



Full wwPDB EM Validation Report ⓘ

May 27, 2024 – 12:15 PM JST

PDB ID : 7E93
EMDB ID : EMD-31027
Title : Intact TRAPP2 (state III).
Authors : Mi, C.C.; Sui, S.F.
Deposited on : 2021-03-03
Resolution : 6.54 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

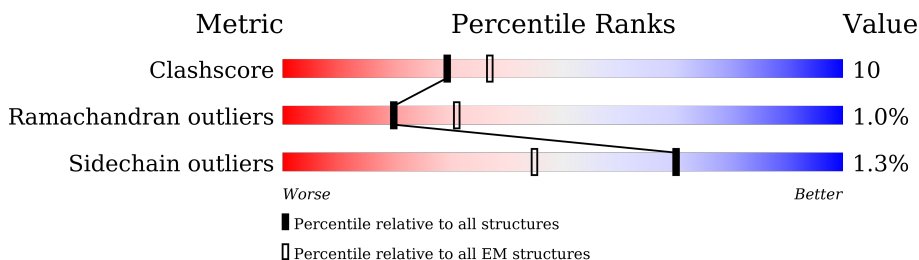
EMDB validation analysis : 0.0.1.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

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 6.54 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)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	152	
1	L	152	
2	B	268	
2	M	268	
3	C	193	
3	F	193	
3	N	193	
3	Q	193	

Continued on next page...

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Mol	Chain	Length	Quality of chain
4	D	159	 14% 74% 19% • 5%
4	O	159	 14% 74% 19% • 5%
5	E	219	 11% 56% 17% 26%
5	P	219	 11% 57% 16% 26%
6	G	283	 22% 56% 14% • 28%
6	R	283	 22% 58% 12% • 28%
7	H	175	 26% 62% 18% • 17%
7	S	175	 26% 63% 17% • 17%
8	I	1102	 17% 66% 6% • 27%
8	T	1102	 17% 66% 5% • 27%
9	J	1289	 15% 55% 12% • 32%
9	U	1289	 15% 55% 11% • 32%
10	K	560	 • 39% 6% • 55%
10	V	560	 • 39% 5% • 55%

2 Entry composition [i](#)

There are 10 unique types of molecules in this entry. The entry contains 45998 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 TRAPP-associated protein TCA17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	150	Total	C	N	O	S	0	0
			1206	781	188	233	4		
1	L	150	Total	C	N	O	S	0	0
			1206	781	188	233	4		

- Molecule 2 is a protein called Trafficking protein particle complex subunit 33.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	195	Total	C	N	O	S	0	0
			1459	940	247	264	8		
2	M	195	Total	C	N	O	S	0	0
			1459	940	247	264	8		

- Molecule 3 is a protein called Trafficking protein particle complex subunit BET3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	184	Total	C	N	O	S	0	0
			1482	947	244	280	11		
3	F	182	Total	C	N	O	S	0	0
			1470	939	242	278	11		
3	N	184	Total	C	N	O	S	0	0
			1482	947	244	280	11		
3	Q	182	Total	C	N	O	S	0	0
			1470	939	242	278	11		

- Molecule 4 is a protein called Trafficking protein particle complex subunit BET5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	151	Total	C	N	O	S	0	0
			1235	793	209	227	6		
4	O	151	Total	C	N	O	S	0	0
			1235	793	209	227	6		

- Molecule 5 is a protein called Trafficking protein particle complex subunit 23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	161	1295	839	205	242	9	0	0
5	P	161	1297	840	206	242	9	0	0

- Molecule 6 is a protein called Trafficking protein particle complex subunit 31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	G	203	1610	1027	282	292	9	0	0
6	R	203	1610	1027	282	292	9	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	41	TYR	ILE	conflict	UNP Q03337
G	42	ILE	PRO	conflict	UNP Q03337
G	108	SER	VAL	conflict	UNP Q03337
R	41	TYR	ILE	conflict	UNP Q03337
R	42	ILE	PRO	conflict	UNP Q03337
R	108	SER	VAL	conflict	UNP Q03337

- Molecule 7 is a protein called Trafficking protein particle complex subunit 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	H	146	1173	759	194	215	5	0	0
7	S	146	1173	759	194	215	5	0	0

- Molecule 8 is a protein called Trafficking protein particle complex II-specific subunit 130.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	I	799	4244	2578	822	842	2	0	0
8	T	799	4244	2578	822	842	2	0	0

- Molecule 9 is a protein called Trafficking protein particle complex II-specific subunit 120.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	J	873	6256	3979	1085	1173	19	0	0
9	U	873	6256	3979	1085	1173	19	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J	1099	PHE	TYR	conflict	UNP Q04183
U	1099	PHE	TYR	conflict	UNP Q04183

