WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Sep 20, 2025 – 12:37 PM EDT

PDB ID	:	8USC / pdb_00008usc
EMDB ID	:	EMD-42507
Title	:	Nub1/Fat10-processing human 26S proteasome
Authors	:	Arkinson, C.; Gee, C.L.; Martin, A.
Deposited on	:	2023-10-27
Resolution	:	3.10 Å(reported)

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

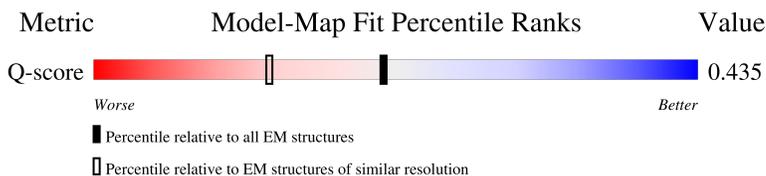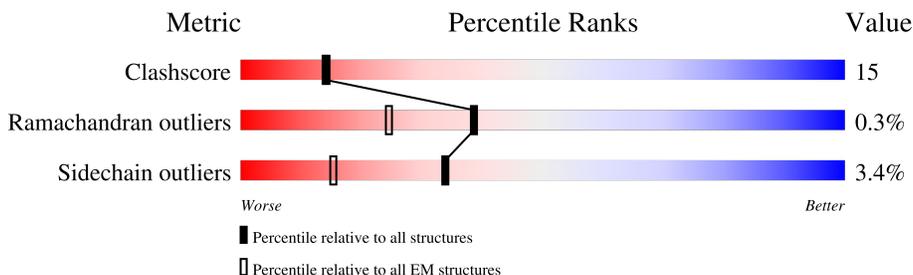|		
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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)	:	2.46

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.10 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.
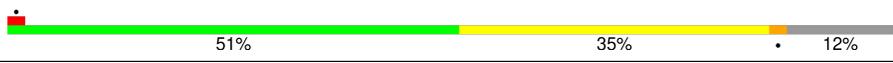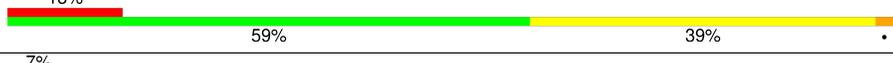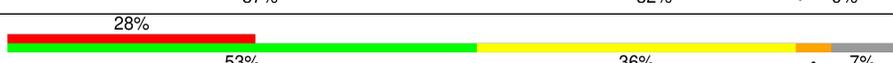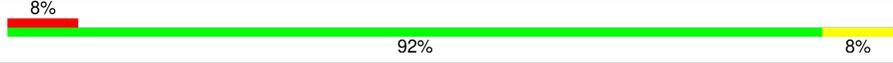
Metric	Percentile Ranks	Value
Clashscore		15
Ramachandran outliers		0.3%
Sidechain outliers		3.4%

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.435

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	14724 (2.60 - 3.60)

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	H	234	68% ▬ 30% •
2	Y	389	67% ▬ 30% ••
3	f	908	19% — 57% ▬ 34% • 7%
4	X	422	6% — 63% ▬ 25% • 10%

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Mol	Chain	Length	Quality of chain
5	U	953	6% 51% 36% 12%
6	Z	324	51% 35% 12%
7	a	376	13% 59% 39%
8	b	377	7% 23% 26% 49%
9	A	433	5% 63% 31%
10	B	440	61% 28% 10%
11	C	406	63% 30% 5%
12	D	418	57% 32% 9%
13	E	389	28% 53% 36% 7%
14	F	439	55% 27% 17%
15	v	12	8% 92% 8%
16	G	246	68% 28%
17	I	261	64% 30% 5%
18	J	248	68% 26% 5%
19	K	241	60% 34% 5%
20	L	263	69% 21% 10%
21	M	255	67% 26% 6%
22	O	277	12% 84%
23	e	70	43% 16% 41%
24	d	350	19% 48% 29% 23%
25	W	456	72% 23%
26	g	601	14% 9% 6% 84%
27	V	534	9% 53% 30% 17%
28	c	424	43% 21% 36%
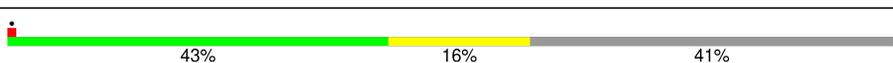
2 Entry composition ⓘ

There are 32 unique types of molecules in this entry. The entry contains 70061 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 Proteasome subunit alpha type-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	H	232	Total 1813	C 1158	N 307	O 342	S 6	0	0

- Molecule 2 is a protein called 26S proteasome non-ATPase regulatory subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	Y	380	Total 3127	C 1995	N 535	O 580	S 17	0	0

- Molecule 3 is a protein called 26S proteasome non-ATPase regulatory subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	f	842	Total 6512	C 4117	N 1105	O 1245	S 45	0	0

- Molecule 4 is a protein called 26S proteasome non-ATPase regulatory subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	X	378	Total 2994	C 1909	N 507	O 566	S 12	0	0

- Molecule 5 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	U	841	Total 6559	C 4162	N 1115	O 1238	S 44	0	0

- Molecule 6 is a protein called 26S proteasome non-ATPase regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Z	286	Total 2281	C 1457	N 392	O 427	S 5	0	0

- Molecule 7 is a protein called 26S proteasome non-ATPase regulatory subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	a	373	Total	C	N	O	S	0	0
			2995	1911	510	559	15		

- Molecule 8 is a protein called 26S proteasome non-ATPase regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	b	191	Total	C	N	O	S	0	0
			1458	910	261	279	8		

- Molecule 9 is a protein called 26S proteasome regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	415	Total	C	N	O	S	0	0
			3261	2053	573	617	18		

- Molecule 10 is a protein called 26S proteasome regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	398	Total	C	N	O	S	0	0
			3122	1966	532	609	15		

- Molecule 11 is a protein called 26S protease regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	386	Total	C	N	O	S	0	0
			3051	1919	547	567	18		

- Molecule 12 is a protein called 26S proteasome regulatory subunit 6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D	380	Total	C	N	O	S	0	0
			3040	1923	524	580	13		

- Molecule 13 is a protein called 26S protease regulatory subunit 10B.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	360	Total	C	N	O	S	0	0
			2859	1805	505	533	16		

- Molecule 14 is a protein called 26S proteasome regulatory subunit 6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	364	Total 2850	C 1803	N 492	O 538	S 17	0	0

- Molecule 15 is a protein called substrate peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	v	12	Total 60	C 36	N 12	O 12	0	0

- Molecule 16 is a protein called Proteasome subunit alpha type-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	G	239	Total 1820	C 1157	N 304	O 346	S 13	0	0

- Molecule 17 is a protein called Proteasome subunit alpha type-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	248	Total 1911	C 1207	N 325	O 370	S 9	0	0

- Molecule 18 is a protein called Proteasome subunit alpha type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	236	Total 1749	C 1090	N 318	O 336	S 5	0	0

- Molecule 19 is a protein called Proteasome subunit alpha type-5.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	228	Total 1733	C 1089	N 285	O 349	S 10	0	0

- Molecule 20 is a protein called Proteasome subunit alpha type-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	238	Total 1850	C 1159	N 334	O 346	S 11	0	0

- Molecule 21 is a protein called Proteasome subunit alpha type-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	240	Total 1856	C 1178	N 314	O 353	S 11	0	0

- Molecule 22 is a protein called Proteasome subunit beta type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	O	44	Total 355	C 222	N 64	O 66	S 3	0	0

- Molecule 23 is a protein called 26S proteasome complex subunit SEM1.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	e	41	Total 353	C 217	N 55	O 81	0	0

- Molecule 24 is a protein called 26S proteasome non-ATPase regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	d	269	Total 2188	C 1414	N 359	O 406	S 9	0	0

- Molecule 25 is a protein called 26S proteasome non-ATPase regulatory subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	438	Total 3570	C 2261	N 609	O 677	S 23	0	0

- Molecule 26 is a protein called Isoform 2 of NEDD8 ultimate buster 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	g	95	Total 771	C 487	N 139	O 144	S 1	0	0

- Molecule 27 is a protein called 26S proteasome non-ATPase regulatory subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	V	441	Total 3593	C 2290	N 641	O 649	S 13	0	0

- Molecule 28 is a protein called 26S proteasome non-ATPase regulatory subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	c	273	2150	1362	369	401	18	0	0

There are 114 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	311	LEU	-	insertion	UNP O00487
c	312	ILE	-	expression tag	UNP O00487
c	313	ASN	-	expression tag	UNP O00487
c	314	HIS	-	expression tag	UNP O00487
c	315	HIS	-	expression tag	UNP O00487
c	316	HIS	-	expression tag	UNP O00487
c	317	HIS	-	expression tag	UNP O00487
c	318	HIS	-	expression tag	UNP O00487
c	319	HIS	-	expression tag	UNP O00487
c	320	ASP	-	expression tag	UNP O00487
c	321	TYR	-	expression tag	UNP O00487
c	322	ASP	-	expression tag	UNP O00487
c	323	ILE	-	expression tag	UNP O00487
c	324	PRO	-	expression tag	UNP O00487
c	325	THR	-	expression tag	UNP O00487
c	326	THR	-	expression tag	UNP O00487
c	327	ALA	-	expression tag	UNP O00487
c	328	SER	-	expression tag	UNP O00487
c	329	GLU	-	expression tag	UNP O00487
c	330	ASN	-	expression tag	UNP O00487
c	331	LEU	-	expression tag	UNP O00487
c	332	TYR	-	expression tag	UNP O00487
c	333	PHE	-	expression tag	UNP O00487
c	334	GLN	-	expression tag	UNP O00487
c	335	GLY	-	expression tag	UNP O00487
c	336	GLU	-	expression tag	UNP O00487
c	337	LEU	-	expression tag	UNP O00487
c	338	GLY	-	expression tag	UNP O00487
c	339	MET	-	expression tag	UNP O00487
c	340	ARG	-	expression tag	UNP O00487
c	341	GLY	-	expression tag	UNP O00487
c	342	SER	-	expression tag	UNP O00487
c	343	ALA	-	expression tag	UNP O00487
c	344	GLY	-	expression tag	UNP O00487
c	345	LYS	-	expression tag	UNP O00487
c	346	ALA	-	expression tag	UNP O00487
c	347	GLY	-	expression tag	UNP O00487

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Chain	Residue	Modelled	Actual	Comment	Reference
c	348	GLU	-	expression tag	UNP O00487
c	349	GLY	-	expression tag	UNP O00487
c	350	GLU	-	expression tag	UNP O00487
c	351	ILE	-	expression tag	UNP O00487
c	352	PRO	-	expression tag	UNP O00487
c	353	ALA	-	expression tag	UNP O00487
c	354	PRO	-	expression tag	UNP O00487
c	355	LEU	-	expression tag	UNP O00487
c	356	ALA	-	expression tag	UNP O00487
c	357	GLY	-	expression tag	UNP O00487
c	358	THR	-	expression tag	UNP O00487
c	359	VAL	-	expression tag	UNP O00487
c	360	SER	-	expression tag	UNP O00487
c	361	LYS	-	expression tag	UNP O00487
c	362	ILE	-	expression tag	UNP O00487
c	363	LEU	-	expression tag	UNP O00487
c	364	VAL	-	expression tag	UNP O00487
c	365	LYS	-	expression tag	UNP O00487
c	366	GLU	-	expression tag	UNP O00487
c	367	GLY	-	expression tag	UNP O00487
c	368	ASP	-	expression tag	UNP O00487
c	369	THR	-	expression tag	UNP O00487
c	370	VAL	-	expression tag	UNP O00487
c	371	LYS	-	expression tag	UNP O00487
c	372	ALA	-	expression tag	UNP O00487
c	373	GLY	-	expression tag	UNP O00487
c	374	GLN	-	expression tag	UNP O00487
c	375	THR	-	expression tag	UNP O00487
c	376	VAL	-	expression tag	UNP O00487
c	377	LEU	-	expression tag	UNP O00487
c	378	VAL	-	expression tag	UNP O00487
c	379	LEU	-	expression tag	UNP O00487
c	380	GLU	-	expression tag	UNP O00487
c	381	ALA	-	expression tag	UNP O00487
c	382	MET	-	expression tag	UNP O00487
c	383	LYS	-	expression tag	UNP O00487
c	384	MET	-	expression tag	UNP O00487
c	385	GLU	-	expression tag	UNP O00487
c	386	THR	-	expression tag	UNP O00487
c	387	GLU	-	expression tag	UNP O00487
c	388	ILE	-	expression tag	UNP O00487
c	389	ASN	-	expression tag	UNP O00487

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Chain	Residue	Modelled	Actual	Comment	Reference
c	390	ALA	-	expression tag	UNP O00487
c	391	PRO	-	expression tag	UNP O00487
c	392	THR	-	expression tag	UNP O00487
c	393	ASP	-	expression tag	UNP O00487
c	394	GLY	-	expression tag	UNP O00487
c	395	LYS	-	expression tag	UNP O00487
c	396	VAL	-	expression tag	UNP O00487
c	397	GLU	-	expression tag	UNP O00487
c	398	LYS	-	expression tag	UNP O00487
c	399	VAL	-	expression tag	UNP O00487
c	400	LEU	-	expression tag	UNP O00487
c	401	VAL	-	expression tag	UNP O00487
c	402	LYS	-	expression tag	UNP O00487
c	403	GLU	-	expression tag	UNP O00487
c	404	ARG	-	expression tag	UNP O00487
c	405	ASP	-	expression tag	UNP O00487
c	406	ALA	-	expression tag	UNP O00487
c	407	VAL	-	expression tag	UNP O00487
c	408	GLN	-	expression tag	UNP O00487
c	409	GLY	-	expression tag	UNP O00487
c	410	GLY	-	expression tag	UNP O00487
c	411	GLN	-	expression tag	UNP O00487
c	412	GLY	-	expression tag	UNP O00487
c	413	LEU	-	expression tag	UNP O00487
c	414	ILE	-	expression tag	UNP O00487
c	415	LYS	-	expression tag	UNP O00487
c	416	ILE	-	expression tag	UNP O00487
c	417	GLY	-	expression tag	UNP O00487
c	418	VAL	-	expression tag	UNP O00487
c	419	HIS	-	expression tag	UNP O00487
c	420	HIS	-	expression tag	UNP O00487
c	421	HIS	-	expression tag	UNP O00487
c	422	HIS	-	expression tag	UNP O00487
c	423	HIS	-	expression tag	UNP O00487
c	424	HIS	-	expression tag	UNP O00487

- Molecule 29 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
29	A	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
29	B	1	Total 1	Mg 1	0
29	C	1	Total 1	Mg 1	0
29	D	1	Total 1	Mg 1	0
29	F	1	Total 1	Mg 1	0

- Molecule 30 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).
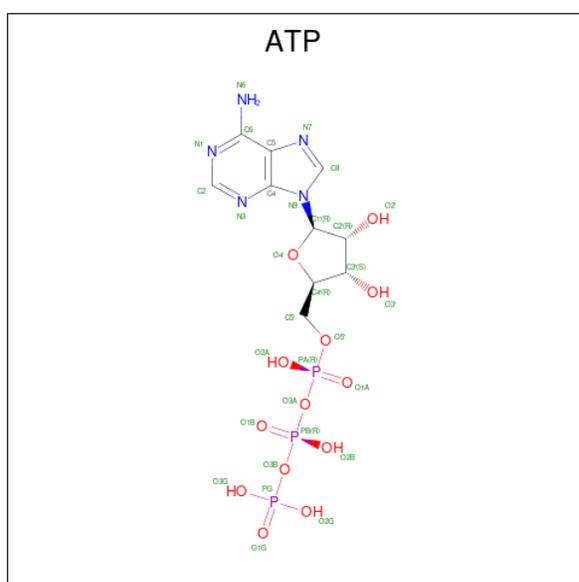
Mol	Chain	Residues	Atoms					AltConf
30	B	1	Total 31	C 10	N 5	O 13	P 3	0
30	B	1	Total 31	C 10	N 5	O 13	P 3	0
30	F	1	Total 31	C 10	N 5	O 13	P 3	0

- Molecule 31 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).

ADP
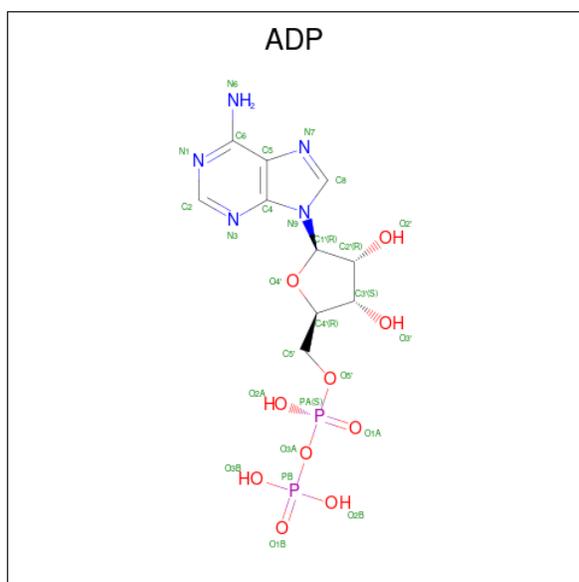
Mol	Chain	Residues	Atoms					AltConf
31	C	1	Total	C	N	O	P	0
			27	10	5	10	2	
31	D	1	Total	C	N	O	P	0
			27	10	5	10	2	
31	E	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 32 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
32	c	1	Total	Zn	0
			1	1	

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.
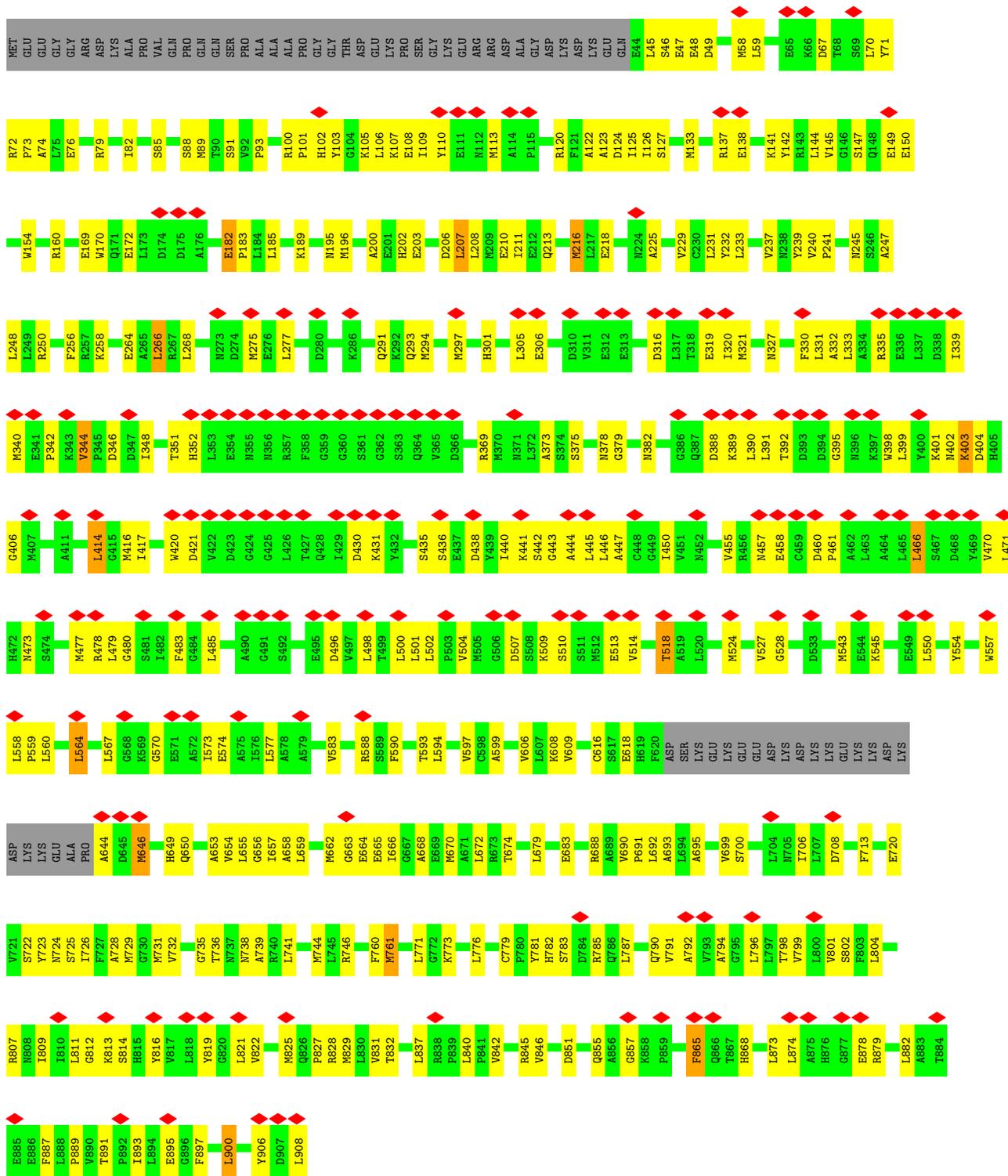
- Molecule 1: Proteasome subunit alpha type-2

Chain H:
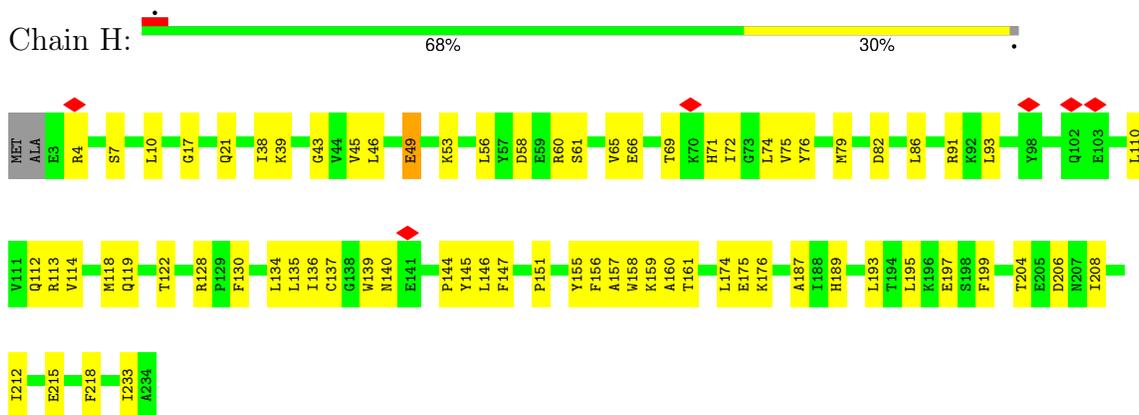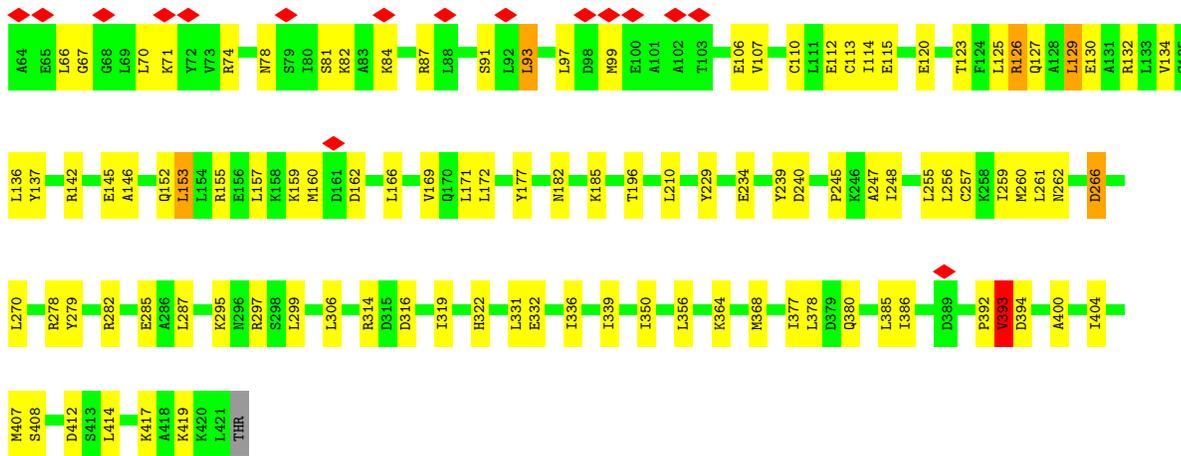

- Molecule 2: 26S proteasome non-ATPase regulatory subunit 6

Chain Y:

- Molecule 3: 26S proteasome non-ATPase regulatory subunit 2

Chain f:

• Molecule 4: 26S proteasome non-ATPase regulatory subunit 11

Chain X:

6%

63% 25% 10%

• Molecule 5: 26S proteasome non-ATPase regulatory subunit 1

Chain U:

• Molecule 6: 26S proteasome non-ATPase regulatory subunit 7

Chain Z:

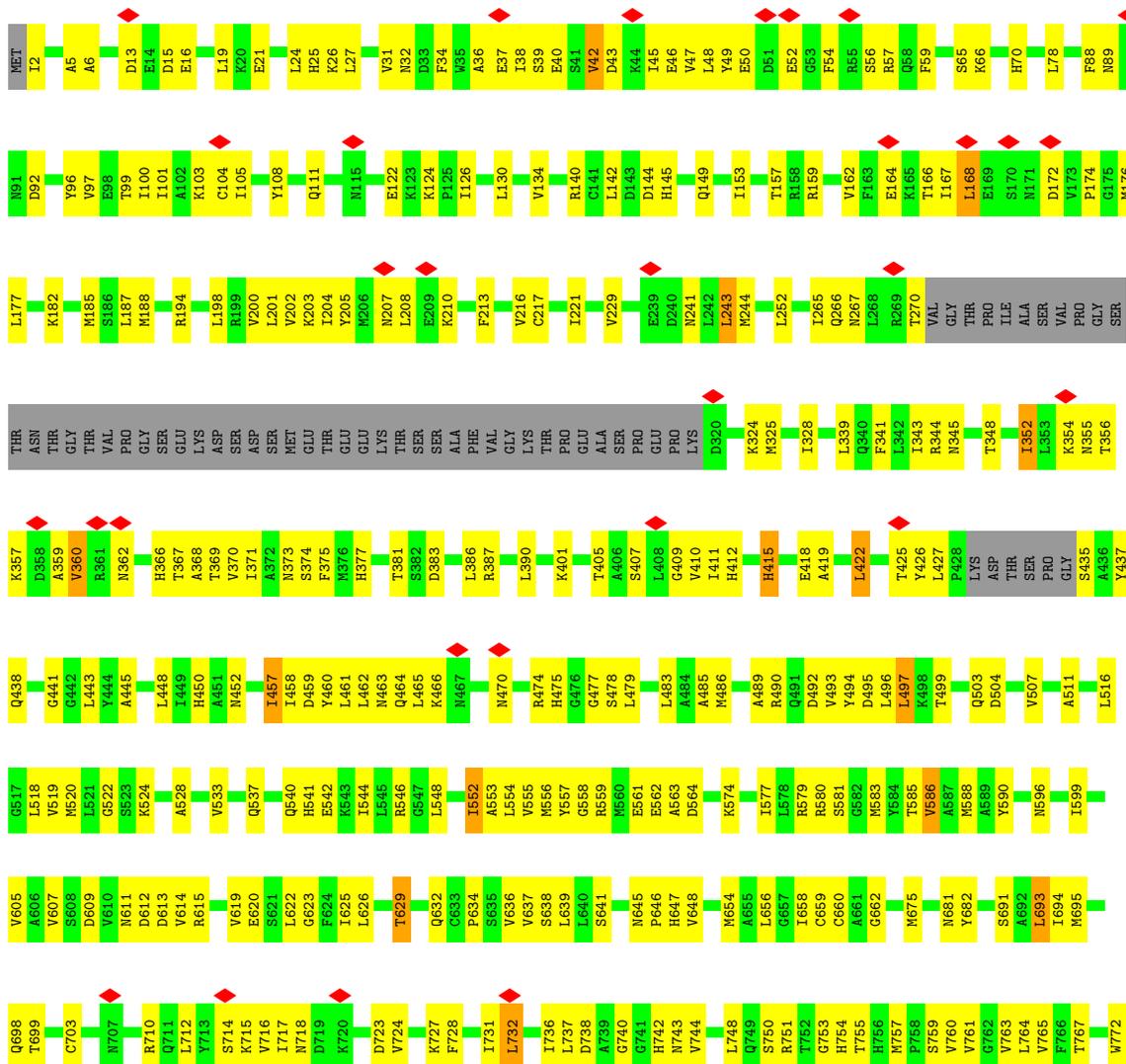• Molecule 7: 26S proteasome non-ATPase regulatory subunit 13

Chain a:

• Molecule 8: 26S proteasome non-ATPase regulatory subunit 4

Chain b:

• Molecule 9: 26S proteasome regulatory subunit 7

Chain A:

• Molecule 10: 26S proteasome regulatory subunit 4

Chain B:

61%   28%   10%

MET GLY GLN SER GLN SER GLY GLY HIS GLY PRO GLY GLY GLY LYS LYS ASP ASP ASP LYS LYS LYS LYS TYR GLU PRO PRO VAL PRO THR ARG VAL GLY LYS LYS LYS LYS **T40** P43 P50 K61 L62 L63 K64 R67 I68 K69 D70 Y71 L72 L73 M74 E75

F78 I79 R80 N81 M85 K86 **P87** LEU GLU GLU **K91** Q92 **E93** E94 **S97** L102 R103 P106 M107 L112 N119 H120 Y132 I135 L136 S137 F138 V139 D140 K141 D142 L143 L144 S149 V159 I160 G161 V162 D166 P169 L170 V171 T172 V173 M174 P180

T183 Y184 G189 Q193 E199 P208 I216 K217 Y225 N241 A245 T246 V250 V251 E254 L255 I256 Q257 K258 V259 D262 E269 L270 F271 R272 E275 E276 H277 A278 P279 E286 I287 D288 A289 I290 Y295 D296 S297 N298 S299 E302 R303 E304

R307 L312 D317 V325 M329 T336 A340 R343 P344 G345 R346 I347 D348 R349 E352 D357 S358 K359 T360 R363 I364 F365 T369 M372 T373 L374 V378 T379 L380 D381 D382 L383 I384 **K387** D388 **D389** L390 D394 I395 I398 E401 L407

R410 R411 T415 D418 **K423** E424 **N425** V426 L427 **Y428** K429 **K430** Q431 **E432** G433 E436 L440

● Molecule 11: 26S protease regulatory subunit 8

Chain C:

63%   30%   5%

MET ALA LEU ASP GLY PRO GLU GLN MET GLU LEU GLU GLU GLY LYS ALA GLY SER GLY LEU **R21** Q22 Y23 Y24 K27 L31 Q32 L33 I34 V35 N36 D37 K38 S39 Q40 R44 L45 Q48 L52 **L63** L66 Y72 E75 K82 H90 P91 E92 V96

D100 I105 V108 R113 L116 R117 N118 D119 S120 Y121 H124 L127 P128 N129 K130 P133 **L134** V135 M138 K142 V143 P144 D145 S146 T147 Y148 G152 Q157 I158 K159 E160 I161 K162 E163 V164 I165 E166 L178 L187 T194 L198 L199 A200 R201

H206 I212 R213 V214 S215 E218 L219 V220 Q221 K222 F223 A228 R229 M230 E233 L234 F235 V236 M237 I251 D252 S253 I254 G255 S256 S257 G264 Q265 D266 S267 E268 V269 Q270 R271 L274 E275 L277 Q279 L280 D281 M293 A294 T295 I300 L301 D302 S303 A304

L305 L306 R307 P308 G309 R310 I311 D312 R313 K314 F317 E322 R325 L326 R334 K335 M336 N337 L338 T339 R340 G341 I342 R345 E349 L350 M351 A354 E358 V362 C363 T364 G367 M368 Y369 F383 E384 M385 A386 V387 **D394** L404 W405 K406

● Molecule 12: 26S proteasome regulatory subunit 6B

Chain D:

57%   32%   9%

MET GLU GLU ILE GLY ILE LEU VAL GLU LYS ALA GLN ASP GLU ILE PRO ALA LEU SER VAL SER ARG PRO GLN THR GLY LEU LEU SER PHE LEU GLY PRO GLU GLY PRO GLU ASP LEU GLU **D39** L40 Y41 S42 K45 K46 L47 F53 L54 I61 Q65 K66 N67 L73 E78

R81 I82 I89 V96 A101 I102 V103 T106 S109 V113 R14 I115 L116 S117 T118 I119 D120 R121 E122 L123 V130 A131 L132 A138 L139 V142 E146 A147 D148 S149 S150 I151 M152 M153 L154 T155 S156 D157 Q158 K159 Y164 D171 K174 R178 E182

L185 T186 H187 L190 Y191 G195 I196 P199 R200 G201 V202 L203 M204 P207 K212 I213 M214 L215 R229 V230 V231 G232 S233 Y239 L240 G241 E242 E243 P244 R245 I264 D265 E266 I267 D268 A269 I270 A271 T272 K273 R274 F275 G280 E284 V285 Q286 R287 I288 L289

L290 L293 D297 G298 F299 N302 V303 N304 V305 I308 M309 A310 T311 N312 R313 A314 D315 T316 L317 D318 L321 L322 R323 P324 G325 R326 L327 D328 R329 F333 P334 L335 P336 D337 R338 R339 S350 K351 L354 S355 E356 E357 V358 D362 R366 S371 G372 I375

N376 Q380 E381 S382 G383 M384 L385 R388 R391 K397 D398 F399 E400 K401 I407 K408 K409 D410 E411 Q412 E413 H414 E415 K418

• Molecule 13: 26S protease regulatory subunit 10B

Chain E:

MET ALA ASP PRO ARG ASP LYS ALA LEU GLN ASP TYR ARG LYS K15 L16 L17 E18 H19 K20 E21 I22 D23 G24 R25 L26 K27 E28 L29 R30 E44 L50 I56 E59 V60 L61 K62 Q63 E66 R78 C83 R84 R85 Q86 L87 V98 M102 R109 Y110

R113 GLU VAL ASP P117 L118 V119 Y120 N121 M122 S123 H124 E125 D126 P127 G128 N129 V130 S131 Y132 I135 G136 Q141 I142 R143 E144 L145 R146 E147 V148 I149 E150 L151 P152 L153 T154 N155 P156 E157 I164 I165 P166 P167 K168 G169 C170 L171 G174 P175 P176 K180 T181 L182 L183

A186 V187 A188 S189 Q190 L191 D192 F195 L196 K197 V198 V199 S200 S201 S202 V204 D205 K206 Y207 I208 G209 E210 S211 A212 R213 L214 I215 R216 E217 M218 F219 N220 Y221 A222 R223 D224 H225 Q226 P227 C228 I229 M232 D233 E234 I235 D236 A237 I238 G239 G240 ARG ARG PHE SER GLU GLY THR

SER ALA ASP ARG E252 I253 Q254 R255 T256 L257 M258 E259 L260 L261 N262 Q263 M264 D265 G266 F267 D268 T269 L270 H271 R272 V273 K274 M275 A278 T279 N280 R281 P282 D283 T284 L285 D286 P287 A288 I289 L290 R291 P292 G293 R294 L295 D296 R297 K298 I299 H300 I301 D302 L303 P304 N305 E306 R309

L310 D311 I312 L313 K314 I315 H316 E325 I326 D327 Y328 E329 A330 I331 V332 K333 L334 G340 A341 D342 L343 R344 N345 V346 E349 M352 F353 A354 V362 V363 Q364 D365 D366 F367 M368 K369 A370 V371 R372 V373 V374 A375 D376 S377 K378 K379 L380 E381 S382 K383 L384 D385 Y386 K387 P388

VAL

• Molecule 14: 26S proteasome regulatory subunit 6A

Chain F:

MET ASN LEU LEU PRO ASN ILE GLU SER PRO VAL THR ARG GLN GLU LYS MET ALA THR VAL TRP ASP GLU ALA GLU GLN ASP GLY ILE GLU GLU GLU VAL LEU LYS MET SER THR GLU GLU ILE ILE GLN ARG THR ARG LEU LEU ASP SER GLU I52 K53 I54 M55 K56 S57 E58 V59 L60

R61 H64 M69 I73 K74 S77 I80 K81 K84 P87 Y88 L89 V90 I94 E95 L96 L97 D98 V99 ASP PRO ASN ASP GLN GLU GLU ASP GLY ALA ASN ILE LEU ASP GLN SER GLN ARG LYS GLY K120 C121 I124 K125 T126 S127 T128 I137 G138 L139 V140

D141 L145 V151 G152 V153 L159 I160 T163 E167 R171 V172 M175 Q184 L198 I202 H208 K209 E213 L224 M225 K233 T234 L235 L236 C240 Q243 T244 T247 I251 Q255 L256 V257 L267 V268 F272 A275 K276 E277

K278 A279 P280 I283 F284 I285 L288 D289 G292 T293 K294 R295 F296 ASP SER GLU LYS A301 G302 D303 R304 E305 V306 G307 R308 L311 E312 L313 Q316 L317 Q321 P322 N323 T324 Q325 V326 K327 V328 I329 T332 N333 D336 I337 L338 D339 L343 R344 S345 F354

N358 A361 R364 H369 S370 R371 K372 M373 N374 V375 D378 L384 T388 Q395 C396 K397 G404 L408 R409 R410 L415 T416 H417 E418 D419 Y420 M421 I424 Q428 A429 K430 L435 Q436 Y437 Y438 A439

• Molecule 15: substrate peptide

Chain v:

8%

92% 8%

X12 X15 X23

• Molecule 16: Proteasome subunit alpha type-6

Chain G:

68% 28%

MET SER ARG GLY SER S6 D10 R11 H12 I13 F16 F29 I32 L37 R43 A48 V49 I50 V51 T52 Q53 K54 K55 V56 P57 D58 L61 D62 S63 V66 K71 I72 T73 E74 N75 I76 G77 C78 V79 M80 T81 T84 A85 D86 S87 R88 S89 R95

W101 E108 V111 D112 M113 L114 C115 K116 R117 I118 A119 D120 I121 T126 R132 C137 M138 I139 L140 I141 Q142 I143 D144 E145 V151 Y152 K153 A157 G158 F163 K164 A165 A168 Q172 T173 E174 L179 V183 K184 E196 C201 L202 S203 S207

I208 D209 F210 V219 V220 T221 P225 K226 F227 L242 A243 E244 ARG ASP

• Molecule 17: Proteasome subunit alpha type-4

Chain I:

64% 30% 5%

MET SER ARG R4 Y5 D6 S7 R8 I11 F12 G16 R17 Q20 V21 E22 A27 T33 C34 L35 D41 G42 L45 A46 I52 D57 E58 F61 S62 E63 K64 I65 Y66 K67 L68 N69 E70 D71 M72 A73 C74 S75 V76 S81 D82 L86 T87 N88 E89

