WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Feb 10, 2026 – 12:45 pm GMT

PDB ID	:	9GD7 / pdb_00009gd7
EMDB ID	:	EMD-51249
Title	:	DNA-PK Ku80 mediated dimer bound to DNA polymerase Lambda and DNA ligase 4/XRCC4
Authors	:	Chaplin, A.K.; Amin, H.; Zahid, S.; Hardwick, S.W.
Deposited on	:	2024-08-05
Resolution	:	4.25 Å(reported)

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

EMDB validation analysis	:	0.0.1.dev131
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48

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 4.25 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.
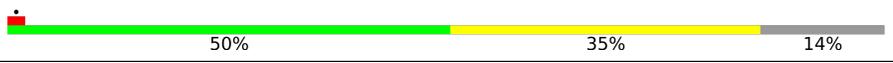
Metric	Percentile Ranks	Value
Clashscore		19
Ramachandran outliers		0.2%
Sidechain outliers		0

Worse   *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.228

Worse   *Better*

▮ Percentile relative to all EM structures
▯ Percentile relative to EM structures of similar resolution

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	4654 (3.75 - 4.75)

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	E	911	17% 16% 10% 73%
2	L	732	19% 53% 35% 12%
3	M	204	• 8% • 89%
4	P	336	16% 9% 8% 83%

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Mol	Chain	Length	Quality of chain
4	Q	336	15% / 10% / 7% / 83%
5	S	4128	50% / 35% / 14%
6	T	609	48% / 35% / 18%
7	i	25	40% / 60%
8	j	25	20% / 80%
9	A	575	10% / 7% / 83%

2 Entry composition ⓘ

There are 9 unique types of molecules in this entry. The entry contains 41717 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 ligase 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	E	246	Total	C	N	O	S	0	0
			1956	1240	332	371	13		

- Molecule 2 is a protein called X-ray repair cross-complementing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	L	641	Total	C	N	O	S	0	0
			5084	3250	859	950	25		

- Molecule 3 is a protein called Protein PAXX.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	M	23	Total	C	N	O	S	0	0
			160	102	27	30	1		

- Molecule 4 is a protein called DNA repair protein XRCC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	P	57	Total	C	N	O	S	0	0
			480	303	90	86	1		
4	Q	57	Total	C	N	O	S	0	0
			475	301	89	84	1		

- Molecule 5 is a protein called DNA-dependent protein kinase catalytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	S	3535	Total	C	N	O	S	0	0
			27773	17865	4705	5020	183		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
6	T	501	Total 4001	C 2561	N 679	O 743	S 18	0	0

- Molecule 7 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	i	25	Total 510	C 247	N 92	O 146	P 25	0	0

- Molecule 8 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	j	25	Total 514	C 250	N 86	O 154	P 24	0	0

- Molecule 9 is a protein called DNA polymerase lambda.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	98	Total 764	C 487	N 142	O 132	S 3	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.
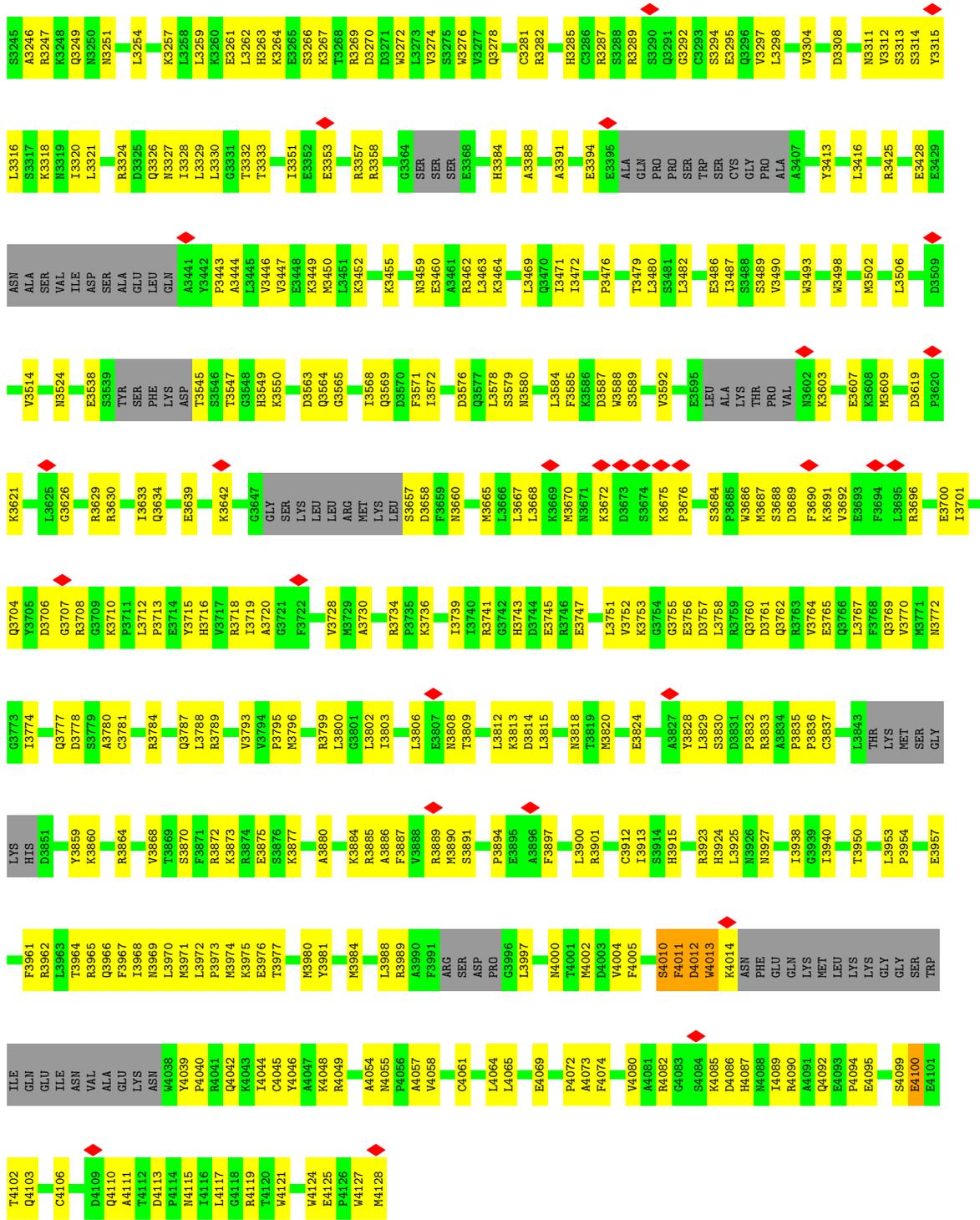
• Molecule 1: DNA ligase 4

• Molecule 2: X-ray repair cross-complementing protein 5

Chain L:

19%

53% 35% 12%

• Molecule 3: Protein PAXX

Chain M: 8% 89%

MET ASP PRO LEU SER PRO PRO LEU CYS THR LEU PRO PRO GLY PRO GLU PRO PRO ARG PHE VAL CYS TYR CYS GLU GLY GLU GLU SER GLY GLU GLY ASP ARG GLY GLY PHE ASN LEU TYR VAL THR ASP ALA ALA GLU LEU TRP SER THR CYS PHE THR PRO ASP SER LEU ALA ALA LEU

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

LEU ARG ALA LEU THR LEU LEU ALA ARG VAL TRP SER LEU GLU ARG GLU LEU ALA ALA GLU GLU THR ALA VAL SER PRO ARG SER PRO ARG PRO ALA GLY PRO GLN LEU PHE LEU PRO ASP ASP PRO GLN ARG GLY PRO GLY VAL ARG ARG GLU **C180**

P181 **G182** **E183** **K191** **S192** **K193** **K194** **P195** **A196** **G197** **G198** **D202** GLU THR

• Molecule 4: DNA repair protein XRCC4

Chain P: 16% / 9% 8% 83%

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

MET GLU LYS LYS TYR VAL GLY LEU GLU ARG LYS ALA LEU LEU LEU SER GLY ALA GLY PRO ALA ASP VAL TYR THR PHE ASN PHE SER LYS GLU SER CYS TYR PHE PHE PHE GLU LYS ASN LEU LYS ASP VAL SER PHE ARG LEU GLY SER PHE ASN LEU GLU LYS VAL GLU ASN PRO ALA

GLU VAL ILE ARG GLU LEU ILE CYS TYR CYS LEU ASP THR ILE ALA GLU ASN GLN ALA LYS ASN GLU HIS LEU **Q145** **K146** **E147** **N148** **E149** **R150** **L151** **L152** **R153** **D154** **W155** **N156** **D157** **V158** **Q159** **G160** **R161** **F162** **E163** **K164** **C165** **V166** **S167** **A168** **K169** **E170** **A171** **L172** **E173** **T174** **D175** **L176** **Y177** **K178** **R179** **F180**

I181 **L182** **V183** **L184** **N185** **E186** **K187** **K188** **T189** **K190** **I191** **R192** **S193** **L194** **H195** **N196** **K197** **L198** **L199** **N200** **A201** ALA GLN GLU ARG GLU LYS ASP ILE LYS GLN GLY LEU THR ALA ILE CYS SER GLU MET THR ALA ASP ARG ASP VAL TYR ASP GLU SER THR ASP GLU GLU SER GLU ASN GLN

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

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

• Molecule 4: DNA repair protein XRCC4

Chain Q: 15% / 10% 7% 83%

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

MET GLU LYS LYS TYR VAL GLY LEU GLU ARG LYS ALA LEU LEU LEU SER GLY ALA GLY PRO ALA ASP VAL TYR THR PHE ASN PHE SER LYS GLU SER CYS TYR PHE PHE PHE GLU LYS ASN LEU LYS ASP VAL SER PHE ARG LEU GLY SER PHE ASN LEU GLU LYS VAL GLU ASN PRO ALA

GLU VAL ILE ARG GLU LEU ILE CYS TYR CYS LEU ASP THR ILE ALA GLU ASN GLN ALA LYS ASN GLU HIS LEU **Q145** **K146** **E147** **N148** **E149** **R150** **L151** **L152** **R153** **D154** **W155** **N156** **D157** **V158** **Q159** **G160** **R161** **F162** **E163** **K164** **C165** **V166** **S167** **A168** **K169** **E170** **A171** **L172** **E173** **T174** **D175** **L176** **Y177** **K178** **R179** **F180**

I181 L182 V183 L184 N185 K188 T189 K190 I191 R192 S193 L194 H195 N196 K197 L198 L199 N200 A201 ALA GLN GLU ARG GLU LYS ASP ILE LYS GLN 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 GLN ASN GLN THR

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

ASP SER SER SER LEU PRO GLU THR SER SER LYS LYS GLU HIS ILE SER ALA GLU ASN MET SER LEU GLU THR LEU ARG SER GLU SER PRO GLU ASP LEU PHE ASP GLU ILE

● Molecule 5: DNA-dependent protein kinase catalytic subunit

Chain S: 50%   35%   14%

MET ALA GLY GLY ALA GLY VAL ARG C10 S11 L12 L13 R14 L15 Q16 L19 S20 D23 R24 C25 G26 A30 G31 L34 I35 R36 Q40 E41 C42 V43 L44 V50 L51 A52 S56 L57 S60 R61 D62 V67 F68 K71 S72 L73 N74 E77 F78 R79

E80 C81 R82 E83 E84 I85 L86 K87 C90 I91 F92 I100 Y103 E106 C111 T112 S113 K117 D118 R119 A120 A121 K124 D129 L130 L131 I132 K133 L134 L135 Q136 T137 F138 R139 S140 S141 M144 D145 E146 F147 E151 L152 F153 S154 K155 I166 P167 V170

K173 V174 Y175 E176 L177 L178 G179 L180 L181 G182 E183 V184 H185 P186 S187 E188 M189 N192 A193 E194 N195 L196 F197 R198 A199 F200 L204 Q207 M208 R213 L217 L220 C223 L224 K225 S229 L230 N233 F234 T235 K236 S237 M238 E239 E240 D241 P242 Q243 R246

E247 F251 V252 L253 LYS ALA ILE ARG PRO Q259 I260 D261 L262 Y265 P268 S269 A270 G271 L272 R273 L274 F275 Q281 C285 V290 V291 S292 L293 F294 E295 V296 N305 V306 E307 L308 K309 K310 A311 A312 L316 F319 L320 K321 Q322 V323 S324 N325 M326 N330 A331

E332 M333 K337 L338 Q339 Y340 F341 I349 ARG ASN VAL ASP SER ASN N356 K357 E358 L359 S360 I361 A362 I363 R364 G365 Y366 G367 L368 F369 P372 C373 K374 V375 D380 V381 D382 F383 M384 Y385 V386 Q390 K393 L397 THR GLN THR ASP THR GLY ASP ASP ARG V407

S412 Q415 S416 V417 A418 S419 V420 L421 L424 D425 P428 E429 V430 Y431 T432 P433 V434 L435 E436 V439 Q442 S445 F446 Y449 S450 P451 K452 M453 Q454 L455 V456 C457 C458 R459 A460 I461 V462 K463 V464 F465 A469 L475 R476 I479 V482 L487 K493

V496 L497 P498 LYS GLY PRO GLU GLU SER GLU SER GLU ASP HIS ARG ALA SER GLY GLU VAL ARG THR GLY LYS W519 K520 V521 H533 S537 D538 M541 D542 S543 A546 D547 GLU ALA PHE PHE SER VAL ASN SER SER GLU S559 L560 I575 L579 D580 L581 E584

I585 Q586 THR VAL GLY GLU GLN GLU ASN GLY ASP GLU ALA PRO GLY VAL TRP MET ILE PRO THR SER ASP PRO ALA A610 H613 D619 I624 N625 L626 V627 E628 F629 C630 I633 L634 P635 E636 A639 F649 S650 Y651 E652 L653 I654 L655 R659 L660 Y667 K668 L669

L670 S671 I672 T673 V674 R675 N676 A677 K678 K681 Y682 F683 E684 G685 VAL SER PRO LYS SER LEU LYS HIS SER PRO GLU D697 K700 L706 F707 V708 K712 E713 V714 Y721 K722 D723 E724 L725 L726 A727 S728 T731 F732 L733 L734 S735 L736 P737 H738 V745 R746 A747 Y748

M754 K757 L758 G759 L760 S761 Y762 T763 A766 E767 V768 N771 E774 I778 Y779 I780 D781 R782 H783 V784 M785 Q786 P787 V788 Y789 I792 L793 D797 G798 Y799 L800 K801 S802 S803 ALA LEU SER ASP GLU THR LYS ASN TRP GLU VAL SER ALA LEU SER ARG ALA

ALA GLN LYS GLY F826 L831 K832 H833 L834 K835 K836 T837 K838 N839 L840 SER SER ASN GLU ALA ILE S847 L848 E849 E850 I851 R852 V855 M858 L859 G860 L862 G863 G864 Q865 I866 N867 K868 N869 L870 L871 THR VAL THR SER SER ASP GLU M879 M880 K881 S882 Y883 W886

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

• Molecule 7: DNA

Chain i:

40% 60%

• Molecule 8: DNA

Chain j:

20% 80%

• Molecule 9: DNA polymerase lambda

Chain A:

10% 7% 83%

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

VAL SER ALA ALA ASP LEU GLU ALA LEU ILE SER GLY HIS TYR PRO THR SER LEU GLU GLY ASP CYS GLU PRO SER PRO ALA PRO ALA VAL LEU ASP LYS TRP VAL CYS ALA GLN PRO SER SER GLN LYS ALA THR ASN HIS ASN LEU HIS ILE THR GLU GLU LEU GLU VAL LEU ALA LYS

ALA TYR SER VAL GLN GLY ASP LYS TRP ARG ALA ALA LEU GLY TYR ALA LYS ALA ILE ALA LEU SER PHE HIS LYS PRO VAL THR SER TYR GLN GLU ALA CYS SER ILE PRO ILE GLY LYS ARG MET ALA GLU LYS ILE GLU ILE GLU LEU GLY HIS ILE ARG LYS LEU

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

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

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

PHE THR GLY SER ALA HIS PHE ASN ARG SER MET ARG ALA ALA LEU ALA LYS THR LYS GLY MET SER LEU SER GLU GLU HIS ALA LEU SER THR ALA VAL VAL ARG ASN THR HIS GLY CYS LYS VAL GLY PRO GLY ARG VAL LEU PRO THR PRO THR GLU LYS ASP VAL PHE ARG LEU LEU GLY LEU

PRO TYR ARG GLU PRO ALA GLU ARG ASP TRP

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	14964	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	51.96	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	130000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.696	Depositor
Minimum map value	-0.178	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.034	Depositor
Recommended contour level	0.211	Depositor
Map size (Å)	417.28, 417.28, 417.28	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.304, 1.304, 1.304	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	E	0.14	0/1997	0.40	0/2695
2	L	0.14	0/5182	0.36	0/6990
3	M	0.17	0/164	0.44	0/220
4	P	0.11	0/485	0.34	0/647
4	Q	0.13	0/480	0.35	0/640
5	S	0.19	0/28315	0.48	0/38300
6	T	0.17	0/4079	0.41	0/5499
7	i	0.28	0/572	0.50	0/879
8	j	0.32	0/575	0.58	0/888
9	A	0.16	0/780	0.44	0/1057
All	All	0.18	0/42629	0.46	0/57815

There are no bond length outliers.

There are no bond angle outliers.

