



# Full wwPDB EM Validation Report ⓘ

Dec 13, 2022 – 12:19 am GMT

PDB ID : 6TM5  
EMDB ID : EMD-10518  
Title : Cryo-EM structure of the Anaphase-promoting complex/Cyclosome, in complex with the Nek2A substrate at 3.9 angstrom resolution  
Authors : Alfieri, C.; Barford, D.  
Deposited on : 2019-12-03  
Resolution : 3.90 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

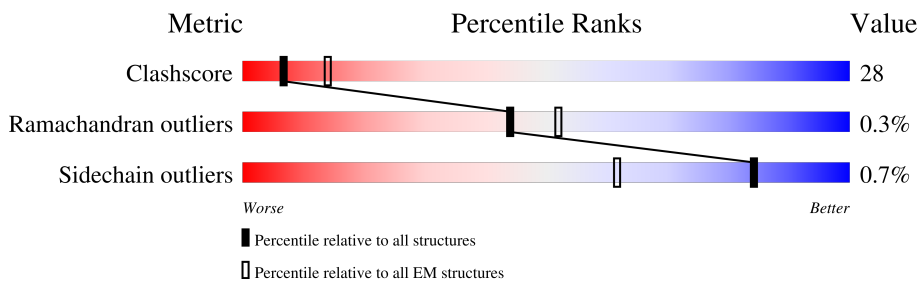
EMDB validation analysis : 0.0.1.dev43  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.3

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.90 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.










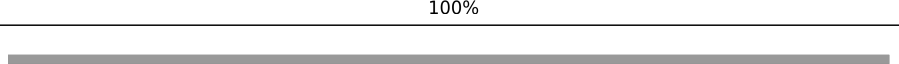
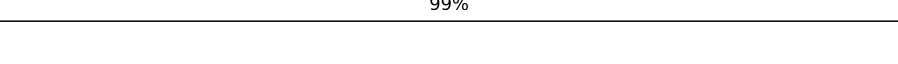
| Metric                | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore            | 158937                   | 4297                     |
| Ramachandran outliers | 154571                   | 4023                     |
| Sidechain outliers    | 154315                   | 3826                     |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | A     | 1944   |                  |
| 2   | B     | 84     |                  |
| 3   | C     | 597    |                  |
| 3   | P     | 597    |                  |
| 4   | D     | 121    |                  |
| 5   | E     | 110    |                  |
| 6   | F     | 824    |                  |
| 6   | H     | 824    |                  |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 7   | G     | 85     |  14%<br>13% 16% 71%  |
| 7   | W     | 85     |  9%<br>11% 19% 69%   |
| 8   | I     | 808    |  59%<br>44% 46% 9%   |
| 9   | J     | 620    |  22%<br>39% 43% 19%  |
| 9   | K     | 620    |  16%<br>45% 33% 20%  |
| 10  | L     | 185    |  52%<br>45% 52% 2%   |
| 11  | M     | 74     |  22%<br>46% 32% 20%  |
| 12  | N     | 822    |  80%<br>40% 40% 18%  |
| 13  | O     | 755    |  11%<br>50% 40% 9%   |
| 14  | T     | 15     |  40%<br>67% 33%      |
| 15  | X     | 599    |  81%<br>38% 42% 19%  |
| 15  | Y     | 599    |  83%<br>34% 48% 17% |
| 16  | S     | 445    |  100%              |
| 17  | Q     | 445    |  99%               |

## 2 Entry composition [i](#)

There are 18 unique types of molecules in this entry. The entry contains 63885 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Anaphase-promoting complex subunit 1.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
|     |       |          | Total | C    | N    | O    | S  |         |       |
| 1   | A     | 1569     | 11890 | 7656 | 2014 | 2140 | 80 | 0       | 0     |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| A     | 356     | PHE      | PRO    | conflict | UNP Q9H1A4 |

- Molecule 2 is a protein called Anaphase-promoting complex subunit 11.

| Mol | Chain | Residues | Atoms |     |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
|     |       |          | Total | C   | N   | O  | S  |         |       |
| 2   | B     | 84       | 649   | 416 | 117 | 99 | 17 | 1       | 0     |

- Molecule 3 is a protein called Cell division cycle protein 23 homolog.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 3   | C     | 524      | 4306  | 2774 | 727 | 781 | 24 | 0       | 0     |
| 3   | P     | 492      | 4046  | 2613 | 679 | 730 | 24 | 0       | 0     |

- Molecule 4 is a protein called Anaphase-promoting complex subunit 15.

| Mol | Chain | Residues | Atoms |     |    |    | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
|     |       |          | Total | C   | N  | O  |         |       |
| 4   | D     | 55       | 436   | 277 | 73 | 86 | 0       | 0     |

- Molecule 5 is a protein called Anaphase-promoting complex subunit 16.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
|     |       |          | Total | C   | N  | O  | S |         |       |
| 5   | E     | 56       | 450   | 290 | 74 | 85 | 1 | 0       | 0     |

- Molecule 6 is a protein called Cell division cycle protein 27 homolog.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 6   | F     | 460      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3618  | 2320 | 608 | 666 | 24 |         |       |
| 6   | H     | 488      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3879  | 2489 | 655 | 709 | 26 |         |       |

- Molecule 7 is a protein called Anaphase-promoting complex subunit CDC26.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
|     |       |          | Total | C   | N  | O  | S |         |       |
| 7   | G     | 25       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 220   | 137 | 41 | 41 | 1 |         |       |
| 7   | W     | 26       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 218   | 136 | 41 | 40 | 1 |         |       |

- Molecule 8 is a protein called Anaphase-promoting complex subunit 4.

| Mol | Chain | Residues | Atoms |      |     |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|----|---------|-------|
|     |       |          | Total | C    | N   | O    | S  |         |       |
| 8   | I     | 736      | Total | C    | N   | O    | S  | 0       | 0     |
|     |       |          | 5726  | 3676 | 957 | 1059 | 34 |         |       |

- Molecule 9 is a protein called Cell division cycle protein 16 homolog.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 9   | J     | 504      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 4053  | 2604 | 687 | 737 | 25 |         |       |
| 9   | K     | 493      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3988  | 2564 | 672 | 728 | 24 |         |       |

- Molecule 10 is a protein called Anaphase-promoting complex subunit 10.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 10  | L     | 182      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1435  | 898 | 263 | 268 | 6 |         |       |

- Molecule 11 is a protein called Anaphase-promoting complex subunit 13.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
|     |       |          | Total | C   | N  | O  | S |         |       |
| 11  | M     | 59       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 481   | 304 | 79 | 96 | 2 |         |       |

- Molecule 12 is a protein called Anaphase-promoting complex subunit 2.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 12  | N     | 676      | 5337  | 3425 | 943 | 944 | 25 | 0       | 0     |

- Molecule 13 is a protein called Anaphase-promoting complex subunit 5.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 13  | O     | 688      | 5400  | 3443 | 940 | 989 | 28 | 0       | 0     |

- Molecule 14 is a protein called Apc1 loop.

| Mol | Chain | Residues | Atoms |    |    |    | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
|     |       |          | Total | C  | N  | O  |         |       |
| 14  | T     | 15       | 79    | 47 | 16 | 16 | 0       | 0     |

- Molecule 15 is a protein called Anaphase-promoting complex subunit 7.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
|     |       |          | Total | C    | N   | O   | S  |         |       |
| 15  | X     | 484      | 3767  | 2390 | 649 | 704 | 24 | 0       | 0     |
| 15  | Y     | 496      | 3862  | 2446 | 666 | 724 | 26 | 0       | 0     |

- Molecule 16 is a protein called Serine/threonine-protein kinase Nek2.

| Mol | Chain | Residues | Atoms |    |   |   |   | AltConf | Trace |
|-----|-------|----------|-------|----|---|---|---|---------|-------|
|     |       |          | Total | C  | N | O | S |         |       |
| 16  | S     | 2        | 19    | 11 | 5 | 2 | 1 | 0       | 0     |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference  |
|-------|---------|----------|--------|----------|------------|
| S     | 449     | ALA      | MET    | conflict | UNP P51955 |

- Molecule 17 is a protein called Serine/threonine-protein kinase Nek2.

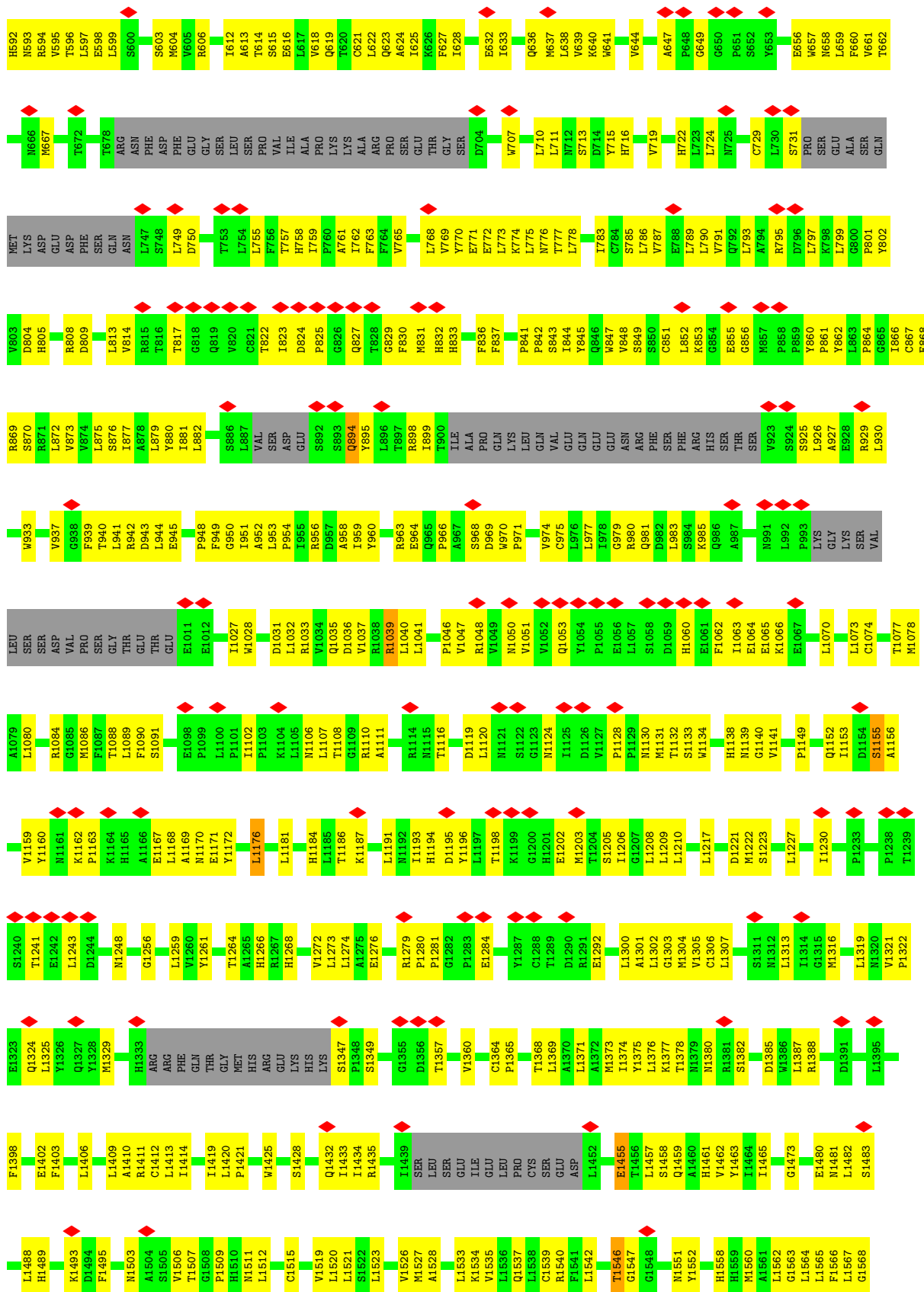
| Mol | Chain | Residues | Atoms |    |   |   |   | AltConf | Trace |
|-----|-------|----------|-------|----|---|---|---|---------|-------|
|     |       |          | Total | C  | N | O | S |         |       |
| 17  | Q     | 3        | 23    | 13 | 6 | 3 | 1 | 0       | 0     |

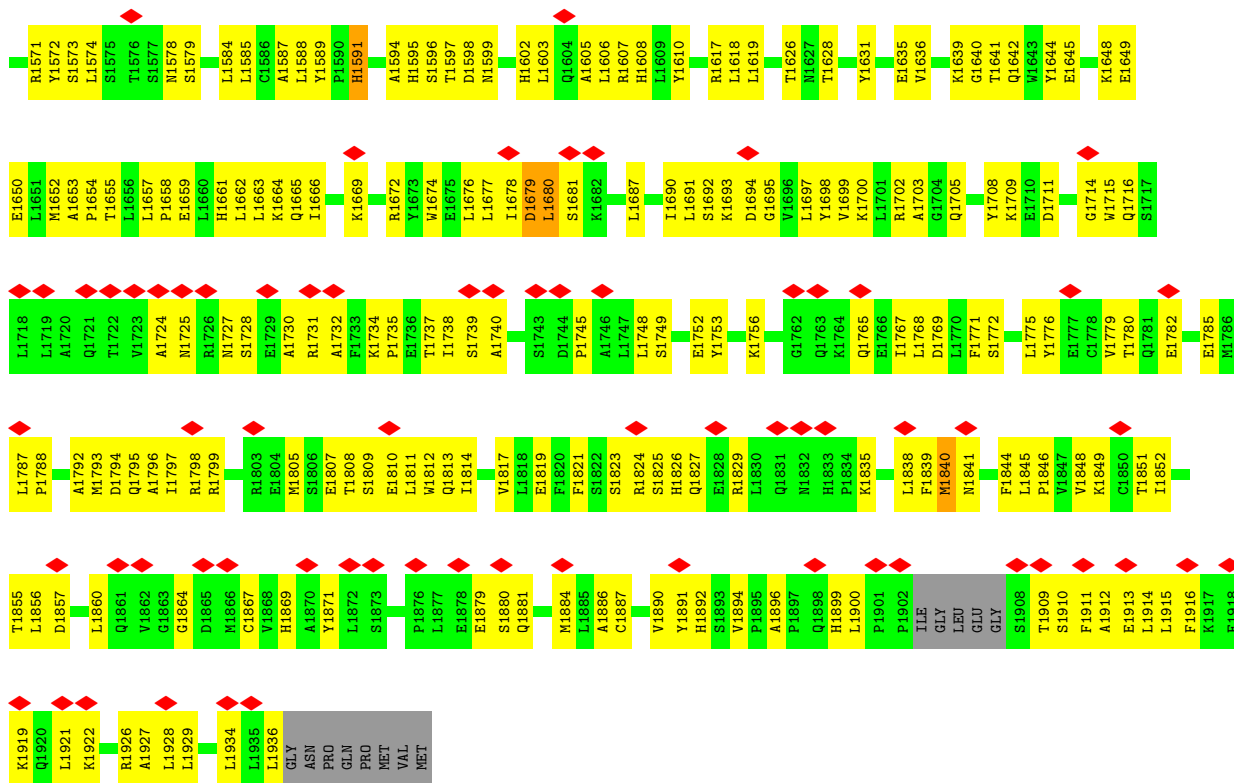
- Molecule 18 is ZINC ION (three-letter code: ZN) (formula: Zn).

| <b>Mol</b> | <b>Chain</b> | <b>Residues</b> | <b>Atoms</b> |         | <b>AltConf</b> |
|------------|--------------|-----------------|--------------|---------|----------------|
| 18         | B            | 3               | Total<br>3   | Zn<br>3 | 0              |

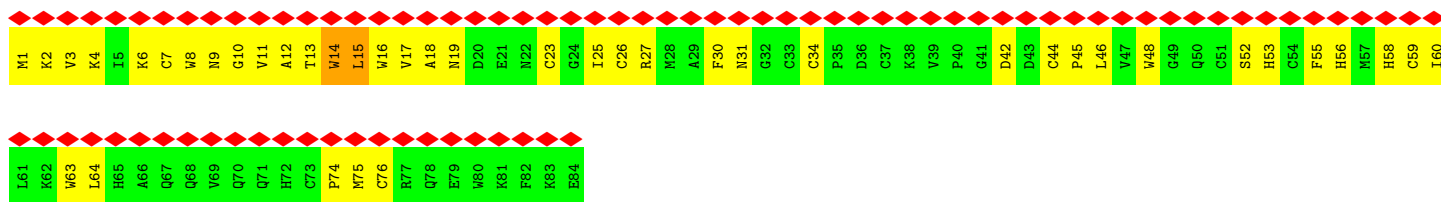




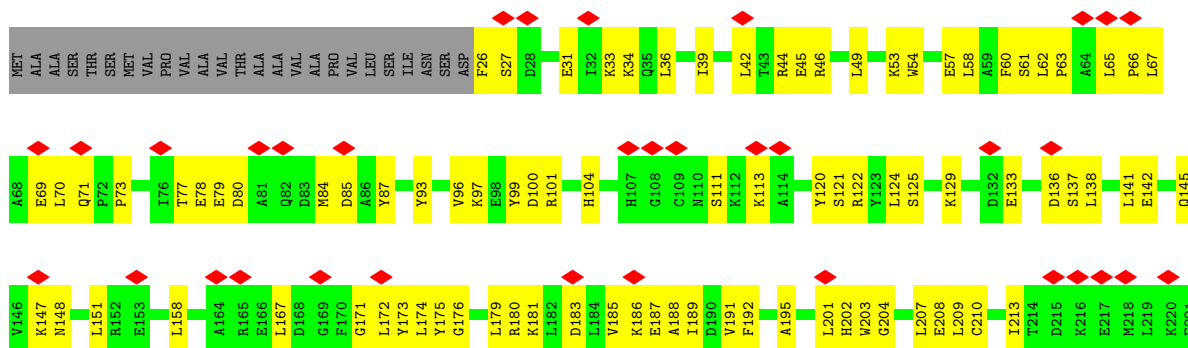




• Molecule 2: Anaphase-promoting complex subunit 11

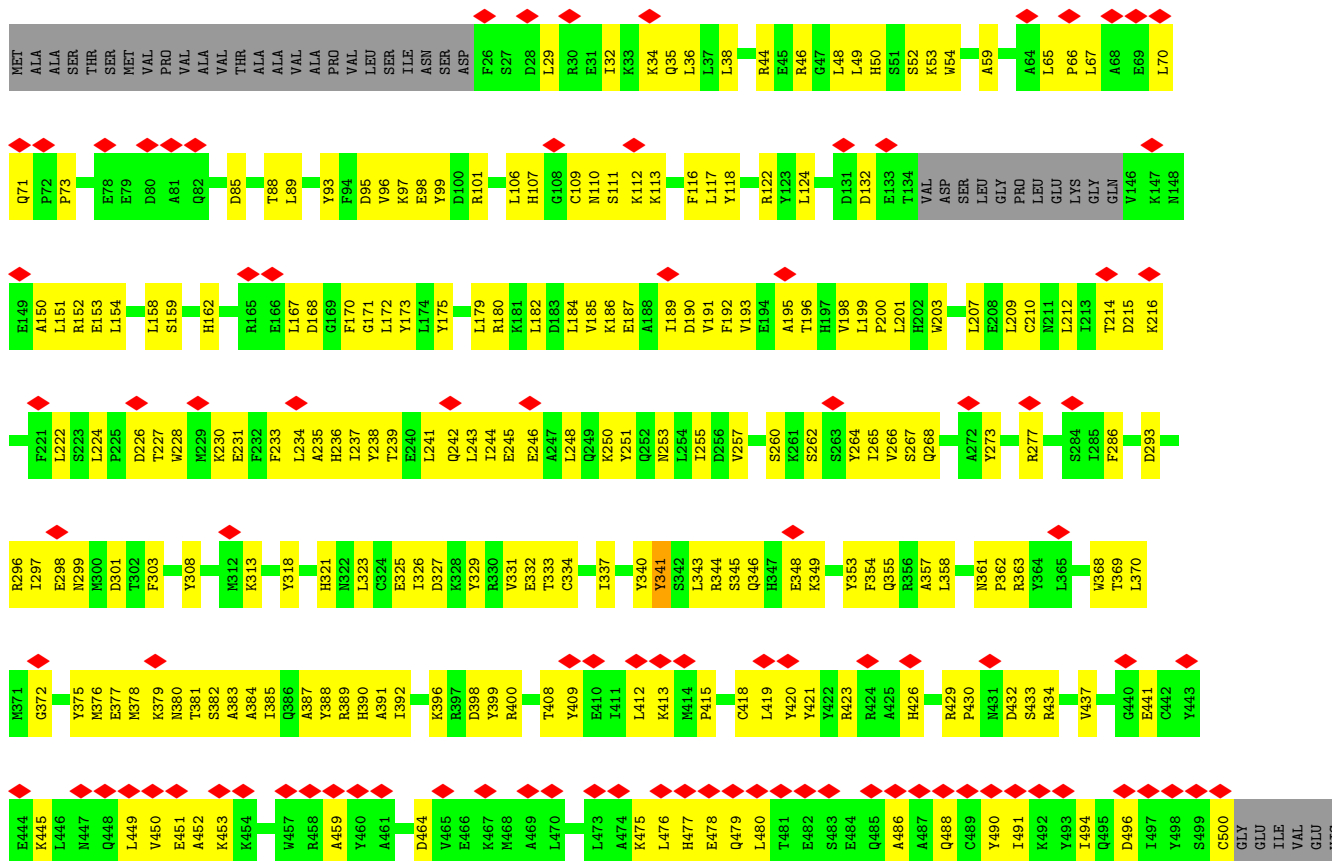


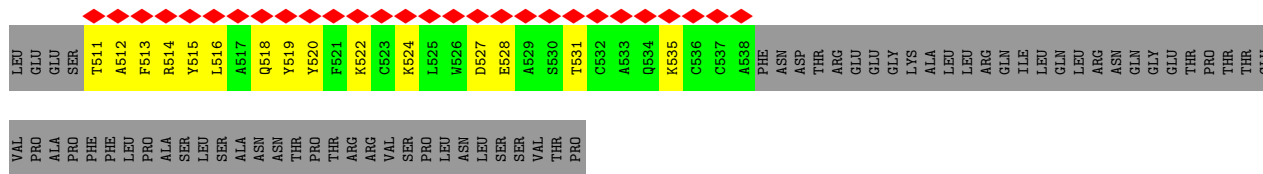
• Molecule 3: Cell division cycle protein 23 homolog



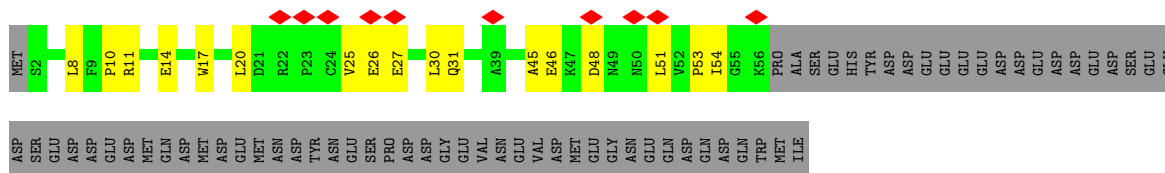
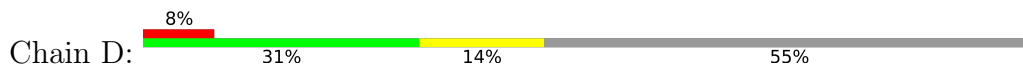


• Molecule 3: Cell division cycle protein 23 homolog

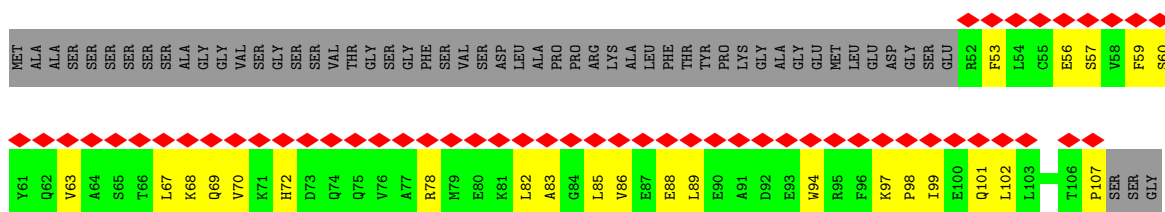
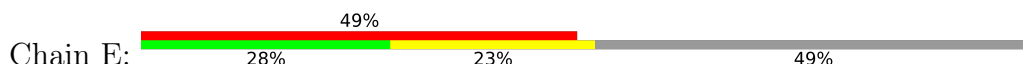




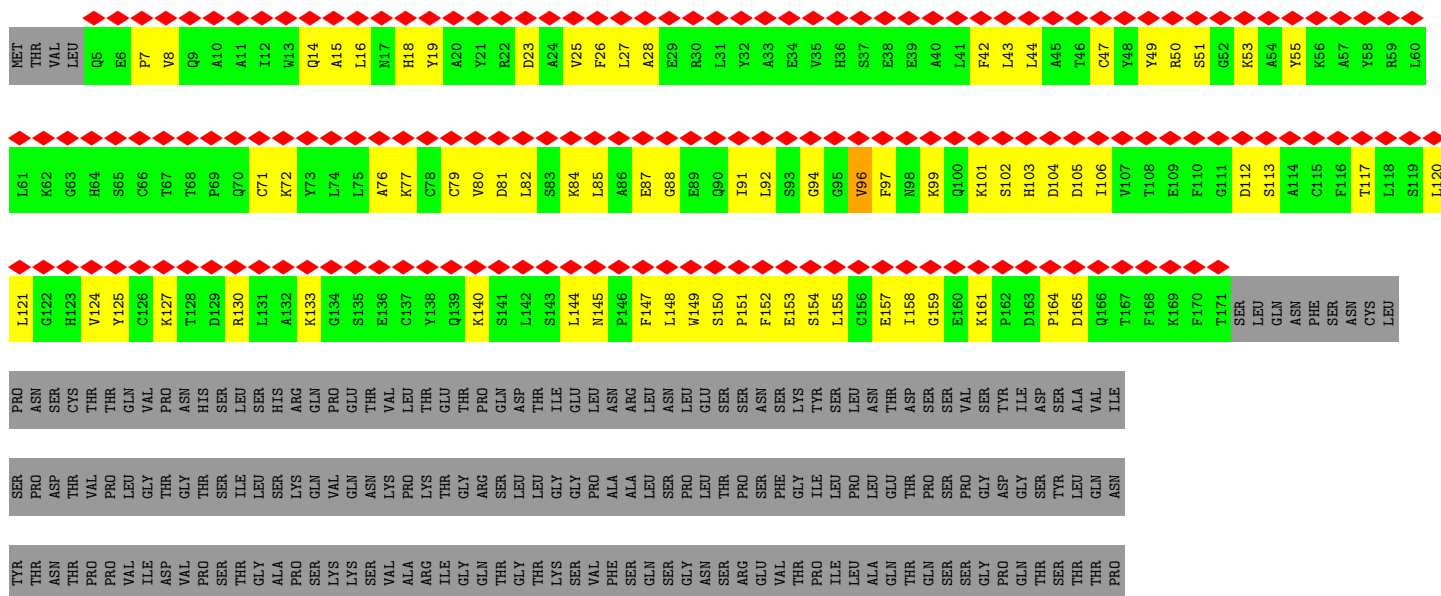
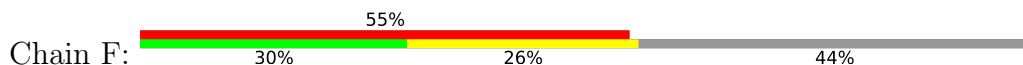
• Molecule 4: Anaphase-promoting complex subunit 15



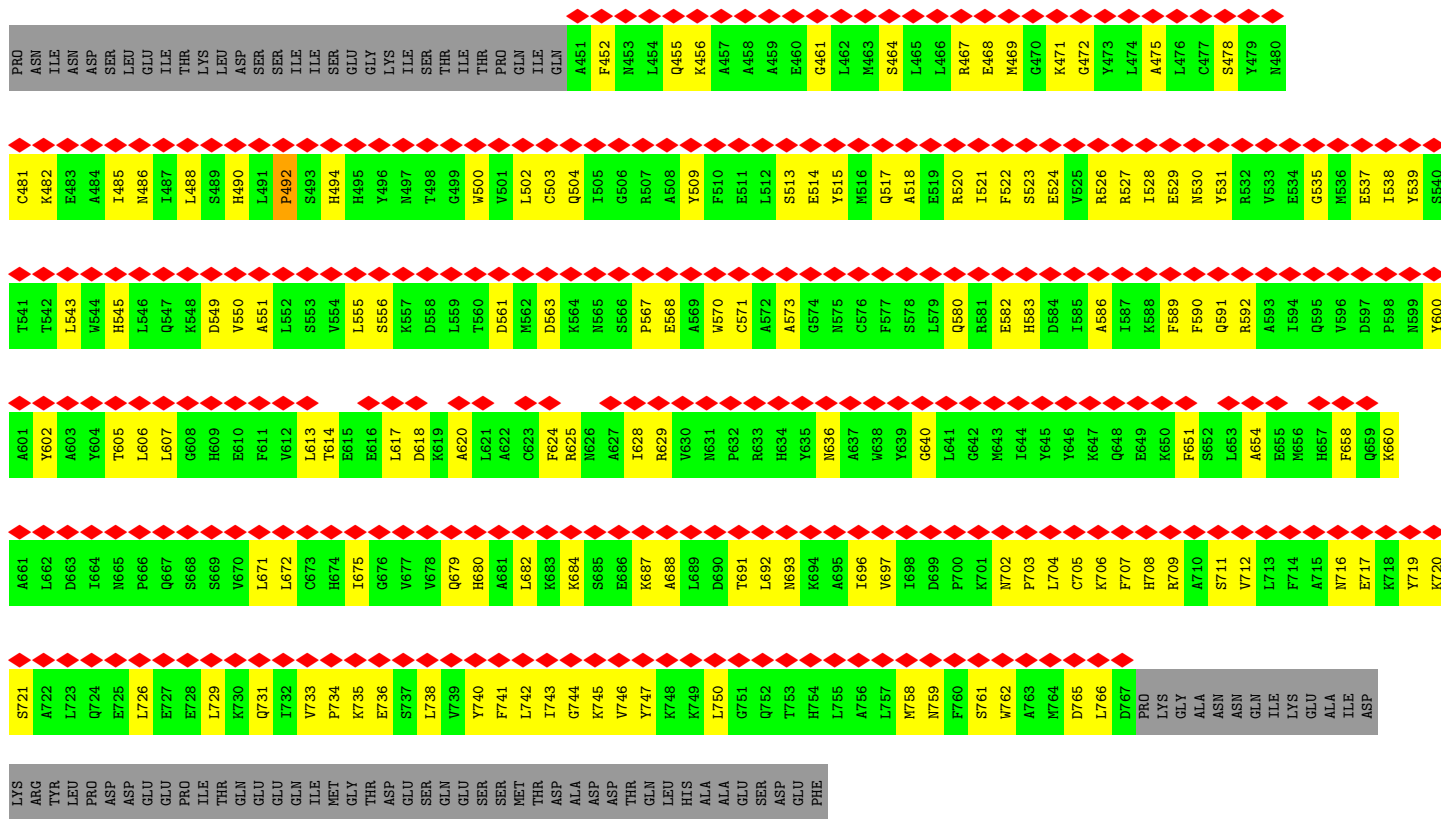
• Molecule 5: Anaphase-promoting complex subunit 16



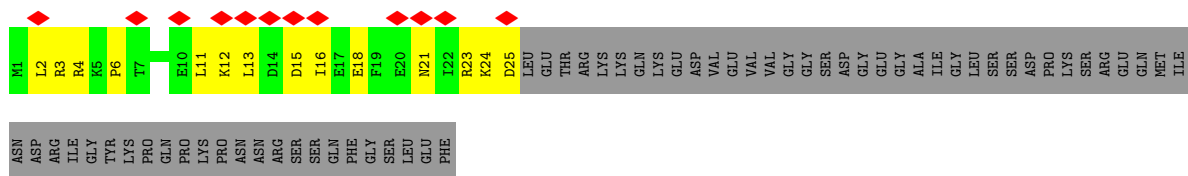
• Molecule 6: Cell division cycle protein 27 homolog



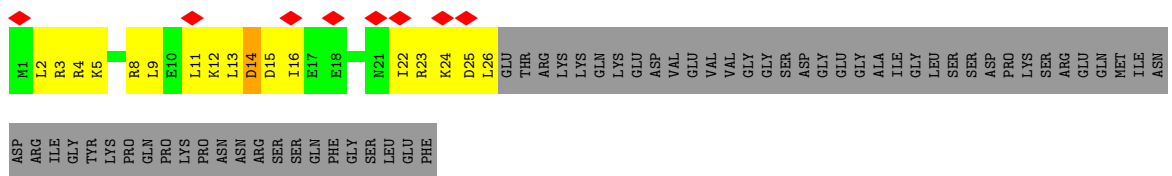




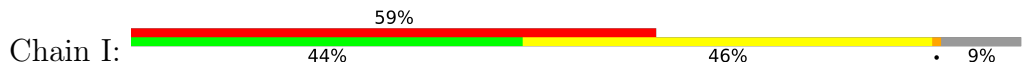
• Molecule 7: Anaphase-promoting complex subunit CDC26

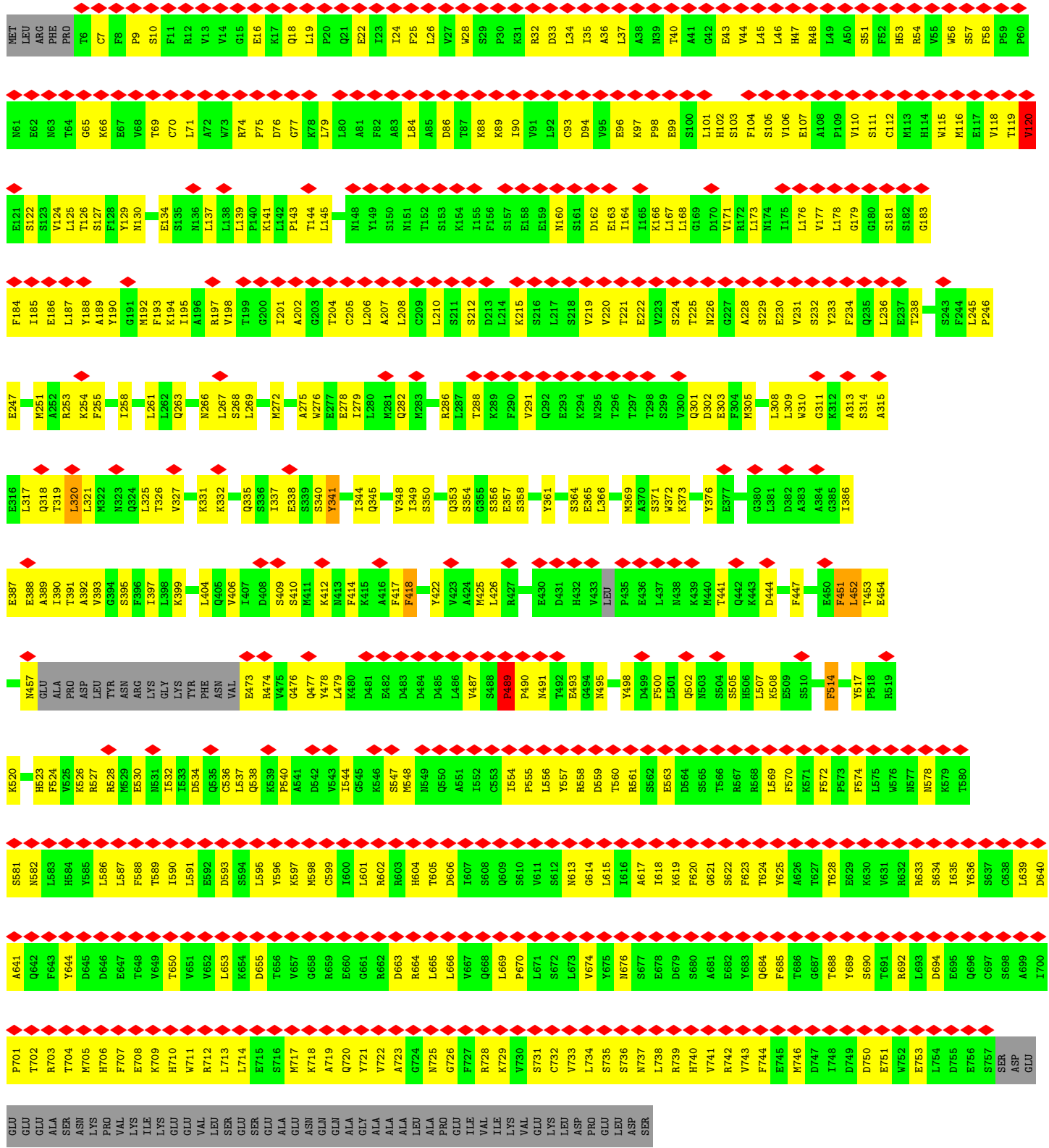


• Molecule 7: Anaphase-promoting complex subunit CDC26



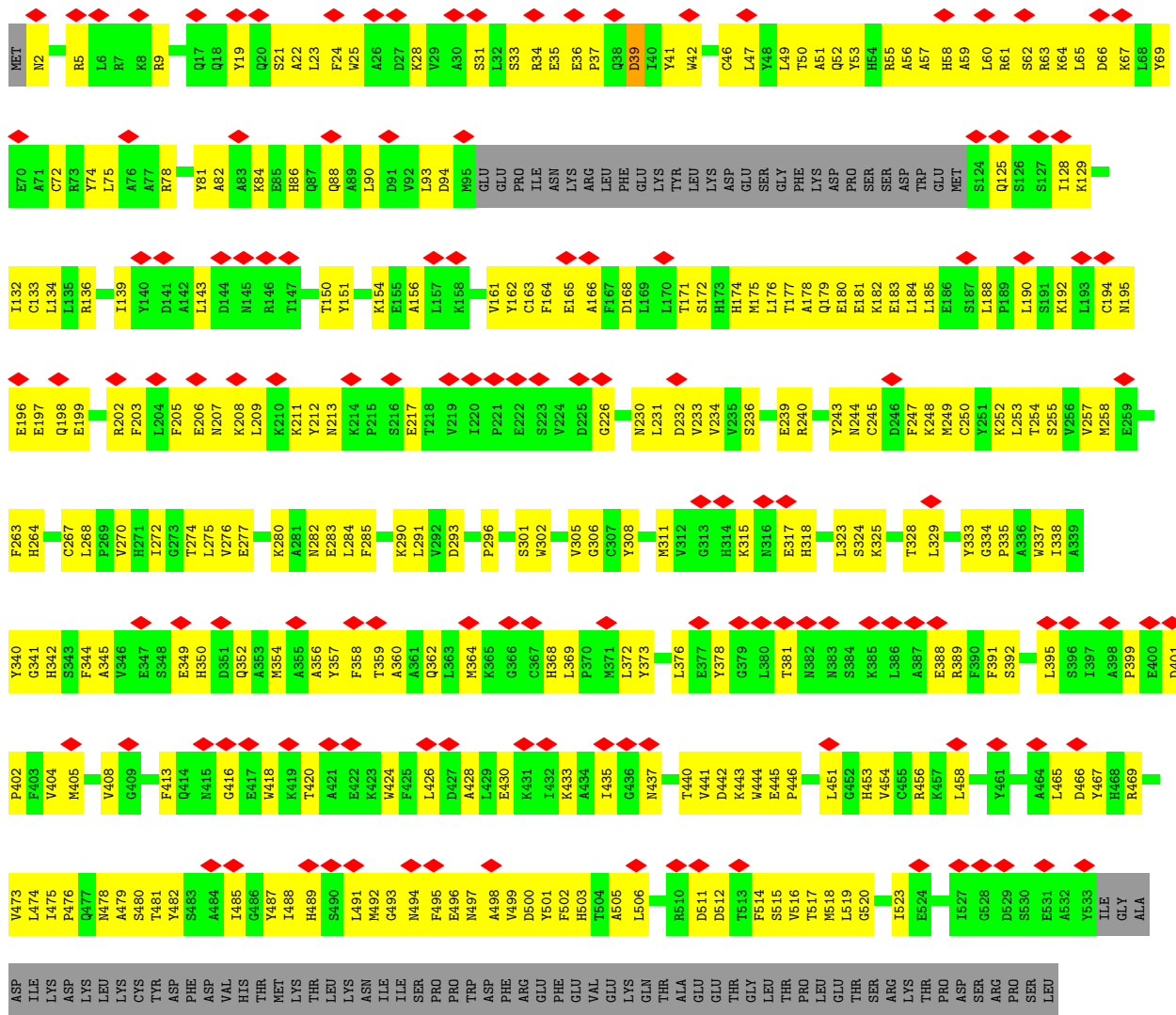
• Molecule 8: Anaphase-promoting complex subunit 4



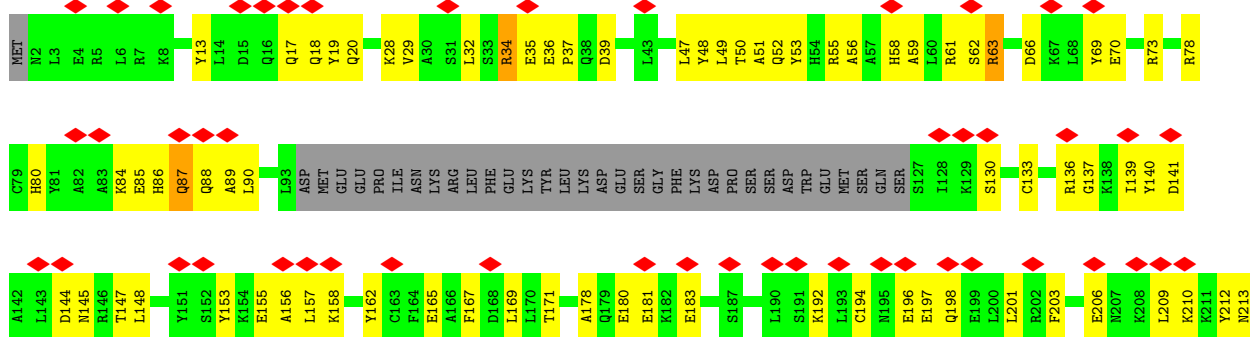


● Molecule 9: Cell division cycle protein 16 homolog

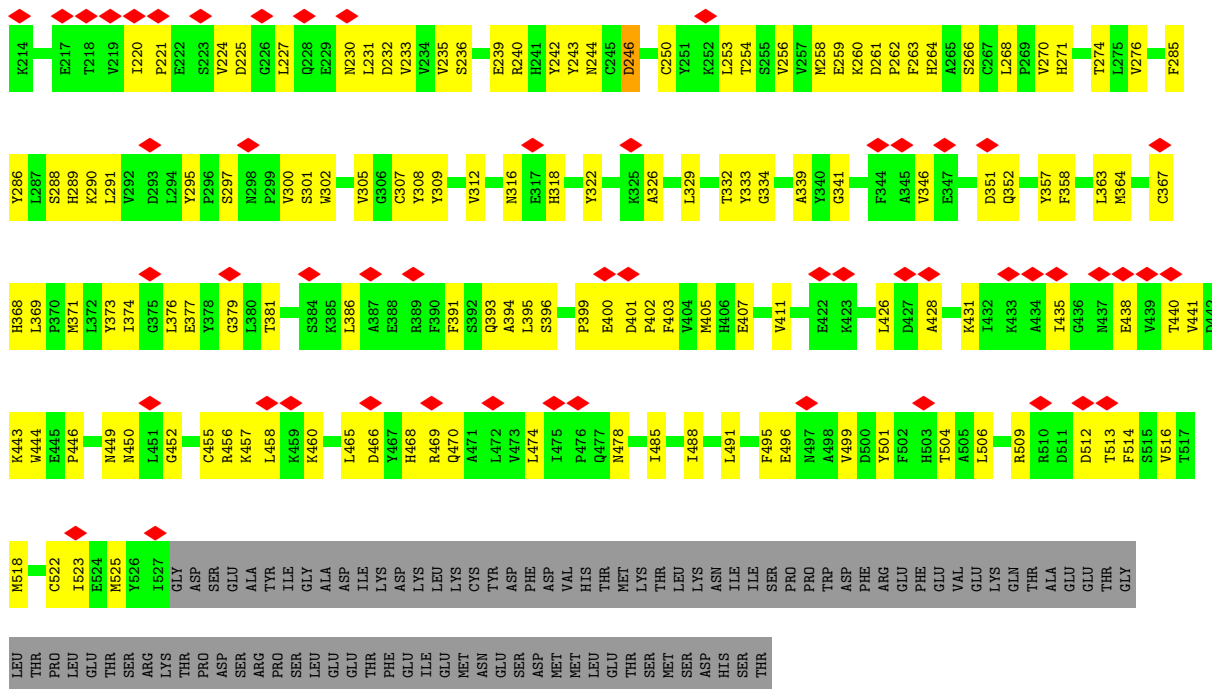




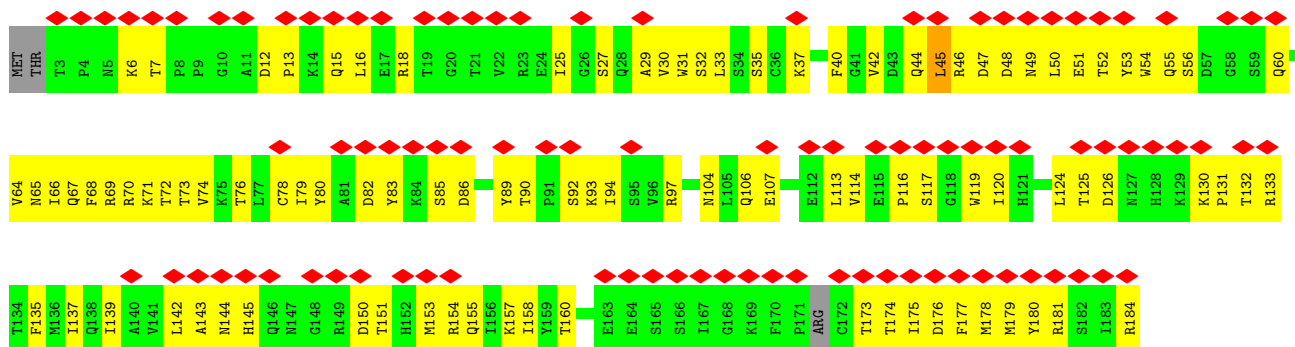
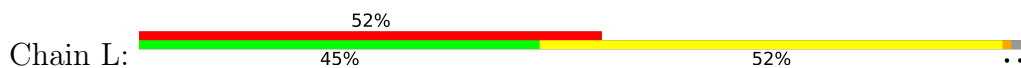
• Molecule 9: Cell division cycle protein 16 homolog



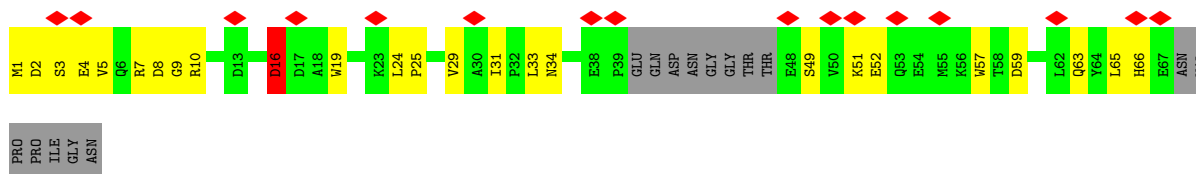




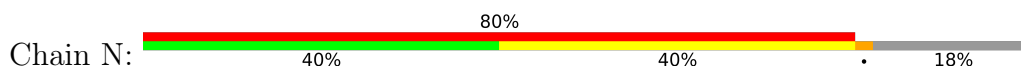
• Molecule 10: Anaphase-promoting complex subunit 10



• Molecule 11: Anaphase-promoting complex subunit 13

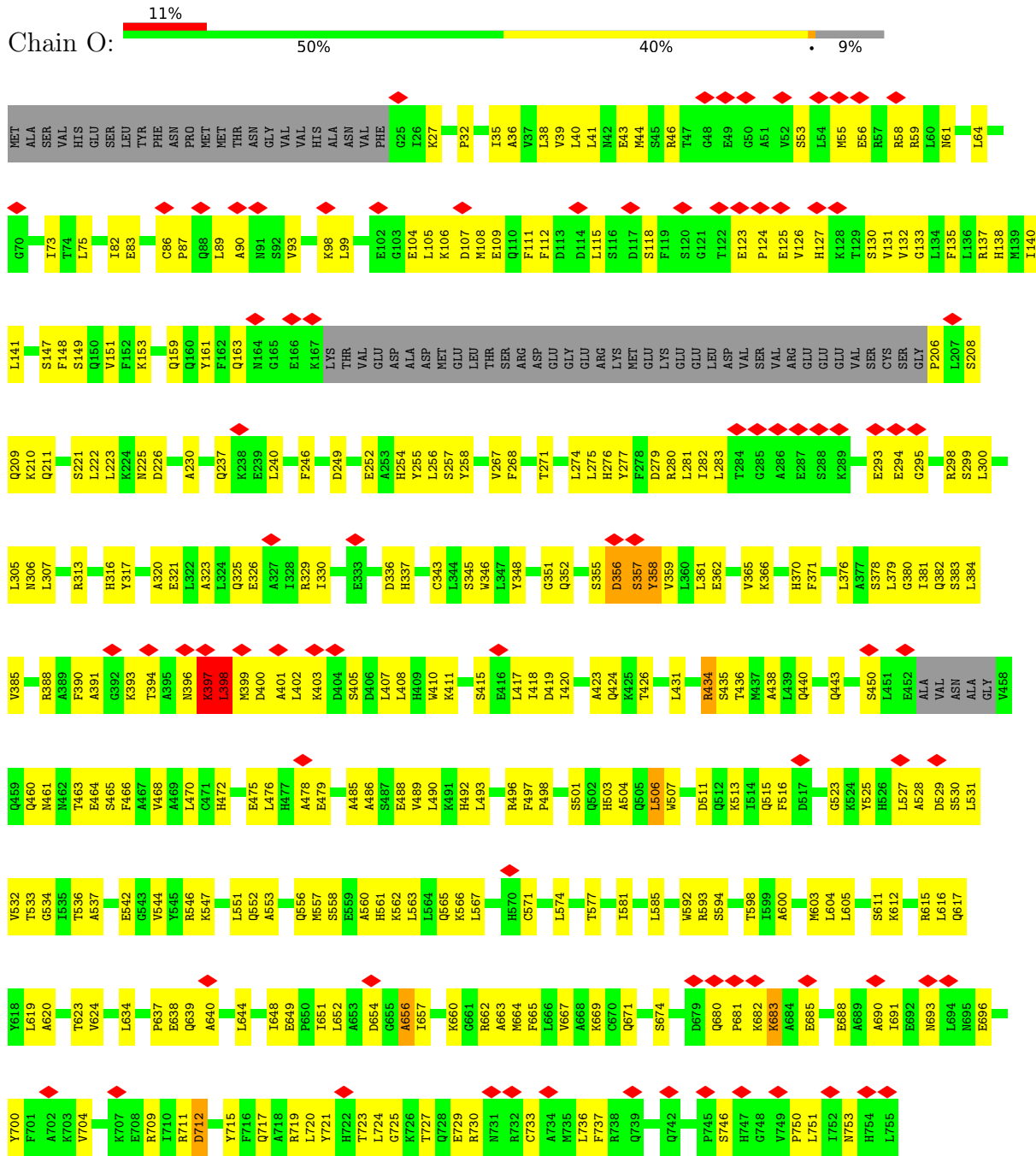


• Molecule 12: Anaphase-promoting complex subunit 2

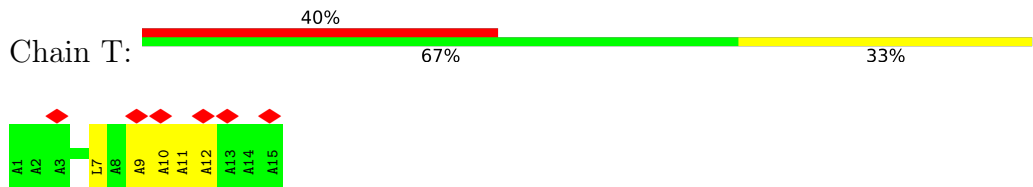


|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A786 | A787 | A788 | E789 | L790 | D791 | L792 | Q793 | E794 | Q796 | G797 | Y798 | L799 | Q800 | K801 | K802 | V803 | R804 | D805 | Q806 | Q807 | L808 | V809 | Y810 | S811 | A812 | G813 | V814 | Y815 | R816 | L817 | P818 | LYS  | ASN  | CYS  | SER  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| M726 | M727 | V728 | L729 | L730 | ASP  | ASP  | ASP  | GLU  | ASP  | GLY  | MET  | ALA  | SER  | GLN  | ALA  | ASP  | GLN  | K747 | E748 | E749 | E750 | L751 | L752 | L753 | F754 | W755 | T756 | Y757 | I758 | Q759 | A760 | M761 | L762 | T763 | N764 | L765 | L766 | G767 | L768 | S769 | L770 | D771 | R772 | I773 | Y774 | M775 | M776 | L777 | R778 | M779 | F780 | V781 | W782 | T783 | G784 | P785 |      |      |      |      |      |
| D606 | E607 | K608 | L609 | E610 | V611 | P612 | E613 | D614 | I615 | R616 | A617 | A618 | L619 | E620 | A621 | Y622 | C623 | K624 | K625 | Y626 | E627 | M628 | Q628 | L629 | K630 | E631 | M632 | R633 | T634 | L635 | S636 | K637 | K638 | H639 | T640 | L641 | G642 | L643 | V644 | T645 | M646 | D647 | P648 | V648 | E649 | L650 | A651 | Y652 | A653 | V654 | I655 | S656 | V657 | A658 | V659 | T660 | P661 | V662 | A664 | V665 |      |
| I666 | L667 | L668 | Y669 | F670 | Q671 | D672 | Q673 | A674 | S675 | W676 | T677 | L678 | E680 | L681 | S682 | K683 | A684 | V685 | K686 | M687 | P688 | V689 | A690 | L691 | L692 | R693 | R694 | R695 | M696 | S697 | V698 | L700 | Q701 | Q702 | G703 | S704 | L705 | R706 | E707 | E708 | P709 | P710 | G711 | T712 | F713 | S714 | V715 | I716 | E717 | E718 | E719 | R720 | P721 | Q722 | P723 | R724 | D725 |      |      |      |      |
| K546 | L547 | R548 | F549 | G550 | E551 | A552 | P553 | M554 | H555 | F556 | C557 | E558 | V559 | M560 | L561 | K562 | D563 | M564 | A565 | D566 | S567 | R568 | R569 | I570 | M571 | A572 | N573 | I574 | R575 | E576 | E577 | D578 | E579 | K580 | P581 | P582 | A583 | E584 | E585 | Q586 | P587 | P588 | F589 | G590 | V591 | Y592 | A593 | V594 | I595 | L596 | S597 | S598 | E599 | F600 | P602 | P603 | F604 | K605 |      |      |      |
| D486 | ALA  | ASP  | PRO  | GLY  | LYS  | SER  | SER  | LYS  | ARG  | SER  | S499 | D500 | I501 | S502 | S503 | L504 | V505 | S506 | I508 | Y509 | G510 | S511 | K512 | D513 | L514 | F515 | I516 | N517 | E518 | Y519 | R520 | S521 | L522 | L523 | A524 | D525 | R526 | L527 | L528 | H529 | Q530 | F531 | S532 | F533 | S534 | P535 | E536 | R537 | E538 | I539 | R540 | N541 | E542 | E543 | L544 | L545 |      |      |      |      |      |
| K362 | Y363 | C364 | L365 | E366 | R367 | T368 | D369 | Q370 | R371 | Q372 | Q373 | L374 | L375 | V376 | S377 | L378 | K379 | A380 | A381 | L382 | E383 | T384 | R385 | L386 | L387 | H388 | P389 | G390 | V391 | N392 | T393 | C394 | I396 | D395 | L399 | Y400 | I401 | S402 | A403 | I404 | K405 | A406 | L407 | R408 | V409 | L410 | D411 | P412 | S413 | M414 | V415 | I416 | L417 | E418 | V419 | A420 | C421 |      |      |      |      |
| E422 | P423 | I424 | R425 | R426 | Y427 | L428 | R429 | T430 | E432 | D433 | T434 | V435 | R436 | Q437 | Q438 | V439 | A440 | C441 | L442 | L443 | GLY  | ASP  | SER  | ASP  | THR  | GLY  | ASP  | LEU  | ALA  | VAL  | LEU  | SER  | LYS  | THR  | GLN  | ASP  | ASP  | GLU  | THR  | I401 | GLY  | ASP  | SER  | ASP  | S474 | W480 | V481 | P482 | D483 | P484 | V485 |      |      |      |      |      |      |      |      |      |      |
| K302 | V303 | F304 | LEU  | GLN  | ASP  | GLY  | PRO  | ALA  | ARG  | PRO  | ALA  | ALA  | SER  | PRO  | GLU  | GLY  | N319 | T320 | L321 | R322 | R323 | W324 | R325 | T282 | T283 | T284 | L285 | H286 | Q287 | V288 | T289 | R270 | E271 | R272 | M273 | E274 | R275 | D276 | C277 | R278 | G279 | E280 | Y281 | E282 | R283 | S284 | F285 | L286 | E288 | F289 | H290 | W292 | I293 | E294 | R295 | V296 | V297 | G298 | W299 | L300 | G301 |
| Q242 | L243 | S244 | Q245 | V246 | L247 | H248 | R249 | L250 | S251 | L252 | E254 | V256 | S257 | A258 | E259 | A260 | V261 | T262 | T263 | T264 | L265 | ARG  | H266 | Q267 | V268 | T269 | R270 | E271 | R272 | M273 | E274 | R275 | D276 | C277 | R278 | G279 | E280 | Y281 | E282 | R283 | S284 | F285 | L286 | E288 | F289 | H290 | W292 | I293 | E294 | R295 | V296 | V297 | G298 | W299 | L300 | G301 |      |      |      |      |      |
| R182 | V183 | Y184 | M185 | Q186 | S187 | K188 | R189 | K190 | G191 | GLY  | GLY  | THR  | PRO  | PRO  | GLU  | LEU  | N319 | T320 | L321 | R322 | R323 | W324 | R325 | T282 | T283 | T284 | L285 | H286 | Q287 | V288 | T289 | R270 | E271 | R272 | M273 | E274 | R275 | D276 | C277 | R278 | G279 | E280 | Y281 | E282 | R283 | S284 | F285 | L286 | E288 | F289 | H290 | W292 | I293 | E294 | R295 | V296 | V297 | G298 | W299 | L300 | G301 |
| L122 | D123 | P124 | Y125 | L126 | R127 | S128 | L129 | E130 | L131 | L132 | E133 | K134 | R135 | T136 | R137 | L138 | G139 | L140 | L141 | M142 | G143 | Q144 | G145 | T146 | G148 | L149 | R150 | E151 | E152 | V153 | H154 | I155 | M156 | L157 | Q158 | G159 | V160 | S161 | F162 | F163 | S164 | T165 | P166 | C167 | T168 | L169 | Q170 | E171 | L172 | M173 | I174 | Q175 | L176 | Y177 | G178 | C179 | F180 | L181 |      |      |      |
| V61  | L62  | R63  | G64  | H65  | G66  | L67  | H68  | S69  | V70  | L71  | E72  | E73  | W74  | F75  | W76  | L79  | Q80  | N81  | D82  | L83  | Q84  | A85  | N86  | I87  | S88  | P89  | E90  | F91  | W92  | N93  | A94  | I95  | S96  | Q97  | C98  | E99  | N100 | S101 | A102 | D103 | E104 | P105 | Q106 | C107 | E53  | L108 | L110 | L111 | L112 | D113 | A114 | F115 | G116 | L118 | E119 | S120 | R121 |      |      |      |      |
| ME1  | ALA  | ALA  | ALA  | VAL  | VAL  | ALA  | GLY  | ASP  | ASP  | SER  | SER  | R15  | P16  | G17  | Q18  | E19  | L20  | L21  | V22  | A23  | W24  | N25  | T26  | V27  | S28  | G30  | L31  | V32  | P33  | PRO  | ALA  | ALA  | LEU  | GLY  | LEU  | VAL  | SER  | SER  | ARG  | THR  | SER  | GLY  | ALA  | VAL  | PRO  | P60  | A51  | E52  | E53  | L55  | H56  | A57  | A58  | V59  | E60  |      |      |      |      |      |      |