E103 P106 C107 E108 L114 C115 D116 I117 K118 Q119 Q123 R128 I137 K141 H142 Y143 Q146 S153 G154 N155 Y156 A161 T162 C163 I164 G165 N166 A171 M174 L175 K176 Q177 D178 M184 T185 L186 K187 L192 K195 V196 L197 N198 K199 T200

L206 S207 A208 E209 T217 R218 E219 N220 G221 K222 T223 R226 K229 Q230 K231 E232 V233 E234 K238 K239 H240 E243 K251 LYS GLU LYS GLU GLN LYS GLU LYS ASP LYS

• Molecule 18: Proteasome subunit alpha type-7

Chain J:

68% 26% 5%

MET S2 Y3 D4 R5 A6 I7 T8 V9 F10 S11 P12 D13 Q18 V19 E20 Q23 E24 A25 V26 G29 S30 V35 R38 D39 I40 V41 V42 L43 G44 K47 V50 A51 K52 L53 Q54 T58 V59 R60 A64 L65 D66 D67 N68 T77 A78 D79 A80 R81

R88 V89 E90 C91 H94 R95 V98 E99 D100 P101 V102 T103 V104 T108 R109 Y110 T119 R125 P126 F127 G128 I129 S130 I133 V134 D137 PHE ASP GLY T141 P142 R143 L144 Y145 D148 P149 Y153 H154 A155 R163 E170 E173 I181 E182 T183 D184

Q200 L208 M211 R212 R213 D214 Q215 E240 LYS LYS LYS GLN LYS LYS ALA SER

• Molecule 19: Proteasome subunit alpha type-5

Chain K:

| 60% | 34% | 5% |

MET PHE LEU THR ARG SER GLU Y8 D9 N13 G19 F22 Q23 V24 E25 I28 E29 A30 I31 T36 A37 I38 E44 G45 V46 C47 L48 A49 V50 E51 K52 L58 P61 S62 S63 K66 I67 A77 I82 A83 D84 A85 L88 I89 D90 K91 A92 R93

N98 H99 W100 F101 T102 E105 V109 S117 N118 L119 A120 L121 D127 ALA ASP PRO GLY ALA MET S134 R135 V139 A140 L141 L142 G145 E148 Q152 L153 D157 P158 S159 G160 R168 A169 I170 G171 S172 A173 S174 Q178 S179 Q182 E183 H186

M189 T190 I195 K196 L202 K203 Q204 V205 M206 E207 L210 N211 A212 T213 N214 I215 E216 L217 V220 Q221 Q224 N225 F226 H227 M228 F229 E233 L234 E235 K239 D240 I241

• Molecule 20: Proteasome subunit alpha type-1

Chain L:

| 69% | 21% | 10% |

MET PHE ARG M4 Q5 Y6 D7 W13 S14 P15 I22 M26 S33 V36 A44 V45 L46 V47 K50 Q53 S54 E55 H59 K62 G71 I72 A79 L84 M88 D94 S95 V98 F99 D100 R101 P102 L103 P104 V105 S106 R107 L108 V109

I112 T120 G124 R125 R126 I134 Y137 D138 D139 M140 Q146 R157 Q166 R169 L172 E173 R174 H175 M176 S177 E178 N185 V188 R193 R196 E197 T198 Q203 I212 V215 G216 K217 F221 V229 F232 E237 E238 R239 P240 Q241

ARG LYS ALA GLN PRO ALA GLN PRO ALA ASP GLU PRO ALA GLU LYS ALA ASP GLU PRO MET GLU HIS

• Molecule 21: Proteasome subunit alpha type-3

Chain M:

| 67% | 26% | 6% |

MET SER SER ILE GLY T5 D8 S12 S15 P16 D17 G18 R19 Q22 V23 M27 K28 T35 A36 I37 G38 I39 R40 C41 G44 V45 V46 V49 L52 V53 L54 N63 K64 R65 V69 D70 R71 H72 V73 G74 M75 A76 L81 L87 A88 D89 I90

E93 N97 F98 R99 S100 N101 F102 G103 Y104 N105 L108 I111 A112 D113 M117 Y118 T123 P130 S134 F135 M136 L137 V142 N143 D144 P153 V156 S157 Y158 G159 Y160 W161 G162 C163 A164 A168 R169 A171 T174 C186 I189 V193

I197 D206 L211 E212 W215 V216 H224 K229 K244 GLU GLU ASP GLU SER ASP ASP ASN MET

• Molecule 22: Proteasome subunit beta type-7

Chain O:

| 12% | 84% |

• Molecule 23: 26S proteasome complex subunit SEM1

Chain e:

• Molecule 24: 26S proteasome non-ATPase regulatory subunit 8

Chain d:

• Molecule 25: 26S proteasome non-ATPase regulatory subunit 12

Chain W:

L90 R93 R94 K98 M104 V105 Q106 Q107 C108 C109 V112 E113 E114 I115 K121 L124 L128 Y137 G157 L166 Q167 E168 V171 E172 T173 M177 E178 E181 R182 V183 L187 E188 Q189 M190 L194 I205 N210 T211 K212 F213 F214 Q215 E216

E217 K225 L229 M230 I231 Q235 Y240 S260 W263 L267 L272 L276 D280 N281 E282 L296 I299 K303 L314 M315 R316 W317 S318 V321 E327 L333 T338 F341 R350 W351 K352 D353 N362 I363 M366 Y370

I373 T374 M375 K376 R377 M378 D383 D387 L393 L396 I402 Q411 I412 I413 N414 F415 D420 L425 L432 L435 L438 T443 H444 L445 M451 N454 LEU GLN

• Molecule 26: Isoform 2 of NEDD8 ultimate buster 1

Chain g:

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

GLU GLU ILE ARG CYS LYS ALA ILE GLU GLY GLY THR GLY ASN ASP ASN TYR ARG T79 T80 G81 I82 A83 T84 I85 E86 V87 F88 L89 P90 P91 R92 L93 K94 K95 D96 R97 K98 N99 L100 L101 E102 T103 R104 L105 H106 I107 T108 G109 R110 E111 L112 R113 S114 K115 I116 A117 E118 T119 F120

G121 L122 Q123 E124 N125 Y126 I127 K128 I129 V130 I131 N132 K133 K134 Q135 L136 Q137 L138 G139 K140 T141 L142 E143 E144 Q145 G146 V147 A148 H149 N150 V151 K152 A153 M154 V155 L156 E157 L158 K159 Q160 S161 E162 E163 D164 A165 R166 K167 N168 F169 Q170 L171 E172 E173 GLU GLU GLN ASN GLU ALA LYS

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

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

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

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

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

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

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

ASN

• Molecule 27: 26S proteasome non-ATPase regulatory subunit 3

Chain V:

MET LYS GLN GLU GLY SER ALA ARG ARG ARG GLY ALA LYS ASP LYS ALA LYS PRO PRO GLY PRO GLY GLU GLN GLU PRO PRO PRO PRO ALA GLN ASP ASP VAL GLU MET LYS GLU GLU ALA ALA THR GLY GLY GLY SER THR GLY ALA ASP GLY LYS THR ALA ALA A58 A59 A60

E61 H62 S63 Q64 R65 E66 L67 D68 T69 V70 T71 D74 H78 V79 L82 E83 K84 A85 V86 S87 G88 K89 R92 F93 V94 L95 L98 R99 M100 L101 P102 S103 T104 S105 R106 R107 L108 N109 L113 Y114 K115 F120 F121 T122 S123 N124 N125 A126 T127 R128 D129 F130 L131

L132 P133 F134 E137 P138 M139 D140 T141 E142 A143 D144 L145 Q146 F147 R148 P149 R150 T151 G152 K153 A154 A155 S156 T157 P158 L159 L160 P161 E162 V163 Y166 L167 Q168 L169 L170 V171 V172 I173 F174 M175 M176 N177 S178 K179 R180 A184 L191 M192 R200 R201 D204 L205 V206 A207

A208 K209 C210 Y211 Y212 Y213 H214 A215 R216 V217 Y218 E219 F220 L221 L224 D225 V226 V227 F230 L231 R234 L235 T236 T237 L240 R241 D245 L250 L251 N252 L253 R256 N257 Y258 L259 H260 Y261 Y264 D265 Q266 A267 E268 S272 K273 Q279 A280 N281 E284

R287 Y290 R294 I295 K296 A297 I298 Y302 A305 M309 L313 P317 Q318 H319 T320 H329 L332 I333 L337 L338 I342 R345 L346 R349 L363 V367 L372 A373 K374 T391 Y392 I395 I396 R397 L398 N401 V402 I403 K404 V407

R408 M409 I410 Y414 I417 I422 E435 V446 I447 E448 A449 N452 H463 E454 K455 G456 Y457 V458 Q459 S460 K461 E462 Y467 R470 E471 P472 R479 F482 M488 M489 S490 V491 K492 A493 M494 R495 P498 LYS SER TYR ASN LYS ASP LEU SER ALA GLU

GLU ARG ARG GLU ARG GLU GLN GLN ASP LEU GLU PHE ALA LYS GLU MET ALA GLU ASP ASP ASP SER PHE PRO

• Molecule 28: 26S proteasome non-ATPase regulatory subunit 14

Chain c:

43% 21% • 36%

MET ASP ARG LEU LEU ARG LEU GLY GLY GLY MET PRO GLY LEU GLY GLN GLY PRO PRO THR ASP ALA P23 A24 V25 Y32 I33 A37 L38 L39 K40 M41 H44 V49 P50 M51 M54 G55 L56 M57 F61 V62 D63 R68 V69 I70 D71 V72 F73 Q77 V82

E85 D97 M98 L99 K100 Q101 T102 G103 R104 V109 Y112 H115 F118 W121 L122 S123 G124 V125 D126 I127 N128 T129 Q130 Q131 E134 A135 L136 S137 E138 R139 K152 V156 I157 D158 A159 F160 R161 L162 I163 N164 A165 N166 M167 V169 M168 L170 G171 H172 K186

P187 S188 I189 Q190 A191 L192 I193 H194 G195 L196 N197 R198 H199 Y200 Y201 I205 N210 E211 K215 M216 L217 L218 N219 S224 W225 M226 T230 H237 C238 S243 V244 E247 L251 D263 LYS MET THR PRO GLU GLN LEU ALA ILE LYS ASN VAL GLY LYS GLN D279

L284 H287 V288 M292 T293 S294 N295 I296 C299 A302 M303 K310 LEU ILE ASN HIS HIS HIS HIS HIS ASP TYR ASP ILE PRO THR THR ALA SER GLU ASN LEU TYR PHE GLN GLY LEU GLY LEU GLY MET ARG GLY SER ALA GLY LYS ALA GLY GLU GLU ILE PRO

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

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	41903	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 $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.758	Depositor
Minimum map value	-0.411	Depositor
Average map value	0.004	Depositor
Map value standard deviation	0.041	Depositor
Recommended contour level	0.13	Depositor
Map size (Å)	293.44, 293.44, 293.44	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.048, 1.048, 1.048	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	H	0.12	0/1852	0.31	0/2507
2	Y	0.11	0/3185	0.26	0/4290
3	f	0.11	0/6623	0.32	0/8965
4	X	0.13	0/3038	0.34	0/4095
5	U	0.12	0/6670	0.34	0/9017
6	Z	0.15	0/2324	0.42	1/3150 (0.0%)
7	a	0.12	0/3053	0.36	0/4133
8	b	0.15	0/1478	0.40	0/2001
9	A	0.12	0/3315	0.31	0/4475
10	B	0.14	0/3167	0.35	0/4271
11	C	0.14	0/3092	0.34	0/4154
12	D	0.12	0/3090	0.34	0/4168
13	E	0.15	0/2902	0.40	0/3904
14	F	0.13	0/2888	0.32	0/3889
16	G	0.12	0/1853	0.31	0/2515
17	I	0.13	0/1941	0.33	0/2626
18	J	0.13	0/1773	0.34	0/2407
19	K	0.14	0/1759	0.36	0/2379
20	L	0.11	0/1885	0.28	0/2552
21	M	0.12	0/1891	0.31	0/2552
22	O	0.09	0/359	0.25	0/483
23	e	0.12	0/362	0.32	0/490
24	d	0.13	0/2234	0.33	0/3018
25	W	0.12	0/3618	0.33	1/4868 (0.0%)
26	g	0.12	0/778	0.34	0/1041
27	V	0.12	0/3663	0.32	0/4946
28	c	0.13	0/2191	0.34	0/2962
All	All	0.13	0/70984	0.33	2/95858 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	Z	78	MET	CB-CG-SD	5.86	130.28	112.70
25	W	40	LEU	CB-CA-C	-5.21	110.14	117.23

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	H	1813	0	1804	47	0
2	Y	3127	0	3133	92	0
3	f	6512	0	6529	236	0
4	X	2994	0	3097	82	0
5	U	6559	0	6600	260	0
6	Z	2281	0	2312	108	0
7	a	2995	0	3012	110	0
8	b	1458	0	1505	91	0
9	A	3261	0	3312	112	0
10	B	3122	0	3183	117	0
11	C	3051	0	3164	114	0
12	D	3040	0	3075	113	0
13	E	2859	0	2941	141	0
14	F	2850	0	2945	89	0
15	v	60	0	16	1	0
16	G	1820	0	1789	46	0
17	I	1911	0	1874	54	0
18	J	1749	0	1641	47	0
19	K	1733	0	1691	61	0
20	L	1850	0	1822	41	0
21	M	1856	0	1814	46	0
22	O	355	0	365	7	0
23	e	353	0	276	14	0
24	d	2188	0	2216	77	0
25	W	3570	0	3685	88	0
26	g	771	0	815	30	0
27	V	3593	0	3659	128	0
28	c	2150	0	2154	79	0

Continued on next page...

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
29	A	1	0	0	0	0
29	B	1	0	0	0	0
29	C	1	0	0	0	0
29	D	1	0	0	0	0
29	F	1	0	0	0	0
30	B	62	0	24	4	0
30	F	31	0	12	5	0
31	C	27	0	12	2	0
31	D	27	0	12	4	0
31	E	27	0	12	5	0
32	c	1	0	0	0	0
All	All	70061	0	70501	2170	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 15.