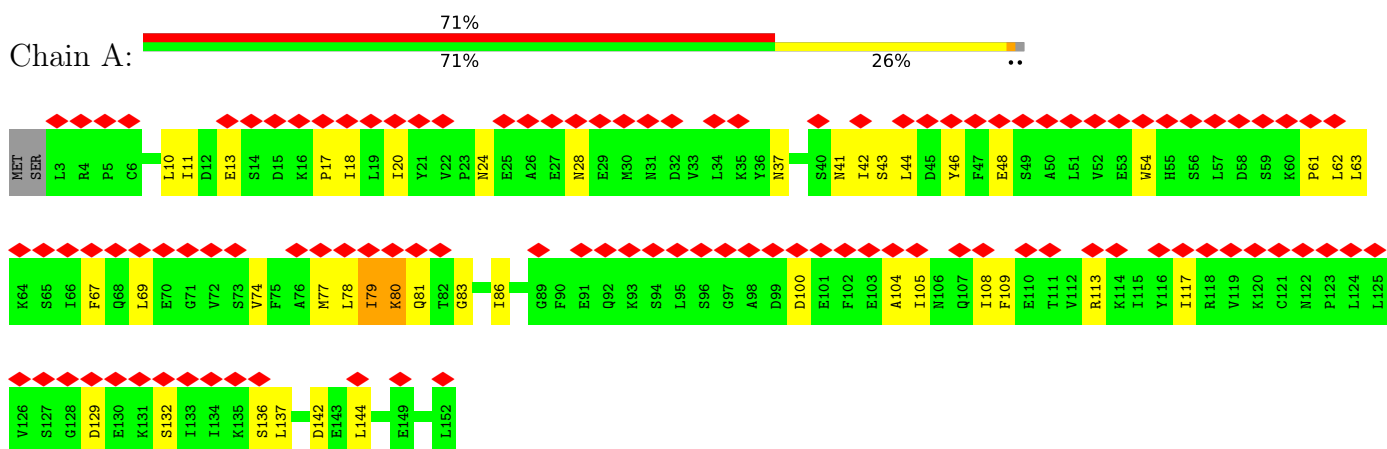
- Molecule 10 is a protein called Trafficking protein particle complex II-specific subunit 65.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	251	1568	988	278	300	2	0	0
10	V	251	1568	988	278	300	2	0	0

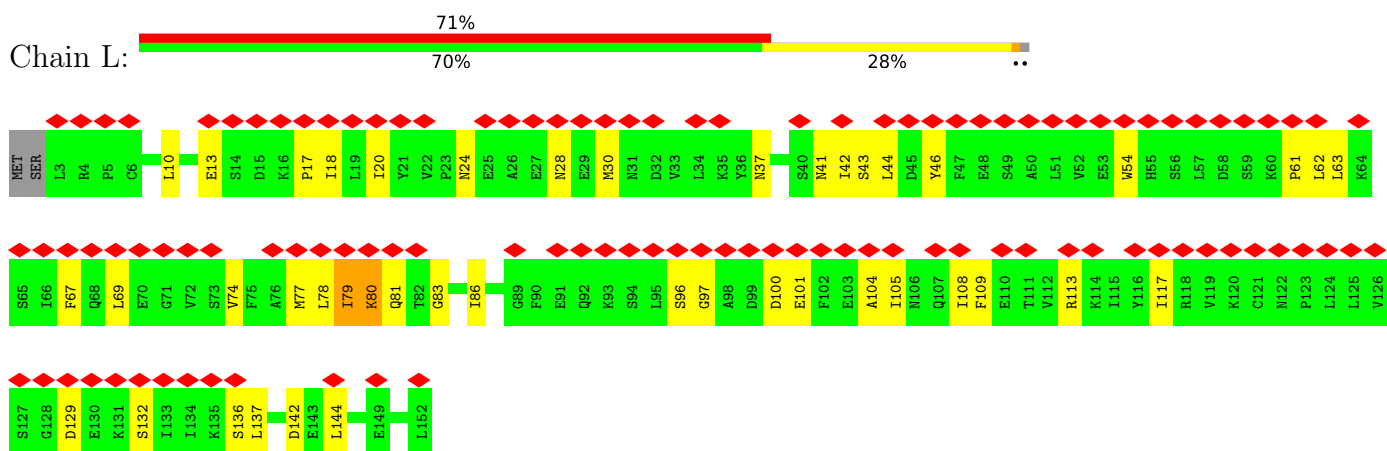
3 Residue-property plots [i](#)

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.