• Molecule 13: Anaphase-promoting complex subunit 5



• Molecule 14: Apc1 loop



• Molecule 15: Anaphase-promoting complex subunit 7



|     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  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    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----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| GLY | ASN | ALA | SER | THR | PRO | GLN | SER | GLN | CYS | L132 | P133 | S134 | E135 | I136 | E137 | V138 | K139 | Y140 | K141 | H142 | A143 | E144 | C145 | Y146 | T147 | M148 | L149 | K150 | Q151 | D152 | K153 | D154 | A155 | I156 | A157 | I158 | L159 | D160 | G161 | I162 | P163 | S164 | R165 | Q166 | R167 | T168 | P169 | K170 | I171 | M172 | M173 | H174 | L175 | A176 | N177 | L178 | Y179 | S237 | W239 | I240 | K181 | A182 | G183 | Q184 | E185 | R186 | P187 | S188 | V189 | T190 | S191 | Y192 | K193 | E194 | V195 | L196 | R197 | Q198 | C199 | P200 | L201 | A202 | L203 | D204 | A205 | I206 | L207 | G208 | L209 | L210 | S211 | L212 | S213 | W214 | V215 | K215 | G216 | A217 | E218 | V219 | A220 | S221 | M222 | T223 | M224 | N225 | V226 | I227 | Q228 | T229 | V230 | P231 | N232 | L233 | D234 | W235 | L236 | Q237 | Q238 | M239 | L300 | K241 | A242 | Y243 | A244 | F245 | H246 | H247 | T248 | G249 | D250 | N251 | S252 | R253 | A254 | I255 | S256 | T257 | I258 | C259 | S260 | L261 | E262 | K263 | K264 | S265 | L266 | L267 | R268 | D269 | N270 | V271 | D272 | L273 | L274 | G275 | S276 | L277 | A278 | D279 | L280 | Y281 | F282 | R283 | A284 | G285 | D286 | N287 | K288 | N289 | S290 | V291 | L292 | K293 | F294 | E295 | Q296 | Q297 | A298 | M299 | D301 | P302 | Y303 | L304 | I305 | K306 | G307 | M308 | D309 | V310 | Y311 | G312 | Y313 | L314 | L315 | A316 | R317 | E318 | G319 | R320 | E322 | D323 | V324 | E325 | N326 | L327 | G328 | C329 | R330 | L331 | F332 | N333 | I334 | S335 | D336 | Q337 | H338 | A339 | E340 | R401 | W402 | V403 | V404 | S405 | G406 | L407 | D408 | C409 | S409 | F350 | Y351 | S352 | K353 | R354 | Y355 | S356 | R357 | A358 | L359 | Y360 | L361 | G362 | A363 | K364 | A365 | I366 | Q367 | L368 | N369 | S370 | N371 | S372 | V373 | Q374 | L375 | A375 | L376 | L377 | L378 | K379 | G380 | A381 | A382 | L383 | R384 | N385 | M386 | G387 | R388 | V389 | Q390 | E391 | A392 | I393 | I394 | H395 | F396 | R397 | E398 | A399 | I400 | R401 | A402 | A403 | P404 | C405 | R406 | L407 | D408 | C409 | Y410 | E411 | G412 | L413 | I414 | E415 | C416 | Y417 | L418 | A419 | S420 | M421 | S422 | I423 | R424 | E425 | A426 | M427 | V428 | M429 | A430 | M431 | M432 | V433 | Y434 | K435 | T436 | L437 | G438 | A439 | M440 | A441 | T443 | L444 | T445 | L446 | L447 | A448 | T449 | V450 | C451 | L452 | E453 | D454 | P455 | V456 | T457 | Q458 | E459 | K460 | A461 | K462 | T463 | L464 | L465 | D466 | K467 | A468 | L469 | T470 | Q471 | R472 | F473 | D474 | Y475 | I476 | K477 | A478 | V479 | V480 | K481 | K482 | A483 | E484 | L485 | S487 | R488 | E489 | Q490 | K491 | Y492 | E493 | D494 | G495 | I496 | A497 | L498 | L499 | B500 | N501 | A502 | L503 | A504 | N505 | Q506 | S507 | D508 | C509 | V510 | L511 | H512 | R513 | L514 | L515 | G516 | D517 | F518 | L519 | V520 | A521 | V522 | N523 | E524 | Y525 | Q526 | E527 | A528 | M529 | D530 | Q531 | Y532 | S533 | I534 | A535 | L536 | S537 | L538 | D539 | P540 | M541 | D542 | Q543 | E544 | S545 | E547 | G548 | M549 | Q550 | K551 | M552 | G111 | L112 | L113 | L114 | L115 | L116 | L117 | L118 | L119 | L120 | L121 | L122 | L123 | L124 | L125 | L126 | L127 | L128 | L129 | L130 | L131 | L132 | L133 | L134 | L135 | L136 | L137 | L138 | L139 | L140 | L141 | L142 | L143 | L144 | L145 | L146 | L147 | L148 | L149 | L150 | L151 | L152 | L153 | L154 | L155 | L156 | L157 | L158 | L159 | L160 | L161 | L162 | L163 | L164 | L165 | L166 | L167 | L168 | L169 | L170 | L171 | L172 | L173 | L174 | L175 | L176 | L177 | L178 | L179 | L180 | L181 | L182 | L183 | L184 | L185 | L186 | L187 | L188 | L189 | L190 | L191 | L192 | L193 | L194 | L195 | L196 | L197 | L198 | L199 | L200 | L201 | L202 | L203 | L204 | L205 | L206 | L207 | L208 | L209 | L210 | L211 | L212 | L213 | L214 | L215 | L216 | L217 | L218 | L219 | L220 | L221 | L222 | L223 | L224 | L225 | L226 | L227 | L228 | L229 | L230 | L231 | L232 | L233 | L234 | L235 | L236 | L237 | L238 | L239 | L240 | L241 | L242 | L243 | L244 | L245 | L246 | L247 | L248 | L249 | L250 | L251 | L252 | L253 | L254 | L255 | L256 | L257 | L258 | L259 | L260 | L261 | L262 | L263 | L264 | L265 | L266 | L267 | L268 | L269 | L270 | L271 | L272 | L273 | L274 | L275 | L276 | L277 | L278 | L279 | L280 | L281 | L282 | L283 | L284 | L285 | L286 | L287 | L288 | L289 | L290 | L291 | L292 | L293 | L294 | L295 | L296 | L297 | L298 | L299 | L300 | L301 | L302 | L303 | L304 | L305 | L306 | L307 | L308 | L309 | L310 | L311 | L312 | L313 | L314 | L315 | L316 | L317 | L318 | L319 | L320 | L321 | L322 | L323 | L324 | L325 | L326 | L327 | L328 | L329 | L330 | L331 | L332 | L333 | L334 | L335 | L336 | L337 | L338 | L339 | L340 | L341 | L342 | L343 | L344 | L345 | L346 | L347 | L348 | L349 | L350 | L351 | L352 | L353 | L354 | L355 | L356 | L357 | L358 | L359 | L360 | L361 | L362 | L363 | L364 | L365 | L366 | L367 | L368 | L369 | L370 | L371 | L372 | L373 | L374 | L375 | L376 | L377 | L378 | L379 | L380 | L381 | L382 | L383 | L384 | L385 | L386 | L387 | L388 | L389 | L390 | L391 | L392 | L393 | L394 | L395 | L396 | L397 | L398 | L399 | L400 | L401 | L402 | L403 | L404 | L405 | L406 | L407 | L408 | L409 | L410 | L411 | L412 | L413 | L414 | L415 | L416 | L417 | L418 | L419 | L420 | L421 | L422 | L423 | L424 | L425 | L426 | L427 | L428 | L429 | L430 | L431 | L432 | L433 | L434 | L435 | L436 | L437 | L438 | L439 | L440 | L441 | L442 | L443 | L444 | L445 | L446 | L447 | L448 | L449 | L450 | L451 | L452 | L453 | L454 | L455 | L456 | L457 | L458 | L459 | L460 | L461 | L462 | L463 | L464 | L465 | L466 | L467 | L468 | L469 | L470 | L471 | L472 | L473 | L474 | L475 | L476 | L477 | L478 | L479 | L480 | L481 | L482 | L483 | L484 | L485 | L486 | L487 | L488 | L489 | L490 | L491 | L492 | L493 | L494 | L495 | L496 | L497 | L498 | L499 | L500 | L501 | L502 | L503 | L504 | L505 | L506 | L507 | L508 | L509 | L510 | L511 | L512 | L513 | L514 | L515 | L516 | L517 | L518 | L519 | L520 | L521 | L522 | L523 | L524 | L525 | L526 | L527 | L528 | L529 | L530 | L531 | L532 | L533 | L534 | L535 | L536 | L537 | L538 | L539 | L540 | L541 | L542 | L543 | L544 | L545 | L546 | L547 | L548 | L549 | L550 | L551 | L552 | L553 | L554 | L555 | L556 | L557 | L558 | L559 | L560 | L561 | L562 | L563 | L564 | L565 | L566 | L567 | L568 | L569 | L570 | L571 | L572 | L573 | L574 | L575 | L576 | L577 | L578 | L579 | L580 | L581 | L582 | L583 | L584 | L585 | L586 | L587 | L588 | L589 | L590 | L591 | L592 | L593 | L594 | L595 | L596 | L597 | L598 | L599 | L600 | L601 | L602 | L603 | L604 | L605 | L606 | L607 | L608 | L609 | L610 | L611 | L612 | L613 | L614 | L615 | L616 | L617 | L618 | L619 | L620 | L621 | L622 | L623 | L624 | L625 | L626 | L627 | L628 | L629 | L630 | L631 | L632 | L633 | L634 | L635 | L636 | L637 | L638 | L639 | L640 | L641 | L642 | L643 | L644 | L645 | L646 | L647 | L648 | L649 | L650 | L651 | L652 | L653 | L654 | L655 | L656 | L657 | L658 | L659 | L660 | L661 | L662 | L663 | L664 | L665 | L666 | L667 | L668 | L669 | L670 | L671 | L672 | L673 | L674 | L675 | L676 | L677 | L678 | L679 | L680 | L681 | L682 | L683 | L684 | L685 | L686 | L687 | L688 | L689 | L690 | L691 | L692 | L693 | L694 | L695 | L696 | L697 | L698 | L699 | L700 | L701 | L702 | L703 | L704 | L705 | L706 | L707 | L708 | L709 | L710 | L711 | L712 | L713 | L714 | L715 | L716 | L717 | L718 | L719 | L720 | L721 | L722 | L723 | L724 | L725 | L726 | L727 | L728 | L729 | L730 | L731 | L732 | L733 | L734 | L735 | L736 | L737 | L738 | L739 | L740 | L741 | L742 | L743 | L744 | L745 | L746 | L747 | L748 | L749 | L750 | L751 | L752 | L753 | L754 | L755 | L756 | L757 | L758 | L759 | L760 | L761 | L762 | L763 | L764 | L765 | L766 | L767 | L768 | L769 | L770 | L771 | L772 | L773 | L774 | L775 | L776 | L777 | L778 | L779 | L780 | L781 | L782 | L783 | L784 | L785 | L786 | L787 | L788 | L789 | L790 | L791 | L792 | L793 | L794 | L795 | L796 | L797 | L798 | L799 | L800 | L801 | L802 | L803 | L804 | L805 | L806 | L807 | L808 | L809 | L810 | L811 | L812 | L813 | L814 | L815 | L816 | L817 | L818 | L819 | L820 | L821 | L822 | L823 | L824 | L825 | L826 | L827 | L828 | L829 | L830 | L831 | L832 | L833 | L834 | L835 | L836 | L837 | L838 | L839 | L840 | L841 | L842 | L843 | L844 | L845 | L846 | L847 | L848 | L849 | L850 | L851 | L852 | L853 | L854 | L855 | L856 | L857 | L858 | L859 | L860 | L861 | L862 | L863 | L864 | L865 | L866 | L867 | L868 | L869 | L870 | L871 | L872 | L873 | L874 | L875 | L876 | L877 | L878 | L879 | L880 | L881 | L882 | L883 | L884 | L885 | L886 | L887 | L888 | L889 | L890 | L891 | L892 | L893 | L894 | L895 | L896 | L897 | L898 | L899 | L900 | L901 | L902 | L903 | L904 | L905 | L906 | L907 | L908 | L909 | L910 | L911 | L912 | L913 | L914 | L915 | L916 | L917 | L918 | L919 | L920 | L921 | L922 | L923 | L924 | L925 | L926 | L927 | L928 | L929 | L930 | L931 | L932 | L933 | L934 | L935 | L936 | L937 | L938 | L939 | L940 | L941 | L942 | L943 | L944 | L945 | L946 | L947 | L948 | L949 | L950 | L951 | L952 | L953 | L954 | L955 | L956 | L957 | L958 | L959 | L960 | L961 | L962 | L963 | L964 | L965 | L966 | L967 | L968 | L969 | L970 | L971 | L972 | L973 | L974 | L975 | L976 | L977 | L978 | L979 | L980 | L981 | L982 | L983 | L984 | L985 | L986 | L987 | L988 | L989 | L990 | L991 | L992 | L993 | L994 | L995 | L996 | L997 | L998 | L999 | L1000 | L1001 | L1002 | L1003 | L1004 | L1005 | L1006 | L1007 | L1008 | L1009 | L1010 | L1011 | L1012 | L1013 | L1014 | L1015 | L1016 | L1017 | L1018 | L1019 | L1020 | L1021 | L1022 | L1023 | L1024 | L1025 | L1026 | L1027 | L1028 | L1029 | L1030 | L1031 | L1032 | L1033 | L1034 | L1035 | L1036 | L1037 | L1038 | L1039 | L1040 | L1041 | L1042 | L1043 | L1044 | L1045 | L1046 | L1047 | L1048 | L1049 | L1050 | L1051 | L1052 | L1053 | L1054 | L1055 | L1056 | L1057 | L1058 | L1059 | L1060 | L1061 | L1062 | L1063 | L1064 | L1065 | L1066 | L1067 | L1068 | L1069 | L1070 | L1071 | L1072 | L1073 | L1074 | L1075 | L1076 | L1077 | L1078 | L1079 | L1080 | L1081 | L1082 | L1083 | L1084 | L1085 | L1086 | L1087 | L1088 | L1089 | L1090 | L1091 | L1092 | L1093 | L1094 | L1095 | L1096 | L1097 | L1098 | L1099 | L1100 | L1101 | L1102 | L1103 | L1104 | L1105 | L1106 | L1107 | L1108 | L1109 | L1110 | L1111 | L1112 | L1113 | L1114 | L1115 | L1116 | L1117 | L1118 | L1119 | L1120 | L1121 | L1122 | L1123 | L1124 | L1125 | L1126 | L1127 | L1128 | L1129 | L1130 | L1131 | L1132 | L1133 | L1134 | L1135 | L1136 | L1137 | L1138 | L1139 | L1140 | L1141 | L1142 | L1143 | L1144 | L1145 | L1146 | L1147 | L1148 | L1149 | L1150 | L1151 | L1152 | L1153 | L1154 | L1155 | L1156 | L1157 | L1158 | L1159 | L1160 | L1161 | L1162 | L1163 | L1164 | L1165 | L1166 | L1167 | L1168 | L1169 | L1170 | L1171 | L1172 | L1173 | L1174 | L1175 | L1176 | L1177 | L1178 | L1179 | L118 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----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------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|---|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 233840                                  | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | FEI TITAN KRIOS                         | Depositor |
| Voltage (kV)                         | 300                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 29                                      | Depositor |
| Minimum defocus (nm)                 | Not provided                            |           |
| Maximum defocus (nm)                 | Not provided                            |           |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K2 SUMMIT (4k x 4k)               | Depositor |
| Maximum map value                    | 0.201                                   | Depositor |
| Minimum map value                    | -0.165                                  | Depositor |
| Average map value                    | 0.000                                   | Depositor |
| Map value standard deviation         | 0.004                                   | Depositor |
| Recommended contour level            | 0.023                                   | Depositor |
| Map size (Å)                         | 388.69998, 388.69998, 388.69998         | wwPDB     |
| Map dimensions                       | 338, 338, 338                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 1.15, 1.15, 1.15                        | Depositor |

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section:  
ZN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |         | Bond angles |                |
|-----|-------|--------------|---------|-------------|----------------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5        |
| 1   | A     | 0.57         | 0/12168 | 0.64        | 0/16587        |
| 2   | B     | 0.35         | 0/674   | 0.53        | 0/913          |
| 3   | C     | 0.63         | 0/4404  | 0.60        | 0/5945         |
| 3   | P     | 0.49         | 0/4141  | 0.55        | 0/5593         |
| 4   | D     | 0.50         | 0/446   | 0.55        | 0/610          |
| 5   | E     | 0.51         | 0/459   | 0.52        | 0/619          |
| 6   | F     | 0.46         | 0/3704  | 0.54        | 0/5019         |
| 6   | H     | 0.55         | 0/3969  | 0.58        | 1/5366 (0.0%)  |
| 7   | G     | 0.34         | 0/221   | 0.53        | 0/292          |
| 7   | W     | 0.50         | 0/219   | 0.67        | 0/291          |
| 8   | I     | 0.52         | 0/5849  | 0.60        | 2/7937 (0.0%)  |
| 9   | J     | 0.48         | 0/4152  | 0.53        | 0/5623         |
| 9   | K     | 0.51         | 0/4086  | 0.54        | 0/5533         |
| 10  | L     | 0.44         | 0/1468  | 0.56        | 0/1993         |
| 11  | M     | 0.45         | 0/490   | 0.62        | 1/665 (0.2%)   |
| 12  | N     | 0.42         | 0/5442  | 0.57        | 3/7376 (0.0%)  |
| 13  | O     | 0.60         | 0/5499  | 0.63        | 0/7432         |
| 14  | T     | 0.38         | 0/78    | 0.87        | 0/107          |
| 15  | X     | 0.34         | 0/3827  | 0.51        | 0/5180         |
| 15  | Y     | 0.35         | 0/3922  | 0.54        | 1/5304 (0.0%)  |
| 16  | S     | 0.19         | 0/18    | 0.29        | 0/21           |
| 17  | Q     | 0.67         | 0/22    | 0.65        | 0/26           |
| All | All   | 0.51         | 0/65258 | 0.58        | 8/88432 (0.0%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 0                   | 8                   |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 2   | B     | 0                   | 2                   |
| 6   | F     | 0                   | 1                   |
| 6   | H     | 0                   | 1                   |
| 8   | I     | 0                   | 4                   |
| 9   | K     | 0                   | 1                   |
| 12  | N     | 0                   | 7                   |
| 13  | O     | 0                   | 7                   |
| 14  | T     | 0                   | 1                   |
| All | All   | 0                   | 32                  |

There are no bond length outliers.

All (8) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 12  | N     | 121 | ARG  | C-N-CA    | 6.52  | 138.00      | 121.70   |
| 6   | H     | 148 | LEU  | CA-CB-CG  | 6.34  | 129.88      | 115.30   |
| 8   | I     | 489 | PRO  | C-N-CD    | -6.19 | 106.97      | 120.60   |
| 15  | Y     | 413 | LEU  | CA-CB-CG  | 6.11  | 129.34      | 115.30   |
| 11  | M     | 16  | ASP  | CB-CG-OD1 | 5.76  | 123.48      | 118.30   |
| 8   | I     | 487 | VAL  | C-N-CA    | 5.59  | 135.67      | 121.70   |
| 12  | N     | 109 | LEU  | CA-CB-CG  | -5.53 | 102.58      | 115.30   |
| 12  | N     | 704 | VAL  | N-CA-C    | 5.48  | 125.81      | 111.00   |

There are no chirality outliers.

All (32) planarity outliers are listed below:

| Mol | Chain | Res  | Type | Group   |
|-----|-------|------|------|---------|
| 1   | A     | 128  | TRP  | Peptide |
| 1   | A     | 140  | LYS  | Peptide |
| 1   | A     | 1455 | GLU  | Peptide |
| 1   | A     | 1679 | ASP  | Peptide |
| 1   | A     | 424  | ASN  | Peptide |
| 1   | A     | 824  | ASP  | Peptide |
| 1   | A     | 855  | GLU  | Peptide |
| 1   | A     | 856  | GLY  | Peptide |
| 2   | B     | 14   | TRP  | Peptide |
| 2   | B     | 15   | LEU  | Peptide |
| 6   | F     | 96   | VAL  | Peptide |
| 6   | H     | 101  | LYS  | Peptide |
| 8   | I     | 119  | THR  | Peptide |
| 8   | I     | 120  | VAL  | Peptide |

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| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 8   | I     | 489 | PRO  | Peptide |
| 8   | I     | 514 | PHE  | Peptide |
| 9   | K     | 87  | GLN  | Peptide |
| 12  | N     | 122 | LEU  | Peptide |
| 12  | N     | 432 | GLU  | Peptide |
| 12  | N     | 433 | ASP  | Peptide |
| 12  | N     | 530 | GLN  | Peptide |
| 12  | N     | 531 | PHE  | Peptide |
| 12  | N     | 534 | SER  | Peptide |
| 12  | N     | 703 | GLY  | Peptide |
| 13  | O     | 355 | SER  | Peptide |
| 13  | O     | 356 | ASP  | Peptide |
| 13  | O     | 357 | SER  | Peptide |
| 13  | O     | 396 | ASN  | Peptide |
| 13  | O     | 397 | LYS  | Peptide |
| 13  | O     | 398 | LEU  | Peptide |
| 13  | O     | 656 | ALA  | Peptide |
| 14  | T     | 10  | ALA  | Peptide |

## 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 11890 | 0        | 11565    | 689     | 0            |
| 2   | B     | 649   | 0        | 597      | 65      | 0            |
| 3   | C     | 4306  | 0        | 4275     | 222     | 0            |
| 3   | P     | 4046  | 0        | 3998     | 241     | 0            |
| 4   | D     | 436   | 0        | 396      | 24      | 0            |
| 5   | E     | 450   | 0        | 435      | 22      | 0            |
| 6   | F     | 3618  | 0        | 3452     | 199     | 0            |
| 6   | H     | 3879  | 0        | 3805     | 209     | 0            |
| 7   | G     | 220   | 0        | 233      | 19      | 0            |
| 7   | W     | 218   | 0        | 222      | 32      | 0            |
| 8   | I     | 5726  | 0        | 5594     | 368     | 0            |
| 9   | J     | 4053  | 0        | 3960     | 228     | 0            |
| 9   | K     | 3988  | 0        | 3913     | 172     | 0            |
| 10  | L     | 1435  | 0        | 1382     | 86      | 0            |
| 11  | M     | 481   | 0        | 457      | 35      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 12  | N     | 5337  | 0        | 5257     | 359     | 0            |
| 13  | O     | 5400  | 0        | 5418     | 280     | 0            |
| 14  | T     | 79    | 0        | 77       | 3       | 0            |
| 15  | X     | 3767  | 0        | 3820     | 234     | 0            |
| 15  | Y     | 3862  | 0        | 3915     | 286     | 0            |
| 16  | S     | 19    | 0        | 21       | 7       | 0            |
| 17  | Q     | 23    | 0        | 24       | 30      | 0            |
| 18  | B     | 3     | 0        | 0        | 0       | 0            |
| All | All   | 63885 | 0        | 62816    | 3499    | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 28.