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	E	1956	0	1905	76	0
2	L	5084	0	5080	206	0
3	M	160	0	148	6	0
4	P	480	0	501	27	0
4	Q	475	0	492	25	0
5	S	27773	0	27732	1057	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	T	4001	0	4050	188	0
7	i	510	0	285	18	0
8	j	514	0	290	20	0
9	A	764	0	785	35	0
All	All	41717	0	41268	1564	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 (1564) 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)
5:S:2806:LYS:HG3	5:S:2857:CYS:HB3	1.59	0.84
1:E:757:GLU:HB3	1:E:763:ASP:H	1.42	0.83
5:S:835:LYS:HA	5:S:838:LYS:HG2	1.62	0.81
5:S:1300:SER:HA	5:S:1304:HIS:HB2	1.65	0.79
5:S:1820:VAL:HA	5:S:1824:LEU:HD23	1.64	0.79
5:S:3913:ILE:HG21	5:S:3984:MET:HG2	1.64	0.78
5:S:111:CYS:HB2	5:S:130:LEU:HD11	1.64	0.77
5:S:2844:LEU:HD22	5:S:2875:ALA:HB1	1.66	0.77
5:S:3472:ILE:HD13	5:S:3479:THR:HB	1.67	0.76
5:S:3988:LEU:HD23	5:S:4100:GLU:HA	1.68	0.75
5:S:1307:ILE:HG13	5:S:1309:ALA:H	1.50	0.74
5:S:2256:ILE:HA	5:S:2259:LYS:HG2	1.68	0.74
5:S:3974:MET:HE2	5:S:3980:MET:HE1	1.69	0.73
5:S:667:TYR:HB2	5:S:728:SER:HB2	1.69	0.73
2:L:380:LEU:HD23	6:T:462:MET:HG3	1.71	0.73
5:S:931:CYS:HG	5:S:984:TYR:HH	1.35	0.72
2:L:628:GLU:HB2	2:L:631:TYR:HB3	1.72	0.72
5:S:487:LEU:HD11	5:S:575:ILE:HD13	1.71	0.72
6:T:273:ILE:HD11	6:T:366:LEU:HB3	1.71	0.72
5:S:913:ARG:HH11	5:S:2804:ILE:HG23	1.55	0.72
5:S:1536:ALA:O	5:S:1555:HIS:ND1	2.23	0.72
5:S:2217:ASN:HA	5:S:2220:MET:HE2	1.72	0.72
5:S:1235:ILE:HG13	5:S:1292:LYS:HE2	1.73	0.71
9:A:87:GLU:HA	9:A:111:LYS:HG2	1.73	0.71
5:S:2563:LEU:HD23	5:S:2795:GLN:HB3	1.70	0.71
1:E:663:GLU:HB3	1:E:697:THR:HA	1.72	0.70
5:S:2507:ILE:HA	5:S:2510:LEU:HD23	1.73	0.70
5:S:3064:PHE:HA	5:S:3067:LYS:HE3	1.72	0.70
2:L:462:SER:HA	6:T:350:PHE:HB2	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:656:ASN:HB3	2:L:688:LYS:HE3	1.72	0.70
5:S:738:HIS:HB2	5:S:780:ILE:HD11	1.73	0.70
5:S:1198:LEU:O	5:S:1202:ARG:NH2	2.24	0.70
5:S:25:CYS:SG	5:S:26:GLY:N	2.64	0.69
7:i:41:DT:H2"	7:i:42:DA:C8	2.27	0.69
5:S:1070:PRO:O	5:S:1075:ARG:NH2	2.26	0.69
5:S:1828:LEU:HD11	5:S:1880:MET:HB3	1.74	0.69
5:S:2965:TYR:HB3	5:S:3001:CYS:HB2	1.75	0.69
5:S:79:ARG:HA	5:S:82:ARG:HD2	1.74	0.69
5:S:1226:GLY:HA2	5:S:1259:LEU:HG	1.74	0.69
5:S:2405:VAL:HA	5:S:2441:LYS:HE3	1.73	0.69
5:S:3160:LEU:O	5:S:3167:ARG:NH2	2.26	0.69
6:T:351:LYS:HD2	6:T:355:LEU:HD13	1.75	0.69
5:S:2753:ARG:NH2	8:j:14:DT:O4	2.26	0.68
3:M:195:PRO:HG3	6:T:244:ARG:HE	1.58	0.68
1:E:813:PHE:H	1:E:848:HIS:HB2	1.58	0.68
6:T:458:GLN:HE21	6:T:528:LEU:HB3	1.59	0.68
5:S:917:LEU:O	5:S:927:LYS:NZ	2.26	0.68
2:L:497:ARG:NH2	2:L:503:GLU:O	2.26	0.67
5:S:3444:ALA:HB1	5:S:3482:LEU:HD12	1.76	0.67
5:S:2795:GLN:O	5:S:2799:GLN:NE2	2.27	0.67
5:S:170:VAL:O	5:S:173:LYS:NZ	2.28	0.67
5:S:2750:GLU:HA	5:S:2753:ARG:HD2	1.77	0.67
5:S:3161:LEU:HA	5:S:3167:ARG:HH12	1.58	0.67
5:S:757:LYS:HA	5:S:760:LEU:HD12	1.75	0.67
5:S:1934:LEU:HD13	5:S:1937:ARG:HH12	1.60	0.67
5:S:3130:GLN:NE2	5:S:3174:ASP:OD1	2.28	0.67
5:S:4039:TYR:HD2	5:S:4042:GLN:HG2	1.60	0.67
5:S:1178:ARG:NH2	5:S:1183:CYS:SG	2.63	0.67
5:S:1097:GLU:HG3	5:S:1149:LYS:HE2	1.77	0.67
5:S:1471:GLN:NE2	5:S:1475:LEU:O	2.28	0.67
5:S:722:LYS:NZ	5:S:1027:ASP:OD2	2.27	0.66
7:i:41:DT:H3	8:j:17:DT:H3	1.43	0.66
5:S:4082:ARG:NH2	5:S:4092:GLN:OE1	2.28	0.66
1:E:846:ARG:HB3	4:Q:166:VAL:HG11	1.78	0.66
6:T:482:VAL:HG12	6:T:486:HIS:HE1	1.61	0.66
1:E:673:GLN:HG3	1:E:678:LEU:HD21	1.78	0.66
1:E:692:ASN:ND2	6:T:290:ARG:O	2.25	0.66
5:S:1156:GLY:HA3	5:S:1171:TRP:HE1	1.59	0.66
2:L:20:MET:HB2	2:L:30:PRO:HB2	1.78	0.66
5:S:412:SER:O	5:S:415:GLN:NE2	2.23	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:449:TYR:O	5:S:454:GLN:NE2	2.29	0.65
5:S:3274:VAL:HG13	5:S:3278:GLN:HE22	1.60	0.65
5:S:2328:ARG:HH21	5:S:2371:PHE:HA	1.60	0.65
2:L:249:CYS:SG	2:L:250:ARG:N	2.70	0.65
5:S:995:PHE:HD1	5:S:1000:LYS:HZ1	1.43	0.65
6:T:170:THR:HG22	6:T:172:GLU:H	1.61	0.65
5:S:2220:MET:HE1	5:S:2252:PRO:HG3	1.77	0.65
5:S:3885:ARG:HB3	5:S:3889:ARG:HH21	1.60	0.65
2:L:310:ILE:HD11	6:T:287:LYS:HD3	1.78	0.65
5:S:3884:LYS:NZ	5:S:3969:ASN:OD1	2.29	0.65
5:S:3239:LYS:NZ	5:S:3261:GLU:OE2	2.29	0.65
2:L:85:LEU:HD12	2:L:86:PRO:HD2	1.77	0.65
4:Q:166:VAL:HA	4:Q:169:LYS:HD2	1.77	0.65
5:S:1871:MET:HE1	5:S:1940:TYR:HA	1.78	0.65
5:S:992:ILE:HG23	5:S:1036:PHE:HD1	1.62	0.65
5:S:3006:ALA:O	5:S:3050:LYS:NZ	2.30	0.65
6:T:441:ASP:O	6:T:444:ARG:NH2	2.29	0.65
5:S:23:ASP:OD1	5:S:24:ARG:NH1	2.27	0.65
5:S:584:GLU:N	5:S:613:HIS:O	2.29	0.65
5:S:1504:ASP:H	5:S:1507:CYS:HB2	1.61	0.65
5:S:2349:LEU:O	5:S:2353:GLN:HB3	1.97	0.65
5:S:3730:ALA:HA	5:S:3734:ARG:HA	1.78	0.65
5:S:1783:ARG:NH1	5:S:1826:THR:O	2.29	0.64
5:S:2260:PHE:O	5:S:2306:ASN:ND2	2.29	0.64
6:T:485:GLN:O	6:T:489:ASN:ND2	2.30	0.64
5:S:1231:GLN:NE2	5:S:1287:GLN:OE1	2.30	0.64
5:S:1946:ASN:HA	5:S:1949:ILE:HD12	1.79	0.64
1:E:690:VAL:HG23	6:T:291:GLU:HG2	1.78	0.64
5:S:225:LYS:HZ1	5:S:273:ARG:HE	1.45	0.64
9:A:48:VAL:HA	9:A:84:VAL:HB	1.78	0.64
3:M:183:GLU:HA	3:M:191:LYS:HA	1.78	0.64
5:S:1178:ARG:H	5:S:1184:ARG:HD3	1.62	0.64
5:S:2327:LEU:O	5:S:2333:ARG:NH2	2.30	0.64
6:T:91:GLU:H	6:T:136:GLY:HA3	1.62	0.64
5:S:306:VAL:HA	5:S:309:LYS:HE2	1.79	0.64
2:L:466:LYS:NZ	2:L:470:THR:O	2.31	0.64
5:S:4055:ASN:HD22	5:S:4058:VAL:HG23	1.63	0.63
5:S:380:ASP:HB3	5:S:384:MET:HE1	1.78	0.63
5:S:2188:GLU:OE2	5:S:2729:ARG:NH2	2.31	0.63
5:S:913:ARG:NH1	5:S:2804:ILE:HG23	2.13	0.63
5:S:1630:ASP:HB3	5:S:1633:TRP:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1171:TRP:O	5:S:1175:HIS:ND1	2.31	0.63
5:S:2449:VAL:HA	5:S:2452:ARG:HE	1.63	0.63
5:S:2837:LEU:O	5:S:2841:ASN:ND2	2.31	0.63
5:S:3657:SER:N	5:S:3660:ASN:OD1	2.31	0.63
5:S:3741:ARG:HH11	5:S:3747:GLU:HB2	1.64	0.63
5:S:253:LEU:HD21	5:S:268:PRO:HA	1.80	0.63
9:A:45:ARG:HH21	9:A:70:GLY:HA2	1.63	0.63
5:S:13:LEU:HD21	5:S:3069:MET:HB3	1.81	0.63
5:S:767:GLU:O	5:S:771:ASN:ND2	2.32	0.63
5:S:3859:TYR:O	5:S:4119:ARG:NH2	2.32	0.63
5:S:3244:ASP:OD1	5:S:3247:ARG:NH2	2.31	0.63
6:T:81:ASP:O	6:T:110:ASN:ND2	2.31	0.63
2:L:465:LYS:H	2:L:474:GLU:HG2	1.63	0.63
6:T:396:ALA:HB3	6:T:413:LEU:HB2	1.81	0.63
2:L:271:ARG:HE	2:L:272:VAL:H	1.46	0.63
5:S:907:LEU:HD13	5:S:937:MET:HG2	1.81	0.63
6:T:287:LYS:NZ	6:T:296:VAL:O	2.30	0.63
5:S:1707:LEU:O	5:S:1711:ARG:NH1	2.32	0.62
5:S:2233:HIS:NE2	5:S:2727:ARG:O	2.30	0.62
5:S:2328:ARG:O	5:S:2333:ARG:NE	2.32	0.62
1:E:654:LYS:N	1:E:660:GLU:OE2	2.33	0.62
5:S:958:MET:O	5:S:962:TYR:N	2.29	0.62
5:S:1227:GLY:O	5:S:1292:LYS:NZ	2.32	0.62
6:T:65:GLN:HB3	6:T:123:LYS:HD3	1.81	0.62
1:E:783:ASN:HA	4:Q:179:ARG:HH21	1.64	0.62
3:M:193:LYS:O	6:T:244:ARG:NH2	2.32	0.62
5:S:3997:LEU:O	5:S:4000:ASN:ND2	2.32	0.62
6:T:164:LYS:HG3	6:T:198:ILE:HA	1.81	0.62
9:A:96:ARG:O	9:A:99:ARG:NH1	2.32	0.62
4:P:176:LEU:HD11	4:Q:173:GLU:HG3	1.80	0.62
9:A:114:TRP:NE1	9:A:125:VAL:O	2.33	0.62
6:T:363:ARG:NH1	8:j:28:DA:OP1	2.33	0.62
5:S:10:CYS:SG	5:S:11:SER:N	2.72	0.62
5:S:1031:ARG:HH22	5:S:1034:ARG:HH11	1.47	0.62
5:S:193:ALA:HA	5:S:196:LEU:HD12	1.81	0.62
5:S:797:ASP:O	5:S:801:LYS:NZ	2.32	0.62
6:T:168:LEU:HD11	6:T:202:LEU:HG	1.81	0.62
2:L:44:ARG:HH12	2:L:488:GLN:HA	1.63	0.62
5:S:2218:PHE:HA	5:S:2221:LYS:HE3	1.82	0.62
5:S:2725:LEU:HD13	5:S:2728:LEU:HD21	1.82	0.62
2:L:146:GLN:HG3	2:L:149:ILE:HD12	1.80	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3278:GLN:NE2	5:S:3326:GLN:HE21	1.97	0.61
2:L:377:LEU:HD23	2:L:380:LEU:HD12	1.81	0.61
5:S:217:LEU:HA	5:S:220:LEU:HD13	1.82	0.61
5:S:1360:LYS:HZ3	5:S:1363:LEU:HB3	1.64	0.61
5:S:174:VAL:HA	5:S:177:LEU:HB2	1.83	0.61
6:T:94:LYS:H	6:T:103:TYR:HA	1.64	0.61
6:T:167:MET:HE2	6:T:203:MET:HB2	1.82	0.61
5:S:67:VAL:HA	5:S:71:LYS:HD3	1.83	0.61
5:S:799:TYR:O	5:S:852:ARG:NH1	2.32	0.61
5:S:890:LYS:HD2	5:S:906:PHE:HB3	1.82	0.61
5:S:3962:ARG:NH1	5:S:4124:TRP:O	2.33	0.61
1:E:778:PHE:O	4:Q:179:ARG:NH1	2.33	0.61
5:S:2094:MET:HB2	5:S:2097:LEU:HD12	1.83	0.61
5:S:2896:ALA:HB1	5:S:2922:ARG:HH21	1.66	0.61
5:S:3974:MET:HG3	5:S:3976:GLU:H	1.66	0.61
5:S:3880:ALA:O	5:S:3885:ARG:NH2	2.34	0.61
5:S:2473:MET:HA	5:S:2476:ILE:HD12	1.82	0.61
9:A:50:ARG:NH1	9:A:53:ILE:O	2.34	0.61
1:E:697:THR:O	1:E:718:HIS:NE2	2.31	0.60
2:L:184:ARG:NH1	2:L:514:ASN:O	2.34	0.60
5:S:2587:GLN:O	5:S:2777:HIS:N	2.28	0.60
5:S:3728:VAL:HA	5:S:3736:LYS:HG3	1.82	0.60
5:S:4046:TYR:HA	5:S:4049:ARG:HH11	1.65	0.60
5:S:867:ASN:HB2	5:S:3129:LEU:HD21	1.83	0.60
6:T:488:ARG:HE	6:T:501:GLU:HG3	1.66	0.60
2:L:269:GLN:NE2	2:L:359:ASN:O	2.26	0.60
5:S:1326:GLU:O	5:S:1329:ARG:NH1	2.33	0.60
5:S:2588:GLU:HA	5:S:2776:ARG:HA	1.81	0.60
5:S:3154:GLN:O	5:S:3159:ARG:NH2	2.35	0.60
5:S:3789:ARG:HH12	5:S:3938:ILE:HB	1.67	0.60
6:T:482:VAL:O	6:T:486:HIS:ND1	2.35	0.60
5:S:984:TYR:HA	5:S:987:LEU:HD12	1.84	0.60
5:S:2547:SER:H	5:S:2554:PHE:HE2	1.48	0.60
5:S:3686:TRP:HB2	5:S:3696:ARG:HH22	1.67	0.60
5:S:3924:HIS:N	5:S:3927:ASN:OD1	2.35	0.60
2:L:541:GLU:HG3	6:T:375:VAL:HG13	1.84	0.60
5:S:678:LYS:NZ	5:S:735:SER:O	2.35	0.60
5:S:1881:TYR:HB2	5:S:1950:SER:HB2	1.84	0.60
5:S:2511:ILE:HD11	5:S:2550:ILE:HG23	1.84	0.60
5:S:14:ARG:HH12	5:S:3070:HIS:HA	1.66	0.60
5:S:881:LYS:NZ	5:S:883:TYR:O	2.26	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1322:THR:O	5:S:1326:GLU:N	2.34	0.60
5:S:1621:THR:O	5:S:1625:HIS:ND1	2.33	0.60
5:S:2358:ASP:OD1	5:S:2359:LYS:N	2.35	0.60
5:S:2467:THR:HG22	5:S:2470:ARG:HH21	1.65	0.60
5:S:4094:PRO:HB3	5:S:4103:GLN:HG2	1.82	0.60
2:L:477:PHE:CZ	2:L:519:PRO:HD2	2.37	0.60
5:S:538:ASP:HA	5:S:541:MET:HG3	1.84	0.60
5:S:3772:ASN:ND2	5:S:3788:LEU:O	2.34	0.60
2:L:510:GLN:HA	2:L:513:TRP:HD1	1.67	0.60
2:L:628:GLU:O	2:L:632:PHE:N	2.30	0.60
5:S:393:LYS:HD2	5:S:434:VAL:HG11	1.83	0.60
5:S:3690:PHE:O	5:S:3696:ARG:NH1	2.35	0.60
5:S:1961:PHE:HB2	5:S:2125:TRP:CZ2	2.36	0.59
5:S:40:GLN:NE2	5:S:2425:ARG:O	2.36	0.59
6:T:213:ILE:HG13	6:T:218:ARG:HH21	1.67	0.59
2:L:659:LEU:HD23	2:L:662:LEU:HD21	1.84	0.59
5:S:895:ALA:HA	5:S:904:VAL:HA	1.85	0.59
5:S:1232:PRO:HA	5:S:1235:ILE:HD12	1.85	0.59
5:S:2134:GLY:HA2	5:S:2167:PRO:HB3	1.83	0.59
4:P:150:ARG:NH1	4:P:154:ASP:OD2	2.35	0.59
5:S:1783:ARG:HH12	5:S:1829:TRP:HB2	1.68	0.59
5:S:2388:LYS:NZ	6:T:157:VAL:O	2.35	0.59
1:E:720:VAL:HB	1:E:745:HIS:H	1.67	0.59
1:E:813:PHE:N	1:E:848:HIS:HB2	2.17	0.59
2:L:198:THR:HG23	2:L:201:GLN:HE21	1.68	0.59
5:S:1611:GLN:NE2	5:S:1614:GLN:OE1	2.36	0.59
5:S:1634:ALA:O	5:S:1642:LYS:NZ	2.34	0.59
5:S:2973:ASP:O	5:S:2977:ASN:ND2	2.34	0.59
1:E:704:SER:O	1:E:708:ARG:NH2	2.36	0.59
2:L:463:LEU:HG	6:T:350:PHE:H	1.67	0.59
6:T:363:ARG:HH22	8:j:27:DT:H5"	1.67	0.59
2:L:359:ASN:OD1	2:L:360:GLN:N	2.35	0.59
7:i:41:DT:H2"	7:i:42:DA:H8	1.68	0.59
1:E:674:PRO:HB2	1:E:676:PRO:HD2	1.85	0.59
6:T:351:LYS:O	6:T:395:ALA:N	2.35	0.59
1:E:721:VAL:HG22	1:E:743:MET:HE1	1.84	0.58
5:S:330:ASN:HB3	5:S:333:MET:HE3	1.85	0.58
5:S:859:LEU:O	5:S:867:ASN:ND2	2.36	0.58
5:S:1222:ASN:OD1	5:S:1223:THR:N	2.34	0.58
5:S:1231:GLN:O	5:S:1292:LYS:NZ	2.33	0.58
5:S:3569:GLN:HA	5:S:3572:ILE:HD12	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:268:LEU:O	6:T:444:ARG:NH1	2.36	0.58
5:S:1922:ALA:HB2	5:S:1944:ALA:HB3	1.85	0.58
6:T:203:MET:HE1	6:T:238:LYS:H	1.68	0.58
6:T:363:ARG:HB3	6:T:436:PHE:CD2	2.38	0.58
2:L:412:ILE:HA	2:L:417:GLU:HA	1.85	0.58
5:S:651:TYR:HE1	5:S:1388:ASP:HB3	1.69	0.58
5:S:1663:THR:OG1	5:S:1665:HIS:NE2	2.37	0.58
5:S:2507:ILE:HD12	5:S:2545:LEU:HB2	1.84	0.58
8:j:30:DT:H2'	8:j:31:DT:H71	1.86	0.58
2:L:647:ILE:HA	2:L:652:GLU:HB3	1.84	0.58
5:S:2880:CYS:HB3	5:S:2886:GLN:HA	1.85	0.58
5:S:3313:SER:HB3	5:S:3316:LEU:HA	1.85	0.58
6:T:357:LYS:HB2	6:T:360:HIS:CD2	2.38	0.58
1:E:682:ILE:HG13	1:E:730:PHE:HZ	1.68	0.58
1:E:728:GLU:OE1	1:E:741:ARG:NH2	2.37	0.58
5:S:1420:ARG:NH2	5:S:1466:ASN:O	2.36	0.58
5:S:3912:CYS:HA	5:S:3915:HIS:CD2	2.38	0.58
6:T:418:GLU:HB2	6:T:430:PRO:HB3	1.85	0.58
2:L:96:SER:O	2:L:99:GLN:NE2	2.37	0.58
2:L:324:SER:OG	2:L:325:LYS:N	2.36	0.58
5:S:3545:THR:OG1	5:S:3549:HIS:N	2.37	0.58
6:T:141:TYR:O	6:T:182:LYS:NZ	2.37	0.58
2:L:423:GLN:NE2	2:L:424:LEU:O	2.37	0.58
5:S:1117:ASP:OD1	5:S:1118:GLU:N	2.37	0.58
5:S:3870:SER:OG	5:S:4117:LEU:O	2.21	0.58
5:S:4012:ASP:O	5:S:4014:LYS:N	2.36	0.58
1:E:774:LEU:HD22	4:P:181:ILE:HG23	1.85	0.58
5:S:649:PHE:O	5:S:653:LEU:HG	2.04	0.58
5:S:782:ARG:HG2	5:S:786:GLN:HE22	1.68	0.58
5:S:1747:LEU:HD21	5:S:1778:PHE:HD1	1.69	0.58
5:S:1000:LYS:NZ	5:S:1005:ASP:OD1	2.37	0.58
5:S:2161:ALA:HA	5:S:2164:TRP:HB2	1.85	0.58
5:S:2269:ASP:OD1	5:S:2270:ASN:N	2.37	0.58
6:T:46:LYS:NZ	6:T:137:HIS:O	2.37	0.58
2:L:640:ARG:NH2	2:L:684:THR:OG1	2.34	0.57
5:S:891:ARG:NH1	5:S:956:PRO:O	2.36	0.57
5:S:899:ARG:NH1	5:S:2565:MET:O	2.36	0.57
5:S:3155:VAL:HG22	5:S:3158:LYS:HZ1	1.69	0.57
6:T:85:VAL:HG21	6:T:119:LEU:HD11	1.86	0.57
2:L:463:LEU:HD11	6:T:349:GLY:HA3	1.85	0.57
6:T:416:GLN:OE1	6:T:433:GLN:NE2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:2129:LEU:HD23	5:S:2132:LYS:HZ3	1.69	0.57
5:S:2257:PHE:HA	5:S:2260:PHE:CE2	2.39	0.57
5:S:4082:ARG:HG3	5:S:4089:ILE:HG22	1.85	0.57
2:L:354:ARG:HD3	6:T:433:GLN:HE21	1.70	0.57
2:L:490:LEU:HA	6:T:337:LEU:HD21	1.84	0.57
5:S:2936:TYR:HA	5:S:2939:LEU:HD13	1.86	0.57
9:A:93:ARG:HE	9:A:97:LEU:HG	1.68	0.57
2:L:277:THR:OG1	6:T:319:SER:OG	2.21	0.57
2:L:278:VAL:HG22	6:T:318:ARG:HH21	1.68	0.57
5:S:243:GLN:O	5:S:246:ARG:NH1	2.37	0.57
5:S:321:LYS:NZ	5:S:325:ASN:OD1	2.37	0.57
5:S:1182:GLU:OE2	5:S:1185:HIS:ND1	2.37	0.57
5:S:1389:VAL:HG23	5:S:1391:VAL:HG22	1.86	0.57
5:S:1490:GLY:O	5:S:1502:SER:N	2.37	0.57
5:S:1592:MET:SD	5:S:1592:MET:N	2.77	0.57
5:S:1803:GLU:OE1	5:S:1806:ARG:NH2	2.36	0.57
5:S:682:TYR:O	5:S:700:LYS:NZ	2.32	0.57
5:S:3706:ASP:OD2	5:S:3708:ARG:NH2	2.38	0.57
6:T:176:HIS:HD2	6:T:182:LYS:HD3	1.70	0.57
2:L:497:ARG:HG2	2:L:505:LEU:HD11	1.86	0.57
5:S:1082:PHE:HA	5:S:1085:ILE:HG12	1.87	0.57
5:S:2986:PRO:O	5:S:2991:LYS:NZ	2.38	0.57
6:T:318:ARG:N	6:T:329:LEU:O	2.38	0.57
5:S:2832:ILE:HA	5:S:2835:LYS:HD2	1.85	0.57
1:E:785:ASN:HA	1:E:792:MET:HE1	1.87	0.57
2:L:81:ARG:NH2	2:L:85:LEU:O	2.38	0.57
4:Q:151:LEU:HA	4:Q:154:ASP:HB2	1.87	0.57
5:S:926:THR:HG22	5:S:2800:ARG:HB3	1.87	0.57
5:S:1623:LEU:HD12	5:S:1624:GLN:HG3	1.87	0.57
5:S:3118:ASP:OD1	5:S:3119:VAL:N	2.38	0.57
5:S:3668:LEU:O	5:S:3672:LYS:NZ	2.35	0.57
5:S:3675:LYS:NZ	5:S:3676:PRO:O	2.37	0.57
5:S:579:LEU:HD11	5:S:619:ASP:HB3	1.87	0.57
5:S:1019:ASP:O	5:S:1026:ARG:NH2	2.31	0.57
8:j:29:DG:H2"	8:j:30:DT:H5"	1.87	0.57
2:L:44:ARG:HH22	2:L:488:GLN:HB2	1.71	0.56
5:S:913:ARG:CZ	5:S:2803:ILE:HB	2.35	0.56
6:T:502:GLN:NE2	6:T:503:ALA:O	2.38	0.56
8:j:18:DA:H2"	8:j:19:DA:C8	2.40	0.56
1:E:814:ARG:N	1:E:850:ALA:H	2.04	0.56
2:L:270:GLU:OE1	6:T:444:ARG:NH2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1182:GLU:HG3	5:S:1186:LYS:HZ3	1.70	0.56
5:S:1611:GLN:OE1	5:S:1613:HIS:ND1	2.38	0.56
5:S:2510:LEU:HA	5:S:2521:ILE:HD12	1.87	0.56
5:S:2954:GLN:HE21	5:S:2958:LEU:HD23	1.69	0.56
5:S:3965:ARG:O	5:S:3969:ASN:ND2	2.38	0.56
8:j:23:DT:H2'	8:j:24:DT:H71	1.86	0.56
2:L:643:ARG:HH11	2:L:659:LEU:HD12	1.70	0.56
4:Q:191:ILE:O	4:Q:195:HIS:ND1	2.29	0.56
5:S:20:SER:O	5:S:24:ARG:NH1	2.38	0.56
5:S:2470:ARG:NH1	5:S:2512:ASP:OD1	2.39	0.56
5:S:3830:SER:O	5:S:3833:ARG:NH1	2.38	0.56
6:T:203:MET:HE2	6:T:239:LEU:HD23	1.88	0.56
6:T:352:PRO:HA	6:T:394:VAL:HA	1.88	0.56
2:L:81:ARG:HD3	2:L:90:LEU:HD11	1.87	0.56
5:S:998:ASN:HA	5:S:1001:PHE:HB2	1.88	0.56
8:j:16:DA:H2"	8:j:17:DT:C5	2.40	0.56
5:S:229:SER:O	5:S:233:ASN:ND2	2.38	0.56
5:S:1864:ASP:HA	5:S:1867:ILE:HD12	1.87	0.56
5:S:3667:LEU:HD12	5:S:3670:MET:HG2	1.88	0.56
5:S:3707:GLY:HA3	5:S:3712:LEU:HD21	1.86	0.56
5:S:520:LYS:NZ	5:S:521:VAL:O	2.39	0.56
5:S:1251:GLN:HA	5:S:1254:LEU:HD12	1.87	0.56
5:S:2197:THR:HG23	5:S:2244:CYS:HB2	1.86	0.56
5:S:3064:PHE:HD1	5:S:3067:LYS:HZ1	1.54	0.56
5:S:4012:ASP:O	5:S:4013:TRP:C	2.49	0.56
6:T:482:VAL:HG12	6:T:486:HIS:CE1	2.40	0.56
5:S:669:LEU:O	5:S:673:THR:HG23	2.06	0.56
5:S:893:SER:H	5:S:944:LYS:HZ1	1.54	0.56
5:S:2987:THR:HG23	5:S:2990:GLU:H	1.70	0.56
5:S:913:ARG:NH1	5:S:2801:ASP:OD2	2.39	0.56
5:S:2788:SER:HA	5:S:2791:ILE:HG12	1.88	0.56
5:S:2945:SER:HB2	5:S:3975:LYS:HD3	1.87	0.56
5:S:3814:ASP:O	5:S:3818:ASN:ND2	2.39	0.56
5:S:1071:ASN:HD22	5:S:1074:LYS:HG3	1.71	0.56
1:E:871:ARG:O	1:E:875:PHE:N	2.35	0.56
2:L:33:GLN:HA	2:L:36:LYS:HE2	1.88	0.56
5:S:246:ARG:NH2	5:S:281:GLN:O	2.39	0.56
5:S:1379:PRO:HB3	5:S:1385:ASN:HB3	1.88	0.56
5:S:1589:ASN:HB3	5:S:1592:MET:SD	2.46	0.56
5:S:1651:LYS:NZ	5:S:2045:PHE:O	2.39	0.56
2:L:466:LYS:NZ	2:L:467:ASP:O	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:593:ASN:HB2	5:S:1723:PRO:HG3	1.88	0.55
3:M:196:ALA:HA	6:T:477:SER:HA	1.88	0.55
5:S:2549:LYS:HG3	5:S:2550:ILE:HG13	1.88	0.55
5:S:3261:GLU:HA	5:S:3264:LYS:HB2	1.88	0.55
2:L:484:ASN:HD21	2:L:486:ARG:HB3	1.71	0.55
2:L:595:ALA:HA	2:L:598:PHE:CE1	2.40	0.55
5:S:1611:GLN:HB2	5:S:1613:HIS:HD1	1.70	0.55
5:S:1762:MET:O	5:S:1766:LEU:HB2	2.06	0.55
5:S:1837:ARG:HH22	5:S:1884:LEU:HD22	1.70	0.55
5:S:3033:GLU:OE1	5:S:3033:GLU:N	2.29	0.55
5:S:3578:LEU:HD11	5:S:3752:VAL:HG21	1.88	0.55
5:S:3684:SER:HB3	5:S:3687:MET:HB2	1.88	0.55
2:L:459:ASP:OD1	6:T:392:LYS:NZ	2.40	0.55
5:S:307:GLU:HA	5:S:310:LYS:HG2	1.88	0.55
5:S:668:LYS:NZ	5:S:728:SER:HB3	2.21	0.55
5:S:2467:THR:HA	5:S:2470:ARG:HE	1.71	0.55
2:L:378:SER:HA	2:L:381:ILE:HD12	1.88	0.55
5:S:4125:GLU:HA	5:S:4127:TRP:CZ3	2.41	0.55
1:E:662:VAL:HG13	1:E:698:TYR:HB2	1.88	0.55
2:L:297:LEU:HB2	2:L:303:THR:HB	1.89	0.55
5:S:330:ASN:OD1	5:S:331:ALA:N	2.40	0.55
5:S:453:MET:HA	5:S:456:VAL:HB	1.89	0.55
5:S:1657:SER:O	5:S:1660:SER:OG	2.21	0.55
5:S:1734:PRO:O	5:S:1738:ASN:ND2	2.40	0.55
5:S:2254:ARG:HD3	5:S:2293:GLY:H	1.71	0.55
5:S:3097:ASP:N	5:S:3097:ASP:OD1	2.39	0.55
5:S:3829:LEU:HA	5:S:3833:ARG:HD2	1.89	0.55
5:S:2129:LEU:HA	5:S:2132:LYS:HZ3	1.71	0.55
5:S:3576:ASP:O	5:S:3629:ARG:NH1	2.39	0.55
