# Full wwPDB EM Validation Report (i)

Feb 23, 2026 – 02:05 pm GMT

| | | |
|---:|:---:|:---|
| PDB ID | : | 9IAX / pdb_00009iax |
| EMDB ID | : | EMD-52786 |
| Title | : | DNA-PK, LX4, XLF - Catalytic domain of L4 |
| Authors | : | Chaplin, A.K.; Hall, C. |
| Deposited on | : | 2025-02-11 |
| Resolution | : | 3.97 Å(reported) |

# 1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.97 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.
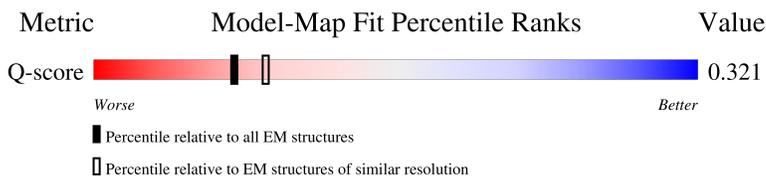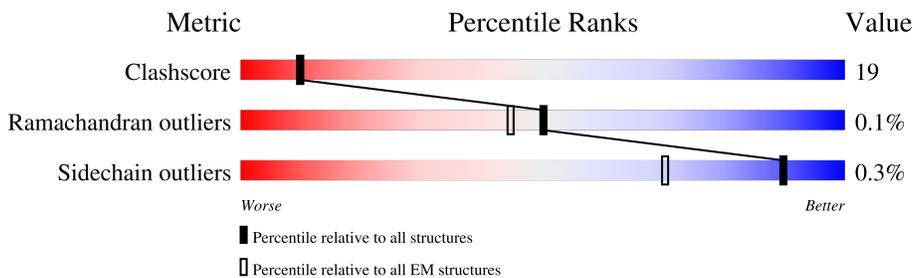


| Metric | Whole archive (#Entries) | EM structures (#Entries) | Similar EM resolution (#Entries, resolution range(Å)) |
|---|---|---|---|
| Clashscore | 210492 | 15764 | - |
| Ramachandran outliers | 207382 | 16835 | - |
| Sidechain outliers | 206894 | 16415 | - |
| Q-score | - | 25397 | 7578 ( 3.47 - 4.47 ) |

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 >=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 <=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 | 4128 | 51% 35% 14% |
| 2 | B | 609 | 49% 35% 17% |
| 3 | C | 732 | 5% / 53% 38% 9% |
| 4 | D | 299 | 53% / 45% 18% 36% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 4 | M | 299 | 47% 48% 18% 34% |
| 5 | G | 336 | 36% 42% 18% 40% |
| 5 | H | 336 | 40% 41% 17% 42% |
| 6 | K | 911 | 6% 53% 37% 9% |
| 7 | d | 55 | 5% 38% 56% |
| 8 | e | 42 | 17% 33% 50% |
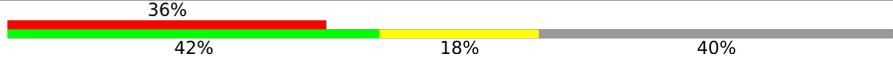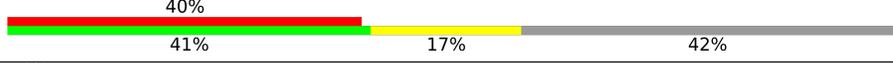
## 2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 51268 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 DNA-dependent protein kinase catalytic subunit.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| 1 | A | 3555 | Total | C | N | O | S | 0 | 0 |
| | | | 28200 | 18096 | 4783 | 5139 | 182 | | |

- Molecule 2 is a protein called X-ray repair cross-complementing protein 6.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| 2 | B | 507 | Total | C | N | O | S | 0 | 0 |
| | | | 4063 | 2595 | 689 | 761 | 18 | | |

- Molecule 3 is a protein called X-ray repair cross-complementing protein 5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| 3 | C | 668 | Total | C | N | O | S | 0 | 0 |
| | | | 5311 | 3394 | 888 | 1004 | 25 | | |

- Molecule 4 is a protein called Non-homologous end-joining factor 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| 4 | D | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1500 | 964 | 253 | 276 | 7 | | |
| 4 | M | 197 | Total | C | N | O | S | 0 | 0 |
| | | | 1552 | 991 | 260 | 293 | 8 | | |

- Molecule 5 is a protein called DNA repair protein XRCC4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| 5 | G | 201 | Total | C | N | O | S | 0 | 0 |
| | | | 1628 | 1031 | 278 | 312 | 7 | | |
| 5 | H | 194 | Total | C | N | O | S | 0 | 0 |
| | | | 1580 | 1003 | 268 | 302 | 7 | | |

- Molecule 6 is a protein called DNA ligase 4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 6 | K | 825 | Total 6514 | C 4138 | N 1116 | O 1218 | S 42 | 0 | 0 |

- Molecule 7 is a DNA chain called DNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | d | 24 | Total 493 | C 238 | N 92 | O 139 | P 24 | 0 | 0 |

- Molecule 8 is a DNA chain called DNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 8 | e | 21 | Total 427 | C 210 | N 68 | O 129 | P 20 | 0 | 0 |

# 3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

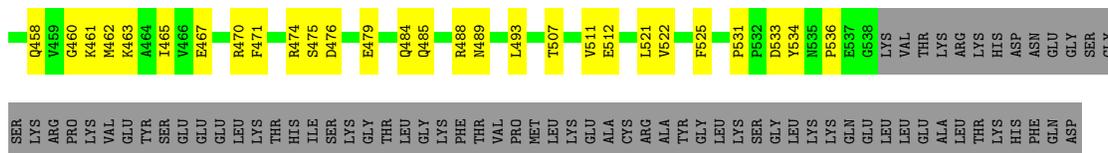• Molecule 1: DNA-dependent protein kinase catalytic subunit

• Molecule 2: X-ray repair cross-complementing protein 6

Chain B:

• Molecule 3: X-ray repair cross-complementing protein 5

Chain C:



• Molecule 4: Non-homologous end-joining factor 1

Chain D:

The sequence row (residues L61–N120):

L61 N62 K63 R64 L65 T66 A67 P68 P69 A70 A71 F72 L73 C74 H75 L76 D77 N78 L79 L80 R81 P82 L83 L84 LYS ASP ALA ALA HIS PRO SER GLU A93 T94 F95 S96 C97 D98 C99 V100 A101 D102 A103 L104 I105 L106 R107 V108 R109 S110 E111 L112 S113 G114 L115 P116 F117 Y118 W119 N120

The sequence row (residues F121–K180):

F121 H122 CYS MET LEU A126 S127 P128 S129 L130 V131 S132 Q133 H134 L135 I136 R137 P138 L139 MET G141 M142 S143 L144 A145 L146 Q147 C148 Q149 V150 R151 E152 L153 A154 T155 L156 L157 H158 M159 K160 D161 L162 E163 I164 Q165 D166 Y167 Q168 E169 S170 G171 A172 T173 L174 I175 R176 D177 R178 L179 K180

The sequence row (residues T181–ASN):

T181 E182 P183 F184 E185 E186 N187 L190 E191 Q192 F193 MET ILE GLU K197 L198 P199 E200 A201 C202 G205 D206 G207 K208 P209 F210 VAL MET N213 L214 Q215 D216 L217 TYR MET ALA VAL THR GLN GLU GLN VAL GLN VAL GLY GLN LYS HIS GLN GLY ALA GLY ASP PRO HIS THR SER ASN

The sequence row:

SER ALA SER LEU GLN GLY ILE ASP SER GLN CYS VAL ASN GLN PRO GLU GLN LEU VAL SER SER ALA PRO THR LEU SER ALA PRO GLU LYS SER THR GLY THR SER GLY PRO LEU GLN ARG PRO GLN LEU SER LYS VAL LYS ARG LYS PRO ARG GLY LEU PHE SER

• Molecule 4: Non-homologous end-joining factor 1

Chain M:

47%
48% 18% 34%

The sequence row (residues MET–R64):

MET E2 E3 L4 E5 Q6 G7 L8 L9 MET GLN P12 W13 ALA W15 L16 Q17 L18 A19 E20 N21 S22 L23 L24 A25 K26 V27 F28 I29 T30 K31 Q32 G33 L37 V38 S39 D40 L41 V44 Q48 V49 D50 T51 S52 V53 V54 S55 Q56 R57 A58 K59 E60 L61 N62 K63 R64

The sequence row (residues P69–S129):

P69 A70 A71 F72 L73 C74 H75 L76 D77 N78 L79 LEU ARG PRO LEU LEU LYS ASP ALA ALA HIS PRO SER GLU A93 T94 F95 S96 C97 D98 C99 V100 A101 D102 A103 L104 I105 L106 R107 V108 R109 S110 E111 L112 S113 G114 L115 Y118 W119 N120 F121 H122 C123 MET L125 A126 S127 P128 S129

The sequence row (residues L130–E191):

L130 V131 S132 Q133 H134 L135 I136 R137 PRO LEU MET GLY MET S143 L146 Q147 C148 Q149 V150 R151 E152 L153 A154 T155 L156 L157 H158 M159 K160 D161 L162 E163 I164 Q165 D166 Y167 Q168 E169 S170 G171 A172 T173 L174 I175 R176 L179 K180 T181 E182 P183 F184 E185 E186 N187 S188 F189 L190 E191

The sequence row (residues Q192–Q224):

Q192 F193 M194 I195 E196 K197 L198 P199 E200 A201 C202 S203 I204 G205 D206 G207 K208 P209 F210 V211 M212 N213 L214 Q215 ASP LEU TYR MET A220 V221 T222 T223 Q224 GLU VAL GLN VAL GLY GLN LYS HIS GLN GLY LEU ALA GLY ASP PRO HIS THR SER ASN SER ALA SER LEU GLN GLY ILE ASP SER SER

The sequence row:

GLN CYS VAL ASN GLN PRO GLU GLN LEU VAL SER SER ALA PRO THR LEU SER ALA PRO GLU LYS SER GLU SER THR GLY THR SER GLY PRO LEU GLN ARG PRO GLN LEU SER LYS VAL LYS ARG LYS PRO ARG GLY LEU PHE SER

• Molecule 5: DNA repair protein XRCC4

Chain G:

36%
42% 18% 40%

The sequence row (residues M1–M61):

M1 E2 R3 K4 I5 S6 R7 I8 H9 S12 E13 P14 S15 I16 T17 H18 F19 L20 Q21 V22 S23 W24 E25 K26 T27 L28 E29 S30 G31 F32 V33 I34 T35 L36 T37 D38 G39 H40 S41 A42 W43 T44 G45 T46 V47 S48 E49 S50 E51 I52 S53 Q54 E55 A56 D57 D58 M59 A60 M61

The sequence row (residues E62–C128):

E62 K65 Y66 V67 G68 E69 L70 R71 K72 G77 A78 G79 P80 A81 D82 V83 Y84 T85 F86 N87 F88 S89 K90 E91 S92 C93 Y94 F95 F96 F97 E98 K99 V104 S105 F106 R107 L108 G109 S110 F111 N112 L113 E114 K115 V116 E117 N118 P119 A120 E121 V122 I123 R124 E125 L126 I127 C128

The sequence row (residues Y129–K197):

Y129 C130 L131 D132 T133 I134 A135 E136 N137 Q138 A139 K140 N141 E142 H143 L144 Q145 K146 E147 N148 E149 R153 D154 W155 N156 D157 V158 G159 G160 R161 V166 S167 A168 K169 E170 A171 L172 E173 L176 Y177 R178 R179 F180 I181 L184 N185 K188 I191 R192 S193 L194 H195 N196 K197

A201 ALA GLN GLU ARG GLU LYS ASP ILE LYS GLN GLU GLY GLU THR ALA ILE CYS SER GLU MET THR ALA ASP ARG ASP PRO VAL TYR ASP GLU SER THR ASP GLU GLU SER GLU ASN GLN THR ASP GLU LYS SER GLY LEU ALA SER ALA VAL SER LYS ASP ASP SER ILE ILE SER

SER LEU ASP VAL THR ASP ILE ALA PRO SER ARG LYS ARG GLN MET GLN ASN LEU GLY THR GLU PRO LYS MET ALA PRO GLN GLU ASN GLN LEU GLU LYS GLU ASN SER ARG PRO ASP SER SER LEU PRO GLU THR SER LYS LYS GLU ASN HIS ILE SER ALA GLU ASN MET

SER LEU GLU THR ARG LEU ASN SER PRO GLU ASP LEU PHE ASP GLU ILE

• Molecule 5: DNA repair protein XRCC4

**Chain H:**

40%

41%     17%     42%

M1 E2 R3 K4 I5 S6 R7 I8 H9 L10 V11 S12 E13 P14 S15 I16 T17 H18 F19 L20 Q21 V22 S23 W24 E25 K26 T27 L28 E29 S30 G31 F32 V33 I34 T37 D38 G39 H40 S41 A42 W43 T44 G45 T46 V47 S48 E49 I52 S53 Q54 E55 A56 D57 D58 M59 A60 M61 E62

K63 G64 K65 Y66 V67 G68 E69 L70 R71 K72 A73 L74 L75 SER GLY ALA GLY PRO ALA ASP V83 Y84 T85 F86 N87 F88 S89 K90 E91 S92 C93 Y94 F95 F96 F97 E98 K99 N100 L101 K102 D103 V104 S105 F106 R107 L108 G109 S110 F111 N112 L113 E114 K115 V116 E117 N118 P119 A120 E121 V122

I123 R124 E125 L126 I127 C128 Y129 C130 L131 D132 T133 I134 A135 E136 N137 Q138 A139 K140 N141 E142 H143 L144 Q145 K146 E147 N148 E149 R150 L151 L152 R153 D154 W155 N156 D157 V158 Q159 G160 R161 F162 E163 K164 A168 K169 L172 L176 Y177 K178 R179 K187 K190 I191 L194 H195

N196 L199 N200 A201 ALA GLN GLU ARG GLU LYS ASP ILE LYS GLN GLU GLY GLU THR ALA ILE CYS SER GLU MET THR ALA ASP ARG ASP PRO VAL TYR ASP GLU SER THR ASP GLU GLU SER GLU ASN GLN THR ASP GLU LYS SER GLY LEU ALA SER ALA VAL SER LYS ASP ASP SER

ILE ILE SER SER LEU ASP VAL THR ASP ILE ALA PRO SER ARG LYS ARG GLN MET GLN ASN LEU GLY THR GLU PRO LYS MET ALA PRO GLN GLU ASN GLN LEU GLU LYS GLU ASN SER ARG PRO ASP SER SER LEU PRO GLU THR SER LYS LYS GLU ASN HIS ILE SER ALA

GLU ASN MET SER LEU GLU THR ARG LEU ASN SER PRO GLU ASP LEU PHE ASP GLU ILE

• Molecule 6: DNA ligase 4

**Chain K:**

6%

53%     37%     9%

MET ALA ALA SER GLN THR SER Q8 T9 V10 A11 S12 P15 L19 C20 L23 K28 S29 K30 G31 R32 I36 L43 F49 H50 H54 H57 T61 D62 Y65 M68 R69 L70 I71 L72 P73 Q74 L75 E76 R77 E78 Y82 G83 I84 K85 E86 T87

M88 L89 K104 D105 K108 L109 L110 N111 Y112 R113 T114 PRO THR GLY THR HIS GLY ASP ALA G123 D124 F125 A126 M127 I128 L138 Q139 K140 T144 I145 Q146 L152 I155 A156 S157 N158 N159 S160 A161 K162 D165 L166 I167 K168 K169 S170 L174 S178 S179 A180 L181

E182 Q183 K184 W185 L186 I187 R188 M189 I190 I191 K192 D193 L194 K195 L196 S199 T202 V206 F207 N208 N209 D210 L214 H215 T218 E222 K223 V224 C225 R226 Q227 L228 L235 T241 L242 F243 S244 A245 F246 K247 P248 M249 L250 A251 A252 I253 A254 D255 I256 E257 H258 I259

E260 K261 D262 M263 K264 H265 L274 D275 G276 E277 R278 M279 Q280 M281 H282 K283 D284 V287 Y288 R293 N294 Q301 P306 I315 H316 F319 D322 I323 C326 I327 L328 G329 G330 E331 M332 M333 A334 Y335 N338 T339 Q340 T341 F342 M343 Y335 N338 T339 Q340 T341 F342 M343 Q344 K345 G346 T347 K348 F349

K352 V355 L360 Q361 T362 C363 Y364 C365 V366 F367 D368 V369 L370 M371 K376 L377 G378 H379 K384 I388 L389 I392 P395 I396 R399 I400 E401 K411 L418 N419 E420 A421 I422 D423 K424 R425 E426 E427 M430 V431 K432 Q433 S436 I437 D441 K442

E445 G446 W447 L448 K449 I450 K451 P452 E453 TYR VAL SER GLY LEU MET D460 E461 L462 D463 I464 L465 I466 G469 Y470 W471 G474 SER ARG GLY G478 M479 M480 S481 H482 F483 L484 C485 A486 V487 A488 E489 K490 K496 P497 H501 T502 L503 S504 R505 V506 G507 T511 M512 K513

E514 L518 F529 H530 P534 I538 L539 C540 G541 T542 E543 E546 I549 S554 V555 I556 V557 Q558 I559 K560 A561 I564 V565 P566 S567 D568 T575 L576 R577 F578 P579 R580 I581 E582 K583 I584 R585 D586 D587 K588 E589 W590 M594 T595 L596 L599 E600 Q601 L602

R603 GLY LYS ALA SER GLY LYS LEU ALA SER LYS HIS LEU TYR ILE GLY GLY ASP GLU PRO GLN GLU LYS LYS ARG LYS ALA ALA PRO LYS MET LYS VAL ILE GLY ILE ILE GLU HIS LEU LYS ALA PRO ASN LEU THR ASN VAL ASN K654 I655 S656 N657 I658 C665 V666 M667

S668 G669 T670 D671 S672 K675 P676 D677 L678 E679 N680 R681 I682 A683 E684 F685 I689 V690 Q691 N692 P693 G694 T697 V700 I701 A702 G703 N706 I707 R708 V709 K710 I713 D719 V720 V721 K722 W725 L726 L727 K731 F735 W738 Q739 P740 R741 F742 M743 I744

H745 M746 K751 E752 H753 F754 A755 R756 E757 Y758 D759 C760 Y765 F766 I767 D768 T769 D770 Q773 L774 V777 K782 N783 S784 N785 E786 Q787 T788 P789 E790 E791 M792 D798 L799 E800 Y801 S804 F813 R814 R815 H816 T817 Y823 A824 V825 I826 N827 D828 L829 S830 T831

E834 G835 T836 R837 K841 A842 R846 G849 A850 K851 V852 V853 S854 C855 L856 A857 E858 G859 V860 S861 H862 I865 G866 E867 D868 H869 S870 R871 V872 A873 D874 F875 K876 A877 F878 R879 R880 T881 F882 K883 R884 K885 F886 K887 I888 L889 K890 GLU SER TRP VAL THR ASP SER ILE

D899 K900 C901 E902 L903 E906 N907 GLN TYR LEU ILE

- Molecule 7: DNA

Chain d: 5% 38% 56%

DC DG DC DG DC DC DA DG DC DT DT DC DC DA DG DC DT A21 A22 T23 A24 A25 A26 C27 T28 A29 A30 A31 A32 A33 C34 T35 A36 T37 T38 A39 T40 T41 A42 T43 G44 DG DC DC DC DC DA DC DG DC DG DT

- Molecule 8: DNA

Chain e: 17% 33% 50%

DA DC DG DC DG DT DG DC DG DG DC DC DA T14 A15 A16 T17 A18 A19 G22 T23 T24 T25 T26 G29 T30 T31 T32 A33 T34 DT DG DG DC DG DC DG

# 4 Experimental information ⓘ

| Property | Value | Source |
| --- | --- | --- |
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 6996 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | TFS KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose $(e^-/\text{Å}^2)$ | 49.6 | Depositor |
| Minimum defocus (nm) | 800 | Depositor |
| Maximum defocus (nm) | 2200 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 BIOCONTINUUM (6k x 4k) | Depositor |
| Maximum map value | 0.349 | Depositor |
| Minimum map value | -0.145 | Depositor |
| Average map value | 0.001 | Depositor |
| Map value standard deviation | 0.015 | Depositor |
| Recommended contour level | 0.0573 | Depositor |
| Map size (Å) | 421.888, 421.888, 421.888 | wwPDB |
| Map dimensions | 512, 512, 512 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.824, 0.824, 0.824 | Depositor |

# 5  Model quality ⓘ

## 5.1  Standard geometry ⓘ

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 | 0.20 | 0/28754 | 0.44 | 1/38855 (0.0%) |
| 2 | B | 0.17 | 0/4142 | 0.39 | 0/5585 |
| 3 | C | 0.16 | 0/5415 | 0.39 | 0/7302 |
| 4 | D | 0.11 | 0/1527 | 0.30 | 0/2065 |
| 4 | M | 0.16 | 0/1578 | 0.40 | 0/2134 |
| 5 | G | 0.13 | 0/1657 | 0.32 | 0/2228 |
| 5 | H | 0.12 | 0/1607 | 0.31 | 0/2159 |
| 6 | K | 0.19 | 0/6644 | 0.39 | 0/8962 |
| 7 | d | 0.23 | 0/554 | 0.40 | 0/852 |
| 8 | e | 0.26 | 0/477 | 0.50 | 0/735 |
| All | All | 0.19 | 0/52355 | 0.41 | 1/70877 (0.0%) |

There are no bond length outliers.

All (1) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|-----|-------|-----|------|-------|---|------------|---------|
| 1 | A | 2458 | VAL | N-CA-C | -5.90 | 106.96 | 111.62 |

There are no chirality outliers.

There are no planarity outliers.

## 5.2  Too-close contacts ⓘ

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 | 28200 | 0 | 28317 | 1120 | 0 |
| 2 | B | 4063 | 0 | 4102 | 194 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3 | C | 5311 | 0 | 5282 | 221 | 0 |
| 4 | D | 1500 | 0 | 1482 | 40 | 0 |
| 4 | M | 1552 | 0 | 1520 | 40 | 0 |
| 5 | G | 1628 | 0 | 1620 | 49 | 0 |
| 5 | H | 1580 | 0 | 1567 | 44 | 0 |
| 6 | K | 6514 | 0 | 6428 | 303 | 0 |
| 7 | d | 493 | 0 | 273 | 22 | 0 |
| 8 | e | 427 | 0 | 243 | 23 | 0 |
| All | All | 51268 | 0 | 50834 | 1962 | 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 19.