All (3499) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:400:ARG:NH1   | 17:Q:499:ARG:HB2  | 1.18                     | 1.42              |
| 3:P:277:ARG:NH2   | 17:Q:498:MET:HE2  | 1.11                     | 1.38              |
| 3:P:400:ARG:NH1   | 17:Q:499:ARG:CB   | 1.91                     | 1.33              |
| 3:P:400:ARG:NH1   | 17:Q:498:MET:O    | 1.62                     | 1.33              |
| 3:P:277:ARG:NH2   | 17:Q:498:MET:CE   | 1.92                     | 1.32              |
| 3:P:400:ARG:HH12  | 17:Q:498:MET:C    | 1.40                     | 1.25              |
| 3:P:400:ARG:CZ    | 17:Q:499:ARG:HB2  | 1.69                     | 1.23              |
| 3:P:277:ARG:CZ    | 17:Q:498:MET:CE   | 2.18                     | 1.19              |
| 16:S:498:MET:O    | 16:S:499:ARG:HG2  | 1.51                     | 1.10              |
| 3:P:277:ARG:CZ    | 17:Q:498:MET:HE1  | 1.80                     | 1.09              |
| 3:P:400:ARG:HH12  | 17:Q:499:ARG:N    | 1.51                     | 1.07              |
| 3:P:400:ARG:HH12  | 17:Q:499:ARG:CA   | 1.66                     | 1.07              |
| 3:P:400:ARG:NH1   | 17:Q:498:MET:C    | 2.08                     | 1.02              |
| 3:P:400:ARG:NH1   | 17:Q:499:ARG:CA   | 2.21                     | 1.01              |
| 16:S:498:MET:O    | 16:S:499:ARG:CG   | 2.15                     | 0.94              |
| 15:Y:393:ILE:HG22 | 15:Y:397:ARG:HH11 | 1.33                     | 0.94              |
| 1:A:267:SER:HG    | 1:A:269:TRP:HE1   | 0.94                     | 0.93              |
| 2:B:14:TRP:HA     | 2:B:15:LEU:HG     | 1.50                     | 0.93              |
| 3:P:277:ARG:HH22  | 17:Q:498:MET:HE2  | 1.12                     | 0.91              |
| 12:N:523:LEU:HD23 | 12:N:526:ARG:HH12 | 1.36                     | 0.91              |
| 15:Y:383:LEU:HB2  | 15:Y:392:ALA:HB2  | 1.52                     | 0.90              |
| 15:Y:302:PRO:O    | 15:Y:330:ARG:NH2  | 2.05                     | 0.89              |
| 3:P:400:ARG:HH11  | 17:Q:499:ARG:HB2  | 1.34                     | 0.89              |
| 15:X:397:ARG:HA   | 15:X:400:ILE:HD12 | 1.52                     | 0.89              |
| 13:O:691:ILE:HD11 | 13:O:717:GLN:HG3  | 1.54                     | 0.89              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:O:391:ALA:O    | 13:O:615:ARG:NH1  | 2.06                     | 0.88              |
| 12:N:121:ARG:HB3  | 12:N:122:LEU:HB2  | 1.56                     | 0.88              |
| 3:P:400:ARG:CZ    | 17:Q:499:ARG:CB   | 2.42                     | 0.88              |
| 8:I:74:ARG:HA     | 8:I:115:TRP:HE3   | 1.39                     | 0.87              |
| 13:O:326:GLU:OE1  | 13:O:329:ARG:NH2  | 2.08                     | 0.87              |
| 15:Y:238:VAL:HA   | 15:Y:241:LYS:HD2  | 1.56                     | 0.87              |
| 6:H:12:ILE:HG21   | 6:H:43:LEU:HD21   | 1.55                     | 0.86              |
| 3:C:347:HIS:NE2   | 3:C:377:GLU:OE1   | 2.08                     | 0.86              |
| 9:K:264:HIS:HD2   | 9:K:266:SER:H     | 1.22                     | 0.86              |
| 3:P:186:LYS:HA    | 3:P:189:ILE:HD12  | 1.58                     | 0.86              |
| 12:N:645:THR:HA   | 12:N:658:ALA:HA   | 1.58                     | 0.85              |
| 6:H:102:SER:O     | 6:H:105:ASP:N     | 2.09                     | 0.85              |
| 13:O:721:TYR:O    | 13:O:725:GLY:N    | 2.09                     | 0.85              |
| 6:F:77:LYS:HZ1    | 6:H:19:TYR:HD2    | 1.23                     | 0.85              |
| 8:I:89:LYS:HA     | 8:I:105:SER:HA    | 1.59                     | 0.84              |
| 1:A:1191:LEU:HD11 | 1:A:1196:TYR:HE2  | 1.42                     | 0.84              |
| 3:C:531:THR:HA    | 3:C:534:GLN:HE21  | 1.42                     | 0.84              |
| 6:H:526:ARG:NH2   | 6:H:530:ASN:O     | 2.10                     | 0.84              |
| 1:A:808:ARG:HH22  | 1:A:1894:VAL:HG13 | 1.42                     | 0.84              |
| 15:X:164:SER:HA   | 15:X:167:ARG:HE   | 1.42                     | 0.83              |
| 1:A:1455:GLU:H    | 1:A:1458:SER:H    | 1.21                     | 0.83              |
| 10:L:32:SER:HB2   | 10:L:65:ASN:HB2   | 1.61                     | 0.83              |
| 1:A:809:ASP:O     | 1:A:1808:THR:OG1  | 1.96                     | 0.83              |
| 3:P:400:ARG:CZ    | 17:Q:498:MET:O    | 2.27                     | 0.83              |
| 1:A:153:ILE:HB    | 1:A:160:ASN:HB2   | 1.60                     | 0.83              |
| 15:X:512:HIS:HB3  | 15:X:531:GLN:HE21 | 1.44                     | 0.82              |
| 15:Y:434:TYR:HA   | 15:Y:444:LEU:HD13 | 1.57                     | 0.82              |
| 6:F:23:ASP:HB3    | 6:H:150:SER:H     | 1.43                     | 0.82              |
| 15:X:63:MET:SD    | 15:Y:235:TRP:NE1  | 2.52                     | 0.82              |
| 8:I:145:LEU:HD21  | 8:I:267:LEU:HG    | 1.61                     | 0.82              |
| 8:I:51:SER:HB3    | 12:N:806:GLN:NE2  | 1.94                     | 0.82              |
| 1:A:155:GLN:NE2   | 1:A:158:CYS:SG    | 2.52                     | 0.82              |
| 1:A:506:VAL:HG13  | 1:A:639:VAL:HG23  | 1.61                     | 0.82              |
| 1:A:879:LEU:HG    | 1:A:929:ARG:HH21  | 1.44                     | 0.82              |
| 3:C:305:ASN:HD22  | 3:C:339:ASN:HD21  | 1.26                     | 0.82              |
| 9:K:478:ASN:HD21  | 7:W:8:ARG:HH22    | 1.28                     | 0.82              |
| 12:N:250:LEU:HB3  | 12:N:252:LEU:HD12 | 1.59                     | 0.81              |
| 12:N:621:ALA:HA   | 12:N:624:LYS:HD2  | 1.61                     | 0.81              |
| 6:H:16:LEU:HD22   | 6:H:50:ARG:HH11   | 1.45                     | 0.81              |
| 12:N:334:ARG:NH1  | 12:N:368:THR:OG1  | 2.13                     | 0.81              |
| 2:B:8:TRP:HA      | 12:N:644:VAL:HG12 | 1.60                     | 0.81              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:554:VAL:HG21  | 9:K:286:TYR:HB2   | 1.61                     | 0.81              |
| 6:H:660:LYS:NZ    | 9:K:496:GLU:OE2   | 2.11                     | 0.81              |
| 1:A:1133:SER:OG   | 1:A:1170:ASN:ND2  | 2.13                     | 0.81              |
| 1:A:1672:ARG:HG3  | 1:A:1708:TYR:HE1  | 1.44                     | 0.81              |
| 12:N:520:ARG:HA   | 12:N:523:LEU:HD12 | 1.63                     | 0.81              |
| 1:A:628:ILE:HD13  | 1:A:765:VAL:HG21  | 1.62                     | 0.80              |
| 13:O:55:MET:HB3   | 13:O:59:ARG:HH21  | 1.45                     | 0.80              |
| 15:Y:261:LEU:HD22 | 15:Y:267:LEU:HD22 | 1.62                     | 0.80              |
| 1:A:1573:SER:O    | 1:A:1617:ARG:NH1  | 2.13                     | 0.80              |
| 15:Y:359:LEU:HD11 | 15:Y:386:MET:HG3  | 1.61                     | 0.80              |
| 1:A:1388:ARG:HA   | 1:A:1411:ARG:HD2  | 1.62                     | 0.80              |
| 12:N:392:ASN:ND2  | 12:N:395:ASP:H    | 1.79                     | 0.80              |
| 11:M:3:SER:HB3    | 3:P:180:ARG:HH22  | 1.46                     | 0.80              |
| 1:A:1653:ALA:O    | 1:A:1655:THR:N    | 2.15                     | 0.80              |
| 1:A:1807:GLU:HG3  | 1:A:1809:SER:H    | 1.47                     | 0.80              |
| 9:J:61:ARG:NH2    | 9:J:66:ASP:OD2    | 2.15                     | 0.80              |
| 12:N:392:ASN:HD21 | 12:N:395:ASP:H    | 1.30                     | 0.80              |
| 2:B:7:CYS:HB3     | 12:N:645:THR:HG22 | 1.62                     | 0.79              |
| 1:A:1432:GLN:HA   | 1:A:1435:ARG:HD2  | 1.65                     | 0.79              |
| 8:I:688:THR:HG22  | 8:I:690:SER:H     | 1.48                     | 0.79              |
| 3:C:73:PRO:HG3    | 3:P:73:PRO:HG2    | 1.63                     | 0.79              |
| 6:H:693:ASN:OD1   | 6:H:709:ARG:NH1   | 2.15                     | 0.79              |
| 8:I:524:PHE:HZ    | 8:I:528:ARG:HH21  | 1.30                     | 0.79              |
| 15:Y:186:ARG:HA   | 15:Y:189:VAL:HG12 | 1.64                     | 0.79              |
| 1:A:757:THR:O     | 1:A:758:HIS:ND1   | 2.16                     | 0.79              |
| 12:N:706:ARG:HB3  | 12:N:714:SER:HB2  | 1.65                     | 0.78              |
| 12:N:433:ASP:O    | 12:N:435:VAL:N    | 2.15                     | 0.78              |
| 1:A:137:LYS:HA    | 1:A:273:ARG:HH21  | 1.47                     | 0.78              |
| 9:J:165:GLU:HG2   | 9:K:20:GLN:HB2    | 1.64                     | 0.78              |
| 13:O:43:GLU:OE1   | 13:O:46:ARG:NH2   | 2.17                     | 0.78              |
| 1:A:1495:PHE:HE1  | 1:A:1515:CYS:HB3  | 1.48                     | 0.78              |
| 7:G:13:LEU:HA     | 7:G:16:ILE:HG12   | 1.66                     | 0.78              |
| 8:I:205:CYS:HA    | 8:I:221:THR:HA    | 1.65                     | 0.78              |
| 15:Y:214:VAL:O    | 15:Y:216:GLY:N    | 2.17                     | 0.78              |
| 15:Y:84:ALA:HA    | 15:Y:87:LEU:HD12  | 1.66                     | 0.77              |
| 12:N:429:ARG:NH2  | 12:N:508:ILE:O    | 2.17                     | 0.77              |
| 9:K:136:ARG:NH1   | 9:K:140:TYR:OH    | 2.17                     | 0.77              |
| 3:P:297:ILE:N     | 3:P:298:GLU:OE1   | 2.18                     | 0.77              |
| 4:D:31:GLN:OE1    | 13:O:137:ARG:NH2  | 2.16                     | 0.77              |
| 15:X:85:ASP:OD1   | 15:X:100:TYR:OH   | 2.02                     | 0.77              |
| 6:F:512:LEU:HG    | 6:F:514:GLU:H     | 1.50                     | 0.77              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:96:VAL:N      | 6:F:97:PHE:HB2    | 2.00                     | 0.77              |
| 10:L:45:LEU:O     | 10:L:155:GLN:NE2  | 2.18                     | 0.77              |
| 13:O:511:ASP:OD2  | 13:O:515:GLN:NE2  | 2.18                     | 0.77              |
| 16:S:498:MET:C    | 16:S:499:ARG:HG2  | 2.05                     | 0.77              |
| 1:A:1839:PHE:O    | 1:A:1841:ASN:N    | 2.17                     | 0.77              |
| 12:N:527:LEU:HA   | 12:N:530:GLN:HA   | 1.65                     | 0.77              |
| 10:L:7:THR:HG23   | 10:L:114:VAL:HG12 | 1.66                     | 0.76              |
| 8:I:625:TYR:HB2   | 8:I:628:THR:HG22  | 1.66                     | 0.76              |
| 7:G:3:ARG:HH12    | 9:J:243:TYR:HA    | 1.49                     | 0.76              |
| 12:N:75:PHE:HE2   | 12:N:129:LEU:HD13 | 1.50                     | 0.76              |
| 7:G:16:ILE:HD12   | 9:J:514:PHE:CD1   | 2.20                     | 0.76              |
| 12:N:162:PHE:HB2  | 12:N:255:ARG:HH22 | 1.51                     | 0.76              |
| 13:O:357:SER:O    | 13:O:359:VAL:N    | 2.18                     | 0.76              |
| 3:P:189:ILE:HG23  | 3:P:209:LEU:HD11  | 1.66                     | 0.76              |
| 1:A:616:GLU:HB2   | 13:O:556:GLN:HG3  | 1.67                     | 0.76              |
| 6:H:130:ARG:HG2   | 9:K:469:ARG:HD3   | 1.66                     | 0.76              |
| 9:J:239:GLU:HG2   | 9:J:270:VAL:HG21  | 1.67                     | 0.76              |
| 1:A:1884:MET:N    | 1:A:1884:MET:SD   | 2.59                     | 0.76              |
| 8:I:341:TYR:HA    | 8:I:344:ILE:HD12  | 1.68                     | 0.76              |
| 6:F:77:LYS:NZ     | 6:H:18:HIS:O      | 2.18                     | 0.76              |
| 13:O:109:GLU:OE2  | 3:P:346:GLN:NE2   | 2.19                     | 0.76              |
| 3:P:308:TYR:CE2   | 17:Q:499:ARG:NH1  | 2.54                     | 0.76              |
| 1:A:1292:GLU:OE1  | 1:A:1292:GLU:N    | 2.19                     | 0.75              |
| 9:J:264:HIS:HD2   | 9:J:267:CYS:H     | 1.33                     | 0.75              |
| 3:P:400:ARG:HH22  | 17:Q:499:ARG:HA   | 1.52                     | 0.75              |
| 2:B:44:CYS:HG     | 2:B:58:HIS:HD1    | 1.32                     | 0.75              |
| 6:H:583:HIS:O     | 6:H:586:ALA:N     | 2.19                     | 0.75              |
| 6:F:25:VAL:HG12   | 6:F:47:CYS:HB3    | 1.68                     | 0.75              |
| 1:A:775:LEU:HD23  | 1:A:869:ARG:HB3   | 1.68                     | 0.75              |
| 13:O:557:MET:SD   | 13:O:593:ARG:NH1  | 2.60                     | 0.75              |
| 15:Y:246:VAL:HG13 | 15:Y:280:LEU:HD21 | 1.68                     | 0.75              |
| 14:T:11:ALA:HA    | 14:T:12:ALA:HB3   | 1.68                     | 0.75              |
| 1:A:459:GLU:HB3   | 1:A:466:LEU:HD23  | 1.69                     | 0.75              |
| 6:F:112:ASP:OD1   | 6:F:113:SER:N     | 2.18                     | 0.75              |
| 1:A:715:TYR:HE1   | 13:O:750:PRO:HD2  | 1.51                     | 0.74              |
| 1:A:830:PHE:O     | 1:A:833:HIS:N     | 2.20                     | 0.74              |
| 1:A:1574:LEU:O    | 1:A:1617:ARG:NH1  | 2.20                     | 0.74              |
| 6:H:702:ASN:OD1   | 6:H:705:CYS:N     | 2.14                     | 0.74              |
| 7:G:3:ARG:NH2     | 9:J:245:CYS:SG    | 2.60                     | 0.74              |
| 15:Y:356:SER:HA   | 15:Y:359:LEU:HD12 | 1.69                     | 0.74              |
| 1:A:963:ARG:O     | 1:A:980:ARG:NH2   | 2.21                     | 0.74              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:93:CYS:SG     | 8:I:94:ASP:N      | 2.60                     | 0.74              |
| 1:A:134:SER:OG    | 1:A:136:ASP:N     | 2.13                     | 0.74              |
| 15:X:383:LEU:HB3  | 15:X:392:ALA:HB2  | 1.68                     | 0.74              |
| 1:A:1672:ARG:HG3  | 1:A:1708:TYR:CE1  | 2.23                     | 0.74              |
| 6:H:25:VAL:HG13   | 6:H:48:TYR:HE1    | 1.51                     | 0.74              |
| 6:H:726:LEU:HD21  | 6:H:742:LEU:HD23  | 1.68                     | 0.74              |
| 12:N:422:GLU:HA   | 12:N:425:ARG:HD2  | 1.69                     | 0.74              |
| 1:A:431:PHE:HB2   | 1:A:481:PRO:HG3   | 1.70                     | 0.74              |
| 1:A:1626:THR:OG1  | 1:A:1628:THR:OG1  | 2.04                     | 0.74              |
| 13:O:493:LEU:HD13 | 13:O:507:TRP:HB2  | 1.70                     | 0.73              |
| 6:F:97:PHE:HB3    | 6:F:99:LYS:H      | 1.52                     | 0.73              |
| 8:I:578:ASN:OD1   | 8:I:581:SER:N     | 2.21                     | 0.73              |
| 10:L:113:LEU:O    | 10:L:145:HIS:NE2  | 2.19                     | 0.73              |
| 12:N:386:LEU:HD22 | 12:N:399:LEU:HD23 | 1.71                     | 0.73              |
| 3:C:96:VAL:H      | 3:C:97:LYS:HA     | 1.54                     | 0.73              |
| 8:I:666:LEU:HB2   | 8:I:714:LEU:HD21  | 1.71                     | 0.73              |
| 12:N:63:ARG:NH2   | 12:N:139:GLY:O    | 2.22                     | 0.73              |
| 13:O:356:ASP:HA   | 13:O:357:SER:CB   | 2.19                     | 0.73              |
| 13:O:415:SER:HA   | 13:O:418:ILE:HD12 | 1.69                     | 0.73              |
| 15:X:63:MET:HG2   | 15:Y:266:LEU:HB3  | 1.71                     | 0.73              |
| 15:X:434:TYR:HA   | 15:X:444:LEU:HD13 | 1.69                     | 0.73              |
| 15:X:492:TYR:O    | 15:X:495:GLY:N    | 2.22                     | 0.73              |
| 1:A:433:THR:HG22  | 1:A:434:SER:H     | 1.53                     | 0.73              |
| 2:B:13:THR:OG1    | 12:N:605:LYS:NZ   | 2.21                     | 0.73              |
| 9:K:36:GLU:OE2    | 9:K:39:ASP:N      | 2.18                     | 0.73              |
| 9:K:85:GLU:HB3    | 9:K:88:GLN:HB2    | 1.70                     | 0.73              |
| 15:Y:179:TYR:O    | 15:Y:183:GLY:N    | 2.19                     | 0.73              |
| 1:A:774:LYS:NZ    | 1:A:809:ASP:OD2   | 2.20                     | 0.73              |
| 12:N:431:ARG:O    | 12:N:434:THR:OG1  | 2.07                     | 0.73              |
| 12:N:545:LEU:O    | 12:N:549:PHE:N    | 2.22                     | 0.73              |
| 6:F:626:ASN:HA    | 6:F:629:ARG:HD2   | 1.71                     | 0.72              |
| 7:G:18:GLU:OE1    | 7:G:21:ASN:ND2    | 2.20                     | 0.72              |
| 11:M:34:ASN:HD22  | 11:M:51:LYS:HE2   | 1.54                     | 0.72              |
| 6:F:92:LEU:HB2    | 6:F:121:LEU:HD21  | 1.69                     | 0.72              |
| 13:O:222:LEU:O    | 13:O:226:ASP:N    | 2.20                     | 0.72              |
| 15:Y:137:GLU:OE1  | 15:Y:141:LYS:NZ   | 2.22                     | 0.72              |
| 8:I:310:TRP:CD1   | 13:O:126:VAL:HG22 | 2.23                     | 0.72              |
| 1:A:1753:TYR:O    | 13:O:639:GLN:NE2  | 2.23                     | 0.72              |
| 4:D:10:PRO:O      | 13:O:313:ARG:NH2  | 2.23                     | 0.72              |
| 6:F:644:ILE:O     | 6:F:648:GLN:HB2   | 1.90                     | 0.72              |
| 3:P:400:ARG:NH2   | 17:Q:499:ARG:HA   | 2.05                     | 0.72              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:511:THR:OG1   | 3:P:512:ALA:N     | 2.22                     | 0.72              |
| 12:N:553:PRO:HB2  | 12:N:554:MET:HE2  | 1.70                     | 0.72              |
| 15:X:340:GLU:CD   | 15:X:340:GLU:H    | 1.93                     | 0.72              |
| 1:A:966:PRO:HD3   | 1:A:980:ARG:HH22  | 1.55                     | 0.72              |
| 3:C:390:HIS:CE1   | 13:O:280:ARG:HH22 | 2.07                     | 0.72              |
| 3:C:493:TYR:HH    | 3:C:509:GLU:N     | 1.87                     | 0.72              |
| 13:O:133:GLY:O    | 13:O:137:ARG:HG3  | 1.90                     | 0.72              |
| 13:O:435:SER:N    | 13:O:654:ASP:OD2  | 2.19                     | 0.72              |
| 5:E:86:VAL:HG22   | 6:H:589:PHE:HE1   | 1.55                     | 0.72              |
| 6:F:19:TYR:OH     | 6:H:50:ARG:NE     | 2.22                     | 0.72              |
| 15:X:276:SER:O    | 15:X:280:LEU:HG   | 1.90                     | 0.72              |
| 15:X:459:GLU:HA   | 15:X:462:LYS:HD3  | 1.72                     | 0.72              |
| 1:A:489:LEU:HD11  | 1:A:497:LEU:HB3   | 1.69                     | 0.72              |
| 8:I:315:ALA:HA    | 8:I:318:GLN:HE21  | 1.55                     | 0.72              |
| 12:N:517:ASN:HA   | 12:N:520:ARG:HG2  | 1.70                     | 0.72              |
| 1:A:1835:LYS:HB2  | 1:A:1838:LEU:HB2  | 1.72                     | 0.71              |
| 11:M:31:ILE:HG22  | 11:M:33:LEU:H     | 1.54                     | 0.71              |
| 12:N:500:ASP:O    | 12:N:503:SER:OG   | 2.05                     | 0.71              |
| 12:N:574:ILE:HG13 | 12:N:625:LYS:HG2  | 1.72                     | 0.71              |
| 6:F:639:TYR:HD1   | 6:F:672:LEU:HD13  | 1.55                     | 0.71              |
| 9:J:5:ARG:NH1     | 9:K:194:CYS:SG    | 2.63                     | 0.71              |
| 12:N:629:LEU:HB3  | 12:N:633:ARG:HH12 | 1.55                     | 0.71              |
| 13:O:504:ALA:HB1  | 13:O:507:TRP:HE1  | 1.55                     | 0.71              |
| 5:E:78:ARG:NH2    | 15:Y:329:CYS:SG   | 2.63                     | 0.71              |
| 8:I:451:PHE:O     | 8:I:453:THR:N     | 2.23                     | 0.71              |
| 9:J:94:ASP:OD1    | 9:J:136:ARG:NH1   | 2.19                     | 0.71              |
| 10:L:80:TYR:HD1   | 10:L:154:ARG:HB2  | 1.55                     | 0.71              |
| 1:A:1032:LEU:H    | 12:N:483:ASP:CB   | 2.03                     | 0.71              |
| 2:B:14:TRP:HA     | 2:B:15:LEU:CG     | 2.20                     | 0.71              |
| 8:I:622:SER:H     | 8:I:706:HIS:HA    | 1.55                     | 0.71              |
| 8:I:653:LEU:O     | 8:I:665:LEU:N     | 2.21                     | 0.71              |
| 13:O:415:SER:O    | 13:O:418:ILE:N    | 2.22                     | 0.71              |
| 10:L:78:CYS:SG    | 10:L:79:ILE:N     | 2.63                     | 0.71              |
| 12:N:762:LEU:O    | 12:N:766:GLU:N    | 2.23                     | 0.71              |
| 12:N:769:SER:HB2  | 12:N:772:ARG:HD3  | 1.71                     | 0.71              |
| 6:H:658:PHE:HB3   | 6:H:675:ILE:HG12  | 1.71                     | 0.71              |
| 15:X:509:CYS:HA   | 15:X:512:HIS:HD2  | 1.55                     | 0.71              |
| 15:Y:93:TYR:CZ    | 15:Y:148:MET:HG3  | 2.26                     | 0.71              |
| 1:A:125:GLN:NE2   | 1:A:179:ASN:OD1   | 2.24                     | 0.71              |
| 8:I:621:GLY:N     | 8:I:705:MET:O     | 2.21                     | 0.71              |
| 9:K:466:ASP:OD2   | 9:K:470:GLN:NE2   | 2.23                     | 0.71              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:O:356:ASP:HA   | 13:O:357:SER:HB3  | 1.71                     | 0.71              |
| 1:A:710:LEU:O     | 1:A:713:SER:OG    | 2.08                     | 0.71              |
| 8:I:51:SER:HB3    | 12:N:806:GLN:HE21 | 1.55                     | 0.71              |
| 8:I:725:ASN:OD1   | 8:I:726:GLY:N     | 2.23                     | 0.71              |
| 13:O:435:SER:O    | 13:O:438:ALA:N    | 2.23                     | 0.71              |
| 9:K:376:LEU:HD13  | 9:K:407:GLU:HB3   | 1.72                     | 0.71              |
| 1:A:1805:MET:HE3  | 1:A:1807:GLU:HB3  | 1.72                     | 0.70              |
| 8:I:717:MET:SD    | 8:I:742:ARG:NH2   | 2.64                     | 0.70              |
| 12:N:571:ASN:HD21 | 12:N:593:ALA:H    | 1.37                     | 0.70              |
| 1:A:434:SER:OG    | 1:A:435:ASP:N     | 2.23                     | 0.70              |
| 6:F:736:GLU:HB2   | 6:F:739:VAL:HG23  | 1.72                     | 0.70              |
| 13:O:254:HIS:O    | 13:O:257:SER:OG   | 2.09                     | 0.70              |
| 3:P:222:LEU:HB2   | 3:P:224:LEU:HD11  | 1.71                     | 0.70              |
| 15:Y:147:THR:HG22 | 15:Y:178:LEU:HD21 | 1.74                     | 0.70              |
| 1:A:879:LEU:HD21  | 1:A:929:ARG:HE    | 1.55                     | 0.70              |
| 1:A:1635:GLU:HB2  | 1:A:1669:LYS:HE2  | 1.73                     | 0.70              |
| 6:F:544:TRP:CD1   | 6:F:579:LEU:HG    | 2.26                     | 0.70              |
| 6:F:16:LEU:O      | 6:F:19:TYR:N      | 2.23                     | 0.70              |
| 7:W:13:LEU:H      | 7:W:13:LEU:HD12   | 1.56                     | 0.70              |
| 15:Y:141:LYS:HA   | 15:Y:144:GLU:HG2  | 1.72                     | 0.70              |
| 1:A:1672:ARG:HD2  | 1:A:1705:GLN:HB3  | 1.74                     | 0.70              |
| 1:A:1459:GLN:NE2  | 1:A:1507:THR:O    | 2.24                     | 0.70              |
| 8:I:93:CYS:SG     | 8:I:99:GLU:N      | 2.64                     | 0.70              |
| 15:Y:248:THR:OG1  | 15:Y:250:ASP:OD2  | 2.07                     | 0.70              |
| 1:A:1619:LEU:HD21 | 1:A:1697:LEU:HD23 | 1.72                     | 0.70              |
| 9:K:456:ARG:HH2   | 7:W:11:LEU:HD21   | 1.57                     | 0.70              |
| 3:P:415:PRO:O     | 3:P:419:LEU:N     | 2.22                     | 0.70              |
| 1:A:1728:SER:HB3  | 12:N:255:ARG:HG3  | 1.73                     | 0.70              |
| 12:N:577:GLU:HG2  | 12:N:583:ALA:HB2  | 1.74                     | 0.70              |
| 3:P:277:ARG:NH1   | 17:Q:498:MET:CE   | 2.55                     | 0.70              |
| 15:Y:475:TYR:HE2  | 15:Y:477:LYS:HB3  | 1.57                     | 0.70              |
| 1:A:1060:HIS:HA   | 1:A:1063:ILE:HD12 | 1.74                     | 0.69              |
| 3:P:477:HIS:HA    | 3:P:480:LEU:HB2   | 1.74                     | 0.69              |
| 15:X:52:ASN:OD1   | 15:Y:204:ASP:N    | 2.22                     | 0.69              |
| 15:Y:428:VAL:O    | 15:Y:432:ASN:ND2  | 2.20                     | 0.69              |
| 15:X:500:ARG:HE   | 15:X:515:LEU:HD11 | 1.57                     | 0.69              |
| 1:A:1574:LEU:HD23 | 1:A:1574:LEU:H    | 1.58                     | 0.69              |
| 8:I:74:ARG:O      | 8:I:77:GLY:N      | 2.24                     | 0.69              |
| 1:A:1799:ARG:NH1  | 1:A:1810:GLU:OE2  | 2.24                     | 0.69              |
| 8:I:9:PRO:HB2     | 8:I:712:ARG:HD2   | 1.75                     | 0.69              |
| 8:I:74:ARG:HA     | 8:I:115:TRP:CE3   | 2.24                     | 0.69              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:M:8:ASP:OD2    | 11:M:10:ARG:NH1   | 2.26                     | 0.69              |
| 3:C:449:LEU:O     | 3:C:452:ALA:N     | 2.25                     | 0.69              |
| 8:I:337:ILE:O     | 8:I:340:SER:OG    | 2.10                     | 0.69              |
| 1:A:880:TYR:HE1   | 1:A:958:ALA:HB2   | 1.56                     | 0.69              |
| 13:O:637:PRO:O    | 13:O:640:ALA:N    | 2.25                     | 0.69              |
| 1:A:795:ARG:NH1   | 1:A:814:VAL:O     | 2.25                     | 0.69              |
| 1:A:1702:ARG:NE   | 1:A:1782:GLU:OE2  | 2.25                     | 0.69              |
| 8:I:349:ILE:O     | 8:I:353:GLN:HB2   | 1.93                     | 0.69              |
| 10:L:73:THR:O     | 10:L:160:THR:OG1  | 2.09                     | 0.69              |
| 12:N:136:THR:HA   | 12:N:140:LEU:HB2  | 1.72                     | 0.69              |
| 3:P:277:ARG:NH1   | 17:Q:498:MET:SD   | 2.66                     | 0.69              |
| 15:Y:87:LEU:HD13  | 15:Y:96:ALA:HA    | 1.75                     | 0.69              |
| 2:B:15:LEU:HD21   | 12:N:636:SER:H    | 1.56                     | 0.69              |
| 8:I:124:VAL:O     | 8:I:127:SER:OG    | 2.10                     | 0.69              |
| 1:A:861:PRO:HB2   | 1:A:899:ILE:HD11  | 1.74                     | 0.69              |
| 1:A:1128:PRO:HG2  | 1:A:1131:MET:HB2  | 1.75                     | 0.69              |
| 9:J:19:TYR:O      | 9:J:22:ALA:N      | 2.26                     | 0.69              |
| 1:A:1084:ARG:NH2  | 1:A:1139:ASN:OD1  | 2.27                     | 0.68              |
| 6:F:544:TRP:HD1   | 6:F:579:LEU:HG    | 1.58                     | 0.68              |
| 9:J:47:LEU:HB3    | 9:J:56:ALA:HB2    | 1.74                     | 0.68              |
| 9:K:35:GLU:OE1    | 9:K:63:ARG:NH1    | 2.26                     | 0.68              |
| 3:P:348:GLU:N     | 3:P:348:GLU:OE2   | 2.25                     | 0.68              |
| 6:F:483:GLU:HA    | 6:F:486:ASN:HD22  | 1.57                     | 0.68              |
| 6:F:695:ALA:HB3   | 6:F:709:ARG:HH11  | 1.58                     | 0.68              |
| 15:Y:92:GLU:OE2   | 15:Y:95:ASN:N     | 2.26                     | 0.68              |
| 9:J:174:HIS:HB2   | 9:J:364:MET:SD    | 2.34                     | 0.68              |
| 6:F:23:ASP:N      | 6:F:23:ASP:OD1    | 2.25                     | 0.68              |
| 15:Y:162:ILE:O    | 15:Y:167:ARG:NH2  | 2.27                     | 0.68              |
| 15:Y:171:ILE:O    | 15:Y:175:LEU:HB2  | 1.94                     | 0.68              |
| 15:Y:433:VAL:HA   | 15:Y:436:THR:HG22 | 1.76                     | 0.68              |
| 15:Y:149:LEU:O    | 15:Y:150:LYS:HG2  | 1.94                     | 0.68              |
| 9:K:261:ASP:OD1   | 9:K:264:HIS:N     | 2.26                     | 0.68              |
| 13:O:98:LYS:HD2   | 13:O:99:LEU:HD22  | 1.75                     | 0.68              |
| 8:I:171:VAL:O     | 8:I:190:TYR:OH    | 2.08                     | 0.68              |
| 3:P:494:ILE:HG21  | 3:P:516:LEU:HD13  | 1.75                     | 0.68              |
| 1:A:950:GLY:H     | 1:A:1813:GLN:HE22 | 1.42                     | 0.68              |
| 9:J:236:SER:HA    | 9:J:239:GLU:OE1   | 1.93                     | 0.68              |
| 1:A:477:LYS:HB2   | 1:A:491:LEU:HD12  | 1.76                     | 0.67              |
| 12:N:148:GLY:O    | 12:N:152:GLU:HB2  | 1.94                     | 0.67              |
| 12:N:663:GLN:HE22 | 12:N:698:VAL:HB   | 1.59                     | 0.67              |
| 13:O:370:HIS:HD2  | 13:O:371:PHE:H    | 1.42                     | 0.67              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 15:X:81:VAL:HG21 | 15:X:133:PRO:HG2  | 1.76                     | 0.67              |
| 15:X:146:TYR:HB2 | 15:X:155:ALA:HB2  | 1.75                     | 0.67              |
| 15:Y:509:CYS:O   | 15:Y:512:HIS:N    | 2.26                     | 0.67              |
| 1:A:1919:LYS:HD2 | 12:N:67:LEU:HB3   | 1.74                     | 0.67              |
| 3:C:385:ILE:HG23 | 3:C:405:LEU:HD11  | 1.76                     | 0.67              |
| 3:P:65:LEU:HD23  | 3:P:70:LEU:HD12   | 1.76                     | 0.67              |
| 1:A:1813:GLN:O   | 1:A:1817:VAL:HG23 | 1.95                     | 0.67              |
| 9:J:388:GLU:OE2  | 9:J:392:SER:OG    | 2.11                     | 0.67              |
| 3:P:99:TYR:CE2   | 3:P:124:LEU:HB3   | 2.29                     | 0.67              |
| 15:X:204:ASP:OD2 | 15:Y:51:SER:OG    | 2.10                     | 0.67              |
| 15:Y:321:LEU:O   | 15:Y:324:VAL:N    | 2.27                     | 0.67              |
| 1:A:894:GLN:OE1  | 1:A:895:TYR:N     | 2.26                     | 0.67              |
| 6:H:103:HIS:HB2  | 6:H:140:LYS:HE3   | 1.76                     | 0.67              |
| 8:I:247:GLU:OE1  | 8:I:247:GLU:N     | 2.19                     | 0.67              |
| 8:I:574:PHE:HB3  | 8:I:587:LEU:HB2   | 1.76                     | 0.67              |
| 1:A:1792:ALA:HB2 | 13:O:598:THR:HG21 | 1.77                     | 0.67              |
| 1:A:158:CYS:SG   | 3:C:427:GLN:NE2   | 2.67                     | 0.67              |
| 9:J:217:GLU:HG3  | 9:J:240:ARG:HD3   | 1.75                     | 0.67              |
| 12:N:663:GLN:NE2 | 12:N:695:ARG:O    | 2.27                     | 0.67              |
| 6:H:720:LYS:NZ   | 6:H:721:SER:OG    | 2.28                     | 0.67              |
| 9:K:446:PRO:HB3  | 7:W:8:ARG:HB2     | 1.77                     | 0.67              |
| 11:M:5:VAL:O     | 11:M:7:ARG:NH2    | 2.27                     | 0.67              |
| 1:A:1639:LYS:HB3 | 1:A:1664:LYS:HB2  | 1.75                     | 0.67              |
| 3:C:536:CYS:O    | 3:C:542:THR:OG1   | 2.12                     | 0.67              |
| 5:E:99:ILE:HD12  | 6:H:591:GLN:HG2   | 1.77                     | 0.67              |
| 6:F:88:GLY:HA2   | 6:F:91:ILE:HD12   | 1.77                     | 0.67              |
| 8:I:514:PHE:H    | 13:O:443:GLN:HE22 | 1.41                     | 0.67              |
| 3:C:426:HIS:HB2  | 3:C:435:MET:HB3   | 1.76                     | 0.67              |
| 8:I:18:GLN:HG2   | 8:I:740:HIS:HD2   | 1.59                     | 0.67              |
| 3:P:409:TYR:HE2  | 3:P:421:TYR:HE2   | 1.43                     | 0.67              |
| 1:A:1119:ASP:OD1 | 1:A:1119:ASP:N    | 2.27                     | 0.67              |
| 8:I:589:THR:HA   | 8:I:598:MET:HA    | 1.75                     | 0.67              |
| 9:J:378:TYR:O    | 9:J:381:THR:OG1   | 2.11                     | 0.67              |
| 3:P:255:ILE:HG13 | 3:P:260:SER:HA    | 1.77                     | 0.67              |
| 1:A:1916:PHE:HD1 | 12:N:67:LEU:HD23  | 1.60                     | 0.66              |
| 9:K:395:LEU:HD12 | 9:K:399:PRO:HA    | 1.78                     | 0.66              |
| 6:H:132:ALA:O    | 6:H:135:SER:OG    | 2.13                     | 0.66              |
| 6:H:761:SER:O    | 6:H:765:ASP:HB2   | 1.95                     | 0.66              |
| 13:O:388:ARG:NH1 | 13:O:397:LYS:O    | 2.28                     | 0.66              |
| 13:O:664:MET:HG3 | 13:O:696:GLU:HG2  | 1.77                     | 0.66              |
| 1:A:134:SER:H    | 1:A:135:GLN:HA    | 1.60                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:O:712:ASP:N    | 13:O:712:ASP:OD1  | 2.23                     | 0.66              |
| 15:Y:376:LEU:HD21 | 15:Y:398:GLU:HG3  | 1.75                     | 0.66              |
| 1:A:1064:GLU:OE1  | 1:A:1124:ASN:ND2  | 2.28                     | 0.66              |
| 8:I:669:LEU:HD12  | 8:I:670:PRO:HD2   | 1.76                     | 0.66              |
| 1:A:1589:TYR:CE2  | 1:A:1591:HIS:HB2  | 2.31                     | 0.66              |
| 1:A:1434:ILE:HA   | 1:A:1457:LEU:HD21 | 1.77                     | 0.66              |
| 3:C:80:ASP:O      | 3:C:84:MET:HB2    | 1.95                     | 0.66              |
| 13:O:504:ALA:HB1  | 13:O:507:TRP:NE1  | 2.10                     | 0.66              |
| 15:Y:414:ILE:HG23 | 15:Y:426:ALA:HB1  | 1.76                     | 0.66              |
| 1:A:131:PHE:CD1   | 1:A:215:HIS:HA    | 2.31                     | 0.66              |
| 2:B:9:ASN:HA      | 12:N:592:TYR:HB3  | 1.77                     | 0.66              |
| 10:L:49:ASN:O     | 10:L:52:THR:OG1   | 2.13                     | 0.66              |
| 1:A:91:GLU:OE1    | 1:A:102:TRP:NE1   | 2.19                     | 0.66              |
| 6:H:85:LEU:O      | 6:H:88:GLY:N      | 2.28                     | 0.66              |
| 15:Y:170:LYS:HG3  | 15:Y:171:ILE:HD12 | 1.76                     | 0.66              |
| 15:Y:462:LYS:NZ   | 15:Y:489:GLU:OE2  | 2.29                     | 0.66              |
| 15:Y:509:CYS:SG   | 15:Y:510:VAL:N    | 2.69                     | 0.66              |
| 1:A:72:GLU:OE1    | 1:A:72:GLU:N      | 2.29                     | 0.65              |
| 1:A:641:TRP:HE1   | 1:A:660:PHE:HA    | 1.61                     | 0.65              |
| 1:A:1089:LEU:O    | 1:A:1091:SER:OG   | 2.14                     | 0.65              |
| 6:F:159:GLY:O     | 6:F:161:LYS:NZ    | 2.28                     | 0.65              |
| 8:I:505:SER:OG    | 13:O:488:GLU:OE2  | 2.14                     | 0.65              |
| 1:A:1674:TRP:CZ3  | 1:A:1782:GLU:HG2  | 2.30                     | 0.65              |
| 15:Y:207:LEU:O    | 15:Y:211:SER:OG   | 2.13                     | 0.65              |
| 1:A:866:ILE:HG13  | 1:A:867:CYS:N     | 2.10                     | 0.65              |
| 8:I:356:SER:HB2   | 8:I:397:ILE:HG12  | 1.77                     | 0.65              |
| 15:X:343:VAL:HG22 | 15:X:375:ALA:HB2  | 1.78                     | 0.65              |
| 15:X:361:LEU:HA   | 15:X:364:LYS:HD2  | 1.78                     | 0.65              |
| 1:A:1910:SER:OG   | 1:A:1913:GLU:N    | 2.27                     | 0.65              |
| 9:K:50:THR:O      | 9:K:52:GLN:NE2    | 2.29                     | 0.65              |
| 3:P:277:ARG:HH21  | 17:Q:498:MET:HE2  | 1.50                     | 0.65              |
| 10:L:73:THR:HG1   | 10:L:133:ARG:HE   | 1.42                     | 0.65              |
| 3:P:96:VAL:HB     | 3:P:98:GLU:H      | 1.62                     | 0.65              |
| 1:A:647:ALA:O     | 1:A:649:GLY:N     | 2.23                     | 0.65              |
| 3:C:358:LEU:HD21  | 3:C:368:TRP:CE2   | 2.31                     | 0.65              |
| 7:G:24:LYS:HG3    | 7:G:25:ASP:HB3    | 1.79                     | 0.65              |
| 6:H:684:LYS:HZ2   | 6:H:687:LYS:H     | 1.43                     | 0.65              |
| 9:J:52:GLN:OE1    | 9:J:55:ARG:NE     | 2.29                     | 0.65              |
| 3:P:36:LEU:HD21   | 3:P:228:TRP:HH2   | 1.60                     | 0.65              |
| 1:A:822:THR:OG1   | 1:A:823:ILE:N     | 2.30                     | 0.65              |
| 9:K:309:TYR:OH    | 11:M:59:ASP:OD1   | 2.07                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:M:2:ASP:OD1    | 3:P:48:LEU:HD13   | 1.97                     | 0.65              |
| 15:X:443:THR:O    | 15:X:447:LEU:HG   | 1.97                     | 0.65              |
| 15:Y:176:ALA:HB2  | 15:Y:191:SER:OG   | 1.95                     | 0.65              |
| 1:A:980:ARG:HG2   | 1:A:983:LEU:HD12  | 1.78                     | 0.65              |
| 2:B:2:LYS:H       | 12:N:650:LEU:HD23 | 1.61                     | 0.65              |
| 3:C:286:PHE:HB3   | 3:C:303:PHE:CD1   | 2.32                     | 0.65              |
| 6:F:7:PRO:HG3     | 6:H:455:GLN:HG3   | 1.78                     | 0.65              |
| 8:I:115:TRP:HE1   | 8:I:176:LEU:HB2   | 1.61                     | 0.65              |
| 8:I:139:LEU:HD11  | 8:I:361:TYR:CG    | 2.32                     | 0.65              |
| 3:P:264:TYR:O     | 3:P:267:SER:OG    | 2.13                     | 0.65              |
| 1:A:1749:SER:HA   | 1:A:1752:GLU:HG2  | 1.78                     | 0.65              |
| 6:H:537:GLU:OE2   | 6:H:600:TYR:OH    | 2.14                     | 0.65              |
| 6:H:568:GLU:N     | 6:H:568:GLU:OE1   | 2.30                     | 0.65              |
| 9:J:23:LEU:HG     | 9:J:46:CYS:HB3    | 1.77                     | 0.65              |
| 9:J:161:VAL:HG23  | 9:J:188:LEU:HD13  | 1.79                     | 0.65              |
| 1:A:1599:ASN:HB2  | 1:A:1603:LEU:HA   | 1.78                     | 0.64              |
| 15:X:196:LEU:HD11 | 15:X:206:ILE:HG12 | 1.78                     | 0.64              |
| 1:A:187:LEU:HB3   | 1:A:213:MET:HB3   | 1.77                     | 0.64              |
| 3:C:389:ARG:NH1   | 13:O:279:ASP:OD2  | 2.30                     | 0.64              |
| 12:N:770:LEU:HA   | 12:N:773:ILE:HD12 | 1.79                     | 0.64              |
| 13:O:148:PHE:O    | 13:O:151:VAL:N    | 2.30                     | 0.64              |
| 13:O:382:GLN:NE2  | 13:O:424:GLN:OE1  | 2.29                     | 0.64              |
| 13:O:551:LEU:HB3  | 13:O:560:ALA:HB2  | 1.79                     | 0.64              |
| 15:X:203:LEU:HA   | 15:X:206:ILE:HD12 | 1.79                     | 0.64              |
| 1:A:1036:ASP:OD1  | 1:A:1039:ARG:NH1  | 2.30                     | 0.64              |
| 3:C:67:LEU:HD12   | 3:C:70:LEU:HB3    | 1.78                     | 0.64              |
| 6:H:42:PHE:O      | 6:H:46:THR:HG23   | 1.97                     | 0.64              |
| 8:I:56:TRP:CE3    | 8:I:98:PRO:HB3    | 2.33                     | 0.64              |
| 8:I:502:GLN:O     | 8:I:508:LYS:NZ    | 2.29                     | 0.64              |
| 9:J:466:ASP:OD1   | 9:J:469:ARG:NH2   | 2.29                     | 0.64              |
| 3:C:305:ASN:ND2   | 3:C:339:ASN:HD21  | 1.96                     | 0.64              |
| 8:I:176:LEU:HB3   | 8:I:188:TYR:HB2   | 1.78                     | 0.64              |
| 9:J:276:VAL:HA    | 9:J:311:MET:SD    | 2.38                     | 0.64              |
| 15:X:446:LEU:HD13 | 15:X:477:LYS:HD2  | 1.80                     | 0.64              |
| 1:A:981:GLN:HG2   | 1:A:1700:LYS:HZ2  | 1.62                     | 0.64              |
| 1:A:1540:ARG:HD3  | 12:N:480:TRP:CE2  | 2.33                     | 0.64              |
| 8:I:219:VAL:HB    | 8:I:234:PHE:HB2   | 1.79                     | 0.64              |
| 8:I:474:ARG:O     | 8:I:477:GLN:HG2   | 1.98                     | 0.64              |
| 9:J:35:GLU:OE2    | 9:J:63:ARG:NH1    | 2.28                     | 0.64              |
| 10:L:25:ILE:O     | 10:L:27:SER:N     | 2.30                     | 0.64              |
| 3:P:96:VAL:N      | 3:P:97:LYS:HA     | 2.12                     | 0.64              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:164:SER:HA   | 15:X:167:ARG:NE   | 2.12                     | 0.64              |
| 15:X:446:LEU:O    | 15:X:481:LYS:NZ   | 2.30                     | 0.64              |
| 1:A:872:LEU:HD21  | 1:A:937:VAL:HG11  | 1.79                     | 0.64              |
| 8:I:110:VAL:HG22  | 8:I:111:SER:H     | 1.63                     | 0.64              |
| 8:I:65:GLY:H      | 8:I:84:LEU:HD13   | 1.61                     | 0.64              |
| 12:N:385:ARG:O    | 12:N:388:HIS:NE2  | 2.31                     | 0.64              |
| 15:X:409:CYS:SG   | 15:X:410:TYR:N    | 2.71                     | 0.64              |
| 1:A:219:GLU:HA    | 3:C:458:ARG:NH1   | 2.13                     | 0.64              |
| 1:A:1645:GLU:OE1  | 1:A:1645:GLU:N    | 2.30                     | 0.64              |
| 2:B:44:CYS:SG     | 2:B:58:HIS:ND1    | 2.65                     | 0.64              |
| 6:F:621:LEU:O     | 6:F:625:ARG:HG2   | 1.98                     | 0.64              |
| 6:H:79:CYS:O      | 6:H:84:LYS:N      | 2.31                     | 0.64              |
| 8:I:115:TRP:CD1   | 8:I:176:LEU:HA    | 2.33                     | 0.64              |
| 13:O:147:SER:OG   | 3:P:353:TYR:OH    | 2.12                     | 0.64              |
| 12:N:693:ARG:HA   | 12:N:696:MET:HG2  | 1.80                     | 0.64              |
| 13:O:498:PRO:O    | 13:O:501:SER:OG   | 2.14                     | 0.64              |
| 15:X:460:LYS:H    | 15:X:460:LYS:HZ3  | 1.44                     | 0.64              |
| 15:Y:452:LEU:HD13 | 15:Y:460:LYS:HB3  | 1.80                     | 0.64              |
| 1:A:715:TYR:O     | 1:A:719:VAL:HG23  | 1.97                     | 0.64              |
| 2:B:14:TRP:N      | 12:N:596:LEU:O    | 2.31                     | 0.64              |
| 6:F:49:TYR:OH     | 6:F:81:ASP:OD2    | 2.16                     | 0.64              |
| 12:N:121:ARG:CB   | 12:N:122:LEU:HB2  | 2.27                     | 0.64              |
| 12:N:134:LYS:HA   | 12:N:137:ARG:HH11 | 1.62                     | 0.64              |
| 15:X:407:LEU:HA   | 15:X:410:TYR:HD2  | 1.63                     | 0.64              |
| 1:A:866:ILE:O     | 1:A:868:GLU:N     | 2.30                     | 0.63              |
| 9:J:192:LYS:H     | 9:J:192:LYS:HD2   | 1.62                     | 0.63              |
| 12:N:571:ASN:ND2  | 12:N:593:ALA:O    | 2.31                     | 0.63              |
| 3:P:341:TYR:CE2   | 3:P:349:LYS:HB3   | 2.33                     | 0.63              |
| 2:B:15:LEU:HD11   | 12:N:635:LEU:HA   | 1.80                     | 0.63              |
| 3:C:393:GLU:OE2   | 13:O:276:HIS:NE2  | 2.31                     | 0.63              |
| 8:I:392:ALA:O     | 8:I:395:SER:OG    | 2.17                     | 0.63              |
| 12:N:610:GLU:HB2  | 12:N:685:VAL:HA   | 1.79                     | 0.63              |
| 13:O:394:THR:HG23 | 13:O:615:ARG:HH22 | 1.63                     | 0.63              |
| 15:Y:271:VAL:HG12 | 15:Y:300:LEU:HD23 | 1.80                     | 0.63              |
| 1:A:176:GLN:OE1   | 1:A:176:GLN:N     | 2.29                     | 0.63              |
| 2:B:8:TRP:HB3     | 12:N:591:VAL:HA   | 1.79                     | 0.63              |
| 9:K:402:PRO:HG3   | 9:K:435:ILE:HD11  | 1.80                     | 0.63              |
| 15:X:255:ILE:HA   | 15:X:258:ILE:HG22 | 1.80                     | 0.63              |
| 3:C:36:LEU:HD21   | 3:C:58:LEU:HB2    | 1.81                     | 0.63              |
| 6:H:452:PHE:O     | 6:H:456:LYS:HB2   | 1.99                     | 0.63              |
| 9:J:36:GLU:HB2    | 9:J:39:ASP:OD1    | 1.99                     | 0.63              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:194:CYS:O     | 9:J:197:GLU:N     | 2.26                     | 0.63              |
| 10:L:86:ASP:OD2   | 10:L:90:THR:OG1   | 2.17                     | 0.63              |
| 10:L:92:SER:HA    | 10:L:113:LEU:HB2  | 1.81                     | 0.63              |
| 11:M:5:VAL:HB     | 3:P:124:LEU:HD22  | 1.81                     | 0.63              |
| 12:N:655:LEU:HD21 | 12:N:721:PRO:HG2  | 1.80                     | 0.63              |
| 13:O:293:GLU:HG2  | 13:O:295:GLY:H    | 1.63                     | 0.63              |
| 3:P:514:ARG:O     | 3:P:518:GLN:NE2   | 2.30                     | 0.63              |
| 1:A:163:SER:OG    | 1:A:167:LYS:N     | 2.32                     | 0.63              |
| 6:H:513:SER:HB2   | 6:H:515:TYR:HE1   | 1.64                     | 0.63              |
| 9:J:489:HIS:HB3   | 9:J:498:ALA:HB2   | 1.80                     | 0.63              |
| 9:K:405:MET:HB2   | 9:K:428:ALA:HB2   | 1.81                     | 0.63              |
| 10:L:93:LYS:HB2   | 10:L:143:ALA:HB3  | 1.80                     | 0.63              |
| 15:Y:320:ARG:NH2  | 15:Y:323:ASP:OD1  | 2.27                     | 0.63              |
| 1:A:168:ASP:OD1   | 1:A:168:ASP:N     | 2.25                     | 0.63              |
| 1:A:950:GLY:H     | 1:A:1813:GLN:NE2  | 1.95                     | 0.63              |
| 1:A:1891:TYR:O    | 1:A:1926:ARG:NH2  | 2.31                     | 0.63              |
| 3:C:528:GLU:HA    | 3:C:531:THR:HG22  | 1.80                     | 0.63              |
| 8:I:536:CYS:O     | 8:I:540:PRO:HD3   | 1.99                     | 0.63              |
| 9:J:59:ALA:O      | 9:J:62:SER:OG     | 2.16                     | 0.63              |
| 9:J:317:GLU:OE2   | 9:J:318:HIS:ND1   | 2.31                     | 0.63              |
| 3:P:298:GLU:OE1   | 3:P:298:GLU:N     | 2.32                     | 0.63              |
| 15:X:496:ILE:HG13 | 15:X:518:PHE:HB3  | 1.80                     | 0.63              |
| 15:Y:465:LEU:HD21 | 15:Y:482:LYS:HB2  | 1.79                     | 0.63              |
| 3:C:77:THR:N      | 3:C:80:ASP:OD1    | 2.25                     | 0.63              |
| 6:F:164:PRO:HD3   | 6:F:474:LEU:HD11  | 1.81                     | 0.63              |
| 8:I:74:ARG:HE     | 8:I:76:ASP:HB3    | 1.63                     | 0.63              |
| 8:I:102:HIS:HE1   | 8:I:263:GLN:HE22  | 1.45                     | 0.63              |
| 9:J:33:SER:O      | 9:J:34:ARG:NH1    | 2.31                     | 0.63              |
| 15:X:153:LYS:HA   | 15:X:156:ILE:HD12 | 1.80                     | 0.63              |
| 2:B:14:TRP:HH2    | 2:B:42:ASP:H      | 1.46                     | 0.63              |
| 6:F:130:ARG:HH11  | 15:Y:506:GLN:HB3  | 1.64                     | 0.63              |
| 9:K:376:LEU:O     | 9:K:379:GLY:N     | 2.32                     | 0.63              |
| 12:N:609:LEU:HD21 | 12:N:662:VAL:HG22 | 1.81                     | 0.63              |
| 15:X:44:MET:HB3   | 15:X:49:LEU:HD11  | 1.81                     | 0.63              |
| 15:X:168:THR:O    | 15:X:172:ASN:ND2  | 2.32                     | 0.63              |
| 15:Y:146:TYR:HE2  | 15:Y:158:ILE:HG13 | 1.63                     | 0.63              |
| 1:A:127:LEU:HD21  | 1:A:180:VAL:HG23  | 1.81                     | 0.62              |
| 6:F:653:LEU:HD21  | 15:Y:552:MET:HE2  | 1.80                     | 0.62              |
| 6:H:629:ARG:HB2   | 9:K:504:THR:HG23  | 1.80                     | 0.62              |
| 9:J:391:PHE:HB3   | 9:J:408:VAL:HG12  | 1.81                     | 0.62              |
| 9:K:291:LEU:HB3   | 9:K:301:SER:OG    | 1.98                     | 0.62              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:414:MET:N    | 12:N:414:MET:SD   | 2.72                     | 0.62              |
| 12:N:699:TRP:CE3  | 12:N:704:VAL:HG21 | 2.34                     | 0.62              |
| 1:A:1919:LYS:NZ   | 12:N:66:GLY:O     | 2.32                     | 0.62              |
| 8:I:224:SER:OG    | 8:I:225:THR:N     | 2.31                     | 0.62              |
| 11:M:8:ASP:OD1    | 11:M:9:GLY:N      | 2.32                     | 0.62              |
| 3:P:199:LEU:HD12  | 3:P:200:PRO:HD2   | 1.81                     | 0.62              |
| 1:A:29:LYS:HG3    | 1:A:30:HIS:CD2    | 2.34                     | 0.62              |
| 3:C:301:ASP:OD1   | 3:C:302:THR:N     | 2.33                     | 0.62              |
| 9:J:180:GLU:OE1   | 9:J:180:GLU:N     | 2.32                     | 0.62              |
| 9:K:130:SER:OG    | 9:K:156:ALA:O     | 2.17                     | 0.62              |
| 10:L:71:LYS:NZ    | 10:L:133:ARG:O    | 2.32                     | 0.62              |
| 15:Y:245:PHE:O    | 15:Y:248:THR:OG1  | 2.17                     | 0.62              |
| 15:Y:441:ALA:HB3  | 15:Y:444:LEU:HG   | 1.80                     | 0.62              |
| 1:A:131:PHE:CE1   | 1:A:216:PRO:HD3   | 2.34                     | 0.62              |
| 1:A:1134:TRP:HD1  | 1:A:1597:THR:HA   | 1.63                     | 0.62              |
| 1:A:1636:VAL:HB   | 1:A:1663:LEU:HD11 | 1.80                     | 0.62              |
| 2:B:8:TRP:O       | 12:N:592:TYR:N    | 2.31                     | 0.62              |
| 15:X:446:LEU:O    | 15:X:449:THR:OG1  | 2.14                     | 0.62              |
| 8:I:186:GLU:OE1   | 8:I:188:TYR:OH    | 2.11                     | 0.62              |
| 15:X:152:ASP:OD2  | 15:X:153:LYS:N    | 2.33                     | 0.62              |
| 15:Y:143:ALA:O    | 15:Y:147:THR:HG23 | 1.99                     | 0.62              |
| 15:Y:532:TYR:HD2  | 15:Y:545:SER:HA   | 1.63                     | 0.62              |
| 1:A:1191:LEU:HD11 | 1:A:1196:TYR:CE2  | 2.30                     | 0.62              |
| 1:A:1692:SER:OG   | 1:A:1693:LYS:N    | 2.29                     | 0.62              |
| 9:J:341:GLY:HA3   | 9:J:357:TYR:CE1   | 2.34                     | 0.62              |
| 10:L:178:MET:O    | 10:L:181:ARG:HG2  | 2.00                     | 0.62              |
| 3:C:329:TYR:HE2   | 3:P:132:ASP:HB3   | 1.64                     | 0.62              |
| 6:F:96:VAL:H      | 6:F:97:PHE:HB2    | 1.64                     | 0.62              |
| 6:F:583:HIS:ND1   | 6:F:610:GLU:OE2   | 2.31                     | 0.62              |
| 9:J:230:ASN:O     | 9:J:233:VAL:HG12  | 1.99                     | 0.62              |
| 12:N:383:GLU:HA   | 12:N:387:LEU:HB2  | 1.82                     | 0.62              |
| 1:A:1851:THR:O    | 1:A:1855:THR:HG23 | 2.00                     | 0.62              |
| 3:C:354:PHE:CE2   | 3:C:370:LEU:HB3   | 2.35                     | 0.62              |
| 9:J:493:GLY:HA2   | 9:J:495:PHE:CZ    | 2.35                     | 0.62              |
| 12:N:151:GLU:HA   | 12:N:154:HIS:HD2  | 1.64                     | 0.62              |
| 6:F:82:LEU:HB3    | 6:F:84:LYS:HZ2    | 1.65                     | 0.62              |
| 8:I:388:GLU:O     | 8:I:391:THR:OG1   | 2.13                     | 0.62              |
| 8:I:474:ARG:HH21  | 8:I:490:PRO:HA    | 1.65                     | 0.62              |
| 8:I:640:ASP:OD1   | 8:I:641:ALA:N     | 2.32                     | 0.62              |
| 12:N:109:LEU:HD21 | 12:N:239:GLN:HG3  | 1.82                     | 0.62              |
| 1:A:588:ARG:O     | 1:A:596:THR:HG22  | 1.99                     | 0.62              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 3:C:389:ARG:HH21  | 13:O:276:HIS:CD2 | 2.18                     | 0.62              |
| 9:J:441:VAL:HG21  | 9:J:444:TRP:CD1  | 2.34                     | 0.62              |
| 10:L:46:ARG:HH12  | 10:L:157:LYS:HA  | 1.63                     | 0.62              |
| 15:Y:184:GLN:HB3  | 15:Y:187:PRO:HG2 | 1.82                     | 0.62              |
| 15:Y:373:VAL:O    | 15:Y:377:LEU:HG  | 2.00                     | 0.62              |
| 8:I:620:PHE:HD2   | 8:I:707:PHE:HE1  | 1.48                     | 0.61              |
| 8:I:624:THR:O     | 8:I:711:TRP:NE1  | 2.32                     | 0.61              |
| 9:J:445:GLU:OE2   | 9:J:475:ILE:HG21 | 2.00                     | 0.61              |
| 12:N:59:VAL:HA    | 12:N:62:LEU:HD12 | 1.82                     | 0.61              |
| 13:O:397:LYS:O    | 13:O:398:LEU:HB2 | 2.00                     | 0.61              |
| 15:Y:73:PRO:HA    | 15:Y:76:LYS:HD2  | 1.82                     | 0.61              |
| 1:A:178:ALA:HB2   | 1:A:192:SER:HB3  | 1.82                     | 0.61              |
| 1:A:1376:LEU:HD23 | 1:A:1377:LYS:HG3 | 1.82                     | 0.61              |
| 3:C:122:ARG:O     | 3:C:125:SER:OG   | 2.15                     | 0.61              |
| 8:I:302:ASP:OD1   | 8:I:303:GLU:N    | 2.33                     | 0.61              |
| 9:J:500:ASP:O     | 9:J:503:HIS:HB2  | 2.00                     | 0.61              |
| 9:K:236:SER:HA    | 9:K:239:GLU:CD   | 2.20                     | 0.61              |
| 15:X:203:LEU:HD11 | 15:X:239:TRP:HZ3 | 1.63                     | 0.61              |
| 3:C:100:ASP:OD1   | 3:C:100:ASP:N    | 2.33                     | 0.61              |
| 3:C:210:CYS:HA    | 3:C:237:ILE:HD11 | 1.82                     | 0.61              |
| 6:F:28:ALA:HB1    | 6:F:44:LEU:HD22  | 1.82                     | 0.61              |
| 8:I:28:TRP:HA     | 8:I:35:ILE:HD13  | 1.82                     | 0.61              |
| 8:I:734:LEU:HA    | 8:I:741:VAL:HG12 | 1.82                     | 0.61              |
| 9:K:351:ASP:OD1   | 9:K:352:GLN:N    | 2.33                     | 0.61              |
| 12:N:509:TYR:H    | 12:N:510:GLY:HA2 | 1.64                     | 0.61              |
| 1:A:1373:MET:O    | 1:A:1376:LEU:HB2 | 2.00                     | 0.61              |
| 10:L:85:SER:HB2   | 10:L:154:ARG:NH2 | 2.15                     | 0.61              |
| 12:N:253:LEU:O    | 12:N:257:SER:N   | 2.33                     | 0.61              |
| 13:O:727:THR:HA   | 13:O:730:ARG:HB3 | 1.82                     | 0.61              |
| 1:A:1912:ALA:HA   | 1:A:1915:LEU:HB3 | 1.82                     | 0.61              |
| 3:C:334:CYS:SG    | 3:C:357:ALA:HB2  | 2.41                     | 0.61              |
| 3:C:368:TRP:HB3   | 3:C:391:ALA:HB2  | 1.82                     | 0.61              |
| 6:F:471:LYS:HA    | 6:F:474:LEU:HD12 | 1.81                     | 0.61              |
| 8:I:115:TRP:HE1   | 8:I:176:LEU:CB   | 2.13                     | 0.61              |
| 9:J:252:LYS:O     | 9:J:255:SER:OG   | 2.19                     | 0.61              |
| 9:J:441:VAL:HG21  | 9:J:444:TRP:HD1  | 1.65                     | 0.61              |
| 15:Y:475:TYR:CE2  | 15:Y:477:LYS:HB3 | 2.35                     | 0.61              |
| 6:F:47:CYS:O      | 6:F:51:SER:OG    | 2.19                     | 0.61              |
| 8:I:369:MET:HB3   | 8:I:376:TYR:CE2  | 2.35                     | 0.61              |
| 9:J:51:ALA:HA     | 9:J:53:TYR:CE1   | 2.36                     | 0.61              |
| 9:J:247:PHE:O     | 9:J:250:CYS:N    | 2.34                     | 0.61              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:L:179:MET:HG3  | 10:L:180:TYR:CD2  | 2.36                     | 0.61              |
| 15:Y:513:ARG:NH1  | 15:Y:517:ASP:OD2  | 2.33                     | 0.61              |
| 1:A:1102:ILE:HG12 | 1:A:1171:GLU:OE2  | 2.01                     | 0.61              |
| 12:N:334:ARG:NH1  | 12:N:369:ASP:OD1  | 2.34                     | 0.61              |
| 1:A:34:ALA:O      | 13:O:237:GLN:NE2  | 2.33                     | 0.61              |
| 1:A:771:GLU:OE2   | 1:A:844:ILE:N     | 2.34                     | 0.61              |
| 6:F:559:LEU:HD23  | 6:F:569:ALA:HA    | 1.82                     | 0.61              |
| 6:F:739:VAL:O     | 6:F:743:ILE:HG13  | 2.01                     | 0.61              |
| 6:H:712:VAL:HG12  | 6:H:716:ASN:HD21  | 1.65                     | 0.61              |
| 12:N:615:ILE:HG12 | 12:N:619:LEU:HD12 | 1.83                     | 0.61              |
| 13:O:493:LEU:O    | 13:O:497:PHE:N    | 2.32                     | 0.61              |
| 15:X:199:CYS:SG   | 15:X:202:ALA:HB2  | 2.41                     | 0.61              |
| 1:A:124:GLN:HB2   | 1:A:154:LEU:HG    | 1.83                     | 0.61              |
| 1:A:1734:LYS:O    | 1:A:1737:THR:OG1  | 2.19                     | 0.61              |
| 8:I:74:ARG:NH1    | 8:I:166:LYS:O     | 2.34                     | 0.61              |
| 8:I:452:LEU:HD12  | 8:I:453:THR:N     | 2.15                     | 0.61              |
| 9:J:125:GLN:HA    | 9:J:128:ILE:HD12  | 1.81                     | 0.61              |
| 3:P:389:ARG:O     | 3:P:392:ILE:HG12  | 2.01                     | 0.61              |
| 1:A:1489:HIS:CD2  | 1:A:1493:LYS:HE3  | 2.35                     | 0.60              |
| 1:A:1658:PRO:HG3  | 1:A:1663:LEU:HD13 | 1.83                     | 0.60              |
| 3:C:324:CYS:SG    | 3:C:328:LYS:HE3   | 2.41                     | 0.60              |
| 8:I:309:LEU:HD22  | 13:O:61:ASN:OD1   | 2.01                     | 0.60              |
| 9:J:442:ASP:HA    | 9:J:474:LEU:HD21  | 1.83                     | 0.60              |
| 15:X:462:LYS:HG2  | 15:X:485:LEU:HD21 | 1.81                     | 0.60              |
| 1:A:1433:ILE:HG22 | 1:A:1457:LEU:HD11 | 1.82                     | 0.60              |
| 3:C:235:ALA:HB1   | 3:C:251:TYR:CE2   | 2.36                     | 0.60              |
| 6:F:512:LEU:HD12  | 6:F:513:SER:H     | 1.66                     | 0.60              |
| 6:H:29:GLU:OE2    | 6:H:48:TYR:OH     | 2.19                     | 0.60              |
| 8:I:622:SER:HB2   | 8:I:633:ARG:HH21  | 1.66                     | 0.60              |
| 10:L:35:SER:OG    | 10:L:56:SER:HA    | 2.00                     | 0.60              |
| 12:N:112:LEU:HD21 | 12:N:243:LEU:HB2  | 1.84                     | 0.60              |
| 15:X:270:ASN:HB3  | 15:X:273:LEU:HB2  | 1.82                     | 0.60              |
| 15:X:338:HIS:HB3  | 15:X:340:GLU:OE1  | 2.00                     | 0.60              |
| 1:A:174:PRO:HG2   | 1:A:175:PHE:HD2   | 1.65                     | 0.60              |
| 1:A:1864:GLY:HA2  | 1:A:1867:CYS:SG   | 2.41                     | 0.60              |
| 3:C:531:THR:O     | 3:C:535:LYS:HG2   | 2.01                     | 0.60              |
| 13:O:357:SER:HB2  | 13:O:358:TYR:CD2  | 2.36                     | 0.60              |
| 6:F:516:MET:N     | 6:F:516:MET:SD    | 2.74                     | 0.60              |
| 6:H:736:GLU:OE2   | 10:L:173:THR:N    | 2.31                     | 0.60              |
| 10:L:82:ASP:HA    | 10:L:117:SER:HA   | 1.81                     | 0.60              |
| 12:N:292:TRP:HE3  | 12:N:293:ILE:HD13 | 1.67                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:570:ILE:HA   | 12:N:573:ASN:ND2  | 2.17                     | 0.60              |
| 12:N:571:ASN:ND2  | 12:N:593:ALA:H    | 1.98                     | 0.60              |
| 13:O:336:ASP:O    | 13:O:337:HIS:ND1  | 2.35                     | 0.60              |
| 13:O:547:LYS:HE3  | 13:O:551:LEU:HD13 | 1.83                     | 0.60              |
| 15:Y:215:LYS:O    | 15:Y:218:GLU:N    | 2.34                     | 0.60              |
| 1:A:212:SER:OG    | 1:A:221:THR:OG1   | 2.13                     | 0.60              |
| 8:I:185:ILE:HG12  | 8:I:201:ILE:HG13  | 1.83                     | 0.60              |
| 12:N:164:SER:N    | 12:N:165:THR:HA   | 2.17                     | 0.60              |
| 1:A:612:ILE:HG13  | 1:A:641:TRP:CZ3   | 2.37                     | 0.60              |
| 5:E:86:VAL:HG22   | 6:H:589:PHE:CE1   | 2.37                     | 0.60              |
| 12:N:706:ARG:O    | 12:N:714:SER:N    | 2.34                     | 0.60              |
| 13:O:53:SER:H     | 13:O:56:GLU:HB2   | 1.66                     | 0.60              |
| 3:P:331:VAL:HG21  | 3:P:361:ASN:HB2   | 1.83                     | 0.60              |
| 15:X:466:ASP:O    | 15:X:470:THR:HG23 | 2.01                     | 0.60              |
| 8:I:207:ALA:HB3   | 8:I:220:VAL:HB    | 1.82                     | 0.60              |
| 13:O:407:LEU:O    | 13:O:411:LYS:HB2  | 2.02                     | 0.60              |
| 15:Y:140:TYR:CZ   | 15:Y:170:LYS:HD3  | 2.37                     | 0.60              |
| 1:A:980:ARG:HG3   | 1:A:983:LEU:H     | 1.66                     | 0.60              |
| 6:H:165:ASP:OD1   | 6:H:467:ARG:HD2   | 2.00                     | 0.60              |
| 9:J:478:ASN:OD1   | 9:J:480:SER:N     | 2.35                     | 0.60              |
| 12:N:361:LEU:HD23 | 12:N:410:LEU:HD11 | 1.83                     | 0.60              |
| 15:Y:143:ALA:HB2  | 15:Y:159:LEU:HD21 | 1.82                     | 0.60              |
| 15:Y:457:THR:OG1  | 15:Y:460:LYS:NZ   | 2.19                     | 0.60              |
| 1:A:1785:GLU:OE1  | 1:A:1785:GLU:N    | 2.34                     | 0.60              |
| 8:I:102:HIS:CE1   | 8:I:263:GLN:HE22  | 2.20                     | 0.60              |
| 9:K:465:LEU:HB3   | 9:K:469:ARG:NH1   | 2.17                     | 0.60              |
| 12:N:811:SER:O    | 12:N:816:ARG:NH2  | 2.34                     | 0.60              |
| 1:A:1462:VAL:HG11 | 1:A:1512:LEU:HD21 | 1.84                     | 0.60              |
| 1:A:1589:TYR:HE2  | 1:A:1591:HIS:HB2  | 1.67                     | 0.60              |
| 3:C:254:LEU:O     | 3:C:257:VAL:HG12  | 2.02                     | 0.60              |
| 5:E:99:ILE:O      | 5:E:102:LEU:N     | 2.35                     | 0.60              |
| 6:F:537:GLU:OE1   | 6:F:537:GLU:N     | 2.35                     | 0.60              |
| 8:I:655:ASP:N     | 8:I:663:ASP:O     | 2.22                     | 0.60              |
| 9:J:315:LYS:O     | 9:J:318:HIS:N     | 2.33                     | 0.60              |
| 9:J:476:PRO:HG2   | 3:P:182:LEU:HG    | 1.84                     | 0.60              |
| 10:L:73:THR:HA    | 10:L:133:ARG:HA   | 1.82                     | 0.60              |
| 3:C:96:VAL:N      | 3:C:97:LYS:HA     | 2.15                     | 0.59              |
| 6:H:590:PHE:HB2   | 6:H:607:LEU:HD13  | 1.84                     | 0.59              |
| 9:J:469:ARG:O     | 9:J:473:VAL:HG23  | 2.02                     | 0.59              |
| 1:A:24:GLY:HA3    | 1:A:94:TYR:CG     | 2.37                     | 0.59              |
| 10:L:70:ARG:O     | 10:L:72:THR:N     | 2.35                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:476:LEU:O     | 3:P:480:LEU:N     | 2.28                     | 0.59              |
| 1:A:880:TYR:CE1   | 1:A:958:ALA:HB2   | 2.37                     | 0.59              |
| 7:G:2:LEU:HD11    | 9:J:276:VAL:HG21  | 1.82                     | 0.59              |
| 12:N:480:TRP:CE3  | 12:N:482:PRO:HA   | 2.38                     | 0.59              |
| 13:O:657:ILE:HD12 | 13:O:700:TYR:HD1  | 1.67                     | 0.59              |
| 13:O:671:GLN:OE1  | 13:O:693:ASN:ND2  | 2.35                     | 0.59              |
| 1:A:867:CYS:O     | 1:A:870:SER:OG    | 2.18                     | 0.59              |
| 8:I:186:GLU:HB3   | 8:I:188:TYR:HE1   | 1.67                     | 0.59              |
| 9:J:66:ASP:OD1    | 9:J:67:LYS:N      | 2.35                     | 0.59              |
| 13:O:513:LYS:NZ   | 13:O:542:GLU:OE1  | 2.27                     | 0.59              |
| 3:P:36:LEU:HB3    | 3:P:59:ALA:HB2    | 1.84                     | 0.59              |
| 1:A:628:ILE:HD12  | 1:A:761:ALA:HB1   | 1.84                     | 0.59              |
| 1:A:1046:PRO:HD3  | 1:A:1106:ASN:HD21 | 1.68                     | 0.59              |
| 1:A:1571:ARG:NH2  | 1:A:1694:ASP:HB2  | 2.17                     | 0.59              |
| 3:C:145:GLN:NE2   | 13:O:206:PRO:O    | 2.28                     | 0.59              |
| 3:C:550:LEU:HD23  | 3:C:553:ILE:HD11  | 1.83                     | 0.59              |
| 8:I:56:TRP:CD2    | 8:I:98:PRO:HB3    | 2.37                     | 0.59              |
| 10:L:44:GLN:HA    | 10:L:47:ASP:OD1   | 2.03                     | 0.59              |
| 12:N:754:PHE:CZ   | 12:N:782:VAL:HG22 | 2.37                     | 0.59              |
| 1:A:1571:ARG:NH1  | 1:A:1694:ASP:O    | 2.35                     | 0.59              |
| 8:I:491:ASN:OD1   | 8:I:493:GLU:N     | 2.35                     | 0.59              |
| 7:W:25:ASP:H      | 7:W:26:LEU:HA     | 1.67                     | 0.59              |
| 6:F:625:ARG:HB3   | 6:F:629:ARG:HH21  | 1.67                     | 0.59              |
| 8:I:90:ILE:N      | 8:I:104:PHE:O     | 2.36                     | 0.59              |
| 9:K:258:MET:HG3   | 9:K:271:HIS:CD2   | 2.37                     | 0.59              |
| 9:K:291:LEU:HD23  | 9:K:301:SER:HA    | 1.84                     | 0.59              |
| 12:N:612:PRO:O    | 12:N:616:ARG:HG3  | 2.02                     | 0.59              |
| 15:X:210:LEU:HD12 | 15:X:244:ALA:HA   | 1.84                     | 0.59              |
| 15:Y:80:LEU:HB3   | 15:Y:103:ALA:HB2  | 1.85                     | 0.59              |
| 3:C:307:LEU:HD22  | 3:C:316:LEU:HB2   | 1.85                     | 0.59              |
| 6:H:77:LYS:NZ     | 6:H:120:LEU:HD21  | 2.18                     | 0.59              |
| 8:I:122:SER:HB3   | 8:I:125:LEU:HD12  | 1.85                     | 0.59              |
| 12:N:158:ARG:HD3  | 12:N:255:ARG:HE   | 1.68                     | 0.59              |
| 12:N:560:MET:O    | 12:N:564:MET:HG2  | 2.02                     | 0.59              |
| 3:P:398:ASP:OD2   | 3:P:399:TYR:N     | 2.36                     | 0.59              |
| 3:P:400:ARG:CZ    | 17:Q:499:ARG:CA   | 2.79                     | 0.59              |
| 7:W:12:LYS:O      | 7:W:15:ASP:N      | 2.27                     | 0.59              |
| 15:X:49:LEU:HD13  | 15:X:52:ASN:HB2   | 1.85                     | 0.59              |
| 6:F:120:LEU:O     | 6:F:124:VAL:HG23  | 2.03                     | 0.59              |
| 6:H:482:LYS:HA    | 6:H:485:ILE:HD12  | 1.84                     | 0.59              |
| 6:H:684:LYS:NZ    | 6:H:687:LYS:HD3   | 2.17                     | 0.59              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:58:HIS:ND1    | 9:K:262:PRO:HD3   | 2.18                     | 0.59              |
| 15:Y:54:ARG:HB2   | 15:Y:86:SER:HB2   | 1.85                     | 0.59              |
| 6:F:85:LEU:N      | 6:F:87:GLU:OE2    | 2.36                     | 0.59              |
| 8:I:111:SER:OG    | 8:I:205:CYS:O     | 2.15                     | 0.59              |
| 8:I:725:ASN:ND2   | 8:I:728:ARG:HB2   | 2.17                     | 0.59              |
| 15:Y:364:LYS:HE2  | 15:Y:368:LEU:HD11 | 1.84                     | 0.59              |
| 15:Y:405:CYS:N    | 15:Y:410:TYR:OH   | 2.35                     | 0.59              |
| 15:Y:476:ILE:HG13 | 15:Y:477:LYS:H    | 1.68                     | 0.59              |
| 2:B:10:GLY:N      | 12:N:592:TYR:O    | 2.35                     | 0.58              |
| 6:H:712:VAL:O     | 6:H:716:ASN:ND2   | 2.35                     | 0.58              |
| 9:K:288:SER:HB3   | 9:K:305:VAL:HG22  | 1.85                     | 0.58              |
| 15:Y:146:TYR:HD1  | 15:Y:149:LEU:HD12 | 1.68                     | 0.58              |
| 1:A:759:ILE:O     | 1:A:762:ILE:N     | 2.35                     | 0.58              |
| 1:A:953:LEU:HD22  | 1:A:1817:VAL:HG13 | 1.85                     | 0.58              |
| 1:A:1595:HIS:NE2  | 1:A:1598:ASP:HB2  | 2.18                     | 0.58              |
| 6:H:567:PRO:O     | 6:H:571:CYS:CB    | 2.50                     | 0.58              |
| 8:I:591:LEU:HB3   | 8:I:596:TYR:CE1   | 2.39                     | 0.58              |
| 8:I:597:LYS:HE2   | 8:I:617:ALA:HB1   | 1.85                     | 0.58              |
| 13:O:435:SER:OG   | 13:O:436:THR:N    | 2.36                     | 0.58              |
| 13:O:577:THR:HG22 | 13:O:581:ILE:HD11 | 1.86                     | 0.58              |
| 3:P:35:GLN:HE21   | 3:P:201:LEU:HD11  | 1.67                     | 0.58              |
| 15:Y:93:TYR:O     | 15:Y:97:VAL:HG23  | 2.02                     | 0.58              |
| 9:K:440:THR:HG21  | 9:K:443:LYS:HD3   | 1.85                     | 0.58              |
| 15:X:384:ARG:NH1  | 15:X:412:GLY:O    | 2.36                     | 0.58              |
| 1:A:1155:SER:OG   | 1:A:1156:ALA:N    | 2.36                     | 0.58              |
| 1:A:1727:ASN:HB2  | 12:N:163:PHE:HE2  | 1.66                     | 0.58              |
| 3:C:97:LYS:HD2    | 3:C:99:TYR:OH     | 2.03                     | 0.58              |
| 3:C:444:GLU:O     | 3:C:447:ASN:N     | 2.30                     | 0.58              |
| 6:H:113:SER:O     | 6:H:117:THR:HG23  | 2.03                     | 0.58              |
| 6:H:651:PHE:O     | 6:H:654:ALA:N     | 2.36                     | 0.58              |
| 12:N:118:LEU:O    | 12:N:122:LEU:HB3  | 2.04                     | 0.58              |
| 12:N:509:TYR:N    | 12:N:510:GLY:HA2  | 2.18                     | 0.58              |
| 1:A:715:TYR:CE1   | 13:O:750:PRO:HD2  | 2.35                     | 0.58              |
| 9:K:371:MET:SD    | 9:K:393:GLN:NE2   | 2.59                     | 0.58              |
| 10:L:73:THR:OG1   | 10:L:133:ARG:NE   | 2.24                     | 0.58              |
| 3:P:299:ASN:O     | 3:P:301:ASP:N     | 2.36                     | 0.58              |
| 15:X:219:VAL:O    | 15:X:223:THR:HG23 | 2.02                     | 0.58              |
| 15:Y:311:TYR:HE2  | 15:Y:327:LEU:HD22 | 1.68                     | 0.58              |
| 1:A:1528:ALA:O    | 1:A:1573:SER:OG   | 2.20                     | 0.58              |
| 6:F:639:TYR:CD1   | 6:F:672:LEU:HD13  | 2.36                     | 0.58              |
| 7:G:4:ARG:HH21    | 9:J:345:ALA:HB1   | 1.68                     | 0.58              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:2:ASN:N       | 9:K:196:GLU:OE1   | 2.37                     | 0.58              |
| 13:O:274:LEU:HD11 | 13:O:306:ASN:ND2  | 2.18                     | 0.58              |
| 3:P:243:LEU:HG    | 3:P:246:GLU:HB3   | 1.85                     | 0.58              |
| 15:X:149:LEU:HB3  | 15:X:151:GLN:HE21 | 1.67                     | 0.58              |
| 15:X:279:ASP:HA   | 15:X:282:PHE:HB3  | 1.85                     | 0.58              |
| 1:A:209:THR:OG1   | 1:A:210:MET:N     | 2.34                     | 0.58              |
| 1:A:272:ARG:HH12  | 1:A:275:LYS:HZ2   | 1.52                     | 0.58              |
| 1:A:1567:LEU:HB3  | 1:A:1572:TYR:O    | 2.03                     | 0.58              |
| 1:A:1603:LEU:HD23 | 1:A:1603:LEU:O    | 2.04                     | 0.58              |
| 8:I:45:LEU:HG     | 8:I:57:SER:HA     | 1.85                     | 0.58              |
| 13:O:370:HIS:CD2  | 13:O:371:PHE:H    | 2.20                     | 0.58              |
| 2:B:3:VAL:H       | 12:N:671:GLN:NE2  | 2.01                     | 0.58              |
| 6:F:148:LEU:HB3   | 6:F:151:PRO:HG2   | 1.84                     | 0.58              |
| 6:H:12:ILE:HD11   | 6:H:27:LEU:HB2    | 1.85                     | 0.58              |
| 15:X:225:ASN:O    | 15:X:229:THR:HG23 | 2.03                     | 0.58              |
| 1:A:1041:LEU:HD21 | 1:A:1562:LEU:HD23 | 1.86                     | 0.58              |
| 1:A:1378:THR:HG23 | 1:A:1380:ASN:H    | 1.68                     | 0.58              |
| 3:C:338:GLY:HA3   | 3:C:354:PHE:CE1   | 2.39                     | 0.58              |
| 3:C:483:SER:HG    | 3:C:515:TYR:HH    | 1.51                     | 0.58              |
| 4:D:53:PRO:HB3    | 3:P:385:ILE:HG21  | 1.85                     | 0.58              |
| 6:H:35:VAL:HG12   | 6:H:37:SER:H      | 1.67                     | 0.58              |
| 8:I:186:GLU:HG3   | 8:I:197:ARG:HG3   | 1.84                     | 0.58              |
| 8:I:604:HIS:ND1   | 8:I:606:ASP:HB3   | 2.19                     | 0.58              |
| 3:P:491:ILE:HB    | 3:P:519:TYR:CZ    | 2.38                     | 0.58              |
| 1:A:585:HIS:N     | 1:A:598:GLU:O     | 2.37                     | 0.58              |
| 1:A:951:ILE:O     | 1:A:954:PRO:HD2   | 2.04                     | 0.58              |
| 1:A:1074:CYS:O    | 1:A:1078:MET:HG2  | 2.04                     | 0.58              |
| 6:F:82:LEU:HB3    | 6:F:84:LYS:NZ     | 2.19                     | 0.58              |
| 6:H:549:ASP:OD1   | 6:H:550:VAL:N     | 2.37                     | 0.58              |
| 6:H:708:HIS:O     | 6:H:712:VAL:HG23  | 2.03                     | 0.58              |
| 8:I:160:ASN:O     | 8:I:164:ILE:HD12  | 2.04                     | 0.58              |
| 9:K:276:VAL:HG21  | 7:W:2:LEU:HD21    | 1.85                     | 0.58              |
| 15:X:52:ASN:OD1   | 15:Y:203:LEU:N    | 2.37                     | 0.58              |
| 15:X:336:ASP:OD1  | 15:X:337:GLN:N    | 2.31                     | 0.58              |
| 15:X:434:TYR:O    | 15:X:438:GLY:N    | 2.37                     | 0.58              |
| 1:A:25:ARG:O      | 1:A:29:LYS:NZ     | 2.32                     | 0.57              |
| 1:A:27:HIS:HB3    | 1:A:101:ILE:HD13  | 1.86                     | 0.57              |
| 8:I:318:GLN:NE2   | 8:I:319:THR:HG23  | 2.18                     | 0.57              |
| 8:I:406:VAL:O     | 8:I:409:SER:OG    | 2.15                     | 0.57              |
| 9:K:13:TYR:HD1    | 9:K:18:GLN:HB2    | 1.69                     | 0.57              |
| 3:P:441:GLU:O     | 3:P:445:LYS:HG3   | 2.04                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:Y:169:PRO:HA   | 15:Y:172:ASN:ND2  | 2.19                     | 0.57              |
| 5:E:89:LEU:HD11   | 6:H:592:ARG:HG2   | 1.84                     | 0.57              |
| 8:I:676:ASN:HB3   | 8:I:703:ARG:HH12  | 1.69                     | 0.57              |
| 12:N:263:THR:O    | 12:N:267:GLN:HG3  | 2.04                     | 0.57              |
| 13:O:357:SER:HB2  | 13:O:358:TYR:HD2  | 1.69                     | 0.57              |
| 15:Y:260:SER:O    | 15:Y:264:LYS:NZ   | 2.34                     | 0.57              |
| 15:Y:509:CYS:HA   | 15:Y:512:HIS:HD2  | 1.69                     | 0.57              |
| 8:I:308:LEU:O     | 13:O:130:SER:OG   | 2.22                     | 0.57              |
| 9:K:386:LEU:H     | 9:K:386:LEU:HD12  | 1.69                     | 0.57              |
| 1:A:183:THR:OG1   | 1:A:184:LYS:N     | 2.38                     | 0.57              |
| 1:A:641:TRP:NE1   | 1:A:660:PHE:HD1   | 2.01                     | 0.57              |
| 1:A:1221:ASP:OD1  | 1:A:1223:SER:N    | 2.35                     | 0.57              |
| 1:A:1357:THR:O    | 10:L:69:ARG:NH2   | 2.36                     | 0.57              |
| 12:N:654:THR:HB   | 12:N:724:ARG:HH21 | 1.69                     | 0.57              |
| 3:P:214:THR:OG1   | 3:P:215:ASP:OD1   | 2.15                     | 0.57              |
| 15:Y:338:HIS:O    | 15:Y:341:PRO:HD2  | 2.03                     | 0.57              |
| 1:A:244:MET:HG3   | 1:A:258:THR:HG21  | 1.86                     | 0.57              |
| 1:A:1134:TRP:CZ3  | 1:A:1605:ALA:HB2  | 2.40                     | 0.57              |
| 1:A:1909:THR:H    | 1:A:1936:LEU:HD22 | 1.70                     | 0.57              |
| 3:C:286:PHE:HB3   | 3:C:303:PHE:HD1   | 1.69                     | 0.57              |
| 6:H:146:PRO:O     | 6:H:148:LEU:HG    | 2.04                     | 0.57              |
| 6:H:500:TRP:O     | 6:H:504:GLN:HG2   | 2.05                     | 0.57              |
| 9:J:86:HIS:HB2    | 9:J:143:LEU:HD21  | 1.87                     | 0.57              |
| 9:K:452:GLY:HA3   | 9:K:468:HIS:CE1   | 2.40                     | 0.57              |
| 10:L:53:TYR:HB3   | 10:L:154:ARG:HD3  | 1.86                     | 0.57              |
| 13:O:365:VAL:HG21 | 13:O:381:ILE:HG13 | 1.86                     | 0.57              |
| 13:O:450:SER:HB3  | 13:O:461:ASN:HB2  | 1.86                     | 0.57              |
| 3:P:409:TYR:CE2   | 3:P:421:TYR:HE2   | 2.21                     | 0.57              |
| 1:A:799:LEU:HD21  | 1:A:837:PHE:HZ    | 1.68                     | 0.57              |
| 1:A:949:PHE:HA    | 1:A:952:ALA:HB3   | 1.85                     | 0.57              |
| 1:A:963:ARG:NH1   | 1:A:979:GLY:H     | 2.03                     | 0.57              |
| 6:F:80:VAL:HG21   | 6:F:120:LEU:HD11  | 1.87                     | 0.57              |
| 9:J:456:ARG:HD2   | 9:J:487:TYR:HD2   | 1.69                     | 0.57              |
| 9:K:455:CYS:SG    | 9:K:460:LYS:HG3   | 2.44                     | 0.57              |
| 12:N:187:SER:O    | 12:N:191:GLY:N    | 2.37                     | 0.57              |
| 12:N:558:GLU:O    | 12:N:561:LEU:HG   | 2.05                     | 0.57              |
| 12:N:806:GLN:O    | 12:N:806:GLN:HG2  | 2.04                     | 0.57              |
| 15:Y:291:VAL:O    | 15:Y:295:GLU:HG3  | 2.04                     | 0.57              |
| 3:C:228:TRP:O     | 3:C:231:GLU:N     | 2.37                     | 0.57              |
| 3:C:474:ALA:HB1   | 3:C:490:TYR:CE2   | 2.40                     | 0.57              |
| 6:F:15:ALA:O      | 6:F:19:TYR:N      | 2.37                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:H:703:PRO:HG2   | 6:H:704:LEU:HD12  | 1.87                     | 0.57              |
| 6:H:731:GLN:O     | 15:X:184:GLN:HG3  | 2.05                     | 0.57              |
| 6:H:758:MET:SD    | 15:X:432:ASN:ND2  | 2.78                     | 0.57              |
| 8:I:181:SER:H     | 8:I:204:THR:HA    | 1.70                     | 0.57              |
| 8:I:204:THR:O     | 8:I:221:THR:OG1   | 2.23                     | 0.57              |
| 9:J:405:MET:HB2   | 9:J:428:ALA:HB2   | 1.84                     | 0.57              |
| 10:L:60:GLN:NE2   | 10:L:144:ASN:OD1  | 2.38                     | 0.57              |
| 13:O:249:ASP:HA   | 13:O:280:ARG:HH21 | 1.69                     | 0.57              |
| 6:F:524:GLU:OE2   | 6:F:527:ARG:NH2   | 2.37                     | 0.57              |
| 6:H:492:PRO:O     | 6:H:494:HIS:ND1   | 2.38                     | 0.57              |
| 8:I:389:ALA:O     | 8:I:393:VAL:HG23  | 2.05                     | 0.57              |
| 15:X:400:ILE:HD11 | 15:X:413:LEU:HD22 | 1.85                     | 0.57              |
| 1:A:799:LEU:HD21  | 1:A:837:PHE:CZ    | 2.39                     | 0.57              |
| 4:D:26:GLU:HG3    | 4:D:27:GLU:H      | 1.69                     | 0.57              |
| 6:H:696:ILE:HD13  | 6:H:706:LYS:HG2   | 1.86                     | 0.57              |
| 8:I:305:MET:O     | 8:I:308:LEU:N     | 2.38                     | 0.57              |
| 10:L:125:THR:HA   | 10:L:126:ASP:HB3  | 1.86                     | 0.57              |
| 12:N:274:GLU:HA   | 12:N:277:CYS:SG   | 2.44                     | 0.57              |
| 12:N:414:MET:HB3  | 12:N:418:GLU:HG3  | 1.87                     | 0.57              |
| 12:N:589:PHE:O    | 12:N:591:VAL:HG13 | 2.04                     | 0.57              |
| 12:N:605:LYS:HZ2  | 12:N:638:LYS:HB2  | 1.68                     | 0.57              |
| 13:O:682:LYS:O    | 13:O:685:GLU:HG2  | 2.04                     | 0.57              |
| 1:A:963:ARG:NH2   | 1:A:1785:GLU:OE2  | 2.37                     | 0.57              |
| 9:K:51:ALA:HA     | 9:K:53:TYR:CZ     | 2.39                     | 0.57              |
| 9:K:212:TYR:OH    | 9:K:368:HIS:ND1   | 2.32                     | 0.57              |
| 9:K:230:ASN:OD1   | 9:K:231:LEU:N     | 2.37                     | 0.57              |
| 10:L:175:ILE:HA   | 10:L:178:MET:HB2  | 1.86                     | 0.57              |
| 13:O:611:SER:OG   | 13:O:612:LYS:N    | 2.36                     | 0.57              |
| 1:A:597:LEU:HD12  | 1:A:597:LEU:O     | 2.05                     | 0.56              |
| 1:A:827:GLN:HE21  | 1:A:829:GLY:H     | 1.52                     | 0.56              |
| 3:C:372:GLY:O     | 3:C:375:TYR:N     | 2.38                     | 0.56              |
| 3:C:490:TYR:CE1   | 3:C:512:ALA:HA    | 2.39                     | 0.56              |
| 6:F:737:SER:HA    | 6:F:740:TYR:HD2   | 1.70                     | 0.56              |
| 8:I:361:TYR:O     | 8:I:365:GLU:HG2   | 2.05                     | 0.56              |
| 12:N:362:LYS:HB2  | 12:N:410:LEU:HD23 | 1.87                     | 0.56              |
| 3:P:527:ASP:O     | 3:P:531:THR:HG23  | 2.05                     | 0.56              |
| 15:Y:499:LEU:HD23 | 15:Y:515:LEU:HD13 | 1.87                     | 0.56              |
| 6:F:152:PHE:HA    | 6:F:155:LEU:HD12  | 1.87                     | 0.56              |
| 12:N:345:PHE:O    | 12:N:348:VAL:HG12 | 2.05                     | 0.56              |
| 12:N:345:PHE:CZ   | 12:N:399:LEU:HD21 | 2.40                     | 0.56              |
| 3:P:437:VAL:HG12  | 3:P:441:GLU:OE2   | 2.04                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:W:13:LEU:O      | 7:W:16:ILE:N      | 2.37                     | 0.56              |
| 1:A:127:LEU:HD12  | 1:A:152:CYS:HB3   | 1.87                     | 0.56              |
| 1:A:215:HIS:O     | 1:A:217:LEU:N     | 2.37                     | 0.56              |
| 1:A:267:SER:OG    | 1:A:269:TRP:NE1   | 2.16                     | 0.56              |
| 1:A:1563:GLY:O    | 1:A:1566:PHE:N    | 2.38                     | 0.56              |
| 1:A:1900:LEU:HD12 | 1:A:1921:LEU:HG   | 1.87                     | 0.56              |
| 3:C:167:LEU:HD23  | 3:C:172:LEU:HD23  | 1.88                     | 0.56              |
| 7:G:4:ARG:N       | 9:J:373:TYR:OH    | 2.27                     | 0.56              |
| 6:H:486:ASN:OD1   | 6:H:490:HIS:NE2   | 2.38                     | 0.56              |
| 8:I:102:HIS:NE2   | 8:I:104:PHE:HB3   | 2.21                     | 0.56              |
| 9:J:33:SER:OG     | 9:J:34:ARG:N      | 2.37                     | 0.56              |
| 9:J:474:LEU:HD23  | 9:J:475:ILE:HG23  | 1.86                     | 0.56              |
| 12:N:162:PHE:CB   | 12:N:255:ARG:HH12 | 2.18                     | 0.56              |
| 3:P:195:ALA:HA    | 3:P:198:VAL:HG22  | 1.87                     | 0.56              |
| 3:P:235:ALA:HB1   | 3:P:251:TYR:CE2   | 2.40                     | 0.56              |
| 3:P:253:ASN:O     | 3:P:257:VAL:HG23  | 2.04                     | 0.56              |
| 3:P:513:PHE:CD1   | 3:P:535:LYS:HB3   | 2.39                     | 0.56              |
| 1:A:1659:GLU:OE1  | 1:A:1661:HIS:NE2  | 2.37                     | 0.56              |
| 2:B:19:ASN:H      | 2:B:48:TRP:HE1    | 1.52                     | 0.56              |
| 3:C:327:ASP:O     | 3:C:333:THR:HG21  | 2.05                     | 0.56              |
| 6:H:522:PHE:HE2   | 6:H:538:ILE:HG22  | 1.70                     | 0.56              |
| 8:I:558:ARG:N     | 8:I:692:ARG:HE    | 2.02                     | 0.56              |
| 9:J:190:LEU:O     | 9:J:198:GLN:NE2   | 2.36                     | 0.56              |
| 10:L:179:MET:HG3  | 10:L:180:TYR:HD2  | 1.69                     | 0.56              |
| 12:N:15:ARG:O     | 12:N:19:GLU:N     | 2.25                     | 0.56              |
| 12:N:567:SER:OG   | 12:N:595:ILE:N    | 2.38                     | 0.56              |
| 12:N:638:LYS:HE2  | 12:N:641:LEU:HD12 | 1.86                     | 0.56              |
| 3:P:187:GLU:H     | 3:P:187:GLU:CD    | 2.08                     | 0.56              |
| 15:X:262:GLU:HA   | 15:X:267:LEU:O    | 2.05                     | 0.56              |
| 15:X:407:LEU:HD11 | 15:X:437:LEU:HD21 | 1.88                     | 0.56              |
| 1:A:1141:VAL:HG11 | 1:A:1608:HIS:CD2  | 2.40                     | 0.56              |
| 2:B:6:LYS:HB3     | 12:N:645:THR:HG23 | 1.88                     | 0.56              |
| 8:I:25:PHE:HE2    | 8:I:71:LEU:H      | 1.51                     | 0.56              |
| 9:J:270:VAL:O     | 9:J:274:THR:HG23  | 2.06                     | 0.56              |
| 12:N:629:LEU:HB3  | 12:N:633:ARG:NH1  | 2.20                     | 0.56              |
| 15:X:495:GLY:HA3  | 15:X:518:PHE:CE2  | 2.40                     | 0.56              |
| 15:Y:396:PHE:O    | 15:Y:400:ILE:HG23 | 2.06                     | 0.56              |
| 15:Y:510:VAL:HG13 | 15:Y:513:ARG:HH21 | 1.70                     | 0.56              |
| 1:A:451:GLN:HB2   | 1:A:475:PRO:HA    | 1.86                     | 0.56              |
| 6:F:147:PHE:HE1   | 6:H:8:VAL:HG12    | 1.70                     | 0.56              |
| 8:I:231:VAL:HG13  | 8:I:556:LEU:HB2   | 1.87                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:K:49:LEU:HD12   | 9:K:50:THR:HG23   | 1.88                     | 0.56              |
| 9:K:465:LEU:HG    | 9:K:488:ILE:HG21  | 1.87                     | 0.56              |
| 10:L:49:ASN:HB3   | 10:L:51:GLU:CD    | 2.26                     | 0.56              |
| 12:N:422:GLU:OE2  | 12:N:426:ARG:NE   | 2.38                     | 0.56              |
| 13:O:513:LYS:HG2  | 13:O:546:ARG:HH21 | 1.70                     | 0.56              |
| 3:P:227:THR:O     | 3:P:230:LYS:N     | 2.31                     | 0.56              |
| 15:Y:92:GLU:OE1   | 15:Y:96:ALA:N     | 2.37                     | 0.56              |
| 1:A:1856:LEU:HD13 | 1:A:1892:HIS:HE1  | 1.70                     | 0.56              |
| 6:F:517:GLN:HA    | 6:F:520:ARG:HH11  | 1.71                     | 0.56              |
| 8:I:572:PHE:CZ    | 8:I:588:PHE:HA    | 2.40                     | 0.56              |
| 8:I:621:GLY:H     | 8:I:705:MET:C     | 2.09                     | 0.56              |
| 9:J:24:PHE:O      | 9:J:28:LYS:HG2    | 2.05                     | 0.56              |
| 9:K:210:LYS:HG2   | 9:K:213:ASN:HD22  | 1.71                     | 0.56              |
| 13:O:294:GLU:HA   | 13:O:298:ARG:HH11 | 1.71                     | 0.56              |
| 15:X:168:THR:OG1  | 15:X:171:ILE:HG12 | 2.05                     | 0.56              |
| 15:X:453:GLU:OE2  | 15:X:488:ARG:NH1  | 2.38                     | 0.56              |
| 15:Y:394:ILE:HG22 | 15:Y:397:ARG:NH2  | 2.21                     | 0.56              |
| 1:A:76:LEU:HG     | 1:A:92:GLU:HB3    | 1.87                     | 0.56              |
| 1:A:1281:PRO:HB2  | 1:A:1349:SER:HB2  | 1.88                     | 0.56              |
| 3:C:33:LYS:HD2    | 3:C:62:LEU:HB2    | 1.86                     | 0.56              |
| 3:C:298:GLU:OE2   | 3:P:101:ARG:NH2   | 2.39                     | 0.56              |
| 12:N:704:VAL:HA   | 12:N:719:GLU:HG2  | 1.86                     | 0.56              |
| 13:O:637:PRO:HB2  | 13:O:674:SER:OG   | 2.06                     | 0.56              |
| 15:X:51:SER:O     | 15:X:54:ARG:HB3   | 2.06                     | 0.56              |
| 15:X:413:LEU:HD12 | 15:X:414:ILE:HG13 | 1.88                     | 0.56              |
| 1:A:275:LYS:O     | 1:A:277:GLU:N     | 2.39                     | 0.56              |
| 3:C:148:ASN:HB3   | 3:C:151:LEU:HG    | 1.87                     | 0.56              |
| 9:J:190:LEU:C     | 9:J:198:GLN:HE22  | 2.09                     | 0.56              |
| 9:K:441:VAL:HB    | 9:K:474:LEU:HD22  | 1.87                     | 0.56              |
| 15:X:383:LEU:HG   | 15:X:388:ARG:HB2  | 1.86                     | 0.56              |
| 15:Y:287:ASN:O    | 15:Y:291:VAL:HG23 | 2.05                     | 0.56              |
| 1:A:763:PHE:CD1   | 1:A:793:LEU:HD22  | 2.41                     | 0.56              |
| 1:A:985:LYS:HD3   | 1:A:1698:TYR:CZ   | 2.41                     | 0.56              |
| 1:A:1195:ASP:O    | 1:A:1198:THR:OG1  | 2.19                     | 0.56              |
| 1:A:1631:TYR:HE2  | 1:A:1709:LYS:HE2  | 1.72                     | 0.56              |
| 3:C:372:GLY:HA3   | 3:C:388:TYR:CE1   | 2.41                     | 0.56              |
| 6:F:140:LYS:HE3   | 6:F:144:LEU:HD11  | 1.87                     | 0.56              |
| 8:I:665:LEU:HG    | 8:I:713:LEU:HG    | 1.87                     | 0.56              |
| 9:K:90:LEU:HB2    | 9:K:139:ILE:HG21  | 1.88                     | 0.56              |
| 10:L:174:THR:O    | 10:L:176:ASP:N    | 2.39                     | 0.56              |
| 15:X:194:GLU:HA   | 15:X:197:ARG:HG2  | 1.88                     | 0.56              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:254:SER:OG    | 1:A:271:LEU:HB2   | 2.06                     | 0.55              |
| 1:A:975:CYS:SG    | 1:A:983:LEU:HB3   | 2.47                     | 0.55              |
| 1:A:1086:MET:HE1  | 1:A:1560:MET:HG3  | 1.87                     | 0.55              |
| 2:B:7:CYS:SG      | 2:B:8:TRP:N       | 2.79                     | 0.55              |
| 3:C:185:VAL:O     | 3:C:189:ILE:HG13  | 2.05                     | 0.55              |
| 9:J:333:TYR:O     | 9:J:337:TRP:HD1   | 1.88                     | 0.55              |
| 9:K:400:GLU:OE2   | 9:K:431:LYS:NZ    | 2.28                     | 0.55              |
| 12:N:811:SER:OG   | 12:N:816:ARG:NE   | 2.29                     | 0.55              |
| 3:P:111:SER:OG    | 3:P:112:LYS:N     | 2.37                     | 0.55              |
| 8:I:168:LEU:HB3   | 8:I:253:ARG:HH12  | 1.69                     | 0.55              |
| 8:I:317:LEU:HD13  | 8:I:320:LEU:HD13  | 1.87                     | 0.55              |
| 8:I:619:LYS:HB2   | 8:I:702:THR:HG22  | 1.88                     | 0.55              |
| 3:P:192:PHE:HB3   | 3:P:209:LEU:HD22  | 1.87                     | 0.55              |
| 1:A:1167:GLU:HG2  | 1:A:1168:LEU:H    | 1.72                     | 0.55              |
| 1:A:1641:THR:OG1  | 1:A:1642:GLN:N    | 2.36                     | 0.55              |
| 1:A:1725:ASN:C    | 1:A:1727:ASN:H    | 2.08                     | 0.55              |
| 15:Y:384:ARG:HG3  | 15:Y:416:CYS:SG   | 2.47                     | 0.55              |
| 1:A:1849:LYS:HA   | 1:A:1852:ILE:HD12 | 1.87                     | 0.55              |
| 10:L:126:ASP:OD1  | 10:L:130:LYS:HB2  | 2.07                     | 0.55              |
| 13:O:525:TYR:CZ   | 13:O:553:ALA:HB1  | 2.41                     | 0.55              |
| 3:P:477:HIS:CD2   | 3:P:480:LEU:HD22  | 2.41                     | 0.55              |
| 15:X:465:LEU:HG   | 15:X:482:LYS:HD2  | 1.87                     | 0.55              |
| 3:C:547:LYS:O     | 3:C:551:ARG:HG2   | 2.07                     | 0.55              |
| 8:I:22:GLU:OE1    | 8:I:22:GLU:N      | 2.39                     | 0.55              |
| 10:L:82:ASP:OD1   | 10:L:85:SER:OG    | 2.21                     | 0.55              |
| 15:X:331:LEU:HD12 | 15:X:334:ILE:HD11 | 1.88                     | 0.55              |
| 15:X:375:ALA:HA   | 15:X:378:LEU:HD12 | 1.89                     | 0.55              |
| 1:A:95:VAL:HG22   | 1:A:100:VAL:HG22  | 1.87                     | 0.55              |
| 1:A:1155:SER:HB2  | 1:A:1184:HIS:CE1  | 2.42                     | 0.55              |
| 6:H:567:PRO:O     | 6:H:571:CYS:HB2   | 2.06                     | 0.55              |
| 8:I:361:TYR:O     | 8:I:364:SER:OG    | 2.21                     | 0.55              |
| 8:I:750:ASP:OD1   | 8:I:751:GLU:N     | 2.38                     | 0.55              |
| 12:N:480:TRP:O    | 12:N:480:TRP:CG   | 2.59                     | 0.55              |
| 3:P:151:LEU:HB3   | 3:P:182:LEU:HD11  | 1.89                     | 0.55              |
| 15:Y:265:SER:OG   | 15:Y:268:ARG:NH2  | 2.39                     | 0.55              |
| 2:B:4:LYS:NZ      | 12:N:649:GLU:OE1  | 2.38                     | 0.55              |
| 8:I:202:ALA:O     | 8:I:221:THR:OG1   | 2.22                     | 0.55              |
| 9:J:258:MET:HE1   | 9:J:268:LEU:HD23  | 1.88                     | 0.55              |
| 13:O:516:PHE:CE1  | 13:O:546:ARG:HD2  | 2.42                     | 0.55              |
| 3:P:167:LEU:HD23  | 3:P:172:LEU:HD13  | 1.89                     | 0.55              |
| 15:X:443:THR:O    | 15:X:446:LEU:HG   | 2.07                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:Y:532:TYR:CD2  | 15:Y:545:SER:HA   | 2.42                     | 0.55              |
| 1:A:1063:ILE:HG23 | 1:A:1066:LYS:HE3  | 1.88                     | 0.55              |
| 4:D:45:ALA:HA     | 3:P:378:MET:SD    | 2.47                     | 0.55              |
| 5:E:82:LEU:O      | 5:E:86:VAL:HG23   | 2.07                     | 0.55              |
| 6:H:121:LEU:HB3   | 6:H:137:CYS:SG    | 2.47                     | 0.55              |
| 12:N:704:VAL:HA   | 12:N:719:GLU:CG   | 2.37                     | 0.55              |
| 12:N:806:GLN:OE1  | 16:S:499:ARG:NH1  | 2.40                     | 0.55              |
| 3:P:151:LEU:HD23  | 3:P:154:LEU:HD13  | 1.87                     | 0.55              |
| 3:P:334:CYS:SG    | 3:P:357:ALA:HB2   | 2.47                     | 0.55              |
| 15:X:445:THR:O    | 15:X:449:THR:HG23 | 2.07                     | 0.55              |
| 3:C:78:GLU:OE1    | 3:C:78:GLU:N      | 2.37                     | 0.55              |
| 6:F:533:VAL:HG12  | 6:F:559:LEU:HD11  | 1.88                     | 0.55              |
| 6:F:741:PHE:HB3   | 6:F:745:LYS:HE2   | 1.89                     | 0.55              |
| 8:I:220:VAL:HA    | 8:I:232:SER:O     | 2.07                     | 0.55              |
| 12:N:162:PHE:HB2  | 12:N:255:ARG:HH12 | 1.71                     | 0.55              |
| 12:N:748:GLU:O    | 12:N:752:LEU:HD12 | 2.07                     | 0.55              |
| 1:A:152:CYS:HA    | 1:A:161:MET:HG3   | 1.88                     | 0.55              |
| 2:B:18:ALA:HA     | 2:B:48:TRP:HZ2    | 1.72                     | 0.55              |
| 3:C:31:GLU:OE1    | 3:C:34:LYS:NZ     | 2.36                     | 0.55              |
| 9:J:466:ASP:HA    | 9:J:469:ARG:NH1   | 2.22                     | 0.55              |
| 1:A:156:SER:OG    | 1:A:157:SER:N     | 2.39                     | 0.54              |
| 1:A:769:VAL:HG13  | 1:A:866:ILE:HD13  | 1.89                     | 0.54              |
| 8:I:24:ILE:HA     | 8:I:569:LEU:HD22  | 1.88                     | 0.54              |
| 8:I:720:GLN:N     | 8:I:734:LEU:O     | 2.32                     | 0.54              |
| 9:J:496:GLU:OE1   | 9:J:496:GLU:N     | 2.31                     | 0.54              |
| 13:O:390:PHE:HE1  | 13:O:431:LEU:HD22 | 1.71                     | 0.54              |
| 13:O:750:PRO:O    | 13:O:751:LEU:HG   | 2.06                     | 0.54              |
| 15:X:530:ASP:O    | 15:X:534:ILE:HG12 | 2.07                     | 0.54              |
| 1:A:492:GLU:N     | 1:A:496:ASN:O     | 2.37                     | 0.54              |
| 1:A:1086:MET:CE   | 1:A:1560:MET:HG3  | 2.38                     | 0.54              |
| 1:A:1463:TYR:HE2  | 1:A:1511:ASN:HB3  | 1.70                     | 0.54              |
| 1:A:1679:ASP:N    | 1:A:1679:ASP:OD1  | 2.36                     | 0.54              |
| 2:B:25:ILE:HG12   | 2:B:74:PRO:HG2    | 1.89                     | 0.54              |
| 3:C:432:ASP:OD1   | 3:C:434:ARG:NH1   | 2.41                     | 0.54              |
| 8:I:183:GLY:HA2   | 8:I:201:ILE:O     | 2.08                     | 0.54              |
| 8:I:272:MET:SD    | 8:I:348:VAL:HG23  | 2.47                     | 0.54              |
| 9:K:221:PRO:O     | 9:K:225:ASP:N     | 2.40                     | 0.54              |
| 11:M:5:VAL:HG13   | 11:M:7:ARG:HH21   | 1.71                     | 0.54              |
| 13:O:486:ALA:O    | 13:O:490:LEU:HG   | 2.07                     | 0.54              |
| 7:W:13:LEU:HA     | 7:W:16:ILE:HG13   | 1.89                     | 0.54              |
| 15:Y:60:LEU:HD23  | 15:Y:79:LEU:HD11  | 1.89                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:B:12:ALA:HA     | 12:N:637:TRP:O    | 2.06                     | 0.54              |
| 8:I:33:ASP:OD1    | 8:I:34:LEU:N      | 2.40                     | 0.54              |
| 8:I:221:THR:HG22  | 8:I:232:SER:HB3   | 1.90                     | 0.54              |
| 8:I:288:THR:HA    | 8:I:291:VAL:HG22  | 1.89                     | 0.54              |
| 9:J:90:LEU:HB2    | 9:J:139:ILE:HG21  | 1.89                     | 0.54              |
| 9:K:514:PHE:HE2   | 7:W:11:LEU:HD13   | 1.72                     | 0.54              |
| 12:N:392:ASN:OD1  | 16:S:499:ARG:NH2  | 2.40                     | 0.54              |
| 15:X:76:LYS:O     | 15:X:80:LEU:HG    | 2.07                     | 0.54              |
| 15:Y:50:HIS:HA    | 15:Y:53:VAL:HG22  | 1.88                     | 0.54              |
| 15:Y:73:PRO:HB2   | 15:Y:74:PRO:HD3   | 1.88                     | 0.54              |
| 15:Y:226:VAL:HA   | 15:Y:229:THR:HG23 | 1.88                     | 0.54              |
| 15:Y:311:TYR:CE2  | 15:Y:327:LEU:HD22 | 2.42                     | 0.54              |
| 15:Y:532:TYR:CZ   | 15:Y:548:GLY:HA3  | 2.43                     | 0.54              |
| 1:A:1053:GLN:HB3  | 1:A:1062:PHE:CD1  | 2.42                     | 0.54              |
| 3:C:361:ASN:HD22  | 3:C:363:ARG:N     | 2.06                     | 0.54              |
| 3:C:392:ILE:HD13  | 3:C:402:TRP:CE2   | 2.41                     | 0.54              |
| 6:F:655:GLU:OE2   | 6:F:705:CYS:N     | 2.40                     | 0.54              |
| 8:I:282:GLN:HA    | 12:N:686:LYS:HE2  | 1.89                     | 0.54              |
| 9:J:23:LEU:HD11   | 9:J:50:THR:HG21   | 1.90                     | 0.54              |
| 9:K:86:HIS:O      | 9:K:87:GLN:HB3    | 2.07                     | 0.54              |
| 12:N:292:TRP:CE3  | 12:N:293:ILE:HD13 | 2.42                     | 0.54              |
| 12:N:564:MET:O    | 12:N:568:ARG:HG3  | 2.08                     | 0.54              |
| 13:O:274:LEU:HD11 | 13:O:306:ASN:HD21 | 1.73                     | 0.54              |
| 1:A:586:SER:OG    | 1:A:587:ILE:N     | 2.40                     | 0.54              |
| 2:B:16:TRP:CZ2    | 2:B:45:PRO:HB3    | 2.43                     | 0.54              |
| 2:B:26:CYS:HB2    | 2:B:59:CYS:SG     | 2.48                     | 0.54              |
| 3:C:270:ALA:HB1   | 3:C:286:PHE:CE2   | 2.43                     | 0.54              |
| 6:F:705:CYS:SG    | 6:F:706:LYS:N     | 2.80                     | 0.54              |
| 6:H:734:PRO:HG2   | 6:H:735:LYS:HD2   | 1.89                     | 0.54              |
| 8:I:622:SER:OG    | 8:I:706:HIS:HB3   | 2.06                     | 0.54              |
| 9:K:236:SER:O     | 9:K:240:ARG:HG3   | 2.08                     | 0.54              |
| 13:O:665:PHE:CZ   | 13:O:669:LYS:HD2  | 2.42                     | 0.54              |
| 15:X:353:LYS:O    | 15:X:355:TYR:N    | 2.41                     | 0.54              |
| 15:Y:475:TYR:HD2  | 15:Y:478:ALA:H    | 1.54                     | 0.54              |
| 3:C:373:HIS:NE2   | 3:C:377:GLU:OE2   | 2.40                     | 0.54              |
| 6:F:79:CYS:SG     | 6:F:87:GLU:HB2    | 2.47                     | 0.54              |
| 6:H:120:LEU:O     | 6:H:124:VAL:HG23  | 2.07                     | 0.54              |
| 9:J:514:PHE:HA    | 9:J:517:THR:HG22  | 1.89                     | 0.54              |
| 9:K:441:VAL:O     | 9:K:444:TRP:N     | 2.41                     | 0.54              |
| 1:A:489:LEU:HD21  | 1:A:497:LEU:HD13  | 1.89                     | 0.54              |
| 3:C:513:PHE:HB3   | 3:C:536:CYS:HB3   | 1.90                     | 0.54              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 8:I:168:LEU:HB3  | 8:I:253:ARG:NH1   | 2.23                     | 0.54              |
| 9:J:482:TYR:HB3  | 9:J:505:ALA:HB2   | 1.90                     | 0.54              |
| 12:N:811:SER:HG  | 12:N:816:ARG:HE   | 1.53                     | 0.54              |
| 3:P:239:THR:HG21 | 3:P:268:GLN:OE1   | 2.07                     | 0.54              |
| 3:P:277:ARG:NH1  | 17:Q:498:MET:HE1  | 2.20                     | 0.54              |
| 3:P:388:TYR:O    | 3:P:392:ILE:HG23  | 2.07                     | 0.54              |
| 15:X:399:ALA:O   | 15:X:403:ALA:N    | 2.39                     | 0.54              |
| 15:X:408:ASP:O   | 15:X:411:GLU:HG3  | 2.08                     | 0.54              |
| 1:A:1825:SER:O   | 1:A:1829:ARG:NH2  | 2.41                     | 0.54              |
| 2:B:10:GLY:O     | 12:N:594:VAL:HG22 | 2.08                     | 0.54              |
| 2:B:56:HIS:HB2   | 2:B:59:CYS:HB2    | 1.89                     | 0.54              |
| 3:C:141:LEU:HD23 | 3:C:141:LEU:H     | 1.73                     | 0.54              |
| 3:C:494:ILE:O    | 3:C:497:ILE:HG22  | 2.08                     | 0.54              |
| 6:H:142:LEU:HD21 | 6:H:151:PRO:CG    | 2.38                     | 0.54              |
| 8:I:255:PHE:HA   | 8:I:258:ILE:HD12  | 1.89                     | 0.54              |
| 8:I:639:LEU:HD12 | 8:I:720:GLN:HE22  | 1.71                     | 0.54              |
| 8:I:713:LEU:HD23 | 8:I:714:LEU:N     | 2.22                     | 0.54              |
| 3:P:341:TYR:CD2  | 3:P:349:LYS:HB3   | 2.43                     | 0.54              |
| 1:A:23:PHE:CD1   | 1:A:111:LEU:HD13  | 2.43                     | 0.54              |
| 1:A:773:LEU:O    | 1:A:776:ASN:N     | 2.40                     | 0.54              |
| 1:A:773:LEU:HB3  | 1:A:783:ILE:HD11  | 1.89                     | 0.54              |
| 1:A:1194:HIS:O   | 1:A:1198:THR:HG23 | 2.08                     | 0.54              |
| 3:C:300:MET:HG3  | 3:C:323:LEU:HD11  | 1.90                     | 0.54              |
| 7:G:3:ARG:HG2    | 9:J:369:LEU:HD11  | 1.89                     | 0.54              |
| 8:I:225:THR:OG1  | 8:I:226:ASN:OD1   | 2.24                     | 0.54              |
| 8:I:523:HIS:HB3  | 8:I:527:ARG:HH12  | 1.73                     | 0.54              |
| 9:K:300:VAL:HG12 | 9:K:333:TYR:OH    | 2.08                     | 0.54              |
| 12:N:535:PRO:O   | 12:N:539:ILE:HG12 | 2.08                     | 0.54              |
| 12:N:670:PHE:HZ  | 12:N:713:PHE:CD1  | 2.25                     | 0.54              |
| 3:P:450:VAL:HA   | 3:P:453:LYS:HD2   | 1.90                     | 0.54              |
| 7:W:25:ASP:N     | 7:W:26:LEU:HA     | 2.21                     | 0.54              |
| 15:Y:99:LYS:HD3  | 15:Y:102:MET:SD   | 2.48                     | 0.54              |
| 1:A:412:LEU:HD22 | 1:A:468:PHE:CD1   | 2.43                     | 0.54              |
| 3:C:33:LYS:NZ    | 3:C:63:PRO:O      | 2.28                     | 0.54              |
| 8:I:561:ARG:NH2  | 8:I:589:THR:O     | 2.27                     | 0.54              |
| 8:I:721:TYR:O    | 8:I:734:LEU:N     | 2.31                     | 0.54              |
| 10:L:32:SER:O    | 10:L:33:LEU:HD23  | 2.08                     | 0.54              |
| 15:Y:72:SER:N    | 15:Y:75:GLN:OE1   | 2.33                     | 0.54              |
| 1:A:1273:LEU:O   | 1:A:1276:GLU:N    | 2.41                     | 0.53              |
| 1:A:1313:LEU:HB2 | 1:A:1316:MET:HB2  | 1.89                     | 0.53              |
| 3:C:101:ARG:NH1  | 3:P:293:ASP:OD2   | 2.41                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:D:17:TRP:HA     | 13:O:283:LEU:HD11 | 1.90                     | 0.53              |
| 8:I:56:TRP:HB2    | 8:I:98:PRO:HG3    | 1.90                     | 0.53              |
| 8:I:221:THR:O     | 8:I:232:SER:N     | 2.31                     | 0.53              |
| 9:K:285:PHE:HB2   | 9:K:308:TYR:CE1   | 2.43                     | 0.53              |
| 13:O:73:ILE:O     | 13:O:161:TYR:OH   | 2.18                     | 0.53              |
| 15:X:226:VAL:HG22 | 15:X:236:LEU:HD12 | 1.89                     | 0.53              |
| 15:X:360:TYR:HB3  | 15:X:364:LYS:NZ   | 2.23                     | 0.53              |
| 15:X:512:HIS:HB3  | 15:X:531:GLN:NE2  | 2.20                     | 0.53              |
| 1:A:1053:GLN:N    | 1:A:1053:GLN:OE1  | 2.41                     | 0.53              |
| 8:I:126:THR:O     | 8:I:130:ASN:ND2   | 2.42                     | 0.53              |
| 9:J:478:ASN:OD1   | 9:J:479:ALA:N     | 2.41                     | 0.53              |
| 12:N:531:PHE:HB3  | 12:N:533:PHE:HA   | 1.91                     | 0.53              |
| 12:N:685:VAL:HB   | 12:N:687:MET:HG2  | 1.89                     | 0.53              |
| 15:X:499:LEU:HB3  | 15:X:515:LEU:HD12 | 1.89                     | 0.53              |
| 15:Y:235:TRP:CD2  | 15:Y:267:LEU:HD21 | 2.43                     | 0.53              |
| 1:A:1523:LEU:HD21 | 1:A:1535:VAL:HG22 | 1.89                     | 0.53              |
| 6:H:77:LYS:O      | 6:H:80:VAL:N      | 2.41                     | 0.53              |
| 6:H:149:TRP:O     | 6:H:153:GLU:HG3   | 2.09                     | 0.53              |
| 8:I:706:HIS:HB2   | 8:I:708:GLU:OE1   | 2.08                     | 0.53              |
| 9:K:254:THR:HG22  | 9:K:271:HIS:CD2   | 2.42                     | 0.53              |
| 3:P:513:PHE:HD1   | 3:P:535:LYS:HB3   | 1.74                     | 0.53              |
| 15:Y:513:ARG:NH2  | 15:Y:514:ILE:HG12 | 2.24                     | 0.53              |
| 1:A:711:LEU:HA    | 1:A:716:HIS:ND1   | 2.23                     | 0.53              |
| 1:A:1473:GLY:HA2  | 1:A:1526:VAL:HG22 | 1.90                     | 0.53              |
| 6:F:157:GLU:O     | 6:F:633:ARG:NH1   | 2.42                     | 0.53              |
| 8:I:321:LEU:O     | 8:I:325:LEU:N     | 2.41                     | 0.53              |
| 8:I:520:LYS:HD3   | 8:I:524:PHE:CD2   | 2.43                     | 0.53              |
| 15:X:476:ILE:H    | 15:X:476:ILE:HD12 | 1.73                     | 0.53              |
| 1:A:926:LEU:HD12  | 1:A:929:ARG:HH22  | 1.73                     | 0.53              |
| 1:A:1047:VAL:HG21 | 1:A:1073:LEU:HD13 | 1.90                     | 0.53              |
| 6:F:662:LEU:HA    | 6:F:665:ASN:O     | 2.09                     | 0.53              |
| 8:I:441:THR:HG23  | 8:I:444:ASP:H     | 1.73                     | 0.53              |
| 13:O:225:ASN:ND2  | 13:O:461:ASN:HD21 | 2.05                     | 0.53              |
| 13:O:419:ASP:OD2  | 13:O:419:ASP:N    | 2.42                     | 0.53              |
| 3:P:216:LYS:NZ    | 3:P:242:GLN:HB2   | 2.24                     | 0.53              |
| 15:X:349:SER:OG   | 15:X:357:ARG:HB3  | 2.08                     | 0.53              |
| 15:Y:77:TYR:HB2   | 15:Y:106:GLN:HG3  | 1.91                     | 0.53              |
| 15:Y:87:LEU:HD11  | 15:Y:99:LYS:HG3   | 1.90                     | 0.53              |
| 15:Y:274:LEU:HD23 | 15:Y:297:ALA:HA   | 1.91                     | 0.53              |
| 15:Y:418:LEU:HD13 | 15:Y:423:ILE:HG22 | 1.89                     | 0.53              |
| 1:A:435:ASP:N     | 1:A:435:ASP:OD1   | 2.41                     | 0.53              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:1626:THR:O   | 1:A:1628:THR:HG23 | 2.09                     | 0.53              |
| 3:C:483:SER:OG   | 3:C:515:TYR:OH    | 2.21                     | 0.53              |
| 6:H:16:LEU:HD22  | 6:H:50:ARG:NH1    | 2.21                     | 0.53              |
| 12:N:411:ASP:C   | 12:N:413:SER:H    | 2.10                     | 0.53              |
| 13:O:592:TRP:HB3 | 13:O:753:ASN:OD1  | 2.07                     | 0.53              |
| 13:O:649:GLU:OE1 | 13:O:649:GLU:N    | 2.42                     | 0.53              |
| 3:P:449:LEU:O    | 3:P:452:ALA:N     | 2.42                     | 0.53              |
| 3:P:453:LYS:HE2  | 3:P:480:LEU:HD11  | 1.90                     | 0.53              |
| 7:W:8:ARG:HG2    | 7:W:9:LEU:O       | 2.08                     | 0.53              |
| 15:Y:310:VAL:O   | 15:Y:314:LEU:HG   | 2.08                     | 0.53              |
| 1:A:172:SER:C    | 1:A:173:LEU:HD22  | 2.29                     | 0.53              |
| 1:A:802:TYR:CZ   | 1:A:841:PRO:HA    | 2.43                     | 0.53              |
| 1:A:808:ARG:NH2  | 1:A:1871:TYR:OH   | 2.33                     | 0.53              |
| 6:F:747:TYR:HA   | 6:F:750:LEU:HB2   | 1.90                     | 0.53              |
| 6:H:600:TYR:HE2  | 6:H:602:TYR:HB3   | 1.74                     | 0.53              |
| 9:K:230:ASN:HB3  | 9:K:233:VAL:HG12  | 1.90                     | 0.53              |
| 3:P:375:TYR:CD2  | 3:P:383:ALA:HB1   | 2.43                     | 0.53              |
| 15:X:87:LEU:HD12 | 15:X:92:GLU:HB3   | 1.91                     | 0.53              |
| 15:Y:85:ASP:OD1  | 15:Y:100:TYR:OH   | 2.27                     | 0.53              |
| 1:A:1852:ILE:O   | 1:A:1855:THR:OG1  | 2.24                     | 0.53              |
| 3:C:510:SER:O    | 3:C:513:PHE:N     | 2.41                     | 0.53              |
| 4:D:54:ILE:HG21  | 3:P:389:ARG:HH12  | 1.73                     | 0.53              |
| 6:F:719:TYR:HB3  | 6:F:750:LEU:HD21  | 1.91                     | 0.53              |
| 6:H:679:GLN:HA   | 6:H:682:LEU:HD12  | 1.91                     | 0.53              |
| 8:I:74:ARG:HB2   | 8:I:79:LEU:HB3    | 1.91                     | 0.53              |
| 8:I:555:PRO:HB2  | 8:I:692:ARG:HG3   | 1.91                     | 0.53              |
| 9:K:256:VAL:O    | 9:K:259:GLU:HG2   | 2.09                     | 0.53              |