5:S:3707:GLY:HA2	5:S:3710:LYS:HE2	1.88	0.55
5:S:3793:VAL:HG23	5:S:3803:ILE:HG13	1.89	0.55
5:S:3812:LEU:HB2	5:S:3925:LEU:HB3	1.88	0.55
6:T:64:ILE:HG22	6:T:123:LYS:HE2	1.88	0.55
5:S:316:LEU:HD13	5:S:361:ILE:HG21	1.88	0.55
5:S:3263:HIS:O	5:S:3267:LYS:NZ	2.33	0.55
6:T:35:ARG:N	6:T:160:LYS:O	2.40	0.55
5:S:129:ASP:HA	5:S:132:ILE:HG22	1.88	0.55
5:S:364:ARG:HA	5:S:415:GLN:HE22	1.72	0.55
5:S:417:VAL:HA	5:S:420:VAL:HG12	1.89	0.55
5:S:1346:THR:O	5:S:1350:ASN:ND2	2.39	0.55
5:S:2349:LEU:O	5:S:2353:GLN:CB	2.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:311:ILE:O	6:T:288:LEU:N	2.35	0.55
4:P:151:LEU:HA	4:P:154:ASP:HB2	1.88	0.55
5:S:3813:LYS:HG3	5:S:3925:LEU:HB2	1.89	0.55
9:A:76:GLN:NE2	9:A:98:LEU:O	2.40	0.55
2:L:513:TRP:HA	2:L:516:LEU:HB3	1.89	0.55
5:S:72:SER:HA	5:S:117:LYS:HE2	1.88	0.55
5:S:1342:MET:HE1	5:S:1398:VAL:HG13	1.87	0.55
5:S:1640:GLU:HA	5:S:1643:MET:HE3	1.89	0.55
5:S:2410:GLU:O	5:S:2414:GLN:NE2	2.40	0.55
5:S:2940:ARG:NH1	5:S:3977:THR:O	2.40	0.55
2:L:247:TRP:HZ2	2:L:338:LYS:HB2	1.72	0.54
5:S:1608:ARG:O	5:S:1608:ARG:NE	2.41	0.54
5:S:1806:ARG:HA	5:S:1869:LYS:HZ1	1.71	0.54
5:S:3130:GLN:HB3	5:S:3178:ILE:HG12	1.89	0.54
6:T:90:THR:OG1	6:T:92:LYS:O	2.25	0.54
6:T:207:LYS:HD2	6:T:208:PRO:HD2	1.89	0.54
6:T:245:LYS:NZ	6:T:246:VAL:O	2.41	0.54
5:S:1798:LEU:HD22	5:S:1827:LEU:HD13	1.89	0.54
7:i:19:DC:O2	7:i:20:DT:N3	2.40	0.54
5:S:1233:SER:O	5:S:1237:ALA:N	2.40	0.54
5:S:1608:ARG:HD2	5:S:1612:LYS:HG3	1.89	0.54
5:S:3044:MET:O	5:S:3047:SER:OG	2.21	0.54
6:T:210:GLY:HA2	6:T:233:PHE:HA	1.88	0.54
2:L:76:ASN:ND2	2:L:104:GLN:O	2.41	0.54
5:S:68:PHE:O	5:S:72:SER:OG	2.25	0.54
5:S:1697:PRO:HG2	5:S:1752:LEU:HD23	1.90	0.54
5:S:2803:ILE:O	5:S:2806:LYS:HB3	2.07	0.54
6:T:316:THR:HB	6:T:318:ARG:HH22	1.72	0.54
2:L:251:LEU:N	2:L:259:ILE:O	2.33	0.54
2:L:531:SER:HA	2:L:534:LYS:HG2	1.89	0.54
5:S:50:VAL:HG13	5:S:51:LEU:HG	1.90	0.54
5:S:998:ASN:HB3	5:S:1044:ILE:HG23	1.89	0.54
5:S:1271:ILE:O	5:S:1274:ARG:NH1	2.38	0.54
5:S:1295:ALA:HA	5:S:1298:LEU:HD12	1.89	0.54
5:S:2919:ASP:N	5:S:2919:ASP:OD1	2.40	0.54
6:T:419:GLU:HB2	6:T:428:THR:HB	1.89	0.54
5:S:1050:GLU:HA	5:S:1055:ASN:HD22	1.73	0.54
5:S:1471:GLN:HE22	5:S:1476:HIS:HA	1.73	0.54
5:S:3177:ASN:OD1	5:S:3178:ILE:HD12	2.07	0.54
5:S:360:SER:HA	5:S:363:ILE:HD12	1.89	0.54
5:S:1952:ILE:HD12	5:S:1961:PHE:CD1	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3684:SER:O	5:S:3688:SER:OG	2.24	0.54
5:S:3758:LEU:HB2	5:S:3795:PRO:HB3	1.88	0.54
5:S:3780:ALA:HB1	5:S:3784:ARG:HH12	1.73	0.54
6:T:363:ARG:HB3	6:T:436:PHE:HD2	1.72	0.54
9:A:123:ARG:HH12	9:A:125:VAL:HG22	1.72	0.54
2:L:455:ASP:HB2	6:T:388:LYS:HD2	1.90	0.54
5:S:42:CYS:HA	5:S:92:PHE:HZ	1.73	0.54
5:S:2313:LYS:HA	5:S:2316:TYR:CZ	2.42	0.54
5:S:2373:PRO:HA	5:S:2404:ARG:HH22	1.72	0.54
5:S:2408:MET:N	5:S:2408:MET:SD	2.81	0.54
5:S:3158:LYS:HG3	5:S:3159:ARG:HD3	1.89	0.54
5:S:3455:LYS:NZ	5:S:3489:SER:O	2.41	0.54
6:T:230:ARG:NH1	6:T:234:GLU:OE1	2.40	0.54
5:S:1342:MET:HG2	5:S:1402:LEU:HD22	1.90	0.53
5:S:1565:GLU:O	5:S:1569:THR:OG1	2.22	0.53
5:S:1726:SER:HA	5:S:1729:PHE:HD2	1.73	0.53
5:S:3181:ASP:O	5:S:3185:ASN:ND2	2.41	0.53
5:S:3962:ARG:NH2	5:S:4125:GLU:O	2.38	0.53
1:E:691:GLN:NE2	6:T:291:GLU:O	2.40	0.53
2:L:533:ILE:HG23	2:L:537:PHE:HD2	1.73	0.53
5:S:1264:LEU:HD11	5:S:1340:ARG:HB3	1.89	0.53
5:S:2973:ASP:OD1	5:S:2977:ASN:ND2	2.40	0.53
5:S:3136:THR:HA	5:S:3139:GLN:HG3	1.89	0.53
5:S:3179:TRP:HB3	5:S:3242:MET:SD	2.48	0.53
5:S:3587:ASP:OD2	5:S:3799:ARG:NH1	2.41	0.53
5:S:3891:SER:HB2	5:S:3900:LEU:HD21	1.89	0.53
2:L:7:LYS:O	2:L:128:GLU:N	2.33	0.53
5:S:1220:LEU:HD11	5:S:1287:GLN:HB2	1.91	0.53
5:S:1428:ILE:HD12	5:S:1431:LEU:HD12	1.89	0.53
5:S:1656:ASP:OD2	5:S:1660:SER:OG	2.27	0.53
5:S:2940:ARG:HH22	5:S:3981:TYR:HB3	1.74	0.53
5:S:3728:VAL:HG13	5:S:3736:LYS:HD2	1.89	0.53
1:E:868:ASP:HB3	1:E:871:ARG:HG3	1.91	0.53
5:S:894:PHE:N	5:S:905:ILE:O	2.38	0.53
5:S:1070:PRO:HG3	5:S:3715:TYR:HB2	1.90	0.53
5:S:2425:ARG:NH1	5:S:2457:PRO:O	2.42	0.53
5:S:2941:GLY:O	5:S:3975:LYS:NZ	2.38	0.53
1:E:792:MET:HE3	4:Q:178:LYS:HD2	1.90	0.53
5:S:2996:LEU:HA	5:S:2999:LEU:HD12	1.91	0.53
5:S:3090:TYR:O	5:S:3095:ASP:N	2.38	0.53
5:S:3145:ILE:HG23	5:S:3196:LYS:HE3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:15:LEU:HB3	5:S:41:GLU:OE2	2.08	0.53
5:S:3104:GLN:NE2	5:S:3105:ASN:OD1	2.41	0.53
4:Q:158:VAL:HA	4:Q:161:ARG:HB2	1.90	0.53
5:S:865:GLN:HB2	5:S:3168:TYR:HE2	1.74	0.53
5:S:1608:ARG:HB2	5:S:1612:LYS:HE3	1.91	0.53
5:S:1627:LYS:HG3	5:S:1628:LYS:HD3	1.90	0.53
5:S:2346:ALA:HB2	5:S:2377:ARG:HH21	1.74	0.53
2:L:168:SER:HB3	2:L:191:SER:HB3	1.90	0.53
5:S:420:VAL:O	5:S:424:LEU:N	2.37	0.53
5:S:2133:LEU:HG	5:S:2167:PRO:HB2	1.89	0.53
5:S:2970:LYS:NZ	5:S:2974:GLU:OE1	2.41	0.53
5:S:3751:LEU:N	5:S:3803:ILE:O	2.39	0.53
6:T:308:GLY:O	9:A:57:ARG:NH1	2.42	0.53
2:L:142:PHE:HZ	2:L:207:ILE:HG13	1.73	0.53
2:L:308:GLU:O	6:T:290:ARG:NH2	2.42	0.53
5:S:1570:GLU:HG3	5:S:1571:LEU:HD22	1.89	0.53
5:S:3048:LYS:NZ	5:S:3060:SER:OG	2.37	0.53
2:L:451:LEU:HB3	6:T:388:LYS:HE3	1.89	0.52
4:P:181:ILE:O	4:P:185:ASN:ND2	2.42	0.52
5:S:236:LYS:HE3	5:S:243:GLN:HE22	1.72	0.52
5:S:1071:ASN:HD21	5:S:1073:PHE:HB2	1.74	0.52
5:S:3774:ILE:O	5:S:3777:GLN:NE2	2.36	0.52
6:T:362:LEU:HD11	6:T:438:PRO:HA	1.90	0.52
5:S:152:LEU:HA	5:S:155:LYS:HE2	1.91	0.52
5:S:305:ASN:O	5:S:308:LEU:N	2.33	0.52
5:S:913:ARG:HH12	5:S:2801:ASP:CG	2.17	0.52
5:S:1725:GLN:H	5:S:1768:ARG:CZ	2.22	0.52
5:S:1936:ARG:HH21	5:S:1937:ARG:HH22	1.55	0.52
5:S:2331:MET:O	5:S:2334:LYS:NZ	2.36	0.52
2:L:652:GLU:O	2:L:656:ASN:ND2	2.42	0.52
5:S:100:ILE:HG22	5:S:103:TYR:HB2	1.91	0.52
5:S:358:GLU:HA	5:S:361:ILE:HD12	1.90	0.52
5:S:1228:GLY:HA3	5:S:1234:GLY:H	1.74	0.52
5:S:2550:ILE:HB	5:S:2554:PHE:CE1	2.44	0.52
5:S:3603:LYS:NZ	5:S:3607:GLU:OE1	2.39	0.52
2:L:269:GLN:HG3	6:T:362:LEU:HD22	1.92	0.52
5:S:963:LYS:HG2	5:S:1007:VAL:HG11	1.91	0.52
5:S:1633:TRP:CE2	5:S:1674:THR:HG21	2.44	0.52
5:S:1697:PRO:HG3	5:S:1753:SER:HB3	1.91	0.52
5:S:3506:LEU:HD21	5:S:3514:VAL:HG23	1.90	0.52
5:S:3706:ASP:O	5:S:3708:ARG:NH1	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:812:MET:H	1:E:849:GLY:H	1.57	0.52
2:L:250:ARG:HH21	6:T:536:PRO:HB2	1.74	0.52
2:L:463:LEU:HD22	2:L:477:PHE:HE2	1.74	0.52
5:S:985:GLU:HA	5:S:988:VAL:HG22	1.90	0.52
5:S:1564:SER:O	5:S:1568:ASN:ND2	2.42	0.52
5:S:1583:MET:HE2	5:S:1628:LYS:HB2	1.91	0.52
5:S:3469:LEU:HD11	5:S:3502:MET:HE1	1.91	0.52
5:S:180:LEU:O	5:S:185:HIS:NE2	2.43	0.52
5:S:272:LEU:HD23	5:S:312:ALA:HA	1.91	0.52
5:S:1457:GLN:HG2	5:S:1460:ARG:HH21	1.75	0.52
5:S:624:ILE:HA	5:S:627:VAL:HG12	1.92	0.52
5:S:1017:ILE:HG13	5:S:1018:VAL:HG23	1.91	0.52
5:S:1225:GLU:O	5:S:1230:GLY:N	2.40	0.52
5:S:2140:LEU:HD23	5:S:2143:ARG:HD2	1.92	0.52
5:S:3156:PRO:HA	5:S:3159:ARG:HE	1.75	0.52
6:T:416:GLN:NE2	6:T:429:PRO:O	2.26	0.52
1:E:668:SER:HB3	1:E:702:ALA:HA	1.92	0.52
2:L:625:ASP:HA	2:L:672:ASN:HD21	1.75	0.52
5:S:320:LEU:HA	5:S:323:VAL:HG22	1.91	0.52
5:S:681:LYS:NZ	5:S:683:PHE:O	2.34	0.52
5:S:958:MET:HB3	5:S:961:LEU:HB2	1.92	0.52
5:S:1115:HIS:HD2	5:S:1119:LYS:HE3	1.73	0.52
5:S:1775:GLU:HA	5:S:1778:PHE:CD2	2.45	0.52
5:S:2582:SER:OG	5:S:2583:GLU:N	2.42	0.52
5:S:3806:LEU:HG	5:S:3808:ASN:H	1.74	0.52
2:L:498:ALA:O	6:T:325:ARG:NH2	2.33	0.52
4:P:189:THR:O	4:P:193:SER:N	2.43	0.52
5:S:1052:SER:OG	5:S:1054:VAL:O	2.28	0.52
5:S:1603:GLN:HG2	5:S:1606:ARG:HH21	1.75	0.52
5:S:2988:GLU:HA	5:S:2991:LYS:HE2	1.92	0.52
1:E:822:SER:HA	1:E:841:LYS:HD2	1.92	0.52
5:S:1601:LEU:HB2	5:S:1655:ILE:HD11	1.91	0.52
6:T:258:ARG:NH1	6:T:259:LEU:O	2.42	0.52
1:E:879:ARG:HB2	1:E:886:PHE:HB2	1.91	0.51
2:L:313:GLY:O	6:T:286:ILE:N	2.34	0.51
4:Q:188:LYS:HA	4:Q:191:ILE:HB	1.91	0.51
5:S:1400:VAL:HA	5:S:1403:MET:HE2	1.92	0.51
5:S:3751:LEU:HB2	5:S:3803:ILE:HB	1.91	0.51
5:S:275:PHE:HE2	5:S:319:PHE:HB2	1.75	0.51
5:S:1805:PHE:O	5:S:1869:LYS:NZ	2.43	0.51
5:S:3753:LYS:HD3	5:S:3756:GLU:HG2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:4054:ALA:HA	5:S:4095:GLU:HA	1.91	0.51
2:L:81:ARG:HE	2:L:84:MET:HB2	1.75	0.51
5:S:542:ASP:OD1	5:S:543:SER:N	2.42	0.51
5:S:1164:CYS:SG	5:S:1165:LEU:N	2.83	0.51
5:S:1296:PHE:O	5:S:1300:SER:OG	2.24	0.51
5:S:2234:ASN:HA	5:S:2237:ILE:HD12	1.92	0.51
5:S:2834:GLN:HA	5:S:2837:LEU:HD12	1.92	0.51
5:S:4125:GLU:HB3	5:S:4128:MET:HB2	1.91	0.51
1:E:837:ARG:HG2	4:P:153:ARG:NH2	2.25	0.51
2:L:161:LEU:HD12	2:L:163:PHE:HE1	1.75	0.51
2:L:184:ARG:NH1	2:L:517:ASN:O	2.37	0.51
2:L:272:VAL:HG22	2:L:274:LYS:H	1.76	0.51
2:L:463:LEU:HD22	2:L:477:PHE:CE2	2.44	0.51
5:S:1474:ASP:OD1	5:S:1474:ASP:N	2.44	0.51
6:T:107:GLU:O	6:T:115:ARG:NH2	2.34	0.51
2:L:689:GLU:HA	2:L:695:SER:HB3	1.92	0.51
5:S:146:GLU:HB3	5:S:183:GLU:HG3	1.92	0.51
5:S:186:PRO:HD2	5:S:189:MET:HE1	1.92	0.51
5:S:1502:SER:OG	5:S:1503:LEU:N	2.41	0.51
2:L:88:PHE:HD2	6:T:325:ARG:HD3	1.75	0.51
2:L:608:SER:HB2	2:L:654:ARG:HH12	1.76	0.51
5:S:955:ALA:O	5:S:957:PRO:HD3	2.10	0.51
5:S:2121:ASP:OD1	5:S:2121:ASP:N	2.43	0.51
5:S:3008:TRP:HB2	5:S:3051:LEU:HD23	1.93	0.51
5:S:3176:MET:HA	5:S:3179:TRP:HD1	1.75	0.51
5:S:3923:ARG:HH21	5:S:3924:HIS:HB3	1.76	0.51
5:S:3970:LEU:HD21	5:S:3974:MET:HG2	1.93	0.51
5:S:1786:ALA:HB3	5:S:1830:HIS:HB3	1.92	0.51
5:S:3927:ASN:O	5:S:3940:ILE:N	2.43	0.51
6:T:299:LYS:NZ	6:T:300:THR:O	2.43	0.51
7:i:36:DA:H2"	7:i:37:DT:C5	2.45	0.51
9:A:45:ARG:HE	9:A:71:GLN:H	1.58	0.51
1:E:879:ARG:HD3	1:E:885:LYS:HA	1.92	0.51
2:L:605:LYS:HE3	2:L:609:PHE:HZ	1.76	0.51
5:S:372:PRO:HA	5:S:375:VAL:HB	1.92	0.51
5:S:430:VAL:HG11	5:S:1643:MET:HG3	1.92	0.51
5:S:1602:ASP:HB3	5:S:1606:ARG:HH12	1.75	0.51
5:S:1626:TRP:HH2	5:S:1632:TRP:HB2	1.76	0.51
5:S:3142:ILE:O	5:S:3147:LYS:NZ	2.39	0.51
6:T:414:VAL:O	6:T:433:GLN:N	2.37	0.51
2:L:261:ILE:HA	2:L:366:ALA:HA	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1621:THR:O	5:S:1625:HIS:N	2.44	0.51
9:A:90:ASP:HB3	9:A:93:ARG:HB3	1.93	0.51
5:S:35:ILE:HG12	5:S:36:ARG:HH21	1.76	0.51
5:S:493:LYS:O	5:S:625:ASN:ND2	2.44	0.51
5:S:886:TRP:O	5:S:964:ARG:NH1	2.43	0.51
5:S:1538:LEU:HB2	5:S:1555:HIS:CE1	2.46	0.51
5:S:2505:VAL:HA	5:S:2508:GLN:HG2	1.93	0.51
6:T:147:LEU:HD11	6:T:193:LEU:HD23	1.93	0.51
6:T:307:THR:HG22	6:T:309:GLY:H	1.75	0.51
6:T:414:VAL:HB	6:T:433:GLN:HB2	1.92	0.51
2:L:235:CYS:HA	2:L:238:LYS:HB2	1.93	0.50
2:L:458:ILE:O	2:L:462:SER:N	2.44	0.50
5:S:833:HIS:O	5:S:838:LYS:NZ	2.43	0.50
5:S:863:GLY:O	5:S:867:ASN:N	2.40	0.50
5:S:2376:ASP:N	5:S:2376:ASP:OD1	2.43	0.50
5:S:2890:ILE:HD11	5:S:2929:LEU:HB3	1.94	0.50
6:T:413:LEU:HB3	6:T:432:PHE:CD2	2.45	0.50
1:E:816:HIS:HB2	1:E:850:ALA:HA	1.93	0.50
5:S:129:ASP:O	5:S:133:LYS:HG2	2.12	0.50
5:S:1576:ASP:OD1	5:S:1576:ASP:N	2.44	0.50
5:S:3037:GLN:N	5:S:3037:GLN:OE1	2.44	0.50
5:S:3311:ASN:HB3	5:S:3315:TYR:CZ	2.46	0.50
5:S:3657:SER:OG	5:S:3658:ASP:N	2.41	0.50
1:E:746:MET:O	1:E:751:LYS:NZ	2.44	0.50
5:S:3266:SER:HA	5:S:3272:TRP:CD1	2.46	0.50
5:S:2232:ARG:HA	5:S:2235:LEU:HD12	1.93	0.50
5:S:2510:LEU:O	5:S:2518:GLN:NE2	2.31	0.50
5:S:3828:TYR:HD2	5:S:3829:LEU:HD22	1.77	0.50
6:T:389:CYS:O	6:T:393:GLU:N	2.44	0.50
2:L:450:GLN:NE2	2:L:536:LEU:O	2.36	0.50
4:P:161:ARG:HA	4:P:164:LYS:HE2	1.93	0.50
5:S:1479:VAL:O	5:S:1482:GLU:HG2	2.11	0.50
5:S:2255:LEU:HD23	5:S:2255:LEU:H	1.77	0.50
5:S:3321:LEU:O	5:S:3324:ARG:HG2	2.12	0.50
1:E:857:ALA:O	1:E:884:ARG:NH1	2.44	0.50
5:S:668:LYS:HZ2	5:S:728:SER:HB3	1.77	0.50
5:S:1776:GLU:O	5:S:1779:GLN:NE2	2.45	0.50
5:S:3228:SER:HA	5:S:3231:ILE:HG12	1.94	0.50
5:S:3806:LEU:HD23	5:S:3809:THR:HB	1.93	0.50
6:T:261:LEU:HB3	6:T:269:ILE:HB	1.94	0.50
2:L:33:GLN:HB3	2:L:227:PHE:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:137:THR:O	5:S:141:SER:OG	2.29	0.50
5:S:931:CYS:O	5:S:935:HIS:ND1	2.45	0.50
5:S:1075:ARG:NH1	5:S:1117:ASP:OD2	2.41	0.50
5:S:2470:ARG:O	5:S:2473:MET:HG2	2.12	0.50
5:S:3132:VAL:HA	5:S:3135:LEU:HD12	1.94	0.50
5:S:3133:GLN:NE2	5:S:3137:GLU:OE2	2.44	0.50
5:S:3796:MET:HB2	5:S:3800:LEU:HB3	1.92	0.50
6:T:343:PRO:HA	6:T:401:THR:HB	1.91	0.50
5:S:630:CYS:HA	5:S:633:ILE:HG12	1.94	0.50
5:S:1057:LYS:HA	5:S:1060:PHE:HD2	1.76	0.50
5:S:1949:ILE:HD13	5:S:2096:PRO:HB2	1.94	0.50
6:T:42:VAL:HG22	6:T:169:PHE:HB2	1.93	0.50
6:T:263:LEU:HD12	6:T:267:ILE:HG21	1.94	0.50
1:E:668:SER:OG	1:E:708:ARG:NH2	2.40	0.49
1:E:707:ILE:HA	1:E:710:LYS:HD3	1.94	0.49
5:S:469:ALA:HA	5:S:475:LEU:HD13	1.93	0.49
5:S:759:GLY:O	5:S:799:TYR:OH	2.28	0.49
5:S:1062:ARG:NH2	5:S:3745:GLU:OE1	2.43	0.49
5:S:189:MET:HA	5:S:192:ASN:HB2	1.94	0.49
5:S:451:PRO:HA	5:S:454:GLN:HB2	1.94	0.49
5:S:1708:GLU:HA	5:S:1711:ARG:HD2	1.94	0.49
5:S:2322:VAL:O	5:S:2326:ILE:HG12	2.12	0.49
5:S:2870:SER:OG	5:S:2899:ARG:NH2	2.43	0.49
5:S:3013:TYR:HA	5:S:3016:THR:HG23	1.94	0.49
6:T:372:GLU:OE1	6:T:377:GLY:N	2.37	0.49
2:L:448:GLU:HA	2:L:451:LEU:HD12	1.93	0.49
2:L:643:ARG:HE	2:L:647:ILE:HG13	1.77	0.49
5:S:425:ASP:OD1	5:S:425:ASP:N	2.43	0.49
5:S:3619:ASP:OD1	5:S:3619:ASP:N	2.45	0.49
6:T:357:LYS:HB3	6:T:359:HIS:CE1	2.47	0.49
2:L:294:VAL:HB	6:T:299:LYS:HB3	1.94	0.49
2:L:298:ASN:OD1	2:L:299:ASP:N	2.46	0.49
5:S:672:ILE:HD12	5:S:675:ARG:HH21	1.78	0.49
5:S:938:VAL:HA	5:S:941:MET:HG3	1.94	0.49
5:S:1118:GLU:OE2	5:S:1120:SER:OG	2.28	0.49
5:S:1250:LEU:O	5:S:1253:THR:OG1	2.25	0.49
5:S:2978:LYS:NZ	5:S:2980:ASP:O	2.37	0.49
5:S:3965:ARG:HA	5:S:3968:ILE:HD12	1.93	0.49
6:T:363:ARG:HH22	8:j:27:DT:H3'	1.77	0.49
7:i:35:DT:O4	7:i:36:DA:N6	2.44	0.49
4:P:187:LYS:O	4:P:191:ILE:HG12	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1142:HIS:O	5:S:1146:ASN:N	2.44	0.49
5:S:3753:LYS:NZ	5:S:3755:GLY:O	2.32	0.49
6:T:74:LYS:HZ1	6:T:81:ASP:H	1.58	0.49
6:T:147:LEU:HD13	6:T:189:LYS:HB3	1.94	0.49
1:E:853:VAL:HG11	1:E:857:ALA:HB2	1.95	0.49
5:S:52:ALA:O	5:S:56:SER:OG	2.25	0.49
5:S:649:PHE:CE2	5:S:653:LEU:HD11	2.48	0.49
5:S:1181:THR:OG1	5:S:1184:ARG:NH2	2.46	0.49
5:S:1357:LYS:HE3	5:S:1410:PRO:HG2	1.95	0.49
5:S:1571:LEU:HD12	5:S:1578:ALA:HB2	1.94	0.49
5:S:3269:ARG:CZ	5:S:3272:TRP:HB2	2.42	0.49
5:S:3413:TYR:O	5:S:3449:LYS:NZ	2.45	0.49
6:T:301:ARG:HH22	9:A:57:ARG:HE	1.61	0.49
2:L:342:VAL:HG23	2:L:393:VAL:HG22	1.95	0.49
2:L:654:ARG:HA	2:L:657:ASN:HD21	1.77	0.49
5:S:793:LEU:HD22	5:S:869:ASN:HB2	1.94	0.49
5:S:1769:GLU:O	5:S:1772:HIS:ND1	2.33	0.49
5:S:2569:SER:OG	5:S:2571:ASP:OD1	2.29	0.49
5:S:2796:ALA:O	5:S:2800:ARG:HG2	2.11	0.49
5:S:2924:VAL:HG11	5:S:2989:ALA:HB1	1.95	0.49
5:S:3538:GLU:OE1	5:S:3538:GLU:N	2.42	0.49
2:L:473:LEU:HD21	6:T:352:PRO:HG2	1.94	0.49
3:M:198:GLY:H	6:T:477:SER:HB3	1.78	0.49
4:P:194:LEU:HD22	4:Q:194:LEU:HD22	1.95	0.49
5:S:87:LYS:HG3	5:S:831:LEU:HD22	1.95	0.49
5:S:1643:MET:HA	5:S:1646:LEU:HG	1.95	0.49
5:S:2495:SER:HA	5:S:2498:ILE:HD12	1.94	0.49
5:S:2541:ALA:O	5:S:2544:SER:OG	2.26	0.49
5:S:3034:PRO:HD2	5:S:3037:GLN:HB2	1.95	0.49
6:T:266:ASP:N	6:T:266:ASP:OD1	2.44	0.49
6:T:422:ASP:OD1	6:T:422:ASP:N	2.44	0.49
9:A:40:TRP:HE1	9:A:122:ARG:CZ	2.25	0.49
2:L:660:LYS:HZ1	2:L:698:ALA:HB1	1.78	0.49
5:S:3169:PRO:HG3	5:S:3241:LYS:HD2	1.95	0.49
6:T:103:TYR:CG	6:T:135:MET:HE1	2.48	0.49
6:T:142:SER:HB3	6:T:145:GLU:HG2	1.94	0.49
2:L:241:GLU:HG3	6:T:445:LYS:HE2	1.95	0.49
5:S:135:LEU:O	5:S:139:ARG:HG2	2.12	0.49
5:S:672:ILE:HG23	5:S:675:ARG:HH21	1.78	0.49
5:S:3104:GLN:HA	5:S:3107:ILE:HG12	1.94	0.49
9:A:109:LEU:HG	9:A:132:ILE:HD12	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:402:ASN:O	2:L:404:GLN:NE2	2.46	0.48
2:L:407:VAL:HG12	2:L:424:LEU:HD21	1.94	0.48
5:S:31:GLY:HA2	5:S:34:LEU:HD12	1.95	0.48
5:S:1191:PHE:O	5:S:1195:VAL:HG23	2.13	0.48
5:S:1828:LEU:HD21	5:S:1880:MET:HA	1.95	0.48
5:S:3119:VAL:HG23	5:S:3120:LEU:HD23	1.95	0.48
2:L:329:GLU:HA	2:L:332:LYS:HG2	1.94	0.48
2:L:663:GLN:HA	2:L:666:VAL:HG12	1.95	0.48
2:L:667:GLU:OE2	2:L:702:LYS:NZ	2.46	0.48
5:S:321:LYS:O	5:S:325:ASN:ND2	2.46	0.48
5:S:847:SER:N	5:S:850:GLU:OE2	2.46	0.48
5:S:3037:GLN:O	5:S:3041:LEU:HG	2.13	0.48
5:S:3476:PRO:O	5:S:3480:LEU:HB2	2.13	0.48
7:i:36:DA:H2"	7:i:37:DT:C4	2.48	0.48
5:S:390:GLN:HA	5:S:393:LYS:HE2	1.96	0.48
5:S:768:VAL:HA	5:S:771:ASN:HD22	1.79	0.48
5:S:3193:ILE:HG13	5:S:3196:LYS:HZ3	1.78	0.48
5:S:3780:ALA:HB1	5:S:3784:ARG:NH1	2.28	0.48
5:S:4086:ASP:OD1	5:S:4086:ASP:N	2.45	0.48
6:T:35:ARG:O	6:T:162:SER:N	2.45	0.48
2:L:55:ALA:HB2	2:L:83:LEU:HG	1.95	0.48
5:S:847:SER:OG	5:S:848:LEU:N	2.29	0.48
2:L:277:THR:OG1	6:T:319:SER:O	2.32	0.48
2:L:389:MET:HG2	6:T:466:VAL:HG21	1.96	0.48
4:P:190:LYS:HG3	4:Q:191:ILE:HD13	1.96	0.48
5:S:243:GLN:O	5:S:246:ARG:HD3	2.14	0.48
5:S:1711:ARG:HE	5:S:1757:MET:HE2	1.78	0.48
5:S:2486:ASP:OD1	5:S:2486:ASP:N	2.42	0.48
5:S:2547:SER:HB3	5:S:2554:PHE:HZ	1.79	0.48
2:L:260:ARG:NE	6:T:536:PRO:O	2.37	0.48
4:P:198:LEU:HD12	4:Q:198:LEU:HD13	1.95	0.48
5:S:1150:LYS:HA	5:S:1162:SER:HA	1.96	0.48
5:S:1196:PRO:HA	5:S:1202:ARG:HA	1.95	0.48
5:S:1591:LYS:O	5:S:1594:SER:OG	2.27	0.48
5:S:2406:GLU:N	5:S:2406:GLU:OE1	2.46	0.48
5:S:261:ASP:HB3	5:S:265:TYR:H	1.79	0.48
5:S:625:ASN:O	5:S:628:GLU:HG2	2.13	0.48
5:S:1257:LEU:HA	5:S:1260:LEU:HD12	1.94	0.48
5:S:1867:ILE:O	5:S:1871:MET:HG2	2.14	0.48
5:S:2522:ARG:HH12	5:S:2564:GLU:HG2	1.79	0.48
5:S:3236:PHE:HD2	5:S:3269:ARG:HH12	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3923:ARG:HG2	5:S:4124:TRP:HA	1.96	0.48
5:S:3964:THR:HG23	5:S:3966:GLN:H	1.77	0.48
2:L:457:LEU:HD22	2:L:533:ILE:HD13	1.94	0.48
5:S:476:ARG:HH21	5:S:1561:SER:HG	1.56	0.48
5:S:1649:LEU:HA	5:S:1652:ILE:HD12	1.96	0.48
5:S:2414:GLN:O	5:S:2417:SER:OG	2.28	0.48
5:S:2522:ARG:NH1	5:S:2564:GLU:HG2	2.29	0.48
5:S:3182:ILE:HA	5:S:3185:ASN:HD21	1.79	0.48
5:S:3452:LYS:HA	5:S:3455:LYS:HG2	1.96	0.48
6:T:247:ARG:NH1	6:T:487:PHE:HB2	2.29	0.48
2:L:263:ALA:HA	2:L:364:VAL:HA	1.96	0.48
4:P:188:LYS:O	4:P:192:ARG:N	2.35	0.48
5:S:792:ILE:HG13	5:S:793:LEU:HD12	1.95	0.48
5:S:974:CYS:HA	5:S:981:ARG:HH12	1.79	0.48