All (1962) 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) |
|--------|--------|--------------------------|-------------------|
| 6:K:183:GLN:HA | 6:K:186:LEU:CD2 | 1.62 | 1.28 |
| 6:K:183:GLN:CA | 6:K:186:LEU:HD21 | 1.70 | 1.19 |
| 1:A:124:LYS:HZ2 | 8:e:22:DG:H5' | 1.07 | 1.16 |
| 2:B:117:LEU:HD12 | 2:B:118:GLU:N | 1.68 | 1.08 |
| 6:K:183:GLN:O | 6:K:187:ILE:HG23 | 1.53 | 1.08 |
| 1:A:2532:PRO:O | 1:A:2538:ARG:HG2 | 1.57 | 1.05 |
| 6:K:182:GLU:O | 6:K:186:LEU:HD23 | 1.57 | 1.04 |
| 6:K:183:GLN:HA | 6:K:186:LEU:CG | 1.86 | 1.03 |
| 1:A:2349:LEU:O | 1:A:2353:GLN:HB2 | 1.58 | 1.01 |
| 6:K:183:GLN:HA | 6:K:186:LEU:HD21 | 1.03 | 1.00 |
| 1:A:264:ARG:NH2 | 7:d:39:DA:H1' | 1.80 | 0.96 |
| 1:A:124:LYS:NZ | 8:e:22:DG:H5' | 1.81 | 0.94 |
| 1:A:1297:PHE:CE2 | 1:A:1341:ILE:CD1 | 2.51 | 0.93 |
| 1:A:417:VAL:O | 1:A:421:LEU:HD23 | 1.67 | 0.93 |
| 2:B:117:LEU:HD12 | 2:B:118:GLU:H | 1.31 | 0.90 |
| 1:A:413:PHE:O | 1:A:417:VAL:HG13 | 1.72 | 0.90 |
| 6:K:182:GLU:C | 6:K:186:LEU:HD23 | 1.96 | 0.89 |
| 6:K:263:MET:C | 6:K:265:HIS:H | 1.80 | 0.89 |
| 1:A:3292:GLY:HA2 | 1:A:3295:GLU:HG2 | 1.56 | 0.87 |
| 6:K:126:ALA:HA | 6:K:187:ILE:HD11 | 1.56 | 0.87 |
| 6:K:182:GLU:O | 6:K:186:LEU:CD2 | 2.23 | 0.87 |
| 1:A:832:LYS:HZ2 | 1:A:835:LYS:HB2 | 1.41 | 0.86 |
| 1:A:413:PHE:O | 1:A:417:VAL:CG1 | 2.24 | 0.85 |
| 6:K:183:GLN:CA | 6:K:186:LEU:CD2 | 2.41 | 0.85 |
| 2:B:114:LYS:HA | 2:B:117:LEU:HD21 | 1.59 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:81:ARG:HD3 | 3:C:90:LEU:HD13 | 1.61 | 0.83 |
| 6:K:183:GLN:O | 6:K:186:LEU:HG | 1.78 | 0.83 |
| 1:A:950:GLU:H | 1:A:957:PRO:HG3 | 1.42 | 0.82 |
| 1:A:3450:MET:HG2 | 1:A:3468:LEU:HD21 | 1.62 | 0.82 |
| 1:A:1412:LYS:O | 1:A:1415:LEU:HB3 | 1.79 | 0.81 |
| 6:K:327:ILE:HB | 6:K:371:MET:HB2 | 1.64 | 0.80 |
| 1:A:2887:PRO:HA | 1:A:2890:ILE:HD12 | 1.64 | 0.80 |
| 1:A:3959:MET:HE1 | 1:A:4112:THR:HA | 1.63 | 0.80 |
| 1:A:618:LYS:HD2 | 1:A:2034:SER:HB2 | 1.65 | 0.79 |
| 1:A:1297:PHE:CZ | 1:A:1341:ILE:HD11 | 2.17 | 0.79 |
| 6:K:182:GLU:C | 6:K:186:LEU:CD2 | 2.55 | 0.79 |
| 1:A:2227:LYS:HE2 | 1:A:2230:VAL:HG21 | 1.65 | 0.79 |
| 2:B:114:LYS:HA | 2:B:117:LEU:CD2 | 2.12 | 0.78 |
| 1:A:1297:PHE:HE2 | 1:A:1341:ILE:HD13 | 1.47 | 0.78 |
| 1:A:2148:LYS:HA | 1:A:2151:ILE:HD12 | 1.65 | 0.78 |
| 3:C:93:ASP:O | 3:C:97:LYS:HB2 | 1.84 | 0.78 |
| 2:B:95:ASN:HD21 | 2:B:99:PHE:H | 1.29 | 0.78 |
| 6:K:84:ILE:HG23 | 6:K:88:MET:HE1 | 1.64 | 0.78 |
| 6:K:126:ALA:CB | 6:K:187:ILE:HD11 | 2.14 | 0.78 |
| 4:M:37:LEU:HD22 | 4:M:135:LEU:HD11 | 1.66 | 0.77 |
| 1:A:3670:MET:HE3 | 1:A:3671:ASN:H | 1.48 | 0.77 |
| 1:A:2891:ARG:HG2 | 1:A:3894:PRO:HB3 | 1.65 | 0.77 |
| 6:K:251:ALA:HB3 | 6:K:449:LYS:HE3 | 1.67 | 0.77 |
| 1:A:2333:ARG:HH21 | 1:A:2336:ILE:CD1 | 1.97 | 0.77 |
| 6:K:187:ILE:HG13 | 6:K:188:ARG:N | 1.99 | 0.77 |
| 1:A:3883:LEU:HB3 | 1:A:3970:LEU:HD13 | 1.66 | 0.76 |
| 1:A:2333:ARG:HH21 | 1:A:2336:ILE:HD12 | 1.51 | 0.76 |
| 6:K:126:ALA:CA | 6:K:187:ILE:HD11 | 2.15 | 0.76 |
| 1:A:1297:PHE:CE2 | 1:A:1341:ILE:HD13 | 2.19 | 0.76 |
| 1:A:3254:LEU:HA | 1:A:3258:LEU:HB3 | 1.68 | 0.76 |
| 1:A:3820:MET:HG2 | 1:A:3824:GLU:HG3 | 1.67 | 0.76 |
| 6:K:183:GLN:N | 6:K:186:LEU:HD21 | 2.01 | 0.75 |
| 6:K:183:GLN:C | 6:K:186:LEU:HG | 2.11 | 0.75 |
| 1:A:2267:SER:HA | 1:A:2312:TYR:HE2 | 1.51 | 0.75 |
| 1:A:3414:MET:HE1 | 1:A:3450:MET:HE1 | 1.68 | 0.75 |
| 1:A:2538:ARG:O | 1:A:2542:LEU:HD23 | 1.86 | 0.75 |
| 1:A:2124:SER:OG | 1:A:2126:MET:SD | 2.45 | 0.74 |
| 1:A:1303:MET:SD | 1:A:1304:HIS:ND1 | 2.58 | 0.74 |
| 3:C:164:PHE:HB3 | 3:C:227:PHE:HE1 | 1.51 | 0.74 |
| 1:A:195:ASN:OD1 | 1:A:198:ARG:NH2 | 2.21 | 0.74 |
| 1:A:3813:LYS:HG2 | 1:A:3925:LEU:HB2 | 1.70 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:2333:ARG:NH2 | 1:A:2336:ILE:HD12 | 2.03 | 0.73 |
| 2:B:171:ASN:HB3 | 2:B:205:LEU:HB2 | 1.70 | 0.73 |
| 3:C:242:ARG:HH22 | 7:d:22:DA:H5' | 1.53 | 0.73 |
| 1:A:1297:PHE:HZ | 1:A:1337:VAL:HG12 | 1.54 | 0.73 |
| 4:M:157:LEU:HA | 4:M:160:LYS:HE3 | 1.71 | 0.73 |
| 2:B:114:LYS:O | 2:B:117:LEU:CD1 | 2.36 | 0.73 |
| 1:A:1297:PHE:CE2 | 1:A:1341:ILE:HG12 | 2.24 | 0.73 |
| 6:K:126:ALA:HA | 6:K:187:ILE:CD1 | 2.18 | 0.73 |
| 3:C:108:LEU:HD23 | 3:C:146:GLN:HB2 | 1.71 | 0.72 |
| 1:A:3817:LEU:HA | 1:A:3820:MET:HE1 | 1.70 | 0.72 |
| 1:A:2810:SER:HA | 1:A:2861:ILE:HD11 | 1.70 | 0.72 |
| 1:A:187:SER:HA | 1:A:190:ILE:HB | 1.70 | 0.72 |
| 1:A:2151:ILE:HG21 | 1:A:2188:GLU:HG3 | 1.72 | 0.71 |
| 1:A:2891:ARG:NH1 | 1:A:2894:GLU:OE2 | 2.22 | 0.71 |
| 2:B:511:VAL:HB | 3:C:255:SER:HB3 | 1.72 | 0.71 |
| 1:A:2267:SER:C | 1:A:2312:TYR:HE2 | 1.98 | 0.71 |
| 2:B:101:ASN:ND2 | 2:B:140:ASP:O | 2.22 | 0.71 |
| 3:C:133:GLU:HG2 | 3:C:162:GLN:H | 1.54 | 0.71 |
| 1:A:4088:ASN:O | 1:A:4092:GLN:NE2 | 2.24 | 0.71 |
| 6:K:187:ILE:O | 6:K:190:ILE:HG22 | 1.90 | 0.71 |
| 2:B:74:LYS:HG2 | 2:B:83:LEU:HD11 | 1.72 | 0.70 |
| 4:M:165:GLN:HG2 | 4:M:183:PRO:HG2 | 1.72 | 0.70 |
| 1:A:1438:GLY:O | 1:A:1445:ARG:NH2 | 2.24 | 0.70 |
| 6:K:263:MET:C | 6:K:265:HIS:N | 2.48 | 0.70 |
| 6:K:389:LEU:HA | 6:K:392:ILE:HG12 | 1.74 | 0.70 |
| 6:K:556:ILE:HB | 6:K:590:TRP:HA | 1.72 | 0.70 |
| 6:K:183:GLN:HA | 6:K:186:LEU:CD1 | 2.22 | 0.70 |
| 1:A:3179:TRP:O | 1:A:3183:ILE:HG12 | 1.91 | 0.70 |
| 8:e:23:DT:H2" | 8:e:24:DT:H5" | 1.74 | 0.70 |
| 3:C:640:ARG:NH1 | 3:C:684:THR:O | 2.25 | 0.69 |
| 6:K:183:GLN:CA | 6:K:186:LEU:CG | 2.65 | 0.69 |
| 1:A:1377:CYS:SG | 1:A:1378:GLU:N | 2.64 | 0.69 |
| 1:A:3953:LEU:HD12 | 1:A:3954:PRO:HD2 | 1.74 | 0.69 |
| 1:A:753:GLN:NE2 | 1:A:791:ASP:OD2 | 2.26 | 0.69 |
| 1:A:2267:SER:CA | 1:A:2312:TYR:HE2 | 2.06 | 0.69 |
| 1:A:61:ARG:NH1 | 1:A:62:ASP:OD1 | 2.26 | 0.69 |
| 3:C:357:MET:HE3 | 3:C:358:GLY:H | 1.57 | 0.69 |
| 1:A:1574:ASN:HD21 | 1:A:1577:LEU:HD22 | 1.56 | 0.69 |
| 1:A:997:ASN:ND2 | 1:A:998:ASN:OD1 | 2.26 | 0.69 |
| 1:A:1304:HIS:O | 1:A:1334:LYS:NZ | 2.25 | 0.69 |
| 2:B:71:TYR:OH | 2:B:115:ARG:NH2 | 2.26 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:144:LYS:NZ | 3:C:200:GLN:O | 2.27 | 0.68 |
| 1:A:3796:MET:H | 1:A:3801:GLY:HA2 | 1.58 | 0.68 |
| 1:A:2531:LEU:HB3 | 1:A:2538:ARG:HD2 | 1.73 | 0.68 |
| 5:G:173:GLU:OE2 | 5:H:169:LYS:NZ | 2.26 | 0.68 |
| 1:A:1297:PHE:HE2 | 1:A:1341:ILE:CD1 | 1.99 | 0.68 |
| 2:B:461:LYS:HB3 | 2:B:525:PHE:CE1 | 2.29 | 0.68 |
| 6:K:462:LEU:HA | 6:K:594:MET:HG3 | 1.73 | 0.68 |
| 6:K:263:MET:O | 6:K:265:HIS:N | 2.27 | 0.68 |
| 6:K:665:CYS:HB2 | 6:K:690:VAL:HG13 | 1.75 | 0.68 |
| 6:K:276:GLY:HA3 | 6:K:332:MET:O | 1.94 | 0.68 |
| 1:A:1423:ILE:HD11 | 1:A:1428:ILE:HG12 | 1.75 | 0.68 |
| 8:e:22:DG:C5 | 8:e:23:DT:C4 | 2.82 | 0.68 |
| 1:A:1019:ASP:O | 1:A:1026:ARG:NH1 | 2.26 | 0.68 |
| 1:A:2047:THR:HG23 | 1:A:2049:VAL:H | 1.58 | 0.68 |
| 1:A:866:ILE:O | 1:A:869:ASN:ND2 | 2.26 | 0.67 |
| 1:A:2104:MET:HE1 | 1:A:2124:SER:HB3 | 1.76 | 0.67 |
| 4:D:138:PRO:HG2 | 4:D:207:GLY:HA2 | 1.74 | 0.67 |
| 1:A:2531:LEU:HB3 | 1:A:2538:ARG:CD | 2.24 | 0.67 |
| 3:C:357:MET:HE3 | 3:C:358:GLY:N | 2.09 | 0.67 |
| 1:A:3958:LEU:O | 1:A:4115:ASN:ND2 | 2.26 | 0.67 |
| 1:A:3718:ARG:H | 1:A:3743:HIS:HB3 | 1.59 | 0.67 |
| 3:C:378:SER:O | 3:C:382:HIS:ND1 | 2.28 | 0.67 |
| 5:H:179:ARG:NH2 | 6:K:783:ASN:OD1 | 2.27 | 0.67 |
| 1:A:305:ASN:HD21 | 7:d:40:DT:H3' | 1.60 | 0.67 |
| 1:A:956:PRO:HB2 | 1:A:959:TYR:HB2 | 1.76 | 0.67 |
| 1:A:1403:MET:HA | 1:A:1403:MET:HE3 | 1.75 | 0.67 |
| 6:K:72:LEU:HB3 | 6:K:75:LEU:HB3 | 1.76 | 0.67 |
| 1:A:3687:MET:HG3 | 1:A:3721:GLY:H | 1.60 | 0.67 |
| 3:C:616:LEU:O | 3:C:620:ILE:HG12 | 1.94 | 0.67 |
| 6:K:12:SER:HA | 6:K:146:GLN:HG2 | 1.76 | 0.67 |
| 6:K:218:THR:HG21 | 6:K:223:LYS:HZ2 | 1.59 | 0.67 |
| 1:A:3681:LYS:HE2 | 1:A:3724:GLU:HG2 | 1.76 | 0.67 |
| 3:C:647:ILE:HA | 3:C:652:GLU:HG2 | 1.76 | 0.67 |
| 5:G:61:MET:HE1 | 5:G:66:TYR:HB3 | 1.77 | 0.67 |
| 6:K:278:ARG:HH12 | 6:K:430:MET:HE1 | 1.59 | 0.67 |
| 1:A:799:TYR:H | 1:A:801:LYS:HZ3 | 1.41 | 0.66 |
| 1:A:2859:GLN:HE21 | 1:A:2888:VAL:HG23 | 1.60 | 0.66 |
| 1:A:54:GLN:OE1 | 1:A:54:GLN:N | 2.23 | 0.66 |
| 3:C:656:ASN:ND2 | 3:C:690:GLU:OE1 | 2.28 | 0.66 |
| 6:K:315:ILE:HG22 | 6:K:399:ARG:HB3 | 1.77 | 0.66 |
| 3:C:147:LEU:HD23 | 3:C:150:ILE:HD12 | 1.77 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:271:ARG:NH1 | 8:e:29:DG:OP2 | 2.25 | 0.66 |
| 6:K:436:SER:CB | 6:K:446:GLY:HA3 | 2.25 | 0.66 |
| 6:K:654:LYS:NZ | 6:K:684:GLU:O | 2.27 | 0.66 |
| 1:A:1538:LEU:HB2 | 1:A:1555:HIS:CE1 | 2.30 | 0.66 |
| 1:A:3357:ARG:NH2 | 1:A:3361:GLU:OE1 | 2.29 | 0.66 |
| 1:A:3714:GLU:OE1 | 1:A:3718:ARG:NH2 | 2.28 | 0.66 |
| 1:A:3157:LEU:HD13 | 1:A:3160:LEU:HD12 | 1.76 | 0.66 |
| 1:A:1485:SER:O | 1:A:1489:LYS:HB2 | 1.95 | 0.66 |
| 1:A:1820:VAL:HG13 | 1:A:1824:LEU:HD22 | 1.78 | 0.66 |
| 1:A:3759:ARG:NH1 | 1:A:4008:GLU:OE1 | 2.28 | 0.66 |
| 2:B:114:LYS:HA | 2:B:117:LEU:CG | 2.25 | 0.66 |
| 1:A:3676:PRO:HD2 | 1:A:3726:VAL:HG11 | 1.77 | 0.66 |
| 1:A:3915:HIS:HD2 | 1:A:3920:ILE:HB | 1.60 | 0.66 |
| 1:A:3713:PRO:O | 1:A:3716:HIS:NE2 | 2.30 | 0.65 |
| 2:B:396:ALA:HB3 | 2:B:413:LEU:HB2 | 1.77 | 0.65 |
| 1:A:1297:PHE:CZ | 1:A:1341:ILE:CD1 | 2.78 | 0.65 |
| 3:C:412:ILE:HA | 3:C:417:GLU:HG2 | 1.78 | 0.65 |
| 5:G:120:ALA:O | 5:G:124:ARG:HG2 | 1.96 | 0.65 |
| 6:K:425:ARG:HH12 | 6:K:581:ILE:H | 1.44 | 0.65 |
| 1:A:63:PHE:O | 1:A:67:VAL:N | 2.27 | 0.65 |
| 6:K:669:GLY:H | 6:K:675:LYS:HD3 | 1.61 | 0.65 |
| 1:A:1297:PHE:CE2 | 1:A:1341:ILE:HD11 | 2.31 | 0.65 |
| 1:A:3820:MET:HE3 | 1:A:3820:MET:H | 1.61 | 0.65 |
| 1:A:3984:MET:HB3 | 1:A:4104:VAL:HG21 | 1.77 | 0.65 |
| 1:A:2267:SER:C | 1:A:2312:TYR:CE2 | 2.74 | 0.65 |
| 3:C:595:ALA:O | 3:C:599:ARG:NH1 | 2.29 | 0.65 |
| 5:G:179:ARG:NH2 | 5:H:177:TYR:OH | 2.29 | 0.65 |
| 2:B:203:MET:HE1 | 2:B:238:LYS:HE2 | 1.79 | 0.65 |
| 6:K:837:ARG:NH2 | 6:K:902:GLU:OE2 | 2.30 | 0.65 |
| 8:e:17:DT:H2' | 8:e:18:DA:C2 | 2.32 | 0.65 |
| 2:B:290:ARG:NH1 | 6:K:693:PRO:O | 2.30 | 0.65 |
| 2:B:379:SER:HB2 | 3:C:438:LEU:HD21 | 1.78 | 0.65 |
| 6:K:301:GLN:OE1 | 6:K:352:LYS:NZ | 2.30 | 0.65 |
| 1:A:124:LYS:HZ2 | 8:e:22:DG:C5' | 1.98 | 0.65 |
| 1:A:859:LEU:O | 1:A:867:ASN:ND2 | 2.28 | 0.65 |
| 1:A:3951:GLN:OE1 | 1:A:3952:PHE:CD2 | 2.50 | 0.65 |
| 2:B:48:MET:N | 2:B:48:MET:SD | 2.69 | 0.65 |
| 6:K:427:GLU:O | 6:K:451:LYS:NZ | 2.28 | 0.65 |
| 1:A:2126:MET:O | 1:A:2130:HIS:HB2 | 1.97 | 0.64 |
| 1:A:1840:PHE:O | 1:A:1844:VAL:HG13 | 1.97 | 0.64 |
| 2:B:135:MET:HA | 2:B:135:MET:HE2 | 1.79 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:40:MET:HA | 3:C:43:GLN:HG3 | 1.80 | 0.64 |
| 2:B:348:MET:HE2 | 2:B:399:ARG:HB2 | 1.79 | 0.64 |
| 6:K:792:MET:HA | 6:K:792:MET:HE3 | 1.79 | 0.64 |
| 1:A:1441:ALA:O | 1:A:1445:ARG:NH1 | 2.31 | 0.64 |
| 1:A:3824:GLU:HA | 1:A:3828:TYR:HB2 | 1.79 | 0.64 |
| 1:A:1196:PRO:HG3 | 1:A:1203:SER:HA | 1.79 | 0.64 |
| 1:A:238:MET:HA | 1:A:243:GLN:HG3 | 1.78 | 0.64 |
| 1:A:1725:GLN:HB2 | 1:A:1728:GLU:HB3 | 1.80 | 0.64 |
| 1:A:264:ARG:CZ | 7:d:39:DA:H1' | 2.28 | 0.64 |
| 1:A:3760:GLN:OE1 | 1:A:3763:ARG:NH1 | 2.31 | 0.64 |
| 5:H:191:ILE:O | 5:H:195:HIS:ND1 | 2.31 | 0.64 |
| 6:K:867:GLU:HA | 6:K:903:LEU:HD23 | 1.78 | 0.64 |
| 1:A:264:ARG:NE | 7:d:39:DA:O3' | 2.29 | 0.64 |
| 1:A:493:LYS:NZ | 1:A:494:PRO:O | 2.30 | 0.64 |
| 1:A:802:THR:HG23 | 1:A:852:ARG:HH12 | 1.63 | 0.64 |
| 1:A:892:LEU:HD12 | 1:A:944:LYS:HD3 | 1.80 | 0.64 |
| 1:A:3243:ILE:HG13 | 1:A:3259:LEU:HD21 | 1.79 | 0.64 |
| 2:B:39:ILE:HG12 | 2:B:84:ALA:HB3 | 1.79 | 0.63 |
| 1:A:1249:SER:OG | 1:A:1312:CYS:SG | 2.56 | 0.63 |
| 1:A:1271:ILE:O | 1:A:1274:ARG:NH1 | 2.31 | 0.63 |
| 1:A:2263:LYS:HE3 | 1:A:2265:PRO:HB3 | 1.79 | 0.63 |
| 1:A:2510:LEU:O | 1:A:2518:GLN:NE2 | 2.32 | 0.63 |
| 1:A:3163:THR:HG22 | 1:A:3164:TRP:H | 1.63 | 0.63 |
| 1:A:1172:LEU:HD11 | 1:A:1191:PHE:HB2 | 1.79 | 0.63 |
| 1:A:1231:GLN:N | 1:A:1232:PRO:CD | 2.61 | 0.63 |
| 1:A:1815:THR:OG1 | 1:A:1816:ARG:N | 2.31 | 0.63 |
| 1:A:3421:ASP:HA | 1:A:3424:LEU:HD12 | 1.79 | 0.63 |
| 1:A:3836:PRO:HA | 1:A:3840:LYS:HB2 | 1.78 | 0.63 |
| 1:A:3951:GLN:OE1 | 1:A:3952:PHE:CE2 | 2.52 | 0.63 |
| 2:B:218:ARG:NH2 | 2:B:223:ILE:O | 2.31 | 0.63 |
| 4:D:34:TYR:HA | 4:D:73:LEU:HD21 | 1.81 | 0.63 |
| 5:G:18:HIS:CE1 | 5:G:36:LEU:HB2 | 2.34 | 0.63 |
| 1:A:1058:SER:HA | 1:A:1061:LYS:HD2 | 1.79 | 0.63 |
| 1:A:2239:LYS:HB2 | 1:A:2279:ILE:HD12 | 1.80 | 0.63 |
| 3:C:524:THR:HA | 3:C:527:GLN:HE22 | 1.64 | 0.63 |
| 1:A:2830:ASN:O | 1:A:2834:GLN:NE2 | 2.32 | 0.63 |
| 1:A:924:ARG:HH12 | 1:A:2768:GLN:HA | 1.64 | 0.63 |
| 1:A:2873:PRO:HA | 1:A:2876:VAL:HG12 | 1.81 | 0.63 |
| 1:A:2898:LEU:HD11 | 1:A:3973:PRO:HD3 | 1.80 | 0.63 |
| 3:C:512:ILE:O | 3:C:516:LEU:HB2 | 1.99 | 0.63 |
| 6:K:679:GLU:HB3 | 6:K:689:ILE:HG12 | 1.81 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:117:LYS:HE3 | 3:C:300:ASP:HA | 1.79 | 0.62 |
| 1:A:1297:PHE:CE2 | 1:A:1341:ILE:CG1 | 2.81 | 0.62 |
| 1:A:2103:HIS:O | 1:A:2106:ARG:NH1 | 2.32 | 0.62 |
| 6:K:753:HIS:HA | 6:K:756:ARG:HE | 1.63 | 0.62 |
| 1:A:889:GLU:HB3 | 1:A:891:ARG:HG3 | 1.79 | 0.62 |
| 1:A:2894:GLU:HB2 | 1:A:3973:PRO:HG2 | 1.81 | 0.62 |
| 6:K:866:GLY:HA3 | 6:K:871:ARG:HG3 | 1.81 | 0.62 |
| 1:A:829:VAL:HG13 | 1:A:830:VAL:HG13 | 1.80 | 0.62 |
| 1:A:1369:MET:HA | 1:A:1372:LEU:HG | 1.80 | 0.62 |
| 3:C:11:VAL:HG11 | 3:C:118:ILE:HG21 | 1.82 | 0.62 |
| 1:A:17:GLU:OE2 | 1:A:3070:HIS:NE2 | 2.32 | 0.62 |
| 1:A:2228:ARG:NH1 | 7:d:44:DG:OP1 | 2.30 | 0.62 |
| 6:K:277:GLU:HB2 | 6:K:332:MET:HG2 | 1.81 | 0.62 |
| 5:H:10:LEU:HG | 5:H:88:PHE:HB3 | 1.80 | 0.62 |
| 2:B:230:ARG:HG3 | 2:B:232:HIS:H | 1.65 | 0.62 |
| 1:A:884:VAL:HG21 | 1:A:964:ARG:HH22 | 1.64 | 0.62 |
| 1:A:2301:GLN:OE1 | 1:A:2305:ASN:ND2 | 2.33 | 0.62 |
| 3:C:247:TRP:HB3 | 3:C:263:ALA:HB3 | 1.81 | 0.62 |
| 1:A:414:LEU:HD12 | 1:A:464:VAL:HG21 | 1.82 | 0.62 |
| 1:A:3819:THR:HG21 | 1:A:3886:ALA:HB2 | 1.82 | 0.62 |
| 1:A:3871:PHE:CD1 | 1:A:4117:LEU:HA | 2.35 | 0.62 |
| 5:G:13:GLU:OE2 | 5:G:90:LYS:NZ | 2.33 | 0.62 |
| 1:A:13:LEU:HD22 | 1:A:3069:MET:HE2 | 1.82 | 0.61 |
| 1:A:3570:ASP:HB3 | 1:A:3685:PRO:HG2 | 1.81 | 0.61 |
| 1:A:1416:GLU:OE1 | 1:A:1420:ARG:NH2 | 2.33 | 0.61 |
| 1:A:1770:GLN:HA | 1:A:1822:ARG:HH22 | 1.66 | 0.61 |
| 1:A:1881:TYR:CE1 | 1:A:1951:VAL:HA | 2.35 | 0.61 |
| 1:A:2274:ILE:HD12 | 1:A:2274:ILE:H | 1.66 | 0.61 |
| 1:A:3085:GLU:OE1 | 1:A:3085:GLU:N | 2.33 | 0.61 |
| 1:A:3263:HIS:HB2 | 1:A:3276:TRP:CE2 | 2.34 | 0.61 |
| 6:K:487:VAL:HB | 6:K:503:LEU:HD22 | 1.82 | 0.61 |
| 3:C:433:TYR:C | 3:C:434:MET:HE2 | 2.26 | 0.61 |
| 1:A:165:LYS:NZ | 7:d:30:DA:OP2 | 2.34 | 0.61 |
| 1:A:1076:LEU:HB2 | 1:A:1123:THR:HG22 | 1.83 | 0.61 |
| 1:A:1392:MET:HA | 1:A:1395:LEU:HG | 1.81 | 0.61 |
| 1:A:3084:GLN:HB2 | 1:A:3135:LEU:HD21 | 1.83 | 0.61 |
| 2:B:479:GLU:HA | 3:C:426:PHE:HB3 | 1.82 | 0.61 |
| 6:K:73:PRO:HB2 | 6:K:192:LYS:HG2 | 1.83 | 0.61 |
| 6:K:283:LYS:HB3 | 6:K:326:CYS:HB2 | 1.81 | 0.61 |
| 1:A:2773:ARG:HD3 | 1:A:2775:TYR:HE2 | 1.66 | 0.61 |
| 1:A:990:GLN:NE2 | 1:A:2778:GLY:O | 2.31 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1080:LEU:O | 1:A:1084:ASN:ND2 | 2.28 | 0.61 |
| 1:A:1322:THR:O | 1:A:1326:GLU:N | 2.34 | 0.61 |
| 1:A:1364:CYS:SG | 1:A:1365:ASN:N | 2.73 | 0.61 |
| 1:A:2126:MET:SD | 1:A:2126:MET:N | 2.73 | 0.61 |
| 1:A:2267:SER:HA | 1:A:2312:TYR:CE2 | 2.35 | 0.61 |
| 1:A:3643:HIS:HB3 | 1:A:3659:PHE:HE2 | 1.66 | 0.61 |
| 2:B:37:SER:HB3 | 2:B:161:MET:HE1 | 1.82 | 0.61 |
| 3:C:496:HIS:CD2 | 3:C:506:PRO:HD3 | 2.34 | 0.61 |
| 6:K:183:GLN:HA | 6:K:186:LEU:HD11 | 1.83 | 0.61 |
| 6:K:194:LEU:HD11 | 6:K:196:LEU:HD22 | 1.81 | 0.61 |
| 1:A:573:LEU:HD12 | 1:A:649:PHE:HD1 | 1.66 | 0.61 |
| 1:A:3759:ARG:HA | 1:A:3795:PRO:HG3 | 1.83 | 0.61 |
| 5:G:176:LEU:HB3 | 5:G:179:ARG:HH21 | 1.66 | 0.61 |
| 1:A:1538:LEU:O | 1:A:1552:HIS:N | 2.33 | 0.61 |
| 1:A:22:ALA:HB3 | 1:A:34:LEU:HD21 | 1.81 | 0.60 |
| 1:A:1801:VAL:HA | 1:A:1804:MET:HG3 | 1.82 | 0.60 |
| 3:C:7:LYS:NZ | 3:C:126:LYS:O | 2.31 | 0.60 |
| 1:A:411:PRO:O | 1:A:414:LEU:HB2 | 2.01 | 0.60 |
| 1:A:799:TYR:N | 1:A:801:LYS:HZ3 | 1.99 | 0.60 |
| 1:A:974:CYS:SG | 1:A:1025:LEU:HD23 | 2.42 | 0.60 |
| 1:A:2145:PHE:CE1 | 1:A:2149:LEU:HD21 | 2.36 | 0.60 |
| 3:C:147:LEU:HD11 | 3:C:207:ILE:HD12 | 1.83 | 0.60 |
| 1:A:3448:GLU:HB2 | 1:A:3482:LEU:HD11 | 1.82 | 0.60 |
| 1:A:3546:SER:O | 1:A:3549:HIS:ND1 | 2.33 | 0.60 |
| 2:B:420:LEU:HB3 | 2:B:424:LYS:HA | 1.82 | 0.60 |
| 5:G:194:LEU:HD13 | 5:H:194:LEU:HB2 | 1.83 | 0.60 |
| 6:K:183:GLN:N | 6:K:186:LEU:CD2 | 2.62 | 0.60 |
| 1:A:893:SER:H | 1:A:944:LYS:HE2 | 1.66 | 0.60 |
| 1:A:942:LEU:O | 1:A:946:THR:HG23 | 2.01 | 0.60 |
| 1:A:2937:ASP:OD2 | 1:A:3784:ARG:NH1 | 2.35 | 0.60 |
| 6:K:256:ILE:O | 6:K:411:LYS:NZ | 2.31 | 0.60 |
| 1:A:413:PHE:O | 1:A:417:VAL:HG12 | 2.02 | 0.60 |
| 1:A:1418:HIS:O | 1:A:1421:GLU:HB3 | 2.02 | 0.60 |
| 2:B:254:ARG:NH1 | 7:d:33:DA:N3 | 2.50 | 0.60 |
| 1:A:1003:SER:OG | 1:A:1004:GLN:NE2 | 2.35 | 0.60 |
| 6:K:241:THR:HG23 | 6:K:244:SER:HB3 | 1.81 | 0.60 |
| 2:B:460:GLY:HA2 | 2:B:463:LYS:HD2 | 1.82 | 0.60 |
| 1:A:1579:VAL:HA | 1:A:1582:LEU:HD12 | 1.83 | 0.60 |
| 1:A:2572:TYR:HE1 | 1:A:2791:ILE:HD11 | 1.65 | 0.60 |
| 1:A:3717:VAL:HG23 | 1:A:3744:ASP:H | 1.67 | 0.60 |
| 6:K:668:SER:O | 6:K:703:GLY:N | 2.33 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:95:LYS:O | 1:A:96:MET:HE2 | 2.02 | 0.59 |
| 5:H:28:LEU:HA | 5:H:32:PHE:HB2 | 1.84 | 0.59 |
| 6:K:124:ASP:OD2 | 6:K:188:ARG:NH1 | 2.35 | 0.59 |
| 1:A:738:HIS:HB2 | 1:A:780:ILE:HD11 | 1.84 | 0.59 |
| 1:A:3301:LEU:HG | 1:A:3333:THR:HG21 | 1.84 | 0.59 |
| 1:A:3965:ARG:NH1 | 1:A:3969:ASN:OD1 | 2.35 | 0.59 |
| 5:G:184:LEU:HD13 | 6:K:769:THR:HG21 | 1.84 | 0.59 |
| 4:M:44:VAL:HG23 | 4:M:125:LEU:HD13 | 1.83 | 0.59 |
| 1:A:332:GLU:HB2 | 1:A:335:LYS:HD2 | 1.83 | 0.59 |
| 3:C:280:ASP:HB3 | 3:C:283:THR:HG22 | 1.83 | 0.59 |
| 1:A:287:LEU:HD23 | 1:A:288:ASP:H | 1.66 | 0.59 |
| 1:A:447:PRO:O | 1:A:448:GLN:HG2 | 2.02 | 0.59 |
| 1:A:1164:CYS:N | 1:A:1167:ASP:OD2 | 2.36 | 0.59 |
| 3:C:208:VAL:HG23 | 3:C:224:ILE:HD13 | 1.84 | 0.59 |
| 1:A:2380:ASN:ND2 | 2:B:192:ASP:OD1 | 2.36 | 0.59 |
| 1:A:3761:ASP:HB3 | 1:A:3793:VAL:HG11 | 1.83 | 0.59 |
| 3:C:164:PHE:HB3 | 3:C:227:PHE:CE1 | 2.37 | 0.59 |
| 6:K:189:MET:HE1 | 6:K:194:LEU:HB3 | 1.84 | 0.59 |
| 4:M:21:ASN:ND2 | 4:M:40:ASP:OD1 | 2.35 | 0.59 |
| 1:A:181:LEU:HD13 | 1:A:230:LEU:HD22 | 1.84 | 0.59 |
| 1:A:924:ARG:NH2 | 1:A:2766:ASP:O | 2.35 | 0.59 |
| 1:A:989:MET:HE1 | 1:A:1035:GLU:HG2 | 1.85 | 0.59 |
| 2:B:125:GLN:O | 2:B:129:LYS:HG2 | 2.03 | 0.59 |
| 3:C:619:HIS:O | 3:C:631:TYR:OH | 2.21 | 0.59 |
| 4:M:211:VAL:HG23 | 4:M:212:MET:HG3 | 1.85 | 0.59 |
| 1:A:1071:ASN:HB3 | 1:A:1074:LYS:HE2 | 1.84 | 0.58 |
| 1:A:3173:MET:O | 1:A:3249:GLN:NE2 | 2.30 | 0.58 |
| 1:A:3389:VAL:HG21 | 1:A:3416:LEU:HD22 | 1.85 | 0.58 |
| 6:K:184:LYS:O | 6:K:187:ILE:HG12 | 2.03 | 0.58 |
| 1:A:1946:ASN:HA | 1:A:1949:ILE:HD12 | 1.85 | 0.58 |
| 1:A:2405:VAL:O | 1:A:2441:LYS:NZ | 2.31 | 0.58 |
| 1:A:3465:PHE:HA | 1:A:3468:LEU:HD23 | 1.84 | 0.58 |
| 1:A:3833:ARG:HH21 | 1:A:4128:MET:HE3 | 1.68 | 0.58 |
| 2:B:47:ALA:HB1 | 2:B:171:ASN:HD21 | 1.67 | 0.58 |
| 6:K:558:GLN:OE1 | 6:K:585:ARG:NH2 | 2.27 | 0.58 |
| 1:A:1873:TYR:O | 1:A:1876:ILE:HG22 | 2.03 | 0.58 |
| 1:A:3165:THR:O | 1:A:3241:LYS:NZ | 2.37 | 0.58 |
| 3:C:261:ILE:HA | 3:C:366:ALA:HA | 1.85 | 0.58 |
| 3:C:328:GLU:O | 3:C:332:LYS:N | 2.34 | 0.58 |
| 4:D:56:GLN:NE2 | 4:D:60:GLU:OE1 | 2.36 | 0.58 |
| 6:K:165:ASP:OD1 | 6:K:169:LYS:NZ | 2.36 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:445:SER:OG | 1:A:445:SER:O | 2.21 | 0.58 |
| 5:G:70:LEU:HG | 5:G:108:LEU:HD22 | 1.84 | 0.58 |
| 4:M:57:ARG:HD3 | 4:M:122:HIS:CD2 | 2.38 | 0.58 |
| 8:e:31:DT:H2' | 8:e:32:DT:H71 | 1.85 | 0.58 |
| 1:A:111:CYS:O | 1:A:130:LEU:HD11 | 2.04 | 0.58 |
| 5:G:194:LEU:HD11 | 5:H:195:HIS:CE1 | 2.39 | 0.58 |
| 6:K:420:GLU:O | 6:K:424:LYS:N | 2.26 | 0.58 |
| 8:e:30:DT:H2' | 8:e:31:DT:H71 | 1.85 | 0.58 |
| 1:A:1427:SER:O | 1:A:1431:LEU:N | 2.28 | 0.58 |
| 1:A:1537:VAL:HA | 1:A:1554:SER:HA | 1.84 | 0.58 |
| 1:A:2196:TRP:HB2 | 1:A:2199:LEU:HB2 | 1.86 | 0.58 |
| 1:A:2859:GLN:OE1 | 1:A:2876:VAL:HG23 | 2.04 | 0.58 |
| 1:A:3868:VAL:HG22 | 1:A:4117:LEU:HD13 | 1.85 | 0.58 |
| 6:K:739:GLN:O | 6:K:741:ARG:NH1 | 2.35 | 0.58 |
| 1:A:305:ASN:O | 1:A:308:LEU:N | 2.31 | 0.58 |
| 1:A:1714:LEU:HD12 | 1:A:1757:MET:HE1 | 1.85 | 0.58 |
| 4:D:163:GLU:HB3 | 4:D:167:TYR:HE2 | 1.67 | 0.58 |
| 6:K:105:ASP:HA | 6:K:108:LYS:HE2 | 1.85 | 0.58 |
| 1:A:1215:GLU:HB3 | 1:A:1219:PHE:HB2 | 1.86 | 0.58 |
| 1:A:2406:GLU:HB3 | 1:A:2408:MET:HE1 | 1.85 | 0.58 |
| 1:A:3312:VAL:O | 1:A:3316:LEU:N | 2.30 | 0.58 |
| 1:A:1400:VAL:HG11 | 1:A:1460:ARG:HH21 | 1.69 | 0.58 |
| 1:A:2953:THR:HB | 1:A:2994:TRP:HE1 | 1.68 | 0.58 |
| 2:B:92:LYS:HD2 | 2:B:135:MET:HE2 | 1.86 | 0.58 |
| 6:K:487:VAL:O | 6:K:501:HIS:N | 2.37 | 0.58 |
| 1:A:36:ARG:O | 1:A:40:GLN:HG2 | 2.03 | 0.58 |
| 1:A:212:VAL:HG23 | 1:A:214:GLU:HG3 | 1.84 | 0.58 |
| 1:A:3992:ARG:NH2 | 1:A:4052:ALA:O | 2.37 | 0.58 |
| 2:B:114:LYS:HA | 2:B:117:LEU:HG | 1.86 | 0.58 |
| 1:A:1386:ILE:HA | 1:A:1392:MET:HE2 | 1.86 | 0.57 |
| 3:C:226:SER:O | 3:C:230:SER:N | 2.35 | 0.57 |
| 3:C:411:HIS:ND1 | 3:C:418:CYS:SG | 2.74 | 0.57 |
| 6:K:183:GLN:CA | 6:K:186:LEU:HG | 2.32 | 0.57 |
| 6:K:275:ASP:OD2 | 6:K:345:LYS:N | 2.37 | 0.57 |
| 1:A:2952:ILE:HG12 | 1:A:2975:ALA:HB2 | 1.85 | 0.57 |
| 6:K:470:TYR:O | 6:K:481:SER:N | 2.37 | 0.57 |
| 6:K:681:ARG:O | 6:K:685:PHE:N | 2.37 | 0.57 |