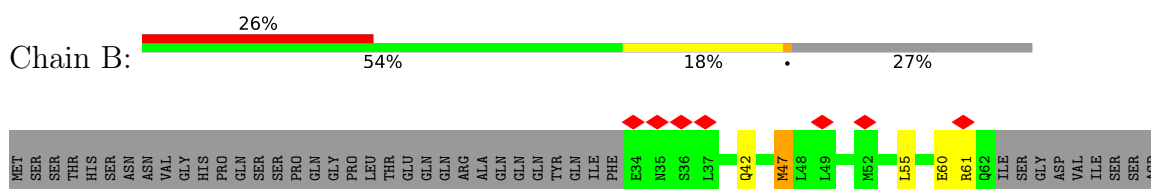
- Molecule 1: TRAPP-associated protein TCA17

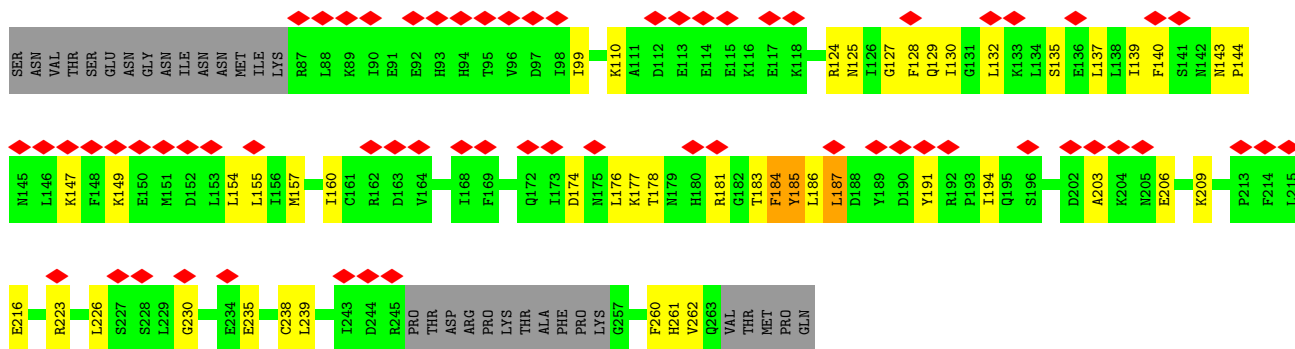


- Molecule 1: TRAPP-associated protein TCA17

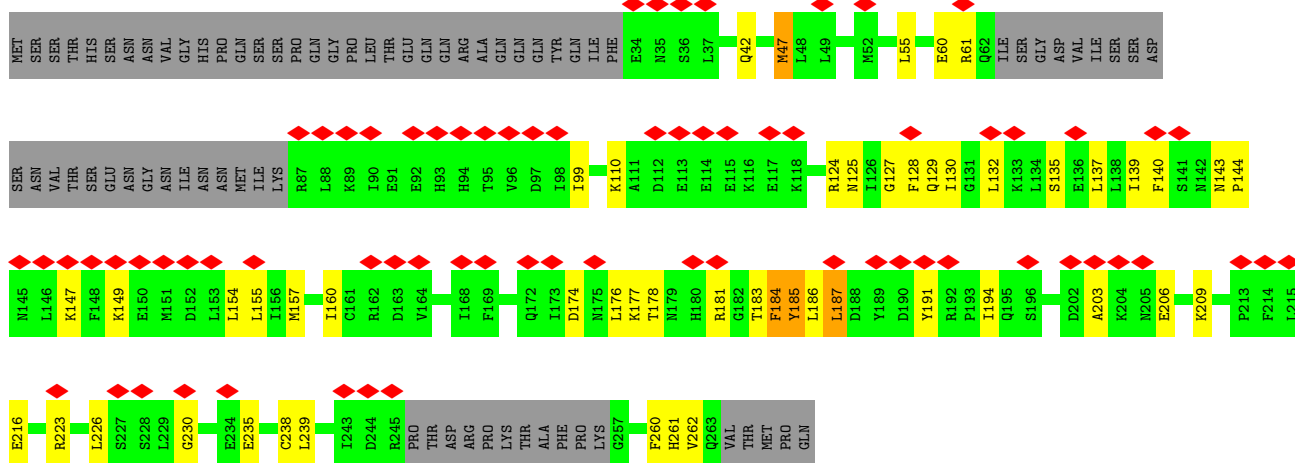


- Molecule 2: Trafficking protein particle complex subunit 33

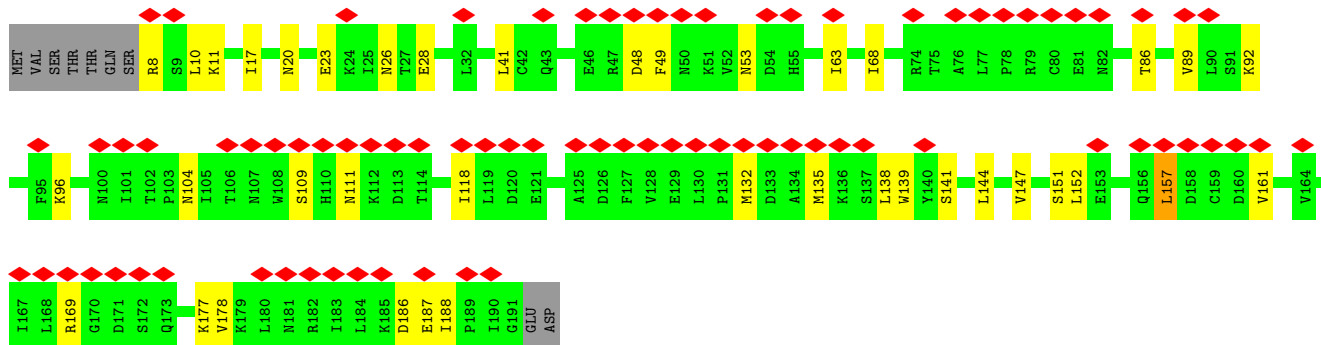