5:S:2129:LEU:HA	5:S:2132:LYS:HG2	1.94	0.48
5:S:2318:ALA:HA	5:S:2321:GLU:HG2	1.96	0.48
5:S:2428:ASP:OD1	5:S:2428:ASP:N	2.45	0.48
5:S:2539:LEU:O	5:S:2542:LEU:HG	2.13	0.48
5:S:3240:MET:HE3	5:S:3272:TRP:CH2	2.49	0.48
1:E:731:LYS:HG3	1:E:732:THR:HG23	1.95	0.48
2:L:360:GLN:HE22	2:L:362:LEU:HB2	1.79	0.48
5:S:1083:ASN:O	5:S:1087:ARG:NH1	2.47	0.48
5:S:1184:ARG:NH2	5:S:1265:GLU:OE1	2.47	0.48
5:S:4004:VAL:HG23	5:S:4005:PHE:H	1.78	0.48
6:T:190:ALA:O	6:T:193:LEU:HG	2.14	0.48
7:i:28:DT:H1'	7:i:29:DA:H5'	1.95	0.48
7:i:37:DT:H5"	7:i:37:DT:C6	2.49	0.48
1:E:677:ASP:N	1:E:677:ASP:OD1	2.47	0.47
2:L:311:ILE:HD11	6:T:290:ARG:HD3	1.95	0.47
2:L:312:GLN:NE2	2:L:324:SER:O	2.46	0.47
2:L:541:GLU:HG2	6:T:268:VAL:HB	1.96	0.47
5:S:1115:HIS:NE2	5:S:1182:GLU:HB3	2.28	0.47
5:S:1115:HIS:CD2	5:S:1119:LYS:HE3	2.49	0.47
5:S:2234:ASN:O	5:S:2238:ILE:HD12	2.14	0.47
5:S:3621:LYS:HB2	5:S:3630:ARG:HH12	1.79	0.47
2:L:306:LEU:HG	2:L:308:GLU:H	1.79	0.47
5:S:80:GLU:HA	5:S:83:GLU:OE1	2.13	0.47
5:S:724:GLU:HB2	5:S:2599:SER:HA	1.95	0.47
5:S:1157:PHE:CE1	5:S:1159:PRO:HG2	2.49	0.47
6:T:247:ARG:NH1	6:T:488:ARG:HG3	2.28	0.47
1:E:656:SER:HA	1:E:733:LYS:HD2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:343:LEU:HD11	2:L:394:ARG:HB2	1.96	0.47
5:S:1105:VAL:O	5:S:1108:MET:HG3	2.14	0.47
5:S:1740:VAL:HA	5:S:1743:MET:HG2	1.97	0.47
5:S:1793:THR:O	5:S:1797:LEU:HG	2.13	0.47
5:S:672:ILE:O	5:S:676:ASN:ND2	2.48	0.47
5:S:3455:LYS:HZ1	5:S:3489:SER:C	2.22	0.47
5:S:3860:LYS:HG2	5:S:4073:ALA:HB2	1.95	0.47
6:T:39:ILE:O	6:T:167:MET:N	2.44	0.47
5:S:1423:ILE:HD11	5:S:1428:ILE:HB	1.95	0.47
2:L:426:PHE:HB3	6:T:479:GLU:HA	1.97	0.47
5:S:2190:VAL:HA	5:S:2193:ILE:HG22	1.97	0.47
5:S:2205:VAL:HG13	5:S:2208:ASP:H	1.78	0.47
5:S:2826:LEU:HA	5:S:2829:LYS:HE2	1.97	0.47
5:S:3008:TRP:HA	5:S:3011:LEU:HD12	1.97	0.47
5:S:3048:LYS:HA	5:S:3051:LEU:HD12	1.97	0.47
5:S:3312:VAL:O	5:S:3316:LEU:N	2.40	0.47
2:L:18:PHE:HA	2:L:21:SER:HB2	1.96	0.47
2:L:188:HIS:HD1	2:L:519:PRO:HD3	1.80	0.47
5:S:67:VAL:HA	5:S:71:LYS:HB2	1.97	0.47
5:S:364:ARG:HA	5:S:415:GLN:NE2	2.29	0.47
5:S:367:GLY:HA3	5:S:416:SER:HB2	1.97	0.47
5:S:763:THR:O	5:S:766:ALA:N	2.47	0.47
5:S:1342:MET:O	5:S:1345:THR:OG1	2.32	0.47
5:S:2393:LEU:HD12	5:S:2393:LEU:H	1.79	0.47
5:S:3189:PHE:O	5:S:3193:ILE:HD12	2.15	0.47
5:S:3285:HIS:HE2	5:S:3333:THR:HB	1.80	0.47
5:S:3720:ALA:HB3	5:S:3743:HIS:HA	1.95	0.47
5:S:4111:ALA:O	5:S:4115:ASN:ND2	2.41	0.47
6:T:353:LEU:HD23	6:T:395:ALA:HB2	1.96	0.47
5:S:1751:GLU:HA	5:S:1785:ILE:HG22	1.97	0.47
5:S:2825:THR:HG23	5:S:2828:GLU:H	1.80	0.47
1:E:800:GLU:O	1:E:804:SER:N	2.48	0.47
4:P:183:VAL:HA	4:P:186:GLU:HG2	1.96	0.47
5:S:204:LEU:O	5:S:208:MET:HG3	2.15	0.47
5:S:1212:LEU:HD12	5:S:1215:GLU:HB2	1.97	0.47
5:S:2044:ASP:O	5:S:2048:GLY:N	2.47	0.47
5:S:2723:THR:HG23	5:S:2727:ARG:HH21	1.80	0.47
7:i:21:DA:P	8:j:37:DG:H21	2.38	0.47
4:P:191:ILE:HG22	4:P:195:HIS:CE1	2.50	0.47
5:S:1226:GLY:HA3	5:S:1263:ALA:HB2	1.97	0.47
5:S:1452:VAL:HG22	5:S:1517:LEU:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:1593:VAL:HA	5:S:1596:VAL:HG22	1.96	0.47
5:S:2196:TRP:NE1	5:S:2200:ALA:HB3	2.30	0.47
5:S:3069:MET:HE1	5:S:3078:LEU:HD11	1.96	0.47
5:S:3692:VAL:HG22	5:S:3696:ARG:HD3	1.96	0.47
2:L:496:HIS:CG	2:L:506:PRO:HD3	2.50	0.46
5:S:781:ASP:OD2	5:S:783:HIS:ND1	2.48	0.46
5:S:784:VAL:O	5:S:787:PRO:HD2	2.15	0.46
5:S:1046:PRO:O	5:S:1049:GLN:HG2	2.15	0.46
5:S:2330:VAL:HG12	5:S:2333:ARG:NH2	2.30	0.46
5:S:3758:LEU:O	5:S:3762:GLN:HG2	2.15	0.46
2:L:276:TRP:HB3	6:T:318:ARG:HB3	1.97	0.46
2:L:524:THR:HA	2:L:527:GLN:HG2	1.96	0.46
5:S:723:ASP:C	5:S:725:LEU:H	2.24	0.46
5:S:1406:LEU:HA	5:S:1409:SER:HB3	1.97	0.46
5:S:1824:LEU:HD13	5:S:1827:LEU:HD21	1.97	0.46
5:S:3085:GLU:OE1	5:S:3085:GLU:N	2.41	0.46
5:S:4099:SER:HB3	5:S:4102:THR:OG1	2.15	0.46
6:T:59:PRO:HA	6:T:62:MET:HG2	1.97	0.46
6:T:262:LYS:HA	6:T:267:ILE:O	2.14	0.46
2:L:357:MET:HG3	2:L:425:PRO:HB3	1.96	0.46
5:S:179:GLY:HA3	5:S:230:LEU:HB2	1.98	0.46
5:S:234:PHE:CD2	5:S:235:THR:HG23	2.51	0.46
5:S:782:ARG:HB3	5:S:3164:TRP:CZ2	2.49	0.46
5:S:935:HIS:CE1	5:S:984:TYR:HE1	2.33	0.46
5:S:1268:ASN:ND2	5:S:1343:GLU:OE2	2.49	0.46
5:S:1453:SER:HA	5:S:1456:LYS:HG2	1.97	0.46
5:S:3713:PRO:HB3	5:S:3715:TYR:CZ	2.51	0.46
5:S:4085:LYS:HB3	5:S:4087:HIS:CE1	2.50	0.46
9:A:42:SER:O	9:A:45:ARG:NH2	2.48	0.46
1:E:774:LEU:HD21	4:P:180:PHE:HB2	1.97	0.46
2:L:162:GLN:NE2	2:L:235:CYS:O	2.47	0.46
5:S:12:LEU:HD21	5:S:44:LEU:HD22	1.97	0.46
5:S:16:GLN:NE2	5:S:62:ASP:OD2	2.48	0.46
5:S:429:GLU:O	5:S:432:THR:OG1	2.34	0.46
5:S:1023:SER:HA	5:S:1026:ARG:HG3	1.98	0.46
5:S:2388:LYS:NZ	6:T:155:SER:O	2.39	0.46
5:S:3163:THR:O	5:S:3167:ARG:NH2	2.48	0.46
5:S:3964:THR:HG22	5:S:3967:PHE:HD2	1.80	0.46
8:j:32:DT:H2"	8:j:33:DA:C8	2.50	0.46
2:L:463:LEU:HD13	2:L:477:PHE:CD2	2.51	0.46
2:L:636:ILE:HA	2:L:639:ILE:HG12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:P:176:LEU:HD13	4:Q:176:LEU:HD12	1.98	0.46
5:S:151:GLU:O	5:S:154:SER:OG	2.30	0.46
5:S:1015:ASP:OD1	5:S:1016:GLY:N	2.46	0.46
5:S:1740:VAL:HA	5:S:1743:MET:HE3	1.98	0.46
5:S:1767:CYS:HB3	5:S:1818:SER:OG	2.16	0.46
5:S:2402:LEU:HD13	5:S:2434:VAL:HG23	1.97	0.46
5:S:2414:GLN:OE1	5:S:2414:GLN:N	2.45	0.46
5:S:3133:GLN:O	5:S:3136:THR:HG22	2.14	0.46
5:S:3592:VAL:HB	5:S:3609:MET:HE1	1.98	0.46
5:S:3832:PRO:HB2	5:S:3877:LYS:HG2	1.98	0.46
5:S:4045:CYS:HA	5:S:4048:LYS:HG2	1.98	0.46
9:A:117:LEU:HD12	9:A:120:GLN:HE22	1.81	0.46
2:L:255:SER:OG	6:T:515:ASN:ND2	2.43	0.46
2:L:457:LEU:HD13	2:L:529:PRO:HB2	1.97	0.46
4:P:150:ARG:O	4:P:154:ASP:N	2.41	0.46
5:S:3176:MET:HA	5:S:3179:TRP:CD1	2.50	0.46
5:S:3328:ILE:O	5:S:3332:THR:OG1	2.27	0.46
5:S:4113:ASP:O	5:S:4117:LEU:HG	2.16	0.46
6:T:44:ALA:HB1	6:T:137:HIS:HA	1.98	0.46
9:A:65:ILE:HG13	9:A:70:GLY:HA3	1.98	0.46
1:E:656:SER:HB3	1:E:685:PHE:CD2	2.50	0.46
1:E:832:LYS:HD3	1:E:834:GLU:H	1.80	0.46
5:S:901:MET:SD	5:S:901:MET:N	2.89	0.46
5:S:913:ARG:NH1	5:S:917:LEU:HD11	2.31	0.46
5:S:1261:LEU:HD21	5:S:1337:VAL:HA	1.97	0.46
5:S:3324:ARG:HB3	5:S:3391:ALA:HB3	1.98	0.46
5:S:3493:TRP:CE2	5:S:3524:ASN:HB2	2.50	0.46
6:T:275:ASN:HD21	6:T:278:GLN:HB2	1.81	0.46
1:E:769:THR:HG21	4:P:184:LEU:HD13	1.98	0.46
2:L:252:THR:HB	2:L:341:SER:HA	1.97	0.46
2:L:511:HIS:ND1	2:L:515:MET:HE1	2.31	0.46
4:P:190:LYS:HD3	4:Q:191:ILE:HG21	1.97	0.46
5:S:113:SER:O	5:S:117:LYS:N	2.49	0.46
5:S:1712:ARG:O	5:S:1715:GLU:HG3	2.15	0.46
5:S:3547:THR:HA	5:S:3550:LYS:HZ2	1.80	0.46
5:S:3658:ASP:N	5:S:3658:ASP:OD1	2.48	0.46
5:S:3912:CYS:HB2	5:S:3961:PHE:HB2	1.96	0.46
6:T:102:ILE:HD12	6:T:146:VAL:HG12	1.97	0.46
5:S:31:GLY:HA3	5:S:77:GLU:HB2	1.97	0.46
5:S:996:THR:HG21	5:S:1039:TRP:HB3	1.98	0.46
5:S:2297:SER:OG	5:S:2298:GLU:OE1	2.23	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3927:ASN:HA	5:S:3940:ILE:HB	1.96	0.46
6:T:372:GLU:OE2	6:T:379:SER:N	2.36	0.46
7:i:37:DT:H5"	7:i:37:DT:H6	1.80	0.46
1:E:725:TRP:NE1	1:E:736:VAL:O	2.43	0.46
5:S:901:MET:SD	5:S:2820:MET:HE1	2.56	0.46
5:S:907:LEU:HA	5:S:910:PHE:CD2	2.51	0.46
5:S:1105:VAL:HA	5:S:1108:MET:HG3	1.98	0.46
5:S:1406:LEU:HD13	5:S:1415:LEU:HD13	1.97	0.46
5:S:1626:TRP:CH2	5:S:1632:TRP:HB2	2.51	0.46
5:S:1770:GLN:NE2	5:S:1775:GLU:OE1	2.49	0.46
5:S:2328:ARG:NE	5:S:2370:SER:O	2.44	0.46
5:S:2375:ALA:O	5:S:2378:PHE:N	2.37	0.46
5:S:2891:ARG:HH22	5:S:3894:PRO:HB2	1.81	0.46
6:T:206:LYS:N	6:T:235:GLU:HB3	2.30	0.46
1:E:711:ASN:OD1	2:L:330:GLN:NE2	2.46	0.45
2:L:21:SER:HB3	2:L:100:PRO:HB3	1.98	0.45
2:L:368:ARG:HD2	2:L:368:ARG:HA	1.86	0.45
2:L:436:SER:O	6:T:369:TYR:OH	2.34	0.45
5:S:166:ILE:N	5:S:167:PRO:HD2	2.31	0.45
5:S:291:VAL:HA	5:S:294:PHE:CD2	2.51	0.45
5:S:861:SER:N	5:S:3136:THR:HG21	2.31	0.45
5:S:891:ARG:HH22	5:S:960:GLN:H	1.65	0.45
5:S:1115:HIS:O	5:S:1119:LYS:NZ	2.36	0.45
5:S:1626:TRP:CZ2	5:S:1630:ASP:HA	2.51	0.45
5:S:2386:LEU:HD12	5:S:2418:LYS:HG3	1.99	0.45
5:S:3247:ARG:NE	5:S:3282:ARG:HE	2.14	0.45
5:S:3837:CYS:SG	5:S:3873:LYS:HB3	2.56	0.45
5:S:3860:LYS:HE3	5:S:4072:PRO:HB2	1.97	0.45
6:T:348:MET:HG3	6:T:410:PHE:CE1	2.50	0.45
1:E:665:CYS:HB3	1:E:700:VAL:HG13	1.98	0.45
1:E:702:ALA:HB3	1:E:720:VAL:HG13	1.98	0.45
1:E:713:ILE:HA	1:E:745:HIS:CE1	2.51	0.45
2:L:65:ASP:N	2:L:77:ILE:O	2.41	0.45
5:S:436:GLU:HA	5:S:439:VAL:HG22	1.98	0.45
5:S:675:ARG:HA	5:S:678:LYS:HG2	1.97	0.45
5:S:1057:LYS:HB3	5:S:1061:LYS:NZ	2.30	0.45
5:S:1651:LYS:O	5:S:1654:GLN:HG2	2.16	0.45
5:S:3177:ASN:OD1	5:S:3178:ILE:N	2.49	0.45
5:S:3689:ASP:N	5:S:3689:ASP:OD1	2.47	0.45
5:S:3767:LEU:HD21	5:S:4002:MET:HA	1.98	0.45
2:L:262:ALA:N	2:L:365:PHE:O	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:81:CYS:O	5:S:85:ILE:HG12	2.17	0.45
5:S:87:LYS:HD3	5:S:831:LEU:HD13	1.98	0.45
5:S:1034:ARG:HH21	5:S:1087:ARG:HB2	1.81	0.45
5:S:1308:ALA:HB3	5:S:1310:GLU:HG2	1.98	0.45
5:S:2227:LYS:HB2	5:S:2230:VAL:HG22	1.98	0.45
5:S:2425:ARG:NH1	5:S:2460:GLU:OE2	2.49	0.45
5:S:3901:ARG:HH21	5:S:3970:LEU:HG	1.81	0.45
5:S:4040:PRO:O	5:S:4044:ILE:HD12	2.17	0.45
2:L:496:HIS:CD2	2:L:505:LEU:HD13	2.52	0.45
2:L:665:LYS:O	2:L:668:ILE:HG12	2.15	0.45
5:S:240:GLU:HB2	5:S:242:PRO:HD2	1.98	0.45
5:S:759:GLY:HA2	5:S:762:TYR:O	2.17	0.45
5:S:771:ASN:O	5:S:774:GLU:HG3	2.14	0.45
5:S:1844:VAL:HG23	5:S:1845:VAL:H	1.80	0.45
5:S:1849:ASP:OD1	5:S:1850:VAL:N	2.49	0.45
5:S:1864:ASP:OD1	5:S:1864:ASP:N	2.46	0.45
5:S:2360:PHE:O	5:S:2364:LEU:HD23	2.17	0.45
5:S:2387:PRO:O	6:T:158:GLN:NE2	2.30	0.45
5:S:2873:PRO:HB2	5:S:2925:GLU:OE1	2.17	0.45
5:S:3000:ASP:O	5:S:3004:HIS:ND1	2.32	0.45
5:S:4055:ASN:HD21	5:S:4057:ALA:HB3	1.80	0.45
1:E:720:VAL:HG23	1:E:745:HIS:HB3	1.98	0.45
2:L:327:ASP:O	2:L:331:MET:HG2	2.16	0.45
5:S:15:LEU:O	5:S:19:LEU:HG	2.16	0.45
5:S:213:ARG:O	6:T:404:ARG:NH2	2.50	0.45
5:S:559:SER:OG	5:S:560:LEU:N	2.38	0.45
5:S:3251:ASN:O	5:S:3254:LEU:HD22	2.16	0.45
6:T:102:ILE:HG21	6:T:149:VAL:HG21	1.98	0.45
9:A:68:HIS:CD2	9:A:122:ARG:HH22	2.35	0.45
1:E:835:GLY:HA2	4:P:150:ARG:HD2	1.98	0.45
2:L:315:ARG:HA	2:L:320:ILE:HA	1.98	0.45
5:S:452:LYS:HE3	5:S:453:MET:HE1	1.98	0.45
5:S:458:CYS:O	5:S:462:VAL:HG23	2.17	0.45
5:S:968:VAL:HA	5:S:971:ARG:HG2	1.98	0.45
5:S:1424:THR:HG23	5:S:1426:GLN:H	1.82	0.45
5:S:1633:TRP:CD2	5:S:1674:THR:HG21	2.51	0.45
5:S:3107:ILE:HG22	5:S:3135:LEU:HD13	1.98	0.45
5:S:3585:PHE:CG	5:S:3667:LEU:HD23	2.52	0.45
6:T:32:TYR:HE2	7:i:34:DC:H4'	1.80	0.45
6:T:200:LEU:HD23	6:T:200:LEU:H	1.82	0.45
6:T:400:TYR:N	6:T:409:TYR:O	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:61:THR:OG1	2:L:63:GLY:O	2.33	0.45
2:L:264:TYR:O	2:L:363:LYS:N	2.43	0.45
5:S:144:MET:HE3	5:S:144:MET:HA	1.99	0.45
5:S:476:ARG:NH2	5:S:1558:TYR:O	2.50	0.45
5:S:1397:ASP:OD1	5:S:1398:VAL:N	2.50	0.45
5:S:1952:ILE:HD12	5:S:1961:PHE:HD1	1.79	0.45
5:S:3568:ILE:HA	5:S:3571:PHE:HD2	1.82	0.45
5:S:3589:SER:HA	5:S:3592:VAL:HG12	1.98	0.45
6:T:86:VAL:HG23	6:T:104:VAL:HA	1.99	0.45
9:A:50:ARG:NH1	9:A:50:ARG:O	2.39	0.45
9:A:60:LEU:HA	9:A:63:LYS:HE3	1.98	0.45
9:A:114:TRP:HB2	9:A:130:PHE:CD2	2.51	0.45
4:P:158:VAL:HG22	4:P:161:ARG:HH22	1.81	0.45
5:S:442:GLN:O	5:S:445:SER:OG	2.31	0.45
5:S:978:GLN:OE1	5:S:2598:ARG:N	2.50	0.45
5:S:1297:PHE:HA	5:S:1301:ILE:HG12	1.99	0.45
5:S:1342:MET:O	5:S:1346:THR:HG23	2.17	0.45
6:T:340:PHE:HD2	6:T:408:PRO:HD2	1.82	0.45
8:j:19:DA:H1'	8:j:20:DT:H5'	1.99	0.45
9:A:117:LEU:HD23	9:A:125:VAL:HG21	1.97	0.45
2:L:161:LEU:HD12	2:L:163:PHE:CE1	2.51	0.45
5:S:745:VAL:HA	5:S:748:TYR:CD2	2.51	0.45
5:S:890:LYS:HA	5:S:890:LYS:HD3	1.74	0.45
5:S:994:TRP:CD2	5:S:2581:LEU:HD21	2.52	0.45
5:S:1387:GLY:O	5:S:1389:VAL:HG13	2.17	0.45
5:S:2584:CYS:SG	5:S:2585:GLU:N	2.89	0.45
1:E:825:VAL:HA	1:E:878:PHE:HZ	1.81	0.45
2:L:438:LEU:HD12	2:L:441:SER:HB3	1.99	0.45
5:S:175:TYR:HB2	5:S:223:CYS:HB3	1.98	0.45
5:S:181:LEU:HD23	5:S:181:LEU:HA	1.83	0.45
5:S:1067:ALA:HB1	5:S:1110:SER:HB3	1.98	0.45
5:S:1770:GLN:O	5:S:1771:GLN:HG3	2.16	0.45
5:S:3100:LYS:HA	5:S:3103:ILE:HG22	1.99	0.45
5:S:3311:ASN:HB2	5:S:3314:SER:HA	1.98	0.45
5:S:3326:GLN:HA	5:S:3329:LEU:HD12	1.98	0.45
5:S:2210:VAL:O	5:S:2214:ARG:HG2	2.16	0.44
5:S:2434:VAL:O	5:S:2438:ILE:HG12	2.17	0.44
5:S:3075:LYS:HA	5:S:3078:LEU:HG	1.99	0.44
5:S:3700:GLU:HG3	5:S:3718:ARG:HH11	1.82	0.44
6:T:218:ARG:H	6:T:221:ILE:HG12	1.81	0.44
2:L:45:GLN:NE2	2:L:50:ASN:OD1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:56:LEU:HD12	2:L:80:HIS:HB3	1.98	0.44
2:L:484:ASN:ND2	2:L:486:ARG:HB3	2.32	0.44
2:L:530:LEU:HD13	6:T:264:ASN:HD22	1.82	0.44
5:S:865:GLN:HB2	5:S:3168:TYR:CE2	2.51	0.44
5:S:1227:GLY:HA2	5:S:1260:LEU:HD23	1.97	0.44
5:S:2154:GLU:HA	5:S:2157:PHE:CE1	2.53	0.44
5:S:2254:ARG:CZ	5:S:2292:CYS:HA	2.47	0.44
5:S:2492:ASP:OD2	5:S:2495:SER:N	2.36	0.44
5:S:2832:ILE:N	5:S:2835:LYS:HZ2	2.15	0.44
5:S:3665:MET:HA	5:S:3668:LEU:HG	1.97	0.44
5:S:4085:LYS:O	5:S:4089:ILE:HG12	2.16	0.44
6:T:303:PHE:HA	6:T:311:LEU:H	1.81	0.44
1:E:725:TRP:HA	1:E:741:ARG:HH22	1.82	0.44
5:S:1034:ARG:NH1	5:S:1088:GLU:OE2	2.51	0.44
5:S:2751:GLN:HA	5:S:2754:GLU:CD	2.42	0.44
5:S:3820:MET:HG2	5:S:3824:GLU:HB3	1.99	0.44
5:S:3887:PHE:HA	5:S:3890:MET:HG3	1.99	0.44
5:S:3923:ARG:HD2	5:S:4121:TRP:CD1	2.51	0.44
2:L:71:GLY:O	2:L:73:GLN:N	2.51	0.44
2:L:523:THR:O	2:L:527:GLN:HG2	2.17	0.44
5:S:1071:ASN:ND2	5:S:1074:LYS:HG3	2.33	0.44
5:S:1215:GLU:OE1	5:S:1222:ASN:ND2	2.49	0.44
5:S:1220:LEU:O	5:S:1224:PHE:HB2	2.18	0.44
5:S:1874:TYR:HB3	5:S:1947:CYS:SG	2.57	0.44
5:S:2886:GLN:HB3	5:S:2929:LEU:HD12	1.99	0.44
5:S:3320:ILE:HD11	5:S:3394:GLU:HB2	1.99	0.44
5:S:3327:ASN:HB2	5:S:3388:ALA:HB2	2.00	0.44
5:S:3868:VAL:HG22	5:S:3872:ARG:HH11	1.83	0.44
1:E:702:ALA:N	1:E:721:VAL:O	2.47	0.44
5:S:1597:LEU:HD11	5:S:1648:LEU:HD22	1.99	0.44
5:S:2105:HIS:HB2	5:S:2156:VAL:HG13	2.00	0.44
5:S:2293:GLY:O	5:S:2295:GLN:N	2.50	0.44
5:S:3241:LYS:HE3	5:S:3241:LYS:HB2	1.75	0.44
5:S:3425:ARG:NH2	5:S:3428:GLU:HG2	2.31	0.44
6:T:403:ARG:HD3	6:T:404:ARG:O	2.16	0.44
1:E:668:SER:HG	1:E:708:ARG:HH21	1.63	0.44
5:S:655:LEU:O	5:S:659:ARG:HG2	2.17	0.44
5:S:746:ARG:HH22	5:S:788:TYR:HD2	1.66	0.44
5:S:981:ARG:HA	5:S:984:TYR:HB2	1.99	0.44
5:S:3234:CYS:O	5:S:3238:MET:HG2	2.17	0.44
1:E:864:ILE:HG13	1:E:889:LEU:HD11	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:653:GLN:O	2:L:657:ASN:ND2	2.51	0.44
5:S:465:PHE:CE1	5:S:479:ILE:HG22	2.53	0.44
5:S:733:LEU:HA	5:S:736:LEU:HD23	2.00	0.44
5:S:953:GLN:H	5:S:956:PRO:HD3	1.82	0.44
5:S:1633:TRP:CD1	5:S:1674:THR:HG21	2.53	0.44
5:S:675:ARG:NH1	5:S:676:ASN:OD1	2.50	0.44
5:S:1207:TRP:HE3	5:S:1208:LEU:HD12	1.82	0.44
5:S:1834:ASP:HA	5:S:1837:ARG:HD2	2.00	0.44
5:S:1850:VAL:HG21	5:S:1873:TYR:CZ	2.53	0.44
5:S:2328:ARG:HH21	5:S:2372:PRO:HD2	1.83	0.44
5:S:2791:ILE:HG13	5:S:2792:THR:N	2.33	0.44
5:S:3877:LYS:HZ2	5:S:4127:TRP:CG	2.36	0.44
5:S:4012:ASP:C	5:S:4014:LYS:N	2.76	0.44
6:T:115:ARG:HA	6:T:118:GLU:HG2	1.99	0.44
7:i:38:DT:N3	8:j:19:DA:N1	2.66	0.44
9:A:114:TRP:HB2	9:A:130:PHE:CG	2.53	0.44
1:E:722:LYS:HB2	1:E:742:PHE:HB2	1.99	0.44
2:L:56:LEU:HG	2:L:81:ARG:HB3	1.99	0.44
2:L:366:ALA:HB2	2:L:377:LEU:HD12	2.00	0.44
2:L:513:TRP:O	2:L:517:ASN:N	2.35	0.44
5:S:188:GLU:HG2	5:S:189:MET:H	1.83	0.44
5:S:374:LYS:HE2	5:S:381:VAL:HG21	2.00	0.44
5:S:1082:PHE:HZ	5:S:1134:LEU:HD21	1.83	0.44
5:S:1136:ARG:O	5:S:1139:GLU:HG2	2.18	0.44
5:S:1146:ASN:ND2	5:S:1199:PRO:HG3	2.33	0.44
5:S:3443:PRO:HA	5:S:3446:VAL:HG22	1.99	0.44
5:S:3447:VAL:HA	5:S:3450:MET:HE2	2.00	0.44
5:S:4064:LEU:HB3	5:S:4074:PHE:HE1	1.83	0.44
6:T:466:VAL:O	6:T:470:ARG:HG3	2.17	0.44
6:T:481:PRO:HA	6:T:484:GLN:HG2	1.99	0.44
6:T:483:LEU:HA	6:T:486:HIS:HD1	1.83	0.44
5:S:12:LEU:HA	5:S:15:LEU:HD12	2.00	0.43
5:S:380:ASP:HA	5:S:383:PHE:HB2	2.00	0.43
5:S:581:LEU:HB3	5:S:660:LEU:HD12	1.99	0.43
5:S:1000:LYS:HB2	5:S:1004:GLN:NE2	2.33	0.43
5:S:1019:ASP:OD1	5:S:1019:ASP:N	2.48	0.43
5:S:1204:PRO:HG2	5:S:1206:LEU:HG	2.00	0.43
5:S:1367:HIS:HB2	5:S:1370:ARG:CZ	2.48	0.43
5:S:1963:GLN:HB2	5:S:2125:TRP:CZ2	2.53	0.43
5:S:2430:GLU:HG2	5:S:2431:ARG:N	2.33	0.43
9:A:64:GLN:O	9:A:68:HIS:ND1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:289:ILE:HA	6:T:311:LEU:HD11	2.00	0.43
2:L:402:ASN:N	7:i:25:DA:OP1	2.51	0.43
5:S:754:MET:HE3	5:S:1021:VAL:HG11	2.00	0.43
5:S:1102:GLU:HA	5:S:1154:PRO:HB3	2.00	0.43
5:S:2410:GLU:OE2	5:S:2412:TYR:N	2.51	0.43
1:E:682:ILE:HG13	1:E:730:PHE:CZ	2.50	0.43
2:L:205:LEU:HG	2:L:209:LYS:HD2	1.99	0.43
2:L:413:LYS:N	2:L:416:TYR:O	2.50	0.43
5:S:57:LEU:HB3	5:S:103:TYR:HE2	1.83	0.43
5:S:174:VAL:O	5:S:178:LEU:HG	2.19	0.43
5:S:708:VAL:C	5:S:712:LYS:HZ2	2.26	0.43
5:S:727:ALA:O	5:S:731:THR:OG1	2.30	0.43
5:S:781:ASP:O	5:S:785:MET:HG2	2.18	0.43
5:S:960:GLN:HA	5:S:963:LYS:HZ3	1.84	0.43
5:S:1390:GLN:HA	5:S:1393:ALA:HB3	1.99	0.43
5:S:1794:GLN:O	5:S:1798:LEU:HG	2.18	0.43
5:S:3247:ARG:HE	5:S:3282:ARG:HE	1.65	0.43
5:S:3289:ARG:H	5:S:3292:GLY:HA3	1.83	0.43
5:S:3772:ASN:HD21	5:S:3787:GLN:HE21	1.66	0.43
5:S:196:LEU:HB3	5:S:200:PHE:CE2	2.53	0.43
5:S:896:VAL:O	5:S:902:LYS:HB3	2.17	0.43
5:S:2311:ARG:HG2	5:S:2312:TYR:HD1	1.84	0.43
5:S:2805:ALA:HA	5:S:2808:LEU:HG	2.00	0.43
5:S:3257:LYS:HA	5:S:3257:LYS:HD3	1.71	0.43
5:S:3270:ASP:N	5:S:3270:ASP:OD1	2.50	0.43
5:S:3584:LEU:HD12	5:S:3799:ARG:HH21	1.84	0.43
5:S:3633:ILE:HG13	5:S:3634:GLN:N	2.33	0.43
5:S:3700:GLU:HA	5:S:3718:ARG:HA	2.00	0.43
5:S:3800:LEU:HD12	5:S:3800:LEU:HA	1.93	0.43
5:S:3901:ARG:NH2	5:S:3970:LEU:HG	2.32	0.43
6:T:420:LEU:HB3	6:T:424:LYS:HA	2.00	0.43
5:S:321:LYS:HD2	5:S:321:LYS:HA	1.71	0.43
5:S:417:VAL:O	5:S:421:LEU:HD23	2.18	0.43
5:S:1405:ALA:HA	5:S:1408:MET:HE2	2.00	0.43
5:S:1632:TRP:HD1	5:S:1645:VAL:HB	1.84	0.43
5:S:1948:ALA:O	5:S:1952:ILE:HG12	2.19	0.43
5:S:2254:ARG:HH11	5:S:2294:ILE:HG13	1.83	0.43
5:S:2271:SER:HA	5:S:2274:ILE:HD13	2.01	0.43
5:S:3718:ARG:H	5:S:3743:HIS:HB3	1.84	0.43
6:T:77:SER:HA	6:T:248:ALA:O	2.18	0.43