All (2170) 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)
4:X:44:GLN:N	4:X:44:GLN:HE21	1.30	1.27
4:X:44:GLN:N	4:X:44:GLN:NE2	2.10	0.99
6:Z:78:MET:HE2	28:c:98:MET:HE2	1.51	0.93
13:E:26:LEU:HD11	14:F:58:GLU:HB3	1.51	0.89
6:Z:101:LEU:HD12	25:W:451:MET:HG2	1.51	0.89
5:U:409:GLY:HA3	5:U:445:ALA:HB1	1.56	0.88
13:E:219:PHE:HB3	13:E:223:ARG:HH21	1.42	0.84
1:H:159:LYS:HG3	17:I:57:ASP:HB2	1.57	0.84
19:K:50:VAL:HG11	19:K:66:LYS:HE2	1.61	0.83
5:U:792:ASN:HB3	5:U:914:LEU:HB3	1.61	0.83
6:Z:228:TYR:HB2	7:a:338:PRO:HB2	1.61	0.81
3:f:597:VAL:HG13	3:f:656:GLY:HA2	1.62	0.81
27:V:78:HIS:HE1	27:V:104:THR:HG21	1.46	0.81
27:V:85:ALA:HB2	27:V:93:PHE:HB2	1.63	0.80
13:E:223:ARG:HD2	13:E:271:HIS:HB2	1.63	0.80
13:E:342:ASP:O	13:E:346:VAL:HG23	1.80	0.80
19:K:48:LEU:HD21	19:K:77:ALA:HB2	1.64	0.79
11:C:367:GLY:HA3	12:D:196:ILE:HG21	1.64	0.78
2:Y:220:VAL:HG21	2:Y:249:VAL:HG21	1.65	0.77
28:c:216:MET:HA	28:c:219:ASN:HD22	1.48	0.77
3:f:597:VAL:HG12	3:f:659:LEU:HD23	1.65	0.76
7:a:252:LYS:HD2	7:a:255:TRP:HE1	1.50	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:284:GLU:HA	27:V:287:ARG:HD2	1.68	0.75
3:f:141:LYS:HA	3:f:144:LEU:HB3	1.67	0.75
16:G:141:ILE:HG22	16:G:151:VAL:HG22	1.68	0.75
3:f:331:LEU:HB3	3:f:335:ARG:HH21	1.50	0.75
11:C:45:LEU:HB3	12:D:61:ILE:HG21	1.68	0.75
24:d:301:ASP:HA	24:d:304:LYS:HE2	1.69	0.75
6:Z:226:ILE:HG21	25:W:445:LEU:HD22	1.67	0.75
4:X:160:MET:HG3	4:X:162:ASP:H	1.52	0.75
5:U:42:VAL:HG13	5:U:43:ASP:H	1.50	0.74
10:B:287:ILE:HG12	10:B:329:MET:HE3	1.70	0.74
9:A:233:THR:HG22	9:A:235:ALA:H	1.53	0.74
13:E:171:LEU:HD11	13:E:279:THR:HG22	1.70	0.74
18:J:91:CYS:HB2	18:J:102:VAL:HG11	1.70	0.74
1:H:119:GLN:HG3	17:I:81:SER:HB2	1.69	0.74
13:E:296:ASP:OD1	13:E:296:ASP:N	2.20	0.73
10:B:401:GLU:OE2	10:B:425:ASN:ND2	2.22	0.73
7:a:77:VAL:HA	7:a:80:ILE:HG12	1.69	0.73
7:a:216:LEU:HD13	7:a:237:LEU:HB3	1.70	0.73
20:L:157:ARG:NH1	20:L:176:MET:SD	2.61	0.73
22:O:70:THR:HG23	22:O:72:ARG:H	1.52	0.73
3:f:46:SER:H	3:f:49:ASP:HB2	1.54	0.73
6:Z:101:LEU:HG	6:Z:123:ILE:HD11	1.70	0.73
13:E:364:GLN:HA	13:E:367:PHE:HB2	1.71	0.73
3:f:832:THR:HB	3:f:900:LEU:HD11	1.71	0.73
7:a:371:ALA:HB2	24:d:340:ILE:HD12	1.68	0.73
13:E:313:LEU:HD23	13:E:343:LEU:HD13	1.71	0.72
6:Z:32:GLN:OE1	6:Z:33:LYS:N	2.21	0.72
11:C:267:SER:OG	11:C:271:ARG:NH2	2.22	0.72
25:W:60:MET:HE3	25:W:60:MET:H	1.53	0.72
16:G:49:VAL:HG22	16:G:219:VAL:HG22	1.70	0.72
9:A:62:LEU:HD22	10:B:79:ILE:HG13	1.69	0.72
7:a:335:TRP:NE1	7:a:337:GLN:O	2.23	0.72
18:J:58:THR:HA	18:J:60:ARG:HH21	1.52	0.72
3:f:470:VAL:HG21	3:f:500:LEU:HD21	1.72	0.72
16:G:89:SER:HA	21:M:117:MET:HE1	1.71	0.72
20:L:88:MET:HG2	20:L:112:ILE:HD11	1.72	0.72
5:U:658:ILE:HD11	5:U:767:THR:HG21	1.72	0.71
3:f:348:ILE:O	3:f:746:ARG:NH1	2.23	0.71
6:Z:260:VAL:HG13	28:c:292:MET:HE3	1.72	0.71
13:E:26:LEU:HD21	14:F:58:GLU:HG2	1.70	0.71
1:H:74:LEU:HD11	1:H:134:LEU:HD13	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Z:59:ASP:HB2	8:b:99:HIS:HE1	1.56	0.71
8:b:62:THR:HG21	8:b:71:ILE:HA	1.73	0.70
6:Z:143:GLU:HG3	6:Z:145:HIS:H	1.55	0.70
7:a:326:GLU:HB2	25:W:373:ILE:HA	1.73	0.70
4:X:44:GLN:HG2	4:X:45:VAL:H	1.55	0.70
13:E:380:LEU:HG	13:E:383:LYS:HB3	1.74	0.70
20:L:72:ILE:HG21	20:L:88:MET:HE1	1.71	0.70
5:U:470:ASN:HA	5:U:474:ARG:HE	1.55	0.70
17:I:161:ALA:HB1	17:I:175:LEU:HD13	1.73	0.70
21:M:186:CYS:HA	21:M:189:ILE:HB	1.74	0.70
25:W:362:ASN:O	25:W:366:MET:HG3	1.92	0.70
7:a:84:VAL:HG21	7:a:97:LEU:HD11	1.74	0.70
27:V:128:ARG:HE	27:V:132:LEU:HD11	1.57	0.69
13:E:222:ALA:O	13:E:224:ASP:N	2.26	0.69
21:M:163:CYS:SG	21:M:164:ALA:N	2.65	0.69
10:B:304:GLU:OE1	10:B:307:ARG:NH1	2.25	0.69
1:H:17:GLY:HA3	17:I:27:ALA:HB2	1.74	0.69
5:U:78:LEU:HD21	5:U:103:LYS:HB2	1.73	0.69
5:U:577:ILE:HD12	5:U:580:ARG:HH21	1.58	0.69
7:a:188:LEU:HD13	7:a:192:GLU:HB3	1.74	0.69
21:M:197:ILE:HG21	21:M:211:LEU:HD13	1.73	0.69
26:g:130:VAL:HB	26:g:154:MET:HB3	1.75	0.69
9:A:123:VAL:HG12	14:F:87:PRO:HB3	1.73	0.69
9:A:128:GLN:N	9:A:128:GLN:OE1	2.25	0.69
17:I:86:LEU:HD22	17:I:114:LEU:HD11	1.74	0.69
5:U:902:PRO:HA	5:U:914:LEU:HA	1.75	0.69
8:b:141:ILE:HG22	8:b:171:VAL:HB	1.74	0.68
6:Z:129:LYS:HD2	28:c:215:LYS:HD2	1.75	0.68
8:b:71:ILE:H	8:b:71:ILE:HD12	1.58	0.68
5:U:140:ARG:O	5:U:144:ASP:HB2	1.94	0.68
5:U:607:VAL:O	12:D:67:ASN:ND2	2.26	0.68
10:B:299:SER:HB3	10:B:302:GLU:HB3	1.75	0.68
24:d:168:MET:SD	24:d:195:ASN:ND2	2.67	0.68
5:U:812:ALA:HB1	5:U:883:ARG:HH12	1.59	0.68
9:A:364:VAL:HG12	9:A:404:ALA:HB3	1.75	0.68
12:D:149:SER:HA	12:D:153:MET:HB3	1.75	0.68
3:f:654:VAL:HA	3:f:657:ILE:HD12	1.76	0.68
11:C:163:GLU:OE1	11:C:313:ARG:NH2	2.27	0.68
2:Y:104:MET:HE3	2:Y:127:THR:HA	1.76	0.67
11:C:228:ALA:HB1	11:C:275:GLU:HG3	1.75	0.67
24:d:261:ASP:HA	24:d:264:LEU:HD12	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:b:97:LEU:HD22	8:b:109:ILE:HD11	1.77	0.67
28:c:51:MET:HE3	28:c:77:GLN:HE21	1.59	0.67
3:f:382:ASN:HB2	3:f:417:ILE:HD11	1.76	0.67
5:U:524:LYS:HG3	5:U:556:MET:HE1	1.75	0.67
11:C:187:LEU:HB2	11:C:311:ILE:HD13	1.75	0.67
12:D:151:ILE:HA	13:E:213:ARG:HH22	1.59	0.67
11:C:198:LEU:HD22	31:C:502:ADP:H2'	1.75	0.67
1:H:204:THR:HG22	1:H:206:ASP:H	1.59	0.67
2:Y:173:ASP:OD2	11:C:340:ARG:NH2	2.27	0.67
3:f:741:LEU:HA	3:f:744:MET:HE2	1.76	0.67
5:U:620:GLU:HG2	5:U:654:MET:HB3	1.75	0.67
8:b:24:THR:HG23	8:b:26:LEU:H	1.57	0.67
12:D:275:PHE:O	12:D:286:GLN:NE2	2.22	0.67
13:E:136:GLY:H	31:E:401:ADP:HN62	1.43	0.67
21:M:134:SER:HB2	21:M:153:PRO:HD3	1.77	0.67
5:U:903:PHE:HB2	5:U:915:LYS:HB2	1.76	0.67
11:C:277:LEU:HD11	11:C:305:LEU:HB3	1.77	0.67
23:e:37:HIS:O	27:V:349:ARG:NH2	2.28	0.67
16:G:75:ASN:ND2	16:G:225:PRO:O	2.26	0.67
23:e:21:GLU:OE2	27:V:287:ARG:NH1	2.26	0.67
24:d:276:GLU:OE2	24:d:308:TRP:NE1	2.27	0.67
27:V:121:PHE:H	27:V:159:LEU:HD21	1.60	0.67
3:f:208:LEU:HD23	3:f:211:ILE:HD11	1.78	0.66
2:Y:50:MET:HG2	2:Y:53:TYR:HB3	1.77	0.66
10:B:103:ARG:HB2	10:B:160:ILE:HD12	1.76	0.66
14:F:324:THR:HG23	14:F:326:VAL:H	1.60	0.66
27:V:115:LYS:HD2	27:V:147:PHE:HB3	1.77	0.66
16:G:208:ILE:HG22	16:G:210:PHE:H	1.60	0.66
8:b:6:THR:HB	8:b:49:VAL:HG23	1.76	0.66
18:J:79:ASP:OD2	18:J:125:ARG:NH1	2.29	0.66
24:d:195:ASN:O	24:d:198:PHE:HB3	1.96	0.66
28:c:71:ASP:OD1	28:c:72:VAL:N	2.29	0.66
3:f:564:LEU:HD12	3:f:567:LEU:HD21	1.78	0.66
14:F:370:SER:HB2	14:F:375:VAL:HG21	1.78	0.66
9:A:274:PHE:HB2	9:A:319:MET:HG2	1.77	0.65
11:C:215:SER:HB3	11:C:218:GLU:HG3	1.77	0.65
3:f:110:TYR:HE2	3:f:123:ALA:HB2	1.59	0.65
11:C:351:MET:HG2	11:C:354:ALA:HB2	1.77	0.65
25:W:17:GLU:N	25:W:57:ALA:O	2.29	0.65
6:Z:263:ALA:HB1	28:c:288:VAL:HG13	1.78	0.65
27:V:169:LEU:O	27:V:173:ILE:HG13	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:X:166:LEU:HD23	4:X:196:THR:HG21	1.77	0.65
12:D:311:THR:HG21	12:D:317:LEU:HD11	1.78	0.65
7:a:216:LEU:HD23	7:a:241:ASN:HD22	1.60	0.65
9:A:55:LEU:O	9:A:59:ILE:HG12	1.96	0.65
10:B:70:ASP:O	10:B:74:MET:HG2	1.97	0.65
10:B:103:ARG:NH2	10:B:160:ILE:O	2.30	0.65
12:D:302:ASN:OD1	12:D:303:VAL:N	2.29	0.65
9:A:140:VAL:HG12	9:A:152:PRO:HA	1.78	0.65
17:I:71:ASP:HB3	17:I:223:THR:HG21	1.77	0.65
6:Z:224:HIS:ND1	6:Z:224:HIS:O	2.29	0.65
12:D:274:ARG:HG3	12:D:289:LEU:HD23	1.78	0.65
3:f:771:LEU:HD11	3:f:825:MET:HE1	1.80	0.64
8:b:68:THR:HA	8:b:71:ILE:HD13	1.78	0.64
12:D:231:VAL:HG23	12:D:265:ASP:HB3	1.79	0.64
5:U:105:ILE:HG22	5:U:134:VAL:HG22	1.80	0.64
13:E:167:PRO:O	13:E:274:LYS:NZ	2.29	0.64
13:E:176:PRO:HD3	13:E:280:ASN:HB2	1.80	0.64
14:F:276:LYS:HD3	14:F:326:VAL:HG21	1.78	0.64
28:c:224:SER:OG	28:c:226:MET:SD	2.54	0.64
12:D:214:MET:HE1	31:D:501:ADP:C4	2.32	0.64
12:D:242:GLU:OE1	12:D:245:ARG:NH1	2.30	0.64
12:D:316:THR:OG1	12:D:317:LEU:N	2.31	0.64
18:J:119:THR:HG22	18:J:126:PRO:HB3	1.79	0.64
3:f:593:THR:O	3:f:597:VAL:HG23	1.97	0.64
5:U:65:SER:HG	5:U:96:TYR:HH	1.45	0.64
24:d:331:PRO:O	24:d:333:THR:N	2.30	0.64
28:c:162:LEU:HD23	28:c:200:TYR:HB3	1.79	0.64
16:G:72:ILE:HG21	16:G:114:LEU:HD21	1.78	0.64
23:e:46:ASP:OD2	27:V:345:ARG:NH1	2.29	0.64
4:X:248:ILE:HD13	4:X:279:TYR:HB3	1.79	0.64
5:U:712:LEU:HA	5:U:715:LYS:HG2	1.80	0.64
5:U:798:PRO:O	5:U:880:ASN:ND2	2.31	0.64
5:U:803:LYS:HB2	5:U:875:PHE:HB2	1.80	0.64
10:B:256:ILE:HD11	10:B:290:ILE:HG22	1.79	0.64
8:b:107:MET:HG3	8:b:136:VAL:HG22	1.80	0.64
12:D:154:LEU:HD11	12:D:229:ARG:HH21	1.62	0.64
13:E:387:LYS:H	13:E:388:PRO:HD2	1.62	0.64
27:V:259:LEU:HD13	27:V:294:ARG:HD2	1.78	0.64
28:c:190:GLN:O	28:c:194:HIS:ND1	2.30	0.64
17:I:52:ILE:HD11	17:I:209:GLU:HG2	1.79	0.63
5:U:524:LYS:HZ2	5:U:562:GLU:HG3	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:285:PHE:HE1	9:A:291:GLY:HA3	1.63	0.63
2:Y:297:ARG:NH2	23:e:45:ASP:OD1	2.31	0.63
11:C:369:TYR:HE2	11:C:385:MET:HG3	1.63	0.63
21:M:113:ASP:O	21:M:117:MET:HG2	1.98	0.63
27:V:342:ILE:HD11	27:V:409:MET:HE3	1.81	0.63
3:f:664:GLU:OE1	10:B:67:ARG:NH2	2.31	0.63
7:a:208:GLU:OE2	7:a:208:GLU:N	2.27	0.63
27:V:488:ASN:O	27:V:492:LYS:HB2	1.99	0.63
3:f:275:MET:SD	3:f:275:MET:N	2.62	0.63
5:U:142:LEU:HD21	5:U:166:THR:HG22	1.80	0.63
7:a:277:LEU:O	7:a:281:THR:HG22	1.98	0.63
8:b:4:GLU:HA	8:b:106:LYS:H	1.63	0.63
9:A:372:LEU:HD11	19:K:207:GLU:HA	1.80	0.63
13:E:379:LYS:O	13:E:381:GLU:N	2.30	0.63
3:f:646:MET:SD	3:f:646:MET:N	2.65	0.63
16:G:132:ARG:HB2	21:M:12:SER:HA	1.79	0.63
27:V:86:VAL:O	27:V:89:LYS:NZ	2.31	0.63
5:U:16:GLU:HB2	5:U:19:LEU:HD23	1.80	0.63
5:U:52:GLU:OE1	5:U:57:ARG:NH2	2.32	0.63
14:F:333:ASN:ND2	30:F:501:ATP:O2G	2.31	0.63
16:G:132:ARG:NH1	21:M:123:THR:O	2.32	0.63
7:a:280:MET:SD	7:a:296:ILE:HG12	2.39	0.63
7:a:335:TRP:HD1	7:a:337:GLN:H	1.47	0.63
13:E:198:VAL:HB	13:E:232:MET:HA	1.81	0.63
7:a:335:TRP:CD1	7:a:337:GLN:H	2.17	0.62
13:E:205:ASP:N	13:E:205:ASP:OD1	2.32	0.62
27:V:121:PHE:HA	27:V:159:LEU:HD11	1.80	0.62
2:Y:331:ASP:OD2	2:Y:349:LYS:NZ	2.33	0.62
13:E:220:ASN:O	13:E:225:HIS:ND1	2.31	0.62
26:g:112:LEU:O	26:g:116:ILE:HG12	1.98	0.62
9:A:73:ALA:HB3	9:A:78:TRP:HD1	1.64	0.62
13:E:141:GLN:O	13:E:145:LEU:HG	1.99	0.62
2:Y:334:LEU:O	2:Y:338:ILE:HG13	2.00	0.62
4:X:44:GLN:HG2	4:X:45:VAL:N	2.13	0.62
4:X:125:LEU:O	4:X:129:LEU:HD22	1.97	0.62
8:b:34:ASN:O	8:b:38:HIS:ND1	2.33	0.62
10:B:246:THR:HG21	10:B:277:HIS:HB2	1.81	0.62
18:J:80:ALA:HA	18:J:129:ILE:HD13	1.82	0.62
21:M:75:MET:HE1	21:M:88:ALA:HA	1.81	0.62
2:Y:42:MET:HE2	2:Y:42:MET:HA	1.82	0.62
5:U:579:ARG:HB3	5:U:614:VAL:HG21	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:761:VAL:O	5:U:765:VAL:HG22	2.00	0.62
20:L:104:PRO:HG2	20:L:107:ARG:HG3	1.81	0.62
2:Y:45:VAL:HG12	2:Y:73:MET:HE1	1.80	0.62
3:f:458:GLU:O	26:g:133:LYS:NZ	2.32	0.62
18:J:4:ASP:O	18:J:18:GLN:NE2	2.33	0.62
4:X:240:ASP:OD1	4:X:278:ARG:NH1	2.33	0.62
27:V:467:TYR:HA	27:V:472:PRO:HG2	1.81	0.62
2:Y:248:GLU:OE1	4:X:182:ASN:ND2	2.32	0.62
5:U:241:ASN:HD21	5:U:244:MET:HB2	1.65	0.62
6:Z:186:THR:O	6:Z:190:ARG:HG2	1.99	0.62
13:E:174:GLY:HA3	13:E:301:ILE:HG23	1.81	0.62
21:M:158:TYR:HD1	21:M:160:TYR:HE1	1.48	0.62
13:E:143:ARG:NH1	25:W:172:GLU:OE1	2.26	0.61
3:f:807:ARG:HA	3:f:811:LEU:HB2	1.82	0.61
3:f:379:GLY:HA2	3:f:417:ILE:HD13	1.82	0.61
25:W:188:GLU:OE2	25:W:225:LYS:NZ	2.33	0.61
4:X:350:ILE:HD12	4:X:385:LEU:HD21	1.82	0.61
8:b:29:GLN:O	8:b:33:VAL:HG23	2.00	0.61
17:I:171:ALA:HB2	17:I:200:THR:HG21	1.82	0.61
17:I:176:LYS:O	18:J:52:LYS:NZ	2.33	0.61
1:H:74:LEU:HD12	1:H:136:ILE:HG12	1.82	0.61
11:C:368:MET:HE1	12:D:191:TYR:HE1	1.66	0.61
13:E:331:ILE:HG13	13:E:371:VAL:HB	1.81	0.61
1:H:7:SER:O	1:H:21:GLN:NE2	2.34	0.61
12:D:200:ARG:HD2	12:D:302:ASN:HD21	1.66	0.61
25:W:316:ARG:NH2	25:W:383:ASP:OD1	2.32	0.61
3:f:658:ALA:HB2	3:f:693:ALA:HB1	1.83	0.61
10:B:258:LYS:HG3	10:B:259:TYR:CD2	2.35	0.61
20:L:138:ASP:OD1	20:L:138:ASP:N	2.31	0.61
5:U:49:TYR:HA	5:U:57:ARG:HB3	1.82	0.61
5:U:662:GLY:O	5:U:698:GLN:NE2	2.34	0.61
28:c:191:ALA:HB1	28:c:196:LEU:HB2	1.81	0.61
4:X:295:LYS:O	4:X:297:ARG:NH1	2.34	0.61
5:U:174:PRO:O	5:U:177:LEU:HB2	1.99	0.61
11:C:38:LYS:HG2	12:D:54:LEU:HB3	1.82	0.61
11:C:257:SER:HA	11:C:302:ASP:HB3	1.82	0.61
12:D:150:SER:O	13:E:213:ARG:NH1	2.34	0.61
21:M:170:GLN:O	21:M:174:THR:HG23	2.01	0.61
6:Z:236:LEU:HB3	25:W:435:LEU:HD12	1.83	0.61
10:B:360:THR:O	10:B:364:ILE:HG12	2.00	0.61
12:D:89:ILE:O	12:D:106:THR:OG1	2.17	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:b:55:ALA:HB1	8:b:82:GLY:HA3	1.82	0.60
12:D:106:THR:HG21	13:E:78:ARG:HG2	1.83	0.60
19:K:117:SER:O	19:K:121:LEU:HG	2.00	0.60
5:U:6:ALA:HB2	5:U:34:PHE:HD2	1.67	0.60
24:d:161:ILE:HD12	24:d:161:ILE:H	1.65	0.60
2:Y:308:LEU:HD23	2:Y:314:LEU:HD21	1.82	0.60
3:f:524:MET:HA	3:f:527:VAL:HG13	1.82	0.60
4:X:81:SER:HB3	4:X:84:LYS:HD2	1.82	0.60
8:b:41:THR:HB	8:b:42:ARG:NH1	2.16	0.60
24:d:212:LEU:HD11	24:d:230:VAL:HG22	1.83	0.60
5:U:712:LEU:O	5:U:716:VAL:HG12	2.01	0.60
5:U:794:ASP:N	5:U:794:ASP:OD1	2.34	0.60
8:b:100:ARG:HD2	8:b:105:HIS:HB2	1.83	0.60
10:B:423:LYS:O	10:B:427:LEU:HB3	2.00	0.60
9:A:84:LYS:HB3	10:B:102:LEU:HD21	1.84	0.60
9:A:187:LEU:HD11	9:A:318:LEU:HD11	1.82	0.60
19:K:52:LYS:NZ	19:K:61:PRO:O	2.33	0.60
23:e:18:GLU:OE2	23:e:18:GLU:N	2.34	0.60
25:W:171:VAL:HB	25:W:182:ARG:HG3	1.83	0.60
3:f:435:SER:HA	26:g:169:PHE:CG	2.37	0.60
7:a:308:GLU:OE2	25:W:370:TYR:OH	2.15	0.60
28:c:57:MET:HA	28:c:72:VAL:HG12	1.83	0.60
3:f:644:ALA:N	3:f:646:MET:SD	2.75	0.60
6:Z:238:PRO:HG3	25:W:432:LEU:HD21	1.84	0.60
12:D:385:LEU:HD13	12:D:401:LYS:HE3	1.83	0.60
26:g:123:GLN:HB2	26:g:126:TYR:HB2	1.83	0.60
3:f:241:PRO:HG3	5:U:835:ILE:HG21	1.83	0.60
4:X:234:GLU:OE1	12:D:338:ARG:NH2	2.35	0.60
5:U:460:TYR:HD2	5:U:461:LEU:HD22	1.66	0.60
5:U:727:LYS:O	5:U:731:ILE:HG22	2.02	0.60
6:Z:44:GLN:HG3	6:Z:45:LYS:H	1.67	0.60
9:A:209:PRO:HB3	9:A:338:ASP:HB2	1.84	0.60
13:E:309:ARG:O	13:E:313:LEU:HG	2.02	0.60
18:J:11:SER:OG	18:J:13:ASP:OD1	2.18	0.60
5:U:198:LEU:O	5:U:202:VAL:HG13	2.02	0.60
10:B:388:ASP:OD1	10:B:388:ASP:N	2.35	0.60
11:C:281:ASP:OD2	11:C:307:ARG:NH2	2.35	0.60
25:W:296:LEU:HB3	25:W:303:LYS:HD2	1.83	0.60
3:f:305:LEU:HG	3:f:321:MET:HE1	1.83	0.59
10:B:383:LEU:HD23	10:B:423:LYS:HE3	1.84	0.59
11:C:40:GLN:OE1	27:V:495:ARG:NH2	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:438:TYR:OH	19:K:19:GLY:O	2.20	0.59
17:I:33:THR:OG1	17:I:166:ASN:O	2.19	0.59
27:V:146:GLN:HB3	27:V:148:ARG:HE	1.65	0.59
3:f:670:MET:HE3	10:B:68:ILE:HA	1.84	0.59
5:U:542:GLU:HG2	5:U:546:ARG:HH21	1.68	0.59
11:C:91:PRO:HG3	12:D:109:SER:HB3	1.84	0.59
27:V:122:THR:HA	27:V:128:ARG:HD2	1.84	0.59
28:c:216:MET:HA	28:c:219:ASN:ND2	2.17	0.59
6:Z:226:ILE:HD13	25:W:445:LEU:HD21	1.84	0.59
9:A:287:ASP:N	9:A:287:ASP:OD1	2.34	0.59
14:F:256:LEU:HD13	14:F:268:VAL:HG22	1.83	0.59
16:G:56:VAL:HG22	16:G:66:VAL:HG11	1.83	0.59
5:U:533:VAL:O	5:U:537:GLN:NE2	2.35	0.59
5:U:623:GLY:HA2	5:U:659:CYS:HB3	1.84	0.59
9:A:22:ILE:HG23	11:C:159:LYS:HD3	1.84	0.59
27:V:281:ASN:HB3	27:V:284:GLU:HG2	1.85	0.59
5:U:588:MET:HE3	5:U:764:LEU:HD22	1.85	0.59
6:Z:145:HIS:O	6:Z:147:ASP:N	2.36	0.59
8:b:7:MET:HB2	8:b:97:LEU:HD13	1.84	0.59
3:f:206:ASP:O	3:f:210:GLU:HG2	2.03	0.59
4:X:44:GLN:O	4:X:48:GLN:NE2	2.34	0.59
5:U:906:LEU:HD13	5:U:912:ILE:HG21	1.85	0.59
18:J:43:LEU:HD22	18:J:134:VAL:HG21	1.84	0.59
18:J:104:VAL:HG23	18:J:133:ILE:HG22	1.85	0.59
26:g:108:THR:HA	26:g:141:THR:HA	1.84	0.59
2:Y:245:GLU:O	2:Y:249:VAL:HG22	2.03	0.59
6:Z:101:LEU:HD12	25:W:451:MET:CG	2.28	0.59
6:Z:247:LYS:HA	6:Z:247:LYS:HE3	1.84	0.59
11:C:90:HIS:HB3	11:C:91:PRO:HD3	1.84	0.59
21:M:41:CYS:SG	21:M:186:CYS:N	2.75	0.59
11:C:127:LEU:HD23	11:C:128:PRO:HD2	1.84	0.59
5:U:387:ARG:HH22	5:U:426:TYR:HD1	1.50	0.59
9:A:333:ARG:HH12	30:F:501:ATP:H5'1	1.68	0.59
9:A:369:ARG:NH2	19:K:206:MET:O	2.30	0.59
13:E:210:GLU:HB2	13:E:214:LEU:HG	1.85	0.59
20:L:166:GLN:OE1	20:L:169:ARG:NH1	2.35	0.59
27:V:302:TYR:OH	27:V:397:ARG:NH1	2.36	0.59
1:H:39:LYS:NZ	17:I:57:ASP:OD1	2.36	0.58
2:Y:221:THR:HG22	2:Y:256:VAL:HG21	1.85	0.58
4:X:99:MET:N	4:X:99:MET:SD	2.75	0.58
14:F:384:LEU:O	14:F:388:THR:HG23	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Y:348:ASP:O	2:Y:352:GLU:N	2.36	0.58
3:f:882:LEU:HD12	3:f:889:PRO:HD3	1.84	0.58
13:E:362:VAL:HG23	13:E:388:PRO:HA	1.84	0.58
14:F:251:LEU:HD11	14:F:285:ILE:HG12	1.86	0.58
4:X:255:LEU:HB2	4:X:287:LEU:HD13	1.84	0.58
9:A:283:ALA:H	10:B:303:ARG:HH22	1.50	0.58
24:d:90:ALA:O	24:d:94:MET:HG3	2.03	0.58
25:W:420:ASP:N	25:W:420:ASP:OD1	2.35	0.58
2:Y:312:ARG:HH21	4:X:386:ILE:HD11	1.66	0.58
3:f:127:SER:HB3	3:f:142:TYR:HB2	1.85	0.58
7:a:212:ASN:N	7:a:212:ASN:OD1	2.37	0.58
11:C:48:GLN:HB3	12:D:65:GLN:HE22	1.69	0.58
13:E:349:GLU:HA	13:E:352:MET:HB2	1.86	0.58
27:V:167:LEU:O	27:V:171:VAL:HG23	2.04	0.58
4:X:339:ILE:HD13	4:X:350:ILE:HD11	1.85	0.58
5:U:38:ILE:HD12	5:U:38:ILE:H	1.67	0.58
5:U:925:VAL:HG12	5:U:927:PRO:HD3	1.86	0.58
8:b:22:LEU:HB3	8:b:23:PRO:HD2	1.84	0.58
12:D:383:GLY:HA3	13:E:164:ILE:HD13	1.84	0.58
2:Y:381:GLN:HB2	27:V:482:PHE:HZ	1.67	0.58
4:X:57:LEU:O	4:X:61:GLY:N	2.34	0.58
5:U:36:ALA:O	5:U:39:SER:OG	2.22	0.58
5:U:710:ARG:NH2	5:U:738:ASP:OD1	2.34	0.58
27:V:139:MET:SD	27:V:139:MET:N	2.76	0.58
5:U:324:LYS:O	5:U:328:ILE:HG12	2.04	0.58
5:U:625:ILE:HG23	5:U:626:LEU:HG	1.86	0.58
9:A:274:PHE:HB3	9:A:277:ILE:HD13	1.85	0.58
9:A:384:GLU:HG2	10:B:344:PRO:HG2	1.84	0.58
9:A:428:ARG:HE	18:J:20:GLU:HB3	1.68	0.58
5:U:452:ASN:HD21	5:U:757:MET:HE1	1.68	0.58
11:C:36:ASN:HD21	27:V:89:LYS:HB3	1.69	0.58
12:D:297:ASP:OD2	12:D:323:ARG:NH2	2.34	0.58
13:E:349:GLU:HB3	13:E:384:LEU:HD21	1.84	0.58
26:g:162:GLU:HG2	26:g:163:GLU:H	1.69	0.58
28:c:130:GLN:HG2	28:c:162:LEU:HG	1.86	0.58
5:U:522:GLY:O	5:U:559:ARG:NH1	2.36	0.58
7:a:23:HIS:HA	7:a:26:GLU:HB3	1.86	0.58
7:a:174:LYS:NZ	7:a:175:ASP:OD1	2.37	0.57
11:C:162:LYS:HG2	11:C:166:GLU:HG3	1.86	0.57
17:I:116:ASP:OD1	18:J:81:ARG:NH2	2.36	0.57
5:U:31:VAL:HG11	5:U:66:LYS:HB3	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:556:MET:HE3	5:U:563:ALA:HB3	1.87	0.57
12:D:273:LYS:HD2	12:D:274:ARG:N	2.18	0.57
17:I:68:LEU:HD11	17:I:74:CYS:HB3	1.86	0.57
28:c:215:LYS:HA	28:c:218:LEU:HD12	1.87	0.57
5:U:483:LEU:HD11	5:U:781:LEU:HD21	1.86	0.57
12:D:81:ARG:HD2	28:c:152:LYS:HG2	1.86	0.57
21:M:37:ILE:HD11	21:M:193:VAL:HG13	1.86	0.57
13:E:340:GLY:HA3	31:E:401:ADP:C8	2.40	0.57
14:F:410:ARG:NH2	14:F:419:ASP:OD2	2.32	0.57
19:K:46:VAL:HB	19:K:220:VAL:HG22	1.87	0.57
22:O:59:ILE:HG13	22:O:83:LEU:HG	1.86	0.57
3:f:560:LEU:HD21	3:f:798:THR:HG22	1.87	0.57
7:a:112:ILE:HD11	7:a:138:VAL:HG13	1.85	0.57
3:f:794:ALA:O	3:f:798:THR:HG23	2.05	0.57
6:Z:130:ASP:N	6:Z:130:ASP:OD1	2.35	0.57
7:a:226:ARG:NH1	7:a:230:ARG:O	2.34	0.57
14:F:171:ARG:HE	14:F:267:LEU:HD11	1.68	0.57
2:Y:198:ALA:HB2	2:Y:226:VAL:HG12	1.87	0.57
4:X:407:MET:HE2	6:Z:266:ILE:HD13	1.85	0.57
5:U:775:LEU:O	5:U:778:PHE:HB2	2.04	0.57
24:d:171:LEU:HD13	24:d:175:TYR:CE2	2.38	0.57
10:B:271:PHE:O	10:B:275:GLU:HG2	2.05	0.57
20:L:22:ILE:O	20:L:26:MET:HG2	2.04	0.57
20:L:84:LEU:O	20:L:88:MET:HG3	2.05	0.57
27:V:78:HIS:CE1	27:V:104:THR:HG21	2.35	0.57
12:D:204:MET:HE2	12:D:308:ILE:HG22	1.86	0.57
24:d:293:PHE:HB2	24:d:299:MET:HE3	1.85	0.57
27:V:448:GLU:O	27:V:461:LYS:HG2	2.04	0.57
2:Y:68:ASP:N	2:Y:68:ASP:OD1	2.37	0.56
2:Y:173:ASP:OD1	2:Y:173:ASP:N	2.32	0.56
6:Z:14:LEU:HD11	28:c:40:LYS:HG3	1.87	0.56
11:C:40:GLN:HB3	27:V:495:ARG:HH22	1.69	0.56
11:C:264:GLY:O	12:D:280:GLY:N	2.38	0.56
11:C:267:SER:HG	11:C:271:ARG:HH22	1.51	0.56
13:E:206:LYS:HD2	13:E:256:THR:HG22	1.87	0.56
20:L:109:VAL:HG22	20:L:134:ILE:HD12	1.86	0.56
24:d:145:ARG:NH1	24:d:183:PRO:O	2.38	0.56
1:H:38:ILE:HG22	1:H:160:ALA:HB1	1.86	0.56
9:A:336:ARG:NH2	30:F:501:ATP:O1G	2.38	0.56
13:E:206:LYS:HD3	13:E:260:LEU:HB2	1.87	0.56
24:d:120:LYS:O	24:d:124:LEU:HG	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:85:SER:O	3:f:88:SER:OG	2.23	0.56
5:U:204:ILE:HA	5:U:207:ASN:HD21	1.71	0.56
5:U:639:LEU:HD21	12:D:61:ILE:HD11	1.87	0.56
12:D:130:VAL:HG12	12:D:142:VAL:HG22	1.88	0.56
14:F:317:LEU:HD11	14:F:328:VAL:HG11	1.85	0.56
14:F:321:GLN:H	14:F:322:PRO:CD	2.19	0.56
17:I:35:LEU:HD12	17:I:163:CYS:HB2	1.86	0.56
2:Y:122:THR:OG1	2:Y:125:ARG:NH2	2.38	0.56
5:U:443:LEU:HD21	5:U:464:GLN:HG3	1.87	0.56
7:a:70:ARG:HH21	8:b:17:ARG:HA	1.70	0.56
8:b:38:HIS:HA	8:b:42:ARG:NH1	2.21	0.56
3:f:333:LEU:HD21	3:f:873:LEU:HD11	1.88	0.56
5:U:524:LYS:HZ1	5:U:563:ALA:HB2	1.71	0.56
5:U:609:ASP:O	5:U:615:ARG:NH1	2.34	0.56
6:Z:68:TRP:CD1	6:Z:104:ASN:HD21	2.23	0.56
8:b:99:HIS:O	8:b:101:GLN:NE2	2.39	0.56
13:E:331:ILE:HD11	13:E:387:LYS:NZ	2.21	0.56
24:d:212:LEU:HD22	24:d:220:ILE:HD12	1.88	0.56
27:V:410:ILE:HG21	27:V:422:ILE:HG12	1.87	0.56
28:c:127:ILE:HG23	28:c:162:LEU:HD11	1.87	0.56
2:Y:272:PHE:HB3	23:e:56:LEU:HD11	1.88	0.56
3:f:109:ILE:HG12	3:f:113:MET:HG2	1.88	0.56
6:Z:233:VAL:HG23	25:W:438:LEU:HD23	1.87	0.56
9:A:73:ALA:HB3	9:A:78:TRP:CD1	2.39	0.56
9:A:258:ARG:HG2	9:A:301:GLU:OE1	2.06	0.56
9:A:433:ASN:HB2	19:K:82:ILE:HD11	1.88	0.56
11:C:252:ASP:HB2	12:D:290:LEU:HD11	1.86	0.56
13:E:169:GLY:O	13:E:296:ASP:N	2.39	0.56
17:I:178:ASP:OD2	17:I:195:LYS:NZ	2.36	0.56
19:K:145:GLY:HA2	19:K:220:VAL:HG21	1.88	0.56
25:W:39:ARG:HH22	25:W:43:VAL:HG23	1.71	0.56
27:V:309:MET:HB2	27:V:332:LEU:HD13	1.88	0.56
3:f:388:ASP:O	3:f:392:THR:OG1	2.20	0.56
3:f:436:SER:HB3	26:g:170:GLN:HA	1.86	0.56
20:L:188:VAL:HG11	20:L:232:PHE:HD1	1.71	0.56
25:W:363:ILE:HG12	25:W:378:MET:HE2	1.86	0.56
3:f:665:GLU:OE2	3:f:665:GLU:N	2.36	0.56
3:f:688:ARG:O	3:f:724:ASN:ND2	2.38	0.56
3:f:725:SER:O	3:f:729:MET:HG2	2.06	0.56
5:U:369:THR:O	5:U:373:ASN:ND2	2.39	0.56
9:A:23:ARG:HB2	10:B:410:ARG:HH22	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:33:ILE:HD11	28:c:205:ILE:HD11	1.87	0.56
5:U:636:VAL:HG13	5:U:637:VAL:HG23	1.88	0.56
7:a:321:LYS:O	7:a:334:THR:OG1	2.24	0.56
8:b:3:LEU:HD13	8:b:44:ASN:HD21	1.70	0.56
8:b:12:ASN:OD1	8:b:53:THR:OG1	2.24	0.56
9:A:222:LYS:NZ	30:B:501:ATP:O2B	2.37	0.56
13:E:119:VAL:HG22	13:E:201:SER:HB3	1.88	0.56
25:W:42:GLU:O	25:W:46:THR:HG22	2.06	0.56
5:U:533:VAL:HB	5:U:537:GLN:HE22	1.71	0.56
13:E:223:ARG:HG3	13:E:224:ASP:H	1.70	0.56
19:K:31:ILE:HD13	19:K:140:ALA:HB2	1.87	0.56
27:V:98:LEU:HD21	27:V:206:VAL:HG22	1.86	0.56
27:V:452:ASN:OD1	27:V:455:LYS:NZ	2.38	0.56
2:Y:202:LEU:HD11	2:Y:231:LEU:HD11	1.88	0.55
9:A:239:ARG:HH22	9:A:241:ILE:HG12	1.70	0.55
12:D:89:ILE:HB	13:E:78:ARG:HG3	1.87	0.55
18:J:29:GLY:O	18:J:163:ARG:N	2.39	0.55
24:d:95:TYR:HE1	24:d:150:ILE:HD12	1.71	0.55
27:V:290:TYR:OH	27:V:294:ARG:NH2	2.36	0.55
4:X:364:LYS:O	4:X:368:MET:HG3	2.06	0.55
5:U:581:SER:O	5:U:585:THR:OG1	2.23	0.55
7:a:33:LEU:HD23	7:a:35:HIS:H	1.70	0.55
9:A:297:ARG:HD3	14:F:257:VAL:HG21	1.88	0.55
13:E:223:ARG:HD2	13:E:271:HIS:CB	2.36	0.55
21:M:36:ALA:HB1	21:M:49:VAL:HG22	1.88	0.55
5:U:559:ARG:HB3	5:U:562:GLU:HB3	1.87	0.55
11:C:40:GLN:HB3	27:V:495:ARG:NH2	2.21	0.55
24:d:104:ARG:HG2	24:d:106:SER:H	1.70	0.55
25:W:40:LEU:O	25:W:42:GLU:N	2.39	0.55
28:c:121:TRP:HZ3	28:c:123:SER:HB3	1.72	0.55
28:c:158:ASP:OD1	28:c:159:ALA:N	2.40	0.55
5:U:164:GLU:O	5:U:168:LEU:HB2	2.06	0.55
5:U:360:VAL:HG22	5:U:362:ASN:H	1.72	0.55
9:A:254:ALA:O	9:A:258:ARG:HG3	2.05	0.55
21:M:160:TYR:HD2	21:M:163:CYS:HB2	1.71	0.55
28:c:118:PHE:O	28:c:121:TRP:NE1	2.35	0.55
6:Z:227:ILE:HD11	7:a:346:ILE:HD11	1.88	0.55
7:a:140:GLU:O	7:a:143:ASN:ND2	2.40	0.55
11:C:133:PRO:O	11:C:134:LEU:HB2	2.06	0.55
14:F:279:ALA:HB3	14:F:280:PRO:HD3	1.88	0.55
16:G:80:MET:HB3	16:G:87:SER:HB2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:L:137:TYR:CE1	20:L:217:LYS:HA	2.42	0.55
24:d:194:LEU:O	24:d:198:PHE:N	2.35	0.55
27:V:219:GLU:HA	27:V:224:LEU:HD21	1.87	0.55
2:Y:384:SER:O	2:Y:388:ASN:ND2	2.40	0.55
3:f:450:ILE:HD11	3:f:822:VAL:HG21	1.87	0.55
4:X:93:LEU:HD11	4:X:132:ARG:HG2	1.89	0.55
8:b:184:ILE:HG22	8:b:188:ILE:HG13	1.88	0.55
18:J:38:ARG:O	18:J:213:ARG:NH2	2.40	0.55
18:J:64:ALA:O	18:J:88:ARG:NH1	2.40	0.55
25:W:87:ILE:HD12	25:W:104:MET:HE3	1.88	0.55
4:X:70:LEU:HB3	4:X:71:LYS:HZ2	1.72	0.55
5:U:459:ASP:O	5:U:462:LEU:HB3	2.07	0.55
12:D:117:SER:HA	12:D:121:ARG:HH22	1.71	0.55
3:f:672:LEU:HD11	3:f:706:ILE:HG12	1.89	0.55
5:U:524:LYS:NZ	5:U:562:GLU:HG3	2.21	0.55
6:Z:17:LEU:HD12	28:c:39:LEU:HD12	1.89	0.55
10:B:135:ILE:HA	10:B:159:VAL:HB	1.88	0.55
12:D:164:TYR:HD1	12:D:174:LYS:HE2	1.71	0.55
16:G:117:ARG:O	16:G:121:ILE:HG12	2.06	0.55
28:c:63:ASP:O	28:c:139:ARG:NH1	2.36	0.55
28:c:115:HIS:HB3	28:c:118:PHE:HB2	1.88	0.55
2:Y:45:VAL:HG13	2:Y:50:MET:HB3	1.87	0.55
24:d:178:TYR:HB3	24:d:182:LEU:HG	1.87	0.55
27:V:208:ALA:O	27:V:211:TYR:HB2	2.06	0.55
1:H:38:ILE:HD11	1:H:187:ALA:O	2.07	0.55
3:f:445:LEU:HB3	3:f:466:LEU:HD11	1.88	0.55
5:U:494:TYR:OH	5:U:528:ALA:HA	2.07	0.55
5:U:789:ILE:HB	5:U:911:ILE:HG23	1.89	0.55
16:G:86:ASP:OD2	16:G:132:ARG:NH2	2.40	0.55
19:K:36:THR:OG1	19:K:172:SER:O	2.18	0.55
27:V:457:TYR:HE1	27:V:459:GLN:HB2	1.71	0.55
3:f:543:MET:HE1	3:f:583:VAL:HB	1.88	0.54
3:f:606:VAL:HG22	5:U:835:ILE:HD11	1.89	0.54
5:U:267:ASN:O	5:U:270:THR:OG1	2.26	0.54
8:b:51:LEU:HD23	8:b:71:ILE:HG23	1.88	0.54
2:Y:265:GLU:OE1	2:Y:267:ARG:NH2	2.35	0.54
5:U:375:PHE:O	5:U:740:GLY:N	2.36	0.54
5:U:504:ASP:OD1	5:U:541:HIS:NE2	2.40	0.54
10:B:369:THR:HB	10:B:374:LEU:HD21	1.88	0.54
28:c:128:ASN:HA	28:c:131:GLN:OE1	2.07	0.54
12:D:355:SER:OG	12:D:357:GLU:OE1	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:188:ALA:O	13:E:192:ASP:N	2.40	0.54
21:M:8:ASP:O	21:M:22:GLN:NE2	2.34	0.54
24:d:332:SER:HA	28:c:303:MET:HE3	1.89	0.54
27:V:175:MET:HB3	27:V:184:ALA:HB2	1.89	0.54
1:H:114:VAL:O	1:H:118:MET:HG3	2.07	0.54
3:f:378:ASN:HB3	3:f:398:TRP:HH2	1.73	0.54
3:f:674:THR:HG22	10:B:75:GLU:HG3	1.90	0.54
5:U:174:PRO:HA	5:U:177:LEU:HD13	1.89	0.54
6:Z:68:TRP:HZ3	6:Z:70:LEU:HB3	1.73	0.54
7:a:281:THR:HB	7:a:291:LEU:HD21	1.89	0.54
8:b:138:VAL:HB	8:b:160:LEU:HD11	1.89	0.54
9:A:113:ILE:HG21	9:A:149:ILE:HD11	1.89	0.54
10:B:278:ALA:HB3	10:B:279:PRO:HD3	1.89	0.54
12:D:366:ARG:NH2	12:D:400:GLU:OE2	2.32	0.54
13:E:59:GLU:OE1	13:E:60:VAL:N	2.41	0.54
13:E:199:VAL:HG13	14:F:344:ARG:HH21	1.72	0.54
25:W:235:GLN:HG2	25:W:350:ARG:HH21	1.71	0.54
1:H:66:GLU:OE1	1:H:91:ARG:NH2	2.40	0.54
3:f:438:ASP:O	3:f:441:LYS:HB2	2.07	0.54
11:C:75:GLU:N	11:C:75:GLU:OE2	2.40	0.54
13:E:204:VAL:O	13:E:214:LEU:HB3	2.08	0.54
22:O:67:SER:HA	22:O:70:THR:HG22	1.88	0.54
24:d:141:LEU:HB3	24:d:182:LEU:HD11	1.89	0.54
5:U:122:GLU:O	5:U:124:LYS:NZ	2.38	0.54
6:Z:20:VAL:HG22	6:Z:126:VAL:HG23	1.89	0.54
9:A:45:ILE:HD13	10:B:61:LYS:HE2	1.88	0.54
20:L:72:ILE:HG22	20:L:134:ILE:HA	1.89	0.54
5:U:759:SER:HA	5:U:782:ALA:HA	1.89	0.54
8:b:56:ASN:N	8:b:83:LYS:O	2.40	0.54
8:b:58:CYS:HB3	8:b:92:VAL:HG11	1.90	0.54
9:A:347:ASP:OD1	9:A:347:ASP:N	2.36	0.54
10:B:174:MET:HE2	10:B:250:VAL:HG13	1.88	0.54
13:E:143:ARG:HE	13:E:147:GLU:HG3	1.72	0.54
13:E:374:VAL:HG23	13:E:381:GLU:HA	1.90	0.54
14:F:247:THR:HG21	14:F:278:LYS:HG3	1.89	0.54
26:g:115:LYS:HA	26:g:118:GLU:HG2	1.89	0.54
28:c:61:PHE:O	28:c:63:ASP:N	2.39	0.54
8:b:38:HIS:O	8:b:42:ARG:HG2	2.07	0.54
10:B:251:VAL:HG13	11:C:278:ASN:HD22	1.73	0.54
14:F:151:VAL:HG12	14:F:163:THR:HA	1.88	0.54
17:I:8:ARG:HB3	17:I:11:ILE:HG13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:153:SER:OG	17:I:155:ASN:OD1	2.15	0.54
1:H:10:LEU:HD21	1:H:122:THR:HA	1.89	0.54
9:A:25:LEU:HB3	9:A:30:ILE:HD11	1.90	0.54
9:A:174:TYR:CD2	9:A:232:ARG:HD3	2.43	0.54
11:C:345:ARG:O	11:C:349:GLU:HG2	2.07	0.54
25:W:318:SER:N	25:W:383:ASP:OD2	2.38	0.54
2:Y:223:THR:O	2:Y:227:SER:OG	2.19	0.54
2:Y:385:ARG:NH1	2:Y:389:MET:OXT	2.35	0.54
3:f:137:ARG:NH1	3:f:172:GLU:OE1	2.41	0.54
5:U:345:ASN:O	5:U:743:ASN:ND2	2.35	0.54
5:U:356:THR:HG21	5:U:731:ILE:HD13	1.90	0.54
5:U:463:ASN:HA	5:U:466:LYS:HE3	1.90	0.54
5:U:740:GLY:HA3	5:U:744:VAL:HG22	1.90	0.54
6:Z:59:ASP:HB2	8:b:99:HIS:CE1	2.41	0.54
7:a:118:ILE:O	7:a:122:LYS:HB2	2.08	0.54
7:a:252:LYS:HA	7:a:255:TRP:NE1	2.23	0.54
9:A:190:VAL:HG11	9:A:212:VAL:HG23	1.90	0.54
11:C:306:LEU:HD22	11:C:314:LYS:HE3	1.90	0.54
13:E:146:ARG:NH2	13:E:190:GLN:OE1	2.40	0.54
13:E:265:ASP:OD1	13:E:266:GLY:N	2.36	0.54
13:E:316:HIS:CE1	13:E:344:ARG:HB2	2.43	0.54
14:F:304:ARG:O	14:F:308:ARG:HG2	2.08	0.54
3:f:202:HIS:HE2	3:f:855:GLN:HB3	1.73	0.53
5:U:371:ILE:HD11	5:U:732:LEU:HD21	1.90	0.53
5:U:540:GLN:OE1	28:c:68:ARG:NH1	2.42	0.53
9:A:207:GLU:OE1	9:A:210:LYS:NZ	2.40	0.53
12:D:214:MET:HE1	31:D:501:ADP:C5	2.44	0.53
18:J:108:THR:HG21	18:J:145:TYR:HB3	1.90	0.53
21:M:168:ALA:HB1	21:M:171:ALA:HB3	1.89	0.53
24:d:89:GLN:O	24:d:92:THR:OG1	2.23	0.53
3:f:738:ASN:HB3	3:f:741:LEU:HB3	1.89	0.53
8:b:22:LEU:HD13	8:b:28:ALA:HB2	1.88	0.53
21:M:108:LEU:HD11	21:M:137:LEU:HB3	1.89	0.53
3:f:79:ARG:NH1	3:f:124:ASP:OD2	2.41	0.53
3:f:340:MET:HA	3:f:340:MET:HE3	1.90	0.53
3:f:739:ALA:HB3	10:B:208:PRO:HG2	1.90	0.53
5:U:42:VAL:O	5:U:46:GLU:HG2	2.09	0.53
9:A:224:LEU:HD22	30:B:501:ATP:H2'	1.89	0.53
1:H:189:HIS:HB3	1:H:233:ILE:HD11	1.89	0.53
2:Y:214:MET:HE3	2:Y:219:PHE:HD1	1.73	0.53
4:X:57:LEU:HD22	4:X:66:LEU:HD13	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:X:256:LEU:HD22	4:X:319:ILE:HD13	1.90	0.53
5:U:548:LEU:O	5:U:552:ILE:HG12	2.08	0.53
8:b:91:ARG:O	8:b:94:HIS:ND1	2.37	0.53
25:W:413:ILE:HG22	25:W:413:ILE:O	2.08	0.53
27:V:495:ARG:HA	27:V:495:ARG:CZ	2.38	0.53
28:c:41:MET:HG3	28:c:72:VAL:HG21	1.91	0.53
2:Y:80:GLU:O	2:Y:84:LEU:HD22	2.08	0.53
3:f:616:CYS:HA	3:f:650:GLN:HG2	1.90	0.53
5:U:750:SER:N	5:U:754:HIS:O	2.39	0.53
14:F:198:LEU:HD13	14:F:236:LEU:HD22	1.91	0.53
17:I:230:GLN:O	17:I:234:GLU:HG2	2.08	0.53
19:K:203:LYS:HB2	19:K:210:LEU:HD22	1.89	0.53
20:L:22:ILE:HD11	20:L:120:THR:HB	1.90	0.53
4:X:74:ARG:NH2	4:X:113:CYS:SG	2.82	0.53
4:X:160:MET:HE2	4:X:162:ASP:HB2	1.91	0.53
6:Z:77:ASN:OD1	28:c:98:MET:HE1	2.08	0.53
6:Z:187:LEU:O	6:Z:191:ILE:HG12	2.09	0.53
6:Z:279:LYS:HA	6:Z:282:ASN:ND2	2.24	0.53
14:F:61:ARG:NE	14:F:61:ARG:HA	2.22	0.53
28:c:131:GLN:HG3	28:c:162:LEU:HD12	1.89	0.53
3:f:170:TRP:CD2	3:f:211:ILE:HG22	2.44	0.53
13:E:293:GLY:H	13:E:296:ASP:CG	2.17	0.53
17:I:82:ASP:OD2	17:I:128:ARG:NH1	2.37	0.53
19:K:31:ILE:HD11	19:K:158:PRO:HD3	1.91	0.53
19:K:227:HIS:NE2	19:K:233:GLU:OE2	2.35	0.53
27:V:102:PRO:O	27:V:106:ARG:NH2	2.42	0.53
2:Y:45:VAL:HG11	2:Y:54:TYR:HD2	1.73	0.53
3:f:559:PRO:HB2	3:f:594:LEU:HD22	1.90	0.53
13:E:283:ASP:N	13:E:283:ASP:OD1	2.34	0.53
14:F:175:MET:HE1	14:F:256:LEU:HD21	1.90	0.53
2:Y:112:CYS:HB2	2:Y:147:ILE:HD11	1.90	0.53
3:f:327:ASN:HB2	3:f:420:TRP:HB2	1.90	0.53
3:f:514:VAL:O	3:f:518:THR:OG1	2.23	0.53
10:B:142:ASP:OD1	10:B:142:ASP:N	2.41	0.53
10:B:357:ASP:N	10:B:360:THR:OG1	2.42	0.53
13:E:122:MET:HG3	13:E:201:SER:HB2	1.90	0.53
24:d:167:TYR:O	24:d:171:LEU:HG	2.09	0.53
27:V:104:THR:HG22	27:V:107:ARG:HH22	1.73	0.53
28:c:190:GLN:HA	28:c:193:ILE:HD12	1.91	0.53
13:E:98:VAL:HA	13:E:110:TYR:HA	1.91	0.53
13:E:306:GLU:HG3	13:E:309:ARG:HH22	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:260:SER:HA	25:W:263:TRP:CD1	2.44	0.53
11:C:322:GLU:OE1	11:C:325:ARG:NH2	2.41	0.52
23:e:41:ASP:OD1	23:e:41:ASP:N	2.37	0.52
24:d:163:SER:HA	24:d:166:ARG:HD2	1.90	0.52
5:U:422:LEU:O	5:U:425:THR:OG1	2.28	0.52
5:U:804:SER:OG	5:U:805:ASN:N	2.42	0.52
6:Z:74:TYR:CE1	28:c:98:MET:HG3	2.44	0.52
13:E:143:ARG:HD3	25:W:173:THR:HG23	1.89	0.52
2:Y:383:LEU:O	2:Y:387:ILE:HG13	2.09	0.52
5:U:738:ASP:OD1	5:U:742:HIS:NE2	2.41	0.52
7:a:348:GLY:O	7:a:352:ARG:HG3	2.09	0.52
11:C:157:GLN:O	11:C:161:ILE:HG22	2.08	0.52
25:W:327:GLU:OE2	25:W:327:GLU:N	2.32	0.52
28:c:195:GLY:HA2	28:c:198:ARG:HE	1.74	0.52
28:c:279:ASP:OD1	28:c:279:ASP:N	2.42	0.52
2:Y:389:MET:HB3	27:V:95:LEU:HD22	1.91	0.52
3:f:102:HIS:CE1	3:f:105:LYS:HG2	2.44	0.52
3:f:438:ASP:N	3:f:438:ASP:OD1	2.42	0.52
5:U:611:ASN:HB3	5:U:614:VAL:HG12	1.90	0.52
7:a:342:ASP:HB3	7:a:345:GLN:HG2	1.91	0.52
11:C:152:GLY:O	31:C:502:ADP:N6	2.39	0.52
26:g:85:ILE:HD11	26:g:153:ALA:HB2	1.92	0.52
3:f:375:SER:HA	3:f:398:TRP:HZ2	1.74	0.52
6:Z:170:VAL:HA	28:c:152:LYS:HZ3	1.72	0.52
6:Z:173:GLU:OE2	28:c:152:LYS:NZ	2.30	0.52
9:A:45:ILE:HG13	10:B:62:LEU:HD13	1.91	0.52
28:c:136:LEU:HD23	28:c:136:LEU:H	1.74	0.52
1:H:157:ALA:O	17:I:57:ASP:HB3	2.09	0.52
5:U:32:ASN:HA	5:U:70:HIS:CE1	2.45	0.52
5:U:833:LEU:HA	5:U:836:THR:HG22	1.92	0.52
6:Z:74:TYR:CZ	28:c:98:MET:HG3	2.44	0.52
6:Z:125:ASP:HB2	6:Z:128:PRO:HD2	1.92	0.52
9:A:270:CYS:SG	9:A:271:LEU:N	2.83	0.52
10:B:390:LEU:H	10:B:390:LEU:HD23	1.75	0.52
13:E:272:ARG:HH21	13:E:274:LYS:HG3	1.75	0.52
16:G:196:GLU:HA	16:G:242:LEU:HD21	1.91	0.52
18:J:90:GLU:HG2	18:J:110:TYR:CG	2.44	0.52
19:K:84:ASP:OD2	19:K:135:ARG:NH1	2.34	0.52
27:V:259:LEU:HD21	27:V:295:ILE:HD11	1.90	0.52
5:U:458:ILE:HD12	5:U:485:ALA:HB2	1.90	0.52
5:U:496:LEU:HD23	5:U:497:LEU:HD22	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:a:168:ASN:OD1	7:a:171:SER:OG	2.21	0.52
11:C:222:LYS:HA	12:D:240:LEU:O	2.09	0.52
21:M:49:VAL:HG11	21:M:65:ARG:HB2	1.92	0.52
23:e:18:GLU:H	23:e:18:GLU:CD	2.18	0.52
27:V:212:TYR:OH	27:V:216:ARG:NH1	2.43	0.52
3:f:560:LEU:O	3:f:564:LEU:N	2.36	0.52
5:U:645:ASN:HD21	5:U:648:VAL:HG23	1.75	0.52
7:a:84:VAL:HA	7:a:87:MET:HG3	1.91	0.52
9:A:238:ILE:HG21	9:A:260:LEU:HD11	1.91	0.52
12:D:337:ASP:OD1	12:D:337:ASP:N	2.43	0.52
17:I:207:SER:OG	17:I:209:GLU:OE1	2.27	0.52
20:L:125:ARG:NH1	20:L:126:ARG:O	2.40	0.52
3:f:891:THR:HG22	3:f:893:ILE:H	1.75	0.52
5:U:111:GLN:HG2	5:U:126:ILE:HG12	1.92	0.52
10:B:107:MET:HB2	11:C:96:VAL:HB	1.91	0.52
10:B:295:TYR:HE2	10:B:297:SER:HB2	1.75	0.52
11:C:36:ASN:ND2	27:V:89:LYS:O	2.43	0.52
11:C:164:VAL:HG21	11:C:313:ARG:HG3	1.92	0.52
11:C:252:ASP:OD1	11:C:295:THR:OG1	2.27	0.52
12:D:119:ILE:O	12:D:121:ARG:NH1	2.42	0.52
24:d:244:VAL:HG11	24:d:267:ILE:HD12	1.92	0.52
3:f:695:ALA:HA	3:f:732:VAL:HG23	1.91	0.52
3:f:731:MET:HE1	3:f:821:LEU:HD21	1.92	0.52
4:X:417:LYS:NZ	6:Z:277:ASN:OD1	2.35	0.52
5:U:401:LYS:HE3	5:U:437:TYR:HB2	1.91	0.52
5:U:796:LYS:HG2	5:U:798:PRO:HD3	1.92	0.52
6:Z:15:VAL:HG12	6:Z:53:SER:HB3	1.91	0.52
7:a:186:LYS:O	7:a:188:LEU:HG	2.10	0.52
8:b:30:GLN:O	8:b:34:ASN:ND2	2.43	0.52
9:A:285:PHE:CE2	10:B:298:ASN:HA	2.45	0.52
11:C:368:MET:HE1	12:D:191:TYR:CE1	2.43	0.52
16:G:79:VAL:HG13	16:G:139:ILE:HB	1.92	0.52
16:G:165:ALA:HB1	16:G:179:LEU:HD13	1.92	0.52
17:I:46:ALA:HB1	17:I:197:LEU:HD11	1.92	0.52
21:M:23:VAL:O	21:M:27:MET:HG2	2.09	0.52
21:M:52:LEU:HD22	21:M:206:ASP:HB3	1.92	0.52
5:U:26:LYS:HD2	24:d:129:LEU:HD12	1.90	0.51
5:U:185:MET:HE1	5:U:753:GLY:HA3	1.91	0.51
5:U:359:ALA:HB1	5:U:718:ASN:HA	1.92	0.51
6:Z:127:LYS:O	6:Z:129:LYS:NZ	2.43	0.51
8:b:112:PHE:CE1	8:b:141:ILE:HD11	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:263:MET:O	9:A:266:THR:OG1	2.26	0.51
2:Y:83:ARG:O	2:Y:87:GLU:HG2	2.09	0.51
2:Y:186:LEU:HD21	2:Y:214:MET:HE1	1.92	0.51
2:Y:222:TYR:OH	2:Y:285:ASP:OD1	2.21	0.51
3:f:668:ALA:O	3:f:672:LEU:HD23	2.10	0.51
5:U:904:LYS:HD3	5:U:912:ILE:HG22	1.92	0.51
13:E:121:ASN:HD22	14:F:311:LEU:HB3	1.75	0.51
13:E:261:LEU:HD11	13:E:288:ALA:HB1	1.92	0.51
20:L:103:LEU:HD12	20:L:104:PRO:HD2	1.91	0.51
3:f:802:SER:HB2	3:f:809:ILE:HG21	1.91	0.51
10:B:259:TYR:HB2	10:B:262:ASP:OD2	2.09	0.51
10:B:343:ARG:NH1	10:B:344:PRO:O	2.39	0.51
13:E:214:LEU:O	13:E:217:GLU:HG2	2.10	0.51
13:E:259:GLU:O	13:E:263:GLN:HG2	2.10	0.51
14:F:289:ASP:OD1	14:F:332:THR:OG1	2.21	0.51
2:Y:184:GLN:HB3	2:Y:200:LEU:HD13	1.92	0.51
3:f:277:LEU:HD12	3:f:277:LEU:H	1.75	0.51
3:f:699:VAL:HG21	3:f:796:LEU:HD21	1.91	0.51
7:a:148:VAL:HG22	7:a:150:SER:H	1.74	0.51
12:D:264:ILE:HB	12:D:309:MET:HG3	1.92	0.51
13:E:198:VAL:HG13	13:E:203:ILE:HG13	1.92	0.51
13:E:232:MET:SD	13:E:235:ILE:HD12	2.51	0.51
13:E:280:ASN:O	13:E:281:ARG:NE	2.43	0.51
16:G:10:ASP:OD1	16:G:11:ARG:NH1	2.43	0.51
27:V:79:VAL:HG21	27:V:120:PHE:CE2	2.46	0.51
28:c:44:HIS:ND1	28:c:112:TYR:OH	2.34	0.51
3:f:110:TYR:CE2	3:f:123:ALA:HB2	2.45	0.51
5:U:751:ARG:NH2	5:U:785:PRO:O	2.44	0.51
6:Z:184:VAL:HG21	12:D:73:LEU:HD22	1.92	0.51
9:A:143:ASP:OD1	9:A:146:LYS:N	2.38	0.51
10:B:374:LEU:HD12	10:B:378:VAL:HG11	1.91	0.51
13:E:145:LEU:HD11	13:E:183:LEU:HB3	1.91	0.51
24:d:287:ALA:O	24:d:299:MET:HE1	2.09	0.51
25:W:166:LEU:HG	25:W:189:GLN:HG2	1.92	0.51
2:Y:168:ILE:HG23	2:Y:172:GLY:HA3	1.93	0.51
3:f:122:ALA:O	3:f:126:ILE:HG12	2.10	0.51
5:U:104:CYS:HB2	5:U:130:LEU:HD11	1.93	0.51
6:Z:67:VAL:HG21	8:b:91:ARG:HD3	1.93	0.51
11:C:303:SER:HA	11:C:306:LEU:HB2	1.93	0.51
19:K:121:LEU:HD22	20:L:79:ALA:HA	1.91	0.51
22:O:78:THR:O	22:O:82:MET:HG3	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:d:185:SER:O	24:d:188:MET:HG3	2.10	0.51
27:V:231:LEU:HD12	27:V:250:LEU:HD22	1.93	0.51
28:c:54:MET:HB3	28:c:82:VAL:HG13	1.92	0.51
2:Y:362:LYS:NZ	4:X:394:ASP:OD2	2.38	0.51
3:f:395:GLY:O	3:f:399:LEU:HG	2.10	0.51
3:f:416:MET:HB2	3:f:450:ILE:HD13	1.93	0.51
4:X:67:GLY:O	4:X:71:LYS:NZ	2.43	0.51
5:U:465:LEU:HD13	5:U:496:LEU:HD21	1.91	0.51
10:B:43:PRO:HA	10:B:277:HIS:HB3	1.92	0.51
10:B:149:SER:OG	10:B:166:ASP:OD2	2.19	0.51
17:I:198:ASN:HD22	17:I:240:HIS:CE1	2.29	0.51
17:I:239:LYS:O	17:I:243:GLU:HG2	2.10	0.51
5:U:101:ILE:HA	5:U:104:CYS:SG	2.50	0.51
5:U:639:LEU:CD2	12:D:61:ILE:HD11	2.40	0.51
6:Z:72:HIS:ND1	6:Z:115:TYR:OH	2.30	0.51
7:a:58:LYS:HZ2	7:a:83:VAL:HG22	1.75	0.51
9:A:425:ALA:O	9:A:429:TYR:N	2.42	0.51
13:E:182:LEU:HD21	31:E:401:ADP:H2'	1.92	0.51
13:E:200:SER:O	13:E:204:VAL:N	2.43	0.51
17:I:155:ASN:ND2	18:J:77:THR:HB	2.25	0.51
27:V:66:GLU:O	27:V:70:VAL:HG13	2.10	0.51
3:f:583:VAL:O	3:f:588:ARG:NE	2.41	0.51
5:U:325:MET:HA	5:U:325:MET:HE2	1.92	0.51
5:U:520:MET:HB3	5:U:555:VAL:HG23	1.92	0.51
5:U:524:LYS:NZ	5:U:563:ALA:HB2	2.26	0.51
5:U:765:VAL:HG23	5:U:778:PHE:HB3	1.93	0.51
7:a:115:LYS:HA	7:a:118:ILE:HG22	1.93	0.51
10:B:286:GLU:HB3	11:C:274:LEU:HD13	1.93	0.51
13:E:367:PHE:CD1	13:E:387:LYS:HE3	2.46	0.51
27:V:449:ALA:HA	27:V:460:SER:HA	1.93	0.51
3:f:144:LEU:HG	3:f:145:VAL:HG13	1.93	0.51
3:f:446:LEU:O	3:f:450:ILE:N	2.44	0.51
11:C:222:LYS:HD2	12:D:242:GLU:CD	2.36	0.51
12:D:411:GLU:HB3	12:D:412:GLN:OE1	2.10	0.51
12:D:412:GLN:OE1	12:D:412:GLN:N	2.44	0.51
14:F:313:LEU:HD23	14:F:317:LEU:HD23	1.92	0.51
19:K:142:LEU:HD22	19:K:153:LEU:HD11	1.93	0.51
3:f:414:LEU:O	3:f:417:ILE:HG22	2.11	0.50
3:f:679:LEU:HB3	3:f:713:PHE:HE2	1.76	0.50
4:X:134:VAL:HG12	4:X:172:LEU:HD13	1.93	0.50
5:U:371:ILE:HG22	5:U:777:HIS:CE1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Z:192:THR:HG22	7:a:375:LEU:HG	1.93	0.50
9:A:303:ILE:HG23	9:A:336:ARG:CZ	2.42	0.50
12:D:202:VAL:HG12	12:D:329:ARG:HG3	1.92	0.50
13:E:219:PHE:HB3	13:E:223:ARG:NH2	2.20	0.50
13:E:370:ALA:HB1	13:E:384:LEU:HD12	1.92	0.50
14:F:94:ILE:HD11	14:F:125:LYS:HB2	1.92	0.50
17:I:106:PRO:O	17:I:108:GLU:N	2.45	0.50
28:c:37:ALA:O	28:c:41:MET:HG3	2.10	0.50
5:U:885:MET:HB2	5:U:888:GLN:HB2	1.93	0.50
7:a:37:LEU:HD21	7:a:64:ILE:HD11	1.93	0.50
12:D:269:ALA:HB1	13:E:255:ARG:HD3	1.93	0.50
14:F:137:ILE:HD12	14:F:140:VAL:HG23	1.94	0.50
14:F:428:GLN:HG3	14:F:430:LYS:HD2	1.92	0.50
25:W:18:VAL:HB	25:W:57:ALA:HB1	1.93	0.50
27:V:64:GLN:NE2	27:V:68:ASP:OD2	2.44	0.50
3:f:185:LEU:O	3:f:189:LYS:HG2	2.11	0.50
3:f:398:TRP:O	3:f:401:LYS:HG2	2.11	0.50
5:U:419:ALA:HA	5:U:422:LEU:HB3	1.94	0.50
6:Z:94:TRP:CZ2	6:Z:121:LEU:HD22	2.46	0.50
10:B:407:LEU:HG	11:C:178:LEU:HD11	1.93	0.50
17:I:6:ASP:O	17:I:20:GLN:NE2	2.35	0.50
21:M:75:MET:HA	21:M:136:MET:O	2.11	0.50
25:W:24:VAL:HA	25:W:27:ARG:HB2	1.92	0.50
25:W:166:LEU:O	25:W:189:GLN:NE2	2.40	0.50
25:W:211:THR:HA	25:W:214:PHE:CE1	2.46	0.50
3:f:570:GLY:HA2	3:f:599:ALA:HB1	1.93	0.50
3:f:879:ARG:HH21	3:f:895:GLU:HG2	1.76	0.50
7:a:321:LYS:HD2	7:a:336:VAL:HG11	1.92	0.50
9:A:174:TYR:HD2	9:A:232:ARG:HD3	1.76	0.50
9:A:398:ARG:NH2	10:B:199:GLU:OE1	2.44	0.50
12:D:187:HIS:HB3	12:D:190:LEU:HD13	1.93	0.50
21:M:46:VAL:HG22	21:M:215:TRP:HB3	1.92	0.50
25:W:177:MET:HE3	25:W:181:GLU:HG2	1.92	0.50
25:W:240:TYR:OH	25:W:353:ASP:OD2	2.25	0.50
26:g:129:ILE:HB	26:g:136:LEU:HD12	1.93	0.50
2:Y:205:VAL:HA	2:Y:219:PHE:HE2	1.77	0.50
3:f:103:TYR:O	3:f:107:LYS:N	2.37	0.50
7:a:305:ASN:OD1	25:W:377:ARG:NH2	2.44	0.50
9:A:97:ARG:HG2	9:A:139:ARG:HB3	1.93	0.50
11:C:253:SER:HB2	12:D:287:ARG:HG3	1.93	0.50
18:J:173:GLU:HA	19:K:58:LEU:HD21	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:135:LEU:HD22	1:H:146:LEU:HD11	1.92	0.50
3:f:782:HIS:HB3	3:f:787:LEU:HD22	1.92	0.50
4:X:78:ASN:ND2	4:X:120:GLU:OE2	2.44	0.50
5:U:19:LEU:HD13	24:d:124:LEU:HD11	1.92	0.50
9:A:248:LYS:HG3	10:B:259:TYR:HB3	1.94	0.50
11:C:369:TYR:CE2	11:C:385:MET:HG3	2.45	0.50
12:D:290:LEU:HA	12:D:293:LEU:HD12	1.93	0.50
3:f:829:MET:SD	3:f:829:MET:N	2.84	0.50
5:U:475:HIS:ND1	5:U:507:VAL:HG12	2.27	0.50
7:a:274:LEU:HD21	7:a:319:LEU:HD12	1.93	0.50
9:A:215:PHE:CE2	9:A:342:GLU:HG3	2.47	0.50
13:E:22:ILE:HD13	14:F:55:MET:HE3	1.93	0.50
14:F:69:MET:O	14:F:73:ILE:HG12	2.11	0.50
14:F:224:LEU:HD22	14:F:343:LEU:HD11	1.94	0.50
20:L:36:VAL:HG13	20:L:172:LEU:HD11	1.92	0.50
5:U:699:THR:HG22	5:U:814:PRO:HB3	1.94	0.50
8:b:27:GLN:HG2	14:F:53:LYS:HD2	1.92	0.50
11:C:119:ASP:OD1	11:C:120:SER:N	2.38	0.50
13:E:371:VAL:HA	13:E:374:VAL:HG12	1.94	0.50
5:U:40:GLU:CD	27:V:273:LYS:HZ1	2.19	0.50
8:b:31:ASP:O	8:b:35:ILE:HG12	2.12	0.50
11:C:48:GLN:HB3	12:D:65:GLN:NE2	2.27	0.50
12:D:376:ASN:O	12:D:380:GLN:HG2	2.11	0.50
17:I:89:GLU:OE2	17:I:117:ILE:HD13	2.12	0.50
3:f:330:PHE:HE2	3:f:827:PRO:HB3	1.77	0.49
5:U:176:MET:HE2	5:U:177:LEU:HD12	1.93	0.49
9:A:287:ASP:OD1	10:B:298:ASN:ND2	2.44	0.49
9:A:428:ARG:NH1	18:J:24:GLU:OE2	2.45	0.49
13:E:182:LEU:HD13	31:E:401:ADP:H5'1	1.94	0.49
14:F:369:HIS:CE1	14:F:397:LYS:HD2	2.47	0.49
19:K:179:SER:O	19:K:183:GLU:HG2	2.12	0.49
20:L:15:PRO:O	21:M:28:LYS:HD2	2.12	0.49
20:L:188:VAL:HG11	20:L:232:PHE:CD1	2.47	0.49
26:g:103:THR:HG21	26:g:115:LYS:HE3	1.94	0.49
5:U:634:PRO:O	5:U:638:SER:OG	2.15	0.49
9:A:78:TRP:CD1	10:B:138:PHE:HA	2.47	0.49
9:A:159:PRO:O	9:A:163:MET:HG3	2.12	0.49
10:B:169:PRO:HA	10:B:172:THR:HG22	1.94	0.49
10:B:180:PRO:O	10:B:241:ASN:ND2	2.39	0.49
11:C:127:LEU:CD2	11:C:128:PRO:HD2	2.41	0.49
13:E:370:ALA:O	13:E:384:LEU:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:83:LEU:O	25:W:87:ILE:HG12	2.12	0.49
28:c:56:LEU:HD23	28:c:73:PHE:CZ	2.47	0.49
1:H:128:ARG:HH12	16:G:126:THR:HG22	1.77	0.49
2:Y:155:ASP:OD1	2:Y:156:LEU:N	2.46	0.49
3:f:618:GLU:HA	10:B:85:MET:HE1	1.93	0.49
3:f:700:SER:HB2	3:f:779:CYS:SG	2.51	0.49
5:U:339:LEU:O	5:U:343:ILE:HG12	2.11	0.49
6:Z:195:VAL:HG12	6:Z:199:LYS:HD2	1.94	0.49
8:b:128:ALA:HA	8:b:131:LEU:HD12	1.93	0.49
12:D:391:ARG:HH12	12:D:397:LYS:HD2	1.76	0.49
17:I:45:LEU:HG	17:I:137:ILE:HD13	1.94	0.49
18:J:184:ASP:OD1	18:J:184:ASP:N	2.45	0.49
26:g:111:GLU:OE1	26:g:111:GLU:N	2.45	0.49
26:g:120:PHE:HB2	26:g:122:LEU:HD11	1.93	0.49
2:Y:105:MET:HG2	2:Y:127:THR:HG21	1.95	0.49
3:f:373:ALA:HB2	3:f:760:PHE:HD1	1.77	0.49
6:Z:169:GLU:HG2	28:c:152:LYS:HE2	1.94	0.49
8:b:147:GLU:CD	8:b:147:GLU:H	2.21	0.49
9:A:97:ARG:HA	9:A:139:ARG:HA	1.94	0.49
14:F:421:MET:HA	14:F:424:ILE:HD12	1.95	0.49
3:f:478:ARG:NH1	3:f:510:SER:OG	2.45	0.49
4:X:245:PRO:O	4:X:248:ILE:HG22	2.12	0.49
4:X:392:PRO:O	4:X:393:VAL:HB	2.10	0.49
5:U:187:LEU:HD22	12:D:45:LYS:HB3	1.94	0.49
6:Z:57:PRO:HG3	28:c:102:THR:HA	1.95	0.49
11:C:63:LEU:HD21	12:D:78:GLU:HB2	1.94	0.49
11:C:72:TYR:CE2	11:C:118:ASN:HA	2.47	0.49
13:E:331:ILE:HD12	13:E:367:PHE:HB3	1.93	0.49
17:I:17:ARG:NH1	17:I:22:GLU:OE1	2.45	0.49
1:H:112:GLN:HG2	1:H:155:TYR:CZ	2.48	0.49
5:U:187:LEU:HD21	12:D:46:LYS:NZ	2.28	0.49
8:b:157:VAL:HG21	8:b:170:LEU:HB2	1.95	0.49
30:B:502:ATP:O3G	11:C:307:ARG:NH1	2.43	0.49
12:D:338:ARG:O	12:D:339:ARG:HB2	2.13	0.49
16:G:37:LEU:HD22	16:G:53:GLN:HB3	1.94	0.49
25:W:263:TRP:HZ3	25:W:267:LEU:HD12	1.76	0.49
26:g:131:ILE:HG21	26:g:147:VAL:HG22	1.93	0.49
27:V:363:LEU:O	27:V:367:VAL:HG12	2.13	0.49
2:Y:282:MET:HE2	2:Y:288:PHE:CD1	2.47	0.49
3:f:137:ARG:O	3:f:141:LYS:HG2	2.13	0.49
3:f:659:LEU:HA	3:f:662:MET:HG2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:X:177:TYR:CZ	4:X:185:LYS:HD3	2.48	0.49
4:X:316:ASP:HB3	4:X:319:ILE:HB	1.95	0.49
5:U:622:LEU:O	5:U:625:ILE:HG22	2.13	0.49
6:Z:16:LEU:HA	6:Z:19:VAL:HG12	1.94	0.49
7:a:180:LEU:HD22	7:a:221:VAL:HG21	1.94	0.49
8:b:107:MET:HE2	8:b:107:MET:N	2.28	0.49
11:C:100:ASP:HB2	11:C:124:HIS:HA	1.93	0.49
13:E:316:HIS:HE1	31:E:401:ADP:H1'	1.77	0.49
28:c:71:ASP:OD2	28:c:104:ARG:NH1	2.46	0.49
3:f:812:GLY:C	3:f:813:LYS:HD3	2.37	0.49
5:U:352:ILE:HD12	5:U:355:ASN:HD21	1.77	0.49
5:U:499:THR:O	5:U:503:GLN:HG2	2.12	0.49
8:b:4:GLU:HA	8:b:106:LYS:N	2.26	0.49
11:C:31:LEU:HD23	12:D:47:LEU:HB3	1.95	0.49
11:C:113:ARG:HH21	11:C:130:LYS:HA	1.76	0.49
1:H:56:LEU:HB3	16:G:165:ALA:O	2.13	0.49
4:X:67:GLY:O	4:X:71:LYS:HG2	2.11	0.49
7:a:231:GLN:O	7:a:234:ILE:HG22	2.13	0.49
8:b:150:THR:HB	8:b:153:LEU:HB2	1.95	0.49
8:b:161:ASN:O	8:b:161:ASN:ND2	2.44	0.49
10:B:365:PHE:HB3	10:B:380:LEU:HD13	1.95	0.49
24:d:187:TYR:O	24:d:190:GLN:HB3	2.13	0.49
27:V:391:THR:O	27:V:395:ILE:HG12	2.13	0.49
5:U:47:VAL:HA	5:U:50:GLU:HB2	1.95	0.49
10:B:411:ARG:NH2	10:B:418:ASP:OD2	2.43	0.49
13:E:365:GLU:O	13:E:369:LYS:NZ	2.46	0.49
25:W:213:PHE:O	25:W:216:GLU:HG3	2.12	0.49
27:V:168:GLN:HB3	27:V:191:LEU:HD12	1.95	0.49
3:f:498:LEU:O	3:f:502:LEU:HG	2.13	0.48
6:Z:79:TYR:OH	6:Z:90:ARG:HA	2.13	0.48
9:A:229:VAL:O	9:A:233:THR:OG1	2.21	0.48
10:B:290:ILE:HD11	10:B:312:LEU:HD22	1.95	0.48
11:C:303:SER:O	11:C:303:SER:OG	2.28	0.48
11:C:334:ARG:HG3	11:C:335:LYS:HG3	1.94	0.48
14:F:126:THR:HG1	14:F:128:THR:HG1	1.54	0.48
17:I:161:ALA:HB3	18:J:53:LEU:HD13	1.95	0.48
25:W:26:GLN:NE2	25:W:27:ARG:HG2	2.28	0.48
27:V:127:THR:O	27:V:131:LEU:HG	2.13	0.48
1:H:145:TYR:HB3	1:H:147:PHE:HE1	1.78	0.48
3:f:339:ILE:O	3:f:773:LYS:NZ	2.42	0.48
3:f:781:TYR:HB3	3:f:785:ARG:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:45:ILE:O	5:U:48:LEU:HB2	2.13	0.48
5:U:838:LYS:HA	5:U:841:LYS:HD3	1.94	0.48
6:Z:108:ILE:HD12	6:Z:108:ILE:H	1.78	0.48
7:a:38:THR:HA	7:a:41:VAL:HG12	1.95	0.48
10:B:251:VAL:HG22	11:C:278:ASN:ND2	2.28	0.48
13:E:232:MET:SD	13:E:235:ILE:HA	2.54	0.48
19:K:50:VAL:CG1	19:K:66:LYS:HE2	2.39	0.48
19:K:186:HIS:CE1	19:K:189:MET:HG2	2.48	0.48
1:H:130:PHE:O	1:H:151:PRO:HB3	2.12	0.48
2:Y:336:ARG:NH1	23:e:44:ASP:OD1	2.46	0.48
3:f:443:GLY:HA2	3:f:446:LEU:HG	1.96	0.48
3:f:609:VAL:HG13	3:f:657:ILE:HG23	1.95	0.48
5:U:615:ARG:O	5:U:619:VAL:HG23	2.13	0.48
6:Z:233:VAL:HG23	25:W:438:LEU:CD2	2.43	0.48
10:B:80:ARG:HH11	10:B:80:ARG:HG3	1.79	0.48
13:E:229:ILE:HD13	13:E:272:ARG:HH22	1.77	0.48
25:W:48:LEU:HD22	25:W:93:ARG:HH21	1.78	0.48
25:W:114:GLU:CD	25:W:114:GLU:H	2.21	0.48
27:V:337:LEU:HB3	27:V:398:LEU:HD13	1.95	0.48
27:V:493:ALA:C	27:V:495:ARG:H	2.21	0.48
1:H:45:VAL:HG22	1:H:212:ILE:HG22	1.94	0.48
3:f:207:LEU:O	3:f:211:ILE:HG12	2.13	0.48
5:U:475:HIS:CE1	5:U:511:ALA:HB2	2.48	0.48
6:Z:249:PHE:HE1	28:c:302:ALA:HB1	1.79	0.48
7:a:255:TRP:O	7:a:258:GLN:NE2	2.46	0.48
10:B:317:ASP:HB3	10:B:346:ARG:HG2	1.95	0.48
11:C:82:LYS:HA	11:C:105:ILE:HG21	1.94	0.48
13:E:223:ARG:HD2	13:E:271:HIS:CG	2.48	0.48
14:F:417:HIS:CE1	20:L:166:GLN:HG2	2.48	0.48
20:L:212:ILE:HD11	20:L:229:VAL:HG13	1.96	0.48
24:d:168:MET:HE2	24:d:168:MET:HA	1.95	0.48
5:U:153:ILE:O	5:U:157:THR:HG22	2.14	0.48
5:U:324:LYS:HZ1	5:U:328:ILE:HG23	1.79	0.48
5:U:693:LEU:HD12	5:U:736:ILE:HG21	1.95	0.48
5:U:807:LYS:HB2	5:U:808:PRO:HD3	1.96	0.48
9:A:172:VAL:HG21	9:A:227:ARG:HE	1.79	0.48
9:A:203:ASN:OD1	9:A:204:LEU:N	2.46	0.48
11:C:307:ARG:HH21	11:C:309:GLY:HA3	1.79	0.48
13:E:135:ILE:HD13	13:E:186:ALA:HB2	1.95	0.48
18:J:79:ASP:HB3	18:J:127:PHE:HD1	1.77	0.48
24:d:154:TRP:HZ2	24:d:158:ARG:HH21	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:417:ILE:HG12	27:V:422:ILE:HG13	1.95	0.48
1:H:93:LEU:HD13	1:H:113:ARG:HB3	1.94	0.48
3:f:67:ASP:HB3	3:f:70:LEU:HG	1.96	0.48
4:X:137:TYR:HB3	4:X:146:ALA:HB2	1.94	0.48
4:X:153:LEU:HD21	4:X:157:LEU:HD12	1.95	0.48
5:U:203:LYS:O	5:U:207:ASN:ND2	2.47	0.48
8:b:15:TYR:C	8:b:16:MET:HE2	2.38	0.48
16:G:29:PHE:HE1	16:G:157:ALA:HB2	1.77	0.48
19:K:195:ILE:HG23	19:K:217:LEU:HD21	1.95	0.48
26:g:152:LYS:H	26:g:152:LYS:HE2	1.79	0.48
2:Y:282:MET:HE2	2:Y:288:PHE:CG	2.48	0.48
4:X:256:LEU:HA	4:X:259:ILE:HD12	1.96	0.48
5:U:200:VAL:O	5:U:204:ILE:HG12	2.13	0.48
8:b:9:CYS:O	8:b:112:PHE:N	2.45	0.48
8:b:180:ALA:HB1	8:b:183:LEU:HB2	1.96	0.48
12:D:231:VAL:HG13	12:D:233:SER:H	1.79	0.48
23:e:21:GLU:HB2	27:V:256:ARG:CZ	2.44	0.48
24:d:140:GLN:O	24:d:143:LEU:HD12	2.13	0.48
27:V:333:ILE:O	27:V:337:LEU:HD23	2.14	0.48
3:f:71:TYR:OH	3:f:109:ILE:HD11	2.14	0.48
4:X:171:LEU:HD13	4:X:210:LEU:HD22	1.96	0.48
5:U:241:ASN:O	5:U:243:LEU:N	2.42	0.48
5:U:681:ASN:ND2	5:U:723:ASP:OD2	2.47	0.48
5:U:786:THR:O	5:U:786:THR:OG1	2.30	0.48
9:A:333:ARG:NE	30:F:501:ATP:O1G	2.46	0.48
9:A:371:GLU:OE2	19:K:204:GLN:NE2	2.44	0.48
11:C:251:ILE:HG12	11:C:293:MET:HE3	1.95	0.48
20:L:33:SER:O	20:L:62:LYS:NZ	2.47	0.48
27:V:224:LEU:O	27:V:257:ASN:ND2	2.38	0.48
3:f:801:VAL:HA	3:f:804:LEU:HD12	1.96	0.48
4:X:240:ASP:OD1	4:X:279:TYR:OH	2.28	0.48
7:a:72:ASN:OD1	8:b:17:ARG:NH2	2.45	0.48
10:B:64:LYS:O	10:B:68:ILE:HG13	2.13	0.48
23:e:42:ASN:N	23:e:45:ASP:OD2	2.46	0.48
25:W:73:MET:HA	25:W:73:MET:HE3	1.95	0.48
9:A:308:GLY:HA2	14:F:234:THR:HG21	1.96	0.48
13:E:265:ASP:O	13:E:294:ARG:NE	2.46	0.48
20:L:47:VAL:HG12	20:L:212:ILE:HG12	1.95	0.48
24:d:191:LEU:HA	24:d:194:LEU:HD12	1.96	0.48
27:V:175:MET:HE3	27:V:178:SER:HB2	1.95	0.48
1:H:39:LYS:HE3	1:H:144:PRO:HG2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:663:GLY:HA2	3:f:781:TYR:OH	2.13	0.47
4:X:112:GLU:HA	4:X:115:GLU:HG2	1.95	0.47
5:U:415:HIS:CD2	5:U:418:GLU:HB3	2.49	0.47
16:G:13:ILE:HD13	16:G:126:THR:HA	1.95	0.47
21:M:69:VAL:HG11	21:M:111:LEU:HD21	1.95	0.47
27:V:215:ALA:HB3	27:V:253:LEU:HD22	1.96	0.47
1:H:65:VAL:HG12	1:H:218:PHE:HZ	1.79	0.47
2:Y:52:PRO:HD2	2:Y:114:ILE:O	2.14	0.47
3:f:297:MET:N	3:f:297:MET:SD	2.87	0.47
3:f:421:ASP:OD1	3:f:421:ASP:N	2.46	0.47
