Full wwPDB EM Validation Report ⓘ

Nov 17, 2025 – 03:44 PM EST

PDB ID	:	9E7M / pdb_00009e7m
EMDB ID	:	EMD-47685
Title	:	In situ cryoEM structure of bacteriophage Ur-lambda tail tip complex
Authors	:	Yu, H.; Liu, J.; Molineux, I.J.
Deposited on	:	2024-11-03
Resolution	:	3.37 Å(reported)

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

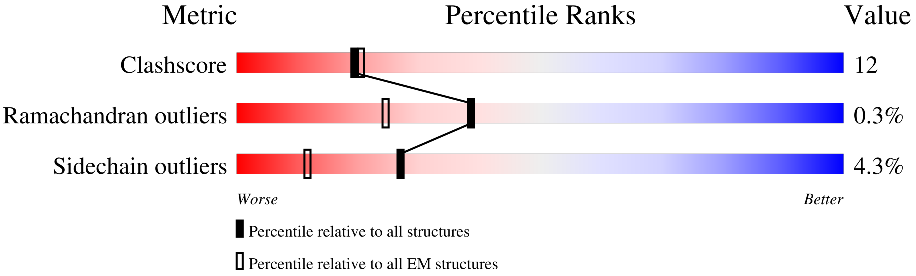
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive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

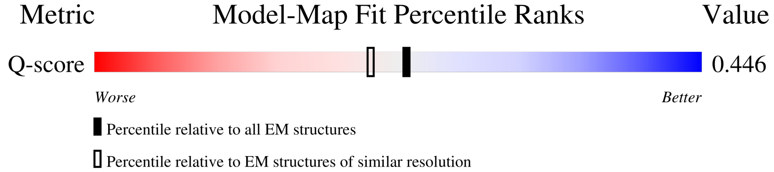
1 Overall quality at a glance

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

The reported resolution of this entry is 3.37 Å.

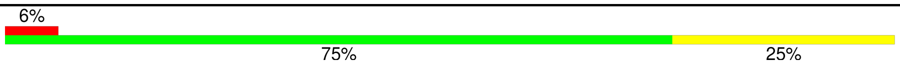
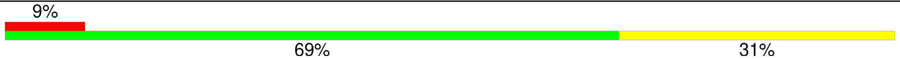
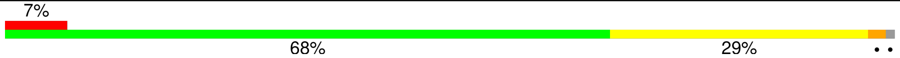
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	14287 (2.87 - 3.87)

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	Ha	32	
1	Hb	32	
1	Hc	32	
2	Ia	90	

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Mol	Chain	Length	Quality of chain
2	Ib	90	7% 70% 28% •
3	Ic	90	9% 73% 24% •
4	Ja	835	5% 68% 31% •
4	Jb	835	5% 69% 30% •
4	Jc	835	5% 68% 31% •
5	La	232	• 74% 25%
5	Lb	232	• 78% 22%
5	Lc	232	• 77% 23%
6	Ta	94	5% 78% 21% •
6	Tb	94	7% 66% 33% •
6	Tc	94	12% 66% 32% •
6	Td	94	10% 81% 19%
6	Te	94	9% 79% 20% •
6	Tf	94	11% 68% 32%
6	Tg	94	6% 76% 23% •
6	Th	94	7% 77% 22% •
6	Ti	94	9% 68% 30% •
6	Tj	94	7% 72% 27% •
6	Tk	94	12% 77% 23%
6	Tl	94	11% 78% 22%
7	Ma	109	• 63% 35% •
7	Mb	109	78% 22%
7	Mc	109	• 72% 28%
7	Md	109	• 61% 38% •
7	Me	109	5% 70% 30%

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Mol	Chain	Length	Quality of chain
7	Mf	109	
8	Va	152	
8	Vb	152	
8	Vc	152	
8	Vd	152	
8	Ve	152	
8	Vf	152	

2 Entry composition ⓘ

There are 9 unique types of molecules in this entry. The entry contains 48257 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 Tape measure protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	Ha	32	237	146	44	45	2	0	0
1	Hb	32	241	149	45	45	2	0	0
1	Hc	32	241	149	45	45	2	0	0

- Molecule 2 is a protein called Tail tip assembly protein I.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	Ia	89	639	396	110	128	5	0	0
2	Ib	90	640	396	111	129	4	0	0

- Molecule 3 is a protein called Tail tip assembly protein I.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	Ic	90	648	400	114	129	5	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ic	138	VAL	ILE	conflict	UNP P03730

- Molecule 4 is a protein called Tip attachment protein J.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	Ja	835	6493	4070	1135	1269	19	0	0
4	Jb	835	6490	4069	1132	1269	20	0	0

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Mol	Chain	Residues	Atoms	AltConf	Trace
4	Jc	835	Total C N O S 6484 4064 1132 1269 19	0	0

- Molecule 5 is a protein called Tail tip protein L.

Mol	Chain	Residues	Atoms	AltConf	Trace
5	Lc	232	Total C N O S 1796 1115 309 363 9	0	0
5	Lb	232	Total C N O S 1796 1115 309 363 9	0	0
5	La	232	Total C N O S 1799 1117 309 363 10	0	0

- Molecule 6 is a protein called Tail fiber protein.

Mol	Chain	Residues	Atoms	AltConf	Trace
6	Ta	94	Total C N O S 704 436 119 144 5	0	0
6	Tb	94	Total C N O S 704 436 119 144 5	0	0
6	Tc	94	Total C N O S 704 436 119 144 5	0	0
6	Td	94	Total C N O S 704 436 119 144 5	0	0
6	Te	94	Total C N O S 704 436 119 144 5	0	0
6	Tf	94	Total C N O S 704 436 119 144 5	0	0
6	Tg	94	Total C N O S 704 436 119 144 5	0	0
6	Tl	94	Total C N O S 704 436 119 144 5	0	0
6	Th	94	Total C N O S 704 436 119 144 5	0	0
6	Ti	94	Total C N O S 704 436 119 144 5	0	0
6	Tj	94	Total C N O S 704 436 119 144 5	0	0
6	Tk	94	Total C N O S 704 436 119 144 5	0	0

- Molecule 7 is a protein called Tail tip protein M.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Ma	109	Total 885	C 569	N 154	O 158	S 4	0	0
7	Mb	109	Total 870	C 558	N 150	O 158	S 4	0	0
7	Mc	109	Total 885	C 569	N 154	O 158	S 4	0	0
7	Md	109	Total 885	C 569	N 154	O 158	S 4	0	0
7	Me	109	Total 885	C 569	N 154	O 158	S 4	0	0
7	Mf	109	Total 881	C 566	N 153	O 158	S 4	0	0

- Molecule 8 is a protein called Tail tube protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Va	152	Total 1165	C 731	N 197	O 234	S 3	0	0
8	Vb	152	Total 1165	C 731	N 197	O 234	S 3	0	0
8	Vc	152	Total 1165	C 731	N 197	O 234	S 3	0	0
8	Vd	152	Total 1165	C 731	N 197	O 234	S 3	0	0
8	Ve	152	Total 1165	C 731	N 197	O 234	S 3	0	0
8	Vf	152	Total 1165	C 731	N 197	O 234	S 3	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Va	?	-	ALA	deletion	UNP P03733
Va	?	-	LYS	deletion	UNP P03733
Va	?	-	GLU	deletion	UNP P03733
Vb	?	-	ALA	deletion	UNP P03733
Vb	?	-	LYS	deletion	UNP P03733
Vb	?	-	GLU	deletion	UNP P03733
Vc	?	-	ALA	deletion	UNP P03733
Vc	?	-	LYS	deletion	UNP P03733
Vc	?	-	GLU	deletion	UNP P03733
Vd	?	-	ALA	deletion	UNP P03733
Vd	?	-	LYS	deletion	UNP P03733

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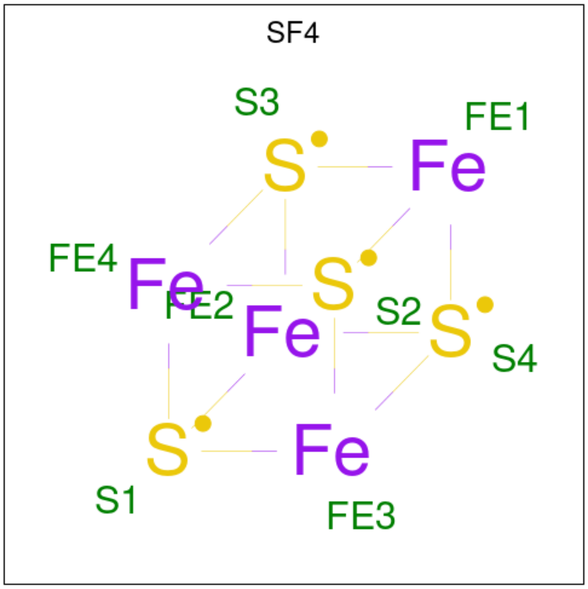
Chain	Residue	Modelled	Actual	Comment	Reference
Vd	?	-	GLU	deletion	UNP P03733
Ve	?	-	ALA	deletion	UNP P03733
Ve	?	-	LYS	deletion	UNP P03733
Ve	?	-	GLU	deletion	UNP P03733
Vf	?	-	ALA	deletion	UNP P03733
Vf	?	-	LYS	deletion	UNP P03733
Vf	?	-	GLU	deletion	UNP P03733

- Molecule 9 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4) (labeled as "Ligand of Interest" by depositor).

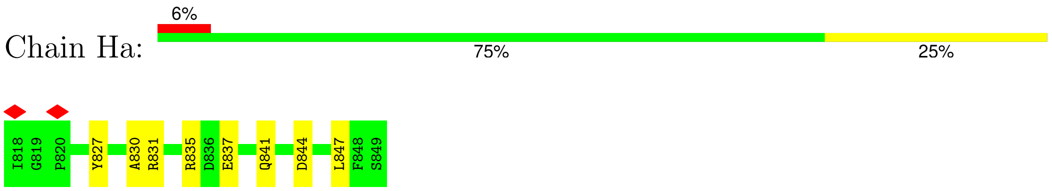


Mol	Chain	Residues	Atoms	AltConf
9	Lc	1	Total Fe S 8 4 4	0
9	Lb	1	Total Fe S 8 4 4	0
9	La	1	Total Fe S 8 4 4	0

3 Residue-property plots ⓘ

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

- Molecule 1: Tape measure protein



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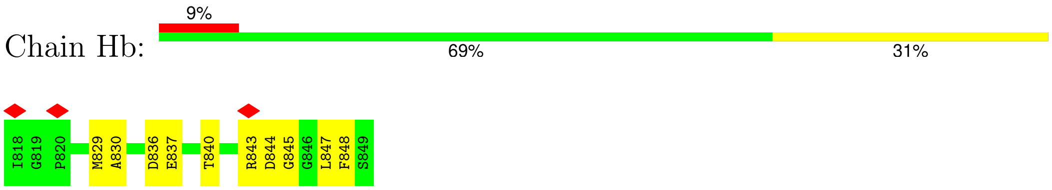
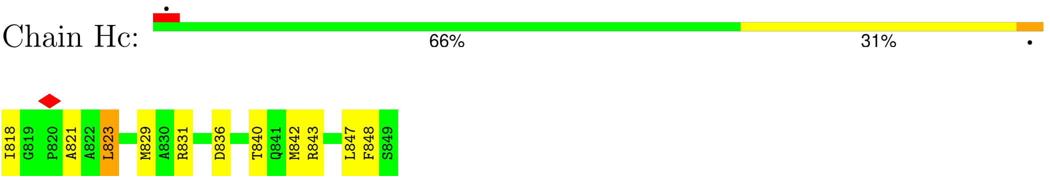
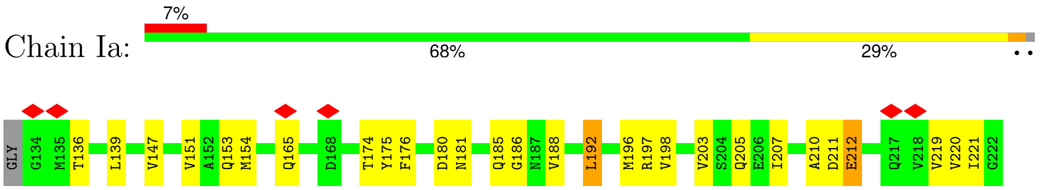


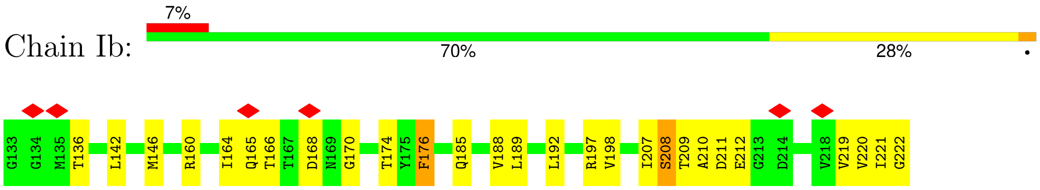
- Molecule 1: Tape measure protein



- Molecule 2: Tail tip assembly protein I

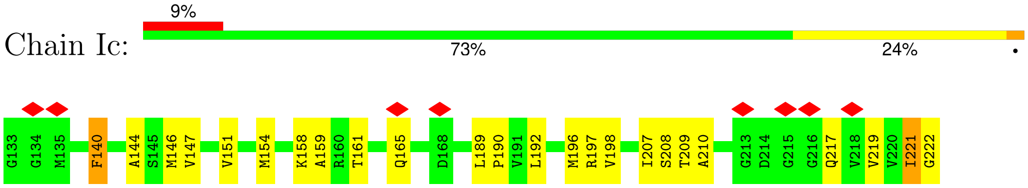


- Molecule 2: Tail tip assembly protein I



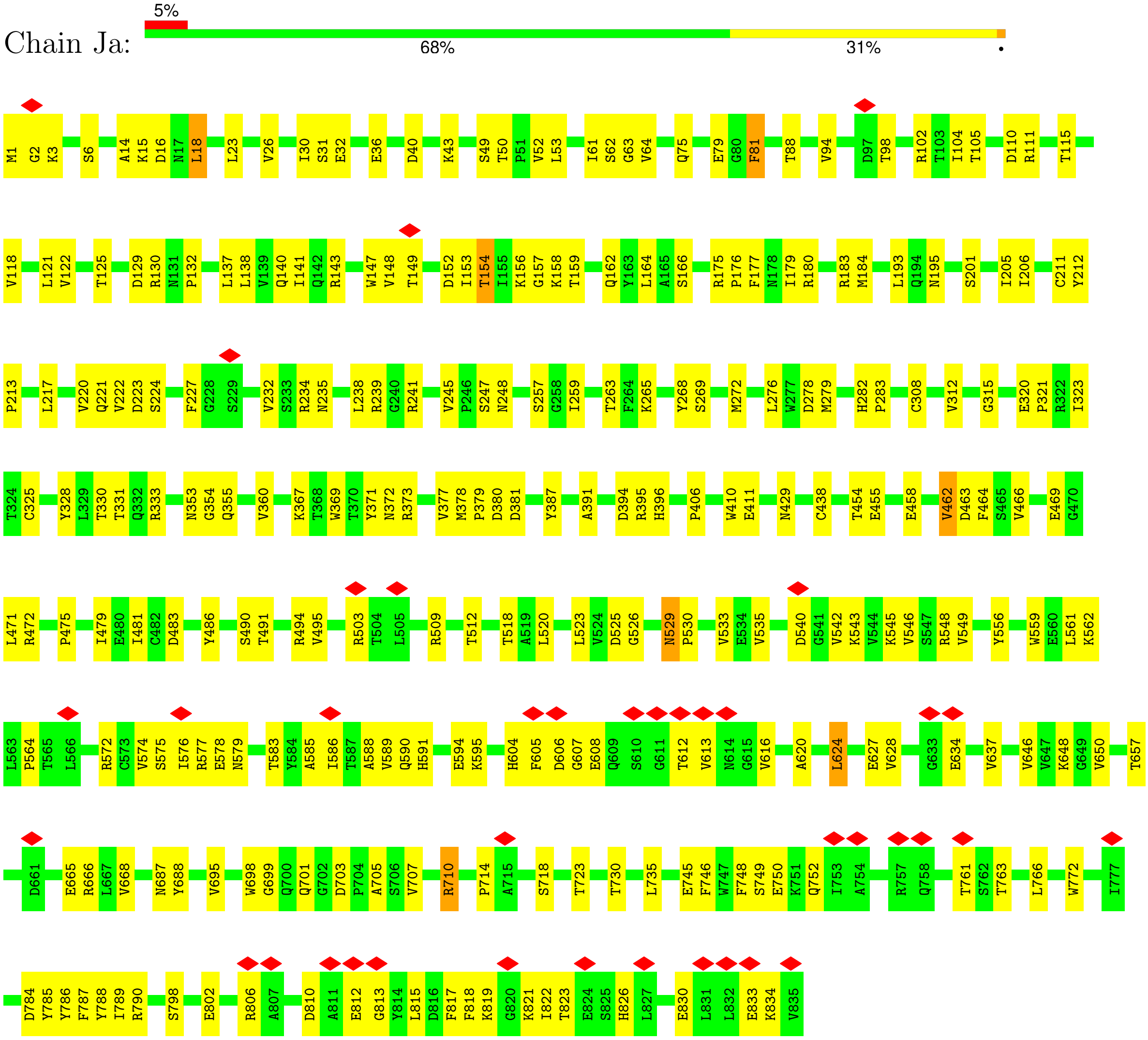
- Molecule 3: Tail tip assembly protein I

Chain Ic:



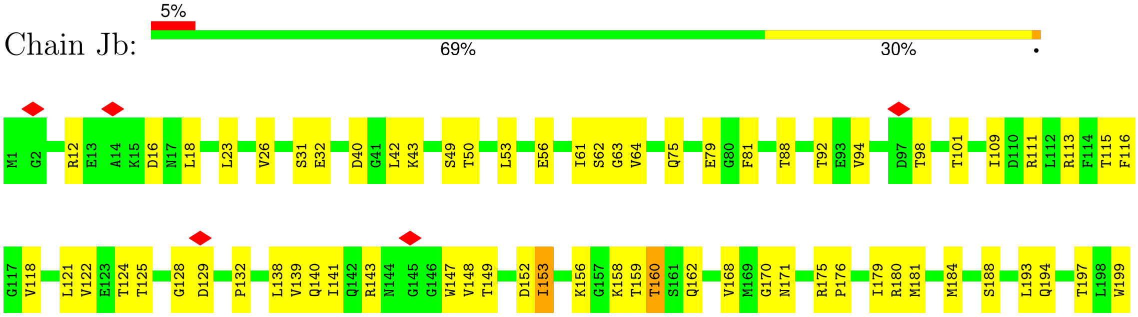
- Molecule 4: Tip attachment protein J

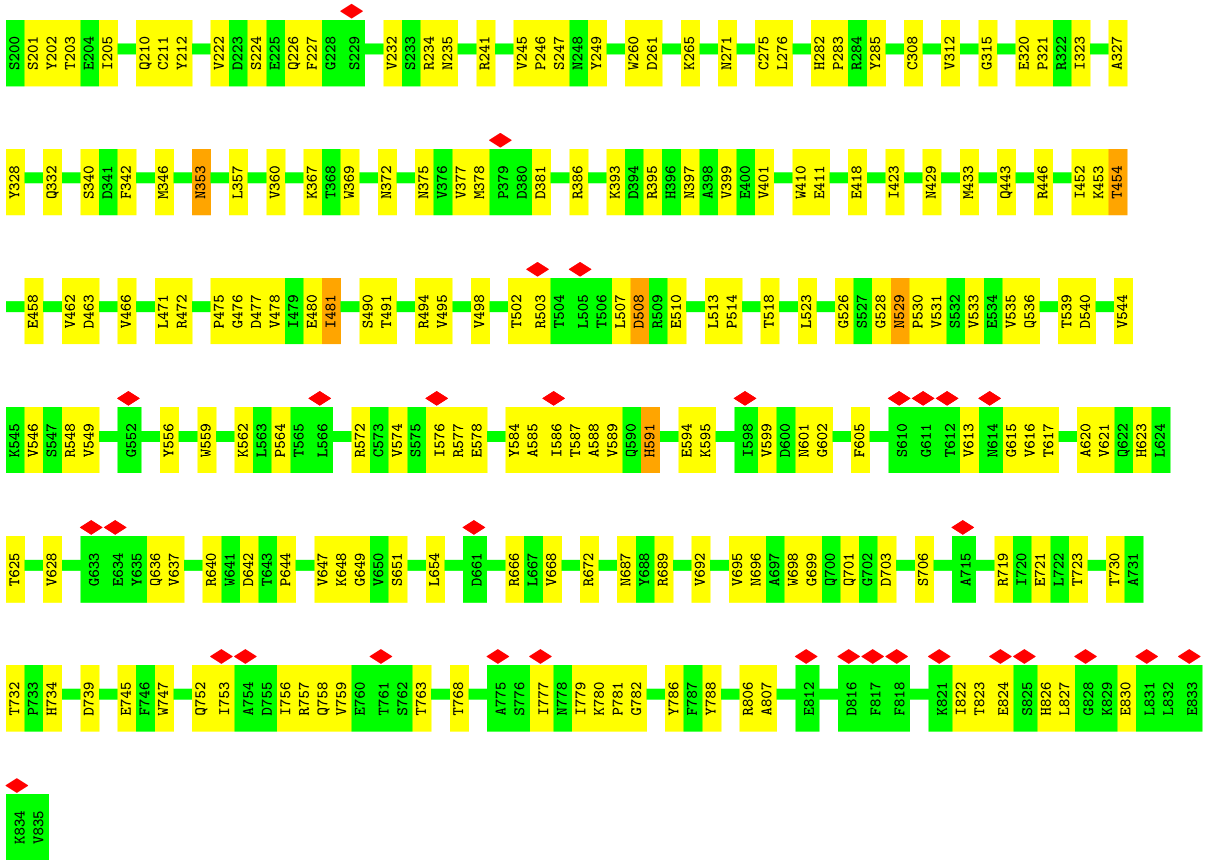
Chain Ja:



- Molecule 4: Tip attachment protein J

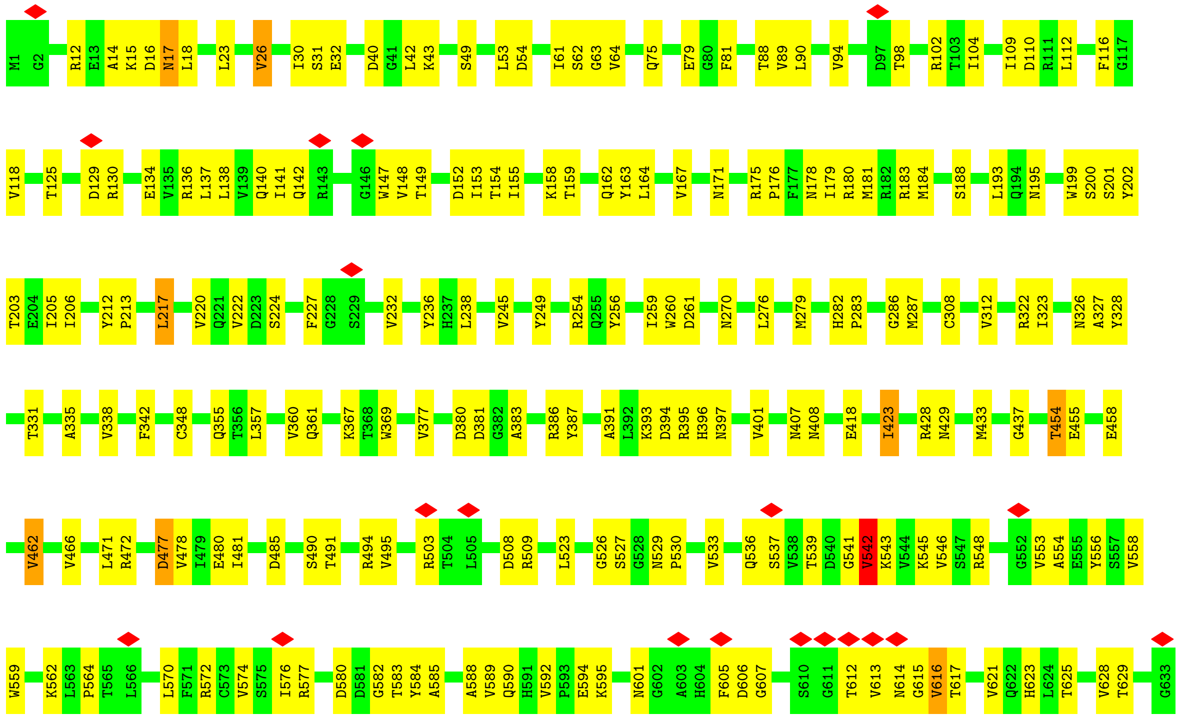
Chain Jb:

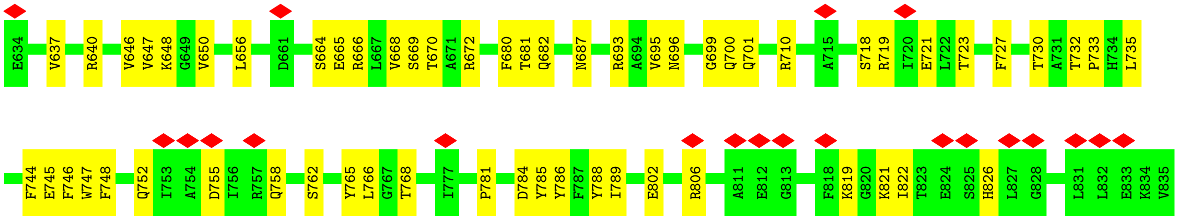




- Molecule 4: Tip attachment protein J

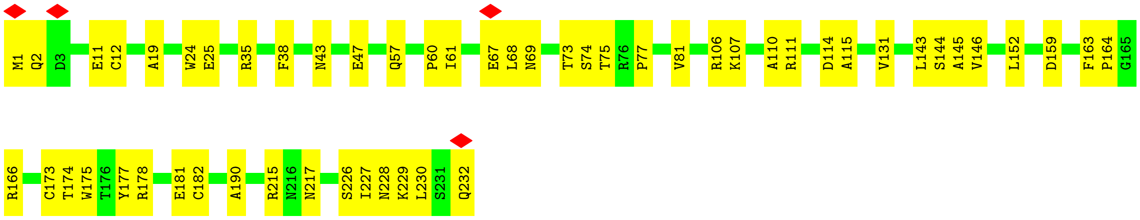
Chain Jc:





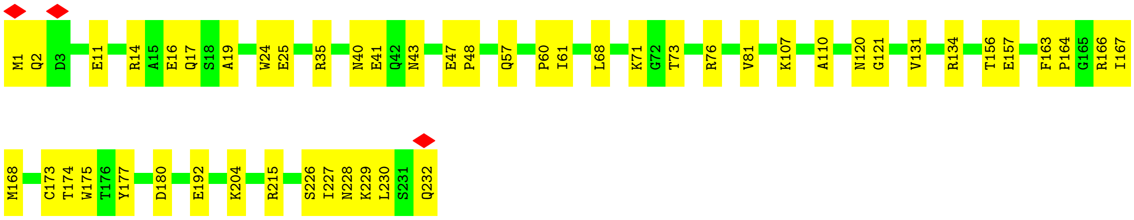
- Molecule 5: Tail tip protein L

Chain Lc:



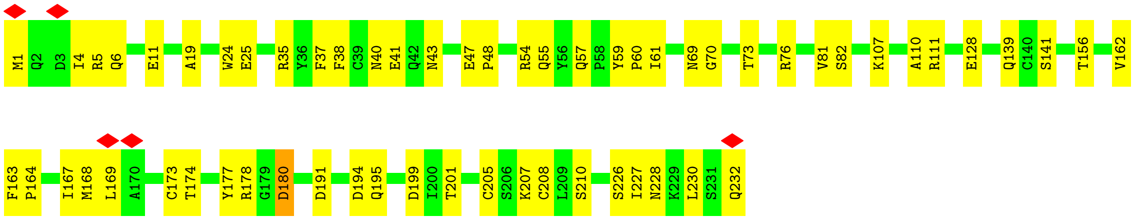
- Molecule 5: Tail tip protein L

Chain Lb:



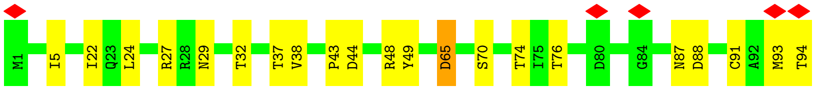
- Molecule 5: Tail tip protein L

Chain La:

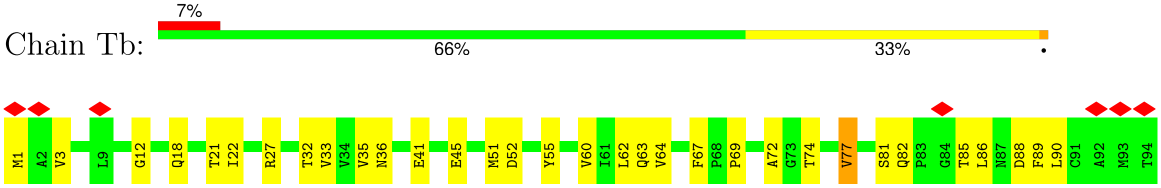


- Molecule 6: Tail fiber protein

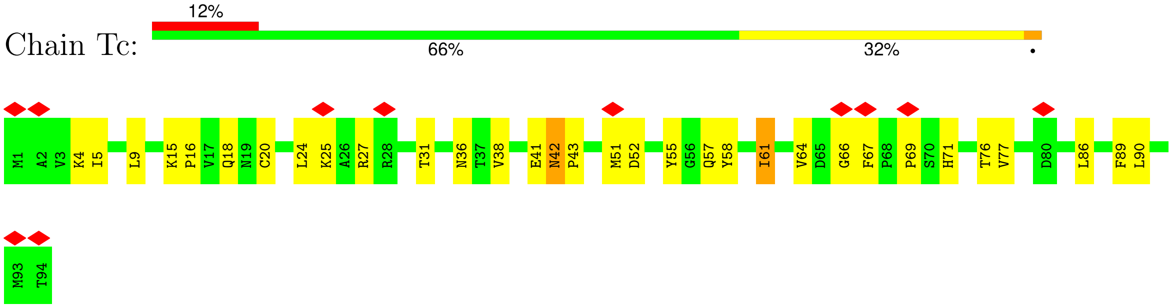
Chain Ta:



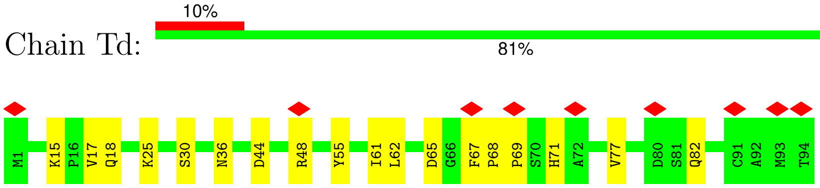
- Molecule 6: Tail fiber protein



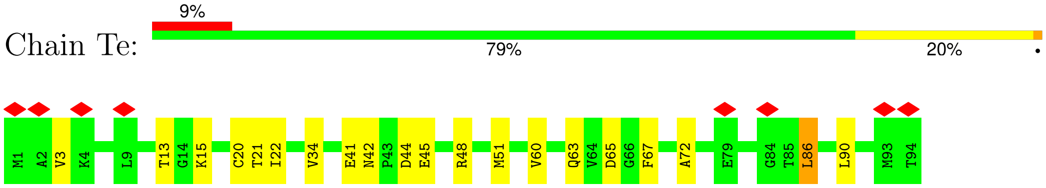
- Molecule 6: Tail fiber protein



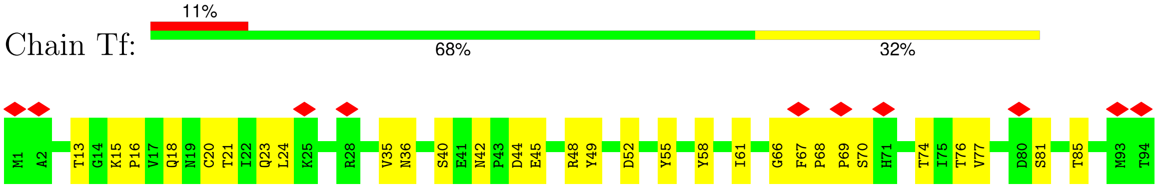
- Molecule 6: Tail fiber protein



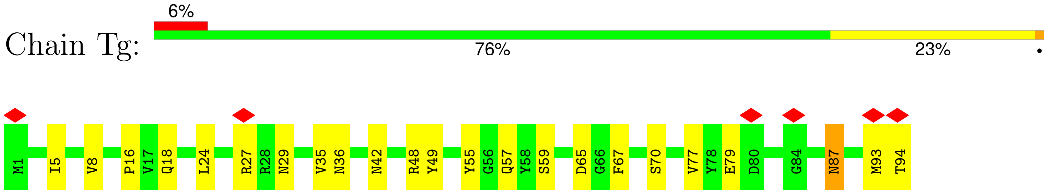
- Molecule 6: Tail fiber protein



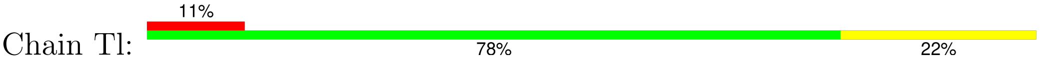
- Molecule 6: Tail fiber protein

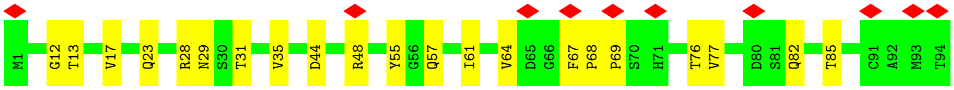


- Molecule 6: Tail fiber protein



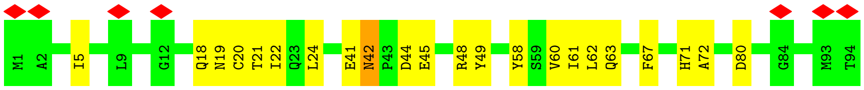
- Molecule 6: Tail fiber protein





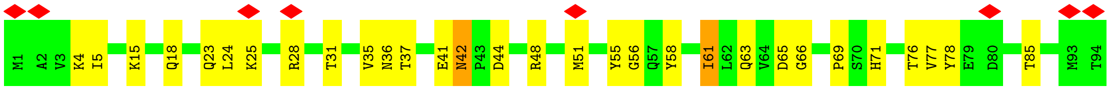
- Molecule 6: Tail fiber protein

Chain Th:



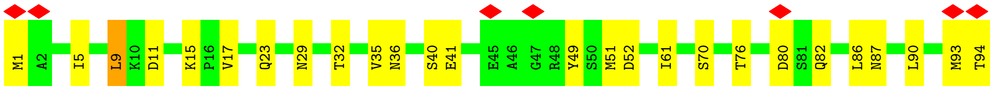
- Molecule 6: Tail fiber protein

Chain Ti:



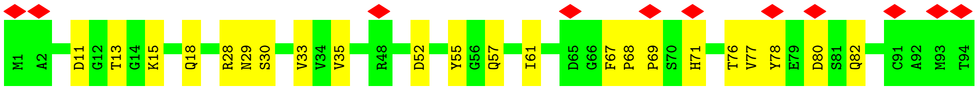
- Molecule 6: Tail fiber protein

Chain Tj:



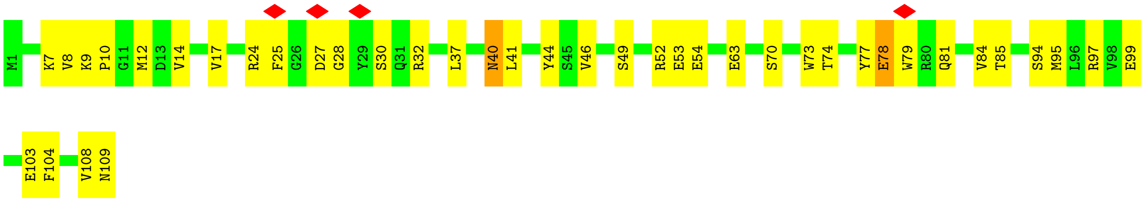
- Molecule 6: Tail fiber protein

Chain Tk:



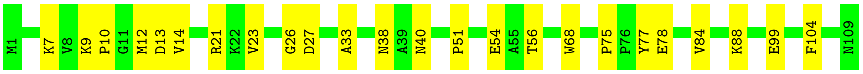
- Molecule 7: Tail tip protein M

Chain Ma:

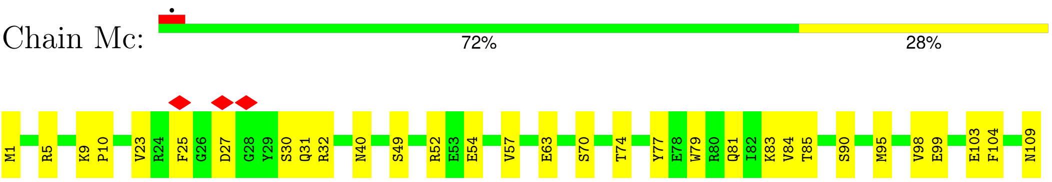


- Molecule 7: Tail tip protein M

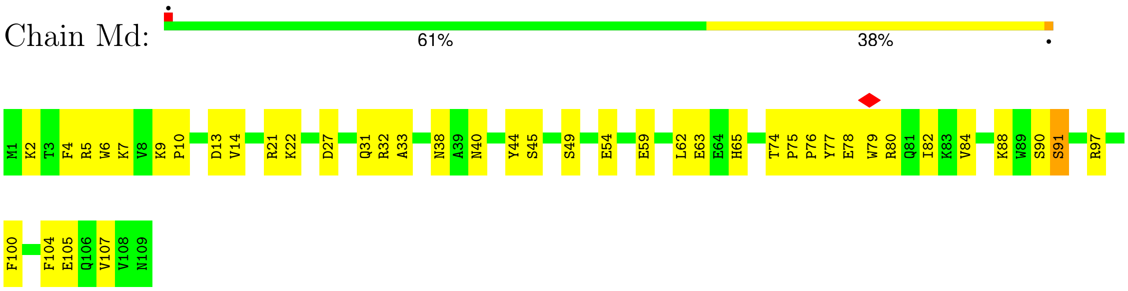
Chain Mb:



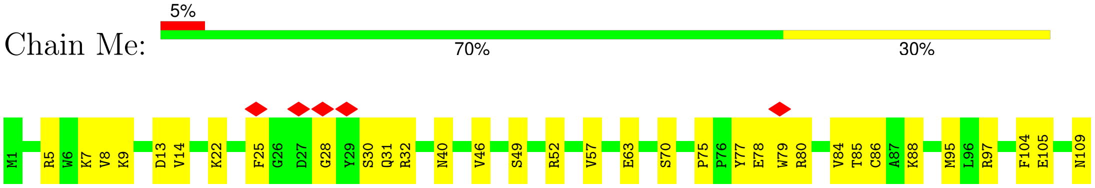
- Molecule 7: Tail tip protein M



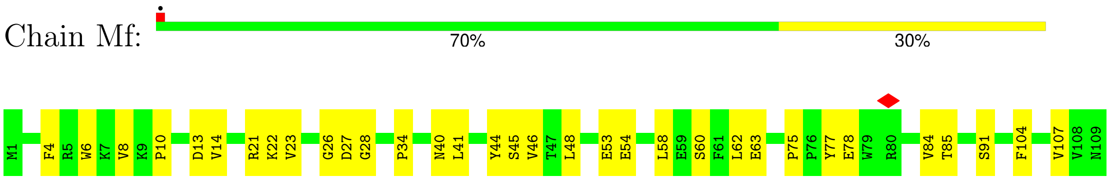
- Molecule 7: Tail tip protein M



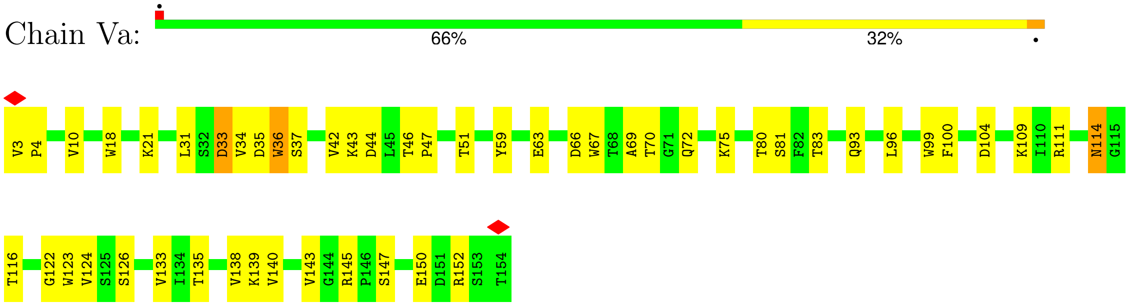
- Molecule 7: Tail tip protein M



- Molecule 7: Tail tip protein M

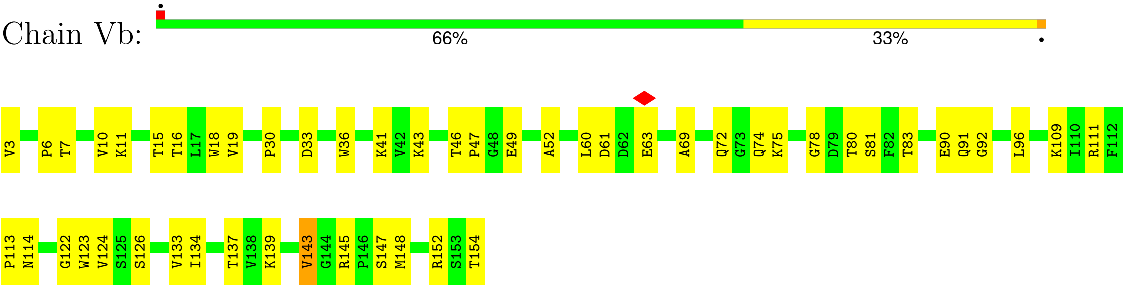


- Molecule 8: Tail tube protein



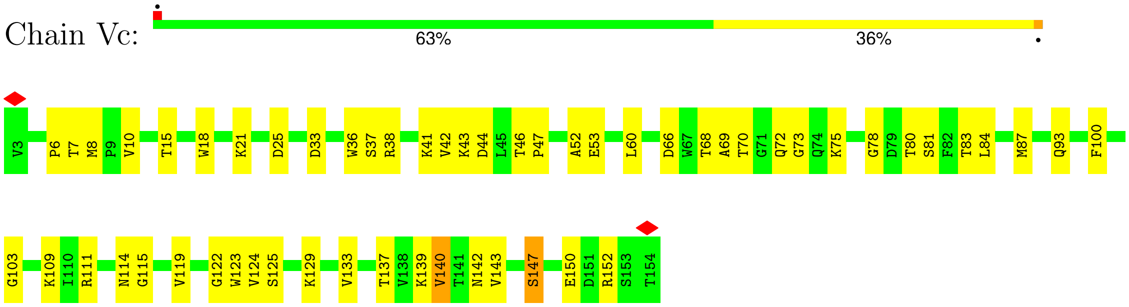
- Molecule 8: Tail tube protein

Chain Vb:



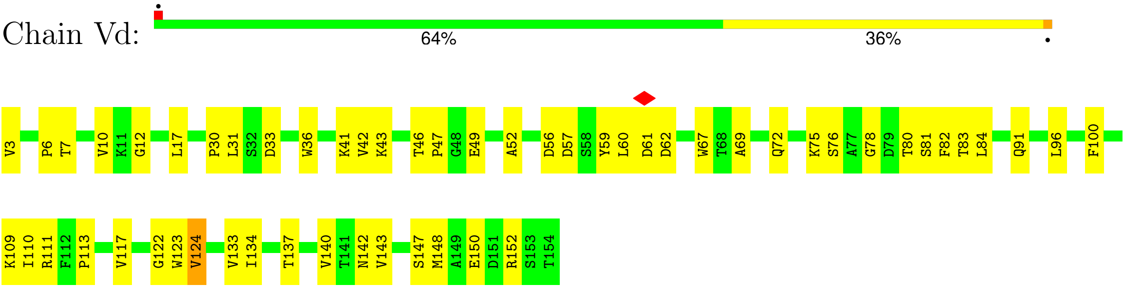
- Molecule 8: Tail tube protein

Chain Vc:



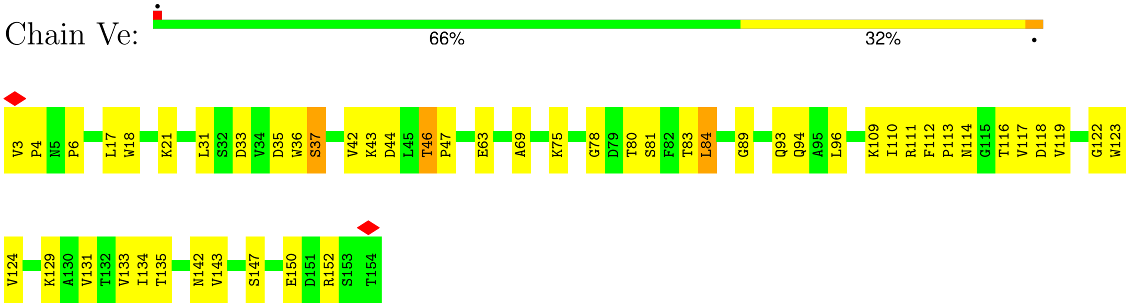
- Molecule 8: Tail tube protein

Chain Vd:



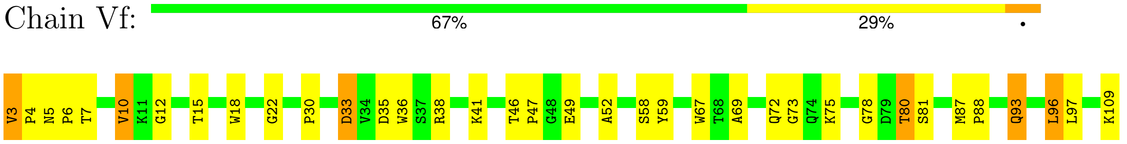
- Molecule 8: Tail tube protein

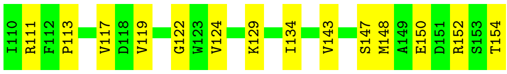
Chain Ve:



- Molecule 8: Tail tube protein

Chain Vf:




I110
R111
F112
P113
V117
D118
V119
G122
W123
V124
K129
I134
V143
S147
M148
A149
E150
D151
R152
S153
T154

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	6517	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{Å}^2$)	30	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.106	Depositor
Minimum map value	-0.328	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	491.90402, 491.90402, 491.90402	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.098, 1.098, 1.098	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: SF4

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	Ha	0.14	0/239	0.36	0/319
1	Hb	0.13	0/243	0.37	0/323
1	Hc	0.15	0/243	0.34	0/323
2	Ia	0.23	0/645	0.55	0/872
2	Ib	0.17	0/646	0.42	0/874
3	Ic	0.19	0/654	0.46	0/883
4	Ja	0.16	0/6633	0.37	0/9035
4	Jb	0.16	0/6630	0.37	0/9031
4	Jc	0.15	0/6624	0.35	0/9024
5	La	0.16	0/1834	0.36	0/2484
5	Lb	0.16	0/1831	0.35	0/2481
5	Lc	0.16	0/1831	0.36	0/2481
6	Ta	0.12	0/715	0.29	0/972
6	Tb	0.18	0/715	0.47	0/972
6	Tc	0.16	0/715	0.40	0/972
6	Td	0.14	0/715	0.37	0/972
6	Te	0.15	0/715	0.37	0/972
6	Tf	0.16	0/715	0.41	0/972
6	Tg	0.24	0/715	0.43	0/972
6	Th	0.15	0/715	0.42	0/972
6	Ti	0.15	0/715	0.39	0/972
6	Tj	0.15	0/715	0.42	0/972
6	Tk	0.14	0/715	0.38	0/972
6	Tl	0.13	0/715	0.39	0/972
7	Ma	0.19	0/910	0.45	0/1231
7	Mb	0.17	0/893	0.38	0/1208
7	Mc	0.16	0/910	0.38	0/1231
7	Md	0.18	0/910	0.41	0/1231
7	Me	0.18	0/910	0.41	0/1231
7	Mf	0.16	0/906	0.34	0/1227
8	Va	0.14	0/1194	0.36	0/1630
8	Vb	0.15	0/1194	0.37	0/1630

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
8	Vc	0.16	0/1194	0.40	0/1630
8	Vd	0.15	0/1194	0.36	0/1630
8	Ve	0.22	0/1194	0.46	1/1630 (0.1%)
8	Vf	0.16	0/1194	0.36	0/1630
All	All	0.16	0/49236	0.38	1/66933 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	Ve	113	PRO	N-CA-C	-5.99	106.05	113.84

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	Ha	237	0	232	10	0
1	Hb	241	0	243	9	0
1	Hc	241	0	243	8	0
2	Ia	639	0	640	26	0
2	Ib	640	0	636	28	0
3	Ic	648	0	652	22	0
4	Ja	6493	0	6350	201	0
4	Jb	6490	0	6346	181	0
4	Jc	6484	0	6330	200	0
5	La	1799	0	1706	43	0
5	Lb	1796	0	1699	43	0
5	Lc	1796	0	1699	45	0
6	Ta	704	0	692	11	0
6	Tb	704	0	692	19	0
6	Tc	704	0	692	22	0
6	Td	704	0	692	14	0
6	Te	704	0	692	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	Tf	704	0	692	16	0
6	Tg	704	0	692	13	0
6	Th	704	0	692	15	0
6	Ti	704	0	692	21	0
6	Tj	704	0	692	13	0
6	Tk	704	0	692	15	0
6	Tl	704	0	692	13	0
7	Ma	885	0	881	39	0
7	Mb	870	0	862	15	0
7	Mc	885	0	881	30	0
7	Md	885	0	881	32	0
7	Me	885	0	881	27	0
7	Mf	881	0	870	27	0
8	Va	1165	0	1113	37	0
8	Vb	1165	0	1113	36	0
8	Vc	1165	0	1113	42	0
8	Vd	1165	0	1113	42	0
8	Ve	1165	0	1113	31	0
8	Vf	1165	0	1113	38	0
9	La	8	0	0	0	0
9	Lb	8	0	0	0	0
9	Lc	8	0	0	0	0
All	All	48257	0	47014	1183	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 12.