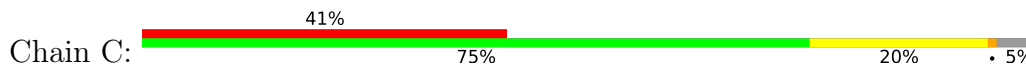




• Molecule 2: Trafficking protein particle complex subunit 33

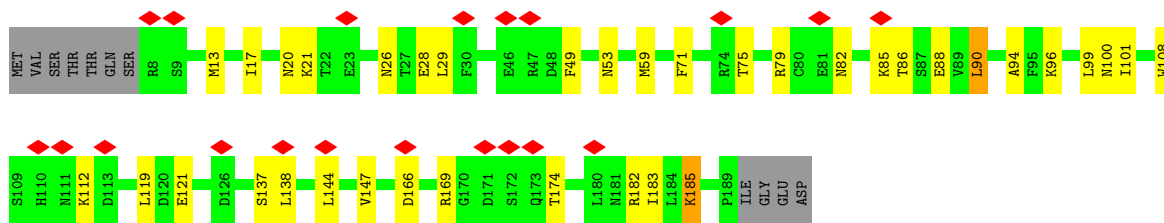


• Molecule 3: Trafficking protein particle complex subunit BET3

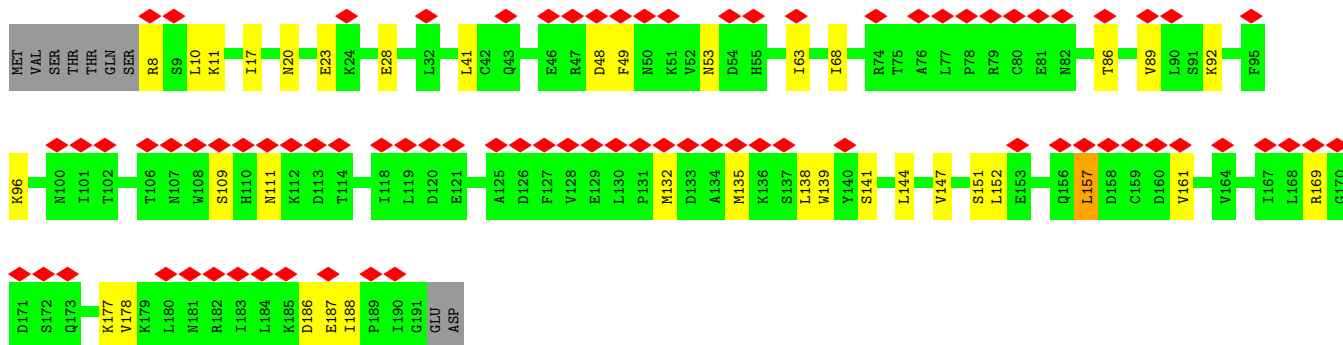
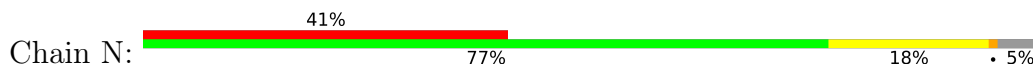