| 1:A:2134:GLY:O | 1:A:2170:GLN:NE2 | 2.38 | 0.57 |
| 1:A:2260:PHE:HB3 | 1:A:2273:GLY:HA3 | 1.85 | 0.57 |
| 1:A:2326:ILE:O | 1:A:2330:VAL:HG13 | 2.04 | 0.57 |
| 2:B:476:ASP:OD1 | 2:B:476:ASP:N | 2.38 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:41:PHE:HE1 | 3:C:235:CYS:H | 1.52 | 0.57 |
| 6:K:277:GLU:O | 6:K:331:GLU:HA | 2.05 | 0.57 |
| 1:A:526:ASP:OD1 | 1:A:526:ASP:N | 2.35 | 0.57 |
| 1:A:1135:CYS:O | 1:A:1139:GLU:HG2 | 2.04 | 0.57 |
| 1:A:1430:GLU:N | 1:A:1430:GLU:OE1 | 2.38 | 0.57 |
| 1:A:1709:GLU:HB3 | 1:A:1712:ARG:HH22 | 1.68 | 0.57 |
| 1:A:2121:ASP:HB3 | 1:A:2127:LYS:HD3 | 1.86 | 0.57 |
| 4:D:62:ASN:ND2 | 4:D:116:PRO:O | 2.35 | 0.57 |
| 1:A:3931:ALA:O | 1:A:3935:GLY:N | 2.37 | 0.57 |
| 6:K:126:ALA:HB2 | 6:K:188:ARG:HD3 | 1.86 | 0.57 |
| 6:K:182:GLU:O | 6:K:186:LEU:CG | 2.53 | 0.57 |
| 1:A:898:PHE:HE1 | 1:A:2565:MET:HE1 | 1.70 | 0.57 |
| 1:A:1722:PHE:HB3 | 1:A:1768:ARG:HH22 | 1.70 | 0.57 |
| 1:A:3156:PRO:O | 1:A:3159:ARG:HG2 | 2.05 | 0.57 |
| 2:B:264:ASN:OD1 | 2:B:267:ILE:N | 2.36 | 0.57 |
| 5:G:169:LYS:HE2 | 5:H:169:LYS:HZ3 | 1.70 | 0.57 |
| 5:H:196:ASN:HA | 5:H:199:LEU:HG | 1.86 | 0.57 |
| 1:A:784:VAL:HG23 | 1:A:785:MET:SD | 2.45 | 0.57 |
| 5:G:176:LEU:HD13 | 5:H:176:LEU:HD21 | 1.87 | 0.57 |
| 6:K:561:ALA:HB3 | 6:K:576:LEU:HD11 | 1.86 | 0.57 |
| 4:M:109:ARG:HD2 | 4:M:118:TYR:HD1 | 1.68 | 0.57 |
| 1:A:306:VAL:HG12 | 1:A:309:LYS:HD2 | 1.87 | 0.57 |
| 3:C:153:SER:HA | 3:C:156:LYS:HD3 | 1.86 | 0.57 |
| 6:K:274:LEU:HB3 | 6:K:333:MET:HE2 | 1.86 | 0.57 |
| 1:A:3820:MET:HB3 | 1:A:3882:LEU:HD11 | 1.85 | 0.57 |
| 6:K:184:LYS:O | 6:K:187:ILE:CG1 | 2.53 | 0.57 |
| 1:A:935:HIS:NE2 | 1:A:939:MET:HE1 | 2.20 | 0.57 |
| 1:A:1053:PRO:O | 1:A:1058:SER:OG | 2.22 | 0.57 |
| 1:A:2786:LYS:O | 1:A:2789:SER:OG | 2.22 | 0.57 |
| 1:A:3959:MET:HE2 | 1:A:3959:MET:HA | 1.87 | 0.57 |
| 2:B:290:ARG:HD3 | 3:C:309:ASP:HA | 1.86 | 0.57 |
| 4:D:13:TRP:HD1 | 4:D:216:ASP:HB2 | 1.70 | 0.57 |
| 1:A:571:SER:O | 1:A:575:ILE:HG22 | 2.05 | 0.56 |
| 1:A:1787:ARG:HB2 | 1:A:1830:HIS:NE2 | 2.20 | 0.56 |
| 4:M:146:LEU:O | 4:M:149:GLN:HG2 | 2.05 | 0.56 |
| 1:A:76:ILE:HG23 | 1:A:79:ARG:HE | 1.69 | 0.56 |
| 1:A:325:ASN:O | 1:A:329:LYS:NZ | 2.34 | 0.56 |
| 1:A:366:TYR:OH | 1:A:387:GLU:OE1 | 2.23 | 0.56 |
| 1:A:1724:MET:HE2 | 3:C:622:GLN:HB3 | 1.86 | 0.56 |
| 1:A:2172:ALA:HB2 | 1:A:2189:ILE:HD11 | 1.87 | 0.56 |
| 1:A:2300:PHE:O | 1:A:2304:VAL:HG23 | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:86:GLU:HA | 6:K:89:LEU:HD12 | 1.87 | 0.56 |
| 1:A:337:LYS:NZ | 1:A:373:CYS:SG | 2.65 | 0.56 |
| 1:A:1560:TYR:O | 1:A:1564:SER:OG | 2.20 | 0.56 |
| 1:A:3048:LYS:HB3 | 1:A:3061:LEU:HD23 | 1.86 | 0.56 |
| 1:A:3503:VAL:HG11 | 1:A:3532:PRO:HB3 | 1.87 | 0.56 |
| 2:B:452:ILE:HD13 | 3:C:371:GLU:HG2 | 1.87 | 0.56 |
| 5:G:194:LEU:HD21 | 5:H:195:HIS:CD2 | 2.40 | 0.56 |
| 6:K:865:ILE:HG13 | 6:K:890:LYS:H | 1.70 | 0.56 |
| 1:A:342:MET:N | 1:A:342:MET:SD | 2.79 | 0.56 |
| 1:A:1369:MET:N | 1:A:1369:MET:SD | 2.79 | 0.56 |
| 2:B:322:TYR:HE1 | 3:C:274:LYS:HG2 | 1.70 | 0.56 |
| 6:K:61:THR:O | 6:K:226:ARG:NH2 | 2.39 | 0.56 |
| 1:A:1864:ASP:OD1 | 1:A:1864:ASP:N | 2.36 | 0.56 |
| 1:A:2253:TYR:HA | 1:A:2256:ILE:HD11 | 1.87 | 0.56 |
| 6:K:74:GLN:O | 6:K:77:ARG:NH1 | 2.39 | 0.56 |
| 6:K:741:ARG:HG2 | 6:K:742:PHE:HD2 | 1.70 | 0.56 |
| 4:M:131:VAL:O | 4:M:135:LEU:N | 2.37 | 0.56 |
| 1:A:1184:ARG:O | 1:A:1188:ILE:HG12 | 2.06 | 0.56 |
| 3:C:272:VAL:HG22 | 3:C:274:LYS:H | 1.70 | 0.56 |
| 3:C:362:LEU:HD12 | 3:C:421:TYR:HD2 | 1.69 | 0.56 |
| 1:A:1172:LEU:HA | 1:A:1175:HIS:HB3 | 1.88 | 0.56 |
| 1:A:3169:PRO:O | 1:A:3179:TRP:NE1 | 2.36 | 0.56 |
| 1:A:1068:LEU:HD11 | 1:A:1106:ILE:HG12 | 1.88 | 0.56 |
| 1:A:3771:MET:HA | 1:A:3774:ILE:HD12 | 1.88 | 0.56 |
| 2:B:173:ASP:HB2 | 2:B:216:PHE:HB3 | 1.87 | 0.56 |
| 6:K:110:LEU:O | 6:K:113:ARG:NE | 2.39 | 0.56 |
| 6:K:542:THR:HG23 | 6:K:543:GLU:HG2 | 1.87 | 0.56 |
| 1:A:172:GLU:HA | 1:A:174:VAL:HG12 | 1.88 | 0.56 |
| 3:C:605:LYS:HB2 | 3:C:609:PHE:CE2 | 2.41 | 0.56 |
| 4:D:43:GLN:OE1 | 4:D:126:ALA:N | 2.39 | 0.56 |
| 6:K:184:LYS:HA | 6:K:187:ILE:HG12 | 1.87 | 0.56 |
| 1:A:1416:GLU:O | 1:A:1420:ARG:NE | 2.39 | 0.56 |
| 1:A:1496:GLU:OE1 | 1:A:1496:GLU:N | 2.35 | 0.56 |
| 1:A:2737:GLU:OE1 | 1:A:2737:GLU:N | 2.39 | 0.56 |
| 1:A:3137:GLU:OE1 | 1:A:3167:ARG:NH2 | 2.39 | 0.56 |
| 3:C:524:THR:HA | 3:C:527:GLN:NE2 | 2.21 | 0.56 |
| 1:A:1878:ASP:OD1 | 1:A:1879:VAL:N | 2.39 | 0.55 |
| 1:A:3758:LEU:HD13 | 1:A:3801:GLY:HA3 | 1.88 | 0.55 |
| 2:B:261:LEU:HA | 2:B:345:LEU:HB2 | 1.88 | 0.55 |
| 2:B:443:LYS:NZ | 3:C:480:THR:OG1 | 2.38 | 0.55 |
| 6:K:158:ASN:O | 6:K:162:LYS:N | 2.39 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:288:TYR:OH | 6:K:316:HIS:ND1 | 2.35 | 0.55 |
| 1:A:58:VAL:HG21 | 1:A:3098:ARG:HE | 1.70 | 0.55 |
| 1:A:1806:ARG:HA | 1:A:1869:LYS:HE3 | 1.86 | 0.55 |
| 2:B:416:GLN:HB3 | 2:B:433:GLN:HE21 | 1.71 | 0.55 |
| 1:A:541:MET:HG2 | 1:A:545:LEU:HD23 | 1.88 | 0.55 |
| 1:A:1844:VAL:O | 1:A:1848:ILE:HG12 | 2.06 | 0.55 |
| 1:A:2532:PRO:O | 1:A:2538:ARG:CG | 2.45 | 0.55 |
| 1:A:3571:PHE:CE1 | 1:A:3575:LEU:HD21 | 2.41 | 0.55 |
| 2:B:253:LYS:HD3 | 3:C:433:TYR:HB3 | 1.88 | 0.55 |
| 3:C:6:ASN:OD1 | 3:C:126:LYS:NZ | 2.37 | 0.55 |
| 3:C:633:MET:HA | 3:C:636:ILE:HG12 | 1.89 | 0.55 |
| 5:G:194:LEU:HA | 5:G:197:LYS:HG2 | 1.87 | 0.55 |
| 1:A:3107:ILE:O | 1:A:3111:MET:HE2 | 2.07 | 0.55 |
| 1:A:3376:GLY:O | 1:A:3380:ARG:HG2 | 2.06 | 0.55 |
| 3:C:12:LEU:HG | 3:C:135:PHE:HE2 | 1.70 | 0.55 |
| 3:C:54:ILE:HD12 | 3:C:86:PRO:HG3 | 1.89 | 0.55 |
| 3:C:655:PHE:HA | 3:C:658:PHE:HD1 | 1.71 | 0.55 |
| 6:K:249:MET:HG2 | 6:K:442:LYS:HB2 | 1.88 | 0.55 |
| 1:A:724:GLU:HB3 | 1:A:2600:THR:HA | 1.89 | 0.55 |
| 1:A:881:LYS:HD2 | 1:A:3900:LEU:HD12 | 1.87 | 0.55 |
| 1:A:1102:GLU:HG3 | 1:A:1152:ARG:CZ | 2.37 | 0.55 |
| 1:A:3138:ILE:O | 1:A:3142:ILE:HG22 | 2.06 | 0.55 |
| 2:B:437:LEU:HD13 | 3:C:479:THR:HG21 | 1.88 | 0.55 |
| 3:C:228:SER:HA | 3:C:231:LEU:HD12 | 1.89 | 0.55 |
| 4:D:34:TYR:HD2 | 4:D:36:LEU:H | 1.54 | 0.55 |
| 6:K:187:ILE:HG13 | 6:K:188:ARG:H | 1.71 | 0.55 |
| 6:K:437:ILE:HG12 | 6:K:437:ILE:O | 2.04 | 0.55 |
| 1:A:2230:VAL:HG12 | 1:A:2733:MET:HE2 | 1.88 | 0.55 |
| 1:A:3460:GLU:HB2 | 1:A:3464:LYS:HZ3 | 1.71 | 0.55 |
| 2:B:109:ASP:OD1 | 2:B:110:ASN:N | 2.40 | 0.55 |
| 3:C:9:ALA:HB3 | 3:C:130:ARG:HA | 1.87 | 0.55 |
| 5:H:89:SER:HB3 | 5:H:92:SER:HB2 | 1.89 | 0.55 |
| 7:d:23:DT:H2" | 7:d:24:DA:C8 | 2.42 | 0.55 |
| 7:d:43:DT:H2" | 7:d:44:DG:N7 | 2.22 | 0.55 |
| 1:A:164:LYS:HA | 1:A:164:LYS:HE2 | 1.89 | 0.55 |
| 1:A:240:GLU:HG3 | 1:A:242:PRO:HD2 | 1.88 | 0.55 |
| 1:A:1598:ASN:HD21 | 1:A:1651:LYS:HE3 | 1.71 | 0.55 |
| 1:A:1793:THR:O | 1:A:1797:LEU:HG | 2.07 | 0.55 |
| 1:A:3516:HIS:NE2 | 1:A:3520:GLU:OE1 | 2.40 | 0.55 |
| 1:A:3665:MET:SD | 1:A:3665:MET:N | 2.80 | 0.55 |
| 1:A:3737:ARG:HH11 | 1:A:3805:TRP:HE1 | 1.55 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:337:GLY:HA2 | 3:C:399:LYS:HA | 1.89 | 0.55 |
| 3:C:597:ASN:ND2 | 3:C:615:GLN:HE22 | 2.05 | 0.55 |
| 4:D:161:ASP:CG | 4:D:184:PHE:H | 2.13 | 0.55 |
| 1:A:2171:LEU:HD22 | 1:A:2189:ILE:HD13 | 1.89 | 0.55 |
| 1:A:3816:LEU:O | 1:A:3819:THR:OG1 | 2.20 | 0.55 |
| 5:G:59:MET:HG3 | 4:M:64:ARG:HD2 | 1.88 | 0.55 |
| 6:K:188:ARG:HE | 6:K:194:LEU:HA | 1.72 | 0.55 |
| 1:A:2313:LYS:HA | 1:A:2316:TYR:CZ | 2.41 | 0.55 |
| 1:A:3355:LYS:O | 1:A:3355:LYS:HD3 | 2.07 | 0.55 |
| 1:A:3698:GLU:HB2 | 1:A:3718:ARG:HD3 | 1.89 | 0.55 |
| 2:B:458:GLN:O | 2:B:462:MET:HE2 | 2.07 | 0.55 |
| 1:A:888:ARG:O | 1:A:3889:ARG:NH1 | 2.40 | 0.55 |
| 1:A:1610:ASN:OD1 | 1:A:1611:GLN:N | 2.39 | 0.55 |
| 6:K:105:ASP:N | 6:K:105:ASP:OD1 | 2.40 | 0.55 |
| 6:K:278:ARG:HB2 | 6:K:293:ARG:HD2 | 1.89 | 0.55 |
| 1:A:174:VAL:HA | 1:A:177:LEU:HD23 | 1.88 | 0.54 |
| 1:A:486:GLY:O | 1:A:490:ILE:HG12 | 2.06 | 0.54 |
| 1:A:1601:LEU:HD21 | 1:A:1618:LEU:HD22 | 1.88 | 0.54 |
| 1:A:1639:LEU:O | 1:A:1642:LYS:N | 2.39 | 0.54 |
| 1:A:2257:PHE:HA | 1:A:2260:PHE:CE2 | 2.42 | 0.54 |
| 1:A:2560:ASN:ND2 | 1:A:2799:GLN:OE1 | 2.39 | 0.54 |
| 1:A:4102:THR:HA | 1:A:4105:LYS:HG2 | 1.90 | 0.54 |
| 6:K:288:TYR:HH | 6:K:316:HIS:HD1 | 1.52 | 0.54 |
| 1:A:180:LEU:HB3 | 1:A:185:HIS:CE1 | 2.42 | 0.54 |
| 1:A:235:THR:OG1 | 1:A:236:LYS:HG2 | 2.08 | 0.54 |
| 1:A:898:PHE:HB2 | 1:A:902:LYS:HB3 | 1.89 | 0.54 |
| 1:A:1411:TYR:O | 1:A:1414:ILE:HG12 | 2.07 | 0.54 |
| 1:A:3448:GLU:O | 1:A:3485:LYS:NZ | 2.39 | 0.54 |
| 2:B:202:LEU:HG | 2:B:204:HIS:HD2 | 1.73 | 0.54 |
| 2:B:362:LEU:HD11 | 3:C:269:GLN:HA | 1.89 | 0.54 |
| 3:C:26:GLY:HA3 | 3:C:196:GLY:HA3 | 1.88 | 0.54 |
| 3:C:35:LYS:O | 3:C:39:THR:HG23 | 2.06 | 0.54 |
| 4:D:153:LEU:HA | 4:D:156:LEU:HB2 | 1.90 | 0.54 |
| 5:G:185:ASN:HA | 5:G:188:LYS:HD2 | 1.89 | 0.54 |
| 1:A:1497:ARG:O | 6:K:140:LYS:N | 2.40 | 0.54 |
| 1:A:3796:MET:HE2 | 1:A:3796:MET:HA | 1.88 | 0.54 |
| 3:C:186:GLY:HA3 | 3:C:511:HIS:HB2 | 1.89 | 0.54 |
| 5:G:153:ARG:HA | 5:G:156:ASN:HD21 | 1.71 | 0.54 |
| 1:A:216:LYS:HG3 | 1:A:252:VAL:HG12 | 1.89 | 0.54 |
| 1:A:1878:ASP:HB3 | 1:A:1947:CYS:SG | 2.47 | 0.54 |
| 1:A:2873:PRO:HG3 | 1:A:2922:ARG:HG2 | 1.88 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:D:79:LEU:HD23 | 4:D:81:ARG:HE | 1.72 | 0.54 |
| 6:K:338:ASN:OD1 | 6:K:339:THR:N | 2.41 | 0.54 |
| 1:A:2876:VAL:HG21 | 1:A:2892:LEU:HD23 | 1.90 | 0.54 |
| 2:B:147:LEU:HA | 2:B:150:CYS:SG | 2.47 | 0.54 |
| 1:A:3033:GLU:HB2 | 1:A:3034:PRO:HD3 | 1.90 | 0.54 |
| 1:A:3266:SER:HB2 | 1:A:3272:TRP:HB3 | 1.89 | 0.54 |
| 1:A:3625:LEU:HA | 1:A:3630:ARG:HD3 | 1.90 | 0.54 |
| 1:A:3988:LEU:O | 1:A:3992:ARG:HG2 | 2.08 | 0.54 |
| 2:B:317:LYS:HG2 | 3:C:281:ALA:HA | 1.89 | 0.54 |
| 3:C:148:ASP:N | 3:C:148:ASP:OD1 | 2.39 | 0.54 |
| 4:M:157:LEU:CA | 4:M:160:LYS:HE3 | 2.36 | 0.54 |
| 1:A:847:SER:OG | 1:A:850:GLU:OE2 | 2.26 | 0.54 |
| 2:B:321:ILE:HG12 | 2:B:326:GLN:HB3 | 1.90 | 0.54 |
| 1:A:3587:ASP:HA | 1:A:3590:ASN:HD22 | 1.72 | 0.54 |
| 4:D:23:LEU:HD21 | 4:D:103:ALA:HA | 1.90 | 0.54 |
| 4:M:57:ARG:HD3 | 4:M:122:HIS:HD2 | 1.73 | 0.54 |
| 1:A:1836:LEU:HG | 1:A:1840:PHE:CE2 | 2.43 | 0.54 |
| 1:A:3758:LEU:HB2 | 1:A:3795:PRO:HB3 | 1.90 | 0.54 |
| 4:M:146:LEU:O | 4:M:150:VAL:HG23 | 2.08 | 0.54 |
| 1:A:35:ILE:HG13 | 1:A:84:GLU:HG3 | 1.90 | 0.54 |
| 1:A:1871:MET:HE1 | 1:A:1936:ARG:HH22 | 1.73 | 0.54 |
| 1:A:2420:PHE:HA | 1:A:2423:VAL:HG12 | 1.89 | 0.54 |
| 1:A:3414:MET:HA | 1:A:3414:MET:HE3 | 1.89 | 0.54 |
| 2:B:493:LEU:HD21 | 6:K:708:ARG:HH11 | 1.72 | 0.54 |
| 2:B:536:PRO:HG3 | 3:C:258:SER:HB2 | 1.89 | 0.54 |
| 4:D:36:LEU:HD13 | 4:D:76:LEU:HD21 | 1.90 | 0.54 |
| 6:K:20:CYS:HA | 6:K:23:LEU:HD12 | 1.90 | 0.54 |
| 1:A:135:LEU:HB3 | 1:A:139:ARG:HH12 | 1.73 | 0.53 |
| 1:A:635:PRO:O | 1:A:679:LYS:NZ | 2.37 | 0.53 |
| 1:A:726:LEU:O | 1:A:730:LEU:HG | 2.08 | 0.53 |
| 1:A:3159:ARG:O | 1:A:3163:THR:OG1 | 2.25 | 0.53 |
| 4:D:165:GLN:O | 4:D:168:GLN:HB2 | 2.07 | 0.53 |
| 4:M:98:ASP:HB3 | 4:M:105:ILE:HG13 | 1.90 | 0.53 |
| 1:A:1336:THR:O | 1:A:1340:ARG:HG2 | 2.09 | 0.53 |
| 3:C:398:ASP:OD1 | 3:C:401:ALA:N | 2.40 | 0.53 |
| 4:D:150:VAL:HG21 | 4:M:149:GLN:HE21 | 1.73 | 0.53 |
| 6:K:501:HIS:CE1 | 6:K:539:LEU:HD22 | 2.42 | 0.53 |
| 6:K:518:LEU:HD22 | 6:K:557:VAL:HG11 | 1.90 | 0.53 |
| 6:K:706:ASN:O | 6:K:710:LYS:HG2 | 2.09 | 0.53 |
| 1:A:135:LEU:HB3 | 1:A:139:ARG:HH22 | 1.73 | 0.53 |
| 1:A:1423:ILE:HD12 | 1:A:1427:SER:OG | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1759:LEU:HD13 | 1:A:1797:LEU:HD22 | 1.89 | 0.53 |
| 1:A:1844:VAL:HG23 | 1:A:1845:VAL:H | 1.74 | 0.53 |
| 6:K:425:ARG:NH2 | 6:K:581:ILE:O | 2.41 | 0.53 |
| 1:A:1580:LEU:O | 1:A:1584:GLN:HG2 | 2.08 | 0.53 |
| 1:A:3575:LEU:HB2 | 1:A:3800:LEU:HD21 | 1.90 | 0.53 |
| 2:B:507:THR:OG1 | 3:C:394:ARG:NE | 2.35 | 0.53 |
| 3:C:280:ASP:OD1 | 3:C:281:ALA:N | 2.41 | 0.53 |
| 1:A:263:LYS:NZ | 1:A:264:ARG:HH11 | 2.07 | 0.53 |
| 1:A:572:VAL:HG23 | 1:A:626:LEU:HD11 | 1.88 | 0.53 |
| 1:A:3614:TYR:HD2 | 1:A:3640:PHE:HD2 | 1.57 | 0.53 |
| 2:B:174:ASN:N | 2:B:175:PRO:HD2 | 2.23 | 0.53 |
| 3:C:118:ILE:HA | 3:C:121:GLU:HG2 | 1.90 | 0.53 |
| 4:D:79:LEU:HG | 4:D:80:LEU:H | 1.74 | 0.53 |
| 4:D:152:GLU:O | 4:D:156:LEU:N | 2.40 | 0.53 |
| 1:A:2945:SER:OG | 1:A:2946:GLU:OE1 | 2.26 | 0.53 |
| 2:B:114:LYS:O | 2:B:117:LEU:HD11 | 2.09 | 0.53 |
| 2:B:202:LEU:HG | 2:B:204:HIS:CD2 | 2.44 | 0.53 |
| 6:K:15:PRO:HA | 6:K:144:THR:HA | 1.90 | 0.53 |
| 1:A:628:GLU:O | 1:A:632:GLU:HG2 | 2.09 | 0.53 |
| 1:A:722:LYS:HG3 | 1:A:723:ASP:H | 1.74 | 0.53 |
| 1:A:1297:PHE:HZ | 1:A:1337:VAL:CG1 | 2.22 | 0.53 |
| 1:A:2411:LEU:O | 1:A:2415:LEU:HG | 2.09 | 0.53 |
| 1:A:2574:ASN:O | 1:A:2787:HIS:ND1 | 2.32 | 0.53 |
| 1:A:2855:VAL:O | 1:A:2859:GLN:HG3 | 2.08 | 0.53 |
| 1:A:3886:ALA:O | 1:A:3890:MET:HG2 | 2.08 | 0.53 |
| 6:K:246:PHE:O | 6:K:280:GLN:NE2 | 2.42 | 0.53 |
| 6:K:460:ASP:HA | 6:K:560:LYS:HA | 1.91 | 0.53 |
| 1:A:236:LYS:O | 1:A:243:GLN:NE2 | 2.42 | 0.53 |
| 1:A:865:GLN:HA | 1:A:3170:ASP:HB2 | 1.90 | 0.53 |
| 2:B:190:ALA:O | 2:B:194:ARG:HG3 | 2.08 | 0.53 |
| 1:A:782:ARG:NH2 | 1:A:3164:TRP:O | 2.41 | 0.53 |
| 1:A:1096:VAL:O | 1:A:1100:VAL:HG13 | 2.08 | 0.53 |
| 1:A:1863:PHE:CE2 | 3:C:718:VAL:HG13 | 2.43 | 0.53 |
| 2:B:263:LEU:HA | 2:B:347:LEU:HB3 | 1.91 | 0.53 |
| 6:K:656:SER:OG | 6:K:685:PHE:O | 2.24 | 0.53 |
| 1:A:162:LEU:HD11 | 1:A:164:LYS:HB3 | 1.91 | 0.53 |
| 1:A:1158:PRO:HB3 | 1:A:3695:LEU:HD21 | 1.90 | 0.53 |
| 1:A:3572:ILE:HG23 | 1:A:3800:LEU:HD23 | 1.91 | 0.53 |
| 1:A:3617:LEU:HD13 | 1:A:3632:PHE:HE2 | 1.72 | 0.53 |
| 3:C:154:LEU:HD12 | 3:C:155:LYS:HG3 | 1.91 | 0.53 |
| 6:K:75:LEU:HD11 | 6:K:215:HIS:CE1 | 2.44 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:183:GLN:O | 6:K:186:LEU:CG | 2.55 | 0.53 |
| 1:A:767:GLU:OE2 | 1:A:854:ARG:NH1 | 2.42 | 0.52 |
| 1:A:796:LEU:HD11 | 1:A:855:VAL:HG13 | 1.90 | 0.52 |
| 1:A:1339:VAL:HA | 1:A:1342:MET:CE | 2.38 | 0.52 |
| 1:A:2251:ILE:HD11 | 1:A:2285:LEU:HD13 | 1.91 | 0.52 |
| 1:A:2431:ARG:HA | 1:A:2434:VAL:HG22 | 1.91 | 0.52 |
| 1:A:2738:LYS:NZ | 7:d:44:DG:O6 | 2.42 | 0.52 |
| 2:B:479:GLU:OE1 | 2:B:479:GLU:N | 2.41 | 0.52 |
| 6:K:418:LEU:HD13 | 6:K:452:PRO:HA | 1.90 | 0.52 |
| 1:A:436:GLU:HA | 1:A:439:VAL:HG12 | 1.89 | 0.52 |
| 1:A:1759:LEU:O | 1:A:1763:THR:HG23 | 2.10 | 0.52 |
| 1:A:3995:PRO:HA | 1:A:4051:LEU:HD21 | 1.90 | 0.52 |
| 2:B:461:LYS:HB3 | 2:B:525:PHE:CZ | 2.45 | 0.52 |
| 4:D:79:LEU:HD21 | 4:D:115:LEU:H | 1.74 | 0.52 |
| 6:K:23:LEU:HD21 | 6:K:71:ILE:HG22 | 1.91 | 0.52 |
| 6:K:208:HIS:NE2 | 6:K:210:ASP:OD2 | 2.42 | 0.52 |
| 6:K:469:GLY:HA3 | 6:K:480:MET:HG3 | 1.91 | 0.52 |
| 1:A:3718:ARG:O | 1:A:3743:HIS:N | 2.38 | 0.52 |
| 3:C:191:SER:OG | 3:C:232:ARG:NH1 | 2.40 | 0.52 |
| 6:K:77:ARG:NE | 6:K:294:ASN:O | 2.42 | 0.52 |
| 6:K:851:LYS:HG3 | 6:K:852:VAL:H | 1.74 | 0.52 |
| 4:M:188:SER:O | 4:M:192:GLN:N | 2.42 | 0.52 |
| 1:A:1095:LEU:HD12 | 1:A:1099:PHE:HB2 | 1.91 | 0.52 |
| 1:A:1344:PHE:O | 1:A:1348:LEU:HG | 2.09 | 0.52 |
| 1:A:1770:GLN:HA | 1:A:1822:ARG:NH2 | 2.25 | 0.52 |
| 1:A:3571:PHE:O | 1:A:3575:LEU:HG | 2.09 | 0.52 |
| 6:K:423:ASP:HB3 | 6:K:507:GLY:HA3 | 1.90 | 0.52 |
| 1:A:1431:LEU:HD13 | 1:A:1447:ARG:HD3 | 1.92 | 0.52 |
| 1:A:2746:LYS:O | 1:A:2750:GLU:HG2 | 2.10 | 0.52 |
| 1:A:3281:CYS:HB2 | 1:A:3329:LEU:HD22 | 1.91 | 0.52 |
| 1:A:3841:ASP:HB3 | 1:A:3842:TRP:CZ3 | 2.45 | 0.52 |
| 6:K:421:ALA:HA | 6:K:424:LYS:HB2 | 1.91 | 0.52 |
| 1:A:572:VAL:O | 1:A:576:VAL:HG12 | 2.09 | 0.52 |
| 1:A:919:LEU:HA | 1:A:972:LEU:HD21 | 1.91 | 0.52 |
| 1:A:958:MET:HE3 | 1:A:961:LEU:HD12 | 1.91 | 0.52 |
| 1:A:1616:LEU:O | 1:A:1620:THR:N | 2.41 | 0.52 |
| 3:C:312:GLN:OE1 | 3:C:313:GLY:N | 2.40 | 0.52 |
| 6:K:773:GLN:O | 6:K:777:VAL:HG13 | 2.10 | 0.52 |
| 7:d:37:DT:H2' | 7:d:38:DT:C5 | 2.44 | 0.52 |
| 1:A:2267:SER:HA | 1:A:2311:ARG:HH21 | 1.73 | 0.52 |
| 6:K:65:TYR:HB2 | 6:K:222:GLU:HA | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 7:d:21:DA:H2" | 7:d:22:DA:N7 | 2.24 | 0.52 |
| 7:d:35:DT:H2" | 7:d:36:DA:C8 | 2.45 | 0.52 |
| 1:A:730:LEU:O | 1:A:734:LEU:HG | 2.10 | 0.52 |
| 2:B:276:LEU:HD12 | 2:B:277:VAL:HG12 | 1.90 | 0.52 |
| 5:G:28:LEU:HD13 | 5:G:70:LEU:HD13 | 1.91 | 0.52 |
| 6:K:188:ARG:HH21 | 6:K:194:LEU:C | 2.18 | 0.52 |
| 1:A:2595:TRP:O | 1:A:2596:ARG:NH1 | 2.35 | 0.52 |
| 1:A:3753:LYS:HB3 | 1:A:3758:LEU:HD21 | 1.92 | 0.52 |
| 5:H:190:LYS:O | 5:H:194:LEU:HG | 2.10 | 0.52 |
| 6:K:322:ASP:OD1 | 6:K:322:ASP:N | 2.42 | 0.52 |
| 6:K:364:TYR:HB3 | 6:K:400:ILE:HG13 | 1.91 | 0.52 |
| 1:A:234:PHE:O | 6:K:32:ARG:NH1 | 2.34 | 0.52 |
| 1:A:523:THR:OG1 | 1:A:524:TYR:N | 2.43 | 0.52 |
| 2:B:86:VAL:HG22 | 2:B:104:VAL:HA | 1.91 | 0.52 |
| 4:D:156:LEU:O | 4:D:160:LYS:HG2 | 2.09 | 0.52 |
| 1:A:989:MET:HE1 | 1:A:1035:GLU:CG | 2.40 | 0.51 |
| 1:A:1685:ASP:HB3 | 1:A:1688:LEU:HG | 1.92 | 0.51 |
| 1:A:3156:PRO:O | 1:A:3160:LEU:HG | 2.10 | 0.51 |
| 3:C:431:ARG:HH12 | 8:e:26:DT:P | 2.33 | 0.51 |
| 3:C:699:GLU:O | 3:C:703:LYS:HG2 | 2.09 | 0.51 |
| 6:K:288:TYR:CE1 | 6:K:306:PRO:HD3 | 2.45 | 0.51 |
| 6:K:433:GLN:CB | 6:K:446:GLY:HA2 | 2.40 | 0.51 |
| 1:A:167:PRO:HA | 1:A:171:LEU:HD12 | 1.92 | 0.51 |
| 1:A:1178:ARG:O | 1:A:1184:ARG:NH1 | 2.43 | 0.51 |
| 1:A:2362:VAL:O | 1:A:2366:LYS:HG2 | 2.10 | 0.51 |
| 1:A:3010:SER:O | 1:A:3014:CYS:HB2 | 2.10 | 0.51 |
| 1:A:3499:ILE:HA | 1:A:3502:MET:SD | 2.50 | 0.51 |
| 1:A:3911:ILE:HD12 | 1:A:3937:VAL:HG13 | 1.93 | 0.51 |
| 3:C:114:SER:O | 3:C:118:ILE:HG12 | 2.10 | 0.51 |
| 3:C:484:ASN:OD1 | 3:C:486:ARG:HG2 | 2.10 | 0.51 |
| 1:A:3350:GLU:HA | 1:A:3357:ARG:HD3 | 1.92 | 0.51 |
| 3:C:655:PHE:HA | 3:C:658:PHE:CD1 | 2.44 | 0.51 |
| 5:H:161:ARG:O | 5:H:164:LYS:HG3 | 2.10 | 0.51 |
| 6:K:344:GLN:OE1 | 6:K:580:ARG:NH2 | 2.43 | 0.51 |
| 6:K:422:ILE:HG13 | 6:K:578:PHE:HB3 | 1.92 | 0.51 |
| 1:A:61:ARG:HG2 | 1:A:65:LEU:HD12 | 1.92 | 0.51 |
| 1:A:925:GLN:HB2 | 1:A:2800:ARG:HH22 | 1.75 | 0.51 |
| 1:A:3029:LYS:HB2 | 1:A:3074:GLN:HG2 | 1.92 | 0.51 |
| 6:K:856:LEU:H | 6:K:884:ARG:CZ | 2.23 | 0.51 |
| 1:A:263:LYS:HZ2 | 1:A:264:ARG:HH11 | 1.56 | 0.51 |
| 1:A:711:GLY:HA2 | 1:A:714:VAL:HG22 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1220:LEU:HD23 | 1:A:1287:GLN:HG3 | 1.93 | 0.51 |
| 1:A:1437:TYR:CE2 | 1:A:1490:GLY:HA2 | 2.45 | 0.51 |
| 1:A:1736:PHE:HA | 1:A:1739:TYR:HD1 | 1.74 | 0.51 |
| 1:A:1752:LEU:O | 1:A:1788:ARG:NH1 | 2.44 | 0.51 |
| 1:A:3287:ARG:HB3 | 1:A:3289:ARG:NH1 | 2.26 | 0.51 |
| 1:A:3328:ILE:HG13 | 1:A:3388:ALA:HB1 | 1.92 | 0.51 |
| 1:A:3999:THR:HG23 | 1:A:4051:LEU:HD23 | 1.93 | 0.51 |
| 3:C:116:ASP:O | 3:C:120:HIS:ND1 | 2.40 | 0.51 |
| 6:K:566:PRO:HB3 | 6:K:603:ARG:HH21 | 1.76 | 0.51 |
| 1:A:1182:GLU:O | 1:A:1186:LYS:HG2 | 2.11 | 0.51 |
| 1:A:1444:ASP:N | 1:A:1444:ASP:OD1 | 2.44 | 0.51 |
| 1:A:1575:LEU:HD21 | 1:A:1617:LYS:HB3 | 1.92 | 0.51 |
| 1:A:2367:VAL:O | 1:A:2371:PHE:N | 2.43 | 0.51 |
| 1:A:2476:ILE:O | 1:A:2480:ILE:HG12 | 2.11 | 0.51 |
| 1:A:2853:PRO:HD3 | 1:A:3116:SER:HB2 | 1.92 | 0.51 |
| 6:K:73:PRO:HB2 | 6:K:192:LYS:HA | 1.92 | 0.51 |
| 1:A:110:THR:O | 1:A:113:SER:OG | 2.26 | 0.51 |
| 1:A:1672:PHE:CZ | 1:A:1676:ILE:HD11 | 2.45 | 0.51 |
| 1:A:3550:LYS:HB3 | 1:A:3554:PHE:CZ | 2.45 | 0.51 |
| 1:A:3578:LEU:HD12 | 1:A:3736:LYS:HZ3 | 1.75 | 0.51 |
| 1:A:4002:MET:SD | 1:A:4007:LYS:HG3 | 2.50 | 0.51 |
| 3:C:457:LEU:O | 3:C:460:SER:OG | 2.29 | 0.51 |
| 5:H:196:ASN:O | 5:H:200:ASN:N | 2.44 | 0.51 |
| 6:K:228:LEU:HD21 | 6:K:235:LEU:HD22 | 1.93 | 0.51 |
| 8:e:17:DT:H2' | 8:e:18:DA:N3 | 2.25 | 0.51 |
| 1:A:220:LEU:HB3 | 1:A:224:LEU:HD23 | 1.92 | 0.51 |
| 1:A:1471:GLN:HG2 | 1:A:1477:HIS:CE1 | 2.46 | 0.51 |
| 1:A:2987:THR:HG23 | 1:A:2990:GLU:H | 1.76 | 0.51 |
| 1:A:3809:THR:CB | 1:A:3932:MET:HG2 | 2.40 | 0.51 |
| 4:D:159:MET:O | 4:D:163:GLU:N | 2.36 | 0.51 |
| 1:A:3487:ILE:HG22 | 1:A:3516:HIS:CD2 | 2.46 | 0.51 |
| 1:A:3702:PRO:HD3 | 1:A:3719:ILE:HD13 | 1.92 | 0.51 |
| 1:A:4045:CYS:HA | 1:A:4048:LYS:HD3 | 1.92 | 0.51 |
| 1:A:911:LEU:O | 1:A:915:THR:HG22 | 2.11 | 0.51 |
| 1:A:1563:PHE:O | 1:A:1567:ILE:HG13 | 2.10 | 0.51 |
| 1:A:1873:TYR:O | 1:A:1877:LEU:HG | 2.11 | 0.51 |
| 1:A:2311:ARG:NH2 | 1:A:2312:TYR:OH | 2.44 | 0.51 |
| 1:A:2859:GLN:NE2 | 1:A:2888:VAL:HG23 | 2.25 | 0.51 |
| 1:A:3554:PHE:O | 1:A:3557:ARG:HG2 | 2.11 | 0.51 |
| 1:A:3659:PHE:HA | 1:A:3662:ILE:HD12 | 1.91 | 0.51 |
| 3:C:44:ARG:HB3 | 3:C:234:LEU:HD21 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:154:LEU:HD13 | 3:C:215:LEU:HD22 | 1.92 | 0.51 |
| 5:G:138:GLN:O | 5:G:142:GLU:HG2 | 2.11 | 0.51 |
| 6:K:825:VAL:H | 6:K:831:THR:HG21 | 1.76 | 0.51 |
| 1:A:478:CYS:O | 1:A:482:VAL:HG12 | 2.11 | 0.50 |
| 1:A:971:ARG:HA | 1:A:1025:LEU:HD21 | 1.91 | 0.50 |
| 1:A:1378:GLU:O | 1:A:1381:SER:OG | 2.21 | 0.50 |
| 1:A:1825:LEU:HA | 1:A:1828:LEU:HB3 | 1.93 | 0.50 |
| 1:A:1871:MET:HE2 | 1:A:1936:ARG:HH12 | 1.75 | 0.50 |
| 1:A:2129:LEU:HD23 | 1:A:2146:LEU:HD22 | 1.93 | 0.50 |
| 1:A:3820:MET:HG2 | 1:A:3824:GLU:CG | 2.37 | 0.50 |
| 2:B:94:LYS:HB3 | 2:B:104:VAL:HG12 | 1.92 | 0.50 |
| 2:B:291:GLU:OE1 | 2:B:291:GLU:N | 2.44 | 0.50 |
| 3:C:654:ARG:O | 3:C:657:ASN:ND2 | 2.45 | 0.50 |
| 4:M:161:ASP:HA | 4:M:183:PRO:HB3 | 1.93 | 0.50 |
| 1:A:151:GLU:OE1 | 1:A:151:GLU:N | 2.40 | 0.50 |
| 1:A:1205:ASN:O | 1:A:1209:LYS:N | 2.40 | 0.50 |
| 4:D:76:LEU:HD13 | 4:D:116:PRO:HD2 | 1.94 | 0.50 |
| 5:G:155:TRP:O | 5:G:159:GLN:HG2 | 2.11 | 0.50 |
| 6:K:342:PHE:HE2 | 6:K:363:CYS:HB3 | 1.76 | 0.50 |