All (1183) 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:Jc:16:ASP:HB2	4:Jc:666:ARG:HB3	1.50	0.92
4:Ja:535:VAL:H	4:Ja:548:ARG:HH21	1.20	0.90
4:Jb:43:LYS:HB3	4:Jb:53:LEU:HB2	1.56	0.87
4:Jb:378:MET:HE1	7:Mb:26:GLY:HA2	1.57	0.87
4:Ja:616:VAL:HG12	5:La:232:GLN:HB2	1.59	0.85
4:Jc:43:LYS:HB3	4:Jc:53:LEU:HB2	1.56	0.84
6:Tf:61:ILE:HG23	6:Tf:69:PRO:HB3	1.61	0.81
4:Jb:16:ASP:HB2	4:Jb:666:ARG:HB3	1.62	0.81
8:Ve:21:LYS:HD2	8:Ve:37:SER:HB3	1.64	0.80
8:Vb:15:THR:HA	8:Vb:111:ARG:O	1.82	0.80
4:Jc:213:PRO:HG3	5:Lb:175:TRP:HH2	1.47	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:472:ARG:HH12	4:Ja:579:ASN:HD21	1.30	0.79
4:Jb:526:GLY:H	4:Jb:530:PRO:HD2	1.47	0.78
4:Ja:353:ASN:HD21	4:Ja:475:PRO:HB2	1.50	0.76
4:Jb:698:TRP:HE1	5:Lb:232:GLN:HA	1.49	0.76
4:Ja:141:ILE:HG22	4:Ja:179:ILE:HG22	1.67	0.76
4:Jb:241:ARG:NH1	4:Jb:285:TYR:OH	2.19	0.76
4:Ja:14:ALA:H	4:Ja:15:LYS:HZ3	1.32	0.75
4:Jc:357:LEU:HD22	5:Lb:156:THR:HG21	1.69	0.74
8:Vc:21:LYS:HD3	8:Vc:37:SER:HB3	1.68	0.74
4:Jb:616:VAL:HG12	5:Lb:232:GLN:HB2	1.70	0.74
4:Ja:140:GLN:HG2	4:Ja:149:THR:HA	1.69	0.73
5:Lc:75:THR:HG22	5:Lc:77:PRO:HD3	1.70	0.72
8:Vb:46:THR:HG1	8:Vb:81:SER:HG	1.35	0.72
4:Jb:471:LEU:HB3	4:Jb:472:ARG:HH21	1.53	0.72
4:Jb:140:GLN:HG2	4:Jb:149:THR:HA	1.71	0.72
6:Tc:66:GLY:HA3	7:Ma:79:TRP:HA	1.71	0.72
6:Tb:41:GLU:HB3	6:Tb:51:MET:HE1	1.72	0.72
4:Jc:276:LEU:HD12	4:Jc:342:PHE:HB3	1.72	0.71
5:Lb:43:ASN:HD21	5:Lb:47:GLU:HB2	1.55	0.71
4:Jc:153:ILE:HD11	4:Jc:167:VAL:HG21	1.72	0.71
4:Jc:615:GLY:O	4:Jc:617:THR:N	2.23	0.71
7:Mf:53:GLU:OE2	7:Mf:53:GLU:N	2.23	0.71
4:Ja:578:GLU:HB2	4:Ja:586:ILE:HB	1.72	0.71
5:Lc:177:TYR:OH	5:Lc:215:ARG:NE	2.24	0.71
5:Lb:177:TYR:OH	5:Lb:215:ARG:NE	2.24	0.70
8:Ve:147:SER:OG	8:Ve:152:ARG:NH2	2.23	0.70
4:Ja:43:LYS:HB3	4:Ja:53:LEU:HB2	1.73	0.70
4:Jc:747:TRP:HB2	4:Jc:788:TYR:HB2	1.74	0.70
8:Va:147:SER:OG	8:Va:152:ARG:NH2	2.24	0.70
4:Jc:755:ASP:HB3	4:Jc:758:GLN:HG2	1.75	0.69
4:Jc:141:ILE:HG22	4:Jc:179:ILE:HG22	1.72	0.69
4:Jc:175:ARG:NH1	4:Jc:176:PRO:O	2.26	0.69
4:Jc:213:PRO:HG3	5:Lb:175:TRP:CH2	2.25	0.69
6:Ta:87:ASN:ND2	6:Td:30:SER:O	2.21	0.69
7:Ma:63:GLU:OE1	7:Mf:40:ASN:ND2	2.25	0.69
4:Jc:75:GLN:NE2	4:Jc:212:TYR:O	2.23	0.69
7:Ma:84:VAL:HG11	7:Ma:104:PHE:HB3	1.75	0.69
8:Vf:15:THR:HA	8:Vf:111:ARG:O	1.93	0.69
6:Ta:27:ARG:HH21	6:Ta:74:THR:HG21	1.58	0.69
7:Me:49:SER:OG	7:Me:97:ARG:NH1	2.26	0.68
4:Ja:577:ARG:HH21	5:Lc:68:LEU:H	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:695:VAL:HB	4:Ja:699:GLY:HA2	1.74	0.68
6:Tc:64:VAL:H	6:Tc:67:PHE:HB2	1.58	0.68
8:Vf:30:PRO:O	8:Vf:109:LYS:NZ	2.27	0.68
6:Tj:5:ILE:HG22	6:Tj:49:TYR:HE1	1.57	0.68
4:Jc:733:PRO:HG2	4:Jc:744:PHE:HD2	1.58	0.68
8:Vd:148:MET:HE3	8:Vd:148:MET:HA	1.75	0.68
4:Jc:140:GLN:HG2	4:Jc:149:THR:HA	1.76	0.68
4:Jc:526:GLY:H	4:Jc:530:PRO:HD2	1.58	0.67
7:Md:84:VAL:HG21	7:Md:104:PHE:HB3	1.76	0.67
8:Ve:122:GLY:HA2	8:Ve:143:VAL:HG12	1.76	0.67
4:Ja:624:LEU:HD22	4:Ja:705:ALA:HB1	1.76	0.67
2:Ia:192:LEU:HD13	4:Jc:328:TYR:HD1	1.60	0.67
4:Jb:143:ARG:NH2	4:Jb:148:VAL:O	2.28	0.67
4:Jb:753:ILE:HD11	4:Jb:759:VAL:HG12	1.77	0.67
4:Ja:576:ILE:HB	4:Ja:588:ALA:HB3	1.77	0.67
2:Ib:188:VAL:HG21	4:Jb:332:GLN:HB2	1.75	0.66
7:Mb:40:ASN:ND2	7:Mc:63:GLU:OE2	2.28	0.66
3:Ic:197:ARG:HH21	4:Ja:235:ASN:HD22	1.44	0.66
2:Ia:205:GLN:H	5:Lb:229:LYS:HZ2	1.44	0.66
6:Ti:18:GLN:CD	6:Ti:18:GLN:H	2.04	0.66
4:Jb:721:GLU:HB3	4:Jb:732:THR:HG23	1.76	0.66
4:Ja:812:GLU:HA	4:Ja:815:LEU:HD23	1.76	0.66
4:Jb:175:ARG:NH1	4:Jb:176:PRO:O	2.28	0.66
7:Mb:84:VAL:HG21	7:Mb:104:PHE:HB3	1.78	0.66
8:Vd:122:GLY:HA2	8:Vd:143:VAL:HG12	1.78	0.66
7:Ma:9:LYS:HE3	7:Ma:49:SER:HB3	1.79	0.66
7:Ma:99:GLU:N	7:Ma:99:GLU:OE1	2.29	0.66
8:Vc:15:THR:HA	8:Vc:111:ARG:O	1.96	0.66
8:Vd:150:GLU:OE2	8:Vd:150:GLU:N	2.29	0.65
8:Vb:134:ILE:HD12	8:Vb:134:ILE:H	1.61	0.65
6:Tb:45:GLU:OE2	6:Tb:45:GLU:N	2.29	0.65
4:Jc:594:GLU:HG2	4:Jc:595:LYS:HD3	1.79	0.65
6:Th:45:GLU:N	6:Th:45:GLU:OE2	2.30	0.65
7:Ma:74:THR:OG1	7:Ma:81:GLN:OE1	2.12	0.65
4:Jc:746:PHE:HD1	4:Jc:789:ILE:HD12	1.62	0.64
8:Vc:122:GLY:HA2	8:Vc:143:VAL:HG12	1.77	0.64
8:Vd:134:ILE:H	8:Vd:134:ILE:HD12	1.62	0.64
7:Me:40:ASN:ND2	7:Mf:63:GLU:OE1	2.30	0.64
4:Jc:746:PHE:HB2	4:Jc:766:LEU:HD11	1.79	0.64
6:Te:45:GLU:OE2	6:Te:45:GLU:N	2.30	0.64
8:Va:21:LYS:HD2	8:Va:37:SER:HB3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Vd:82:PHE:HD2	8:Vd:84:LEU:HD21	1.62	0.64
4:Jc:79:GLU:OE1	4:Jc:79:GLU:N	2.31	0.64
1:Ha:835:ARG:NH1	1:Hb:837:GLU:OE1	2.30	0.64
4:Jc:381:ASP:OD2	4:Jc:386:ARG:NH2	2.31	0.64
4:Jb:118:VAL:O	4:Jb:162:GLN:HA	1.97	0.64
4:Jb:395:ARG:O	4:Jb:429:ASN:ND2	2.31	0.64
6:Tl:61:ILE:HG23	6:Tl:69:PRO:HB3	1.80	0.64
4:Ja:373:ARG:HG3	4:Ja:486:TYR:HE2	1.63	0.63
4:Jb:471:LEU:HG	4:Jb:585:ALA:HB2	1.78	0.63
4:Jb:494:ARG:NH1	7:Mb:27:ASP:OD2	2.30	0.63
4:Ja:606:ASP:OD2	5:La:210:SER:OG	2.16	0.63
4:Jc:18:LEU:H	4:Jc:18:LEU:HD23	1.63	0.63
5:La:41:GLU:HB2	7:Ma:27:ASP:HB2	1.78	0.63
8:Vb:122:GLY:HA2	8:Vb:143:VAL:HG12	1.79	0.63
8:Vf:150:GLU:N	8:Vf:150:GLU:OE2	2.29	0.63
4:Jc:147:TRP:CD1	4:Jc:180:ARG:HE	2.16	0.63
5:Lc:60:PRO:HG3	7:Me:25:PHE:CE1	2.33	0.63
2:Ib:208:SER:OG	2:Ib:209:THR:N	2.32	0.63
4:Jb:147:TRP:HB3	4:Jb:180:ARG:HH22	1.62	0.63
4:Ja:784:ASP:OD1	4:Ja:806:ARG:NE	2.30	0.63
4:Jb:79:GLU:OE2	4:Jb:79:GLU:N	2.32	0.63
8:Va:122:GLY:HA2	8:Va:143:VAL:HG12	1.80	0.63
4:Jb:393:LYS:HE2	5:Lb:157:GLU:HG2	1.79	0.63
8:Vd:52:ALA:HA	8:Vd:75:LYS:HA	1.81	0.63
4:Ja:575:SER:HB2	4:Ja:590:GLN:HE22	1.64	0.63
4:Ja:18:LEU:HD23	4:Ja:18:LEU:H	1.64	0.62
4:Ja:143:ARG:NH2	4:Ja:148:VAL:O	2.29	0.62
8:Vf:52:ALA:HA	8:Vf:75:LYS:HA	1.80	0.62
6:Tb:86:LEU:HA	6:Tb:89:PHE:HD2	1.63	0.62
6:Tj:80:ASP:O	6:Tj:82:GLN:NE2	2.33	0.62
7:Me:84:VAL:HG21	7:Me:104:PHE:HB3	1.81	0.62
4:Ja:746:PHE:HB2	4:Ja:766:LEU:HD11	1.81	0.62
4:Jc:695:VAL:HB	4:Jc:699:GLY:HA2	1.81	0.62
6:Tc:24:LEU:HB3	6:Tc:58:TYR:HD2	1.64	0.62
8:Vb:41:LYS:HG3	8:Vb:43:LYS:HZ2	1.63	0.62
6:Tg:55:TYR:HA	6:Tg:77:VAL:HG13	1.80	0.62
7:Ma:27:ASP:OD1	7:Mb:38:ASN:N	2.32	0.62
7:Md:40:ASN:ND2	7:Me:63:GLU:OE2	2.32	0.62
4:Ja:183:ARG:NH2	4:Ja:195:ASN:O	2.33	0.62
6:Tf:15:LYS:NZ	6:Tf:16:PRO:O	2.32	0.62
4:Jc:554:ALA:HB1	4:Jc:558:VAL:HG11	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:105:THR:HG23	4:Ja:176:PRO:HG3	1.80	0.62
4:Ja:604:HIS:CE1	4:Ja:607:GLY:H	2.18	0.62
4:Ja:620:ALA:HB2	4:Ja:703:ASP:HB2	1.80	0.62
4:Ja:687:ASN:HB3	4:Ja:710:ARG:HG2	1.81	0.62
8:Vb:30:PRO:O	8:Vb:109:LYS:NZ	2.33	0.62
8:Va:47:PRO:HA	8:Va:80:THR:HG23	1.81	0.61
5:Lc:166:ARG:HH12	5:Lc:175:TRP:HE1	1.47	0.61
8:Vd:83:THR:HG22	8:Vd:137:THR:HG22	1.82	0.61
4:Ja:147:TRP:CD1	4:Ja:180:ARG:HE	2.18	0.61
7:Mc:84:VAL:HG21	7:Mc:104:PHE:HB3	1.81	0.61
8:Vf:122:GLY:HA2	8:Vf:143:VAL:HG12	1.80	0.61
6:Tc:55:TYR:HA	6:Tc:77:VAL:HB	1.82	0.61
4:Jb:471:LEU:HB3	4:Jb:472:ARG:NH2	2.15	0.61
6:Ti:23:GLN:HB2	6:Ti:61:ILE:HG23	1.83	0.61
8:Va:143:VAL:HG23	8:Vf:69:ALA:HA	1.81	0.61
8:Vf:147:SER:OG	8:Vf:152:ARG:NH2	2.33	0.61
2:Ia:188:VAL:HG11	5:Lb:164:PRO:HB2	1.82	0.61
4:Ja:512:THR:HG21	4:Ja:545:LYS:HE2	1.83	0.61
8:Ve:131:VAL:HA	8:Ve:134:ILE:HD13	1.82	0.61
4:Ja:62:SER:OG	4:Ja:63:GLY:N	2.32	0.61
4:Ja:471:LEU:HD13	4:Ja:585:ALA:HB2	1.83	0.61
4:Ja:687:ASN:HA	4:Ja:710:ARG:HA	1.82	0.61
4:Jb:211:CYS:SG	4:Jb:212:TYR:N	2.74	0.61
4:Jc:718:SER:H	4:Jc:735:LEU:HA	1.65	0.61
8:Ve:47:PRO:HA	8:Ve:80:THR:HG23	1.81	0.61
4:Jc:745:GLU:OE1	4:Jc:768:THR:OG1	2.19	0.61
2:Ib:197:ARG:HD3	4:Jb:410:TRP:CD1	2.36	0.61
4:Jc:574:VAL:HA	4:Jc:589:VAL:HG12	1.81	0.61
5:La:1:MET:HE3	5:La:1:MET:HA	1.83	0.60
4:Jb:594:GLU:HG2	4:Jb:595:LYS:HD3	1.82	0.60
4:Ja:175:ARG:HH21	4:Ja:177:PHE:HB3	1.65	0.60
5:Lc:144:SER:OG	5:Lc:145:ALA:N	2.34	0.60
7:Md:13:ASP:HB2	7:Md:45:SER:HB2	1.84	0.60
4:Ja:111:ARG:HB2	4:Ja:205:ILE:HD11	1.83	0.60
8:Va:10:VAL:HG23	8:Vb:134:ILE:HD13	1.82	0.60
2:Ia:205:GLN:H	5:Lb:229:LYS:NZ	1.99	0.60
4:Jb:31:SER:OG	4:Jb:32:GLU:N	2.35	0.60
4:Jb:115:THR:OG1	4:Jb:201:SER:O	2.18	0.60
8:Vc:147:SER:HG	8:Vc:152:ARG:HH22	1.47	0.60
4:Jb:723:THR:HB	4:Jb:730:THR:HB	1.82	0.60
5:La:5:ARG:NH1	5:La:128:GLU:O	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Ma:14:VAL:HG13	7:Ma:44:TYR:HE1	1.66	0.60
4:Jc:615:GLY:C	4:Jc:617:THR:H	2.09	0.60
8:Vb:36:TRP:CD2	8:Vb:109:LYS:HE2	2.36	0.59
2:Ia:165:GLN:N	2:Ia:165:GLN:OE1	2.35	0.59
4:Jc:142:GLN:NE2	4:Jc:178:ASN:OD1	2.34	0.59
7:Md:22:LYS:NZ	7:Me:105:GLU:OE2	2.34	0.59
4:Ja:122:VAL:HG21	4:Ja:130:ARG:HH11	1.68	0.59
4:Jb:576:ILE:HB	4:Jb:588:ALA:HB3	1.83	0.59
4:Jc:287:MET:HE1	4:Jc:335:ALA:HB1	1.84	0.59
6:Tc:71:HIS:ND1	8:Va:63:GLU:OE1	2.35	0.59
7:Ma:40:ASN:O	7:Ma:40:ASN:ND2	2.34	0.59
4:Ja:247:SER:HA	4:Ja:265:LYS:HD2	1.84	0.59
4:Jc:64:VAL:HG22	4:Jc:222:VAL:HG22	1.85	0.59
8:Ve:42:VAL:HG23	8:Ve:84:LEU:HG	1.83	0.59
4:Ja:79:GLU:N	4:Ja:79:GLU:OE1	2.35	0.59
4:Jc:282:HIS:HB3	4:Jc:286:GLY:HA3	1.84	0.59
6:Tb:32:THR:HG23	6:Tb:33:VAL:HG13	1.85	0.59
6:Td:71:HIS:NE2	8:Vb:63:GLU:HB2	2.18	0.59
6:Tf:23:GLN:HB2	6:Tf:61:ILE:HB	1.84	0.59
6:Tl:44:ASP:OD1	6:Tl:48:ARG:N	2.34	0.59
4:Jc:719:ARG:NH1	4:Jc:721:GLU:OE1	2.34	0.59
7:Ma:40:ASN:ND2	7:Ma:40:ASN:C	2.59	0.59
8:Ve:44:ASP:OD1	8:Ve:83:THR:OG1	2.18	0.59
4:Ja:125:THR:OG1	4:Ja:129:ASP:OD1	2.16	0.59
4:Ja:577:ARG:HH21	5:Lc:68:LEU:HG	1.68	0.59
4:Ja:628:VAL:HG12	4:Ja:637:VAL:HG12	1.85	0.59
4:Jb:523:LEU:HB3	4:Jb:533:VAL:HG12	1.84	0.59
4:Jb:647:VAL:HG12	4:Jb:648:LYS:HG2	1.85	0.59
6:Th:20:CYS:SG	6:Th:21:THR:N	2.76	0.59
4:Jc:183:ARG:NH2	4:Jc:195:ASN:O	2.36	0.58
1:Hc:843:ARG:HH12	5:La:76:ARG:HD2	1.68	0.58
4:Ja:471:LEU:HG	4:Ja:472:ARG:HD3	1.84	0.58
8:Vf:46:THR:OG1	8:Vf:81:SER:OG	2.20	0.58
2:Ia:210:ALA:HB2	4:Jc:23:LEU:HB2	1.84	0.58
4:Ja:475:PRO:HB3	5:Lc:2:GLN:HG2	1.85	0.58
4:Jc:616:VAL:HG21	5:Lc:232:GLN:HB2	1.86	0.58
7:Md:21:ARG:HB3	7:Md:33:ALA:HB3	1.85	0.58
4:Ja:248:ASN:ND2	4:Ja:257:SER:O	2.36	0.58
4:Jb:141:ILE:HG22	4:Jb:179:ILE:HG22	1.85	0.58
5:Lc:166:ARG:NH1	5:Lc:175:TRP:HE1	2.01	0.58
4:Jb:401:VAL:HG12	4:Jb:433:MET:HB3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:Lc:173:CYS:SG	5:Lc:174:THR:N	2.75	0.58
7:Mc:99:GLU:OE1	7:Mc:99:GLU:N	2.37	0.58
8:Vd:41:LYS:HG3	8:Vd:43:LYS:HZ3	1.68	0.58
4:Jb:226:GLN:O	4:Jb:672:ARG:NH1	2.36	0.58
8:Va:44:ASP:OD1	8:Va:83:THR:OG1	2.17	0.58
2:Ib:176:PHE:HA	4:Jb:328:TYR:H	1.69	0.58
2:Ia:219:VAL:HG21	4:Jc:152:ASP:O	2.04	0.58
4:Ja:749:SER:HB3	4:Ja:763:THR:HG22	1.85	0.58
4:Jc:508:ASP:HB2	4:Jc:543:LYS:HZ1	1.68	0.58
8:Va:150:GLU:OE1	8:Va:150:GLU:N	2.33	0.58
8:Vb:33:ASP:OD2	8:Vb:111:ARG:NH1	2.36	0.58
4:Ja:788:TYR:HE1	4:Ja:802:GLU:HG3	1.68	0.58
4:Jc:537:SER:OG	4:Jc:548:ARG:NH1	2.36	0.58
4:Jc:625:THR:HG23	4:Jc:640:ARG:HG3	1.85	0.58
4:Jc:747:TRP:HZ3	4:Jc:765:TYR:HA	1.69	0.58
8:Vf:134:ILE:HD12	8:Vf:134:ILE:H	1.68	0.58
2:Ib:197:ARG:HH21	4:Jb:235:ASN:HD22	1.50	0.57
4:Jb:381:ASP:OD2	4:Jb:386:ARG:NH2	2.37	0.57
4:Jc:472:ARG:HD2	5:Lb:107:LYS:HD2	1.85	0.57
6:Tb:1:MET:HE1	6:Tb:3:VAL:HG22	1.86	0.57
6:Ti:66:GLY:HA2	7:Me:79:TRP:CG	2.39	0.57
7:Ma:40:ASN:O	7:Ma:41:LEU:HD23	2.04	0.57
7:Mb:13:ASP:OD1	7:Mb:14:VAL:N	2.37	0.57
3:Ic:190:PRO:HB3	4:Ja:330:THR:HA	1.86	0.57
5:Lc:61:ILE:HG13	5:Lc:81:VAL:HG22	1.85	0.57
7:Mc:54:GLU:N	7:Mc:54:GLU:OE1	2.36	0.57
4:Jb:40:ASP:OD2	4:Jb:43:LYS:HG3	2.04	0.57
6:Td:44:ASP:OD1	6:Td:48:ARG:N	2.35	0.57
7:Mf:84:VAL:HG21	7:Mf:104:PHE:HB3	1.85	0.57
8:Vc:150:GLU:N	8:Vc:150:GLU:OE2	2.37	0.57
8:Vd:33:ASP:OD2	8:Vd:111:ARG:NH1	2.37	0.57
8:Vf:33:ASP:OD2	8:Vf:111:ARG:NH1	2.37	0.57
2:Ib:185:GLN:HB3	5:La:230:LEU:HD21	1.85	0.57
5:Lb:48:PRO:HB3	5:Lb:57:GLN:HA	1.84	0.57
5:La:173:CYS:SG	5:La:174:THR:N	2.76	0.57
6:Tf:13:THR:HG22	6:Tg:24:LEU:HD12	1.86	0.57
6:Ti:66:GLY:HA2	7:Me:79:TRP:CD1	2.39	0.57
8:Ve:31:LEU:O	8:Ve:111:ARG:NH2	2.37	0.57
7:Me:70:SER:HA	7:Me:85:THR:HG22	1.87	0.57
2:Ia:192:LEU:HD13	4:Jc:328:TYR:CD1	2.39	0.57
4:Ja:1:MET:HB2	4:Ja:3:LYS:HZ1	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:371:TYR:HE2	4:Ja:466:VAL:HG22	1.69	0.57
4:Ja:490:SER:OG	4:Ja:491:THR:N	2.38	0.57
4:Jb:466:VAL:HB	4:Jb:585:ALA:HB3	1.86	0.57
4:Jb:689:ARG:HH11	4:Jb:706:SER:HB2	1.70	0.57
4:Jc:541:GLY:C	4:Jc:543:LYS:H	2.13	0.57
1:Hb:847:LEU:H	1:Hb:847:LEU:HD23	1.70	0.57
4:Jc:147:TRP:HD1	4:Jc:180:ARG:HE	1.53	0.57
6:Te:13:THR:HG23	6:Te:15:LYS:HG2	1.87	0.57
7:Md:75:PRO:HB2	7:Md:78:GLU:HG3	1.85	0.57
8:Vb:83:THR:HG22	8:Vb:137:THR:HG22	1.85	0.57
2:Ib:185:GLN:HG2	5:La:230:LEU:HD11	1.86	0.56
4:Jb:357:LEU:HB2	5:La:156:THR:HG21	1.86	0.56
4:Jc:490:SER:OG	4:Jc:491:THR:N	2.38	0.56
5:Lb:17:GLN:NE2	7:Md:31:GLN:OE1	2.38	0.56
8:Vb:72:GLN:HB3	8:Vc:123:TRP:CE3	2.40	0.56
4:Ja:574:VAL:HA	4:Ja:589:VAL:HG12	1.86	0.56
4:Jb:827:LEU:HA	4:Jc:822:ILE:HD11	1.86	0.56
4:Jc:407:ASN:OD1	4:Jc:408:ASN:ND2	2.37	0.56
6:Tk:68:PRO:HD3	7:Mf:77:TYR:HD1	1.70	0.56
8:Vb:148:MET:HE3	8:Vb:148:MET:HA	1.88	0.56
8:Vc:44:ASP:OD1	8:Vc:83:THR:OG1	2.16	0.56
8:Vd:46:THR:OG1	8:Vd:81:SER:OG	2.23	0.56
8:Vf:148:MET:HE3	8:Vf:148:MET:HA	1.87	0.56
4:Ja:75:GLN:NE2	4:Ja:212:TYR:O	2.35	0.56
4:Jc:125:THR:OG1	4:Jc:129:ASP:OD1	2.18	0.56
4:Jc:495:VAL:HB	4:Jc:509:ARG:NH2	2.21	0.56
6:Tl:82:GLN:OE1	6:Tl:82:GLN:N	2.38	0.56
2:Ib:142:LEU:HB3	2:Ib:146:MET:HE3	1.87	0.56
6:Tc:42:ASN:OD1	6:Tc:42:ASN:N	2.37	0.56
4:Ja:594:GLU:HG2	4:Ja:595:LYS:HD3	1.86	0.56
4:Ja:723:THR:HB	4:Ja:730:THR:HB	1.87	0.56
4:Jc:543:LYS:O	4:Jc:543:LYS:NZ	2.34	0.56
4:Jb:132:PRO:HG3	4:Jb:158:LYS:HB2	1.88	0.56
4:Jc:391:ALA:HB3	4:Jc:394:ASP:HB2	1.87	0.56
6:Tc:18:GLN:CD	6:Tc:18:GLN:H	2.13	0.56
7:Mc:25:PHE:CE2	7:Mc:30:SER:HA	2.40	0.56
8:Vf:36:TRP:CD2	8:Vf:109:LYS:HE2	2.41	0.56
8:Vc:47:PRO:HA	8:Vc:80:THR:HG23	1.88	0.56
4:Ja:523:LEU:HB3	4:Ja:533:VAL:HG12	1.88	0.56
4:Jc:40:ASP:OD2	4:Jc:43:LYS:HG3	2.05	0.56
7:Mf:14:VAL:HG22	7:Mf:44:TYR:HD1	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Jb:184:MET:N	4:Jb:184:MET:HE2	2.21	0.56
2:Ia:139:LEU:H	2:Ia:139:LEU:HD23	1.71	0.55
4:Ja:475:PRO:HG3	5:Lc:1:MET:HA	1.87	0.55
4:Jb:621:VAL:HG12	4:Jb:644:PRO:HD3	1.89	0.55
5:Lc:177:TYR:CD1	5:Lc:178:ARG:HG3	2.40	0.55
5:Lc:226:SER:O	5:Lc:228:ASN:N	2.39	0.55
4:Jb:411:GLU:HG3	5:Lb:230:LEU:HB3	1.88	0.55
2:Ib:146:MET:HE1	4:Jb:576:ILE:HG13	1.88	0.55
3:Ic:196:MET:HG3	3:Ic:196:MET:O	2.06	0.55
6:Tl:29:ASN:OD1	6:Tl:35:VAL:N	2.38	0.55
8:Vf:47:PRO:HA	8:Vf:80:THR:HG23	1.87	0.55
4:Jc:681:THR:HG22	4:Jc:682:GLN:HG3	1.89	0.55
8:Vd:147:SER:OG	8:Vd:152:ARG:NH2	2.39	0.55
2:Ia:196:MET:O	2:Ia:198:VAL:HG13	2.07	0.55
6:Tc:20:CYS:HB3	6:Tc:43:PRO:HD2	1.88	0.55
8:Va:123:TRP:CE3	8:Vf:72:GLN:HB2	2.42	0.55
2:Ia:211:ASP:OD1	2:Ia:212:GLU:N	2.39	0.55
4:Jb:75:GLN:NE2	4:Jb:212:TYR:O	2.30	0.55
4:Jb:222:VAL:HG12	4:Jb:224:SER:H	1.72	0.55
4:Jb:360:VAL:HG11	4:Jb:477:ASP:HB2	1.88	0.55
5:La:69:ASN:OD1	5:La:70:GLY:N	2.40	0.55
6:Te:41:GLU:HB3	6:Te:51:MET:HE1	1.89	0.55
2:Ia:180:ASP:OD1	2:Ia:181:ASN:N	2.39	0.55
4:Jb:757:ARG:HB2	4:Jb:758:GLN:NE2	2.22	0.55
4:Jc:175:ARG:HG2	4:Jc:176:PRO:HD2	1.89	0.55
4:Jc:628:VAL:HG22	4:Jc:637:VAL:HG12	1.89	0.55
6:Td:25:LYS:NZ	6:Td:36:ASN:OD1	2.38	0.55
7:Ma:14:VAL:HG13	7:Ma:44:TYR:CE1	2.41	0.55
4:Jb:490:SER:OG	4:Jb:491:THR:N	2.39	0.55
6:Tk:68:PRO:HD3	7:Mf:77:TYR:CD1	2.42	0.55
7:Ma:52:ARG:NH2	7:Ma:95:MET:O	2.40	0.55
4:Jc:222:VAL:HG12	4:Jc:224:SER:H	1.71	0.55
4:Jb:372:ASN:OD1	4:Jb:375:ASN:ND2	2.38	0.54
4:Jb:623:HIS:ND1	4:Jb:642:ASP:OD2	2.38	0.54
5:Lc:11:GLU:HG3	5:Lc:111:ARG:HD3	1.88	0.54
4:Jb:556:TYR:CZ	7:Mc:109:ASN:HB2	2.42	0.54
4:Jc:282:HIS:ND1	4:Jc:283:PRO:O	2.39	0.54
5:La:19:ALA:HB3	5:La:110:ALA:HB2	1.89	0.54
4:Ja:223:ASP:OD2	4:Ja:223:ASP:N	2.38	0.54
4:Ja:604:HIS:NE2	4:Ja:606:ASP:HB3	2.22	0.54
6:Tl:55:TYR:HA	6:Tl:77:VAL:HB	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Jb:282:HIS:ND1	4:Jb:283:PRO:O	2.41	0.54
4:Jb:823:THR:HG22	4:Jb:824:GLU:H	1.73	0.54
4:Ja:279:MET:HG2	5:Lc:163:PHE:CE1	2.42	0.54
6:Tb:63:GLN:HE22	6:Tb:69:PRO:HG3	1.72	0.54
8:Vc:147:SER:OG	8:Vc:152:ARG:NH2	2.28	0.54
5:La:226:SER:O	5:La:228:ASN:N	2.37	0.54
6:Ti:24:LEU:HD23	6:Ti:58:TYR:HD2	1.72	0.54
4:Ja:396:HIS:HA	4:Ja:429:ASN:HB2	1.89	0.54
4:Ja:818:PHE:HA	4:Ja:821:LYS:HD3	1.90	0.54
4:Jb:498:VAL:HG23	4:Jb:507:LEU:HD13	1.90	0.54
5:Lb:25:GLU:OE2	5:Lb:35:ARG:NH2	2.40	0.54
5:Lb:226:SER:O	5:Lb:228:ASN:N	2.40	0.54
6:Tc:41:GLU:HG2	6:Tc:51:MET:SD	2.48	0.54
