



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 01:25 PM UTC

PDB ID : 7K56 / pdb_00007k56
EMDB ID : EMD-22675
Title : Structure of VCP dodecamer purified from H1299 cells
Authors : Yu, G.; Bai, Y.; Li, K.; Jiang, W.; Zhang, Z.Y.
Deposited on : 2020-09-16
Resolution : 3.90 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

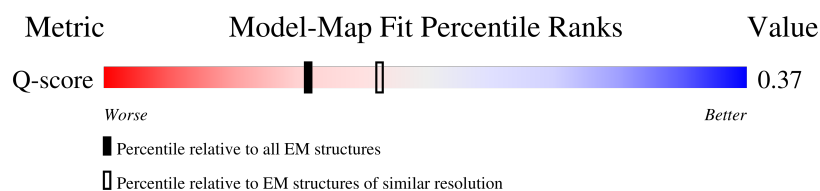
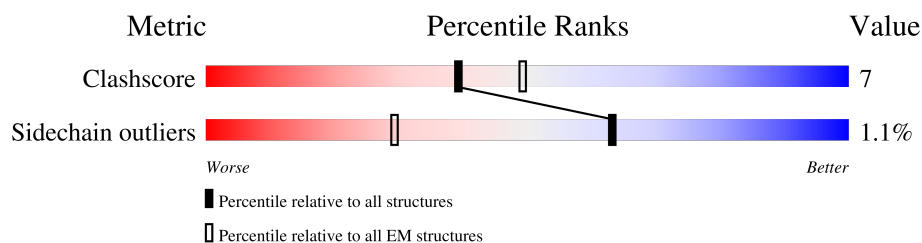
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 3.90 Å.

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



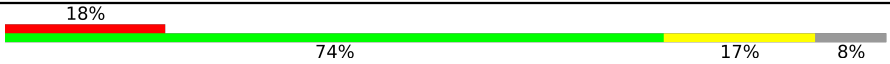
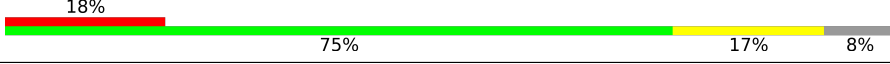
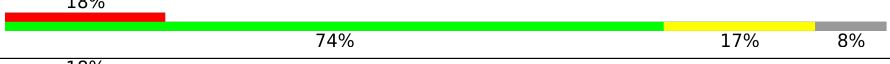
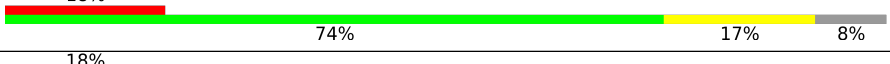
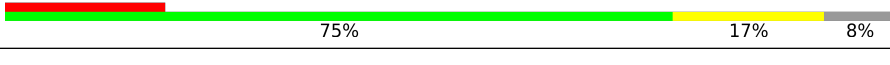
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	8855 (3.40 - 4.40)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	806	18% 75% 17% 8%
1	B	806	18% 75% 17% 8%
1	C	806	18% 75% 17% 8%
1	D	806	18% 75% 16% 8%
1	E	806	18% 75% 17% 8%

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Mol	Chain	Length	Quality of chain
1	F	806	
1	G	806	
1	H	806	
1	I	806	
1	J	806	
1	K	806	
1	L	806	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 70080 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.

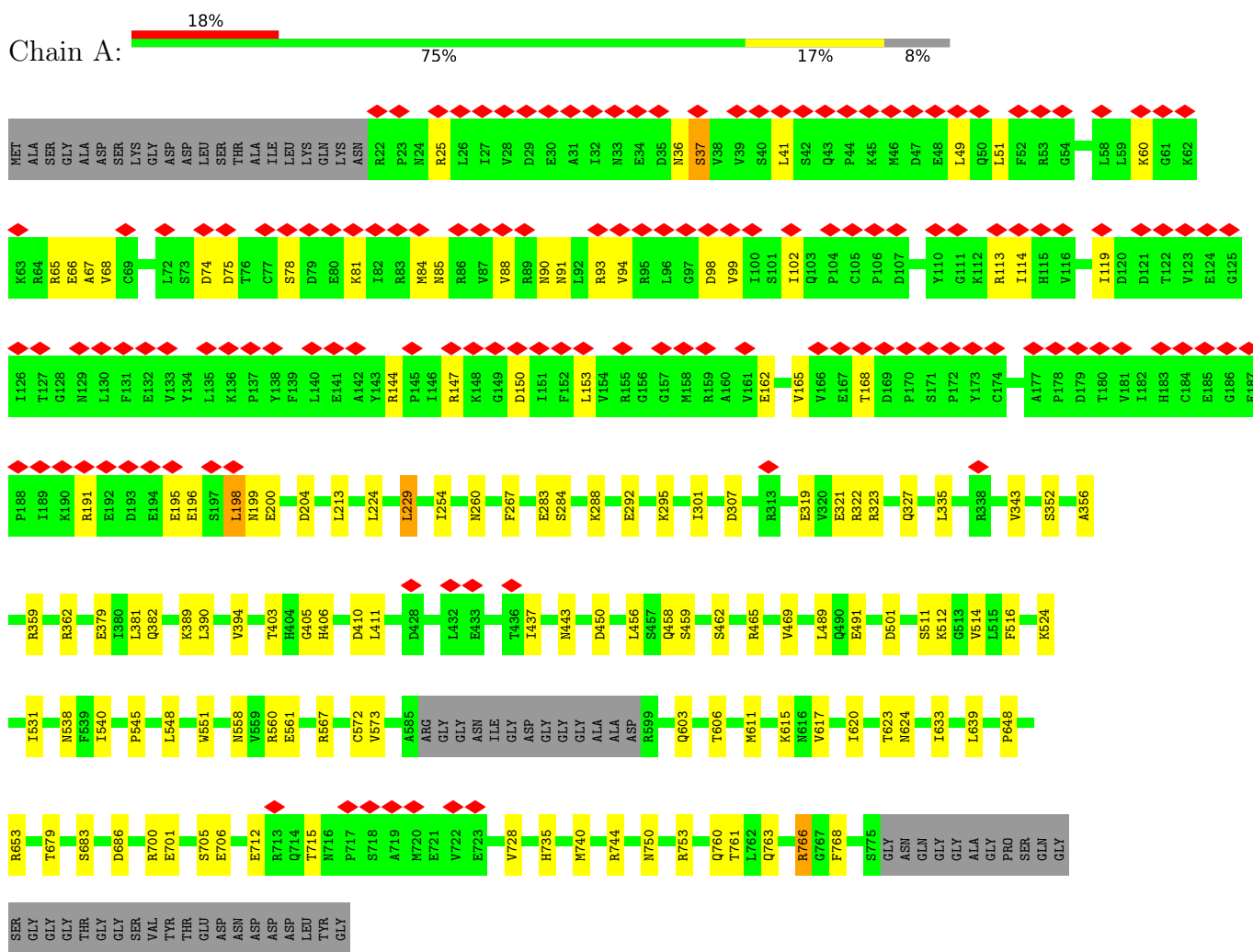
- Molecule 1 is a protein called Transitional endoplasmic reticulum ATPase.

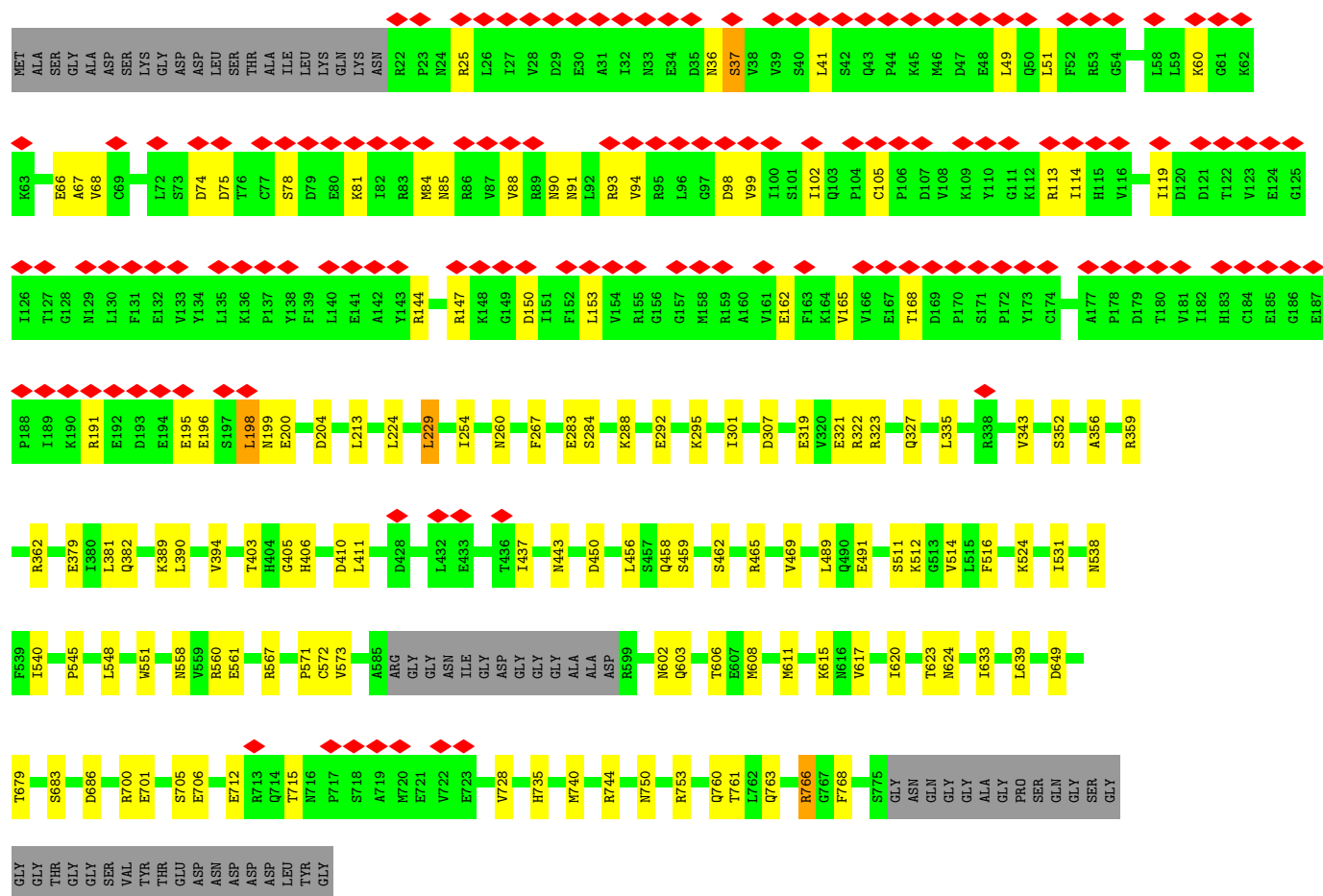
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	B	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	C	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	D	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	E	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	F	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	G	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	H	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	I	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	J	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	K	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		
1	L	741	Total	C	N	O	S	0	0
			5840	3673	1030	1106	31		

3 Residue-property plots

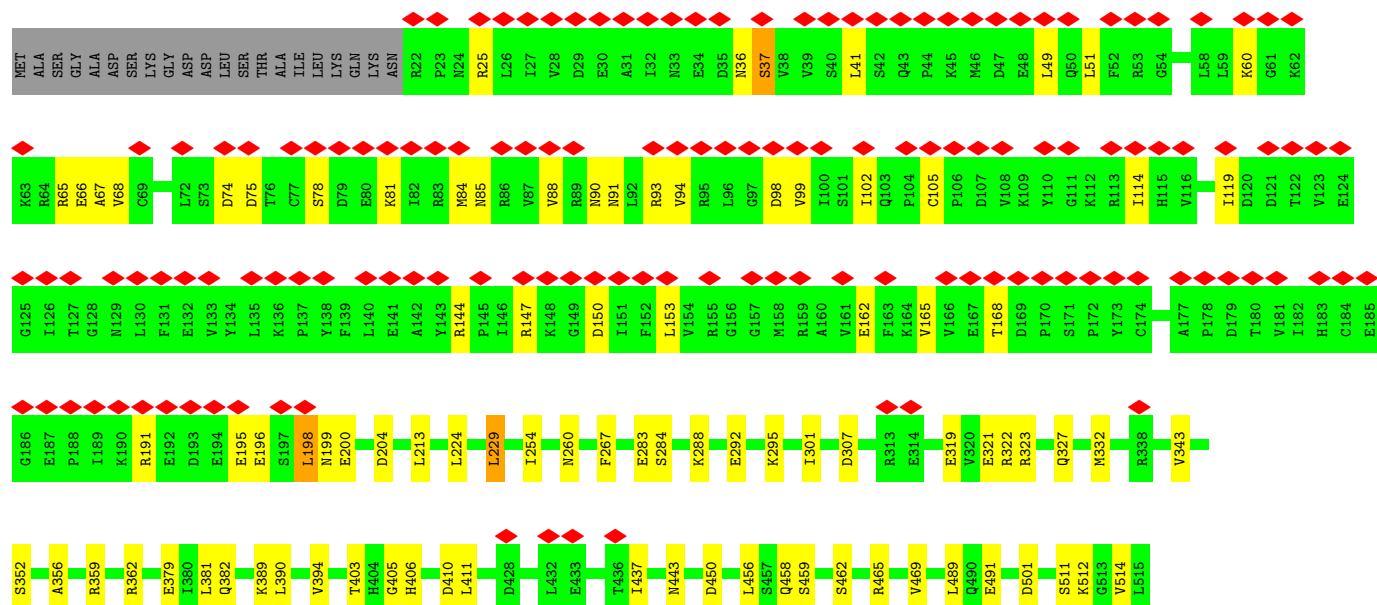
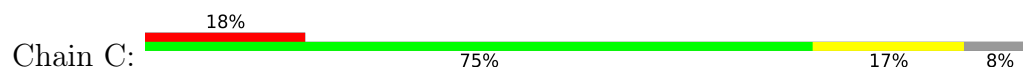
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

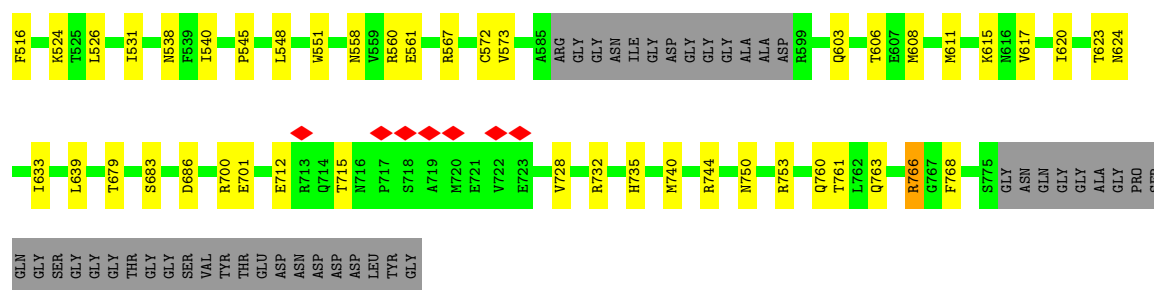
- Molecule 1: Transitional endoplasmic reticulum ATPase



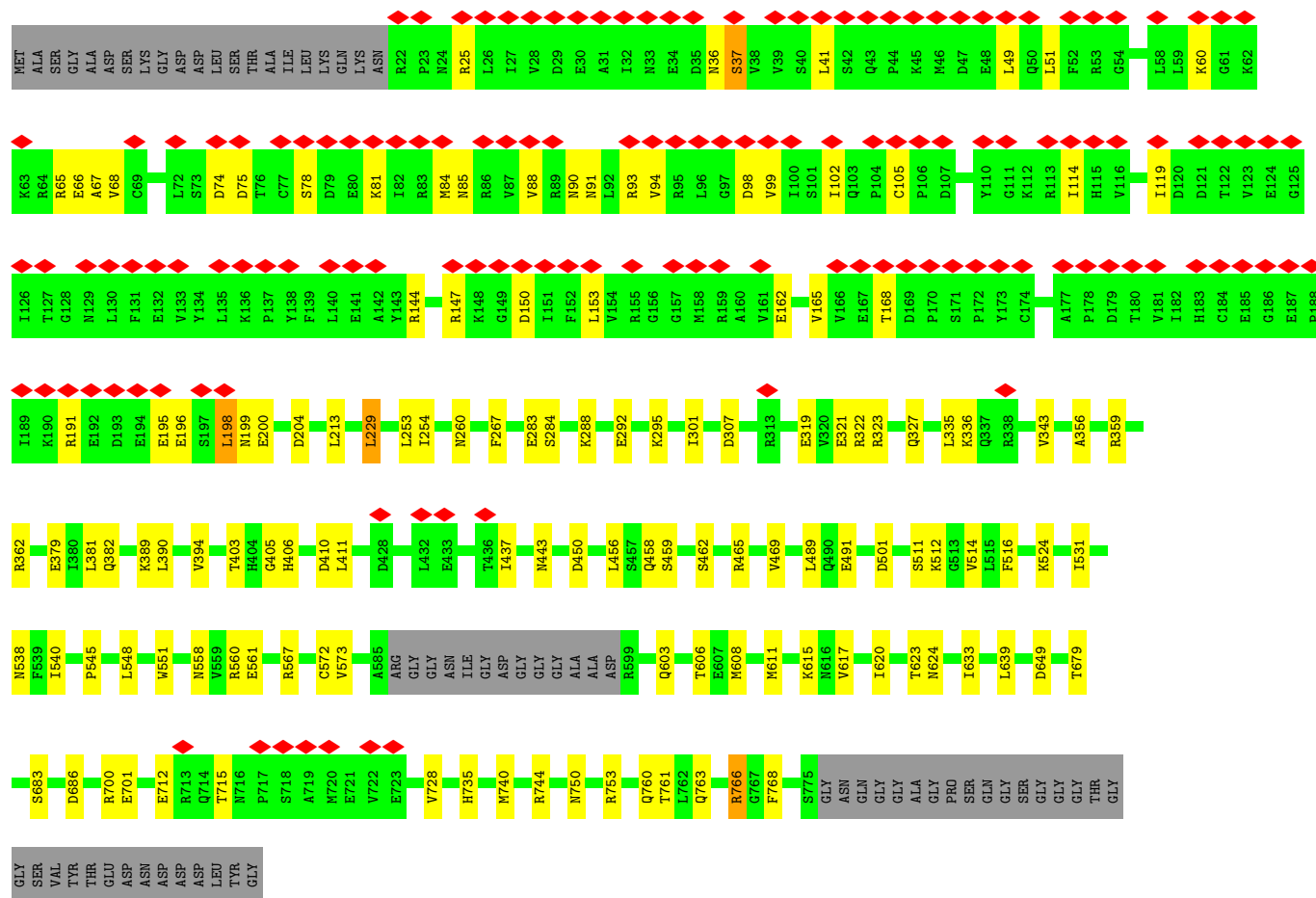
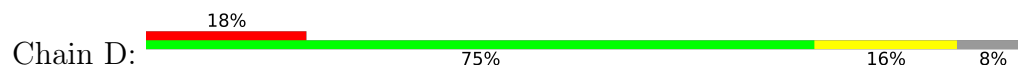