| 4:M:23:LEU:HB3 | 4:M:38:VAL:HG12 | 1.93 | 0.50 |
| 1:A:96:MET:HE2 | 1:A:96:MET:HA | 1.92 | 0.50 |
| 1:A:1121:LEU:HD12 | 1:A:1122:GLY:H | 1.77 | 0.50 |
| 1:A:1714:LEU:O | 1:A:1717:LEU:HB3 | 2.11 | 0.50 |
| 1:A:2104:MET:CE | 1:A:2124:SER:HB3 | 2.39 | 0.50 |
| 1:A:3287:ARG:O | 1:A:3289:ARG:NH1 | 2.33 | 0.50 |
| 1:A:3814:ASP:N | 1:A:3814:ASP:OD1 | 2.41 | 0.50 |
| 1:A:4121:TRP:HB3 | 1:A:4124:TRP:HB2 | 1.93 | 0.50 |
| 2:B:320:GLN:NE2 | 3:C:275:THR:O | 2.44 | 0.50 |
| 6:K:74:GLN:HA | 6:K:192:LYS:HE3 | 1.93 | 0.50 |
| 1:A:852:ARG:HA | 1:A:855:VAL:HB | 1.93 | 0.50 |
| 1:A:1769:GLU:HB2 | 1:A:1772:HIS:NE2 | 2.26 | 0.50 |
| 2:B:93:ASP:HB3 | 2:B:102:ILE:H | 1.75 | 0.50 |
| 5:G:153:ARG:HA | 5:G:156:ASN:ND2 | 2.27 | 0.50 |
| 6:K:276:GLY:CA | 6:K:332:MET:O | 2.58 | 0.50 |
| 6:K:721:VAL:HG22 | 6:K:743:MET:HG2 | 1.94 | 0.50 |
| 1:A:3514:VAL:O | 1:A:3518:VAL:HG12 | 2.12 | 0.50 |
| 1:A:4120:THR:HG21 | 1:A:4126:PRO:HB3 | 1.94 | 0.50 |
| 2:B:168:LEU:HD11 | 2:B:217:TYR:HE2 | 1.76 | 0.50 |
| 3:C:81:ARG:NE | 3:C:84:MET:SD | 2.84 | 0.50 |
| 6:K:278:ARG:HA | 6:K:331:GLU:HG2 | 1.94 | 0.50 |
| 6:K:654:LYS:HG3 | 6:K:655:ILE:H | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------|--------|--------------------------|-------------------|
| 1:A:1055:ASN:OD1 | 1:A:1058:SER:OG | 2.20 | 0.50 |
| 1:A:1496:GLU:HG2 | 1:A:1498:GLN:HG3 | 1.94 | 0.50 |
| 1:A:1815:THR:HG23 | 1:A:1817:GLN:H | 1.76 | 0.50 |
| 1:A:175:TYR:HD2 | 1:A:224:LEU:HB3 | 1.75 | 0.50 |
| 1:A:267:VAL:HB | 1:A:268:PRO:HD3 | 1.94 | 0.50 |
| 1:A:977:ASP:OD1 | 1:A:978:GLN:N | 2.45 | 0.50 |
| 1:A:3061:LEU:HD11 | 1:A:3089:LEU:HD13 | 1.94 | 0.50 |
| 3:C:460:SER:OG | 3:C:461:MET:SD | 2.69 | 0.50 |
| 6:K:124:ASP:O | 6:K:128:ILE:HG22 | 2.11 | 0.50 |
| 6:K:720:VAL:HG13 | 6:K:744:ILE:HB | 1.93 | 0.50 |
| 6:K:841:LYS:HG3 | 6:K:867:GLU:HG3 | 1.93 | 0.50 |
| 1:A:207:GLN:HB3 | 1:A:217:LEU:HB3 | 1.94 | 0.50 |
| 1:A:665:GLY:O | 1:A:669:LEU:HD23 | 2.12 | 0.50 |
| 1:A:1099:PHE:HA | 1:A:1152:ARG:CZ | 2.42 | 0.50 |
| 1:A:1369:MET:CE | 1:A:1369:MET:H | 2.25 | 0.50 |
| 1:A:1437:TYR:HE2 | 1:A:1490:GLY:HA2 | 1.77 | 0.50 |
| 1:A:2247:ASP:H | 1:A:2249:LEU:HD12 | 1.77 | 0.50 |
| 1:A:2434:VAL:O | 1:A:2438:ILE:HG22 | 2.12 | 0.50 |
| 1:A:2568:MET:N | 1:A:2568:MET:HE2 | 2.27 | 0.50 |
| 1:A:3460:GLU:HB2 | 1:A:3464:LYS:NZ | 2.26 | 0.50 |
| 2:B:91:GLU:H | 2:B:136:GLY:HA3 | 1.77 | 0.50 |
| 3:C:715:THR:HA | 3:C:720:GLU:HG3 | 1.93 | 0.50 |
| 5:H:145:GLN:HA | 5:H:148:ASN:ND2 | 2.26 | 0.50 |
| 5:H:154:ASP:O | 5:H:158:VAL:HG23 | 2.12 | 0.50 |
| 5:H:190:LYS:HG2 | 6:K:765:TYR:OH | 2.11 | 0.50 |
| 1:A:1111:LEU:HD11 | 1:A:1124:ILE:HG23 | 1.94 | 0.49 |
| 1:A:3019:ILE:HG13 | 1:A:3020:ASP:H | 1.78 | 0.49 |
| 1:A:3614:TYR:O | 1:A:3619:ASP:N | 2.45 | 0.49 |
| 2:B:148:TRP:CG | 2:B:189:LYS:HZ3 | 2.30 | 0.49 |
| 5:G:62:GLU:HG3 | 5:G:65:LYS:HD3 | 1.94 | 0.49 |
| 6:K:329:ASP:HB3 | 6:K:368:ASP:HB2 | 1.93 | 0.49 |
| 6:K:814:ARG:H | 6:K:849:GLY:H | 1.57 | 0.49 |
| 1:A:50:VAL:HG13 | 1:A:51:LEU:HD13 | 1.93 | 0.49 |
| 1:A:793:LEU:HD22 | 1:A:869:ASN:HB2 | 1.92 | 0.49 |
| 1:A:1048:GLN:O | 1:A:1051:LYS:HG2 | 2.12 | 0.49 |
| 1:A:1369:MET:O | 1:A:1373:VAL:HG22 | 2.12 | 0.49 |
| 1:A:2552:VAL:HG23 | 1:A:2553:HIS:ND1 | 2.27 | 0.49 |
| 1:A:3045:ILE:HG13 | 1:A:3046:ARG:N | 2.27 | 0.49 |
| 1:A:3741:ARG:HD2 | 1:A:3745:GLU:HA | 1.94 | 0.49 |
| 5:H:94:TYR:HB3 | 5:H:96:PHE:CE2 | 2.47 | 0.49 |
| 6:K:323:ILE:HG13 | 6:K:392:ILE:HA | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:666:VAL:HG23 | 6:K:701:ILE:HB | 1.94 | 0.49 |
| 7:d:32:DA:H2" | 7:d:33:DA:C8 | 2.47 | 0.49 |
| 1:A:111:CYS:SG | 1:A:112:THR:N | 2.84 | 0.49 |
| 1:A:639:ALA:HB1 | 1:A:642:PHE:HB3 | 1.94 | 0.49 |
| 1:A:1232:PRO:HA | 1:A:1235:ILE:HB | 1.94 | 0.49 |
| 1:A:1256:TRP:O | 1:A:1260:LEU:HG | 2.11 | 0.49 |
| 1:A:1493:PRO:HG3 | 1:A:1500:LEU:HA | 1.94 | 0.49 |
| 1:A:1838:GLU:O | 1:A:1841:SER:OG | 2.30 | 0.49 |
| 2:B:534:TYR:OH | 3:C:260:ARG:NE | 2.39 | 0.49 |
| 5:H:135:ALA:O | 5:H:138:GLN:NE2 | 2.42 | 0.49 |
| 6:K:28:LYS:O | 6:K:30:LYS:NZ | 2.39 | 0.49 |
| 6:K:395:PRO:HB3 | 6:K:401:GLU:HG3 | 1.94 | 0.49 |
| 6:K:800:GLU:O | 6:K:804:SER:N | 2.46 | 0.49 |
| 1:A:926:THR:OG1 | 1:A:2800:ARG:NH2 | 2.46 | 0.49 |
| 1:A:1102:GLU:HG3 | 1:A:1152:ARG:NH2 | 2.28 | 0.49 |
| 1:A:1338:VAL:HA | 1:A:1341:ILE:HD13 | 1.94 | 0.49 |
| 1:A:1844:VAL:HG23 | 1:A:1845:VAL:N | 2.27 | 0.49 |
| 1:A:3147:LYS:HD2 | 1:A:3147:LYS:N | 2.27 | 0.49 |
| 2:B:33:SER:O | 2:B:162:SER:OG | 2.29 | 0.49 |
| 2:B:330:GLU:OE2 | 2:B:331:LYS:N | 2.44 | 0.49 |
| 2:B:422:ASP:O | 2:B:424:LYS:NZ | 2.45 | 0.49 |
| 6:K:658:ILE:HD13 | 6:K:735:PHE:HA | 1.95 | 0.49 |
| 1:A:243:GLN:HA | 1:A:246:ARG:NH2 | 2.27 | 0.49 |
| 1:A:1265:GLU:OE1 | 1:A:1340:ARG:NH2 | 2.45 | 0.49 |
| 1:A:1323:SER:N | 1:A:1328:GLU:OE2 | 2.45 | 0.49 |
| 1:A:2260:PHE:HA | 1:A:2270:ASN:HB2 | 1.94 | 0.49 |
| 1:A:3463:LEU:O | 1:A:3466:PRO:HD2 | 2.13 | 0.49 |
| 3:C:11:VAL:HG23 | 3:C:55:ALA:HB3 | 1.94 | 0.49 |
| 3:C:111:LEU:HD22 | 3:C:134:ILE:HD13 | 1.94 | 0.49 |
| 3:C:111:LEU:HD22 | 3:C:134:ILE:HB | 1.94 | 0.49 |
| 3:C:270:GLU:H | 3:C:270:GLU:CD | 2.20 | 0.49 |
| 3:C:408:ALA:HA | 3:C:420:VAL:O | 2.12 | 0.49 |
| 3:C:610:GLU:O | 3:C:613:SER:OG | 2.22 | 0.49 |
| 1:A:111:CYS:HB2 | 1:A:130:LEU:HG | 1.94 | 0.49 |
| 1:A:247:GLU:CD | 1:A:251:PHE:CE1 | 2.91 | 0.49 |
| 1:A:782:ARG:HG2 | 1:A:3164:TRP:CZ2 | 2.47 | 0.49 |
| 1:A:1150:LYS:NZ | 1:A:1151:ARG:O | 2.44 | 0.49 |
| 1:A:1436:LEU:HD23 | 1:A:1436:LEU:H | 1.77 | 0.49 |
| 1:A:2537:ASP:O | 1:A:2541:ALA:CB | 2.61 | 0.49 |
| 1:A:3227:ILE:HA | 1:A:3230:LEU:HD12 | 1.94 | 0.49 |
| 1:A:3462:ARG:HG2 | 1:A:3498:TRP:CZ3 | 2.48 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:4040:PRO:O | 1:A:4044:ILE:HG12 | 2.12 | 0.49 |
| 2:B:345:LEU:C | 2:B:346:MET:HE2 | 2.37 | 0.49 |
| 2:B:521:LEU:HB3 | 2:B:525:PHE:HE2 | 1.76 | 0.49 |
| 3:C:649:PHE:HB3 | 3:C:651:GLU:HG2 | 1.95 | 0.49 |
| 1:A:389:ILE:HG22 | 1:A:393:LYS:HZ1 | 1.78 | 0.49 |
| 1:A:718:MET:HB2 | 1:A:729:CYS:SG | 2.53 | 0.49 |
| 1:A:1082:PHE:HA | 1:A:1085:ILE:HG12 | 1.94 | 0.49 |
| 1:A:2151:ILE:HG23 | 1:A:2192:THR:CG2 | 2.43 | 0.49 |
| 1:A:2337:LEU:HD23 | 1:A:2338:GLU:HG2 | 1.94 | 0.49 |
| 1:A:3622:ALA:H | 1:A:3630:ARG:HH22 | 1.60 | 0.49 |
| 1:A:3624:GLY:O | 1:A:3630:ARG:NH1 | 2.46 | 0.49 |
| 1:A:3632:PHE:HZ | 1:A:3667:LEU:HD21 | 1.77 | 0.49 |
| 2:B:202:LEU:HD22 | 2:B:217:TYR:CD2 | 2.48 | 0.49 |
| 2:B:330:GLU:O | 2:B:334:THR:HG23 | 2.13 | 0.49 |
| 5:H:139:ALA:O | 5:H:143:HIS:ND1 | 2.45 | 0.49 |
| 1:A:238:MET:HG2 | 1:A:283:SER:O | 2.13 | 0.49 |
| 1:A:446:PHE:CE2 | 1:A:530:LEU:HB2 | 2.47 | 0.49 |
| 1:A:967:PRO:O | 1:A:971:ARG:NE | 2.45 | 0.49 |
| 1:A:1305:ASP:OD1 | 1:A:1305:ASP:N | 2.46 | 0.49 |
| 1:A:2493:ASN:O | 1:A:2496:GLN:HG2 | 2.11 | 0.49 |
| 2:B:219:ASP:OD1 | 2:B:219:ASP:N | 2.45 | 0.49 |
| 6:K:489:GLU:HG2 | 6:K:490:LYS:H | 1.77 | 0.49 |
| 1:A:392:CYS:O | 1:A:395:MET:HG3 | 2.13 | 0.49 |
| 1:A:1588:ASP:OD1 | 1:A:1589:ASN:N | 2.46 | 0.49 |
| 2:B:338:LYS:NZ | 8:e:29:DG:OP1 | 2.46 | 0.49 |
| 5:G:177:TYR:HE1 | 5:H:176:LEU:HD11 | 1.76 | 0.49 |
| 6:K:278:ARG:HG2 | 6:K:331:GLU:CD | 2.38 | 0.49 |
| 6:K:323:ILE:HG21 | 6:K:392:ILE:HG23 | 1.95 | 0.49 |
| 6:K:559:ILE:HG12 | 6:K:581:ILE:HA | 1.94 | 0.49 |
| 6:K:585:ARG:HD2 | 6:K:588:LYS:HD3 | 1.95 | 0.49 |
| 6:K:798:ASP:HA | 6:K:801:TYR:CD2 | 2.47 | 0.49 |
| 1:A:801:LYS:HE3 | 1:A:920:THR:O | 2.12 | 0.49 |
| 1:A:1045:THR:OG1 | 1:A:1048:GLN:HG2 | 2.13 | 0.49 |
| 1:A:2732:PHE:HA | 1:A:2734:ARG:NH2 | 2.27 | 0.49 |
| 1:A:4011:PHE:HB3 | 1:A:4038:TRP:CE2 | 2.48 | 0.49 |
| 2:B:63:SER:O | 2:B:67:ILE:HG12 | 2.13 | 0.49 |
| 3:C:623:PHE:HD2 | 3:C:631:TYR:HE1 | 1.61 | 0.49 |
| 5:G:134:ILE:HB | 5:H:134:ILE:HG12 | 1.95 | 0.49 |
| 6:K:246:PHE:C | 6:K:280:GLN:HE22 | 2.21 | 0.49 |
| 4:M:131:VAL:HG13 | 4:M:135:LEU:HB2 | 1.95 | 0.49 |
| 1:A:583:LEU:HA | 1:A:614:PRO:HA | 1.95 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1095:LEU:O | 1:A:1099:PHE:N | 2.41 | 0.48 |
| 1:A:1685:ASP:OD1 | 1:A:1686:LEU:N | 2.46 | 0.48 |
| 1:A:2439:ILE:O | 1:A:2443:MET:HG3 | 2.12 | 0.48 |
| 1:A:3619:ASP:N | 1:A:3619:ASP:OD1 | 2.46 | 0.48 |
| 1:A:3733:ARG:HB3 | 1:A:3753:LYS:HE2 | 1.94 | 0.48 |
| 2:B:94:LYS:HB2 | 2:B:103:TYR:CD1 | 2.48 | 0.48 |
| 2:B:117:LEU:CD1 | 2:B:118:GLU:N | 2.59 | 0.48 |
| 3:C:66:ASN:HB3 | 3:C:75:GLN:HE22 | 1.78 | 0.48 |
| 6:K:65:TYR:CE2 | 6:K:69:ARG:HD2 | 2.48 | 0.48 |
| 1:A:89:LEU:HB3 | 1:A:133:LYS:HE3 | 1.94 | 0.48 |
| 1:A:540:MET:O | 1:A:544:ILE:HG12 | 2.14 | 0.48 |
| 1:A:2252:PRO:C | 1:A:2254:ARG:H | 2.21 | 0.48 |
| 1:A:2306:ASN:HA | 1:A:2309:PHE:CD2 | 2.48 | 0.48 |
| 1:A:3855:TYR:HB3 | 1:A:3859:TYR:CE2 | 2.48 | 0.48 |
| 2:B:146:VAL:HA | 2:B:149:VAL:HG12 | 1.96 | 0.48 |
| 4:D:155:THR:O | 4:D:159:MET:HE3 | 2.13 | 0.48 |
| 6:K:157:SER:O | 6:K:160:SER:OG | 2.23 | 0.48 |
| 6:K:355:VAL:HG23 | 6:K:360:LEU:HB2 | 1.96 | 0.48 |
| 1:A:913:ARG:CZ | 1:A:2803:ILE:HG21 | 2.43 | 0.48 |
| 1:A:1347:THR:O | 1:A:1351:THR:HG23 | 2.13 | 0.48 |
| 1:A:1651:LYS:NZ | 1:A:2045:PHE:O | 2.46 | 0.48 |
| 1:A:2205:VAL:HG22 | 1:A:2207:LYS:H | 1.78 | 0.48 |
| 1:A:3158:LYS:HG3 | 1:A:3159:ARG:N | 2.28 | 0.48 |
| 3:C:457:LEU:O | 3:C:461:MET:SD | 2.71 | 0.48 |
| 5:G:188:LYS:NZ | 6:K:767:ILE:O | 2.41 | 0.48 |
| 6:K:54:HIS:HA | 6:K:57:HIS:HB2 | 1.94 | 0.48 |
| 6:K:746:MET:N | 6:K:746:MET:SD | 2.86 | 0.48 |
| 1:A:538:ASP:OD1 | 1:A:538:ASP:N | 2.46 | 0.48 |
| 1:A:1101:PHE:HB2 | 1:A:1152:ARG:HH12 | 1.78 | 0.48 |
| 2:B:333:GLU:HA | 2:B:336:GLU:OE2 | 2.13 | 0.48 |
| 3:C:352:GLN:OE1 | 3:C:352:GLN:N | 2.46 | 0.48 |
| 6:K:814:ARG:HB3 | 6:K:849:GLY:H | 1.78 | 0.48 |
| 1:A:97:GLY:O | 1:A:100:ILE:HG12 | 2.12 | 0.48 |
| 1:A:2298:GLU:HA | 1:A:2301:GLN:HB3 | 1.94 | 0.48 |
| 1:A:3259:LEU:O | 1:A:3276:TRP:NE1 | 2.45 | 0.48 |
| 2:B:330:GLU:H | 2:B:333:GLU:HG2 | 1.79 | 0.48 |
| 5:G:178:LYS:HD2 | 5:G:181:ILE:HD12 | 1.95 | 0.48 |
| 8:e:19:DA:H5" | 8:e:19:DA:H8 | 1.79 | 0.48 |
| 1:A:669:LEU:HA | 1:A:672:ILE:HD12 | 1.96 | 0.48 |
| 1:A:1613:HIS:HA | 1:A:1616:LEU:HD23 | 1.95 | 0.48 |
| 1:A:3416:LEU:HD23 | 1:A:3449:LYS:HG3 | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3554:PHE:O | 1:A:3558:ILE:HG12 | 2.13 | 0.48 |
| 3:C:262:ALA:N | 3:C:365:PHE:O | 2.29 | 0.48 |
| 1:A:166:ILE:N | 1:A:167:PRO:HD2 | 2.28 | 0.48 |
| 1:A:1386:ILE:HG13 | 1:A:1387:GLY:H | 1.78 | 0.48 |
| 1:A:2126:MET:HB3 | 1:A:2164:TRP:CZ2 | 2.48 | 0.48 |
| 1:A:2151:ILE:HG23 | 1:A:2192:THR:HG21 | 1.94 | 0.48 |
| 1:A:2517:LEU:HA | 1:A:2520:ILE:HG22 | 1.95 | 0.48 |
| 1:A:3392:ALA:HB1 | 1:A:3409:VAL:HG23 | 1.96 | 0.48 |
| 1:A:3509:ASP:OD1 | 1:A:3509:ASP:N | 2.37 | 0.48 |
| 2:B:266:ASP:OD2 | 3:C:534:LYS:NZ | 2.42 | 0.48 |
| 2:B:444:ARG:HH11 | 3:C:244:SER:HB2 | 1.79 | 0.48 |
| 3:C:678:VAL:O | 3:C:682:GLY:N | 2.46 | 0.48 |
| 5:H:145:GLN:HA | 5:H:148:ASN:HD21 | 1.78 | 0.48 |
| 6:K:170:SER:O | 6:K:174:LEU:HG | 2.13 | 0.48 |
| 8:e:16:DA:H2" | 8:e:17:DT:H71 | 1.95 | 0.48 |
| 1:A:243:GLN:HA | 1:A:246:ARG:HH21 | 1.78 | 0.48 |
| 1:A:1422:LYS:O | 1:A:1426:GLN:NE2 | 2.44 | 0.48 |
| 5:G:3:ARG:HH11 | 5:G:129:TYR:HD2 | 1.62 | 0.48 |
| 6:K:343:MET:SD | 6:K:360:LEU:HD21 | 2.54 | 0.48 |
| 6:K:431:VAL:HG23 | 6:K:448:LEU:HB2 | 1.96 | 0.48 |
| 1:A:221:ALA:O | 1:A:225:LYS:HG2 | 2.14 | 0.48 |
| 1:A:1121:LEU:HG | 1:A:1123:THR:HG23 | 1.96 | 0.48 |
| 1:A:1689:LYS:O | 1:A:1693:VAL:HG13 | 2.14 | 0.48 |
| 1:A:1840:PHE:HA | 1:A:1843:ILE:HG12 | 1.95 | 0.48 |
| 1:A:2150:VAL:HB | 1:A:2157:PHE:CZ | 2.49 | 0.48 |
| 1:A:2216:LEU:HD13 | 1:A:2241:LEU:HD22 | 1.96 | 0.48 |
| 1:A:2391:GLY:O | 1:A:2431:ARG:NH2 | 2.45 | 0.48 |
| 1:A:2837:LEU:O | 1:A:2841:ASN:ND2 | 2.47 | 0.48 |
| 1:A:2894:GLU:O | 1:A:2898:LEU:HG | 2.14 | 0.48 |
| 1:A:3239:LYS:O | 1:A:3243:ILE:HG12 | 2.14 | 0.48 |
| 1:A:3499:ILE:HD12 | 1:A:3532:PRO:HG2 | 1.96 | 0.48 |
| 2:B:262:LYS:HB3 | 2:B:268:VAL:HG12 | 1.96 | 0.48 |
| 3:C:450:GLN:O | 3:C:454:VAL:HG23 | 2.13 | 0.48 |
| 6:K:124:ASP:OD1 | 6:K:126:ALA:N | 2.47 | 0.48 |
| 6:K:813:PHE:HA | 6:K:850:ALA:HB3 | 1.96 | 0.48 |
| 4:M:159:MET:HE2 | 4:M:159:MET:C | 2.38 | 0.48 |
| 1:A:297:LEU:HB3 | 1:A:316:LEU:HG | 1.96 | 0.48 |
| 1:A:3687:MET:HE1 | 1:A:3690:PHE:O | 2.14 | 0.48 |
| 1:A:3913:ILE:HB | 1:A:3984:MET:HG2 | 1.96 | 0.48 |
| 3:C:244:SER:OG | 3:C:245:ILE:N | 2.47 | 0.48 |
| 6:K:210:ASP:HB3 | 6:K:235:LEU:HB3 | 1.95 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:567:SER:OG | 6:K:575:THR:HG23 | 2.13 | 0.48 |
| 7:d:25:DA:H2" | 7:d:26:DA:H8 | 1.79 | 0.48 |
| 1:A:243:GLN:CD | 1:A:246:ARG:HH21 | 2.22 | 0.47 |
| 1:A:476:ARG:O | 1:A:480:SER:OG | 2.26 | 0.47 |
| 1:A:1106:ILE:HA | 1:A:1109:GLU:OE1 | 2.14 | 0.47 |
| 2:B:62:MET:O | 2:B:65:GLN:HG3 | 2.13 | 0.47 |
| 3:C:492:GLN:NE2 | 3:C:509:GLN:OE1 | 2.47 | 0.47 |
| 5:G:96:PHE:HA | 5:G:111:PHE:HB2 | 1.96 | 0.47 |
| 6:K:264:LYS:O | 6:K:265:HIS:CB | 2.62 | 0.47 |
| 6:K:332:MET:N | 6:K:332:MET:SD | 2.86 | 0.47 |
| 4:M:132:SER:HA | 4:M:136:ILE:HB | 1.95 | 0.47 |
| 1:A:2281:MET:HE2 | 1:A:2329:TYR:HD2 | 1.79 | 0.47 |
| 1:A:2575:PRO:HD3 | 1:A:2786:LYS:HZ3 | 1.79 | 0.47 |
| 1:A:3601:VAL:HG23 | 1:A:3604:LYS:HB3 | 1.96 | 0.47 |
| 2:B:171:ASN:O | 2:B:207:LYS:HD2 | 2.14 | 0.47 |
| 2:B:446:MET:SD | 2:B:446:MET:N | 2.86 | 0.47 |
| 3:C:613:SER:O | 3:C:617:ILE:HG12 | 2.14 | 0.47 |
| 4:D:16:LEU:HB3 | 4:D:23:LEU:HB2 | 1.95 | 0.47 |
| 4:D:145:ALA:HB1 | 4:M:197:LYS:HG3 | 1.96 | 0.47 |
| 6:K:123:GLY:HA2 | 6:K:127:MET:HE2 | 1.96 | 0.47 |
| 1:A:1115:HIS:ND1 | 1:A:1180:GLN:HA | 2.30 | 0.47 |
| 1:A:2578:GLU:O | 1:A:2784:GLN:NE2 | 2.32 | 0.47 |
| 1:A:2830:ASN:HA | 1:A:2833:THR:HB | 1.96 | 0.47 |
| 1:A:3384:HIS:O | 1:A:3387:GLU:HG2 | 2.14 | 0.47 |
| 2:B:372:GLU:OE2 | 2:B:379:SER:OG | 2.31 | 0.47 |
| 4:D:24:LEU:HB2 | 4:D:37:LEU:HB2 | 1.96 | 0.47 |
| 1:A:394:GLN:HE21 | 1:A:1740:VAL:HG21 | 1.80 | 0.47 |
| 1:A:489:ARG:O | 1:A:492:SER:OG | 2.31 | 0.47 |
| 1:A:864:GLY:HA2 | 1:A:867:ASN:HB2 | 1.95 | 0.47 |
| 1:A:1819:PHE:O | 1:A:1823:SER:OG | 2.26 | 0.47 |
| 1:A:3462:ARG:NH1 | 1:A:3707:GLY:O | 2.47 | 0.47 |
| 1:A:3500:SER:O | 1:A:3503:VAL:HG12 | 2.14 | 0.47 |
| 1:A:3868:VAL:O | 1:A:3872:ARG:HG2 | 2.14 | 0.47 |
| 2:B:465:ILE:HD11 | 2:B:525:PHE:CE2 | 2.49 | 0.47 |
| 3:C:92:GLU:O | 3:C:96:SER:OG | 2.26 | 0.47 |
| 3:C:151:ILE:HD11 | 3:C:210:MET:HE1 | 1.95 | 0.47 |
| 1:A:247:GLU:CD | 1:A:251:PHE:HE1 | 2.22 | 0.47 |
| 1:A:1249:SER:N | 1:A:1313:PHE:O | 2.48 | 0.47 |
| 1:A:1281:VAL:HG13 | 1:A:1282:LEU:HG | 1.96 | 0.47 |
| 1:A:2826:LEU:HA | 1:A:2829:LYS:HE2 | 1.97 | 0.47 |
| 1:A:3061:LEU:O | 1:A:3065:ILE:HG12 | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3291:GLN:O | 1:A:3293:CYS:N | 2.48 | 0.47 |
| 1:A:3689:ASP:N | 1:A:3689:ASP:OD1 | 2.46 | 0.47 |
| 2:B:485:GLN:OE1 | 2:B:489:ASN:ND2 | 2.47 | 0.47 |
| 3:C:593:ASN:HB2 | 3:C:594:PRO:HD3 | 1.97 | 0.47 |
| 4:D:182:GLU:HB3 | 4:D:183:PRO:HD2 | 1.97 | 0.47 |
| 6:K:11:ALA:HB1 | 6:K:145:ILE:HB | 1.96 | 0.47 |
| 1:A:639:ALA:HB2 | 1:A:676:ASN:HB3 | 1.95 | 0.47 |
| 1:A:2507:ILE:HG21 | 1:A:2547:SER:HB3 | 1.97 | 0.47 |
| 1:A:3628:PHE:HA | 1:A:3631:LYS:HE3 | 1.96 | 0.47 |
| 2:B:41:LEU:O | 2:B:169:PHE:N | 2.39 | 0.47 |
| 3:C:287:GLU:OE1 | 3:C:287:GLU:N | 2.47 | 0.47 |
| 6:K:259:ILE:HD11 | 6:K:431:VAL:HG21 | 1.96 | 0.47 |
| 6:K:725:TRP:HB2 | 6:K:742:PHE:CD1 | 2.49 | 0.47 |
| 1:A:144:MET:N | 1:A:144:MET:SD | 2.87 | 0.47 |
| 1:A:1029:CYS:SG | 1:A:1030:GLY:N | 2.87 | 0.47 |
| 1:A:1101:PHE:N | 1:A:1152:ARG:HH22 | 2.12 | 0.47 |
| 1:A:1339:VAL:HA | 1:A:1342:MET:HE1 | 1.97 | 0.47 |
| 1:A:1917:LYS:NZ | 1:A:1921:ASP:OD2 | 2.48 | 0.47 |
| 1:A:3139:GLN:O | 1:A:3143:SER:OG | 2.24 | 0.47 |
| 1:A:3291:GLN:NE2 | 1:A:3294:SER:HB2 | 2.29 | 0.47 |
| 2:B:474:ARG:HH11 | 2:B:475:SER:H | 1.63 | 0.47 |
| 3:C:532:LYS:HZ3 | 3:C:533:ILE:HG12 | 1.79 | 0.47 |
| 5:H:118:ASN:HB2 | 5:H:121:GLU:HG2 | 1.96 | 0.47 |
| 6:K:376:LYS:HZ1 | 6:K:378:GLY:HA3 | 1.80 | 0.47 |
| 6:K:585:ARG:HH11 | 6:K:588:LYS:HD3 | 1.79 | 0.47 |
| 4:M:194:MET:N | 4:M:194:MET:SD | 2.88 | 0.47 |
| 8:e:22:DG:C8 | 8:e:23:DT:H73 | 2.50 | 0.47 |
| 1:A:780:ILE:HB | 1:A:785:MET:SD | 2.54 | 0.47 |
| 1:A:1035:GLU:HA | 1:A:1038:LYS:HG2 | 1.97 | 0.47 |
| 1:A:2254:ARG:NH2 | 1:A:2293:GLY:O | 2.45 | 0.47 |
| 1:A:3142:ILE:O | 1:A:3147:LYS:NZ | 2.44 | 0.47 |
| 1:A:3573:ASN:O | 1:A:3577:GLN:HG2 | 2.15 | 0.47 |
| 1:A:3961:PHE:HE2 | 1:A:4107:LEU:HD21 | 1.80 | 0.47 |
| 2:B:290:ARG:HG3 | 3:C:309:ASP:O | 2.15 | 0.47 |
| 2:B:329:LEU:HD13 | 3:C:276:TRP:HH2 | 1.80 | 0.47 |
| 3:C:253:ILE:HB | 3:C:257:LEU:HB2 | 1.97 | 0.47 |
| 1:A:1709:GLU:CD | 1:A:1709:GLU:H | 2.23 | 0.47 |
| 1:A:2101:VAL:HG12 | 1:A:2156:VAL:HG21 | 1.96 | 0.47 |
| 2:B:114:LYS:O | 2:B:117:LEU:HD12 | 2.13 | 0.47 |
| 2:B:172:GLU:HG2 | 2:B:207:LYS:HE2 | 1.97 | 0.47 |
| 4:D:166:ASP:HB2 | 4:M:176:ARG:NE | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:68:MET:N | 6:K:68:MET:SD | 2.88 | 0.47 |
| 6:K:78:GLU:OE1 | 6:K:78:GLU:N | 2.48 | 0.47 |
| 6:K:214:LEU:HD23 | 6:K:224:VAL:HG13 | 1.97 | 0.47 |
| 6:K:879:ARG:HD2 | 6:K:886:PHE:H | 1.79 | 0.47 |
| 1:A:767:GLU:OE2 | 1:A:771:ASN:ND2 | 2.48 | 0.47 |
| 1:A:834:LEU:HD12 | 1:A:837:THR:HG23 | 1.96 | 0.47 |
| 1:A:1449:ALA:HA | 1:A:1452:VAL:HG12 | 1.97 | 0.47 |
| 1:A:1570:GLU:OE1 | 1:A:1571:LEU:HD22 | 2.14 | 0.47 |
| 1:A:1750:LEU:HA | 1:A:1758:LEU:HD23 | 1.97 | 0.47 |
| 1:A:2254:ARG:HG2 | 1:A:2294:ILE:HD11 | 1.97 | 0.47 |
| 1:A:2291:GLN:HG2 | 1:A:2292:CYS:H | 1.80 | 0.47 |
| 1:A:3050:LYS:O | 1:A:3054:GLN:HG2 | 2.15 | 0.47 |
| 1:A:3565:GLY:HA2 | 1:A:3568:ILE:HD12 | 1.97 | 0.47 |
| 1:A:3771:MET:O | 1:A:3775:LEU:HG | 2.15 | 0.47 |
| 1:A:3969:ASN:HD22 | 1:A:3972:LEU:HD21 | 1.80 | 0.47 |
| 2:B:61:ASP:OD1 | 2:B:124:GLY:N | 2.47 | 0.47 |
| 2:B:304:ASN:HB2 | 2:B:311:LEU:HD21 | 1.96 | 0.47 |
| 3:C:448:GLU:HA | 3:C:451:LEU:HD12 | 1.96 | 0.47 |
| 6:K:112:TYR:CZ | 6:K:124:ASP:HA | 2.50 | 0.47 |
| 6:K:496:LYS:HD3 | 6:K:497:PRO:HD3 | 1.97 | 0.47 |
| 1:A:250:ASN:C | 1:A:252:VAL:H | 2.23 | 0.46 |
| 1:A:421:LEU:HB3 | 1:A:467:ALA:HB1 | 1.97 | 0.46 |
| 1:A:1366:THR:O | 1:A:1369:MET:HE1 | 2.15 | 0.46 |
| 1:A:3477:GLU:HG2 | 1:A:3478:GLU:H | 1.80 | 0.46 |
| 1:A:3585:PHE:CD1 | 1:A:3667:LEU:HD23 | 2.51 | 0.46 |
| 1:A:4100:GLU:OE1 | 1:A:4100:GLU:N | 2.46 | 0.46 |
| 2:B:75:ILE:HG21 | 3:C:316:TYR:CZ | 2.50 | 0.46 |
| 2:B:172:GLU:HB3 | 2:B:175:PRO:HG3 | 1.96 | 0.46 |
| 2:B:288:LEU:HA | 2:B:296:VAL:HG23 | 1.97 | 0.46 |
| 3:C:643:ARG:HE | 3:C:685:LEU:HB3 | 1.79 | 0.46 |
| 6:K:242:LEU:HD12 | 6:K:282:HIS:HB3 | 1.98 | 0.46 |
| 1:A:303:HIS:ND1 | 1:A:304:THR:O | 2.48 | 0.46 |
| 1:A:785:MET:HA | 1:A:788:TYR:CZ | 2.50 | 0.46 |
| 1:A:1733:THR:HG22 | 1:A:1736:PHE:HB3 | 1.97 | 0.46 |
| 1:A:2267:SER:O | 1:A:2312:TYR:CE2 | 2.68 | 0.46 |
| 1:A:2790:LEU:C | 1:A:2793:PRO:HD2 | 2.41 | 0.46 |
| 1:A:3363:SER:O | 1:A:3380:ARG:NH1 | 2.48 | 0.46 |
| 2:B:250:GLU:O | 2:B:250:GLU:HG2 | 2.15 | 0.46 |
| 3:C:283:THR:HG23 | 3:C:285:LYS:H | 1.80 | 0.46 |
| 1:A:249:PHE:O | 1:A:252:VAL:HG23 | 2.15 | 0.46 |
| 1:A:565:TYR:CD2 | 1:A:641:PHE:HB3 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:919:LEU:HD13 | 1:A:971:ARG:HG3 | 1.97 | 0.46 |
| 1:A:1343:GLU:O | 1:A:1346:THR:OG1 | 2.31 | 0.46 |
| 1:A:1946:ASN:O | 1:A:1949:ILE:HB | 2.14 | 0.46 |
| 1:A:2264:ASP:HA | 1:A:2309:PHE:CZ | 2.50 | 0.46 |
| 1:A:3608:LYS:HE3 | 1:A:3612:ARG:HD3 | 1.97 | 0.46 |
| 2:B:269:ILE:HA | 2:B:375:VAL:HG11 | 1.97 | 0.46 |
| 4:D:149:GLN:HG3 | 4:D:150:VAL:N | 2.30 | 0.46 |
| 4:D:163:GLU:HA | 4:D:166:ASP:OD2 | 2.15 | 0.46 |
| 6:K:182:GLU:O | 6:K:186:LEU:HG | 2.15 | 0.46 |
| 7:d:22:DA:H5" | 7:d:22:DA:H8 | 1.81 | 0.46 |
| 1:A:723:ASP:C | 1:A:725:LEU:H | 2.23 | 0.46 |
| 1:A:1205:ASN:HB2 | 1:A:1208:LEU:HB3 | 1.97 | 0.46 |
| 1:A:2251:ILE:HD12 | 1:A:2251:ILE:H | 1.80 | 0.46 |
| 1:A:2575:PRO:HD3 | 1:A:2786:LYS:NZ | 2.30 | 0.46 |
| 3:C:40:MET:HA | 3:C:43:GLN:CG | 2.44 | 0.46 |
| 3:C:522:VAL:O | 3:C:526:SER:OG | 2.32 | 0.46 |
| 6:K:376:LYS:HD3 | 6:K:379:HIS:CE1 | 2.51 | 0.46 |
| 6:K:463:ASP:OD1 | 6:K:585:ARG:NH2 | 2.48 | 0.46 |
| 6:K:480:MET:HB2 | 6:K:483:PHE:CE1 | 2.51 | 0.46 |
| 6:K:746:MET:O | 6:K:751:LYS:NZ | 2.36 | 0.46 |
| 1:A:181:LEU:HB2 | 1:A:230:LEU:HB3 | 1.98 | 0.46 |
| 1:A:359:LEU:HD12 | 1:A:359:LEU:H | 1.79 | 0.46 |
| 1:A:537:SER:O | 1:A:541:MET:N | 2.48 | 0.46 |
| 1:A:1101:PHE:HD2 | 1:A:1163:LEU:HD13 | 1.79 | 0.46 |
| 1:A:1102:GLU:H | 1:A:1152:ARG:NH2 | 2.14 | 0.46 |
| 1:A:1128:CYS:O | 1:A:1131:ILE:HG13 | 2.15 | 0.46 |
| 1:A:1419:LEU:O | 1:A:1423:ILE:N | 2.40 | 0.46 |
| 1:A:2479:TRP:HE3 | 1:A:2480:ILE:HD13 | 1.80 | 0.46 |
| 1:A:3232:ARG:HB3 | 1:A:3236:PHE:CZ | 2.50 | 0.46 |
| 1:A:3459:ASN:O | 1:A:3463:LEU:HG | 2.16 | 0.46 |
| 1:A:3730:ALA:HA | 1:A:3734:ARG:HA | 1.96 | 0.46 |
| 1:A:3915:HIS:CD2 | 1:A:3920:ILE:HB | 2.47 | 0.46 |
| 2:B:358:LYS:HA | 3:C:353:ARG:NH1 | 2.31 | 0.46 |
| 5:G:17:THR:HG23 | 5:H:124:ARG:HH12 | 1.79 | 0.46 |
| 5:H:13:GLU:HB3 | 5:H:16:ILE:HD13 | 1.98 | 0.46 |
| 6:K:138:LEU:HD23 | 6:K:138:LEU:HA | 1.81 | 0.46 |
| 6:K:549:ILE:HD13 | 6:K:554:SER:HB3 | 1.97 | 0.46 |
| 1:A:935:HIS:CD2 | 1:A:939:MET:HE1 | 2.50 | 0.46 |
| 1:A:1346:THR:HG22 | 1:A:1402:LEU:HA | 1.98 | 0.46 |
| 1:A:2231:PHE:CZ | 1:A:2272:VAL:HG12 | 2.50 | 0.46 |
| 1:A:3107:ILE:HG22 | 1:A:3111:MET:HE2 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3316:LEU:HD12 | 1:A:3316:LEU:O | 2.16 | 0.46 |
| 1:A:3493:TRP:CH2 | 1:A:3520:GLU:HG3 | 2.51 | 0.46 |