| 12:N:65:HIS:HB2  | 12:N:66:GLY:HA2   | 1.89                     | 0.53              |
| 15:X:424:ARG:O   | 15:X:428:VAL:HG23 | 2.09                     | 0.53              |
| 1:A:435:ASP:OD2  | 1:A:437:CYS:HB2   | 2.09                     | 0.53              |
| 1:A:1398:PHE:CD1 | 10:L:70:ARG:HG3   | 2.44                     | 0.53              |
| 1:A:1775:LEU:O   | 1:A:1779:VAL:HG23 | 2.08                     | 0.53              |
| 3:C:209:LEU:O    | 3:C:213:ILE:HG12  | 2.08                     | 0.53              |
| 6:H:104:ASP:O    | 6:H:108:THR:HG23  | 2.08                     | 0.53              |
| 6:H:582:GLU:OE2  | 10:L:18:ARG:HG2   | 2.09                     | 0.53              |
| 9:K:264:HIS:CD2  | 9:K:266:SER:H     | 2.13                     | 0.53              |
| 9:K:270:VAL:O    | 9:K:274:THR:HG23  | 2.09                     | 0.53              |
| 10:L:74:VAL:HG11 | 10:L:158:ILE:HD11 | 1.90                     | 0.53              |
| 12:N:421:CYS:SG  | 12:N:425:ARG:NH1  | 2.81                     | 0.53              |
| 12:N:703:GLY:HA2 | 12:N:705:LEU:H    | 1.72                     | 0.53              |
| 12:N:706:ARG:HG2 | 12:N:707:GLU:N    | 2.24                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:579:GLN:O     | 1:A:583:TYR:N     | 2.42                     | 0.53              |
| 6:F:660:LYS:O     | 6:F:663:ASP:HB3   | 2.09                     | 0.53              |
| 6:H:170:PHE:O     | 6:H:174:GLN:N     | 2.42                     | 0.53              |
| 6:H:765:ASP:OD2   | 15:X:397:ARG:NH1  | 2.40                     | 0.53              |
| 9:J:232:ASP:OD2   | 9:K:28:LYS:NZ     | 2.38                     | 0.53              |
| 10:L:53:TYR:HA    | 10:L:153:MET:O    | 2.09                     | 0.53              |
| 12:N:162:PHE:HB2  | 12:N:255:ARG:NH2  | 2.22                     | 0.53              |
| 1:A:845:TYR:HB3   | 1:A:1812:TRP:CH2  | 2.44                     | 0.52              |
| 6:F:147:PHE:CE1   | 6:H:8:VAL:HG12    | 2.44                     | 0.52              |
| 6:F:645:TYR:HB3   | 6:F:654:ALA:HB2   | 1.91                     | 0.52              |
| 6:F:737:SER:HA    | 6:F:740:TYR:CD2   | 2.44                     | 0.52              |
| 6:F:740:TYR:HA    | 6:F:743:ILE:HD12  | 1.91                     | 0.52              |
| 6:H:461:GLY:O     | 6:H:464:SER:OG    | 2.26                     | 0.52              |
| 6:H:762:TRP:CD1   | 15:X:397:ARG:CZ   | 2.92                     | 0.52              |
| 9:J:151:TYR:HA    | 9:J:154:LYS:HD2   | 1.91                     | 0.52              |
| 9:J:275:LEU:HD11  | 9:J:283:GLU:HG3   | 1.91                     | 0.52              |
| 9:K:84:LYS:HA     | 9:K:86:HIS:NE2    | 2.24                     | 0.52              |
| 10:L:31:TRP:CZ3   | 10:L:66:ILE:HD11  | 2.44                     | 0.52              |
| 12:N:386:LEU:HD22 | 12:N:399:LEU:CD2  | 2.37                     | 0.52              |
| 12:N:698:VAL:HG13 | 12:N:728:VAL:HB   | 1.91                     | 0.52              |
| 13:O:663:ALA:O    | 13:O:667:VAL:HG23 | 2.09                     | 0.52              |
| 6:F:692:LEU:O     | 6:F:709:ARG:NH2   | 2.34                     | 0.52              |
| 8:I:88:LYS:O      | 8:I:106:VAL:HG22  | 2.08                     | 0.52              |
| 8:I:193:PHE:CE1   | 8:I:195:ILE:HA    | 2.44                     | 0.52              |
| 8:I:229:SER:N     | 8:I:559:ASP:O     | 2.29                     | 0.52              |
| 8:I:602:ARG:HG2   | 8:I:614:GLY:HA2   | 1.92                     | 0.52              |
| 9:K:203:PHE:HA    | 9:K:206:GLU:OE2   | 2.09                     | 0.52              |
| 9:K:261:ASP:OD1   | 9:K:263:PHE:N     | 2.42                     | 0.52              |
| 12:N:411:ASP:OD1  | 12:N:413:SER:OG   | 2.13                     | 0.52              |
| 15:X:242:ALA:HA   | 15:X:257:THR:HG21 | 1.91                     | 0.52              |
| 15:X:390:GLN:O    | 15:X:394:ILE:HG12 | 2.08                     | 0.52              |
| 15:Y:85:ASP:OD1   | 15:Y:141:LYS:HD3  | 2.09                     | 0.52              |
| 15:Y:444:LEU:O    | 15:Y:447:LEU:HG   | 2.09                     | 0.52              |
| 1:A:12:ILE:O      | 1:A:510:PHE:N     | 2.42                     | 0.52              |
| 1:A:1652:MET:O    | 1:A:1655:THR:OG1  | 2.28                     | 0.52              |
| 3:C:254:LEU:O     | 3:C:259:PHE:HB2   | 2.10                     | 0.52              |
| 8:I:266:ASN:ND2   | 8:I:530:GLU:OE2   | 2.27                     | 0.52              |
| 9:J:268:LEU:O     | 9:J:272:ILE:HG12  | 2.10                     | 0.52              |
| 9:J:465:LEU:HD13  | 9:J:492:MET:HE1   | 1.91                     | 0.52              |
| 9:K:302:TRP:HB2   | 9:K:326:ALA:HB2   | 1.90                     | 0.52              |
| 10:L:13:PRO:O     | 10:L:16:LEU:HB3   | 2.10                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:258:ALA:HA   | 12:N:261:VAL:HG22 | 1.92                     | 0.52              |
| 1:A:749:LEU:HD12  | 1:A:750:ASP:H     | 1.75                     | 0.52              |
| 1:A:845:TYR:HB3   | 1:A:1812:TRP:CZ3  | 2.45                     | 0.52              |
| 1:A:848:VAL:HA    | 1:A:851:CYS:SG    | 2.49                     | 0.52              |
| 1:A:849:SER:O     | 1:A:852:LEU:HG    | 2.09                     | 0.52              |
| 8:I:46:LEU:HD12   | 8:I:47:HIS:H      | 1.73                     | 0.52              |
| 8:I:116:MET:SD    | 8:I:210:LEU:HB3   | 2.49                     | 0.52              |
| 9:K:478:ASN:HD21  | 7:W:8:ARG:NH2     | 2.04                     | 0.52              |
| 12:N:524:ALA:HA   | 12:N:601:TRP:HZ3  | 1.75                     | 0.52              |
| 3:P:85:ASP:O      | 3:P:88:THR:OG1    | 2.27                     | 0.52              |
| 15:X:414:ILE:HA   | 15:X:417:TYR:CD1  | 2.44                     | 0.52              |
| 15:Y:180:LYS:HG2  | 15:Y:188:SER:OG   | 2.09                     | 0.52              |
| 15:Y:458:GLN:OE1  | 15:Y:458:GLN:N    | 2.42                     | 0.52              |
| 15:Y:518:PHE:O    | 15:Y:522:VAL:HG23 | 2.10                     | 0.52              |
| 1:A:1640:GLY:HA2  | 1:A:1644:TYR:CE2  | 2.44                     | 0.52              |
| 3:C:368:TRP:CE2   | 3:C:390:HIS:HB3   | 2.45                     | 0.52              |
| 6:F:113:SER:O     | 6:F:117:THR:HG23  | 2.08                     | 0.52              |
| 6:F:149:TRP:CD1   | 6:H:26:PHE:CG     | 2.98                     | 0.52              |
| 8:I:570:PHE:C     | 8:I:572:PHE:H     | 2.11                     | 0.52              |
| 9:K:518:MET:HE2   | 7:W:16:ILE:HG12   | 1.92                     | 0.52              |
| 12:N:131:LEU:HB3  | 12:N:135:TRP:CZ3  | 2.45                     | 0.52              |
| 12:N:703:GLY:HA2  | 12:N:705:LEU:N    | 2.25                     | 0.52              |
| 1:A:76:LEU:HD22   | 1:A:606:ARG:HH12  | 1.74                     | 0.52              |
| 2:B:8:TRP:N       | 12:N:590:GLY:O    | 2.43                     | 0.52              |
| 3:C:45:GLU:OE1    | 3:C:87:TYR:OH     | 2.21                     | 0.52              |
| 6:H:148:LEU:HB2   | 6:H:151:PRO:HG3   | 1.91                     | 0.52              |
| 13:O:123:GLU:N    | 13:O:124:PRO:HA   | 2.25                     | 0.52              |
| 15:X:53:VAL:HA    | 15:X:56:LEU:HD12  | 1.90                     | 0.52              |
| 15:X:466:ASP:OD1  | 15:X:482:LYS:NZ   | 2.33                     | 0.52              |
| 15:Y:58:SER:O     | 15:Y:62:THR:HG23  | 2.09                     | 0.52              |
| 15:Y:510:VAL:CG1  | 15:Y:513:ARG:HH21 | 2.23                     | 0.52              |
| 1:A:1268:HIS:O    | 1:A:1272:VAL:HG23 | 2.10                     | 0.52              |
| 3:C:550:LEU:HA    | 3:C:553:ILE:HG12  | 1.91                     | 0.52              |
| 6:F:585:ILE:HG12  | 11:M:66:HIS:ND1   | 2.25                     | 0.52              |
| 6:H:742:LEU:O     | 6:H:746:VAL:HG23  | 2.10                     | 0.52              |
| 8:I:719:ALA:HA    | 8:I:735:SER:HA    | 1.90                     | 0.52              |
| 11:M:1:MET:N      | 3:P:48:LEU:HD11   | 2.25                     | 0.52              |
| 12:N:333:TYR:HH   | 12:N:363:TYR:HE1  | 1.57                     | 0.52              |
| 12:N:414:MET:HG3  | 12:N:417:LEU:HD13 | 1.90                     | 0.52              |
| 12:N:644:VAL:HG22 | 12:N:661:PRO:HG3  | 1.90                     | 0.52              |
| 3:P:187:GLU:OE2   | 3:P:187:GLU:N     | 2.27                     | 0.52              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:244:ILE:HD12  | 3:P:244:ILE:H     | 1.74                     | 0.52              |
| 15:X:146:TYR:O    | 15:X:150:LYS:N    | 2.43                     | 0.52              |
| 1:A:215:HIS:N     | 1:A:218:ASP:OD2   | 2.37                     | 0.52              |
| 1:A:226:LYS:HZ3   | 1:A:234:SER:N     | 2.08                     | 0.52              |
| 1:A:1184:HIS:O    | 1:A:1186:THR:N    | 2.42                     | 0.52              |
| 1:A:1261:TYR:O    | 1:A:1264:THR:HG22 | 2.10                     | 0.52              |
| 1:A:1382:SER:O    | 1:A:1385:ASP:HB3  | 2.10                     | 0.52              |
| 6:F:526:ARG:NH1   | 6:F:530:ASN:O     | 2.42                     | 0.52              |
| 6:H:680:HIS:CD2   | 6:H:712:VAL:HG13  | 2.44                     | 0.52              |
| 8:I:331:LYS:O     | 8:I:335:GLN:HG2   | 2.10                     | 0.52              |
| 9:J:209:LEU:O     | 9:J:211:LYS:NZ    | 2.27                     | 0.52              |
| 9:J:441:VAL:HG23  | 9:J:443:LYS:H     | 1.75                     | 0.52              |
| 10:L:68:PHE:N     | 10:L:135:PHE:O    | 2.24                     | 0.52              |
| 12:N:520:ARG:HH21 | 12:N:600:PHE:C    | 2.12                     | 0.52              |
| 12:N:630:LYS:HB2  | 12:N:633:ARG:CZ   | 2.40                     | 0.52              |
| 3:P:267:SER:HB2   | 3:P:299:ASN:ND2   | 2.25                     | 0.52              |
| 15:Y:208:GLY:O    | 15:Y:212:LEU:HG   | 2.09                     | 0.52              |
| 1:A:941:LEU:HB2   | 1:A:977:LEU:HD12  | 1.91                     | 0.52              |
| 1:A:1535:VAL:HB   | 1:A:1565:LEU:HD11 | 1.91                     | 0.52              |
| 6:H:468:GLU:HA    | 6:H:471:LYS:HD2   | 1.90                     | 0.52              |
| 6:H:514:GLU:OE1   | 6:H:514:GLU:N     | 2.43                     | 0.52              |
| 6:H:636:ASN:ND2   | 10:L:184:ARG:O    | 2.43                     | 0.52              |
| 8:I:321:LEU:HD11  | 8:I:425:MET:SD    | 2.50                     | 0.52              |
| 9:K:465:LEU:HB3   | 9:K:469:ARG:HH12  | 1.74                     | 0.52              |
| 12:N:663:GLN:NE2  | 12:N:698:VAL:HB   | 2.25                     | 0.52              |
| 15:X:495:GLY:HA3  | 15:X:518:PHE:HE2  | 1.75                     | 0.52              |
| 15:X:518:PHE:O    | 15:X:522:VAL:HG23 | 2.09                     | 0.52              |
| 1:A:477:LYS:HB2   | 1:A:491:LEU:CD1   | 2.39                     | 0.52              |
| 1:A:1560:MET:HE1  | 1:A:1607:ARG:HB3  | 1.92                     | 0.52              |
| 2:B:2:LYS:H       | 12:N:650:LEU:CD2  | 2.22                     | 0.52              |
| 3:C:180:ARG:O     | 3:C:183:ASP:N     | 2.41                     | 0.52              |
| 9:J:335:PRO:O     | 9:J:338:ILE:HG22  | 2.10                     | 0.52              |
| 10:L:13:PRO:O     | 10:L:16:LEU:N     | 2.43                     | 0.52              |
| 12:N:530:GLN:OE1  | 12:N:533:PHE:HE1  | 1.93                     | 0.52              |
| 15:X:463:THR:O    | 15:X:467:LYS:HG3  | 2.09                     | 0.52              |
| 15:X:519:LEU:HA   | 15:X:522:VAL:HG23 | 1.91                     | 0.52              |
| 6:F:549:ASP:OD1   | 6:F:579:LEU:HD13  | 2.10                     | 0.51              |
| 6:H:651:PHE:HB3   | 6:H:682:LEU:HD21  | 1.91                     | 0.51              |
| 8:I:291:VAL:HG12  | 8:I:317:LEU:HD12  | 1.91                     | 0.51              |
| 8:I:615:LEU:HB3   | 8:I:685:PHE:HB2   | 1.92                     | 0.51              |
| 8:I:723:ALA:O     | 8:I:732:CYS:N     | 2.33                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:65:LEU:HD12   | 9:J:65:LEU:H      | 1.75                     | 0.51              |
| 9:J:212:TYR:HB3   | 9:J:243:TYR:CG    | 2.45                     | 0.51              |
| 12:N:516:ILE:HG21 | 12:N:553:PRO:HB3  | 1.92                     | 0.51              |
| 13:O:594:SER:O    | 13:O:594:SER:OG   | 2.19                     | 0.51              |
| 3:P:327:ASP:O     | 3:P:333:THR:HG21  | 2.09                     | 0.51              |
| 15:X:185:GLU:HG3  | 15:X:186:ARG:H    | 1.73                     | 0.51              |
| 15:X:245:PHE:CD2  | 15:X:253:ARG:HB3  | 2.45                     | 0.51              |
| 15:X:509:CYS:HA   | 15:X:512:HIS:CD2  | 2.41                     | 0.51              |
| 15:Y:272:ASP:N    | 15:Y:272:ASP:OD1  | 2.38                     | 0.51              |
| 1:A:657:TRP:NE1   | 1:A:785:SER:HB3   | 2.25                     | 0.51              |
| 3:C:180:ARG:NH1   | 3:C:208:GLU:OE1   | 2.43                     | 0.51              |
| 6:H:469:MET:HG2   | 6:H:500:TRP:HZ3   | 1.75                     | 0.51              |
| 6:H:712:VAL:HG12  | 6:H:716:ASN:ND2   | 2.25                     | 0.51              |
| 8:I:9:PRO:HG2     | 8:I:750:ASP:HB3   | 1.92                     | 0.51              |
| 8:I:115:TRP:NE1   | 8:I:176:LEU:HD13  | 2.25                     | 0.51              |
| 8:I:593:ASP:HB3   | 8:I:595:LEU:HG    | 1.92                     | 0.51              |
| 9:J:466:ASP:HA    | 9:J:469:ARG:HH12  | 1.74                     | 0.51              |
| 9:J:516:VAL:O     | 9:J:519:LEU:HB3   | 2.10                     | 0.51              |
| 9:K:254:THR:HG22  | 9:K:271:HIS:HD2   | 1.74                     | 0.51              |
| 12:N:132:LEU:HD22 | 12:N:135:TRP:CZ3  | 2.46                     | 0.51              |
| 12:N:676:TRP:HB3  | 12:N:681:LEU:HD21 | 1.91                     | 0.51              |
| 3:P:265:ILE:HG13  | 3:P:266:VAL:N     | 2.24                     | 0.51              |
| 15:Y:295:GLU:O    | 15:Y:299:MET:HG2  | 2.10                     | 0.51              |
| 2:B:17:VAL:HG11   | 12:N:634:THR:HG23 | 1.91                     | 0.51              |
| 4:D:25:VAL:HG12   | 4:D:26:GLU:O      | 2.10                     | 0.51              |
| 6:H:38:GLU:OE2    | 6:H:66:CYS:HA     | 2.10                     | 0.51              |
| 9:J:164:PHE:HZ    | 9:J:208:LYS:HG3   | 1.75                     | 0.51              |
| 10:L:97:ARG:HG2   | 10:L:107:GLU:HA   | 1.92                     | 0.51              |
| 12:N:83:LEU:HA    | 12:N:87:ILE:HB    | 1.93                     | 0.51              |
| 12:N:411:ASP:O    | 12:N:413:SER:N    | 2.39                     | 0.51              |
| 12:N:699:TRP:HE3  | 12:N:704:VAL:HG21 | 1.74                     | 0.51              |
| 3:P:368:TRP:HB2   | 3:P:391:ALA:HB2   | 1.92                     | 0.51              |
| 1:A:98:ASN:HB3    | 1:A:120:ASP:H     | 1.75                     | 0.51              |
| 1:A:114:TYR:O     | 1:A:115:LYS:HG3   | 2.10                     | 0.51              |
| 1:A:457:PHE:HB3   | 1:A:468:PHE:CE2   | 2.45                     | 0.51              |
| 3:C:39:ILE:HG21   | 3:C:201:LEU:HB3   | 1.92                     | 0.51              |
| 3:C:58:LEU:HA     | 3:C:61:SER:HB2    | 1.92                     | 0.51              |
| 4:D:45:ALA:O      | 3:P:380:ASN:ND2   | 2.26                     | 0.51              |
| 9:K:167:PHE:O     | 9:K:171:THR:HG22  | 2.10                     | 0.51              |
| 10:L:74:VAL:HG21  | 10:L:137:ILE:HD11 | 1.92                     | 0.51              |
| 3:P:368:TRP:CE3   | 3:P:390:HIS:HB2   | 2.44                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:W:23:ARG:HG2    | 7:W:24:LYS:H      | 1.75                     | 0.51              |
| 15:X:165:ARG:HH21 | 15:X:166:GLN:HG3  | 1.74                     | 0.51              |
| 15:Y:180:LYS:HD3  | 15:Y:212:LEU:HD11 | 1.91                     | 0.51              |
| 1:A:12:ILE:N      | 1:A:508:LYS:O     | 2.44                     | 0.51              |
| 1:A:966:PRO:HA    | 1:A:970:TRP:CH2   | 2.45                     | 0.51              |
| 2:B:15:LEU:HD12   | 12:N:626:TYR:HE2  | 1.75                     | 0.51              |
| 3:C:42:LEU:O      | 3:C:46:ARG:NH1    | 2.44                     | 0.51              |
| 3:C:147:LYS:HD3   | 3:C:148:ASN:H     | 1.76                     | 0.51              |
| 3:C:179:LEU:HD13  | 3:C:187:GLU:HB3   | 1.92                     | 0.51              |
| 6:F:695:ALA:HB3   | 6:F:709:ARG:NH1   | 2.24                     | 0.51              |
| 6:H:154:SER:O     | 6:H:158:ILE:HG13  | 2.11                     | 0.51              |
| 8:I:173:LEU:HA    | 8:I:190:TYR:HE1   | 1.75                     | 0.51              |
| 8:I:572:PHE:HZ    | 8:I:589:THR:N     | 2.08                     | 0.51              |
| 9:K:391:PHE:CE2   | 9:K:411:VAL:HG11  | 2.46                     | 0.51              |
| 11:M:4:GLU:OE1    | 11:M:7:ARG:NH2    | 2.41                     | 0.51              |
| 12:N:156:MET:O    | 12:N:160:VAL:HG22 | 2.10                     | 0.51              |
| 12:N:184:TYR:OH   | 12:N:188:LYS:NZ   | 2.21                     | 0.51              |
| 12:N:803:VAL:HG21 | 12:N:810:TYR:HB2  | 1.91                     | 0.51              |
| 13:O:317:TYR:O    | 13:O:320:ALA:HB3  | 2.11                     | 0.51              |
| 15:X:450:VAL:HB   | 15:X:481:LYS:HZ3  | 1.76                     | 0.51              |
| 1:A:24:GLY:HA3    | 1:A:94:TYR:CD1    | 2.45                     | 0.51              |
| 6:F:570:TRP:HZ3   | 11:M:65:LEU:HD11  | 1.75                     | 0.51              |
| 8:I:176:LEU:HG    | 8:I:178:LEU:HG    | 1.91                     | 0.51              |
| 8:I:708:GLU:N     | 8:I:708:GLU:OE2   | 2.43                     | 0.51              |
| 9:J:372:LEU:O     | 9:J:376:LEU:HG    | 2.11                     | 0.51              |
| 9:K:368:HIS:NE2   | 9:K:401:ASP:OD2   | 2.44                     | 0.51              |
| 12:N:502:ILE:H    | 12:N:502:ILE:HD12 | 1.75                     | 0.51              |
| 3:P:400:ARG:CZ    | 17:Q:499:ARG:HA   | 2.40                     | 0.51              |
| 15:X:94:ARG:CZ    | 15:X:151:GLN:HE22 | 2.23                     | 0.51              |
| 1:A:1206:ILE:HD11 | 1:A:1248:ASN:O    | 2.11                     | 0.51              |
| 6:H:693:ASN:O     | 6:H:697:VAL:HG23  | 2.11                     | 0.51              |
| 8:I:125:LEU:HB3   | 8:I:129:TYR:CZ    | 2.45                     | 0.51              |
| 8:I:279:ILE:HD11  | 8:I:337:ILE:HG23  | 1.93                     | 0.51              |
| 9:J:418:TRP:HB3   | 9:J:458:LEU:HD21  | 1.92                     | 0.51              |
| 9:J:433:LYS:NZ    | 9:J:437:ASN:O     | 2.26                     | 0.51              |
| 12:N:712:THR:O    | 12:N:712:THR:OG1  | 2.28                     | 0.51              |
| 13:O:434:ARG:NH2  | 13:O:617:GLN:OE1  | 2.43                     | 0.51              |
| 3:P:179:LEU:HD22  | 3:P:184:LEU:HD12  | 1.92                     | 0.51              |
| 15:X:77:TYR:HE1   | 15:X:107:LYS:HB2  | 1.75                     | 0.51              |
| 15:X:305:ILE:H    | 15:X:305:ILE:HD12 | 1.75                     | 0.51              |
| 15:Y:244:ALA:O    | 15:Y:248:THR:HG23 | 2.10                     | 0.51              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:Y:258:ILE:HG21 | 15:Y:277:LEU:HB2  | 1.92                     | 0.51              |
| 1:A:479:ALA:CB    | 1:A:490:VAL:HG12  | 2.41                     | 0.51              |
| 1:A:795:ARG:CZ    | 1:A:817:THR:H     | 2.23                     | 0.51              |
| 1:A:852:LEU:HD12  | 1:A:853:LYS:HG3   | 1.92                     | 0.51              |
| 1:A:1677:LEU:HD12 | 1:A:1678:ILE:H    | 1.75                     | 0.51              |
| 6:F:709:ARG:HA    | 6:F:712:VAL:HG22  | 1.93                     | 0.51              |
| 6:H:684:LYS:NZ    | 6:H:687:LYS:H     | 2.09                     | 0.51              |
| 8:I:86:ASP:OD1    | 8:I:86:ASP:N      | 2.44                     | 0.51              |
| 8:I:302:ASP:HB3   | 13:O:58:ARG:HD2   | 1.93                     | 0.51              |
| 9:J:293:ASP:O     | 9:J:296:PRO:HD3   | 2.10                     | 0.51              |
| 10:L:126:ASP:OD2  | 10:L:130:LYS:N    | 2.36                     | 0.51              |
| 10:L:178:MET:HG2  | 10:L:181:ARG:HE   | 1.75                     | 0.51              |
| 12:N:121:ARG:HB3  | 12:N:122:LEU:CB   | 2.36                     | 0.51              |
| 12:N:527:LEU:HD22 | 12:N:530:GLN:HG2  | 1.92                     | 0.51              |
| 12:N:637:TRP:HE3  | 12:N:639:HIS:HB2  | 1.76                     | 0.51              |
| 13:O:83:GLU:OE1   | 13:O:87:PRO:HA    | 2.11                     | 0.51              |
| 13:O:104:GLU:O    | 13:O:107:ASP:N    | 2.30                     | 0.51              |
| 13:O:385:VAL:HB   | 13:O:401:ALA:CB   | 2.41                     | 0.51              |
| 4:D:11:ARG:HE     | 4:D:14:GLU:CD     | 2.12                     | 0.51              |
| 6:F:730:LYS:O     | 6:F:734:PRO:HA    | 2.10                     | 0.51              |
| 6:H:556:SER:OG    | 6:H:573:ALA:HA    | 2.11                     | 0.51              |
| 6:H:702:ASN:OD1   | 6:H:704:LEU:N     | 2.44                     | 0.51              |
| 9:J:192:LYS:HG3   | 9:J:198:GLN:NE2   | 2.26                     | 0.51              |
| 9:J:305:VAL:CG2   | 11:M:29:VAL:HG11  | 2.41                     | 0.51              |
| 13:O:542:GLU:O    | 13:O:546:ARG:HG2  | 2.10                     | 0.51              |
| 13:O:593:ARG:HG2  | 13:O:753:ASN:ND2  | 2.26                     | 0.51              |
| 15:X:253:ARG:O    | 15:X:256:SER:OG   | 2.16                     | 0.51              |
| 15:X:365:ALA:HA   | 15:X:368:LEU:HD12 | 1.93                     | 0.51              |
| 1:A:431:PHE:CE1   | 1:A:443:CYS:HB2   | 2.46                     | 0.51              |
| 1:A:1138:HIS:HD2  | 1:A:1608:HIS:NE2  | 2.09                     | 0.51              |
| 1:A:1195:ASP:OD2  | 1:A:1195:ASP:N    | 2.44                     | 0.51              |
| 1:A:1503:ASN:O    | 1:A:1506:VAL:HG22 | 2.11                     | 0.51              |
| 9:K:285:PHE:HB2   | 9:K:308:TYR:CZ    | 2.46                     | 0.51              |
| 12:N:82:ASP:O     | 12:N:87:ILE:HG12  | 2.10                     | 0.51              |
| 12:N:335:ILE:O    | 12:N:338:SER:OG   | 2.26                     | 0.51              |
| 12:N:660:THR:HG22 | 12:N:729:LEU:HD23 | 1.92                     | 0.51              |
| 15:X:66:ASN:ND2   | 15:Y:265:SER:O    | 2.44                     | 0.51              |
| 1:A:31:HIS:CG     | 1:A:32:PRO:HD2    | 2.46                     | 0.50              |
| 1:A:33:ASN:OD1    | 1:A:98:ASN:ND2    | 2.44                     | 0.50              |
| 3:C:42:LEU:HD11   | 3:C:46:ARG:HH22   | 1.76                     | 0.50              |
| 3:C:179:LEU:HB3   | 3:C:188:ALA:HB2   | 1.93                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:186:LYS:HA    | 3:C:189:ILE:HD12  | 1.92                     | 0.50              |
| 3:C:337:ILE:HD12  | 11:M:24:LEU:HD21  | 1.92                     | 0.50              |
| 8:I:48:ARG:NH1    | 12:N:392:ASN:HB3  | 2.26                     | 0.50              |
| 8:I:721:TYR:HD2   | 8:I:734:LEU:HD23  | 1.76                     | 0.50              |
| 9:J:368:HIS:NE2   | 9:J:401:ASP:OD2   | 2.44                     | 0.50              |
| 9:K:147:THR:HG23  | 9:K:148:LEU:HD12  | 1.92                     | 0.50              |
| 12:N:157:LEU:HD21 | 12:N:161:LEU:HD12 | 1.92                     | 0.50              |
| 13:O:378:SER:OG   | 13:O:417:LEU:HG   | 2.11                     | 0.50              |
| 13:O:620:ALA:O    | 13:O:623:THR:HG22 | 2.11                     | 0.50              |
| 3:P:34:LYS:HD2    | 3:P:71:GLN:CD     | 2.32                     | 0.50              |
| 3:P:98:GLU:OE2    | 3:P:101:ARG:NH2   | 2.35                     | 0.50              |
| 3:P:333:THR:O     | 3:P:337:ILE:HG13  | 2.11                     | 0.50              |
| 15:X:38:ILE:HG13  | 15:X:75:GLN:HG2   | 1.92                     | 0.50              |
| 15:X:206:ILE:O    | 15:X:210:LEU:HD23 | 2.12                     | 0.50              |
| 1:A:823:ILE:C     | 1:A:825:PRO:HD3   | 2.32                     | 0.50              |
| 1:A:847:TRP:NE1   | 1:A:860:TYR:HB2   | 2.26                     | 0.50              |
| 1:A:872:LEU:O     | 1:A:876:SER:OG    | 2.22                     | 0.50              |
| 1:A:1347:SER:O    | 1:A:1347:SER:OG   | 2.29                     | 0.50              |
| 1:A:1848:VAL:HG12 | 1:A:1852:ILE:HD11 | 1.93                     | 0.50              |
| 6:F:522:PHE:HA    | 6:F:525:VAL:HG12  | 1.93                     | 0.50              |
| 6:F:726:LEU:HD13  | 6:F:742:LEU:HD23  | 1.93                     | 0.50              |
| 6:H:503:CYS:SG    | 6:H:535:GLY:HA3   | 2.52                     | 0.50              |
| 8:I:176:LEU:HD12  | 8:I:177:VAL:N     | 2.25                     | 0.50              |
| 8:I:644:TYR:HB2   | 8:I:650:THR:HG23  | 1.93                     | 0.50              |
| 9:J:334:GLY:H     | 9:J:335:PRO:HD2   | 1.76                     | 0.50              |
| 12:N:523:LEU:HD23 | 12:N:526:ARG:NH1  | 2.18                     | 0.50              |
| 1:A:76:LEU:HD22   | 1:A:606:ARG:NH1   | 2.27                     | 0.50              |
| 1:A:85:GLU:H      | 13:O:566:LYS:HZ3  | 1.60                     | 0.50              |
| 1:A:129:CYS:SG    | 1:A:187:LEU:HD22  | 2.51                     | 0.50              |
| 1:A:1769:ASP:O    | 1:A:1772:SER:OG   | 2.26                     | 0.50              |
| 1:A:1910:SER:C    | 1:A:1912:ALA:H    | 2.14                     | 0.50              |
| 3:C:173:TYR:CG    | 3:C:202:HIS:HE1   | 2.30                     | 0.50              |
| 4:D:46:GLU:HA     | 3:P:380:ASN:ND2   | 2.27                     | 0.50              |
| 4:D:53:PRO:HD3    | 3:P:382:SER:HB2   | 1.92                     | 0.50              |
| 5:E:94:TRP:CZ2    | 6:F:592:ARG:HG3   | 2.46                     | 0.50              |
| 7:G:12:LYS:O      | 7:G:15:ASP:HB3    | 2.11                     | 0.50              |
| 6:H:77:LYS:HZ2    | 6:H:120:LEU:HD21  | 1.76                     | 0.50              |
| 8:I:526:LYS:HE2   | 8:I:530:GLU:OE2   | 2.11                     | 0.50              |
| 13:O:382:GLN:O    | 13:O:385:VAL:HG12 | 2.11                     | 0.50              |
| 13:O:405:SER:O    | 13:O:408:LEU:N    | 2.43                     | 0.50              |
| 15:X:287:ASN:OD1  | 15:X:288:LYS:N    | 2.45                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:360:TYR:O    | 15:X:364:LYS:HG3  | 2.12                     | 0.50              |
| 15:Y:186:ARG:HA   | 15:Y:189:VAL:CG1  | 2.38                     | 0.50              |
| 3:C:370:LEU:O     | 3:C:374:GLU:HG2   | 2.10                     | 0.50              |
| 4:D:31:GLN:CD     | 13:O:137:ARG:HH22 | 2.15                     | 0.50              |
| 6:H:125:TYR:O     | 6:H:128:THR:HB    | 2.12                     | 0.50              |
| 8:I:70:CYS:SG     | 8:I:112:CYS:HA    | 2.52                     | 0.50              |
| 8:I:721:TYR:HB2   | 8:I:734:LEU:HB3   | 1.93                     | 0.50              |
| 9:J:226:GLY:HA2   | 9:K:34:ARG:HH12   | 1.76                     | 0.50              |
| 9:K:403:PHE:O     | 9:K:407:GLU:HG2   | 2.11                     | 0.50              |
| 9:K:506:LEU:HD21  | 9:K:516:VAL:HG22  | 1.94                     | 0.50              |
| 12:N:151:GLU:HA   | 12:N:154:HIS:CD2  | 2.46                     | 0.50              |
| 12:N:186:GLN:HG2  | 12:N:190:LYS:NZ   | 2.27                     | 0.50              |
| 12:N:771:ASP:OD1  | 12:N:772:ARG:HD2  | 2.12                     | 0.50              |
| 13:O:461:ASN:HB3  | 13:O:466:PHE:HE1  | 1.76                     | 0.50              |
| 15:X:203:LEU:HD11 | 15:X:239:TRP:CZ3  | 2.45                     | 0.50              |
| 15:Y:192:TYR:HA   | 15:Y:195:VAL:HG22 | 1.93                     | 0.50              |
| 15:Y:205:ALA:O    | 15:Y:209:LEU:HG   | 2.11                     | 0.50              |
| 15:Y:447:LEU:HA   | 15:Y:450:VAL:HG22 | 1.93                     | 0.50              |
| 1:A:640:LYS:O     | 1:A:644:VAL:HG23  | 2.11                     | 0.50              |
| 6:F:14:GLN:O      | 6:F:18:HIS:ND1    | 2.28                     | 0.50              |
| 8:I:74:ARG:HE     | 8:I:76:ASP:CB     | 2.25                     | 0.50              |
| 8:I:544:ILE:O     | 8:I:547:SER:OG    | 2.09                     | 0.50              |
| 8:I:619:LYS:HB2   | 8:I:702:THR:CG2   | 2.41                     | 0.50              |
| 12:N:663:GLN:HG2  | 12:N:699:TRP:NE1  | 2.27                     | 0.50              |
| 13:O:255:TYR:HD1  | 13:O:277:TYR:CD2  | 2.28                     | 0.50              |
| 13:O:620:ALA:O    | 13:O:624:VAL:HG23 | 2.12                     | 0.50              |
| 3:P:496:ASP:O     | 3:P:500:CYS:N     | 2.45                     | 0.50              |
| 15:Y:340:GLU:O    | 15:Y:344:VAL:HG23 | 2.10                     | 0.50              |
| 15:Y:455:PRO:O    | 15:Y:457:THR:N    | 2.44                     | 0.50              |
| 1:A:161:MET:CE    | 1:A:216:PRO:HB3   | 2.42                     | 0.50              |
| 1:A:225:CYS:N     | 1:A:237:GLN:O     | 2.40                     | 0.50              |
| 1:A:1107:LEU:HD12 | 1:A:1107:LEU:O    | 2.12                     | 0.50              |
| 1:A:1316:MET:O    | 1:A:1319:LEU:N    | 2.44                     | 0.50              |
| 3:C:389:ARG:HH21  | 13:O:276:HIS:HD2  | 1.57                     | 0.50              |
| 3:C:494:ILE:HG12  | 3:C:513:PHE:HE1   | 1.77                     | 0.50              |
| 6:H:142:LEU:HD21  | 6:H:151:PRO:HG3   | 1.94                     | 0.50              |
| 8:I:111:SER:OG    | 8:I:179:GLY:O     | 2.28                     | 0.50              |
| 8:I:451:PHE:CG    | 8:I:452:LEU:N     | 2.79                     | 0.50              |
| 8:I:604:HIS:HB3   | 8:I:606:ASP:O     | 2.12                     | 0.50              |
| 9:K:478:ASN:ND2   | 7:W:8:ARG:HH22    | 2.03                     | 0.50              |
| 10:L:33:LEU:HG    | 10:L:42:VAL:HG22  | 1.93                     | 0.50              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:530:GLN:O    | 12:N:531:PHE:HB2  | 2.12                     | 0.50              |
| 12:N:759:GLN:O    | 12:N:763:THR:HG23 | 2.12                     | 0.50              |
| 3:P:159:SER:HA    | 3:P:175:TYR:HE1   | 1.75                     | 0.50              |
| 3:P:248:LEU:HD22  | 3:P:273:TYR:HE1   | 1.76                     | 0.50              |
| 15:X:91:LYS:HE2   | 15:Y:338:HIS:CE1  | 2.47                     | 0.50              |
| 15:X:230:VAL:HG12 | 15:X:232:ASN:H    | 1.77                     | 0.50              |
| 15:X:256:SER:OG   | 15:X:257:THR:N    | 2.44                     | 0.50              |
| 1:A:894:GLN:HG3   | 1:A:895:TYR:CD2   | 2.47                     | 0.50              |
| 1:A:1037:VAL:HA   | 1:A:1040:LEU:HD13 | 1.93                     | 0.50              |
| 2:B:6:LYS:HB2     | 12:N:647:ASP:HB2  | 1.94                     | 0.50              |
| 3:C:328:LYS:HB3   | 3:C:329:TYR:CD1   | 2.47                     | 0.50              |
| 3:C:415:PRO:O     | 3:C:418:CYS:N     | 2.45                     | 0.50              |
| 5:E:56:GLU:HA     | 5:E:59:PHE:HB3    | 1.93                     | 0.50              |
| 6:F:736:GLU:O     | 6:F:739:VAL:N     | 2.45                     | 0.50              |
| 6:H:110:PHE:CG    | 6:H:117:THR:HG21  | 2.46                     | 0.50              |
| 6:H:467:ARG:O     | 6:H:471:LYS:HG3   | 2.12                     | 0.50              |
| 8:I:75:PRO:HD3    | 8:I:115:TRP:HB3   | 1.93                     | 0.50              |
| 8:I:251:MET:O     | 8:I:254:LYS:N     | 2.44                     | 0.50              |
| 9:J:150:THR:HG23  | 9:J:154:LYS:NZ    | 2.26                     | 0.50              |
| 9:J:416:GLY:HA2   | 9:J:418:TRP:CZ2   | 2.47                     | 0.50              |
| 12:N:637:TRP:HB3  | 12:N:639:HIS:HB2  | 1.93                     | 0.50              |
| 12:N:693:ARG:HA   | 12:N:696:MET:HE3  | 1.93                     | 0.50              |
| 15:X:414:ILE:O    | 15:X:417:TYR:HB2  | 2.11                     | 0.50              |
| 1:A:765:VAL:O     | 1:A:769:VAL:HG23  | 2.11                     | 0.50              |
| 1:A:1793:MET:O    | 1:A:1797:ILE:HG23 | 2.12                     | 0.50              |
| 3:C:176:GLY:HA3   | 3:C:192:PHE:CE1   | 2.47                     | 0.50              |
| 5:E:67:LEU:HA     | 5:E:70:VAL:HG22   | 1.94                     | 0.50              |
| 6:H:137:CYS:O     | 6:H:141:SER:OG    | 2.28                     | 0.50              |
| 6:H:502:LEU:HD12  | 6:H:521:ILE:HG23  | 1.93                     | 0.50              |
| 6:H:527:ARG:HB3   | 15:Y:302:PRO:HG3  | 1.94                     | 0.50              |
| 12:N:264:THR:HA   | 12:N:267:GLN:HE21 | 1.76                     | 0.50              |
| 12:N:673:GLN:O    | 12:N:676:TRP:NE1  | 2.45                     | 0.50              |
| 12:N:691:LEU:HD21 | 12:N:695:ARG:NH1  | 2.27                     | 0.50              |
| 13:O:38:LEU:HD21  | 13:O:115:LEU:HD22 | 1.92                     | 0.50              |
| 3:P:228:TRP:O     | 3:P:231:GLU:HB3   | 2.12                     | 0.50              |
| 3:P:412:LEU:HG    | 3:P:413:LYS:H     | 1.76                     | 0.50              |
| 15:Y:235:TRP:CD1  | 15:Y:267:LEU:HD11 | 2.47                     | 0.50              |
| 15:Y:410:TYR:O    | 15:Y:414:ILE:HG13 | 2.12                     | 0.50              |
| 1:A:1511:ASN:HD21 | 10:L:104:ASN:ND2  | 2.10                     | 0.50              |
| 1:A:1795:GLN:HB3  | 1:A:1799:ARG:NH2  | 2.27                     | 0.50              |
| 3:C:136:ASP:OD1   | 3:C:137:SER:N     | 2.45                     | 0.50              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 3:C:381:THR:HG21 | 3:C:412:LEU:HD11  | 1.94                     | 0.50              |
| 8:I:19:LEU:O     | 8:I:739:ARG:HB3   | 2.11                     | 0.50              |
| 8:I:32:ARG:HB3   | 12:N:388:HIS:CE1  | 2.47                     | 0.50              |
| 9:J:194:CYS:O    | 9:J:196:GLU:N     | 2.44                     | 0.50              |
| 9:J:254:THR:HA   | 9:J:257:VAL:HB    | 1.94                     | 0.50              |
| 9:K:55:ARG:O     | 9:K:58:HIS:HB3    | 2.12                     | 0.50              |
| 10:L:50:LEU:O    | 10:L:154:ARG:NH1  | 2.42                     | 0.50              |
| 12:N:272:ARG:NH2 | 12:N:288:GLU:OE1  | 2.44                     | 0.50              |
| 15:X:64:SER:HB3  | 15:X:71:PHE:HE2   | 1.76                     | 0.50              |
| 15:X:204:ASP:H   | 15:Y:52:ASN:ND2   | 2.10                     | 0.50              |
| 1:A:473:ASN:O    | 1:A:474:ILE:HD13  | 2.12                     | 0.49              |
| 1:A:776:ASN:OD1  | 1:A:869:ARG:NH2   | 2.35                     | 0.49              |
| 1:A:778:LEU:HD23 | 13:O:594:SER:HB2  | 1.93                     | 0.49              |
| 1:A:1674:TRP:HE3 | 1:A:1702:ARG:HD3  | 1.76                     | 0.49              |
| 3:C:361:ASN:HD22 | 3:C:363:ARG:H     | 1.57                     | 0.49              |
| 10:L:29:ALA:HB2  | 10:L:68:PHE:CD2   | 2.47                     | 0.49              |
| 13:O:258:TYR:CE2 | 13:O:274:LEU:HD12 | 2.47                     | 0.49              |
| 13:O:657:ILE:HB  | 13:O:700:TYR:CD1  | 2.47                     | 0.49              |
| 3:P:341:TYR:CZ   | 3:P:349:LYS:HD3   | 2.47                     | 0.49              |
| 3:P:368:TRP:HB3  | 3:P:387:ALA:O     | 2.12                     | 0.49              |
| 15:X:251:ASN:OD1 | 15:X:283:ARG:HD2  | 2.12                     | 0.49              |
| 15:X:414:ILE:O   | 15:X:418:LEU:HG   | 2.12                     | 0.49              |
| 1:A:776:ASN:ND2  | 1:A:778:LEU:HB2   | 2.27                     | 0.49              |
| 3:C:175:TYR:HD2  | 3:C:191:VAL:HG11  | 1.76                     | 0.49              |
| 4:D:48:ASP:N     | 4:D:48:ASP:OD1    | 2.42                     | 0.49              |
| 5:E:101:GLN:NE2  | 5:E:107:PRO:O     | 2.37                     | 0.49              |
| 6:H:741:PHE:O    | 6:H:745:LYS:HG2   | 2.11                     | 0.49              |
| 8:I:45:LEU:HD22  | 8:I:54:ARG:CZ     | 2.42                     | 0.49              |
| 8:I:310:TRP:CD1  | 13:O:126:VAL:HG13 | 2.47                     | 0.49              |
| 9:J:168:ASP:HA   | 9:J:171:THR:HG22  | 1.94                     | 0.49              |
| 9:J:401:ASP:HB3  | 9:J:404:VAL:HG22  | 1.94                     | 0.49              |
| 12:N:753:LEU:HA  | 12:N:756:THR:OG1  | 2.13                     | 0.49              |
| 13:O:127:HIS:ND1 | 13:O:127:HIS:O    | 2.45                     | 0.49              |
| 15:X:271:VAL:HB  | 15:X:304:LEU:HD21 | 1.94                     | 0.49              |
| 1:A:771:GLU:OE2  | 1:A:844:ILE:HG22  | 2.12                     | 0.49              |
| 2:B:34:CYS:HB3   | 2:B:56:HIS:CG     | 2.47                     | 0.49              |
| 6:F:670:VAL:HA   | 6:F:673:CYS:SG    | 2.52                     | 0.49              |
| 6:H:103:HIS:O    | 6:H:107:VAL:HG23  | 2.12                     | 0.49              |
| 6:H:617:LEU:O    | 6:H:620:ALA:N     | 2.45                     | 0.49              |
| 8:I:310:TRP:HZ3  | 13:O:61:ASN:ND2   | 2.10                     | 0.49              |
| 8:I:354:SER:HB3  | 13:O:403:LYS:HZ1  | 1.77                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:444:ASP:O     | 8:I:447:PHE:HB2   | 2.12                     | 0.49              |
| 8:I:582:ASN:HB3   | 8:I:605:THR:HG21  | 1.93                     | 0.49              |
| 9:K:203:PHE:HB2   | 9:K:221:PRO:HG3   | 1.94                     | 0.49              |
| 10:L:83:TYR:N     | 10:L:116:PRO:O    | 2.44                     | 0.49              |
| 12:N:153:VAL:HG13 | 12:N:154:HIS:H    | 1.77                     | 0.49              |
| 12:N:235:GLN:O    | 12:N:239:GLN:HG2  | 2.11                     | 0.49              |
| 12:N:706:ARG:HG2  | 12:N:707:GLU:H    | 1.76                     | 0.49              |
| 13:O:662:ARG:HD3  | 13:O:709:ARG:HH12 | 1.76                     | 0.49              |
| 15:X:44:MET:O     | 15:X:49:LEU:HG    | 2.13                     | 0.49              |
| 1:A:731:SER:O     | 1:A:731:SER:OG    | 2.30                     | 0.49              |
| 1:A:1546:THR:HG23 | 1:A:1547:GLY:H    | 1.76                     | 0.49              |
| 6:F:568:GLU:OE2   | 6:F:568:GLU:N     | 2.31                     | 0.49              |
| 8:I:320:LEU:HD23  | 8:I:321:LEU:N     | 2.27                     | 0.49              |
| 9:J:25:TRP:HA     | 9:J:28:LYS:HG2    | 1.94                     | 0.49              |
| 9:K:339:ALA:HB2   | 7:W:2:LEU:HD12    | 1.94                     | 0.49              |
| 10:L:48:ASP:H     | 10:L:155:GLN:NE2  | 2.09                     | 0.49              |
| 12:N:273:MET:SD   | 12:N:335:ILE:HG22 | 2.52                     | 0.49              |
| 12:N:409:VAL:HG12 | 12:N:410:LEU:H    | 1.77                     | 0.49              |
| 3:P:107:HIS:HA    | 3:P:118:TYR:CE1   | 2.47                     | 0.49              |
| 3:P:293:ASP:HB3   | 3:P:296:ARG:HB2   | 1.93                     | 0.49              |
| 3:P:520:TYR:CD2   | 3:P:528:GLU:HB3   | 2.47                     | 0.49              |
| 15:Y:235:TRP:HZ3  | 15:Y:239:TRP:CD1  | 2.30                     | 0.49              |
| 15:Y:285:GLY:O    | 15:Y:287:ASN:N    | 2.46                     | 0.49              |
| 1:A:125:GLN:HB2   | 1:A:154:LEU:HD23  | 1.93                     | 0.49              |
| 1:A:1063:ILE:HA   | 1:A:1066:LYS:HE2  | 1.95                     | 0.49              |
| 1:A:1840:MET:HB3  | 1:A:1845:LEU:HD11 | 1.95                     | 0.49              |
| 6:F:500:TRP:CH2   | 6:F:504:GLN:HG3   | 2.47                     | 0.49              |
| 12:N:333:TYR:CZ   | 12:N:367:ARG:HG3  | 2.46                     | 0.49              |
| 3:P:189:ILE:O     | 3:P:193:VAL:HG22  | 2.13                     | 0.49              |
| 15:X:286:ASP:OD2  | 15:X:289:ASN:ND2  | 2.46                     | 0.49              |
| 15:Y:37:VAL:O     | 15:Y:41:VAL:HG23  | 2.12                     | 0.49              |
| 15:Y:236:LEU:O    | 15:Y:239:TRP:HB3  | 2.12                     | 0.49              |
| 1:A:773:LEU:HD23  | 1:A:783:ILE:HG13  | 1.94                     | 0.49              |
| 7:G:3:ARG:NH1     | 9:J:243:TYR:HD1   | 2.10                     | 0.49              |
| 8:I:422:TYR:CZ    | 8:I:426:LEU:HD21  | 2.48                     | 0.49              |
| 8:I:602:ARG:NH2   | 8:I:613:ASN:HB2   | 2.28                     | 0.49              |
| 10:L:37:LYS:HB3   | 10:L:40:PHE:HD1   | 1.77                     | 0.49              |
| 10:L:175:ILE:O    | 10:L:178:MET:N    | 2.45                     | 0.49              |
| 12:N:278:ARG:O    | 12:N:280:GLU:N    | 2.46                     | 0.49              |
| 12:N:663:GLN:HG3  | 12:N:695:ARG:HB3  | 1.95                     | 0.49              |
| 15:X:507:SER:HB2  | 15:X:511:LEU:HD21 | 1.94                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:Y:153:LYS:HA   | 15:Y:156:ILE:HB   | 1.94                     | 0.49              |
| 1:A:23:PHE:HB2    | 1:A:111:LEU:HD22  | 1.95                     | 0.49              |
| 1:A:226:LYS:HD2   | 1:A:236:VAL:HG13  | 1.95                     | 0.49              |
| 1:A:594:ARG:O     | 1:A:606:ARG:NH2   | 2.46                     | 0.49              |
| 1:A:1752:GLU:HA   | 1:A:1756:LYS:HD2  | 1.95                     | 0.49              |
| 6:H:684:LYS:HZ1   | 6:H:687:LYS:HD3   | 1.78                     | 0.49              |
| 8:I:96:GLU:HA     | 12:N:389:PRO:HG2  | 1.94                     | 0.49              |
| 8:I:269:LEU:O     | 8:I:272:MET:HB2   | 2.13                     | 0.49              |
| 9:J:41:TYR:HD2    | 9:J:72:CYS:SG     | 2.35                     | 0.49              |
| 9:J:418:TRP:O     | 9:J:458:LEU:HD11  | 2.12                     | 0.49              |
| 12:N:260:ALA:O    | 12:N:264:THR:HG23 | 2.12                     | 0.49              |
| 12:N:352:PRO:O    | 12:N:355:ARG:HG3  | 2.12                     | 0.49              |
| 12:N:508:ILE:HG23 | 12:N:509:TYR:CD2  | 2.48                     | 0.49              |
| 3:P:193:VAL:O     | 3:P:196:THR:OG1   | 2.29                     | 0.49              |
| 3:P:210:CYS:SG    | 3:P:236:HIS:HD2   | 2.34                     | 0.49              |
| 15:X:134:SER:O    | 15:X:137:GLU:HG2  | 2.11                     | 0.49              |
| 15:Y:72:SER:O     | 15:Y:75:GLN:HB2   | 2.13                     | 0.49              |
| 15:Y:548:GLY:O    | 15:Y:551:LYS:HE3  | 2.13                     | 0.49              |
| 1:A:862:TYR:CE2   | 1:A:864:PRO:HG3   | 2.47                     | 0.49              |
| 1:A:940:THR:HG23  | 1:A:943:ASP:H     | 1.77                     | 0.49              |
| 1:A:1520:LEU:O    | 1:A:1523:LEU:N    | 2.45                     | 0.49              |
| 1:A:1680:LEU:HG   | 1:A:1681:SER:N    | 2.27                     | 0.49              |
| 1:A:1765:GLN:OE1  | 1:A:1768:LEU:HD22 | 2.13                     | 0.49              |
| 6:F:28:ALA:O      | 6:F:44:LEU:HD21   | 2.12                     | 0.49              |
| 6:H:735:LYS:NZ    | 15:X:182:ALA:O    | 2.37                     | 0.49              |
| 8:I:301:GLN:HE22  | 8:I:457:ASN:HB2   | 1.78                     | 0.49              |
| 12:N:92:TRP:HA    | 12:N:95:ILE:HG22  | 1.95                     | 0.49              |
| 12:N:755:TRP:O    | 12:N:759:GLN:HG3  | 2.12                     | 0.49              |
| 13:O:254:HIS:CE1  | 13:O:276:HIS:CE1  | 3.01                     | 0.49              |
| 15:X:44:MET:SD    | 15:X:49:LEU:HD21  | 2.52                     | 0.49              |
| 15:X:215:LYS:O    | 15:X:218:GLU:N    | 2.46                     | 0.49              |
| 15:Y:64:SER:HA    | 15:Y:70:LEU:HD12  | 1.94                     | 0.49              |
| 15:Y:251:ASN:O    | 15:Y:255:ILE:HG12 | 2.13                     | 0.49              |
| 15:Y:276:SER:HA   | 15:Y:279:ASP:OD1  | 2.11                     | 0.49              |
| 1:A:1796:ALA:HA   | 1:A:1799:ARG:NH1  | 2.28                     | 0.49              |
| 3:C:270:ALA:HB1   | 3:C:286:PHE:CD2   | 2.48                     | 0.49              |
| 8:I:22:GLU:O      | 8:I:40:THR:HG23   | 2.12                     | 0.49              |
| 9:J:180:GLU:HA    | 9:J:183:GLU:HB3   | 1.95                     | 0.49              |
| 9:K:137:GLY:HA3   | 9:K:153:TYR:CE1   | 2.47                     | 0.49              |
| 12:N:141:LEU:O    | 12:N:141:LEU:HD12 | 2.13                     | 0.49              |
| 13:O:733:CYS:O    | 13:O:736:LEU:HB2  | 2.13                     | 0.49              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:407:LEU:HA   | 15:X:410:TYR:CD2  | 2.46                     | 0.49              |
| 1:A:1162:LYS:HG3  | 1:A:1163:PRO:HD2  | 1.95                     | 0.49              |
| 2:B:12:ALA:O      | 12:N:596:LEU:HD12 | 2.13                     | 0.49              |
| 4:D:8:LEU:HD11    | 13:O:424:GLN:HE21 | 1.78                     | 0.49              |
| 6:F:27:LEU:HD21   | 6:H:147:PHE:O     | 2.12                     | 0.49              |
| 6:H:766:LEU:HD23  | 15:X:394:ILE:HD12 | 1.93                     | 0.49              |
| 8:I:224:SER:HB3   | 8:I:229:SER:HA    | 1.94                     | 0.49              |
| 8:I:345:GLN:HE21  | 8:I:404:LEU:HD11  | 1.78                     | 0.49              |
| 8:I:393:VAL:O     | 8:I:397:ILE:HG13  | 2.12                     | 0.49              |
| 9:K:206:GLU:HA    | 9:K:209:LEU:HG    | 1.94                     | 0.49              |
| 9:K:440:THR:CG2   | 9:K:443:LYS:HD3   | 2.43                     | 0.49              |
| 13:O:435:SER:OG   | 13:O:654:ASP:OD1  | 2.25                     | 0.49              |
| 15:Y:245:PHE:HB3  | 15:Y:253:ARG:HH11 | 1.77                     | 0.49              |
| 15:Y:267:LEU:HG   | 15:Y:270:ASN:HD21 | 1.78                     | 0.49              |
| 15:Y:400:ILE:HB   | 15:Y:410:TYR:HE1  | 1.77                     | 0.49              |
| 1:A:657:TRP:CE2   | 1:A:785:SER:HB3   | 2.48                     | 0.48              |
| 6:H:475:ALA:O     | 6:H:478:SER:OG    | 2.28                     | 0.48              |
| 6:H:550:VAL:HG13  | 6:H:551:ALA:H     | 1.78                     | 0.48              |
| 9:J:199:GLU:HG2   | 9:J:202:ARG:NH2   | 2.28                     | 0.48              |
| 9:J:502:PHE:HE1   | 9:J:515:SER:HA    | 1.77                     | 0.48              |
| 12:N:527:LEU:HD12 | 12:N:601:TRP:HH2  | 1.78                     | 0.48              |
| 13:O:249:ASP:HA   | 13:O:280:ARG:NH2  | 2.28                     | 0.48              |
| 15:Y:175:LEU:HG   | 15:Y:179:TYR:CZ   | 2.48                     | 0.48              |
| 1:A:27:HIS:HB3    | 1:A:101:ILE:CD1   | 2.44                     | 0.48              |
| 1:A:774:LYS:HD3   | 1:A:845:TYR:CE2   | 2.48                     | 0.48              |
| 1:A:1412:CYS:HG   | 1:A:1425:TRP:HH2  | 1.59                     | 0.48              |
| 1:A:1509:PRO:HD2  | 10:L:106:GLN:HE22 | 1.77                     | 0.48              |
| 1:A:1542:LEU:HB3  | 1:A:1558:HIS:ND1  | 2.28                     | 0.48              |
| 1:A:1821:PHE:HZ   | 1:A:1839:PHE:HD2  | 1.60                     | 0.48              |
| 3:C:142:GLU:OE2   | 13:O:209:GLN:HB2  | 2.14                     | 0.48              |
| 3:C:158:LEU:HD11  | 3:C:174:LEU:HD23  | 1.95                     | 0.48              |
| 3:C:329:TYR:CE2   | 3:P:132:ASP:HB3   | 2.47                     | 0.48              |
| 3:C:449:LEU:HD23  | 3:C:449:LEU:HA    | 1.60                     | 0.48              |
| 9:J:333:TYR:O     | 9:J:337:TRP:CD1   | 2.67                     | 0.48              |
| 9:K:357:TYR:HB3   | 9:K:374:ILE:HG13  | 1.95                     | 0.48              |
| 11:M:1:MET:N      | 3:P:50:HIS:HB2    | 2.28                     | 0.48              |
| 13:O:426:THR:OG1  | 13:O:438:ALA:O    | 2.30                     | 0.48              |
| 3:P:238:TYR:CE1   | 3:P:243:LEU:HD23  | 2.48                     | 0.48              |
| 15:Y:54:ARG:NH1   | 15:Y:87:LEU:HA    | 2.28                     | 0.48              |
| 15:Y:171:ILE:HD12 | 15:Y:171:ILE:H    | 1.78                     | 0.48              |
| 1:A:584:ILE:HG22  | 1:A:599:LEU:HD23  | 1.95                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:722:HIS:O     | 1:A:724:LEU:N     | 2.46                     | 0.48              |
| 1:A:1141:VAL:HG11 | 1:A:1608:HIS:CG   | 2.48                     | 0.48              |
| 1:A:1551:ASN:ND2  | 1:A:1594:ALA:HA   | 2.28                     | 0.48              |
| 1:A:1595:HIS:CE1  | 1:A:1598:ASP:HB2  | 2.48                     | 0.48              |
| 1:A:1702:ARG:HD2  | 1:A:1703:ALA:H    | 1.78                     | 0.48              |
| 3:C:409:TYR:HB3   | 3:C:418:CYS:HB3   | 1.95                     | 0.48              |
| 6:F:570:TRP:HB2   | 6:F:593:ALA:HB2   | 1.95                     | 0.48              |
| 9:J:9:ARG:HD3     | 9:K:162:TYR:CD2   | 2.48                     | 0.48              |
| 9:J:249:MET:HB3   | 9:J:249:MET:HE2   | 1.64                     | 0.48              |
| 9:J:291:LEU:HB3   | 9:J:301:SER:OG    | 2.13                     | 0.48              |
| 9:J:306:GLY:HA3   | 9:J:323:LEU:CD1   | 2.43                     | 0.48              |
| 9:J:497:ASN:O     | 9:J:501:TYR:HD2   | 1.96                     | 0.48              |
| 13:O:159:GLN:O    | 13:O:163:GLN:HG2  | 2.12                     | 0.48              |
| 15:X:295:GLU:O    | 15:X:299:MET:HG2  | 2.13                     | 0.48              |
| 15:Y:393:ILE:O    | 15:Y:397:ARG:HD3  | 2.13                     | 0.48              |
| 1:A:23:PHE:HE2    | 1:A:113:VAL:HB    | 1.78                     | 0.48              |
| 1:A:89:TYR:CD1    | 13:O:537:ALA:HA   | 2.49                     | 0.48              |
| 1:A:1602:HIS:O    | 1:A:1606:LEU:HD12 | 2.13                     | 0.48              |
| 3:C:346:GLN:O     | 3:C:348:GLU:N     | 2.47                     | 0.48              |
| 6:F:583:HIS:O     | 6:F:587:ILE:HG22  | 2.13                     | 0.48              |
| 6:F:712:VAL:O     | 6:F:716:ASN:ND2   | 2.46                     | 0.48              |
| 6:H:25:VAL:HG13   | 6:H:48:TYR:CE1    | 2.40                     | 0.48              |
| 8:I:65:GLY:N      | 8:I:84:LEU:HD13   | 2.26                     | 0.48              |
| 8:I:145:LEU:HD22  | 8:I:268:SER:HA    | 1.95                     | 0.48              |
| 8:I:737:ASN:CG    | 8:I:739:ARG:H     | 2.17                     | 0.48              |
| 9:J:523:ILE:HD11  | 3:P:420:TYR:CB    | 2.43                     | 0.48              |
| 9:K:291:LEU:HB3   | 9:K:301:SER:HG    | 1.78                     | 0.48              |
| 9:K:369:LEU:HD22  | 7:W:3:ARG:HG3     | 1.95                     | 0.48              |
| 12:N:337:ALA:HB2  | 12:N:364:CYS:CB   | 2.43                     | 0.48              |
| 12:N:802:LYS:HA   | 12:N:807:GLN:NE2  | 2.27                     | 0.48              |
| 13:O:321:GLU:O    | 13:O:325:GLN:HG2  | 2.13                     | 0.48              |
| 3:P:96:VAL:HG11   | 3:P:98:GLU:HG3    | 1.96                     | 0.48              |
| 15:X:460:LYS:O    | 15:X:464:LEU:HG   | 2.13                     | 0.48              |
| 15:X:517:ASP:O    | 15:X:520:VAL:HG22 | 2.13                     | 0.48              |
| 15:Y:410:TYR:O    | 15:Y:413:LEU:HB3  | 2.13                     | 0.48              |
| 1:A:224:VAL:HG12  | 1:A:238:TYR:HD1   | 1.79                     | 0.48              |
| 1:A:248:PHE:HB2   | 1:A:430:VAL:HG21  | 1.96                     | 0.48              |
| 1:A:869:ARG:O     | 1:A:873:VAL:HG12  | 2.13                     | 0.48              |
| 1:A:1279:ARG:HG3  | 1:A:1280:PRO:HD2  | 1.96                     | 0.48              |
| 3:C:436:LEU:HB3   | 3:C:459:ALA:HB2   | 1.96                     | 0.48              |
| 3:C:439:LEU:HA    | 3:C:439:LEU:HD23  | 1.68                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:490:TYR:CD2   | 3:C:515:TYR:HD1   | 2.31                     | 0.48              |
| 6:F:97:PHE:CD2    | 6:F:99:LYS:HG3    | 2.48                     | 0.48              |
| 6:F:520:ARG:O     | 6:F:523:SER:OG    | 2.23                     | 0.48              |
| 6:F:556:SER:O     | 6:F:560:THR:HG23  | 2.13                     | 0.48              |
| 6:H:472:GLY:HA3   | 6:H:488:LEU:HD21  | 1.96                     | 0.48              |
| 6:H:717:GLU:HA    | 6:H:719:TYR:CE1   | 2.48                     | 0.48              |
| 9:J:325:LYS:HE3   | 9:J:329:LEU:HB2   | 1.94                     | 0.48              |
| 9:K:458:LEU:HD12  | 9:K:458:LEU:HA    | 1.65                     | 0.48              |
| 3:P:400:ARG:NH1   | 17:Q:499:ARG:HA   | 2.23                     | 0.48              |
| 15:X:190:THR:O    | 15:X:194:GLU:HG2  | 2.12                     | 0.48              |
| 15:Y:237:SER:OG   | 15:Y:241:LYS:HE3  | 2.13                     | 0.48              |
| 15:Y:250:ASP:OD2  | 15:Y:253:ARG:NH1  | 2.46                     | 0.48              |
| 15:Y:254:ALA:O    | 15:Y:258:ILE:HG12 | 2.14                     | 0.48              |
| 1:A:1028:TRP:CH2  | 1:A:1566:PHE:HD1  | 2.32                     | 0.48              |
| 2:B:13:THR:HB     | 12:N:598:SER:HB3  | 1.94                     | 0.48              |
| 6:H:522:PHE:CE2   | 6:H:538:ILE:HG22  | 2.49                     | 0.48              |
| 8:I:560:THR:OG1   | 8:I:563:GLU:HB2   | 2.13                     | 0.48              |
| 9:J:420:THR:O     | 9:J:424:TRP:CD1   | 2.66                     | 0.48              |
| 9:K:62:SER:OG     | 9:K:63:ARG:HD3    | 2.13                     | 0.48              |
| 13:O:470:LEU:HD22 | 13:O:489:VAL:HG13 | 1.94                     | 0.48              |
| 3:P:32:ILE:O      | 3:P:36:LEU:HD23   | 2.13                     | 0.48              |
| 3:P:36:LEU:HD21   | 3:P:228:TRP:CH2   | 2.46                     | 0.48              |
| 3:P:361:ASN:HB3   | 3:P:362:PRO:C     | 2.34                     | 0.48              |
| 15:X:304:LEU:O    | 15:X:308:MET:HG2  | 2.14                     | 0.48              |
| 15:X:349:SER:HA   | 15:X:352:SER:OG   | 2.14                     | 0.48              |
| 15:Y:449:THR:HG22 | 15:Y:461:ALA:HA   | 1.96                     | 0.48              |
| 1:A:1131:MET:HG2  | 1:A:1132:THR:N    | 2.28                     | 0.48              |
| 1:A:1402:GLU:HA   | 1:A:1463:TYR:CE1  | 2.49                     | 0.48              |
| 1:A:1892:HIS:HB3  | 1:A:1927:ALA:HB2  | 1.96                     | 0.48              |
| 3:C:270:ALA:HB2   | 3:C:285:ILE:HG22  | 1.95                     | 0.48              |
| 3:C:399:TYR:CD1   | 3:C:400:ARG:N     | 2.82                     | 0.48              |
| 5:E:99:ILE:CD1    | 6:H:591:GLN:HG2   | 2.43                     | 0.48              |
| 6:F:611:PHE:HB3   | 6:F:620:ALA:HB2   | 1.96                     | 0.48              |
| 6:H:520:ARG:O     | 6:H:523:SER:OG    | 2.30                     | 0.48              |
| 6:H:707:PHE:HA    | 6:H:729:LEU:HD11  | 1.96                     | 0.48              |
| 8:I:404:LEU:HD21  | 13:O:410:TRP:NE1  | 2.28                     | 0.48              |
| 9:J:315:LYS:HD2   | 9:J:318:HIS:ND1   | 2.29                     | 0.48              |
| 9:K:48:TYR:OH     | 9:K:78:ARG:NH2    | 2.46                     | 0.48              |
| 12:N:435:VAL:HG23 | 12:N:515:PHE:CE2  | 2.48                     | 0.48              |
| 12:N:538:GLU:OE1  | 12:N:561:LEU:HD22 | 2.14                     | 0.48              |
| 12:N:676:TRP:O    | 12:N:713:PHE:HB2  | 2.14                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:488:GLN:HA    | 3:P:491:ILE:HG22  | 1.95                     | 0.48              |
| 15:X:258:ILE:O    | 15:X:262:GLU:HG2  | 2.13                     | 0.48              |
| 15:Y:520:VAL:HA   | 15:Y:525:TYR:HE1  | 1.78                     | 0.48              |
| 1:A:1256:GLY:O    | 1:A:1259:LEU:N    | 2.47                     | 0.48              |
| 1:A:1595:HIS:CD2  | 1:A:1598:ASP:HB2  | 2.49                     | 0.48              |
| 1:A:1749:SER:HB2  | 13:O:605:LEU:HD22 | 1.96                     | 0.48              |
| 3:C:484:GLU:OE2   | 3:C:488:GLN:NE2   | 2.47                     | 0.48              |
| 6:F:584:ASP:OD1   | 6:F:585:ILE:N     | 2.44                     | 0.48              |
| 8:I:16:GLU:OE2    | 8:I:740:HIS:NE2   | 2.41                     | 0.48              |
| 8:I:28:TRP:CE3    | 8:I:35:ILE:HB     | 2.49                     | 0.48              |
| 8:I:184:PHE:O     | 8:I:185:ILE:HD13  | 2.14                     | 0.48              |
| 8:I:620:PHE:HD2   | 8:I:707:PHE:CE1   | 2.29                     | 0.48              |
| 12:N:502:ILE:HD11 | 12:N:548:ARG:HD2  | 1.96                     | 0.48              |
| 12:N:629:LEU:HD23 | 12:N:633:ARG:HH22 | 1.79                     | 0.48              |
| 13:O:435:SER:HB2  | 13:O:476:LEU:HD11 | 1.95                     | 0.48              |
| 13:O:681:PRO:O    | 13:O:682:LYS:HB2  | 2.13                     | 0.48              |
| 15:X:185:GLU:O    | 15:X:189:VAL:HG23 | 2.14                     | 0.48              |
| 15:Y:193:LYS:HA   | 15:Y:196:LEU:HG   | 1.96                     | 0.48              |
| 15:Y:350:PHE:O    | 15:Y:353:LYS:HE2  | 2.14                     | 0.48              |
| 1:A:102:TRP:O     | 1:A:114:TYR:HB3   | 2.12                     | 0.48              |
| 1:A:131:PHE:O     | 1:A:147:VAL:HG23  | 2.14                     | 0.48              |
| 1:A:847:TRP:CD1   | 1:A:860:TYR:HB2   | 2.49                     | 0.48              |
| 1:A:1856:LEU:HD12 | 1:A:1857:ASP:N    | 2.28                     | 0.48              |
| 1:A:1869:HIS:HB2  | 1:A:1934:LEU:HD13 | 1.96                     | 0.48              |
| 3:C:49:LEU:HD12   | 3:P:95:ASP:OD2    | 2.13                     | 0.48              |
| 3:C:228:TRP:CD1   | 3:C:228:TRP:N     | 2.81                     | 0.48              |
| 6:F:618:ASP:O     | 6:F:621:LEU:N     | 2.46                     | 0.48              |
| 6:H:141:SER:HA    | 6:H:144:LEU:HD12  | 1.96                     | 0.48              |
| 8:I:197:ARG:HG2   | 8:I:198:VAL:N     | 2.29                     | 0.48              |
| 8:I:664:ARG:HB3   | 8:I:714:LEU:HD12  | 1.96                     | 0.48              |
| 8:I:692:ARG:NH2   | 8:I:694:ASP:OD2   | 2.46                     | 0.48              |
| 9:J:39:ASP:OD2    | 9:J:39:ASP:N      | 2.44                     | 0.48              |
| 3:P:355:GLN:NE2   | 3:P:375:TYR:OH    | 2.46                     | 0.48              |
| 15:Y:236:LEU:O    | 15:Y:240:ILE:HG13 | 2.13                     | 0.48              |
| 1:A:480:ALA:O     | 1:A:488:MET:HG3   | 2.13                     | 0.48              |
| 1:A:612:ILE:HG13  | 1:A:641:TRP:HZ3   | 1.78                     | 0.48              |
| 1:A:1046:PRO:HB3  | 1:A:1108:THR:OG1  | 2.13                     | 0.48              |
| 1:A:1745:PRO:HA   | 1:A:1748:LEU:HB2  | 1.95                     | 0.48              |
| 8:I:286:ARG:NH2   | 8:I:325:LEU:HD13  | 2.29                     | 0.48              |
| 8:I:737:ASN:OD1   | 8:I:740:HIS:N     | 2.47                     | 0.48              |
| 9:K:192:LYS:HB2   | 9:K:198:GLN:HE21  | 1.78                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:L:37:LYS:HG3   | 10:L:55:GLN:HB3   | 1.96                     | 0.48              |
| 10:L:73:THR:HG22  | 10:L:131:PRO:HB2  | 1.94                     | 0.48              |
| 12:N:172:MET:O    | 12:N:176:LEU:HD23 | 2.14                     | 0.48              |
| 3:P:226:ASP:HA    | 3:P:230:LYS:HE2   | 1.95                     | 0.48              |
| 3:P:396:LYS:HD2   | 3:P:396:LYS:N     | 2.29                     | 0.48              |
| 3:P:515:TYR:HA    | 3:P:518:GLN:HG2   | 1.95                     | 0.48              |
| 15:X:315:LEU:CD2  | 15:X:320:ARG:HE   | 2.26                     | 0.48              |
| 15:Y:190:THR:HA   | 15:Y:193:LYS:HE2  | 1.95                     | 0.48              |
| 1:A:1159:VAL:HG22 | 1:A:1160:TYR:O    | 2.13                     | 0.47              |
| 1:A:1635:GLU:OE2  | 1:A:1648:LYS:HD3  | 2.13                     | 0.47              |
| 1:A:1649:GLU:HG2  | 1:A:1650:GLU:H    | 1.79                     | 0.47              |
| 1:A:1690:ILE:O    | 1:A:1695:GLY:HA2  | 2.13                     | 0.47              |
| 2:B:18:ALA:HA     | 2:B:48:TRP:CZ2    | 2.48                     | 0.47              |
| 6:F:529:GLU:O     | 6:F:531:TYR:N     | 2.47                     | 0.47              |
| 6:H:44:LEU:HD23   | 6:H:60:LEU:CD2    | 2.44                     | 0.47              |
| 8:I:66:LYS:N      | 8:I:86:ASP:OD2    | 2.26                     | 0.47              |
| 9:J:217:GLU:OE2   | 9:J:240:ARG:NH1   | 2.45                     | 0.47              |
| 9:J:389:ARG:HA    | 9:J:389:ARG:NH1   | 2.29                     | 0.47              |
| 10:L:89:TYR:HB3   | 10:L:151:THR:HA   | 1.96                     | 0.47              |
| 12:N:659:VAL:HG23 | 12:N:728:VAL:HG23 | 1.97                     | 0.47              |
| 15:X:271:VAL:HG23 | 15:X:272:ASP:H    | 1.79                     | 0.47              |
| 15:Y:222:MET:O    | 15:Y:226:VAL:HG23 | 2.14                     | 0.47              |
| 1:A:82:GLU:O      | 1:A:84:GLY:N      | 2.46                     | 0.47              |
| 1:A:768:LEU:HA    | 1:A:768:LEU:HD23  | 1.59                     | 0.47              |
| 3:C:284:SER:OG    | 3:C:285:ILE:N     | 2.47                     | 0.47              |
| 6:F:611:PHE:O     | 6:F:614:THR:N     | 2.47                     | 0.47              |
| 7:G:23:ARG:HG3    | 7:G:24:LYS:HD3    | 1.96                     | 0.47              |
| 6:H:44:LEU:HD23   | 6:H:60:LEU:HD21   | 1.96                     | 0.47              |
| 6:H:614:THR:HG22  | 6:H:614:THR:O     | 2.14                     | 0.47              |
| 8:I:26:LEU:HB3    | 8:I:37:LEU:HA     | 1.95                     | 0.47              |
| 8:I:34:LEU:H      | 8:I:34:LEU:HD23   | 1.79                     | 0.47              |
| 8:I:224:SER:HB2   | 8:I:230:GLU:HB3   | 1.95                     | 0.47              |
| 8:I:393:VAL:HG12  | 8:I:397:ILE:HD11  | 1.96                     | 0.47              |
| 9:J:211:LYS:C     | 9:J:213:ASN:H     | 2.17                     | 0.47              |
| 9:J:376:LEU:HD23  | 9:J:391:PHE:CZ    | 2.49                     | 0.47              |
| 9:K:289:HIS:CE1   | 11:M:57:TRP:CH2   | 3.02                     | 0.47              |
| 11:M:63:GLN:C     | 11:M:65:LEU:H     | 2.18                     | 0.47              |
| 15:X:99:LYS:HA    | 15:X:102:MET:SD   | 2.54                     | 0.47              |
| 15:X:340:GLU:O    | 15:X:344:VAL:HG22 | 2.13                     | 0.47              |
| 15:X:417:TYR:O    | 15:X:422:SER:OG   | 2.32                     | 0.47              |
| 15:X:460:LYS:O    | 15:X:463:THR:OG1  | 2.26                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:522:VAL:HG12 | 15:X:524:GLU:OE1  | 2.13                     | 0.47              |
| 15:Y:146:TYR:HA   | 15:Y:149:LEU:HD12 | 1.95                     | 0.47              |
| 15:Y:400:ILE:HG22 | 15:Y:409:CYS:SG   | 2.54                     | 0.47              |
| 15:Y:458:GLN:O    | 15:Y:462:LYS:HG3  | 2.14                     | 0.47              |
| 1:A:632:GLU:O     | 1:A:636:GLN:NE2   | 2.47                     | 0.47              |
| 1:A:980:ARG:NE    | 1:A:1674:TRP:HE1  | 2.11                     | 0.47              |
| 1:A:1051:VAL:HG21 | 1:A:1065:GLU:OE2  | 2.14                     | 0.47              |
| 1:A:1284:GLU:HA   | 1:A:1349:SER:HA   | 1.95                     | 0.47              |
| 3:C:93:TYR:CE1    | 3:C:101:ARG:HG2   | 2.49                     | 0.47              |
| 6:F:655:GLU:HG3   | 6:F:702:ASN:ND2   | 2.30                     | 0.47              |
| 7:G:18:GLU:HA     | 7:G:21:ASN:ND2    | 2.29                     | 0.47              |
| 6:H:571:CYS:SG    | 6:H:606:LEU:HD12  | 2.54                     | 0.47              |
| 8:I:37:LEU:HD23   | 8:I:45:LEU:O      | 2.14                     | 0.47              |
| 8:I:569:LEU:HD12  | 8:I:721:TYR:CE2   | 2.50                     | 0.47              |
| 9:J:58:HIS:HE1    | 9:K:260:LYS:O     | 1.96                     | 0.47              |
| 9:K:61:ARG:HD2    | 9:K:66:ASP:OD2    | 2.14                     | 0.47              |
| 12:N:369:ASP:O    | 12:N:370:GLN:HB3  | 2.15                     | 0.47              |
| 12:N:557:CYS:HA   | 12:N:560:MET:SD   | 2.54                     | 0.47              |
| 12:N:687:MET:HB2  | 12:N:691:LEU:HD22 | 1.95                     | 0.47              |
| 15:Y:399:ALA:O    | 15:Y:402:LEU:N    | 2.47                     | 0.47              |
| 1:A:633:ILE:H     | 1:A:633:ILE:HD12  | 1.79                     | 0.47              |
| 1:A:1170:ASN:ND2  | 1:A:1203:MET:HG3  | 2.29                     | 0.47              |
| 1:A:1375:TYR:O    | 1:A:1414:ILE:HG23 | 2.14                     | 0.47              |
| 1:A:1910:SER:O    | 1:A:1911:PHE:HB3  | 2.14                     | 0.47              |
| 2:B:31:ASN:N      | 2:B:31:ASN:OD1    | 2.47                     | 0.47              |
| 3:C:311:SER:O     | 3:C:311:SER:OG    | 2.29                     | 0.47              |
| 6:F:103:HIS:HA    | 6:F:106:ILE:HD12  | 1.96                     | 0.47              |
| 6:H:118:LEU:HD12  | 6:H:118:LEU:HA    | 1.62                     | 0.47              |
| 9:K:376:LEU:CD2   | 7:W:4:ARG:HH22    | 2.28                     | 0.47              |
| 10:L:93:LYS:HB3   | 10:L:142:LEU:HB2  | 1.96                     | 0.47              |
| 12:N:355:ARG:O    | 12:N:359:GLU:HG2  | 2.15                     | 0.47              |
| 13:O:223:LEU:HD23 | 13:O:223:LEU:HA   | 1.59                     | 0.47              |
| 13:O:561:HIS:O    | 13:O:565:GLN:HG3  | 2.14                     | 0.47              |
| 15:X:135:GLU:OE2  | 15:X:135:GLU:N    | 2.46                     | 0.47              |
| 15:Y:175:LEU:HG   | 15:Y:179:TYR:CE2  | 2.49                     | 0.47              |
| 15:Y:486:LEU:HD13 | 15:Y:489:GLU:HG3  | 1.95                     | 0.47              |
| 16:S:498:MET:C    | 16:S:499:ARG:CG   | 2.76                     | 0.47              |
| 1:A:1306:CYS:HB2  | 1:A:1374:ILE:HG12 | 1.97                     | 0.47              |
| 1:A:1307:LEU:HD21 | 1:A:1579:SER:HA   | 1.96                     | 0.47              |
| 1:A:1364:CYS:N    | 1:A:1365:PRO:HD2  | 2.29                     | 0.47              |
| 1:A:1473:GLY:HA2  | 1:A:1526:VAL:CG2  | 2.44                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1480:GLU:HG2  | 1:A:1527:MET:SD   | 2.54                     | 0.47              |
| 1:A:1731:ARG:HA   | 1:A:1732:ALA:HA   | 1.70                     | 0.47              |
| 1:A:1824:ARG:HH21 | 12:N:142:MET:HA   | 1.79                     | 0.47              |
| 6:F:509:TYR:CE2   | 6:F:517:GLN:HG3   | 2.50                     | 0.47              |
| 6:F:552:LEU:HD12  | 6:F:552:LEU:HA    | 1.62                     | 0.47              |
| 6:H:481:CYS:O     | 6:H:485:ILE:HG13  | 2.14                     | 0.47              |
| 8:I:386:ILE:O     | 8:I:390:ILE:HG13  | 2.14                     | 0.47              |
| 9:J:84:LYS:HA     | 9:J:86:HIS:CE1    | 2.50                     | 0.47              |
| 9:J:291:LEU:HD12  | 9:J:301:SER:HB2   | 1.95                     | 0.47              |
| 9:J:426:LEU:O     | 9:J:430:GLU:HG2   | 2.15                     | 0.47              |
| 9:K:290:LYS:HD3   | 9:K:290:LYS:HA    | 1.58                     | 0.47              |
| 10:L:80:TYR:HA    | 10:L:120:ILE:HD12 | 1.96                     | 0.47              |
| 12:N:248:HIS:O    | 12:N:248:HIS:ND1  | 2.47                     | 0.47              |
| 12:N:534:SER:O    | 12:N:537:ARG:HG2  | 2.14                     | 0.47              |
| 13:O:399:MET:O    | 13:O:399:MET:HG3  | 2.15                     | 0.47              |
| 15:X:66:ASN:HD22  | 15:Y:266:LEU:C    | 2.18                     | 0.47              |
| 15:Y:192:TYR:CB   | 15:Y:209:LEU:HD21 | 2.44                     | 0.47              |
| 15:Y:196:LEU:O    | 15:Y:200:PRO:HB3  | 2.14                     | 0.47              |
| 1:A:614:THR:HB    | 1:A:656:GLU:OE2   | 2.14                     | 0.47              |
| 1:A:1086:MET:HG3  | 1:A:1610:TYR:OH   | 2.14                     | 0.47              |
| 1:A:1676:LEU:HD23 | 1:A:1677:LEU:N    | 2.29                     | 0.47              |
| 1:A:1824:ARG:HD2  | 1:A:1824:ARG:N    | 2.29                     | 0.47              |
| 2:B:48:TRP:CH2    | 12:N:632:MET:HG2  | 2.49                     | 0.47              |
| 2:B:63:TRP:CD1    | 2:B:74:PRO:HG3    | 2.49                     | 0.47              |
| 3:C:316:LEU:HD12  | 3:C:316:LEU:HA    | 1.65                     | 0.47              |
| 6:F:18:HIS:NE2    | 6:H:113:SER:OG    | 2.35                     | 0.47              |
| 6:F:609:HIS:HA    | 6:F:612:VAL:HG22  | 1.96                     | 0.47              |
| 6:H:522:PHE:CD2   | 6:H:539:TYR:HA    | 2.49                     | 0.47              |
| 8:I:45:LEU:CG     | 8:I:57:SER:HA     | 2.45                     | 0.47              |
| 8:I:317:LEU:O     | 8:I:320:LEU:HB3   | 2.14                     | 0.47              |
| 8:I:326:THR:HG22  | 8:I:327:VAL:H     | 1.79                     | 0.47              |
| 9:K:80:HIS:HB3    | 9:K:89:ALA:HB2    | 1.96                     | 0.47              |
| 9:K:232:ASP:OD1   | 9:K:264:HIS:NE2   | 2.45                     | 0.47              |
| 9:K:450:ASN:OD1   | 7:W:9:LEU:N       | 2.41                     | 0.47              |
| 12:N:484:PRO:O    | 12:N:486:ASP:N    | 2.47                     | 0.47              |
| 12:N:613:GLU:HA   | 12:N:616:ARG:HD2  | 1.96                     | 0.47              |
| 12:N:798:TYR:O    | 12:N:802:LYS:HG2  | 2.14                     | 0.47              |
| 1:A:1035:GLN:HG3  | 1:A:1039:ARG:HH12 | 1.80                     | 0.47              |
| 1:A:1892:HIS:HA   | 1:A:1926:ARG:HH22 | 1.80                     | 0.47              |
| 2:B:8:TRP:CH2     | 2:B:10:GLY:HA3    | 2.50                     | 0.47              |
| 3:C:348:GLU:OE1   | 3:C:378:MET:HE1   | 2.15                     | 0.47              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 3:C:376:MET:HE1   | 3:C:411:ILE:HG21 | 1.97                     | 0.47              |
| 6:F:15:ALA:HA     | 6:H:116:PHE:CZ   | 2.50                     | 0.47              |
| 6:F:101:LYS:HB3   | 6:F:105:ASP:OD1  | 2.15                     | 0.47              |
| 8:I:275:ALA:O     | 8:I:278:GLU:HG3  | 2.15                     | 0.47              |
| 8:I:286:ARG:HH21  | 8:I:325:LEU:HD13 | 1.80                     | 0.47              |
| 9:J:52:GLN:HB3    | 9:J:55:ARG:HG3   | 1.97                     | 0.47              |
| 9:J:134:LEU:HD13  | 9:J:166:ALA:HB2  | 1.97                     | 0.47              |
| 9:J:338:ILE:HG12  | 9:J:342:HIS:CE1  | 2.50                     | 0.47              |
| 9:J:488:ILE:O     | 9:J:492:MET:N    | 2.35                     | 0.47              |
| 10:L:12:ASP:HB3   | 10:L:15:GLN:HG2  | 1.96                     | 0.47              |
| 12:N:103:ASP:HA   | 12:N:104:GLU:HA  | 1.63                     | 0.47              |
| 12:N:345:PHE:CE2  | 12:N:385:ARG:HD2 | 2.50                     | 0.47              |
| 12:N:562:LYS:NZ   | 12:N:565:ALA:HB3 | 2.29                     | 0.47              |
| 12:N:702:GLN:HG2  | 12:N:704:VAL:H   | 1.80                     | 0.47              |
| 13:O:40:LEU:HD13  | 13:O:82:ILE:HD11 | 1.97                     | 0.47              |
| 13:O:356:ASP:OD1  | 13:O:356:ASP:N   | 2.37                     | 0.47              |
| 13:O:657:ILE:HD11 | 13:O:704:VAL:HB  | 1.97                     | 0.47              |
| 3:P:187:GLU:O     | 3:P:191:VAL:HG22 | 2.14                     | 0.47              |
| 15:Y:430:ALA:HB2  | 15:Y:451:CYS:SG  | 2.55                     | 0.47              |
| 1:A:621:CYS:SG    | 1:A:622:LEU:N    | 2.88                     | 0.47              |
| 1:A:843:SER:O     | 1:A:843:SER:OG   | 2.31                     | 0.47              |
| 1:A:851:CYS:O     | 1:A:882:LEU:HD11 | 2.14                     | 0.47              |
| 3:C:133:GLU:O     | 3:C:136:ASP:N    | 2.47                     | 0.47              |
| 8:I:176:LEU:O     | 8:I:187:LEU:HA   | 2.15                     | 0.47              |
| 8:I:557:TYR:C     | 8:I:692:ARG:HE   | 2.18                     | 0.47              |
| 9:K:318:HIS:O     | 9:K:322:TYR:HD1  | 1.98                     | 0.47              |
| 13:O:320:ALA:O    | 13:O:323:ALA:N   | 2.48                     | 0.47              |
| 13:O:571:CYS:O    | 13:O:574:LEU:N   | 2.48                     | 0.47              |
| 13:O:715:TYR:HB2  | 13:O:737:PHE:CE2 | 2.50                     | 0.47              |
| 3:P:318:TYR:HA    | 3:P:321:HIS:CE1  | 2.50                     | 0.47              |
| 3:P:323:LEU:O     | 3:P:326:ILE:N    | 2.46                     | 0.47              |
| 3:P:344:ARG:O     | 3:P:345:SER:OG   | 2.31                     | 0.47              |
| 1:A:659:LEU:O     | 1:A:662:THR:OG1  | 2.28                     | 0.47              |
| 1:A:926:LEU:CD1   | 1:A:929:ARG:HH22 | 2.28                     | 0.47              |
| 1:A:1274:LEU:HD13 | 1:A:1324:GLN:OE1 | 2.15                     | 0.47              |
| 3:C:120:TYR:HD1   | 3:C:174:LEU:HD13 | 1.80                     | 0.47              |
| 3:C:326:ILE:HD13  | 3:C:326:ILE:HA   | 1.72                     | 0.47              |
| 6:F:560:THR:OG1   | 6:F:561:ASP:N    | 2.47                     | 0.47              |
| 6:F:645:TYR:CE1   | 6:F:653:LEU:HD12 | 2.50                     | 0.47              |
| 8:I:452:LEU:HD12  | 8:I:453:THR:H    | 1.80                     | 0.47              |
| 9:J:285:PHE:HD1   | 9:J:308:TYR:CZ   | 2.32                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:K:438:GLU:OE2   | 9:K:440:THR:HG22  | 2.15                     | 0.47              |
| 10:L:13:PRO:HG3   | 10:L:78:CYS:SG    | 2.55                     | 0.47              |
| 12:N:762:LEU:O    | 12:N:765:LEU:N    | 2.48                     | 0.47              |
| 13:O:299:SER:OG   | 13:O:300:LEU:N    | 2.47                     | 0.47              |
| 13:O:506:LEU:HD12 | 13:O:507:TRP:N    | 2.30                     | 0.47              |
| 15:X:510:VAL:O    | 15:X:514:ILE:HG13 | 2.15                     | 0.47              |
| 15:Y:394:ILE:O    | 15:Y:398:GLU:HG2  | 2.14                     | 0.47              |
| 1:A:24:GLY:HA3    | 1:A:94:TYR:CD2    | 2.50                     | 0.47              |
| 1:A:90:ASP:N      | 1:A:90:ASP:OD1    | 2.47                     | 0.47              |
| 1:A:174:PRO:HG2   | 1:A:175:PHE:CD2   | 2.49                     | 0.47              |
| 1:A:776:ASN:HD21  | 1:A:778:LEU:HB2   | 1.80                     | 0.47              |
| 1:A:1715:TRP:HB2  | 1:A:1716:GLN:NE2  | 2.29                     | 0.47              |
| 2:B:1:MET:HA      | 12:N:650:LEU:HD22 | 1.96                     | 0.47              |
| 3:C:167:LEU:HG    | 3:C:171:GLY:HA3   | 1.97                     | 0.47              |
| 3:C:298:GLU:OE1   | 3:C:298:GLU:N     | 2.47                     | 0.47              |
| 6:H:102:SER:HB2   | 6:H:105:ASP:HB2   | 1.96                     | 0.47              |
| 8:I:167:LEU:H     | 8:I:167:LEU:HD12  | 1.79                     | 0.47              |
| 9:J:177:THR:OG1   | 9:J:178:ALA:N     | 2.48                     | 0.47              |
| 13:O:493:LEU:HD13 | 13:O:507:TRP:CB   | 2.43                     | 0.47              |
| 15:Y:533:SER:O    | 15:Y:536:LEU:HB3  | 2.14                     | 0.47              |
| 1:A:484:LYS:CB    | 1:A:593:ASN:HB2   | 2.44                     | 0.46              |
| 1:A:636:GLN:O     | 1:A:639:VAL:HG12  | 2.15                     | 0.46              |
| 1:A:772:GLU:OE1   | 1:A:869:ARG:HB2   | 2.15                     | 0.46              |
| 1:A:1823:SER:O    | 1:A:1826:HIS:HD2  | 1.98                     | 0.46              |
| 2:B:53:HIS:CE1    | 2:B:76:CYS:HB3    | 2.50                     | 0.46              |
| 3:C:296:ARG:HE    | 3:C:298:GLU:HB2   | 1.80                     | 0.46              |
| 3:C:465:VAL:HG23  | 3:C:466:GLU:CD    | 2.35                     | 0.46              |
| 3:C:531:THR:HA    | 3:C:534:GLN:NE2   | 2.21                     | 0.46              |
| 6:F:153:GLU:HA    | 6:F:473:TYR:CE2   | 2.50                     | 0.46              |
| 6:F:165:ASP:HA    | 6:F:467:ARG:HD2   | 1.97                     | 0.46              |
| 6:F:498:THR:HG21  | 6:H:30:ARG:NH2    | 2.29                     | 0.46              |
| 6:H:747:TYR:O     | 6:H:750:LEU:N     | 2.48                     | 0.46              |
| 8:I:310:TRP:HD1   | 13:O:126:VAL:HG22 | 1.77                     | 0.46              |
| 9:K:140:TYR:O     | 9:K:144:ASP:N     | 2.48                     | 0.46              |
| 10:L:33:LEU:HD13  | 10:L:54:TRP:CD2   | 2.50                     | 0.46              |
| 12:N:132:LEU:HD22 | 12:N:135:TRP:CE3  | 2.50                     | 0.46              |
| 12:N:366:GLU:N    | 12:N:366:GLU:OE2  | 2.47                     | 0.46              |
| 12:N:575:ARG:NH2  | 12:N:592:TYR:HD1  | 2.13                     | 0.46              |
| 13:O:361:LEU:HB2  | 13:O:384:LEU:HD13 | 1.97                     | 0.46              |
| 13:O:715:TYR:HB2  | 13:O:737:PHE:CD2  | 2.49                     | 0.46              |
| 3:P:449:LEU:HD13  | 3:P:476:LEU:HD11  | 1.97                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:304:LEU:HD23 | 15:X:304:LEU:HA   | 1.65                     | 0.46              |
| 15:X:379:LYS:NZ   | 15:X:383:LEU:HD22 | 2.30                     | 0.46              |
| 15:X:496:ILE:CG1  | 15:X:518:PHE:HB3  | 2.45                     | 0.46              |
| 1:A:1807:GLU:O    | 1:A:1808:THR:OG1  | 2.31                     | 0.46              |
| 3:C:73:PRO:CG     | 3:P:73:PRO:HG2    | 2.39                     | 0.46              |
| 6:F:641:LEU:HB3   | 6:F:657:HIS:CD2   | 2.49                     | 0.46              |
| 6:F:649:GLU:HA    | 6:F:651:PHE:CE2   | 2.51                     | 0.46              |
| 6:H:509:TYR:O     | 6:H:513:SER:N     | 2.48                     | 0.46              |
| 9:K:316:ASN:HD21  | 9:K:346:VAL:HG23  | 1.80                     | 0.46              |
| 10:L:45:LEU:HB2   | 10:L:54:TRP:HB2   | 1.97                     | 0.46              |
| 12:N:639:HIS:O    | 12:N:641:LEU:N    | 2.47                     | 0.46              |
| 13:O:326:GLU:O    | 13:O:330:ILE:HG13 | 2.15                     | 0.46              |
| 3:P:162:HIS:HB2   | 3:P:167:LEU:HD22  | 1.97                     | 0.46              |
| 3:P:475:LYS:O     | 3:P:479:GLN:NE2   | 2.48                     | 0.46              |
| 15:X:442:GLN:NE2  | 15:X:443:THR:HG22 | 2.31                     | 0.46              |
| 1:A:628:ILE:HD11  | 1:A:762:ILE:HD13  | 1.97                     | 0.46              |
| 1:A:763:PHE:CG    | 1:A:793:LEU:HD22  | 2.50                     | 0.46              |
| 1:A:877:ILE:HG23  | 1:A:881:ILE:HD13  | 1.96                     | 0.46              |
| 3:C:238:TYR:CD1   | 3:C:243:LEU:HD12  | 2.51                     | 0.46              |
| 3:C:409:TYR:CE2   | 3:C:417:TYR:HE2   | 2.33                     | 0.46              |
| 6:F:674:HIS:O     | 6:F:678:VAL:HG13  | 2.14                     | 0.46              |
| 6:H:150:SER:N     | 6:H:151:PRO:HD2   | 2.30                     | 0.46              |
| 8:I:93:CYS:SG     | 8:I:98:PRO:HA     | 2.54                     | 0.46              |
| 8:I:409:SER:OG    | 8:I:410:SER:N     | 2.49                     | 0.46              |
| 9:J:176:LEU:HD11  | 9:J:180:GLU:HB2   | 1.97                     | 0.46              |
| 9:J:184:LEU:HA    | 9:J:184:LEU:HD23  | 1.70                     | 0.46              |
| 9:K:59:ALA:O      | 9:K:63:ARG:NH2    | 2.48                     | 0.46              |
| 9:K:194:CYS:SG    | 9:K:197:GLU:HG3   | 2.55                     | 0.46              |
| 12:N:654:THR:HB   | 12:N:724:ARG:NH2  | 2.30                     | 0.46              |
| 12:N:772:ARG:O    | 12:N:776:MET:HG2  | 2.15                     | 0.46              |
| 13:O:53:SER:N     | 13:O:56:GLU:HB2   | 2.30                     | 0.46              |
| 3:P:490:TYR:O     | 3:P:494:ILE:HD12  | 2.15                     | 0.46              |
| 7:W:13:LEU:HB3    | 7:W:16:ILE:HD12   | 1.96                     | 0.46              |
| 15:X:435:LYS:HA   | 15:X:435:LYS:HD2  | 1.74                     | 0.46              |
| 15:X:441:ALA:HB3  | 15:X:444:LEU:CD1  | 2.45                     | 0.46              |
| 1:A:12:ILE:HB     | 1:A:509:VAL:HA    | 1.97                     | 0.46              |
| 1:A:436:LEU:HD13  | 1:A:638:LEU:HD23  | 1.97                     | 0.46              |
| 1:A:452:LEU:N     | 1:A:474:ILE:O     | 2.48                     | 0.46              |
| 1:A:804:ASP:O     | 1:A:808:ARG:HG3   | 2.14                     | 0.46              |
| 1:A:1221:ASP:OD1  | 1:A:1222:MET:N    | 2.48                     | 0.46              |
| 1:A:1248:ASN:OD1  | 1:A:1603:LEU:HD12 | 2.16                     | 0.46              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 2:B:30:PHE:HD1   | 2:B:46:LEU:HD22   | 1.80                     | 0.46              |
| 3:C:204:GLY:O    | 3:C:208:GLU:HG2   | 2.15                     | 0.46              |
| 6:F:149:TRP:O    | 6:F:152:PHE:N     | 2.43                     | 0.46              |
| 6:H:671:LEU:O    | 6:H:675:ILE:HG13  | 2.15                     | 0.46              |
| 9:J:74:TYR:OH    | 9:J:78:ARG:NH1    | 2.48                     | 0.46              |
| 10:L:49:ASN:HB3  | 10:L:51:GLU:OE2   | 2.15                     | 0.46              |
| 3:P:233:PHE:O    | 3:P:237:ILE:HG22  | 2.15                     | 0.46              |
| 3:P:245:GLU:HG2  | 3:P:246:GLU:N     | 2.30                     | 0.46              |
| 15:X:202:ALA:O   | 15:X:206:ILE:HG13 | 2.15                     | 0.46              |
| 15:X:496:ILE:H   | 15:X:496:ILE:HD12 | 1.80                     | 0.46              |
| 15:Y:163:PRO:O   | 15:Y:167:ARG:HG3  | 2.16                     | 0.46              |
| 15:Y:364:LYS:O   | 15:Y:368:LEU:HG   | 2.14                     | 0.46              |
| 1:A:953:LEU:HB3  | 1:A:954:PRO:HD3   | 1.97                     | 0.46              |
| 1:A:1771:PHE:HZ  | 13:O:634:LEU:HD23 | 1.81                     | 0.46              |
| 1:A:1785:GLU:O   | 1:A:1788:PRO:HD2  | 2.15                     | 0.46              |
| 1:A:1922:LYS:HD3 | 1:A:1922:LYS:HA   | 1.68                     | 0.46              |
| 3:C:323:LEU:HA   | 3:C:323:LEU:HD23  | 1.68                     | 0.46              |
| 6:H:520:ARG:O    | 6:H:524:GLU:HG3   | 2.15                     | 0.46              |
| 6:H:530:ASN:OD1  | 6:H:531:TYR:N     | 2.48                     | 0.46              |
| 8:I:122:SER:OG   | 8:I:124:VAL:N     | 2.49                     | 0.46              |
| 8:I:441:THR:O    | 8:I:444:ASP:HB3   | 2.15                     | 0.46              |
| 9:J:93:LEU:HA    | 9:J:93:LEU:HD23   | 1.56                     | 0.46              |
| 12:N:285:PHE:HB3 | 12:N:289:PHE:CD1  | 2.49                     | 0.46              |
| 12:N:343:GLU:O   | 12:N:347:ILE:HG12 | 2.16                     | 0.46              |
| 12:N:608:LYS:HD2 | 12:N:608:LYS:HA   | 1.74                     | 0.46              |
| 13:O:147:SER:OG  | 13:O:148:PHE:N    | 2.49                     | 0.46              |
| 3:P:35:GLN:O     | 3:P:38:LEU:HG     | 2.15                     | 0.46              |
| 1:A:117:PHE:HD2  | 13:O:268:PHE:CE2  | 2.33                     | 0.46              |
| 1:A:191:ARG:HG2  | 1:A:192:SER:H     | 1.79                     | 0.46              |
| 1:A:259:TYR:HD1  | 1:A:266:HIS:CE1   | 2.33                     | 0.46              |
| 1:A:431:PHE:CB   | 1:A:481:PRO:HG3   | 2.45                     | 0.46              |
| 1:A:757:THR:OG1  | 1:A:758:HIS:N     | 2.43                     | 0.46              |
| 1:A:1111:ALA:HB3 | 1:A:1116:THR:HB   | 1.97                     | 0.46              |
| 1:A:1169:ALA:O   | 1:A:1172:TYR:N    | 2.48                     | 0.46              |
| 1:A:1268:HIS:ND1 | 3:C:545:GLU:HG2   | 2.31                     | 0.46              |
| 6:F:485:ILE:HD12 | 6:F:509:TYR:CE1   | 2.51                     | 0.46              |
| 8:I:88:LYS:HD2   | 8:I:107:GLU:O     | 2.16                     | 0.46              |
| 8:I:144:THR:H    | 8:I:160:ASN:CB    | 2.29                     | 0.46              |
| 8:I:335:GLN:O    | 8:I:338:GLU:HG3   | 2.15                     | 0.46              |
| 8:I:731:SER:OG   | 8:I:746:MET:SD    | 2.71                     | 0.46              |
| 9:J:133:CYS:HB2  | 9:J:156:ALA:HB2   | 1.97                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:445:GLU:CD    | 9:J:475:ILE:HD13  | 2.36                     | 0.46              |
| 9:J:482:TYR:HA    | 9:J:485:ILE:HG22  | 1.98                     | 0.46              |
| 9:K:341:GLY:HA3   | 9:K:357:TYR:CE1   | 2.51                     | 0.46              |
| 12:N:387:LEU:HD23 | 12:N:387:LEU:HA   | 1.70                     | 0.46              |
| 3:P:262:SER:O     | 3:P:266:VAL:HG23  | 2.15                     | 0.46              |
| 15:X:452:LEU:HB3  | 15:X:461:ALA:HB2  | 1.98                     | 0.46              |
| 15:X:455:PRO:O    | 15:X:457:THR:N    | 2.49                     | 0.46              |
| 15:X:465:LEU:HD21 | 15:X:482:LYS:HA   | 1.97                     | 0.46              |
| 15:Y:72:SER:OG    | 15:Y:74:PRO:HD2   | 2.16                     | 0.46              |
| 15:Y:538:LEU:HD23 | 15:Y:538:LEU:HA   | 1.64                     | 0.46              |
| 1:A:117:PHE:HB3   | 13:O:268:PHE:CE2  | 2.51                     | 0.46              |
| 1:A:131:PHE:HD1   | 1:A:214:LEU:O     | 1.98                     | 0.46              |
| 1:A:1387:LEU:HD21 | 1:A:1410:ALA:HB3  | 1.97                     | 0.46              |
| 1:A:1626:THR:HG1  | 1:A:1628:THR:HG1  | 1.51                     | 0.46              |
| 1:A:1727:ASN:HB2  | 12:N:163:PHE:CE2  | 2.49                     | 0.46              |
| 2:B:63:TRP:CD1    | 2:B:64:LEU:HD22   | 2.50                     | 0.46              |
| 3:C:480:LEU:HD23  | 3:C:480:LEU:HA    | 1.65                     | 0.46              |
| 6:F:26:PHE:HD2    | 6:F:27:LEU:HD12   | 1.78                     | 0.46              |
| 6:F:26:PHE:CD1    | 6:H:149:TRP:CD1   | 3.03                     | 0.46              |
| 6:F:543:LEU:HD23  | 6:F:543:LEU:HA    | 1.56                     | 0.46              |
| 7:G:23:ARG:HG3    | 7:G:24:LYS:HB2    | 1.97                     | 0.46              |
| 6:H:509:TYR:CD2   | 6:H:517:GLN:HG3   | 2.51                     | 0.46              |
| 8:I:723:ALA:HB3   | 8:I:732:CYS:HB3   | 1.97                     | 0.46              |
| 12:N:148:GLY:O    | 12:N:152:GLU:CB   | 2.64                     | 0.46              |
| 12:N:716:ILE:HD12 | 12:N:718:GLU:HB2  | 1.97                     | 0.46              |
| 13:O:276:HIS:CE1  | 13:O:280:ARG:HG3  | 2.51                     | 0.46              |
| 13:O:529:ASP:O    | 13:O:532:VAL:HG12 | 2.15                     | 0.46              |
| 3:P:477:HIS:HB3   | 3:P:486:ALA:HB2   | 1.98                     | 0.46              |
| 15:X:193:LYS:HE2  | 15:X:193:LYS:HB3  | 1.83                     | 0.46              |
| 15:X:259:CYS:O    | 15:X:263:LYS:HG2  | 2.16                     | 0.46              |
| 1:A:1364:CYS:O    | 1:A:1368:THR:HG22 | 2.15                     | 0.46              |
| 1:A:1511:ASN:HD21 | 10:L:104:ASN:HD21 | 1.63                     | 0.46              |
| 3:C:307:LEU:HD22  | 3:C:316:LEU:HD13  | 1.97                     | 0.46              |
| 3:C:521:PHE:CD2   | 3:C:549:LEU:HD11  | 2.51                     | 0.46              |
| 6:F:644:ILE:HA    | 6:F:644:ILE:HD12  | 1.79                     | 0.46              |
| 6:H:679:GLN:O     | 6:H:682:LEU:N     | 2.46                     | 0.46              |
| 13:O:637:PRO:O    | 13:O:638:GLU:C    | 2.54                     | 0.46              |
| 3:P:54:TRP:CD2    | 3:P:203:TRP:CD1   | 3.04                     | 0.46              |
| 15:X:173:MET:HG2  | 15:X:177:ASN:HD21 | 1.81                     | 0.46              |
| 15:Y:446:LEU:O    | 15:Y:449:THR:OG1  | 2.28                     | 0.46              |
| 1:A:1300:LEU:HD13 | 1:A:1369:LEU:HD13 | 1.96                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1461:HIS:O    | 1:A:1465:ILE:HG12 | 2.16                     | 0.46              |
| 1:A:1910:SER:OG   | 1:A:1912:ALA:N    | 2.46                     | 0.46              |
| 1:A:1910:SER:CB   | 1:A:1913:GLU:H    | 2.28                     | 0.46              |
| 3:C:58:LEU:O      | 3:C:61:SER:N      | 2.48                     | 0.46              |
| 3:C:318:TYR:HD1   | 9:J:282:ASN:OD1   | 1.99                     | 0.46              |
| 3:C:517:ALA:HA    | 3:C:532:CYS:SG    | 2.56                     | 0.46              |
| 6:F:23:ASP:O      | 6:F:27:LEU:HD13   | 2.16                     | 0.46              |
| 6:F:97:PHE:HB3    | 6:F:99:LYS:HB2    | 1.97                     | 0.46              |
| 6:F:504:GLN:HE22  | 6:F:507:ARG:NH2   | 2.12                     | 0.46              |
| 8:I:102:HIS:CG    | 8:I:103:SER:N     | 2.84                     | 0.46              |
| 8:I:523:HIS:HB3   | 8:I:527:ARG:NH1   | 2.30                     | 0.46              |
| 9:J:488:ILE:O     | 9:J:492:MET:HG2   | 2.16                     | 0.46              |
| 12:N:180:PHE:HB2  | 12:N:240:PHE:CE2  | 2.50                     | 0.46              |
| 12:N:392:ASN:HD22 | 12:N:394:CYS:N    | 2.14                     | 0.46              |
| 13:O:380:GLY:O    | 13:O:383:SER:OG   | 2.31                     | 0.46              |
| 3:P:433:SER:O     | 3:P:437:VAL:HG23  | 2.16                     | 0.46              |
| 15:Y:383:LEU:CB   | 15:Y:392:ALA:HB2  | 2.36                     | 0.46              |
| 1:A:217:LEU:HD23  | 1:A:217:LEU:HA    | 1.73                     | 0.46              |
| 1:A:802:TYR:OH    | 1:A:842:PRO:HD3   | 2.16                     | 0.46              |
| 1:A:872:LEU:HD23  | 1:A:933:TRP:HH2   | 1.81                     | 0.46              |
| 1:A:1027:ILE:HG22 | 1:A:1028:TRP:CD1  | 2.50                     | 0.46              |
| 1:A:1080:LEU:HD23 | 1:A:1080:LEU:HA   | 1.70                     | 0.46              |
| 1:A:1210:LEU:HD23 | 1:A:1210:LEU:HA   | 1.63                     | 0.46              |
| 3:C:328:LYS:HB3   | 3:C:329:TYR:CE1   | 2.50                     | 0.46              |
| 9:J:31:SER:HB2    | 9:K:227:LEU:HD23  | 1.98                     | 0.46              |
| 9:J:275:LEU:HA    | 9:J:275:LEU:HD23  | 1.64                     | 0.46              |
| 9:J:324:SER:O     | 9:J:328:THR:HG22  | 2.15                     | 0.46              |
| 9:J:349:GLU:OE1   | 9:J:352:GLN:HG3   | 2.16                     | 0.46              |
| 9:J:451:LEU:HG    | 9:J:467:TYR:CE2   | 2.51                     | 0.46              |
| 9:J:523:ILE:HD11  | 3:P:420:TYR:HB2   | 1.98                     | 0.46              |
| 10:L:86:ASP:HB2   | 10:L:89:TYR:HD1   | 1.81                     | 0.46              |
| 12:N:331:PHE:CZ   | 12:N:335:ILE:HD12 | 2.51                     | 0.46              |
| 12:N:506:VAL:HA   | 12:N:510:GLY:O    | 2.16                     | 0.46              |
| 12:N:637:TRP:N    | 12:N:637:TRP:CD1  | 2.84                     | 0.46              |
| 13:O:240:LEU:HD23 | 13:O:240:LEU:HA   | 1.80                     | 0.46              |
| 3:P:46:ARG:NH2    | 3:P:113:LYS:HB2   | 2.31                     | 0.46              |
| 15:Y:192:TYR:O    | 15:Y:195:VAL:HG22 | 2.16                     | 0.46              |
| 1:A:1533:LEU:HD11 | 12:N:482:PRO:HD3  | 1.97                     | 0.45              |
| 1:A:1585:LEU:HA   | 1:A:1585:LEU:HD23 | 1.49                     | 0.45              |
| 6:F:466:LEU:HD12  | 6:F:466:LEU:HA    | 1.77                     | 0.45              |
| 8:I:717:MET:HG3   | 8:I:719:ALA:HB2   | 1.96                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:293:ILE:O    | 12:N:297:VAL:HG23 | 2.16                     | 0.45              |
| 12:N:506:VAL:O    | 12:N:510:GLY:HA3  | 2.15                     | 0.45              |
| 3:P:228:TRP:CD1   | 3:P:228:TRP:N     | 2.84                     | 0.45              |
| 3:P:372:GLY:HA2   | 3:P:384:ALA:HA    | 1.98                     | 0.45              |
| 15:X:77:TYR:OH    | 15:X:107:LYS:HD3  | 2.16                     | 0.45              |
| 15:X:175:LEU:HD11 | 15:X:179:TYR:CZ   | 2.51                     | 0.45              |
| 15:Y:193:LYS:HA   | 15:Y:196:LEU:CD2  | 2.46                     | 0.45              |
| 15:Y:390:GLN:O    | 15:Y:394:ILE:HG23 | 2.15                     | 0.45              |
| 1:A:252:ASP:OD2   | 1:A:253:PRO:HD3   | 2.16                     | 0.45              |
| 1:A:485:ILE:O     | 1:A:487:THR:HG23  | 2.16                     | 0.45              |
| 1:A:619:GLN:O     | 1:A:623:GLN:HG2   | 2.15                     | 0.45              |
| 1:A:852:LEU:HD11  | 1:A:1819:GLU:HB3  | 1.98                     | 0.45              |
| 1:A:1217:LEU:HD12 | 1:A:1259:LEU:O    | 2.16                     | 0.45              |
| 1:A:1824:ARG:NH2  | 12:N:142:MET:HA   | 2.32                     | 0.45              |
| 3:C:399:TYR:HA    | 3:C:428:LEU:HD12  | 1.98                     | 0.45              |
| 3:C:517:ALA:HB1   | 3:C:549:LEU:HD23  | 1.97                     | 0.45              |
| 6:F:613:LEU:HB2   | 6:F:679:GLN:NE2   | 2.31                     | 0.45              |
| 8:I:10:SER:OG     | 8:I:710:HIS:HA    | 2.16                     | 0.45              |
| 9:J:451:LEU:HD12  | 9:J:451:LEU:HA    | 1.49                     | 0.45              |
| 9:J:469:ARG:HB3   | 9:J:469:ARG:CZ    | 2.46                     | 0.45              |
| 12:N:503:SER:HA   | 12:N:506:VAL:HG22 | 1.97                     | 0.45              |
| 12:N:528:LEU:HD22 | 12:N:529:HIS:CE1  | 2.51                     | 0.45              |
| 13:O:39:VAL:HG22  | 13:O:93:VAL:HG23  | 1.98                     | 0.45              |
| 13:O:127:HIS:O    | 13:O:127:HIS:CG   | 2.69                     | 0.45              |
| 15:X:458:GLN:HE21 | 15:X:488:ARG:NH2  | 2.14                     | 0.45              |
| 15:Y:74:PRO:O     | 15:Y:78:GLN:HG3   | 2.15                     | 0.45              |
| 15:Y:515:LEU:O    | 15:Y:519:LEU:HD13 | 2.16                     | 0.45              |
| 1:A:412:LEU:HD22  | 1:A:468:PHE:HD1   | 1.81                     | 0.45              |
| 1:A:925:SER:C     | 1:A:927:ALA:H     | 2.18                     | 0.45              |
| 1:A:1301:ALA:HA   | 1:A:1304:MET:HE3  | 1.99                     | 0.45              |
| 1:A:1844:PHE:O    | 1:A:1848:VAL:HG23 | 2.17                     | 0.45              |
| 2:B:3:VAL:HB      | 12:N:671:GLN:OE1  | 2.17                     | 0.45              |
| 2:B:46:LEU:HB2    | 2:B:48:TRP:CH2    | 2.52                     | 0.45              |
| 6:F:76:ALA:HB2    | 6:F:92:LEU:HD21   | 1.98                     | 0.45              |
| 6:H:550:VAL:HG13  | 6:H:551:ALA:N     | 2.31                     | 0.45              |
| 6:H:625:ARG:NH1   | 9:K:506:LEU:HB3   | 2.32                     | 0.45              |
| 6:H:740:TYR:HA    | 6:H:743:ILE:HD12  | 1.98                     | 0.45              |
| 8:I:644:TYR:OH    | 8:I:729:LYS:O     | 2.26                     | 0.45              |
| 8:I:723:ALA:N     | 8:I:732:CYS:O     | 2.40                     | 0.45              |
| 9:K:373:TYR:O     | 9:K:377:GLU:HG2   | 2.16                     | 0.45              |
| 12:N:696:MET:HG3  | 12:N:697:SER:N    | 2.32                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:699:TRP:O    | 12:N:703:GLY:N    | 2.41                     | 0.45              |
| 3:P:48:LEU:HD12   | 3:P:49:LEU:H      | 1.82                     | 0.45              |
| 3:P:286:PHE:HB3   | 3:P:303:PHE:CD1   | 2.51                     | 0.45              |
| 15:X:491:LYS:HG2  | 15:X:494:ASP:OD1  | 2.17                     | 0.45              |
| 15:Y:169:PRO:HA   | 15:Y:172:ASN:HD22 | 1.79                     | 0.45              |
| 15:Y:320:ARG:O    | 15:Y:324:VAL:HG23 | 2.16                     | 0.45              |
| 1:A:85:GLU:H      | 13:O:566:LYS:NZ   | 2.14                     | 0.45              |
| 1:A:153:ILE:N     | 1:A:160:ASN:O     | 2.49                     | 0.45              |
| 1:A:881:ILE:HG23  | 1:A:1825:SER:HB2  | 1.97                     | 0.45              |
| 1:A:1584:LEU:HB3  | 1:A:1588:LEU:HD23 | 1.99                     | 0.45              |
| 1:A:1787:LEU:HD23 | 1:A:1788:PRO:N    | 2.31                     | 0.45              |
| 6:F:559:LEU:HD12  | 6:F:559:LEU:HA    | 1.65                     | 0.45              |
| 6:H:696:ILE:HG12  | 6:H:705:CYS:SG    | 2.56                     | 0.45              |
| 8:I:500:PHE:CE2   | 13:O:492:HIS:HB2  | 2.51                     | 0.45              |
| 8:I:557:TYR:HA    | 8:I:692:ARG:HE    | 1.82                     | 0.45              |
| 8:I:640:ASP:HB3   | 8:I:722:VAL:HG12  | 1.97                     | 0.45              |
| 9:J:33:SER:O      | 9:J:34:ARG:HG2    | 2.17                     | 0.45              |
| 9:K:444:TRP:CE3   | 9:K:444:TRP:HA    | 2.52                     | 0.45              |
| 12:N:55:LEU:HD13  | 12:N:55:LEU:HA    | 1.85                     | 0.45              |
| 12:N:340:ARG:HA   | 12:N:340:ARG:HD3  | 1.81                     | 0.45              |
| 12:N:793:GLN:OE1  | 12:N:793:GLN:N    | 2.49                     | 0.45              |
| 13:O:472:HIS:O    | 13:O:476:LEU:HD23 | 2.15                     | 0.45              |
| 15:X:137:GLU:HG3  | 15:X:138:VAL:N    | 2.30                     | 0.45              |
| 15:X:218:GLU:O    | 15:X:221:SER:OG   | 2.27                     | 0.45              |
| 15:X:339:ALA:O    | 15:X:343:VAL:HG23 | 2.15                     | 0.45              |
| 15:Y:513:ARG:HH22 | 15:Y:514:ILE:HG12 | 1.80                     | 0.45              |
| 1:A:226:LYS:HB2   | 1:A:236:VAL:HG12  | 1.98                     | 0.45              |
| 1:A:637:MET:HG3   | 1:A:667:MET:SD    | 2.57                     | 0.45              |
| 1:A:777:THR:OG1   | 1:A:948:PRO:HG3   | 2.16                     | 0.45              |
| 1:A:1649:GLU:HG2  | 1:A:1650:GLU:N    | 2.32                     | 0.45              |
| 2:B:60:ILE:O      | 2:B:64:LEU:HD23   | 2.16                     | 0.45              |
| 6:F:154:SER:O     | 6:F:158:ILE:HG12  | 2.16                     | 0.45              |
| 6:F:579:LEU:HD23  | 6:F:579:LEU:HA    | 1.65                     | 0.45              |
| 8:I:534:ASP:O     | 8:I:538:GLN:HG2   | 2.16                     | 0.45              |
| 8:I:557:TYR:HA    | 8:I:692:ARG:HG2   | 1.98                     | 0.45              |
| 9:J:37:PRO:HB3    | 9:J:69:TYR:HE2    | 1.80                     | 0.45              |
| 9:J:356:ALA:O     | 9:J:359:THR:OG1   | 2.31                     | 0.45              |
| 9:J:369:LEU:HD22  | 9:J:373:TYR:CE2   | 2.52                     | 0.45              |
| 9:K:253:LEU:HD23  | 9:K:253:LEU:HA    | 1.78                     | 0.45              |
| 9:K:499:VAL:HG23  | 9:K:522:CYS:SG    | 2.56                     | 0.45              |
| 13:O:690:ALA:HA   | 13:O:693:ASN:HD22 | 1.80                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:185:VAL:HG23  | 3:P:186:LYS:H     | 1.81                     | 0.45              |
| 15:X:152:ASP:O    | 15:X:156:ILE:HG13 | 2.16                     | 0.45              |
| 15:X:196:LEU:HD23 | 15:X:196:LEU:HA   | 1.72                     | 0.45              |
| 15:Y:460:LYS:H    | 15:Y:460:LYS:HE2  | 1.82                     | 0.45              |
| 1:A:16:ASP:OD1    | 1:A:17:LEU:N      | 2.49                     | 0.45              |
| 1:A:1031:ASP:OD2  | 1:A:1033:ARG:N    | 2.49                     | 0.45              |
| 1:A:1811:LEU:HG   | 1:A:1887:CYS:HB2  | 1.99                     | 0.45              |
| 1:A:1845:LEU:N    | 1:A:1846:PRO:HD2  | 2.32                     | 0.45              |
| 3:C:34:LYS:HD2    | 3:C:71:GLN:HG3    | 1.98                     | 0.45              |
| 6:F:463:MET:HB3   | 6:F:467:ARG:HH12  | 1.81                     | 0.45              |
| 8:I:206:LEU:HB2   | 8:I:222:GLU:OE2   | 2.15                     | 0.45              |
| 12:N:299:TRP:O    | 12:N:303:VAL:HG23 | 2.17                     | 0.45              |
| 12:N:392:ASN:HD22 | 12:N:392:ASN:C    | 2.20                     | 0.45              |
| 12:N:401:ILE:HD11 | 12:N:504:LEU:HD12 | 1.98                     | 0.45              |
| 13:O:256:LEU:HA   | 13:O:256:LEU:HD12 | 1.67                     | 0.45              |
| 3:P:251:TYR:OH    | 3:P:268:GLN:HG2   | 2.16                     | 0.45              |
| 15:X:87:LEU:O     | 15:X:90:ASP:N     | 2.50                     | 0.45              |
| 15:X:362:GLY:O    | 15:X:366:ILE:HG13 | 2.16                     | 0.45              |
| 15:Y:78:GLN:HG2   | 15:Y:133:PRO:HD2  | 1.98                     | 0.45              |
| 1:A:117:PHE:HB3   | 13:O:268:PHE:CD2  | 2.52                     | 0.45              |
| 1:A:799:LEU:O     | 1:A:801:PRO:HD2   | 2.16                     | 0.45              |
| 1:A:1574:LEU:HD12 | 1:A:1584:LEU:HD11 | 1.98                     | 0.45              |
| 2:B:55:PHE:CE1    | 2:B:75:MET:HG3    | 2.52                     | 0.45              |
| 5:E:53:PHE:O      | 5:E:57:SER:OG     | 2.30                     | 0.45              |
| 6:F:77:LYS:NZ     | 6:H:19:TYR:HD2    | 2.03                     | 0.45              |
| 6:F:474:LEU:O     | 6:F:478:SER:CB    | 2.65                     | 0.45              |
| 6:F:670:VAL:HA    | 6:F:673:CYS:HG    | 1.80                     | 0.45              |
| 6:H:592:ARG:HD3   | 6:H:592:ARG:HA    | 1.67                     | 0.45              |
| 8:I:36:ALA:HB2    | 8:I:46:LEU:HD13   | 1.98                     | 0.45              |
| 8:I:220:VAL:HG12  | 8:I:222:GLU:OE2   | 2.16                     | 0.45              |
| 8:I:276:TRP:CH2   | 8:I:476:GLY:HA2   | 2.52                     | 0.45              |
| 8:I:313:ALA:HA    | 8:I:314:SER:HA    | 1.58                     | 0.45              |
| 8:I:737:ASN:O     | 8:I:739:ARG:HG3   | 2.15                     | 0.45              |
| 9:K:157:LEU:HD13  | 9:K:157:LEU:HA    | 1.74                     | 0.45              |
| 9:K:377:GLU:O     | 9:K:381:THR:HG22  | 2.17                     | 0.45              |
| 9:K:485:ILE:O     | 9:K:488:ILE:HB    | 2.15                     | 0.45              |
| 12:N:153:VAL:HG13 | 12:N:154:HIS:N    | 2.32                     | 0.45              |
| 12:N:341:ILE:HG12 | 12:N:374:LEU:HD12 | 1.99                     | 0.45              |
| 13:O:470:LEU:HD13 | 13:O:493:LEU:HG   | 1.98                     | 0.45              |
| 13:O:680:GLN:HG3  | 13:O:683:LYS:N    | 2.32                     | 0.45              |
| 15:X:503:LEU:C    | 15:X:506:GLN:H    | 2.20                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:188:LEU:HA    | 1:A:188:LEU:HD12  | 1.68                     | 0.45              |
| 1:A:615:SER:O     | 1:A:615:SER:OG    | 2.27                     | 0.45              |
| 1:A:624:ALA:O     | 1:A:627:PHE:N     | 2.48                     | 0.45              |
| 1:A:898:ARG:H     | 1:A:898:ARG:HD2   | 1.82                     | 0.45              |
| 1:A:1587:ALA:HB3  | 1:A:1588:LEU:HD22 | 1.98                     | 0.45              |
| 2:B:7:CYS:CB      | 12:N:645:THR:HG22 | 2.40                     | 0.45              |
| 3:C:203:TRP:HE1   | 3:C:207:LEU:HD13  | 1.82                     | 0.45              |
| 5:E:94:TRP:CE2    | 6:F:592:ARG:HG3   | 2.51                     | 0.45              |
| 8:I:236:LEU:HD21  | 8:I:548:MET:HB2   | 1.99                     | 0.45              |
| 8:I:417:PHE:CD2   | 8:I:451:PHE:HD2   | 2.34                     | 0.45              |
| 9:J:248:LYS:O     | 9:J:252:LYS:HG3   | 2.17                     | 0.45              |
| 9:J:442:ASP:OD1   | 3:P:152:ARG:NH1   | 2.50                     | 0.45              |
| 9:K:495:PHE:CZ    | 9:K:525:MET:HG2   | 2.51                     | 0.45              |
| 10:L:50:LEU:HD21  | 10:L:119:TRP:CZ2  | 2.52                     | 0.45              |
| 13:O:222:LEU:HD23 | 13:O:222:LEU:HA   | 1.65                     | 0.45              |
| 13:O:258:TYR:CZ   | 13:O:274:LEU:HD12 | 2.52                     | 0.45              |
| 13:O:464:GLU:OE2  | 13:O:503:HIS:HB3  | 2.17                     | 0.45              |
| 13:O:600:ALA:O    | 13:O:603:MET:N    | 2.50                     | 0.45              |
| 15:X:240:ILE:HG13 | 15:X:241:LYS:N    | 2.31                     | 0.45              |
| 15:Y:288:LYS:O    | 15:Y:292:LEU:HG   | 2.17                     | 0.45              |
| 1:A:949:PHE:N     | 1:A:1813:GLN:HE22 | 2.14                     | 0.45              |
| 1:A:1032:LEU:HD12 | 1:A:1032:LEU:O    | 2.16                     | 0.45              |
| 1:A:1657:LEU:HB3  | 1:A:1658:PRO:HD2  | 1.99                     | 0.45              |
| 3:C:34:LYS:HE2    | 3:C:69:GLU:O      | 2.17                     | 0.45              |
| 3:C:53:LYS:HD2    | 3:P:93:TYR:CE1    | 2.52                     | 0.45              |
| 6:H:515:TYR:O     | 6:H:518:ALA:HB3   | 2.17                     | 0.45              |
| 8:I:32:ARG:HD3    | 12:N:388:HIS:ND1  | 2.32                     | 0.45              |
| 8:I:94:ASP:HB2    | 8:I:97:LYS:O      | 2.17                     | 0.45              |
| 13:O:533:THR:OG1  | 13:O:534:GLY:N    | 2.50                     | 0.45              |
| 3:P:122:ARG:HH22  | 3:P:153:GLU:HG2   | 1.82                     | 0.45              |
| 3:P:122:ARG:HG2   | 3:P:154:LEU:HD21  | 1.99                     | 0.45              |
| 15:X:467:LYS:O    | 15:X:471:GLN:HG2  | 2.16                     | 0.45              |
| 15:Y:67:ASN:HB3   | 15:Y:70:LEU:HD11  | 1.99                     | 0.45              |
| 15:Y:99:LYS:HA    | 15:Y:102:MET:HG2  | 1.99                     | 0.45              |
| 15:Y:140:TYR:CE2  | 15:Y:170:LYS:HD3  | 2.51                     | 0.45              |
| 15:Y:218:GLU:O    | 15:Y:222:MET:HG2  | 2.17                     | 0.45              |
| 1:A:1521:LEU:HA   | 1:A:1521:LEU:HD23 | 1.70                     | 0.45              |
| 2:B:23:CYS:O      | 2:B:27:ARG:HD3    | 2.16                     | 0.45              |
| 3:C:46:ARG:NH2    | 3:C:113:LYS:HE2   | 2.31                     | 0.45              |
| 3:C:235:ALA:HB1   | 3:C:251:TYR:CZ    | 2.51                     | 0.45              |
| 4:D:51:LEU:O      | 3:P:382:SER:OG    | 2.19                     | 0.45              |