● Molecule 1: Transitional endoplasmic reticulum ATPase

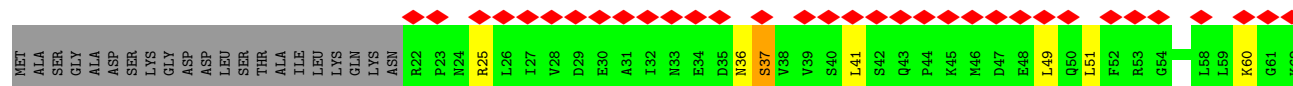


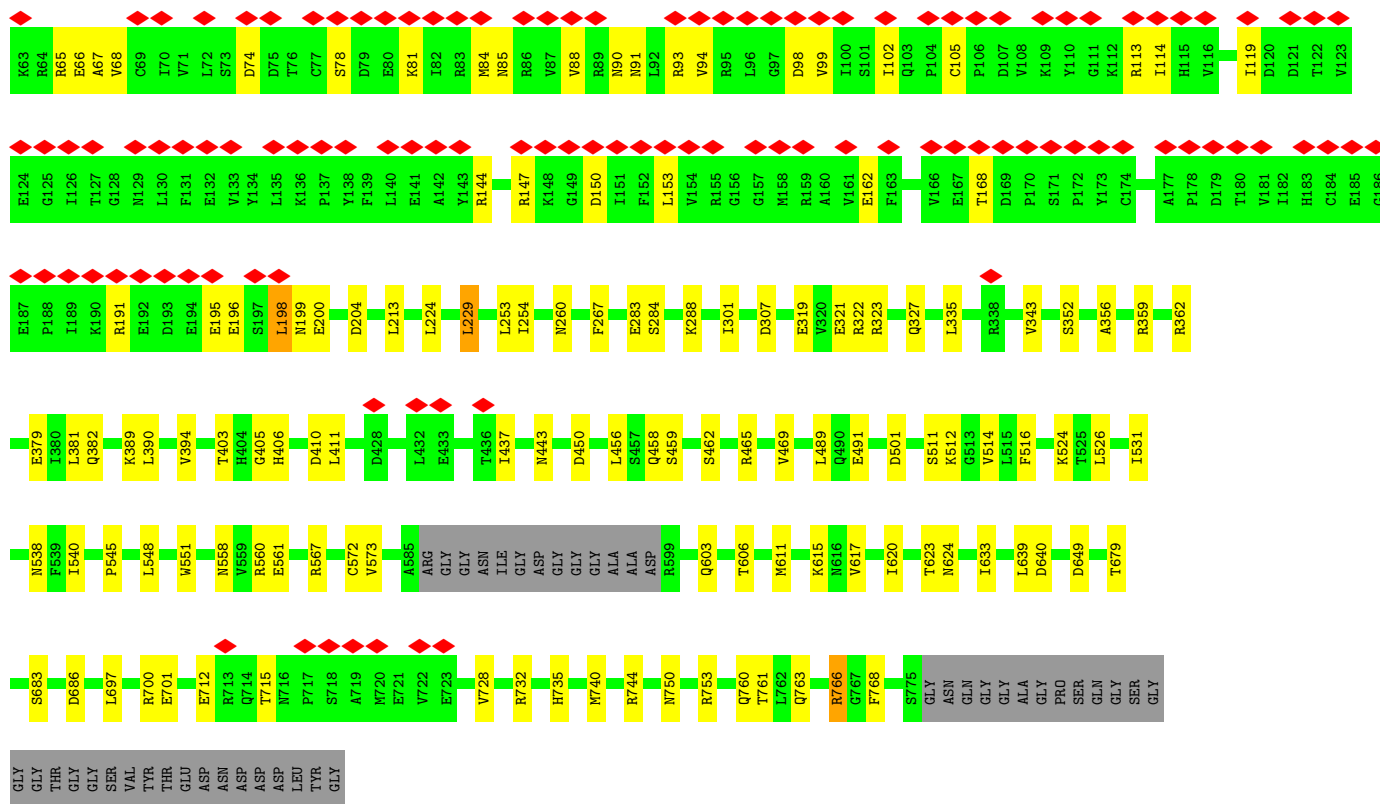


• Molecule 1: Transitional endoplasmic reticulum ATPase

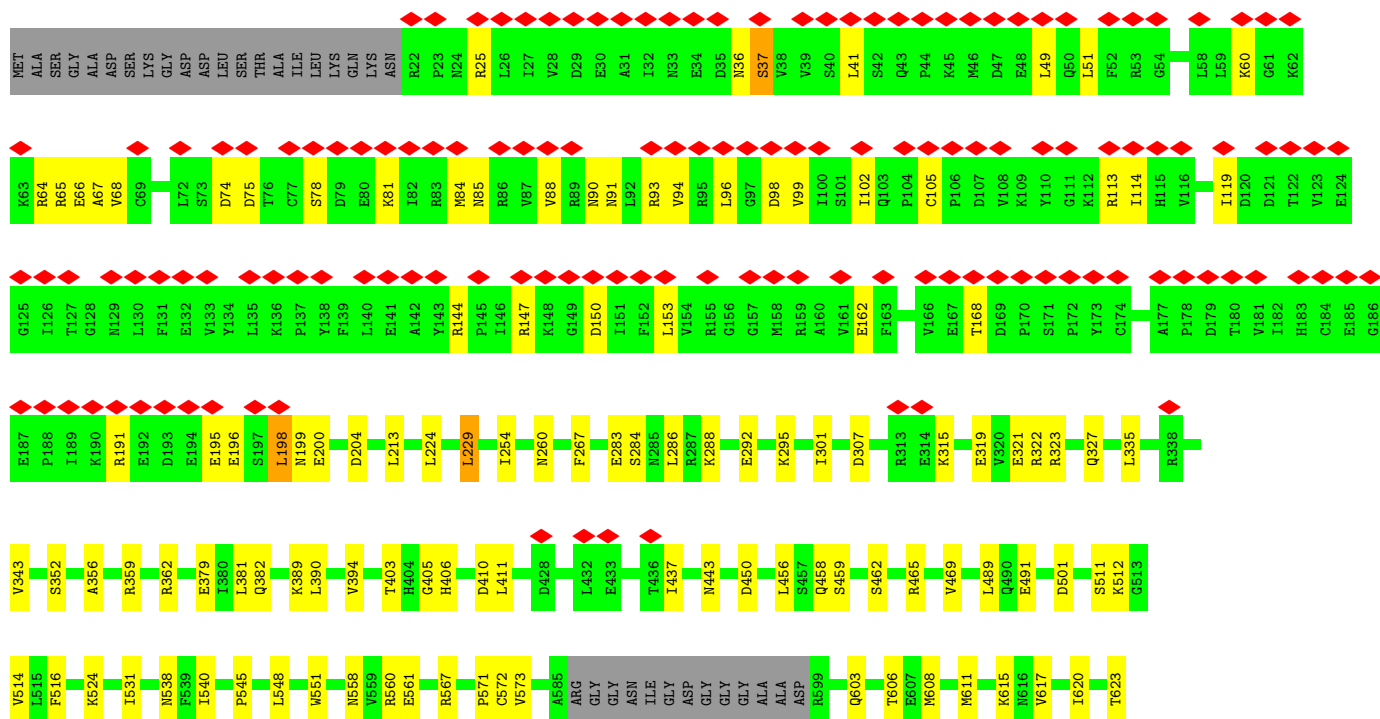
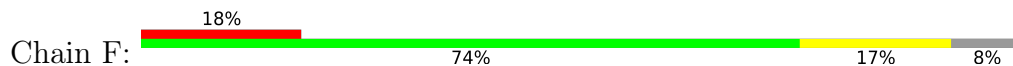


• Molecule 1: Transitional endoplasmic reticulum ATPase

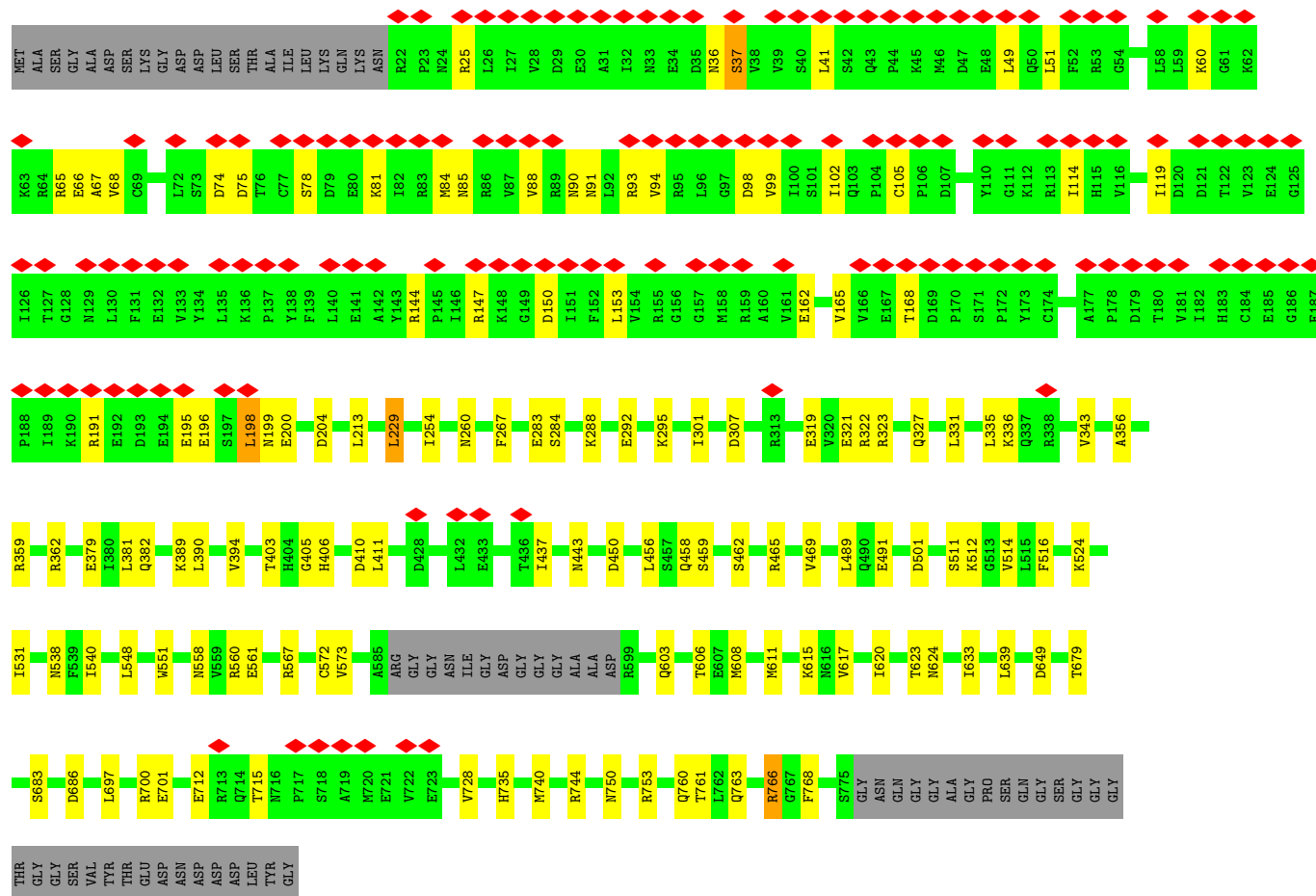
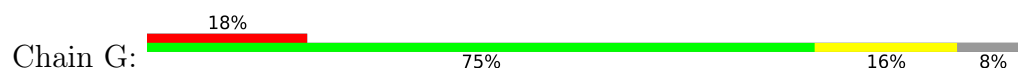




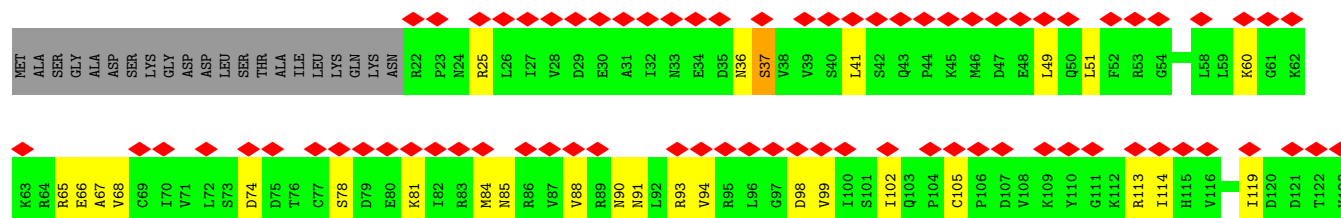
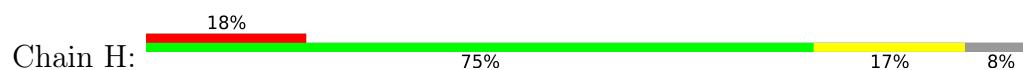
• Molecule 1: Transitional endoplasmic reticulum ATPase

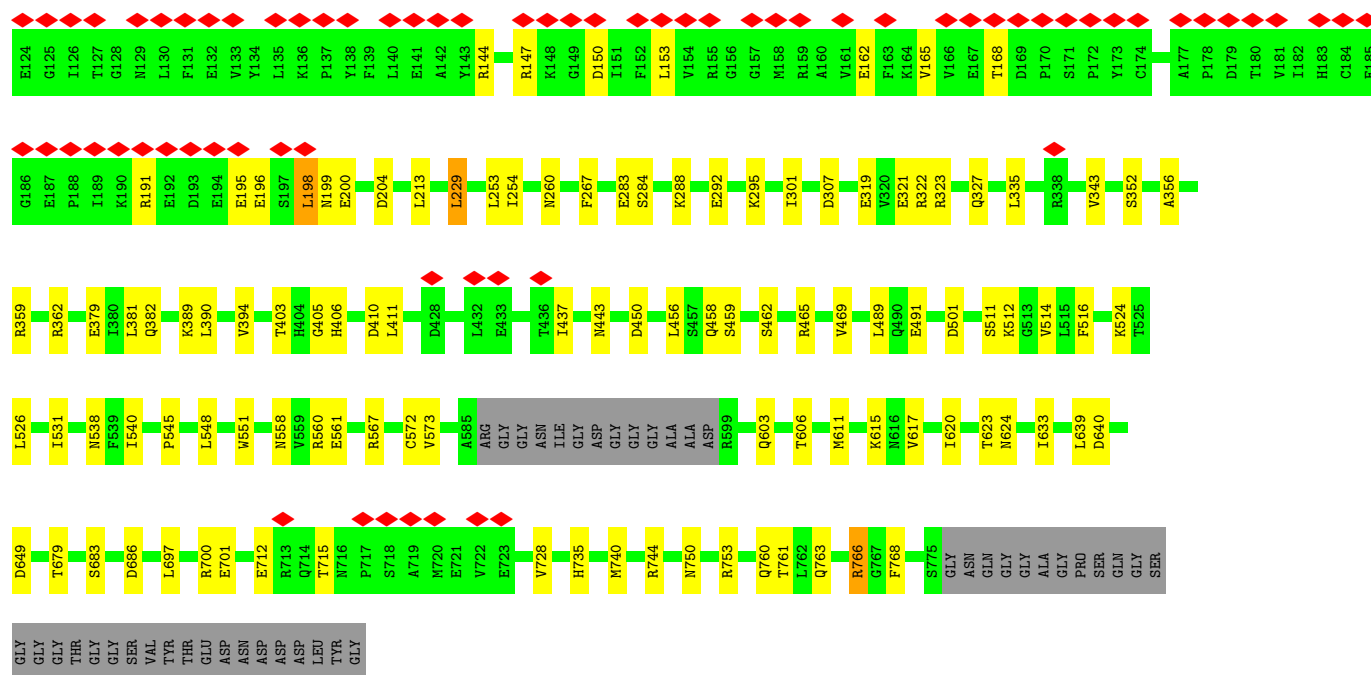


- Molecule 1: Transitional endoplasmic reticulum ATPase

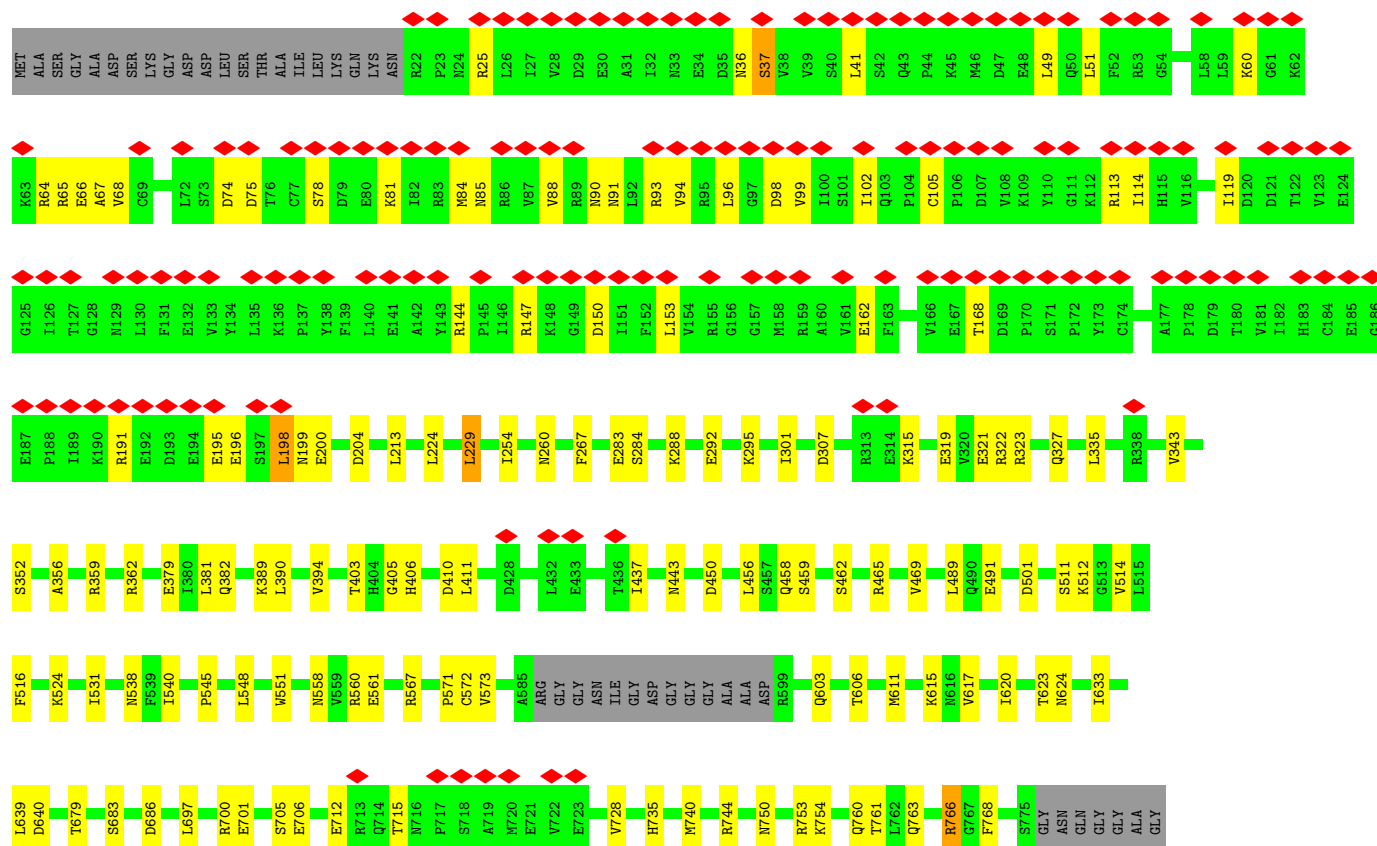
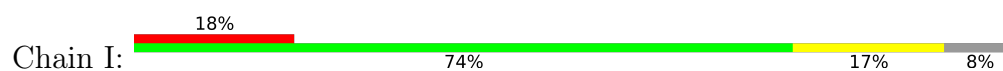


- Molecule 1: Transitional endoplasmic reticulum ATPase

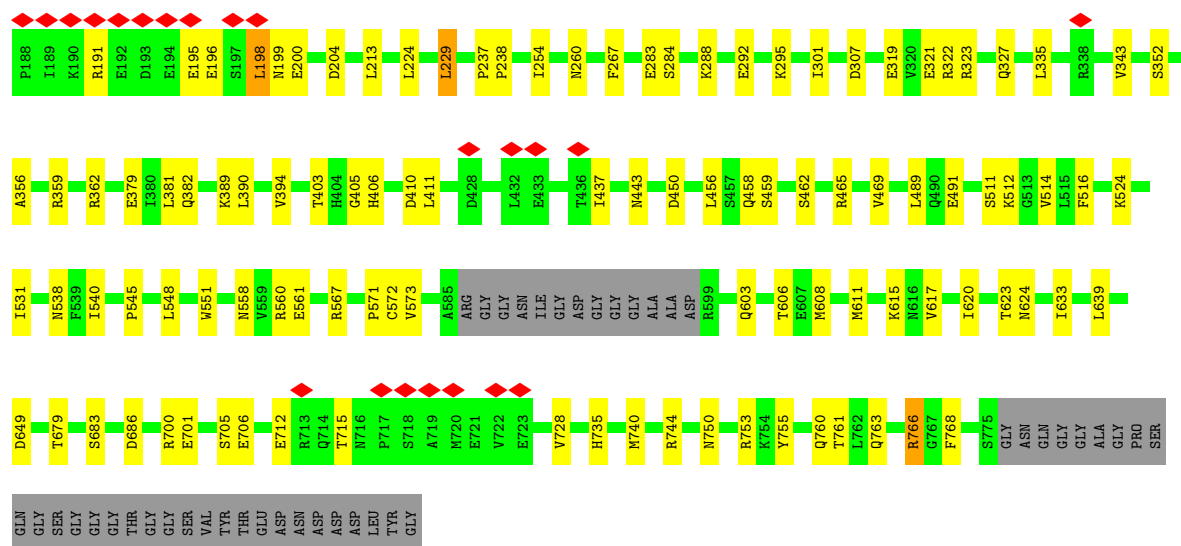




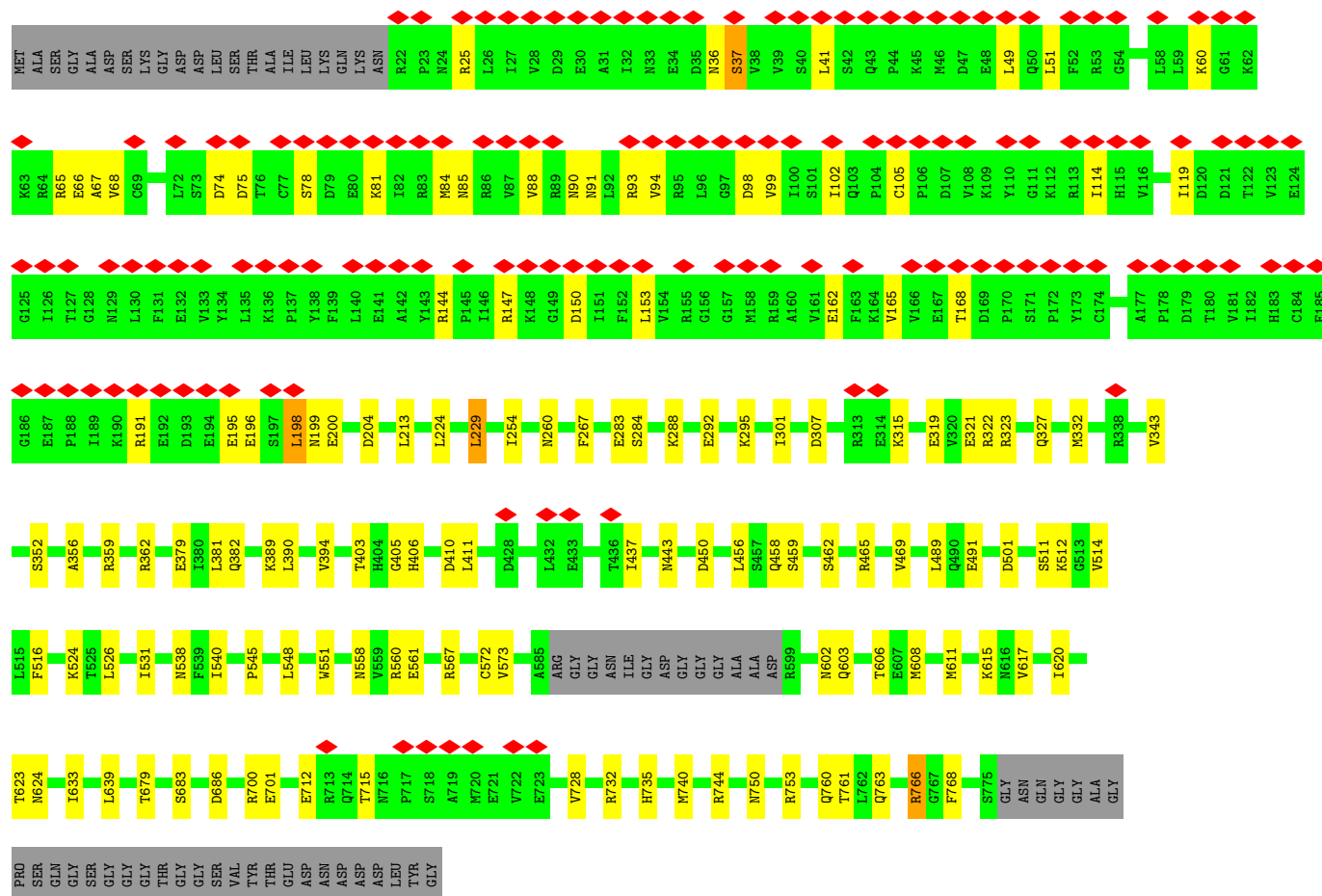
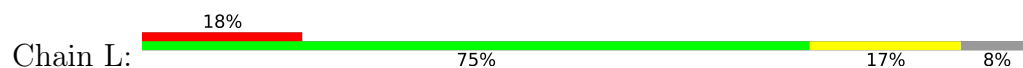
• Molecule 1: Transitional endoplasmic reticulum ATPase



WET	ALA	SER	GLY	ALA	ASP	SER	LYS	GLY	ASP	LEU	SER	THR	ALA	ILE	LEU	LYS	GLN	LYS	ASN	R22	P23	R24	R25	L26	I27	V28	D29	E30	A31	N33	E34	D35	N36	S37	V36	V39	S40	L41	S42	Q43	P44	K45	M46	D47	E48	L49	Q50	L51	F52	R53	G54	L58	L59	K60	G61	K62	G125
K63		E66	A67	V68	O69	L72	S73	D74	D75	T76	C77	S78	D79	E80	K81	I82	R83	H84	R85	R86	V87	V88	R89	L92	R93	Y94	R95	L96	G97	D98	V99	I100	S101	I102	Q103	P104	C105	P106	D107	V108	K109	Y110	G111	K112	R113	I114	H115	V116	I119	D120	D121	T122	V123	E124			
I126	T127	G128	N129	L130	F131	E132	V133	Y134	L135	K136	P137	Y138	F139	L140	E141	A142	Y143	R144	R147	K148	G149	D150	I151	F152	L153	V154	R155	G156	G157	M158	R159	A160	V161	E162	F163	K164	V165	V166	E167	T168	D169	P170	S171	P172	Y173	C174	A177	P178	D179	T180	V181	I182	H183	C184	E185	G186	



• Molecule 1: Transitional endoplasmic reticulum ATPase



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D6	Depositor
Number of particles used	27516	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	46	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.466	Depositor
Minimum map value	-1.135	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.104	Depositor
Recommended contour level	0.37	Depositor
Map size (Å)	379.008, 379.008, 379.008	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.4805, 1.4805, 1.4805	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.35	0/5938	0.60	1/8018 (0.0%)
1	B	0.35	0/5938	0.60	1/8018 (0.0%)
1	C	0.35	0/5938	0.60	1/8018 (0.0%)
1	D	0.35	0/5938	0.60	1/8018 (0.0%)
1	E	0.35	0/5938	0.60	1/8018 (0.0%)
1	F	0.35	0/5938	0.60	1/8018 (0.0%)
1	G	0.35	0/5938	0.60	1/8018 (0.0%)
1	H	0.35	0/5938	0.60	1/8018 (0.0%)
1	I	0.35	0/5938	0.60	1/8018 (0.0%)
1	J	0.35	0/5938	0.60	1/8018 (0.0%)
1	K	0.35	0/5938	0.60	1/8018 (0.0%)
1	L	0.35	0/5938	0.60	1/8018 (0.0%)
All	All	0.35	0/71256	0.60	12/96216 (0.0%)

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	766	ARG	CB-CG-CD	-5.28	99.15	111.30
1	B	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	E	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	F	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	A	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	G	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	I	766	ARG	CB-CG-CD	-5.28	99.17	111.30
1	K	766	ARG	CB-CG-CD	-5.28	99.16	111.30
1	L	766	ARG	CB-CG-CD	-5.28	99.17	111.30
1	C	766	ARG	CB-CG-CD	-5.27	99.18	111.30
1	D	766	ARG	CB-CG-CD	-5.27	99.18	111.30
1	J	766	ARG	CB-CG-CD	-5.27	99.18	111.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5840	0	5901	90	0
1	B	5840	0	5901	93	0
1	C	5840	0	5901	92	0
1	D	5840	0	5901	91	0
1	E	5840	0	5901	92	0
1	F	5840	0	5901	99	0
1	G	5840	0	5901	91	0
1	H	5840	0	5901	91	0
1	I	5840	0	5901	97	0
1	J	5840	0	5901	90	0
1	K	5840	0	5901	93	0
1	L	5840	0	5901	93	0
All	All	70080	0	70812	1020	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 7.