3:f:828:ARG:NH2	3:f:879:ARG:HH22	2.11	0.47
5:U:366:HIS:O	5:U:369:THR:OG1	2.23	0.47
7:a:76:LEU:O	7:a:80:ILE:HG23	2.13	0.47
7:a:289:ARG:HG3	7:a:333:MET:HB3	1.96	0.47
9:A:258:ARG:HH21	14:F:255:GLN:HA	1.77	0.47
10:B:415:THR:OG1	10:B:418:ASP:OD2	2.32	0.47
13:E:198:VAL:HA	13:E:203:ILE:HD12	1.96	0.47
19:K:44:GLU:OE1	19:K:190:THR:OG1	2.31	0.47
19:K:121:LEU:HD23	19:K:160:GLY:HA3	1.96	0.47
24:d:145:ARG:HH22	24:d:184:GLU:HA	1.79	0.47
27:V:296:LYS:HB2	27:V:305:ALA:HB2	1.96	0.47
27:V:495:ARG:HA	27:V:495:ARG:NE	2.29	0.47
2:Y:304:TYR:OH	2:Y:333:GLU:OE1	2.26	0.47
3:f:264:GLU:O	3:f:268:LEU:HG	2.15	0.47
3:f:513:GLU:HB2	3:f:554:TYR:CE1	2.49	0.47
3:f:699:VAL:HG21	3:f:796:LEU:CD2	2.44	0.47
5:U:489:ALA:HA	5:U:520:MET:HE1	1.96	0.47
6:Z:252:LYS:HG3	25:W:425:LEU:HD12	1.97	0.47
7:a:312:MET:HE3	7:a:312:MET:HB2	1.64	0.47
8:b:73:SER:HA	14:F:61:ARG:CZ	2.44	0.47
12:D:284:GLU:OE1	12:D:287:ARG:NH1	2.46	0.47
24:d:344:ARG:O	24:d:348:MET:HG2	2.14	0.47
27:V:67:LEU:O	27:V:70:VAL:HG22	2.14	0.47
27:V:404:LYS:HD3	27:V:446:VAL:HG21	1.96	0.47
3:f:196:MET:HA	3:f:196:MET:HE3	1.97	0.47
3:f:446:LEU:HD21	3:f:480:GLY:HA2	1.96	0.47
5:U:27:LEU:O	5:U:31:VAL:HG23	2.14	0.47
7:a:68:GLU:HB2	7:a:71:VAL:HG23	1.96	0.47
7:a:373:ASP:OD1	24:d:344:ARG:NH1	2.47	0.47
9:A:297:ARG:NH2	14:F:306:VAL:HG21	2.30	0.47
9:A:399:ALA:O	9:A:401:ARG:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:106:PRO:HG3	11:C:121:TYR:CD1	2.49	0.47
12:D:113:VAL:HB	12:D:138:ALA:HA	1.97	0.47
27:V:214:HIS:O	27:V:217:VAL:HG22	2.14	0.47
2:Y:290:PRO:HG2	2:Y:291:HIS:CE1	2.49	0.47
3:f:851:ASP:N	3:f:851:ASP:OD1	2.45	0.47
4:X:126:ARG:O	4:X:130:GLU:HG2	2.13	0.47
5:U:352:ILE:HA	5:U:355:ASN:HD21	1.79	0.47
5:U:450:HIS:CE1	5:U:457:ILE:HG12	2.50	0.47
6:Z:40:LEU:HD11	6:Z:54:PHE:CD2	2.50	0.47
6:Z:204:LYS:HD2	25:W:443:THR:HG21	1.95	0.47
10:B:426:VAL:O	10:B:429:LYS:HD3	2.14	0.47
11:C:220:VAL:HG21	12:D:287:ARG:HD3	1.96	0.47
13:E:223:ARG:HG3	13:E:224:ASP:N	2.30	0.47
13:E:373:LYS:HB2	13:E:384:LEU:HA	1.95	0.47
14:F:436:GLN:HA	20:L:53:GLN:NE2	2.29	0.47
27:V:236:ARG:O	27:V:240:LEU:HG	2.14	0.47
3:f:301:HIS:CD2	3:f:787:LEU:HD21	2.50	0.47
3:f:846:VAL:HB	3:f:868:HIS:NE2	2.30	0.47
6:Z:252:LYS:HE2	28:c:238:CYS:SG	2.54	0.47
7:a:117:ALA:O	7:a:121:LEU:HD12	2.15	0.47
9:A:99:THR:N	9:A:112:ILE:O	2.48	0.47
9:A:258:ARG:NH2	14:F:255:GLN:HA	2.30	0.47
14:F:52:ILE:O	14:F:56:LYS:HG2	2.14	0.47
24:d:251:ILE:HG21	24:d:260:ILE:HG13	1.97	0.47
27:V:86:VAL:HG21	27:V:160:LEU:HD13	1.96	0.47
1:H:75:VAL:HG22	1:H:76:TYR:H	1.79	0.47
5:U:383:ASP:HB2	5:U:386:LEU:HB2	1.96	0.47
5:U:465:LEU:HD22	5:U:496:LEU:HD21	1.97	0.47
5:U:490:ARG:HD2	5:U:493:VAL:HG23	1.97	0.47
6:Z:195:VAL:HG21	7:a:375:LEU:HD11	1.96	0.47
6:Z:225:GLN:CD	6:Z:226:ILE:HG13	2.40	0.47
11:C:63:LEU:HD12	11:C:63:LEU:HA	1.78	0.47
11:C:280:LEU:HD11	11:C:310:ARG:HB3	1.96	0.47
12:D:384:MET:HE3	13:E:164:ILE:HG21	1.96	0.47
14:F:89:LEU:HD21	14:F:126:THR:HB	1.96	0.47
14:F:184:GLN:OE1	14:F:243:GLN:NE2	2.47	0.47
18:J:170:GLU:HA	18:J:173:GLU:OE2	2.13	0.47
19:K:13:ASN:ND2	20:L:124:GLY:O	2.47	0.47
19:K:51:GLU:HA	19:K:215:ILE:HG22	1.97	0.47
19:K:182:GLN:NE2	20:L:55:GLU:OE1	2.48	0.47
21:M:159:GLY:C	21:M:160:TYR:HD1	2.23	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:229:LYS:HE3	21:M:229:LYS:HB3	1.66	0.47
24:d:256:TYR:O	24:d:260:ILE:HG12	2.13	0.47
27:V:68:ASP:O	27:V:71:THR:OG1	2.24	0.47
28:c:164:ASN:HB2	28:c:167:MET:SD	2.54	0.47
1:H:49:GLU:HG3	1:H:199:PHE:CD1	2.50	0.47
3:f:301:HIS:ND1	3:f:301:HIS:O	2.48	0.47
3:f:564:LEU:HD12	3:f:564:LEU:HA	1.80	0.47
6:Z:113:LYS:HA	6:Z:116:CYS:O	2.15	0.47
9:A:195:LEU:HD21	9:A:269:ALA:HB1	1.97	0.47
12:D:101:ALA:HB2	12:D:115:ILE:HD11	1.97	0.47
3:f:369:ARG:HG2	3:f:760:PHE:HB2	1.97	0.47
11:C:148:TYR:H	11:C:206:HIS:HE1	1.62	0.47
11:C:256:SER:HA	11:C:301:LEU:HA	1.97	0.47
13:E:155:ASN:ND2	13:E:157:GLU:OE2	2.48	0.47
14:F:198:LEU:HD11	14:F:329:ILE:HD13	1.96	0.47
14:F:240:CYS:O	14:F:244:THR:OG1	2.21	0.47
14:F:404:GLY:HA2	14:F:415:LEU:HD11	1.96	0.47
16:G:143:ILE:HG12	16:G:220:VAL:HG22	1.97	0.47
20:L:50:LYS:HB3	20:L:59:HIS:HB3	1.95	0.47
23:e:21:GLU:OE1	23:e:21:GLU:N	2.41	0.47
24:d:339:VAL:HG13	28:c:296:ILE:HG23	1.97	0.47
27:V:82:LEU:HD11	27:V:166:TYR:HD2	1.80	0.47
3:f:213:GLN:HE22	3:f:216:MET:HG2	1.79	0.47
6:Z:126:VAL:HA	28:c:216:MET:HE1	1.97	0.47
7:a:15:GLY:HA3	7:a:21:VAL:HG21	1.97	0.47
7:a:249:GLN:O	7:a:253:THR:HG22	2.15	0.47
3:f:105:LYS:HG3	3:f:106:LEU:N	2.30	0.46
3:f:138:GLU:HG3	3:f:141:LYS:HE3	1.98	0.46
4:X:257:CYS:O	4:X:261:LEU:HD12	2.14	0.46
5:U:13:ASP:OD2	24:d:166:ARG:NH2	2.48	0.46
6:Z:96:HIS:CE1	6:Z:123:ILE:HG12	2.50	0.46
7:a:248:PHE:O	7:a:252:LYS:HG2	2.15	0.46
8:b:44:ASN:HB3	8:b:47:ASN:ND2	2.30	0.46
10:B:431:GLN:HG2	10:B:432:GLU:H	1.79	0.46
12:D:273:LYS:HD2	12:D:274:ARG:H	1.80	0.46
25:W:105:VAL:HG23	25:W:128:LEU:HD22	1.97	0.46
28:c:85:GLU:H	28:c:85:GLU:CD	2.23	0.46
2:Y:174:TRP:CD1	11:C:337:ASN:HB3	2.50	0.46
9:A:158:ASP:O	9:A:162:THR:HG23	2.15	0.46
9:A:180:CYS:O	9:A:184:ILE:HG13	2.16	0.46
16:G:202:LEU:HB3	16:G:210:PHE:CE2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:24:VAL:O	19:K:28:ILE:HD12	2.15	0.46
24:d:116:LEU:O	24:d:120:LYS:HG3	2.15	0.46
27:V:268:GLU:O	27:V:272:SER:OG	2.31	0.46
28:c:244:VAL:HG13	28:c:287:HIS:HD2	1.81	0.46
3:f:564:LEU:HA	3:f:567:LEU:HD21	1.97	0.46
5:U:205:TYR:HA	5:U:208:LEU:HD12	1.98	0.46
6:Z:255:ASP:OD1	27:V:467:TYR:OH	2.33	0.46
6:Z:278:ASN:ND2	27:V:494:MET:O	2.48	0.46
7:a:61:GLU:O	7:a:65:SER:N	2.48	0.46
7:a:325:ASP:OD1	7:a:326:GLU:N	2.48	0.46
11:C:257:SER:N	11:C:300:ILE:O	2.45	0.46
13:E:180:LYS:HE3	13:E:301:ILE:HG21	1.96	0.46
13:E:255:ARG:HA	13:E:258:MET:HG3	1.97	0.46
27:V:337:LEU:HD12	27:V:367:VAL:HG11	1.97	0.46
2:Y:58:CYS:HA	2:Y:63:TRP:HB2	1.97	0.46
2:Y:259:TYR:HB2	2:Y:274:SER:HB2	1.97	0.46
3:f:59:LEU:HD12	3:f:74:ALA:HA	1.97	0.46
3:f:391:LEU:HB2	3:f:398:TRP:CZ3	2.51	0.46
3:f:840:LEU:HD23	3:f:900:LEU:HD13	1.98	0.46
9:A:212:VAL:HG22	9:A:339:ARG:HB3	1.97	0.46
10:B:250:VAL:HG11	10:B:255:LEU:HD23	1.96	0.46
10:B:390:LEU:HD12	10:B:395:ILE:HG13	1.98	0.46
11:C:222:LYS:HG3	11:C:223:PHE:CE1	2.51	0.46
13:E:331:ILE:HD11	13:E:387:LYS:HZ1	1.81	0.46
27:V:207:ALA:HA	27:V:210:CYS:SG	2.55	0.46
28:c:251:LEU:HB3	28:c:284:LEU:HG	1.96	0.46
3:f:504:VAL:HB	3:f:518:THR:HG21	1.96	0.46
3:f:695:ALA:HB2	3:f:728:ALA:HA	1.97	0.46
5:U:54:PHE:HB3	5:U:57:ARG:HG2	1.96	0.46
5:U:579:ARG:NH1	5:U:609:ASP:OD1	2.49	0.46
6:Z:106:ILE:HG22	6:Z:155:PHE:HE1	1.81	0.46
6:Z:232:ASP:OD1	6:Z:235:ASN:ND2	2.49	0.46
8:b:26:LEU:HD21	8:b:80:PRO:HD3	1.97	0.46
9:A:186:LYS:HE3	9:A:341:ILE:HG12	1.98	0.46
9:A:292:ASP:O	9:A:294:GLU:N	2.47	0.46
11:C:24:TYR:HB3	12:D:40:LEU:HD12	1.97	0.46
13:E:273:VAL:O	13:E:273:VAL:HG12	2.16	0.46
17:I:72:MET:SD	17:I:107:CYS:HA	2.56	0.46
17:I:229:LYS:N	17:I:232:GLU:OE2	2.48	0.46
27:V:337:LEU:HB3	27:V:398:LEU:CD1	2.45	0.46
28:c:163:ILE:HG23	28:c:201:TYR:HD2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:82:ASP:HB3	1:H:130:PHE:HD1	1.80	0.46
7:a:54:ASP:O	7:a:57:ILE:HG22	2.14	0.46
7:a:174:LYS:O	7:a:178:ARG:HG3	2.16	0.46
9:A:251:GLY:H	9:A:294:GLU:CD	2.23	0.46
11:C:266:ASP:O	11:C:268:GLU:N	2.49	0.46
12:D:120:ASP:OD1	12:D:123:LEU:N	2.47	0.46
16:G:32:ILE:HD12	16:G:137:CYS:HB2	1.97	0.46
16:G:174:GLU:OE1	16:G:174:GLU:N	2.47	0.46
3:f:496:ASP:N	3:f:496:ASP:OD1	2.48	0.46
4:X:87:ARG:HH21	4:X:91:SER:N	2.13	0.46
5:U:805:ASN:N	5:U:891:VAL:O	2.48	0.46
6:Z:275:LEU:HD22	27:V:490:SER:HA	1.97	0.46
7:a:251:LEU:HB3	7:a:255:TRP:CH2	2.51	0.46
9:A:122:VAL:HB	14:F:88:TYR:HB2	1.97	0.46
11:C:33:LEU:HD11	27:V:201:ARG:HG2	1.97	0.46
11:C:301:LEU:HD12	11:C:305:LEU:HD11	1.97	0.46
16:G:203:SER:O	16:G:207:SER:N	2.46	0.46
18:J:44:GLY:HA2	18:J:208:LEU:HA	1.98	0.46
23:e:50:ASP:N	23:e:50:ASP:OD1	2.45	0.46
25:W:55:ARG:HD2	25:W:94:ARG:O	2.16	0.46
3:f:527:VAL:HB	3:f:790:GLN:HB3	1.96	0.46
3:f:666:ILE:HG12	10:B:50:PRO:HB2	1.96	0.46
5:U:541:HIS:O	5:U:544:ILE:N	2.47	0.46
9:A:352:THR:HG22	9:A:371:GLU:HA	1.97	0.46
12:D:103:VAL:HG21	12:D:132:LEU:HD21	1.97	0.46
13:E:174:GLY:O	13:E:280:ASN:HA	2.16	0.46
13:E:354:ALA:HA	13:E:388:PRO:HG3	1.98	0.46
14:F:80:ILE:O	14:F:84:LYS:HG2	2.15	0.46
19:K:235:GLU:OE1	19:K:235:GLU:N	2.42	0.46
25:W:72:LYS:O	25:W:76:GLU:HG2	2.16	0.46
25:W:90:LEU:HA	25:W:93:ARG:HG2	1.97	0.46
25:W:213:PHE:O	25:W:213:PHE:HD2	1.98	0.46
26:g:85:ILE:HG13	26:g:151:VAL:O	2.16	0.46
3:f:239:TYR:HD1	10:B:67:ARG:HG3	1.81	0.46
5:U:366:HIS:CE1	5:U:367:THR:HG23	2.51	0.46
5:U:889:LEU:HD12	5:U:908:ILE:HA	1.98	0.46
6:Z:279:LYS:HA	6:Z:282:ASN:HD21	1.80	0.46
7:a:8:LEU:HA	7:a:22:TRP:HZ3	1.80	0.46
8:b:157:VAL:HG11	8:b:170:LEU:HB2	1.98	0.46
10:B:141:LYS:HA	10:B:144:LEU:HD23	1.98	0.46
24:d:180:GLU:CD	24:d:180:GLU:H	2.24	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:216:ARG:O	27:V:219:GLU:HB2	2.16	0.46
27:V:236:ARG:HD3	27:V:240:LEU:HD21	1.97	0.46
2:Y:127:THR:O	2:Y:131:THR:OG1	2.27	0.46
2:Y:183:TYR:CE1	2:Y:213:LEU:HD21	2.51	0.46
3:f:149:GLU:HG3	3:f:150:GLU:HG2	1.97	0.46
9:A:135:GLU:H	9:A:138:MET:HE3	1.81	0.46
11:C:213:ARG:HD2	12:D:299:PHE:CD2	2.51	0.46
13:E:121:ASN:HB3	14:F:311:LEU:HD13	1.97	0.46
13:E:271:HIS:ND1	13:E:271:HIS:O	2.49	0.46
13:E:384:LEU:HD12	13:E:387:LYS:HZ3	1.80	0.46
13:E:384:LEU:HD23	13:E:385:ASP:H	1.80	0.46
14:F:202:ILE:HD13	14:F:327:LYS:HB3	1.97	0.46
19:K:67:ILE:HG12	19:K:216:GLU:OE2	2.16	0.46
20:L:185:ASN:O	20:L:188:VAL:HG12	2.16	0.46
21:M:72:HIS:NE2	21:M:105:ASN:HB3	2.31	0.46
25:W:67:LEU:HD22	25:W:90:LEU:HD13	1.97	0.46
26:g:112:LEU:O	26:g:115:LYS:HG2	2.15	0.46
4:X:414:LEU:HD11	6:Z:273:HIS:HB2	1.97	0.45
5:U:99:THR:O	5:U:103:LYS:HG2	2.16	0.45
5:U:145:HIS:NE2	5:U:149:GLN:OE1	2.43	0.45
5:U:612:ASP:HB3	5:U:647:HIS:CG	2.51	0.45
6:Z:34:ARG:HE	6:Z:96:HIS:CG	2.33	0.45
6:Z:100:LYS:HA	25:W:451:MET:SD	2.56	0.45
6:Z:230:LEU:O	6:Z:233:VAL:HB	2.15	0.45
8:b:122:LYS:HA	8:b:125:VAL:HG22	1.97	0.45
10:B:289:ALA:HB2	11:C:274:LEU:HD12	1.98	0.45
10:B:380:LEU:O	10:B:384:ILE:HG13	2.15	0.45
13:E:281:ARG:HB3	13:E:283:ASP:OD1	2.16	0.45
14:F:225:MET:HB3	14:F:354:PHE:CE1	2.51	0.45
17:I:12:PHE:N	18:J:18:GLN:OE1	2.49	0.45
19:K:24:VAL:HG11	19:K:159:SER:HB3	1.98	0.45
24:d:283:LEU:HD13	24:d:315:TYR:HE1	1.81	0.45
26:g:110:ARG:O	26:g:113:ARG:HG2	2.16	0.45
27:V:372:LEU:HD23	27:V:372:LEU:H	1.80	0.45
3:f:93:PRO:HD3	9:A:36:TYR:CD2	2.51	0.45
3:f:237:VAL:HB	3:f:248:LEU:HD22	1.99	0.45
3:f:735:GLY:HA3	3:f:776:LEU:O	2.15	0.45
5:U:202:VAL:HB	5:U:216:VAL:HG23	1.98	0.45
8:b:51:LEU:C	8:b:52:ILE:HD13	2.41	0.45
10:B:289:ALA:O	11:C:271:ARG:NH1	2.48	0.45
13:E:368:MET:HE2	13:E:368:MET:HA	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:344:ARG:HB3	14:F:345:SER:H	1.58	0.45
17:I:195:LYS:O	17:I:199:LYS:HG2	2.16	0.45
25:W:112:VAL:HG22	25:W:124:LEU:HG	1.98	0.45
25:W:187:LEU:HD23	25:W:225:LYS:HD3	1.99	0.45
25:W:231:ILE:O	25:W:235:GLN:HB2	2.16	0.45
27:V:82:LEU:HD11	27:V:166:TYR:CD2	2.50	0.45
3:f:442:SER:H	3:f:477:MET:HE1	1.81	0.45
6:Z:78:MET:CE	28:c:98:MET:HE2	2.35	0.45
7:a:34:TRP:H	8:b:18:ASN:HB3	1.82	0.45
8:b:111:ALA:HB3	8:b:140:ILE:HD13	1.98	0.45
8:b:134:GLU:HG3	8:b:136:VAL:HG23	1.98	0.45
10:B:217:LYS:HE2	10:B:217:LYS:HA	1.99	0.45
13:E:374:VAL:O	13:E:374:VAL:HG22	2.17	0.45
16:G:72:ILE:HA	16:G:95:ARG:HG2	1.98	0.45
16:G:101:TRP:CH2	16:G:113:MET:HG3	2.51	0.45
19:K:212:ALA:HB2	19:K:235:GLU:HG3	1.98	0.45
21:M:74:GLY:HA3	21:M:224:HIS:CD2	2.51	0.45
22:O:75:ARG:HB2	22:O:78:THR:HG23	1.97	0.45
24:d:117:GLY:HA2	24:d:120:LYS:HE3	1.98	0.45
25:W:27:ARG:O	25:W:30:GLU:HG2	2.15	0.45
2:Y:13:LYS:HA	2:Y:212:GLU:HB2	1.96	0.45
3:f:45:LEU:HD23	3:f:49:ASP:HB3	1.99	0.45
3:f:316:ASP:O	3:f:319:GLU:HG3	2.17	0.45
3:f:882:LEU:HD11	3:f:900:LEU:HD23	1.97	0.45
5:U:341:PHE:CZ	5:U:787:CYS:HB3	2.51	0.45
6:Z:13:PRO:HD3	6:Z:163:GLY:O	2.16	0.45
7:a:176:ALA:HB3	7:a:200:LEU:HD13	1.99	0.45
7:a:191:SER:O	7:a:194:GLN:HG3	2.16	0.45
7:a:364:GLU:HG2	7:a:368:GLU:OE1	2.16	0.45
11:C:23:TYR:CE2	11:C:27:LYS:HD3	2.52	0.45
11:C:326:LEU:HD11	11:C:345:ARG:HG2	1.99	0.45
13:E:312:ILE:HB	13:E:343:LEU:HD12	1.98	0.45
14:F:285:ILE:HG21	14:F:288:LEU:HD13	1.97	0.45
19:K:37:ALA:HB3	19:K:170:ILE:HG12	1.96	0.45
19:K:67:ILE:HB	19:K:229:PHE:HE1	1.82	0.45
24:d:348:MET:HE2	24:d:348:MET:HA	1.99	0.45
25:W:375:MET:HE2	25:W:411:GLY:HA2	1.98	0.45
28:c:134:GLU:HA	28:c:137:SER:O	2.17	0.45
2:Y:15:PRO:HG3	2:Y:147:ILE:HD13	1.99	0.45
3:f:688:ARG:HG2	3:f:720:GLU:HB3	1.99	0.45
5:U:737:LEU:HD23	5:U:737:LEU:HA	1.83	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:68:ASN:HD21	18:J:101:PRO:HB2	1.80	0.45
27:V:313:LEU:HD21	27:V:329:HIS:CE1	2.52	0.45
2:Y:51:ALA:HB3	2:Y:52:PRO:HD3	1.98	0.45
2:Y:314:LEU:HA	4:X:380:GLN:HB3	1.97	0.45
2:Y:376:LEU:HD13	4:X:408:SER:HA	1.99	0.45
3:f:320:ILE:HD11	3:f:837:LEU:HD11	1.97	0.45
3:f:485:LEU:HD23	3:f:501:LEU:HD21	1.99	0.45
4:X:60:THR:HB	4:X:62:GLN:HE22	1.82	0.45
4:X:70:LEU:HB3	4:X:71:LYS:NZ	2.31	0.45
5:U:561:GLU:HA	5:U:564:ASP:OD1	2.16	0.45
6:Z:165:GLU:OE2	6:Z:166:GLU:N	2.49	0.45
10:B:394:ASP:O	10:B:398:ILE:HG12	2.17	0.45
10:B:407:LEU:HD23	10:B:407:LEU:HA	1.82	0.45
12:D:178:ARG:HG2	12:D:182:GLU:OE1	2.16	0.45
12:D:316:THR:HG23	12:D:317:LEU:HD12	1.98	0.45
22:O:81:ARG:O	22:O:85:GLN:HG3	2.16	0.45
25:W:17:GLU:HG2	25:W:58:SER:HB2	1.99	0.45
3:f:776:LEU:HD13	3:f:825:MET:SD	2.56	0.45
5:U:24:LEU:HD11	5:U:48:LEU:HD13	1.97	0.45
5:U:213:PHE:HA	5:U:216:VAL:HG12	1.97	0.45
5:U:354:LYS:HA	5:U:357:LYS:HG2	1.98	0.45
5:U:422:LEU:HG	5:U:426:TYR:CE2	2.51	0.45
5:U:748:LEU:HD23	5:U:760:VAL:HB	1.99	0.45
6:Z:226:ILE:HD13	25:W:445:LEU:HD11	1.99	0.45
7:a:311:VAL:HG21	7:a:331:VAL:HG11	1.98	0.45
8:b:79:GLN:OE1	8:b:79:GLN:HA	2.16	0.45
8:b:95:LEU:O	8:b:98:LYS:HG2	2.17	0.45
9:A:333:ARG:HH21	9:A:336:ARG:CZ	2.30	0.45
10:B:80:ARG:HG3	10:B:80:ARG:NH1	2.32	0.45
10:B:299:SER:O	10:B:302:GLU:N	2.49	0.45
11:C:36:ASN:ND2	27:V:89:LYS:HB3	2.31	0.45
11:C:233:GLU:O	11:C:236:VAL:HG12	2.16	0.45
13:E:149:ILE:O	13:E:153:LEU:HG	2.16	0.45
13:E:305:ASN:OD1	13:E:306:GLU:N	2.49	0.45
21:M:70:ASP:OD1	21:M:99:ARG:NH2	2.50	0.45
21:M:117:MET:HE3	21:M:117:MET:HB3	1.70	0.45
27:V:213:TYR:O	27:V:217:VAL:HG13	2.17	0.45
27:V:279:GLN:CD	27:V:279:GLN:H	2.24	0.45
28:c:161:ARG:HB3	28:c:201:TYR:CE2	2.52	0.45
2:Y:168:ILE:HD12	2:Y:180:LEU:HD22	1.97	0.45
3:f:189:LYS:NZ	3:f:216:MET:HE1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:352:ILE:HA	5:U:355:ASN:ND2	2.32	0.45
7:a:281:THR:HG23	7:a:335:TRP:CH2	2.51	0.45
8:b:29:GLN:HB2	8:b:112:PHE:CD2	2.52	0.45
10:B:140:ASP:OD2	10:B:140:ASP:N	2.49	0.45
14:F:77:SER:O	14:F:81:LYS:HG2	2.17	0.45
19:K:85:ALA:HB2	19:K:139:VAL:HG21	1.99	0.45
1:H:58:ASP:HB3	1:H:61:SER:HB3	1.98	0.45
2:Y:346:LYS:NZ	27:V:414:TYR:O	2.50	0.45
3:f:375:SER:HA	3:f:398:TRP:CZ2	2.51	0.45
5:U:89:ASN:HD21	5:U:100:ILE:HG21	1.82	0.45
5:U:159:ARG:HB3	5:U:162:VAL:HG12	1.99	0.45
5:U:479:LEU:HD23	5:U:479:LEU:HA	1.81	0.45
7:a:156:TYR:HB3	7:a:179:PHE:HB2	1.98	0.45
7:a:188:LEU:HD11	7:a:193:GLN:HG3	1.99	0.45
7:a:189:PRO:HG2	7:a:192:GLU:HB2	1.98	0.45
8:b:41:THR:HB	8:b:42:ARG:HH11	1.80	0.45
13:E:311:ASP:O	13:E:315:ILE:HG22	2.17	0.45
21:M:76:ALA:HB3	21:M:136:MET:HB2	1.99	0.45
27:V:175:MET:HE2	27:V:180:ARG:HB2	1.99	0.45
1:H:21:GLN:OE1	16:G:16:PHE:N	2.43	0.45
1:H:118:MET:HE2	1:H:151:PRO:HA	1.99	0.45
1:H:174:LEU:C	1:H:176:LYS:H	2.25	0.45
3:f:120:ARG:HB3	3:f:147:SER:HB2	1.97	0.45
3:f:126:ILE:HG13	3:f:142:TYR:CD2	2.51	0.45
3:f:160:ARG:NH1	3:f:203:GLU:OE2	2.50	0.45
3:f:479:LEU:HD21	3:f:816:TYR:CZ	2.51	0.45
4:X:239:TYR:HB3	4:X:247:ALA:HB2	1.98	0.45
5:U:377:HIS:HB2	5:U:411:ILE:HG12	1.99	0.45
8:b:155:ALA:O	8:b:159:THR:HG22	2.16	0.45
10:B:78:PHE:HA	10:B:81:ASN:ND2	2.32	0.45
10:B:183:THR:OG1	10:B:184:TYR:N	2.50	0.45
13:E:214:LEU:HD22	13:E:217:GLU:OE2	2.16	0.45
14:F:275:ALA:HB2	14:F:283:ILE:HD11	1.99	0.45
14:F:378:ASP:OD1	20:L:174:ARG:NH2	2.45	0.45
17:I:174:MET:HE3	17:I:174:MET:HB2	1.71	0.45
17:I:198:ASN:HA	17:I:206:LEU:HD13	1.99	0.45
21:M:71:ARG:H	21:M:71:ARG:HG2	1.57	0.45
2:Y:22:LEU:HD22	2:Y:37:VAL:HG13	1.97	0.44
2:Y:382:LYS:HE3	2:Y:382:LYS:HB3	1.77	0.44
3:f:70:LEU:C	3:f:73:PRO:HD2	2.43	0.44
3:f:528:GLY:HA3	3:f:790:GLN:NE2	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:X:229:TYR:HB2	4:X:257:CYS:HB3	1.99	0.44
4:X:282:ARG:O	4:X:285:GLU:HG2	2.16	0.44
5:U:580:ARG:HD3	5:U:613:ASP:HB3	1.98	0.44
9:A:103:ASN:N	9:A:109:PRO:O	2.50	0.44
12:D:410:ASP:O	12:D:413:GLU:HG2	2.17	0.44
16:G:71:LYS:O	16:G:95:ARG:NH1	2.46	0.44
17:I:35:LEU:HD11	17:I:175:LEU:HD11	1.99	0.44
28:c:164:ASN:H	28:c:167:MET:HE1	1.81	0.44
1:H:69:THR:OG1	1:H:71:HIS:ND1	2.47	0.44
2:Y:237:ARG:HA	2:Y:241:ILE:HB	1.98	0.44
2:Y:319:MET:SD	2:Y:334:LEU:HD11	2.57	0.44
3:f:133:MET:HE2	3:f:133:MET:HA	1.99	0.44
3:f:141:LYS:O	3:f:145:VAL:HG22	2.18	0.44
3:f:266:LEU:HD13	3:f:294:MET:HB2	1.98	0.44
3:f:293:GLN:O	3:f:297:MET:HE2	2.17	0.44
3:f:460:ASP:HB2	26:g:133:LYS:HD2	1.99	0.44
10:B:258:LYS:CE	11:C:223:PHE:HB3	2.47	0.44
12:D:212:LYS:NZ	31:D:501:ADP:O2B	2.49	0.44
12:D:271:ALA:O	12:D:317:LEU:HA	2.16	0.44
17:I:143:TYR:HB2	17:I:146:GLN:NE2	2.31	0.44
3:f:330:PHE:O	3:f:333:LEU:HB3	2.18	0.44
3:f:473:ASN:O	3:f:509:LYS:NZ	2.46	0.44
5:U:574:LYS:HD2	28:c:211:GLU:HG2	1.99	0.44
5:U:590:TYR:O	5:U:625:ILE:HD12	2.18	0.44
9:A:365:GLU:HB2	9:A:368:ILE:HD11	2.00	0.44
10:B:394:ASP:HA	11:C:308:PRO:HG2	1.99	0.44
11:C:135:VAL:HA	11:C:138:MET:SD	2.58	0.44
13:E:252:GLU:HG2	13:E:255:ARG:HH21	1.81	0.44
24:d:148:LEU:HB3	24:d:171:LEU:HB3	1.98	0.44
24:d:291:LEU:HB2	24:d:299:MET:HE2	1.98	0.44
28:c:299:CYS:O	28:c:303:MET:HG2	2.17	0.44
2:Y:379:ARG:NH2	4:X:412:ASP:OD1	2.46	0.44
3:f:195:ASN:HA	3:f:200:ALA:HB3	1.98	0.44
3:f:447:ALA:HA	3:f:450:ILE:HG22	2.00	0.44
3:f:828:ARG:HD2	3:f:874:LEU:HB2	2.00	0.44
4:X:378:LEU:HD23	4:X:385:LEU:HB3	1.98	0.44
5:U:105:ILE:C	5:U:105:ILE:HD12	2.42	0.44
5:U:210:LYS:O	5:U:210:LYS:HD2	2.17	0.44
8:b:7:MET:HE2	8:b:52:ILE:HG12	2.00	0.44
8:b:55:ALA:C	8:b:57:ASP:H	2.25	0.44
8:b:106:LYS:C	8:b:107:MET:HE2	2.42	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:100:LYS:HD2	14:F:167:GLU:HG2	2.00	0.44
11:C:91:PRO:HG2	11:C:92:GLU:OE2	2.17	0.44
17:I:57:ASP:OD2	17:I:58:GLU:N	2.51	0.44
24:d:178:TYR:HD1	24:d:181:GLN:HB2	1.81	0.44
25:W:54:THR:HB	25:W:59:ASP:HB3	1.99	0.44
25:W:69:ALA:O	25:W:73:MET:HG2	2.17	0.44
27:V:264:TYR:CE2	27:V:298:ILE:HG13	2.52	0.44
27:V:457:TYR:CE1	27:V:459:GLN:HB2	2.53	0.44
28:c:49:VAL:HG22	28:c:50:PRO:HA	2.00	0.44
2:Y:381:GLN:HB2	27:V:482:PHE:CZ	2.49	0.44
4:X:93:LEU:CD1	4:X:132:ARG:HG2	2.47	0.44
5:U:78:LEU:HD22	5:U:104:CYS:HB3	1.99	0.44
9:A:277:ILE:HG12	9:A:319:MET:SD	2.57	0.44
12:D:156:SER:HA	12:D:159:LYS:HD3	2.00	0.44
13:E:268:ASP:HB3	13:E:271:HIS:NE2	2.33	0.44
13:E:328:TYR:O	13:E:331:ILE:HG22	2.18	0.44
14:F:172:VAL:O	14:F:175:MET:HB2	2.17	0.44
20:L:71:GLY:HA3	20:L:221:PHE:CZ	2.53	0.44
24:d:145:ARG:O	24:d:149:GLU:HG3	2.18	0.44
26:g:108:THR:HG22	26:g:109:GLY:H	1.83	0.44
1:H:128:ARG:NH1	16:G:126:THR:HG22	2.33	0.44
2:Y:186:LEU:HD23	2:Y:201:PHE:HZ	1.83	0.44
3:f:471:LEU:HD23	3:f:471:LEU:H	1.82	0.44
3:f:573:ILE:HG13	3:f:599:ALA:CB	2.47	0.44
3:f:814:SER:HA	3:f:816:TYR:CE2	2.53	0.44
3:f:842:VAL:HG21	3:f:900:LEU:HD22	1.99	0.44
5:U:410:VAL:HG23	5:U:448:LEU:HD12	2.00	0.44
6:Z:225:GLN:NE2	6:Z:226:ILE:HG13	2.32	0.44
7:a:122:LYS:HE3	7:a:130:VAL:HG13	2.00	0.44
8:b:36:VAL:O	8:b:40:LYS:HG2	2.17	0.44
11:C:161:ILE:HD13	11:C:199:LEU:HD22	2.00	0.44
12:D:264:ILE:N	12:D:308:ILE:O	2.51	0.44
14:F:97:LEU:HB2	14:F:121:CYS:SG	2.57	0.44
14:F:321:GLN:CD	14:F:322:PRO:HD3	2.43	0.44
14:F:408:LEU:HD23	14:F:408:LEU:HA	1.85	0.44
17:I:16:GLY:HA3	18:J:24:GLU:HB2	2.00	0.44
19:K:25:GLU:O	19:K:29:GLU:HG2	2.17	0.44
20:L:196:ARG:NH1	20:L:237:GLU:O	2.42	0.44
24:d:232:LEU:HD13	24:d:244:VAL:HG22	1.99	0.44
25:W:108:CYS:HB3	25:W:128:LEU:HD11	1.99	0.44
27:V:68:ASP:CG	27:V:109:ASN:HD21	2.25	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:558:LEU:HB2	3:f:559:PRO:HD3	1.99	0.44
4:X:306:LEU:HD21	4:X:314:ARG:HE	1.82	0.44
5:U:159:ARG:HH21	5:U:162:VAL:HB	1.82	0.44
5:U:412:HIS:CD2	5:U:422:LEU:HD11	2.53	0.44
7:a:61:GLU:HA	7:a:64:ILE:HG22	2.00	0.44
8:b:100:ARG:NE	8:b:102:GLY:O	2.50	0.44
8:b:169:HIS:CD2	8:b:187:PRO:HA	2.53	0.44
14:F:55:MET:O	14:F:59:VAL:HB	2.18	0.44
16:G:84:THR:HB	21:M:156:VAL:HG22	1.99	0.44
16:G:202:LEU:HD23	16:G:202:LEU:HA	1.79	0.44
19:K:174:SER:O	19:K:178:GLN:HB2	2.18	0.44
20:L:112:ILE:HD13	20:L:112:ILE:HA	1.81	0.44
21:M:49:VAL:HB	21:M:212:GLU:HG3	2.00	0.44
26:g:114:SER:HA	26:g:124:GLU:HG3	1.99	0.44
27:V:224:LEU:HB2	27:V:261:TYR:HE1	1.83	0.44
27:V:462:GLU:H	27:V:462:GLU:CD	2.25	0.44
3:f:390:LEU:HD23	3:f:398:TRP:CZ3	2.52	0.44
4:X:123:THR:O	4:X:127:GLN:HG3	2.18	0.44
5:U:348:THR:HG21	5:U:377:HIS:CD2	2.53	0.44
5:U:748:LEU:H	5:U:748:LEU:HD12	1.83	0.44
8:b:9:CYS:HB3	8:b:54:LEU:HD11	2.00	0.44
8:b:141:ILE:HG13	8:b:143:PHE:CZ	2.52	0.44
9:A:120:LYS:HB2	14:F:90:VAL:CG2	2.47	0.44
14:F:153:VAL:HG12	14:F:160:ILE:HA	1.98	0.44
25:W:67:LEU:HB3	25:W:104:MET:HB2	1.98	0.44
25:W:387:ASP:N	25:W:387:ASP:OD1	2.49	0.44
27:V:374:LYS:HE3	27:V:374:LYS:HB3	1.67	0.44
2:Y:101:ARG:O	2:Y:105:MET:HG3	2.18	0.44
3:f:430:ASP:OD1	3:f:431:LYS:N	2.51	0.44
5:U:37:GLU:OE2	27:V:266:GLN:NE2	2.40	0.44
5:U:188:MET:HE1	5:U:194:ARG:HA	1.98	0.44
8:b:6:THR:O	8:b:49:VAL:HA	2.18	0.44
13:E:165:ILE:HD13	13:E:165:ILE:HA	1.90	0.44
13:E:313:LEU:CD2	13:E:343:LEU:HD13	2.45	0.44
13:E:331:ILE:HD12	13:E:367:PHE:CB	2.48	0.44
18:J:26:VAL:HG21	18:J:130:SER:HB2	1.99	0.44
19:K:88:LEU:HD23	19:K:119:LEU:HD23	1.99	0.44
24:d:121:LEU:O	24:d:125:GLU:HG2	2.18	0.44
25:W:373:ILE:HG22	25:W:415:PHE:HE2	1.83	0.44
3:f:792:ALA:O	3:f:796:LEU:HD13	2.18	0.43
5:U:26:LYS:HD3	5:U:26:LYS:HA	1.71	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:a:108:ASP:OD1	7:a:108:ASP:N	2.49	0.43
8:b:75:LEU:HD23	8:b:75:LEU:HA	1.85	0.43
8:b:141:ILE:HA	8:b:171:VAL:O	2.18	0.43
9:A:90:GLU:OE2	10:B:120:HIS:NE2	2.46	0.43
10:B:289:ALA:HB1	11:C:271:ARG:HG3	2.00	0.43
17:I:184:MET:HE3	17:I:184:MET:HB3	1.77	0.43
19:K:157:ASP:C	19:K:157:ASP:OD1	2.61	0.43
25:W:74:CYS:HB2	25:W:83:LEU:HD13	2.01	0.43
25:W:393:LEU:HD11	25:W:402:ILE:HD11	2.00	0.43
27:V:252:ASN:ND2	27:V:287:ARG:HB2	2.33	0.43
2:Y:13:LYS:HG3	2:Y:212:GLU:HA	2.00	0.43
5:U:475:HIS:ND1	5:U:511:ALA:HB2	2.33	0.43
5:U:520:MET:HE2	5:U:520:MET:HA	1.99	0.43
5:U:772:TRP:HB3	5:U:775:LEU:HG	1.99	0.43
6:Z:37:GLY:HA3	6:Z:95:TYR:CZ	2.53	0.43
7:a:325:ASP:O	7:a:329:LYS:HA	2.18	0.43
10:B:269:GLU:OE2	10:B:272:ARG:NH1	2.51	0.43
11:C:254:ILE:HG13	11:C:254:ILE:O	2.17	0.43
12:D:410:ASP:OD1	12:D:411:GLU:N	2.52	0.43
12:D:412:GLN:C	12:D:414:HIS:H	2.26	0.43
16:G:58:ASP:HB3	16:G:61:LEU:HG	2.00	0.43
16:G:77:GLY:HA3	16:G:227:PHE:CD1	2.53	0.43
26:g:154:MET:HA	26:g:154:MET:HE2	1.99	0.43
1:H:72:ILE:HG21	1:H:110:LEU:HD23	2.00	0.43
4:X:299:LEU:HD12	4:X:299:LEU:H	1.83	0.43
5:U:415:HIS:HD2	5:U:418:GLU:HB3	1.82	0.43
5:U:691:SER:O	5:U:695:MET:HB2	2.17	0.43
5:U:802:TYR:HB3	5:U:895:PRO:HB3	2.00	0.43
7:a:13:ASN:N	7:a:13:ASN:OD1	2.50	0.43
10:B:251:VAL:HG23	10:B:254:GLU:OE2	2.18	0.43
10:B:256:ILE:HD12	11:C:271:ARG:HD3	1.99	0.43
12:D:199:PRO:HG3	12:D:329:ARG:HD2	2.00	0.43
12:D:207:PRO:HG2	12:D:335:LEU:HG	2.01	0.43
14:F:53:LYS:O	14:F:57:SER:OG	2.25	0.43
14:F:288:LEU:HG	14:F:338:LEU:HD21	1.99	0.43
17:I:115:CYS:SG	17:I:156:TYR:HB3	2.58	0.43
18:J:109:ARG:HG3	18:J:153:TYR:CE2	2.53	0.43
24:d:163:SER:O	24:d:166:ARG:HG2	2.18	0.43
27:V:401:ASN:HD21	27:V:404:LYS:HE2	1.84	0.43
28:c:210:ASN:OD1	28:c:211:GLU:N	2.51	0.43
28:c:247:GLU:O	28:c:251:LEU:HG	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:138:GLU:HB3	3:f:142:TYR:CZ	2.52	0.43
3:f:708:ASP:OD1	10:B:43:PRO:HD2	2.18	0.43
5:U:15:ASP:OD1	5:U:15:ASP:N	2.51	0.43
5:U:324:LYS:NZ	5:U:328:ILE:HG23	2.33	0.43
6:Z:108:ILE:HD12	6:Z:108:ILE:N	2.34	0.43
6:Z:288:LYS:HE3	6:Z:288:LYS:HB3	1.83	0.43
7:a:87:MET:SD	7:a:88:THR:N	2.91	0.43
12:D:203:LEU:HB2	12:D:327:LEU:HD13	2.01	0.43
14:F:74:LYS:HB3	14:F:74:LYS:HE3	1.56	0.43
27:V:319:HIS:O	27:V:319:HIS:ND1	2.51	0.43
1:H:46:LEU:HD21	1:H:137:CYS:HB3	2.00	0.43
3:f:229:VAL:O	3:f:233:LEU:HG	2.18	0.43
3:f:332:ALA:O	3:f:335:ARG:HG2	2.18	0.43
3:f:513:GLU:OE2	3:f:514:VAL:HG23	2.19	0.43
5:U:583:MET:SD	5:U:605:VAL:HG11	2.58	0.43
7:a:42:LEU:O	7:a:46:GLN:HG2	2.17	0.43
7:a:64:ILE:O	7:a:68:GLU:HB3	2.18	0.43
7:a:70:ARG:NE	8:b:24:THR:OG1	2.52	0.43
7:a:252:LYS:HD2	7:a:255:TRP:NE1	2.27	0.43
10:B:436:GLU:OE1	10:B:436:GLU:N	2.50	0.43
14:F:338:LEU:HD23	14:F:338:LEU:HA	1.77	0.43
18:J:148:ASP:OD1	18:J:149:PRO:HD2	2.19	0.43
18:J:155:ALA:HB3	19:K:63:SER:HB2	2.00	0.43
20:L:4:ASN:HB3	20:L:5:GLN:H	1.52	0.43
20:L:13:TRP:N	21:M:22:GLN:OE1	2.48	0.43
25:W:451:MET:HE2	25:W:451:MET:HB2	1.76	0.43
26:g:136:LEU:HA	26:g:136:LEU:HD23	1.80	0.43
28:c:25:VAL:HG21	28:c:201:TYR:CZ	2.54	0.43
3:f:240:VAL:HG13	3:f:245:ASN:HB3	2.01	0.43
3:f:402:ASN:HB3	3:f:406:GLY:HA3	2.01	0.43
3:f:574:GLU:O	3:f:577:LEU:HG	2.19	0.43
5:U:401:LYS:NZ	5:U:435:SER:OG	2.32	0.43
7:a:175:ASP:OD1	7:a:175:ASP:N	2.52	0.43
9:A:102:ILE:HB	9:A:110:LYS:HB2	2.01	0.43
25:W:106:GLN:HA	25:W:109:CYS:SG	2.59	0.43
27:V:192:MET:HE3	27:V:211:TYR:HD1	1.83	0.43
27:V:192:MET:HE2	27:V:230:PHE:HZ	1.84	0.43
2:Y:19:ILE:HG23	2:Y:41:LEU:HD11	2.01	0.43
2:Y:166:SER:O	2:Y:170:GLU:HG3	2.19	0.43
2:Y:186:LEU:HD22	2:Y:287:LEU:HD21	2.01	0.43
2:Y:285:ASP:OD2	2:Y:288:PHE:N	2.37	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:218:GLU:HB3	3:f:258:LYS:HE3	2.00	0.43
3:f:478:ARG:NH1	3:f:507:ASP:OD2	2.44	0.43
3:f:845:ARG:HD3	3:f:865:PHE:HB2	2.00	0.43
4:X:57:LEU:HD21	4:X:62:GLN:HB2	2.01	0.43
4:X:157:LEU:HA	4:X:157:LEU:HD23	1.73	0.43
4:X:260:MET:HE2	4:X:322:HIS:HB3	2.01	0.43
5:U:583:MET:O	5:U:586:VAL:HG12	2.19	0.43
5:U:754:HIS:CD2	5:U:755:THR:H	2.37	0.43
6:Z:34:ARG:HB2	6:Z:96:HIS:HB2	1.99	0.43
7:a:193:GLN:HB3	7:a:225:LEU:HD11	1.99	0.43
8:b:68:THR:O	8:b:72:LEU:HG	2.19	0.43
11:C:44:ARG:HG3	11:C:45:LEU:N	2.33	0.43
11:C:304:ALA:O	11:C:310:ARG:NH1	2.50	0.43
12:D:244:PRO:HD3	12:D:288:ILE:HG13	2.00	0.43
16:G:54:LYS:NZ	16:G:63:SER:O	2.37	0.43
18:J:9:VAL:HA	19:K:23:GLN:HE22	1.83	0.43
19:K:210:LEU:HD11	19:K:215:ILE:HG12	2.01	0.43
22:O:70:THR:OG1	22:O:72:ARG:NH1	2.52	0.43
2:Y:21:GLN:HA	2:Y:286:TRP:HB3	1.99	0.43
4:X:142:ARG:HB3	4:X:145:GLU:CD	2.44	0.43
5:U:187:LEU:HD13	12:D:45:LYS:HB2	1.99	0.43
5:U:204:ILE:HA	5:U:207:ASN:ND2	2.33	0.43
5:U:367:THR:O	5:U:370:VAL:HB	2.19	0.43
5:U:803:LYS:HD3	5:U:875:PHE:CG	2.54	0.43
6:Z:79:TYR:CD2	6:Z:91:ILE:HG13	2.53	0.43
6:Z:261:TYR:CE1	27:V:479:ARG:HB3	2.54	0.43
7:a:70:ARG:NH2	8:b:17:ARG:HA	2.31	0.43
7:a:145:LEU:HD23	7:a:145:LEU:HA	1.81	0.43
7:a:221:VAL:HG23	7:a:222:LEU:H	1.82	0.43
8:b:21:PHE:HE1	8:b:176:GLY:H	1.66	0.43
9:A:46:LYS:NZ	9:A:50:ASP:OD2	2.52	0.43
9:A:52:ILE:HD13	10:B:72:LEU:HD12	2.01	0.43
14:F:358:ASN:N	14:F:361:ALA:HB3	2.34	0.43
24:d:297:LYS:HA	24:d:297:LYS:HD3	1.84	0.43
25:W:183:VAL:HG21	25:W:213:PHE:CD1	2.53	0.43
3:f:398:TRP:HA	3:f:401:LYS:HE3	2.01	0.43
6:Z:28:LYS:HB3	6:Z:28:LYS:HE2	1.77	0.43
7:a:11:SER:HB2	7:a:56:LEU:HD13	2.01	0.43
9:A:428:ARG:HD2	18:J:23:GLN:HB2	2.00	0.43
10:B:119:ASN:HA	10:B:135:ILE:HB	1.99	0.43
12:D:321:LEU:HD12	12:D:321:LEU:HA	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:310:LEU:HB2	13:E:332:VAL:HG21	2.00	0.43
24:d:258:PHE:O	24:d:262:ILE:HG13	2.19	0.43
25:W:39:ARG:NH2	25:W:43:VAL:HG23	2.34	0.43
25:W:190:MET:HE2	25:W:205:ILE:HG22	2.00	0.43
25:W:272:LEU:HD13	25:W:341:PHE:CE1	2.54	0.43
2:Y:50:MET:HE2	2:Y:113:ARG:O	2.19	0.43
2:Y:175:ASP:O	2:Y:179:ARG:HG3	2.19	0.43
4:X:81:SER:OG	4:X:82:LYS:N	2.52	0.43
6:Z:153:LYS:HE2	6:Z:155:PHE:CE1	2.54	0.43
6:Z:176:LEU:O	6:Z:178:ASP:N	2.52	0.43
9:A:120:LYS:HE2	14:F:90:VAL:HG21	2.01	0.43
13:E:19:HIS:HA	13:E:22:ILE:HG22	2.01	0.43
13:E:344:ARG:HH21	13:E:345:ASN:ND2	2.17	0.43
13:E:380:LEU:HD12	13:E:380:LEU:HA	1.90	0.43
24:d:127:ASN:HD22	24:d:136:LEU:HD21	1.84	0.43
27:V:226:VAL:HG23	27:V:227:VAL:HG13	2.01	0.43
28:c:97:ASP:O	28:c:100:LYS:HG2	2.18	0.43
3:f:225:ALA:O	3:f:229:VAL:HG12	2.19	0.42
3:f:608:LYS:HD3	3:f:608:LYS:HA	1.76	0.42
5:U:92:ASP:HA	5:U:97:VAL:HG11	2.00	0.42
5:U:201:LEU:HD23	5:U:201:LEU:HA	1.87	0.42
5:U:641:SER:HB2	5:U:675:MET:CE	2.49	0.42
6:Z:272:LEU:HD23	6:Z:272:LEU:HA	1.86	0.42
7:a:312:MET:SD	25:W:314:LEU:HD13	2.59	0.42
8:b:16:MET:HE2	8:b:16:MET:N	2.34	0.42
9:A:362:MET:HE2	9:A:362:MET:HB3	1.89	0.42
10:B:381:ASP:HA	10:B:384:ILE:HD12	1.99	0.42
13:E:254:GLN:O	13:E:258:MET:HG3	2.19	0.42
13:E:289:LEU:O	13:E:295:LEU:HB2	2.19	0.42
13:E:330:ALA:HB1	13:E:368:MET:HE3	2.00	0.42
13:E:334:LEU:HB2	13:E:371:VAL:HG13	2.00	0.42
16:G:43:ARG:HH21	16:G:164:LYS:HG2	1.83	0.42
17:I:155:ASN:HD22	18:J:77:THR:HB	1.84	0.42
19:K:37:ALA:C	19:K:38:ILE:HD13	2.44	0.42
2:Y:314:LEU:HD13	2:Y:319:MET:HG3	2.01	0.42
3:f:256:PHE:HD2	3:f:268:LEU:HD11	1.83	0.42
3:f:466:LEU:HB2	3:f:485:LEU:HD13	2.01	0.42
3:f:887:PHE:HB3	3:f:900:LEU:HB3	2.00	0.42
4:X:66:LEU:HD12	4:X:66:LEU:HA	1.80	0.42
4:X:417:LYS:C	4:X:419:LYS:H	2.27	0.42
5:U:21:GLU:OE2	5:U:56:SER:HB2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:557:TYR:CE2	5:U:757:MET:HB2	2.54	0.42
5:U:660:CYS:O	5:U:694:ILE:HD13	2.19	0.42
6:Z:67:VAL:HG11	8:b:91:ARG:HB3	1.99	0.42
8:b:11:ASP:OD1	8:b:12:ASN:N	2.52	0.42
11:C:23:TYR:HE2	11:C:27:LYS:HD3	1.84	0.42
11:C:269:VAL:HG21	12:D:287:ARG:CZ	2.49	0.42
11:C:358:GLU:HA	12:D:324:PRO:HG2	2.00	0.42
12:D:371:SER:O	12:D:375:ILE:HG12	2.19	0.42
26:g:163:GLU:O	26:g:167:LYS:HG2	2.19	0.42
27:V:100:MET:O	27:V:103:SER:OG	2.33	0.42
1:H:53:LYS:NZ	12:D:412:GLN:O	2.35	0.42
1:H:158:TRP:CD2	1:H:161:THR:HB	2.55	0.42
5:U:845:GLU:O	5:U:849:LYS:HG3	2.19	0.42
7:a:146:PRO:HA	7:a:152:HIS:CE1	2.55	0.42
8:b:9:CYS:HB2	8:b:111:ALA:HA	2.00	0.42
11:C:339:THR:O	11:C:342:ILE:HB	2.19	0.42
11:C:362:VAL:HG22	11:C:387:VAL:HA	2.01	0.42
12:D:297:ASP:HB3	12:D:326:ARG:HG3	2.02	0.42
14:F:225:MET:HE3	14:F:233:LYS:HB3	2.00	0.42
17:I:4:ARG:HA	17:I:4:ARG:HD2	1.68	0.42
17:I:62:SER:HB2	17:I:65:ILE:O	2.18	0.42
24:d:331:PRO:HG2	27:V:470:ARG:HD2	2.02	0.42
25:W:194:LEU:HD12	25:W:229:LEU:HD22	2.01	0.42
25:W:210:ASN:OD1	25:W:211:THR:N	2.52	0.42
1:H:60:ARG:HH22	16:G:164:LYS:NZ	2.16	0.42
2:Y:372:LYS:HB3	4:X:404:ILE:HG21	2.00	0.42
3:f:100:ARG:N	3:f:101:PRO:HD3	2.33	0.42
5:U:553:ALA:HA	5:U:585:THR:HG23	2.01	0.42
6:Z:69:PHE:CE1	8:b:60:VAL:HG11	2.54	0.42
9:A:393:GLY:HA3	10:B:216:ILE:HG12	2.01	0.42
21:M:63:ASN:HB3	21:M:81:LEU:HD21	2.01	0.42
27:V:338:LEU:HD22	27:V:398:LEU:HB2	2.01	0.42
27:V:398:LEU:O	27:V:402:VAL:HG23	2.19	0.42
2:Y:127:THR:O	2:Y:131:THR:N	2.52	0.42
3:f:185:LEU:C	3:f:189:LYS:HZ3	2.28	0.42
3:f:342:PRO:HG2	3:f:389:LYS:HG3	2.01	0.42
3:f:590:PHE:HB2	3:f:649:HIS:CE1	2.55	0.42
5:U:88:PHE:CG	5:U:89:ASN:N	2.86	0.42
6:Z:21:ASP:OD2	28:c:104:ARG:NH2	2.50	0.42
9:A:215:PHE:CD2	9:A:324:PRO:HG3	2.54	0.42
11:C:142:LYS:HB3	11:C:142:LYS:HE3	1.79	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:364:THR:O	11:C:368:MET:HG2	2.20	0.42
13:E:50:LEU:HD21	14:F:139:LEU:HD11	2.01	0.42
13:E:218:MET:HE3	13:E:219:PHE:CE1	2.55	0.42
13:E:331:ILE:HD12	13:E:367:PHE:CG	2.55	0.42
14:F:312:GLU:O	14:F:316:GLN:HG2	2.19	0.42
17:I:119:GLN:NE2	17:I:123:GLN:OE1	2.39	0.42
18:J:41:VAL:HG23	18:J:211:MET:HB3	2.01	0.42
19:K:202:LEU:HD23	19:K:202:LEU:HA	1.83	0.42
24:d:139:GLN:O	24:d:143:LEU:HG	2.19	0.42
27:V:392:TYR:O	27:V:396:ILE:HG12	2.20	0.42
2:Y:169:GLU:HA	2:Y:169:GLU:OE1	2.19	0.42
2:Y:311:TYR:CB	2:Y:314:LEU:HD23	2.50	0.42
3:f:545:LYS:HD3	3:f:545:LYS:HA	1.85	0.42
4:X:87:ARG:HE	4:X:87:ARG:C	2.23	0.42
5:U:27:LEU:HD22	5:U:38:ILE:HG12	2.01	0.42
5:U:452:ASN:ND2	5:U:757:MET:HE1	2.33	0.42
7:a:118:ILE:O	7:a:122:LYS:CB	2.68	0.42
7:a:221:VAL:HG23	7:a:222:LEU:N	2.35	0.42
8:b:147:GLU:HG2	8:b:150:THR:HG23	2.01	0.42
10:B:347:ILE:HD13	10:B:347:ILE:HA	1.84	0.42
11:C:251:ILE:HD12	11:C:251:ILE:HA	1.92	0.42
14:F:64:HIS:HD1	14:F:64:HIS:C	2.27	0.42
14:F:126:THR:OG1	14:F:128:THR:OG1	2.26	0.42
19:K:89:ILE:O	19:K:93:ARG:HG3	2.19	0.42
19:K:217:LEU:HB2	19:K:234:LEU:HD11	2.02	0.42
25:W:321:VAL:HG22	25:W:351:TRP:HZ2	1.84	0.42
27:V:250:LEU:HD23	27:V:253:LEU:HD12	2.02	0.42
3:f:247:ALA:HA	3:f:250:ARG:NE	2.35	0.42
5:U:108:TYR:CD2	5:U:134:VAL:HG21	2.55	0.42
5:U:405:THR:OG1	5:U:441:GLY:HA3	2.19	0.42
5:U:448:LEU:HA	5:U:483:LEU:HD23	2.00	0.42
5:U:629:THR:OG1	5:U:632:GLN:HG3	2.20	0.42
5:U:900:TYR:HB3	5:U:914:LEU:HD21	2.00	0.42
6:Z:76:GLU:OE2	6:Z:115:TYR:OH	2.29	0.42
11:C:212:ILE:HD13	11:C:237:MET:HE3	2.01	0.42
13:E:331:ILE:O	13:E:371:VAL:HG21	2.20	0.42
14:F:272:PHE:O	14:F:276:LYS:HG2	2.19	0.42
18:J:38:ARG:HH21	18:J:182:GLU:HA	1.84	0.42
24:d:259:PHE:HA	24:d:262:ILE:HD12	2.02	0.42
25:W:280:ASP:OD2	25:W:282:GLU:N	2.50	0.42
26:g:82:ILE:HD13	26:g:102:GLU:CD	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:g:110:ARG:HE	26:g:110:ARG:HB2	1.66	0.42
3:f:231:LEU:HD22	3:f:857:GLY:HA2	2.01	0.42
4:X:339:ILE:HD12	4:X:339:ILE:HA	1.92	0.42
9:A:93:LEU:O	10:B:132:TYR:N	2.38	0.42
9:A:206:ILE:HA	14:F:373:MET:HE2	2.02	0.42
10:B:359:LYS:HB3	10:B:359:LYS:HE3	1.90	0.42
10:B:363:ARG:HD2	10:B:363:ARG:HA	1.90	0.42
12:D:311:THR:HG22	12:D:313:ARG:H	1.84	0.42
12:D:413:GLU:C	12:D:415:GLU:H	2.27	0.42
18:J:47:LYS:HB3	18:J:47:LYS:HE3	1.86	0.42
19:K:186:HIS:O	19:K:189:MET:HG3	2.20	0.42
21:M:90:ILE:HG13	21:M:118:TYR:CE2	2.55	0.42
24:d:138:LYS:O	24:d:142:ILE:HG12	2.20	0.42
27:V:264:TYR:HE2	27:V:294:ARG:HG2	1.83	0.42
7:a:57:ILE:HG13	7:a:61:GLU:HG2	2.01	0.42
8:b:10:VAL:HA	8:b:112:PHE:HB2	2.01	0.42
8:b:33:VAL:HA	8:b:36:VAL:HG22	2.00	0.42
9:A:26:ASP:O	9:A:30:ILE:HG12	2.19	0.42
13:E:62:LYS:HD2	13:E:63:GLN:N	2.35	0.42
20:L:44:ALA:HB3	20:L:215:VAL:HG13	2.02	0.42
3:f:346:ASP:OD1	3:f:351:THR:OG1	2.36	0.42
3:f:653:ALA:O	3:f:657:ILE:HG13	2.19	0.42
3:f:799:VAL:HG21	3:f:821:LEU:HG	2.02	0.42
3:f:813:LYS:HD3	3:f:813:LYS:N	2.35	0.42
4:X:172:LEU:HD23	4:X:172:LEU:HA	1.82	0.42
5:U:105:ILE:HD11	11:C:23:TYR:CE1	2.55	0.42
5:U:381:THR:HA	5:U:412:HIS:ND1	2.34	0.42
5:U:599:ILE:HD13	12:D:53:PHE:HE1	1.85	0.42
6:Z:236:LEU:HD12	6:Z:236:LEU:HA	1.87	0.42
6:Z:249:PHE:CE1	28:c:302:ALA:HB1	2.55	0.42
7:a:35:HIS:NE2	8:b:14:GLU:HB3	2.35	0.42
7:a:134:THR:HA	7:a:137:ASP:OD2	2.20	0.42
7:a:201:GLY:HA3	7:a:233:LEU:HD11	2.01	0.42
8:b:48:ASN:HA	8:b:66:PRO:HA	2.02	0.42
9:A:394:MET:HG2	10:B:349:ARG:NH2	2.35	0.42
17:I:41:ASP:O	17:I:217:THR:HG23	2.20	0.42
19:K:221:GLN:HB2	19:K:224:GLN:HB3	2.02	0.42
24:d:188:MET:SD	24:d:189:HIS:N	2.93	0.42
24:d:212:LEU:HD23	24:d:212:LEU:HA	1.83	0.42
25:W:98:LYS:HD2	25:W:137:TYR:CE2	2.55	0.42
25:W:366:MET:HB3	25:W:370:TYR:CD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:175:MET:HE3	27:V:175:MET:O	2.19	0.42
28:c:57:MET:O	28:c:109:VAL:HG22	2.20	0.42
3:f:657:ILE:HG13	3:f:657:ILE:H	1.75	0.41
5:U:182:LYS:O	5:U:185:MET:HG3	2.20	0.41
5:U:344:ARG:HH21	5:U:927:PRO:HB2	1.84	0.41
5:U:470:ASN:OD1	5:U:474:ARG:NE	2.53	0.41
5:U:646:PRO:HB2	5:U:682:TYR:OH	2.20	0.41
10:B:193:GLN:OE1	10:B:193:GLN:N	2.50	0.41
10:B:258:LYS:HG3	10:B:259:TYR:CE2	2.54	0.41
10:B:398:ILE:HD12	10:B:423:LYS:HA	2.02	0.41
13:E:373:LYS:C	13:E:380:LEU:HD23	2.45	0.41
16:G:51:VAL:HG22	16:G:202:LEU:HD12	2.02	0.41
17:I:63:GLU:HG3	17:I:64:LYS:HG2	2.01	0.41
17:I:192:LEU:HA	17:I:195:LYS:HG2	2.02	0.41
18:J:50:VAL:HB	18:J:54:GLN:HG2	2.02	0.41
20:L:71:GLY:HA3	20:L:221:PHE:CE2	2.55	0.41
24:d:148:LEU:HD23	24:d:148:LEU:HA	1.93	0.41
26:g:79:THR:O	26:g:82:ILE:HG13	2.19	0.41
28:c:168:MET:SD	28:c:169:VAL:HG23	2.60	0.41
3:f:403:LYS:HE2	3:f:403:LYS:HB2	1.87	0.41
3:f:416:MET:O	3:f:416:MET:HG2	2.20	0.41
5:U:479:LEU:HG	5:U:511:ALA:HB1	2.01	0.41
9:A:65:ILE:HG23	9:A:66:LYS:H	1.85	0.41
9:A:73:ALA:HB1	9:A:77:LEU:HD23	2.02	0.41
9:A:92:PRO:HG2	9:A:144:ARG:NH2	2.35	0.41
9:A:161:VAL:HG12	9:A:263:MET:SD	2.61	0.41
10:B:86:LYS:HA	10:B:86:LYS:HD2	1.82	0.41
12:D:96:VAL:HG23	12:D:101:ALA:HA	2.01	0.41
17:I:238:LYS:HD2	17:I:238:LYS:HA	1.77	0.41
19:K:9:ASP:HB3	19:K:22:PHE:HB3	2.02	0.41
19:K:196:LYS:NZ	19:K:240:ASP:O	2.52	0.41
19:K:211:ASN:OD1	19:K:213:THR:HG22	2.20	0.41
21:M:41:CYS:N	21:M:44:GLY:O	2.53	0.41
24:d:172:LYS:HD2	24:d:176:PHE:CE2	2.55	0.41
2:Y:45:VAL:O	2:Y:49:ASN:N	2.53	0.41
3:f:106:LEU:HA	3:f:109:ILE:HG22	2.01	0.41
3:f:906:TYR:HE2	3:f:908:LEU:HD22	1.85	0.41
4:X:114:ILE:HD13	4:X:114:ILE:HA	1.90	0.41
4:X:299:LEU:HD21	4:X:331:LEU:HA	2.02	0.41
5:U:427:LEU:HD13	5:U:438:GLN:HG2	2.02	0.41
7:a:18:GLN:HB2	7:a:19:PRO:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:a:61:GLU:O	7:a:64:ILE:HG22	2.21	0.41
8:b:100:ARG:HH21	8:b:103:LYS:HA	1.86	0.41
9:A:71:GLY:HA3	10:B:162:VAL:HG12	2.02	0.41
9:A:83:ASP:OD2	10:B:137:SER:OG	2.33	0.41
11:C:31:LEU:HA	11:C:34:ILE:HG22	2.01	0.41
13:E:20:LYS:HD3	13:E:20:LYS:HA	1.71	0.41
17:I:187:LYS:HB2	17:I:187:LYS:HE2	1.88	0.41
19:K:142:LEU:HD21	19:K:168:ARG:HB3	2.03	0.41
21:M:123:THR:HG22	21:M:130:PRO:HB3	2.02	0.41
24:d:102:TRP:HA	24:d:107:PRO:HB3	2.01	0.41
24:d:295:THR:HB	24:d:298:LYS:HG3	2.02	0.41
26:g:130:VAL:O	26:g:153:ALA:HA	2.20	0.41
27:V:169:LEU:HA	27:V:172:VAL:HG12	2.01	0.41
27:V:192:MET:HE2	27:V:230:PHE:CZ	2.55	0.41
1:H:86:LEU:HD23	1:H:86:LEU:HA	1.87	0.41
1:H:193:LEU:O	1:H:197:GLU:HG2	2.21	0.41
3:f:291:GLN:HA	3:f:294:MET:HE2	2.03	0.41
3:f:301:HIS:HD2	3:f:787:LEU:HD21	1.85	0.41
3:f:564:LEU:HD11	3:f:794:ALA:HA	2.02	0.41
3:f:691:PRO:HB2	3:f:724:ASN:HB3	2.01	0.41
3:f:831:VAL:HB	3:f:897:PHE:HD1	1.85	0.41
4:X:332:GLU:O	4:X:336:ILE:HG12	2.21	0.41
5:U:407:SER:HA	5:U:410:VAL:HG12	2.02	0.41
5:U:483:LEU:HA	5:U:518:LEU:HD13	2.02	0.41
5:U:558:GLY:N	5:U:588:MET:O	2.38	0.41
6:Z:37:GLY:HA2	6:Z:56:VAL:HG22	2.02	0.41
6:Z:58:PHE:CE2	6:Z:60:GLU:HB2	2.55	0.41
6:Z:101:LEU:HD23	6:Z:121:LEU:HD21	2.02	0.41
7:a:215:GLU:HA	7:a:218:MET:HB2	2.01	0.41
7:a:217:LEU:HD23	7:a:217:LEU:H	1.86	0.41
10:B:189:GLY:HA3	10:B:360:THR:HG22	2.01	0.41
13:E:144:GLU:OE1	13:E:297:ARG:NH2	2.54	0.41
13:E:370:ALA:HB2	13:E:386:TYR:O	2.21	0.41
19:K:142:LEU:HG	19:K:170:ILE:HD13	2.02	0.41
27:V:259:LEU:HD22	27:V:264:TYR:CE2	2.55	0.41
3:f:137:ARG:HA	3:f:137:ARG:NE	2.35	0.41
3:f:679:LEU:HG	3:f:690:VAL:HG11	2.03	0.41
4:X:400:ALA:O	4:X:404:ILE:HG12	2.20	0.41
5:U:443:LEU:HB3	5:U:477:GLY:HA2	2.02	0.41
5:U:659:CYS:SG	5:U:660:CYS:N	2.93	0.41
5:U:710:ARG:HH22	5:U:738:ASP:CG	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Z:39:LEU:HG	6:Z:95:TYR:HD2	1.85	0.41
7:a:142:LEU:HD11	7:a:152:HIS:CD2	2.55	0.41
8:b:11:ASP:O	8:b:29:GLN:NE2	2.49	0.41
9:A:187:LEU:O	9:A:191:VAL:HG22	2.20	0.41
9:A:281:GLY:O	9:A:327:LEU:HA	2.20	0.41
9:A:333:ARG:NH1	30:F:501:ATP:H5'1	2.34	0.41
10:B:225:TYR:CE2	10:B:352:GLU:HG2	2.55	0.41
10:B:298:ASN:OD1	10:B:298:ASN:N	2.54	0.41
10:B:340:ALA:O	10:B:346:ARG:HD2	2.20	0.41
12:D:407:ILE:HD13	12:D:407:ILE:HA	1.87	0.41
13:E:102:MET:SD	28:c:50:PRO:HG3	2.60	0.41
13:E:180:LYS:H	13:E:180:LYS:HG2	1.59	0.41
19:K:84:ASP:N	19:K:84:ASP:OD1	2.53	0.41
20:L:193:ARG:HA	20:L:196:ARG:HD2	2.02	0.41
24:d:109:LEU:HB3	24:d:158:ARG:NH2	2.35	0.41
24:d:119:LEU:HA	24:d:122:VAL:HG22	2.01	0.41
27:V:346:LEU:HA	27:V:349:ARG:HG2	2.02	0.41
27:V:449:ALA:HB1	27:V:458:VAL:HG12	2.03	0.41
1:H:118:MET:HE2	1:H:118:MET:HB3	1.95	0.41
3:f:650:GLN:NE2	3:f:683:GLU:OE2	2.50	0.41
5:U:2:ILE:N	24:d:177:ASP:OD1	2.54	0.41
5:U:552:ILE:O	5:U:555:VAL:HG12	2.21	0.41
5:U:760:VAL:HA	5:U:763:VAL:HG12	2.01	0.41
5:U:775:LEU:HD22	5:U:778:PHE:HE2	1.84	0.41
7:a:78:GLU:O	7:a:82:HIS:ND1	2.47	0.41
9:A:80:LEU:HD22	9:A:82:ALA:HB3	2.01	0.41
10:B:384:ILE:HG13	10:B:384:ILE:H	1.63	0.41
12:D:200:ARG:HD2	12:D:302:ASN:ND2	2.33	0.41
13:E:145:LEU:CD1	13:E:183:LEU:HB3	2.50	0.41
14:F:364:ARG:HH22	14:F:371:ARG:NH2	2.19	0.41
21:M:87:LEU:HD13	21:M:135:PHE:CE1	2.56	0.41
24:d:200:LEU:HD12	24:d:263:LEU:HD11	2.03	0.41
27:V:204:ASP:HA	27:V:207:ALA:HB3	2.02	0.41
27:V:435:GLU:OE2	27:V:453:HIS:ND1	2.37	0.41
28:c:243:SER:O	28:c:247:GLU:HG3	2.20	0.41
2:Y:82:LYS:HA	2:Y:82:LYS:HD2	1.91	0.41
3:f:182:GLU:HB2	3:f:183:PRO:HD3	2.03	0.41
3:f:670:MET:O	3:f:674:THR:HG23	2.19	0.41
3:f:679:LEU:HB3	3:f:713:PHE:CE2	2.55	0.41
4:X:153:LEU:HD22	4:X:169:VAL:HG11	2.02	0.41
5:U:5:ALA:HB3	24:d:173:CYS:SG	2.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:U:596:ASN:HA	5:U:599:ILE:HG22	2.02	0.41
6:Z:25:ARG:HH21	28:c:104:ARG:NH2	2.17	0.41
6:Z:79:TYR:HE2	6:Z:91:ILE:N	2.19	0.41
6:Z:189:GLN:HA	6:Z:192:THR:OG1	2.21	0.41
9:A:334:PRO:HG2	14:F:395:GLN:HG2	2.01	0.41
10:B:245:ALA:HB1	10:B:279:PRO:O	2.21	0.41
12:D:42:SER:O	12:D:46:LYS:HG2	2.21	0.41
12:D:274:ARG:HB2	12:D:318:ASP:OD2	2.21	0.41
12:D:354:LEU:HD22	12:D:358:VAL:HG11	2.02	0.41
16:G:75:ASN:HB2	16:G:108:GLU:OE2	2.21	0.41
18:J:9:VAL:HA	19:K:23:GLN:NE2	2.35	0.41
18:J:200:GLN:OE1	18:J:200:GLN:HA	2.21	0.41
24:d:208:PHE:CD2	24:d:208:PHE:C	2.99	0.41
27:V:237:THR:HG22	27:V:241:ARG:HH12	1.85	0.41
3:f:232:TYR:HB2	3:f:855:GLN:NE2	2.36	0.41
3:f:391:LEU:HG	3:f:414:LEU:HG	2.03	0.41
4:X:155:ARG:O	4:X:159:LYS:HG3	2.20	0.41
4:X:266:ASP:OD1	4:X:266:ASP:N	2.53	0.41
5:U:495:ASP:O	5:U:499:THR:HG23	2.20	0.41
5:U:900:TYR:HB3	5:U:914:LEU:HD11	2.02	0.41
6:Z:10:VAL:HG13	6:Z:49:ASP:HA	2.03	0.41
9:A:166:VAL:HG13	9:A:167:GLU:N	2.36	0.41
10:B:62:LEU:HD12	10:B:62:LEU:HA	1.94	0.41
10:B:431:GLN:OE1	10:B:431:GLN:N	2.53	0.41
11:C:218:GLU:O	11:C:230:MET:HE1	2.21	0.41
12:D:239:TYR:HA	15:v:15:UNK:O	2.20	0.41
13:E:87:LEU:HD21	13:E:109:ARG:HA	2.02	0.41
13:E:117:PRO:HB2	13:E:118:LEU:H	1.61	0.41
13:E:170:CYS:HA	13:E:297:ARG:HB2	2.03	0.41
13:E:203:ILE:HG23	13:E:221:TYR:HD1	1.86	0.41
18:J:40:ILE:HG22	18:J:212:ARG:HG3	2.03	0.41
19:K:48:LEU:CD2	19:K:67:ILE:HD12	2.51	0.41
20:L:45:VAL:HG11	20:L:188:VAL:HG23	2.03	0.41
21:M:39:ILE:HD13	21:M:162:GLY:HA3	2.02	0.41
26:g:140:LYS:HE3	26:g:144:GLU:HG3	2.03	0.41
1:H:43:GLY:HA2	1:H:144:PRO:HB3	2.03	0.41
1:H:86:LEU:HD21	1:H:118:MET:HG2	2.03	0.41
2:Y:50:MET:CG	2:Y:53:TYR:HB3	2.48	0.41
3:f:72:ARG:O	3:f:76:GLU:HB2	2.21	0.41
3:f:89:MET:HE3	10:B:411:ARG:HD3	2.03	0.41
3:f:105:LYS:O	3:f:108:GLU:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:f:816:TYR:HA	3:f:819:TYR:HD2	1.85	0.41
5:U:217:CYS:O	5:U:221:ILE:HG23	2.20	0.41
5:U:229:VAL:HG21	5:U:252:LEU:HD11	2.01	0.41
5:U:368:ALA:HB2	5:U:728:PHE:CE2	2.55	0.41
5:U:478:SER:HB2	5:U:497:LEU:HD11	2.03	0.41
5:U:516:LEU:HA	5:U:519:VAL:HG12	2.02	0.41
5:U:656:LEU:HD23	5:U:656:LEU:HA	1.92	0.41
5:U:842:LYS:HA	5:U:845:GLU:CD	2.45	0.41
6:Z:110:GLU:HG2	6:Z:153:LYS:NZ	2.36	0.41
6:Z:173:GLU:OE2	28:c:152:LYS:HG3	2.21	0.41
7:a:99:LYS:HA	7:a:102:GLU:HG2	2.02	0.41
8:b:18:ASN:N	8:b:18:ASN:OD1	2.52	0.41
9:A:80:LEU:HA	9:A:80:LEU:HD23	1.85	0.41
10:B:401:GLU:OE2	11:C:313:ARG:NH1	2.54	0.41
11:C:66:LEU:HD23	11:C:66:LEU:HA	1.89	0.41
12:D:130:VAL:HG11	12:D:139:LEU:HD11	2.02	0.41
13:E:83:CYS:SG	13:E:84:ARG:N	2.94	0.41
14:F:137:ILE:O	14:F:160:ILE:HB	2.21	0.41
14:F:435:LEU:HB2	14:F:438:TYR:HD2	1.85	0.41
16:G:179:LEU:O	16:G:183:VAL:HG12	2.20	0.41
17:I:66:TYR:CD2	17:I:87:THR:HG21	2.56	0.41
18:J:79:ASP:CG	18:J:125:ARG:HH12	2.28	0.41
18:J:142:PRO:HD3	18:J:213:ARG:HH21	1.86	0.41
19:K:8:TYR:OH	20:L:7:ASP:OD2	2.23	0.41
20:L:105:VAL:O	20:L:109:VAL:HG23	2.20	0.41
21:M:37:ILE:HG22	21:M:164:ALA:HB2	2.02	0.41
24:d:166:ARG:HE	24:d:166:ARG:HB3	1.52	0.41
24:d:209:HIS:HB3	27:V:397:ARG:HH21	1.86	0.41
25:W:27:ARG:O	25:W:27:ARG:NH1	2.54	0.41
27:V:163:VAL:O	27:V:167:LEU:HG	2.20	0.41
27:V:298:ILE:HA	27:V:397:ARG:HH22	1.86	0.41
27:V:317:PRO:HB2	27:V:320:THR:HB	2.02	0.41
1:H:139:TRP:CD1	1:H:215:GLU:HA	2.55	0.41
3:f:444:ALA:O	3:f:447:ALA:HB3	2.21	0.41
3:f:457:ASN:HB2	3:f:461:PRO:HD3	2.03	0.41
3:f:782:HIS:CG	3:f:783:SER:N	2.89	0.41
3:f:783:SER:HB3	3:f:787:LEU:HB2	2.03	0.41
5:U:412:HIS:HD2	5:U:422:LEU:HD21	1.86	0.41
5:U:463:ASN:HA	5:U:466:LYS:HG3	2.02	0.41
5:U:898:CYS:SG	5:U:899:ARG:N	2.94	0.41
8:b:181:ASP:O	8:b:184:ILE:HG13	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:293:MET:HE1	11:C:305:LEU:HD13	2.03	0.41
12:D:267:ILE:HD12	12:D:267:ILE:HA	1.81	0.41
14:F:213:GLU:N	14:F:213:GLU:OE1	2.54	0.41
14:F:289:ASP:O	14:F:293:THR:OG1	2.37	0.41
25:W:396:LEU:HD23	25:W:396:LEU:HA	1.93	0.41
28:c:216:MET:HE2	28:c:216:MET:HB2	1.83	0.41
3:f:47:GLU:HG2	3:f:48:GLU:H	1.85	0.40
3:f:124:ASP:HB3	3:f:154:TRP:CZ2	2.55	0.40
3:f:137:ARG:NH2	3:f:169:GLU:HB2	2.36	0.40
3:f:545:LYS:HG3	3:f:550:LEU:HG	2.03	0.40
3:f:722:SER:O	3:f:726:ILE:HG12	2.21	0.40
5:U:542:GLU:OE2	28:c:32:TYR:OH	2.28	0.40
5:U:645:ASN:HA	5:U:646:PRO:HD3	1.95	0.40
7:a:65:SER:HA	7:a:68:GLU:CD	2.47	0.40
7:a:69:HIS:O	7:a:70:ARG:HD2	2.21	0.40
7:a:226:ARG:HH22	7:a:230:ARG:HB2	1.87	0.40
10:B:251:VAL:HG23	10:B:254:GLU:CD	2.46	0.40
10:B:364:ILE:HD12	30:B:502:ATP:N1	2.36	0.40
11:C:52:LEU:HD12	11:C:52:LEU:HA	1.90	0.40
12:D:215:LEU:HD23	12:D:333:PHE:HZ	1.87	0.40
12:D:350:SER:OG	12:D:351:LYS:HD3	2.21	0.40
13:E:56:ILE:HD12	13:E:102:MET:HA	2.03	0.40
14:F:292:GLY:O	14:F:339:ASP:N	2.53	0.40
18:J:7:ILE:HG12	18:J:18:GLN:HG2	2.02	0.40
25:W:267:LEU:HD23	25:W:267:LEU:HA	1.79	0.40
27:V:403:ILE:O	27:V:407:VAL:HG23	2.20	0.40
28:c:237:HIS:NE2	28:c:294:SER:OG	2.48	0.40
2:Y:26:LEU:HD23	2:Y:26:LEU:HA	1.89	0.40
2:Y:146:ARG:HG2	2:Y:183:TYR:HE1	1.86	0.40
3:f:91:SER:HA	10:B:410:ARG:O	2.21	0.40
3:f:109:ILE:O	3:f:113:MET:HG2	2.21	0.40
5:U:265:ILE:HG13	5:U:266:GLN:N	2.36	0.40
5:U:496:LEU:O	5:U:499:THR:OG1	2.36	0.40
5:U:841:LYS:O	5:U:845:GLU:HG3	2.20	0.40
6:Z:228:TYR:HA	6:Z:231:GLN:HB3	2.03	0.40
7:a:278:MET:HE1	7:a:319:LEU:HB3	2.03	0.40
13:E:127:PRO:HB3	13:E:195:PHE:HB3	2.02	0.40
13:E:202:SER:C	13:E:217:GLU:HG3	2.45	0.40
16:G:48:ALA:HB3	16:G:220:VAL:HG12	2.03	0.40
21:M:53:VAL:O	21:M:53:VAL:HG13	2.21	0.40
25:W:115:ILE:O	25:W:121:LYS:HD3	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:276:LEU:HD23	25:W:276:LEU:HA	1.94	0.40
27:V:250:LEU:HD23	27:V:250:LEU:HA	1.79	0.40
28:c:41:MET:CG	28:c:72:VAL:HG21	2.51	0.40
1:H:195:LEU:HD13	1:H:208:ILE:HD12	2.03	0.40
2:Y:50:MET:HE3	2:Y:50:MET:HB2	1.88	0.40
3:f:344:VAL:HG12	3:f:346:ASP:H	1.86	0.40
3:f:557:TRP:HA	3:f:560:LEU:HB2	2.03	0.40
3:f:723:TYR:HB3	3:f:761:MET:HE3	2.04	0.40
5:U:612:ASP:HB3	5:U:647:HIS:CD2	2.57	0.40
5:U:714:SER:HA	5:U:717:ILE:HG22	2.03	0.40
6:Z:23:PHE:HB2	6:Z:97:THR:HG21	2.03	0.40
6:Z:110:GLU:HG2	6:Z:153:LYS:HZ2	1.86	0.40
10:B:170:LEU:HD22	10:B:257:GLN:HE22	1.85	0.40
11:C:194:THR:CG2	11:C:317:PHE:HB3	2.51	0.40
12:D:191:TYR:O	12:D:195:GLY:N	2.52	0.40
12:D:362:ASP:O	12:D:366:ARG:NE	2.55	0.40
12:D:384:MET:HB3	12:D:388:ARG:NH2	2.36	0.40
13:E:206:LYS:HE3	13:E:206:LYS:HB3	1.90	0.40
14:F:145:LEU:HD23	14:F:145:LEU:HA	1.89	0.40
16:G:168:ALA:HA	16:G:172:GLN:HG3	2.03	0.40
18:J:104:VAL:HG11	18:J:143:ARG:HB2	2.03	0.40
24:d:151:GLY:HA3	24:d:167:TYR:CE1	2.57	0.40
24:d:196:LEU:HD11	24:d:215:LEU:HD11	2.03	0.40
27:V:218:TYR:HA	27:V:221:LEU:HB2	2.03	0.40
1:H:79:MET:HE3	1:H:79:MET:HB3	1.82	0.40
3:f:398:TRP:CD1	3:f:398:TRP:C	2.99	0.40
4:X:270:LEU:HD12	4:X:270:LEU:HA	1.82	0.40
7:a:54:ASP:OD1	7:a:54:ASP:N	2.55	0.40
11:C:144:PRO:HG3	11:C:201:ARG:HG2	2.02	0.40
12:D:146:GLU:CD	12:D:146:GLU:H	2.30	0.40
12:D:372:GLY:HA3	31:D:501:ADP:C8	2.56	0.40
16:G:153:LYS:HB3	16:G:163:PHE:CE1	2.57	0.40
18:J:2:SER:HA	18:J:5:ARG:HH21	1.87	0.40
19:K:109:VAL:HG11	19:K:152:GLN:HB2	2.03	0.40
20:L:203:GLN:O	20:L:239:ARG:NH2	2.53	0.40
21:M:15:SER:OG	21:M:17:ASP:OD1	2.33	0.40
23:e:56:LEU:HD23	23:e:56:LEU:HA	1.79	0.40
2:Y:165:LYS:O	2:Y:169:GLU:HG2	2.21	0.40
2:Y:215:ASP:OD1	2:Y:218:THR:N	2.43	0.40
2:Y:250:LEU:HD13	2:Y:257:ARG:HA	2.02	0.40
2:Y:312:ARG:HE	4:X:386:ILE:HD12	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Y:387:ILE:HG13	2:Y:387:ILE:H	1.77	0.40
4:X:97:LEU:HD11	4:X:106:GLU:HB3	2.03	0.40
6:Z:101:LEU:CD1	25:W:451:MET:HG2	2.37	0.40
7:a:280:MET:HE1	7:a:296:ILE:HA	2.03	0.40
7:a:281:THR:HG23	7:a:335:TRP:CZ3	2.57	0.40
8:b:130:ARG:HH21	8:b:131:LEU:HG	1.86	0.40
9:A:120:LYS:HB2	9:A:120:LYS:HE2	1.87	0.40
10:B:112:LEU:HD12	10:B:144:LEU:HD12	2.04	0.40
11:C:66:LEU:HD13	12:D:82:ILE:HG21	2.04	0.40
11:C:146:SER:HB2	11:C:201:ARG:HB3	2.03	0.40
16:G:119:ALA:HB1	16:G:158:GLY:O	2.21	0.40
16:G:179:LEU:HG	16:G:201:CYS:SG	2.61	0.40
17:I:42:GLY:HA3	17:I:186:LEU:HD13	2.04	0.40
19:K:91:LYS:O	19:K:91:LYS:HD3	2.21	0.40
21:M:189:ILE:HD13	21:M:189:ILE:HA	1.95	0.40
24:d:168:MET:HE2	24:d:171:LEU:HD11	2.04	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	H	230/234 (98%)	224 (97%)	6 (3%)	0	100	100
2	Y	378/389 (97%)	369 (98%)	9 (2%)	0	100	100
3	f	838/908 (92%)	793 (95%)	44 (5%)	1 (0%)	48	79
4	X	376/422 (89%)	353 (94%)	22 (6%)	1 (0%)	37	68
5	U	831/953 (87%)	768 (92%)	60 (7%)	3 (0%)	30	63
6	Z	284/324 (88%)	256 (90%)	25 (9%)	3 (1%)	12	39
7	a	371/376 (99%)	341 (92%)	30 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	b	189/377 (50%)	170 (90%)	18 (10%)	1 (0%)	25	58
9	A	413/433 (95%)	379 (92%)	33 (8%)	1 (0%)	44	74
10	B	394/440 (90%)	368 (93%)	26 (7%)	0	100	100
11	C	384/406 (95%)	354 (92%)	29 (8%)	1 (0%)	37	68
12	D	378/418 (90%)	341 (90%)	34 (9%)	3 (1%)	16	48
13	E	354/389 (91%)	308 (87%)	41 (12%)	5 (1%)	9	34
14	F	358/439 (82%)	338 (94%)	18 (5%)	2 (1%)	22	53
16	G	237/246 (96%)	231 (98%)	5 (2%)	1 (0%)	30	63
17	I	246/261 (94%)	235 (96%)	10 (4%)	1 (0%)	30	63
18	J	232/248 (94%)	216 (93%)	16 (7%)	0	100	100
19	K	224/241 (93%)	207 (92%)	17 (8%)	0	100	100
20	L	236/263 (90%)	231 (98%)	5 (2%)	0	100	100
21	M	238/255 (93%)	228 (96%)	10 (4%)	0	100	100
22	O	42/277 (15%)	42 (100%)	0	0	100	100
23	e	37/70 (53%)	37 (100%)	0	0	100	100
24	d	267/350 (76%)	253 (95%)	13 (5%)	1 (0%)	30	63
25	W	436/456 (96%)	423 (97%)	12 (3%)	1 (0%)	44	74
26	g	93/601 (16%)	91 (98%)	2 (2%)	0	100	100
27	V	439/534 (82%)	421 (96%)	17 (4%)	1 (0%)	44	74
28	c	269/424 (63%)	253 (94%)	16 (6%)	0	100	100
All	All	8774/10734 (82%)	8230 (94%)	518 (6%)	26 (0%)	38	68