| 1:A:3962:ARG:HD2 | 1:A:4124:TRP:CZ2 | 2.51 | 0.46 |
| 2:B:62:MET:H | 2:B:62:MET:HG2 | 1.59 | 0.46 |
| 3:C:202:LYS:O | 3:C:206:GLU:HG2 | 2.16 | 0.46 |
| 3:C:249:CYS:SG | 3:C:250:ARG:N | 2.86 | 0.46 |
| 6:K:152:LEU:HA | 6:K:155:ILE:HD12 | 1.96 | 0.46 |
| 1:A:947:GLN:NE2 | 1:A:948:MET:HB2 | 2.31 | 0.46 |
| 1:A:1100:VAL:HG23 | 1:A:1101:PHE:CD1 | 2.51 | 0.46 |
| 1:A:1141:LYS:HE3 | 1:A:1144:SER:HB3 | 1.97 | 0.46 |
| 1:A:1487:VAL:HG11 | 1:A:1515:LEU:HD21 | 1.97 | 0.46 |
| 1:A:1498:GLN:HA | 6:K:138:LEU:O | 2.16 | 0.46 |
| 1:A:2421:VAL:HG23 | 1:A:2457:PRO:HG3 | 1.97 | 0.46 |
| 1:A:2594:ASP:OD1 | 1:A:2594:ASP:N | 2.49 | 0.46 |
| 1:A:3950:THR:HG21 | 1:A:3957:GLU:N | 2.31 | 0.46 |
| 2:B:388:LYS:HE3 | 3:C:451:LEU:O | 2.16 | 0.46 |
| 3:C:77:ILE:HD11 | 3:C:110:ALA:O | 2.16 | 0.46 |
| 4:D:37:LEU:HD22 | 4:D:44:VAL:HG11 | 1.97 | 0.46 |
| 6:K:188:ARG:NE | 6:K:194:LEU:HA | 2.31 | 0.46 |
| 4:M:189:PHE:HA | 4:M:193:PHE:HB3 | 1.98 | 0.46 |
| 1:A:18:THR:O | 1:A:22:ALA:N | 2.43 | 0.46 |
| 1:A:360:SER:O | 1:A:364:ARG:HG3 | 2.16 | 0.46 |
| 1:A:2126:MET:HB3 | 1:A:2164:TRP:HZ2 | 1.80 | 0.46 |
| 1:A:2491:THR:OG1 | 1:A:2492:ASP:N | 2.42 | 0.46 |
| 2:B:46:LYS:HA | 2:B:49:PHE:HD2 | 1.81 | 0.46 |
| 3:C:295:TYR:O | 3:C:305:VAL:N | 2.46 | 0.46 |
| 3:C:628:GLU:HG3 | 3:C:630:PRO:HG2 | 1.98 | 0.46 |
| 3:C:712:SER:O | 3:C:712:SER:OG | 2.26 | 0.46 |
| 6:K:471:TRP:N | 6:K:546:GLU:OE1 | 2.39 | 0.46 |
| 1:A:1278:ALA:HA | 1:A:1281:VAL:HG12 | 1.97 | 0.46 |
| 1:A:2511:ILE:HA | 1:A:2518:GLN:HE22 | 1.80 | 0.46 |
| 1:A:2752:LYS:NZ | 1:A:2756:GLU:HB2 | 2.31 | 0.46 |
| 1:A:3462:ARG:HG2 | 1:A:3498:TRP:HZ3 | 1.81 | 0.46 |
| 2:B:106:GLN:NE2 | 2:B:118:GLU:OE1 | 2.47 | 0.46 |
| 3:C:600:VAL:HA | 3:C:603:LYS:HG2 | 1.98 | 0.46 |
| 6:K:247:LYS:NZ | 6:K:248:PRO:O | 2.40 | 0.46 |
| 1:A:189:MET:N | 1:A:189:MET:SD | 2.75 | 0.46 |
| 1:A:215:PRO:C | 1:A:216:LYS:HD3 | 2.40 | 0.46 |
| 1:A:1470:SER:OG | 1:A:1477:HIS:ND1 | 2.41 | 0.46 |
| 1:A:2732:PHE:HA | 1:A:2734:ARG:HH22 | 1.81 | 0.46 |
| 1:A:3515:GLN:HE22 | 1:A:3557:ARG:HE | 1.64 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:381:LEU:O | 2:B:385:LEU:HG | 2.16 | 0.46 |
| 3:C:387:LEU:HD23 | 3:C:387:LEU:HA | 1.81 | 0.46 |
| 5:G:3:ARG:HB2 | 5:G:21:GLN:HA | 1.97 | 0.46 |
| 6:K:741:ARG:HG2 | 6:K:742:PHE:CD2 | 2.51 | 0.46 |
| 1:A:662:LEU:HD23 | 1:A:662:LEU:H | 1.82 | 0.45 |
| 1:A:1209:LYS:O | 1:A:1213:LYS:HG2 | 2.17 | 0.45 |
| 1:A:1231:GLN:N | 1:A:1232:PRO:HD2 | 2.31 | 0.45 |
| 1:A:3010:SER:OG | 1:A:3011:LEU:N | 2.49 | 0.45 |
| 5:G:99:LYS:HG3 | 5:G:106:PHE:HB2 | 1.98 | 0.45 |
| 6:K:395:PRO:HB3 | 6:K:401:GLU:HA | 1.97 | 0.45 |
| 4:M:160:LYS:HD2 | 4:M:161:ASP:N | 2.31 | 0.45 |
| 1:A:58:VAL:HG21 | 1:A:3098:ARG:NE | 2.31 | 0.45 |
| 1:A:384:MET:O | 1:A:387:GLU:HB3 | 2.16 | 0.45 |
| 1:A:924:ARG:O | 1:A:928:VAL:HG12 | 2.16 | 0.45 |
| 1:A:1102:GLU:HA | 1:A:1105:VAL:HG22 | 1.99 | 0.45 |
| 1:A:1107:TYR:HA | 1:A:1110:SER:OG | 2.15 | 0.45 |
| 1:A:1452:VAL:HG23 | 1:A:1517:LEU:HD13 | 1.98 | 0.45 |
| 1:A:3387:GLU:O | 1:A:3390:GLN:HG3 | 2.16 | 0.45 |
| 1:A:4089:ILE:HA | 1:A:4092:GLN:HE21 | 1.80 | 0.45 |
| 2:B:91:GLU:HB2 | 2:B:136:GLY:HA3 | 1.97 | 0.45 |
| 2:B:202:LEU:HD12 | 2:B:203:MET:N | 2.30 | 0.45 |
| 5:H:9:HIS:CE1 | 5:H:86:PHE:H | 2.34 | 0.45 |
| 6:K:316:HIS:HA | 6:K:319:PHE:CD2 | 2.51 | 0.45 |
| 6:K:344:GLN:NE2 | 6:K:425:ARG:O | 2.39 | 0.45 |
| 6:K:464:ILE:HD13 | 6:K:485:CYS:HB3 | 1.98 | 0.45 |
| 1:A:135:LEU:HD12 | 1:A:139:ARG:HH12 | 1.80 | 0.45 |
| 1:A:972:LEU:HB3 | 1:A:984:TYR:CD2 | 2.51 | 0.45 |
| 1:A:1349:LEU:HD11 | 1:A:1406:LEU:HD23 | 1.96 | 0.45 |
| 1:A:2292:CYS:SG | 1:A:2293:GLY:N | 2.89 | 0.45 |
| 1:A:3301:LEU:HB2 | 1:A:3304:VAL:HA | 1.98 | 0.45 |
| 1:A:3632:PHE:HE1 | 1:A:3667:LEU:HD11 | 1.81 | 0.45 |
| 2:B:341:ASP:OD1 | 2:B:341:ASP:N | 2.48 | 0.45 |
| 2:B:423:GLN:HB3 | 2:B:425:ILE:HG12 | 1.97 | 0.45 |
| 3:C:226:SER:O | 3:C:230:SER:OG | 2.29 | 0.45 |
| 3:C:510:GLN:NE2 | 3:C:510:GLN:O | 2.49 | 0.45 |
| 3:C:629:THR:O | 3:C:632:PHE:HB2 | 2.15 | 0.45 |
| 3:C:643:ARG:HH12 | 3:C:689:GLU:N | 2.13 | 0.45 |
| 5:G:38:ASP:OD1 | 5:G:38:ASP:N | 2.47 | 0.45 |
| 6:K:384:LYS:HE3 | 6:K:388:ILE:HD11 | 1.96 | 0.45 |
| 6:K:577:ARG:HG3 | 6:K:578:PHE:CD2 | 2.50 | 0.45 |
| 6:K:667:MET:CE | 6:K:708:ARG:HB2 | 2.46 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:991:LEU:O | 1:A:995:PHE:N | 2.41 | 0.45 |
| 1:A:1690:GLY:O | 1:A:1693:VAL:HG22 | 2.16 | 0.45 |
| 1:A:1786:ALA:HB3 | 1:A:1830:HIS:HB3 | 1.97 | 0.45 |
| 1:A:3493:TRP:CE3 | 1:A:3493:TRP:HA | 2.52 | 0.45 |
| 6:K:323:ILE:HG21 | 6:K:392:ILE:HD12 | 1.98 | 0.45 |
| 1:A:451:PRO:HA | 1:A:454:GLN:HG3 | 1.98 | 0.45 |
| 1:A:1646:LEU:HD21 | 1:A:1692:ALA:HA | 1.99 | 0.45 |
| 1:A:2151:ILE:HG21 | 1:A:2188:GLU:CG | 2.46 | 0.45 |
| 1:A:2959:ALA:HB1 | 1:A:2962:ARG:HH21 | 1.82 | 0.45 |
| 1:A:3091:LEU:HD23 | 1:A:3091:LEU:HA | 1.71 | 0.45 |
| 1:A:3170:ASP:HB3 | 1:A:3174:ASP:OD2 | 2.17 | 0.45 |
| 1:A:3299:THR:HA | 1:A:3302:LYS:NZ | 2.31 | 0.45 |
| 1:A:4054:ALA:HA | 1:A:4096:SER:HA | 1.98 | 0.45 |
| 2:B:193:LEU:HD13 | 2:B:198:ILE:HB | 1.99 | 0.45 |
| 3:C:147:LEU:HA | 3:C:150:ILE:HD12 | 1.99 | 0.45 |
| 3:C:643:ARG:HG2 | 3:C:685:LEU:HB3 | 1.99 | 0.45 |
| 5:G:52:ILE:HG23 | 5:G:109:GLY:HA3 | 1.98 | 0.45 |
| 5:H:187:LYS:HB3 | 6:K:758:TYR:CZ | 2.52 | 0.45 |
| 1:A:86:LEU:HD13 | 1:A:130:LEU:HB2 | 1.99 | 0.45 |
| 1:A:246:ARG:HH22 | 1:A:282:PHE:HE1 | 1.65 | 0.45 |
| 1:A:957:PRO:HB2 | 1:A:958:MET:SD | 2.57 | 0.45 |
| 1:A:1071:ASN:O | 1:A:1075:ARG:HG3 | 2.16 | 0.45 |
| 1:A:1340:ARG:NE | 1:A:1343:GLU:OE1 | 2.39 | 0.45 |
| 1:A:3170:ASP:OD2 | 1:A:3173:MET:HB2 | 2.17 | 0.45 |
| 1:A:3267:LYS:HA | 1:A:3273:LEU:HD13 | 1.98 | 0.45 |
| 1:A:3772:ASN:ND2 | 1:A:3788:LEU:O | 2.38 | 0.45 |
| 2:B:255:ALA:HB2 | 2:B:274:TYR:CZ | 2.52 | 0.45 |
| 3:C:406:GLY:HA2 | 3:C:424:LEU:HB2 | 1.98 | 0.45 |
| 6:K:466:ILE:HG12 | 6:K:483:PHE:HB3 | 1.98 | 0.45 |
| 6:K:489:GLU:HG3 | 6:K:501:HIS:NE2 | 2.31 | 0.45 |
| 8:e:23:DT:H2' | 8:e:24:DT:H71 | 1.99 | 0.45 |
| 1:A:437:HIS:ND1 | 1:A:2047:THR:HG21 | 2.32 | 0.45 |
| 1:A:612:LEU:HD22 | 1:A:2602:LEU:HD13 | 1.98 | 0.45 |
| 1:A:1693:VAL:O | 1:A:1696:LEU:HD23 | 2.17 | 0.45 |
| 1:A:2891:ARG:O | 1:A:2894:GLU:HG3 | 2.17 | 0.45 |
| 1:A:3301:LEU:HD12 | 1:A:3304:VAL:HG23 | 1.98 | 0.45 |
| 1:A:3449:LYS:HD3 | 1:A:3449:LYS:HA | 1.70 | 0.45 |
| 1:A:3518:VAL:O | 1:A:3522:THR:HG23 | 2.16 | 0.45 |
| 1:A:3958:LEU:HB3 | 1:A:4115:ASN:ND2 | 2.31 | 0.45 |
| 2:B:351:LYS:HE2 | 2:B:351:LYS:HB2 | 1.76 | 0.45 |
| 2:B:392:LYS:NZ | 3:C:455:ASP:OD1 | 2.38 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:519:PRO:O | 3:C:522:VAL:HG12 | 2.16 | 0.45 |
| 3:C:664:GLU:HA | 3:C:667:GLU:HB2 | 1.99 | 0.45 |
| 5:H:4:LYS:HE2 | 5:H:24:TRP:HZ3 | 1.82 | 0.45 |
| 6:K:284:ASP:O | 6:K:287:VAL:HG22 | 2.16 | 0.45 |
| 6:K:529:PHE:HE1 | 6:K:538:ILE:HD12 | 1.81 | 0.45 |
| 1:A:892:LEU:HD12 | 1:A:892:LEU:HA | 1.80 | 0.45 |
| 1:A:2245:TRP:HA | 1:A:2245:TRP:CE3 | 2.51 | 0.45 |
| 1:A:2278:GLY:O | 1:A:2282:ALA:N | 2.50 | 0.45 |
| 1:A:2960:GLU:HB3 | 1:A:2968:ALA:HB2 | 1.99 | 0.45 |
| 1:A:2980:ASP:OD1 | 1:A:2980:ASP:N | 2.45 | 0.45 |
| 1:A:3088:LEU:O | 1:A:3092:LEU:HD12 | 2.16 | 0.45 |
| 2:B:451:LYS:NZ | 3:C:413:LYS:O | 2.47 | 0.45 |
| 5:H:124:ARG:HA | 5:H:127:ILE:HG12 | 1.99 | 0.45 |
| 6:K:199:SER:O | 6:K:202:THR:OG1 | 2.27 | 0.45 |
| 6:K:328:LEU:HG | 6:K:369:VAL:HG23 | 1.98 | 0.45 |
| 6:K:371:MET:HA | 6:K:371:MET:HE2 | 1.97 | 0.45 |
| 1:A:140:SER:OG | 1:A:141:SER:N | 2.50 | 0.45 |
| 1:A:893:SER:HB2 | 1:A:904:VAL:HG11 | 1.98 | 0.45 |
| 1:A:1775:GLU:OE2 | 1:A:1822:ARG:NH1 | 2.46 | 0.45 |
| 1:A:2155:GLU:OE1 | 1:A:2155:GLU:N | 2.50 | 0.45 |
| 1:A:2411:LEU:HA | 1:A:2414:GLN:HB3 | 1.97 | 0.45 |
| 1:A:3468:LEU:HA | 1:A:3471:ILE:HG22 | 1.99 | 0.45 |
| 1:A:3493:TRP:CZ2 | 1:A:3520:GLU:HG3 | 2.52 | 0.45 |
| 1:A:3608:LYS:O | 1:A:3611:GLU:HG3 | 2.17 | 0.45 |
| 1:A:3920:ILE:HG21 | 1:A:3942:PHE:HD2 | 1.82 | 0.45 |
| 2:B:232:HIS:CD2 | 2:B:236:SER:HB2 | 2.52 | 0.45 |
| 2:B:280:ALA:N | 3:C:429:ASP:OD1 | 2.49 | 0.45 |
| 3:C:11:VAL:HG11 | 3:C:118:ILE:CG2 | 2.46 | 0.45 |
| 4:D:13:TRP:HZ3 | 4:D:134:HIS:HB3 | 1.82 | 0.45 |
| 1:A:238:MET:HB2 | 1:A:281:GLN:O | 2.17 | 0.45 |
| 1:A:1372:LEU:O | 1:A:1375:THR:HB | 2.17 | 0.45 |
| 1:A:1511:ALA:O | 1:A:1515:LEU:HD23 | 2.17 | 0.45 |
| 1:A:1639:LEU:O | 1:A:1642:LYS:HB2 | 2.16 | 0.45 |
| 1:A:2328:ARG:O | 1:A:2333:ARG:HD2 | 2.17 | 0.45 |
| 1:A:3498:TRP:HD1 | 1:A:3501:HIS:CE1 | 2.35 | 0.45 |
| 1:A:4056:PRO:HG2 | 1:A:4107:LEU:HB2 | 1.99 | 0.45 |
| 2:B:92:LYS:HG3 | 2:B:136:GLY:H | 1.81 | 0.45 |
| 3:C:356:PHE:CD2 | 3:C:422:VAL:HG11 | 2.52 | 0.45 |
| 3:C:653:GLN:HA | 3:C:656:ASN:ND2 | 2.32 | 0.45 |
| 3:C:722:GLY:HA2 | 3:C:725:VAL:HB | 1.99 | 0.45 |
| 6:K:787:GLN:NE2 | 6:K:792:MET:SD | 2.69 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:666:PHE:O | 1:A:670:LEU:HD23 | 2.17 | 0.44 |
| 1:A:682:TYR:CZ | 1:A:700:LYS:HG2 | 2.52 | 0.44 |
| 1:A:1154:PRO:HG2 | 1:A:1157:PHE:HB2 | 1.98 | 0.44 |
| 1:A:2444:PRO:HB2 | 1:A:2445:LYS:HE2 | 1.97 | 0.44 |
| 1:A:2923:TRP:O | 1:A:2926:LEU:HB3 | 2.17 | 0.44 |
| 1:A:3168:TYR:HA | 1:A:3169:PRO:HD3 | 1.82 | 0.44 |
| 1:A:3811:THR:HG23 | 1:A:3814:ASP:OD1 | 2.17 | 0.44 |
| 1:A:3815:LEU:HD13 | 1:A:3930:VAL:HG11 | 1.98 | 0.44 |
| 2:B:263:LEU:HD13 | 2:B:267:ILE:HG22 | 1.99 | 0.44 |
| 2:B:382:PHE:O | 2:B:385:LEU:HD12 | 2.17 | 0.44 |
| 6:K:274:LEU:HB2 | 6:K:331:GLU:CD | 2.42 | 0.44 |
| 6:K:335:TYR:HB3 | 6:K:361:GLN:O | 2.17 | 0.44 |
| 6:K:558:GLN:HB3 | 6:K:583:LYS:HB2 | 1.99 | 0.44 |
| 4:M:160:LYS:HD2 | 4:M:160:LYS:C | 2.42 | 0.44 |
| 1:A:117:LYS:O | 1:A:120:ALA:N | 2.41 | 0.44 |
| 1:A:2148:LYS:HA | 1:A:2148:LYS:HD2 | 1.84 | 0.44 |
| 1:A:2167:PRO:O | 1:A:2170:GLN:HG2 | 2.17 | 0.44 |
| 1:A:3373:VAL:O | 1:A:3377:LEU:HG | 2.17 | 0.44 |
| 1:A:3857:LEU:H | 1:A:3857:LEU:HD12 | 1.81 | 0.44 |
| 6:K:264:LYS:O | 6:K:265:HIS:HB2 | 2.15 | 0.44 |
| 8:e:30:DT:H2' | 8:e:31:DT:C6 | 2.51 | 0.44 |
| 1:A:58:VAL:HG11 | 1:A:3098:ARG:CD | 2.47 | 0.44 |
| 1:A:117:LYS:O | 1:A:119:ARG:N | 2.50 | 0.44 |
| 1:A:369:PHE:O | 1:A:372:PRO:HD2 | 2.16 | 0.44 |
| 1:A:1112:ALA:HB1 | 1:A:1178:ARG:HH21 | 1.83 | 0.44 |
| 1:A:1389:VAL:O | 1:A:1391:VAL:N | 2.51 | 0.44 |
| 1:A:1606:ARG:HB2 | 1:A:2042:GLN:HG3 | 1.99 | 0.44 |
| 1:A:2100:LEU:O | 1:A:2103:HIS:HB3 | 2.17 | 0.44 |
| 1:A:2101:VAL:O | 1:A:2105:HIS:N | 2.50 | 0.44 |
| 1:A:2271:SER:HA | 1:A:2274:ILE:HD13 | 1.99 | 0.44 |
| 1:A:3333:THR:O | 1:A:3337:ILE:HG12 | 2.18 | 0.44 |
| 1:A:3358:ARG:O | 1:A:3361:GLU:HG2 | 2.18 | 0.44 |
| 1:A:3485:LYS:HG3 | 1:A:3486:GLU:OE1 | 2.17 | 0.44 |
| 1:A:3585:PHE:HZ | 1:A:3664:ASN:HA | 1.83 | 0.44 |
| 1:A:3968:ILE:HG23 | 1:A:3976:GLU:HG2 | 1.99 | 0.44 |
| 2:B:319:SER:O | 3:C:277:THR:OG1 | 2.29 | 0.44 |
| 2:B:471:PHE:HB3 | 3:C:345:PHE:H | 1.81 | 0.44 |
| 3:C:81:ARG:NH2 | 3:C:84:MET:SD | 2.89 | 0.44 |
| 6:K:184:LYS:O | 6:K:187:ILE:HG13 | 2.17 | 0.44 |
| 6:K:251:ALA:HB1 | 6:K:448:LEU:C | 2.42 | 0.44 |
| 6:K:278:ARG:HD2 | 6:K:293:ARG:HD2 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:147:PHE:C | 1:A:148:LYS:HD3 | 2.42 | 0.44 |
| 1:A:247:GLU:HG3 | 1:A:282:PHE:CD2 | 2.53 | 0.44 |
| 1:A:530:LEU:O | 1:A:534:LEU:HD12 | 2.17 | 0.44 |
| 1:A:765:LEU:HA | 1:A:765:LEU:HD23 | 1.74 | 0.44 |
| 1:A:1105:VAL:O | 1:A:1109:GLU:OE2 | 2.35 | 0.44 |
| 1:A:1158:PRO:N | 1:A:1159:PRO:HD2 | 2.32 | 0.44 |
| 1:A:1331:ASN:HB3 | 1:A:1384:PHE:H | 1.81 | 0.44 |
| 1:A:2166:SER:HB2 | 1:A:2167:PRO:HD3 | 1.99 | 0.44 |
| 1:A:3144:PHE:HA | 1:A:3147:LYS:HD3 | 2.00 | 0.44 |
| 1:A:3334:TYR:HE2 | 1:A:3363:SER:HB3 | 1.82 | 0.44 |
| 1:A:3725:ARG:HE | 1:A:3725:ARG:HB2 | 1.63 | 0.44 |
| 1:A:3927:ASN:ND2 | 1:A:3940:ILE:O | 2.40 | 0.44 |
| 1:A:3980:MET:HE3 | 1:A:3980:MET:HB3 | 1.83 | 0.44 |
| 3:C:225:TYR:CE2 | 3:C:233:LYS:HE2 | 2.52 | 0.44 |
| 3:C:613:SER:O | 3:C:616:LEU:HG | 2.17 | 0.44 |
| 4:D:137:ARG:HB2 | 4:D:138:PRO:HD3 | 1.99 | 0.44 |
| 5:G:191:ILE:HG21 | 6:K:765:TYR:CD2 | 2.52 | 0.44 |
| 6:K:104:LYS:HE2 | 6:K:104:LYS:HB2 | 1.82 | 0.44 |
| 6:K:247:LYS:HZ2 | 6:K:441:ASP:HA | 1.83 | 0.44 |
| 1:A:785:MET:HA | 1:A:788:TYR:CE2 | 2.52 | 0.44 |
| 1:A:972:LEU:HB3 | 1:A:984:TYR:HD2 | 1.82 | 0.44 |
| 1:A:1783:ARG:CZ | 1:A:1830:HIS:HB2 | 2.47 | 0.44 |
| 1:A:2418:LYS:NZ | 2:B:155:SER:OG | 2.47 | 0.44 |
| 1:A:2508:GLN:HE22 | 1:A:2549:LYS:HG3 | 1.83 | 0.44 |
| 1:A:2511:ILE:HD12 | 1:A:2550:ILE:HG22 | 1.99 | 0.44 |
| 1:A:3298:LEU:O | 1:A:3302:LYS:NZ | 2.49 | 0.44 |
| 2:B:77:SER:HB2 | 2:B:250:GLU:OE2 | 2.17 | 0.44 |
| 6:K:208:HIS:HD2 | 6:K:228:LEU:HD13 | 1.82 | 0.44 |
| 6:K:700:VAL:HG12 | 6:K:720:VAL:HA | 1.99 | 0.44 |
| 7:d:42:DA:N6 | 8:e:14:DT:H2" | 2.32 | 0.44 |
| 1:A:89:LEU:HD23 | 1:A:89:LEU:HA | 1.82 | 0.44 |
| 1:A:1224:PHE:HB2 | 1:A:1227:GLY:HA2 | 2.00 | 0.44 |
| 1:A:1408:MET:N | 1:A:1408:MET:SD | 2.91 | 0.44 |
| 1:A:2429:ASP:OD1 | 1:A:2429:ASP:N | 2.49 | 0.44 |
| 1:A:2507:ILE:HD11 | 1:A:2545:LEU:HA | 1.99 | 0.44 |
| 1:A:3227:ILE:O | 1:A:3231:ILE:HG12 | 2.16 | 0.44 |
| 1:A:3667:LEU:HD12 | 1:A:3670:MET:HB2 | 2.00 | 0.44 |
| 1:A:3767:LEU:O | 1:A:3771:MET:HE2 | 2.17 | 0.44 |
| 5:H:3:ARG:CZ | 5:H:129:TYR:HB3 | 2.48 | 0.44 |
| 6:K:323:ILE:HG22 | 6:K:326:CYS:SG | 2.58 | 0.44 |
| 6:K:425:ARG:O | 6:K:580:ARG:NH2 | 2.49 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:183:GLU:HG2 | 1:A:185:HIS:H | 1.83 | 0.44 |
| 1:A:197:PHE:CZ | 1:A:231:LEU:HB3 | 2.53 | 0.44 |
| 1:A:934:LEU:HA | 1:A:937:MET:HB2 | 1.99 | 0.44 |
| 1:A:1526:GLU:OE1 | 1:A:1526:GLU:N | 2.47 | 0.44 |
| 1:A:2857:CYS:O | 1:A:2861:ILE:HG12 | 2.18 | 0.44 |
| 1:A:2925:GLU:O | 1:A:2928:LYS:HB2 | 2.17 | 0.44 |
| 2:B:93:ASP:N | 2:B:93:ASP:OD1 | 2.48 | 0.44 |
| 3:C:108:LEU:O | 3:C:112:ILE:HG12 | 2.17 | 0.44 |
| 3:C:247:TRP:CZ2 | 3:C:338:LYS:HG3 | 2.51 | 0.44 |
| 3:C:677:ILE:HA | 3:C:680:GLN:HG2 | 1.98 | 0.44 |
| 5:H:163:GLU:OE2 | 6:K:846:ARG:NH2 | 2.49 | 0.44 |
| 6:K:512:MET:CE | 6:K:514:GLU:H | 2.30 | 0.44 |
| 6:K:529:PHE:CE1 | 6:K:538:ILE:HD12 | 2.52 | 0.44 |
| 1:A:124:LYS:HZ2 | 8:e:22:DG:H3' | 1.83 | 0.44 |
| 1:A:246:ARG:CZ | 1:A:246:ARG:HB2 | 2.48 | 0.44 |
| 1:A:854:ARG:HA | 1:A:857:GLN:HB3 | 1.99 | 0.44 |
| 1:A:958:MET:SD | 1:A:958:MET:N | 2.91 | 0.44 |
| 1:A:1055:ASN:HD21 | 1:A:1057:LYS:HB2 | 1.82 | 0.44 |
| 1:A:1634:ALA:O | 1:A:1637:SER:OG | 2.35 | 0.44 |
| 1:A:1697:PRO:HA | 1:A:1753:SER:HB3 | 1.99 | 0.44 |
| 1:A:2424:MET:HE3 | 1:A:2457:PRO:O | 2.17 | 0.44 |
| 2:B:125:GLN:HG3 | 2:B:126:GLN:N | 2.33 | 0.44 |
| 2:B:154:PHE:HD2 | 2:B:198:ILE:HD12 | 1.82 | 0.44 |
| 3:C:75:GLN:HG3 | 3:C:76:ASN:H | 1.83 | 0.44 |
| 6:K:512:MET:HE1 | 6:K:514:GLU:H | 1.82 | 0.44 |
| 6:K:694:GLY:N | 6:K:697:THR:OG1 | 2.42 | 0.44 |
| 1:A:1836:LEU:HG | 1:A:1840:PHE:HE2 | 1.83 | 0.44 |
| 1:A:2485:ARG:HE | 1:A:2485:ARG:HB3 | 1.62 | 0.44 |
| 1:A:2573:PRO:O | 1:A:2786:LYS:NZ | 2.50 | 0.44 |
| 1:A:2592:ASP:N | 1:A:2592:ASP:OD1 | 2.42 | 0.44 |
| 2:B:217:TYR:HA | 2:B:220:ILE:HG12 | 1.99 | 0.44 |
| 3:C:419:LEU:HD23 | 3:C:419:LEU:HA | 1.86 | 0.44 |
| 6:K:183:GLN:CA | 6:K:186:LEU:HD11 | 2.48 | 0.44 |
| 6:K:196:LEU:HD12 | 6:K:196:LEU:HA | 1.89 | 0.44 |
| 6:K:511:THR:O | 6:K:512:MET:HB3 | 2.18 | 0.44 |
| 1:A:236:LYS:HE3 | 1:A:243:GLN:OE1 | 2.18 | 0.43 |
| 1:A:323:VAL:HG13 | 1:A:369:PHE:HE1 | 1.81 | 0.43 |
| 1:A:1534:ASN:OD1 | 1:A:1534:ASN:N | 2.50 | 0.43 |
| 1:A:2183:HIS:HA | 1:A:2186:VAL:HB | 2.00 | 0.43 |
| 1:A:3692:VAL:HG11 | 1:A:3720:ALA:HB1 | 2.00 | 0.43 |
| 1:A:3992:ARG:NH1 | 1:A:4100:GLU:OE2 | 2.50 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:230:ARG:HG3 | 2:B:232:HIS:N | 2.32 | 0.43 |
| 5:G:139:ALA:O | 5:G:143:HIS:ND1 | 2.51 | 0.43 |
| 6:K:281:MET:SD | 6:K:283:LYS:HB2 | 2.58 | 0.43 |
| 6:K:721:VAL:HG12 | 6:K:722:LYS:O | 2.18 | 0.43 |
| 6:K:770:ASP:OD1 | 6:K:770:ASP:N | 2.51 | 0.43 |
| 1:A:186:PRO:HD2 | 1:A:188:GLU:OE2 | 2.17 | 0.43 |
| 1:A:251:PHE:HE2 | 1:A:293:LEU:HD11 | 1.83 | 0.43 |
| 1:A:320:LEU:HA | 1:A:323:VAL:HG12 | 2.00 | 0.43 |
| 1:A:529:ASP:OD1 | 1:A:529:ASP:N | 2.50 | 0.43 |
| 1:A:732:PHE:O | 1:A:735:SER:OG | 2.32 | 0.43 |
| 1:A:925:GLN:OE1 | 1:A:2769:VAL:HA | 2.19 | 0.43 |
| 1:A:1039:TRP:CE3 | 1:A:1042:LYS:HD3 | 2.54 | 0.43 |
| 1:A:1880:MET:HE1 | 1:A:1881:TYR:CE2 | 2.53 | 0.43 |
| 1:A:2361:ILE:HD11 | 1:A:2397:CYS:HB2 | 2.01 | 0.43 |
| 1:A:2455:LEU:HD11 | 1:A:2501:LEU:HD23 | 2.00 | 0.43 |
| 1:A:3912:CYS:HB3 | 1:A:3961:PHE:CG | 2.53 | 0.43 |
| 3:C:6:ASN:ND2 | 3:C:128:GLU:HB2 | 2.33 | 0.43 |
| 3:C:16:VAL:HG22 | 3:C:100:PRO:HA | 2.00 | 0.43 |
| 3:C:75:GLN:CG | 3:C:76:ASN:H | 2.30 | 0.43 |
| 3:C:658:PHE:O | 3:C:662:LEU:HG | 2.18 | 0.43 |
| 4:D:176:ARG:HG2 | 4:D:178:ARG:HB2 | 2.00 | 0.43 |
| 5:G:120:ALA:O | 5:G:123:ILE:HG22 | 2.18 | 0.43 |
| 5:G:188:LYS:HZ1 | 6:K:769:THR:HG23 | 1.82 | 0.43 |
| 6:K:126:ALA:CB | 6:K:188:ARG:HD3 | 2.48 | 0.43 |
| 1:A:36:ARG:HD3 | 1:A:2426:HIS:HB2 | 1.99 | 0.43 |
| 1:A:79:ARG:HA | 1:A:82:ARG:HE | 1.83 | 0.43 |
| 1:A:152:LEU:HD23 | 1:A:152:LEU:HA | 1.84 | 0.43 |
| 1:A:860:GLY:C | 1:A:3136:THR:HG21 | 2.43 | 0.43 |
| 1:A:993:HIS:HA | 1:A:1039:TRP:CD1 | 2.53 | 0.43 |
| 1:A:996:THR:HG21 | 1:A:1039:TRP:HD1 | 1.82 | 0.43 |
| 1:A:1653:LEU:HB3 | 1:A:1698:PHE:CD2 | 2.53 | 0.43 |
| 1:A:3148:GLN:HE21 | 1:A:3155:VAL:HG11 | 1.82 | 0.43 |
| 1:A:3158:LYS:HE3 | 1:A:3231:ILE:HD11 | 2.00 | 0.43 |
| 1:A:3614:TYR:HA | 1:A:3618:GLY:HA3 | 2.00 | 0.43 |
| 3:C:675:TRP:CD1 | 3:C:679:VAL:HG23 | 2.53 | 0.43 |
| 6:K:557:VAL:HA | 6:K:585:ARG:H | 1.84 | 0.43 |
| 4:M:53:VAL:O | 4:M:56:GLN:HG3 | 2.18 | 0.43 |
| 1:A:57:LEU:HD11 | 1:A:100:ILE:HD13 | 2.01 | 0.43 |
| 1:A:197:PHE:O | 1:A:201:LEU:HD13 | 2.18 | 0.43 |
| 1:A:2538:ARG:NH2 | 1:A:2561:PHE:O | 2.51 | 0.43 |
| 1:A:2723:THR:O | 1:A:2727:ARG:HG2 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:212:ASP:HB3 | 2:B:215:LEU:HG | 1.99 | 0.43 |
| 3:C:629:THR:HA | 3:C:632:PHE:HD2 | 1.84 | 0.43 |
| 5:H:61:MET:SD | 5:H:62:GLU:N | 2.91 | 0.43 |
| 6:K:82:TYR:O | 6:K:159:ASN:ND2 | 2.50 | 0.43 |
| 6:K:327:ILE:HD12 | 6:K:371:MET:HG3 | 2.00 | 0.43 |
| 6:K:679:GLU:HA | 6:K:682:ILE:HD12 | 1.99 | 0.43 |
| 1:A:1115:HIS:HB2 | 1:A:1182:GLU:OE2 | 2.18 | 0.43 |
| 1:A:1145:LEU:HB3 | 1:A:1165:LEU:HB2 | 1.99 | 0.43 |
| 1:A:2551:GLU:N | 1:A:2551:GLU:OE1 | 2.52 | 0.43 |
| 1:A:3962:ARG:HE | 1:A:3962:ARG:HB3 | 1.53 | 0.43 |
| 2:B:531:PRO:HB2 | 2:B:533:ASP:OD1 | 2.18 | 0.43 |
| 3:C:599:ARG:O | 3:C:603:LYS:HG2 | 2.18 | 0.43 |
| 4:D:36:LEU:HG | 4:D:38:VAL:H | 1.83 | 0.43 |
| 1:A:722:LYS:C | 1:A:726:LEU:HD23 | 2.42 | 0.43 |
| 1:A:801:LYS:NZ | 1:A:920:THR:HG22 | 2.33 | 0.43 |
| 1:A:1571:LEU:HB3 | 1:A:1600:MET:HE1 | 2.01 | 0.43 |
| 1:A:3477:GLU:HG2 | 1:A:3478:GLU:N | 2.33 | 0.43 |
| 1:A:3706:ASP:O | 1:A:3708:ARG:NH1 | 2.51 | 0.43 |
| 1:A:3812:LEU:HB3 | 1:A:3925:LEU:HB3 | 2.00 | 0.43 |
| 3:C:168:SER:OG | 3:C:192:PHE:N | 2.37 | 0.43 |
| 3:C:636:ILE:O | 3:C:640:ARG:HG2 | 2.17 | 0.43 |
| 6:K:19:LEU:H | 6:K:19:LEU:HD12 | 1.83 | 0.43 |
| 6:K:823:TYR:OH | 6:K:829:LEU:O | 2.36 | 0.43 |
| 1:A:759:GLY:HA3 | 1:A:766:ALA:HB2 | 1.99 | 0.43 |
| 1:A:770:LEU:HD23 | 1:A:854:ARG:HG3 | 2.01 | 0.43 |
| 1:A:848:LEU:O | 1:A:851:ILE:HB | 2.18 | 0.43 |
| 1:A:1476:HIS:CG | 1:A:1521:PHE:HB3 | 2.53 | 0.43 |
| 1:A:1532:LEU:O | 1:A:1592:MET:HE3 | 2.18 | 0.43 |
| 1:A:1871:MET:CE | 1:A:1936:ARG:HH12 | 2.31 | 0.43 |
| 1:A:2357:GLU:HA | 1:A:2360:PHE:HB3 | 1.99 | 0.43 |
| 1:A:2479:TRP:CE3 | 1:A:2480:ILE:HD13 | 2.52 | 0.43 |
| 1:A:3103:ILE:HD12 | 1:A:3103:ILE:HA | 1.88 | 0.43 |
| 1:A:3419:PHE:HD1 | 1:A:3422:GLN:HE21 | 1.64 | 0.43 |
| 1:A:3506:LEU:HD23 | 1:A:3506:LEU:HA | 1.81 | 0.43 |
| 1:A:3568:ILE:O | 1:A:3572:ILE:HG12 | 2.19 | 0.43 |
| 1:A:4064:LEU:O | 1:A:4068:HIS:HB3 | 2.19 | 0.43 |
| 3:C:361:VAL:HG22 | 3:C:422:VAL:HG22 | 2.01 | 0.43 |
| 4:D:190:LEU:HD13 | 4:D:193:PHE:HD2 | 1.84 | 0.43 |
| 6:K:817:THR:HA | 6:K:851:LYS:HD3 | 2.01 | 0.43 |
| 4:M:134:HIS:O | 4:M:222:THR:HG21 | 2.18 | 0.43 |
| 1:A:1672:PHE:CE2 | 1:A:1676:ILE:HD11 | 2.54 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1867:ILE:O | 1:A:1871:MET:HG2 | 2.18 | 0.43 |
| 1:A:2380:ASN:OD1 | 1:A:2380:ASN:N | 2.50 | 0.43 |
| 1:A:2548:PRO:HA | 1:A:2551:GLU:OE2 | 2.19 | 0.43 |
| 1:A:3450:MET:HE2 | 1:A:3450:MET:HA | 2.01 | 0.43 |
| 1:A:3708:ARG:HD2 | 1:A:3708:ARG:N | 2.34 | 0.43 |
| 1:A:4101:GLU:H | 1:A:4101:GLU:CD | 2.27 | 0.43 |
| 2:B:512:GLU:OE1 | 2:B:512:GLU:N | 2.40 | 0.43 |
| 6:K:23:LEU:HB3 | 6:K:185:TRP:CH2 | 2.53 | 0.43 |
| 6:K:30:LYS:HE2 | 6:K:30:LYS:HB2 | 1.82 | 0.43 |
| 6:K:480:MET:HB2 | 6:K:483:PHE:HE1 | 1.83 | 0.43 |
| 1:A:360:SER:OG | 1:A:361:ILE:N | 2.50 | 0.43 |
| 1:A:2333:ARG:NE | 1:A:2333:ARG:HA | 2.32 | 0.43 |
| 1:A:3122:HIS:O | 1:A:3126:LEU:HG | 2.19 | 0.43 |
| 3:C:27:ILE:HG21 | 3:C:166:PRO:HB2 | 2.00 | 0.43 |
| 3:C:605:LYS:HB2 | 3:C:609:PHE:HE2 | 1.84 | 0.43 |
| 6:K:425:ARG:HB2 | 6:K:511:THR:HG21 | 2.00 | 0.43 |
| 6:K:713:ILE:HG23 | 6:K:745:HIS:CG | 2.53 | 0.43 |
| 4:M:215:GLN:OE1 | 4:M:215:GLN:HA | 2.19 | 0.43 |
| 1:A:1369:MET:H | 1:A:1369:MET:HE3 | 1.84 | 0.43 |
| 1:A:2107:SER:OG | 1:A:2108:LEU:N | 2.51 | 0.43 |
| 1:A:2415:LEU:HD13 | 1:A:2420:PHE:CB | 2.49 | 0.43 |
| 1:A:2733:MET:SD | 1:A:2733:MET:N | 2.92 | 0.43 |
| 1:A:3319:ASN:OD1 | 1:A:3322:ALA:N | 2.44 | 0.43 |
| 1:A:3463:LEU:HD23 | 1:A:3498:TRP:HH2 | 1.83 | 0.43 |
| 1:A:3813:LYS:O | 1:A:3817:LEU:HG | 2.19 | 0.43 |
| 1:A:3958:LEU:HD13 | 1:A:4081:ALA:HB1 | 2.00 | 0.43 |