All (1020) 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)
1:F:760:GLN:HG3	1:J:760:GLN:HG3	1.69	0.75
1:A:760:GLN:HG3	1:I:760:GLN:HG3	1.69	0.74
1:B:760:GLN:HG3	1:H:760:GLN:HG3	1.69	0.73
1:C:403:THR:HG1	1:C:406:HIS:HD1	1.35	0.73
1:C:760:GLN:HG3	1:G:760:GLN:HG3	1.69	0.73
1:D:760:GLN:HG3	1:L:760:GLN:HG3	1.69	0.73
1:E:760:GLN:HG3	1:K:760:GLN:HG3	1.70	0.73
1:C:94:VAL:HG23	1:C:98:ASP:HB2	1.74	0.70
1:B:94:VAL:HG23	1:B:98:ASP:HB2	1.74	0.70
1:L:94:VAL:HG23	1:L:98:ASP:HB2	1.74	0.70
1:K:94:VAL:HG23	1:K:98:ASP:HB2	1.74	0.69
1:G:94:VAL:HG23	1:G:98:ASP:HB2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:94:VAL:HG23	1:D:98:ASP:HB2	1.74	0.69
1:A:94:VAL:HG23	1:A:98:ASP:HB2	1.74	0.69
1:J:94:VAL:HG23	1:J:98:ASP:HB2	1.74	0.69
1:E:94:VAL:HG23	1:E:98:ASP:HB2	1.74	0.69
1:H:94:VAL:HG23	1:H:98:ASP:HB2	1.74	0.69
1:I:94:VAL:HG23	1:I:98:ASP:HB2	1.74	0.69
1:F:94:VAL:HG23	1:F:98:ASP:HB2	1.74	0.69
1:J:403:THR:OG1	1:J:406:HIS:ND1	2.26	0.68
1:K:403:THR:OG1	1:K:406:HIS:ND1	2.26	0.68
1:A:403:THR:OG1	1:A:406:HIS:ND1	2.26	0.68
1:B:403:THR:OG1	1:B:406:HIS:ND1	2.26	0.68
1:L:403:THR:OG1	1:L:406:HIS:ND1	2.26	0.68
1:I:403:THR:OG1	1:I:406:HIS:ND1	2.26	0.67
1:F:403:THR:OG1	1:F:406:HIS:ND1	2.26	0.67
1:D:403:THR:OG1	1:D:406:HIS:ND1	2.26	0.66
1:G:403:THR:OG1	1:G:406:HIS:ND1	2.26	0.66
1:H:403:THR:OG1	1:H:406:HIS:ND1	2.26	0.66
1:E:403:THR:OG1	1:E:406:HIS:ND1	2.26	0.66
1:I:567:ARG:HB3	1:I:615:LYS:HZ3	1.61	0.66
1:F:567:ARG:HB3	1:F:615:LYS:HZ3	1.61	0.66
1:A:567:ARG:HB3	1:A:615:LYS:HZ3	1.61	0.66
1:J:567:ARG:HB3	1:J:615:LYS:HZ3	1.61	0.66
1:K:567:ARG:HB3	1:K:615:LYS:HZ3	1.61	0.65
1:E:567:ARG:HB3	1:E:615:LYS:HZ3	1.61	0.65
1:B:567:ARG:HB3	1:B:615:LYS:HZ3	1.61	0.65
1:H:567:ARG:HB3	1:H:615:LYS:HZ3	1.61	0.64
1:G:567:ARG:HB3	1:G:615:LYS:HZ3	1.61	0.64
1:L:567:ARG:HB3	1:L:615:LYS:HZ3	1.61	0.64
1:D:567:ARG:HB3	1:D:615:LYS:HZ3	1.61	0.64
1:C:567:ARG:HB3	1:C:615:LYS:HZ3	1.61	0.63
1:F:267:PHE:HB3	1:F:301:ILE:HG22	1.81	0.62
1:J:267:PHE:HB3	1:J:301:ILE:HG22	1.81	0.62
1:A:267:PHE:HB3	1:A:301:ILE:HG22	1.81	0.62
1:I:267:PHE:HB3	1:I:301:ILE:HG22	1.81	0.62
1:B:267:PHE:HB3	1:B:301:ILE:HG22	1.81	0.62
1:K:267:PHE:HB3	1:K:301:ILE:HG22	1.81	0.62
1:E:267:PHE:HB3	1:E:301:ILE:HG22	1.81	0.62
1:H:267:PHE:HB3	1:H:301:ILE:HG22	1.81	0.62
1:C:267:PHE:HB3	1:C:301:ILE:HG22	1.81	0.61
1:D:267:PHE:HB3	1:D:301:ILE:HG22	1.81	0.61
1:G:267:PHE:HB3	1:G:301:ILE:HG22	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:267:PHE:HB3	1:L:301:ILE:HG22	1.81	0.61
1:C:403:THR:OG1	1:C:406:HIS:ND1	2.26	0.60
1:D:450:ASP:OD1	1:D:450:ASP:N	2.35	0.59
1:B:119:ILE:O	1:B:191:ARG:NH1	2.35	0.59
1:D:119:ILE:O	1:D:191:ARG:NH1	2.35	0.59
1:G:119:ILE:O	1:G:191:ARG:NH1	2.35	0.59
1:G:450:ASP:OD1	1:G:450:ASP:N	2.35	0.59
1:K:119:ILE:O	1:K:191:ARG:NH1	2.35	0.59
1:E:25:ARG:HH21	1:E:99:VAL:HB	1.68	0.59
1:G:25:ARG:HH21	1:G:99:VAL:HB	1.68	0.59
1:H:25:ARG:HH21	1:H:99:VAL:HB	1.68	0.59
1:A:119:ILE:O	1:A:191:ARG:NH1	2.35	0.59
1:D:25:ARG:HH21	1:D:99:VAL:HB	1.68	0.59
1:E:119:ILE:O	1:E:191:ARG:NH1	2.35	0.59
1:H:119:ILE:O	1:H:191:ARG:NH1	2.35	0.59
1:J:119:ILE:O	1:J:191:ARG:NH1	2.35	0.59
1:F:25:ARG:HH21	1:F:99:VAL:HB	1.68	0.59
1:I:25:ARG:HH21	1:I:99:VAL:HB	1.68	0.59
1:B:78:SER:HB2	1:B:81:LYS:HB2	1.85	0.59
1:L:25:ARG:HH21	1:L:99:VAL:HB	1.68	0.59
1:A:213:LEU:HD13	1:A:254:ILE:HD11	1.85	0.59
1:D:213:LEU:HD13	1:D:254:ILE:HD11	1.85	0.59
1:E:213:LEU:HD13	1:E:254:ILE:HD11	1.85	0.59
1:H:213:LEU:HD13	1:H:254:ILE:HD11	1.85	0.59
1:K:78:SER:HB2	1:K:81:LYS:HB2	1.85	0.59
1:C:25:ARG:HH21	1:C:99:VAL:HB	1.68	0.58
1:J:213:LEU:HD13	1:J:254:ILE:HD11	1.85	0.58
1:C:119:ILE:O	1:C:191:ARG:NH1	2.35	0.58
1:G:213:LEU:HD13	1:G:254:ILE:HD11	1.85	0.58
1:L:119:ILE:O	1:L:191:ARG:NH1	2.35	0.58
1:B:213:LEU:HD13	1:B:254:ILE:HD11	1.85	0.58
1:C:78:SER:HB2	1:C:81:LYS:HB2	1.85	0.58
1:I:213:LEU:HD13	1:I:254:ILE:HD11	1.85	0.58
1:J:78:SER:HB2	1:J:81:LYS:HB2	1.85	0.58
1:K:213:LEU:HD13	1:K:254:ILE:HD11	1.85	0.58
1:L:78:SER:HB2	1:L:81:LYS:HB2	1.85	0.58
1:A:78:SER:HB2	1:A:81:LYS:HB2	1.85	0.58
1:F:119:ILE:O	1:F:191:ARG:NH1	2.35	0.58
1:C:213:LEU:HD13	1:C:254:ILE:HD11	1.85	0.58
1:F:213:LEU:HD13	1:F:254:ILE:HD11	1.85	0.58
1:I:119:ILE:O	1:I:191:ARG:NH1	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:213:LEU:HD13	1:L:254:ILE:HD11	1.85	0.58
1:A:560:ARG:HE	1:F:465:ARG:HH12	1.51	0.58
1:A:25:ARG:HH21	1:A:99:VAL:HB	1.68	0.57
1:F:78:SER:HB2	1:F:81:LYS:HB2	1.85	0.57
1:I:78:SER:HB2	1:I:81:LYS:HB2	1.85	0.57
1:J:25:ARG:HH21	1:J:99:VAL:HB	1.68	0.57
1:K:25:ARG:HH21	1:K:99:VAL:HB	1.68	0.57
1:B:25:ARG:HH21	1:B:99:VAL:HB	1.68	0.57
1:E:78:SER:HB2	1:E:81:LYS:HB2	1.85	0.57
1:H:78:SER:HB2	1:H:81:LYS:HB2	1.85	0.57
1:A:465:ARG:HH12	1:B:560:ARG:HE	1.51	0.57
1:A:572:CYS:SG	1:A:573:VAL:N	2.78	0.57
1:J:572:CYS:SG	1:J:573:VAL:N	2.78	0.57
1:I:465:ARG:HH12	1:J:560:ARG:HE	1.52	0.57
1:K:572:CYS:SG	1:K:573:VAL:N	2.78	0.57
1:A:450:ASP:OD1	1:A:450:ASP:N	2.35	0.57
1:B:572:CYS:SG	1:B:573:VAL:N	2.78	0.57
1:J:450:ASP:OD1	1:J:450:ASP:N	2.35	0.57
1:D:78:SER:HB2	1:D:81:LYS:HB2	1.85	0.57
1:G:78:SER:HB2	1:G:81:LYS:HB2	1.85	0.57
1:C:49:LEU:HD12	1:C:51:LEU:H	1.71	0.56
1:C:572:CYS:SG	1:C:573:VAL:N	2.78	0.56
1:D:49:LEU:HD12	1:D:51:LEU:H	1.71	0.56
1:E:49:LEU:HD12	1:E:51:LEU:H	1.70	0.56
1:D:572:CYS:SG	1:D:573:VAL:N	2.78	0.56
1:G:49:LEU:HD12	1:G:51:LEU:H	1.71	0.56
1:G:572:CYS:SG	1:G:573:VAL:N	2.78	0.56
1:L:49:LEU:HD12	1:L:51:LEU:H	1.71	0.56
1:L:572:CYS:SG	1:L:573:VAL:N	2.78	0.56
1:E:67:ALA:HB2	1:E:91:ASN:HD22	1.70	0.56
1:E:465:ARG:HH12	1:F:560:ARG:HE	1.53	0.56
1:F:450:ASP:OD1	1:F:450:ASP:N	2.35	0.56
1:H:49:LEU:HD12	1:H:51:LEU:H	1.71	0.56
1:H:67:ALA:HB2	1:H:91:ASN:HD22	1.70	0.56
1:I:450:ASP:OD1	1:I:450:ASP:N	2.35	0.56
1:J:465:ARG:HH12	1:K:560:ARG:HE	1.52	0.56
1:E:572:CYS:SG	1:E:573:VAL:N	2.78	0.56
1:F:572:CYS:SG	1:F:573:VAL:N	2.78	0.56
1:H:465:ARG:HH12	1:I:560:ARG:HE	1.53	0.56
1:H:572:CYS:SG	1:H:573:VAL:N	2.78	0.56
1:K:465:ARG:HH12	1:L:560:ARG:HE	1.51	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:572:CYS:SG	1:I:573:VAL:N	2.78	0.56
1:D:465:ARG:HH12	1:E:560:ARG:HE	1.52	0.56
1:J:49:LEU:HD12	1:J:51:LEU:H	1.71	0.56
1:A:49:LEU:HD12	1:A:51:LEU:H	1.71	0.56
1:G:465:ARG:HH12	1:H:560:ARG:HE	1.52	0.56
1:B:49:LEU:HD12	1:B:51:LEU:H	1.70	0.56
1:D:91:ASN:ND2	1:D:150:ASP:OD1	2.39	0.56
1:G:560:ARG:HE	1:L:465:ARG:HH12	1.52	0.56
1:G:91:ASN:ND2	1:G:150:ASP:OD1	2.39	0.56
1:L:91:ASN:ND2	1:L:150:ASP:OD1	2.39	0.56
1:C:91:ASN:ND2	1:C:150:ASP:OD1	2.39	0.56
1:I:49:LEU:HD12	1:I:51:LEU:H	1.71	0.56
1:D:67:ALA:HB2	1:D:91:ASN:HD22	1.70	0.55
1:F:49:LEU:HD12	1:F:51:LEU:H	1.71	0.55
1:G:67:ALA:HB2	1:G:91:ASN:HD22	1.70	0.55
1:K:49:LEU:HD12	1:K:51:LEU:H	1.71	0.55
1:L:67:ALA:HB2	1:L:91:ASN:HD22	1.70	0.55
1:B:465:ARG:HH12	1:C:560:ARG:HE	1.52	0.55
1:C:67:ALA:HB2	1:C:91:ASN:HD22	1.70	0.55
1:E:91:ASN:ND2	1:E:150:ASP:OD1	2.39	0.55
1:H:91:ASN:ND2	1:H:150:ASP:OD1	2.39	0.55
1:K:91:ASN:ND2	1:K:150:ASP:OD1	2.39	0.55
1:A:356:ALA:O	1:A:362:ARG:NH1	2.40	0.55
1:B:91:ASN:ND2	1:B:150:ASP:OD1	2.39	0.55
1:I:67:ALA:HB2	1:I:91:ASN:HD22	1.70	0.55
1:J:356:ALA:O	1:J:362:ARG:NH1	2.40	0.55
1:C:465:ARG:HH12	1:D:560:ARG:HE	1.52	0.55
1:E:196:GLU:HA	1:E:199:ASN:HD21	1.71	0.55
1:L:196:GLU:HA	1:L:199:ASN:HD21	1.71	0.55
1:H:196:GLU:HA	1:H:199:ASN:HD21	1.71	0.55
1:C:196:GLU:HA	1:C:199:ASN:HD21	1.71	0.55
1:F:67:ALA:HB2	1:F:91:ASN:HD22	1.70	0.55
1:A:67:ALA:HB2	1:A:91:ASN:HD22	1.70	0.55
1:E:683:SER:OG	1:E:686:ASP:OD1	2.25	0.55
1:I:91:ASN:ND2	1:I:150:ASP:OD1	2.39	0.55
1:J:91:ASN:ND2	1:J:150:ASP:OD1	2.39	0.55
1:K:196:GLU:HA	1:K:199:ASN:HD21	1.71	0.55
1:A:91:ASN:ND2	1:A:150:ASP:OD1	2.39	0.55
1:B:196:GLU:HA	1:B:199:ASN:HD21	1.71	0.55
1:E:356:ALA:O	1:E:362:ARG:NH1	2.40	0.55
1:F:91:ASN:ND2	1:F:150:ASP:OD1	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:356:ALA:O	1:H:362:ARG:NH1	2.40	0.55
1:H:683:SER:OG	1:H:686:ASP:OD1	2.25	0.55
1:J:67:ALA:HB2	1:J:91:ASN:HD22	1.70	0.55
1:K:356:ALA:O	1:K:362:ARG:NH1	2.40	0.55
1:L:356:ALA:O	1:L:362:ARG:NH1	2.40	0.55
1:B:67:ALA:HB2	1:B:91:ASN:HD22	1.70	0.54
1:B:356:ALA:O	1:B:362:ARG:NH1	2.40	0.54
1:C:356:ALA:O	1:C:362:ARG:NH1	2.40	0.54
1:F:196:GLU:HA	1:F:199:ASN:HD21	1.71	0.54
1:I:196:GLU:HA	1:I:199:ASN:HD21	1.71	0.54
1:I:356:ALA:O	1:I:362:ARG:NH1	2.40	0.54
1:K:67:ALA:HB2	1:K:91:ASN:HD22	1.70	0.54
1:D:356:ALA:O	1:D:362:ARG:NH1	2.40	0.54
1:G:356:ALA:O	1:G:362:ARG:NH1	2.40	0.54
1:D:524:LYS:NZ	1:D:624:ASN:OD1	2.41	0.54
1:F:356:ALA:O	1:F:362:ARG:NH1	2.40	0.54
1:K:284:SER:OG	1:K:288:LYS:NZ	2.41	0.54
1:B:284:SER:OG	1:B:288:LYS:NZ	2.41	0.54
1:G:524:LYS:NZ	1:G:624:ASN:OD1	2.41	0.54
1:H:524:LYS:NZ	1:H:624:ASN:OD1	2.41	0.54
1:A:524:LYS:NZ	1:A:624:ASN:OD1	2.41	0.54
1:E:524:LYS:NZ	1:E:624:ASN:OD1	2.41	0.54
1:J:524:LYS:NZ	1:J:624:ASN:OD1	2.41	0.54
1:A:750:ASN:OD1	1:A:753:ARG:NH2	2.41	0.54
1:C:524:LYS:NZ	1:C:624:ASN:OD1	2.41	0.54
1:E:284:SER:OG	1:E:288:LYS:NZ	2.41	0.54
1:J:750:ASN:OD1	1:J:753:ARG:NH2	2.41	0.54
1:L:284:SER:OG	1:L:288:LYS:NZ	2.41	0.54
1:L:524:LYS:NZ	1:L:624:ASN:OD1	2.41	0.54
1:A:196:GLU:HA	1:A:199:ASN:HD21	1.71	0.54
1:C:284:SER:OG	1:C:288:LYS:NZ	2.41	0.54
1:D:196:GLU:HA	1:D:199:ASN:HD21	1.71	0.54
1:G:196:GLU:HA	1:G:199:ASN:HD21	1.71	0.54
1:H:284:SER:OG	1:H:288:LYS:NZ	2.41	0.54
1:J:284:SER:OG	1:J:288:LYS:NZ	2.41	0.54
1:A:284:SER:OG	1:A:288:LYS:NZ	2.41	0.54
1:B:524:LYS:NZ	1:B:624:ASN:OD1	2.41	0.54
1:C:750:ASN:OD1	1:C:753:ARG:NH2	2.41	0.54
1:F:558:ASN:ND2	1:F:561:GLU:OE2	2.41	0.54
1:F:750:ASN:OD1	1:F:753:ARG:NH2	2.41	0.54
1:I:558:ASN:ND2	1:I:561:GLU:OE2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:750:ASN:OD1	1:I:753:ARG:NH2	2.41	0.54
1:J:196:GLU:HA	1:J:199:ASN:HD21	1.71	0.54
1:K:524:LYS:NZ	1:K:624:ASN:OD1	2.41	0.54
1:L:750:ASN:OD1	1:L:753:ARG:NH2	2.41	0.54
1:D:750:ASN:OD1	1:D:753:ARG:NH2	2.41	0.53
1:E:750:ASN:OD1	1:E:753:ARG:NH2	2.41	0.53
1:G:558:ASN:ND2	1:G:561:GLU:OE2	2.41	0.53
1:G:750:ASN:OD1	1:G:753:ARG:NH2	2.41	0.53
1:H:750:ASN:OD1	1:H:753:ARG:NH2	2.41	0.53
1:F:284:SER:OG	1:F:288:LYS:NZ	2.41	0.53
1:H:489:LEU:HD13	1:H:531:ILE:HD13	1.90	0.53
1:I:284:SER:OG	1:I:288:LYS:NZ	2.41	0.53
1:I:524:LYS:NZ	1:I:624:ASN:OD1	2.41	0.53
1:L:683:SER:OG	1:L:686:ASP:OD1	2.25	0.53
1:C:558:ASN:ND2	1:C:561:GLU:OE2	2.41	0.53
1:D:558:ASN:ND2	1:D:561:GLU:OE2	2.42	0.53
1:E:489:LEU:HD13	1:E:531:ILE:HD13	1.90	0.53
1:F:524:LYS:NZ	1:F:624:ASN:OD1	2.41	0.53
1:G:489:LEU:HD13	1:G:531:ILE:HD13	1.90	0.53
1:A:558:ASN:ND2	1:A:561:GLU:OE2	2.41	0.53
1:G:683:SER:OG	1:G:686:ASP:OD1	2.25	0.53
1:J:558:ASN:ND2	1:J:561:GLU:OE2	2.41	0.53
1:L:558:ASN:ND2	1:L:561:GLU:OE2	2.42	0.53
1:D:683:SER:OG	1:D:686:ASP:OD1	2.25	0.53
1:A:489:LEU:HD13	1:A:531:ILE:HD13	1.90	0.53
1:B:750:ASN:OD1	1:B:753:ARG:NH2	2.41	0.53
1:D:489:LEU:HD13	1:D:531:ILE:HD13	1.90	0.53
1:J:489:LEU:HD13	1:J:531:ILE:HD13	1.90	0.53
1:K:750:ASN:OD1	1:K:753:ARG:NH2	2.41	0.53
1:D:284:SER:OG	1:D:288:LYS:NZ	2.41	0.53
1:E:558:ASN:ND2	1:E:561:GLU:OE2	2.41	0.53
1:G:284:SER:OG	1:G:288:LYS:NZ	2.41	0.53
1:B:319:GLU:OE1	1:B:323:ARG:NH2	2.42	0.53
1:F:683:SER:OG	1:F:686:ASP:OD1	2.25	0.53
1:H:558:ASN:ND2	1:H:561:GLU:OE2	2.41	0.53
1:K:319:GLU:OE1	1:K:323:ARG:NH2	2.42	0.52
1:B:558:ASN:ND2	1:B:561:GLU:OE2	2.42	0.52
1:I:683:SER:OG	1:I:686:ASP:OD1	2.25	0.52
1:K:558:ASN:ND2	1:K:561:GLU:OE2	2.41	0.52
1:B:489:LEU:HD13	1:B:531:ILE:HD13	1.90	0.52
1:K:489:LEU:HD13	1:K:531:ILE:HD13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:489:LEU:HD13	1:C:531:ILE:HD13	1.90	0.52
1:I:489:LEU:HD13	1:I:531:ILE:HD13	1.90	0.52
1:L:489:LEU:HD13	1:L:531:ILE:HD13	1.90	0.52
1:A:405:GLY:O	1:A:462:SER:OG	2.25	0.52
1:B:683:SER:OG	1:B:686:ASP:OD1	2.25	0.52
1:D:458:GLN:OE1	1:D:459:SER:OG	2.28	0.52
1:F:489:LEU:HD13	1:F:531:ILE:HD13	1.90	0.52
1:J:405:GLY:O	1:J:462:SER:OG	2.25	0.52
1:K:683:SER:OG	1:K:686:ASP:OD1	2.25	0.52
1:G:458:GLN:OE1	1:G:459:SER:OG	2.28	0.51
1:A:319:GLU:OE1	1:A:323:ARG:NH2	2.42	0.51
1:C:701:GLU:OE1	1:C:735:HIS:NE2	2.43	0.51
1:D:701:GLU:OE1	1:D:735:HIS:NE2	2.43	0.51
1:G:701:GLU:OE1	1:G:735:HIS:NE2	2.43	0.51
1:K:75:ASP:OD1	1:K:75:ASP:N	2.43	0.51
1:L:701:GLU:OE1	1:L:735:HIS:NE2	2.43	0.51
1:A:381:LEU:HD23	1:A:411:LEU:HD13	1.93	0.51
1:C:204:ASP:OD1	1:C:204:ASP:N	2.43	0.51
1:J:319:GLU:OE1	1:J:323:ARG:NH2	2.42	0.51
1:K:37:SER:HB2	1:K:144:ARG:HD2	1.92	0.51
1:L:204:ASP:N	1:L:204:ASP:OD1	2.43	0.51
1:B:37:SER:HB2	1:B:144:ARG:HD2	1.92	0.51
1:B:75:ASP:OD1	1:B:75:ASP:N	2.43	0.51
1:E:319:GLU:OE1	1:E:323:ARG:NH2	2.42	0.51
1:F:36:ASN:HA	1:F:85:ASN:HD21	1.75	0.51
1:G:319:GLU:OE1	1:G:323:ARG:NH2	2.42	0.51
1:I:36:ASN:HA	1:I:85:ASN:HD21	1.75	0.51
1:J:381:LEU:HD23	1:J:411:LEU:HD13	1.93	0.51
1:H:458:GLN:OE1	1:H:459:SER:OG	2.28	0.51
1:J:501:ASP:OD1	1:J:501:ASP:N	2.44	0.51
1:K:701:GLU:OE1	1:K:735:HIS:NE2	2.43	0.51
1:C:683:SER:OG	1:C:686:ASP:OD1	2.25	0.51
1:D:319:GLU:OE1	1:D:323:ARG:NH2	2.42	0.51
1:D:437:ILE:HG12	1:E:229:LEU:HD21	1.93	0.51
1:E:458:GLN:OE1	1:E:459:SER:OG	2.28	0.51
1:H:319:GLU:OE1	1:H:323:ARG:NH2	2.42	0.51
1:J:489:LEU:HD11	1:J:516:PHE:HZ	1.76	0.51
1:J:701:GLU:OE1	1:J:735:HIS:NE2	2.43	0.51
1:A:352:SER:O	1:A:352:SER:OG	2.29	0.51
1:A:489:LEU:HD11	1:A:516:PHE:HZ	1.76	0.51
1:B:458:GLN:OE1	1:B:459:SER:OG	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:381:LEU:HD23	1:C:411:LEU:HD13	1.93	0.51
1:G:501:ASP:OD1	1:G:501:ASP:N	2.44	0.51
1:I:75:ASP:OD1	1:I:75:ASP:N	2.43	0.51
1:J:352:SER:O	1:J:352:SER:OG	2.29	0.51
1:K:458:GLN:OE1	1:K:459:SER:OG	2.28	0.51
1:A:389:LYS:HE3	1:A:443:ASN:HA	1.93	0.51
1:B:701:GLU:OE1	1:B:735:HIS:NE2	2.43	0.51
1:F:37:SER:HB2	1:F:144:ARG:HD2	1.92	0.51
1:G:381:LEU:HD23	1:G:411:LEU:HD13	1.93	0.51
1:H:60:LYS:HA	1:H:66:GLU:HG3	1.93	0.51
1:I:701:GLU:OE1	1:I:735:HIS:NE2	2.43	0.51
1:J:37:SER:HB2	1:J:144:ARG:HD2	1.92	0.51
1:J:389:LYS:HE3	1:J:443:ASN:HA	1.93	0.51
1:L:381:LEU:HD23	1:L:411:LEU:HD13	1.93	0.51
1:D:381:LEU:HD23	1:D:411:LEU:HD13	1.93	0.51
1:E:60:LYS:HA	1:E:66:GLU:HG3	1.93	0.51
1:F:75:ASP:OD1	1:F:75:ASP:N	2.43	0.51
1:F:389:LYS:HE3	1:F:443:ASN:HA	1.93	0.51
1:F:701:GLU:OE1	1:F:735:HIS:NE2	2.43	0.51
1:H:437:ILE:HG12	1:I:229:LEU:HD21	1.93	0.51
1:I:389:LYS:HE3	1:I:443:ASN:HA	1.93	0.51
1:K:489:LEU:HD11	1:K:516:PHE:HZ	1.76	0.51
1:A:37:SER:HB2	1:A:144:ARG:HD2	1.92	0.51
1:B:489:LEU:HD11	1:B:516:PHE:HZ	1.76	0.51
1:E:701:GLU:OE1	1:E:735:HIS:NE2	2.43	0.51
1:F:319:GLU:OE1	1:F:323:ARG:NH2	2.42	0.51
1:I:37:SER:HB2	1:I:144:ARG:HD2	1.92	0.51
1:A:683:SER:OG	1:A:686:ASP:OD1	2.25	0.50
1:F:381:LEU:HD23	1:F:411:LEU:HD13	1.93	0.50
1:F:489:LEU:HD11	1:F:516:PHE:HZ	1.76	0.50
1:G:204:ASP:N	1:G:204:ASP:OD1	2.43	0.50
1:I:319:GLU:OE1	1:I:323:ARG:NH2	2.42	0.50
1:I:489:LEU:HD11	1:I:516:PHE:HZ	1.76	0.50
1:B:36:ASN:HA	1:B:85:ASN:HD21	1.75	0.50
1:B:60:LYS:HA	1:B:66:GLU:HG3	1.93	0.50
1:G:437:ILE:HG12	1:H:229:LEU:HD21	1.94	0.50
1:I:381:LEU:HD23	1:I:411:LEU:HD13	1.93	0.50
1:J:36:ASN:HA	1:J:85:ASN:HD21	1.75	0.50
1:L:489:LEU:HD11	1:L:516:PHE:HZ	1.76	0.50
1:B:437:ILE:HG12	1:C:229:LEU:HD21	1.94	0.50
1:C:389:LYS:HE3	1:C:443:ASN:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:37:SER:HB2	1:D:144:ARG:HD2	1.92	0.50
1:D:204:ASP:N	1:D:204:ASP:OD1	2.43	0.50
1:E:36:ASN:HA	1:E:85:ASN:HD21	1.75	0.50
1:E:649:ASP:OD1	1:E:649:ASP:N	2.41	0.50
1:G:36:ASN:HA	1:G:85:ASN:HD21	1.75	0.50
1:H:36:ASN:HA	1:H:85:ASN:HD21	1.75	0.50
1:I:60:LYS:HA	1:I:66:GLU:HG3	1.93	0.50
1:J:683:SER:OG	1:J:686:ASP:OD1	2.25	0.50
1:K:36:ASN:HA	1:K:85:ASN:HD21	1.75	0.50
1:K:60:LYS:HA	1:K:66:GLU:HG3	1.93	0.50
1:A:36:ASN:HA	1:A:85:ASN:HD21	1.75	0.50
1:A:390:LEU:HD12	1:A:394:VAL:HG11	1.94	0.50
1:D:60:LYS:HA	1:D:66:GLU:HG3	1.93	0.50
1:F:60:LYS:HA	1:F:66:GLU:HG3	1.93	0.50
1:G:37:SER:HB2	1:G:144:ARG:HD2	1.92	0.50
1:G:60:LYS:HA	1:G:66:GLU:HG3	1.93	0.50
1:G:405:GLY:O	1:G:462:SER:OG	2.25	0.50
1:J:390:LEU:HD12	1:J:394:VAL:HG11	1.94	0.50
1:L:37:SER:HB2	1:L:144:ARG:HD2	1.92	0.50
1:L:389:LYS:HE3	1:L:443:ASN:HA	1.93	0.50
1:A:701:GLU:OE1	1:A:735:HIS:NE2	2.43	0.50
1:C:489:LEU:HD11	1:C:516:PHE:HZ	1.76	0.50
1:D:405:GLY:O	1:D:462:SER:OG	2.25	0.50
1:H:381:LEU:HD23	1:H:411:LEU:HD13	1.93	0.50
1:H:649:ASP:OD1	1:H:649:ASP:N	2.41	0.50
1:K:381:LEU:HD23	1:K:411:LEU:HD13	1.93	0.50
1:B:204:ASP:N	1:B:204:ASP:OD1	2.43	0.50
1:C:437:ILE:HG12	1:D:229:LEU:HD21	1.94	0.50
1:D:36:ASN:HA	1:D:85:ASN:HD21	1.75	0.50
1:H:489:LEU:HD11	1:H:516:PHE:HZ	1.76	0.50
1:K:204:ASP:OD1	1:K:204:ASP:N	2.43	0.50
1:C:36:ASN:HA	1:C:85:ASN:HD21	1.75	0.50
1:C:37:SER:HB2	1:C:144:ARG:HD2	1.92	0.50
1:E:200:GLU:HA	1:E:260:ASN:HD22	1.77	0.50
1:E:204:ASP:OD1	1:E:204:ASP:N	2.43	0.50
1:E:381:LEU:HD23	1:E:411:LEU:HD13	1.93	0.50
1:E:489:LEU:HD11	1:E:516:PHE:HZ	1.76	0.50
1:G:489:LEU:HD11	1:G:516:PHE:HZ	1.76	0.50
1:H:200:GLU:HA	1:H:260:ASN:HD22	1.77	0.50
1:B:381:LEU:HD23	1:B:411:LEU:HD13	1.93	0.50
1:C:200:GLU:HA	1:C:260:ASN:HD22	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:204:ASP:OD1	1:H:204:ASP:N	2.43	0.50
1:K:352:SER:O	1:K:352:SER:OG	2.29	0.50
1:L:36:ASN:HA	1:L:85:ASN:HD21	1.75	0.50
1:L:200:GLU:HA	1:L:260:ASN:HD22	1.77	0.50
1:L:319:GLU:OE1	1:L:323:ARG:NH2	2.42	0.50
1:C:390:LEU:HD12	1:C:394:VAL:HG11	1.94	0.50
1:D:200:GLU:HA	1:D:260:ASN:HD22	1.77	0.50
1:D:489:LEU:HD11	1:D:516:PHE:HZ	1.76	0.50
1:E:37:SER:HB2	1:E:144:ARG:HD2	1.92	0.50
1:F:458:GLN:OE1	1:F:459:SER:OG	2.28	0.50
1:G:200:GLU:HA	1:G:260:ASN:HD22	1.77	0.50
1:A:437:ILE:HG12	1:B:229:LEU:HD21	1.94	0.49
1:C:458:GLN:OE1	1:C:459:SER:OG	2.28	0.49
1:D:389:LYS:HE3	1:D:443:ASN:HA	1.93	0.49
1:I:458:GLN:OE1	1:I:459:SER:OG	2.28	0.49
1:K:200:GLU:HA	1:K:260:ASN:HD22	1.77	0.49
1:L:390:LEU:HD12	1:L:394:VAL:HG11	1.94	0.49
1:A:465:ARG:NH1	1:B:560:ARG:HE	2.10	0.49
1:B:200:GLU:HA	1:B:260:ASN:HD22	1.77	0.49
1:C:319:GLU:OE1	1:C:323:ARG:NH2	2.42	0.49
1:G:229:LEU:HD21	1:L:437:ILE:HG12	1.94	0.49
1:G:389:LYS:HE3	1:G:443:ASN:HA	1.93	0.49
1:H:701:GLU:OE1	1:H:735:HIS:NE2	2.43	0.49
1:K:321:GLU:OE2	1:L:322:ARG:NH1	2.44	0.49
1:E:437:ILE:HG12	1:F:229:LEU:HD21	1.94	0.49
1:H:37:SER:HB2	1:H:144:ARG:HD2	1.92	0.49
1:I:437:ILE:HG12	1:J:229:LEU:HD21	1.94	0.49
1:B:389:LYS:HE3	1:B:443:ASN:HA	1.93	0.49
1:K:389:LYS:HE3	1:K:443:ASN:HA	1.93	0.49
1:L:458:GLN:OE1	1:L:459:SER:OG	2.28	0.49
1:C:450:ASP:OD1	1:C:450:ASP:N	2.35	0.49
1:F:200:GLU:HA	1:F:260:ASN:HD22	1.77	0.49
1:H:389:LYS:HE3	1:H:443:ASN:HA	1.93	0.49
1:A:560:ARG:HE	1:F:465:ARG:NH1	2.11	0.49
1:E:389:LYS:HE3	1:E:443:ASN:HA	1.93	0.49
1:I:200:GLU:HA	1:I:260:ASN:HD22	1.77	0.49
1:K:390:LEU:HD12	1:K:394:VAL:HG11	1.94	0.49
1:L:450:ASP:OD1	1:L:450:ASP:N	2.35	0.49
1:J:458:GLN:OE1	1:J:459:SER:OG	2.28	0.49
1:K:437:ILE:HG12	1:L:229:LEU:HD21	1.95	0.49
1:L:60:LYS:HA	1:L:66:GLU:HG3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:60:LYS:HA	1:A:66:GLU:HG3	1.93	0.49
1:A:458:GLN:OE1	1:A:459:SER:OG	2.28	0.49
1:B:390:LEU:HD12	1:B:394:VAL:HG11	1.94	0.49
1:J:60:LYS:HA	1:J:66:GLU:HG3	1.93	0.49
1:B:405:GLY:O	1:B:462:SER:OG	2.25	0.49
1:C:60:LYS:HA	1:C:66:GLU:HG3	1.93	0.49
1:C:403:THR:HB	1:C:456:LEU:HD11	1.95	0.49
1:E:390:LEU:HD12	1:E:394:VAL:HG11	1.94	0.49
1:G:406:HIS:HD2	1:G:410:ASP:HB3	1.77	0.49
1:H:390:LEU:HD12	1:H:394:VAL:HG11	1.94	0.49
1:K:405:GLY:O	1:K:462:SER:OG	2.25	0.49
1:A:229:LEU:HD21	1:F:437:ILE:HG12	1.95	0.49
1:A:406:HIS:HD2	1:A:410:ASP:HB3	1.77	0.49
1:F:204:ASP:OD1	1:F:204:ASP:N	2.43	0.49
1:G:560:ARG:HE	1:L:465:ARG:NH1	2.11	0.49
1:H:406:HIS:HD2	1:H:410:ASP:HB3	1.78	0.49
1:J:200:GLU:HA	1:J:260:ASN:HD22	1.77	0.49
1:L:403:THR:HB	1:L:456:LEU:HD11	1.95	0.49
1:A:200:GLU:HA	1:A:260:ASN:HD22	1.77	0.48
1:A:204:ASP:OD1	1:A:204:ASP:N	2.43	0.48
1:D:406:HIS:HD2	1:D:410:ASP:HB3	1.77	0.48
1:I:204:ASP:N	1:I:204:ASP:OD1	2.43	0.48
1:E:406:HIS:HD2	1:E:410:ASP:HB3	1.77	0.48
1:G:390:LEU:HD12	1:G:394:VAL:HG11	1.94	0.48
1:G:465:ARG:NH1	1:H:560:ARG:HE	2.11	0.48
1:J:204:ASP:OD1	1:J:204:ASP:N	2.43	0.48
1:J:406:HIS:HD2	1:J:410:ASP:HB3	1.77	0.48
1:L:405:GLY:O	1:L:462:SER:OG	2.25	0.48
1:D:390:LEU:HD12	1:D:394:VAL:HG11	1.94	0.48
1:J:403:THR:HB	1:J:456:LEU:HD11	1.95	0.48
1:K:465:ARG:NH1	1:L:560:ARG:HE	2.11	0.48
1:D:465:ARG:NH1	1:E:560:ARG:HE	2.12	0.48
1:A:403:THR:HB	1:A:456:LEU:HD11	1.95	0.48
1:B:68:VAL:HG22	1:B:147:ARG:HB2	1.96	0.48
1:F:390:LEU:HD12	1:F:394:VAL:HG11	1.94	0.48
1:F:403:THR:HB	1:F:456:LEU:HD11	1.95	0.48
1:I:403:THR:HB	1:I:456:LEU:HD11	1.95	0.48
1:K:68:VAL:HG22	1:K:147:ARG:HB2	1.96	0.48
1:B:465:ARG:NH1	1:C:560:ARG:HE	2.11	0.48
1:E:405:GLY:O	1:E:462:SER:OG	2.25	0.48
1:G:322:ARG:NH1	1:L:321:GLU:OE2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:403:THR:HB	1:G:456:LEU:HD11	1.95	0.48
1:H:465:ARG:NH1	1:I:560:ARG:HE	2.12	0.48
1:J:437:ILE:HG12	1:K:229:LEU:HD21	1.96	0.48
1:B:511:SER:OG	1:B:512:LYS:N	2.47	0.48
1:E:465:ARG:NH1	1:F:560:ARG:HE	2.12	0.48
1:I:90:ASN:O	1:I:93:ARG:NH1	2.47	0.48
1:I:390:LEU:HD12	1:I:394:VAL:HG11	1.94	0.48
1:I:465:ARG:NH1	1:J:560:ARG:HE	2.12	0.48
1:B:321:GLU:OE2	1:C:322:ARG:NH1	2.46	0.48
1:B:406:HIS:HD2	1:B:410:ASP:HB3	1.77	0.48
1:C:352:SER:O	1:C:352:SER:OG	2.29	0.48
1:D:403:THR:HB	1:D:456:LEU:HD11	1.95	0.48
1:E:403:THR:HB	1:E:456:LEU:HD11	1.95	0.48
1:F:90:ASN:O	1:F:93:ARG:NH1	2.47	0.48
1:K:450:ASP:OD1	1:K:450:ASP:N	2.35	0.48
1:K:511:SER:OG	1:K:512:LYS:N	2.47	0.48
1:C:465:ARG:NH1	1:D:560:ARG:HE	2.12	0.48
1:E:90:ASN:O	1:E:93:ARG:NH1	2.47	0.48
1:H:403:THR:HB	1:H:456:LEU:HD11	1.95	0.48
1:H:405:GLY:O	1:H:462:SER:OG	2.25	0.48
1:J:465:ARG:NH1	1:K:560:ARG:HE	2.12	0.48
1:K:611:MET:HE2	1:K:611:MET:HB3	1.78	0.48
1:L:406:HIS:HD2	1:L:410:ASP:HB3	1.78	0.48
1:B:403:THR:HB	1:B:456:LEU:HD11	1.95	0.48
1:B:611:MET:HB3	1:B:611:MET:HE2	1.78	0.48
1:D:90:ASN:O	1:D:93:ARG:NH1	2.47	0.48
1:F:406:HIS:HD2	1:F:410:ASP:HB3	1.78	0.48
1:G:90:ASN:O	1:G:93:ARG:NH1	2.47	0.48
1:K:406:HIS:HD2	1:K:410:ASP:HB3	1.77	0.48
1:L:352:SER:O	1:L:352:SER:OG	2.29	0.48
1:L:511:SER:OG	1:L:512:LYS:N	2.47	0.48
1:C:406:HIS:HD2	1:C:410:ASP:HB3	1.78	0.47
1:C:511:SER:OG	1:C:512:LYS:N	2.47	0.47
1:H:90:ASN:O	1:H:93:ARG:NH1	2.47	0.47
1:I:406:HIS:HD2	1:I:410:ASP:HB3	1.78	0.47
1:A:153:LEU:HA	1:A:162:GLU:HA	1.96	0.47
1:A:489:LEU:HB3	1:A:531:ILE:HG21	1.97	0.47
1:B:153:LEU:HA	1:B:162:GLU:HA	1.96	0.47
1:F:489:LEU:HB3	1:F:531:ILE:HG21	1.97	0.47
1:I:489:LEU:HB3	1:I:531:ILE:HG21	1.97	0.47
1:J:489:LEU:HB3	1:J:531:ILE:HG21	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:153:LEU:HA	1:K:162:GLU:HA	1.96	0.47
1:K:403:THR:HB	1:K:456:LEU:HD11	1.95	0.47
1:L:68:VAL:HG22	1:L:147:ARG:HB2	1.96	0.47
1:A:68:VAL:HG22	1:A:147:ARG:HB2	1.96	0.47
1:C:68:VAL:HG22	1:C:147:ARG:HB2	1.96	0.47
1:C:90:ASN:O	1:C:93:ARG:NH1	2.47	0.47
1:J:153:LEU:HA	1:J:162:GLU:HA	1.96	0.47
1:L:90:ASN:O	1:L:93:ARG:NH1	2.47	0.47
1:L:153:LEU:HA	1:L:162:GLU:HA	1.96	0.47
1:A:501:ASP:OD1	1:A:501:ASP:N	2.44	0.47
1:B:90:ASN:O	1:B:93:ARG:NH1	2.47	0.47
1:C:153:LEU:HA	1:C:162:GLU:HA	1.96	0.47
1:C:321:GLU:OE2	1:D:322:ARG:NH1	2.47	0.47
1:C:405:GLY:O	1:C:462:SER:OG	2.25	0.47