All (26) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	X	393	VAL
5	U	42	VAL
5	U	812	ALA
6	Z	146	ASP
12	D	339	ARG
13	E	223	ARG
13	E	387	LYS
14	F	321	GLN
25	W	41	GLN
8	b	22	LEU

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Mol	Chain	Res	Type
9	A	116	LYS
11	C	134	LEU
12	D	303	VAL
13	E	85	ARG
16	G	184	LYS
17	I	107	CYS
24	d	332	SER
3	f	404	ASP
5	U	172	ASP
13	E	380	LEU
27	V	318	GLN
6	Z	154	THR
12	D	150	SER
13	E	229	ILE
14	F	209	LYS
6	Z	226	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	H	190/191 (100%)	185 (97%)	5 (3%)	41	68
2	Y	335/344 (97%)	329 (98%)	6 (2%)	54	76
3	f	709/763 (93%)	682 (96%)	27 (4%)	28	59
4	X	325/362 (90%)	311 (96%)	14 (4%)	25	55
5	U	715/816 (88%)	685 (96%)	30 (4%)	25	56
6	Z	257/295 (87%)	245 (95%)	12 (5%)	22	52
7	a	333/336 (99%)	310 (93%)	23 (7%)	13	39
8	b	167/312 (54%)	159 (95%)	8 (5%)	21	51
9	A	356/372 (96%)	343 (96%)	13 (4%)	29	59
10	B	350/385 (91%)	343 (98%)	7 (2%)	50	74
11	C	338/352 (96%)	321 (95%)	17 (5%)	20	50