| 2:B:215:LEU:HD23 | 2:B:215:LEU:HA | 1.87 | 0.43 |
| 3:C:107:PHE:CG | 3:C:136:THR:HG21 | 2.54 | 0.43 |
| 3:C:229:GLU:O | 3:C:233:LYS:HG2 | 2.19 | 0.43 |
| 6:K:738:TRP:HD1 | 6:K:754:PHE:CE1 | 2.37 | 0.43 |
| 6:K:746:MET:H | 6:K:746:MET:HE2 | 1.83 | 0.43 |
| 1:A:628:GLU:HA | 1:A:631:ARG:HG2 | 2.00 | 0.42 |
| 1:A:913:ARG:HE | 1:A:917:LEU:HD21 | 1.84 | 0.42 |
| 1:A:1093:GLU:HA | 1:A:1096:VAL:HG22 | 2.00 | 0.42 |
| 1:A:1101:PHE:CD2 | 1:A:1163:LEU:HD13 | 2.54 | 0.42 |
| 1:A:1202:ARG:HD3 | 1:A:1202:ARG:HA | 1.81 | 0.42 |
| 1:A:1684:LEU:HD23 | 1:A:1689:LYS:HG2 | 2.01 | 0.42 |
| 1:A:1957:ASN:CG | 1:A:2103:HIS:HE2 | 2.24 | 0.42 |
| 1:A:2771:LEU:HD23 | 1:A:2771:LEU:H | 1.84 | 0.42 |
| 1:A:3134:ALA:O | 1:A:3138:ILE:HG22 | 2.19 | 0.42 |
| 1:A:3357:ARG:NH1 | 1:A:3357:ARG:O | 2.52 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3496:ILE:HA | 1:A:3499:ILE:HG23 | 2.01 | 0.42 |
| 2:B:283:PRO:HA | 2:B:284:PRO:HD3 | 1.96 | 0.42 |
| 6:K:183:GLN:O | 6:K:186:LEU:CD1 | 2.67 | 0.42 |
| 4:M:5:GLU:HG2 | 4:M:130:LEU:HD13 | 2.01 | 0.42 |
| 1:A:247:GLU:O | 1:A:251:PHE:CD1 | 2.72 | 0.42 |
| 1:A:420:VAL:O | 1:A:424:LEU:N | 2.52 | 0.42 |
| 1:A:900:GLU:OE1 | 1:A:900:GLU:N | 2.52 | 0.42 |
| 1:A:975:ASP:O | 1:A:981:ARG:NH2 | 2.52 | 0.42 |
| 1:A:1614:GLN:HA | 1:A:1617:LYS:HD2 | 2.00 | 0.42 |
| 1:A:2158:ARG:C | 1:A:2160:TYR:H | 2.28 | 0.42 |
| 1:A:2233:HIS:O | 1:A:2237:ILE:HG12 | 2.18 | 0.42 |
| 3:C:362:LEU:HB2 | 3:C:421:TYR:HB3 | 2.01 | 0.42 |
| 3:C:656:ASN:HD21 | 3:C:690:GLU:HB3 | 1.85 | 0.42 |
| 6:K:68:MET:O | 6:K:72:LEU:N | 2.39 | 0.42 |
| 6:K:180:ALA:HA | 6:K:183:GLN:OE1 | 2.20 | 0.42 |
| 1:A:115:TYR:HB2 | 1:A:130:LEU:HD22 | 2.00 | 0.42 |
| 1:A:230:LEU:O | 1:A:233:ASN:HB3 | 2.18 | 0.42 |
| 1:A:330:ASN:O | 1:A:333:MET:HE3 | 2.20 | 0.42 |
| 1:A:899:ARG:HH11 | 1:A:2568:MET:HB2 | 1.83 | 0.42 |
| 1:A:1344:PHE:O | 1:A:1347:THR:OG1 | 2.32 | 0.42 |
| 1:A:1569:THR:HA | 1:A:1603:GLN:HE22 | 1.85 | 0.42 |
| 1:A:2185:MET:O | 1:A:2189:ILE:HG23 | 2.19 | 0.42 |
| 1:A:2313:LYS:O | 1:A:2317:ALA:CB | 2.67 | 0.42 |
| 1:A:3424:LEU:HD21 | 1:A:3442:TYR:HB2 | 2.01 | 0.42 |
| 1:A:3523:ASP:N | 1:A:3523:ASP:OD1 | 2.50 | 0.42 |
| 1:A:3718:ARG:N | 1:A:3743:HIS:HB3 | 2.32 | 0.42 |
| 1:A:3871:PHE:O | 1:A:3875:GLU:HG2 | 2.19 | 0.42 |
| 5:G:192:ARG:O | 5:G:196:ASN:ND2 | 2.51 | 0.42 |
| 5:H:90:LYS:HD3 | 5:H:90:LYS:HA | 1.76 | 0.42 |
| 1:A:40:GLN:OE1 | 1:A:2427:ARG:N | 2.52 | 0.42 |
| 1:A:96:MET:HB3 | 1:A:100:ILE:HD11 | 2.01 | 0.42 |
| 1:A:631:ARG:HG3 | 1:A:632:GLU:OE2 | 2.19 | 0.42 |
| 1:A:3603:LYS:HE3 | 1:A:3603:LYS:HB3 | 1.79 | 0.42 |
| 1:A:4005:PHE:CG | 1:A:4006:VAL:N | 2.87 | 0.42 |
| 2:B:264:ASN:C | 2:B:266:ASP:H | 2.27 | 0.42 |
| 2:B:320:GLN:HG3 | 3:C:276:TRP:CE3 | 2.54 | 0.42 |
| 3:C:162:GLN:CD | 3:C:223:GLU:HB3 | 2.44 | 0.42 |
| 3:C:212:MET:O | 3:C:216:GLU:N | 2.52 | 0.42 |
| 6:K:460:ASP:HB2 | 6:K:561:ALA:HB3 | 2.01 | 0.42 |
| 1:A:163:LYS:NZ | 2:B:302:THR:HG23 | 2.35 | 0.42 |
| 1:A:374:LYS:NZ | 1:A:423:TYR:O | 2.32 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:536:SER:O | 1:A:539:GLN:HG2 | 2.20 | 0.42 |
| 1:A:771:ASN:O | 1:A:774:GLU:HG3 | 2.20 | 0.42 |
| 1:A:1844:VAL:HG23 | 1:A:1845:VAL:HG13 | 2.02 | 0.42 |
| 1:A:2279:ILE:HA | 1:A:2282:ALA:HB2 | 2.02 | 0.42 |
| 1:A:3548:GLY:O | 1:A:3552:LYS:HG2 | 2.18 | 0.42 |
| 1:A:3931:ALA:O | 1:A:3935:GLY:CA | 2.68 | 0.42 |
| 2:B:407:PRO:HA | 2:B:408:PRO:HD3 | 1.91 | 0.42 |
| 3:C:74:TYR:HB3 | 3:C:113:VAL:CG2 | 2.50 | 0.42 |
| 6:K:228:LEU:HD21 | 6:K:235:LEU:HB2 | 2.00 | 0.42 |
| 6:K:706:ASN:H | 6:K:709:VAL:CG2 | 2.32 | 0.42 |
| 6:K:719:ASP:CG | 6:K:746:MET:HA | 2.44 | 0.42 |
| 1:A:120:ALA:HA | 1:A:123:CYS:SG | 2.60 | 0.42 |
| 1:A:477:ASN:OD1 | 1:A:477:ASN:C | 2.62 | 0.42 |
| 1:A:865:GLN:O | 1:A:868:LYS:NZ | 2.53 | 0.42 |
| 1:A:977:ASP:OD1 | 1:A:979:VAL:HG22 | 2.20 | 0.42 |
| 1:A:2576:MET:HE1 | 1:A:2786:LYS:O | 2.19 | 0.42 |
| 1:A:3321:LEU:O | 1:A:3324:ARG:HG2 | 2.19 | 0.42 |
| 1:A:3515:GLN:NE2 | 1:A:3554:PHE:HB3 | 2.35 | 0.42 |
| 1:A:3820:MET:SD | 1:A:3825:LYS:HB2 | 2.59 | 0.42 |
| 2:B:358:LYS:HA | 3:C:353:ARG:CZ | 2.50 | 0.42 |
| 6:K:366:VAL:HG11 | 6:K:389:LEU:HD11 | 2.01 | 0.42 |
| 6:K:529:PHE:O | 6:K:530:HIS:ND1 | 2.52 | 0.42 |
| 6:K:879:ARG:NH1 | 6:K:886:PHE:O | 2.52 | 0.42 |
| 1:A:573:LEU:HD12 | 1:A:649:PHE:CD1 | 2.52 | 0.42 |
| 1:A:1881:TYR:HB2 | 1:A:1950:SER:HB3 | 2.01 | 0.42 |
| 1:A:2916:LEU:HD12 | 1:A:2917:PRO:HD2 | 2.01 | 0.42 |
| 1:A:2965:TYR:HB2 | 1:A:3005:LEU:HD21 | 2.02 | 0.42 |
| 1:A:3442:TYR:O | 1:A:3445:LEU:HG | 2.20 | 0.42 |
| 1:A:3588:TRP:HD1 | 1:A:3609:MET:SD | 2.43 | 0.42 |
| 1:A:3595:GLU:CD | 1:A:3606:ILE:HG13 | 2.45 | 0.42 |
| 2:B:493:LEU:HD21 | 6:K:708:ARG:NH1 | 2.34 | 0.42 |
| 3:C:71:GLY:C | 3:C:73:GLN:H | 2.27 | 0.42 |
| 3:C:651:GLU:O | 3:C:654:ARG:HB2 | 2.19 | 0.42 |
| 5:G:28:LEU:HD22 | 5:G:52:ILE:HG21 | 2.02 | 0.42 |
| 6:K:43:LEU:HD11 | 6:K:207:PHE:CD2 | 2.54 | 0.42 |
| 6:K:418:LEU:HD22 | 6:K:452:PRO:HA | 2.02 | 0.42 |
| 1:A:382:ASP:OD1 | 1:A:383:PHE:N | 2.50 | 0.42 |
| 1:A:2425:ARG:NH2 | 1:A:2460:GLU:OE1 | 2.51 | 0.42 |
| 1:A:2870:SER:HA | 1:A:2922:ARG:HH22 | 1.84 | 0.42 |
| 1:A:3117:ILE:HD11 | 1:A:3125:ARG:HG2 | 2.01 | 0.42 |
| 1:A:3141:PHE:CZ | 1:A:3145:ILE:HD11 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3463:LEU:HA | 1:A:3498:TRP:CH2 | 2.54 | 0.42 |
| 1:A:3880:ALA:HB2 | 1:A:3965:ARG:HH22 | 1.85 | 0.42 |
| 1:A:4012:ASP:OD1 | 1:A:4012:ASP:N | 2.52 | 0.42 |
| 2:B:108:LEU:HD11 | 2:B:154:PHE:CD1 | 2.55 | 0.42 |
| 2:B:418:GLU:CD | 2:B:426:GLN:HE22 | 2.27 | 0.42 |
| 2:B:442:ASP:OD1 | 3:C:270:GLU:HB3 | 2.20 | 0.42 |
| 2:B:522:VAL:HG21 | 3:C:256:ASN:HB3 | 2.00 | 0.42 |
| 4:M:187:ASN:HA | 4:M:190:LEU:HG | 2.01 | 0.42 |
| 8:e:22:DG:H2' | 8:e:23:DT:H71 | 2.01 | 0.42 |
| 1:A:373:CYS:SG | 1:A:384:MET:HE1 | 2.60 | 0.42 |
| 1:A:484:HIS:HE1 | 1:A:574:LYS:HG3 | 1.85 | 0.42 |
| 1:A:754:MET:HA | 1:A:754:MET:HE2 | 2.02 | 0.42 |
| 1:A:1791:CYS:HB2 | 1:A:1835:ALA:HB2 | 2.01 | 0.42 |
| 1:A:3045:ILE:O | 1:A:3049:LEU:N | 2.41 | 0.42 |
| 1:A:3096:VAL:HG23 | 1:A:3100:LYS:HZ1 | 1.85 | 0.42 |
| 1:A:3264:LYS:N | 1:A:3264:LYS:HD2 | 2.35 | 0.42 |
| 1:A:3326:GLN:O | 1:A:3329:LEU:HD12 | 2.20 | 0.42 |
| 1:A:3563:ASP:C | 1:A:3564:GLN:HG3 | 2.45 | 0.42 |
| 1:A:3638:LYS:HD2 | 1:A:3642:LYS:NZ | 2.35 | 0.42 |
| 1:A:3831:ASP:HB3 | 1:A:3832:PRO:HD3 | 2.01 | 0.42 |
| 1:A:4043:LYS:HD2 | 1:A:4043:LYS:N | 2.35 | 0.42 |
| 3:C:529:PRO:HA | 3:C:532:LYS:HG2 | 2.01 | 0.42 |
| 5:G:141:ASN:OD1 | 5:H:144:LEU:HD12 | 2.20 | 0.42 |
| 5:H:26:LYS:HD3 | 5:H:26:LYS:HA | 1.89 | 0.42 |
| 5:H:158:VAL:HG12 | 5:H:162:PHE:CZ | 2.54 | 0.42 |
| 6:K:274:LEU:HD12 | 6:K:367:PHE:HE2 | 1.85 | 0.42 |
| 1:A:982:GLN:NE2 | 1:A:2592:ASP:OD1 | 2.52 | 0.42 |
| 1:A:1486:LEU:O | 1:A:1490:GLY:N | 2.53 | 0.42 |
| 1:A:1634:ALA:HB3 | 1:A:1637:SER:HB3 | 2.02 | 0.42 |
| 1:A:2036:LEU:O | 1:A:2040:MET:HG2 | 2.20 | 0.42 |
| 1:A:2950:LYS:O | 1:A:2953:THR:HG22 | 2.20 | 0.42 |
| 1:A:3014:CYS:HB3 | 1:A:3047:SER:OG | 2.20 | 0.42 |
| 1:A:3589:SER:HA | 1:A:3592:VAL:HG22 | 2.01 | 0.42 |
| 2:B:346:MET:HG3 | 2:B:399:ARG:HH21 | 1.85 | 0.42 |
| 3:C:10:VAL:HB | 3:C:54:ILE:HG12 | 2.01 | 0.42 |
| 3:C:383:ALA:O | 3:C:387:LEU:HB2 | 2.20 | 0.42 |
| 5:G:8:ILE:HD12 | 5:G:9:HIS:H | 1.84 | 0.42 |
| 5:G:29:GLU:HG2 | 5:G:50:SER:HA | 2.01 | 0.42 |
| 5:G:43:TRP:HD1 | 5:G:115:LYS:HA | 1.85 | 0.42 |
| 6:K:339:THR:O | 6:K:341:THR:HG23 | 2.19 | 0.42 |
| 1:A:153:PHE:HD2 | 1:A:180:LEU:HD12 | 1.84 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:468:LEU:HA | 1:A:468:LEU:HD12 | 1.80 | 0.41 |
| 1:A:581:LEU:HD13 | 1:A:619:ASP:HB3 | 2.02 | 0.41 |
| 1:A:636:GLU:O | 1:A:638:GLN:NE2 | 2.53 | 0.41 |
| 1:A:1208:LEU:HA | 1:A:1211:VAL:HG12 | 2.00 | 0.41 |
| 1:A:1255:CYS:O | 1:A:1259:LEU:HG | 2.20 | 0.41 |
| 1:A:1839:PHE:CE1 | 1:A:1843:ILE:HD13 | 2.55 | 0.41 |
| 1:A:2310:VAL:HG11 | 1:A:2359:LYS:HG3 | 2.01 | 0.41 |
| 1:A:2426:HIS:CE1 | 1:A:2431:ARG:HD2 | 2.55 | 0.41 |
| 1:A:3301:LEU:CB | 1:A:3304:VAL:HA | 2.50 | 0.41 |
| 1:A:4113:ASP:O | 1:A:4116:ILE:HG22 | 2.20 | 0.41 |
| 2:B:38:LEU:HB3 | 2:B:83:LEU:HD23 | 2.02 | 0.41 |
| 2:B:227:GLU:OE2 | 2:B:232:HIS:HE1 | 2.03 | 0.41 |
| 5:H:87:ASN:O | 5:H:97:PHE:HA | 2.20 | 0.41 |
| 6:K:36:ILE:HG23 | 6:K:206:VAL:HG11 | 2.02 | 0.41 |
| 6:K:396:ILE:N | 6:K:400:ILE:O | 2.53 | 0.41 |
| 1:A:1721:HIS:O | 1:A:1739:TYR:HE2 | 2.03 | 0.41 |
| 1:A:2788:SER:HA | 1:A:2791:ILE:HG12 | 2.02 | 0.41 |
| 1:A:3072:GLU:OE1 | 1:A:3072:GLU:N | 2.53 | 0.41 |
| 1:A:3761:ASP:O | 1:A:3765:GLU:HG2 | 2.20 | 0.41 |
| 2:B:346:MET:HE2 | 2:B:346:MET:N | 2.35 | 0.41 |
| 3:C:86:PRO:HB3 | 3:C:90:LEU:HD23 | 2.01 | 0.41 |
| 3:C:654:ARG:HA | 3:C:657:ASN:HD21 | 1.85 | 0.41 |
| 5:G:161:ARG:HA | 5:G:161:ARG:HD2 | 1.86 | 0.41 |
| 6:K:126:ALA:HB2 | 6:K:187:ILE:HD11 | 1.97 | 0.41 |
| 6:K:158:ASN:HB3 | 6:K:167:ILE:HG13 | 2.02 | 0.41 |
| 6:K:260:GLU:OE1 | 6:K:411:LYS:HE2 | 2.20 | 0.41 |
| 6:K:774:LEU:O | 6:K:777:VAL:HG22 | 2.20 | 0.41 |
| 1:A:145:ASP:O | 1:A:147:PHE:N | 2.50 | 0.41 |
| 1:A:169:THR:O | 1:A:172:GLU:HB2 | 2.20 | 0.41 |
| 1:A:301:CYS:SG | 1:A:316:LEU:HD12 | 2.60 | 0.41 |
| 1:A:1489:LYS:HA | 1:A:1492:ALA:HB3 | 2.01 | 0.41 |
| 1:A:2813:PHE:HZ | 1:A:2836:LEU:HD13 | 1.85 | 0.41 |
| 1:A:2945:SER:OG | 1:A:2946:GLU:N | 2.53 | 0.41 |
| 1:A:3502:MET:HE3 | 1:A:3502:MET:HB3 | 1.93 | 0.41 |
| 1:A:3510:GLN:CD | 1:A:3511:ALA:H | 2.27 | 0.41 |
| 2:B:41:LEU:HD23 | 2:B:41:LEU:HA | 1.86 | 0.41 |
| 2:B:278:GLN:NE2 | 2:B:279:LYS:O | 2.46 | 0.41 |
| 2:B:370:PRO:HD3 | 2:B:382:PHE:CE2 | 2.55 | 0.41 |
| 3:C:73:GLN:HE22 | 3:C:106:ASP:H | 1.68 | 0.41 |
| 3:C:660:LYS:O | 3:C:664:GLU:N | 2.42 | 0.41 |
| 6:K:596:LEU:O | 6:K:600:GLU:HG3 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:M:185:GLU:HB3 | 4:M:187:ASN:OD1 | 2.20 | 0.41 |
| 7:d:42:DA:H2' | 7:d:43:DT:C6 | 2.56 | 0.41 |
| 1:A:115:TYR:OH | 1:A:159:GLU:OE1 | 2.24 | 0.41 |
| 1:A:710:PHE:O | 1:A:714:VAL:HG13 | 2.21 | 0.41 |
| 1:A:997:ASN:ND2 | 1:A:999:LYS:H | 2.18 | 0.41 |
| 1:A:1000:LYS:HD3 | 1:A:1000:LYS:HA | 1.84 | 0.41 |
| 1:A:1251:GLN:OE1 | 1:A:1251:GLN:N | 2.44 | 0.41 |
| 1:A:1775:GLU:O | 1:A:1779:GLN:HG2 | 2.20 | 0.41 |
| 1:A:1950:SER:HA | 1:A:1953:CYS:SG | 2.60 | 0.41 |
| 1:A:1960:LYS:O | 1:A:1962:TYR:N | 2.52 | 0.41 |
| 1:A:2379:MET:HG3 | 1:A:2383:PHE:CE2 | 2.55 | 0.41 |
| 1:A:2493:ASN:OD1 | 1:A:2494:ASP:N | 2.53 | 0.41 |
| 1:A:2553:HIS:O | 1:A:2557:LEU:HG | 2.20 | 0.41 |
| 1:A:3270:ASP:OD1 | 1:A:3270:ASP:N | 2.54 | 0.41 |
| 1:A:3501:HIS:CE1 | 1:A:4004:VAL:HG21 | 2.54 | 0.41 |
| 1:A:4038:TRP:CH2 | 1:A:4043:LYS:HD3 | 2.55 | 0.41 |
| 2:B:95:ASN:HD21 | 2:B:99:PHE:N | 2.06 | 0.41 |
| 2:B:107:GLU:HB2 | 2:B:153:LEU:HD11 | 2.01 | 0.41 |
| 2:B:267:ILE:HD12 | 3:C:530:LEU:HD12 | 2.02 | 0.41 |
| 2:B:327:ILE:HD13 | 3:C:494:LEU:HD12 | 2.01 | 0.41 |
| 6:K:253:ILE:HD13 | 6:K:449:LYS:HG3 | 2.01 | 0.41 |
| 1:A:623:PHE:O | 1:A:627:VAL:HG12 | 2.20 | 0.41 |
| 1:A:1670:GLU:OE1 | 1:A:1670:GLU:N | 2.51 | 0.41 |
| 1:A:3642:LYS:HG3 | 1:A:3643:HIS:ND1 | 2.35 | 0.41 |
| 1:A:3880:ALA:HB2 | 1:A:3965:ARG:HH12 | 1.86 | 0.41 |
| 1:A:4007:LYS:HA | 1:A:4007:LYS:HD3 | 1.77 | 0.41 |
| 1:A:4093:GLU:OE1 | 1:A:4093:GLU:N | 2.52 | 0.41 |
| 2:B:254:ARG:NH2 | 8:e:24:DT:O2 | 2.54 | 0.41 |
| 2:B:316:THR:OG1 | 2:B:318:ARG:NH1 | 2.54 | 0.41 |
| 2:B:327:ILE:HD11 | 3:C:497:ARG:HB3 | 2.02 | 0.41 |
| 3:C:66:ASN:HD22 | 3:C:75:GLN:NE2 | 2.18 | 0.41 |
| 3:C:111:LEU:HB2 | 3:C:134:ILE:HD13 | 2.02 | 0.41 |
| 3:C:169:LEU:HD11 | 3:C:225:TYR:HA | 2.02 | 0.41 |
| 6:K:247:LYS:NZ | 6:K:250:LEU:HG | 2.35 | 0.41 |
| 6:K:512:MET:HE1 | 6:K:514:GLU:CB | 2.50 | 0.41 |
| 7:d:28:DT:H2" | 7:d:29:DA:C8 | 2.55 | 0.41 |
| 1:A:849:GLU:O | 1:A:853:ILE:HG12 | 2.20 | 0.41 |
| 1:A:1367:HIS:HB2 | 1:A:1370:ARG:NE | 2.36 | 0.41 |
| 1:A:1452:VAL:HG23 | 1:A:1517:LEU:HB2 | 2.02 | 0.41 |
| 1:A:1640:GLU:HA | 1:A:1643:MET:SD | 2.61 | 0.41 |
| 1:A:2562:LEU:O | 1:A:2565:MET:HE3 | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3380:ARG:HD2 | 1:A:3383:GLN:NE2 | 2.36 | 0.41 |
| 1:A:3714:GLU:O | 1:A:3716:HIS:N | 2.51 | 0.41 |
| 1:A:3739:ILE:HG13 | 1:A:3747:GLU:OE2 | 2.21 | 0.41 |
| 1:A:3840:LYS:N | 1:A:3840:LYS:HD2 | 2.35 | 0.41 |
| 2:B:114:LYS:CA | 2:B:117:LEU:HG | 2.49 | 0.41 |
| 2:B:444:ARG:HD3 | 2:B:444:ARG:HA | 1.79 | 0.41 |
| 2:B:467:GLU:O | 2:B:470:ARG:HG2 | 2.21 | 0.41 |
| 2:B:484:GLN:O | 2:B:488:ARG:HG2 | 2.20 | 0.41 |
| 3:C:229:GLU:HB3 | 3:C:233:LYS:NZ | 2.36 | 0.41 |
| 5:H:42:ALA:O | 5:H:119:PRO:HB3 | 2.21 | 0.41 |
| 6:K:215:HIS:HA | 6:K:218:THR:O | 2.20 | 0.41 |
| 6:K:677:ASP:O | 6:K:681:ARG:HG2 | 2.21 | 0.41 |
| 1:A:709:LYS:HE3 | 1:A:1389:VAL:HG12 | 2.02 | 0.41 |
| 1:A:983:LEU:C | 1:A:986:PRO:HD2 | 2.46 | 0.41 |
| 1:A:2039:GLU:OE1 | 1:A:2039:GLU:C | 2.63 | 0.41 |
| 1:A:2125:TRP:O | 1:A:2129:LEU:HD12 | 2.21 | 0.41 |
| 1:A:2443:MET:HA | 1:A:2446:LEU:HG | 2.02 | 0.41 |
| 1:A:2452:ARG:HD2 | 1:A:2494:ASP:OD1 | 2.21 | 0.41 |
| 1:A:2537:ASP:O | 1:A:2541:ALA:HB2 | 2.20 | 0.41 |
| 1:A:2798:ALA:O | 1:A:2805:ALA:HB2 | 2.21 | 0.41 |
| 1:A:3063:THR:HA | 1:A:3066:ASP:OD2 | 2.21 | 0.41 |
| 1:A:3369:ASP:OD1 | 1:A:3370:SER:N | 2.53 | 0.41 |
| 1:A:3490:VAL:HG21 | 1:A:3493:TRP:HA | 2.03 | 0.41 |
| 2:B:77:SER:HA | 2:B:248:ALA:O | 2.20 | 0.41 |
| 2:B:358:LYS:HE3 | 3:C:353:ARG:HD3 | 2.03 | 0.41 |
| 3:C:13:CYS:O | 3:C:135:PHE:HB2 | 2.21 | 0.41 |
| 5:H:103:ASP:OD1 | 5:H:103:ASP:N | 2.53 | 0.41 |
| 5:H:155:TRP:O | 5:H:159:GLN:HB3 | 2.21 | 0.41 |
| 6:K:10:VAL:HG13 | 6:K:49:PHE:HD2 | 1.86 | 0.41 |
| 6:K:258:HIS:NE2 | 6:K:262:ASP:OD1 | 2.53 | 0.41 |
| 4:M:156:LEU:O | 4:M:160:LYS:HG3 | 2.20 | 0.41 |
| 1:A:149:ILE:HD13 | 1:A:183:GLU:OE1 | 2.21 | 0.41 |
| 1:A:650:SER:O | 1:A:654:ILE:HG12 | 2.20 | 0.41 |
| 1:A:834:LEU:O | 1:A:838:LYS:HG3 | 2.21 | 0.41 |
| 1:A:931:CYS:O | 1:A:984:TYR:OH | 2.33 | 0.41 |
| 1:A:2773:ARG:HH22 | 1:A:2785:ILE:HG21 | 1.86 | 0.41 |
| 1:A:3719:ILE:HG13 | 1:A:3719:ILE:O | 2.21 | 0.41 |
| 1:A:3813:LYS:NZ | 1:A:3926:ASN:H | 2.18 | 0.41 |
| 2:B:303:PHE:HB2 | 2:B:309:GLY:O | 2.21 | 0.41 |
| 4:D:79:LEU:HD23 | 4:D:81:ARG:NE | 2.35 | 0.41 |
| 5:G:71:ARG:NE | 5:G:71:ARG:HA | 2.35 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:782:LYS:HA | 6:K:782:LYS:HD2 | 1.81 | 0.41 |
| 1:A:382:ASP:O | 1:A:386:VAL:HG12 | 2.21 | 0.41 |
| 1:A:397:LEU:HD23 | 1:A:397:LEU:HA | 1.86 | 0.41 |
| 1:A:709:LYS:O | 1:A:713:GLU:HG3 | 2.21 | 0.41 |
| 1:A:936:SER:HB2 | 1:A:2773:ARG:HE | 1.86 | 0.41 |
| 1:A:1075:ARG:HH21 | 1:A:1114:ALA:HA | 1.85 | 0.41 |
| 1:A:1150:LYS:HA | 1:A:1150:LYS:HD2 | 1.84 | 0.41 |
| 1:A:1184:ARG:CZ | 1:A:1262:ALA:HA | 2.51 | 0.41 |
| 1:A:1298:LEU:HA | 1:A:1367:HIS:CD2 | 2.56 | 0.41 |
| 1:A:1333:SER:O | 1:A:1337:VAL:HG23 | 2.20 | 0.41 |
| 1:A:1464:LEU:HD22 | 1:A:1521:PHE:CE1 | 2.56 | 0.41 |
| 1:A:2104:MET:HE3 | 1:A:2104:MET:HB2 | 1.93 | 0.41 |
| 1:A:2245:TRP:HA | 1:A:2245:TRP:HE3 | 1.86 | 0.41 |
| 1:A:2316:TYR:OH | 1:A:2359:LYS:HD2 | 2.20 | 0.41 |
| 1:A:2386:LEU:HD13 | 1:A:2397:CYS:SG | 2.61 | 0.41 |
| 1:A:2792:THR:OG1 | 1:A:2793:PRO:HD3 | 2.20 | 0.41 |
| 1:A:2873:PRO:HA | 1:A:2876:VAL:CG1 | 2.50 | 0.41 |
| 1:A:3178:ILE:O | 1:A:3182:ILE:HG12 | 2.21 | 0.41 |
| 1:A:3325:ASP:O | 1:A:3329:LEU:HG | 2.20 | 0.41 |
| 1:A:3457:ASN:N | 1:A:3457:ASN:OD1 | 2.54 | 0.41 |
| 1:A:3753:LYS:HA | 1:A:3753:LYS:HD2 | 1.92 | 0.41 |
| 1:A:3813:LYS:HG3 | 1:A:3926:ASN:OD1 | 2.21 | 0.41 |
| 1:A:3824:GLU:H | 1:A:3824:GLU:HG2 | 1.63 | 0.41 |
| 1:A:3829:LEU:HA | 1:A:3833:ARG:HD2 | 2.03 | 0.41 |
| 1:A:3951:GLN:HG2 | 1:A:4066:LEU:O | 2.21 | 0.41 |
| 2:B:35:ARG:O | 2:B:162:SER:HB2 | 2.21 | 0.41 |
| 2:B:131:PHE:HA | 2:B:134:MET:SD | 2.60 | 0.41 |
| 2:B:330:GLU:O | 2:B:333:GLU:HG2 | 2.20 | 0.41 |
| 2:B:521:LEU:O | 2:B:525:PHE:HD2 | 2.03 | 0.41 |
| 3:C:36:LYS:HZ3 | 3:C:231:LEU:HD22 | 1.85 | 0.41 |
| 3:C:64:THR:HG22 | 3:C:76:ASN:HA | 2.03 | 0.41 |
| 3:C:283:THR:O | 3:C:285:LYS:HG2 | 2.21 | 0.41 |
| 3:C:352:GLN:HB2 | 3:C:355:PHE:HD2 | 1.86 | 0.41 |
| 3:C:492:GLN:OE1 | 3:C:509:GLN:HG2 | 2.21 | 0.41 |
| 3:C:539:LEU:HD23 | 3:C:539:LEU:HA | 1.92 | 0.41 |
| 3:C:621:GLU:O | 3:C:623:PHE:N | 2.50 | 0.41 |
| 3:C:671:LEU:HD12 | 3:C:674:PHE:HA | 2.03 | 0.41 |
| 3:C:688:LYS:HE3 | 3:C:695:SER:HA | 2.01 | 0.41 |
| 6:K:65:TYR:CZ | 6:K:69:ARG:HD2 | 2.56 | 0.41 |
| 6:K:178:SER:O | 6:K:183:GLN:NE2 | 2.54 | 0.41 |
| 6:K:671:ASP:OD1 | 6:K:672:SER:N | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:K:679:GLU:H | 6:K:679:GLU:CD | 2.29 | 0.41 |
| 1:A:23:ASP:OD1 | 1:A:23:ASP:N | 2.48 | 0.41 |
| 1:A:566:ASP:HB2 | 1:A:645:TRP:HZ2 | 1.86 | 0.41 |
| 1:A:785:MET:HE2 | 1:A:785:MET:HB2 | 1.87 | 0.41 |
| 1:A:1238:GLN:O | 1:A:1311:LYS:HG2 | 2.20 | 0.41 |
| 1:A:1574:ASN:HD21 | 1:A:1577:LEU:CD2 | 2.28 | 0.41 |
| 1:A:1783:ARG:NH1 | 1:A:1830:HIS:HB2 | 2.36 | 0.41 |
| 1:A:2044:ASP:O | 1:A:2048:GLY:N | 2.48 | 0.41 |
| 1:A:3100:LYS:HG3 | 1:A:3142:ILE:HD11 | 2.03 | 0.41 |
| 1:A:3811:THR:OG1 | 1:A:3812:LEU:N | 2.54 | 0.41 |
| 3:C:44:ARG:NH2 | 3:C:488:GLN:OE1 | 2.37 | 0.41 |
| 3:C:58:LEU:HD11 | 3:C:80:HIS:HB2 | 2.01 | 0.41 |
| 3:C:510:GLN:NE2 | 3:C:513:TRP:HB2 | 2.36 | 0.41 |
| 4:D:14:ALA:HB3 | 4:D:26:LYS:HB3 | 2.02 | 0.41 |
| 1:A:1479:VAL:HB | 1:A:1518:ALA:HA | 2.02 | 0.40 |
| 1:A:1572:LEU:HD12 | 1:A:1572:LEU:HA | 1.88 | 0.40 |
| 1:A:1783:ARG:NH1 | 1:A:1829:TRP:HB3 | 2.35 | 0.40 |
| 1:A:2928:LYS:HG3 | 1:A:2993:PHE:CD2 | 2.56 | 0.40 |
| 1:A:3259:LEU:HA | 1:A:3259:LEU:HD23 | 1.80 | 0.40 |
| 1:A:3639:GLU:HA | 1:A:3642:LYS:HG2 | 2.03 | 0.40 |
| 1:A:3771:MET:HE3 | 1:A:3771:MET:HB2 | 2.01 | 0.40 |
| 2:B:105:LEU:HD12 | 2:B:105:LEU:HA | 1.83 | 0.40 |
| 2:B:388:LYS:HD3 | 2:B:391:GLU:OE1 | 2.21 | 0.40 |
| 2:B:521:LEU:HB3 | 2:B:525:PHE:CE2 | 2.56 | 0.40 |
| 5:G:8:ILE:HD12 | 5:G:9:HIS:N | 2.36 | 0.40 |
| 5:G:62:GLU:HB2 | 5:G:65:LYS:HB2 | 2.02 | 0.40 |
| 4:M:21:ASN:OD1 | 4:M:21:ASN:N | 2.54 | 0.40 |
| 4:M:69:PRO:O | 4:M:73:LEU:HG | 2.20 | 0.40 |
| 4:M:115:LEU:H | 4:M:115:LEU:HD12 | 1.85 | 0.40 |
| 7:d:42:DA:H2 | 8:e:15:DA:H5' | 1.86 | 0.40 |
| 1:A:639:ALA:HB3 | 1:A:680:ILE:HG12 | 2.02 | 0.40 |
| 1:A:2323:LEU:HD23 | 1:A:2323:LEU:HA | 1.73 | 0.40 |
| 1:A:2949:THR:O | 1:A:2950:LYS:NZ | 2.54 | 0.40 |
| 1:A:3313:SER:O | 1:A:3313:SER:OG | 2.39 | 0.40 |
| 1:A:3355:LYS:HD3 | 1:A:3355:LYS:C | 2.45 | 0.40 |
| 1:A:3895:GLU:H | 1:A:3895:GLU:CD | 2.21 | 0.40 |
| 2:B:94:LYS:HB2 | 2:B:103:TYR:CE1 | 2.56 | 0.40 |
| 2:B:322:TYR:CE1 | 3:C:274:LYS:HG2 | 2.54 | 0.40 |
| 2:B:418:GLU:OE1 | 3:C:437:SER:HA | 2.21 | 0.40 |
| 3:C:107:PHE:HE2 | 3:C:141:ARG:H | 1.68 | 0.40 |
| 6:K:19:LEU:HD11 | 6:K:145:ILE:HG12 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:M:50:ASP:O | 4:M:54:VAL:HG13 | 2.21 | 0.40 |
| 1:A:990:GLN:NE2 | 1:A:2778:GLY:H | 2.18 | 0.40 |
| 1:A:1057:LYS:H | 1:A:1057:LYS:HD2 | 1.86 | 0.40 |
| 1:A:1519:PHE:HD1 | 1:A:1524:LEU:HD21 | 1.87 | 0.40 |
| 1:A:2747:GLY:O | 1:A:2751:GLN:HG2 | 2.22 | 0.40 |
| 1:A:4075:ARG:HA | 1:A:4078:VAL:HG22 | 2.02 | 0.40 |
| 2:B:114:LYS:O | 2:B:117:LEU:HG | 2.21 | 0.40 |
| 2:B:158:GLN:OE1 | 2:B:158:GLN:N | 2.55 | 0.40 |
| 2:B:290:ARG:NH2 | 6:K:692:ASN:O | 2.55 | 0.40 |
| 2:B:302:THR:HB | 2:B:311:LEU:HD12 | 2.03 | 0.40 |
| 2:B:330:GLU:H | 2:B:333:GLU:CG | 2.35 | 0.40 |
| 3:C:656:ASN:ND2 | 3:C:690:GLU:HB3 | 2.37 | 0.40 |
| 4:D:143:SER:O | 4:D:146:LEU:HB2 | 2.21 | 0.40 |
| 6:K:343:MET:HE1 | 6:K:360:LEU:HD21 | 2.03 | 0.40 |
| 6:K:465:LEU:HD11 | 6:K:554:SER:HB2 | 2.02 | 0.40 |
| 6:K:482:HIS:HB2 | 6:K:505:ARG:HH21 | 1.86 | 0.40 |
| 6:K:727:LEU:O | 6:K:731:LYS:HE2 | 2.22 | 0.40 |
| 8:e:18:DA:H2" | 8:e:19:DA:N7 | 2.36 | 0.40 |
| 1:A:1366:THR:O | 1:A:1368:LEU:N | 2.54 | 0.40 |
| 1:A:3918:LEU:HB2 | 1:A:3920:ILE:HG12 | 2.04 | 0.40 |
| 1:A:3953:LEU:HD13 | 1:A:3953:LEU:HA | 1.77 | 0.40 |
| 2:B:58:THR:O | 2:B:62:MET:HG2 | 2.22 | 0.40 |
| 2:B:108:LEU:HD11 | 2:B:154:PHE:HD1 | 1.86 | 0.40 |
| 2:B:203:MET:HE3 | 2:B:237:SER:HB3 | 2.02 | 0.40 |
| 2:B:471:PHE:HB3 | 3:C:345:PHE:O | 2.21 | 0.40 |
| 3:C:268:LEU:HD12 | 3:C:268:LEU:HA | 1.93 | 0.40 |
| 4:D:108:VAL:HG12 | 4:D:110:SER:H | 1.86 | 0.40 |
| 6:K:342:PHE:O | 6:K:511:THR:HA | 2.22 | 0.40 |
| 7:d:33:DA:C4 | 7:d:34:DC:C4 | 3.10 | 0.40 |
| 1:A:36:ARG:HB3 | 1:A:2426:HIS:HB2 | 2.03 | 0.40 |
| 1:A:697:ASP:HA | 1:A:698:PRO:HD3 | 1.86 | 0.40 |
| 1:A:781:ASP:HB3 | 1:A:784:VAL:HG22 | 2.04 | 0.40 |
| 1:A:1261:LEU:O | 1:A:1265:GLU:HG2 | 2.21 | 0.40 |
| 1:A:2188:GLU:OE1 | 1:A:2729:ARG:HD2 | 2.20 | 0.40 |
| 1:A:2351:GLN:HB3 | 1:A:2352:HIS:ND1 | 2.36 | 0.40 |
| 1:A:2758:LYS:HE3 | 1:A:2758:LYS:HB3 | 1.82 | 0.40 |
| 1:A:2850:PHE:CE2 | 1:A:2879:GLY:HA2 | 2.56 | 0.40 |
| 1:A:3100:LYS:HE2 | 1:A:3100:LYS:HB2 | 1.79 | 0.40 |
| 1:A:3164:TRP:C | 1:A:3166:ASN:H | 2.29 | 0.40 |
| 1:A:3420:CYS:SG | 1:A:3442:TYR:HB3 | 2.62 | 0.40 |
| 1:A:3829:LEU:HD13 | 1:A:3833:ARG:NH1 | 2.37 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:3835:PRO:HA | 1:A:3839:TYR:CD1 | 2.57 | 0.40 |
| 2:B:212:ASP:HA | 2:B:231:VAL:HA | 2.03 | 0.40 |
| 2:B:289:TYR:CE2 | 2:B:291:GLU:HB2 | 2.57 | 0.40 |
| 3:C:20:MET:HE1 | 3:C:31:PHE:HA | 2.03 | 0.40 |
| 3:C:526:SER:C | 3:C:529:PRO:HD2 | 2.47 | 0.40 |
| 4:D:176:ARG:HD2 | 4:M:163:GLU:HG3 | 2.02 | 0.40 |
| 5:G:67:VAL:O | 5:G:71:ARG:HG2 | 2.22 | 0.40 |
| 5:H:118:ASN:OD1 | 5:H:118:ASN:N | 2.54 | 0.40 |
| 6:K:50:HIS:NE2 | 6:K:62:ASP:OD1 | 2.54 | 0.40 |
| 6:K:534:PRO:HB3 | 6:K:540:CYS:SG | 2.61 | 0.40 |