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| Atom-1           | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 5:E:60:SER:O     | 5:E:63:VAL:HG12  | 2.17                     | 0.45              |
| 6:F:667:GLN:HG2  | 6:F:670:VAL:HG12 | 1.98                     | 0.45              |
| 8:I:163:GLU:O    | 8:I:167:LEU:HD12 | 2.16                     | 0.45              |
| 8:I:318:GLN:HE22 | 8:I:319:THR:HG23 | 1.82                     | 0.45              |
| 8:I:590:ILE:O    | 8:I:597:LYS:N    | 2.47                     | 0.45              |
| 9:J:325:LYS:HZ1  | 9:J:329:LEU:HB2  | 1.81                     | 0.45              |
| 13:O:351:GLY:O   | 13:O:352:GLN:HG2 | 2.16                     | 0.45              |
| 13:O:393:LYS:HD3 | 13:O:393:LYS:HA  | 1.74                     | 0.45              |
| 3:P:535:LYS:HD3  | 3:P:535:LYS:HA   | 1.63                     | 0.45              |
| 15:X:324:VAL:CG1 | 15:X:348:HIS:HB2 | 2.47                     | 0.45              |
| 15:Y:486:LEU:HA  | 15:Y:489:GLU:HB2 | 1.99                     | 0.45              |
| 1:A:613:ALA:HB1  | 1:A:619:GLN:HB2  | 1.99                     | 0.44              |
| 1:A:795:ARG:NH1  | 1:A:817:THR:H    | 2.15                     | 0.44              |
| 1:A:880:TYR:HD1  | 1:A:930:LEU:HD22 | 1.83                     | 0.44              |
| 2:B:46:LEU:HB2   | 2:B:48:TRP:CZ3   | 2.52                     | 0.44              |
| 3:C:85:ASP:OD1   | 3:C:85:ASP:N     | 2.50                     | 0.44              |
| 3:C:137:SER:OG   | 3:C:138:LEU:N    | 2.50                     | 0.44              |
| 3:C:530:SER:O    | 3:C:534:GLN:HG2  | 2.17                     | 0.44              |
| 6:F:102:SER:O    | 6:F:104:ASP:N    | 2.50                     | 0.44              |
| 6:H:13:TRP:HA    | 6:H:13:TRP:CE3   | 2.52                     | 0.44              |
| 6:H:130:ARG:HG3  | 9:K:469:ARG:HB3  | 1.99                     | 0.44              |
| 9:J:302:TRP:O    | 9:J:305:VAL:HG12 | 2.16                     | 0.44              |
| 9:J:476:PRO:HB3  | 3:P:182:LEU:O    | 2.18                     | 0.44              |
| 12:N:432:GLU:HG3 | 12:N:432:GLU:O   | 2.17                     | 0.44              |
| 3:P:29:LEU:O     | 3:P:32:ILE:N     | 2.51                     | 0.44              |
| 3:P:48:LEU:O     | 3:P:49:LEU:HD23  | 2.17                     | 0.44              |
| 3:P:331:VAL:HG21 | 3:P:361:ASN:CB   | 2.47                     | 0.44              |
| 3:P:354:PHE:CE2  | 3:P:370:LEU:HB3  | 2.51                     | 0.44              |
| 3:P:429:ARG:HB3  | 3:P:432:ASP:CG   | 2.37                     | 0.44              |
| 1:A:223:LEU:HD21 | 1:A:409:ILE:HD11 | 1.98                     | 0.44              |
| 1:A:615:SER:O    | 1:A:618:VAL:N    | 2.50                     | 0.44              |
| 1:A:790:LEU:HA   | 1:A:790:LEU:HD23 | 1.66                     | 0.44              |
| 1:A:1155:SER:HB2 | 1:A:1184:HIS:HE1 | 1.81                     | 0.44              |
| 2:B:16:TRP:HE1   | 2:B:42:ASP:HA    | 1.82                     | 0.44              |
| 3:C:494:ILE:HG12 | 3:C:513:PHE:CE1  | 2.52                     | 0.44              |
| 6:H:515:TYR:HB2  | 10:L:179:MET:HE1 | 1.99                     | 0.44              |
| 8:I:28:TRP:CZ2   | 8:I:732:CYS:HB2  | 2.53                     | 0.44              |
| 8:I:110:VAL:HG22 | 8:I:111:SER:N    | 2.30                     | 0.44              |
| 8:I:601:LEU:HA   | 8:I:614:GLY:O    | 2.17                     | 0.44              |
| 9:J:75:LEU:HD12  | 9:J:75:LEU:HA    | 1.85                     | 0.44              |
| 9:K:295:TYR:O    | 9:K:297:SER:N    | 2.50                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:L:89:TYR:CD2   | 10:L:150:ASP:HB2  | 2.52                     | 0.44              |
| 12:N:250:LEU:O    | 12:N:251:SER:OG   | 2.31                     | 0.44              |
| 12:N:612:PRO:HB3  | 12:N:665:VAL:HG23 | 1.99                     | 0.44              |
| 12:N:663:GLN:HG2  | 12:N:699:TRP:CE2  | 2.52                     | 0.44              |
| 13:O:44:MET:HB2   | 13:O:89:LEU:HD21  | 2.00                     | 0.44              |
| 13:O:147:SER:HG   | 3:P:353:TYR:HH    | 1.53                     | 0.44              |
| 13:O:222:LEU:HB3  | 13:O:230:ALA:HB2  | 2.00                     | 0.44              |
| 13:O:348:TYR:HB2  | 13:O:359:VAL:HG11 | 1.99                     | 0.44              |
| 13:O:478:ALA:HB2  | 13:O:486:ALA:HB2  | 1.98                     | 0.44              |
| 13:O:552:GLN:HB3  | 13:O:593:ARG:NH2  | 2.32                     | 0.44              |
| 3:P:361:ASN:HD22  | 3:P:363:ARG:C     | 2.20                     | 0.44              |
| 15:Y:443:THR:O    | 15:Y:446:LEU:HG   | 2.17                     | 0.44              |
| 1:A:185:TYR:CD1   | 1:A:273:ARG:HD3   | 2.53                     | 0.44              |
| 1:A:894:GLN:HG3   | 1:A:895:TYR:CG    | 2.52                     | 0.44              |
| 1:A:1767:ILE:HG12 | 1:A:1798:ARG:CZ   | 2.47                     | 0.44              |
| 1:A:1892:HIS:HA   | 1:A:1926:ARG:NH2  | 2.33                     | 0.44              |
| 3:C:172:LEU:HD12  | 3:C:195:ALA:HA    | 1.98                     | 0.44              |
| 3:C:339:ASN:O     | 3:C:342:SER:HB3   | 2.17                     | 0.44              |
| 3:C:349:LYS:HE2   | 3:C:349:LYS:HB3   | 1.54                     | 0.44              |
| 6:F:26:PHE:CG     | 6:H:149:TRP:CD1   | 3.05                     | 0.44              |
| 6:H:515:TYR:HE2   | 6:H:545:HIS:CD2   | 2.35                     | 0.44              |
| 6:H:688:ALA:O     | 6:H:692:LEU:HD23  | 2.17                     | 0.44              |
| 6:H:731:GLN:OE1   | 15:X:186:ARG:NH1  | 2.50                     | 0.44              |
| 8:I:69:THR:HG23   | 8:I:70:CYS:SG     | 2.57                     | 0.44              |
| 9:J:441:VAL:O     | 9:J:442:ASP:HB3   | 2.18                     | 0.44              |
| 9:K:268:LEU:HA    | 9:K:268:LEU:HD23  | 1.58                     | 0.44              |
| 11:M:19:TRP:CD1   | 11:M:19:TRP:O     | 2.70                     | 0.44              |
| 12:N:542:VAL:HG13 | 12:N:554:MET:SD   | 2.58                     | 0.44              |
| 13:O:463:THR:O    | 13:O:465:SER:N    | 2.50                     | 0.44              |
| 15:X:59:LEU:HD13  | 15:Y:235:TRP:HH2  | 1.82                     | 0.44              |
| 15:Y:413:LEU:HG   | 15:Y:417:TYR:CE2  | 2.52                     | 0.44              |
| 1:A:104:LYS:HE3   | 1:A:114:TYR:CD1   | 2.52                     | 0.44              |
| 1:A:267:SER:HA    | 1:A:414:THR:CB    | 2.47                     | 0.44              |
| 1:A:1036:ASP:O    | 1:A:1040:LEU:HD12 | 2.18                     | 0.44              |
| 1:A:1879:GLU:O    | 1:A:1880:SER:OG   | 2.35                     | 0.44              |
| 3:C:304:SER:OG    | 3:C:336:VAL:HG13  | 2.18                     | 0.44              |
| 6:F:532:ARG:NH1   | 6:F:534:GLU:HB2   | 2.31                     | 0.44              |
| 8:I:441:THR:HG22  | 8:I:444:ASP:HB2   | 2.00                     | 0.44              |
| 8:I:495:ASN:HA    | 13:O:460:GLN:HG2  | 2.00                     | 0.44              |
| 8:I:664:ARG:NE    | 8:I:719:ALA:O     | 2.42                     | 0.44              |
| 9:J:395:LEU:HD12  | 9:J:399:PRO:HB3   | 1.99                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:K:509:ARG:HD3   | 9:K:512:ASP:OD1   | 2.16                     | 0.44              |
| 12:N:571:ASN:HA   | 12:N:574:ILE:HG22 | 1.99                     | 0.44              |
| 12:N:756:THR:O    | 12:N:759:GLN:HB2  | 2.18                     | 0.44              |
| 13:O:149:SER:O    | 13:O:153:LYS:HG2  | 2.16                     | 0.44              |
| 15:X:407:LEU:HD11 | 15:X:437:LEU:CD2  | 2.47                     | 0.44              |
| 15:Y:233:LEU:HD21 | 15:Y:236:LEU:HB2  | 1.98                     | 0.44              |
| 15:Y:383:LEU:HD22 | 15:Y:388:ARG:HB2  | 1.99                     | 0.44              |
| 15:Y:532:TYR:CE2  | 15:Y:548:GLY:HA3  | 2.53                     | 0.44              |
| 1:A:248:PHE:HB2   | 1:A:430:VAL:CG2   | 2.47                     | 0.44              |
| 1:A:260:ASP:OD1   | 1:A:262:VAL:HG22  | 2.18                     | 0.44              |
| 1:A:1048:ARG:HH21 | 1:A:1050:ASN:HD22 | 1.65                     | 0.44              |
| 1:A:1412:CYS:HB3  | 1:A:1419:ILE:HD11 | 1.98                     | 0.44              |
| 3:C:42:LEU:HD12   | 3:C:42:LEU:HA     | 1.75                     | 0.44              |
| 3:C:491:ILE:HA    | 3:C:494:ILE:HG22  | 1.97                     | 0.44              |
| 3:C:516:LEU:HD23  | 3:C:516:LEU:HA    | 1.75                     | 0.44              |
| 6:F:149:TRP:HB3   | 6:H:23:ASP:OD2    | 2.17                     | 0.44              |
| 6:H:716:ASN:O     | 6:H:717:GLU:HG3   | 2.16                     | 0.44              |
| 8:I:233:TYR:HB3   | 8:I:554:ILE:O     | 2.18                     | 0.44              |
| 8:I:269:LEU:HD21  | 8:I:523:HIS:NE2   | 2.33                     | 0.44              |
| 8:I:317:LEU:HA    | 8:I:320:LEU:HB3   | 1.98                     | 0.44              |
| 8:I:624:THR:OG1   | 8:I:625:TYR:N     | 2.50                     | 0.44              |
| 9:J:373:TYR:HD1   | 9:J:376:LEU:HD12  | 1.82                     | 0.44              |
| 9:J:475:ILE:HG13  | 9:J:475:ILE:O     | 2.18                     | 0.44              |
| 12:N:121:ARG:CA   | 12:N:122:LEU:HB2  | 2.47                     | 0.44              |
| 12:N:345:PHE:HZ   | 12:N:399:LEU:HD21 | 1.79                     | 0.44              |
| 12:N:392:ASN:ND2  | 12:N:392:ASN:C    | 2.70                     | 0.44              |
| 12:N:630:LYS:HE2  | 12:N:630:LYS:HB3  | 1.58                     | 0.44              |
| 13:O:345:SER:HB3  | 13:O:376:LEU:HD11 | 2.00                     | 0.44              |
| 3:P:358:LEU:O     | 3:P:362:PRO:HA    | 2.18                     | 0.44              |
| 15:X:467:LYS:HB3  | 15:X:471:GLN:HE21 | 1.82                     | 0.44              |
| 1:A:490:VAL:O     | 1:A:497:LEU:HA    | 2.18                     | 0.44              |
| 1:A:787:VAL:O     | 1:A:791:VAL:HG12  | 2.17                     | 0.44              |
| 6:F:613:LEU:HB2   | 6:F:679:GLN:CD    | 2.38                     | 0.44              |
| 8:I:309:LEU:HA    | 13:O:131:VAL:CG2  | 2.48                     | 0.44              |
| 8:I:554:ILE:HG12  | 8:I:689:TYR:O     | 2.17                     | 0.44              |
| 9:J:81:TYR:HB2    | 9:J:139:ILE:HD11  | 2.00                     | 0.44              |
| 9:J:211:LYS:O     | 9:J:213:ASN:N     | 2.50                     | 0.44              |
| 12:N:655:LEU:HD23 | 12:N:655:LEU:HA   | 1.75                     | 0.44              |
| 12:N:677:THR:O    | 12:N:680:GLU:HB3  | 2.18                     | 0.44              |
| 12:N:709:PRO:HB3  | 12:N:712:THR:HG22 | 1.98                     | 0.44              |
| 13:O:720:LEU:O    | 13:O:723:THR:OG1  | 2.31                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:106:LEU:HD12  | 3:P:106:LEU:HA    | 1.53                     | 0.44              |
| 3:P:478:GLU:HG2   | 3:P:522:LYS:NZ    | 2.32                     | 0.44              |
| 15:Y:145:CYS:O    | 15:Y:149:LEU:HG   | 2.17                     | 0.44              |
| 15:Y:271:VAL:HA   | 15:Y:274:LEU:HD22 | 1.99                     | 0.44              |
| 15:Y:282:PHE:CD1  | 15:Y:314:LEU:HD21 | 2.53                     | 0.44              |
| 1:A:1663:LEU:HD12 | 1:A:1663:LEU:HA   | 1.80                     | 0.44              |
| 1:A:1680:LEU:HG   | 1:A:1681:SER:H    | 1.83                     | 0.44              |
| 2:B:27:ARG:HD3    | 2:B:27:ARG:HA     | 1.56                     | 0.44              |
| 3:C:433:SER:O     | 3:C:436:LEU:N     | 2.50                     | 0.44              |
| 3:C:473:LEU:HD12  | 3:C:473:LEU:HA    | 1.71                     | 0.44              |
| 6:F:71:CYS:SG     | 6:F:72:LYS:N      | 2.91                     | 0.44              |
| 6:F:599:ASN:ND2   | 6:F:599:ASN:O     | 2.51                     | 0.44              |
| 6:H:152:PHE:CE1   | 6:H:162:PRO:HG2   | 2.53                     | 0.44              |
| 6:H:526:ARG:HH11  | 6:H:555:LEU:HD12  | 1.82                     | 0.44              |
| 8:I:44:VAL:C      | 8:I:45:LEU:HD12   | 2.38                     | 0.44              |
| 8:I:422:TYR:O     | 8:I:426:LEU:HD23  | 2.18                     | 0.44              |
| 8:I:574:PHE:O     | 8:I:586:LEU:HD12  | 2.17                     | 0.44              |
| 9:K:37:PRO:HB3    | 9:K:69:TYR:CE1    | 2.53                     | 0.44              |
| 11:M:31:ILE:HB    | 11:M:33:LEU:HD12  | 1.99                     | 0.44              |
| 12:N:131:LEU:HD23 | 12:N:131:LEU:HA   | 1.82                     | 0.44              |
| 12:N:392:ASN:HD21 | 12:N:395:ASP:N    | 2.07                     | 0.44              |
| 12:N:659:VAL:HG11 | 12:N:699:TRP:CH2  | 2.53                     | 0.44              |
| 12:N:660:THR:OG1  | 12:N:663:GLN:HB2  | 2.18                     | 0.44              |
| 13:O:423:ALA:O    | 13:O:426:THR:N    | 2.50                     | 0.44              |
| 13:O:721:TYR:CE2  | 13:O:729:GLU:HB3  | 2.52                     | 0.44              |
| 15:X:450:VAL:HB   | 15:X:481:LYS:NZ   | 2.32                     | 0.44              |
| 15:Y:37:VAL:HG23  | 15:Y:38:ILE:HG12  | 2.00                     | 0.44              |
| 15:Y:203:LEU:HD11 | 15:Y:236:LEU:HD11 | 1.99                     | 0.44              |
| 15:Y:412:GLY:O    | 15:Y:415:GLU:HG3  | 2.17                     | 0.44              |
| 15:Y:499:LEU:HA   | 15:Y:499:LEU:HD12 | 1.71                     | 0.44              |
| 1:A:248:PHE:C     | 1:A:249:LEU:HD12  | 2.38                     | 0.44              |
| 1:A:625:ILE:HG22  | 1:A:637:MET:HE1   | 2.00                     | 0.44              |
| 1:A:658:ASN:O     | 1:A:662:THR:HG23  | 2.17                     | 0.44              |
| 1:A:830:PHE:HD1   | 1:A:830:PHE:HA    | 1.73                     | 0.44              |
| 1:A:831:MET:HA    | 1:A:832:HIS:HA    | 1.38                     | 0.44              |
| 1:A:1027:ILE:HG12 | 1:A:1654:PRO:O    | 2.17                     | 0.44              |
| 1:A:1041:LEU:O    | 1:A:1080:LEU:HD13 | 2.18                     | 0.44              |
| 1:A:1070:LEU:HG   | 1:A:1120:LEU:HD11 | 2.00                     | 0.44              |
| 6:F:16:LEU:HD12   | 6:F:50:ARG:HD2    | 1.99                     | 0.44              |
| 6:F:543:LEU:CD2   | 6:F:548:LYS:HD2   | 2.47                     | 0.44              |
| 6:F:635:TYR:HA    | 6:F:638:TRP:HD1   | 1.82                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:188:TYR:OH    | 8:I:194:LYS:HE2   | 2.17                     | 0.44              |
| 8:I:720:GLN:HB2   | 8:I:736:SER:OG    | 2.18                     | 0.44              |
| 9:J:66:ASP:OD1    | 9:J:66:ASP:N      | 2.51                     | 0.44              |
| 9:K:180:GLU:HA    | 9:K:183:GLU:HB2   | 1.98                     | 0.44              |
| 9:K:307:CYS:HB2   | 7:W:2:LEU:HD11    | 2.00                     | 0.44              |
| 12:N:681:LEU:O    | 12:N:685:VAL:N    | 2.51                     | 0.44              |
| 13:O:147:SER:O    | 13:O:151:VAL:HG23 | 2.17                     | 0.44              |
| 3:P:246:GLU:O     | 3:P:250:LYS:HG2   | 2.18                     | 0.44              |
| 7:W:9:LEU:HD23    | 7:W:9:LEU:HA      | 1.83                     | 0.44              |
| 1:A:598:GLU:HG2   | 1:A:604:MET:HG2   | 1.99                     | 0.44              |
| 1:A:1090:PHE:CG   | 1:A:1149:PRO:HG3  | 2.52                     | 0.44              |
| 1:A:1274:LEU:HD11 | 1:A:1321:VAL:HG23 | 2.00                     | 0.44              |
| 1:A:1539:CYS:SG   | 1:A:1562:LEU:HB2  | 2.58                     | 0.44              |
| 1:A:1618:LEU:HD12 | 1:A:1619:LEU:H    | 1.82                     | 0.44              |
| 1:A:1711:ASP:OD1  | 1:A:1714:GLY:N    | 2.51                     | 0.44              |
| 1:A:1838:LEU:HD13 | 1:A:1838:LEU:HA   | 1.83                     | 0.44              |
| 2:B:11:VAL:HA     | 12:N:594:VAL:HG23 | 1.99                     | 0.44              |
| 3:C:483:SER:O     | 3:C:486:ALA:HB3   | 2.18                     | 0.44              |
| 6:F:42:PHE:HD1    | 6:F:71:CYS:HA     | 1.83                     | 0.44              |
| 6:F:617:LEU:HB2   | 6:F:619:LYS:HZ2   | 1.82                     | 0.44              |
| 8:I:47:HIS:CD2    | 8:I:54:ARG:HA     | 2.53                     | 0.44              |
| 8:I:732:CYS:SG    | 8:I:743:VAL:HB    | 2.58                     | 0.44              |
| 9:J:47:LEU:HD13   | 9:J:56:ALA:N      | 2.32                     | 0.44              |
| 9:K:262:PRO:HB2   | 9:K:263:PHE:CD2   | 2.52                     | 0.44              |
| 9:K:457:LYS:HA    | 9:K:457:LYS:HD3   | 1.73                     | 0.44              |
| 9:K:495:PHE:CE1   | 9:K:525:MET:HG2   | 2.53                     | 0.44              |
| 13:O:32:PRO:O     | 13:O:35:ILE:HG22  | 2.18                     | 0.44              |
| 13:O:271:THR:O    | 13:O:275:LEU:HD13 | 2.18                     | 0.44              |
| 13:O:379:LEU:HA   | 13:O:417:LEU:HD11 | 2.00                     | 0.44              |
| 3:P:158:LEU:HD23  | 3:P:158:LEU:HA    | 1.70                     | 0.44              |
| 3:P:381:THR:O     | 3:P:385:ILE:HG12  | 2.18                     | 0.44              |
| 15:X:194:GLU:OE2  | 15:X:197:ARG:HD3  | 2.18                     | 0.44              |
| 15:X:357:ARG:O    | 15:X:361:LEU:HG   | 2.17                     | 0.44              |
| 15:Y:135:GLU:HG2  | 15:Y:139:LYS:HE3  | 1.99                     | 0.44              |
| 15:Y:476:ILE:HG13 | 15:Y:477:LYS:N    | 2.31                     | 0.44              |
| 1:A:1193:ILE:HG23 | 1:A:1208:LEU:HD21 | 1.99                     | 0.43              |
| 1:A:1737:THR:O    | 1:A:1740:ALA:N    | 2.33                     | 0.43              |
| 3:C:286:PHE:CB    | 3:C:303:PHE:HD1   | 2.29                     | 0.43              |
| 6:F:543:LEU:HD22  | 6:F:548:LYS:HD2   | 2.00                     | 0.43              |
| 6:H:468:GLU:O     | 6:H:471:LYS:HB2   | 2.19                     | 0.43              |
| 6:H:567:PRO:O     | 6:H:571:CYS:HB3   | 2.17                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:495:ASN:CB    | 8:I:498:TYR:HD2   | 2.31                     | 0.43              |
| 9:J:175:MET:HB2   | 9:J:175:MET:HE2   | 1.80                     | 0.43              |
| 9:J:413:PHE:CD1   | 9:J:454:VAL:HG22  | 2.53                     | 0.43              |
| 9:K:165:GLU:O     | 9:K:169:LEU:HG    | 2.17                     | 0.43              |
| 9:K:426:LEU:HA    | 9:K:426:LEU:HD23  | 1.71                     | 0.43              |
| 12:N:365:LEU:HD23 | 12:N:365:LEU:HA   | 1.64                     | 0.43              |
| 12:N:544:LEU:O    | 12:N:548:ARG:HG2  | 2.18                     | 0.43              |
| 13:O:27:LYS:HG2   | 13:O:210:LYS:HE3  | 1.99                     | 0.43              |
| 15:X:40:HIS:CD2   | 15:Y:201:LEU:HD21 | 2.53                     | 0.43              |
| 15:X:324:VAL:HG11 | 15:X:348:HIS:HB2  | 2.00                     | 0.43              |
| 15:X:469:LEU:HG   | 15:X:478:ALA:HB1  | 2.00                     | 0.43              |
| 15:Y:519:LEU:HD21 | 15:Y:527:GLU:HG2  | 2.00                     | 0.43              |
| 1:A:614:THR:O     | 1:A:614:THR:HG22  | 2.18                     | 0.43              |
| 1:A:1028:TRP:CH2  | 1:A:1566:PHE:CD1  | 3.06                     | 0.43              |
| 1:A:1186:THR:OG1  | 1:A:1187:LYS:N    | 2.51                     | 0.43              |
| 1:A:1222:MET:SD   | 3:C:514:ARG:NH2   | 2.91                     | 0.43              |
| 3:C:124:LEU:HD23  | 3:C:124:LEU:HA    | 1.54                     | 0.43              |
| 3:C:308:TYR:CD1   | 3:C:343:LEU:HG    | 2.53                     | 0.43              |
| 3:C:462:VAL:O     | 3:C:462:VAL:HG12  | 2.18                     | 0.43              |
| 3:C:475:LYS:HD3   | 3:C:475:LYS:HA    | 1.72                     | 0.43              |
| 6:F:625:ARG:O     | 6:F:628:ILE:HB    | 2.18                     | 0.43              |
| 6:F:656:MET:HE1   | 15:Y:526:GLN:H    | 1.83                     | 0.43              |
| 6:H:43:LEU:O      | 6:H:46:THR:OG1    | 2.27                     | 0.43              |
| 6:H:61:LEU:HB3    | 6:H:75:LEU:HD13   | 1.99                     | 0.43              |
| 6:H:104:ASP:OD1   | 6:H:105:ASP:N     | 2.50                     | 0.43              |
| 6:H:605:THR:HG21  | 6:H:636:ASN:HB3   | 1.98                     | 0.43              |
| 8:I:163:GLU:HA    | 8:I:166:LYS:HD2   | 2.00                     | 0.43              |
| 8:I:279:ILE:CD1   | 8:I:337:ILE:HG23  | 2.48                     | 0.43              |
| 9:J:9:ARG:HH11    | 9:K:162:TYR:HD2   | 1.65                     | 0.43              |
| 9:J:372:LEU:HD12  | 9:J:391:PHE:CE1   | 2.52                     | 0.43              |
| 10:L:125:THR:HA   | 10:L:126:ASP:CB   | 2.48                     | 0.43              |
| 12:N:435:VAL:O    | 12:N:439:VAL:HG23 | 2.18                     | 0.43              |
| 12:N:538:GLU:O    | 12:N:542:VAL:HG23 | 2.19                     | 0.43              |
| 13:O:293:GLU:HG2  | 13:O:295:GLY:N    | 2.31                     | 0.43              |
| 13:O:435:SER:O    | 13:O:436:THR:C    | 2.57                     | 0.43              |
| 13:O:492:HIS:O    | 13:O:496:ARG:HB2  | 2.18                     | 0.43              |
| 13:O:585:LEU:HA   | 13:O:585:LEU:HD13 | 1.71                     | 0.43              |
| 13:O:644:LEU:HD23 | 13:O:667:VAL:HG22 | 2.00                     | 0.43              |
| 15:X:144:GLU:O    | 15:X:148:MET:HG2  | 2.18                     | 0.43              |
| 15:Y:192:TYR:HB2  | 15:Y:209:LEU:HD21 | 2.00                     | 0.43              |
| 15:Y:242:ALA:O    | 15:Y:246:VAL:HG23 | 2.17                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:Y:305:ILE:HG13 | 15:Y:306:LYS:N    | 2.33                     | 0.43              |
| 16:S:498:MET:O    | 16:S:499:ARG:HG3  | 2.10                     | 0.43              |
| 1:A:83:ILE:O      | 1:A:85:GLU:HG2    | 2.18                     | 0.43              |
| 1:A:93:LEU:HD12   | 1:A:93:LEU:HA     | 1.88                     | 0.43              |
| 1:A:244:MET:N     | 1:A:244:MET:SD    | 2.92                     | 0.43              |
| 1:A:875:LEU:HD22  | 1:A:933:TRP:CZ2   | 2.53                     | 0.43              |
| 1:A:942:ARG:HA    | 1:A:945:GLU:HG3   | 1.99                     | 0.43              |
| 1:A:1074:CYS:HA   | 1:A:1077:THR:OG1  | 2.18                     | 0.43              |
| 1:A:1303:GLY:HA3  | 1:A:1373:MET:HG3  | 2.01                     | 0.43              |
| 1:A:1481:ASN:HA   | 14:T:7:LEU:CB     | 2.48                     | 0.43              |
| 1:A:1562:LEU:O    | 1:A:1565:LEU:HB2  | 2.19                     | 0.43              |
| 1:A:1749:SER:HA   | 1:A:1752:GLU:CG   | 2.46                     | 0.43              |
| 3:C:251:TYR:HB3   | 3:C:269:ILE:HD11  | 1.98                     | 0.43              |
| 4:D:20:LEU:HD12   | 4:D:20:LEU:HA     | 1.87                     | 0.43              |
| 6:F:125:TYR:HB3   | 6:F:130:ARG:O     | 2.18                     | 0.43              |
| 6:F:543:LEU:HD22  | 6:F:548:LYS:HB3   | 1.99                     | 0.43              |
| 6:H:8:VAL:HG23    | 6:H:31:LEU:HD21   | 1.99                     | 0.43              |
| 6:H:79:CYS:SG     | 6:H:87:GLU:HG3    | 2.58                     | 0.43              |
| 6:H:628:ILE:HD13  | 6:H:628:ILE:HA    | 1.86                     | 0.43              |
| 8:I:372:TRP:CH2   | 13:O:667:VAL:HG11 | 2.53                     | 0.43              |
| 9:J:213:ASN:N     | 9:J:213:ASN:OD1   | 2.50                     | 0.43              |
| 9:K:243:TYR:OH    | 9:K:367:CYS:SG    | 2.59                     | 0.43              |
| 9:K:393:GLN:HG3   | 9:K:394:ALA:N     | 2.32                     | 0.43              |
| 11:M:34:ASN:O     | 11:M:49:SER:HB2   | 2.19                     | 0.43              |
| 12:N:121:ARG:HB3  | 12:N:122:LEU:HD23 | 2.00                     | 0.43              |
| 12:N:173:ILE:HD11 | 12:N:177:TYR:CE2  | 2.53                     | 0.43              |
| 12:N:355:ARG:O    | 12:N:358:ILE:HG12 | 2.18                     | 0.43              |
| 13:O:36:ALA:HA    | 13:O:39:VAL:HG12  | 2.00                     | 0.43              |
| 13:O:267:VAL:O    | 13:O:271:THR:HG22 | 2.18                     | 0.43              |
| 13:O:283:LEU:O    | 13:O:283:LEU:HD23 | 2.18                     | 0.43              |
| 3:P:313:LYS:HG2   | 3:P:343:LEU:HD21  | 1.99                     | 0.43              |
| 15:X:457:THR:C    | 15:X:460:LYS:HZ1  | 2.20                     | 0.43              |
| 15:Y:72:SER:O     | 15:Y:76:LYS:HG3   | 2.18                     | 0.43              |
| 15:Y:187:PRO:O    | 15:Y:190:THR:HG22 | 2.18                     | 0.43              |
| 15:Y:338:HIS:HB3  | 15:Y:340:GLU:OE1  | 2.18                     | 0.43              |
| 15:Y:435:LYS:HD2  | 15:Y:435:LYS:HA   | 1.70                     | 0.43              |
| 15:Y:513:ARG:HH12 | 15:Y:514:ILE:HD13 | 1.83                     | 0.43              |
| 1:A:774:LYS:HD3   | 1:A:845:TYR:CZ    | 2.52                     | 0.43              |
| 1:A:844:ILE:O     | 1:A:848:VAL:HG22  | 2.19                     | 0.43              |
| 1:A:1031:ASP:OD2  | 1:A:1032:LEU:N    | 2.51                     | 0.43              |
| 1:A:1090:PHE:HB2  | 1:A:1572:TYR:CE2  | 2.53                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:B:34:CYS:SG     | 2:B:58:HIS:HB2    | 2.58                     | 0.43              |
| 3:C:290:ARG:HH22  | 3:C:322:ASN:ND2   | 2.17                     | 0.43              |
| 4:D:11:ARG:NE     | 4:D:14:GLU:OE2    | 2.42                     | 0.43              |
| 6:F:480:ASN:HB3   | 6:F:483:GLU:CD    | 2.38                     | 0.43              |
| 6:H:81:ASP:C      | 6:H:83:SER:H      | 2.22                     | 0.43              |
| 8:I:301:GLN:NE2   | 8:I:457:ASN:HB2   | 2.33                     | 0.43              |
| 8:I:732:CYS:HA    | 8:I:743:VAL:HA    | 2.00                     | 0.43              |
| 9:J:21:SER:OG     | 9:K:165:GLU:HG3   | 2.18                     | 0.43              |
| 9:J:209:LEU:HD23  | 9:J:209:LEU:HA    | 1.72                     | 0.43              |
| 9:J:402:PRO:HB2   | 9:J:444:TRP:CZ2   | 2.53                     | 0.43              |
| 9:K:268:LEU:HD13  | 9:K:291:LEU:HD21  | 2.00                     | 0.43              |
| 11:M:63:GLN:HA    | 11:M:66:HIS:O     | 2.18                     | 0.43              |
| 12:N:333:TYR:OH   | 12:N:363:TYR:HE1  | 2.01                     | 0.43              |
| 13:O:141:LEU:HD12 | 13:O:141:LEU:HA   | 1.80                     | 0.43              |
| 13:O:148:PHE:O    | 13:O:149:SER:C    | 2.56                     | 0.43              |
| 13:O:281:LEU:HD12 | 13:O:282:ILE:N    | 2.34                     | 0.43              |
| 13:O:528:ALA:O    | 13:O:531:LEU:N    | 2.51                     | 0.43              |
| 13:O:648:ILE:HG13 | 13:O:651:ILE:HD12 | 2.00                     | 0.43              |
| 3:P:377:GLU:O     | 3:P:379:LYS:HD2   | 2.19                     | 0.43              |
| 15:X:506:GLN:HE22 | 15:X:512:HIS:CE1  | 2.36                     | 0.43              |
| 15:Y:71:PHE:HB3   | 15:Y:75:GLN:OE1   | 2.18                     | 0.43              |
| 15:Y:219:VAL:O    | 15:Y:223:THR:HG23 | 2.19                     | 0.43              |
| 1:A:18:GLN:OE1    | 1:A:18:GLN:N      | 2.51                     | 0.43              |
| 1:A:258:THR:HB    | 1:A:267:SER:OG    | 2.17                     | 0.43              |
| 1:A:436:LEU:HB3   | 1:A:638:LEU:HD23  | 2.00                     | 0.43              |
| 1:A:644:VAL:HG12  | 1:A:659:LEU:HD11  | 2.01                     | 0.43              |
| 1:A:937:VAL:C     | 1:A:939:PHE:H     | 2.22                     | 0.43              |
| 1:A:1371:LEU:HD23 | 1:A:1371:LEU:HA   | 1.83                     | 0.43              |
| 8:I:118:VAL:HA    | 8:I:212:SER:O     | 2.18                     | 0.43              |
| 9:J:129:LYS:O     | 9:J:132:ILE:HG22  | 2.18                     | 0.43              |
| 9:K:368:HIS:HA    | 9:K:371:MET:HE3   | 2.00                     | 0.43              |
| 10:L:30:VAL:HG22  | 10:L:31:TRP:H     | 1.83                     | 0.43              |
| 10:L:76:THR:HA    | 10:L:124:LEU:HG   | 2.00                     | 0.43              |
| 13:O:225:ASN:HB3  | 13:O:461:ASN:OD1  | 2.19                     | 0.43              |
| 13:O:605:LEU:HD23 | 13:O:605:LEU:HA   | 1.79                     | 0.43              |
| 3:P:151:LEU:HD23  | 3:P:151:LEU:HA    | 1.78                     | 0.43              |
| 15:X:203:LEU:HA   | 15:X:206:ILE:CD1  | 2.47                     | 0.43              |
| 15:X:251:ASN:O    | 15:X:255:ILE:HG12 | 2.18                     | 0.43              |
| 15:Y:264:LYS:HB2  | 15:Y:267:LEU:HB2  | 2.00                     | 0.43              |
| 15:Y:512:HIS:HB2  | 15:Y:535:ALA:HB2  | 2.00                     | 0.43              |
| 1:A:11:MET:HB3    | 1:A:12:ILE:H      | 1.58                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:81:SER:OG     | 1:A:87:VAL:HG22   | 2.18                     | 0.43              |
| 1:A:226:LYS:HD2   | 1:A:236:VAL:CG1   | 2.48                     | 0.43              |
| 1:A:1088:THR:HG23 | 1:A:1088:THR:O    | 2.18                     | 0.43              |
| 1:A:1302:LEU:O    | 1:A:1305:VAL:N    | 2.50                     | 0.43              |
| 1:A:1665:GLN:HB2  | 1:A:1678:ILE:HA   | 2.00                     | 0.43              |
| 2:B:13:THR:OG1    | 12:N:636:SER:HB2  | 2.19                     | 0.43              |
| 3:C:236:HIS:O     | 3:C:239:THR:OG1   | 2.34                     | 0.43              |
| 4:D:20:LEU:HD13   | 13:O:252:GLU:HG2  | 2.00                     | 0.43              |
| 6:H:96:VAL:HG12   | 9:K:470:GLN:HB3   | 2.01                     | 0.43              |
| 8:I:454:GLU:HG2   | 8:I:473:GLU:HA    | 1.99                     | 0.43              |
| 9:J:511:ASP:OD1   | 9:J:512:ASP:N     | 2.52                     | 0.43              |
| 9:K:334:GLY:HA3   | 9:K:364:MET:SD    | 2.59                     | 0.43              |
| 12:N:277:CYS:SG   | 12:N:339:LEU:HD13 | 2.58                     | 0.43              |
| 12:N:433:ASP:C    | 12:N:435:VAL:N    | 2.70                     | 0.43              |
| 13:O:688:GLU:O    | 13:O:691:ILE:HG22 | 2.18                     | 0.43              |
| 3:P:122:ARG:NH2   | 3:P:153:GLU:HG2   | 2.34                     | 0.43              |
| 3:P:267:SER:OG    | 3:P:268:GLN:N     | 2.52                     | 0.43              |
| 15:X:165:ARG:HE   | 15:X:166:GLN:NE2  | 2.16                     | 0.43              |
| 15:X:325:GLU:OE2  | 15:X:348:HIS:NE2  | 2.49                     | 0.43              |
| 15:X:450:VAL:HG23 | 15:X:481:LYS:HD3  | 1.99                     | 0.43              |
| 1:A:980:ARG:CD    | 1:A:1674:TRP:HE1  | 2.32                     | 0.43              |
| 3:C:316:LEU:HD23  | 3:C:340:TYR:HA    | 2.00                     | 0.43              |
| 3:C:343:LEU:HD23  | 3:C:343:LEU:HA    | 1.69                     | 0.43              |
| 3:C:409:TYR:CE2   | 3:C:417:TYR:CE2   | 3.07                     | 0.43              |
| 6:F:14:GLN:HG2    | 6:F:18:HIS:CE1    | 2.53                     | 0.43              |
| 6:F:94:GLY:O      | 6:F:101:LYS:HG3   | 2.18                     | 0.43              |
| 6:F:506:GLY:HA3   | 6:F:522:PHE:CZ    | 2.54                     | 0.43              |
| 6:F:526:ARG:NH2   | 6:F:558:ASP:OD2   | 2.52                     | 0.43              |
| 6:H:8:VAL:O       | 6:H:12:ILE:HG12   | 2.19                     | 0.43              |
| 6:H:543:LEU:HA    | 6:H:543:LEU:HD12  | 1.60                     | 0.43              |
| 8:I:728:ARG:HD2   | 8:I:728:ARG:HA    | 1.66                     | 0.43              |
| 12:N:82:ASP:OD2   | 12:N:83:LEU:N     | 2.51                     | 0.43              |
| 12:N:551:GLU:HG3  | 12:N:554:MET:HG3  | 2.01                     | 0.43              |
| 3:P:170:PHE:O     | 3:P:173:TYR:HB3   | 2.19                     | 0.43              |
| 3:P:381:THR:HG23  | 3:P:382:SER:N     | 2.33                     | 0.43              |
| 15:X:95:ASN:O     | 15:X:99:LYS:HG2   | 2.18                     | 0.43              |
| 15:Y:486:LEU:HD12 | 15:Y:491:LYS:HB2  | 2.00                     | 0.43              |
| 15:Y:519:LEU:HA   | 15:Y:522:VAL:HG23 | 2.01                     | 0.43              |
| 1:A:247:VAL:HG22  | 1:A:257:MET:O     | 2.19                     | 0.43              |
| 1:A:259:TYR:OH    | 1:A:261:ALA:HA    | 2.19                     | 0.43              |
| 1:A:1540:ARG:HD3  | 12:N:480:TRP:CZ2  | 2.54                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:60:PHE:HB2    | 3:P:89:LEU:HD23   | 2.01                     | 0.43              |
| 3:C:234:LEU:HA    | 3:C:234:LEU:HD12  | 1.80                     | 0.43              |
| 6:F:589:PHE:O     | 6:F:592:ARG:HB3   | 2.19                     | 0.43              |
| 6:F:594:ILE:HD13  | 6:F:594:ILE:HA    | 1.88                     | 0.43              |
| 6:H:469:MET:HG2   | 6:H:500:TRP:CZ3   | 2.51                     | 0.43              |
| 6:H:761:SER:O     | 6:H:765:ASP:CB    | 2.65                     | 0.43              |
| 8:I:371:SER:O     | 8:I:373:LYS:N     | 2.52                     | 0.43              |
| 8:I:676:ASN:HB3   | 8:I:703:ARG:HH22  | 1.84                     | 0.43              |
| 9:J:207:ASN:OD1   | 9:J:208:LYS:HG2   | 2.18                     | 0.43              |
| 9:J:350:HIS:O     | 9:J:354:MET:HG2   | 2.18                     | 0.43              |
| 9:J:520:GLY:O     | 9:J:523:ILE:HG22  | 2.19                     | 0.43              |
| 10:L:44:GLN:HA    | 10:L:47:ASP:CG    | 2.39                     | 0.43              |
| 11:M:9:GLY:HA3    | 3:P:329:TYR:CD1   | 2.54                     | 0.43              |
| 12:N:546:LYS:HA   | 12:N:549:PHE:O    | 2.19                     | 0.43              |
| 12:N:550:GLY:HA2  | 12:N:551:GLU:HA   | 1.66                     | 0.43              |
| 13:O:464:GLU:O    | 13:O:468:VAL:HG13 | 2.18                     | 0.43              |
| 15:X:40:HIS:CD2   | 15:Y:201:LEU:HD11 | 2.54                     | 0.43              |
| 15:X:452:LEU:HD21 | 15:X:460:LYS:HE2  | 2.01                     | 0.43              |
| 15:Y:87:LEU:HD22  | 15:Y:92:GLU:OE1   | 2.19                     | 0.43              |
| 15:Y:445:THR:HG22 | 15:Y:464:LEU:HD12 | 2.01                     | 0.43              |
| 1:A:771:GLU:HG2   | 1:A:860:TYR:OH    | 2.19                     | 0.43              |
| 1:A:968:SER:OG    | 1:A:969:ASP:N     | 2.51                     | 0.43              |
| 1:A:1046:PRO:CD   | 1:A:1106:ASN:HD21 | 2.31                     | 0.43              |
| 1:A:1321:VAL:HG13 | 1:A:1322:PRO:HD3  | 2.01                     | 0.43              |
| 1:A:1534:LYS:HA   | 1:A:1537:GLN:HE21 | 1.83                     | 0.43              |
| 1:A:1661:HIS:CE1  | 1:A:1662:LEU:HD23 | 2.54                     | 0.43              |
| 3:C:250:LYS:HD2   | 3:C:250:LYS:HA    | 1.75                     | 0.43              |
| 3:C:303:PHE:CE2   | 3:C:307:LEU:HD12  | 2.54                     | 0.43              |
| 3:C:428:LEU:HA    | 3:C:428:LEU:HD23  | 1.58                     | 0.43              |
| 6:F:594:ILE:HD12  | 6:F:604:TYR:CZ    | 2.54                     | 0.43              |
| 6:H:613:LEU:HA    | 6:H:613:LEU:HD12  | 1.80                     | 0.43              |
| 8:I:620:PHE:HB3   | 8:I:623:PHE:CZ    | 2.54                     | 0.43              |
| 8:I:634:SER:OG    | 8:I:635:ILE:N     | 2.51                     | 0.43              |
| 9:J:244:ASN:HD22  | 9:J:435:ILE:HD13  | 1.83                     | 0.43              |
| 9:K:47:LEU:HB3    | 9:K:56:ALA:HB2    | 2.00                     | 0.43              |
| 13:O:527:LEU:O    | 13:O:530:SER:OG   | 2.19                     | 0.43              |
| 13:O:652:LEU:HA   | 13:O:660:LYS:HD3  | 2.00                     | 0.43              |
| 3:P:203:TRP:CZ2   | 3:P:207:LEU:HB2   | 2.53                     | 0.43              |
| 15:Y:305:ILE:HG13 | 15:Y:306:LYS:H    | 1.84                     | 0.43              |
| 1:A:590:PRO:HA    | 1:A:595:VAL:HG23  | 2.01                     | 0.43              |
| 1:A:1542:LEU:HD13 | 1:A:1558:HIS:CE1  | 2.54                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1814:ILE:O    | 1:A:1817:VAL:N    | 2.52                     | 0.43              |
| 3:C:187:GLU:O     | 3:C:191:VAL:HG23  | 2.19                     | 0.43              |
| 3:C:210:CYS:HA    | 3:C:237:ILE:CD1   | 2.47                     | 0.43              |
| 3:C:295:TYR:HD2   | 3:P:101:ARG:HA    | 1.84                     | 0.43              |
| 3:C:305:ASN:O     | 3:C:308:TYR:N     | 2.49                     | 0.43              |
| 3:C:556:LEU:HD23  | 3:C:556:LEU:HA    | 1.90                     | 0.43              |
| 6:F:513:SER:O     | 6:F:515:TYR:N     | 2.51                     | 0.43              |
| 6:H:679:GLN:OE1   | 6:H:688:ALA:N     | 2.52                     | 0.43              |
| 6:H:740:TYR:CE2   | 6:H:762:TRP:HE3   | 2.37                     | 0.43              |
| 6:H:747:TYR:HD1   | 6:H:750:LEU:HD12  | 1.83                     | 0.43              |
| 8:I:189:ALA:HB2   | 8:I:195:ILE:HB    | 2.01                     | 0.43              |
| 8:I:238:THR:HA    | 8:I:548:MET:SD    | 2.59                     | 0.43              |
| 8:I:311:GLY:HA3   | 13:O:127:HIS:HB3  | 2.00                     | 0.43              |
| 8:I:625:TYR:OH    | 8:I:711:TRP:O     | 2.28                     | 0.43              |
| 8:I:636:TYR:CD1   | 8:I:655:ASP:HA    | 2.54                     | 0.43              |
| 9:J:190:LEU:HB3   | 9:J:198:GLN:NE2   | 2.34                     | 0.43              |
| 12:N:362:LYS:HE3  | 12:N:362:LYS:HB3  | 1.74                     | 0.43              |
| 13:O:115:LEU:O    | 13:O:118:SER:HB3  | 2.19                     | 0.43              |
| 13:O:221:SER:O    | 13:O:225:ASN:HB2  | 2.19                     | 0.43              |
| 13:O:506:LEU:H    | 13:O:506:LEU:HG   | 1.40                     | 0.43              |
| 13:O:648:ILE:HA   | 13:O:651:ILE:HD12 | 2.01                     | 0.43              |
| 13:O:724:LEU:HD23 | 13:O:724:LEU:HA   | 1.69                     | 0.43              |
| 15:X:369:ASN:HB3  | 15:X:371:ASN:OD1  | 2.19                     | 0.43              |
| 15:Y:53:VAL:HG23  | 15:Y:86:SER:HB3   | 2.00                     | 0.43              |
| 15:Y:167:ARG:HB3  | 15:Y:172:ASN:OD1  | 2.19                     | 0.43              |
| 1:A:459:GLU:CB    | 1:A:466:LEU:HD23  | 2.46                     | 0.42              |
| 1:A:768:LEU:HD11  | 1:A:861:PRO:HG2   | 2.01                     | 0.42              |
| 1:A:971:PRO:HG2   | 1:A:974:VAL:HG23  | 2.01                     | 0.42              |
| 1:A:1360:VAL:HG23 | 1:A:1403:PHE:HE2  | 1.84                     | 0.42              |
| 3:C:99:TYR:HB3    | 3:C:121:SER:OG    | 2.19                     | 0.42              |
| 3:C:307:LEU:HD21  | 3:C:312:MET:O     | 2.19                     | 0.42              |
| 6:F:88:GLY:O      | 6:F:91:ILE:HB     | 2.19                     | 0.42              |
| 6:F:581:ARG:HA    | 6:F:583:HIS:NE2   | 2.33                     | 0.42              |
| 6:F:597:ASP:OD1   | 6:F:599:ASN:N     | 2.46                     | 0.42              |
| 6:H:696:ILE:HD11  | 6:H:706:LYS:HA    | 2.01                     | 0.42              |
| 6:H:736:GLU:HG2   | 10:L:177:PHE:CG   | 2.55                     | 0.42              |
| 8:I:387:GLU:O     | 8:I:391:THR:HG23  | 2.18                     | 0.42              |
| 9:J:185:LEU:HA    | 9:J:185:LEU:HD23  | 1.80                     | 0.42              |
| 9:J:413:PHE:CE1   | 9:J:454:VAL:HG22  | 2.54                     | 0.42              |
| 12:N:179:CYS:O    | 12:N:183:VAL:HG22 | 2.19                     | 0.42              |
| 13:O:41:LEU:HD11  | 13:O:132:VAL:HG11 | 2.01                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:O:135:PHE:O    | 13:O:138:HIS:HB2  | 2.18                     | 0.42              |
| 13:O:644:LEU:HD12 | 13:O:644:LEU:HA   | 1.80                     | 0.42              |
| 3:P:368:TRP:HE3   | 3:P:387:ALA:HA    | 1.84                     | 0.42              |
| 7:W:13:LEU:C      | 7:W:15:ASP:N      | 2.70                     | 0.42              |
| 15:X:54:ARG:HD2   | 15:X:55:LEU:N     | 2.34                     | 0.42              |
| 15:Y:421:ASN:ND2  | 15:Y:421:ASN:O    | 2.52                     | 0.42              |
| 1:A:802:TYR:O     | 1:A:805:HIS:HB3   | 2.19                     | 0.42              |
| 1:A:1037:VAL:O    | 1:A:1040:LEU:N    | 2.52                     | 0.42              |
| 1:A:1086:MET:HG3  | 1:A:1610:TYR:CZ   | 2.54                     | 0.42              |
| 1:A:1886:ALA:O    | 1:A:1890:VAL:HG12 | 2.19                     | 0.42              |
| 3:C:356:ARG:O     | 3:C:359:LYS:HB3   | 2.19                     | 0.42              |
| 3:C:375:TYR:HD1   | 3:C:378:MET:SD    | 2.42                     | 0.42              |
| 6:F:76:ALA:O      | 6:F:80:VAL:HG22   | 2.19                     | 0.42              |
| 6:H:62:LYS:O      | 6:H:62:LYS:HG2    | 2.19                     | 0.42              |
| 6:H:744:GLY:HA2   | 6:H:759:ASN:HD22  | 1.83                     | 0.42              |
| 8:I:540:PRO:O     | 8:I:544:ILE:HG13  | 2.19                     | 0.42              |
| 8:I:590:ILE:HD11  | 8:I:599:CYS:SG    | 2.59                     | 0.42              |
| 9:J:86:HIS:C      | 9:J:88:GLN:H      | 2.22                     | 0.42              |
| 9:K:141:ASP:C     | 9:K:144:ASP:H     | 2.22                     | 0.42              |
| 9:K:235:VAL:O     | 9:K:239:GLU:HG3   | 2.19                     | 0.42              |
| 9:K:242:TYR:HB2   | 9:K:250:CYS:SG    | 2.59                     | 0.42              |
| 11:M:1:MET:H2     | 3:P:48:LEU:HD11   | 1.84                     | 0.42              |
| 12:N:247:LEU:O    | 12:N:251:SER:N    | 2.51                     | 0.42              |
| 13:O:532:VAL:O    | 13:O:536:THR:HG22 | 2.18                     | 0.42              |
| 13:O:544:VAL:HG22 | 13:O:567:LEU:HD12 | 2.01                     | 0.42              |
| 15:Y:37:VAL:HG23  | 15:Y:38:ILE:N     | 2.34                     | 0.42              |
| 15:Y:413:LEU:HG   | 15:Y:417:TYR:HE2  | 1.84                     | 0.42              |
| 1:A:1176:LEU:HD22 | 1:A:1176:LEU:HA   | 1.79                     | 0.42              |
| 1:A:1596:SER:O    | 1:A:1597:THR:HG22 | 2.19                     | 0.42              |
| 1:A:1674:TRP:O    | 1:A:1674:TRP:CD1  | 2.72                     | 0.42              |
| 1:A:1839:PHE:C    | 1:A:1841:ASN:N    | 2.71                     | 0.42              |
| 2:B:12:ALA:O      | 12:N:595:ILE:HA   | 2.19                     | 0.42              |
| 6:F:127:LYS:HD3   | 6:F:127:LYS:HA    | 1.80                     | 0.42              |
| 6:F:145:ASN:CG    | 6:F:148:LEU:HD13  | 2.40                     | 0.42              |
| 7:G:23:ARG:HA     | 7:G:24:LYS:HA     | 1.68                     | 0.42              |
| 8:I:215:LYS:HE3   | 8:I:215:LYS:HB3   | 1.82                     | 0.42              |
| 8:I:308:LEU:HD23  | 8:I:308:LEU:HA    | 1.89                     | 0.42              |
| 8:I:309:LEU:HD23  | 13:O:64:LEU:HD22  | 2.01                     | 0.42              |
| 8:I:505:SER:OG    | 8:I:507:LEU:N     | 2.40                     | 0.42              |
| 9:K:309:TYR:HD1   | 9:K:309:TYR:HA    | 1.61                     | 0.42              |
| 11:M:16:ASP:C     | 11:M:16:ASP:OD1   | 2.58                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:758:ILE:O    | 12:N:762:LEU:HG   | 2.19                     | 0.42              |
| 12:N:766:GLU:OE2  | 12:N:816:ARG:HG2  | 2.19                     | 0.42              |
| 13:O:86:CYS:SG    | 13:O:89:LEU:N     | 2.87                     | 0.42              |
| 15:X:57:SER:CB    | 15:X:83:HIS:HB2   | 2.49                     | 0.42              |
| 15:X:257:THR:O    | 15:X:260:SER:OG   | 2.20                     | 0.42              |
| 15:Y:331:LEU:HA   | 15:Y:331:LEU:HD13 | 1.79                     | 0.42              |
| 15:Y:475:TYR:HB3  | 15:Y:478:ALA:HB3  | 2.00                     | 0.42              |
| 1:A:80:VAL:N      | 1:A:87:VAL:HG11   | 2.34                     | 0.42              |
| 1:A:223:LEU:HD12  | 1:A:223:LEU:HA    | 1.77                     | 0.42              |
| 1:A:661:VAL:HG23  | 1:A:789:LEU:HD12  | 2.02                     | 0.42              |
| 1:A:827:GLN:HE21  | 1:A:829:GLY:N     | 2.15                     | 0.42              |
| 1:A:1300:LEU:HA   | 1:A:1300:LEU:HD12 | 1.71                     | 0.42              |
| 1:A:1455:GLU:N    | 1:A:1458:SER:H    | 2.02                     | 0.42              |
| 1:A:1856:LEU:O    | 1:A:1860:LEU:HG   | 2.19                     | 0.42              |
| 7:G:6:PRO:HB2     | 9:J:446:PRO:HG2   | 2.01                     | 0.42              |
| 6:H:93:SER:HB2    | 6:H:121:LEU:HD11  | 2.01                     | 0.42              |
| 8:I:225:THR:HG23  | 8:I:228:ALA:H     | 1.85                     | 0.42              |
| 8:I:560:THR:O     | 8:I:563:GLU:N     | 2.52                     | 0.42              |
| 9:J:185:LEU:HD21  | 9:J:205:PHE:HB3   | 2.01                     | 0.42              |
| 9:J:253:LEU:HD23  | 9:J:253:LEU:HA    | 1.77                     | 0.42              |
| 9:K:509:ARG:HG3   | 9:K:512:ASP:HB2   | 2.01                     | 0.42              |
| 10:L:71:LYS:HG2   | 10:L:133:ARG:HG2  | 2.00                     | 0.42              |
| 12:N:287:ARG:HD3  | 12:N:287:ARG:HA   | 1.85                     | 0.42              |
| 12:N:433:ASP:O    | 12:N:435:VAL:HG12 | 2.19                     | 0.42              |
| 12:N:560:MET:CE   | 12:N:600:PHE:HB3  | 2.49                     | 0.42              |
| 13:O:542:GLU:OE2  | 13:O:546:ARG:NH2  | 2.52                     | 0.42              |
| 3:P:150:ALA:O     | 3:P:154:LEU:HD12  | 2.20                     | 0.42              |
| 3:P:376:MET:SD    | 3:P:408:THR:OG1   | 2.67                     | 0.42              |
| 7:W:12:LYS:O      | 7:W:14:ASP:N      | 2.53                     | 0.42              |
| 15:Y:143:ALA:CB   | 15:Y:159:LEU:HD11 | 2.50                     | 0.42              |
| 15:Y:315:LEU:HD11 | 15:Y:320:ARG:HB2  | 2.01                     | 0.42              |
| 15:Y:331:LEU:HD12 | 15:Y:341:PRO:HG3  | 2.01                     | 0.42              |
| 15:Y:459:GLU:O    | 15:Y:463:THR:HG23 | 2.18                     | 0.42              |
| 1:A:1515:CYS:O    | 1:A:1519:VAL:HG12 | 2.20                     | 0.42              |
| 1:A:1608:HIS:O    | 1:A:1610:TYR:N    | 2.53                     | 0.42              |
| 3:C:286:PHE:CG    | 3:C:303:PHE:HD1   | 2.37                     | 0.42              |
| 3:C:544:GLU:HA    | 3:C:547:LYS:HB2   | 2.00                     | 0.42              |
| 5:E:94:TRP:HH2    | 6:F:596:VAL:HG22  | 1.85                     | 0.42              |
| 8:I:125:LEU:HB3   | 8:I:129:TYR:OH    | 2.20                     | 0.42              |
| 8:I:309:LEU:O     | 8:I:310:TRP:CG    | 2.72                     | 0.42              |
| 8:I:590:ILE:N     | 8:I:597:LYS:O     | 2.36                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:19:TYR:CZ     | 9:J:49:LEU:HD23   | 2.55                     | 0.42              |
| 9:J:358:PHE:O     | 9:J:362:GLN:HG2   | 2.20                     | 0.42              |
| 9:J:514:PHE:CE1   | 9:J:518:MET:HB2   | 2.54                     | 0.42              |
| 12:N:667:LEU:HA   | 12:N:670:PHE:HD2  | 1.85                     | 0.42              |
| 13:O:105:LEU:HD23 | 3:P:340:TYR:OH    | 2.19                     | 0.42              |
| 3:P:52:SER:OG     | 3:P:53:LYS:N      | 2.52                     | 0.42              |
| 3:P:241:LEU:HD23  | 3:P:241:LEU:HA    | 1.75                     | 0.42              |
| 15:X:325:GLU:HG2  | 15:X:348:HIS:CD2  | 2.55                     | 0.42              |
| 15:Y:84:ALA:O     | 15:Y:87:LEU:HB2   | 2.19                     | 0.42              |
| 1:A:166:GLY:HA2   | 13:O:316:HIS:ND1  | 2.34                     | 0.42              |
| 3:C:129:LYS:NZ    | 3:P:325:GLU:O     | 2.36                     | 0.42              |
| 3:C:263:SER:HA    | 3:C:292:GLN:HE22  | 1.83                     | 0.42              |
| 6:F:540:SER:OG    | 6:F:552:LEU:HD11  | 2.19                     | 0.42              |
| 7:G:11:LEU:HD22   | 7:G:15:ASP:OD2    | 2.20                     | 0.42              |
| 6:H:85:LEU:HD23   | 6:H:85:LEU:HA     | 1.81                     | 0.42              |
| 8:I:309:LEU:HG    | 13:O:131:VAL:HG21 | 2.00                     | 0.42              |
| 8:I:399:LYS:HD3   | 8:I:399:LYS:HA    | 1.66                     | 0.42              |
| 8:I:604:HIS:CE1   | 8:I:606:ASP:HB3   | 2.54                     | 0.42              |
| 12:N:247:LEU:HD22 | 12:N:253:LEU:HA   | 2.01                     | 0.42              |
| 13:O:222:LEU:HD22 | 13:O:226:ASP:HB3  | 2.01                     | 0.42              |
| 3:P:65:LEU:HG     | 3:P:66:PRO:CD     | 2.50                     | 0.42              |
| 3:P:109:CYS:C     | 3:P:110:ASN:HD22  | 2.22                     | 0.42              |
| 15:X:525:TYR:O    | 15:X:529:MET:HG2  | 2.19                     | 0.42              |
| 15:Y:447:LEU:HD12 | 15:Y:448:ALA:N    | 2.35                     | 0.42              |
| 15:Y:465:LEU:CD2  | 15:Y:482:LYS:HB2  | 2.48                     | 0.42              |
| 15:Y:525:TYR:HD1  | 15:Y:525:TYR:HA   | 1.72                     | 0.42              |
| 17:Q:499:ARG:HD2  | 17:Q:499:ARG:C    | 2.40                     | 0.42              |
| 1:A:25:ARG:HH22   | 1:A:604:MET:CE    | 2.33                     | 0.42              |
| 1:A:942:ARG:HA    | 1:A:945:GLU:OE2   | 2.20                     | 0.42              |
| 1:A:1110:ARG:HD3  | 1:A:1110:ARG:HA   | 1.64                     | 0.42              |
| 1:A:1329:MET:CE   | 1:A:1371:LEU:HD12 | 2.49                     | 0.42              |
| 1:A:1738:ILE:HD11 | 1:A:1779:VAL:HG11 | 2.02                     | 0.42              |
| 3:C:279:ILE:HG21  | 3:C:310:ARG:HG3   | 2.01                     | 0.42              |
| 6:F:516:MET:O     | 6:F:519:GLU:HG3   | 2.20                     | 0.42              |
| 6:H:580:GLN:HB2   | 6:H:582:GLU:OE1   | 2.19                     | 0.42              |
| 8:I:418:PHE:HD1   | 8:I:418:PHE:HA    | 1.59                     | 0.42              |
| 11:M:34:ASN:ND2   | 11:M:51:LYS:HE2   | 2.29                     | 0.42              |
| 12:N:553:PRO:HB2  | 12:N:554:MET:CE   | 2.46                     | 0.42              |
| 12:N:610:GLU:OE1  | 12:N:610:GLU:N    | 2.53                     | 0.42              |
| 13:O:470:LEU:HD23 | 13:O:470:LEU:HA   | 1.76                     | 0.42              |
| 13:O:485:ALA:O    | 13:O:489:VAL:HG23 | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:116:PHE:O     | 3:P:117:LEU:C     | 2.58                     | 0.42              |
| 15:X:437:LEU:HD22 | 15:X:444:LEU:HD21 | 2.02                     | 0.42              |
| 15:X:449:THR:OG1  | 15:X:450:VAL:N    | 2.52                     | 0.42              |
| 15:Y:271:VAL:O    | 15:Y:274:LEU:HB2  | 2.19                     | 0.42              |
| 15:Y:304:LEU:HD21 | 15:Y:307:GLY:H    | 1.83                     | 0.42              |
| 15:Y:446:LEU:HD22 | 15:Y:477:LYS:HE3  | 2.01                     | 0.42              |
| 17:Q:498:MET:HB3  | 17:Q:498:MET:HE3  | 1.87                     | 0.42              |
| 1:A:185:TYR:CE1   | 1:A:273:ARG:HD3   | 2.54                     | 0.42              |
| 1:A:599:LEU:HB2   | 1:A:603:SER:O     | 2.19                     | 0.42              |
| 1:A:960:TYR:O     | 1:A:964:GLU:HG2   | 2.20                     | 0.42              |
| 1:A:1406:LEU:O    | 1:A:1409:LEU:HB3  | 2.19                     | 0.42              |
| 1:A:1428:SER:HA   | 1:A:1435:ARG:HH21 | 1.84                     | 0.42              |
| 1:A:1691:LEU:HA   | 1:A:1691:LEU:HD23 | 1.81                     | 0.42              |
| 2:B:23:CYS:O      | 2:B:27:ARG:HA     | 2.19                     | 0.42              |
| 3:C:79:GLU:HB3    | 3:C:111:SER:HB3   | 2.02                     | 0.42              |
| 3:C:409:TYR:HD1   | 3:C:409:TYR:HA    | 1.60                     | 0.42              |
| 5:E:69:GLN:HB3    | 15:Y:357:ARG:HH21 | 1.85                     | 0.42              |
| 6:F:87:GLU:OE2    | 6:F:87:GLU:N      | 2.47                     | 0.42              |
| 6:F:522:PHE:O     | 6:F:525:VAL:HG12  | 2.19                     | 0.42              |
| 6:H:142:LEU:O     | 6:H:146:PRO:HB3   | 2.19                     | 0.42              |
| 6:H:464:SER:HA    | 6:H:467:ARG:CZ    | 2.49                     | 0.42              |
| 6:H:590:PHE:HB3   | 6:H:607:LEU:HB2   | 2.02                     | 0.42              |
| 8:I:185:ILE:O     | 8:I:197:ARG:HA    | 2.19                     | 0.42              |
| 8:I:572:PHE:CE1   | 8:I:588:PHE:HA    | 2.54                     | 0.42              |
| 8:I:684:GLN:C     | 8:I:701:PRO:HG3   | 2.40                     | 0.42              |
| 9:J:19:TYR:OH     | 9:J:49:LEU:HD23   | 2.19                     | 0.42              |
| 9:J:37:PRO:HB3    | 9:J:69:TYR:CE2    | 2.54                     | 0.42              |
| 9:J:340:TYR:CZ    | 9:J:344:PHE:HE2   | 2.38                     | 0.42              |
| 10:L:37:LYS:HD2   | 10:L:37:LYS:HA    | 1.88                     | 0.42              |
| 12:N:567:SER:HB2  | 12:N:595:ILE:O    | 2.20                     | 0.42              |
| 12:N:705:LEU:HB2  | 12:N:714:SER:O    | 2.19                     | 0.42              |
| 12:N:769:SER:O    | 12:N:773:ILE:HG13 | 2.20                     | 0.42              |
| 13:O:307:LEU:HD12 | 13:O:307:LEU:HA   | 1.60                     | 0.42              |
| 13:O:525:TYR:CE1  | 13:O:553:ALA:HB1  | 2.55                     | 0.42              |
| 3:P:168:ASP:O     | 3:P:171:GLY:N     | 2.47                     | 0.42              |
| 15:X:330:ARG:O    | 15:X:334:ILE:HG12 | 2.20                     | 0.42              |
| 15:Y:315:LEU:HG   | 15:Y:324:VAL:HG22 | 2.02                     | 0.42              |
| 15:Y:394:ILE:HG22 | 15:Y:397:ARG:HH22 | 1.84                     | 0.42              |
| 15:Y:445:THR:O    | 15:Y:449:THR:HG23 | 2.19                     | 0.42              |
| 15:Y:509:CYS:SG   | 15:Y:510:VAL:HG23 | 2.59                     | 0.42              |
| 1:A:128:TRP:O     | 1:A:182:PRO:HB3   | 2.20                     | 0.42              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:250:ASN:OD1  | 1:A:253:PRO:HD2   | 2.20                     | 0.42              |
| 1:A:755:LEU:HD23 | 1:A:755:LEU:HA    | 1.88                     | 0.42              |
| 1:A:1268:HIS:HD1 | 3:C:545:GLU:HG2   | 1.85                     | 0.42              |
| 1:A:1420:LEU:HA  | 1:A:1420:LEU:HD23 | 1.82                     | 0.42              |
| 1:A:1540:ARG:HD3 | 12:N:480:TRP:NE1  | 2.35                     | 0.42              |
| 1:A:1730:ALA:HB2 | 1:A:1776:TYR:CD2  | 2.55                     | 0.42              |
| 1:A:1735:PRO:O   | 1:A:1737:THR:N    | 2.53                     | 0.42              |
| 3:C:179:LEU:HD23 | 3:C:179:LEU:HA    | 1.65                     | 0.42              |
| 5:E:85:LEU:HA    | 5:E:88:GLU:HG3    | 2.01                     | 0.42              |
| 6:F:133:LYS:HE2  | 6:F:133:LYS:HB3   | 1.77                     | 0.42              |
| 6:H:45:ALA:HB2   | 6:H:61:LEU:HD23   | 2.01                     | 0.42              |
| 6:H:158:ILE:HG22 | 6:H:159:GLY:H     | 1.85                     | 0.42              |
| 6:H:738:LEU:HD12 | 6:H:738:LEU:HA    | 1.87                     | 0.42              |
| 8:I:7:CYS:O      | 8:I:753:GLU:HG3   | 2.20                     | 0.42              |
| 8:I:141:LYS:O    | 8:I:143:PRO:HD3   | 2.19                     | 0.42              |
| 8:I:350:SER:HA   | 13:O:403:LYS:HZ3  | 1.84                     | 0.42              |
| 8:I:572:PHE:HZ   | 8:I:589:THR:H     | 1.68                     | 0.42              |
| 9:J:60:LEU:HD23  | 9:J:60:LEU:HA     | 1.81                     | 0.42              |
| 9:J:263:PHE:CZ   | 9:J:290:LYS:HE3   | 2.55                     | 0.42              |
| 9:J:284:LEU:HA   | 9:J:284:LEU:HD12  | 1.80                     | 0.42              |
| 9:K:332:THR:O    | 9:K:363:LEU:HD21  | 2.19                     | 0.42              |
| 9:K:449:ASN:HD22 | 7:W:8:ARG:NE      | 2.17                     | 0.42              |
| 13:O:523:GLY:O   | 13:O:525:TYR:N    | 2.53                     | 0.42              |
| 3:P:251:TYR:CZ   | 3:P:268:GLN:HG2   | 2.54                     | 0.42              |
| 15:Y:193:LYS:HE2 | 15:Y:193:LYS:HB2  | 1.83                     | 0.42              |
| 1:A:24:GLY:O     | 1:A:28:CYS:HB2    | 2.20                     | 0.42              |
| 1:A:1574:LEU:H   | 1:A:1574:LEU:CD2  | 2.30                     | 0.42              |
| 1:A:1666:ILE:O   | 1:A:1677:LEU:HB3  | 2.20                     | 0.42              |
| 1:A:1776:TYR:O   | 1:A:1780:THR:HG23 | 2.19                     | 0.42              |
| 3:C:248:LEU:HA   | 3:C:248:LEU:HD23  | 1.66                     | 0.42              |
| 6:F:101:LYS:HB2  | 6:F:101:LYS:HE3   | 1.89                     | 0.42              |
| 6:H:172:SER:HA   | 6:H:456:LYS:HE3   | 2.02                     | 0.42              |
| 8:I:120:VAL:HG22 | 8:I:122:SER:H     | 1.85                     | 0.42              |
| 8:I:676:ASN:CB   | 8:I:703:ARG:HH12  | 2.33                     | 0.42              |
| 9:J:192:LYS:HD2  | 9:J:192:LYS:N     | 2.30                     | 0.42              |
| 9:J:212:TYR:HB3  | 9:J:243:TYR:CD1   | 2.55                     | 0.42              |
| 9:J:334:GLY:N    | 9:J:335:PRO:HD2   | 2.35                     | 0.42              |
| 10:L:33:LEU:HD21 | 10:L:64:VAL:HG13  | 2.01                     | 0.42              |
| 10:L:126:ASP:N   | 10:L:132:THR:OG1  | 2.53                     | 0.42              |
| 12:N:253:LEU:O   | 12:N:257:SER:OG   | 2.37                     | 0.42              |
| 12:N:356:PRO:HA  | 12:N:359:GLU:HG2  | 2.02                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:689:VAL:O    | 12:N:692:LEU:HB3  | 2.20                     | 0.42              |
| 13:O:320:ALA:O    | 13:O:321:GLU:C    | 2.59                     | 0.42              |
| 15:X:309:ASP:OD1  | 15:X:340:GLU:HA   | 2.20                     | 0.42              |
| 15:X:467:LYS:HB3  | 15:X:471:GLN:NE2  | 2.34                     | 0.42              |
| 15:Y:474:ASP:OD2  | 15:Y:505:ASN:HB2  | 2.20                     | 0.42              |
| 15:Y:543:GLN:O    | 15:Y:547:GLU:HG2  | 2.20                     | 0.42              |
| 1:A:1070:LEU:HA   | 1:A:1070:LEU:HD12 | 1.75                     | 0.41              |
| 1:A:1455:GLU:HB2  | 1:A:1458:SER:HB2  | 2.02                     | 0.41              |
| 1:A:1880:SER:OG   | 1:A:1881:GLN:OE1  | 2.28                     | 0.41              |
| 2:B:15:LEU:CD1    | 12:N:626:TYR:HE2  | 2.33                     | 0.41              |
| 2:B:16:TRP:O      | 2:B:31:ASN:HB3    | 2.20                     | 0.41              |
| 3:C:532:CYS:SG    | 3:C:533:ALA:N     | 2.93                     | 0.41              |
| 6:F:43:LEU:HD23   | 6:F:43:LEU:HA     | 1.75                     | 0.41              |
| 6:F:509:TYR:O     | 6:F:512:LEU:N     | 2.52                     | 0.41              |
| 6:H:729:LEU:O     | 6:H:733:VAL:N     | 2.44                     | 0.41              |
| 8:I:47:HIS:HD2    | 8:I:53:HIS:C      | 2.23                     | 0.41              |
| 9:J:305:VAL:HG23  | 11:M:29:VAL:HG11  | 2.01                     | 0.41              |
| 9:J:495:PHE:O     | 9:J:499:VAL:HG13  | 2.20                     | 0.41              |
| 9:K:29:VAL:HA     | 9:K:32:LEU:HB2    | 2.01                     | 0.41              |
| 9:K:155:GLU:HA    | 9:K:158:LYS:HD2   | 2.01                     | 0.41              |
| 9:K:244:ASN:HB3   | 9:K:246:ASP:OD2   | 2.20                     | 0.41              |
| 9:K:393:GLN:O     | 9:K:396:SER:OG    | 2.27                     | 0.41              |
| 10:L:80:TYR:HB2   | 10:L:119:TRP:CE3  | 2.55                     | 0.41              |
| 12:N:775:ASN:HB3  | 12:N:776:MET:HE2  | 2.01                     | 0.41              |
| 3:P:332:GLU:N     | 3:P:332:GLU:OE1   | 2.53                     | 0.41              |
| 15:X:44:MET:SD    | 15:Y:201:LEU:HB2  | 2.60                     | 0.41              |
| 15:X:271:VAL:HG11 | 15:X:301:ASP:OD2  | 2.20                     | 0.41              |
| 15:X:361:LEU:HD23 | 15:X:364:LYS:HD2  | 2.02                     | 0.41              |
| 15:Y:191:SER:HA   | 15:Y:194:GLU:CD   | 2.40                     | 0.41              |
| 15:Y:191:SER:O    | 15:Y:195:VAL:HG13 | 2.20                     | 0.41              |
| 15:Y:245:PHE:CG   | 15:Y:253:ARG:HD2  | 2.55                     | 0.41              |
| 15:Y:255:ILE:HA   | 15:Y:277:LEU:HD11 | 2.02                     | 0.41              |
| 1:A:179:ASN:HB2   | 1:A:190:GLU:OE2   | 2.20                     | 0.41              |
| 1:A:191:ARG:HG2   | 1:A:192:SER:N     | 2.35                     | 0.41              |
| 1:A:259:TYR:CG    | 1:A:260:ASP:N     | 2.88                     | 0.41              |
| 1:A:429:LYS:HD2   | 1:A:479:ALA:O     | 2.19                     | 0.41              |
| 1:A:974:VAL:O     | 1:A:977:LEU:N     | 2.53                     | 0.41              |
| 1:A:1032:LEU:HD23 | 12:N:485:VAL:HA   | 2.02                     | 0.41              |
| 1:A:1033:ARG:O    | 1:A:1037:VAL:HG23 | 2.20                     | 0.41              |
| 1:A:1153:ILE:HD12 | 1:A:1153:ILE:HA   | 1.92                     | 0.41              |
| 1:A:1488:LEU:HD23 | 1:A:1488:LEU:HA   | 1.79                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1520:LEU:HA   | 1:A:1520:LEU:HD12 | 1.81                     | 0.41              |
| 3:C:54:TRP:O      | 3:C:57:GLU:HB2    | 2.20                     | 0.41              |
| 4:D:46:GLU:HA     | 3:P:380:ASN:HD21  | 1.84                     | 0.41              |
| 5:E:83:ALA:HA     | 5:E:86:VAL:HG23   | 2.03                     | 0.41              |
| 6:F:541:THR:O     | 6:F:544:TRP:HB3   | 2.19                     | 0.41              |
| 6:F:617:LEU:H     | 6:F:617:LEU:HD12  | 1.84                     | 0.41              |
| 8:I:414:PHE:HE2   | 8:I:418:PHE:CE2   | 2.38                     | 0.41              |
| 8:I:479:LEU:HD23  | 8:I:479:LEU:HA    | 1.68                     | 0.41              |
| 8:I:591:LEU:HB3   | 8:I:596:TYR:CD1   | 2.55                     | 0.41              |
| 8:I:717:MET:SD    | 8:I:740:HIS:CE1   | 3.13                     | 0.41              |
| 9:J:231:LEU:HA    | 9:J:234:VAL:HG22  | 2.02                     | 0.41              |
| 9:J:478:ASN:HB3   | 9:J:481:THR:HG22  | 2.02                     | 0.41              |
| 9:K:17:GLN:O      | 9:K:19:TYR:N      | 2.53                     | 0.41              |
| 9:K:28:LYS:HD3    | 9:K:28:LYS:HA     | 1.60                     | 0.41              |
| 9:K:440:THR:O     | 9:K:443:LYS:HB2   | 2.20                     | 0.41              |
| 12:N:131:LEU:HD13 | 12:N:135:TRP:CH2  | 2.55                     | 0.41              |
| 12:N:292:TRP:CZ3  | 12:N:296:VAL:HG21 | 2.54                     | 0.41              |
| 12:N:548:ARG:HD3  | 12:N:548:ARG:HA   | 1.71                     | 0.41              |
| 12:N:768:LEU:HD22 | 12:N:772:ARG:HB3  | 2.02                     | 0.41              |
| 13:O:38:LEU:O     | 13:O:41:LEU:HB3   | 2.19                     | 0.41              |
| 13:O:729:GLU:N    | 13:O:729:GLU:OE1  | 2.53                     | 0.41              |
| 3:P:348:GLU:N     | 3:P:348:GLU:CD    | 2.74                     | 0.41              |
| 15:Y:173:MET:HE3  | 15:Y:192:TYR:HE1  | 1.85                     | 0.41              |
| 15:Y:220:ALA:HA   | 15:Y:223:THR:HG23 | 2.02                     | 0.41              |
| 15:Y:241:LYS:H    | 15:Y:241:LYS:HG3  | 1.72                     | 0.41              |
| 15:Y:492:TYR:O    | 15:Y:496:ILE:HG22 | 2.20                     | 0.41              |
| 1:A:591:VAL:O     | 1:A:592:HIS:C     | 2.59                     | 0.41              |
| 1:A:769:VAL:HA    | 1:A:866:ILE:HD11  | 2.02                     | 0.41              |
| 1:A:797:LEU:HD12  | 1:A:797:LEU:HA    | 1.74                     | 0.41              |
| 1:A:1041:LEU:HD23 | 1:A:1041:LEU:HA   | 1.77                     | 0.41              |
| 1:A:1376:LEU:HD22 | 1:A:1578:ASN:OD1  | 2.19                     | 0.41              |
| 1:A:1421:PRO:HB2  | 1:A:1483:SER:OG   | 2.19                     | 0.41              |
| 1:A:1724:ALA:O    | 1:A:1728:SER:OG   | 2.38                     | 0.41              |
| 2:B:18:ALA:HB2    | 2:B:46:LEU:HD13   | 2.01                     | 0.41              |
| 3:C:389:ARG:HG2   | 13:O:280:ARG:HD3  | 2.02                     | 0.41              |
| 3:C:443:TYR:CD2   | 3:C:451:GLU:HB3   | 2.55                     | 0.41              |
| 5:E:68:LYS:HG2    | 5:E:72:HIS:HD2    | 1.85                     | 0.41              |
| 5:E:85:LEU:HD23   | 6:H:570:TRP:HZ3   | 1.85                     | 0.41              |
| 6:F:105:ASP:OD1   | 6:F:106:ILE:N     | 2.53                     | 0.41              |
| 6:F:672:LEU:O     | 6:F:675:ILE:HB    | 2.20                     | 0.41              |
| 6:H:716:ASN:C     | 6:H:717:GLU:HG3   | 2.41                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:412:LYS:HD2   | 8:I:447:PHE:CE2   | 2.54                     | 0.41              |
| 9:J:275:LEU:CD2   | 9:J:280:LYS:HB2   | 2.49                     | 0.41              |
| 9:J:360:ALA:O     | 9:J:364:MET:N     | 2.52                     | 0.41              |
| 9:K:66:ASP:N      | 9:K:66:ASP:OD1    | 2.53                     | 0.41              |
| 9:K:402:PRO:HG3   | 9:K:435:ILE:CD1   | 2.47                     | 0.41              |
| 12:N:118:LEU:HD11 | 12:N:250:LEU:HG   | 2.03                     | 0.41              |
| 12:N:319:ASN:C    | 12:N:321:LEU:H    | 2.24                     | 0.41              |
| 12:N:660:THR:O    | 12:N:664:ALA:N    | 2.50                     | 0.41              |
| 13:O:90:ALA:O     | 13:O:93:VAL:HG12  | 2.20                     | 0.41              |
| 13:O:254:HIS:NE2  | 13:O:276:HIS:CE1  | 2.89                     | 0.41              |
| 15:Y:255:ILE:HG13 | 15:Y:256:SER:N    | 2.35                     | 0.41              |
| 15:Y:255:ILE:HG22 | 15:Y:277:LEU:HD11 | 2.02                     | 0.41              |
| 1:A:207:LEU:O     | 1:A:240:VAL:HG23  | 2.20                     | 0.41              |
| 1:A:219:GLU:HA    | 3:C:458:ARG:HH11  | 1.83                     | 0.41              |
| 1:A:770:TYR:HB2   | 1:A:786:LEU:HD22  | 2.01                     | 0.41              |
| 1:A:1073:LEU:HA   | 1:A:1073:LEU:HD23 | 1.52                     | 0.41              |
| 2:B:16:TRP:HB2    | 2:B:31:ASN:HA     | 2.03                     | 0.41              |
| 3:C:65:LEU:HA     | 3:C:66:PRO:HD3    | 1.92                     | 0.41              |
| 6:F:639:TYR:HE1   | 6:F:708:HIS:NE2   | 2.17                     | 0.41              |
| 6:H:134:GLY:O     | 6:H:138:TYR:HD2   | 2.03                     | 0.41              |
| 8:I:185:ILE:H     | 8:I:198:VAL:HG22  | 1.84                     | 0.41              |
| 8:I:528:ARG:O     | 8:I:532:ILE:HG13  | 2.20                     | 0.41              |
| 8:I:664:ARG:NH1   | 8:I:718:LYS:HD2   | 2.36                     | 0.41              |
| 9:J:487:TYR:O     | 9:J:491:LEU:HB2   | 2.20                     | 0.41              |
| 9:J:488:ILE:HD12  | 9:J:491:LEU:HB3   | 2.03                     | 0.41              |
| 10:L:6:LYS:HA     | 10:L:114:VAL:HG13 | 2.01                     | 0.41              |
| 10:L:29:ALA:HB1   | 10:L:67:GLN:O     | 2.20                     | 0.41              |
| 13:O:362:GLU:O    | 13:O:366:LYS:HG2  | 2.20                     | 0.41              |
| 3:P:195:ALA:O     | 3:P:199:LEU:N     | 2.51                     | 0.41              |
| 3:P:267:SER:HB2   | 3:P:299:ASN:HD21  | 1.85                     | 0.41              |
| 3:P:426:HIS:NE2   | 3:P:430:PRO:O     | 2.50                     | 0.41              |
| 15:X:382:ALA:O    | 15:X:385:ASN:HB2  | 2.21                     | 0.41              |
| 15:Y:146:TYR:O    | 15:Y:149:LEU:HB2  | 2.20                     | 0.41              |
| 15:Y:214:VAL:O    | 15:Y:214:VAL:HG12 | 2.21                     | 0.41              |
| 1:A:491:LEU:HB3   | 1:A:497:LEU:CD2   | 2.50                     | 0.41              |
| 1:A:761:ALA:O     | 1:A:765:VAL:HG23  | 2.21                     | 0.41              |
| 1:A:1130:ASN:OD1  | 1:A:1130:ASN:N    | 2.52                     | 0.41              |
| 1:A:1563:GLY:O    | 1:A:1565:LEU:N    | 2.54                     | 0.41              |
| 4:D:54:ILE:HD13   | 3:P:389:ARG:HH22  | 1.86                     | 0.41              |
| 6:F:8:VAL:H       | 6:F:8:VAL:HG22    | 1.67                     | 0.41              |
| 6:F:522:PHE:CD2   | 6:F:539:TYR:HB2   | 2.55                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:548:LYS:HG2   | 6:F:551:ALA:HB3   | 2.02                     | 0.41              |
| 6:F:644:ILE:O     | 6:F:648:GLN:CB    | 2.64                     | 0.41              |
| 6:H:68:THR:O      | 6:H:72:LYS:HG3    | 2.20                     | 0.41              |
| 8:I:22:GLU:HB3    | 8:I:738:LEU:HD12  | 2.03                     | 0.41              |
| 8:I:70:CYS:O      | 8:I:71:LEU:HD12   | 2.20                     | 0.41              |
| 8:I:350:SER:CB    | 13:O:403:LYS:HD3  | 2.50                     | 0.41              |
| 8:I:399:LYS:HD2   | 8:I:478:TYR:CE2   | 2.55                     | 0.41              |
| 8:I:514:PHE:CE2   | 13:O:440:GLN:HG2  | 2.55                     | 0.41              |
| 9:J:150:THR:HG23  | 9:J:154:LYS:HZ2   | 1.84                     | 0.41              |
| 11:M:49:SER:O     | 11:M:52:GLU:HG3   | 2.21                     | 0.41              |
| 12:N:247:LEU:HA   | 12:N:247:LEU:HD23 | 1.88                     | 0.41              |
| 12:N:345:PHE:HE2  | 12:N:349:ARG:NH2  | 2.18                     | 0.41              |
| 12:N:432:GLU:O    | 12:N:434:THR:N    | 2.51                     | 0.41              |
| 12:N:799:LEU:HD23 | 12:N:799:LEU:HA   | 1.95                     | 0.41              |
| 13:O:109:GLU:HB3  | 3:P:344:ARG:HH21  | 1.84                     | 0.41              |
| 3:P:107:HIS:CE1   | 3:P:118:TYR:HH    | 2.35                     | 0.41              |
| 3:P:341:TYR:HD1   | 3:P:341:TYR:HA    | 1.68                     | 0.41              |
| 15:Y:237:SER:O    | 15:Y:241:LYS:HG3  | 2.20                     | 0.41              |
| 15:Y:261:LEU:HD23 | 15:Y:261:LEU:HA   | 1.71                     | 0.41              |
| 15:Y:500:ARG:HD3  | 15:Y:503:LEU:HD21 | 2.02                     | 0.41              |
| 1:A:27:HIS:CD2    | 1:A:113:VAL:HG21  | 2.55                     | 0.41              |
| 1:A:445:LEU:HA    | 1:A:452:LEU:HA    | 2.02                     | 0.41              |
| 1:A:926:LEU:HA    | 1:A:929:ARG:HH12  | 1.86                     | 0.41              |
| 1:A:1227:LEU:O    | 1:A:1230:ILE:HG22 | 2.21                     | 0.41              |
| 1:A:1369:LEU:HD23 | 1:A:1369:LEU:HA   | 1.60                     | 0.41              |
| 1:A:1402:GLU:HA   | 1:A:1463:TYR:HE1  | 1.84                     | 0.41              |
| 1:A:1413:LEU:HD23 | 1:A:1413:LEU:HA   | 1.83                     | 0.41              |
| 3:C:255:ILE:HG23  | 3:C:260:SER:HA    | 2.03                     | 0.41              |
| 3:C:279:ILE:HD12  | 3:C:310:ARG:HE    | 1.85                     | 0.41              |
| 4:D:30:LEU:HD11   | 13:O:138:HIS:CD2  | 2.55                     | 0.41              |
| 6:F:55:TYR:HH     | 6:H:563:ASP:CG    | 2.19                     | 0.41              |
| 6:F:150:SER:OG    | 6:H:22:ARG:HB3    | 2.20                     | 0.41              |
| 6:H:528:ILE:HG23  | 6:H:529:GLU:N     | 2.35                     | 0.41              |
| 6:H:538:ILE:HD13  | 6:H:538:ILE:HA    | 1.85                     | 0.41              |
| 8:I:245:LEU:HB3   | 8:I:246:PRO:HD3   | 2.02                     | 0.41              |
| 8:I:357:GLU:O     | 8:I:358:SER:C     | 2.58                     | 0.41              |
| 8:I:514:PHE:H     | 13:O:443:GLN:NE2  | 2.11                     | 0.41              |
| 8:I:709:LYS:HE3   | 8:I:709:LYS:HB3   | 1.70                     | 0.41              |
| 9:J:179:GLN:HA    | 9:J:182:LYS:HE2   | 2.01                     | 0.41              |
| 9:K:260:LYS:HA    | 9:K:260:LYS:HE2   | 2.03                     | 0.41              |
| 9:K:309:TYR:O     | 9:K:312:VAL:HG12  | 2.20                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:109:LEU:HA   | 12:N:109:LEU:HD23 | 1.78                     | 0.41              |
| 12:N:162:PHE:HB2  | 12:N:255:ARG:NH1  | 2.36                     | 0.41              |
| 13:O:108:MET:O    | 13:O:111:PHE:HB3  | 2.21                     | 0.41              |
| 3:P:193:VAL:HG13  | 3:P:209:LEU:HD21  | 2.02                     | 0.41              |
| 3:P:297:ILE:O     | 3:P:332:GLU:HG2   | 2.20                     | 0.41              |
| 7:W:2:LEU:HA      | 7:W:2:LEU:HD23    | 1.57                     | 0.41              |
| 15:X:270:ASN:O    | 15:X:274:LEU:HG   | 2.20                     | 0.41              |
| 15:X:371:ASN:OD1  | 15:X:372:SER:N    | 2.53                     | 0.41              |
| 15:X:383:LEU:HD12 | 15:X:383:LEU:HA   | 1.79                     | 0.41              |
| 15:X:494:ASP:OD1  | 15:X:494:ASP:N    | 2.53                     | 0.41              |
| 15:Y:211:SER:HA   | 15:Y:247:HIS:CG   | 2.56                     | 0.41              |
| 15:Y:308:MET:HG3  | 15:Y:331:LEU:HD21 | 2.02                     | 0.41              |
| 15:Y:417:TYR:O    | 15:Y:422:SER:N    | 2.54                     | 0.41              |
| 1:A:31:HIS:HB3    | 1:A:99:MET:SD     | 2.60                     | 0.41              |
| 1:A:1131:MET:HG2  | 1:A:1132:THR:H    | 1.85                     | 0.41              |
| 1:A:1181:LEU:HA   | 1:A:1181:LEU:HD13 | 1.72                     | 0.41              |
| 1:A:1911:PHE:O    | 1:A:1911:PHE:CG   | 2.74                     | 0.41              |
| 6:H:672:LEU:HD11  | 6:H:691:THR:HB    | 2.02                     | 0.41              |
| 8:I:134:GLU:O     | 8:I:137:LEU:HB3   | 2.19                     | 0.41              |
| 8:I:261:LEU:HD23  | 8:I:261:LEU:HA    | 1.85                     | 0.41              |
| 8:I:517:TYR:HE2   | 8:I:528:ARG:HD2   | 1.86                     | 0.41              |
| 8:I:536:CYS:SG    | 8:I:537:LEU:N     | 2.94                     | 0.41              |
| 13:O:400:ASP:O    | 13:O:402:LEU:HG   | 2.20                     | 0.41              |
| 13:O:680:GLN:O    | 13:O:683:LYS:HB3  | 2.21                     | 0.41              |
| 3:P:524:LYS:HA    | 3:P:524:LYS:HD2   | 1.84                     | 0.41              |
| 15:X:77:TYR:CZ    | 15:X:107:LYS:HD3  | 2.55                     | 0.41              |
| 15:X:500:ARG:HD3  | 15:X:500:ARG:HA   | 1.60                     | 0.41              |
| 1:A:104:LYS:O     | 13:O:537:ALA:HB1  | 2.20                     | 0.41              |
| 1:A:667:MET:O     | 1:A:755:LEU:HB3   | 2.21                     | 0.41              |
| 1:A:1209:LEU:HA   | 1:A:1209:LEU:HD23 | 1.62                     | 0.41              |
| 6:F:625:ARG:CB    | 6:F:629:ARG:HH21  | 2.32                     | 0.41              |
| 6:F:673:CYS:O     | 6:F:677:VAL:HG13  | 2.20                     | 0.41              |
| 8:I:572:PHE:CZ    | 8:I:589:THR:HG22  | 2.55                     | 0.41              |
| 8:I:619:LYS:HD3   | 8:I:704:THR:HG22  | 2.02                     | 0.41              |
| 8:I:740:HIS:HE1   | 8:I:742:ARG:HH21  | 1.69                     | 0.41              |
| 9:J:203:PHE:O     | 9:J:206:GLU:HB3   | 2.21                     | 0.41              |
| 9:J:492:MET:HG3   | 9:J:494:ASN:HD22  | 1.86                     | 0.41              |
| 12:N:669:TYR:HA   | 12:N:672:ASP:OD2  | 2.21                     | 0.41              |
| 13:O:558:SER:OG   | 13:O:562:LYS:HE3  | 2.21                     | 0.41              |
| 13:O:711:ARG:NH2  | 13:O:746:SER:O    | 2.54                     | 0.41              |
| 3:P:434:ARG:HD3   | 17:Q:498:MET:SD   | 2.60                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:265:SER:O    | 15:Y:66:ASN:HB3   | 2.20                     | 0.41              |
| 15:X:379:LYS:HA   | 15:X:379:LYS:HD2  | 1.81                     | 0.41              |
| 15:X:446:LEU:HD12 | 15:X:447:LEU:N    | 2.36                     | 0.41              |
| 15:Y:321:LEU:HD13 | 15:Y:321:LEU:HA   | 1.92                     | 0.41              |
| 1:A:76:LEU:HD13   | 1:A:589:ASP:HB3   | 2.03                     | 0.41              |
| 1:A:163:SER:HG    | 1:A:167:LYS:N     | 2.16                     | 0.41              |
| 1:A:173:LEU:HA    | 1:A:173:LEU:HD13  | 1.79                     | 0.41              |
| 1:A:221:THR:HA    | 1:A:222:PRO:HD3   | 1.96                     | 0.41              |
| 1:A:424:ASN:O     | 1:A:425:SER:OG    | 2.38                     | 0.41              |
| 1:A:836:PHE:CD1   | 1:A:899:ILE:HG23  | 2.56                     | 0.41              |
| 1:A:1140:GLY:HA2  | 1:A:1171:GLU:OE2  | 2.21                     | 0.41              |
| 1:A:1241:THR:HG22 | 1:A:1243:LEU:HD23 | 2.01                     | 0.41              |
| 1:A:1677:LEU:HD21 | 1:A:1687:LEU:HD12 | 2.02                     | 0.41              |
| 1:A:1795:GLN:HB3  | 1:A:1799:ARG:HH22 | 1.85                     | 0.41              |
| 1:A:1824:ARG:O    | 1:A:1827:GLN:HB2  | 2.21                     | 0.41              |
| 1:A:1896:ALA:HB3  | 1:A:1899:HIS:HB3  | 2.02                     | 0.41              |
| 1:A:1928:LEU:HD12 | 1:A:1928:LEU:HA   | 1.77                     | 0.41              |
| 3:C:356:ARG:NE    | 11:M:19:TRP:HB2   | 2.36                     | 0.41              |
| 3:C:369:THR:OG1   | 3:C:370:LEU:N     | 2.54                     | 0.41              |
| 3:C:513:PHE:CE2   | 3:C:535:LYS:HB3   | 2.55                     | 0.41              |
| 5:E:97:LYS:HA     | 5:E:98:PRO:HD3    | 1.91                     | 0.41              |
| 6:F:53:LYS:HD2    | 6:F:55:TYR:OH     | 2.21                     | 0.41              |
| 6:F:742:LEU:O     | 6:F:746:VAL:HG12  | 2.21                     | 0.41              |
| 6:H:720:LYS:HE3   | 6:H:720:LYS:HB3   | 1.95                     | 0.41              |
| 8:I:125:LEU:HD21  | 8:I:246:PRO:HB3   | 2.02                     | 0.41              |
| 8:I:176:LEU:HD12  | 8:I:177:VAL:H     | 1.85                     | 0.41              |
| 8:I:226:ASN:OD1   | 8:I:226:ASN:N     | 2.51                     | 0.41              |
| 8:I:332:LYS:HE3   | 8:I:332:LYS:HB3   | 1.75                     | 0.41              |
| 8:I:674:VAL:O     | 8:I:703:ARG:NH1   | 2.52                     | 0.41              |
| 8:I:742:ARG:HD2   | 8:I:744:PHE:CZ    | 2.56                     | 0.41              |
| 9:J:277:GLU:HA    | 9:J:277:GLU:OE2   | 2.21                     | 0.41              |
| 9:J:333:TYR:CE2   | 9:J:335:PRO:HG2   | 2.56                     | 0.41              |
| 9:J:392:SER:O     | 9:J:395:LEU:HB3   | 2.20                     | 0.41              |
| 9:J:506:LEU:HD23  | 9:J:506:LEU:O     | 2.21                     | 0.41              |
| 9:K:133:CYS:O     | 9:K:136:ARG:HB2   | 2.21                     | 0.41              |
| 9:K:289:HIS:CE1   | 11:M:57:TRP:CZ3   | 3.08                     | 0.41              |
| 9:K:485:ILE:HG22  | 9:K:501:TYR:CD2   | 2.56                     | 0.41              |
| 9:K:514:PHE:CE2   | 7:W:11:LEU:HD13   | 2.53                     | 0.41              |
| 10:L:94:ILE:HG23  | 10:L:139:ILE:HG23 | 2.01                     | 0.41              |
| 11:M:3:SER:CB     | 3:P:180:ARG:HH12  | 2.33                     | 0.41              |
| 11:M:49:SER:H     | 11:M:52:GLU:CG    | 2.33                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:M:65:LEU:HD12  | 11:M:65:LEU:HA    | 1.82                     | 0.41              |
| 12:N:703:GLY:O    | 12:N:719:GLU:HA   | 2.20                     | 0.41              |
| 13:O:208:SER:O    | 13:O:211:GLN:N    | 2.53                     | 0.41              |
| 13:O:246:PHE:CD1  | 13:O:246:PHE:N    | 2.88                     | 0.41              |
| 13:O:475:GLU:O    | 13:O:479:GLU:HG3  | 2.21                     | 0.41              |
| 3:P:44:ARG:HB3    | 3:P:44:ARG:NH1    | 2.36                     | 0.41              |
| 3:P:67:LEU:HA     | 3:P:70:LEU:HD13   | 2.03                     | 0.41              |
| 3:P:286:PHE:HD1   | 3:P:286:PHE:HA    | 1.74                     | 0.41              |
| 3:P:346:GLN:O     | 3:P:348:GLU:N     | 2.54                     | 0.41              |
| 3:P:369:THR:OG1   | 3:P:370:LEU:N     | 2.54                     | 0.41              |
| 3:P:409:TYR:HD1   | 3:P:409:TYR:HA    | 1.67                     | 0.41              |
| 7:W:13:LEU:HD23   | 7:W:16:ILE:HD11   | 2.01                     | 0.41              |
| 15:X:256:SER:HG   | 15:X:257:THR:H    | 1.68                     | 0.41              |
| 15:X:340:GLU:CD   | 15:X:340:GLU:N    | 2.69                     | 0.41              |
| 15:X:355:TYR:CE2  | 15:X:385:ASN:HB3  | 2.56                     | 0.41              |
| 15:Y:279:ASP:HB3  | 15:Y:283:ARG:HE   | 1.86                     | 0.41              |
| 15:Y:295:GLU:O    | 15:Y:298:GLN:HG2  | 2.21                     | 0.41              |
| 15:Y:306:LYS:HG3  | 15:Y:307:GLY:N    | 2.35                     | 0.41              |
| 15:Y:315:LEU:HD21 | 15:Y:323:ASP:HB3  | 2.01                     | 0.41              |
| 15:Y:475:TYR:O    | 15:Y:479:VAL:HG22 | 2.21                     | 0.41              |
| 1:A:99:MET:HA     | 1:A:117:PHE:O     | 2.21                     | 0.41              |
| 1:A:707:TRP:NE1   | 13:O:730:ARG:HD2  | 2.35                     | 0.41              |
| 1:A:1202:GLU:O    | 1:A:1205:SER:OG   | 2.30                     | 0.41              |
| 2:B:52:SER:O      | 2:B:52:SER:OG     | 2.36                     | 0.41              |
| 3:C:26:PHE:CD1    | 3:C:27:SER:N      | 2.89                     | 0.41              |
| 3:C:136:ASP:OD1   | 3:C:136:ASP:C     | 2.59                     | 0.41              |
| 3:C:375:TYR:HD1   | 3:C:375:TYR:HA    | 1.75                     | 0.41              |
| 4:D:10:PRO:HG2    | 13:O:346:TRP:CE2  | 2.55                     | 0.41              |
| 4:D:11:ARG:NH2    | 4:D:14:GLU:OE1    | 2.43                     | 0.41              |
| 6:F:495:HIS:NE2   | 6:H:34:GLU:OE2    | 2.54                     | 0.41              |
| 6:H:606:LEU:HD23  | 6:H:606:LEU:HA    | 1.68                     | 0.41              |
| 6:H:617:LEU:O     | 6:H:618:ASP:C     | 2.60                     | 0.41              |
| 8:I:310:TRP:NE1   | 13:O:126:VAL:HG22 | 2.36                     | 0.41              |
| 8:I:733:VAL:HG12  | 8:I:742:ARG:O     | 2.21                     | 0.41              |
| 9:J:285:PHE:HD1   | 9:J:308:TYR:CE2   | 2.38                     | 0.41              |
| 9:J:487:TYR:CD1   | 9:J:514:PHE:HZ    | 2.38                     | 0.41              |
| 9:J:489:HIS:HA    | 9:J:492:MET:HE2   | 2.03                     | 0.41              |
| 9:J:489:HIS:HA    | 9:J:492:MET:HG2   | 2.02                     | 0.41              |
| 9:K:192:LYS:HG3   | 9:K:198:GLN:HG3   | 2.03                     | 0.41              |
| 9:K:233:VAL:O     | 9:K:236:SER:OG    | 2.30                     | 0.41              |
| 9:K:491:LEU:HD22  | 7:W:22:ILE:HG21   | 2.02                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:N:626:TYR:CE2  | 12:N:633:ARG:HD3  | 2.56                     | 0.41              |
| 12:N:629:LEU:HD23 | 12:N:633:ARG:HH12 | 1.85                     | 0.41              |
| 13:O:476:LEU:O    | 13:O:479:GLU:HB2  | 2.21                     | 0.41              |
| 13:O:604:LEU:HD23 | 13:O:604:LEU:HA   | 1.77                     | 0.41              |
| 3:P:189:ILE:HG13  | 3:P:212:LEU:HD13  | 2.03                     | 0.41              |
| 15:X:166:GLN:N    | 15:X:166:GLN:OE1  | 2.55                     | 0.41              |
| 15:Y:78:GLN:O     | 15:Y:81:VAL:HG12  | 2.21                     | 0.41              |
| 15:Y:258:ILE:HD12 | 15:Y:273:LEU:HD11 | 2.03                     | 0.41              |
| 15:Y:423:ILE:HG21 | 15:Y:454:ASP:CG   | 2.41                     | 0.41              |
| 15:Y:534:ILE:HD13 | 15:Y:534:ILE:HA   | 1.74                     | 0.41              |
| 1:A:879:LEU:HG    | 1:A:929:ARG:NH2   | 2.23                     | 0.40              |
| 1:A:941:LEU:O     | 1:A:944:LEU:HB3   | 2.20                     | 0.40              |
| 1:A:956:ARG:O     | 1:A:959:ILE:HB    | 2.21                     | 0.40              |
| 1:A:1520:LEU:O    | 1:A:1521:LEU:C    | 2.60                     | 0.40              |
| 1:A:1794:ASP:O    | 1:A:1797:ILE:HG12 | 2.21                     | 0.40              |
| 3:C:101:ARG:NH2   | 3:P:298:GLU:OE2   | 2.54                     | 0.40              |
| 7:G:25:ASP:OD1    | 7:G:25:ASP:N      | 2.53                     | 0.40              |
| 8:I:163:GLU:O     | 8:I:166:LYS:HB2   | 2.21                     | 0.40              |
| 8:I:310:TRP:HD1   | 13:O:126:VAL:HG13 | 1.86                     | 0.40              |
| 8:I:719:ALA:HB1   | 8:I:733:VAL:HG22  | 2.03                     | 0.40              |
| 9:K:141:ASP:O     | 9:K:144:ASP:N     | 2.54                     | 0.40              |
| 9:K:201:LEU:HD23  | 9:K:201:LEU:HA    | 1.82                     | 0.40              |
| 9:K:513:THR:HG23  | 9:K:514:PHE:H     | 1.86                     | 0.40              |
| 12:N:63:ARG:O     | 12:N:66:GLY:HA3   | 2.21                     | 0.40              |
| 12:N:121:ARG:H    | 12:N:122:LEU:HB2  | 1.85                     | 0.40              |
| 12:N:587:PRO:HA   | 12:N:588:PRO:HD3  | 1.89                     | 0.40              |
| 12:N:706:ARG:HE   | 12:N:708:GLU:HG3  | 1.86                     | 0.40              |
| 12:N:774:TYR:CG   | 12:N:792:LEU:HD13 | 2.56                     | 0.40              |
| 3:P:185:VAL:HG23  | 3:P:186:LYS:N     | 2.36                     | 0.40              |
| 3:P:187:GLU:HA    | 3:P:190:ASP:OD2   | 2.21                     | 0.40              |
| 3:P:451:GLU:H     | 3:P:451:GLU:CD    | 2.18                     | 0.40              |
| 15:X:83:HIS:CE1   | 15:X:87:LEU:HD23  | 2.55                     | 0.40              |
| 15:X:225:ASN:O    | 15:X:228:GLN:N    | 2.54                     | 0.40              |
| 15:X:253:ARG:O    | 15:X:257:THR:HG22 | 2.21                     | 0.40              |
| 15:X:465:LEU:HD21 | 15:X:482:LYS:CA   | 2.51                     | 0.40              |
| 1:A:215:HIS:HB3   | 3:C:454:LYS:NZ    | 2.36                     | 0.40              |
| 1:A:254:SER:HG    | 1:A:271:LEU:HD23  | 1.87                     | 0.40              |
| 1:A:263:GLN:HB3   | 1:A:265:VAL:HG22  | 2.03                     | 0.40              |
| 1:A:596:THR:HA    | 1:A:606:ARG:HA    | 2.02                     | 0.40              |
| 1:A:707:TRP:CD1   | 13:O:730:ARG:HD2  | 2.57                     | 0.40              |
| 1:A:787:VAL:HG12  | 1:A:813:LEU:HD11  | 2.02                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1089:LEU:H    | 1:A:1568:GLY:HA2  | 1.86                     | 0.40              |
| 1:A:1677:LEU:HD12 | 1:A:1678:ILE:N    | 2.36                     | 0.40              |
| 1:A:1825:SER:OG   | 1:A:1829:ARG:NH2  | 2.33                     | 0.40              |
| 1:A:1910:SER:C    | 1:A:1912:ALA:N    | 2.74                     | 0.40              |
| 2:B:55:PHE:HE1    | 2:B:75:MET:HG3    | 1.85                     | 0.40              |
| 3:C:79:GLU:H      | 3:C:79:GLU:HG3    | 1.69                     | 0.40              |
| 6:F:16:LEU:HA     | 6:F:16:LEU:HD13   | 1.88                     | 0.40              |
| 6:F:165:ASP:HA    | 6:F:467:ARG:CD    | 2.52                     | 0.40              |
| 6:F:480:ASN:HB3   | 6:F:483:GLU:OE2   | 2.22                     | 0.40              |
| 6:F:711:SER:O     | 6:F:714:PHE:N     | 2.53                     | 0.40              |
| 6:H:102:SER:O     | 6:H:103:HIS:C     | 2.59                     | 0.40              |
| 8:I:617:ALA:O     | 8:I:618:ILE:HD13  | 2.21                     | 0.40              |
| 9:J:53:TYR:CZ     | 9:J:82:ALA:HB1    | 2.56                     | 0.40              |
| 9:J:178:ALA:O     | 9:J:181:GLU:HB3   | 2.21                     | 0.40              |
| 9:J:440:THR:O     | 9:J:440:THR:OG1   | 2.36                     | 0.40              |
| 12:N:409:VAL:O    | 12:N:410:LEU:HB2  | 2.21                     | 0.40              |
| 12:N:428:LEU:HD23 | 12:N:428:LEU:HA   | 1.71                     | 0.40              |
| 13:O:282:ILE:HD13 | 13:O:282:ILE:HA   | 1.98                     | 0.40              |
| 3:P:93:TYR:CE1    | 3:P:101:ARG:NE    | 2.89                     | 0.40              |
| 15:X:86:SER:O     | 15:X:89:HIS:HB3   | 2.21                     | 0.40              |
| 15:X:442:GLN:O    | 15:X:445:THR:OG1  | 2.34                     | 0.40              |
| 15:Y:153:LYS:HA   | 15:Y:153:LYS:HD3  | 1.88                     | 0.40              |
| 15:Y:207:LEU:HD13 | 15:Y:239:TRP:HH2  | 1.86                     | 0.40              |
| 15:Y:443:THR:H    | 15:Y:443:THR:HG23 | 1.61                     | 0.40              |
| 1:A:591:VAL:HG22  | 1:A:606:ARG:HH22  | 1.87                     | 0.40              |
| 1:A:966:PRO:HA    | 1:A:970:TRP:CZ3   | 2.56                     | 0.40              |
| 1:A:1552:TYR:CE2  | 1:A:1596:SER:HA   | 2.56                     | 0.40              |
| 3:C:181:LYS:HA    | 3:C:181:LYS:HD3   | 1.85                     | 0.40              |
| 6:F:161:LYS:HE2   | 6:F:161:LYS:HB2   | 1.90                     | 0.40              |
| 6:F:733:VAL:HG13  | 6:F:733:VAL:O     | 2.22                     | 0.40              |
| 6:H:726:LEU:HD23  | 6:H:729:LEU:HD12  | 2.03                     | 0.40              |
| 8:I:46:LEU:HD23   | 8:I:56:TRP:NE1    | 2.36                     | 0.40              |
| 8:I:162:ASP:O     | 8:I:166:LYS:HG3   | 2.22                     | 0.40              |
| 8:I:717:MET:SD    | 8:I:740:HIS:HE1   | 2.45                     | 0.40              |
| 9:K:220:ILE:O     | 9:K:224:VAL:HG23  | 2.20                     | 0.40              |
| 9:K:297:SER:O     | 9:K:329:LEU:HD21  | 2.21                     | 0.40              |
| 12:N:121:ARG:N    | 12:N:122:LEU:HB2  | 2.36                     | 0.40              |
| 12:N:330:ARG:HE   | 12:N:330:ARG:HB3  | 1.63                     | 0.40              |
| 12:N:405:LYS:HA   | 12:N:405:LYS:HD3  | 1.83                     | 0.40              |
| 13:O:140:ILE:HD13 | 13:O:140:ILE:HA   | 1.90                     | 0.40              |
| 3:P:297:ILE:HD11  | 3:P:326:ILE:CG2   | 2.51                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:361:ASN:HB3   | 3:P:362:PRO:CA    | 2.50                     | 0.40              |
| 3:P:459:ALA:HB1   | 3:P:464:ASP:OD1   | 2.21                     | 0.40              |
| 7:W:5:LYS:HZ3     | 7:W:5:LYS:HG2     | 1.62                     | 0.40              |
| 7:W:13:LEU:H      | 7:W:13:LEU:CD1    | 2.30                     | 0.40              |
| 15:X:263:LYS:HA   | 15:X:263:LYS:HD3  | 1.71                     | 0.40              |
| 15:Y:140:TYR:O    | 15:Y:144:GLU:HG2  | 2.21                     | 0.40              |
| 15:Y:182:ALA:HB1  | 15:Y:184:GLN:HE22 | 1.86                     | 0.40              |
| 1:A:85:GLU:HA     | 1:A:87:VAL:HG23   | 2.02                     | 0.40              |
| 1:A:778:LEU:HD11  | 13:O:561:HIS:ND1  | 2.37                     | 0.40              |
| 1:A:1149:PRO:HG2  | 1:A:1152:GLN:NE2  | 2.36                     | 0.40              |
| 1:A:1217:LEU:HA   | 1:A:1259:LEU:O    | 2.21                     | 0.40              |
| 1:A:1266:HIS:NE2  | 3:C:545:GLU:OE2   | 2.55                     | 0.40              |
| 1:A:1325:LEU:HD23 | 1:A:1325:LEU:HA   | 1.77                     | 0.40              |
| 1:A:1325:LEU:HD13 | 1:A:1371:LEU:HG   | 2.03                     | 0.40              |
| 1:A:1482:LEU:H    | 14:T:7:LEU:CB     | 2.35                     | 0.40              |
| 3:C:233:PHE:CZ    | 3:C:237:ILE:HG13  | 2.57                     | 0.40              |
| 3:C:341:TYR:OH    | 11:M:25:PRO:HD3   | 2.20                     | 0.40              |
| 3:C:488:GLN:HA    | 3:C:491:ILE:HG12  | 2.03                     | 0.40              |
| 6:H:66:CYS:HB3    | 6:H:71:CYS:SG     | 2.61                     | 0.40              |
| 6:H:624:PHE:CE2   | 6:H:640:GLY:HA3   | 2.56                     | 0.40              |
| 6:H:711:SER:OG    | 6:H:712:VAL:N     | 2.54                     | 0.40              |
| 8:I:36:ALA:HA     | 8:I:46:LEU:HA     | 2.02                     | 0.40              |
| 8:I:43:GLU:HB2    | 8:I:58:PHE:O      | 2.21                     | 0.40              |
| 8:I:167:LEU:HB3   | 8:I:192:MET:SD    | 2.61                     | 0.40              |
| 8:I:366:LEU:HD12  | 8:I:366:LEU:HA    | 1.84                     | 0.40              |
| 9:J:42:TRP:CE3    | 9:J:42:TRP:HA     | 2.56                     | 0.40              |
| 9:J:63:ARG:O      | 9:J:65:LEU:HD12   | 2.21                     | 0.40              |
| 9:J:64:LYS:HA     | 9:J:64:LYS:HD3    | 1.81                     | 0.40              |
| 9:J:168:ASP:OD1   | 9:J:172:SER:OG    | 2.32                     | 0.40              |
| 9:K:70:GLU:O      | 9:K:73:ARG:HB3    | 2.22                     | 0.40              |
| 9:K:178:ALA:HA    | 9:K:181:GLU:HB2   | 2.03                     | 0.40              |
| 9:K:523:ILE:HD13  | 9:K:523:ILE:HA    | 1.91                     | 0.40              |
| 12:N:527:LEU:HD12 | 12:N:601:TRP:CH2  | 2.57                     | 0.40              |
| 12:N:536:GLU:O    | 12:N:540:ARG:HG2  | 2.22                     | 0.40              |
| 12:N:629:LEU:CB   | 12:N:633:ARG:HH12 | 2.30                     | 0.40              |
| 12:N:663:GLN:O    | 12:N:699:TRP:HZ2  | 2.04                     | 0.40              |
| 13:O:305:LEU:HD13 | 13:O:343:CYS:HA   | 2.03                     | 0.40              |
| 13:O:544:VAL:HG23 | 13:O:563:LEU:HD21 | 2.04                     | 0.40              |
| 13:O:681:PRO:O    | 13:O:682:LYS:HE2  | 2.21                     | 0.40              |
| 13:O:725:GLY:O    | 13:O:727:THR:N    | 2.55                     | 0.40              |
| 3:P:46:ARG:NH1    | 3:P:113:LYS:HD3   | 2.37                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:X:74:PRO:O     | 15:X:77:TYR:HB3   | 2.21                     | 0.40              |
| 15:Y:282:PHE:HE2  | 15:Y:406:ARG:NH2  | 2.18                     | 0.40              |
| 1:A:185:TYR:O     | 1:A:214:LEU:HD23  | 2.21                     | 0.40              |
| 1:A:409:ILE:HG22  | 1:A:410:ASP:N     | 2.37                     | 0.40              |
| 1:A:471:VAL:HG12  | 1:A:472:THR:N     | 2.37                     | 0.40              |
| 1:A:499:LEU:HD23  | 1:A:499:LEU:HA    | 1.83                     | 0.40              |
| 1:A:599:LEU:HD12  | 1:A:603:SER:OG    | 2.22                     | 0.40              |
| 1:A:729:CYS:HB3   | 13:O:719:ARG:HH21 | 1.86                     | 0.40              |
| 1:A:1307:LEU:HA   | 1:A:1307:LEU:HD12 | 1.73                     | 0.40              |
| 1:A:1564:LEU:HD12 | 1:A:1567:LEU:HD13 | 2.03                     | 0.40              |
| 1:A:1699:VAL:O    | 1:A:1699:VAL:HG23 | 2.22                     | 0.40              |
| 1:A:1737:THR:O    | 1:A:1739:SER:N    | 2.55                     | 0.40              |
| 1:A:1914:LEU:H    | 1:A:1914:LEU:HD12 | 1.86                     | 0.40              |
| 1:A:1929:LEU:HA   | 1:A:1929:LEU:HD13 | 1.84                     | 0.40              |
| 3:C:273:TYR:HB3   | 3:C:282:ALA:HB2   | 2.03                     | 0.40              |
| 8:I:99:GLU:O      | 8:I:101:LEU:N     | 2.54                     | 0.40              |
| 8:I:208:LEU:HD23  | 8:I:208:LEU:HA    | 1.87                     | 0.40              |
| 8:I:269:LEU:HD21  | 8:I:523:HIS:CE1   | 2.56                     | 0.40              |
| 8:I:729:LYS:HA    | 8:I:729:LYS:HD3   | 1.91                     | 0.40              |
| 9:J:57:ALA:O      | 9:J:61:ARG:HG2    | 2.21                     | 0.40              |
| 12:N:86:ASN:C     | 12:N:89:PRO:HD2   | 2.42                     | 0.40              |
| 12:N:268:VAL:HA   | 12:N:271:GLU:OE1  | 2.21                     | 0.40              |
| 12:N:585:GLU:CD   | 12:N:621:ALA:HB1  | 2.42                     | 0.40              |
| 13:O:112:PHE:O    | 13:O:115:LEU:HB3  | 2.22                     | 0.40              |
| 13:O:616:LEU:HD11 | 13:O:619:LEU:HB2  | 2.03                     | 0.40              |
| 3:P:234:LEU:HD11  | 3:P:238:TYR:CZ    | 2.55                     | 0.40              |
| 3:P:236:HIS:CE1   | 3:P:268:GLN:NE2   | 2.90                     | 0.40              |
| 15:X:78:GLN:HA    | 15:X:81:VAL:HG22  | 2.04                     | 0.40              |
| 15:X:147:THR:O    | 15:X:150:LYS:HD3  | 2.22                     | 0.40              |
| 15:Y:335:SER:OG   | 15:Y:336:ASP:N    | 2.55                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.