9:A:89:MET:HE2	9:A:89:MET:HA	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:513:TRP:HB3	2:L:517:ASN:ND2	2.33	0.43
4:Q:194:LEU:HA	4:Q:197:LYS:HE2	2.01	0.43
5:S:207:GLN:C	5:S:217:LEU:HD11	2.44	0.43
5:S:682:TYR:CZ	5:S:700:LYS:HG2	2.54	0.43
5:S:935:HIS:HA	5:S:938:VAL:HG12	2.00	0.43
5:S:1056:THR:HG21	5:S:1095:LEU:HD13	2.00	0.43
5:S:1475:LEU:HB2	5:S:1477:HIS:CE1	2.53	0.43
5:S:3075:LYS:O	5:S:3078:LEU:HG	2.18	0.43
5:S:3287:ARG:HA	5:S:3289:ARG:HH21	1.82	0.43
8:j:27:DT:H2"	8:j:28:DA:C8	2.53	0.43
2:L:662:LEU:HA	2:L:665:LYS:HE2	2.01	0.43
4:Q:161:ARG:HA	4:Q:164:LYS:HE3	2.01	0.43
5:S:290:TYR:OH	5:S:339:GLN:OE1	2.28	0.43
5:S:293:LEU:HA	5:S:296:VAL:HG12	2.01	0.43
5:S:1425:ALA:HA	5:S:1428:ILE:HG22	2.00	0.43
5:S:1504:ASP:O	5:S:1508:LYS:N	2.48	0.43
5:S:2300:PHE:HD2	5:S:2341:LEU:HD13	1.84	0.43
5:S:2467:THR:HB	5:S:2517:LEU:HD11	2.00	0.43
5:S:2497:GLU:HA	5:S:2500:LYS:HD2	2.00	0.43
5:S:2869:LEU:HB2	5:S:2899:ARG:HE	1.83	0.43
5:S:3739:ILE:HG23	5:S:3747:GLU:CD	2.44	0.43
5:S:4080:VAL:HG21	5:S:4119:ARG:HD2	2.01	0.43
1:E:806:ASP:HB3	1:E:816:HIS:CD2	2.53	0.43
2:L:604:GLN:HG3	2:L:605:LYS:HG3	2.01	0.43
4:Q:178:LYS:HA	4:Q:181:ILE:HG22	2.01	0.43
5:S:450:SER:N	5:S:453:MET:SD	2.92	0.43
5:S:864:GLY:N	5:S:3170:ASP:OD1	2.40	0.43
5:S:898:PHE:H	5:S:902:LYS:HE3	1.83	0.43
5:S:1287:GLN:OE1	5:S:1289:SER:N	2.48	0.43
5:S:2431:ARG:HA	5:S:2434:VAL:HG12	2.01	0.43
5:S:2816:ILE:O	5:S:2820:MET:HG2	2.18	0.43
5:S:3078:LEU:HD13	5:S:3086:LEU:HD11	1.99	0.43
5:S:3165:THR:O	5:S:3238:MET:HE1	2.19	0.43
5:S:3828:TYR:OH	5:S:4127:TRP:NE1	2.51	0.43
2:L:6:ASN:HA	2:L:51:LYS:HD2	2.01	0.43
2:L:675:TRP:O	2:L:679:VAL:N	2.48	0.43
4:P:183:VAL:HG11	4:Q:184:LEU:HD13	2.01	0.43
5:S:57:LEU:O	5:S:60:SER:OG	2.33	0.43
5:S:2752:LYS:HD2	5:S:2755:LYS:HZ1	1.84	0.43
5:S:3761:ASP:OD1	5:S:3762:GLN:N	2.51	0.43
5:S:3767:LEU:HA	5:S:3770:VAL:HG22	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3923:ARG:HH11	5:S:4121:TRP:HE1	1.66	0.43
6:T:99:PHE:CD2	6:T:145:GLU:HB2	2.54	0.43
6:T:357:LYS:HE2	6:T:359:HIS:NE2	2.33	0.43
2:L:154:LEU:HD23	2:L:154:LEU:HA	1.88	0.43
2:L:243:HIS:HD2	2:L:264:TYR:HE2	1.66	0.43
2:L:250:ARG:HA	2:L:260:ARG:HA	2.01	0.43
2:L:291:LYS:HA	6:T:302:THR:HA	2.00	0.43
2:L:463:LEU:C	6:T:351:LYS:HZ3	2.27	0.43
4:P:185:ASN:O	4:P:189:THR:HG23	2.19	0.43
5:S:1011:GLU:HA	5:S:1014:LEU:HG	2.01	0.43
5:S:1304:HIS:CD2	5:S:1307:ILE:HG23	2.54	0.43
5:S:1934:LEU:HA	5:S:1937:ARG:HH12	1.84	0.43
5:S:2150:VAL:HG23	5:S:2157:PHE:CZ	2.54	0.43
5:S:3972:LEU:HB3	5:S:3973:PRO:HD3	2.00	0.43
1:E:787:GLN:HE22	4:Q:178:LYS:NZ	2.17	0.42
1:E:812:MET:HE1	1:E:844:GLU:HB3	2.01	0.42
2:L:88:PHE:HD1	2:L:91:LEU:HD12	1.84	0.42
2:L:163:PHE:HB2	2:L:224:ILE:HG12	2.00	0.42
2:L:311:ILE:HA	2:L:325:LYS:NZ	2.34	0.42
5:S:23:ASP:OD1	5:S:23:ASP:N	2.52	0.42
5:S:247:GLU:OE1	5:S:285:CYS:HB2	2.19	0.42
5:S:851:ILE:O	5:S:855:VAL:HG23	2.19	0.42
5:S:977:ASP:HB3	5:S:980:THR:OG1	2.19	0.42
5:S:2331:MET:HE1	5:S:2338:GLU:OE1	2.18	0.42
5:S:3923:ARG:HD2	5:S:4121:TRP:HD1	1.84	0.42
5:S:3971:MET:SD	5:S:3974:MET:HB2	2.59	0.42
2:L:92:GLU:HA	2:L:95:GLU:HG3	2.01	0.42
5:S:721:TYR:HB2	5:S:726:LEU:HB3	2.00	0.42
5:S:785:MET:HB3	5:S:789:TYR:CZ	2.54	0.42
5:S:933:LEU:HD22	5:S:2797:VAL:HG21	2.00	0.42
5:S:1082:PHE:CZ	5:S:1134:LEU:HD21	2.55	0.42
5:S:2170:GLN:HA	5:S:2211:LEU:HD22	2.01	0.42
5:S:2183:HIS:O	5:S:2187:VAL:HG13	2.18	0.42
5:S:2317:ALA:O	5:S:2366:LYS:HD3	2.20	0.42
5:S:2452:ARG:CZ	5:S:2494:ASP:HB3	2.49	0.42
5:S:3172:LYS:HD2	5:S:3172:LYS:HA	1.77	0.42
5:S:3193:ILE:HA	5:S:3196:LYS:HG2	2.01	0.42
6:T:262:LYS:O	6:T:346:MET:HA	2.19	0.42
1:E:883:LYS:HD3	1:E:883:LYS:HA	1.81	0.42
5:S:1268:ASN:HD21	5:S:1344:PHE:HB2	1.84	0.42
5:S:1569:THR:O	5:S:1573:LYS:NZ	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:2421:VAL:HA	5:S:2424:MET:HG3	2.01	0.42
5:S:2548:PRO:HB2	5:S:2848:PHE:CD1	2.55	0.42
5:S:3835:PRO:HB2	5:S:3836:PRO:HD3	2.00	0.42
6:T:301:ARG:NH1	9:A:57:ARG:HH21	2.17	0.42
9:A:41:LEU:HB2	9:A:68:HIS:HB2	2.00	0.42
2:L:61:THR:N	2:L:76:ASN:O	2.52	0.42
2:L:251:LEU:HD23	2:L:259:ILE:HD13	2.02	0.42
5:S:891:ARG:HH12	5:S:959:TYR:H	1.67	0.42
5:S:1256:TRP:CE2	5:S:1260:LEU:HD11	2.54	0.42
5:S:1614:GLN:HA	5:S:1617:LYS:HE2	2.01	0.42
6:T:301:ARG:HH12	9:A:57:ARG:HH21	1.65	0.42
2:L:250:ARG:NH2	6:T:536:PRO:HB2	2.35	0.42
5:S:130:LEU:HD12	5:S:130:LEU:HA	1.79	0.42
5:S:479:ILE:HA	5:S:482:VAL:HG22	2.01	0.42
5:S:858:MET:HE2	5:S:858:MET:HB2	1.94	0.42
5:S:943:GLY:HA3	5:S:2783:ILE:HG21	2.00	0.42
5:S:978:GLN:NE2	5:S:2597:PHE:HA	2.35	0.42
5:S:1017:ILE:HG13	5:S:1018:VAL:N	2.34	0.42
5:S:1658:SER:O	5:S:1662:ASN:HB3	2.19	0.42
5:S:1713:VAL:O	5:S:1716:GLN:HG2	2.20	0.42
5:S:1936:ARG:HH21	5:S:1937:ARG:NH2	2.17	0.42
5:S:2364:LEU:HA	5:S:2367:VAL:HG22	2.02	0.42
5:S:3416:LEU:HB3	5:S:3449:LYS:NZ	2.35	0.42
6:T:465:ILE:HG13	6:T:525:PHE:HE2	1.84	0.42
8:j:32:DT:H2"	8:j:33:DA:N7	2.34	0.42
2:L:298:ASN:HB3	6:T:297:LYS:HG2	2.01	0.42
2:L:327:ASP:OD1	2:L:328:GLU:N	2.51	0.42
2:L:497:ARG:NH2	2:L:500:HIS:O	2.53	0.42
2:L:596:GLU:HA	2:L:599:ARG:HD2	2.01	0.42
4:P:155:TRP:HD1	4:Q:155:TRP:HA	1.85	0.42
5:S:1834:ASP:N	5:S:1834:ASP:OD1	2.51	0.42
5:S:3588:TRP:CZ3	5:S:3609:MET:HG3	2.55	0.42
5:S:3700:GLU:OE2	5:S:3704:GLN:NE2	2.38	0.42
6:T:339:ARG:HA	6:T:405:ASN:HA	2.01	0.42
6:T:363:ARG:HG3	6:T:364:PRO:HD2	2.02	0.42
2:L:223:GLU:OE2	2:L:238:LYS:NZ	2.53	0.42
5:S:993:HIS:O	5:S:996:THR:OG1	2.37	0.42
5:S:1018:VAL:HG22	5:S:1074:LYS:HG2	2.01	0.42
5:S:1031:ARG:NH2	5:S:1034:ARG:HH11	2.14	0.42
5:S:2184:TYR:O	5:S:2187:VAL:HG22	2.19	0.42
5:S:2890:ILE:HD11	5:S:2929:LEU:CB	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:2953:THR:OG1	5:S:2994:TRP:NE1	2.52	0.42
6:T:32:TYR:HB2	6:T:252:ARG:HH22	1.83	0.42
6:T:403:ARG:NE	7:i:32:DA:OP1	2.43	0.42
1:E:778:PHE:CG	4:Q:176:LEU:HD22	2.54	0.42
2:L:677:ILE:HA	2:L:680:GLN:HG2	2.01	0.42
5:S:30:ALA:O	5:S:34:LEU:HG	2.20	0.42
5:S:73:LEU:O	5:S:82:ARG:NH2	2.53	0.42
5:S:520:LYS:HA	5:S:520:LYS:HD2	1.90	0.42
5:S:774:GLU:O	5:S:778:ILE:HG12	2.20	0.42
5:S:1258:ASP:HA	5:S:1261:LEU:HD12	2.02	0.42
5:S:2261:SER:O	5:S:2270:ASN:ND2	2.48	0.42
5:S:2584:CYS:HB3	5:S:2586:PHE:CZ	2.55	0.42
5:S:2820:MET:HA	5:S:2823:PHE:HE1	1.85	0.42
5:S:3156:PRO:O	5:S:3160:LEU:N	2.53	0.42
5:S:3741:ARG:HA	5:S:3747:GLU:HA	2.02	0.42
9:A:83:ILE:HG13	9:A:107:ALA:HB1	2.01	0.42
2:L:16:VAL:HG21	2:L:61:THR:HG22	2.02	0.42
2:L:154:LEU:HD13	2:L:215:LEU:HD13	2.02	0.42
2:L:155:LYS:HA	2:L:155:LYS:HD3	1.68	0.42
2:L:453:ALA:O	2:L:533:ILE:HD11	2.20	0.42
5:S:194:GLU:O	5:S:198:ARG:HG2	2.20	0.42
5:S:294:PHE:HE1	5:S:319:PHE:HE2	1.68	0.42
5:S:992:ILE:HG23	5:S:1036:PHE:CD1	2.49	0.42
5:S:2468:THR:HA	5:S:2471:GLU:CD	2.45	0.42
5:S:3295:GLU:O	5:S:3298:LEU:HG	2.20	0.42
5:S:3700:GLU:HG3	5:S:3718:ARG:HD3	2.01	0.42
5:S:3828:TYR:CD2	5:S:3829:LEU:HD22	2.54	0.42
6:T:82:LEU:C	6:T:83:LEU:HD12	2.44	0.42
6:T:488:ARG:CZ	6:T:503:ALA:HA	2.50	0.42
1:E:720:VAL:HG11	1:E:744:ILE:HB	2.02	0.42
1:E:811:SER:O	1:E:900:LYS:HG2	2.18	0.42
5:S:1588:ASP:OD1	5:S:1588:ASP:N	2.52	0.42
5:S:3580:ASN:OD1	5:S:3580:ASN:N	2.53	0.42
5:S:4010:SER:O	5:S:4011:PHE:C	2.62	0.42
6:T:33:SER:HB3	6:T:162:SER:HB2	2.02	0.42
6:T:64:ILE:O	6:T:68:GLN:HG2	2.20	0.42
7:i:20:DT:O2	8:j:38:DG:N1	2.50	0.42
8:j:15:DA:N3	8:j:16:DA:N6	2.67	0.42
1:E:675:LYS:HD2	1:E:675:LYS:HA	1.74	0.41
1:E:815:ARG:O	1:E:816:HIS:ND1	2.53	0.41
2:L:166:PRO:HA	2:L:227:PHE:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:366:TYR:HA	5:S:369:PHE:CD1	2.55	0.41
5:S:465:PHE:HE1	5:S:479:ILE:HG22	1.85	0.41
5:S:975:ASP:O	5:S:981:ARG:NH2	2.53	0.41
5:S:1135:CYS:HA	5:S:1138:ILE:HG12	2.01	0.41
5:S:2162:LYS:HZ3	5:S:2200:ALA:HA	1.83	0.41
5:S:2327:LEU:HG	5:S:2371:PHE:CG	2.55	0.41
5:S:2331:MET:O	5:S:2334:LYS:HG2	2.20	0.41
5:S:3110:PHE:HB3	5:S:3128:LYS:HE2	2.02	0.41
5:S:3353:GLU:HG3	5:S:3358:ARG:HH12	1.85	0.41
5:S:3449:LYS:HA	5:S:3452:LYS:HG2	2.02	0.41
5:S:3480:LEU:HD23	5:S:3480:LEU:HA	1.94	0.41
5:S:3765:GLU:OE2	5:S:3769:GLN:NE2	2.53	0.41
5:S:3872:ARG:HA	5:S:3875:GLU:HG2	2.01	0.41
5:S:4106:CYS:SG	5:S:4110:GLN:NE2	2.93	0.41
8:j:24:DT:H1'	8:j:25:DT:H5'	2.02	0.41
2:L:279:VAL:HG23	6:T:317:LYS:HB2	2.02	0.41
4:P:175:ASP:O	4:P:179:ARG:HG2	2.20	0.41
5:S:1607:GLU:OE1	5:S:1610:ASN:ND2	2.52	0.41
5:S:1952:ILE:HG23	5:S:1961:PHE:CE1	2.54	0.41
5:S:2208:ASP:OD1	5:S:2209:GLU:N	2.53	0.41
5:S:3090:TYR:HB3	5:S:3095:ASP:HB2	2.02	0.41
5:S:3171:ALA:HA	5:S:3179:TRP:CZ2	2.56	0.41
5:S:3639:GLU:HA	5:S:3642:LYS:HE2	2.02	0.41
6:T:269:ILE:HG23	6:T:378:SER:HB3	2.02	0.41
6:T:276:LEU:H	6:T:276:LEU:HD23	1.84	0.41
6:T:288:LEU:HA	6:T:295:PRO:HA	2.02	0.41
6:T:418:GLU:HA	6:T:428:THR:O	2.19	0.41
2:L:54:ILE:HG22	2:L:86:PRO:HD3	2.02	0.41
2:L:512:ILE:HA	2:L:515:MET:SD	2.61	0.41
5:S:337:LYS:HA	5:S:341:PHE:CD1	2.55	0.41
5:S:428:PRO:HB2	5:S:431:TYR:CD2	2.55	0.41
5:S:475:LEU:O	5:S:479:ILE:HG12	2.20	0.41
5:S:1506:SER:O	5:S:1509:GLN:NE2	2.53	0.41
5:S:1632:TRP:CD1	5:S:1645:VAL:HB	2.55	0.41
5:S:1713:VAL:HA	5:S:1716:GLN:NE2	2.35	0.41
5:S:1779:GLN:O	5:S:1783:ARG:HG2	2.20	0.41
5:S:3114:TYR:HB2	5:S:3128:LYS:HZ2	1.85	0.41
5:S:3761:ASP:HA	5:S:3764:VAL:HG12	2.02	0.41
5:S:3814:ASP:OD1	5:S:3814:ASP:N	2.54	0.41
5:S:3967:PHE:O	5:S:3970:LEU:HD22	2.20	0.41
2:L:291:LYS:HE2	6:T:300:THR:HG23	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:618:ASN:HA	2:L:621:GLU:CD	2.45	0.41
5:S:275:PHE:CE2	5:S:319:PHE:HB2	2.55	0.41
5:S:446:PHE:CE1	5:S:454:GLN:HG2	2.55	0.41
5:S:993:HIS:HE2	5:S:1035:GLU:CD	2.27	0.41
5:S:1693:VAL:HG11	5:S:1746:PHE:CE1	2.55	0.41
5:S:2300:PHE:CD2	5:S:2341:LEU:HD13	2.55	0.41
5:S:2364:LEU:O	5:S:2368:THR:HG22	2.20	0.41
5:S:2514:ASN:HB3	5:S:2517:LEU:HG	2.02	0.41
5:S:2773:ARG:HH21	5:S:2785:ILE:HD13	1.85	0.41
5:S:3778:ASP:HB3	5:S:3781:CYS:HB2	2.02	0.41
5:S:4099:SER:HB3	5:S:4102:THR:HG1	1.86	0.41
6:T:67:ILE:HA	6:T:70:VAL:HG22	2.02	0.41
6:T:510:LYS:NZ	6:T:517:ARG:HH22	2.18	0.41
1:E:706:ASN:HB3	1:E:708:ARG:HH11	1.85	0.41
1:E:815:ARG:HA	1:E:851:LYS:HA	2.03	0.41
2:L:111:LEU:HD21	2:L:134:ILE:HG12	2.03	0.41
2:L:309:ASP:HA	6:T:290:ARG:HE	1.85	0.41
2:L:381:ILE:HG23	2:L:410:PRO:HB2	2.02	0.41
5:S:460:ALA:O	5:S:464:VAL:HG13	2.21	0.41
5:S:1489:LYS:HA	5:S:1489:LYS:HD3	1.82	0.41
5:S:1526:GLU:OE2	5:S:1527:ARG:NE	2.54	0.41
5:S:2840:PHE:HB2	5:S:2871:LEU:HD11	2.03	0.41
5:S:2935:GLU:OE1	5:S:2937:ASP:N	2.53	0.41
5:S:3011:LEU:HB3	5:S:3047:SER:CB	2.50	0.41
5:S:3033:GLU:HG2	5:S:3034:PRO:HD3	2.01	0.41
5:S:3459:ASN:O	5:S:3463:LEU:HG	2.21	0.41
5:S:3460:GLU:O	5:S:3464:LYS:NZ	2.48	0.41
5:S:3498:TRP:O	5:S:3502:MET:HG2	2.20	0.41
5:S:4061:CYS:O	5:S:4065:LEU:HG	2.20	0.41
6:T:512:GLU:H	6:T:512:GLU:CD	2.29	0.41
1:E:797:ALA:HB1	1:E:801:TYR:CZ	2.55	0.41
1:E:876:LYS:HD3	1:E:876:LYS:HA	1.90	0.41
2:L:468:GLU:O	2:L:469:LYS:HG2	2.20	0.41
2:L:529:PRO:HA	2:L:532:LYS:HE2	2.03	0.41
5:S:225:LYS:HD2	5:S:270:ALA:HB1	2.02	0.41
5:S:651:TYR:HD1	5:S:706:LEU:HD11	1.85	0.41
5:S:789:TYR:HA	5:S:792:ILE:HG12	2.02	0.41
5:S:833:HIS:HB2	5:S:835:LYS:NZ	2.36	0.41
5:S:1065:SER:O	5:S:1068:LEU:HG	2.20	0.41
5:S:3330:LEU:HD23	5:S:3384:HIS:CD2	2.56	0.41
5:S:3351:ILE:O	5:S:3357:ARG:NH1	2.48	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:3585:PHE:CD2	5:S:3667:LEU:HD23	2.56	0.41
5:S:3713:PRO:HB2	5:S:3716:HIS:CE1	2.55	0.41
6:T:130:ARG:O	6:T:134:MET:HG3	2.21	0.41
6:T:369:TYR:CG	6:T:370:PRO:HD2	2.56	0.41
2:L:59:PHE:HA	2:L:77:ILE:HA	2.02	0.41
2:L:250:ARG:HG2	2:L:260:ARG:HG2	2.03	0.41
5:S:654:ILE:HD13	5:S:706:LEU:HD22	2.02	0.41
5:S:1205:ASN:OD1	5:S:1206:LEU:N	2.54	0.41
5:S:1753:SER:O	5:S:1754:GLN:HG2	2.20	0.41
5:S:2185:MET:O	5:S:2189:ILE:HG12	2.20	0.41
5:S:2253:TYR:CE1	5:S:2288:TYR:HA	2.55	0.41
5:S:2333:ARG:NH1	5:S:2336:ILE:HD11	2.36	0.41
5:S:3096:VAL:HG12	5:S:3100:LYS:NZ	2.35	0.41
5:S:3246:ALA:HA	5:S:3249:GLN:HB2	2.03	0.41
5:S:3753:LYS:HE3	5:S:3753:LYS:HB3	1.92	0.41
5:S:3780:ALA:HB3	5:S:3989:ARG:HH22	1.86	0.41
5:S:3815:LEU:HA	5:S:3818:ASN:HD21	1.86	0.41
5:S:3894:PRO:O	5:S:3897:PHE:HB3	2.20	0.41
6:T:94:LYS:HD3	6:T:103:TYR:CE1	2.55	0.41
1:E:816:HIS:H	1:E:851:LYS:N	2.19	0.41
4:P:154:ASP:HB3	4:Q:155:TRP:NE1	2.35	0.41
5:S:635:PRO:HA	5:S:675:ARG:HH12	1.86	0.41
5:S:672:ILE:HG23	5:S:675:ARG:NH2	2.36	0.41
5:S:714:VAL:HG13	5:S:733:LEU:HD21	2.03	0.41
5:S:1014:LEU:HA	5:S:1017:ILE:HG12	2.03	0.41
5:S:1047:GLN:C	5:S:1051:LYS:HZ2	2.29	0.41
5:S:1754:GLN:CD	5:S:1788:ARG:HH21	2.29	0.41
5:S:2187:VAL:HA	5:S:2190:VAL:HG22	2.02	0.41
5:S:2825:THR:O	5:S:2829:LYS:HG3	2.20	0.41
5:S:3075:LYS:HG3	5:S:3076:ALA:N	2.36	0.41
5:S:3281:CYS:O	5:S:3285:HIS:ND1	2.54	0.41
5:S:3471:ILE:HD12	5:S:3471:ILE:HA	1.97	0.41
5:S:3487:ILE:HD13	5:S:3487:ILE:HA	1.94	0.41
5:S:3626:GLY:O	5:S:3630:ARG:HD3	2.20	0.41
5:S:4069:GLU:HA	5:S:4074:PHE:CG	2.55	0.41
7:i:24:DA:H1'	7:i:25:DA:O4'	2.21	0.41
9:A:109:LEU:HD23	9:A:132:ILE:HB	2.03	0.41
1:E:768:ASP:OD1	1:E:768:ASP:N	2.54	0.41
2:L:395:TYR:N	2:L:404:GLN:O	2.37	0.41
2:L:528:ILE:O	2:L:531:SER:OG	2.30	0.41
5:S:87:LYS:O	5:S:90:CYS:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:135:LEU:HB2	5:S:177:LEU:HD11	2.02	0.41
5:S:418:ALA:HB2	5:S:464:VAL:HG12	2.03	0.41
5:S:832:LYS:NZ	5:S:836:LYS:HG3	2.36	0.41
5:S:931:CYS:O	5:S:934:LEU:HG	2.21	0.41
5:S:993:HIS:ND1	5:S:2779:ASP:HB2	2.36	0.41
5:S:1848:ILE:O	5:S:1852:LYS:NZ	2.43	0.41
5:S:2433:LYS:HG3	5:S:2472:GLN:HE22	1.86	0.41
5:S:2438:ILE:O	5:S:2442:MET:HG3	2.21	0.41
5:S:2575:PRO:HA	5:S:2785:ILE:O	2.20	0.41
5:S:2722:ARG:HA	5:S:2722:ARG:HD3	1.90	0.41
5:S:2869:LEU:HD13	5:S:2895:GLU:HG3	2.02	0.41
5:S:2957:LEU:HA	5:S:2960:GLU:HG3	2.03	0.41
5:S:2960:GLU:HB3	5:S:2968:ALA:HB2	2.03	0.41
5:S:3074:GLN:O	5:S:3077:ILE:HG12	2.20	0.41
5:S:3314:SER:HB3	5:S:3318:LYS:HD2	2.03	0.41
5:S:3563:ASP:O	5:S:3564:GLN:HG3	2.20	0.41
5:S:3686:TRP:CZ3	5:S:3691:LYS:HA	2.56	0.41
5:S:3757:ASP:O	5:S:3760:GLN:NE2	2.49	0.41
5:S:4055:ASN:ND2	5:S:4057:ALA:HB3	2.36	0.41
6:T:335:GLU:O	6:T:339:ARG:N	2.54	0.41
6:T:403:ARG:HE	7:i:32:DA:P	2.42	0.41
8:j:22:DG:H2”	8:j:23:DT:H71	2.03	0.41
9:A:50:ARG:HD3	9:A:55:ARG:NH1	2.36	0.41
2:L:443:LYS:H	2:L:443:LYS:HG2	1.73	0.41
2:L:667:GLU:HG2	2:L:675:TRP:NE1	2.36	0.41
3:M:194:LYS:HD2	3:M:195:PRO:O	2.20	0.41
5:S:326:MET:O	5:S:330:ASN:N	2.54	0.41
5:S:386:VAL:O	5:S:390:GLN:HG2	2.21	0.41
5:S:1176:CYS:HB3	5:S:1188:ILE:HD11	2.03	0.41
5:S:3048:LYS:HZ3	5:S:3061:LEU:HB2	1.85	0.41
5:S:3151:LEU:HA	5:S:3197:LEU:HG	2.03	0.41
5:S:3294:SER:HA	5:S:3297:VAL:HG22	2.02	0.41
5:S:3565:GLY:HA2	5:S:3568:ILE:HD13	2.03	0.41
5:S:3864:ARG:NH2	5:S:4085:LYS:HA	2.36	0.41
9:A:91:TYR:CD2	9:A:135:PRO:HD2	2.56	0.41
2:L:443:LYS:HG3	2:L:444:TYR:CD2	2.56	0.40
5:S:103:TYR:HA	5:S:106:GLU:CD	2.46	0.40
5:S:458:CYS:O	5:S:461:ILE:HG22	2.22	0.40
5:S:1087:ARG:HG3	5:S:1090:ARG:HH21	1.85	0.40
5:S:1164:CYS:N	5:S:1167:ASP:OD2	2.53	0.40
5:S:1947:CYS:O	5:S:1951:VAL:HG13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:2848:PHE:HD2	5:S:3077:ILE:HG22	1.87	0.40
5:S:3489:SER:OG	5:S:3490:VAL:N	2.53	0.40
6:T:275:ASN:ND2	6:T:278:GLN:HB2	2.37	0.40
6:T:308:GLY:HA3	9:A:61:PHE:HE1	1.87	0.40
2:L:40:MET:HA	2:L:43:GLN:HE21	1.86	0.40
2:L:277:THR:HB	2:L:286:LYS:HD2	2.03	0.40
2:L:466:LYS:HA	2:L:466:LYS:HD2	1.89	0.40
5:S:671:SER:HA	5:S:674:VAL:HG12	2.02	0.40
5:S:1065:SER:O	5:S:1069:HIS:ND1	2.55	0.40
5:S:2233:HIS:O	5:S:2237:ILE:HG13	2.21	0.40
5:S:3462:ARG:HG2	5:S:3498:TRP:HH2	1.85	0.40
6:T:74:LYS:HZ1	6:T:81:ASP:N	2.19	0.40
1:E:669:GLY:H	1:E:675:LYS:HD3	1.85	0.40
2:L:247:TRP:HB3	2:L:263:ALA:HB3	2.03	0.40
4:Q:149:GLU:OE2	4:Q:153:ARG:NH2	2.55	0.40
4:Q:181:ILE:HD12	4:Q:184:LEU:HD23	2.04	0.40
5:S:237:SER:C	5:S:238:MET:HE2	2.47	0.40
5:S:533:HIS:O	5:S:537:SER:HB2	2.21	0.40
5:S:639:ALA:HB2	5:S:676:ASN:HB3	2.03	0.40
5:S:889:GLU:OE2	5:S:891:ARG:HG2	2.21	0.40
5:S:1184:ARG:O	5:S:1188:ILE:HG12	2.21	0.40
5:S:1424:THR:C	5:S:1426:GLN:H	2.30	0.40
5:S:1775:GLU:HA	5:S:1778:PHE:HD2	1.84	0.40
5:S:1921:ASP:O	5:S:1924:THR:OG1	2.32	0.40
5:S:2220:MET:HE3	5:S:2255:LEU:HD21	2.04	0.40
5:S:3037:GLN:HA	5:S:3040:TYR:CD2	2.57	0.40
5:S:3259:LEU:O	5:S:3276:TRP:NE1	2.54	0.40
5:S:3576:ASP:O	5:S:3579:SER:OG	2.36	0.40
6:T:193:LEU:HB2	6:T:198:ILE:HB	2.04	0.40
6:T:278:GLN:OE1	6:T:279:LYS:N	2.55	0.40
9:A:117:LEU:HD12	9:A:120:GLN:NE2	2.36	0.40
2:L:310:ILE:H	6:T:290:ARG:HH21	1.68	0.40
2:L:439:LYS:HB2	2:L:439:LYS:HE2	1.89	0.40
5:S:356:ASN:N	5:S:358:GLU:OE2	2.55	0.40
5:S:1168:LEU:HA	5:S:1171:TRP:HB3	2.02	0.40
5:S:1574:ASN:HD21	5:S:1577:LEU:HB2	1.86	0.40
5:S:2851:PHE:CG	5:S:2853:PRO:HD2	2.57	0.40
5:S:2930:TYR:CE2	5:S:2938:VAL:HG11	2.56	0.40
5:S:3796:MET:HE1	5:S:3802:LEU:HB2	2.03	0.40
5:S:4087:HIS:O	5:S:4090:ARG:HD2	2.22	0.40
2:L:297:LEU:N	2:L:303:THR:O	2.28	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:339:CYS:HB2	2:L:394:ARG:HH22	1.85	0.40
5:S:111:CYS:HB2	5:S:130:LEU:CD1	2.44	0.40
5:S:124:LYS:HA	5:S:124:LYS:HD3	1.81	0.40
5:S:145:ASP:HA	5:S:147:PHE:CE2	2.56	0.40
5:S:246:ARG:NH1	5:S:247:GLU:HB2	2.36	0.40
5:S:374:LYS:HD3	5:S:374:LYS:HA	1.89	0.40
5:S:2218:PHE:O	5:S:2221:LYS:HG2	2.21	0.40
5:S:2408:MET:HA	5:S:2411:LEU:HD23	2.04	0.40
5:S:2886:GLN:H	5:S:2886:GLN:CD	2.29	0.40
5:S:2950:LYS:HB3	5:S:2952:ILE:HG22	2.03	0.40
5:S:3262:LEU:O	5:S:3266:SER:CB	2.70	0.40
5:S:3308:ASP:OD1	5:S:3308:ASP:N	2.52	0.40
5:S:3486:GLU:OE2	5:S:3487:ILE:HG12	2.21	0.40
5:S:3701:ILE:HD13	5:S:3719:ILE:HG12	2.02	0.40
5:S:3886:ALA:O	5:S:3889:ARG:HG2	2.20	0.40
5:S:3950:THR:HG23	5:S:3957:GLU:H	1.87	0.40
5:S:3953:LEU:HD13	5:S:3954:PRO:HD2	2.02	0.40
6:T:289:TYR:HD2	6:T:292:THR:H	1.68	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	E	242/911 (27%)	208 (86%)	32 (13%)	2 (1%)	16	53
2	L	635/732 (87%)	598 (94%)	36 (6%)	1 (0%)	44	78
3	M	21/204 (10%)	21 (100%)	0	0	100	100
4	P	55/336 (16%)	55 (100%)	0	0	100	100
4	Q	55/336 (16%)	55 (100%)	0	0	100	100
5	S	3459/4128 (84%)	3188 (92%)	263 (8%)	8 (0%)	44	78