There are no symmetry-related clashes.

## 5.3　Torsion angles ⓘ

### 5.3.1　Protein backbone ⓘ

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 | 3483/4128 (84%) | 3142 (90%) | 339 (10%) | 2 (0%) | 48 | 81 |
| 2 | B | 505/609 (83%) | 472 (94%) | 33 (6%) | 0 | 100 | 100 |
| 3 | C | 660/732 (90%) | 603 (91%) | 57 (9%) | 0 | 100 | 100 |
| 4 | D | 174/299 (58%) | 161 (92%) | 13 (8%) | 0 | 100 | 100 |
| 4 | M | 183/299 (61%) | 170 (93%) | 13 (7%) | 0 | 100 | 100 |
| 5 | G | 199/336 (59%) | 185 (93%) | 14 (7%) | 0 | 100 | 100 |
| 5 | H | 190/336 (56%) | 178 (94%) | 12 (6%) | 0 | 100 | 100 |
| 6 | K | 813/911 (89%) | 747 (92%) | 64 (8%) | 2 (0%) | 44 | 76 |
| All | All | 6207/7650 (81%) | 5658 (91%) | 545 (9%) | 4 (0%) | 50 | 81 |

All (4) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 6 | K | 264 | LYS |
| 6 | K | 265 | HIS |
| 1 | A | 1723 | PRO |
| 1 | A | 3292 | GLY |

## 5.3.2   Protein sidechains ⓘ

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 | 3083/3671 (84%) | 3071 (100%) | 12 (0%) | 89 | 91 |
| 2 | B | 451/548 (82%) | 450 (100%) | 1 (0%) | 92 | 94 |
| 3 | C | 585/649 (90%) | 585 (100%) | 0 | 100 | 100 |
| 4 | D | 163/262 (62%) | 163 (100%) | 0 | 100 | 100 |
| 4 | M | 169/262 (64%) | 169 (100%) | 0 | 100 | 100 |
| 5 | G | 180/303 (59%) | 180 (100%) | 0 | 100 | 100 |
| 5 | H | 175/303 (58%) | 175 (100%) | 0 | 100 | 100 |
| 6 | K | 706/808 (87%) | 703 (100%) | 3 (0%) | 89 | 91 |
| All | All | 5512/6806 (81%) | 5496 (100%) | 16 (0%) | 90 | 92 |

All (16) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 51 | LEU |
| 1 | A | 224 | LEU |
| 1 | A | 417 | VAL |
| 1 | A | 1299 | GLU |
| 1 | A | 1403 | MET |
| 1 | A | 2225 | HIS |
| 1 | A | 2333 | ARG |
| 1 | A | 2504 | ASP |
| 1 | A | 3701 | ILE |
| 1 | A | 3820 | MET |
| 1 | A | 3953 | LEU |
| 1 | A | 3955 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | B | 119 | LEU |
| 6 | K | 186 | LEU |
| 6 | K | 432 | LYS |
| 6 | K | 437 | ILE |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (55) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 289 | ASN |
| 1 | A | 305 | ASN |
| 1 | A | 325 | ASN |
| 1 | A | 356 | ASN |
| 1 | A | 448 | GLN |
| 1 | A | 869 | ASN |
| 1 | A | 997 | ASN |
| 1 | A | 1004 | GLN |
| 1 | A | 1126 | GLN |
| 1 | A | 1201 | ASN |
| 1 | A | 1435 | ASN |
| 1 | A | 1598 | ASN |
| 1 | A | 1611 | GLN |
| 1 | A | 2183 | HIS |
| 1 | A | 2222 | HIS |
| 1 | A | 2354 | ASN |
| 1 | A | 2390 | HIS |
| 1 | A | 2765 | GLN |
| 1 | A | 2834 | GLN |
| 1 | A | 2859 | GLN |
| 1 | A | 3093 | GLN |
| 1 | A | 3459 | ASN |
| 1 | A | 3501 | HIS |
| 1 | A | 3605 | ASN |
| 1 | A | 3671 | ASN |
| 1 | A | 3766 | GLN |
| 1 | A | 3915 | HIS |
| 2 | B | 95 | ASN |
| 2 | B | 132 | GLN |
| 2 | B | 232 | HIS |
| 2 | B | 293 | ASN |
| 2 | B | 433 | GLN |
| 2 | B | 484 | GLN |
| 3 | C | 76 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | C | 80 | HIS |
| 3 | C | 246 | HIS |
| 3 | C | 402 | ASN |
| 3 | C | 492 | GLN |
| 3 | C | 509 | GLN |
| 3 | C | 510 | GLN |
| 3 | C | 615 | GLN |
| 3 | C | 622 | GLN |
| 3 | C | 670 | GLN |
| 5 | G | 40 | HIS |
| 5 | G | 148 | ASN |
| 5 | H | 145 | GLN |
| 5 | H | 156 | ASN |
| 5 | H | 185 | ASN |
| 6 | K | 13 | HIS |
| 6 | K | 159 | ASN |
| 6 | K | 216 | ASN |
| 6 | K | 407 | GLN |
| 6 | K | 692 | ASN |
| 4 | M | 149 | GLN |
| 4 | M | 224 | GLN |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

There are no ligands in this entry.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

# 6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-52786. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections ⓘ
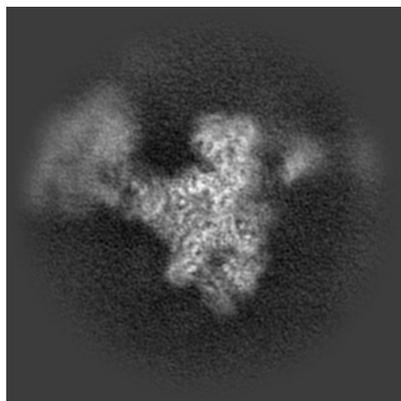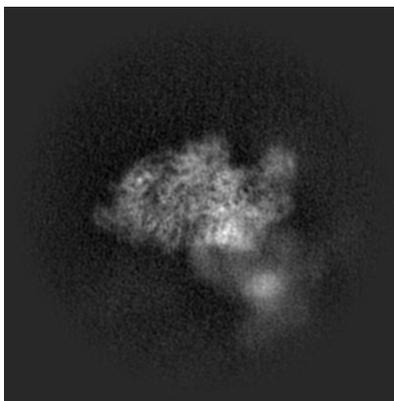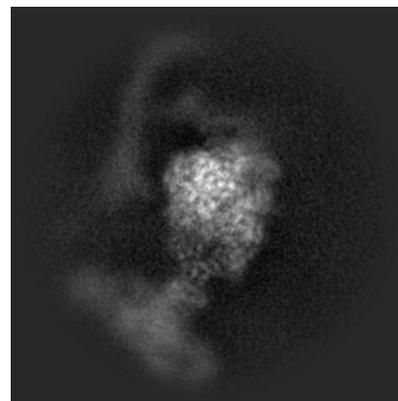
### 6.1.1 Primary map



X                              Y                              Z

### 6.1.2 Raw map



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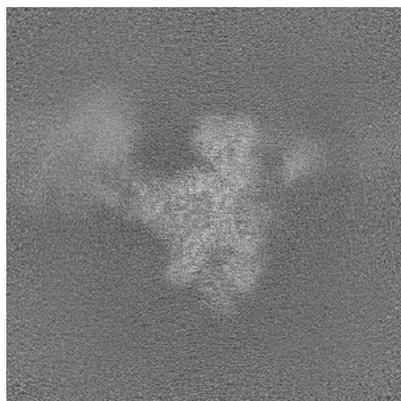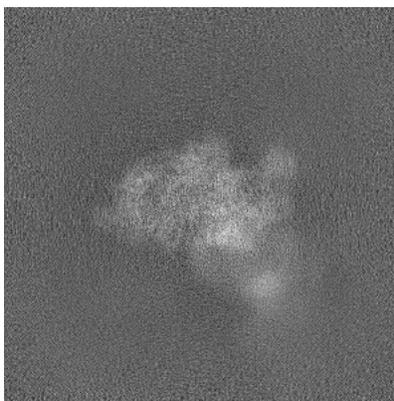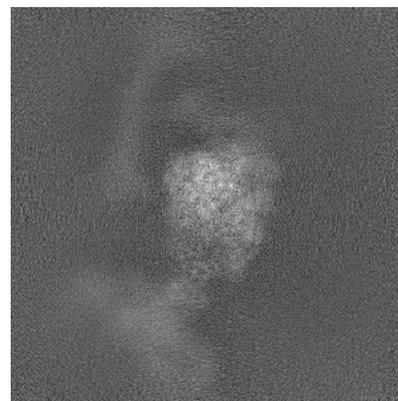
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices ⓘ
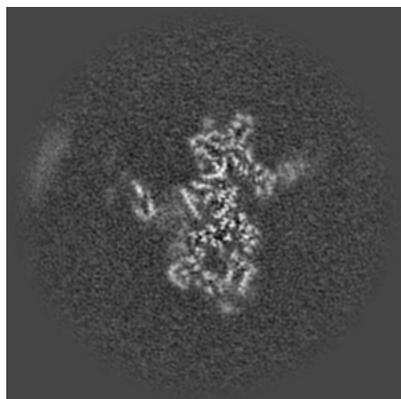
### 6.2.1 Primary map
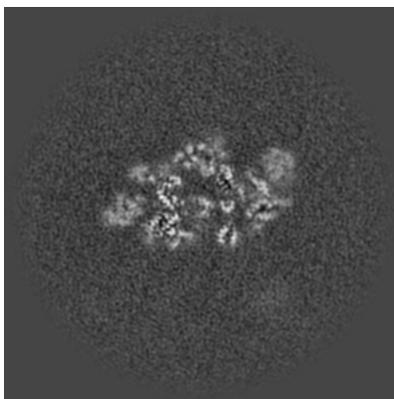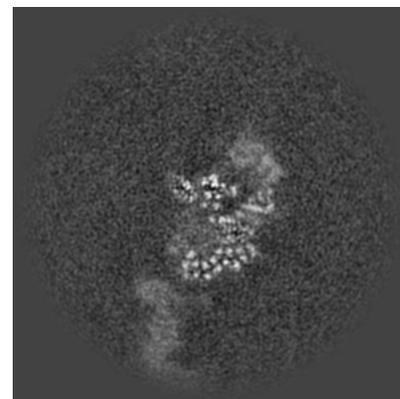


| X Index: 256 | Y Index: 256 | Z Index: 256 |

### 6.2.2 Raw map
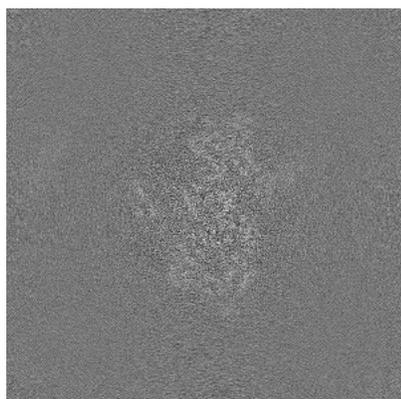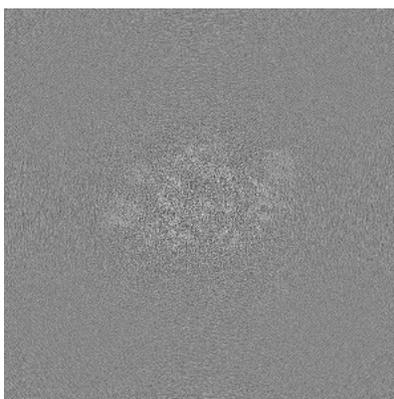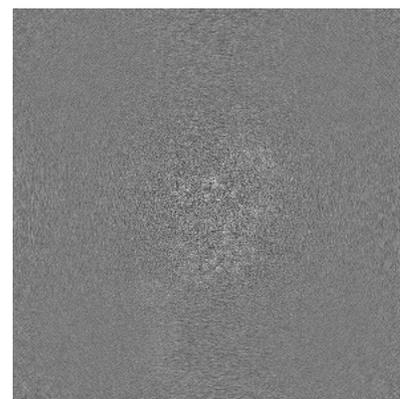


| X Index: 256 | Y Index: 256 | Z Index: 256 |

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

## 6.3    Largest variance slices ⓘ
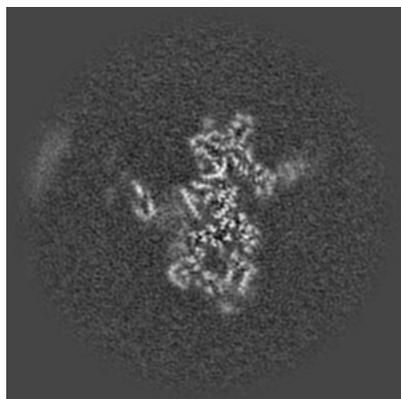
### 6.3.1    Primary map
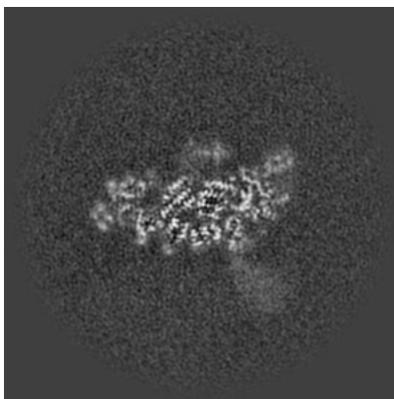