• Molecule 3: Trafficking protein particle complex subunit BET3

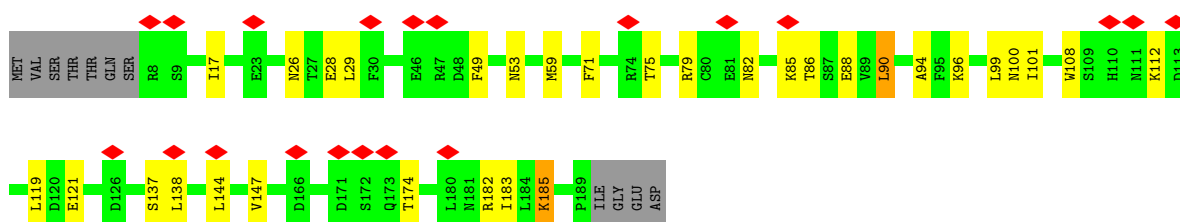
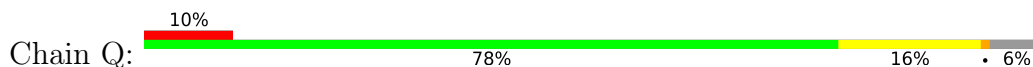




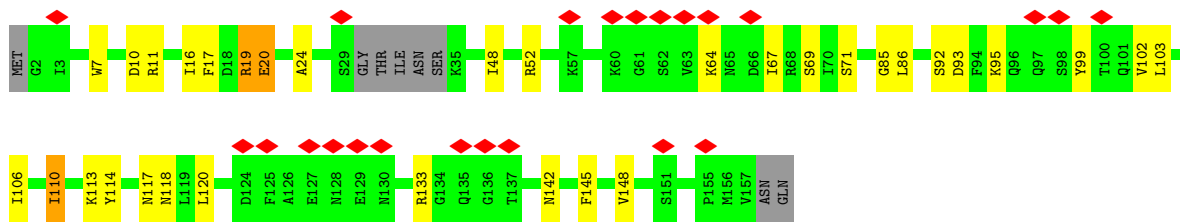
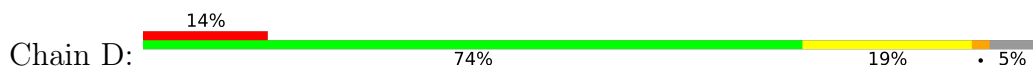
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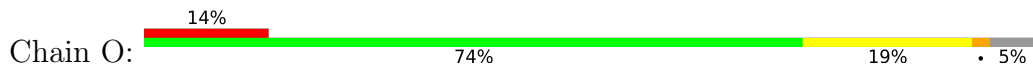
• Molecule 3: Trafficking protein particle complex subunit BET3