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles		
12	D	333/366 (91%)	319 (96%)	14 (4%)	25	56	
13	E	316/341 (93%)	298 (94%)	18 (6%)	17	46	
14	F	311/379 (82%)	302 (97%)	9 (3%)	37	65	
16	G	192/210 (91%)	185 (96%)	7 (4%)	30	60	
17	I	197/221 (89%)	193 (98%)	4 (2%)	50	74	
18	J	167/211 (79%)	161 (96%)	6 (4%)	30	60	
19	K	188/203 (93%)	186 (99%)	2 (1%)	70	84	
20	L	198/224 (88%)	192 (97%)	6 (3%)	36	64	
21	M	192/212 (91%)	186 (97%)	6 (3%)	35	63	
22	O	41/228 (18%)	38 (93%)	3 (7%)	11	37	
23	e	37/63 (59%)	36 (97%)	1 (3%)	40	67	
24	d	237/294 (81%)	236 (100%)	1 (0%)	89	94	
25	W	403/416 (97%)	398 (99%)	5 (1%)	67	83	
26	g	85/527 (16%)	83 (98%)	2 (2%)	44	70	
27	V	389/460 (85%)	384 (99%)	5 (1%)	65	82	
28	c	240/359 (67%)	230 (96%)	10 (4%)	25	56	
All	All	7601/9242 (82%)	7340 (97%)	261 (3%)	34	62	