8:Vc:100:PHE:HD1	8:Vc:124:VAL:HG13	1.73	0.54
4:Jc:495:VAL:HA	4:Jc:559:TRP:HA	1.88	0.54
5:Lb:60:PRO:HB3	7:Mc:25:PHE:CE1	2.43	0.54
5:Lb:192:GLU:HG3	5:Lb:204:LYS:HG2	1.89	0.54
8:Vc:52:ALA:HA	8:Vc:75:LYS:HA	1.88	0.54
8:Vd:17:LEU:HD13	8:Vd:110:ILE:HG22	1.89	0.54
3:Ic:189:LEU:HD22	4:Ja:32:GLU:HB2	1.90	0.54
5:La:48:PRO:HB3	5:La:57:GLN:HA	1.89	0.54
5:Lc:107:LYS:HG2	5:Lc:131:VAL:HB	1.91	0.54
8:Va:72:GLN:HB2	8:Vb:123:TRP:CE3	2.43	0.54
6:Tk:82:GLN:N	6:Tk:82:GLN:OE1	2.41	0.53
4:Ja:118:VAL:O	4:Ja:162:GLN:HA	2.08	0.53
4:Jb:695:VAL:HG12	4:Jb:701:GLN:HA	1.90	0.53
8:Vc:78:GLY:O	8:Vc:142:ASN:ND2	2.37	0.53
4:Ja:583:THR:HG22	4:Ja:583:THR:O	2.09	0.53
4:Jc:162:GLN:OE1	4:Jc:162:GLN:N	2.34	0.53
4:Ja:411:GLU:HG3	5:La:230:LEU:HB2	1.89	0.53
4:Jc:494:ARG:HG3	4:Jc:509:ARG:HE	1.73	0.53
4:Ja:248:ASN:HD21	4:Ja:257:SER:C	2.17	0.53
4:Ja:577:ARG:NH2	5:Lc:68:LEU:H	2.05	0.53
4:Jb:759:VAL:O	4:Jb:763:THR:OG1	2.25	0.53
6:Ti:41:GLU:HG2	6:Ti:51:MET:SD	2.48	0.53
6:Tk:61:ILE:HG23	6:Tk:69:PRO:HB3	1.91	0.53
4:Jb:508:ASP:OD1	4:Jb:508:ASP:N	2.42	0.53
6:Ti:55:TYR:HA	6:Ti:77:VAL:HB	1.90	0.53
8:Vd:72:GLN:HB2	8:Ve:123:TRP:CE3	2.44	0.53
4:Ja:2:GLY:O	4:Ja:3:LYS:HG2	2.09	0.53
4:Jb:315:GLY:HA2	4:Jb:605:PHE:HA	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Ti:71:HIS:CE1	8:Ve:63:GLU:HB3	2.44	0.53
8:Vd:47:PRO:HA	8:Vd:80:THR:HG23	1.90	0.53
4:Ja:241:ARG:NH2	4:Ja:278:ASP:OD1	2.42	0.53
7:Ma:7:LYS:HD2	8:Va:59:TYR:CD2	2.43	0.53
4:Jb:745:GLU:OE1	4:Jb:768:THR:OG1	2.26	0.52
8:Ve:46:THR:HG1	8:Ve:81:SER:HG	1.57	0.52
2:Ia:176:PHE:HB2	4:Jc:327:ALA:HA	1.91	0.52
2:Ib:222:GLY:HA3	4:Jb:156:LYS:HB2	1.92	0.52
4:Ja:31:SER:OG	4:Ja:32:GLU:N	2.41	0.52
4:Ja:526:GLY:H	4:Ja:530:PRO:HD2	1.74	0.52
4:Jc:548:ARG:HD2	4:Jc:548:ARG:N	2.25	0.52
6:Ta:38:VAL:HG22	6:Tc:67:PHE:HZ	1.75	0.52
8:Vc:69:ALA:HA	8:Vd:143:VAL:HG23	1.90	0.52
4:Jb:535:VAL:HG13	4:Jb:548:ARG:HG3	1.91	0.52
8:Vb:18:TRP:HB2	8:Vb:109:LYS:HG3	1.90	0.52
8:Vb:49:GLU:H	8:Vb:78:GLY:HA3	1.74	0.52
8:Ve:150:GLU:OE2	8:Ve:150:GLU:N	2.36	0.52
4:Ja:222:VAL:HG12	4:Ja:224:SER:H	1.74	0.52
7:Ma:54:GLU:OE2	7:Ma:54:GLU:N	2.33	0.52
8:Vf:49:GLU:H	8:Vf:78:GLY:HA3	1.75	0.52
7:Mc:40:ASN:ND2	7:Md:63:GLU:OE2	2.43	0.52
8:Vf:46:THR:HG1	8:Vf:81:SER:HG	1.53	0.52
4:Jb:261:ASP:OD1	4:Jb:261:ASP:N	2.43	0.52
6:Th:67:PHE:CE2	7:Me:5:ARG:HG3	2.45	0.52
8:Va:46:THR:OG1	8:Va:81:SER:OG	2.27	0.52
8:Vb:52:ALA:HA	8:Vb:75:LYS:HA	1.91	0.52
8:Vd:47:PRO:HG2	8:Ve:129:LYS:HB3	1.92	0.52
4:Jb:113:ARG:HB2	4:Jb:168:VAL:HG22	1.91	0.52
8:Va:93:GLN:HA	8:Va:96:LEU:HB3	1.92	0.52
8:Vc:36:TRP:CD2	8:Vc:109:LYS:HE2	2.44	0.52
8:Vc:68:THR:OG1	8:Vd:76:SER:OG	2.24	0.52
8:Vc:72:GLN:HB2	8:Vd:123:TRP:CE3	2.45	0.52
8:Vc:87:MET:HB2	8:Vc:93:GLN:HE22	1.75	0.52
8:Vd:69:ALA:HA	8:Ve:143:VAL:HG23	1.92	0.52
4:Ja:282:HIS:ND1	4:Ja:283:PRO:O	2.37	0.52
4:Ja:381:ASP:OD1	4:Ja:381:ASP:N	2.38	0.52
4:Jc:32:GLU:OE2	5:Lb:166:ARG:NH1	2.39	0.52
8:Vb:69:ALA:HA	8:Vc:143:VAL:HG23	1.92	0.52
4:Ja:535:VAL:H	4:Ja:548:ARG:NH2	1.99	0.52
4:Ja:624:LEU:HD12	4:Ja:707:VAL:HB	1.91	0.52
6:Tg:5:ILE:HG22	6:Tg:49:TYR:HE2	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Va:69:ALA:HA	8:Vb:143:VAL:HG23	1.92	0.52
4:Jb:528:GLY:HA2	5:La:6:GLN:NE2	2.25	0.51
4:Jc:536:GLN:NE2	4:Jc:546:VAL:O	2.37	0.51
5:Lb:41:GLU:HA	7:Mc:27:ASP:OD1	2.10	0.51
6:Ti:28:ARG:HH21	6:Ti:56:GLY:HA2	1.75	0.51
6:Tj:90:LEU:HB3	6:Tk:29:ASN:HD22	1.75	0.51
8:Vc:18:TRP:CE2	8:Vc:38:ARG:HG3	2.46	0.51
4:Jc:118:VAL:O	4:Jc:162:GLN:HA	2.09	0.51
4:Jc:637:VAL:CG2	4:Jc:680:PHE:HB2	2.40	0.51
8:Vb:47:PRO:HG2	8:Vc:129:LYS:HB3	1.92	0.51
8:Vf:22:GLY:N	8:Vf:35:ASP:OD1	2.42	0.51
3:Ic:196:MET:O	3:Ic:198:VAL:HG13	2.09	0.51
5:La:25:GLU:OE2	5:La:35:ARG:NH2	2.43	0.51
4:Jb:175:ARG:HG2	4:Jb:176:PRO:HD2	1.93	0.51
4:Jc:656:LEU:HB3	4:Jc:668:VAL:HG13	1.92	0.51
6:Tg:87:ASN:ND2	6:Tl:31:THR:O	2.42	0.51
7:Mc:52:ARG:NH1	7:Mc:95:MET:O	2.44	0.51
4:Jc:18:LEU:HD11	4:Jc:159:THR:HG21	1.93	0.51
4:Jc:162:GLN:H	4:Jc:162:GLN:CD	2.17	0.51
5:La:60:PRO:HG3	7:Ma:25:PHE:CZ	2.44	0.51
7:Mc:74:THR:OG1	7:Mc:81:GLN:OE1	2.22	0.51
8:Va:36:TRP:N	8:Va:36:TRP:CD1	2.79	0.51
2:Ia:212:GLU:N	2:Ia:212:GLU:OE1	2.44	0.51
4:Jb:574:VAL:HA	4:Jb:589:VAL:HG12	1.91	0.51
7:Mc:70:SER:HA	7:Mc:85:THR:HG22	1.93	0.51
2:Ia:186:GLY:HA3	2:Ib:170:GLY:HA2	1.92	0.51
6:Tf:44:ASP:OD1	6:Tf:48:ARG:N	2.44	0.51
7:Md:79:TRP:HB3	7:Md:80:ARG:NH2	2.26	0.51
4:Jb:782:GLY:H	4:Jb:806:ARG:NH2	2.08	0.51
5:Lc:182:CYS:SG	5:Lc:217:ASN:ND2	2.83	0.51
6:Te:67:PHE:CE1	7:Mc:5:ARG:HG3	2.46	0.51
8:Va:99:TRP:NE1	8:Va:104:ASP:O	2.40	0.51
8:Vc:53:GLU:HB3	8:Vc:73:GLY:O	2.11	0.51
4:Ja:503:ARG:HE	4:Ja:546:VAL:HG21	1.76	0.50
6:Te:22:ILE:HD11	6:Te:60:VAL:HG23	1.92	0.50
6:Tk:29:ASN:OD1	6:Tk:35:VAL:HG13	2.10	0.50
8:Vc:42:VAL:HA	8:Vc:84:LEU:HB3	1.92	0.50
8:Ve:78:GLY:O	8:Ve:142:ASN:ND2	2.43	0.50
4:Ja:454:THR:OG1	4:Ja:458:GLU:OE1	2.20	0.50
4:Jb:513:LEU:HD12	4:Jb:514:PRO:HD2	1.93	0.50
4:Jc:523:LEU:HB3	4:Jc:533:VAL:HG12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Tk:28:ARG:HH21	6:Tk:57:GLN:HE21	1.59	0.50
1:Ha:831:ARG:HH22	1:Hb:836:ASP:HB3	1.76	0.50
4:Ja:752:GLN:HB2	4:Ja:786:TYR:CZ	2.46	0.50
4:Ja:162:GLN:H	4:Ja:162:GLN:CD	2.19	0.50
4:Jc:752:GLN:HB2	4:Jc:786:TYR:CZ	2.46	0.50
7:Mc:32:ARG:HH21	7:Md:107:VAL:HG21	1.76	0.50
4:Jc:576:ILE:HB	4:Jc:588:ALA:HB3	1.94	0.50
5:La:177:TYR:HD1	5:La:178:ARG:N	2.09	0.50
7:Me:25:PHE:HB2	7:Me:28:GLY:O	2.12	0.50
2:Ia:196:MET:HE2	4:Jc:326:ASN:HB3	1.93	0.50
5:Lb:107:LYS:HG2	5:Lb:131:VAL:HB	1.94	0.50
7:Mf:13:ASP:HB3	7:Mf:45:SER:HB2	1.93	0.50
2:Ia:188:VAL:HG13	5:Lb:166:ARG:O	2.12	0.50
4:Jc:279:MET:HE2	4:Jc:338:VAL:HG12	1.94	0.50
4:Ja:748:PHE:HE2	4:Ja:785:TYR:HB3	1.77	0.50
4:Jc:380:ASP:N	4:Jc:380:ASP:OD1	2.44	0.50
6:Ti:25:LYS:HZ1	6:Ti:37:THR:N	2.10	0.50
7:Md:76:PRO:HG3	8:Vd:60:LEU:HD23	1.94	0.50
7:Ma:25:PHE:CE2	7:Ma:30:SER:HA	2.47	0.50
4:Ja:373:ARG:HH12	7:Mf:27:ASP:CG	2.20	0.49
4:Jc:617:THR:OG1	4:Jc:700:GLN:OE1	2.23	0.49
4:Jc:732:THR:O	4:Jc:732:THR:OG1	2.23	0.49
4:Jc:747:TRP:CZ3	4:Jc:765:TYR:HA	2.47	0.49
7:Ma:77:TYR:CG	7:Ma:78:GLU:N	2.80	0.49
8:Va:72:GLN:NE2	8:Va:75:LYS:HE3	2.27	0.49
8:Vb:90:GLU:CD	8:Vb:92:GLY:H	2.19	0.49
2:Ib:164:ILE:HD12	2:Ib:164:ILE:H	1.76	0.49
4:Ja:110:ASP:HB2	4:Ja:206:ILE:HA	1.93	0.49
4:Jc:788:TYR:HE1	4:Jc:802:GLU:HG3	1.77	0.49
6:Ta:22:ILE:HD11	6:Ta:43:PRO:HG3	1.94	0.49
4:Jb:719:ARG:NH1	4:Jb:721:GLU:OE1	2.36	0.49
6:Td:82:GLN:OE1	6:Td:82:GLN:N	2.44	0.49
8:Va:36:TRP:CD2	8:Va:109:LYS:HE2	2.48	0.49
2:Ia:136:THR:HG21	4:Jc:580:ASP:HB2	1.94	0.49
4:Ja:373:ARG:NH1	7:Mf:27:ASP:OD2	2.40	0.49
4:Jb:822:ILE:HG13	4:Jb:826:HIS:HB2	1.94	0.49
4:Jc:260:TRP:NE1	4:Jc:261:ASP:O	2.45	0.49
4:Jc:664:SER:OG	4:Jc:665:GLU:N	2.45	0.49
5:Lb:19:ALA:HB3	5:Lb:110:ALA:HB2	1.93	0.49
6:Tf:55:TYR:HA	6:Tf:77:VAL:HB	1.92	0.49
7:Ma:17:VAL:HG22	7:Mb:88:LYS:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Vf:93:GLN:HA	8:Vf:96:LEU:HB3	1.92	0.49
2:Ib:189:LEU:HA	5:La:168:MET:HE1	1.94	0.49
4:Ja:371:TYR:CE2	4:Ja:466:VAL:HG22	2.48	0.49
4:Jb:64:VAL:HG22	4:Jb:222:VAL:HG22	1.94	0.49
4:Jb:247:SER:HA	4:Jb:265:LYS:HD3	1.93	0.49
4:Jb:628:VAL:HG12	4:Jb:637:VAL:HG22	1.94	0.49
4:Jc:541:GLY:O	4:Jc:543:LYS:N	2.43	0.49
5:Lb:61:ILE:HG13	5:Lb:81:VAL:HG22	1.94	0.49
4:Jb:353:ASN:ND2	4:Jb:475:PRO:HB2	2.28	0.49
5:Lc:114:ASP:OD1	5:Lc:115:ALA:N	2.45	0.49
6:Tb:60:VAL:HG13	6:Tb:72:ALA:HB3	1.95	0.49
3:Ic:208:SER:OG	3:Ic:209:THR:N	2.46	0.49
3:Ic:210:ALA:HB2	4:Ja:23:LEU:HB2	1.93	0.49
4:Ja:81:PHE:HD2	4:Ja:221:GLN:HE21	1.59	0.49
4:Ja:380:ASP:OD1	4:Ja:380:ASP:N	2.45	0.49
4:Ja:575:SER:HB2	4:Ja:590:GLN:NE2	2.26	0.49
4:Jb:98:THR:O	4:Jb:98:THR:OG1	2.30	0.49
6:Tf:15:LYS:HD2	6:Tf:16:PRO:HD2	1.95	0.49
6:Ti:61:ILE:HD11	6:Ti:69:PRO:HB3	1.94	0.49
8:Vc:7:THR:O	8:Vc:8:MET:HE2	2.12	0.49
2:Ib:210:ALA:HB2	4:Jb:23:LEU:HB2	1.94	0.49
4:Ja:718:SER:H	4:Ja:735:LEU:HA	1.78	0.49
4:Jc:570:LEU:HB3	4:Jc:572:ARG:HH12	1.76	0.49
6:Tl:13:THR:HG22	6:Th:24:LEU:HD13	1.93	0.49
6:Th:22:ILE:HD11	6:Th:60:VAL:HG23	1.93	0.49
7:Me:52:ARG:NH2	7:Me:95:MET:O	2.46	0.49
4:Ja:494:ARG:HH12	7:Ma:37:LEU:HD13	1.77	0.49
4:Jb:625:THR:HG23	4:Jb:640:ARG:HG3	1.94	0.49
4:Jb:752:GLN:HB2	4:Jb:786:TYR:CZ	2.47	0.49
6:Td:55:TYR:HA	6:Td:77:VAL:HB	1.94	0.49
5:Lc:19:ALA:HB3	5:Lc:110:ALA:HB2	1.95	0.49
5:Lb:16:GLU:OE2	7:Md:32:ARG:NH2	2.33	0.49
7:Mc:23:VAL:HG13	7:Mc:25:PHE:CZ	2.48	0.49
8:Ve:43:LYS:N	8:Ve:83:THR:O	2.45	0.49
8:Vf:30:PRO:HB2	8:Vf:117:VAL:HG21	1.95	0.49
3:Ic:192:LEU:HD13	4:Ja:328:TYR:HD1	1.78	0.48
4:Ja:354:GLY:O	4:Ja:355:GLN:NE2	2.46	0.48
4:Jb:594:GLU:N	4:Jb:594:GLU:OE2	2.46	0.48
4:Jc:471:LEU:HD13	4:Jc:585:ALA:HB2	1.94	0.48
4:Jc:562:LYS:NZ	4:Jc:564:PRO:HB3	2.28	0.48
7:Mf:14:VAL:HG22	7:Mf:44:TYR:CD1	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Me:8:VAL:HG13	7:Me:46:VAL:HG13	1.95	0.48
4:Jb:175:ARG:HD2	4:Jb:176:PRO:O	2.13	0.48
4:Jc:583:THR:HG21	7:Md:21:ARG:HH11	1.79	0.48
4:Jc:646:VAL:HG13	4:Jc:650:VAL:HG13	1.95	0.48
5:Lc:25:GLU:OE2	5:Lc:35:ARG:NH2	2.46	0.48
7:Mc:23:VAL:HG22	7:Mc:25:PHE:CE1	2.47	0.48
8:Va:72:GLN:HE22	8:Va:75:LYS:HE3	1.77	0.48
8:Va:114:ASN:OD1	8:Va:116:THR:OG1	2.21	0.48
4:Ja:378:MET:O	4:Ja:378:MET:HG2	2.13	0.48
4:Ja:391:ALA:HB3	4:Ja:394:ASP:HB2	1.94	0.48
6:Ti:42:ASN:OD1	6:Ti:42:ASN:N	2.40	0.48
7:Me:77:TYR:O	7:Me:77:TYR:CD1	2.67	0.48
8:Vb:147:SER:OG	8:Vb:152:ARG:NH2	2.46	0.48
4:Ja:132:PRO:HG3	4:Ja:158:LYS:HB2	1.94	0.48
4:Jb:528:GLY:HA2	5:La:6:GLN:HE21	1.78	0.48
6:Tb:22:ILE:HD11	6:Tb:60:VAL:HG23	1.95	0.48
6:Th:60:VAL:HG13	6:Th:72:ALA:HB3	1.93	0.48
8:Vc:10:VAL:HG23	8:Vd:134:ILE:HD13	1.95	0.48
8:Vc:46:THR:HG1	8:Vc:81:SER:HG	1.57	0.48
8:Ve:69:ALA:HA	8:Vf:143:VAL:HG23	1.95	0.48
4:Jb:260:TRP:NE1	4:Jb:261:ASP:O	2.47	0.48
4:Jb:615:GLY:O	4:Jb:617:THR:OG1	2.30	0.48
6:Th:18:GLN:OE1	6:Th:18:GLN:N	2.46	0.48
7:Ma:49:SER:O	7:Ma:97:ARG:NH2	2.46	0.48
1:Ha:831:ARG:HB2	1:Ha:831:ARG:NH1	2.29	0.48
4:Jc:472:ARG:CZ	4:Jc:472:ARG:HA	2.43	0.48
4:Jc:650:VAL:HA	4:Jc:695:VAL:O	2.14	0.48
5:Lc:43:ASN:HD21	5:Lc:47:GLU:HB2	1.78	0.48
6:Ta:5:ILE:HG22	6:Ta:49:TYR:HE2	1.77	0.48
6:Tc:27:ARG:NH2	6:Tc:57:GLN:OE1	2.38	0.48
7:Ma:77:TYR:OH	7:Mb:56:THR:N	2.46	0.48
3:Ic:144:ALA:HA	3:Ic:147:VAL:HB	1.94	0.48
4:Ja:64:VAL:HG22	4:Ja:222:VAL:HG22	1.95	0.48
4:Ja:572:ARG:HE	4:Ja:591:HIS:HA	1.79	0.48
4:Ja:749:SER:OG	4:Ja:786:TYR:HB2	2.13	0.48
5:La:59:TYR:CG	5:La:60:PRO:HD2	2.49	0.48
7:Mc:1:MET:SD	7:Mc:83:LYS:NZ	2.87	0.48
8:Vf:6:PRO:O	8:Vf:7:THR:OG1	2.29	0.48
4:Ja:143:ARG:NH1	4:Ja:148:VAL:HG13	2.29	0.48
4:Jc:612:THR:O	4:Jc:614:ASN:N	2.47	0.48
6:Tb:21:THR:HB	6:Tb:63:GLN:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Md:7:LYS:HE2	8:Vd:59:TYR:CD2	2.49	0.48
8:Vb:47:PRO:HA	8:Vb:80:THR:HG23	1.95	0.48
5:La:43:ASN:HD21	5:La:47:GLU:HB2	1.78	0.47
6:Tc:15:LYS:HD2	6:Tc:16:PRO:HD2	1.96	0.47
6:Tg:16:PRO:HG2	6:Tg:18:GLN:HE22	1.79	0.47
6:Tl:28:ARG:NE	6:Tl:57:GLN:OE1	2.38	0.47
6:Tk:55:TYR:HA	6:Tk:77:VAL:HB	1.94	0.47
7:Me:75:PRO:HB2	7:Me:78:GLU:HB2	1.94	0.47
4:Jb:757:ARG:HB2	4:Jb:758:GLN:HE21	1.79	0.47
4:Jc:116:PHE:CZ	4:Jc:153:ILE:HD12	2.49	0.47
4:Jc:152:ASP:O	4:Jc:153:ILE:HG12	2.14	0.47
7:Ma:44:TYR:HD2	7:Ma:73:TRP:HZ3	1.62	0.47
4:Ja:556:TYR:CZ	7:Ma:109:ASN:HB2	2.49	0.47
4:Ja:750:GLU:HG2	4:Ja:785:TYR:HE1	1.79	0.47
4:Ja:787:PHE:HB3	4:Ja:789:ILE:HD11	1.97	0.47
4:Jc:134:GLU:HA	4:Jc:155:ILE:O	2.14	0.47
5:La:139:GLN:HE21	5:La:141:SER:HB3	1.80	0.47
7:Mf:75:PRO:HB2	7:Mf:78:GLU:HB2	1.96	0.47
8:Ve:6:PRO:HB3	8:Vf:88:PRO:HG2	1.96	0.47
2:Ib:197:ARG:NH2	4:Jb:235:ASN:HD22	2.12	0.47
4:Ja:495:VAL:HA	4:Ja:559:TRP:HA	1.95	0.47
4:Jc:98:THR:O	4:Jc:98:THR:OG1	2.30	0.47
6:Ta:93:MET:SD	6:Ta:94:THR:N	2.87	0.47
8:Vf:36:TRP:H	8:Vf:36:TRP:CD1	2.32	0.47
1:Hc:829:MET:HA	3:Ic:140:PHE:HE2	1.79	0.47
4:Jb:210:GLN:NE2	4:Jb:211:CYS:O	2.48	0.47
4:Jc:360:VAL:HG11	4:Jc:477:ASP:HB2	1.97	0.47
4:Jc:727:PHE:HE1	4:Jc:781:PRO:HD3	1.78	0.47
6:Ta:29:ASN:HD21	6:Tc:90:LEU:HD13	1.78	0.47
8:Va:18:TRP:HB2	8:Va:109:LYS:HG3	1.94	0.47
8:Va:100:PHE:HD1	8:Va:124:VAL:HG13	1.80	0.47
5:Lc:177:TYR:HD1	5:Lc:178:ARG:HG3	1.80	0.47
6:Ti:4:LYS:HZ3	6:Ti:51:MET:H	1.62	0.47
2:Ia:220:VAL:HA	4:Jc:154:THR:HG23	1.96	0.47
4:Ja:30:ILE:HG21	4:Ja:238:LEU:HD12	1.96	0.47
4:Ja:104:ILE:O	4:Ja:176:PRO:HA	2.14	0.47
4:Ja:627:GLU:OE1	4:Jb:160:THR:HG23	2.15	0.47
4:Jb:188:SER:HA	4:Jb:193:LEU:HD11	1.96	0.47
4:Jb:443:GLN:HA	4:Jb:446:ARG:NH1	2.29	0.47
5:La:226:SER:OG	5:La:227:ILE:N	2.47	0.47
6:Tb:18:GLN:N	6:Tb:18:GLN:OE1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Ma:8:VAL:HG12	7:Ma:46:VAL:HG13	1.96	0.47
7:Me:32:ARG:HH12	7:Mf:107:VAL:HG21	1.79	0.47
8:Vd:49:GLU:H	8:Vd:78:GLY:HA3	1.80	0.47
1:Hc:842:MET:HA	1:Hc:848:PHE:HA	1.97	0.47
4:Ja:378:MET:HE1	7:Mf:26:GLY:HA2	1.96	0.47
4:Jc:454:THR:HG23	4:Jc:458:GLU:OE1	2.15	0.47
4:Jc:637:VAL:HG22	4:Jc:680:PHE:HB2	1.97	0.47
4:Jc:733:PRO:HG2	4:Jc:744:PHE:CD2	2.44	0.47
6:Tf:18:GLN:N	6:Tf:18:GLN:OE1	2.48	0.47
6:Ti:23:GLN:NE2	6:Ti:63:GLN:OE1	2.47	0.47
6:Tk:61:ILE:HD12	6:Tk:69:PRO:HB3	1.96	0.47
7:Mc:10:PRO:HA	8:Vc:60:LEU:HD21	1.97	0.47
4:Jc:31:SER:OG	4:Jc:32:GLU:N	2.47	0.47
4:Jc:90:LEU:HD23	4:Jc:90:LEU:HA	1.81	0.47
4:Jc:472:ARG:HD3	5:Lb:131:VAL:HG21	1.97	0.47
6:Tl:68:PRO:HD3	7:Md:77:TYR:HD1	1.79	0.47
6:Th:63:GLN:HE22	7:Me:57:VAL:HG11	1.80	0.47
8:Vb:72:GLN:NE2	8:Vc:103:GLY:HA3	2.30	0.47
4:Jc:136:ARG:HD2	4:Jc:184:MET:HG3	1.97	0.47
5:La:180:ASP:OD1	5:La:180:ASP:N	2.34	0.47
4:Ja:469:GLU:HB3	5:Lc:12:CYS:O	2.15	0.46
4:Jb:26:VAL:HG21	4:Jb:234:ARG:NH2	2.30	0.46
4:Jb:122:VAL:HG23	4:Jb:194:GLN:HE21	1.80	0.46
4:Jb:342:PHE:O	4:Jb:346:MET:HE2	2.14	0.46
5:La:173:CYS:N	5:La:207:LYS:O	2.41	0.46
6:Tc:4:LYS:HZ3	6:Tc:51:MET:H	1.63	0.46
7:Mc:27:ASP:HB2	7:Md:38:ASN:OD1	2.15	0.46
8:Vc:18:TRP:CZ3	8:Vc:33:ASP:HB3	2.50	0.46
2:Ib:165:GLN:N	2:Ib:165:GLN:OE1	2.48	0.46
4:Jc:130:ARG:HB3	4:Jc:158:LYS:HE3	1.96	0.46
7:Mb:75:PRO:HB2	7:Mb:78:GLU:HG2	1.98	0.46
4:Ja:745:GLU:OE2	4:Ja:790:ARG:NE	2.48	0.46
4:Jb:118:VAL:HG22	4:Jb:197:THR:HG22	1.97	0.46
4:Jb:651:SER:HB3	4:Jb:695:VAL:HG23	1.97	0.46
6:Tl:64:VAL:HG12	6:Tl:64:VAL:O	2.16	0.46
6:Td:61:ILE:HD11	6:Td:69:PRO:HB3	1.98	0.46
8:Vf:10:VAL:HG22	8:Vf:12:GLY:H	1.80	0.46
4:Jb:782:GLY:H	4:Jb:806:ARG:CZ	2.29	0.46
4:Jc:109:ILE:HB	4:Jc:171:ASN:HD22	1.79	0.46
4:Jb:494:ARG:NE	4:Jb:510:GLU:OE1	2.27	0.46
4:Jb:562:LYS:NZ	4:Jb:564:PRO:HB3	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Md:2:LYS:HD3	7:Md:65:HIS:NE2	2.30	0.46
7:Md:49:SER:O	7:Md:97:ARG:NH2	2.49	0.46
8:Vb:11:LYS:HD2	8:Vb:11:LYS:O	2.15	0.46
8:Vd:100:PHE:HB2	8:Vd:124:VAL:HG21	1.98	0.46
8:Ve:109:LYS:HB2	8:Ve:119:VAL:HG22	1.97	0.46
2:Ib:219:VAL:HG21	4:Jb:152:ASP:O	2.16	0.46
4:Ja:102:ARG:HA	4:Ja:102:ARG:HD3	1.77	0.46
4:Ja:367:LYS:HG3	4:Ja:481:ILE:HG22	1.98	0.46
4:Jb:138:LEU:HG	4:Jb:184:MET:HE3	1.96	0.46
4:Jc:42:LEU:HD23	4:Jc:42:LEU:O	2.15	0.46
6:Tc:5:ILE:HD11	6:Tc:89:PHE:HE2	1.81	0.46
8:Vc:87:MET:HB2	8:Vc:93:GLN:NE2	2.31	0.46
4:Ja:16:ASP:OD2	4:Ja:666:ARG:HB3	2.15	0.46
4:Ja:373:ARG:HG3	4:Ja:486:TYR:CE2	2.46	0.46
6:Te:60:VAL:HG13	6:Te:72:ALA:HB3	1.97	0.46
4:Jc:12:ARG:HB3	4:Jc:63:GLY:HA3	1.97	0.46
6:Tg:42:ASN:OD1	6:Tg:42:ASN:N	2.49	0.46
7:Md:14:VAL:HG12	7:Md:44:TYR:HD1	1.81	0.46
8:Va:66:ASP:HA	8:Vb:74:GLN:HE21	1.81	0.46
4:Ja:121:LEU:HD22	4:Ja:157:GLY:O	2.16	0.45
4:Jc:102:ARG:HD3	4:Jc:102:ARG:HA	1.77	0.45
1:Ha:837:GLU:OE1	1:Hc:831:ARG:NH2	2.37	0.45
4:Ja:657:THR:O	4:Ja:688:TYR:HB2	2.15	0.45
4:Jb:308:CYS:SG	4:Jb:323:ILE:HD11	2.57	0.45
4:Jb:572:ARG:HD3	4:Jb:591:HIS:HA	1.98	0.45
4:Jb:620:ALA:HB2	4:Jb:703:ASP:HB2	1.98	0.45
5:Lc:73:THR:OG1	5:Lc:74:SER:N	2.48	0.45
5:Lc:181:GLU:OE1	5:Lc:181:GLU:N	2.49	0.45
6:Te:63:GLN:HE22	7:Mc:57:VAL:HG11	1.80	0.45
7:Ma:77:TYR:O	7:Ma:78:GLU:HB2	2.16	0.45
7:Md:80:ARG:HB3	7:Md:82:ILE:HG23	1.98	0.45
8:Va:67:TRP:CE2	8:Vb:145:ARG:HB3	2.51	0.45
4:Ja:373:ARG:HH22	7:Mf:27:ASP:CG	2.24	0.45
4:Jb:62:SER:OG	4:Jb:63:GLY:N	2.43	0.45
4:Jb:227:PHE:CD2	4:Jb:232:VAL:HG11	2.52	0.45
4:Jb:271:ASN:O	4:Jb:275:CYS:HB2	2.16	0.45
4:Jb:502:THR:OG1	4:Jb:503:ARG:N	2.49	0.45
4:Jb:695:VAL:HB	4:Jb:699:GLY:HA2	1.98	0.45
4:Jc:188:SER:HA	4:Jc:193:LEU:HD11	1.98	0.45
6:Tg:27:ARG:HD2	6:Tg:59:SER:HB2	1.97	0.45
6:Th:42:ASN:OD1	6:Th:42:ASN:N	2.47	0.45