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	T	497/609 (82%)	461 (93%)	36 (7%)	0	100	100
9	A	96/575 (17%)	96 (100%)	0	0	100	100
All	All	5060/7831 (65%)	4682 (92%)	367 (7%)	11 (0%)	45	78

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	814	ARG
5	S	4012	ASP
5	S	4013	TRP
5	S	1231	GLN
5	S	4010	SER
5	S	4011	PHE
5	S	4100	GLU
2	L	72	ASP
1	E	662	VAL
5	S	3304	VAL
5	S	2294	ILE

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	E	217/808 (27%)	217 (100%)	0	100	100
2	L	559/649 (86%)	559 (100%)	0	100	100
3	M	16/160 (10%)	16 (100%)	0	100	100
4	P	53/303 (18%)	53 (100%)	0	100	100
4	Q	51/303 (17%)	51 (100%)	0	100	100
5	S	2998/3671 (82%)	2998 (100%)	0	100	100
6	T	444/548 (81%)	444 (100%)	0	100	100
9	A	81/480 (17%)	81 (100%)	0	100	100
All	All	4419/6922 (64%)	4419 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (59) such sidechains are listed below:

Mol	Chain	Res	Type
1	E	787	GLN
1	E	904	GLN
2	L	80	HIS
2	L	119	GLN
2	L	201	GLN
2	L	360	GLN
2	L	657	ASN
2	L	672	ASN
3	M	187	ASN
4	P	185	ASN
4	Q	145	GLN
4	Q	148	ASN
5	S	54	GLN
5	S	98	GLN
5	S	771	ASN
5	S	786	GLN
5	S	833	HIS
5	S	1049	GLN
5	S	1055	ASN
5	S	1071	ASN
5	S	1084	ASN
5	S	1125	GLN
5	S	1146	ASN
5	S	1350	ASN
5	S	1426	GLN
5	S	1471	GLN
5	S	1476	HIS
5	S	1509	GLN
5	S	1611	GLN
5	S	1737	ASN
5	S	1830	HIS
5	S	2213	ASN
5	S	2301	GLN
5	S	2306	ASN
5	S	2353	GLN
5	S	2493	ASN
5	S	2508	GLN
5	S	3154	GLN
5	S	3250	ASN