The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed         | Favoured   | Allowed   | Outliers | Percentiles |     |
|-----|-------|------------------|------------|-----------|----------|-------------|-----|
| 1   | A     | 1539/1944 (79%)  | 1253 (81%) | 283 (18%) | 3 (0%)   | 47          | 79  |
| 2   | B     | 83/84 (99%)      | 73 (88%)   | 10 (12%)  | 0        | 100         | 100 |
| 3   | C     | 520/597 (87%)    | 462 (89%)  | 58 (11%)  | 0        | 100         | 100 |
| 3   | P     | 486/597 (81%)    | 437 (90%)  | 49 (10%)  | 0        | 100         | 100 |
| 4   | D     | 53/121 (44%)     | 45 (85%)   | 8 (15%)   | 0        | 100         | 100 |
| 5   | E     | 54/110 (49%)     | 52 (96%)   | 2 (4%)    | 0        | 100         | 100 |
| 6   | F     | 454/824 (55%)    | 423 (93%)  | 30 (7%)   | 1 (0%)   | 47          | 79  |
| 6   | H     | 484/824 (59%)    | 424 (88%)  | 57 (12%)  | 3 (1%)   | 25          | 63  |
| 7   | G     | 23/85 (27%)      | 23 (100%)  | 0         | 0        | 100         | 100 |
| 7   | W     | 24/85 (28%)      | 22 (92%)   | 1 (4%)    | 1 (4%)   | 3           | 26  |
| 8   | I     | 732/808 (91%)    | 620 (85%)  | 108 (15%) | 4 (0%)   | 29          | 67  |
| 9   | J     | 500/620 (81%)    | 457 (91%)  | 42 (8%)   | 1 (0%)   | 47          | 79  |
| 9   | K     | 489/620 (79%)    | 448 (92%)  | 41 (8%)   | 0        | 100         | 100 |
| 10  | L     | 180/185 (97%)    | 154 (86%)  | 26 (14%)  | 0        | 100         | 100 |
| 11  | M     | 55/74 (74%)      | 48 (87%)   | 7 (13%)   | 0        | 100         | 100 |
| 12  | N     | 662/822 (80%)    | 592 (89%)  | 66 (10%)  | 4 (1%)   | 25          | 63  |
| 13  | O     | 682/755 (90%)    | 588 (86%)  | 89 (13%)  | 5 (1%)   | 22          | 60  |
| 14  | T     | 13/15 (87%)      | 9 (69%)    | 3 (23%)   | 1 (8%)   | 1           | 16  |
| 15  | X     | 480/599 (80%)    | 447 (93%)  | 33 (7%)   | 0        | 100         | 100 |
| 15  | Y     | 492/599 (82%)    | 453 (92%)  | 37 (8%)   | 2 (0%)   | 34          | 71  |
| 17  | Q     | 1/445 (0%)       | 1 (100%)   | 0         | 0        | 100         | 100 |
| All | All   | 8006/10813 (74%) | 7031 (88%) | 950 (12%) | 25 (0%)  | 44          | 75  |