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
7:Md:9:LYS:HE2	7:Md:10:PRO:HD2	1.98	0.45
4:Ja:472:ARG:HH21	5:Lc:107:LYS:HE3	1.81	0.45
4:Jc:396:HIS:HA	4:Jc:429:ASN:HB2	1.98	0.45
4:Jc:397:ASN:OD1	4:Jc:397:ASN:N	2.49	0.45
4:Jc:401:VAL:HA	4:Jc:433:MET:O	2.16	0.45
5:Lb:226:SER:OG	5:Lb:227:ILE:N	2.49	0.45
6:Tf:45:GLU:N	6:Tf:45:GLU:OE1	2.48	0.45
6:Tg:35:VAL:HG13	6:Tg:36:ASN:OD1	2.17	0.45
8:Va:31:LEU:O	8:Va:111:ARG:NH2	2.49	0.45
8:Vb:10:VAL:HG21	8:Vb:113:PRO:HG2	1.97	0.45
8:Vb:36:TRP:H	8:Vb:36:TRP:CD1	2.34	0.45
4:Ja:36:GLU:OE2	4:Ja:268:TYR:HB2	2.17	0.45
4:Jb:162:GLN:H	4:Jb:162:GLN:CD	2.21	0.45
4:Jc:397:ASN:ND2	4:Jc:423:ILE:HD13	2.31	0.45
6:Tl:61:ILE:HD12	6:Tl:69:PRO:HB3	1.99	0.45
6:Ti:4:LYS:HZ3	6:Ti:51:MET:N	2.15	0.45
7:Ma:32:ARG:HB3	7:Mb:68:TRP:HB2	1.98	0.45
7:Md:62:LEU:HD23	7:Md:62:LEU:HA	1.71	0.45
7:Me:9:LYS:HB3	7:Me:9:LYS:HE3	1.76	0.45
4:Ja:395:ARG:HA	4:Ja:455:GLU:OE1	2.16	0.45
4:Ja:540:ASP:OD1	4:Ja:540:ASP:N	2.50	0.45
4:Ja:815:LEU:HD21	4:Jc:821:LYS:HE2	1.98	0.45
4:Jb:42:LEU:HD23	4:Jb:42:LEU:O	2.16	0.45
4:Jb:353:ASN:HD21	4:Jb:475:PRO:HB2	1.80	0.45
4:Jc:227:PHE:HA	4:Jc:672:ARG:HH11	1.81	0.45
1:Hc:836:ASP:O	1:Hc:840:THR:HG22	2.17	0.45
4:Jb:601:ASN:C	4:Jb:601:ASN:OD1	2.59	0.45
4:Jc:212:TYR:HD2	4:Jc:217:LEU:HD22	1.82	0.45
5:Lb:1:MET:HE3	5:Lb:2:GLN:H	1.80	0.45
6:Tc:25:LYS:HD2	6:Tc:38:VAL:HG12	1.99	0.45
6:Tj:93:MET:SD	6:Tj:94:THR:N	2.90	0.45
7:Mb:9:LYS:HG2	7:Mb:10:PRO:HD2	1.99	0.45
7:Md:4:PHE:CE1	7:Md:6:TRP:HB2	2.52	0.45
8:Vd:10:VAL:HG21	8:Vd:113:PRO:HG2	1.99	0.45
8:Vf:10:VAL:HG21	8:Vf:113:PRO:HG2	1.99	0.45
4:Jb:332:GLN:OE1	5:La:162:VAL:HG21	2.16	0.45
4:Jc:18:LEU:HD12	4:Jc:163:TYR:CD1	2.52	0.45
4:Jc:395:ARG:HA	4:Jc:455:GLU:OE1	2.17	0.45
4:Jc:458:GLU:HG2	4:Jc:592:VAL:HA	1.99	0.45
4:Jc:748:PHE:HE1	4:Jc:785:TYR:HB3	1.81	0.45
6:Te:86:LEU:HD12	6:Te:90:LEU:HD11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Tg:67:PHE:CE2	7:Md:5:ARG:HG3	2.52	0.45
6:Tg:93:MET:SD	6:Tg:94:THR:N	2.90	0.45
6:Th:61:ILE:HD13	6:Th:71:HIS:HA	1.98	0.45
8:Vd:10:VAL:HG22	8:Vd:12:GLY:H	1.82	0.45
8:Ve:93:GLN:HA	8:Ve:96:LEU:HB3	1.99	0.45
3:Ic:198:VAL:HG11	4:Ja:328:TYR:CG	2.52	0.45
4:Ja:562:LYS:NZ	4:Ja:564:PRO:HB3	2.32	0.45
4:Jb:367:LYS:HB3	4:Jb:367:LYS:HE3	1.80	0.45
4:Jb:556:TYR:OH	7:Mc:109:ASN:HB2	2.17	0.45
4:Jc:723:THR:HB	4:Jc:730:THR:HB	1.99	0.45
6:Tf:66:GLY:HA2	7:Mc:79:TRP:CG	2.52	0.45
6:Tj:29:ASN:OD1	6:Tj:35:VAL:N	2.48	0.45
7:Mc:25:PHE:HE2	7:Mc:31:GLN:H	1.64	0.45
3:Ic:146:MET:HE1	4:Ja:576:ILE:HG13	1.99	0.44
4:Ja:1:MET:HB2	4:Ja:3:LYS:NZ	2.31	0.44
4:Ja:40:ASP:OD1	4:Ja:43:LYS:HD2	2.17	0.44
4:Ja:572:ARG:HD3	4:Ja:590:GLN:O	2.17	0.44
4:Jc:203:THR:HG22	4:Jc:205:ILE:HG23	1.98	0.44
4:Jc:503:ARG:HG3	4:Jc:503:ARG:O	2.17	0.44
4:Jc:527:SER:HB3	4:Jc:553:VAL:HG11	1.99	0.44
4:Jc:539:THR:OG1	4:Jc:545:LYS:NZ	2.49	0.44
5:Lb:71:LYS:HB2	5:Lb:71:LYS:HE3	1.72	0.44
8:Vc:72:GLN:HB2	8:Vd:123:TRP:CD2	2.51	0.44
2:Ib:220:VAL:HG13	4:Jb:156:LYS:NZ	2.31	0.44
3:Ic:222:GLY:HA3	4:Ja:156:LYS:HE2	1.99	0.44
4:Ja:14:ALA:H	4:Ja:15:LYS:NZ	2.07	0.44
4:Jc:348:CYS:SG	4:Jc:361:GLN:HB3	2.57	0.44
4:Jc:383:ALA:HB2	5:Lc:146:VAL:HG13	1.98	0.44
4:Jc:590:GLN:N	4:Jc:590:GLN:CD	2.75	0.44
4:Jc:594:GLU:N	4:Jc:594:GLU:OE2	2.50	0.44
5:Lb:120:ASN:OD1	5:Lb:121:GLY:N	2.50	0.44
5:La:38:PHE:HE1	5:La:57:GLN:HE21	1.64	0.44
6:Ta:44:ASP:OD1	6:Ta:48:ARG:N	2.46	0.44
7:Ma:53:GLU:HA	7:Ma:53:GLU:OE1	2.16	0.44
8:Vc:109:LYS:HB3	8:Vc:119:VAL:HG12	1.98	0.44
8:Vf:87:MET:HB2	8:Vf:93:GLN:NE2	2.32	0.44
4:Ja:462:VAL:HG13	4:Ja:589:VAL:CG2	2.48	0.44
4:Jc:110:ASP:HB2	4:Jc:206:ILE:HA	1.98	0.44
4:Jc:541:GLY:O	4:Jc:542:VAL:HG12	2.18	0.44
6:Tj:41:GLU:OE1	6:Tj:51:MET:HG2	2.18	0.44
7:Md:59:GLU:O	7:Md:63:GLU:N	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Vd:30:PRO:HB2	8:Vd:117:VAL:HG21	2.00	0.44
8:Vd:31:LEU:H	8:Vd:31:LEU:HD22	1.82	0.44
8:Vf:36:TRP:CD1	8:Vf:36:TRP:N	2.85	0.44
3:Ic:217:GLN:HB3	4:Ja:152:ASP:OD2	2.18	0.44
4:Jc:30:ILE:HG21	4:Jc:238:LEU:HD12	1.99	0.44
5:La:54:ARG:HG2	5:La:55:GLN:H	1.82	0.44
5:La:194:ASP:OD1	5:La:194:ASP:N	2.50	0.44
6:Tb:35:VAL:HG22	6:Tb:36:ASN:OD1	2.18	0.44
6:Td:18:GLN:OE1	6:Td:18:GLN:N	2.50	0.44
8:Va:21:LYS:HD3	8:Va:35:ASP:O	2.18	0.44
4:Ja:61:ILE:HG22	4:Ja:62:SER:H	1.81	0.44
4:Ja:572:ARG:HD3	4:Ja:590:GLN:C	2.42	0.44
4:Jb:121:LEU:N	4:Jb:159:THR:O	2.48	0.44
4:Jb:367:LYS:HG3	4:Jb:481:ILE:HG22	2.00	0.44
4:Jc:687:ASN:HA	4:Jc:710:ARG:HA	2.00	0.44
5:Lc:77:PRO:HG2	5:Lc:152:LEU:HB2	1.99	0.44
5:La:191:ASP:OD1	5:La:195:GLN:N	2.40	0.44
6:Tj:49:TYR:OH	6:Tj:86:LEU:N	2.36	0.44
7:Me:25:PHE:CD1	7:Me:30:SER:HA	2.53	0.44
8:Ve:36:TRP:CD1	8:Ve:36:TRP:N	2.85	0.44
8:Vf:72:GLN:HG2	8:Vf:73:GLY:N	2.32	0.44
4:Jb:540:ASP:O	4:Jb:544:VAL:HB	2.18	0.44
4:Jb:572:ARG:HB3	4:Jb:589:VAL:HG21	1.98	0.44
4:Jc:308:CYS:SG	4:Jc:323:ILE:HD11	2.58	0.44
6:Tf:35:VAL:HG13	6:Tf:36:ASN:OD1	2.18	0.44
6:Tl:12:GLY:HA3	6:Th:58:TYR:HE2	1.83	0.44
6:Ti:15:LYS:NZ	6:Ti:18:GLN:OE1	2.51	0.44
6:Ti:35:VAL:HG22	6:Ti:36:ASN:OD1	2.18	0.44
6:Tk:13:THR:OG1	6:Tk:15:LYS:HD3	2.17	0.44
7:Mb:21:ARG:HB3	7:Mb:33:ALA:HB3	1.98	0.44
7:Mf:4:PHE:CE1	7:Mf:6:TRP:HB2	2.53	0.44
8:Vc:114:ASN:OD1	8:Vc:115:GLY:N	2.50	0.44
2:Ib:192:LEU:HG	4:Jb:328:TYR:HD1	1.82	0.44
4:Jb:124:THR:HG23	4:Jb:128:GLY:HA2	2.00	0.44
4:Jb:399:VAL:HG23	4:Jb:452:ILE:HD11	1.99	0.44
4:Jc:279:MET:HG2	5:Lb:163:PHE:CE1	2.53	0.44
4:Jc:485:ASP:N	4:Jc:485:ASP:OD1	2.48	0.44
4:Jc:556:TYR:CZ	7:Me:109:ASN:HB2	2.52	0.44
5:Lb:60:PRO:HG3	7:Mc:25:PHE:CZ	2.53	0.44
5:Lb:167:ILE:HD13	5:Lb:167:ILE:HA	1.83	0.44
6:Tb:64:VAL:HB	6:Tb:67:PHE:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Tj:5:ILE:HG22	6:Tj:49:TYR:CE1	2.46	0.44
7:Mf:40:ASN:O	7:Mf:41:LEU:HD23	2.18	0.44
8:Vd:36:TRP:CE3	8:Vd:109:LYS:HG2	2.53	0.44
1:Hb:844:ASP:OD1	1:Hb:845:GLY:N	2.50	0.44
4:Jc:61:ILE:HG22	4:Jc:62:SER:H	1.82	0.44
4:Jc:112:LEU:HD11	4:Jc:202:TYR:HD2	1.83	0.44
7:Ma:40:ASN:C	7:Ma:40:ASN:HD22	2.16	0.44
7:Mf:10:PRO:HD3	8:Vf:59:TYR:HA	2.00	0.44
8:Va:126:SER:OG	8:Va:139:LYS:HG2	2.17	0.44
8:Vc:124:VAL:HG23	8:Vc:140:VAL:HG12	2.00	0.44
4:Ja:259:ILE:HD13	4:Ja:259:ILE:HA	1.87	0.44
4:Ja:462:VAL:O	4:Ja:589:VAL:HG22	2.18	0.44
6:Tb:85:THR:OG1	6:Tb:88:ASP:OD2	2.13	0.44
7:Mc:9:LYS:HD2	7:Mc:49:SER:HB3	2.00	0.44
3:Ic:158:LYS:HG3	3:Ic:159:ALA:H	1.83	0.43
3:Ic:196:MET:HE3	3:Ic:196:MET:HB2	1.70	0.43
4:Ja:245:VAL:HG21	4:Ja:269:SER:HB2	1.99	0.43
4:Ja:372:ASN:HD22	4:Ja:561:LEU:HD11	1.82	0.43
4:Ja:472:ARG:NH2	5:Lc:107:LYS:HE3	2.33	0.43
4:Ja:657:THR:OG1	4:Ja:665:GLU:HG3	2.18	0.43
4:Jb:101:THR:HG22	4:Jb:180:ARG:HG2	1.99	0.43
4:Jb:654:LEU:HD22	4:Jb:692:VAL:HG22	2.00	0.43
6:Ti:65:ASP:N	6:Ti:65:ASP:OD1	2.48	0.43
4:Jb:61:ILE:HG22	4:Jb:62:SER:H	1.83	0.43
5:Lc:229:LYS:HA	5:Lc:229:LYS:HE2	1.98	0.43
8:Vd:36:TRP:N	8:Vd:36:TRP:CD1	2.86	0.43
4:Jb:578:GLU:HB2	4:Jb:586:ILE:HB	2.00	0.43
8:Va:18:TRP:NE1	8:Va:111:ARG:HD2	2.33	0.43
8:Va:145:ARG:HG2	8:Vf:67:TRP:CE2	2.53	0.43
2:Ib:212:GLU:N	2:Ib:212:GLU:OE2	2.52	0.43
2:Ib:221:ILE:HG21	4:Jb:18:LEU:HD13	2.01	0.43
8:Vb:36:TRP:CD1	8:Vb:36:TRP:N	2.86	0.43
8:Vb:61:ASP:OD2	8:Vb:61:ASP:C	2.61	0.43
8:Vd:67:TRP:HA	8:Ve:75:LYS:O	2.19	0.43
4:Ja:320:GLU:HG3	4:Ja:321:PRO:O	2.18	0.43
4:Ja:542:VAL:HG23	4:Ja:543:LYS:H	1.83	0.43
4:Jb:181:MET:HE1	4:Jb:199:TRP:CE3	2.53	0.43
4:Jb:463:ASP:OD1	4:Jb:463:ASP:C	2.61	0.43
4:Jc:387:TYR:CD2	4:Jc:462:VAL:HB	2.53	0.43
5:Lb:230:LEU:HD23	5:Lb:230:LEU:HA	1.81	0.43
5:La:37:PHE:CE2	5:La:54:ARG:HD3	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Ma:25:PHE:HB2	7:Ma:28:GLY:O	2.18	0.43
8:Va:36:TRP:CZ3	8:Va:109:LYS:HG2	2.53	0.43
8:Vd:59:TYR:HB2	8:Vd:62:ASP:OD2	2.18	0.43
8:Vf:109:LYS:HB3	8:Vf:119:VAL:HG12	1.99	0.43
4:Ja:193:LEU:HD13	4:Ja:193:LEU:HA	1.91	0.43
4:Ja:595:LYS:HE2	4:Ja:595:LYS:HB2	1.84	0.43
4:Ja:817:PHE:CE1	4:Jb:781:PRO:HG2	2.54	0.43
4:Jb:494:ARG:HE	4:Jb:510:GLU:CD	2.21	0.43
4:Jb:577:ARG:HG2	4:Jb:578:GLU:N	2.34	0.43
4:Jc:369:TRP:O	4:Jc:480:GLU:HB2	2.18	0.43
5:Lc:25:GLU:OE1	5:Lc:106:ARG:NH2	2.39	0.43
5:La:40:ASN:OD1	7:Ma:25:PHE:HB3	2.18	0.43
6:Tk:78:TYR:HB3	6:Tk:80:ASP:OD1	2.19	0.43
1:Ha:844:ASP:C	1:Ha:844:ASP:OD1	2.61	0.43
4:Jb:529:ASN:N	4:Jb:530:PRO:HD3	2.34	0.43
4:Jc:393:LYS:HE3	5:Lc:159:ASP:HB3	2.01	0.43
7:Me:88:LYS:HE3	7:Me:88:LYS:HB3	1.76	0.43
8:Vc:36:TRP:CD1	8:Vc:36:TRP:N	2.87	0.43
2:Ib:188:VAL:CG1	5:La:164:PRO:HB2	2.49	0.43
4:Ja:141:ILE:O	4:Ja:143:ARG:NH2	2.30	0.43
4:Jb:56:GLU:OE1	4:Jb:56:GLU:N	2.51	0.43
4:Jb:199:TRP:HZ2	4:Jb:202:TYR:CD1	2.36	0.43
4:Jc:355:GLN:HB2	5:Lb:134:ARG:HG2	2.01	0.43
4:Jc:472:ARG:HA	4:Jc:472:ARG:NE	2.33	0.43
4:Jc:572:ARG:HD2	4:Jc:589:VAL:HG23	2.00	0.43
6:Td:65:ASP:OD1	6:Td:65:ASP:N	2.50	0.43
7:Ma:94:SER:O	7:Mf:10:PRO:HB3	2.19	0.43
4:Ja:406:PRO:HB3	4:Ja:410:TRP:CH2	2.54	0.43
4:Jc:433:MET:O	4:Jc:433:MET:HG3	2.19	0.43
4:Jc:481:ILE:HG13	4:Jc:570:LEU:O	2.19	0.43
4:Jc:727:PHE:CE1	4:Jc:781:PRO:HD3	2.53	0.43
6:Td:68:PRO:HD3	7:Mb:77:TYR:HD1	1.84	0.43
6:Tk:18:GLN:OE1	6:Tk:18:GLN:N	2.52	0.43
8:Vd:42:VAL:HG22	8:Vd:84:LEU:HD22	1.99	0.43
2:Ia:165:GLN:NE2	2:Ib:166:THR:OG1	2.51	0.43
1:Hb:843:ARG:NH1	5:Lb:76:ARG:HD2	2.34	0.43
4:Ja:810:ASP:N	4:Ja:810:ASP:OD1	2.51	0.43
4:Jb:50:THR:HG21	4:Jb:701:GLN:HG2	2.01	0.43
4:Jb:595:LYS:HE2	4:Jb:595:LYS:HB2	1.85	0.43
4:Jb:623:HIS:NE2	4:Jc:164:LEU:HD12	2.34	0.43
4:Jb:806:ARG:NH1	4:Jb:807:ALA:H	2.16	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Jc:646:VAL:HG22	4:Jc:650:VAL:HG11	2.00	0.43
6:Tb:62:LEU:HD23	6:Tb:62:LEU:HA	1.84	0.43
6:Tf:20:CYS:SG	6:Tf:21:THR:N	2.92	0.43
6:Th:62:LEU:HD23	6:Th:62:LEU:HA	1.78	0.43
8:Vb:7:THR:C	8:Vc:87:MET:HE1	2.44	0.43
8:Vd:36:TRP:CZ3	8:Vd:109:LYS:HG2	2.54	0.43
8:Ve:112:PHE:C	8:Ve:114:ASN:N	2.70	0.43
8:Vf:18:TRP:CE2	8:Vf:38:ARG:HG3	2.54	0.43
2:Ia:188:VAL:CG1	5:Lb:164:PRO:HB2	2.48	0.42
4:Ja:52:VAL:HG12	4:Ja:61:ILE:HG13	2.01	0.42
4:Ja:98:THR:O	4:Ja:98:THR:OG1	2.34	0.42
4:Ja:520:LEU:HD12	4:Ja:562:LYS:HE2	2.01	0.42
4:Jb:111:ARG:HG2	4:Jb:170:GLY:HA2	2.01	0.42
4:Jc:18:LEU:HD12	4:Jc:163:TYR:CG	2.54	0.42
4:Jc:227:PHE:CD2	4:Jc:232:VAL:HG11	2.54	0.42
4:Jc:693:ARG:HD2	4:Jc:701:GLN:HB3	2.01	0.42
2:Ib:160:ARG:HD3	2:Ib:160:ARG:HA	1.69	0.42
4:Ja:36:GLU:HB3	4:Ja:239:ARG:HB2	2.01	0.42
4:Ja:227:PHE:CD2	4:Ja:232:VAL:HG11	2.53	0.42
4:Ja:315:GLY:HA2	4:Ja:605:PHE:H	1.83	0.42
4:Ja:746:PHE:CE2	4:Ja:772:TRP:HB2	2.53	0.42
4:Jc:556:TYR:OH	7:Me:109:ASN:HB2	2.19	0.42
6:Tc:25:LYS:HZ1	6:Tc:36:ASN:HA	1.83	0.42
6:Tf:24:LEU:HB3	6:Tf:58:TYR:HD2	1.84	0.42
6:Th:44:ASP:OD1	6:Th:48:ARG:N	2.52	0.42
6:Tj:23:GLN:HB2	6:Tj:61:ILE:HB	2.00	0.42
6:Tj:35:VAL:HG22	6:Tj:36:ASN:OD1	2.20	0.42
7:Md:7:LYS:HD2	8:Vd:61:ASP:OD1	2.19	0.42
8:Va:3:VAL:HA	8:Va:4:PRO:HD3	1.90	0.42
8:Ve:89:GLY:O	8:Ve:94:GLN:NE2	2.52	0.42
8:Vf:18:TRP:HB2	8:Vf:109:LYS:HG3	1.99	0.42
3:Ic:151:VAL:O	3:Ic:154:MET:HG2	2.20	0.42
4:Ja:583:THR:HG21	7:Mf:21:ARG:NH1	2.34	0.42
4:Ja:594:GLU:OE2	4:Ja:594:GLU:N	2.52	0.42
4:Jb:116:PHE:CZ	4:Jb:153:ILE:HG21	2.54	0.42
4:Jb:125:THR:OG1	4:Jb:129:ASP:OD1	2.19	0.42
4:Jb:454:THR:HG23	4:Jb:458:GLU:OE2	2.19	0.42
4:Jb:719:ARG:HG2	4:Jb:734:HIS:HB2	2.01	0.42
4:Jc:572:ARG:HH11	4:Jc:572:ARG:HG2	1.83	0.42
8:Vd:124:VAL:HG12	8:Vd:140:VAL:HG12	2.00	0.42
3:Ic:190:PRO:O	4:Ja:31:SER:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:175:ARG:NE	4:Ja:176:PRO:O	2.53	0.42
4:Ja:479:ILE:HD12	4:Ja:572:ARG:O	2.20	0.42
4:Jb:539:THR:O	4:Jb:539:THR:OG1	2.34	0.42
4:Jb:780:LYS:HB3	4:Jb:780:LYS:HE3	1.86	0.42
4:Jc:494:ARG:NH1	7:Md:27:ASP:OD2	2.51	0.42
5:Lc:163:PHE:HB3	5:Lc:164:PRO:HD3	2.00	0.42
7:Ma:108:VAL:CG1	7:Mf:28:GLY:HA3	2.48	0.42
7:Ma:109:ASN:ND2	7:Ma:109:ASN:H	2.18	0.42
8:Vd:56:ASP:OD1	8:Vd:57:ASP:N	2.53	0.42
8:Ve:21:LYS:HD3	8:Ve:35:ASP:O	2.19	0.42
3:Ic:219:VAL:HG21	4:Ja:152:ASP:O	2.20	0.42
4:Ja:26:VAL:HG21	4:Ja:234:ARG:NH2	2.35	0.42
4:Ja:372:ASN:HA	4:Ja:483:ASP:O	2.19	0.42
4:Ja:387:TYR:CD1	4:Ja:462:VAL:HB	2.55	0.42
4:Jb:109:ILE:HD12	4:Jb:171:ASN:ND2	2.35	0.42
4:Jb:203:THR:HG22	4:Jb:205:ILE:HG23	2.01	0.42
4:Jb:536:GLN:NE2	4:Jb:546:VAL:O	2.51	0.42
4:Jc:322:ARG:NH2	4:Jc:601:ASN:HD21	2.18	0.42
4:Jc:508:ASP:HB2	4:Jc:543:LYS:NZ	2.34	0.42
6:Ti:44:ASP:OD1	6:Ti:48:ARG:N	2.50	0.42
4:Ja:556:TYR:OH	7:Ma:109:ASN:HB2	2.19	0.42
4:Jc:137:LEU:O	4:Jc:138:LEU:HD23	2.20	0.42
4:Jc:227:PHE:HA	4:Jc:672:ARG:NH1	2.34	0.42
6:Ti:5:ILE:HD13	6:Ti:5:ILE:HA	1.82	0.42
8:Ve:17:LEU:HD12	8:Ve:18:TRP:N	2.34	0.42
2:Ib:198:VAL:HG21	4:Jb:328:TYR:CD2	2.54	0.42
2:Ib:207:ILE:HD13	4:Ja:648:LYS:O	2.20	0.42
4:Ja:272:MET:SD	4:Ja:325:CYS:HB2	2.60	0.42
4:Jb:572:ARG:HG2	4:Jb:572:ARG:HH11	1.84	0.42
4:Jb:781:PRO:HA	4:Jb:806:ARG:HH12	1.85	0.42
4:Jc:254:ARG:NH2	4:Jc:270:ASN:OD1	2.53	0.42
4:Jc:367:LYS:HE3	4:Jc:367:LYS:HB3	1.83	0.42
4:Jc:577:ARG:HH21	5:Lb:68:LEU:HG	1.85	0.42
5:La:177:TYR:CD2	5:La:205:CYS:HB2	2.54	0.42
6:Ta:24:LEU:O	6:Ta:38:VAL:HA	2.20	0.42
6:Tb:27:ARG:NH1	6:Tb:74:THR:OG1	2.53	0.42
6:Tf:68:PRO:HD3	7:Mc:77:TYR:CD1	2.54	0.42
6:Tg:65:ASP:OD1	6:Tg:65:ASP:O	2.38	0.42
7:Md:10:PRO:HA	8:Vd:60:LEU:HD11	2.01	0.42
7:Me:22:LYS:HD3	7:Me:22:LYS:HA	1.86	0.42
2:Ia:147:VAL:HG22	2:Ia:154:MET:HE1	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:578:GLU:HG2	5:Lc:67:GLU:OE1	2.19	0.42
4:Ja:714:PRO:O	4:Ja:798:SER:HB3	2.20	0.42
4:Jc:647:VAL:HG12	4:Jc:648:LYS:HG2	2.02	0.42
6:Tc:9:LEU:HD11	6:Tc:20:CYS:SG	2.60	0.42
6:Th:41:GLU:C	6:Th:41:GLU:OE1	2.63	0.42
8:Va:33:ASP:OD1	8:Va:33:ASP:N	2.53	0.42
8:Vb:6:PRO:O	8:Vb:7:THR:OG1	2.31	0.42
1:Ha:841:GLN:NE2	1:Ha:847:LEU:HD22	2.35	0.42
3:Ic:165:GLN:N	3:Ic:165:GLN:OE1	2.53	0.42
4:Ja:576:ILE:HG23	5:Lc:69:ASN:OD1	2.20	0.42
4:Jb:381:ASP:OD1	4:Jb:381:ASP:N	2.36	0.42
4:Jc:529:ASN:N	4:Jc:530:PRO:HD3	2.35	0.42
7:Mb:7:LYS:HB2	7:Mb:7:LYS:HE2	1.78	0.42
8:Vb:126:SER:HB3	8:Vb:139:LYS:HB3	2.01	0.42
8:Vf:129:LYS:HE2	8:Vf:129:LYS:HB3	1.73	0.42
4:Ja:115:THR:HG22	4:Ja:166:SER:HB3	2.02	0.41
4:Ja:529:ASN:N	4:Ja:530:PRO:HD3	2.35	0.41
4:Ja:698:TRP:CZ3	5:La:232:GLN:HA	2.55	0.41
4:Jb:830:GLU:H	4:Jb:830:GLU:CD	2.28	0.41
6:Tb:55:TYR:HA	6:Tb:77:VAL:HG13	2.01	0.41
6:Td:62:LEU:HD12	6:Te:34:VAL:HG11	2.02	0.41
6:Te:20:CYS:SG	6:Te:21:THR:N	2.93	0.41
6:Ti:23:GLN:C	6:Ti:24:LEU:HD12	2.44	0.41
4:Ja:213:PRO:HG2	5:Lc:175:TRP:CZ2	2.56	0.41
4:Jb:109:ILE:HD12	4:Jb:171:ASN:HD21	1.86	0.41
4:Jb:495:VAL:HA	4:Jb:559:TRP:HA	2.01	0.41
4:Jc:104:ILE:O	4:Jc:176:PRO:HB3	2.19	0.41
4:Jc:784:ASP:OD1	4:Jc:806:ARG:NH1	2.50	0.41
6:Ta:65:ASP:N	6:Ta:65:ASP:OD1	2.51	0.41
7:Md:54:GLU:N	7:Md:54:GLU:OE2	2.53	0.41
7:Md:91:SER:HB3	7:Md:100:PHE:CE1	2.56	0.41
7:Mf:22:LYS:HB3	7:Mf:22:LYS:HE3	1.77	0.41
8:Ve:3:VAL:HA	8:Ve:4:PRO:HD3	1.88	0.41
1:Ha:827:TYR:HB2	1:Hb:829:MET:HE2	2.01	0.41
4:Ja:475:PRO:HG3	5:Lc:1:MET:CA	2.49	0.41
4:Jc:819:LYS:HA	4:Jc:819:LYS:HD3	1.80	0.41
5:Lc:38:PHE:HE1	5:Lc:57:GLN:HE21	1.68	0.41
6:Te:44:ASP:OD1	6:Te:48:ARG:N	2.51	0.41
6:Tl:23:GLN:HB2	6:Tl:61:ILE:HB	2.02	0.41
7:Mf:62:LEU:HD23	7:Mf:62:LEU:HA	1.89	0.41
8:Vc:7:THR:C	8:Vc:8:MET:HE2	2.46	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:Vf:41:LYS:HA	8:Vf:41:LYS:HD2	1.70	0.41
1:Ha:847:LEU:HD12	1:Hc:842:MET:HE1	2.03	0.41
4:Ja:369:TRP:HD1	4:Ja:371:TYR:CE1	2.39	0.41
4:Ja:823:THR:H	4:Ja:826:HIS:HE1	1.68	0.41
4:Jb:739:ASP:N	4:Jb:739:ASP:OD1	2.52	0.41
4:Jc:89:VAL:HB	4:Jc:201:SER:HB3	2.03	0.41
4:Jc:478:VAL:H	4:Jc:574:VAL:CG1	2.33	0.41
4:Jc:605:PHE:O	4:Jc:607:GLY:N	2.53	0.41
6:Td:61:ILE:HD11	6:Td:69:PRO:CB	2.50	0.41
7:Mc:23:VAL:HG13	7:Mc:25:PHE:HZ	1.85	0.41
2:Ib:176:PHE:HB3	4:Jb:327:ALA:HA	2.02	0.41
4:Ja:115:THR:OG1	4:Ja:201:SER:O	2.21	0.41
4:Ja:308:CYS:SG	4:Ja:323:ILE:HD11	2.60	0.41
4:Jb:92:THR:HG23	4:Jb:199:TRP:HB3	2.02	0.41
4:Jb:276:LEU:HD22	4:Jb:346:MET:HE1	2.01	0.41
6:Tc:61:ILE:HG23	6:Tc:69:PRO:HB3	2.01	0.41
6:Td:67:PHE:CD2	6:Td:68:PRO:HD2	2.55	0.41
6:Te:67:PHE:HE1	7:Mc:5:ARG:HG3	1.84	0.41
6:Tf:68:PRO:HD3	7:Mc:77:TYR:HD1	1.86	0.41
8:Vb:16:THR:OG1	8:Vb:18:TRP:NE1	2.51	0.41
4:Ja:495:VAL:O	4:Ja:509:ARG:HG2	2.20	0.41
4:Jb:453:LYS:HE2	4:Jb:599:VAL:HG11	2.03	0.41
6:Tb:12:GLY:HA3	6:Tc:58:TYR:HE2	1.86	0.41
7:Md:84:VAL:HG23	7:Md:105:GLU:O	2.20	0.41
7:Md:88:LYS:HE3	7:Md:88:LYS:HB3	1.78	0.41
7:Me:9:LYS:HD2	7:Me:49:SER:HB3	2.01	0.41
8:Va:43:LYS:N	8:Va:83:THR:O	2.48	0.41
8:Vc:66:ASP:OD2	8:Vd:75:LYS:NZ	2.52	0.41
8:Vd:91:GLN:OE1	8:Vd:91:GLN:HA	2.20	0.41
8:Ve:46:THR:O	8:Ve:46:THR:OG1	2.39	0.41
1:Ha:830:ALA:HB1	1:Hb:830:ALA:HA	2.03	0.41
3:Ic:221:ILE:HD12	4:Ja:154:THR:O	2.21	0.41
4:Ja:138:LEU:HG	4:Ja:184:MET:SD	2.60	0.41
4:Ja:276:LEU:O	4:Ja:276:LEU:HD12	2.20	0.41
4:Ja:819:LYS:HE2	4:Ja:819:LYS:HB2	1.89	0.41
4:Ja:830:GLU:HA	4:Ja:833:GLU:HG3	2.01	0.41
4:Jb:756:ILE:O	4:Jb:759:VAL:HG13	2.21	0.41
4:Jc:495:VAL:HB	4:Jc:509:ARG:CZ	2.51	0.41
4:Jc:595:LYS:HE2	4:Jc:595:LYS:HB2	1.85	0.41
5:Lc:190:ALA:HB3	5:Lc:215:ARG:NH2	2.36	0.41
5:La:199:ASP:OD2	5:La:201:THR:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Tf:49:TYR:OH	6:Tf:85:THR:OG1	2.33	0.41
6:Th:5:ILE:HG22	6:Th:49:TYR:HE2	1.86	0.41
8:Vc:83:THR:HG22	8:Vc:137:THR:HB	2.02	0.41
8:Vd:6:PRO:O	8:Vd:7:THR:OG1	2.31	0.41
8:Ve:109:LYS:HG3	8:Ve:117:VAL:HG23	2.01	0.41
8:Vf:5:ASN:OD1	8:Vf:5:ASN:C	2.62	0.41
2:Ia:180:ASP:OD1	2:Ia:180:ASP:C	2.64	0.41
2:Ib:211:ASP:O	4:Jb:12:ARG:NH1	2.53	0.41
1:Hc:818:ILE:HG13	1:Hc:821:ALA:HB3	2.02	0.41
3:Ic:207:ILE:HD12	4:Jc:646:VAL:HG11	2.03	0.41
4:Ja:211:CYS:SG	4:Ja:212:TYR:N	2.93	0.41
4:Jb:122:VAL:HG23	4:Jb:194:GLN:NE2	2.36	0.41
4:Jb:246:PRO:HG2	4:Jb:249:TYR:HB2	2.03	0.41
4:Jb:476:GLY:O	4:Jb:478:VAL:HG13	2.20	0.41
4:Jc:181:MET:SD	4:Jc:199:TRP:CD1	3.14	0.41
4:Jc:249:TYR:HD1	4:Jc:256:TYR:CE2	2.39	0.41
4:Jc:477:ASP:H	4:Jc:574:VAL:HG13	1.85	0.41
4:Jc:696:ASN:HD21	4:Jc:700:GLN:HB3	1.86	0.41
5:Lc:24:TRP:CD1	5:Lc:61:ILE:HG21	2.56	0.41
7:Ma:14:VAL:HG12	7:Ma:14:VAL:O	2.21	0.41
8:Va:33:ASP:OD1	8:Va:111:ARG:NH2	2.45	0.41
2:Ia:197:ARG:HA	4:Jc:236:TYR:O	2.21	0.41
4:Ja:164:LEU:HD12	4:Jc:623:HIS:CE1	2.56	0.41
4:Ja:471:LEU:HD13	4:Ja:585:ALA:CB	2.49	0.41
4:Ja:813:GLY:HA3	4:Jb:777:ILE:HD11	2.03	0.41
4:Jb:369:TRP:O	4:Jb:480:GLU:HB2	2.21	0.41
4:Jb:472:ARG:HD2	5:La:107:LYS:HE3	2.02	0.41
4:Jc:14:ALA:H	4:Jc:15:LYS:HZ3	1.68	0.41
4:Jc:54:ASP:OD2	4:Jc:54:ASP:N	2.39	0.41
4:Jc:418:GLU:OE1	4:Jc:428:ARG:NH2	2.53	0.41
4:Jc:541:GLY:C	4:Jc:543:LYS:N	2.79	0.41
4:Jc:758:GLN:OE1	4:Jc:762:SER:OG	2.39	0.41
5:Lb:11:GLU:HG2	5:Lb:14:ARG:HH21	1.86	0.41
5:La:11:GLU:HG3	5:La:111:ARG:HD3	2.02	0.41
5:La:156:THR:O	5:La:156:THR:OG1	2.36	0.41
6:Ta:88:ASP:HA	6:Ta:91:CYS:SG	2.60	0.41
6:Tc:71:HIS:CE1	8:Va:63:GLU:HB2	2.56	0.41
7:Me:32:ARG:NH1	7:Mf:85:THR:HG21	2.35	0.41
8:Vc:43:LYS:H	8:Vc:84:LEU:HA	1.86	0.41
2:Ia:151:VAL:HG13	4:Jc:455:GLU:HG2	2.03	0.41
1:Hc:823:LEU:HD13	1:Hc:823:LEU:HA	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Ja:50:THR:HG21	4:Ja:701:GLN:HG2	2.03	0.41
4:Jb:636:GLN:OE1	4:Jb:636:GLN:HA	2.19	0.41
4:Jc:26:VAL:HG13	4:Jc:220:VAL:HG13	2.02	0.41
4:Jc:200:SER:OG	4:Jc:201:SER:N	2.53	0.41
5:La:163:PHE:HB3	5:La:164:PRO:HD3	2.02	0.41
7:Ma:70:SER:HA	7:Ma:85:THR:HG22	2.02	0.41
7:Mf:54:GLU:H	7:Mf:54:GLU:CD	2.29	0.41
8:Vf:97:LEU:HD12	8:Vf:97:LEU:HA	1.85	0.41
4:Ja:195:ASN:OD1	4:Ja:195:ASN:N	2.54	0.40
4:Ja:247:SER:HG	4:Ja:263:THR:HG1	1.69	0.40
4:Ja:823:THR:H	4:Ja:826:HIS:CE1	2.39	0.40
5:Lb:24:TRP:CD1	5:Lb:61:ILE:HG21	2.56	0.40
6:Tb:86:LEU:O	6:Tb:90:LEU:HD12	2.21	0.40
6:Tg:8:VAL:HG22	6:Tg:48:ARG:HG3	2.03	0.40
6:Tj:87:ASN:ND2	6:Tk:30:SER:O	2.54	0.40
8:Vb:91:GLN:HA	8:Vb:91:GLN:OE1	2.21	0.40
8:Vc:43:LYS:N	8:Vc:83:THR:O	2.52	0.40
8:Ve:110:ILE:HG13	8:Ve:118:ASP:HB3	2.03	0.40
1:Ha:831:ARG:NH2	1:Hb:836:ASP:HB3	2.36	0.40
2:Ia:153:GLN:C	2:Ia:153:GLN:OE1	2.64	0.40
4:Ja:32:GLU:OE2	5:Lc:166:ARG:HD3	2.22	0.40
4:Ja:111:ARG:HB2	4:Ja:205:ILE:CD1	2.51	0.40
4:Ja:525:ASP:OD2	4:Ja:525:ASP:C	2.64	0.40
4:Ja:834:LYS:HA	4:Ja:834:LYS:HE2	2.04	0.40
4:Jb:360:VAL:HG11	4:Jb:477:ASP:CB	2.50	0.40
4:Jb:601:ASN:OD1	4:Jb:602:GLY:N	2.54	0.40
4:Jb:649:GLY:O	4:Jb:696:ASN:HA	2.20	0.40
4:Jc:16:ASP:O	4:Jc:17:ASN:HB3	2.20	0.40
4:Jc:582:GLY:HA3	4:Jc:584:TYR:CE1	2.56	0.40
6:Tj:11:ASP:OD1	6:Tj:15:LYS:N	2.38	0.40
6:Tk:11:ASP:OD1	6:Tk:13:THR:OG1	2.34	0.40
7:Me:13:ASP:OD1	7:Me:14:VAL:N	2.54	0.40
7:Me:25:PHE:HE1	7:Me:31:GLN:H	1.68	0.40
8:Vc:6:PRO:O	8:Vc:7:THR:OG1	2.32	0.40
8:Vf:3:VAL:HA	8:Vf:4:PRO:HD3	1.88	0.40
1:Hb:837:GLU:HA	1:Hb:840:THR:HG22	2.02	0.40
4:Ja:472:ARG:HH12	4:Ja:579:ASN:ND2	2.08	0.40
4:Ja:650:VAL:HA	4:Ja:695:VAL:O	2.21	0.40
4:Jb:320:GLU:HG3	4:Jb:321:PRO:O	2.21	0.40
4:Jc:259:ILE:HD13	4:Jc:259:ILE:HA	1.87	0.40
4:Jc:393:LYS:HB2	4:Jc:393:LYS:HE2	1.77	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Jc:669:SER:OG	4:Jc:670:THR:N	2.53	0.40
5:La:24:TRP:CD1	5:La:61:ILE:HG21	2.56	0.40
6:Tc:61:ILE:HD13	6:Tc:69:PRO:HB3	2.02	0.40
6:Tg:29:ASN:OD1	6:Tg:35:VAL:N	2.54	0.40
6:Tj:9:LEU:HD11	6:Tj:17:VAL:HB	2.02	0.40
7:Mf:8:VAL:HG13	7:Mf:46:VAL:HG23	2.02	0.40
4:Ja:463:ASP:OD2	4:Ja:464:PHE:N	2.54	0.40
4:Ja:818:PHE:O	4:Jc:826:HIS:HA	2.22	0.40
4:Jb:397:ASN:O	4:Jb:418:GLU:HA	2.22	0.40
4:Jb:423:ILE:HD13	4:Jb:423:ILE:HA	1.91	0.40
4:Jb:747:TRP:HB2	4:Jb:788:TYR:HB2	2.03	0.40
5:Lc:19:ALA:HB2	7:Mf:34:PRO:HG2	2.04	0.40
5:Lb:173:CYS:SG	5:Lb:174:THR:N	2.94	0.40
6:Td:15:LYS:HE2	6:Td:15:LYS:HB3	1.94	0.40
7:Mb:51:PRO:HG2	7:Mb:54:GLU:OE2	2.21	0.40
8:Va:36:TRP:CE3	8:Va:109:LYS:HE2	2.56	0.40
8:Vc:41:LYS:HD2	8:Vc:41:LYS:HA	1.77	0.40
4:Ja:137:LEU:C	4:Ja:138:LEU:HD23	2.47	0.40
4:Jc:326:ASN:O	4:Jc:437:GLY:HA2	2.22	0.40
5:Lb:40:ASN:OD1	7:Mc:25:PHE:HB3	2.21	0.40
6:Tb:82:GLN:N	6:Tb:82:GLN:OE1	2.54	0.40
6:Tk:30:SER:OG	6:Tk:33:VAL:HB	2.21	0.40
7:Ma:9:LYS:HG3	7:Ma:10:PRO:HD2	2.03	0.40
8:Ve:134:ILE:H	8:Ve:134:ILE:HG12	1.71	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	Ha	30/32 (94%)	28 (93%)	2 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Hb	30/32 (94%)	25 (83%)	5 (17%)	0	100	100
1	Hc	30/32 (94%)	27 (90%)	3 (10%)	0	100	100
2	Ia	87/90 (97%)	75 (86%)	11 (13%)	1 (1%)	12	37
2	Ib	88/90 (98%)	77 (88%)	11 (12%)	0	100	100
3	Ic	88/90 (98%)	78 (89%)	10 (11%)	0	100	100
4	Ja	833/835 (100%)	744 (89%)	85 (10%)	4 (0%)	25	54
4	Jb	833/835 (100%)	751 (90%)	81 (10%)	1 (0%)	48	77
4	Jc	833/835 (100%)	759 (91%)	70 (8%)	4 (0%)	25	54
5	La	230/232 (99%)	215 (94%)	15 (6%)	0	100	100
5	Lb	230/232 (99%)	214 (93%)	15 (6%)	1 (0%)	30	60
5	Lc	230/232 (99%)	209 (91%)	20 (9%)	1 (0%)	30	60
6	Ta	92/94 (98%)	91 (99%)	1 (1%)	0	100	100
6	Tb	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
6	Tc	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
6	Td	92/94 (98%)	85 (92%)	7 (8%)	0	100	100
6	Te	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
6	Tf	92/94 (98%)	81 (88%)	11 (12%)	0	100	100
6	Tg	92/94 (98%)	91 (99%)	1 (1%)	0	100	100
6	Th	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
6	Ti	92/94 (98%)	84 (91%)	8 (9%)	0	100	100
6	Tj	92/94 (98%)	92 (100%)	0	0	100	100
6	Tk	92/94 (98%)	83 (90%)	9 (10%)	0	100	100
6	Tl	92/94 (98%)	83 (90%)	9 (10%)	0	100	100
7	Ma	107/109 (98%)	95 (89%)	11 (10%)	1 (1%)	14	41
7	Mb	107/109 (98%)	100 (94%)	7 (6%)	0	100	100
7	Mc	107/109 (98%)	97 (91%)	10 (9%)	0	100	100
7	Md	107/109 (98%)	97 (91%)	10 (9%)	0	100	100
7	Me	107/109 (98%)	97 (91%)	10 (9%)	0	100	100
7	Mf	107/109 (98%)	101 (94%)	6 (6%)	0	100	100
8	Va	150/152 (99%)	137 (91%)	12 (8%)	1 (1%)	19	47
8	Vb	150/152 (99%)	140 (93%)	9 (6%)	1 (1%)	19	47