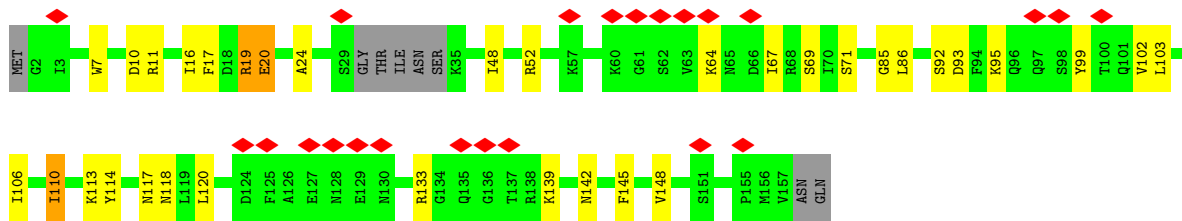


• Molecule 4: Trafficking protein particle complex subunit BET5

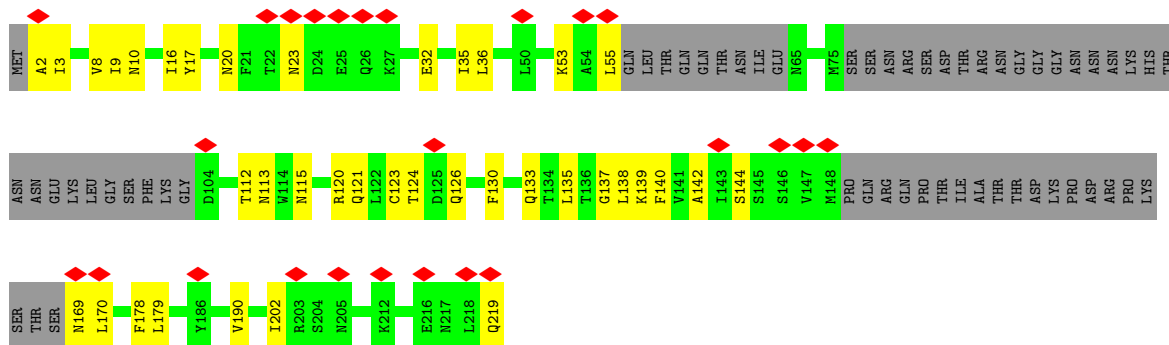


• Molecule 4: Trafficking protein particle complex subunit BET5

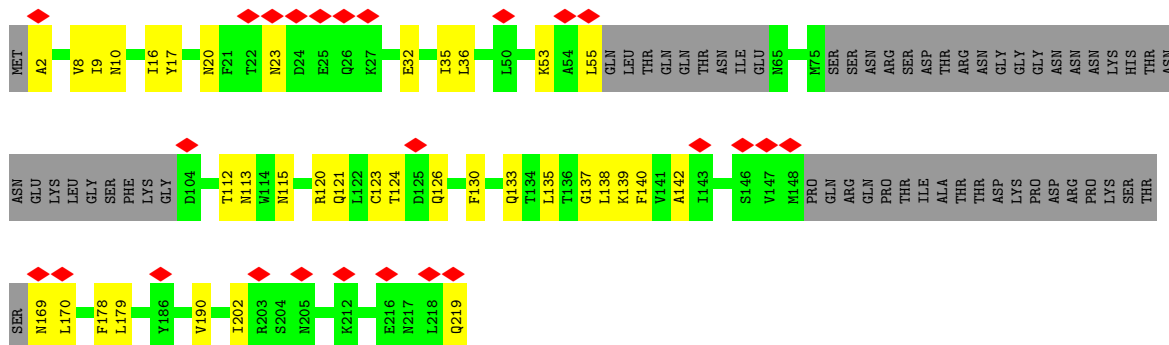




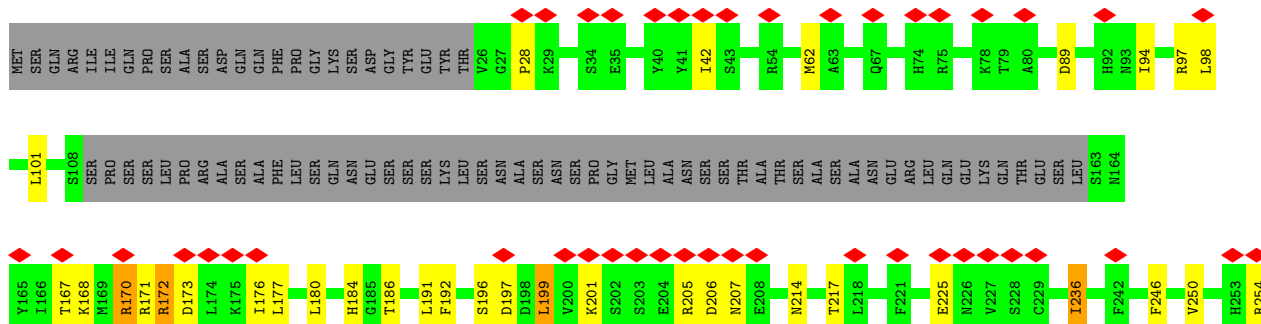
• Molecule 5: Trafficking protein particle complex subunit 23