1:E:489:LEU:HB3	1:E:531:ILE:HG21	1.97	0.47
1:J:75:ASP:OD1	1:J:75:ASP:N	2.43	0.47
1:F:379:GLU:HA	1:F:382:GLN:HB2	1.97	0.47
1:H:489:LEU:HB3	1:H:531:ILE:HG21	1.97	0.47
1:J:68:VAL:HG22	1:J:147:ARG:HB2	1.96	0.47
1:K:90:ASN:O	1:K:93:ARG:NH1	2.47	0.47
1:A:75:ASP:OD1	1:A:75:ASP:N	2.43	0.47
1:A:321:GLU:OE2	1:B:322:ARG:NH1	2.45	0.47
1:A:379:GLU:HA	1:A:382:GLN:HB2	1.97	0.47
1:B:489:LEU:HB3	1:B:531:ILE:HG21	1.97	0.47
1:D:321:GLU:OE2	1:E:322:ARG:NH1	2.46	0.47
1:F:283:GLU:HB3	1:F:327:GLN:HE21	1.80	0.47
1:H:511:SER:OG	1:H:512:LYS:N	2.47	0.47
1:I:283:GLU:HB3	1:I:327:GLN:HE21	1.80	0.47
1:I:379:GLU:HA	1:I:382:GLN:HB2	1.97	0.47
1:J:379:GLU:HA	1:J:382:GLN:HB2	1.97	0.47
1:K:489:LEU:HB3	1:K:531:ILE:HG21	1.97	0.47
1:B:113:ARG:HD2	1:B:113:ARG:HA	1.73	0.47
1:E:511:SER:OG	1:E:512:LYS:N	2.47	0.47
1:H:450:ASP:OD1	1:H:450:ASP:N	2.35	0.47
1:I:511:SER:OG	1:I:512:LYS:N	2.47	0.47
1:J:712:GLU:O	1:J:715:THR:OG1	2.33	0.47
1:A:712:GLU:O	1:A:715:THR:OG1	2.33	0.47
1:B:712:GLU:O	1:B:715:THR:OG1	2.33	0.47
1:E:450:ASP:OD1	1:E:450:ASP:N	2.35	0.47
1:F:511:SER:OG	1:F:512:LYS:N	2.47	0.47
1:G:379:GLU:HA	1:G:382:GLN:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:283:GLU:HB3	1:H:327:GLN:HE21	1.80	0.47
1:J:90:ASN:O	1:J:93:ARG:NH1	2.47	0.47
1:K:379:GLU:HA	1:K:382:GLN:HB2	1.97	0.47
1:K:712:GLU:O	1:K:715:THR:OG1	2.33	0.47
1:D:379:GLU:HA	1:D:382:GLN:HB2	1.97	0.47
1:E:283:GLU:HB3	1:E:327:GLN:HE21	1.80	0.47
1:I:68:VAL:HG22	1:I:147:ARG:HB2	1.96	0.47
1:A:90:ASN:O	1:A:93:ARG:NH1	2.47	0.46
1:B:379:GLU:HA	1:B:382:GLN:HB2	1.97	0.46
1:B:450:ASP:OD1	1:B:450:ASP:N	2.35	0.46
1:F:68:VAL:HG22	1:F:147:ARG:HB2	1.96	0.46
1:G:153:LEU:HA	1:G:162:GLU:HA	1.96	0.46
1:H:68:VAL:HG22	1:H:147:ARG:HB2	1.96	0.46
1:D:153:LEU:HA	1:D:162:GLU:HA	1.97	0.46
1:E:68:VAL:HG22	1:E:147:ARG:HB2	1.96	0.46
1:F:153:LEU:HA	1:F:162:GLU:HA	1.96	0.46
1:F:712:GLU:O	1:F:715:THR:OG1	2.33	0.46
1:I:712:GLU:O	1:I:715:THR:OG1	2.33	0.46
1:C:489:LEU:HB3	1:C:531:ILE:HG21	1.97	0.46
1:G:68:VAL:HG22	1:G:147:ARG:HB2	1.96	0.46
1:G:321:GLU:OE2	1:H:322:ARG:NH1	2.46	0.46
1:G:489:LEU:HB3	1:G:531:ILE:HG21	1.97	0.46
1:H:640:ASP:OD1	1:H:640:ASP:N	2.46	0.46
1:I:153:LEU:HA	1:I:162:GLU:HA	1.96	0.46
1:J:511:SER:OG	1:J:512:LYS:N	2.47	0.46
1:K:113:ARG:HD2	1:K:113:ARG:HA	1.73	0.46
1:A:511:SER:OG	1:A:512:LYS:N	2.47	0.46
1:A:611:MET:HE2	1:A:611:MET:HB3	1.78	0.46
1:C:379:GLU:HA	1:C:382:GLN:HB2	1.97	0.46
1:D:68:VAL:HG22	1:D:147:ARG:HB2	1.96	0.46
1:L:489:LEU:HB3	1:L:531:ILE:HG21	1.97	0.46
1:D:489:LEU:HB3	1:D:531:ILE:HG21	1.97	0.46
1:E:633:ILE:HG13	1:E:639:LEU:HD12	1.98	0.46
1:E:640:ASP:OD1	1:E:640:ASP:N	2.46	0.46
1:E:679:THR:O	1:E:679:THR:OG1	2.34	0.46
1:F:405:GLY:O	1:F:462:SER:OG	2.25	0.46
1:H:633:ILE:HG13	1:H:639:LEU:HD12	1.98	0.46
1:H:679:THR:O	1:H:679:THR:OG1	2.34	0.46
1:L:379:GLU:HA	1:L:382:GLN:HB2	1.97	0.46
1:C:283:GLU:HB3	1:C:327:GLN:HE21	1.80	0.46
1:C:679:THR:O	1:C:679:THR:OG1	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:283:GLU:HB3	1:D:327:GLN:HE21	1.80	0.46
1:F:307:ASP:OD1	1:F:307:ASP:N	2.49	0.46
1:F:611:MET:HE2	1:F:611:MET:HB3	1.78	0.46
1:H:153:LEU:HA	1:H:162:GLU:HA	1.96	0.46
1:J:611:MET:HE2	1:J:611:MET:HB3	1.78	0.46
1:L:283:GLU:HB3	1:L:327:GLN:HE21	1.80	0.46
1:A:283:GLU:HB3	1:A:327:GLN:HE21	1.80	0.46
1:C:501:ASP:OD1	1:C:501:ASP:N	2.44	0.46
1:E:379:GLU:HA	1:E:382:GLN:HB2	1.97	0.46
1:I:307:ASP:N	1:I:307:ASP:OD1	2.49	0.46
1:I:611:MET:HE2	1:I:611:MET:HB3	1.78	0.46
1:I:633:ILE:HG13	1:I:639:LEU:HD12	1.98	0.46
1:L:501:ASP:OD1	1:L:501:ASP:N	2.44	0.46
1:C:633:ILE:HG13	1:C:639:LEU:HD12	1.98	0.46
1:C:712:GLU:O	1:C:715:THR:OG1	2.33	0.46
1:D:633:ILE:HG13	1:D:639:LEU:HD12	1.98	0.46
1:E:153:LEU:HA	1:E:162:GLU:HA	1.96	0.46
1:F:633:ILE:HG13	1:F:639:LEU:HD12	1.98	0.46
1:G:283:GLU:HB3	1:G:327:GLN:HE21	1.80	0.46
1:H:379:GLU:HA	1:H:382:GLN:HB2	1.97	0.46
1:L:633:ILE:HG13	1:L:639:LEU:HD12	1.98	0.46
1:L:679:THR:O	1:L:679:THR:OG1	2.34	0.46
1:L:712:GLU:O	1:L:715:THR:OG1	2.33	0.46
1:D:511:SER:OG	1:D:512:LYS:N	2.47	0.46
1:G:633:ILE:HG13	1:G:639:LEU:HD12	1.98	0.46
1:I:405:GLY:O	1:I:462:SER:OG	2.25	0.46
1:J:283:GLU:HB3	1:J:327:GLN:HE21	1.80	0.46
1:B:283:GLU:HB3	1:B:327:GLN:HE21	1.80	0.46
1:F:224:LEU:HD23	1:F:224:LEU:HA	1.83	0.46
1:A:763:GLN:HA	1:A:766:ARG:HD2	1.98	0.45
1:E:712:GLU:O	1:E:715:THR:OG1	2.33	0.45
1:G:511:SER:OG	1:G:512:LYS:N	2.47	0.45
1:H:712:GLU:O	1:H:715:THR:OG1	2.33	0.45
1:J:321:GLU:OE2	1:K:322:ARG:NH1	2.47	0.45
1:B:224:LEU:HD23	1:B:224:LEU:HA	1.83	0.45
1:D:712:GLU:O	1:D:715:THR:OG1	2.33	0.45
1:G:712:GLU:O	1:G:715:THR:OG1	2.33	0.45
1:J:763:GLN:HA	1:J:766:ARG:HD2	1.98	0.45
1:A:322:ARG:NH1	1:F:321:GLU:OE2	2.46	0.45
1:H:307:ASP:OD1	1:H:307:ASP:N	2.49	0.45
1:K:283:GLU:HB3	1:K:327:GLN:HE21	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:307:ASP:N	1:B:307:ASP:OD1	2.49	0.45
1:B:633:ILE:HG13	1:B:639:LEU:HD12	1.98	0.45
1:B:763:GLN:HA	1:B:766:ARG:HD2	1.98	0.45
1:E:307:ASP:OD1	1:E:307:ASP:N	2.49	0.45
1:K:224:LEU:HD23	1:K:224:LEU:HA	1.83	0.45
1:K:307:ASP:OD1	1:K:307:ASP:N	2.49	0.45
1:K:633:ILE:HG13	1:K:639:LEU:HD12	1.98	0.45
1:D:469:VAL:HB	1:D:538:ASN:HD21	1.82	0.45
1:D:744:ARG:HE	1:E:763:GLN:HG3	1.82	0.45
1:F:501:ASP:OD1	1:F:501:ASP:N	2.44	0.45
1:H:469:VAL:HB	1:H:538:ASN:HD21	1.82	0.45
1:K:763:GLN:HA	1:K:766:ARG:HD2	1.99	0.45
1:E:469:VAL:HB	1:E:538:ASN:HD21	1.82	0.45
1:F:113:ARG:HD2	1:F:113:ARG:HA	1.73	0.45
1:F:763:GLN:HA	1:F:766:ARG:HD2	1.98	0.45
1:G:469:VAL:HB	1:G:538:ASN:HD21	1.82	0.45
1:H:352:SER:O	1:H:352:SER:OG	2.29	0.45
1:I:224:LEU:HD23	1:I:224:LEU:HA	1.83	0.45
1:I:469:VAL:HB	1:I:538:ASN:HD21	1.82	0.45
1:I:501:ASP:OD1	1:I:501:ASP:N	2.44	0.45
1:I:763:GLN:HA	1:I:766:ARG:HD2	1.98	0.45
1:A:469:VAL:HB	1:A:538:ASN:HD21	1.82	0.45
1:A:633:ILE:HG13	1:A:639:LEU:HD12	1.98	0.45
1:B:524:LYS:NZ	1:B:623:THR:O	2.39	0.45
1:B:649:ASP:OD1	1:B:649:ASP:N	2.41	0.45
1:D:603:GLN:HA	1:D:606:THR:HG22	1.99	0.45
1:F:469:VAL:HB	1:F:538:ASN:HD21	1.82	0.45
1:G:697:LEU:HD12	1:G:697:LEU:HA	1.86	0.45
1:J:469:VAL:HB	1:J:538:ASN:HD21	1.82	0.45
1:J:697:LEU:HD12	1:J:697:LEU:HA	1.86	0.45
1:G:603:GLN:HA	1:G:606:THR:HG22	1.99	0.45
1:H:335:LEU:HD23	1:H:335:LEU:HA	1.87	0.45
1:J:633:ILE:HG13	1:J:639:LEU:HD12	1.98	0.45
1:A:679:THR:O	1:A:679:THR:OG1	2.34	0.45
1:B:603:GLN:HA	1:B:606:THR:HG22	1.99	0.45
1:E:335:LEU:HD23	1:E:335:LEU:HA	1.87	0.45
1:E:352:SER:O	1:E:352:SER:OG	2.29	0.45
1:K:603:GLN:HA	1:K:606:THR:HG22	1.99	0.45
1:L:524:LYS:NZ	1:L:623:THR:O	2.39	0.45
1:B:335:LEU:HD23	1:B:335:LEU:HA	1.87	0.45
1:C:603:GLN:HA	1:C:606:THR:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:195:GLU:O	1:D:199:ASN:ND2	2.50	0.45
1:F:315:LYS:HD2	1:F:315:LYS:HA	1.86	0.45
1:G:195:GLU:O	1:G:199:ASN:ND2	2.50	0.45
1:J:195:GLU:O	1:J:199:ASN:ND2	2.50	0.45
1:J:603:GLN:HA	1:J:606:THR:HG22	1.99	0.45
1:L:307:ASP:OD1	1:L:307:ASP:N	2.49	0.45
1:A:195:GLU:O	1:A:199:ASN:ND2	2.50	0.44
1:A:744:ARG:HE	1:B:763:GLN:HG3	1.82	0.44
1:C:307:ASP:OD1	1:C:307:ASP:N	2.49	0.44
1:E:195:GLU:O	1:E:199:ASN:ND2	2.50	0.44
1:F:352:SER:O	1:F:352:SER:OG	2.29	0.44
1:G:744:ARG:HE	1:H:763:GLN:HG3	1.82	0.44
1:I:321:GLU:OE2	1:J:322:ARG:NH1	2.46	0.44
1:J:679:THR:O	1:J:679:THR:OG1	2.34	0.44
1:K:649:ASP:OD1	1:K:649:ASP:N	2.41	0.44
1:L:195:GLU:O	1:L:199:ASN:ND2	2.50	0.44
1:L:603:GLN:HA	1:L:606:THR:HG22	1.99	0.44
1:A:84:MET:HE3	1:A:88:VAL:HG13	1.99	0.44
1:A:603:GLN:HA	1:A:606:THR:HG22	1.99	0.44
1:C:195:GLU:O	1:C:199:ASN:ND2	2.50	0.44
1:D:307:ASP:N	1:D:307:ASP:OD1	2.49	0.44
1:H:195:GLU:O	1:H:199:ASN:ND2	2.50	0.44
1:E:321:GLU:OE2	1:F:322:ARG:NH1	2.46	0.44
1:G:307:ASP:N	1:G:307:ASP:OD1	2.49	0.44
1:G:524:LYS:NZ	1:G:623:THR:O	2.39	0.44
1:H:321:GLU:OE2	1:I:322:ARG:NH1	2.46	0.44
1:H:603:GLN:HA	1:H:606:THR:HG22	1.99	0.44
1:I:113:ARG:HA	1:I:113:ARG:HD2	1.73	0.44
1:J:84:MET:HE3	1:J:88:VAL:HG13	1.99	0.44
1:K:335:LEU:HD23	1:K:335:LEU:HA	1.87	0.44
1:C:524:LYS:NZ	1:C:623:THR:O	2.39	0.44
1:D:84:MET:HE3	1:D:88:VAL:HG13	1.99	0.44
1:E:41:LEU:HD21	1:E:102:ILE:HD13	1.99	0.44
1:G:84:MET:HE3	1:G:88:VAL:HG13	1.99	0.44
1:H:41:LEU:HD21	1:H:102:ILE:HD13	1.99	0.44
1:I:352:SER:O	1:I:352:SER:OG	2.29	0.44
1:L:315:LYS:HD2	1:L:315:LYS:HA	1.86	0.44
1:B:41:LEU:HD21	1:B:102:ILE:HD13	1.99	0.44
1:B:744:ARG:HE	1:C:763:GLN:HG3	1.82	0.44
1:C:763:GLN:HA	1:C:766:ARG:HD2	1.98	0.44
1:E:603:GLN:HA	1:E:606:THR:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:763:GLN:HA	1:L:766:ARG:HD2	1.98	0.44
1:B:469:VAL:HB	1:B:538:ASN:HD21	1.82	0.44
1:C:469:VAL:HB	1:C:538:ASN:HD21	1.82	0.44
1:C:744:ARG:HE	1:D:763:GLN:HG3	1.82	0.44
1:D:524:LYS:NZ	1:D:623:THR:O	2.39	0.44
1:D:679:THR:O	1:D:679:THR:OG1	2.34	0.44
1:D:763:GLN:HA	1:D:766:ARG:HD2	1.98	0.44
1:K:41:LEU:HD21	1:K:102:ILE:HD13	1.99	0.44
1:K:538:ASN:N	1:K:571:PRO:O	2.42	0.44
1:B:705:SER:OG	1:B:706:GLU:OE2	2.35	0.44
1:D:649:ASP:OD1	1:D:649:ASP:N	2.41	0.44
1:E:763:GLN:HA	1:E:766:ARG:HD2	1.98	0.44
1:F:195:GLU:O	1:F:199:ASN:ND2	2.50	0.44
1:F:603:GLN:HA	1:F:606:THR:HG22	1.99	0.44
1:H:763:GLN:HA	1:H:766:ARG:HD2	1.98	0.44
1:I:195:GLU:O	1:I:199:ASN:ND2	2.50	0.44
1:K:705:SER:OG	1:K:706:GLU:OE2	2.35	0.44
1:G:763:GLN:HA	1:G:766:ARG:HD2	1.98	0.44
1:I:315:LYS:HD2	1:I:315:LYS:HA	1.86	0.44
1:I:603:GLN:HA	1:I:606:THR:HG22	1.99	0.44
1:K:195:GLU:O	1:K:199:ASN:ND2	2.50	0.44
1:K:469:VAL:HB	1:K:538:ASN:HD21	1.82	0.44
1:L:611:MET:HE2	1:L:611:MET:HB3	1.78	0.44
1:B:195:GLU:O	1:B:199:ASN:ND2	2.50	0.44
1:C:611:MET:HE2	1:C:611:MET:HB3	1.78	0.44
1:F:84:MET:HE3	1:F:88:VAL:HG13	1.99	0.44
1:G:608:MET:HE3	1:G:608:MET:HB2	1.83	0.44
1:L:41:LEU:HD21	1:L:102:ILE:HD13	1.99	0.44
1:L:469:VAL:HB	1:L:538:ASN:HD21	1.82	0.44
1:B:84:MET:HE3	1:B:88:VAL:HG13	1.99	0.43
1:B:538:ASN:N	1:B:571:PRO:O	2.42	0.43
1:C:41:LEU:HD21	1:C:102:ILE:HD13	1.99	0.43
1:G:679:THR:O	1:G:679:THR:OG1	2.34	0.43
1:G:763:GLN:HG3	1:L:744:ARG:HE	1.83	0.43
1:H:84:MET:HE3	1:H:88:VAL:HG13	2.00	0.43
1:I:744:ARG:HE	1:J:763:GLN:HG3	1.83	0.43
1:J:744:ARG:HE	1:K:763:GLN:HG3	1.83	0.43
1:K:84:MET:HE3	1:K:88:VAL:HG13	1.99	0.43
1:A:763:GLN:HG3	1:F:744:ARG:HE	1.83	0.43
1:D:41:LEU:HD21	1:D:102:ILE:HD13	1.99	0.43
1:D:608:MET:HE3	1:D:608:MET:HB2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:84:MET:HE3	1:E:88:VAL:HG13	1.99	0.43
1:F:41:LEU:HD21	1:F:102:ILE:HD13	1.99	0.43
1:G:41:LEU:HD21	1:G:102:ILE:HD13	1.99	0.43
1:I:84:MET:HE3	1:I:88:VAL:HG13	1.99	0.43
1:J:74:ASP:N	1:J:74:ASP:OD1	2.51	0.43
1:K:744:ARG:HE	1:L:763:GLN:HG3	1.82	0.43
1:A:74:ASP:OD1	1:A:74:ASP:N	2.51	0.43
1:G:649:ASP:OD1	1:G:649:ASP:N	2.41	0.43
1:I:41:LEU:HD21	1:I:102:ILE:HD13	1.99	0.43
1:I:705:SER:OG	1:I:706:GLU:OE2	2.35	0.43
1:A:705:SER:OG	1:A:706:GLU:OE2	2.35	0.43
1:E:74:ASP:N	1:E:74:ASP:OD1	2.51	0.43
1:F:705:SER:OG	1:F:706:GLU:OE2	2.35	0.43
1:G:700:ARG:NH1	1:H:491:GLU:OE2	2.51	0.43
1:H:74:ASP:OD1	1:H:74:ASP:N	2.51	0.43
1:H:744:ARG:HE	1:I:763:GLN:HG3	1.83	0.43
1:J:705:SER:OG	1:J:706:GLU:OE2	2.35	0.43
1:B:74:ASP:N	1:B:74:ASP:OD1	2.51	0.43
1:C:74:ASP:OD1	1:C:74:ASP:N	2.51	0.43
1:D:501:ASP:OD1	1:D:501:ASP:N	2.44	0.43
1:E:744:ARG:HE	1:F:763:GLN:HG3	1.83	0.43
1:K:74:ASP:OD1	1:K:74:ASP:N	2.51	0.43
1:L:74:ASP:OD1	1:L:74:ASP:N	2.51	0.43
1:L:75:ASP:OD1	1:L:75:ASP:N	2.43	0.43
1:E:700:ARG:NH1	1:F:491:GLU:OE2	2.52	0.43
1:H:700:ARG:NH1	1:I:491:GLU:OE2	2.52	0.43
1:J:41:LEU:HD21	1:J:102:ILE:HD13	1.99	0.43
1:J:307:ASP:OD1	1:J:307:ASP:N	2.49	0.43
1:C:84:MET:HE3	1:C:88:VAL:HG13	1.99	0.43
1:G:491:GLU:OE2	1:L:700:ARG:NH1	2.51	0.43
1:A:41:LEU:HD21	1:A:102:ILE:HD13	1.99	0.43
1:A:307:ASP:OD1	1:A:307:ASP:N	2.49	0.43
1:B:700:ARG:NH1	1:C:491:GLU:OE2	2.51	0.43
1:C:75:ASP:OD1	1:C:75:ASP:N	2.43	0.43
1:D:469:VAL:HG12	1:D:540:ILE:HG22	2.01	0.43
1:E:469:VAL:HG12	1:E:540:ILE:HG22	2.01	0.43
1:G:469:VAL:HG12	1:G:540:ILE:HG22	2.01	0.43
1:A:700:ARG:NH1	1:B:491:GLU:OE2	2.51	0.43
1:C:700:ARG:NH1	1:D:491:GLU:OE2	2.51	0.43
1:F:679:THR:O	1:F:679:THR:OG1	2.34	0.43
1:H:469:VAL:HG12	1:H:540:ILE:HG22	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:538:ASN:N	1:I:571:PRO:O	2.42	0.43
1:I:640:ASP:OD1	1:I:640:ASP:N	2.46	0.43
1:L:84:MET:HE3	1:L:88:VAL:HG13	1.99	0.43
1:E:524:LYS:NZ	1:E:623:THR:O	2.39	0.42
1:G:74:ASP:N	1:G:74:ASP:OD1	2.51	0.42
1:D:700:ARG:NH1	1:E:491:GLU:OE2	2.52	0.42
1:F:538:ASN:N	1:F:571:PRO:O	2.42	0.42
1:F:640:ASP:OD1	1:F:640:ASP:N	2.46	0.42
1:I:679:THR:O	1:I:679:THR:OG1	2.34	0.42
1:K:624:ASN:O	1:K:755:TYR:OH	2.34	0.42
1:A:469:VAL:HG12	1:A:540:ILE:HG22	2.01	0.42
1:D:74:ASP:OD1	1:D:74:ASP:N	2.51	0.42
1:J:469:VAL:HG12	1:J:540:ILE:HG22	2.01	0.42
1:K:469:VAL:HG12	1:K:540:ILE:HG22	2.01	0.42
1:A:491:GLU:OE2	1:F:700:ARG:NH1	2.52	0.42
1:B:469:VAL:HG12	1:B:540:ILE:HG22	2.01	0.42
1:D:253:LEU:HD12	1:D:253:LEU:HA	1.90	0.42
1:F:697:LEU:HD12	1:F:697:LEU:HA	1.86	0.42
1:B:352:SER:O	1:B:352:SER:OG	2.29	0.42
1:E:697:LEU:HD12	1:E:697:LEU:HA	1.86	0.42
1:G:331:LEU:HD23	1:G:331:LEU:HA	1.91	0.42
1:D:514:VAL:HG22	1:D:620:ILE:HG22	2.02	0.42
1:I:700:ARG:NH1	1:J:491:GLU:OE2	2.52	0.42
1:K:195:GLU:HA	1:K:198:LEU:HD22	2.02	0.42
1:A:113:ARG:HD2	1:A:113:ARG:HA	1.73	0.42
1:B:195:GLU:HA	1:B:198:LEU:HD22	2.02	0.42
1:G:301:ILE:HD11	1:G:343:VAL:HG22	2.02	0.42
1:G:514:VAL:HG22	1:G:620:ILE:HG22	2.02	0.42
1:K:114:ILE:HG22	1:K:168:THR:HG22	2.02	0.42
1:A:195:GLU:HA	1:A:198:LEU:HD22	2.02	0.42
1:B:114:ILE:HG22	1:B:168:THR:HG22	2.02	0.42
1:C:514:VAL:HG22	1:C:620:ILE:HG22	2.02	0.42
1:D:548:LEU:HB2	1:D:551:TRP:HE1	1.85	0.42
1:D:740:MET:HE3	1:E:768:PHE:HZ	1.84	0.42
1:E:113:ARG:HA	1:E:113:ARG:HD2	1.73	0.42
1:G:548:LEU:HB2	1:G:551:TRP:HE1	1.85	0.42
1:H:697:LEU:HD12	1:H:697:LEU:HA	1.86	0.42
1:I:469:VAL:HG12	1:I:540:ILE:HG22	2.01	0.42
1:I:697:LEU:HA	1:I:697:LEU:HD12	1.86	0.42
1:J:114:ILE:HG22	1:J:168:THR:HG22	2.02	0.42
1:J:195:GLU:HA	1:J:198:LEU:HD22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:114:ILE:HG22	1:A:168:THR:HG22	2.02	0.42
1:B:301:ILE:HD11	1:B:343:VAL:HG22	2.02	0.42
1:C:332:MET:HE2	1:C:332:MET:HB2	1.88	0.42
1:C:469:VAL:HG12	1:C:540:ILE:HG22	2.01	0.42
1:C:732:ARG:HE	1:C:732:ARG:HB2	1.60	0.42
1:D:301:ILE:HD11	1:D:343:VAL:HG22	2.02	0.42
1:E:501:ASP:OD1	1:E:501:ASP:N	2.44	0.42
1:F:469:VAL:HG12	1:F:540:ILE:HG22	2.01	0.42
1:G:740:MET:HE3	1:H:768:PHE:HZ	1.85	0.42
1:H:611:MET:HE2	1:H:611:MET:HB3	1.78	0.42
1:L:224:LEU:HA	1:L:224:LEU:HD23	1.83	0.42
1:L:548:LEU:HB2	1:L:551:TRP:HE1	1.85	0.42
1:A:301:ILE:HD11	1:A:343:VAL:HG22	2.02	0.42
1:B:679:THR:O	1:B:679:THR:OG1	2.34	0.42
1:C:114:ILE:HG22	1:C:168:THR:HG22	2.02	0.42
1:C:526:LEU:HD12	1:C:526:LEU:HA	1.91	0.42
1:C:548:LEU:HB2	1:C:551:TRP:HE1	1.85	0.42
1:C:740:MET:HE3	1:D:768:PHE:HZ	1.84	0.42
1:E:253:LEU:HD12	1:E:253:LEU:HA	1.90	0.42
1:F:114:ILE:HG22	1:F:168:THR:HG22	2.02	0.42
1:H:253:LEU:HD12	1:H:253:LEU:HA	1.90	0.42
1:I:96:LEU:HD12	1:I:96:LEU:HA	1.92	0.42
1:I:114:ILE:HG22	1:I:168:THR:HG22	2.02	0.42
1:J:740:MET:HE3	1:K:768:PHE:HZ	1.84	0.42
1:K:301:ILE:HD11	1:K:343:VAL:HG22	2.02	0.42
1:L:469:VAL:HG12	1:L:540:ILE:HG22	2.01	0.42
1:L:514:VAL:HG22	1:L:620:ILE:HG22	2.02	0.42
1:A:740:MET:HE3	1:B:768:PHE:HZ	1.84	0.41
1:E:611:MET:HE2	1:E:611:MET:HB3	1.78	0.41
1:G:768:PHE:HZ	1:L:740:MET:HE3	1.85	0.41
1:H:501:ASP:OD1	1:H:501:ASP:N	2.44	0.41
1:H:526:LEU:HD12	1:H:526:LEU:HA	1.91	0.41
1:J:514:VAL:HG22	1:J:620:ILE:HG22	2.02	0.41
1:J:700:ARG:NH1	1:K:491:GLU:OE2	2.53	0.41
1:L:114:ILE:HG22	1:L:168:THR:HG22	2.02	0.41
1:A:768:PHE:HZ	1:F:740:MET:HE3	1.85	0.41
1:C:301:ILE:HD11	1:C:343:VAL:HG22	2.02	0.41
1:E:545:PRO:HA	1:E:548:LEU:HD23	2.03	0.41
1:F:96:LEU:HD12	1:F:96:LEU:HA	1.92	0.41
1:H:545:PRO:HA	1:H:548:LEU:HD23	2.02	0.41
1:J:301:ILE:HD11	1:J:343:VAL:HG22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:195:GLU:HA	1:L:198:LEU:HD22	2.02	0.41
1:L:526:LEU:HD12	1:L:526:LEU:HA	1.91	0.41
1:A:514:VAL:HG22	1:A:620:ILE:HG22	2.02	0.41
1:C:195:GLU:HA	1:C:198:LEU:HD22	2.02	0.41
1:C:545:PRO:HA	1:C:548:LEU:HD23	2.03	0.41
1:E:526:LEU:HD12	1:E:526:LEU:HA	1.91	0.41
1:F:74:ASP:OD1	1:F:74:ASP:N	2.51	0.41
1:I:524:LYS:NZ	1:I:623:THR:O	2.39	0.41
1:K:608:MET:HE3	1:K:608:MET:HB2	1.84	0.41
1:L:301:ILE:HD11	1:L:343:VAL:HG22	2.02	0.41
1:L:545:PRO:HA	1:L:548:LEU:HD23	2.03	0.41
1:B:608:MET:HE3	1:B:608:MET:HB2	1.84	0.41
1:C:224:LEU:HA	1:C:224:LEU:HD23	1.83	0.41
1:D:114:ILE:HG22	1:D:168:THR:HG22	2.02	0.41
1:E:301:ILE:HD11	1:E:343:VAL:HG22	2.02	0.41
1:E:514:VAL:HG22	1:E:620:ILE:HG22	2.02	0.41
1:F:489:LEU:HD23	1:F:489:LEU:HA	1.89	0.41
1:H:301:ILE:HD11	1:H:343:VAL:HG22	2.02	0.41
1:I:740:MET:HE3	1:J:768:PHE:HZ	1.85	0.41
1:K:679:THR:O	1:K:679:THR:OG1	2.34	0.41
1:L:332:MET:HE2	1:L:332:MET:HB2	1.88	0.41
1:E:114:ILE:HG22	1:E:168:THR:HG22	2.02	0.41
1:F:301:ILE:HD11	1:F:343:VAL:HG22	2.02	0.41
1:G:114:ILE:HG22	1:G:168:THR:HG22	2.02	0.41
1:G:335:LEU:HD23	1:G:335:LEU:HA	1.87	0.41
1:H:114:ILE:HG22	1:H:168:THR:HG22	2.02	0.41
1:H:514:VAL:HG22	1:H:620:ILE:HG22	2.02	0.41
1:I:74:ASP:OD1	1:I:74:ASP:N	2.51	0.41
1:I:301:ILE:HD11	1:I:343:VAL:HG22	2.02	0.41
1:K:292:GLU:HA	1:K:295:LYS:HB3	2.03	0.41
1:B:292:GLU:HA	1:B:295:LYS:HB3	2.03	0.41
1:C:292:GLU:HA	1:C:295:LYS:HB3	2.03	0.41
1:E:548:LEU:HB2	1:E:551:TRP:HE1	1.85	0.41
1:H:548:LEU:HB2	1:H:551:TRP:HE1	1.85	0.41
1:I:514:VAL:HG22	1:I:620:ILE:HG22	2.02	0.41
1:J:359:ARG:HD3	1:J:362:ARG:HH12	1.85	0.41
1:A:359:ARG:HD3	1:A:362:ARG:HH12	1.85	0.41
1:F:195:GLU:HA	1:F:198:LEU:HD22	2.02	0.41
1:F:514:VAL:HG22	1:F:620:ILE:HG22	2.02	0.41
1:H:113:ARG:HA	1:H:113:ARG:HD2	1.73	0.41
1:I:65:ARG:HH21	1:I:91:ASN:HA	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:195:GLU:HA	1:I:198:LEU:HD22	2.02	0.41
1:I:335:LEU:HD23	1:I:335:LEU:HA	1.87	0.41
1:L:292:GLU:HA	1:L:295:LYS:HB3	2.03	0.41
1:L:732:ARG:HE	1:L:732:ARG:HB2	1.60	0.41
1:B:114:ILE:HD12	1:B:165:VAL:HG11	2.03	0.41
1:B:514:VAL:HG22	1:B:620:ILE:HG22	2.02	0.41
1:C:608:MET:HE3	1:C:608:MET:HB2	1.84	0.41
1:E:740:MET:HE3	1:F:768:PHE:HZ	1.85	0.41
1:F:65:ARG:HH21	1:F:91:ASN:HA	1.86	0.41
1:F:335:LEU:HD23	1:F:335:LEU:HA	1.87	0.41
1:F:524:LYS:NZ	1:F:623:THR:O	2.39	0.41
1:J:335:LEU:HD23	1:J:335:LEU:HA	1.87	0.41
1:K:114:ILE:HD12	1:K:165:VAL:HG11	2.03	0.41
1:K:359:ARG:HD3	1:K:362:ARG:HH12	1.86	0.41
1:A:114:ILE:HD12	1:A:165:VAL:HG11	2.03	0.41
1:A:224:LEU:HD23	1:A:224:LEU:HA	1.83	0.41
1:A:292:GLU:HA	1:A:295:LYS:HB3	2.03	0.41
1:B:359:ARG:HD3	1:B:362:ARG:HH12	1.85	0.41
1:B:623:THR:OG1	1:B:624:ASN:N	2.54	0.41
1:C:65:ARG:HH21	1:C:91:ASN:HA	1.86	0.41
1:D:195:GLU:HA	1:D:198:LEU:HD22	2.02	0.41
1:D:292:GLU:HA	1:D:295:LYS:HB3	2.03	0.41
1:D:335:LEU:HD23	1:D:335:LEU:HA	1.87	0.41
1:D:623:THR:OG1	1:D:624:ASN:N	2.54	0.41
1:F:623:THR:OG1	1:F:624:ASN:N	2.54	0.41
1:G:75:ASP:OD1	1:G:75:ASP:N	2.43	0.41
1:G:195:GLU:HA	1:G:198:LEU:HD22	2.02	0.41
1:G:336:LYS:HE2	1:G:336:LYS:HB2	1.89	0.41
1:G:623:THR:OG1	1:G:624:ASN:N	2.54	0.41
1:I:489:LEU:HD23	1:I:489:LEU:HA	1.89	0.41
1:J:292:GLU:HA	1:J:295:LYS:HB3	2.03	0.41
1:K:514:VAL:HG22	1:K:620:ILE:HG22	2.02	0.41
1:K:548:LEU:HB2	1:K:551:TRP:HE1	1.85	0.41
1:K:623:THR:OG1	1:K:624:ASN:N	2.54	0.41
1:K:700:ARG:NH1	1:L:491:GLU:OE2	2.53	0.41
1:K:740:MET:HE3	1:L:768:PHE:HZ	1.84	0.41
1:L:65:ARG:HH21	1:L:91:ASN:HA	1.86	0.41
1:A:335:LEU:HD23	1:A:335:LEU:HA	1.87	0.41
1:B:545:PRO:HA	1:B:548:LEU:HD23	2.03	0.41
1:B:548:LEU:HB2	1:B:551:TRP:HE1	1.85	0.41
1:B:740:MET:HE3	1:C:768:PHE:HZ	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:65:ARG:HH21	1:D:91:ASN:HA	1.86	0.41
1:F:608:MET:HE3	1:F:608:MET:HB2	1.84	0.41
1:G:65:ARG:HH21	1:G:91:ASN:HA	1.86	0.41
1:G:292:GLU:HA	1:G:295:LYS:HB3	2.03	0.41
1:H:740:MET:HE3	1:I:768:PHE:HZ	1.85	0.41
1:I:548:LEU:HB2	1:I:551:TRP:HE1	1.85	0.41
1:I:754:LYS:HE3	1:I:754:LYS:HB2	1.93	0.41
1:J:113:ARG:HD2	1:J:113:ARG:HA	1.73	0.41
1:J:114:ILE:HD12	1:J:165:VAL:HG11	2.03	0.41
1:A:623:THR:OG1	1:A:624:ASN:N	2.54	0.40
1:A:648:PRO:O	1:A:653:ARG:NH1	2.55	0.40
1:E:65:ARG:HH21	1:E:91:ASN:HA	1.86	0.40
1:F:64:ARG:HD3	1:F:64:ARG:HA	1.96	0.40
1:F:548:LEU:HB2	1:F:551:TRP:HE1	1.85	0.40
1:H:65:ARG:HH21	1:H:91:ASN:HA	1.86	0.40
1:H:195:GLU:HA	1:H:198:LEU:HD22	2.02	0.40
1:I:545:PRO:HA	1:I:548:LEU:HD23	2.03	0.40
1:I:623:THR:OG1	1:I:624:ASN:N	2.54	0.40
1:J:65:ARG:HH21	1:J:91:ASN:HA	1.86	0.40
1:J:648:PRO:O	1:J:653:ARG:NH1	2.55	0.40
1:L:114:ILE:HD12	1:L:165:VAL:HG11	2.03	0.40
1:L:608:MET:HE3	1:L:608:MET:HB2	1.84	0.40
1:A:65:ARG:HH21	1:A:91:ASN:HA	1.86	0.40
1:B:489:LEU:HD23	1:B:489:LEU:HA	1.89	0.40
1:F:545:PRO:HA	1:F:548:LEU:HD23	2.03	0.40
1:I:359:ARG:HD3	1:I:362:ARG:HH12	1.85	0.40
1:J:623:THR:OG1	1:J:624:ASN:N	2.54	0.40
1:K:237:PRO:HA	1:K:238:PRO:HD3	1.92	0.40
1:C:114:ILE:HD12	1:C:165:VAL:HG11	2.03	0.40
1:C:359:ARG:HD3	1:C:362:ARG:HH12	1.85	0.40
1:C:623:THR:OG1	1:C:624:ASN:N	2.54	0.40
1:D:75:ASP:OD1	1:D:75:ASP:N	2.43	0.40
1:D:611:MET:HE2	1:D:611:MET:HB3	1.78	0.40
1:E:359:ARG:HD3	1:E:362:ARG:HH12	1.85	0.40
1:E:623:THR:OG1	1:E:624:ASN:N	2.54	0.40
1:F:292:GLU:HA	1:F:295:LYS:HB3	2.03	0.40
1:G:114:ILE:HD12	1:G:165:VAL:HG11	2.03	0.40
1:G:611:MET:HE2	1:G:611:MET:HB3	1.78	0.40
1:I:292:GLU:HA	1:I:295:LYS:HB3	2.03	0.40
1:J:224:LEU:HD23	1:J:224:LEU:HA	1.83	0.40
1:K:545:PRO:HA	1:K:548:LEU:HD23	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:623:THR:OG1	1:L:624:ASN:N	2.54	0.40
1:A:545:PRO:HA	1:B:602:ASN:HD21	1.86	0.40
1:A:548:LEU:HB2	1:A:551:TRP:HE1	1.85	0.40
1:D:545:PRO:HA	1:D:548:LEU:HD23	2.03	0.40
1:D:763:GLN:OE1	1:D:766:ARG:NH1	2.54	0.40
1:E:195:GLU:HA	1:E:198:LEU:HD22	2.02	0.40
1:F:359:ARG:HD3	1:F:362:ARG:HH12	1.85	0.40
1:F:754:LYS:HE3	1:F:754:LYS:HB2	1.93	0.40
1:H:623:THR:OG1	1:H:624:ASN:N	2.54	0.40
1:L:359:ARG:HD3	1:L:362:ARG:HH12	1.85	0.40
1:D:114:ILE:HD12	1:D:165:VAL:HG11	2.03	0.40
1:D:336:LYS:HE2	1:D:336:LYS:HB2	1.89	0.40
1:D:359:ARG:HD3	1:D:362:ARG:HH12	1.85	0.40
1:E:224:LEU:HD23	1:E:224:LEU:HA	1.83	0.40
1:E:732:ARG:HE	1:E:732:ARG:HB2	1.60	0.40
1:F:286:LEU:HA	1:F:286:LEU:HD23	1.92	0.40
1:G:359:ARG:HD3	1:G:362:ARG:HH12	1.85	0.40
1:G:763:GLN:OE1	1:G:766:ARG:NH1	2.54	0.40
1:H:114:ILE:HD12	1:H:165:VAL:HG11	2.03	0.40
1:H:292:GLU:HA	1:H:295:LYS:HB3	2.03	0.40
1:H:359:ARG:HD3	1:H:362:ARG:HH12	1.85	0.40
1:I:64:ARG:HD3	1:I:64:ARG:HA	1.96	0.40
1:J:548:LEU:HB2	1:J:551:TRP:HE1	1.85	0.40
1:K:545:PRO:HA	1:L:602:ASN:HD21	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	619/678 (91%)	613 (99%)	6 (1%)	68	75
1	B	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	C	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	D	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	E	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	F	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	G	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	H	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	I	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	J	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	K	638/678 (94%)	631 (99%)	7 (1%)	65	74
1	L	638/678 (94%)	631 (99%)	7 (1%)	65	74
All	All	7637/8136 (94%)	7554 (99%)	83 (1%)	63	74