All (261) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	4	ARG
1	H	49	GLU
1	H	140	ASN
1	H	156	PHE
1	H	175	GLU
2	Y	30	GLU
2	Y	84	LEU
2	Y	112	CYS
2	Y	143	TYR
2	Y	173	ASP
2	Y	220	VAL
3	f	58	MET
3	f	82	ILE
3	f	125	ILE
3	f	182	GLU

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Mol	Chain	Res	Type
3	f	207	LEU
3	f	216	MET
3	f	266	LEU
3	f	306	GLU
3	f	344	VAL
3	f	352	HIS
3	f	403	LYS
3	f	414	LEU
3	f	440	ILE
3	f	455	VAL
3	f	466	LEU
3	f	483	PHE
3	f	518	THR
3	f	564	LEU
3	f	646	MET
3	f	655	LEU
3	f	692	LEU
3	f	736	THR
3	f	761	MET
3	f	791	VAL
3	f	865	PHE
3	f	878	GLU
3	f	900	LEU
4	X	44	GLN
4	X	93	LEU
4	X	107	VAL
4	X	110	CYS
4	X	126	ARG
4	X	129	LEU
4	X	136	LEU
4	X	152	GLN
4	X	153	LEU
4	X	262	ASN
4	X	266	ASP
4	X	356	LEU
4	X	377	ILE
4	X	393	VAL
5	U	25	HIS
5	U	59	PHE
5	U	167	ILE
5	U	168	LEU
5	U	243	LEU

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Mol	Chain	Res	Type
5	U	352	ILE
5	U	360	VAL
5	U	374	SER
5	U	390	LEU
5	U	415	HIS
5	U	422	LEU
5	U	457	ILE
5	U	486	MET
5	U	492	ASP
5	U	497	LEU
5	U	552	ILE
5	U	554	LEU
5	U	586	VAL
5	U	629	THR
5	U	693	LEU
5	U	703	CYS
5	U	724	VAL
5	U	732	LEU
5	U	776	SER
5	U	786	THR
5	U	788	VAL
5	U	794	ASP
5	U	828	VAL
5	U	875	PHE
5	U	884	VAL
6	Z	47	VAL
6	Z	91	ILE
6	Z	101	LEU
6	Z	118	ASN
6	Z	120	VAL
6	Z	121	LEU
6	Z	144	VAL
6	Z	188	SER
6	Z	227	ILE
6	Z	234	PHE
6	Z	235	ASN
6	Z	289	GLU
7	a	8	LEU
7	a	118	ILE
7	a	127	ASP
7	a	128	LEU
7	a	136	GLU

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Mol	Chain	Res	Type
7	a	148	VAL
7	a	163	TYR
7	a	177	LEU
7	a	183	VAL
7	a	211	PHE
7	a	212	ASN
7	a	216	LEU
7	a	219	HIS
7	a	248	PHE
7	a	261	LEU
7	a	269	LEU
7	a	272	ILE
7	a	307	VAL
7	a	327	VAL
7	a	349	MET
7	a	366	LEU
7	a	374	ILE
7	a	375	LEU
8	b	8	VAL
8	b	51	LEU
8	b	60	VAL
8	b	78	VAL
8	b	94	HIS
8	b	132	LYS
8	b	150	THR
8	b	161	ASN
9	A	22	ILE
9	A	26	ASP
9	A	60	ASN
9	A	70	THR
9	A	83	ASP
9	A	117	GLN
9	A	144	ARG
9	A	195	LEU
9	A	270	CYS
9	A	287	ASP
9	A	309	PHE
9	A	403	ILE
9	A	429	TYR
10	B	102	LEU
10	B	216	ILE
10	B	270	LEU

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Mol	Chain	Res	Type
10	B	325	VAL
10	B	336	THR
10	B	372	MET
10	B	388	ASP
11	C	35	VAL
11	C	37	ASP
11	C	63	LEU
11	C	105	ILE
11	C	108	VAL
11	C	116	LEU
11	C	118	ASN
11	C	134	LEU
11	C	145	ASP
11	C	166	GLU
11	C	234	LEU
11	C	236	VAL
11	C	266	ASP
11	C	301	LEU
11	C	351	MET
11	C	383	PHE
11	C	404	LEU
12	D	109	SER
12	D	132	LEU
12	D	157	ASP
12	D	171	ASP
12	D	185	LEU
12	D	267	ILE
12	D	268	ASP
12	D	270	ILE
12	D	272	THR
12	D	303	VAL
12	D	305	VAL
12	D	328	ASP
12	D	399	PHE
12	D	407	ILE
13	E	62	LYS
13	E	120	TYR
13	E	124	HIS
13	E	151	LEU
13	E	180	LYS
13	E	196	LEU
13	E	203	ILE

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Mol	Chain	Res	Type
13	E	205	ASP
13	E	270	LEU
13	E	289	LEU
13	E	296	ASP
13	E	301	ILE
13	E	326	ILE
13	E	327	ASP
13	E	332	VAL
13	E	369	LYS
13	E	371	VAL
13	E	386	TYR
14	F	59	VAL
14	F	96	LEU
14	F	124	ILE
14	F	153	VAL
14	F	159	LEU
14	F	208	HIS
14	F	332	THR
14	F	336	ASP
14	F	435	LEU
16	G	78	CYS
16	G	79	VAL
16	G	81	THR
16	G	111	VAL
16	G	115	CYS
16	G	203	SER
16	G	221	THR
17	I	63	GLU
17	I	76	VAL
17	I	108	GLU
17	I	164	ILE
18	J	30	SER
18	J	35	VAL
18	J	104	VAL
18	J	130	SER
18	J	181	ILE
18	J	184	ASP
19	K	47	CYS
19	K	139	VAL
20	L	138	ASP
20	L	146	GLN
20	L	178	GLU

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Mol	Chain	Res	Type
20	L	198	THR
20	L	215	VAL
20	L	239	ARG
21	M	19	ARG
21	M	22	GLN
21	M	35	THR
21	M	54	LEU
21	M	158	TYR
21	M	216	VAL
22	O	52	THR
22	O	78	THR
22	O	83	LEU
23	e	63	HIS
24	d	156	ILE
25	W	105	VAL
25	W	171	VAL
25	W	235	GLN
25	W	299	ILE
25	W	338	THR
26	g	87	VAL
26	g	122	LEU
27	V	153	LYS
27	V	224	LEU
27	V	234	ARG
27	V	245	ASP
27	V	309	MET
28	c	54	MET
28	c	70	ILE
28	c	109	VAL
28	c	125	VAL
28	c	131	GLN
28	c	156	VAL
28	c	166	ASN
28	c	216	MET
28	c	230	THR
28	c	263	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (79) such sidechains are listed below:

Mol	Chain	Res	Type
1	H	95	GLN
2	Y	77	ASN

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Mol	Chain	Res	Type
2	Y	344	HIS
3	f	291	GLN
3	f	327	ASN
3	f	402	ASN
3	f	452	ASN
3	f	540	GLN
3	f	565	ASN
3	f	790	GLN
4	X	127	GLN
4	X	207	GLN
4	X	380	GLN
5	U	207	ASN
5	U	266	GLN
5	U	355	ASN
5	U	415	HIS
5	U	452	ASN
5	U	491	GLN
5	U	537	GLN
5	U	711	GLN
5	U	749	GLN
5	U	754	HIS
5	U	777	HIS
6	Z	44	GLN
6	Z	231	GLN
6	Z	273	HIS
6	Z	278	ASN
7	a	9	GLN
7	a	86	GLN
7	a	169	HIS
7	a	241	ASN
7	a	264	ASN
7	a	369	HIS
8	b	48	ASN
8	b	101	GLN
8	b	142	ASN
8	b	149	ASN
9	A	165	GLN
9	A	231	ASN
10	B	257	GLN
10	B	315	GLN
11	C	41	ASN
11	C	69	GLN

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Mol	Chain	Res	Type
11	C	205	HIS
11	C	221	GLN
11	C	278	ASN
12	D	65	GLN
12	D	83	GLN
12	D	99	ASN
12	D	295	GLN
13	E	19	HIS
13	E	121	ASN
13	E	316	HIS
14	F	92	ASN
14	F	214	ASN
14	F	243	GLN
14	F	436	GLN
17	I	149	GLN
17	I	198	ASN
19	K	13	ASN
19	K	114	GLN
19	K	118	ASN
19	K	155	HIS
21	M	97	ASN
21	M	120	HIS
21	M	147	GLN
24	d	127	ASN
24	d	195	ASN
24	d	242	ASN
25	W	235	GLN
25	W	423	ASN
26	g	135	GLN
27	V	125	ASN
27	V	247	GLN
27	V	260	HIS
27	V	347	GLN
28	c	30	GLN
28	c	240	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
30	ATP	B	502	29	28,33,33	0.64	0	34,52,52	0.60	1 (2%)
31	ADP	E	401	-	24,29,29	0.90	0	29,45,45	1.25	2 (6%)
31	ADP	C	502	29	24,29,29	0.88	0	29,45,45	1.20	2 (6%)
30	ATP	F	501	29	28,33,33	0.64	0	34,52,52	0.66	1 (2%)
30	ATP	B	501	29	28,33,33	0.83	1 (3%)	34,52,52	0.69	2 (5%)
31	ADP	D	501	29	24,29,29	0.88	0	29,45,45	1.27	3 (10%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
30	ATP	B	502	29	-	7/18/38/38	0/3/3/3
31	ADP	E	401	-	-	4/12/32/32	0/3/3/3
31	ADP	C	502	29	-	3/12/32/32	0/3/3/3
30	ATP	F	501	29	-	5/18/38/38	0/3/3/3
30	ATP	B	501	29	-	8/18/38/38	0/3/3/3
31	ADP	D	501	29	-	1/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	B	501	ATP	PA-O3A	2.27	1.62	1.59

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	E	401	ADP	N3-C2-N1	-3.60	123.79	128.67
31	D	501	ADP	N3-C2-N1	-3.58	123.82	128.67
31	C	502	ADP	N3-C2-N1	-3.57	123.83	128.67
31	C	502	ADP	C4-C5-N7	-2.54	106.65	109.34
31	D	501	ADP	C4'-O4'-C1'	2.54	112.25	109.92
31	D	501	ADP	C4-C5-N7	-2.43	106.77	109.34
31	E	401	ADP	C4-C5-N7	-2.39	106.81	109.34
30	B	502	ATP	C5-C6-N6	2.33	123.86	120.31
30	F	501	ATP	C5-C6-N6	2.28	123.79	120.31
30	B	501	ATP	C5-C6-N6	2.28	123.78	120.31
30	B	501	ATP	C4'-O4'-C1'	-2.00	108.09	109.92

There are no chirality outliers.

All (28) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
30	B	501	ATP	PB-O3B-PG-O2G
30	B	501	ATP	C5'-O5'-PA-O1A
30	B	501	ATP	C5'-O5'-PA-O3A
30	B	502	ATP	PB-O3B-PG-O2G
30	B	502	ATP	C5'-O5'-PA-O1A
30	B	502	ATP	C5'-O5'-PA-O3A
30	F	501	ATP	O4'-C4'-C5'-O5'
31	C	502	ADP	C5'-O5'-PA-O1A
31	C	502	ADP	O4'-C4'-C5'-O5'
31	E	401	ADP	C5'-O5'-PA-O2A
31	E	401	ADP	C5'-O5'-PA-O3A
31	C	502	ADP	C3'-C4'-C5'-O5'
30	F	501	ATP	C3'-C4'-C5'-O5'
31	E	401	ADP	O4'-C4'-C5'-O5'
30	B	501	ATP	O4'-C4'-C5'-O5'
31	E	401	ADP	C3'-C4'-C5'-O5'
30	B	502	ATP	PB-O3B-PG-O3G
30	B	501	ATP	PG-O3B-PB-O1B
30	B	501	ATP	C5'-O5'-PA-O2A
30	B	502	ATP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
30	F	501	ATP	C5'-O5'-PA-O1A
30	B	502	ATP	PG-O3B-PB-O2B
30	B	501	ATP	C3'-C4'-C5'-O5'
30	B	502	ATP	PB-O3B-PG-O1G
30	B	501	ATP	PB-O3B-PG-O3G
30	F	501	ATP	PB-O3A-PA-O1A
30	F	501	ATP	PB-O3A-PA-O2A
31	D	501	ADP	O4'-C4'-C5'-O5'

There are no ring outliers.

6 monomers are involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
30	B	502	ATP	2	0
31	E	401	ADP	5	0
31	C	502	ADP	2	0
30	F	501	ATP	5	0
30	B	501	ATP	2	0
31	D	501	ADP	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ATP B 502

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP E 401

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP C 502

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP F 501

Bond lengths

Bond angles

Torsions

Rings

Ligand ATP B 501

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP D 501

Bond lengths

Bond angles

Torsions

Rings
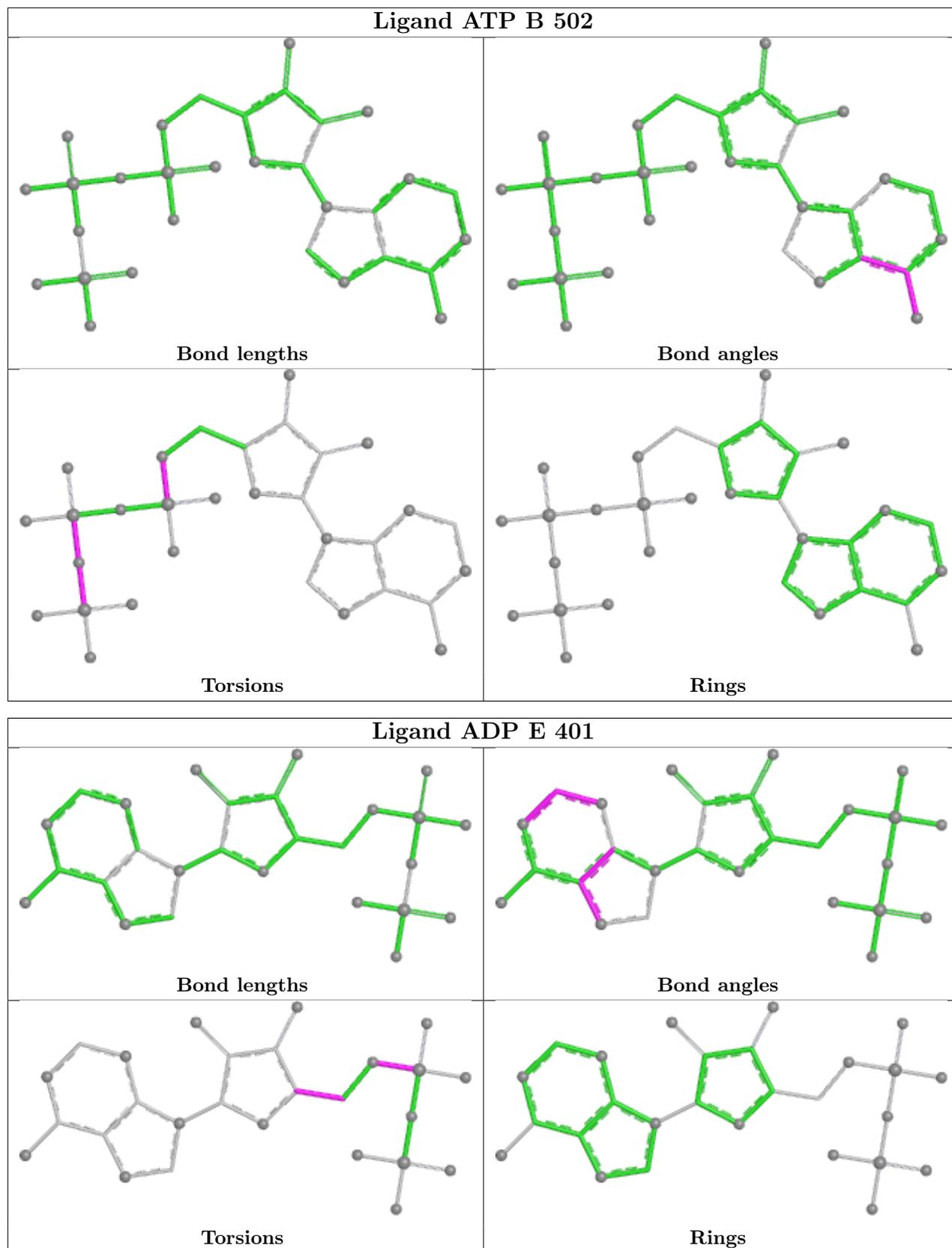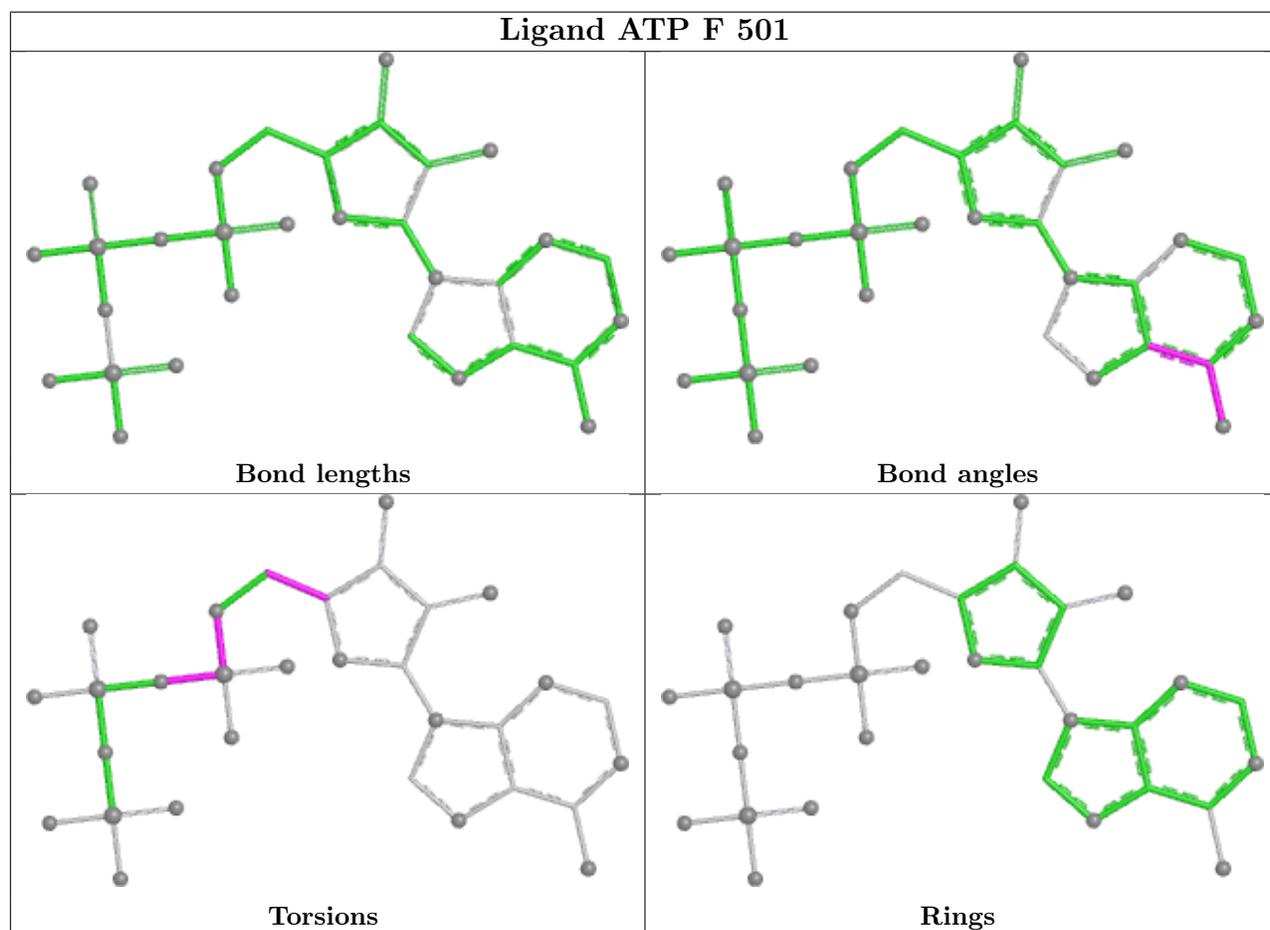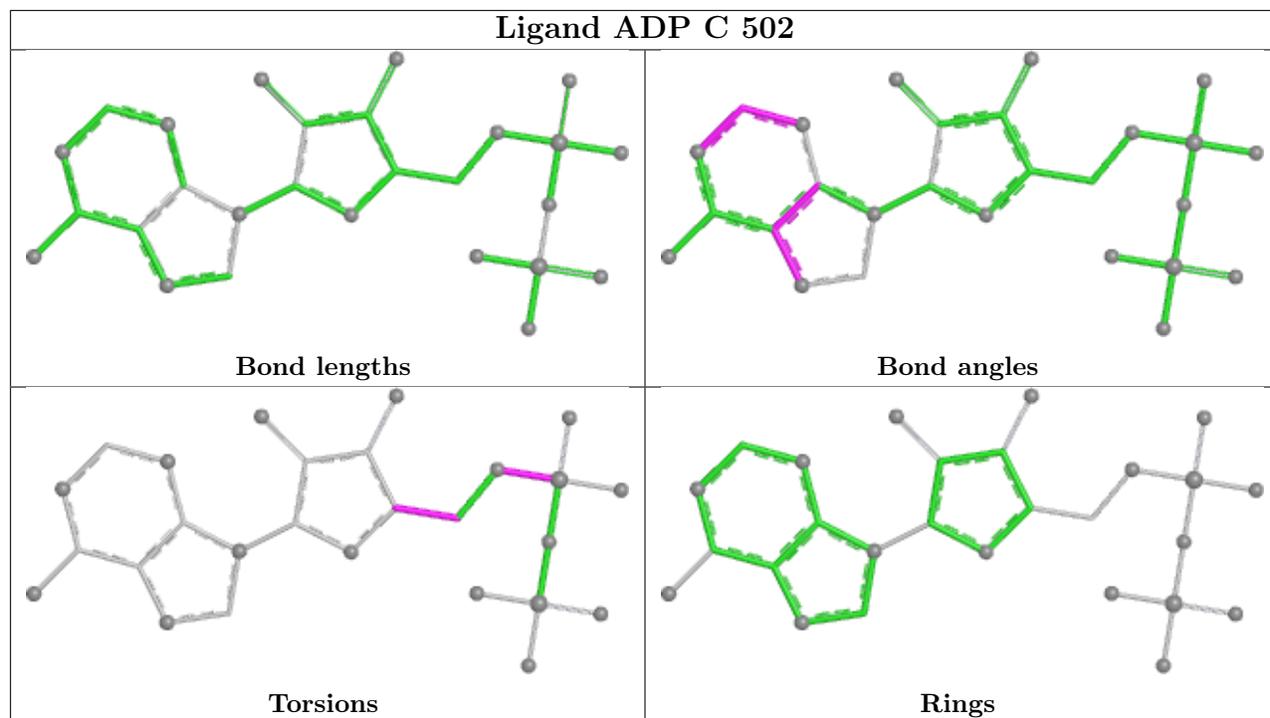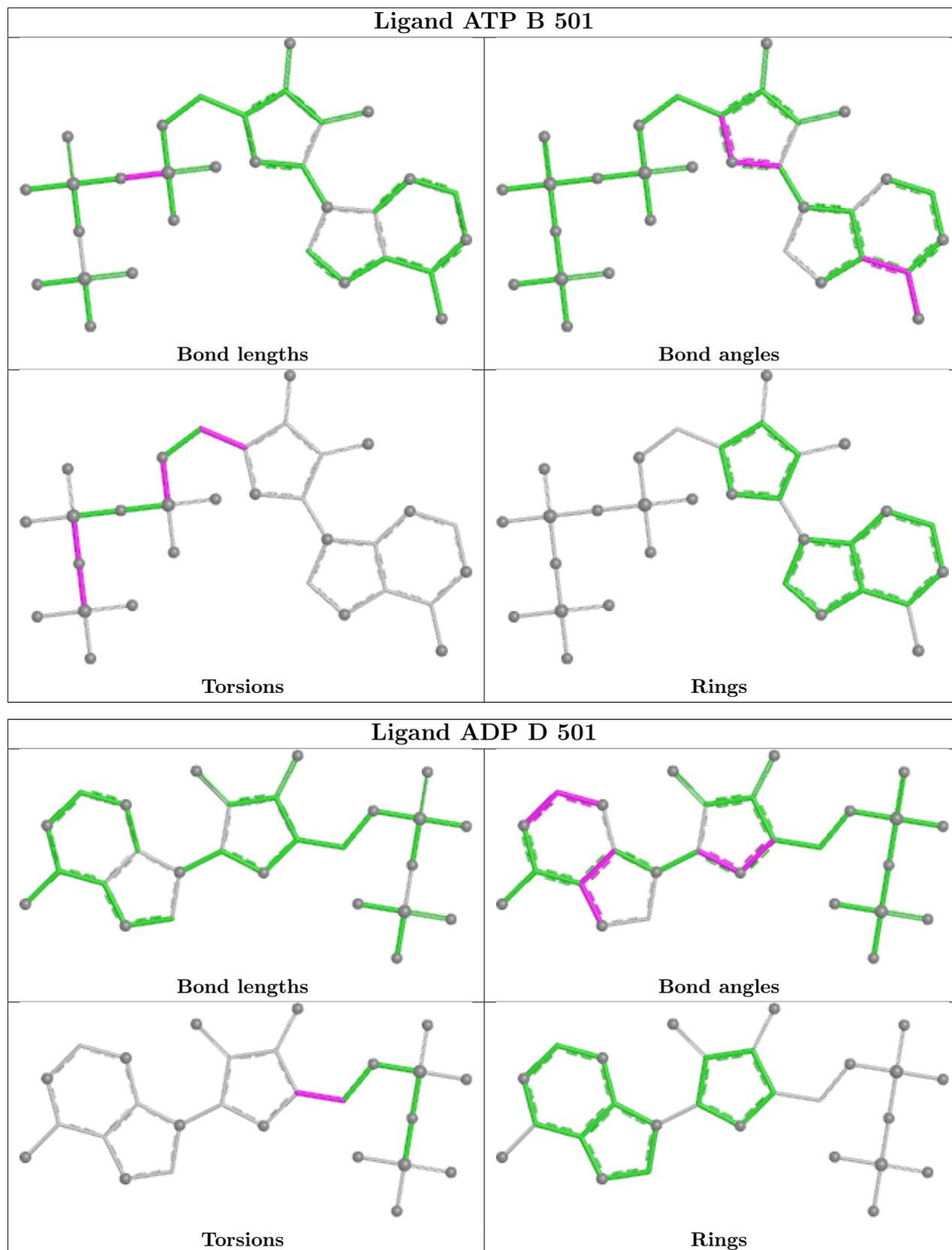
5.7　Other polymers ⓘ

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-42507. 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 ⓘ
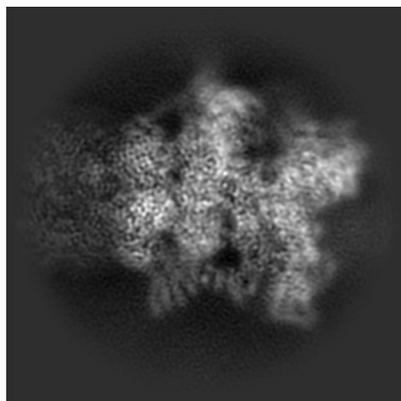
6.1.1 Primary map

X
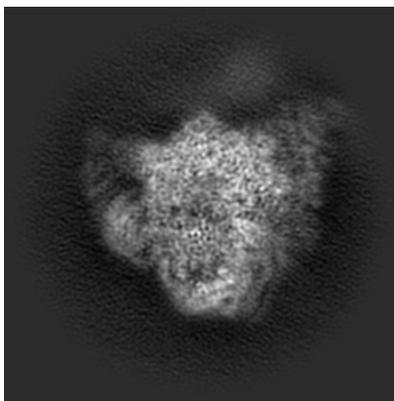
Y
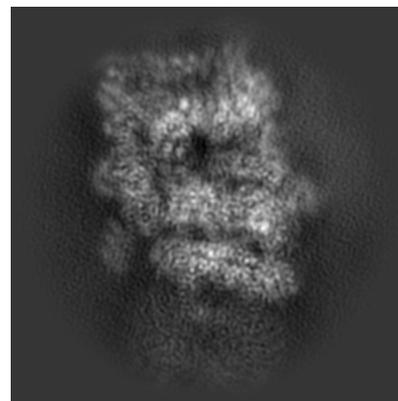
Z

6.1.2 Raw map

X

Y

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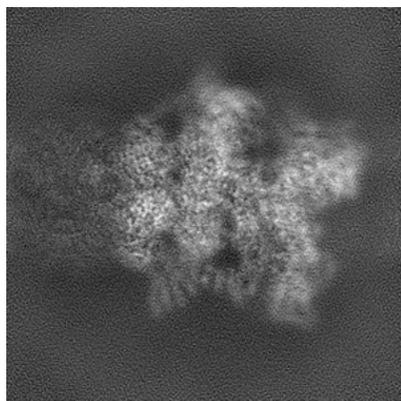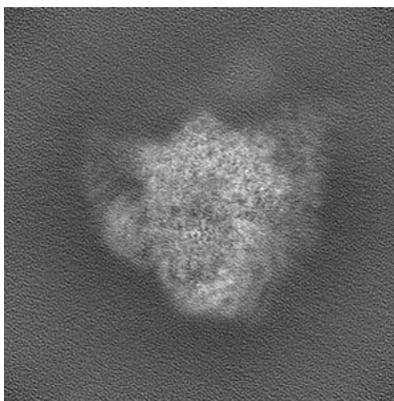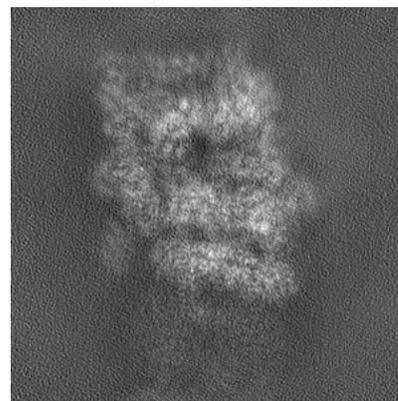
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
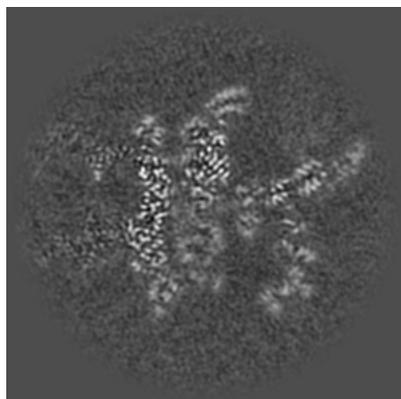
6.2.1 Primary map
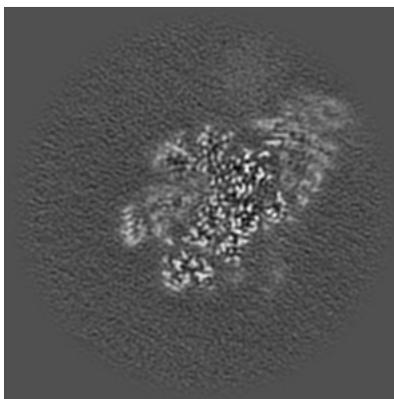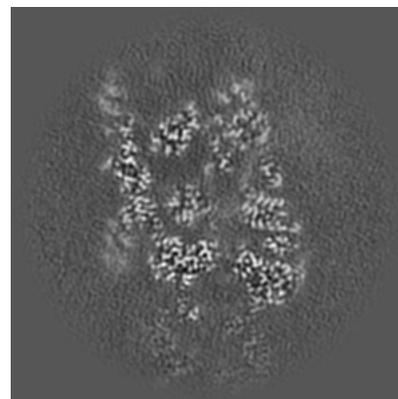
| X Index: 140 | Y Index: 140 | Z Index: 140 |