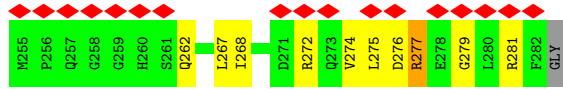


• Molecule 5: Trafficking protein particle complex subunit 23

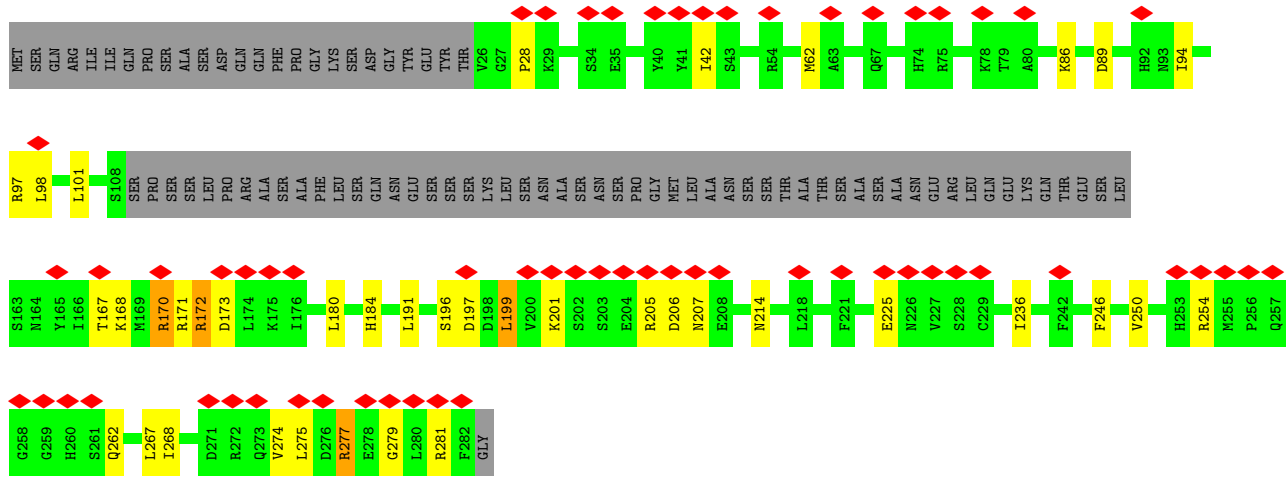


• Molecule 6: Trafficking protein particle complex subunit 31

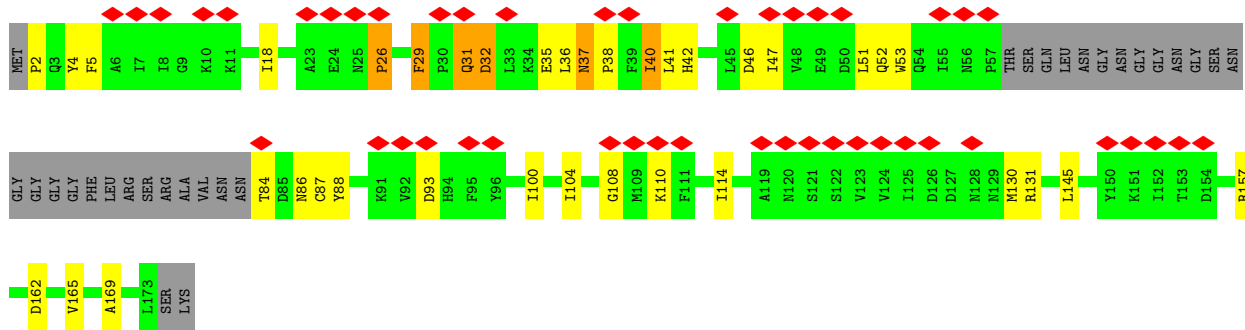




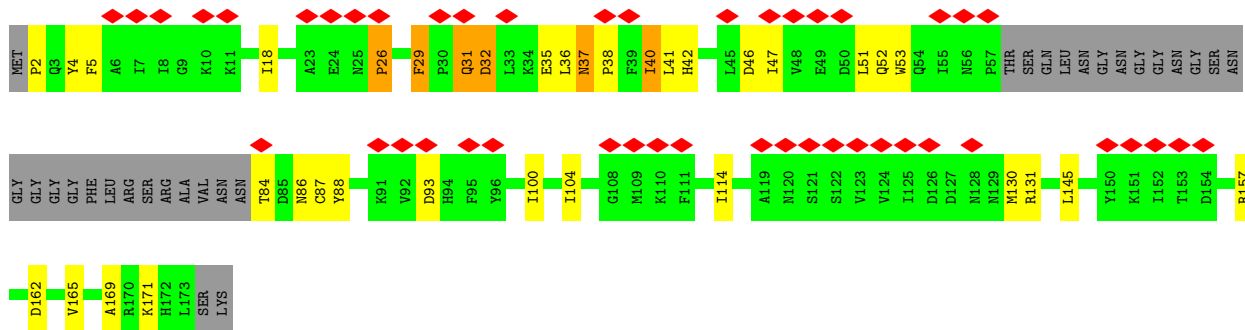
• Molecule 6: Trafficking protein particle complex subunit 31