All (83) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	37	SER
1	A	198	LEU
1	A	229	LEU
1	A	617	VAL
1	A	728	VAL
1	A	761	THR
1	B	37	SER
1	B	105	CYS
1	B	198	LEU
1	B	229	LEU
1	B	617	VAL
1	B	728	VAL
1	B	761	THR
1	C	37	SER
1	C	105	CYS
1	C	198	LEU
1	C	229	LEU
1	C	617	VAL
1	C	728	VAL
1	C	761	THR
1	D	37	SER
1	D	105	CYS

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Mol	Chain	Res	Type
1	D	198	LEU
1	D	229	LEU
1	D	617	VAL
1	D	728	VAL
1	D	761	THR
1	E	37	SER
1	E	105	CYS
1	E	198	LEU
1	E	229	LEU
1	E	617	VAL
1	E	728	VAL
1	E	761	THR
1	F	37	SER
1	F	105	CYS
1	F	198	LEU
1	F	229	LEU
1	F	617	VAL
1	F	728	VAL
1	F	761	THR
1	G	37	SER
1	G	105	CYS
1	G	198	LEU
1	G	229	LEU
1	G	617	VAL
1	G	728	VAL
1	G	761	THR
1	H	37	SER
1	H	105	CYS
1	H	198	LEU
1	H	229	LEU
1	H	617	VAL
1	H	728	VAL
1	H	761	THR
1	I	37	SER
1	I	105	CYS
1	I	198	LEU
1	I	229	LEU
1	I	617	VAL
1	I	728	VAL
1	I	761	THR
1	J	37	SER
1	J	105	CYS