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	Vc	150/152 (99%)	140 (93%)	9 (6%)	1 (1%)	19	47
8	Vd	150/152 (99%)	141 (94%)	8 (5%)	1 (1%)	19	47
8	Ve	150/152 (99%)	140 (93%)	9 (6%)	1 (1%)	19	47
8	Vf	150/152 (99%)	141 (94%)	9 (6%)	0	100	100
All	All	6188/6261 (99%)	5670 (92%)	500 (8%)	18 (0%)	38	66

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	Jc	542	VAL
4	Jc	616	VAL
4	Ja	613	VAL
4	Jb	613	VAL
4	Jc	606	ASP
4	Jc	613	VAL
2	Ia	185	GLN
4	Ja	608	GLU
5	Lc	227	ILE
5	Lb	168	MET
7	Ma	78	GLU
8	Vc	133	VAL
8	Ve	133	VAL
8	Vd	133	VAL
4	Ja	822	ILE
8	Va	133	VAL
8	Vb	133	VAL
4	Ja	379	PRO

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	Ha	22/23 (96%)	22 (100%)	0	100	100
1	Hb	23/23 (100%)	22 (96%)	1 (4%)	25	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Hc	23/23 (100%)	21 (91%)	2 (9%)	8	28
2	Ia	69/70 (99%)	62 (90%)	7 (10%)	6	22
2	Ib	68/70 (97%)	63 (93%)	5 (7%)	11	36
3	Ic	70/70 (100%)	67 (96%)	3 (4%)	25	51
4	Ja	709/711 (100%)	681 (96%)	28 (4%)	27	54
4	Jb	709/711 (100%)	683 (96%)	26 (4%)	29	55
4	Jc	707/711 (99%)	687 (97%)	20 (3%)	38	63
5	La	195/198 (98%)	187 (96%)	8 (4%)	26	52
5	Lb	194/198 (98%)	192 (99%)	2 (1%)	73	84
5	Lc	194/198 (98%)	192 (99%)	2 (1%)	73	84
6	Ta	80/80 (100%)	75 (94%)	5 (6%)	15	40
6	Tb	80/80 (100%)	77 (96%)	3 (4%)	28	54
6	Tc	80/80 (100%)	74 (92%)	6 (8%)	11	35
6	Td	80/80 (100%)	79 (99%)	1 (1%)	65	79
6	Te	80/80 (100%)	76 (95%)	4 (5%)	20	47
6	Tf	80/80 (100%)	72 (90%)	8 (10%)	6	23
6	Tg	80/80 (100%)	76 (95%)	4 (5%)	20	47
6	Th	80/80 (100%)	77 (96%)	3 (4%)	28	54
6	Ti	80/80 (100%)	74 (92%)	6 (8%)	11	35
6	Tj	80/80 (100%)	73 (91%)	7 (9%)	8	28
6	Tk	80/80 (100%)	76 (95%)	4 (5%)	20	47
6	Tl	80/80 (100%)	76 (95%)	4 (5%)	20	47
7	Ma	96/96 (100%)	92 (96%)	4 (4%)	25	51
7	Mb	94/96 (98%)	91 (97%)	3 (3%)	34	60
7	Mc	96/96 (100%)	93 (97%)	3 (3%)	35	61
7	Md	96/96 (100%)	93 (97%)	3 (3%)	35	61
7	Me	96/96 (100%)	93 (97%)	3 (3%)	35	61
7	Mf	95/96 (99%)	90 (95%)	5 (5%)	19	45
8	Va	124/124 (100%)	114 (92%)	10 (8%)	9	31
8	Vb	124/124 (100%)	116 (94%)	8 (6%)	14	40
8	Vc	124/124 (100%)	118 (95%)	6 (5%)	21	48

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	Vd	124/124 (100%)	120 (97%)	4 (3%)	34	60
8	Ve	124/124 (100%)	117 (94%)	7 (6%)	17	44
8	Vf	124/124 (100%)	115 (93%)	9 (7%)	11	36
All	All	5260/5286 (100%)	5036 (96%)	224 (4%)	27	51

All (224) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	Ia	174	THR
2	Ia	175	TYR
2	Ia	192	LEU
2	Ia	203	VAL
2	Ia	207	ILE
2	Ia	212	GLU
2	Ia	221	ILE
1	Hb	848	PHE
2	Ib	136	THR
2	Ib	168	ASP
2	Ib	174	THR
2	Ib	176	PHE
2	Ib	208	SER
1	Hc	823	LEU
1	Hc	847	LEU
3	Ic	140	PHE
3	Ic	161	THR
3	Ic	221	ILE
4	Ja	6	SER
4	Ja	18	LEU
4	Ja	49	SER
4	Ja	81	PHE
4	Ja	88	THR
4	Ja	94	VAL
4	Ja	153	ILE
4	Ja	154	THR
4	Ja	159	THR
4	Ja	217	LEU
4	Ja	220	VAL
4	Ja	312	VAL
4	Ja	331	THR
4	Ja	333	ARG
4	Ja	360	VAL

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Mol	Chain	Res	Type
4	Ja	377	VAL
4	Ja	438	CYS
4	Ja	462	VAL
4	Ja	518	THR
4	Ja	529	ASN
4	Ja	549	VAL
4	Ja	612	THR
4	Ja	624	LEU
4	Ja	634	GLU
4	Ja	646	VAL
4	Ja	668	VAL
4	Ja	710	ARG
4	Ja	761	THR
4	Jb	49	SER
4	Jb	81	PHE
4	Jb	88	THR
4	Jb	94	VAL
4	Jb	139	VAL
4	Jb	153	ILE
4	Jb	160	THR
4	Jb	245	VAL
4	Jb	312	VAL
4	Jb	340	SER
4	Jb	353	ASN
4	Jb	377	VAL
4	Jb	454	THR
4	Jb	462	VAL
4	Jb	481	ILE
4	Jb	508	ASP
4	Jb	518	THR
4	Jb	529	ASN
4	Jb	531	VAL
4	Jb	549	VAL
4	Jb	584	TYR
4	Jb	587	THR
4	Jb	591	HIS
4	Jb	668	VAL
4	Jb	687	ASN
4	Jb	779	ILE
4	Jc	17	ASN
4	Jc	26	VAL
4	Jc	49	SER