All (25) Ramachandran outliers are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 8   | I     | 452  | LEU  |
| 12  | N     | 434  | THR  |
| 12  | N     | 531  | PHE  |
| 15  | Y     | 215  | LYS  |
| 1   | A     | 1840 | MET  |
| 8   | I     | 120  | VAL  |
| 8   | I     | 451  | PHE  |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 13  | O     | 358  | TYR  |
| 13  | O     | 398  | LEU  |
| 1   | A     | 1155 | SER  |
| 6   | H     | 147  | PHE  |
| 8   | I     | 489  | PRO  |
| 9   | J     | 195  | ASN  |
| 12  | N     | 704  | VAL  |
| 13  | O     | 656  | ALA  |
| 1   | A     | 276  | SER  |
| 14  | T     | 9    | ALA  |
| 7   | W     | 14   | ASP  |
| 6   | F     | 530  | ASN  |
| 13  | O     | 125  | GLU  |
| 13  | O     | 397  | LYS  |
| 6   | H     | 492  | PRO  |
| 12  | N     | 485  | VAL  |
| 15  | Y     | 216  | GLY  |
| 6   | H     | 146  | PRO  |

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 1   | A     | 1243/1720 (72%) | 1234 (99%) | 9 (1%)   | 84          | 90  |
| 2   | B     | 65/75 (87%)     | 65 (100%)  | 0        | 100         | 100 |
| 3   | C     | 452/520 (87%)   | 449 (99%)  | 3 (1%)   | 84          | 90  |
| 3   | P     | 422/520 (81%)   | 419 (99%)  | 3 (1%)   | 84          | 90  |
| 4   | D     | 46/115 (40%)    | 46 (100%)  | 0        | 100         | 100 |
| 5   | E     | 47/89 (53%)     | 47 (100%)  | 0        | 100         | 100 |
| 6   | F     | 371/727 (51%)   | 371 (100%) | 0        | 100         | 100 |
| 6   | H     | 408/727 (56%)   | 405 (99%)  | 3 (1%)   | 84          | 90  |
| 7   | G     | 25/77 (32%)     | 25 (100%)  | 0        | 100         | 100 |
| 7   | W     | 23/77 (30%)     | 23 (100%)  | 0        | 100         | 100 |