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Mol	Chain	Res	Type
1	J	198	LEU
1	J	229	LEU
1	J	617	VAL
1	J	728	VAL
1	J	761	THR
1	K	37	SER
1	K	105	CYS
1	K	198	LEU
1	K	229	LEU
1	K	617	VAL
1	K	728	VAL
1	K	761	THR
1	L	37	SER
1	L	105	CYS
1	L	198	LEU
1	L	229	LEU
1	L	617	VAL
1	L	728	VAL
1	L	761	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (157) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	199	ASN
1	A	260	ASN
1	A	296	ASN
1	A	327	GLN
1	A	384	HIS
1	A	387	ASN
1	A	404	HIS
1	A	499	HIS
1	A	536	GLN
1	A	558	ASN
1	A	660	ASN
1	B	90	ASN
1	B	91	ASN
1	B	199	ASN
1	B	260	ASN
1	B	296	ASN
1	B	327	GLN
1	B	384	HIS
1	B	387	ASN

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Mol	Chain	Res	Type
1	B	404	HIS
1	B	499	HIS
1	B	536	GLN
1	B	558	ASN
1	B	660	ASN
1	C	90	ASN
1	C	91	ASN
1	C	199	ASN
1	C	260	ASN
1	C	296	ASN
1	C	327	GLN
1	C	384	HIS
1	C	387	ASN
1	C	404	HIS
1	C	499	HIS
1	C	536	GLN
1	C	558	ASN
1	C	660	ASN
1	D	50	GLN
1	D	90	ASN
1	D	91	ASN
1	D	199	ASN
1	D	260	ASN
1	D	296	ASN
1	D	327	GLN
1	D	384	HIS
1	D	387	ASN
1	D	404	HIS
1	D	499	HIS
1	D	536	GLN
1	D	558	ASN
1	D	660	ASN
1	E	90	ASN
1	E	91	ASN
1	E	199	ASN
1	E	260	ASN
1	E	296	ASN
1	E	327	GLN
1	E	384	HIS
1	E	404	HIS
1	E	499	HIS
1	E	536	GLN

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Mol	Chain	Res	Type
1	E	558	ASN
1	E	660	ASN
1	F	50	GLN
1	F	90	ASN
1	F	91	ASN
1	F	199	ASN
1	F	260	ASN
1	F	296	ASN
1	F	327	GLN
1	F	384	HIS
1	F	387	ASN
1	F	404	HIS
1	F	499	HIS
1	F	536	GLN
1	F	558	ASN
1	F	660	ASN
1	G	50	GLN
1	G	90	ASN
1	G	91	ASN
1	G	199	ASN
1	G	260	ASN
1	G	296	ASN
1	G	327	GLN
1	G	384	HIS
1	G	387	ASN
1	G	404	HIS
1	G	499	HIS
1	G	536	GLN
1	G	558	ASN
1	G	660	ASN
1	H	90	ASN
1	H	91	ASN
1	H	199	ASN
1	H	260	ASN
1	H	296	ASN
1	H	327	GLN
1	H	384	HIS
1	H	387	ASN
1	H	404	HIS
1	H	499	HIS
1	H	536	GLN
1	H	558	ASN

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Mol	Chain	Res	Type
1	H	660	ASN
1	I	90	ASN
1	I	91	ASN
1	I	199	ASN
1	I	260	ASN
1	I	296	ASN
1	I	327	GLN
1	I	384	HIS
1	I	387	ASN
1	I	404	HIS
1	I	499	HIS
1	I	536	GLN
1	I	558	ASN
1	I	660	ASN
1	J	50	GLN
1	J	90	ASN
1	J	91	ASN
1	J	199	ASN
1	J	260	ASN
1	J	296	ASN
1	J	327	GLN
1	J	384	HIS
1	J	387	ASN
1	J	404	HIS
1	J	499	HIS
1	J	536	GLN
1	J	558	ASN
1	J	660	ASN
1	K	90	ASN
1	K	91	ASN
1	K	199	ASN
1	K	260	ASN
1	K	296	ASN
1	K	327	GLN
1	K	384	HIS
1	K	387	ASN
1	K	404	HIS
1	K	499	HIS
1	K	536	GLN
1	K	558	ASN
1	K	660	ASN
1	L	90	ASN

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Mol	Chain	Res	Type
1	L	91	ASN
1	L	199	ASN
1	L	260	ASN
1	L	296	ASN
1	L	327	GLN
1	L	384	HIS
1	L	387	ASN
1	L	404	HIS
1	L	499	HIS
1	L	536	GLN
1	L	558	ASN
1	L	660	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

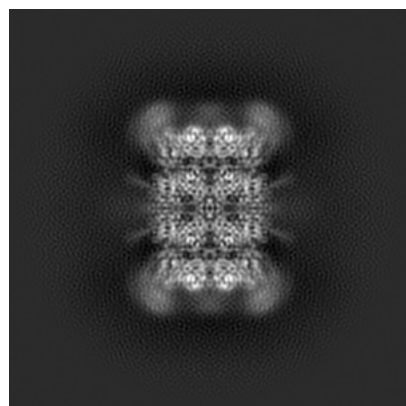
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22675. These allow visual inspection of the internal detail of the map and identification of artifacts.