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Mol	Chain	Res	Type
4	Jc	81	PHE
4	Jc	88	THR
4	Jc	94	VAL
4	Jc	148	VAL
4	Jc	217	LEU
4	Jc	245	VAL
4	Jc	312	VAL
4	Jc	331	THR
4	Jc	377	VAL
4	Jc	423	ILE
4	Jc	454	THR
4	Jc	462	VAL
4	Jc	466	VAL
4	Jc	477	ASP
4	Jc	542	VAL
4	Jc	621	VAL
4	Jc	629	THR
5	Lc	143	LEU
5	Lc	230	LEU
5	Lb	73	THR
5	Lb	180	ASP
5	La	4	ILE
5	La	73	THR
5	La	81	VAL
5	La	82	SER
5	La	167	ILE
5	La	169	LEU
5	La	180	ASP
5	La	208	CYS
6	Ta	32	THR
6	Ta	37	THR
6	Ta	65	ASP
6	Ta	70	SER
6	Ta	76	THR
6	Tb	52	ASP
6	Tb	77	VAL
6	Tb	81	SER
6	Tc	31	THR
6	Tc	42	ASN
6	Tc	52	ASP
6	Tc	61	ILE
6	Tc	76	THR

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Mol	Chain	Res	Type
6	Tc	86	LEU
6	Td	17	VAL
6	Te	3	VAL
6	Te	42	ASN
6	Te	65	ASP
6	Te	86	LEU
6	Tf	40	SER
6	Tf	42	ASN
6	Tf	52	ASP
6	Tf	67	PHE
6	Tf	70	SER
6	Tf	74	THR
6	Tf	76	THR
6	Tf	81	SER
6	Tg	57	GLN
6	Tg	70	SER
6	Tg	79	GLU
6	Tg	87	ASN
6	Tl	17	VAL
6	Tl	67	PHE
6	Tl	76	THR
6	Tl	85	THR
6	Th	19	ASN
6	Th	42	ASN
6	Th	80	ASP
6	Ti	31	THR
6	Ti	42	ASN
6	Ti	61	ILE
6	Ti	76	THR
6	Ti	78	TYR
6	Ti	85	THR
6	Tj	1	MET
6	Tj	9	LEU
6	Tj	32	THR
6	Tj	40	SER
6	Tj	52	ASP
6	Tj	70	SER
6	Tj	76	THR
6	Tk	52	ASP
6	Tk	67	PHE
6	Tk	71	HIS
6	Tk	76	THR

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Mol	Chain	Res	Type
7	Ma	12	MET
7	Ma	24	ARG
7	Ma	40	ASN
7	Ma	103	GLU
7	Mb	12	MET
7	Mb	23	VAL
7	Mb	99	GLU
7	Mc	90	SER
7	Mc	98	VAL
7	Mc	103	GLU
7	Md	74	THR
7	Md	90	SER
7	Md	91	SER
7	Me	7	LYS
7	Me	80	ARG
7	Me	86	CYS
7	Mf	23	VAL
7	Mf	48	LEU
7	Mf	58	LEU
7	Mf	60	SER
7	Mf	91	SER
8	Va	33	ASP
8	Va	34	VAL
8	Va	36	TRP
8	Va	42	VAL
8	Va	51	THR
8	Va	70	THR
8	Va	114	ASN
8	Va	135	THR
8	Va	138	VAL
8	Va	140	VAL
8	Vb	3	VAL
8	Vb	19	VAL
8	Vb	60	LEU
8	Vb	96	LEU
8	Vb	114	ASN
8	Vb	124	VAL
8	Vb	143	VAL
8	Vb	154	THR
8	Vc	25	ASP
8	Vc	70	THR
8	Vc	125	SER

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Mol	Chain	Res	Type
8	Vc	139	LYS
8	Vc	140	VAL
8	Vc	147	SER
8	Vd	3	VAL
8	Vd	96	LEU
8	Vd	124	VAL
8	Vd	142	ASN
8	Ve	33	ASP
8	Ve	37	SER
8	Ve	46	THR
8	Ve	84	LEU
8	Ve	116	THR
8	Ve	124	VAL
8	Ve	135	THR
8	Vf	3	VAL
8	Vf	10	VAL
8	Vf	33	ASP
8	Vf	58	SER
8	Vf	80	THR
8	Vf	93	GLN
8	Vf	96	LEU
8	Vf	124	VAL
8	Vf	154	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (44) such sidechains are listed below:

Mol	Chain	Res	Type
2	Ia	173	ASN
2	Ia	205	GLN
2	Ib	217	GLN
3	Ic	172	GLN
4	Ja	178	ASN
4	Ja	221	GLN
4	Ja	248	ASN
4	Ja	326	ASN
4	Ja	353	ASN
4	Ja	355	GLN
4	Ja	579	ASN
4	Ja	590	GLN
4	Ja	604	HIS
4	Ja	623	HIS
4	Jb	119	GLN

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Mol	Chain	Res	Type
4	Jb	140	GLN
4	Jb	178	ASN
4	Jb	194	GLN
4	Jb	353	ASN
4	Jb	529	ASN
4	Jc	140	GLN
4	Jc	214	ASN
4	Jc	375	ASN
4	Jc	408	ASN
4	Jc	601	ASN
4	Jc	604	HIS
5	Lc	6	GLN
5	Lc	129	GLN
5	Lc	171	ASN
5	Lb	17	GLN
6	Ta	63	GLN
6	Tc	23	GLN
6	Tc	63	GLN
6	Td	19	ASN
6	Tf	23	GLN
6	Tl	19	ASN
6	Ti	23	GLN
6	Tk	19	ASN
6	Tk	42	ASN
7	Mb	81	GLN
7	Me	109	ASN
8	Vd	94	GLN
8	Vf	29	ASN
8	Vf	114	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

3 ligands are modelled in this entry.

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	$\#\|Z\| > 2$
9	SF4	Lb	301	5	0,12,12	-	-	-		
9	SF4	La	301	5	0,12,12	-	-	-		
9	SF4	Lc	301	5	0,12,12	-	-	-		

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
9	SF4	Lb	301	5	-	-	0/6/5/5
9	SF4	La	301	5	-	-	0/6/5/5
9	SF4	Lc	301	5	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

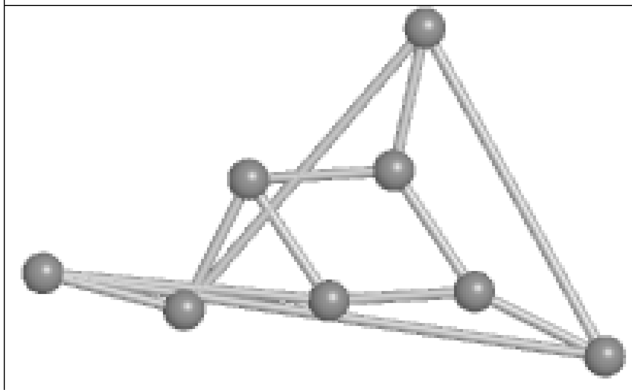
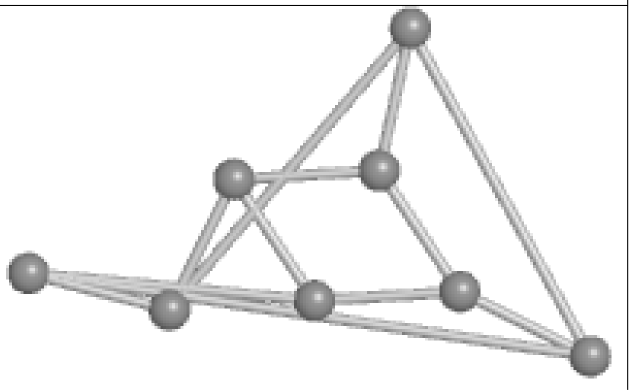
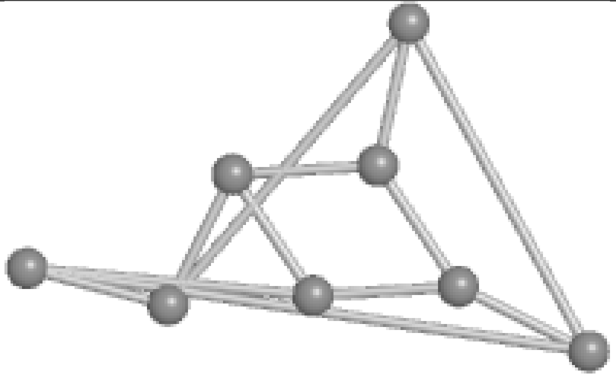
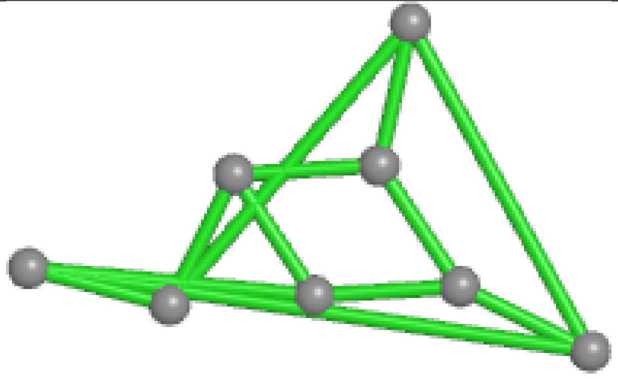
There are no chirality outliers.

There are no torsion outliers.

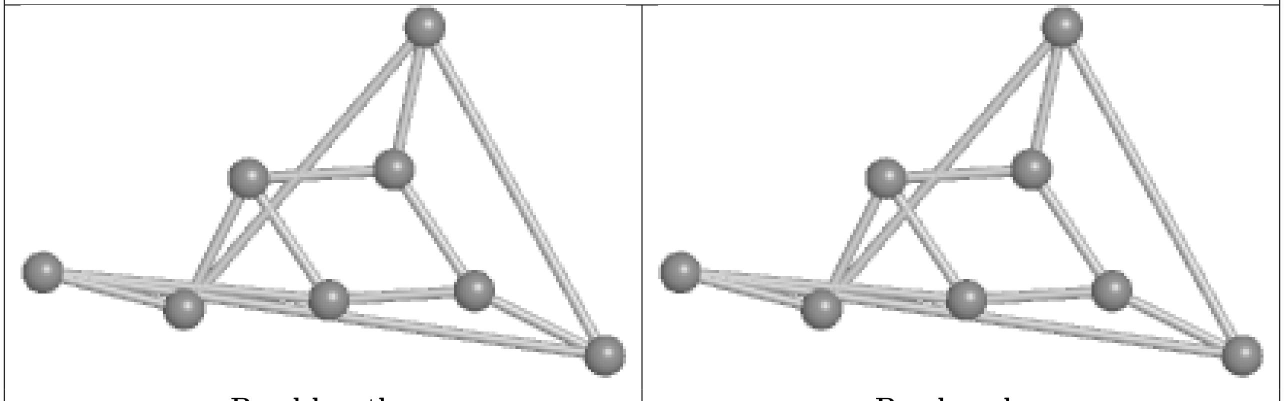
There are no ring outliers.

No monomer is involved in short contacts.

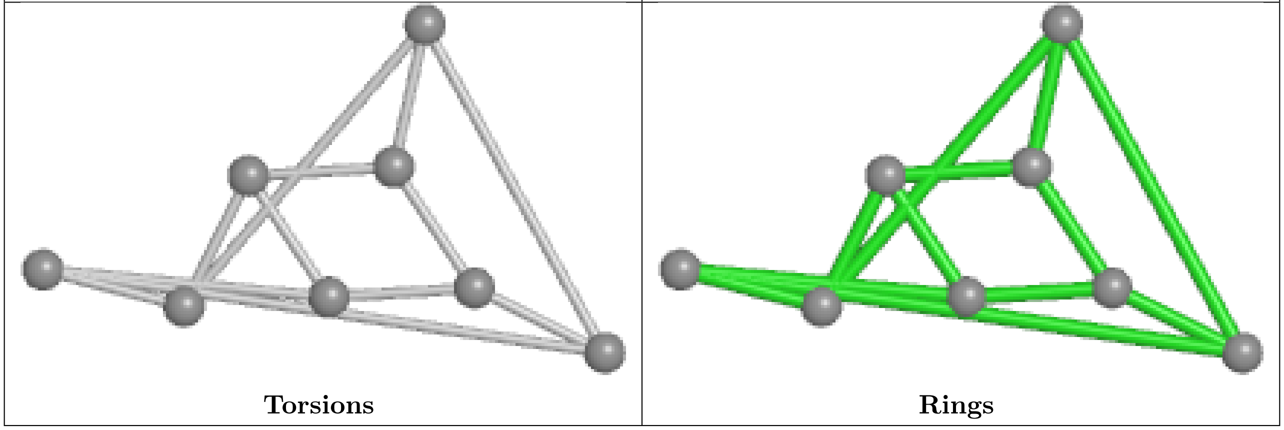
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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 SF4 Lb 301	
 **Bond lengths**	 **Bond angles**
 **Torsions**	 **Rings**

Ligand SF4 La 301

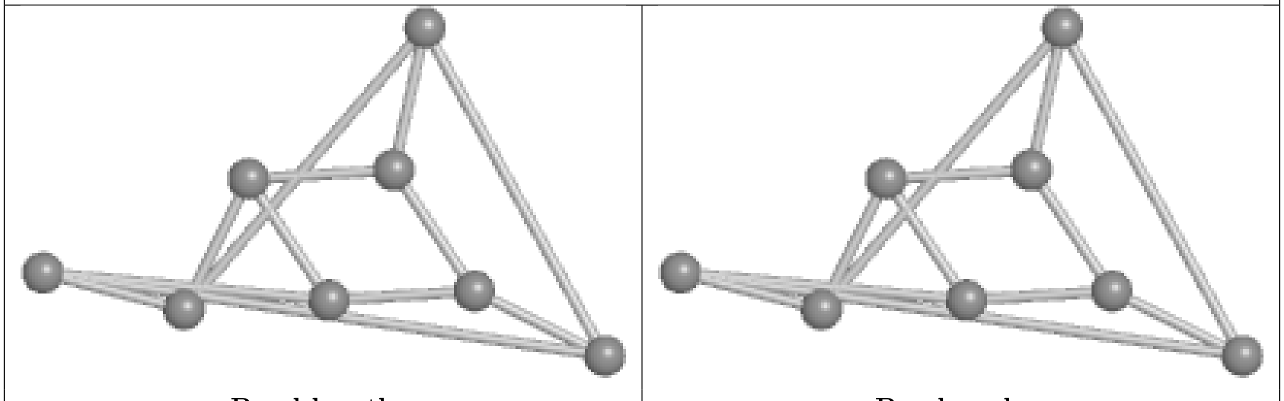


Bond lengths Bond angles

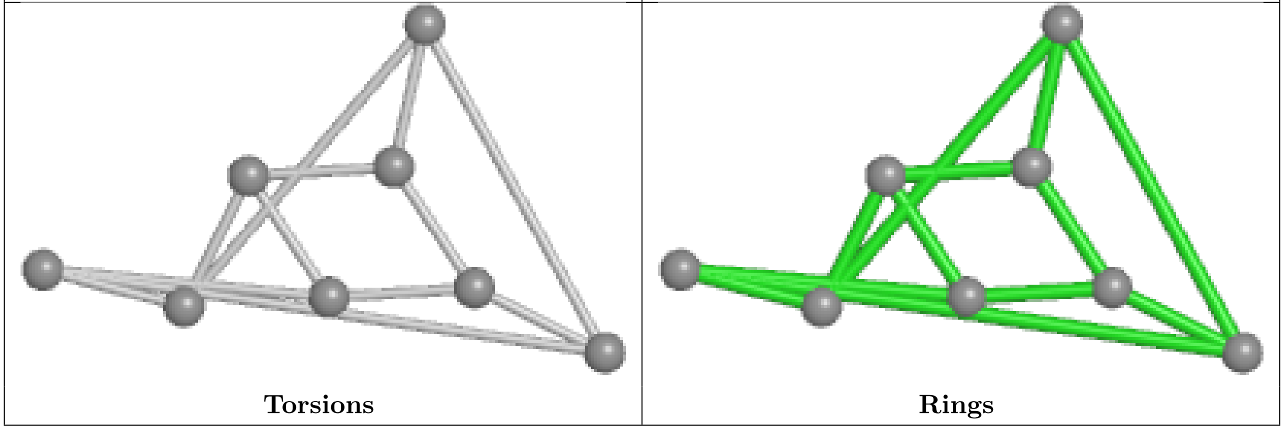


Torsions Rings

Ligand SF4 Lc 301



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.

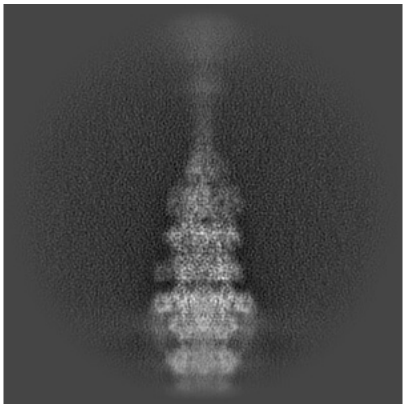
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-47685. These allow visual inspection of the internal detail of the map and identification of artifacts.

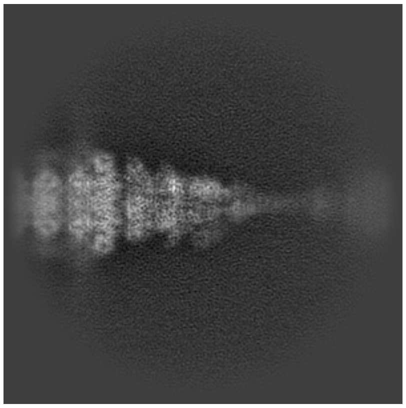
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

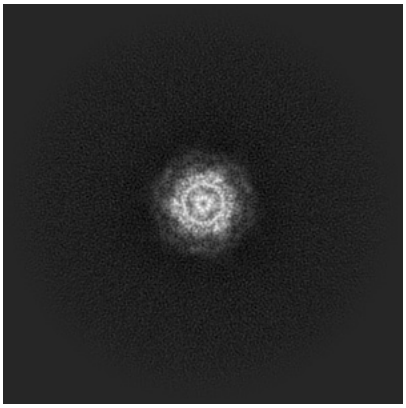
6.1.1 Primary map



X

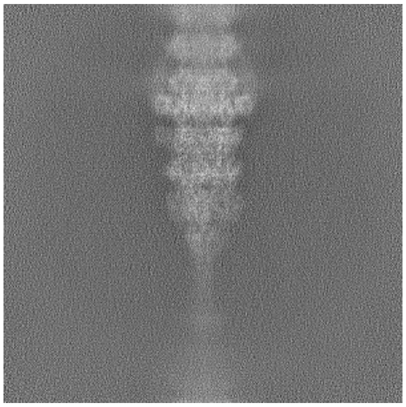


Y

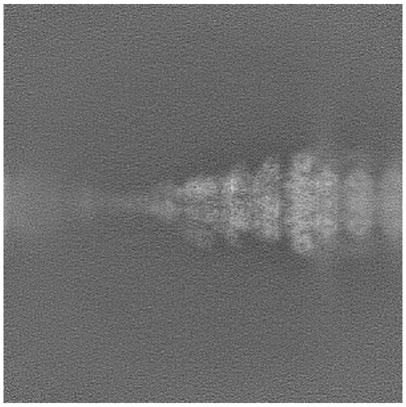


Z

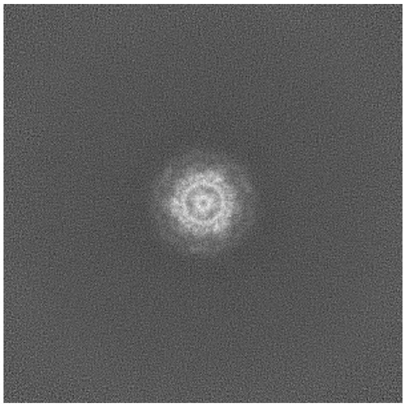
6.1.2 Raw map



X



Y

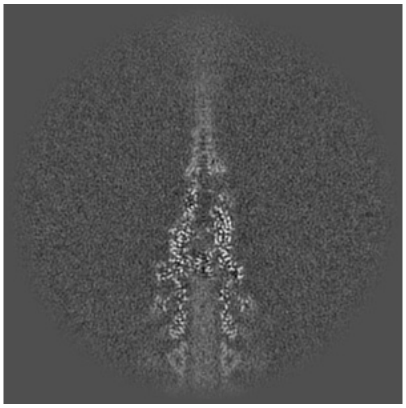


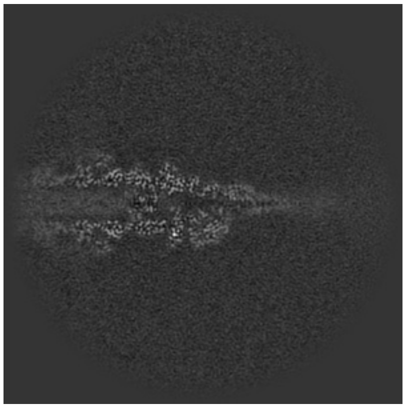
Z

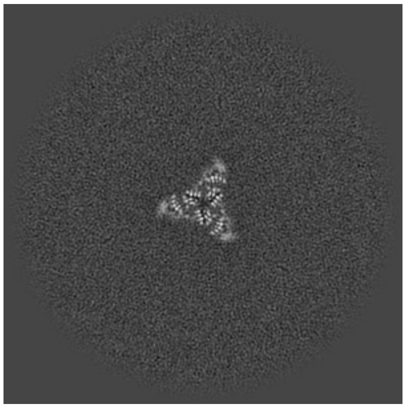
The images above show the map projected in three orthogonal directions.

6.2 Central slices

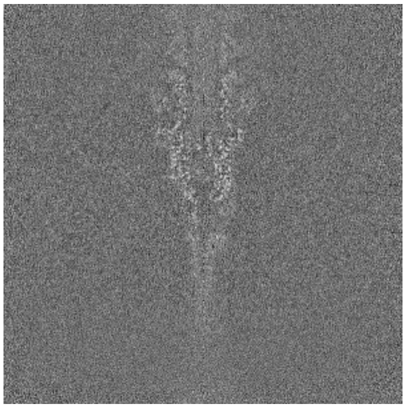
6.2.1 Primary map

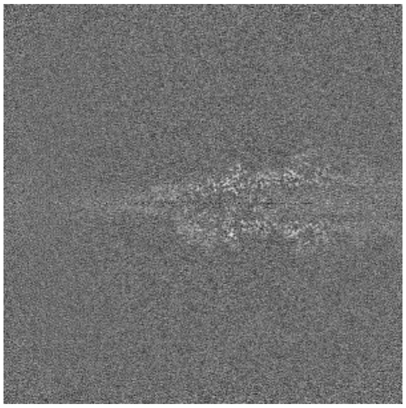

X Index: 224

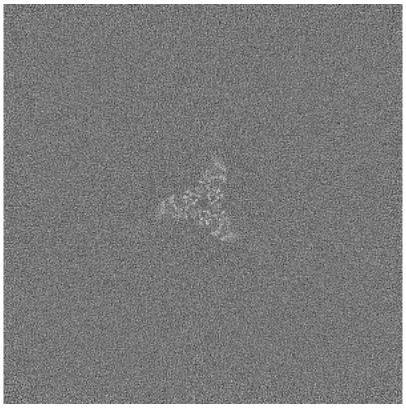

Y Index: 224


Z Index: 224

6.2.2 Raw map


X Index: 224

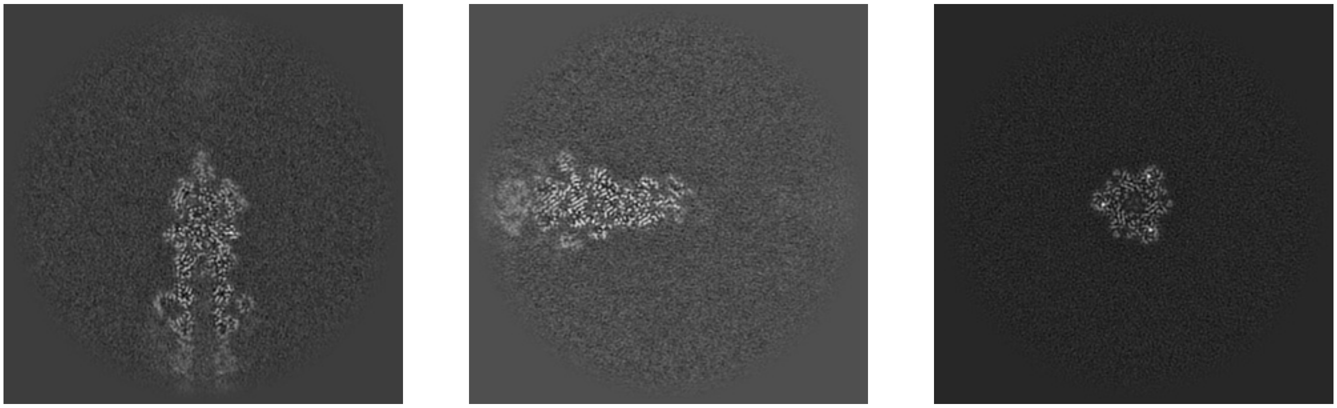

Y Index: 224


Z Index: 224

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

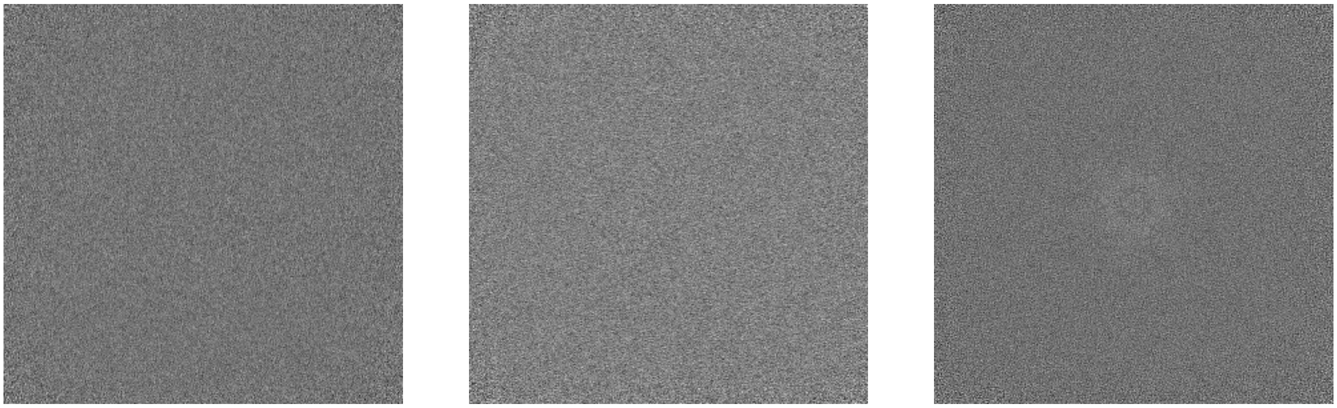
6.3 Largest variance slices

6.3.1 Primary map



X Index: 239 Y Index: 203 Z Index: 191

6.3.2 Raw map

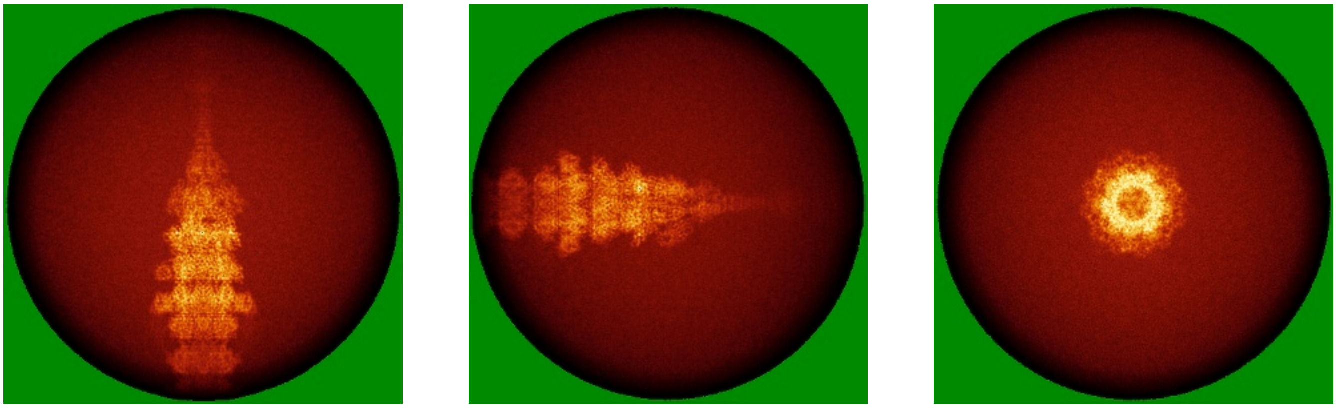


X Index: 0 Y Index: 0 Z Index: 0

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

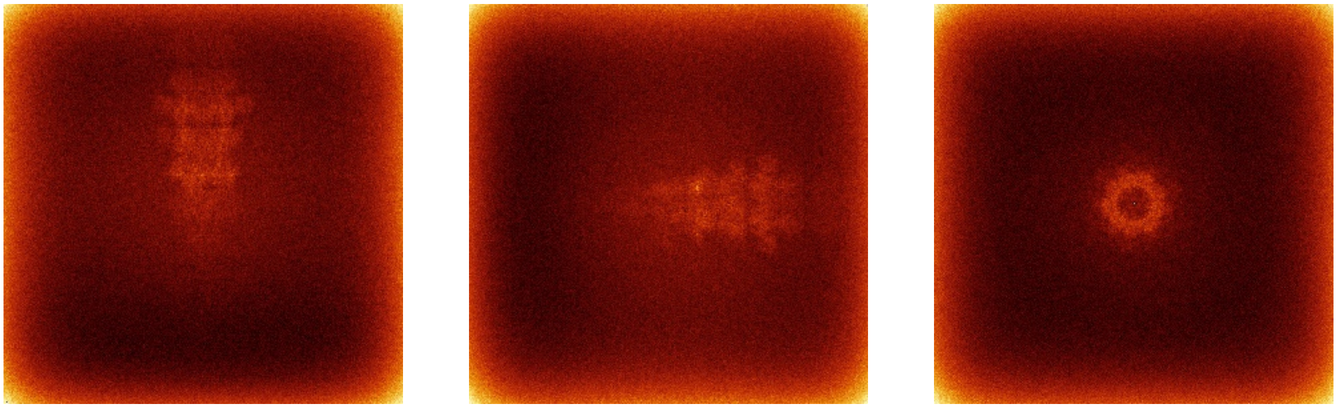
6.4 Orthogonal standard-deviation projections (False-color)

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 0.12. 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.