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Mol	Chain	Res	Type
5	S	3278	GLN
5	S	3383	GLN
5	S	3510	GLN
5	S	3549	HIS
5	S	3577	GLN
5	S	3590	ASN
5	S	3787	GLN
5	S	3818	ASN
5	S	4000	ASN
5	S	4042	GLN
5	S	4055	ASN
5	S	4110	GLN
6	T	68	GLN
6	T	152	ASN
6	T	416	GLN
6	T	433	GLN
6	T	484	GLN
6	T	489	ASN
6	T	515	ASN
9	A	82	HIS

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-51249. 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 ⓘ
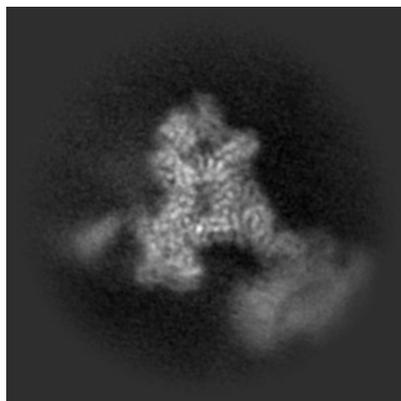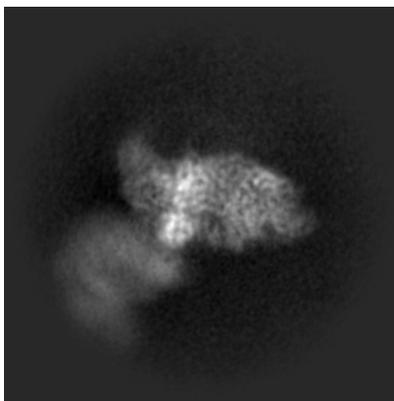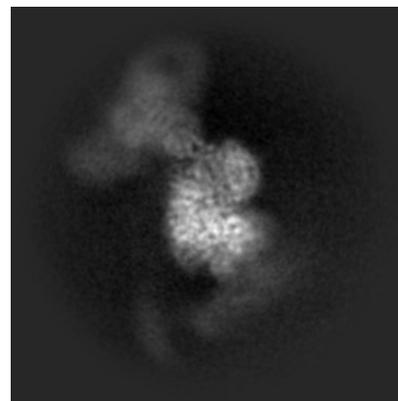
6.1.1 Primary map

| X | Y | Z |

6.1.2 Raw map

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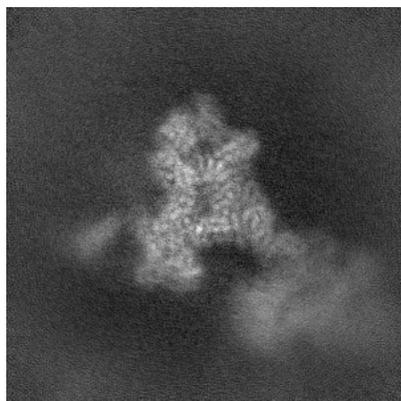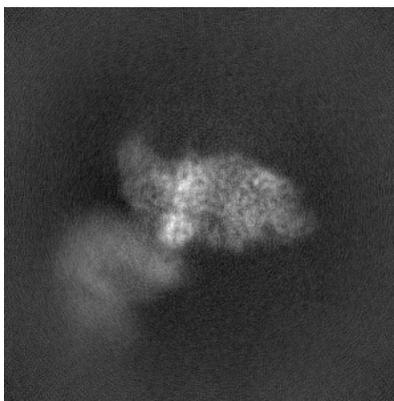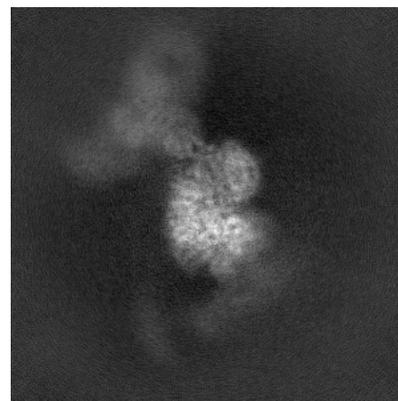
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
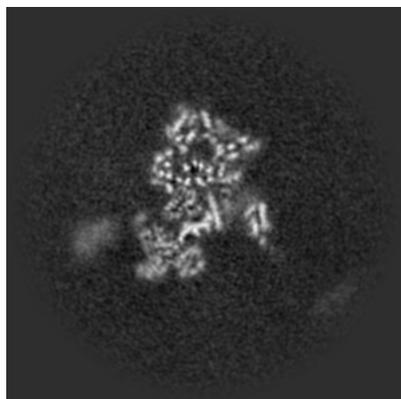
6.2.1 Primary map
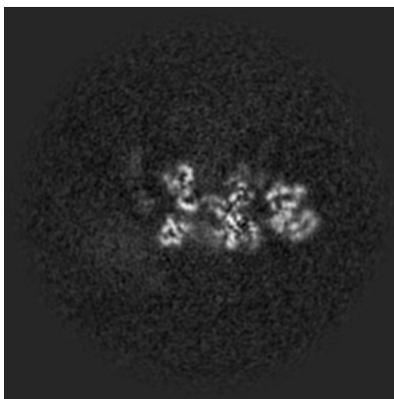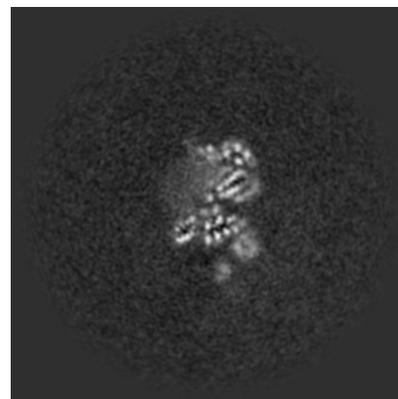
X Index: 160	Y Index: 160	Z Index: 160

6.2.2 Raw map
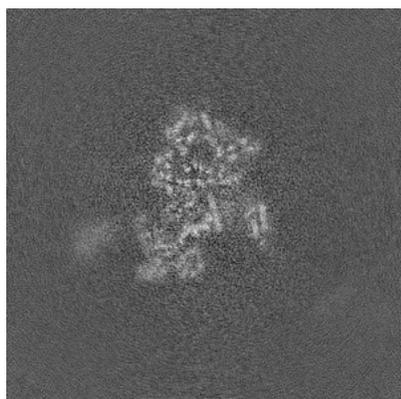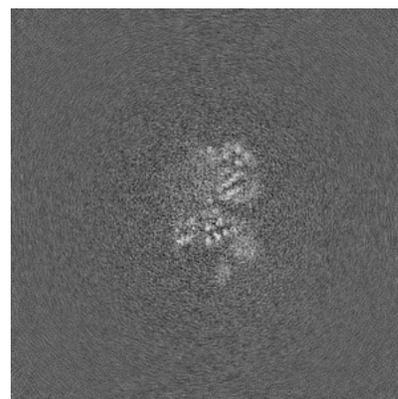
X Index: 160	Y Index: 160	Z Index: 160

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
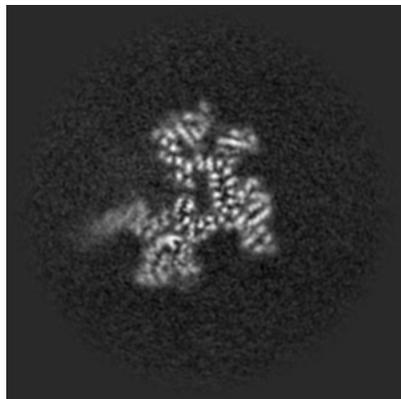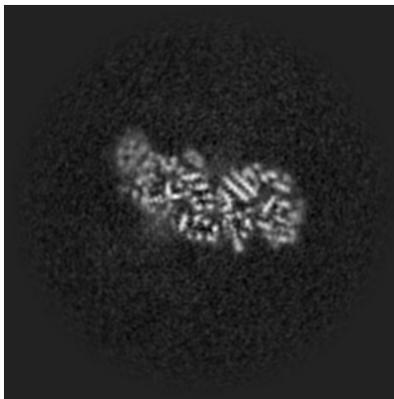
| X Index: 175 | Y Index: 138 | Z Index: 142 |
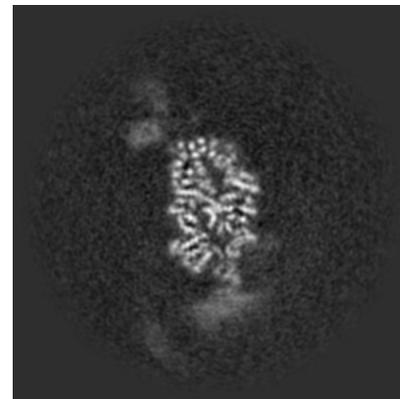
6.3.2 Raw map
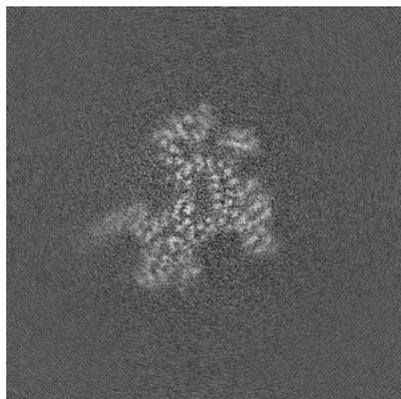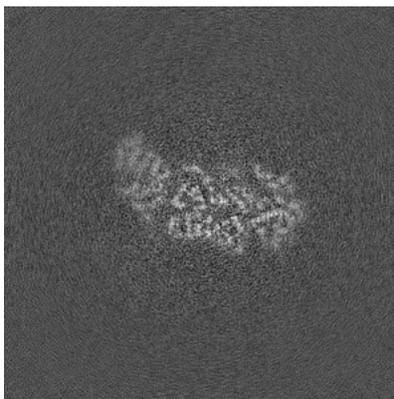
| X Index: 174 | Y Index: 143 | Z Index: 142 |
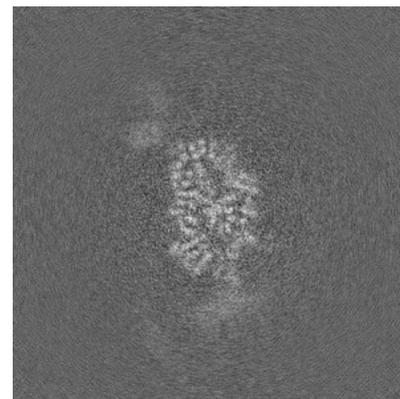
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
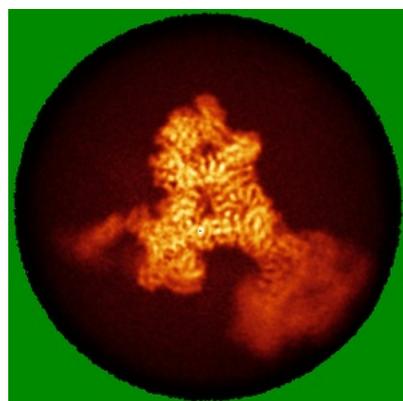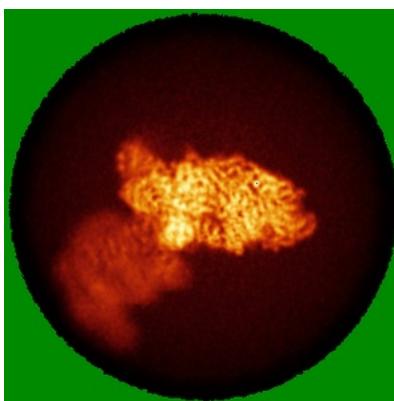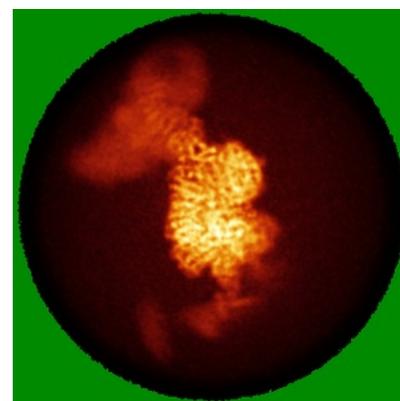
X Y Z

6.4.2 Raw map

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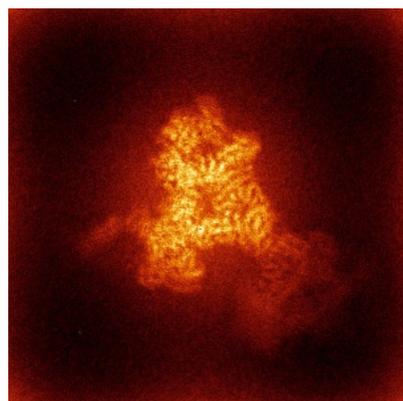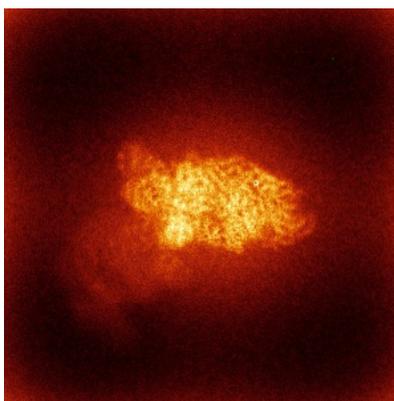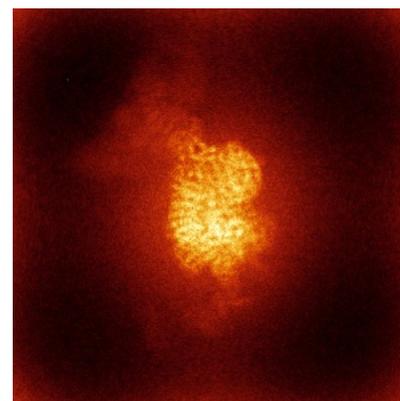
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X	Y	Z
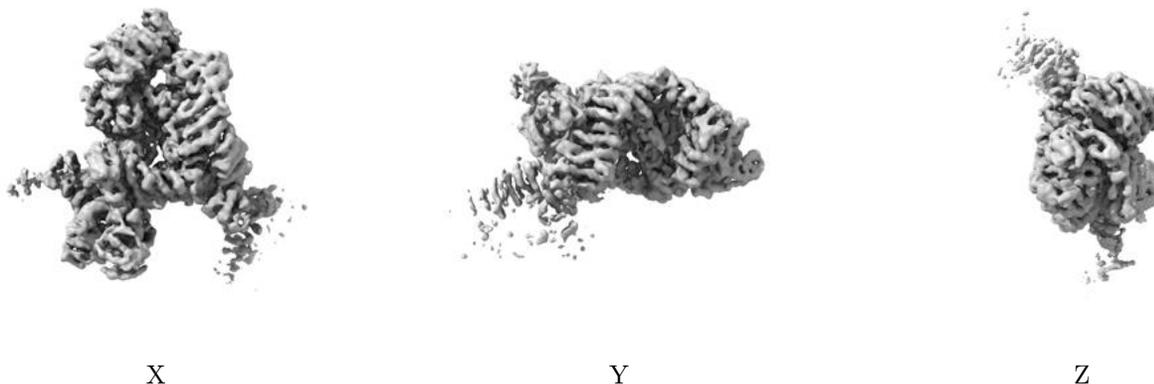
The images above show the 3D surface view of the map at the recommended contour level 0.211. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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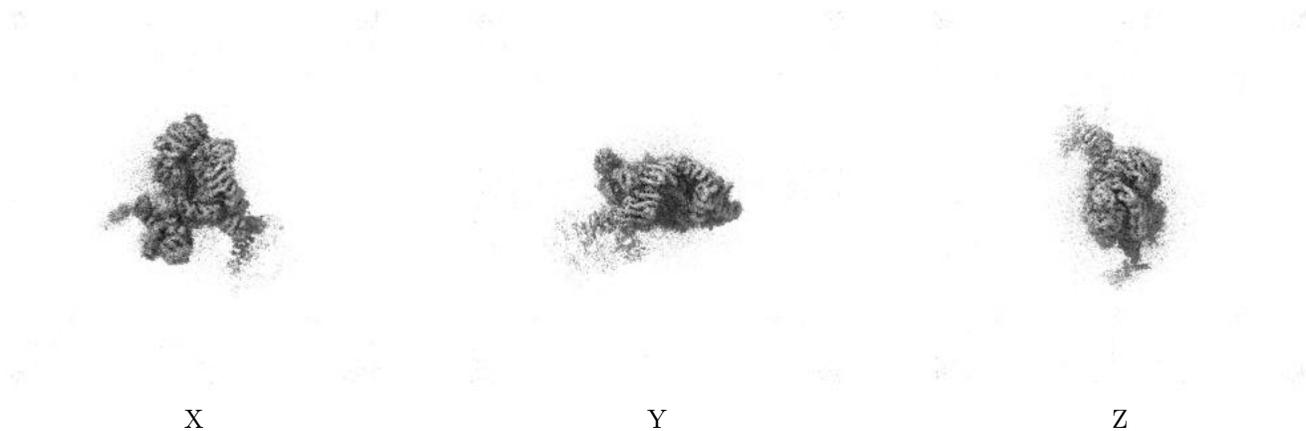
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation ⓘ