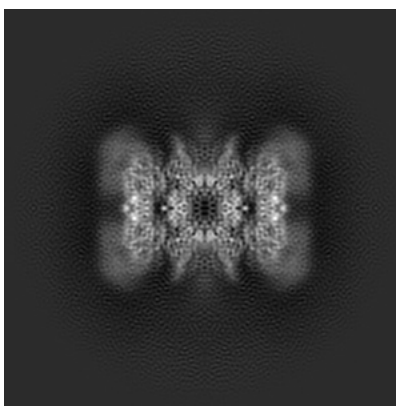
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

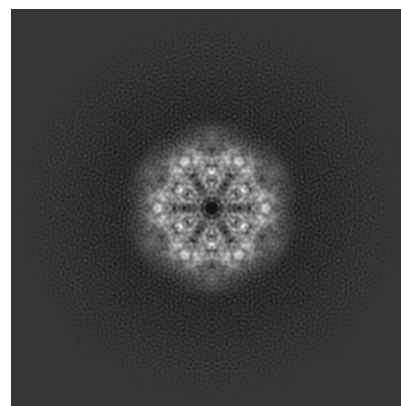
6.1.1 Primary map



X

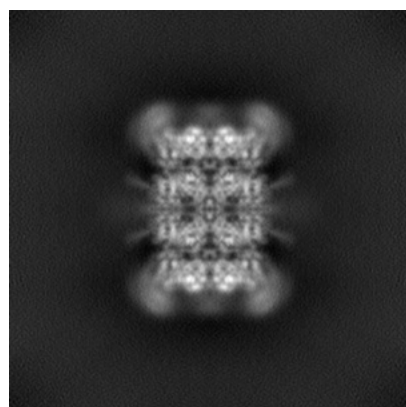


Y

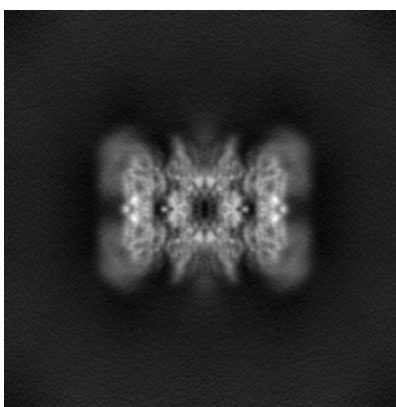


Z

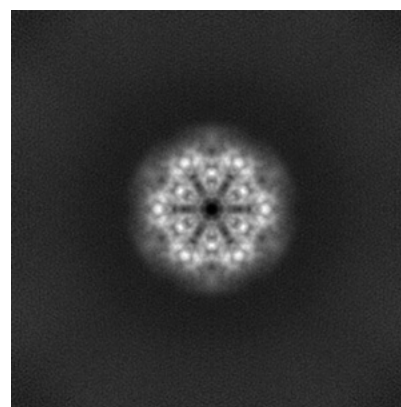
6.1.2 Raw map



X



Y

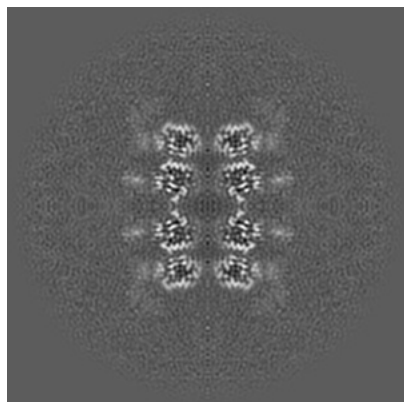


Z

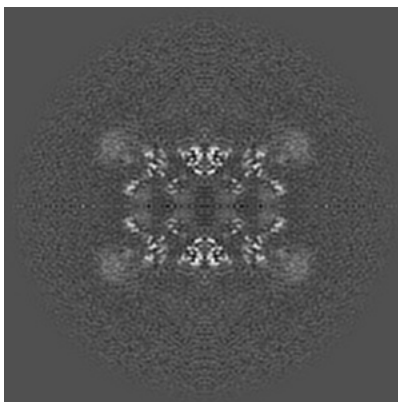
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

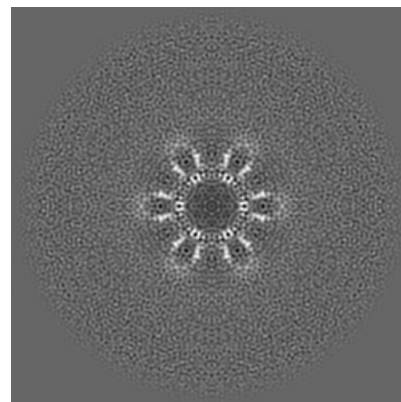
6.2.1 Primary map



X Index: 128

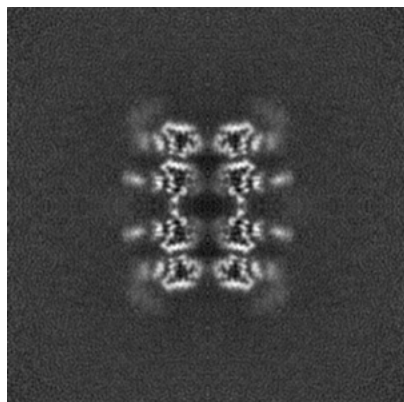


Y Index: 128

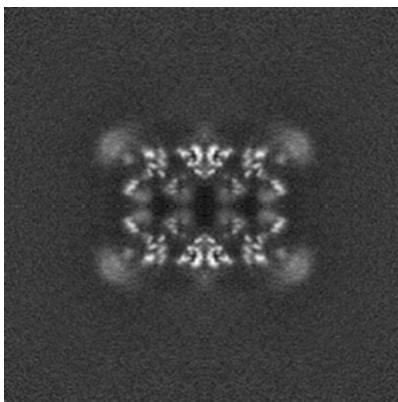


Z Index: 128

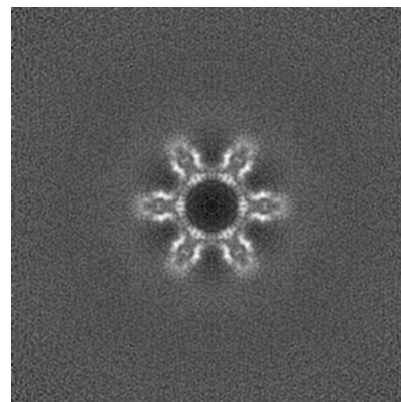
6.2.2 Raw map



X Index: 128



Y Index: 128

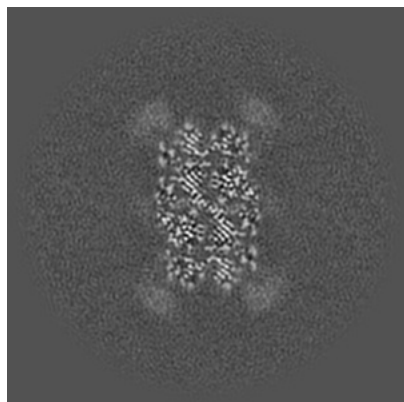


Z Index: 128

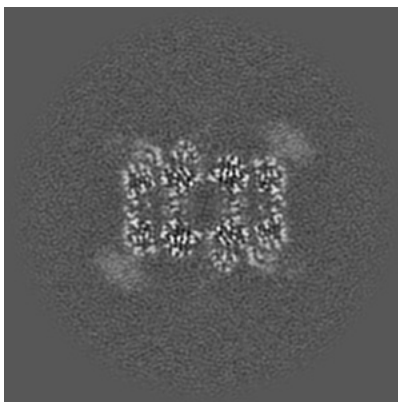
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

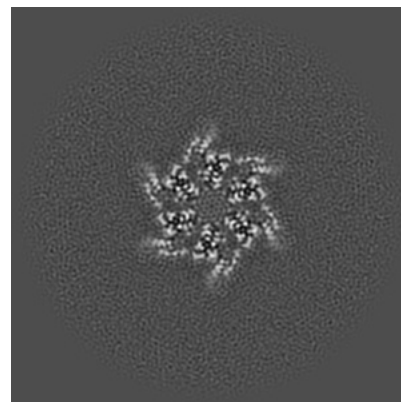
6.3.1 Primary map



X Index: 108

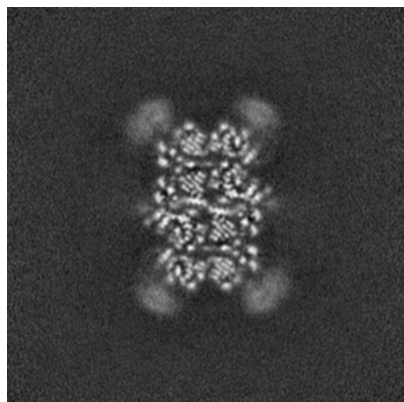


Y Index: 138

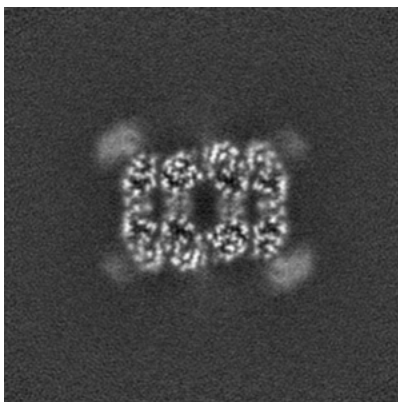


Z Index: 143

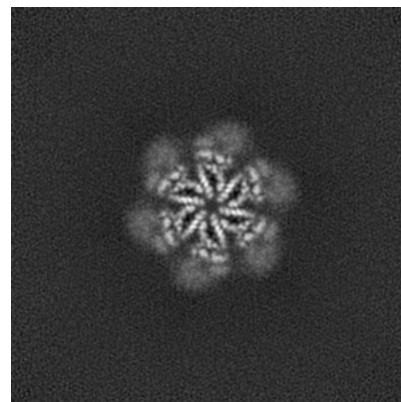
6.3.2 Raw map



X Index: 109



Y Index: 120

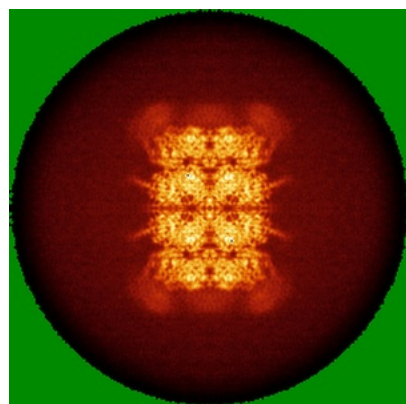


Z Index: 173

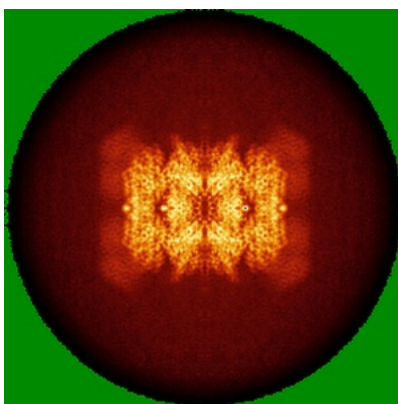
The images above show the largest variance slices of the map in three orthogonal directions.

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

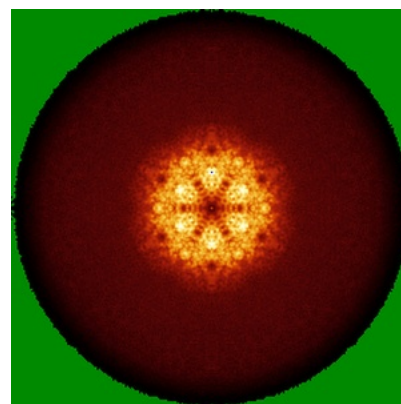
6.4.1 Primary map



X

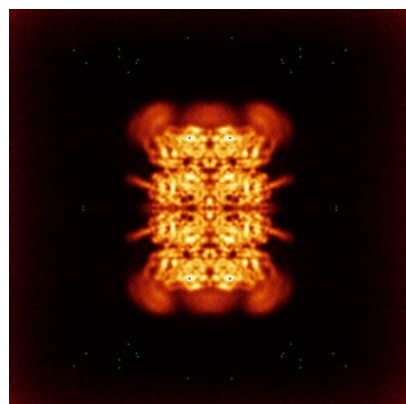


Y

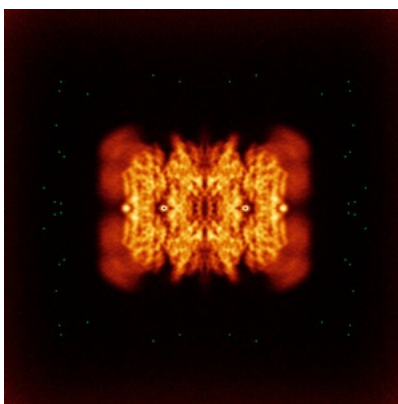


Z

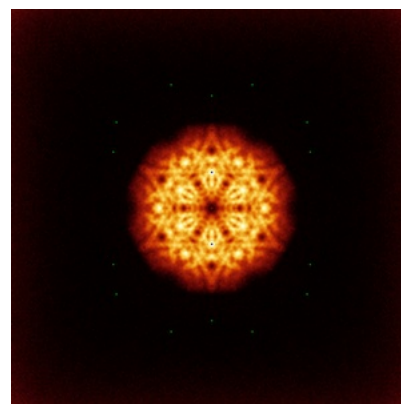
6.4.2 Raw map



X



Y

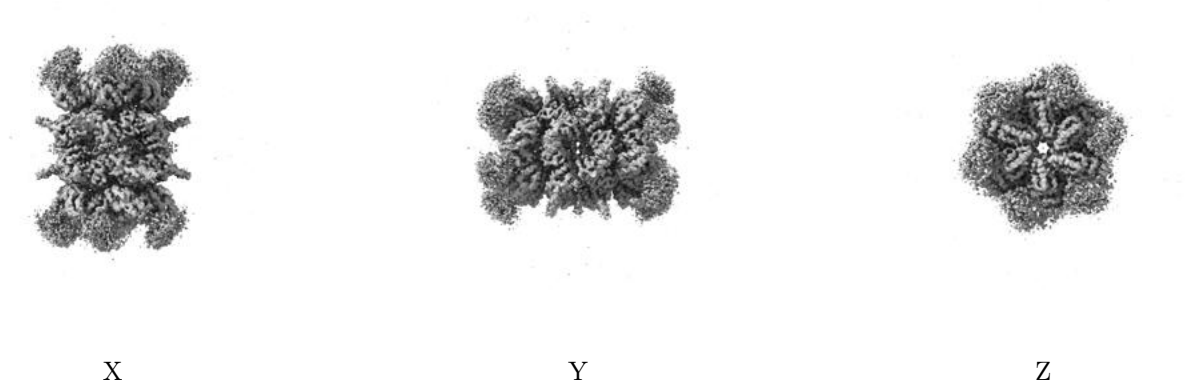


Z

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

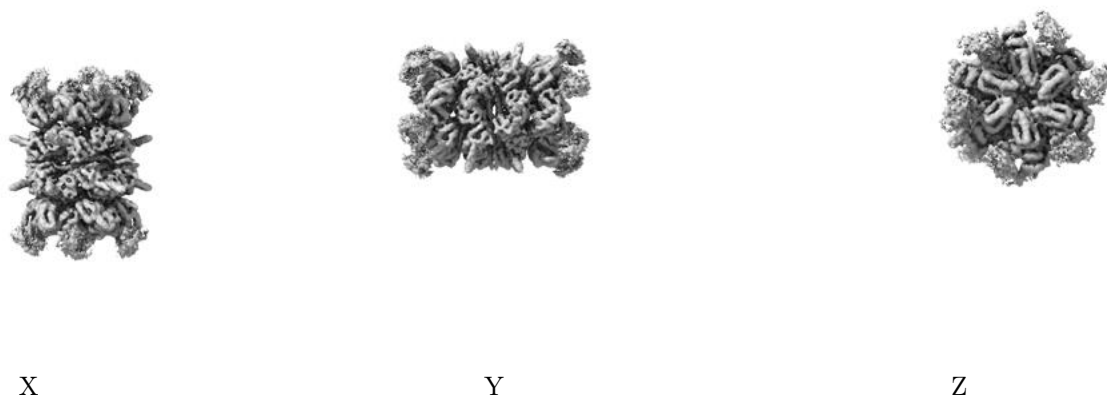
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.37. 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



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.

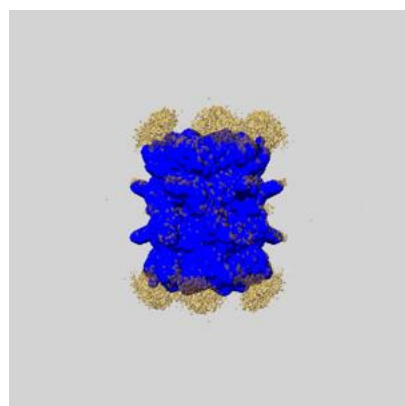
6.6 Mask visualisation [i](#)

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

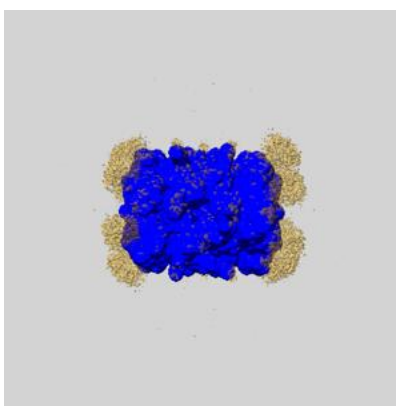
A mask typically either:

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

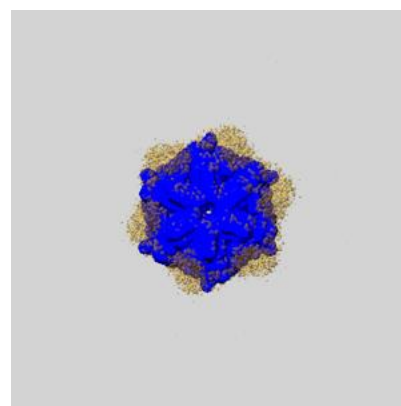
6.6.1 emd_22675_msk_1.map [i](#)