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| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |     |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 8   | I     | 614/730 (84%)   | 611 (100%) | 3 (0%)   | 88          | 93  |
| 9   | J     | 425/548 (78%)   | 421 (99%)  | 4 (1%)   | 78          | 87  |
| 9   | K     | 423/548 (77%)   | 418 (99%)  | 5 (1%)   | 71          | 83  |
| 10  | L     | 155/170 (91%)   | 154 (99%)  | 1 (1%)   | 86          | 91  |
| 11  | M     | 52/67 (78%)     | 51 (98%)   | 1 (2%)   | 57          | 75  |
| 12  | N     | 549/724 (76%)   | 545 (99%)  | 4 (1%)   | 84          | 90  |
| 13  | O     | 573/650 (88%)   | 566 (99%)  | 7 (1%)   | 71          | 83  |
| 14  | T     | 1/2 (50%)       | 1 (100%)   | 0        | 100         | 100 |
| 15  | X     | 406/513 (79%)   | 406 (100%) | 0        | 100         | 100 |
| 15  | Y     | 417/513 (81%)   | 414 (99%)  | 3 (1%)   | 84          | 90  |
| 16  | S     | 2/401 (0%)      | 2 (100%)   | 0        | 100         | 100 |
| 17  | Q     | 2/402 (0%)      | 2 (100%)   | 0        | 100         | 100 |
| All | All   | 6721/9915 (68%) | 6675 (99%) | 46 (1%)  | 84          | 90  |

All (46) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | A     | 17   | LEU  |
| 1   | A     | 89   | TYR  |
| 1   | A     | 445  | LEU  |
| 1   | A     | 894  | GLN  |
| 1   | A     | 1039 | ARG  |
| 1   | A     | 1176 | LEU  |
| 1   | A     | 1546 | THR  |
| 1   | A     | 1591 | HIS  |
| 1   | A     | 1680 | LEU  |
| 3   | C     | 44   | ARG  |
| 3   | C     | 104  | HIS  |
| 3   | C     | 409  | TYR  |
| 6   | H     | 22   | ARG  |
| 6   | H     | 141  | SER  |
| 6   | H     | 561  | ASP  |
| 8   | I     | 320  | LEU  |
| 8   | I     | 341  | TYR  |
| 8   | I     | 418  | PHE  |
| 9   | J     | 39   | ASP  |
| 9   | J     | 162  | TYR  |
| 9   | J     | 163  | CYS  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 9          | J            | 453        | HIS         |
| 9          | K            | 34         | ARG         |
| 9          | K            | 63         | ARG         |
| 9          | K            | 145        | ASN         |
| 9          | K            | 246        | ASP         |
| 9          | K            | 358        | PHE         |
| 10         | L            | 45         | LEU         |
| 11         | M            | 16         | ASP         |
| 12         | N            | 272        | ARG         |
| 12         | N            | 386        | LEU         |
| 12         | N            | 392        | ASN         |
| 12         | N            | 660        | THR         |
| 13         | O            | 75         | LEU         |
| 13         | O            | 106        | LYS         |
| 13         | O            | 420        | ILE         |
| 13         | O            | 434        | ARG         |
| 13         | O            | 506        | LEU         |
| 13         | O            | 683        | LYS         |
| 13         | O            | 712        | ASP         |
| 3          | P            | 341        | TYR         |
| 3          | P            | 418        | CYS         |
| 3          | P            | 423        | ARG         |
| 15         | Y            | 301        | ASP         |
| 15         | Y            | 401        | ARG         |
| 15         | Y            | 551        | LYS         |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (149) such sidechains are listed below:

| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 30         | HIS         |
| 1          | A            | 125        | GLN         |
| 1          | A            | 179        | ASN         |
| 1          | A            | 411        | HIS         |
| 1          | A            | 473        | ASN         |
| 1          | A            | 623        | GLN         |
| 1          | A            | 636        | GLN         |
| 1          | A            | 827        | GLN         |
| 1          | A            | 965        | GLN         |
| 1          | A            | 981        | GLN         |
| 1          | A            | 1115       | ASN         |
| 1          | A            | 1138       | HIS         |
| 1          | A            | 1170       | ASN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | A            | 1184       | HIS         |
| 1          | A            | 1248       | ASN         |
| 1          | A            | 1379       | ASN         |
| 1          | A            | 1489       | HIS         |
| 1          | A            | 1813       | GLN         |
| 1          | A            | 1892       | HIS         |
| 1          | A            | 1899       | HIS         |
| 2          | B            | 9          | ASN         |
| 2          | B            | 53         | HIS         |
| 3          | C            | 202        | HIS         |
| 3          | C            | 274        | HIS         |
| 3          | C            | 292        | GLN         |
| 3          | C            | 305        | ASN         |
| 3          | C            | 361        | ASN         |
| 3          | C            | 427        | GLN         |
| 3          | C            | 534        | GLN         |
| 3          | C            | 552        | GLN         |
| 4          | D            | 32         | GLN         |
| 4          | D            | 35         | GLN         |
| 4          | D            | 37         | HIS         |
| 4          | D            | 38         | GLN         |
| 5          | E            | 72         | HIS         |
| 6          | F            | 90         | GLN         |
| 6          | F            | 486        | ASN         |
| 6          | F            | 494        | HIS         |
| 6          | F            | 504        | GLN         |
| 6          | F            | 599        | ASN         |
| 6          | F            | 702        | ASN         |
| 6          | F            | 716        | ASN         |
| 6          | H            | 123        | HIS         |
| 6          | H            | 517        | GLN         |
| 6          | H            | 545        | HIS         |
| 6          | H            | 626        | ASN         |
| 6          | H            | 634        | HIS         |
| 6          | H            | 648        | GLN         |
| 6          | H            | 657        | HIS         |
| 6          | H            | 680        | HIS         |
| 6          | H            | 716        | ASN         |
| 6          | H            | 759        | ASN         |
| 8          | I            | 47         | HIS         |
| 8          | I            | 130        | ASN         |
| 8          | I            | 263        | GLN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 8          | I            | 318        | GLN         |
| 8          | I            | 362        | HIS         |
| 8          | I            | 503        | ASN         |
| 8          | I            | 506        | HIS         |
| 8          | I            | 523        | HIS         |
| 9          | J            | 86         | HIS         |
| 9          | J            | 198        | GLN         |
| 9          | J            | 264        | HIS         |
| 9          | J            | 437        | ASN         |
| 9          | J            | 449        | ASN         |
| 9          | J            | 468        | HIS         |
| 9          | J            | 494        | ASN         |
| 9          | J            | 503        | HIS         |
| 9          | K            | 54         | HIS         |
| 9          | K            | 213        | ASN         |
| 9          | K            | 241        | HIS         |
| 9          | K            | 244        | ASN         |
| 9          | K            | 264        | HIS         |
| 9          | K            | 271        | HIS         |
| 9          | K            | 279        | ASN         |
| 9          | K            | 316        | ASN         |
| 9          | K            | 350        | HIS         |
| 9          | K            | 352        | GLN         |
| 9          | K            | 449        | ASN         |
| 9          | K            | 468        | HIS         |
| 9          | K            | 478        | ASN         |
| 10         | L            | 101        | ASN         |
| 10         | L            | 104        | ASN         |
| 10         | L            | 146        | GLN         |
| 10         | L            | 155        | GLN         |
| 11         | M            | 34         | ASN         |
| 11         | M            | 53         | GLN         |
| 12         | N            | 154        | HIS         |
| 12         | N            | 170        | GLN         |
| 12         | N            | 239        | GLN         |
| 12         | N            | 392        | ASN         |
| 12         | N            | 529        | HIS         |
| 12         | N            | 541        | ASN         |
| 12         | N            | 571        | ASN         |
| 12         | N            | 671        | GLN         |
| 12         | N            | 673        | GLN         |
| 12         | N            | 702        | GLN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 13         | O            | 138        | HIS         |
| 13         | O            | 218        | GLN         |
| 13         | O            | 225        | ASN         |
| 13         | O            | 306        | ASN         |
| 13         | O            | 319        | GLN         |
| 13         | O            | 325        | GLN         |
| 13         | O            | 363        | HIS         |
| 13         | O            | 370        | HIS         |
| 13         | O            | 443        | GLN         |
| 13         | O            | 460        | GLN         |
| 13         | O            | 462        | ASN         |
| 13         | O            | 515        | GLN         |
| 13         | O            | 552        | GLN         |
| 13         | O            | 671        | GLN         |
| 13         | O            | 680        | GLN         |
| 13         | O            | 693        | ASN         |
| 13         | O            | 717        | GLN         |
| 3          | P            | 35         | GLN         |
| 3          | P            | 71         | GLN         |
| 3          | P            | 82         | GLN         |
| 3          | P            | 110        | ASN         |
| 3          | P            | 148        | ASN         |
| 3          | P            | 236        | HIS         |
| 3          | P            | 299        | ASN         |
| 3          | P            | 322        | ASN         |
| 3          | P            | 347        | HIS         |
| 3          | P            | 355        | GLN         |
| 3          | P            | 361        | ASN         |
| 3          | P            | 427        | GLN         |
| 3          | P            | 479        | GLN         |
| 3          | P            | 495        | GLN         |
| 15         | X            | 65         | ASN         |
| 15         | X            | 66         | ASN         |
| 15         | X            | 78         | GLN         |
| 15         | X            | 151        | GLN         |
| 15         | X            | 177        | ASN         |
| 15         | X            | 289        | ASN         |
| 15         | X            | 298        | GLN         |
| 15         | X            | 338        | HIS         |
| 15         | X            | 369        | ASN         |
| 15         | X            | 471        | GLN         |
| 15         | X            | 512        | HIS         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15  | X     | 531 | GLN  |
| 15  | Y     | 184 | GLN  |
| 15  | Y     | 298 | GLN  |
| 15  | Y     | 338 | HIS  |
| 15  | Y     | 385 | ASN  |
| 15  | Y     | 421 | ASN  |
| 15  | Y     | 501 | ASN  |
| 15  | Y     | 512 | HIS  |
| 15  | Y     | 523 | ASN  |
| 15  | Y     | 531 | GLN  |

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.



## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

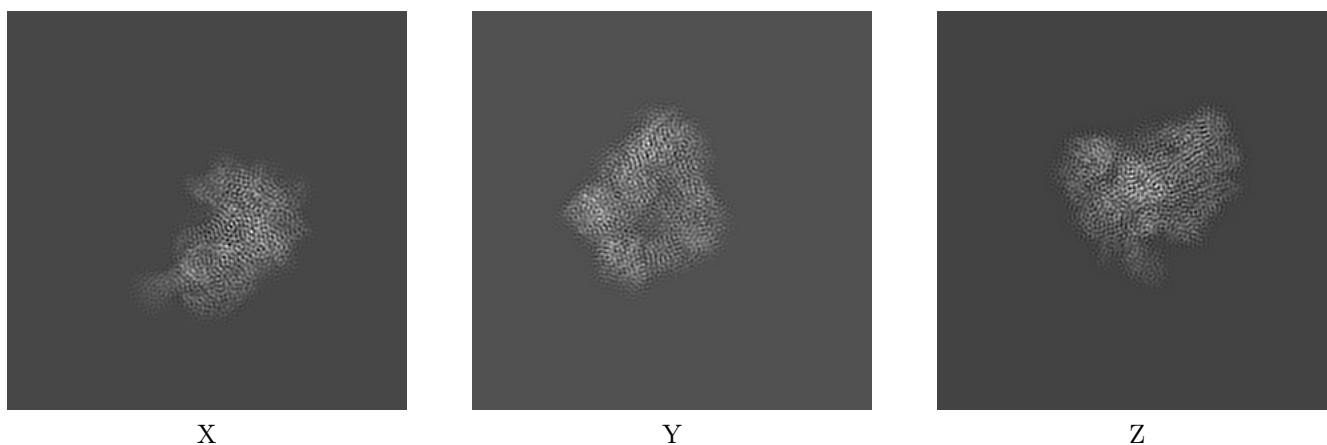
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-10518. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

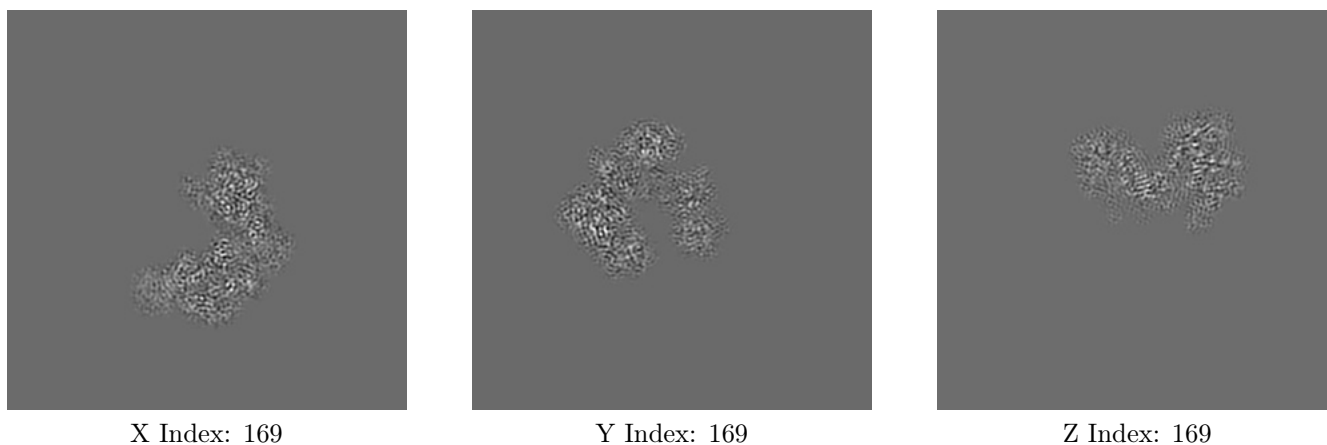
#### 6.1.1 Primary map



The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

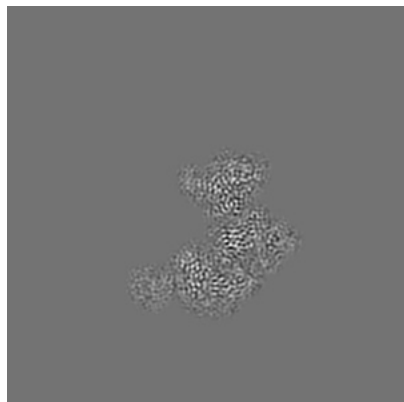
#### 6.2.1 Primary map



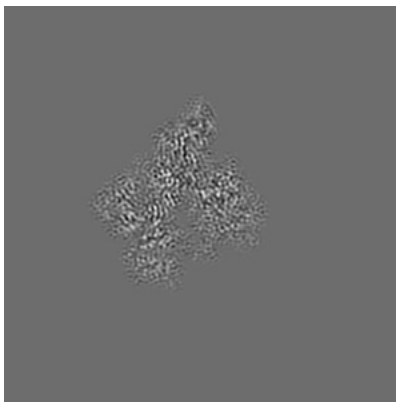
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

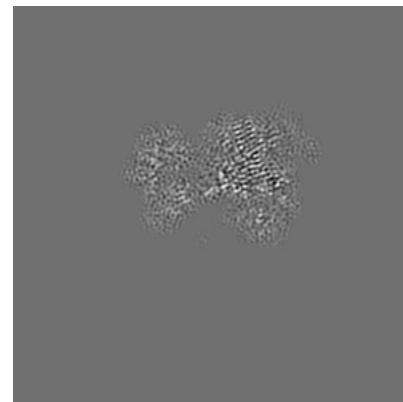
### 6.3.1 Primary map



X Index: 177



Y Index: 185



Z Index: 139

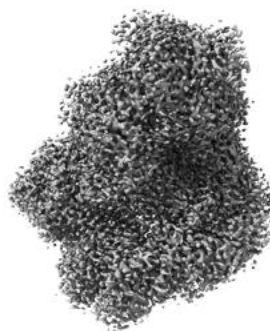
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal surface views [i](#)

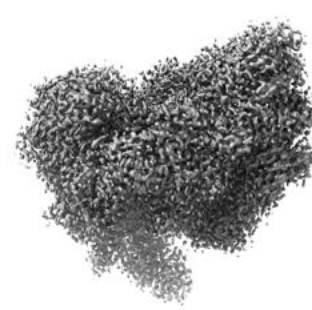
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.023. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

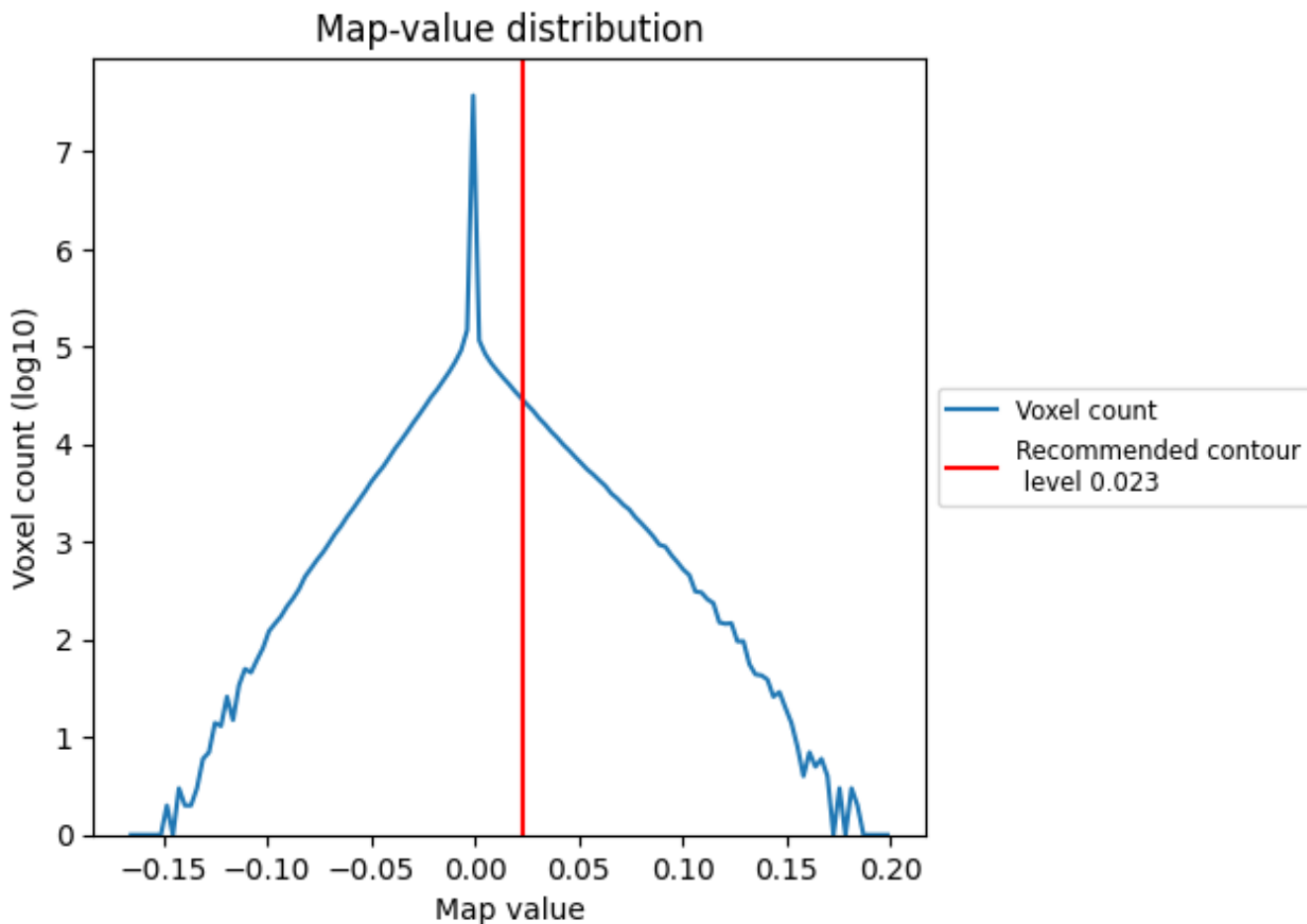
## 6.5 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

## 7 Map analysis [i](#)

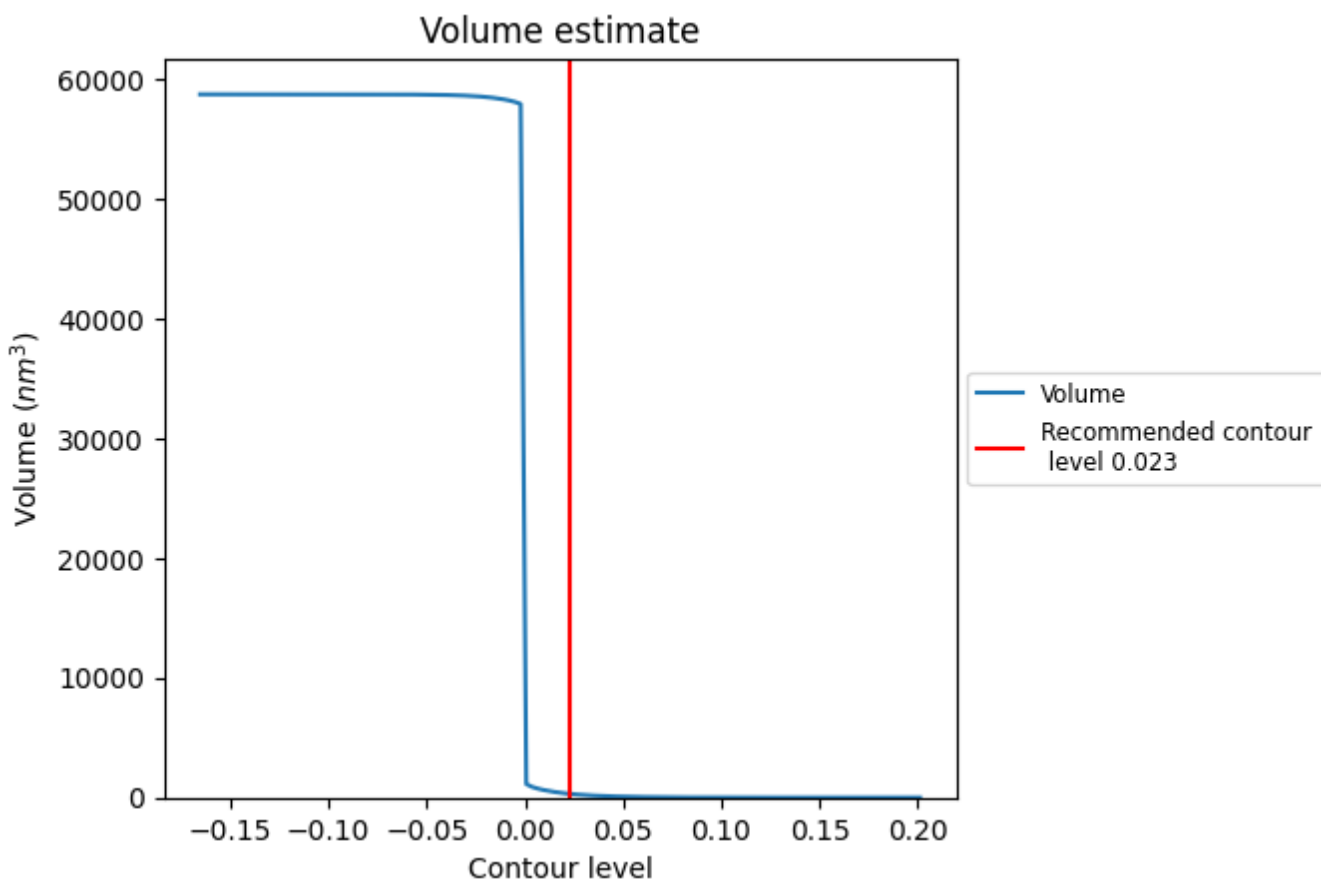
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

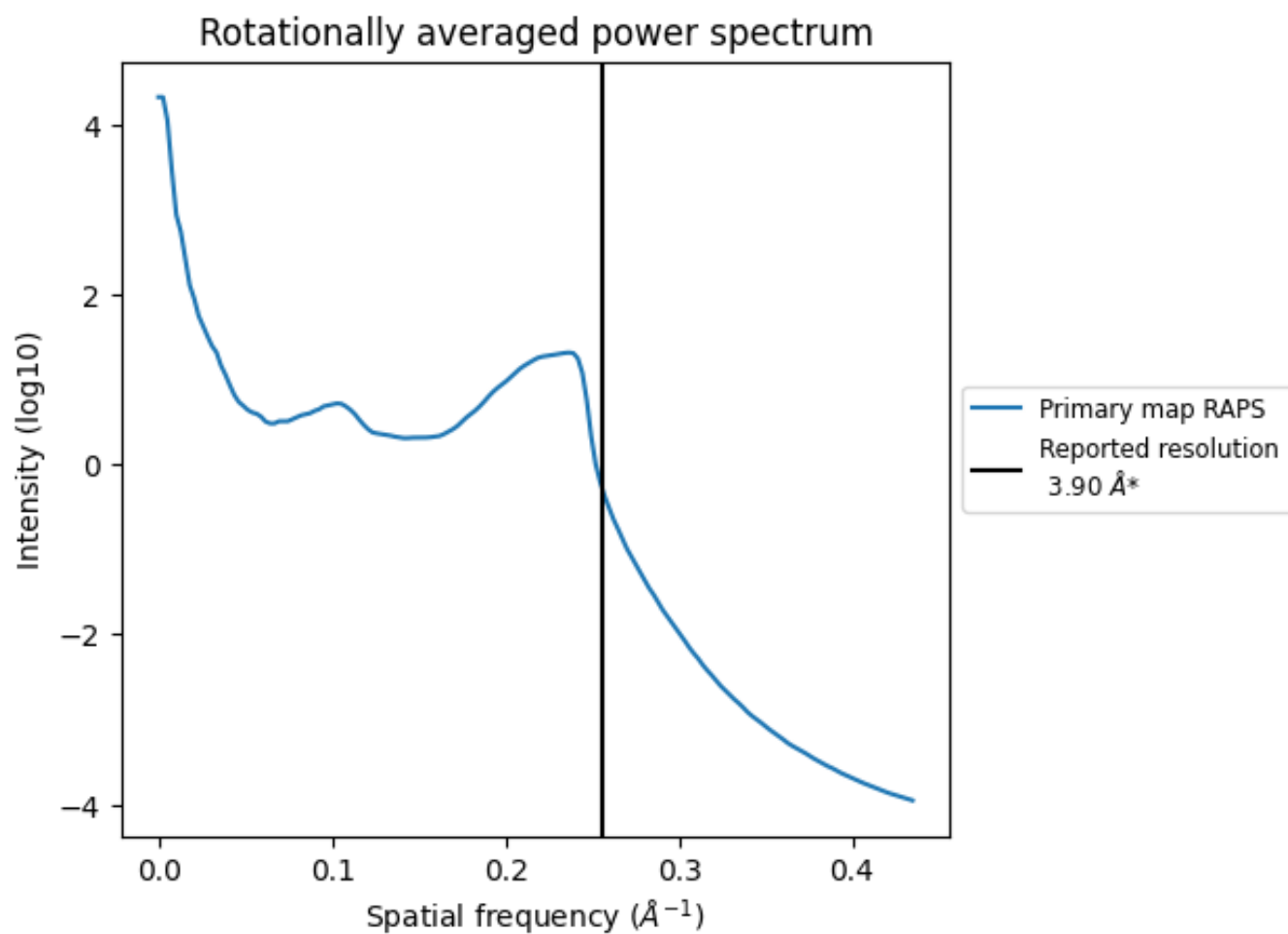
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 308 nm<sup>3</sup>; this corresponds to an approximate mass of 278 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum [i](#)



\*Reported resolution corresponds to spatial frequency of  $0.256 \text{\AA}^{-1}$

## 8 Fourier-Shell correlation

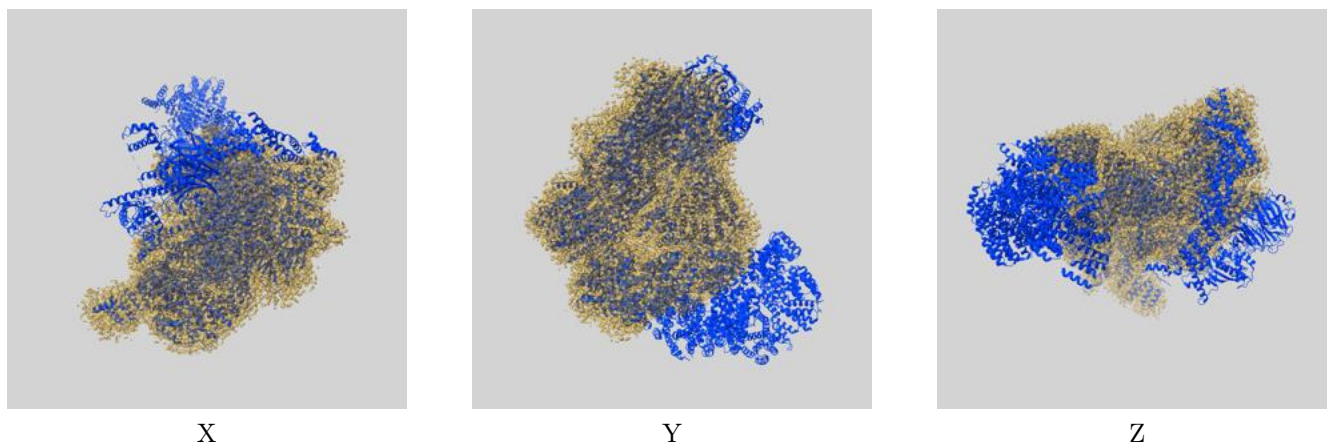
This section was not generated. No FSC curve or half-maps provided.



## 9 Map-model fit [i](#)

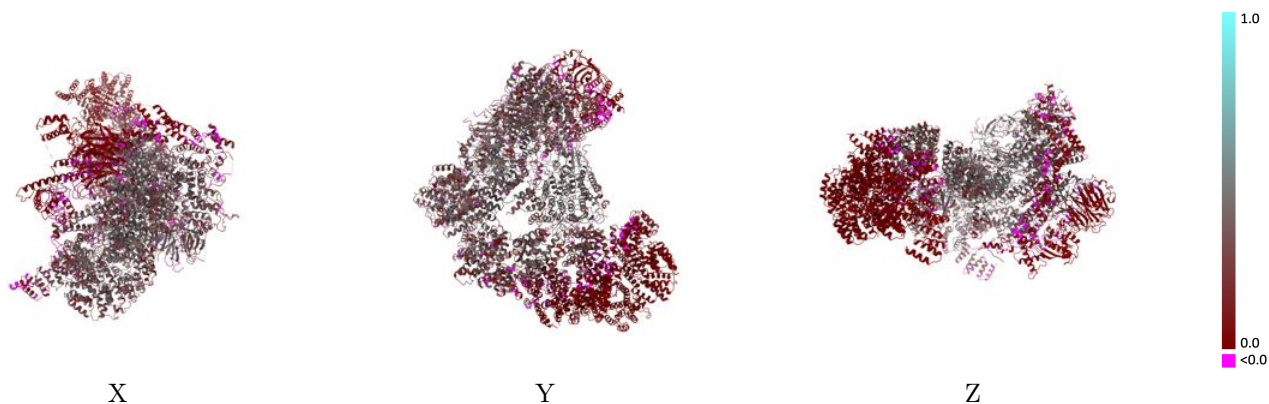
This section contains information regarding the fit between EMDB map EMD-10518 and PDB model 6TM5. Per-residue inclusion information can be found in section 3 on page 8.

### 9.1 Map-model overlay [i](#)



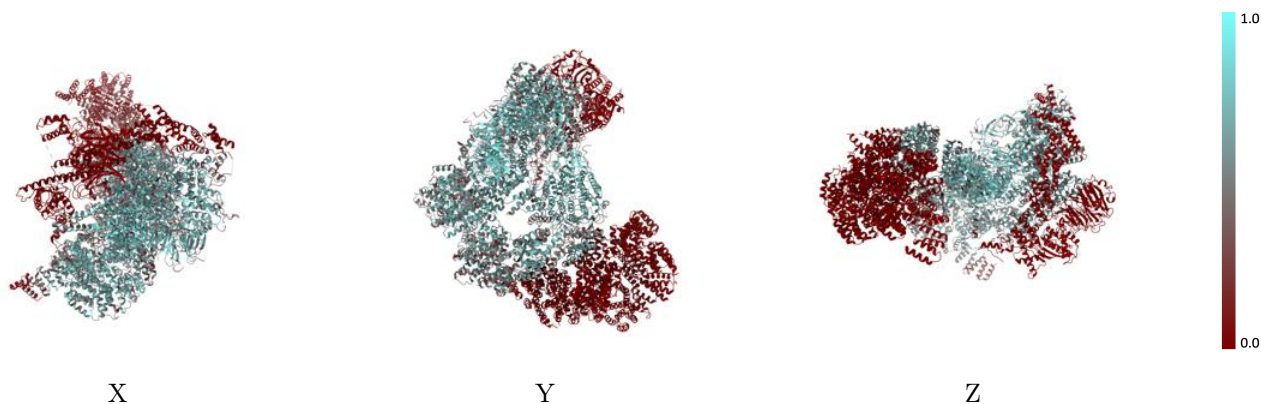
The images above show the 3D surface view of the map at the recommended contour level 0.023 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



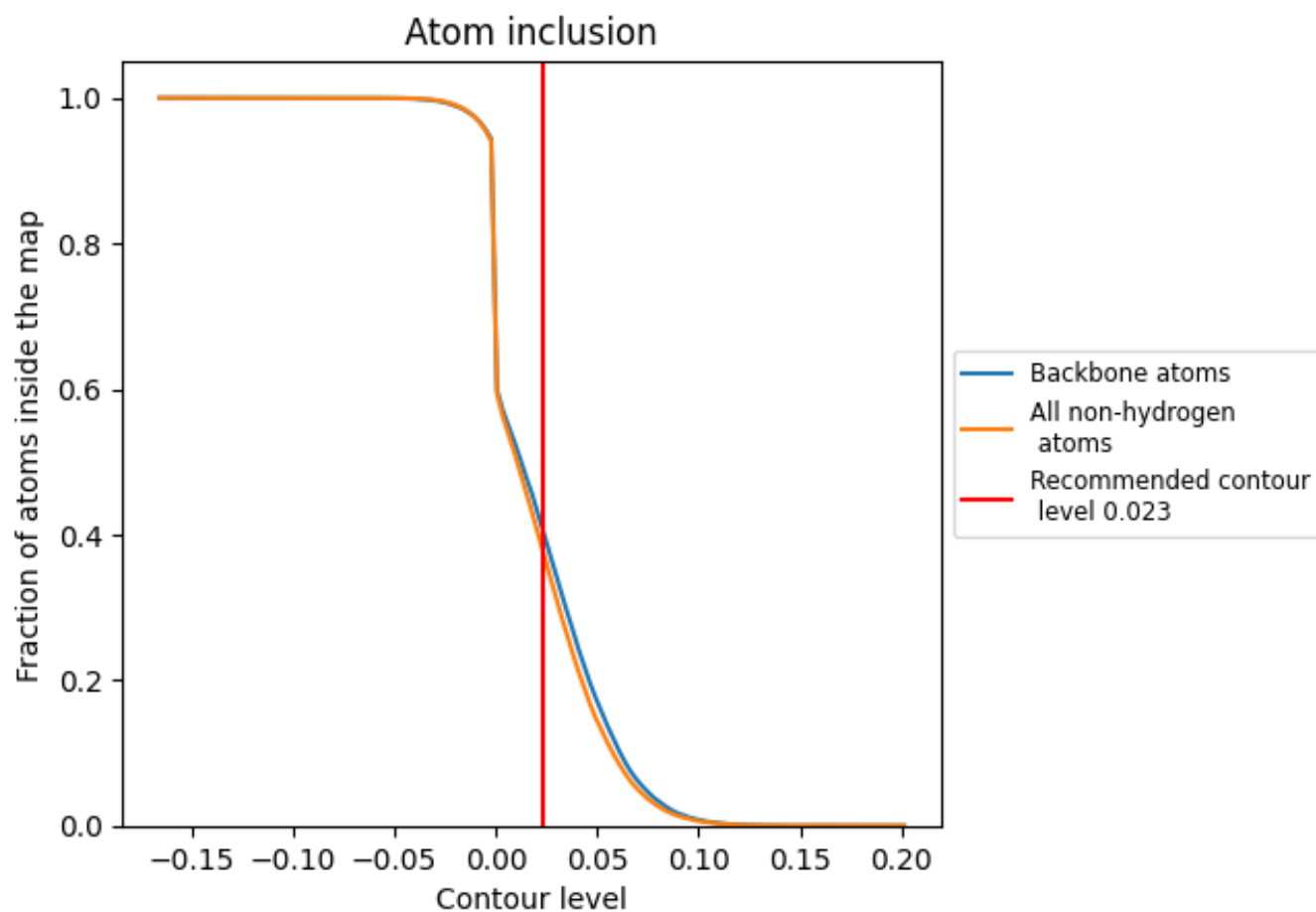
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.023).















































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 41% of all backbone atoms, 38% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.023) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| All   |  0.3806   |  0.2120   |
| A     |  0.6495   |  0.3470   |
| B     |  0.0016   |  0.0290   |
| C     |  0.6470   |  0.3530   |
| D     |  0.6389   |  0.3260   |
| E     |  0.0383   |  0.0930   |
| F     |  0.0104   |  0.0280   |
| G     |  0.4104   |  0.2260   |
| H     |  0.0278   |  0.0560   |
| I     |  0.2789   |  0.1660   |
| J     |  0.5618   |  0.2910   |
| K     |  0.5759   |  0.3100   |
| L     |  0.3980   |  0.2180   |
| M     |  0.5456   |  0.3010   |
| N     |  0.0272  |  0.0550  |
| O     |  0.6722 |  0.3600 |
| P     |  0.5688 |  0.2900 |
| Q     |  0.5714 |  0.4260 |
| S     |  0.0000 |  0.0000 |
| T     |  0.5443 |  0.2430 |
| W     |  0.5476 |  0.3010 |
| X     |  0.0000 |  0.0010 |
| Y     |  0.0000 |  0.0000 |