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

A mask typically either:

- Encompasses the whole structure

- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

6.6.1 emd_51249_msk_1.map ⓘ

X   Y   Z
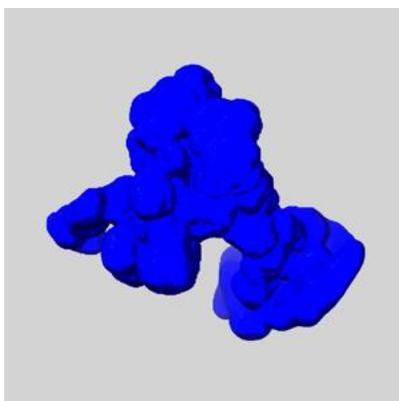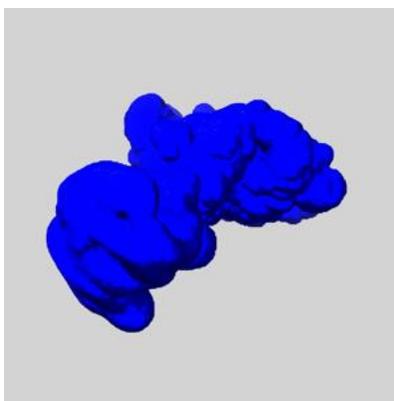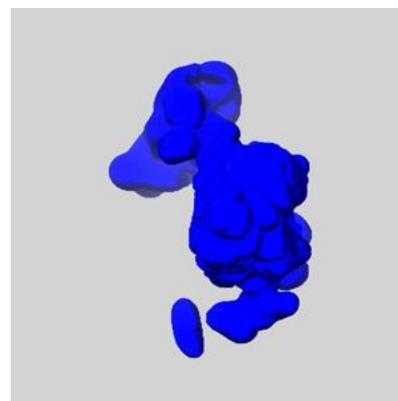
7　Map analysis ⓘ

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 ⓘ
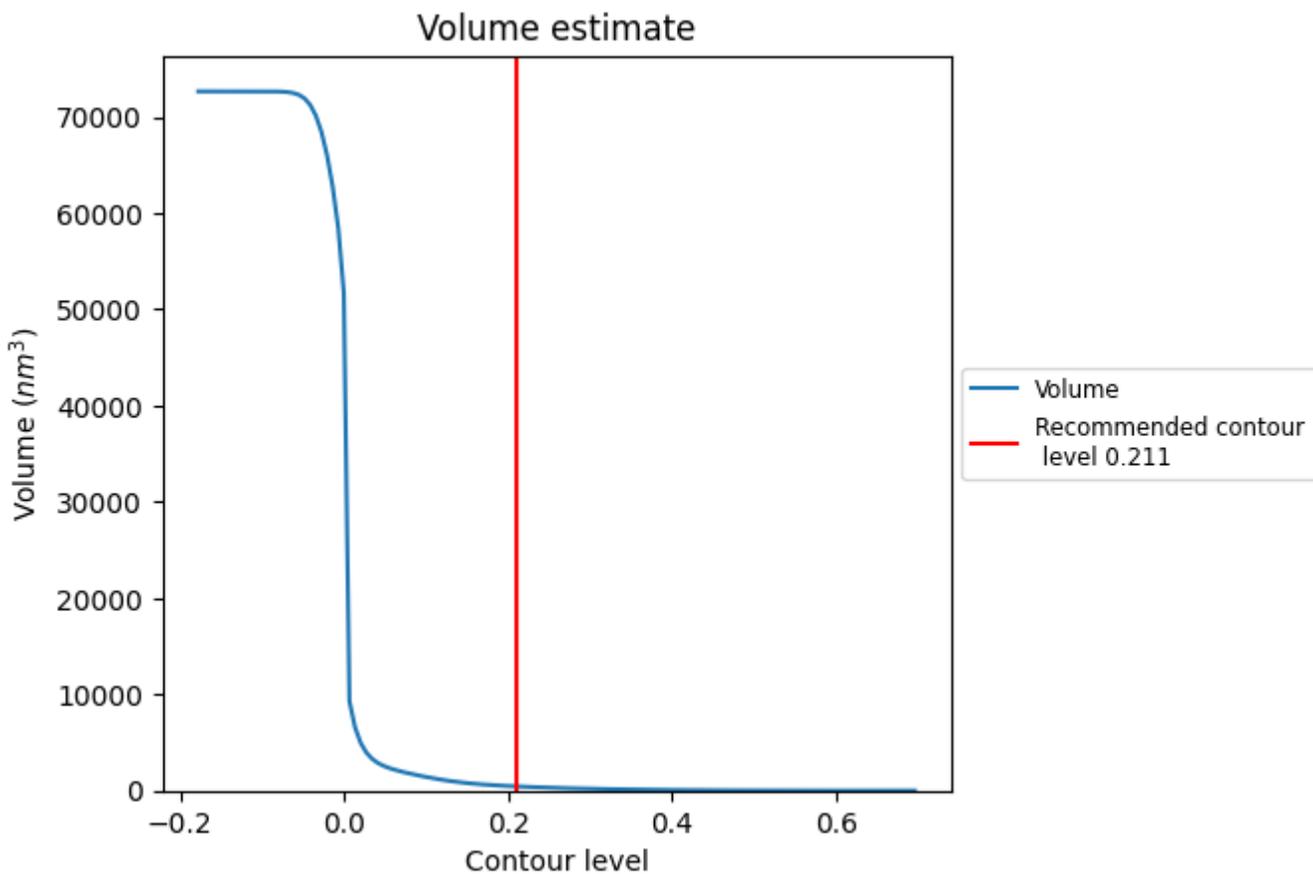
The volume at the recommended contour level is 434 nm^3; this corresponds to an approximate mass of 392 kDa.

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 ⓘ
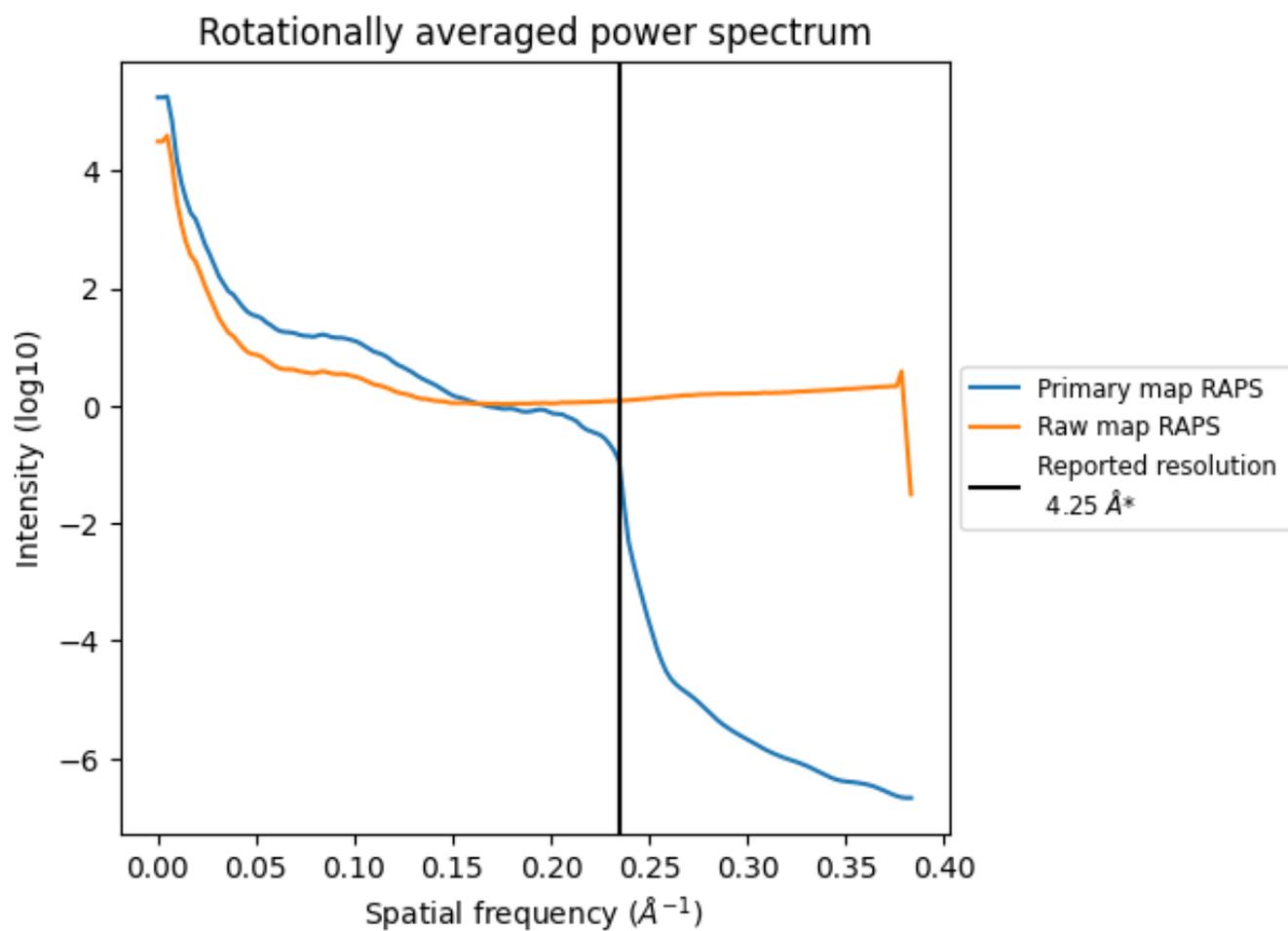
*Reported resolution corresponds to spatial frequency of 0.235 Å^{-1}

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 ⓘ
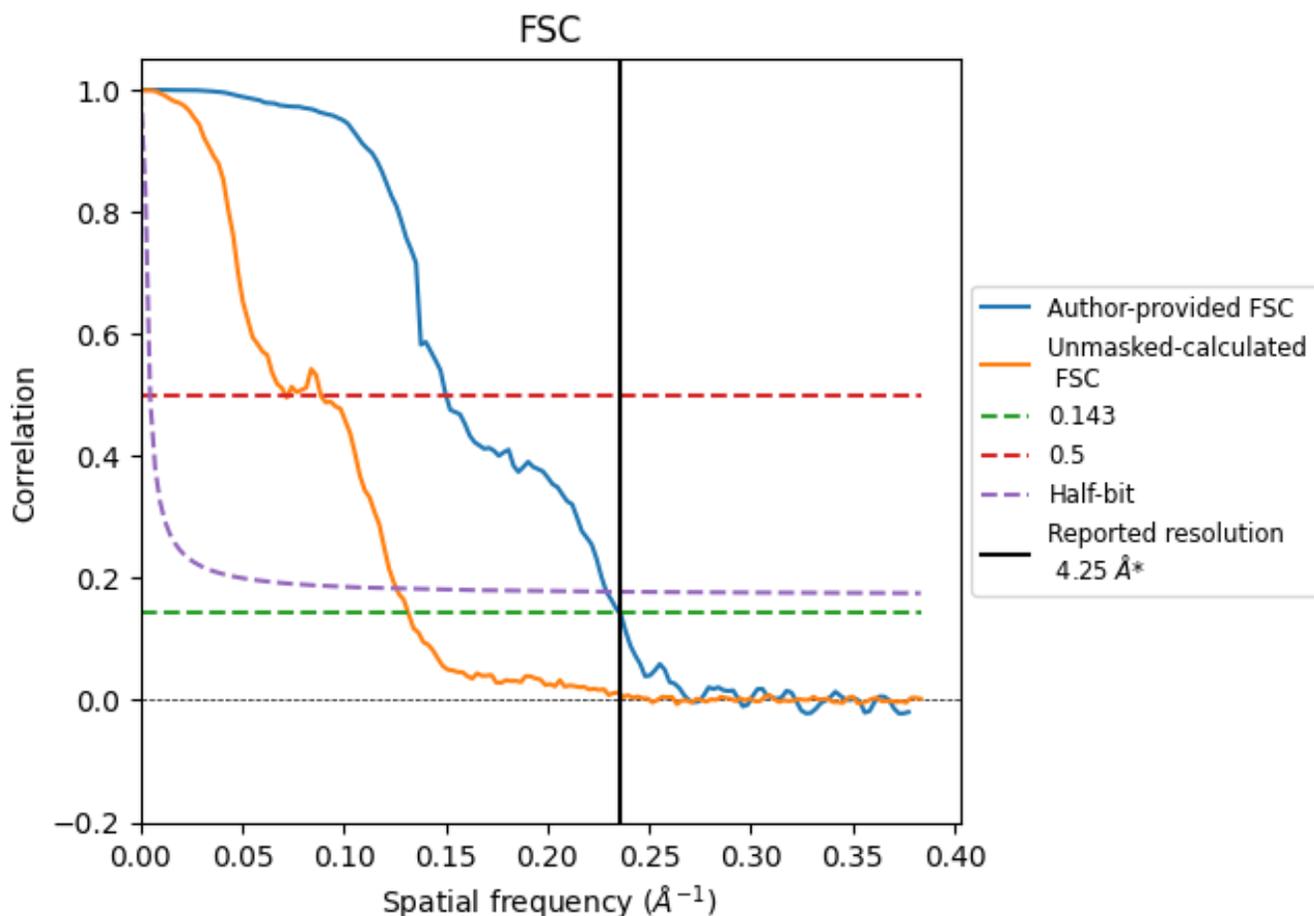
*Reported resolution corresponds to spatial frequency of 0.235 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.25	-	-
Author-provided FSC curve	4.25	6.66	4.37
Unmasked-calculated*	7.60	14.04	7.95

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.60 differs from the reported value 4.25 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-51249 and PDB model 9GD7. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay ⓘ

| X | Y | Z |
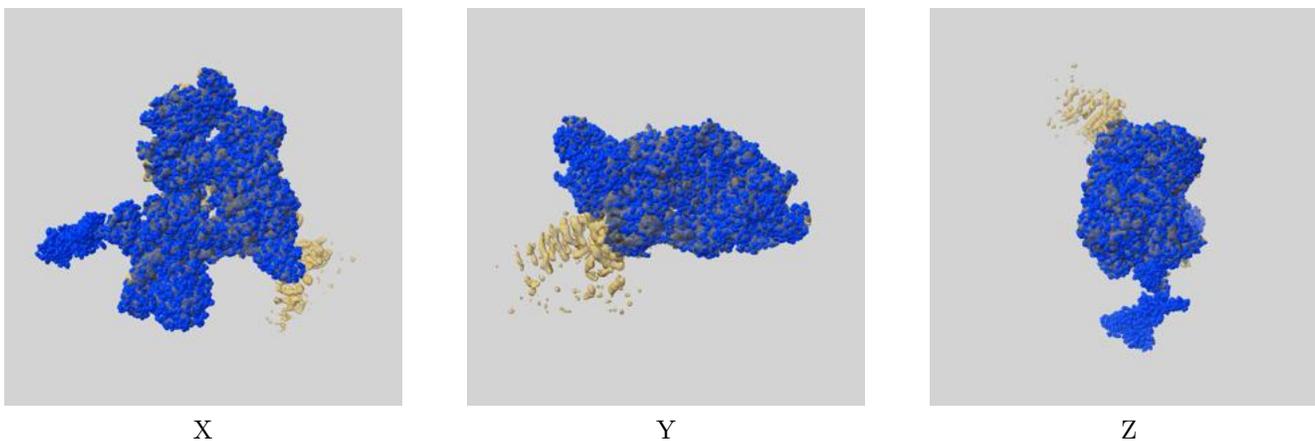
The images above show the 3D surface view of the map at the recommended contour level 0.211 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model　ⓘ


X　　　　　　　　　　　Y　　　　　　　　　　Z
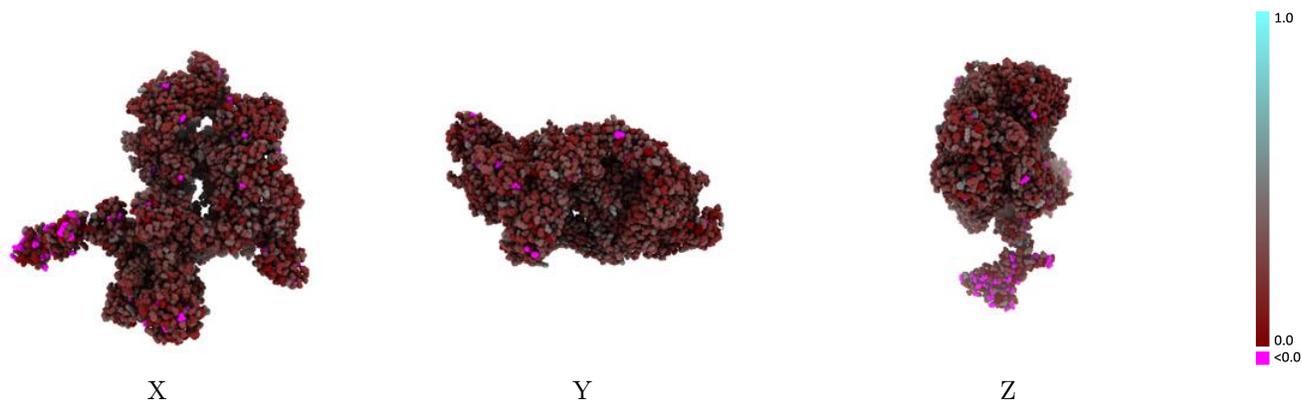
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
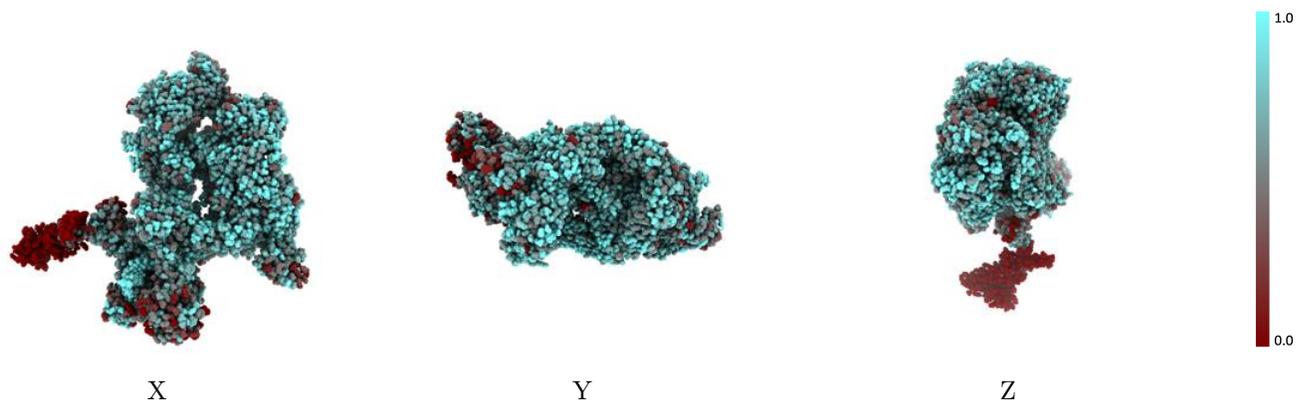
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.211).

9.4   Atom inclusion (i)
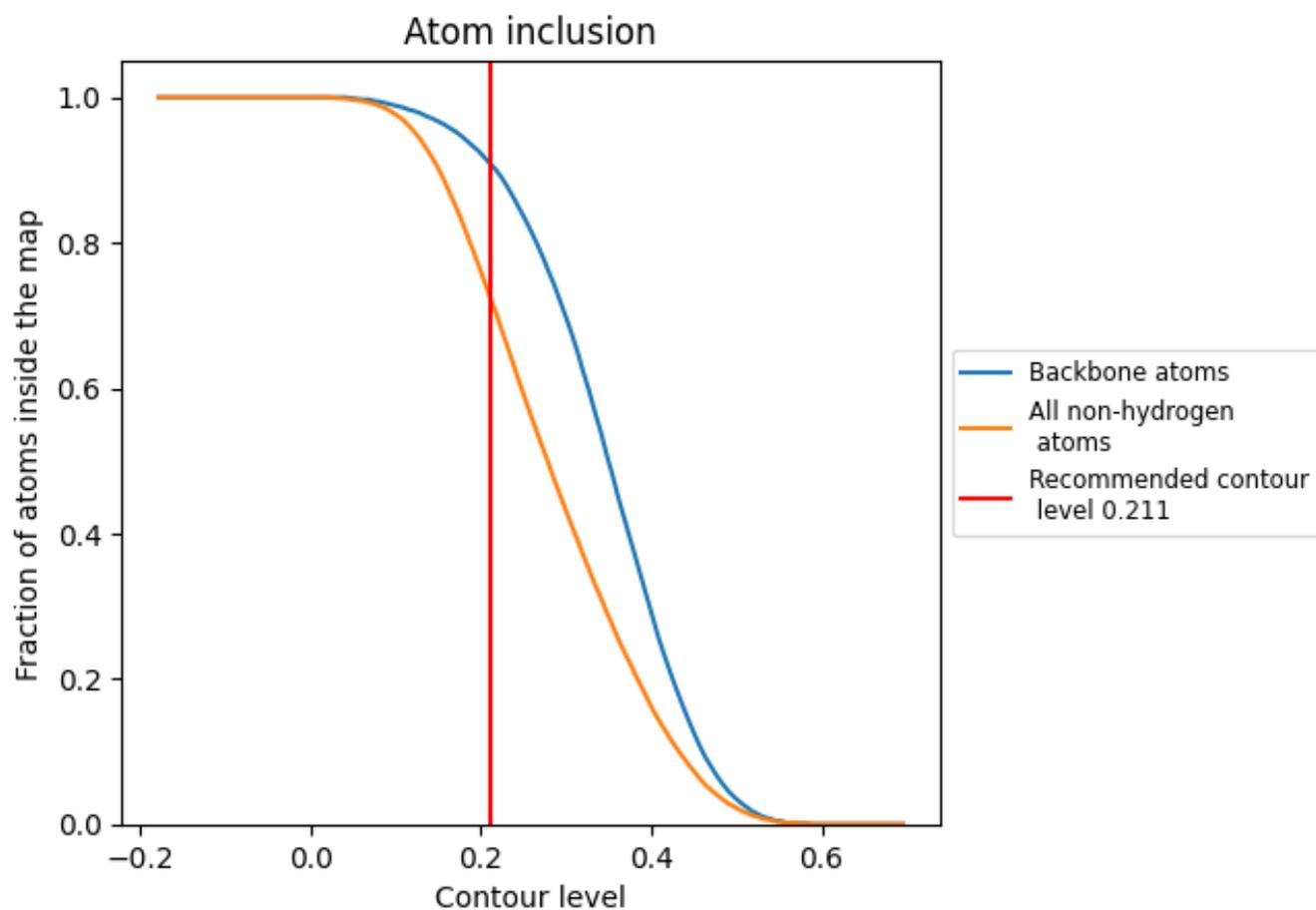
At the recommended contour level, 91% of all backbone atoms, 72% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.211) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7240	0.2280
A	0.7750	0.2160
E	0.2650	0.1390
L	0.6110	0.2070
M	0.6560	0.2950
P	0.0530	0.0970
Q	0.0970	0.0800
S	0.7870	0.2370
T	0.7420	0.2480
i	0.9770	0.3020
j	0.9810	0.2960

1.0

0.0
<0.0