6.2.2 Raw map
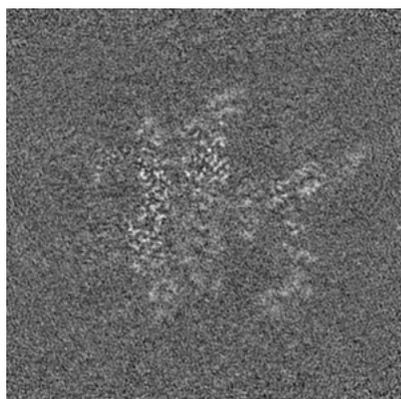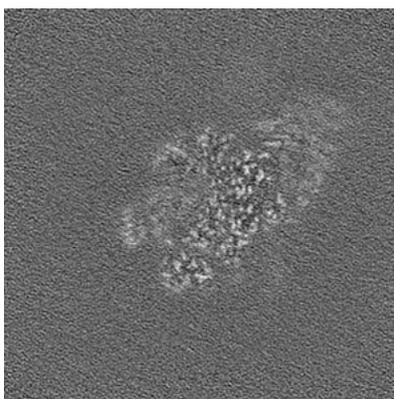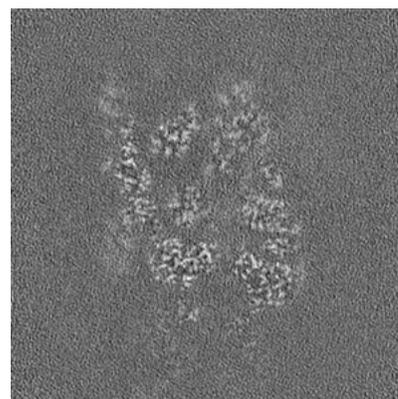
| X Index: 140 | Y Index: 140 | Z Index: 140 |

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

6.3 Largest variance slices (i)

6.3.1 Primary map
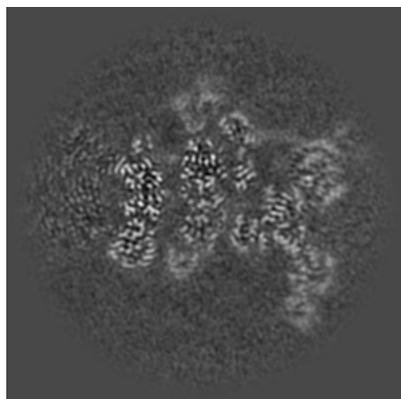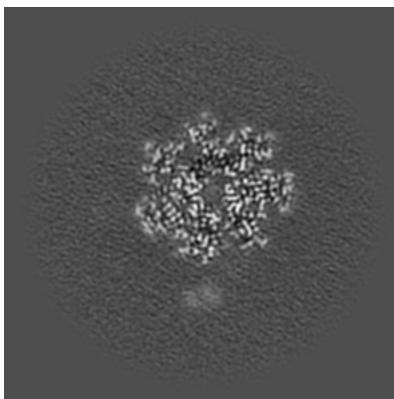
| X Index: 167 | Y Index: 96 | Z Index: 141 |
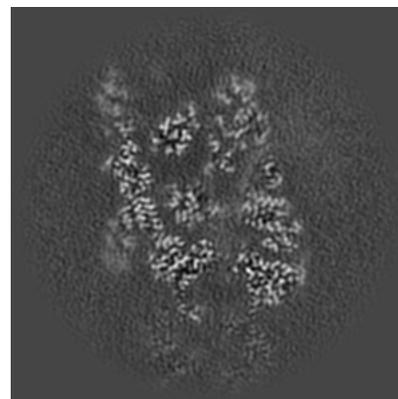
6.3.2 Raw map
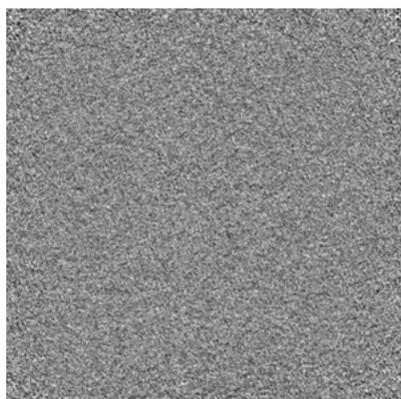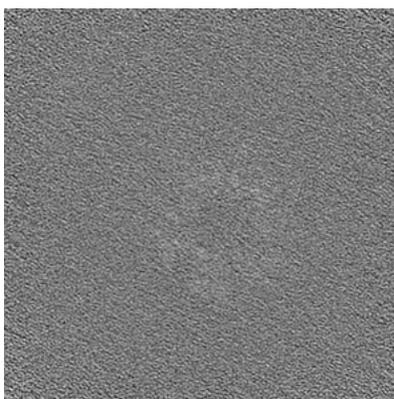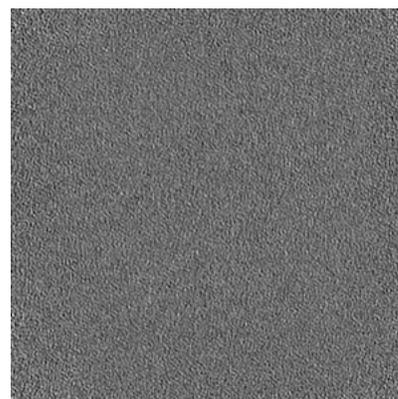
| X Index: 0 | Y Index: 0 | Z Index: 0 |

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

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

6.4.1 Primary map
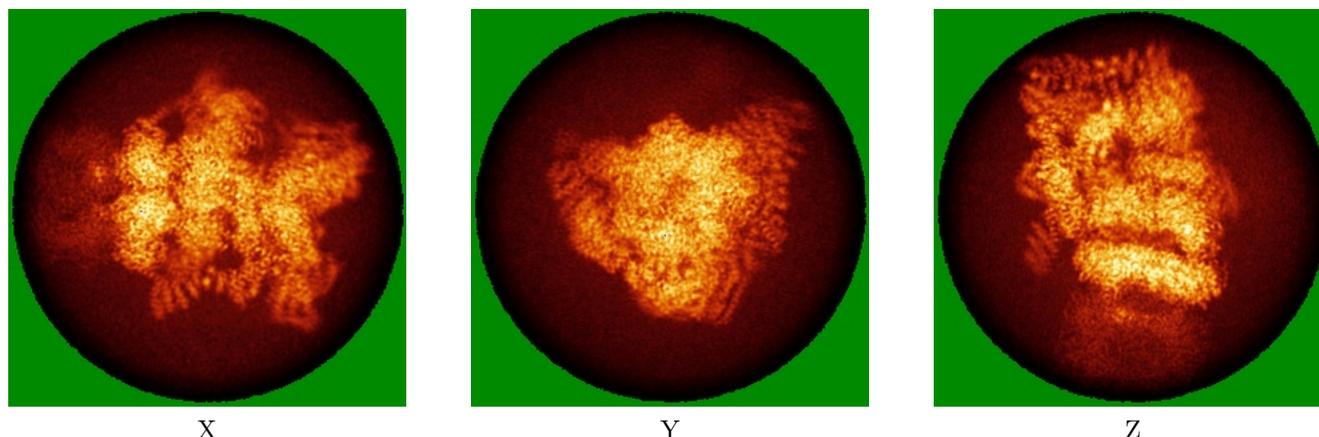
X Y Z

6.4.2 Raw map

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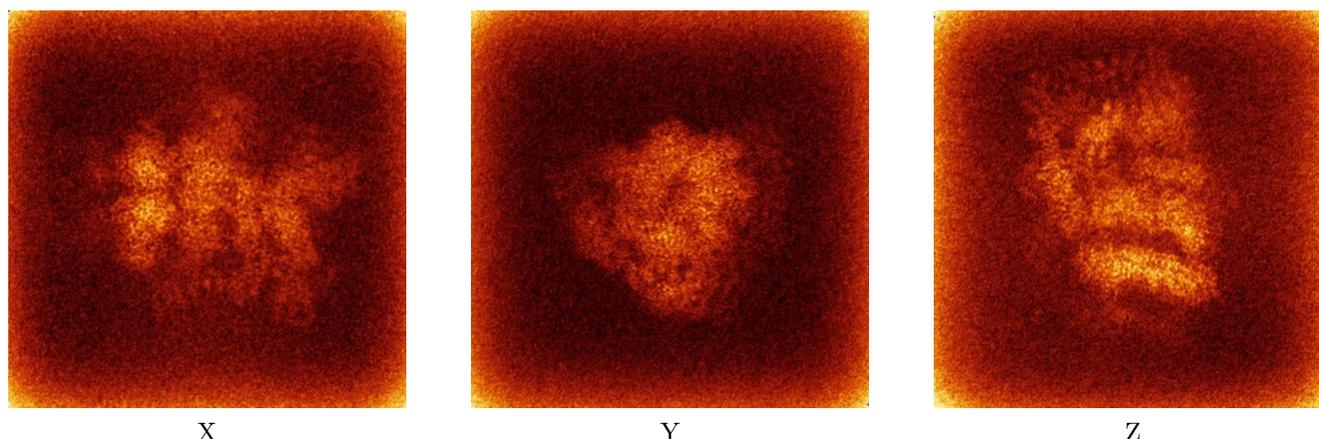
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5   Orthogonal surface views ⓘ

6.5.1   Primary map

X   Y   Z
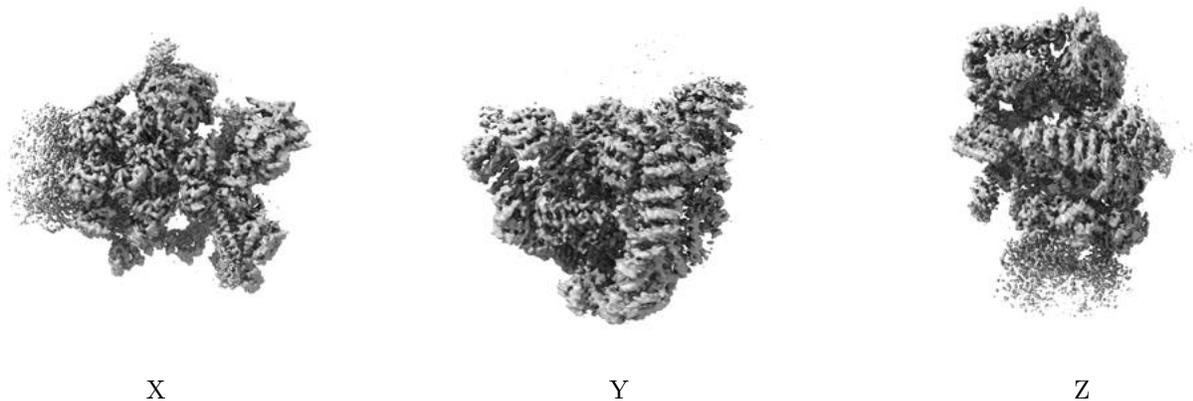
The images above show the 3D surface view of the map at the recommended contour level 0.13. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2   Raw map

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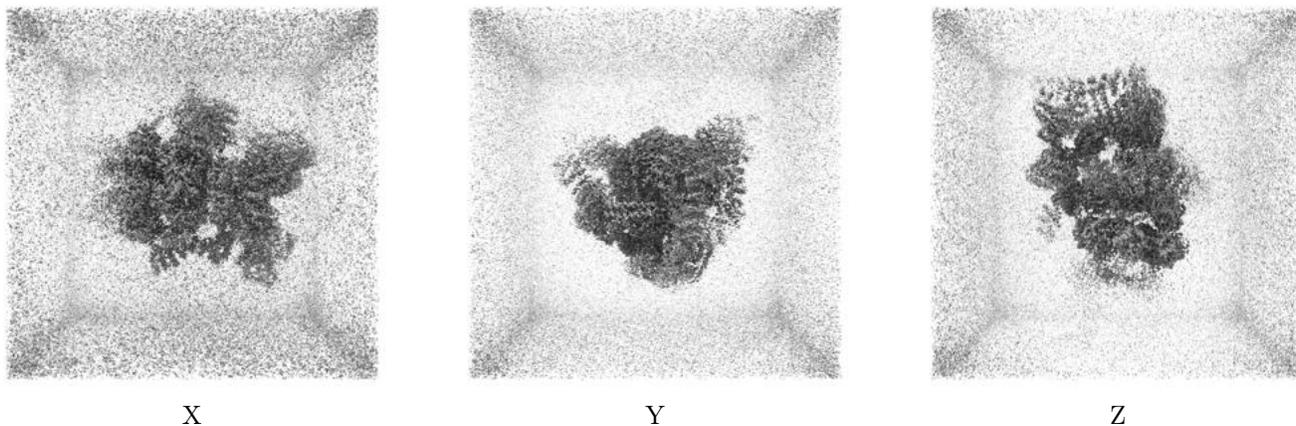
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6   Mask visualisation ⓘ

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

7   Map analysis ⓘ

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

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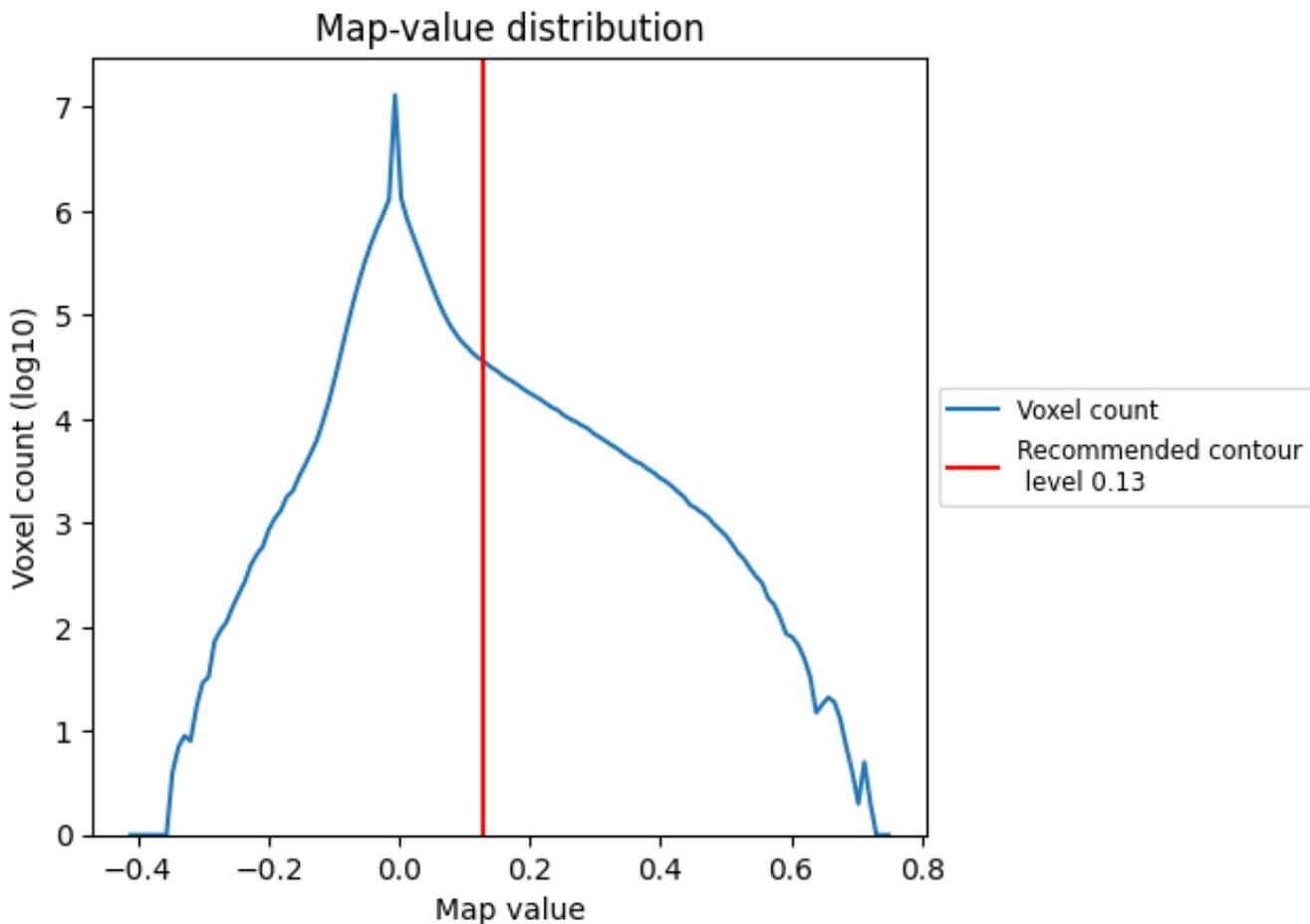
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2　Volume estimate ⓘ
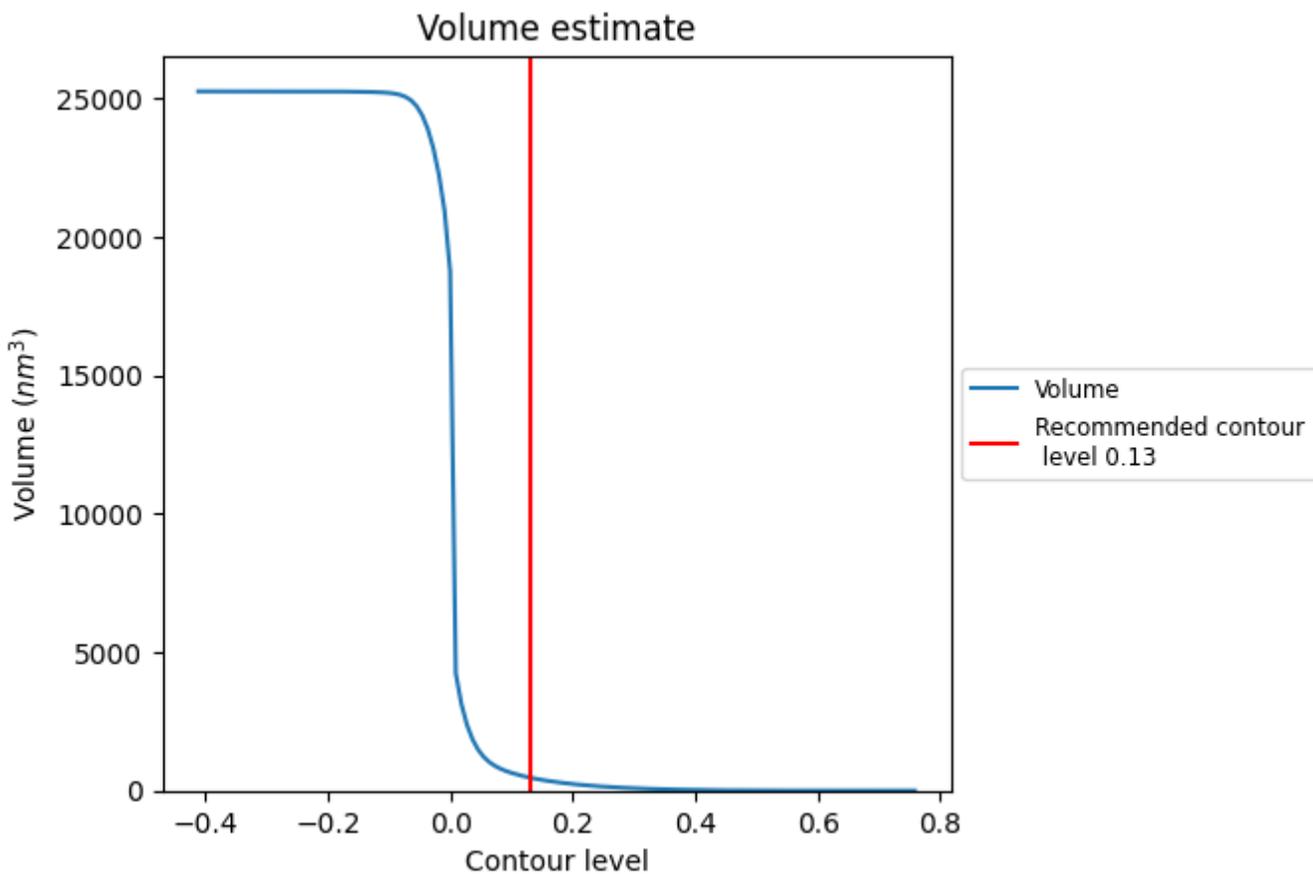
The volume at the recommended contour level is 471 nm^3; this corresponds to an approximate mass of 425 kDa.

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 ⓘ
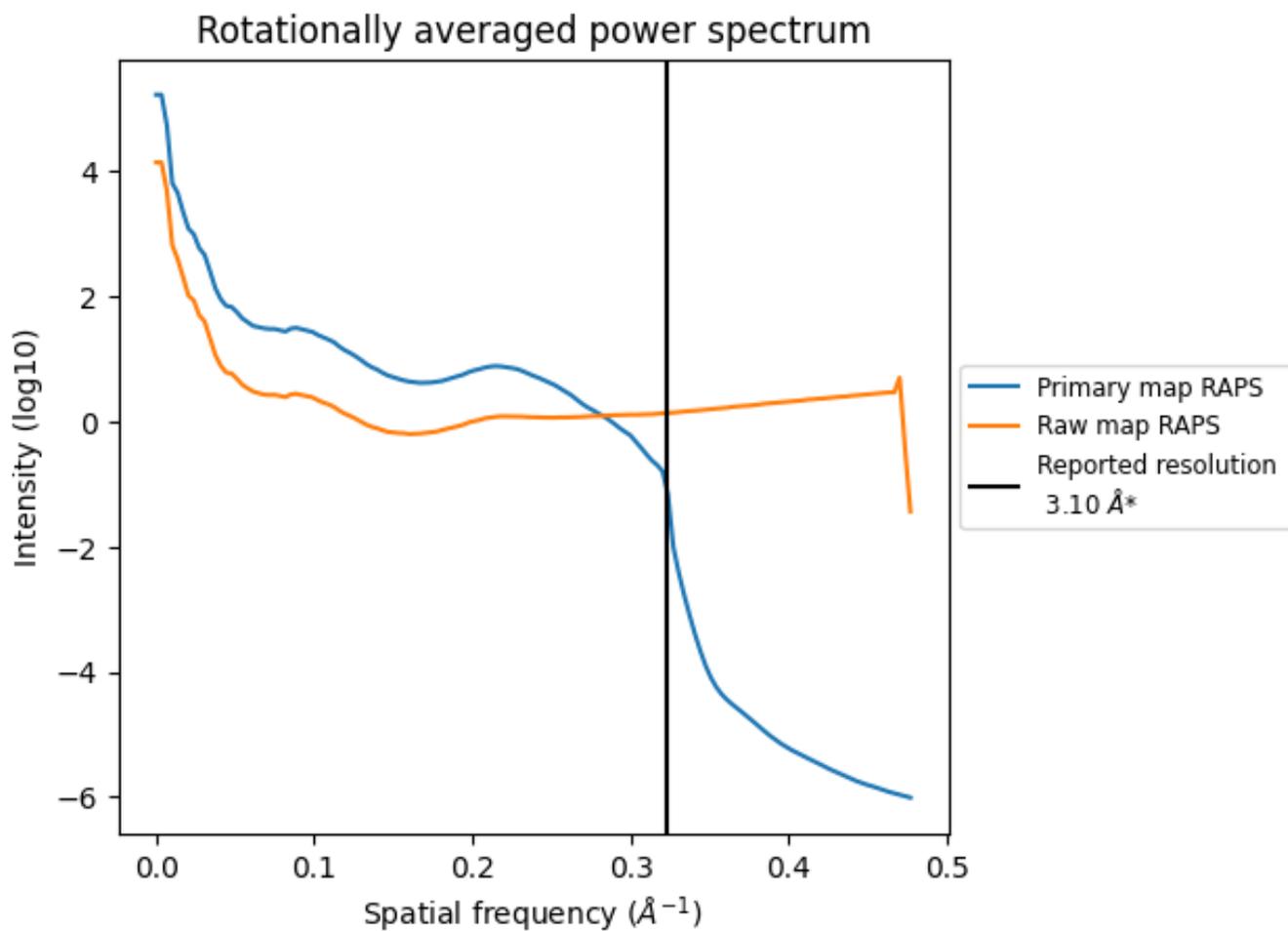
*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

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 ⓘ
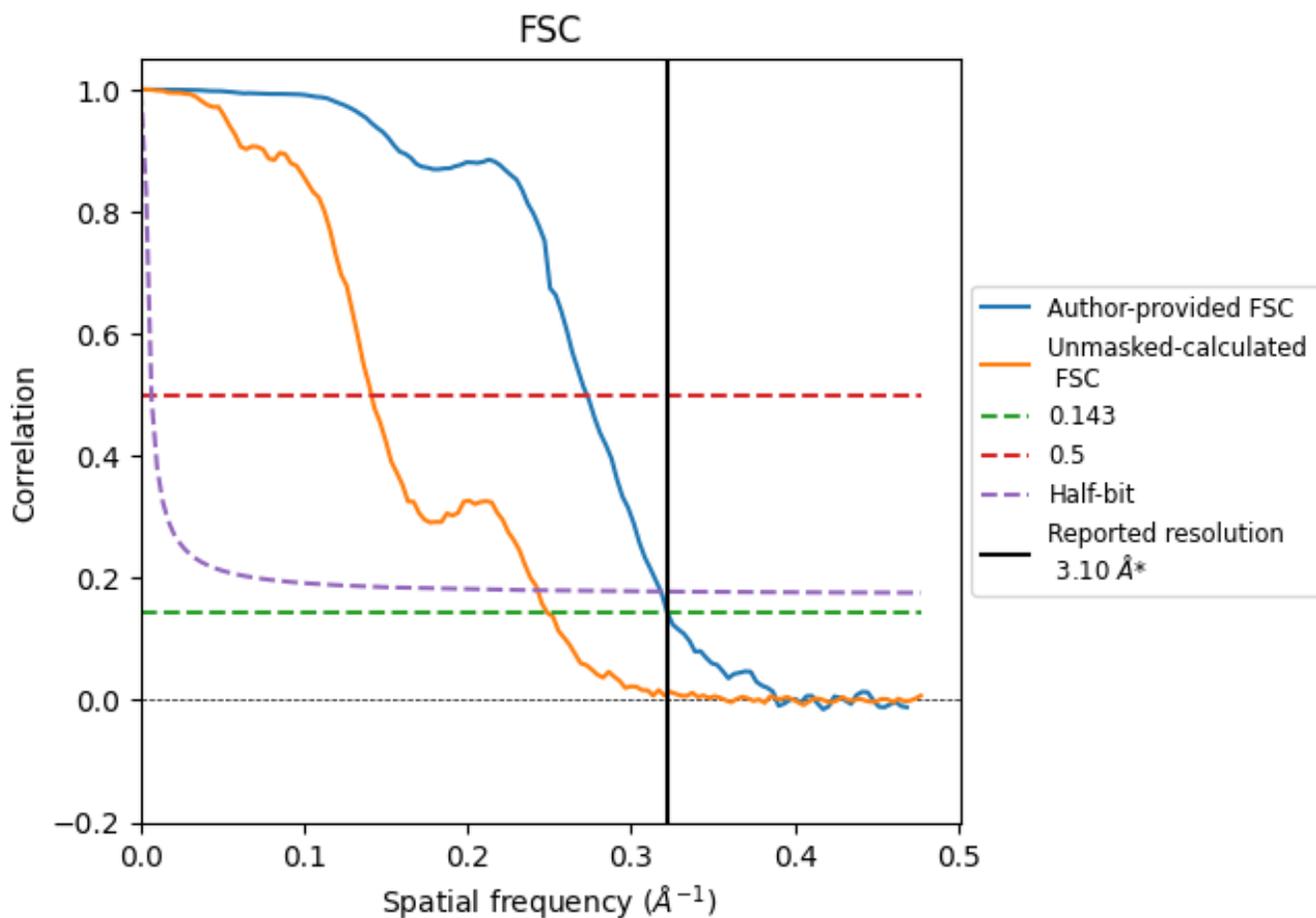
*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8.2　Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.10	3.66	3.14
Unmasked-calculated*	4.02	7.08	4.12

*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 4.02 differs from the reported value 3.1 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-42507 and PDB model 8USC. Per-residue inclusion information can be found in section 3 on page 13.

9.1 Map-model overlay ⓘ

X   Y   Z
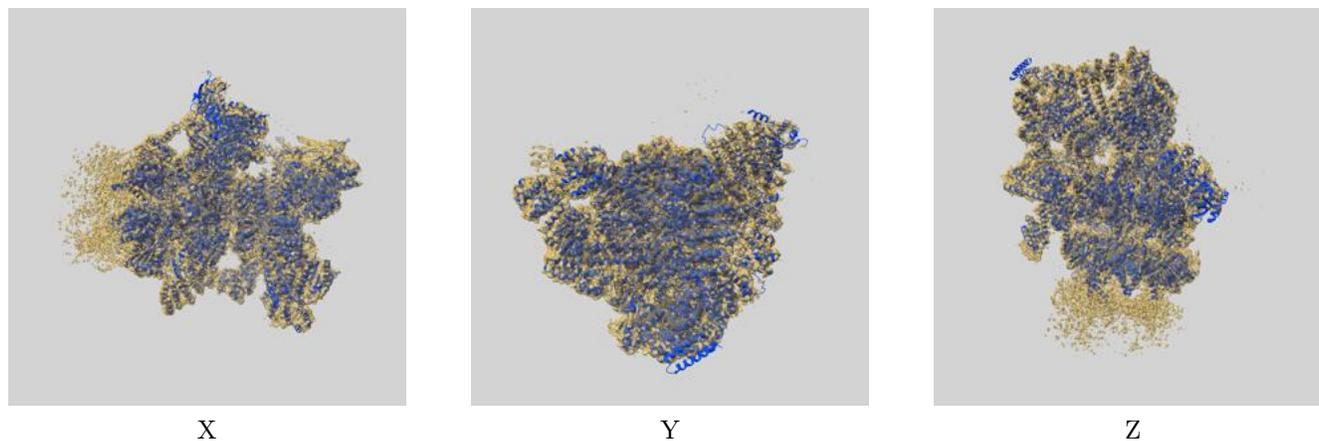
The images above show the 3D surface view of the map at the recommended contour level 0.13 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

X   Y   Z
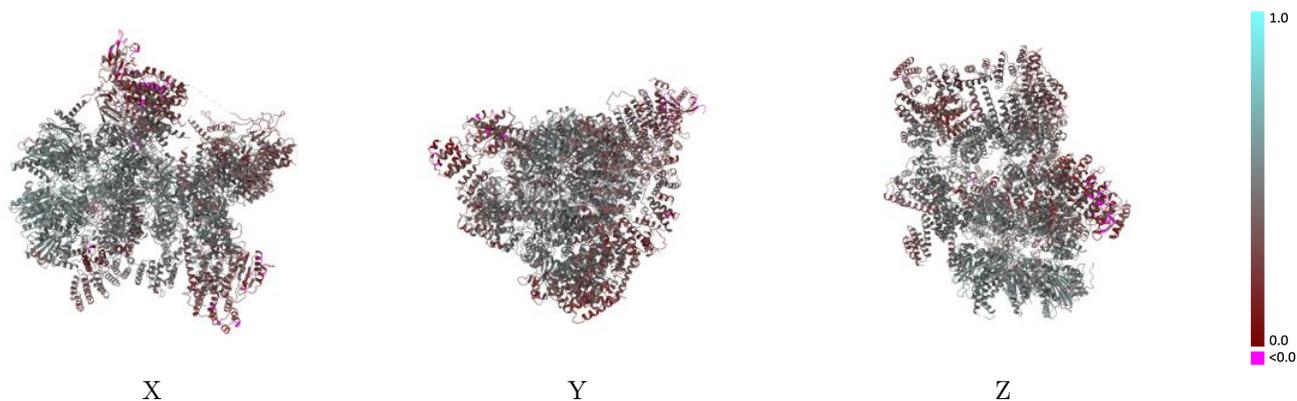
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
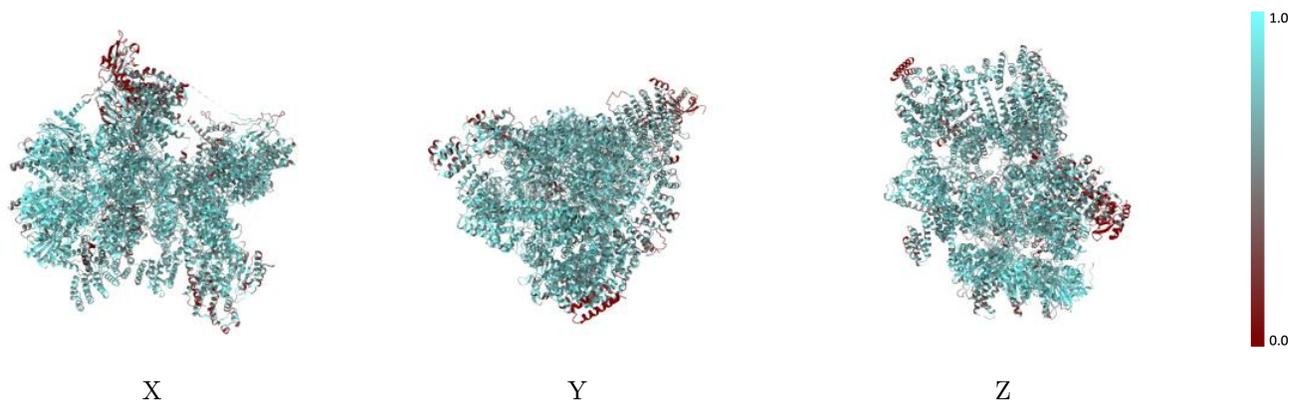
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.13).

9.4　Atom inclusion　ⓘ
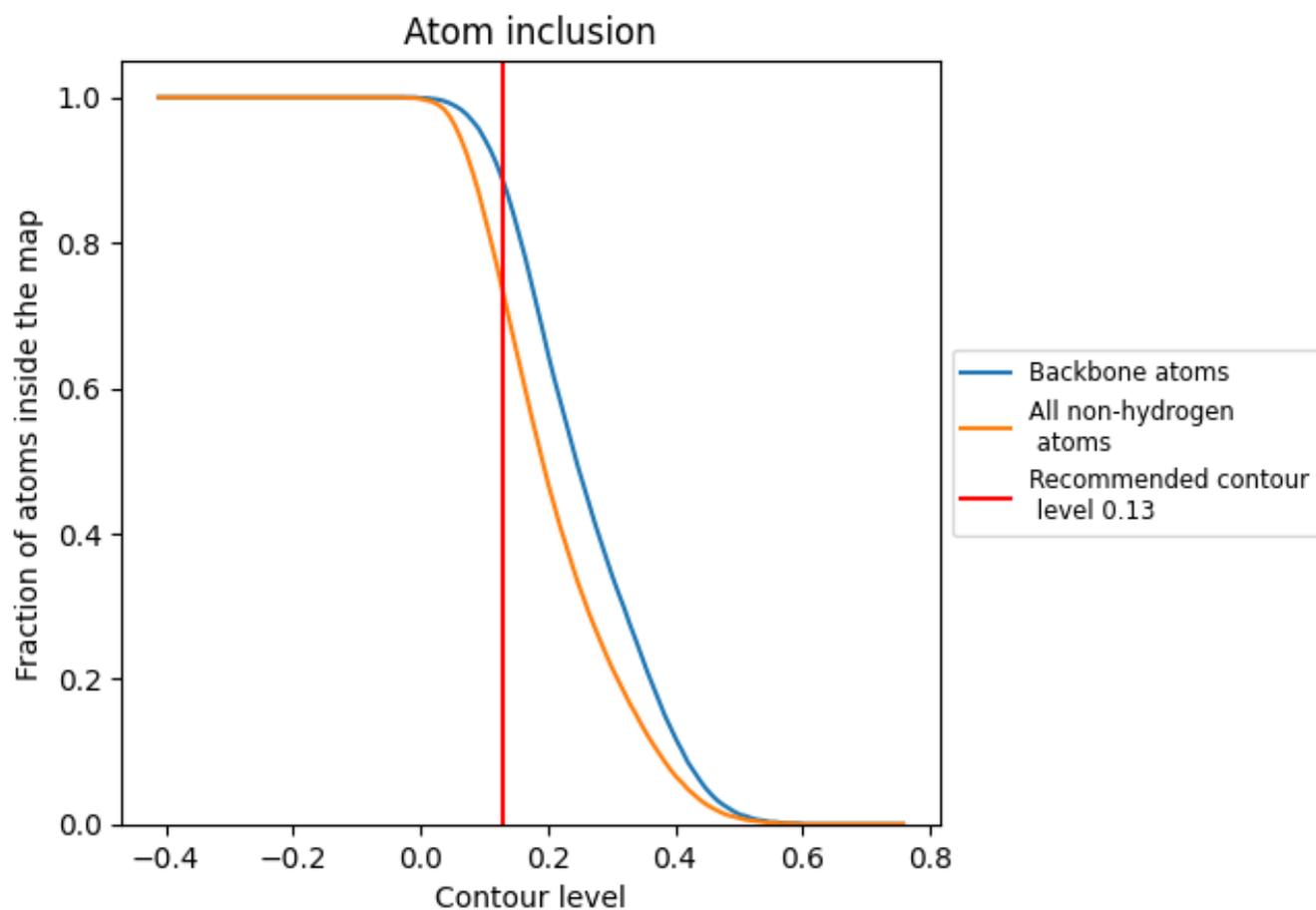
At the recommended contour level, 88% of all backbone atoms, 73% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.13) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7300	0.4350
A	0.7730	0.4910
B	0.7910	0.4960
C	0.8180	0.5060
D	0.7800	0.4900
E	0.5410	0.3430
F	0.7590	0.4790
G	0.8230	0.5210
H	0.8490	0.5260
I	0.7860	0.5090
J	0.8260	0.5160
K	0.8010	0.5060
L	0.8480	0.5350
M	0.8000	0.5100
O	0.6640	0.5180
U	0.7080	0.3780
V	0.6970	0.3930
W	0.7690	0.4370
X	0.7550	0.4480
Y	0.8250	0.4650
Z	0.7830	0.4610
a	0.6840	0.3380
b	0.6500	0.3180
c	0.7740	0.4710
d	0.5840	0.3270
e	0.7670	0.4570
f	0.6040	0.3430
g	0.1370	0.2010
v	0.9000	0.5430

1.0

0.0
<0.0