X Index: 256          Y Index: 282          Z Index: 276
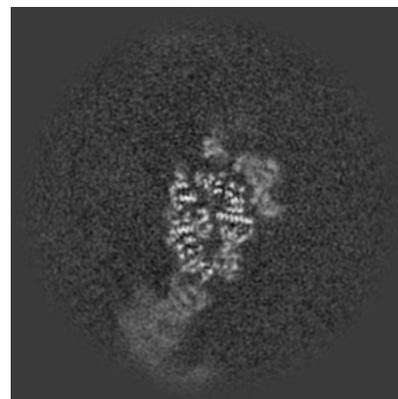
### 6.3.2    Raw map
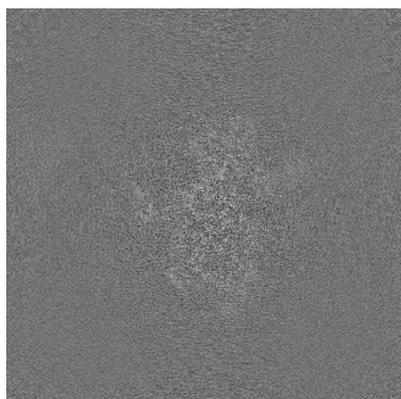


X Index: 255          Y Index: 263          Z Index: 0
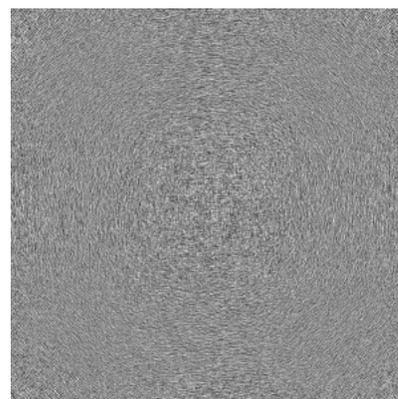
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) ⓘ

### 6.4.1 Primary map



X

Y

Z

### 6.4.2 Raw map



X

Y

Z
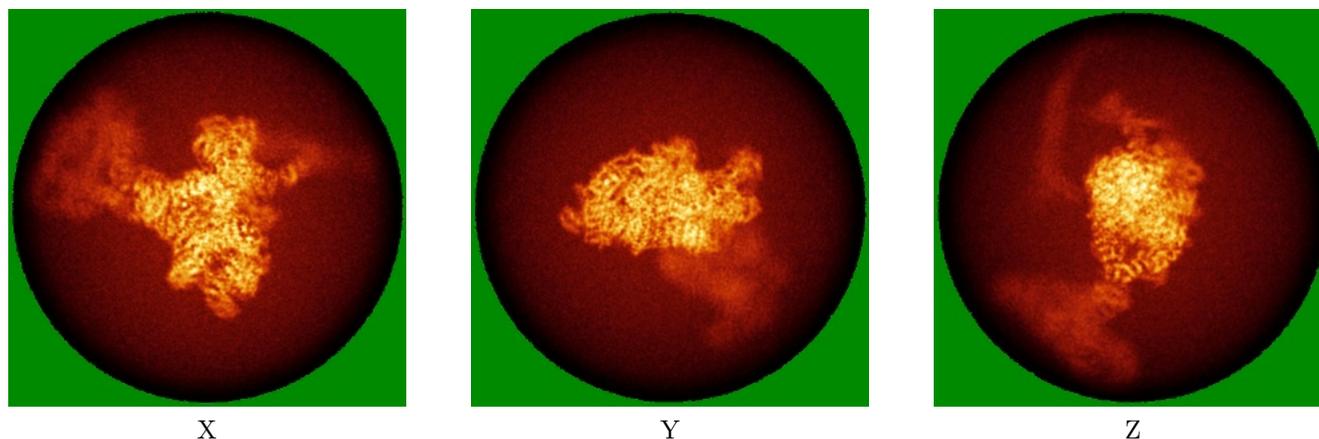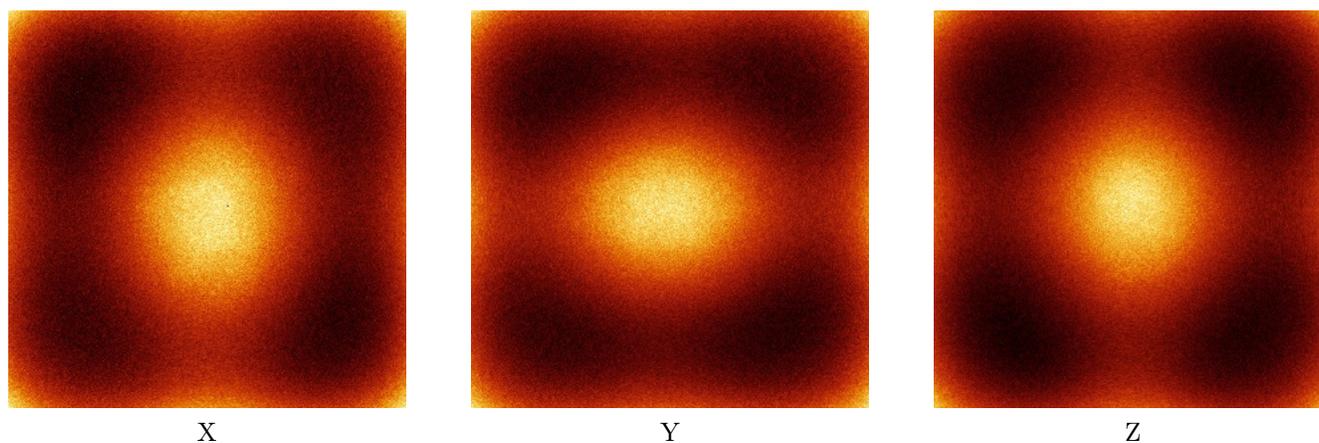
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views ⓘ

### 6.5.1 Primary map



| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0573. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



| X | Y | Z |
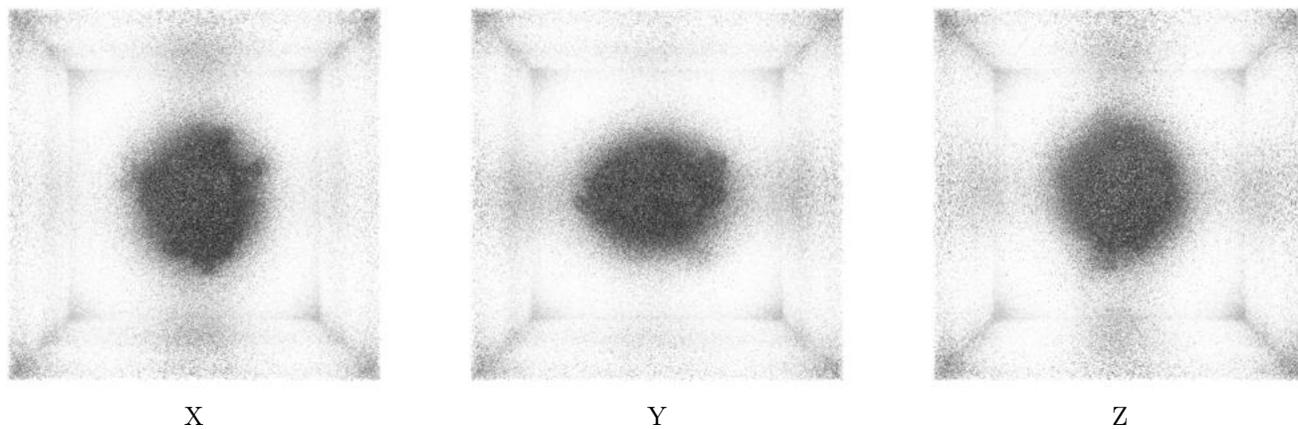
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

## 6.6 Mask visualisation ⓘ

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

# 7 Map analysis ⓘ

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

## 7.1 Map-value distribution ⓘ
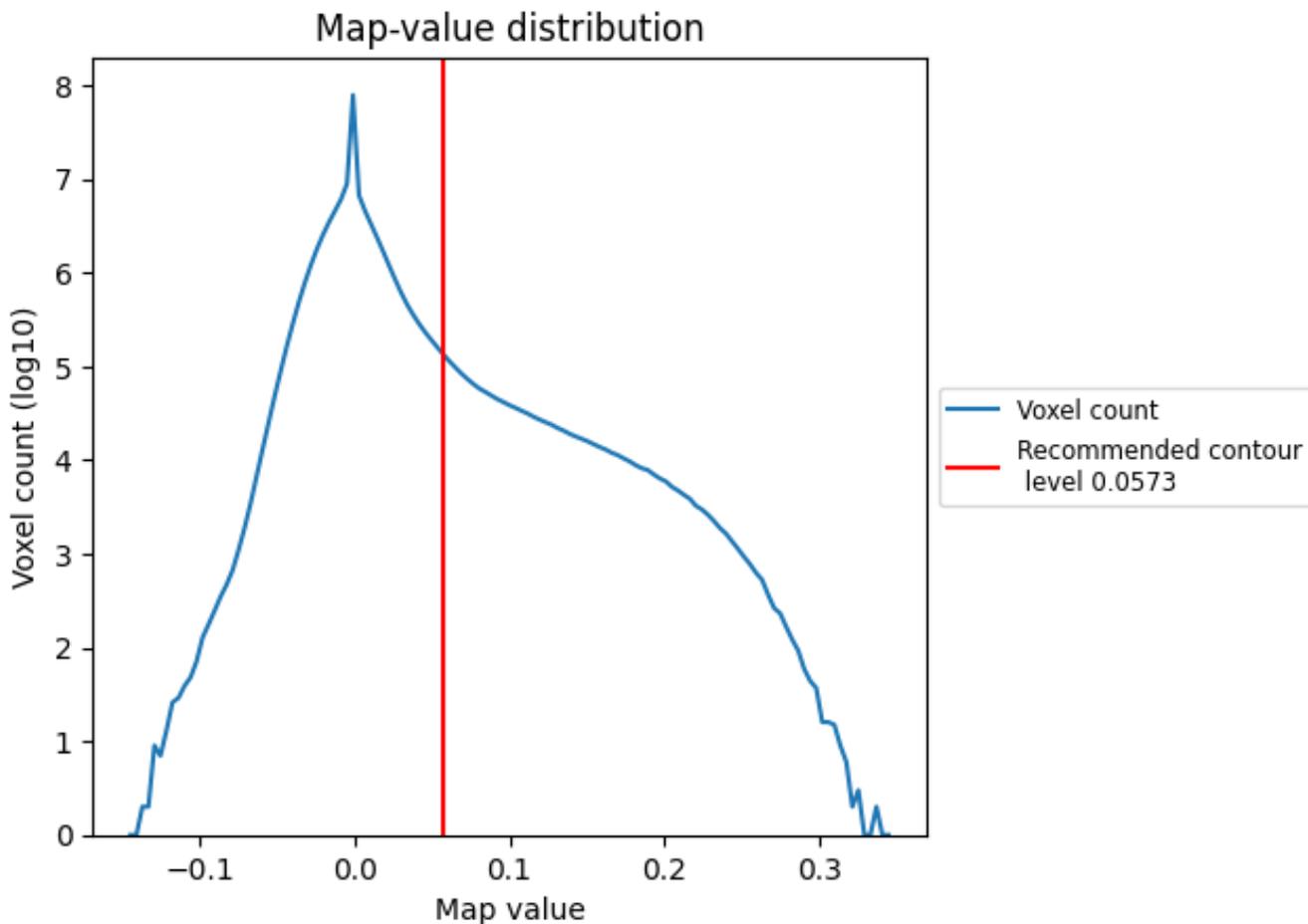


The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

## 7.2 Volume estimate (i)
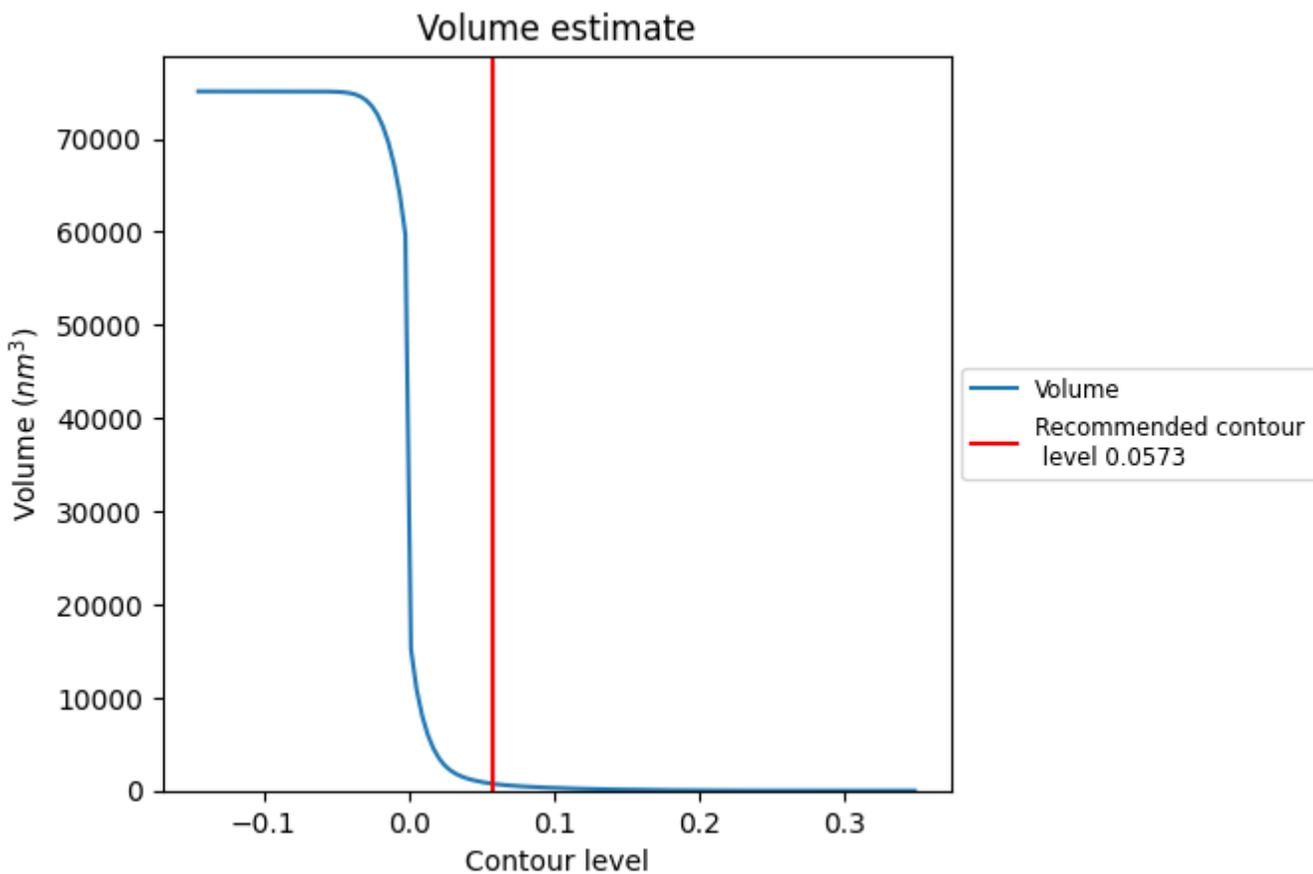


The volume at the recommended contour level is 754 nm$^3$; this corresponds to an approximate mass of 681 kDa.

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 ⓘ
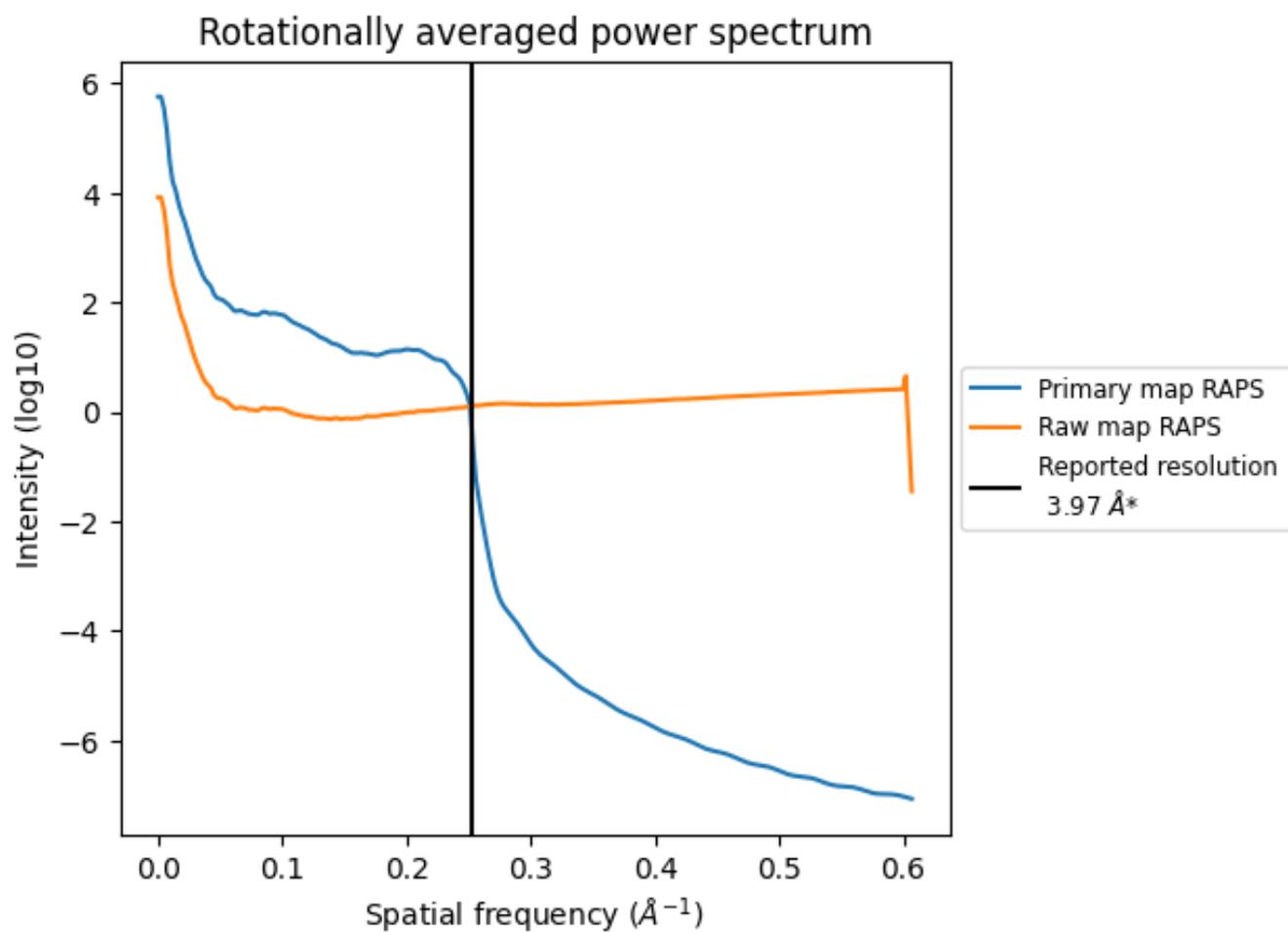


*Reported resolution corresponds to spatial frequency of 0.252 $\text{Å}^{-1}$

# 8 Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

## 8.1 FSC ⓘ
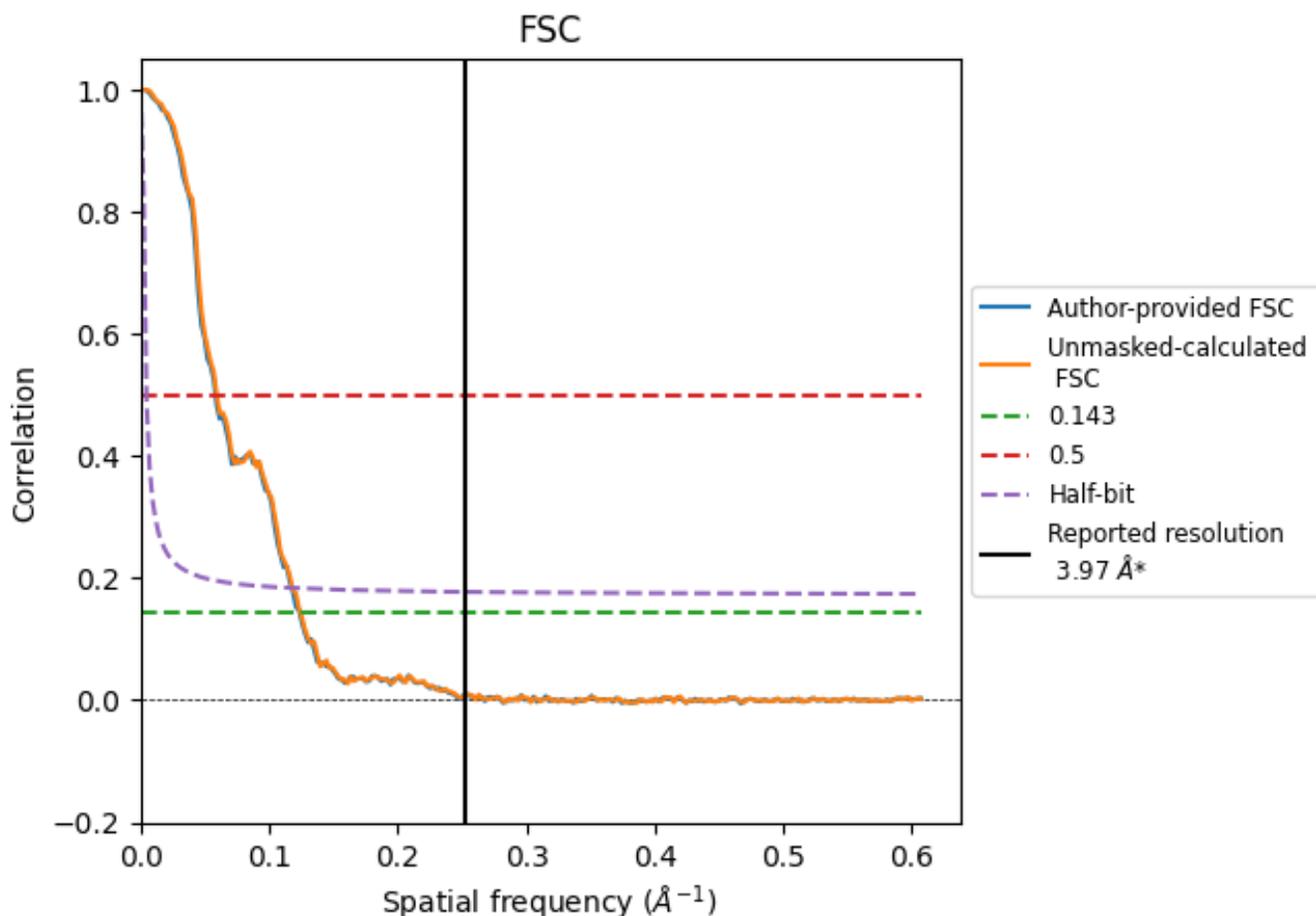


*Reported resolution corresponds to spatial frequency of 0.252 Å$^{-1}$

## 8.2　Resolution estimates　ⓘ

| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.97 | - | - |
| Author-provided FSC curve | 8.08 | 17.15 | 8.50 |
| Unmasked-calculated* | 8.05 | 16.86 | 8.46 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 8.08 differs from the reported value 3.97 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 8.05 differs from the reported value 3.97 by more than 10 %

# 9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-52786 and PDB model 9IAX. Per-residue inclusion information can be found in section 3 on page 6.

## 9.1 Map-model overlay ⓘ
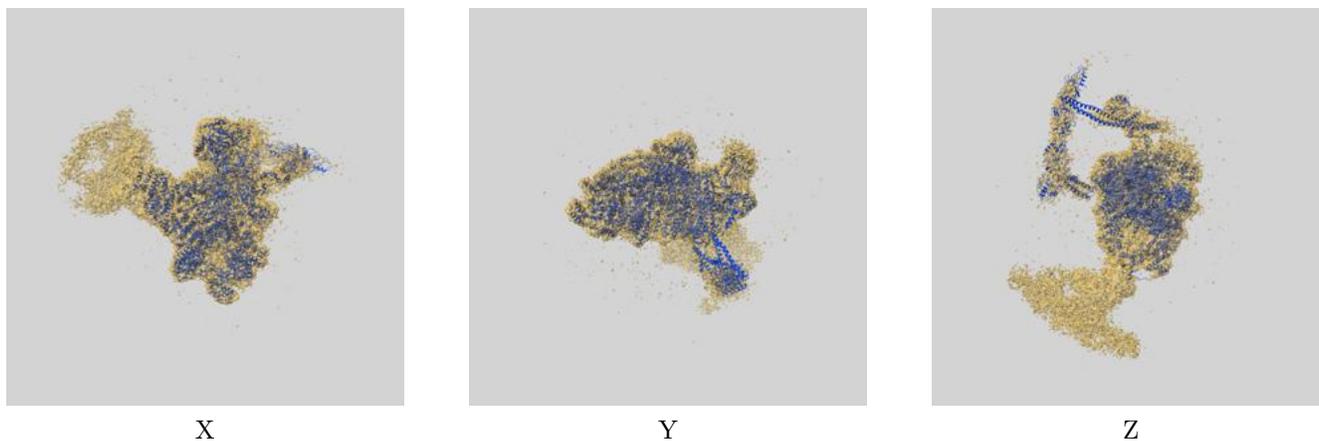


| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0573 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 ⓘ



|  |  |  |
|---|---|---|
| X | Y | Z |
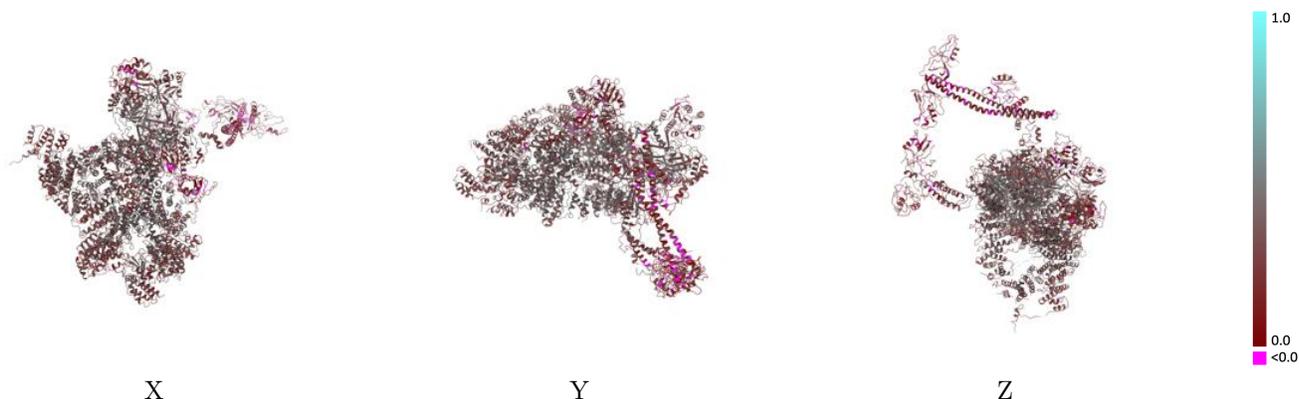
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 ⓘ



|  |  |  |
|---|---|---|
| X | Y | Z |
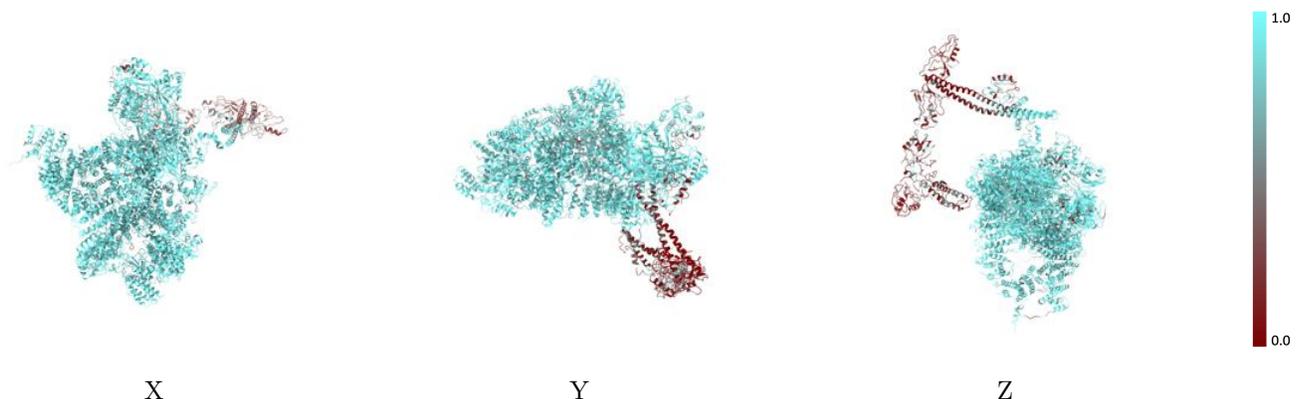
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0573).

## 9.4 Atom inclusion (i)
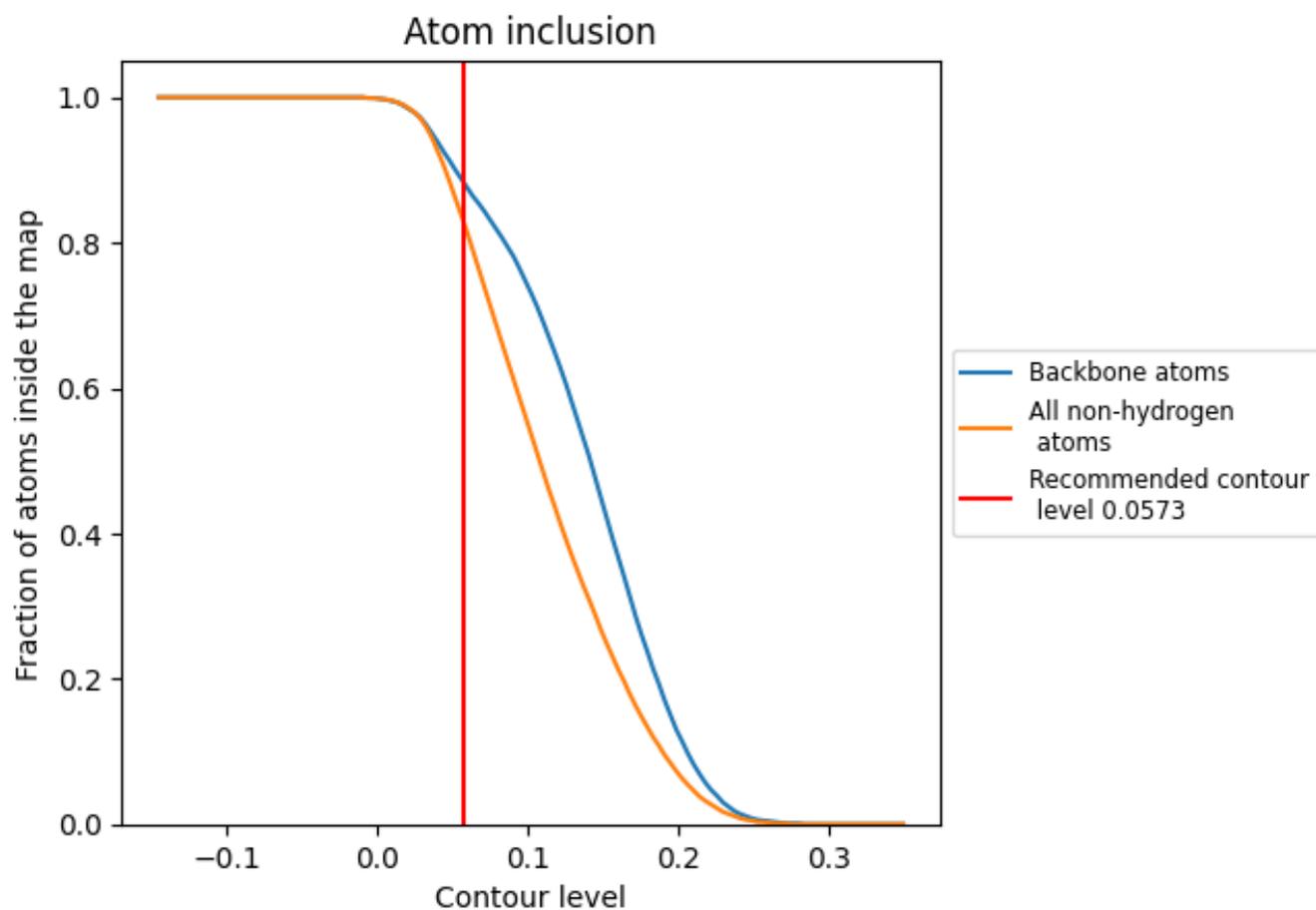


At the recommended contour level, 88% of all backbone atoms, 83% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0573) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|:-----:|:--------------:|:-------:|
| All | 0.8280 | 0.3210 |
| A | 0.9220 | 0.3530 |
| B | 0.9300 | 0.3740 |
| C | 0.8650 | 0.3060 |
| D | 0.1850 | 0.2440 |
| G | 0.3480 | 0.1960 |
| H | 0.2790 | 0.1890 |
| K | 0.8340 | 0.2600 |
| M | 0.2980 | 0.2210 |
| d | 0.9960 | 0.3660 |
| e | 0.9910 | 0.3550 |

1.0

0.0
<0.0