X



Y

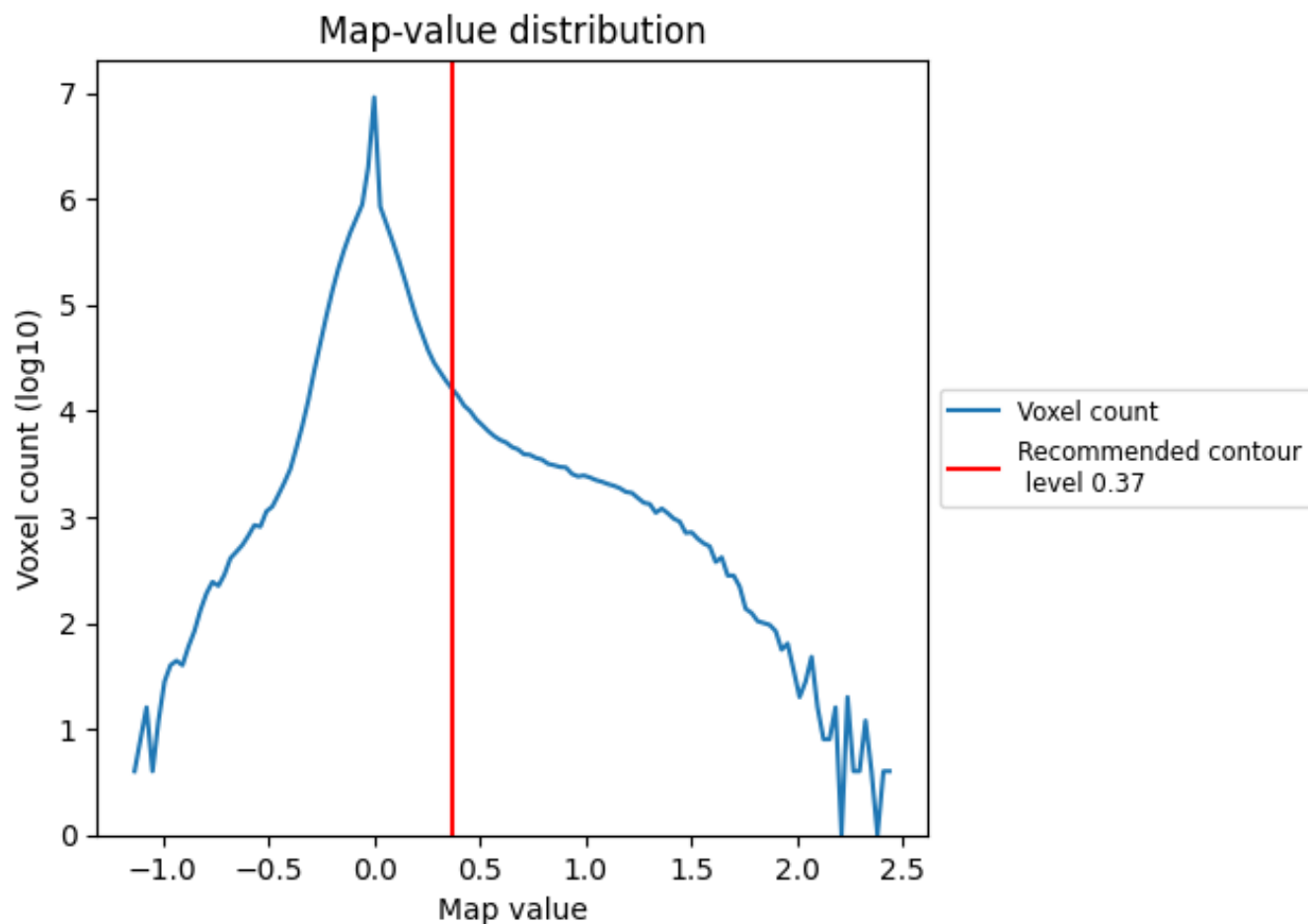


Z

7 Map analysis [i](#)

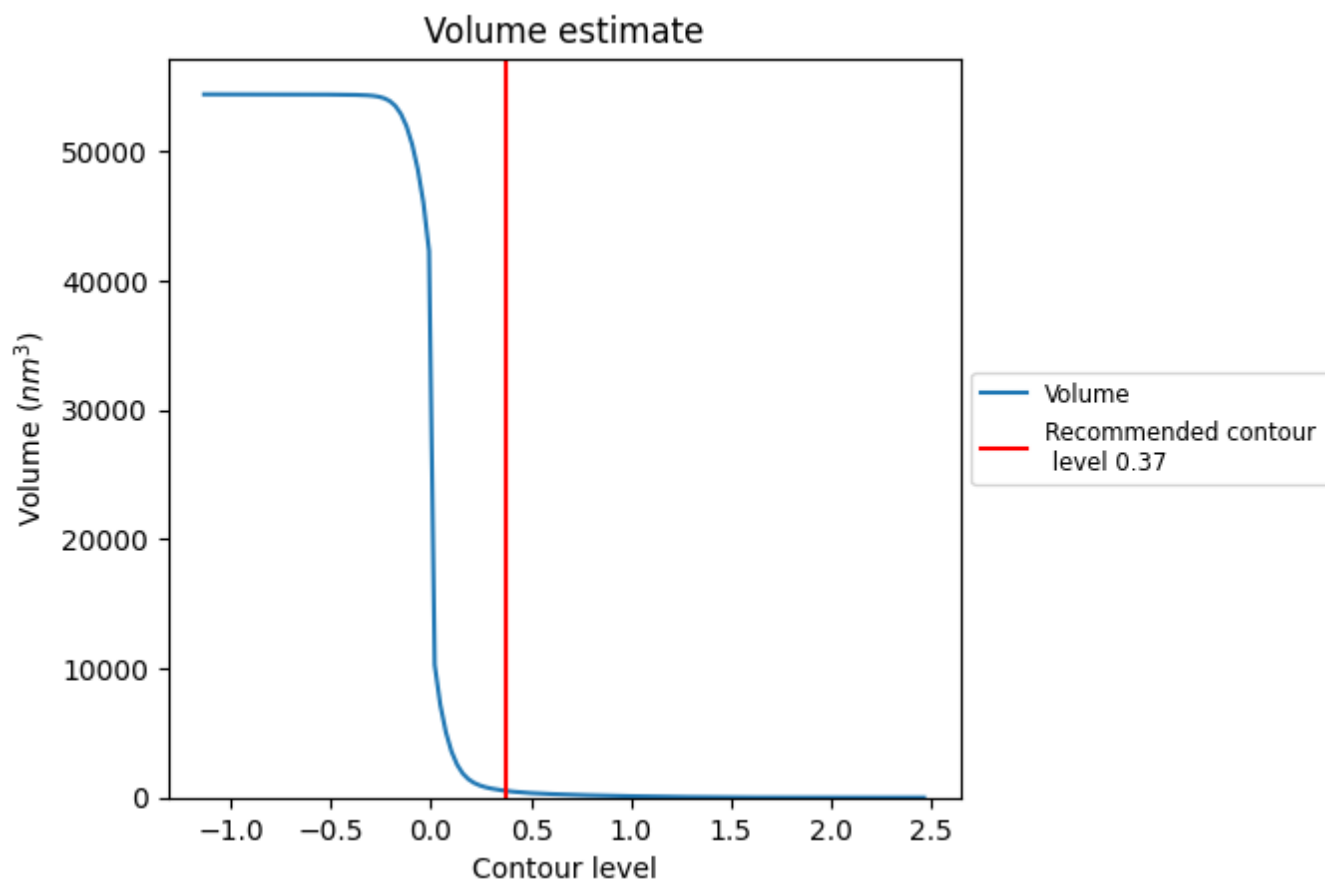
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

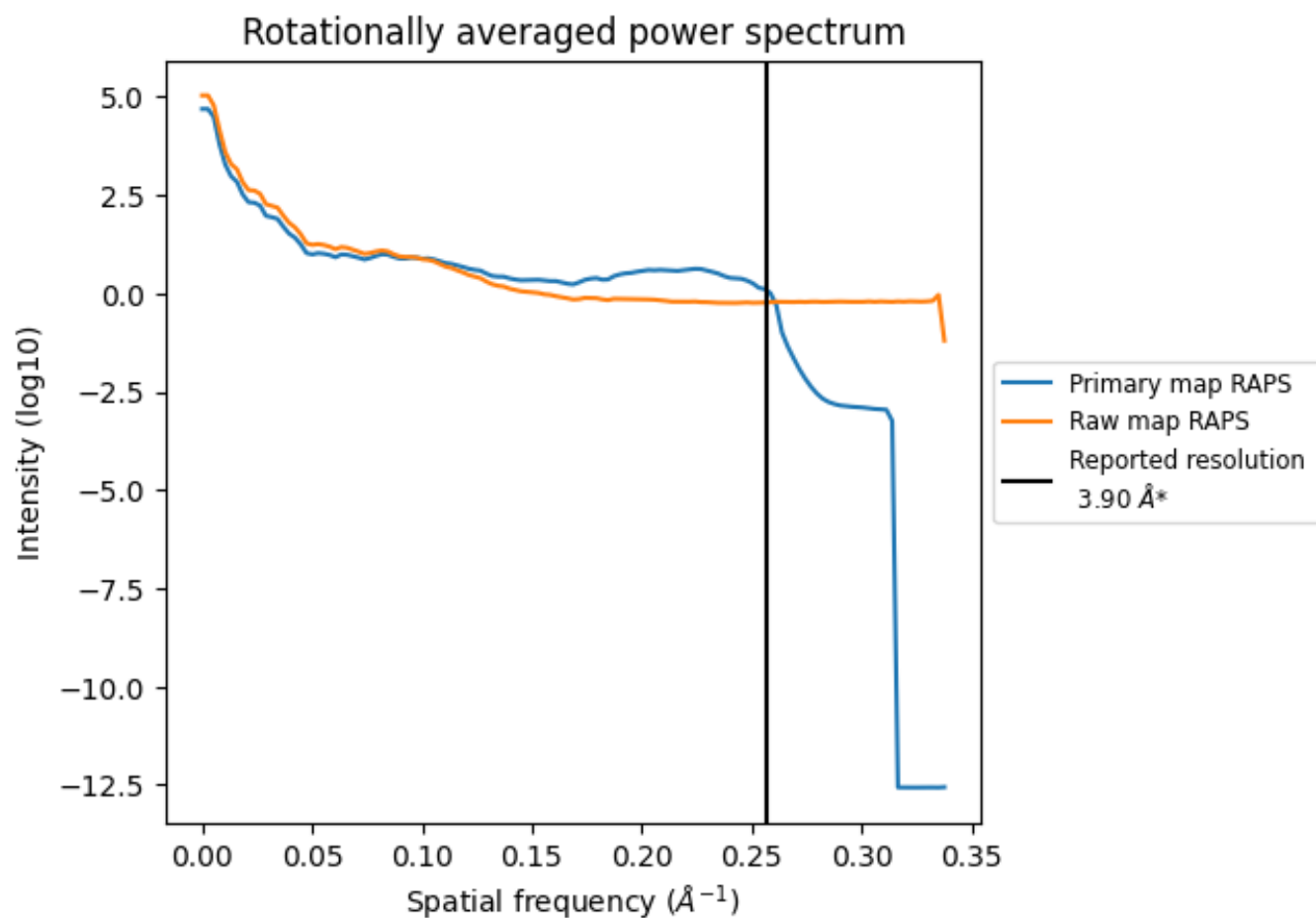
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 530 nm³; this corresponds to an approximate mass of 478 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 ⓘ

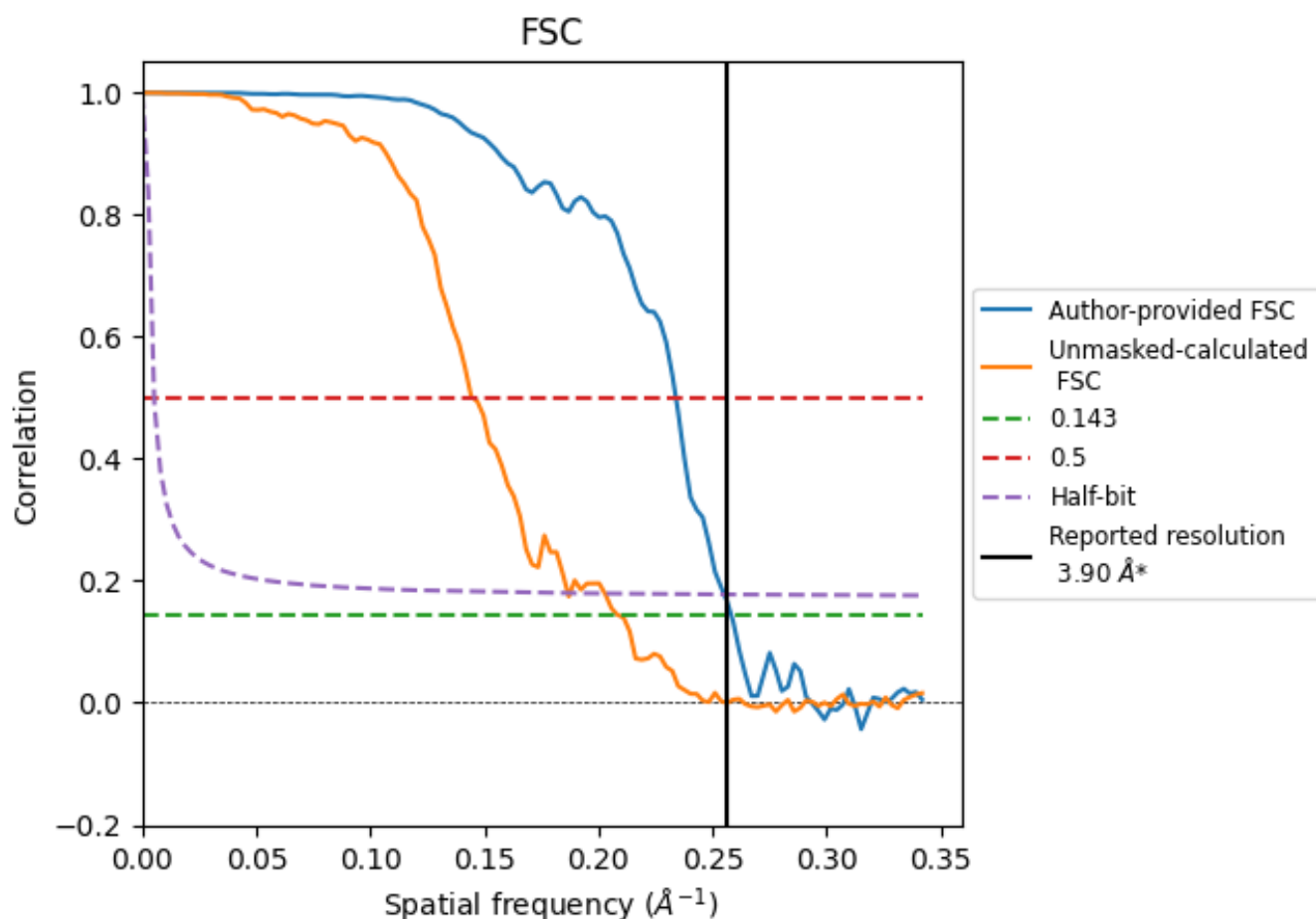


*Reported resolution corresponds to spatial frequency of 0.256 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



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

8.2 Resolution estimates [i](#)

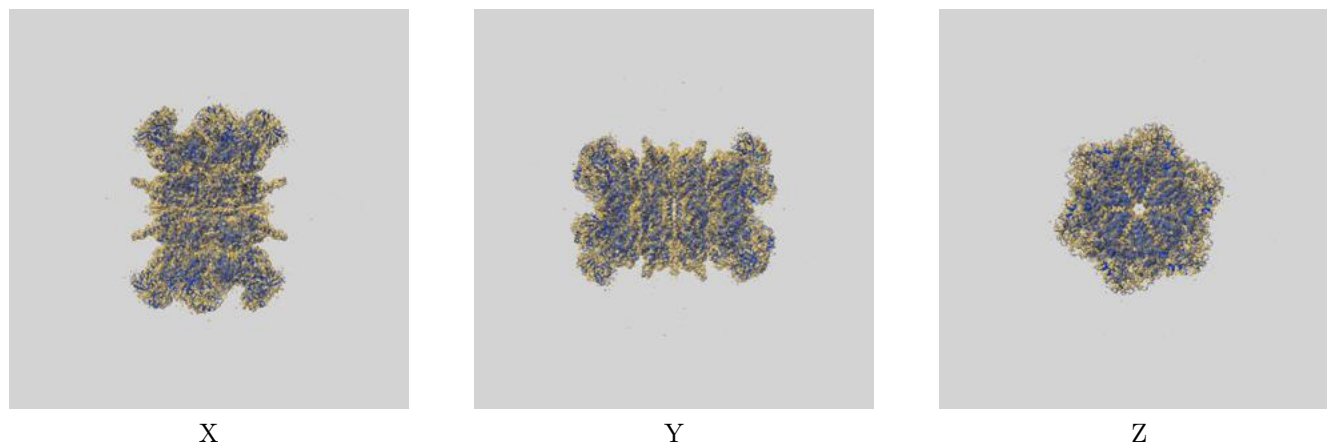
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	3.87	4.27	3.92
Unmasked-calculated*	4.78	6.90	5.36

*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 4.78 differs from the reported value 3.9 by more than 10 %

9 Map-model fit [i](#)

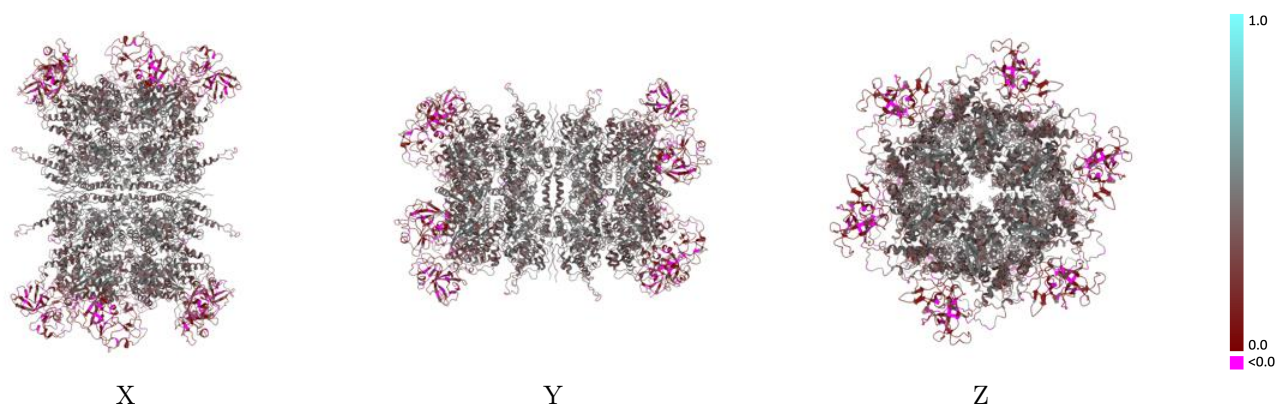
This section contains information regarding the fit between EMDB map EMD-22675 and PDB model 7K56. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

9.1 Map-model overlay [i](#)



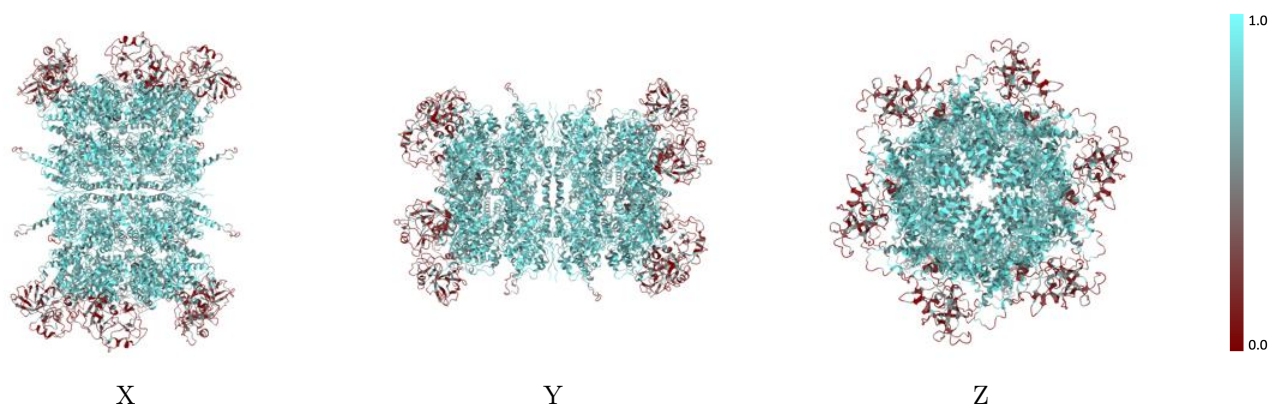
The images above show the 3D surface view of the map at the recommended contour level 0.37 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



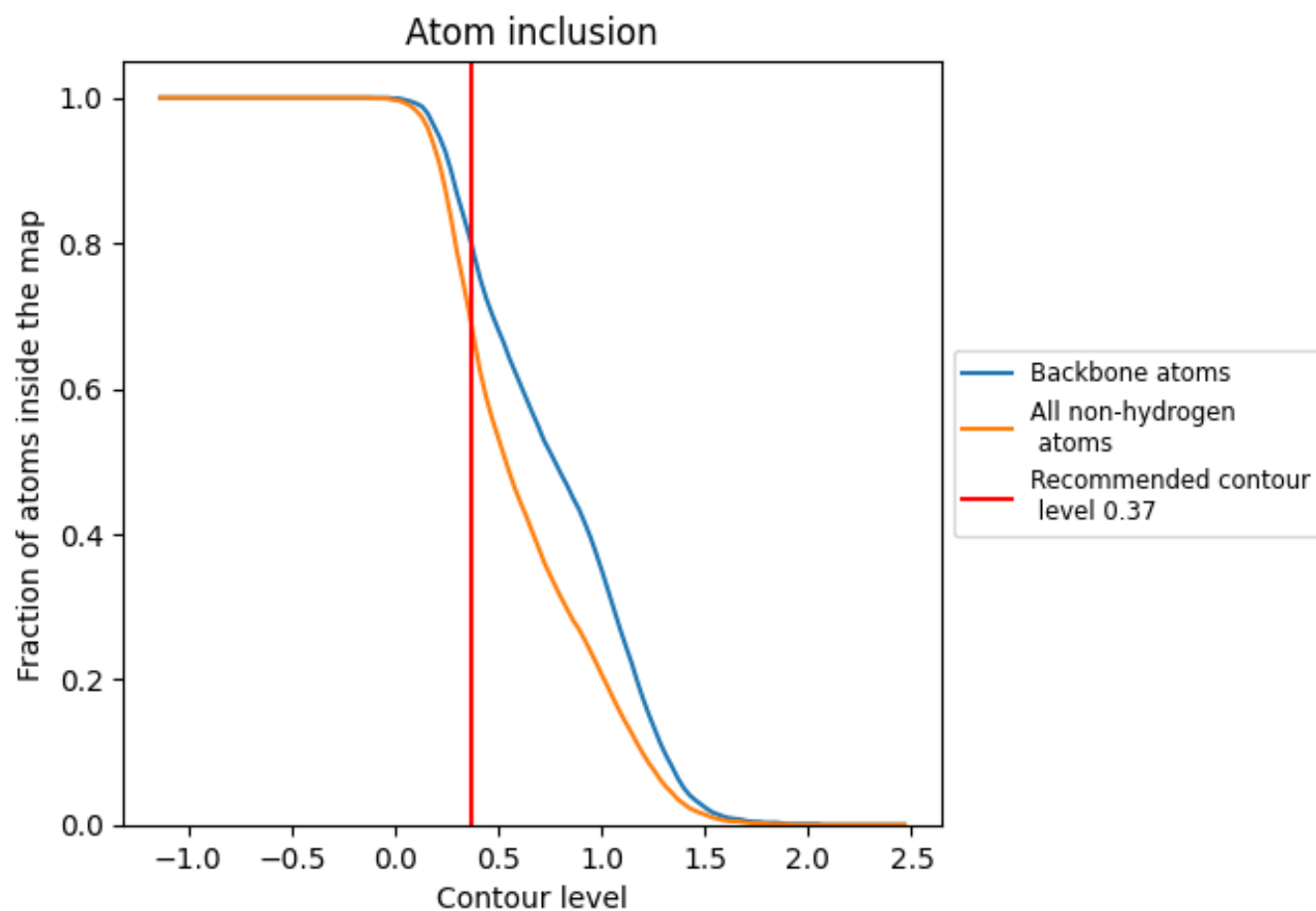
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.37).

9.4 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 69% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.37) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6880	0.3700
A	0.6920	0.3720
B	0.6850	0.3720
C	0.6850	0.3690
D	0.6920	0.3710
E	0.6860	0.3700
F	0.6860	0.3680
G	0.6920	0.3710
H	0.6870	0.3700
I	0.6850	0.3690
J	0.6920	0.3720
K	0.6850	0.3710
L	0.6860	0.3680

1.0

0.0

<0.0