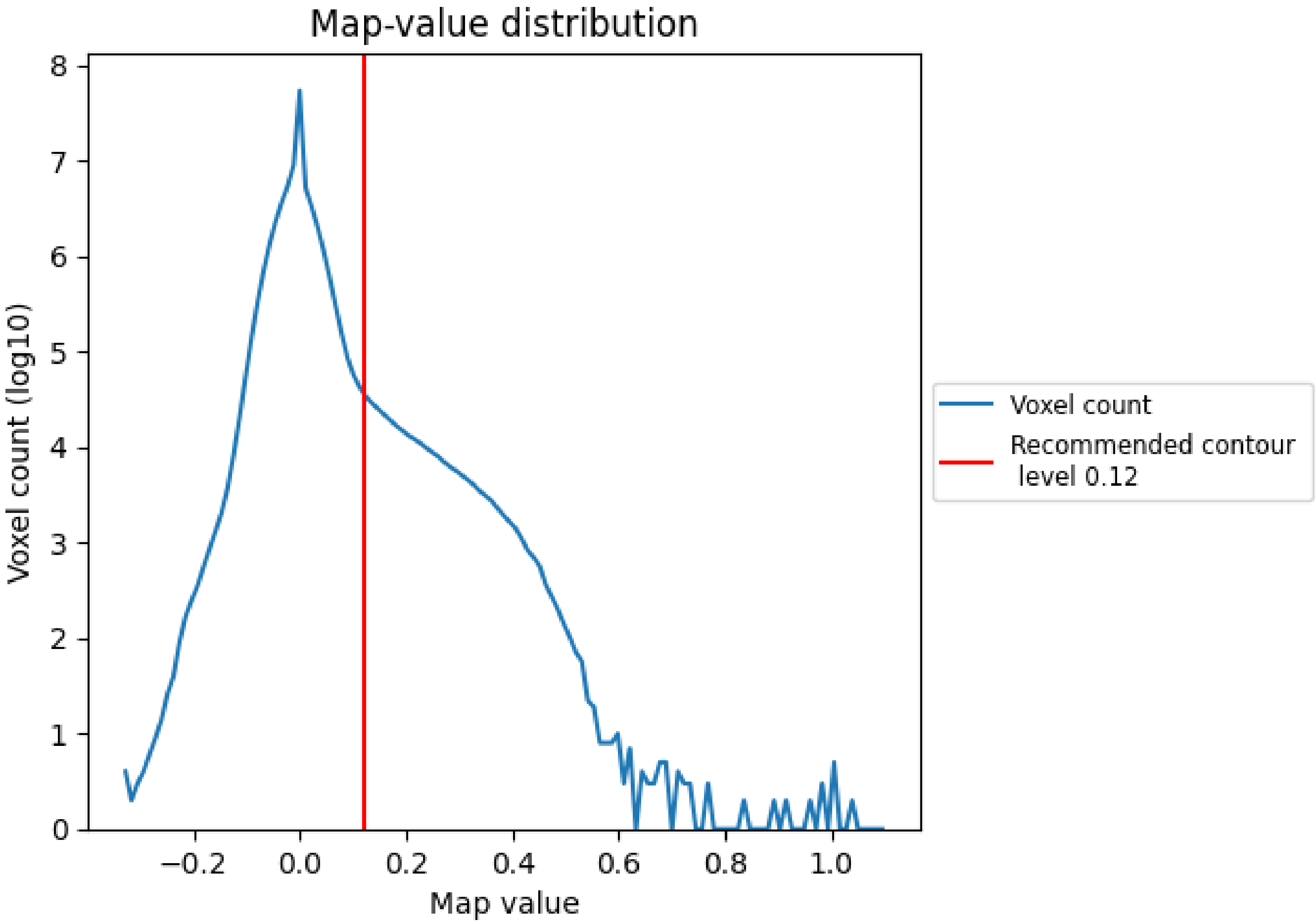
6.6 Mask visualisation ⓘ

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

7 Map analysis ⓘ

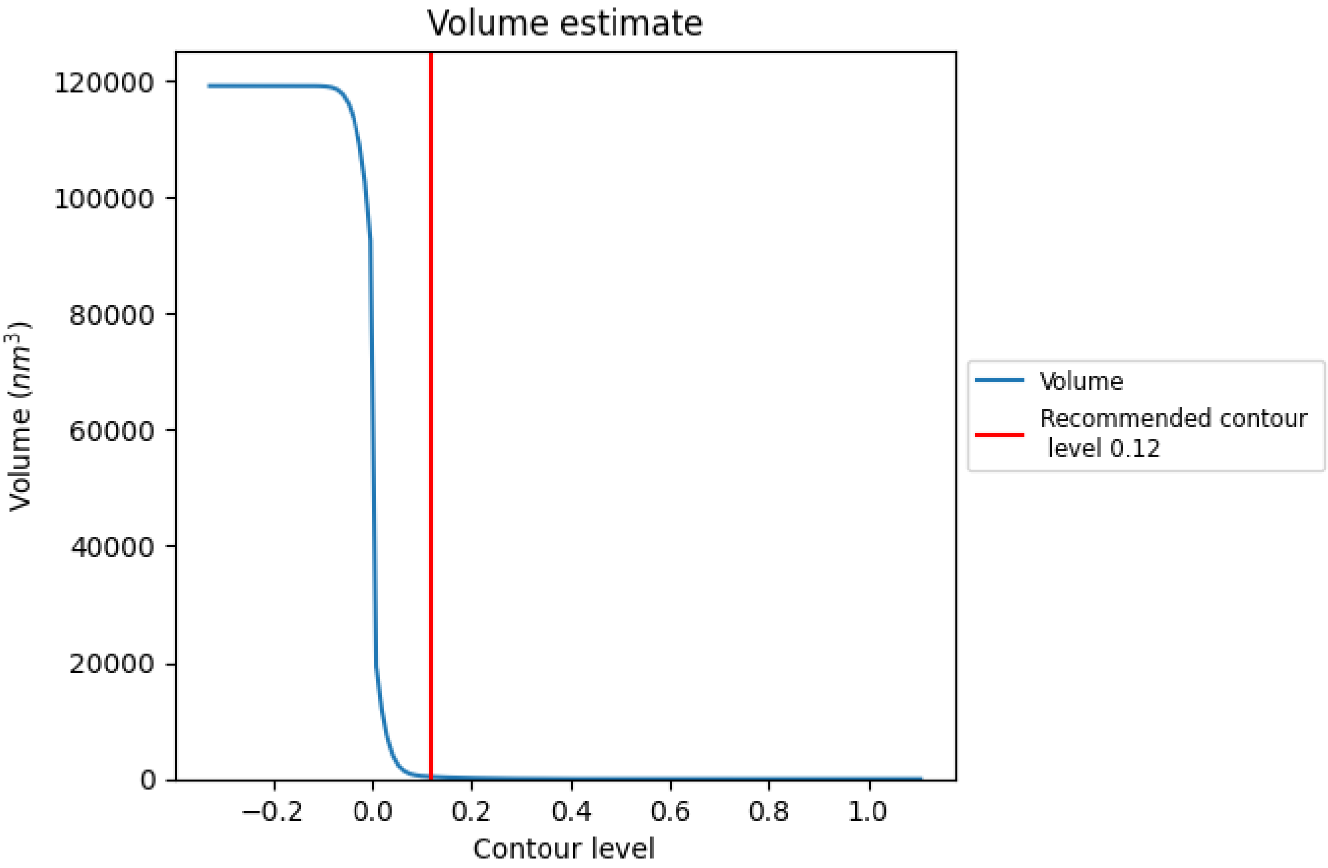
This section contains the results of statistical analysis of the map.

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.

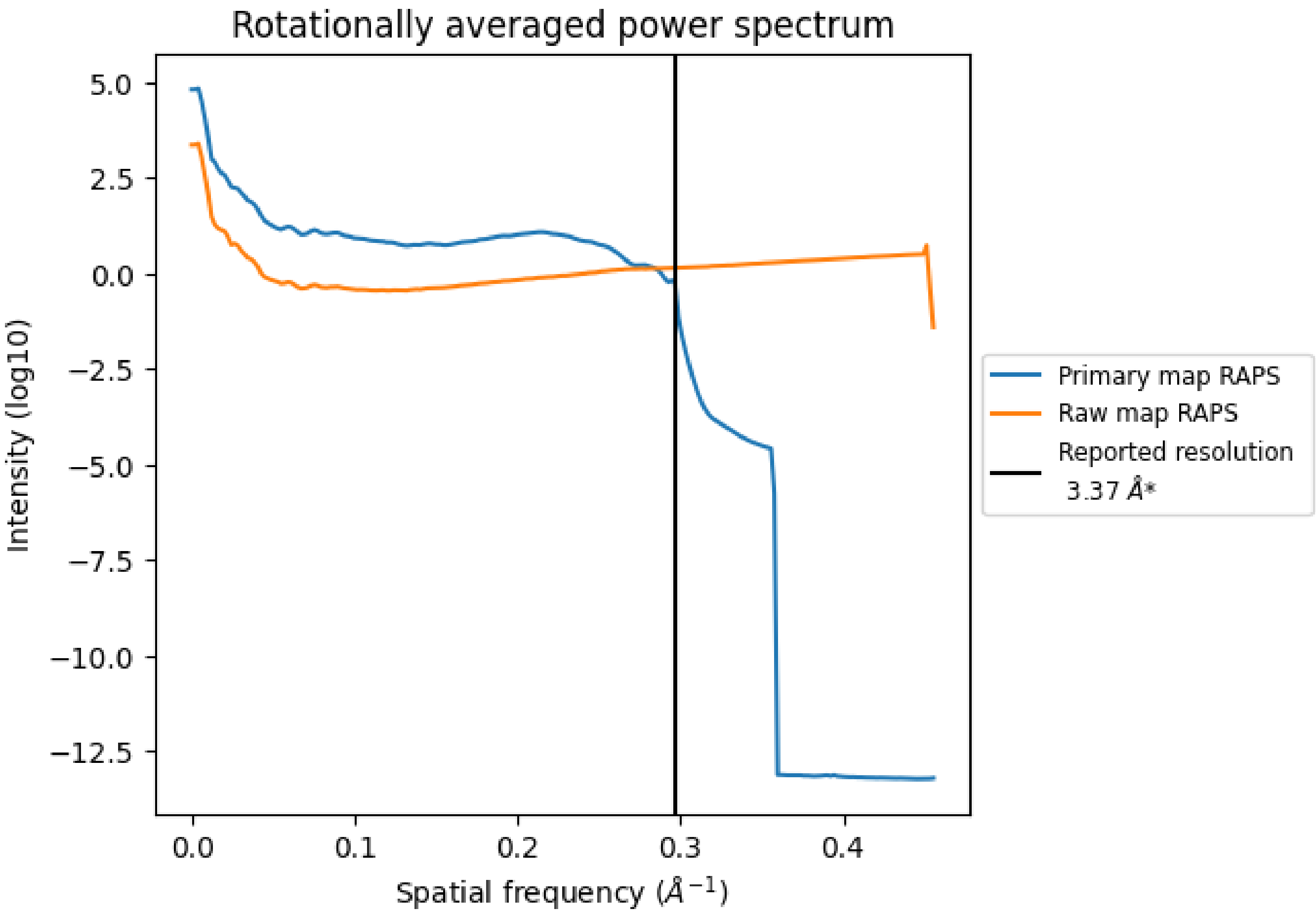
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 385 nm^3; this corresponds to an approximate mass of 348 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 ⓘ

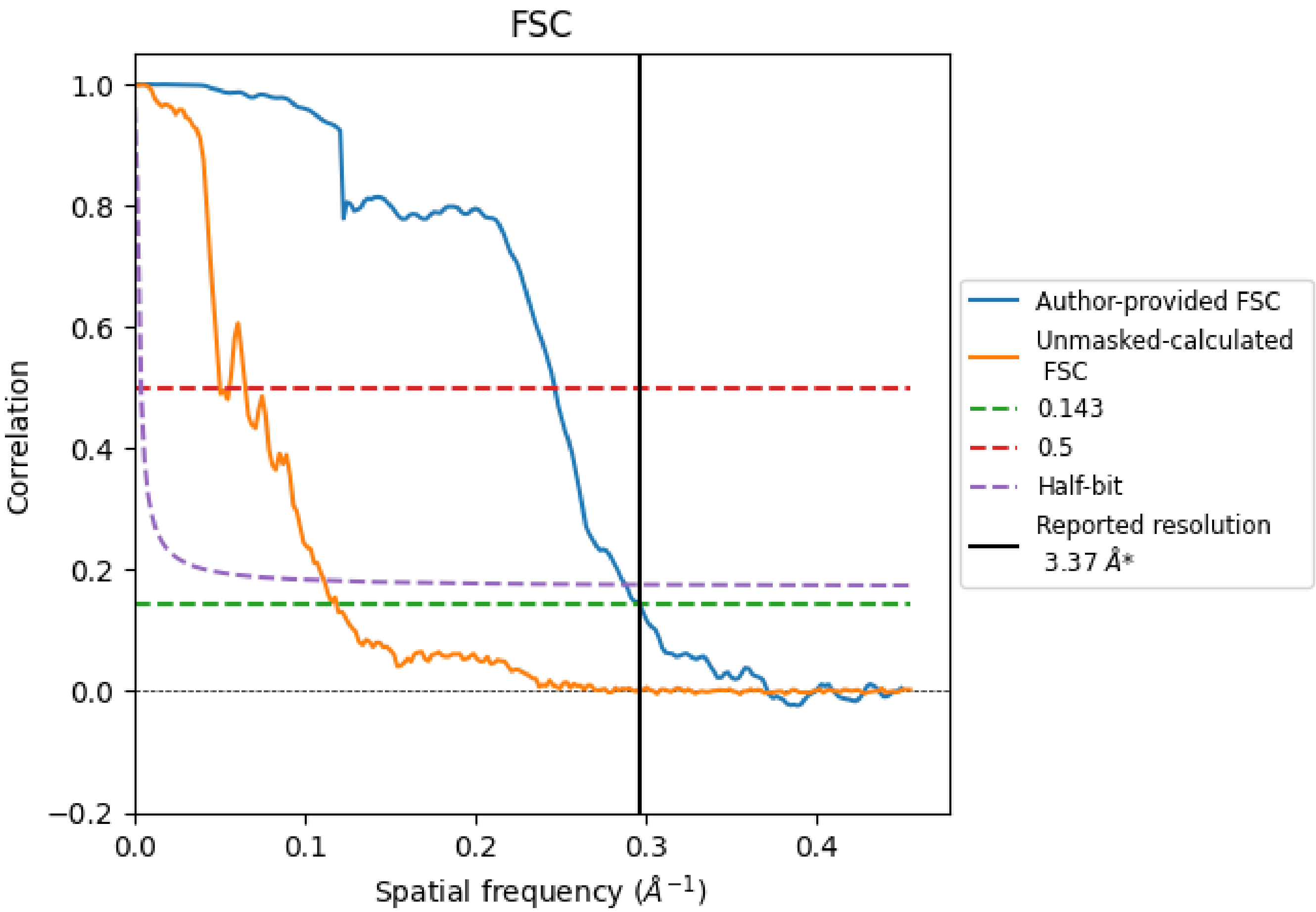


*Reported resolution corresponds to spatial frequency of 0.297 Å^{-1}

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 0.297 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.37	-	-
Author-provided FSC curve	3.37	4.05	3.47
Unmasked-calculated*	8.42	19.80	8.96

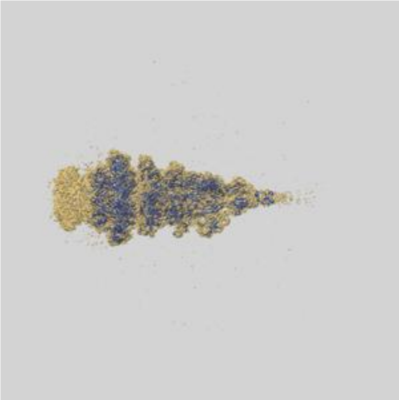
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 8.42 differs from the reported value 3.37 by more than 10 %

9 Map-model fit ⓘ

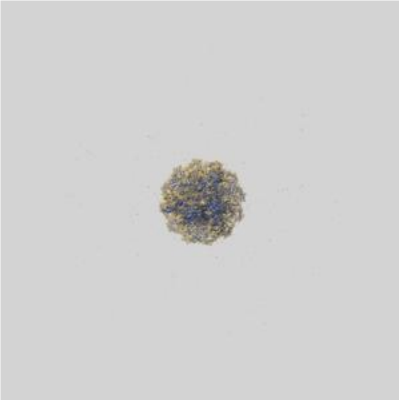
This section contains information regarding the fit between EMDB map EMD-47685 and PDB model 9E7M. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay ⓘ

X



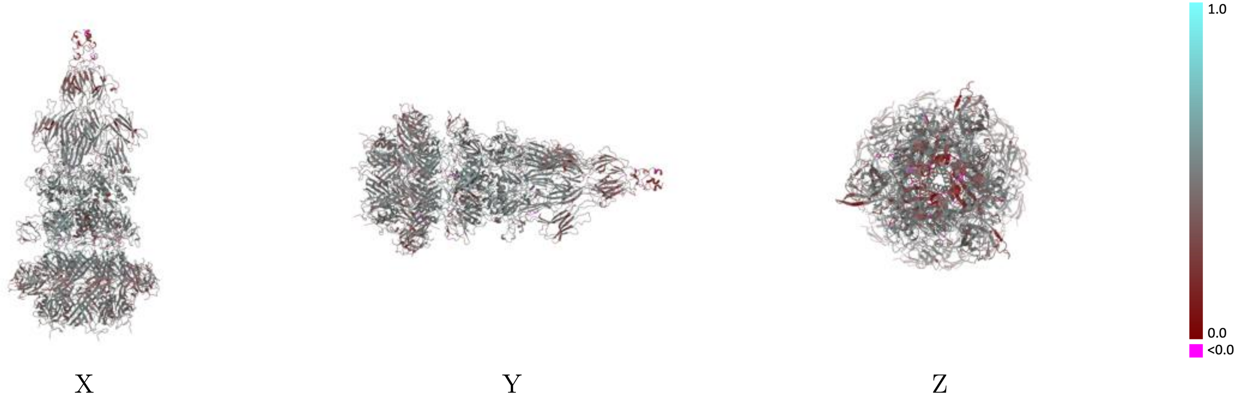
Y



Z

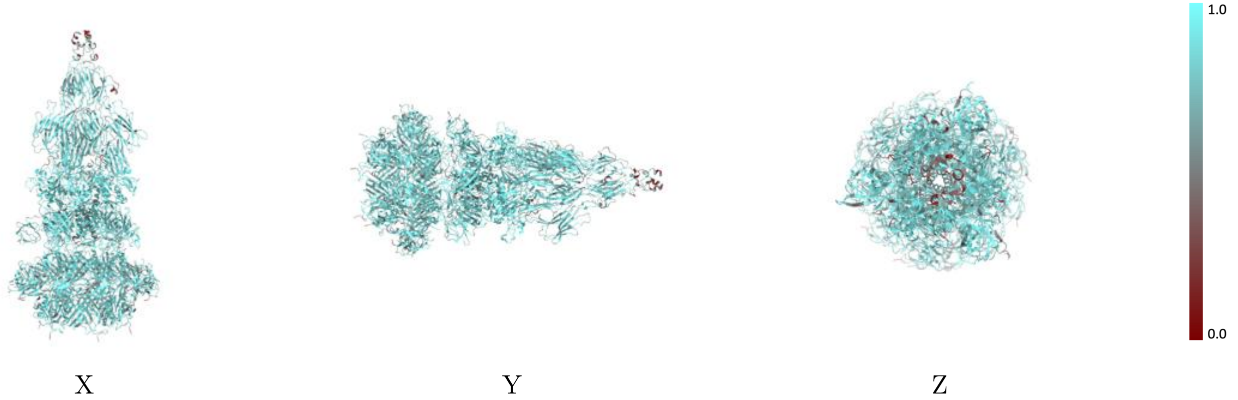
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



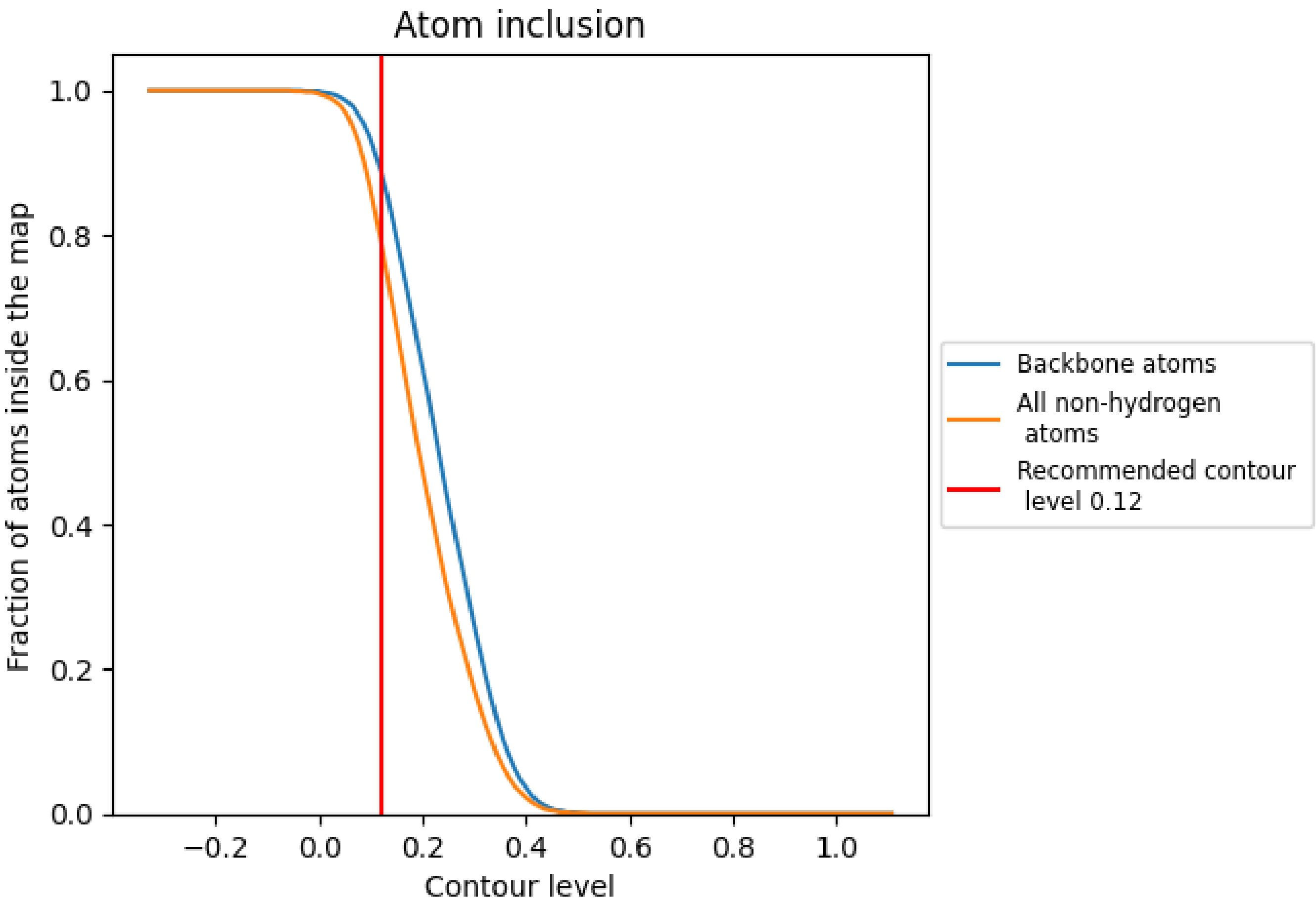
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.12).

9.4 Atom inclusion ⓘ



At the recommended contour level, 89% of all backbone atoms, 79% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7890	0.4460
Ha	0.7650	0.4530
Hb	0.7520	0.4470
Hc	0.7610	0.4410
Ia	0.7530	0.4380
Ib	0.7120	0.4250
Ic	0.7620	0.4750
Ja	0.7860	0.4320
Jb	0.7900	0.4390
Jc	0.7840	0.4330
La	0.8590	0.4930
Lb	0.8600	0.4910
Lc	0.8540	0.4870
Ma	0.8150	0.4630
Mb	0.8540	0.4900
Mc	0.8140	0.4630
Md	0.8420	0.4900
Me	0.8210	0.4610
Mf	0.8430	0.4870
Ta	0.7450	0.4270
Tb	0.7380	0.4390
Tc	0.7050	0.3890
Td	0.7150	0.3990
Te	0.7310	0.4260
Tf	0.7090	0.3980
Tg	0.7360	0.4260
Th	0.7330	0.4270
Ti	0.6970	0.3990
Tj	0.7350	0.4160
Tk	0.6970	0.3880
Tl	0.7100	0.3910
Va	0.8170	0.4690
Vb	0.8020	0.4670
Vc	0.8200	0.4710
Vd	0.8040	0.4670

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Chain	Atom inclusion	Q-score
Ve	0.8140	0.4670
Vf	0.7960	0.4600