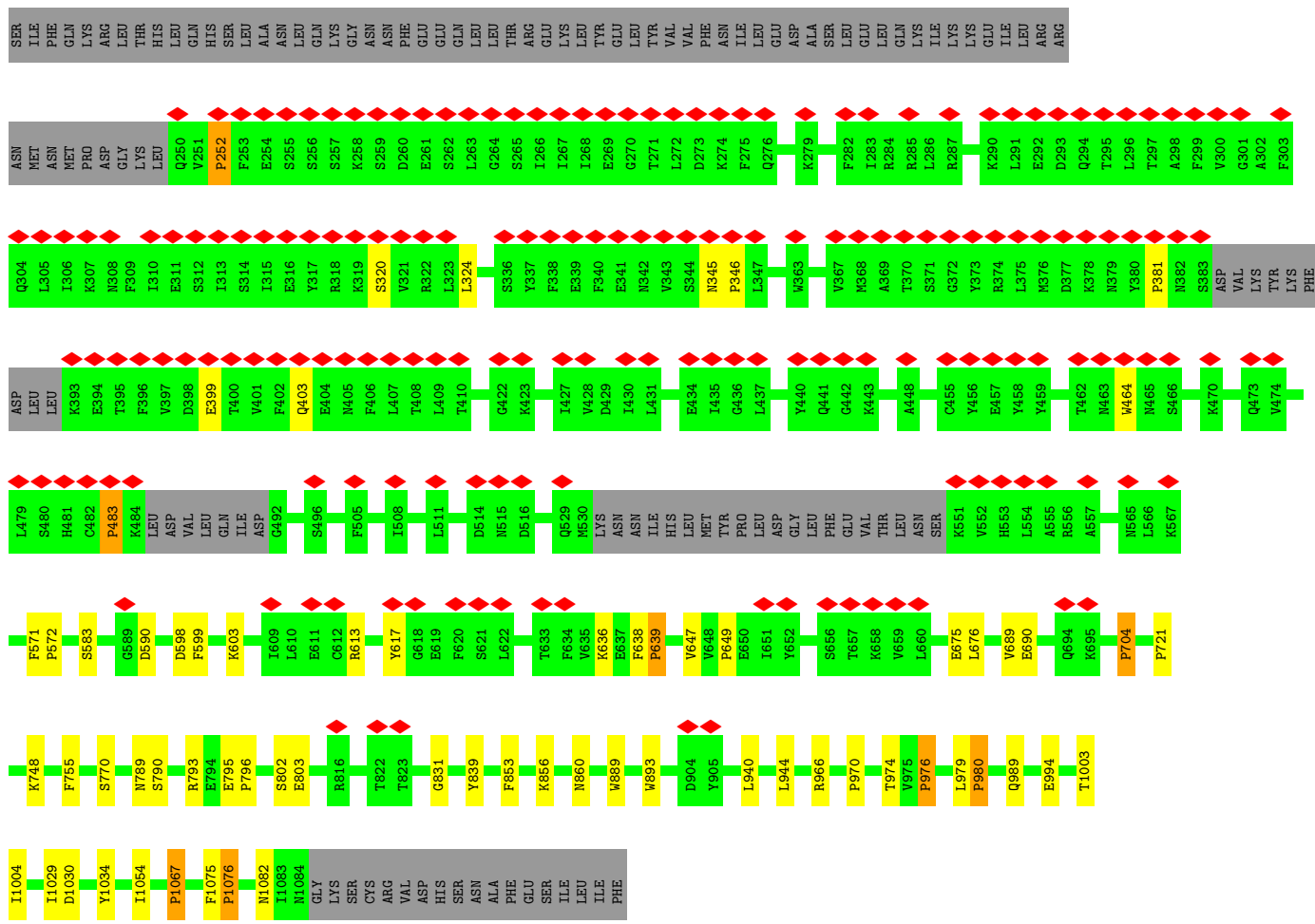


• Molecule 7: Trafficking protein particle complex subunit 20

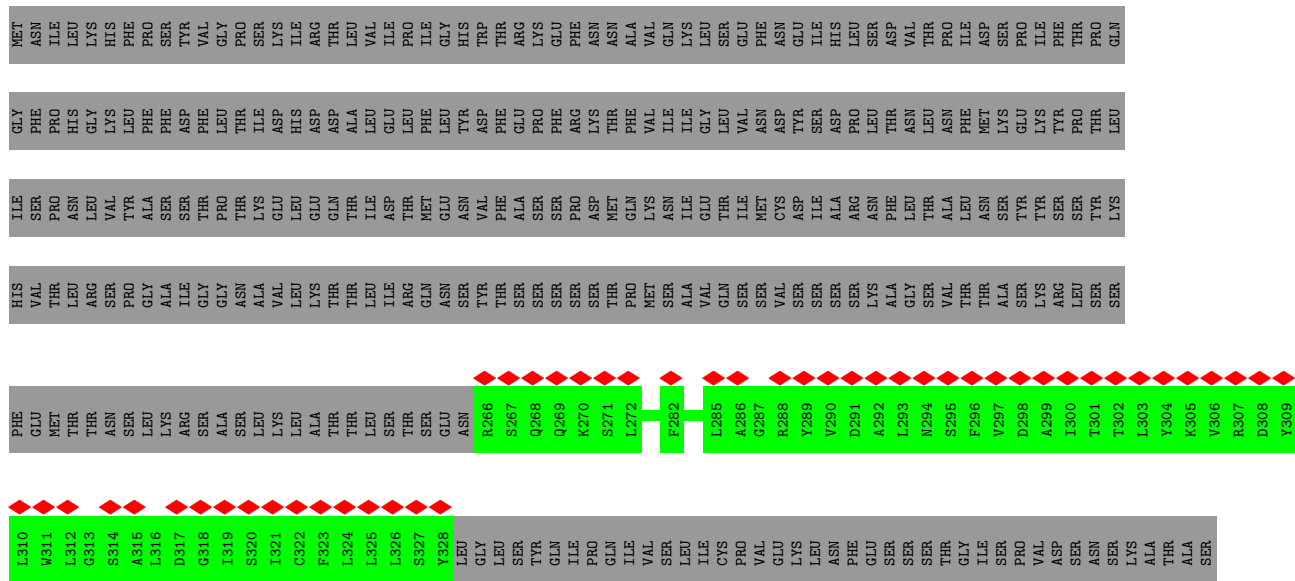


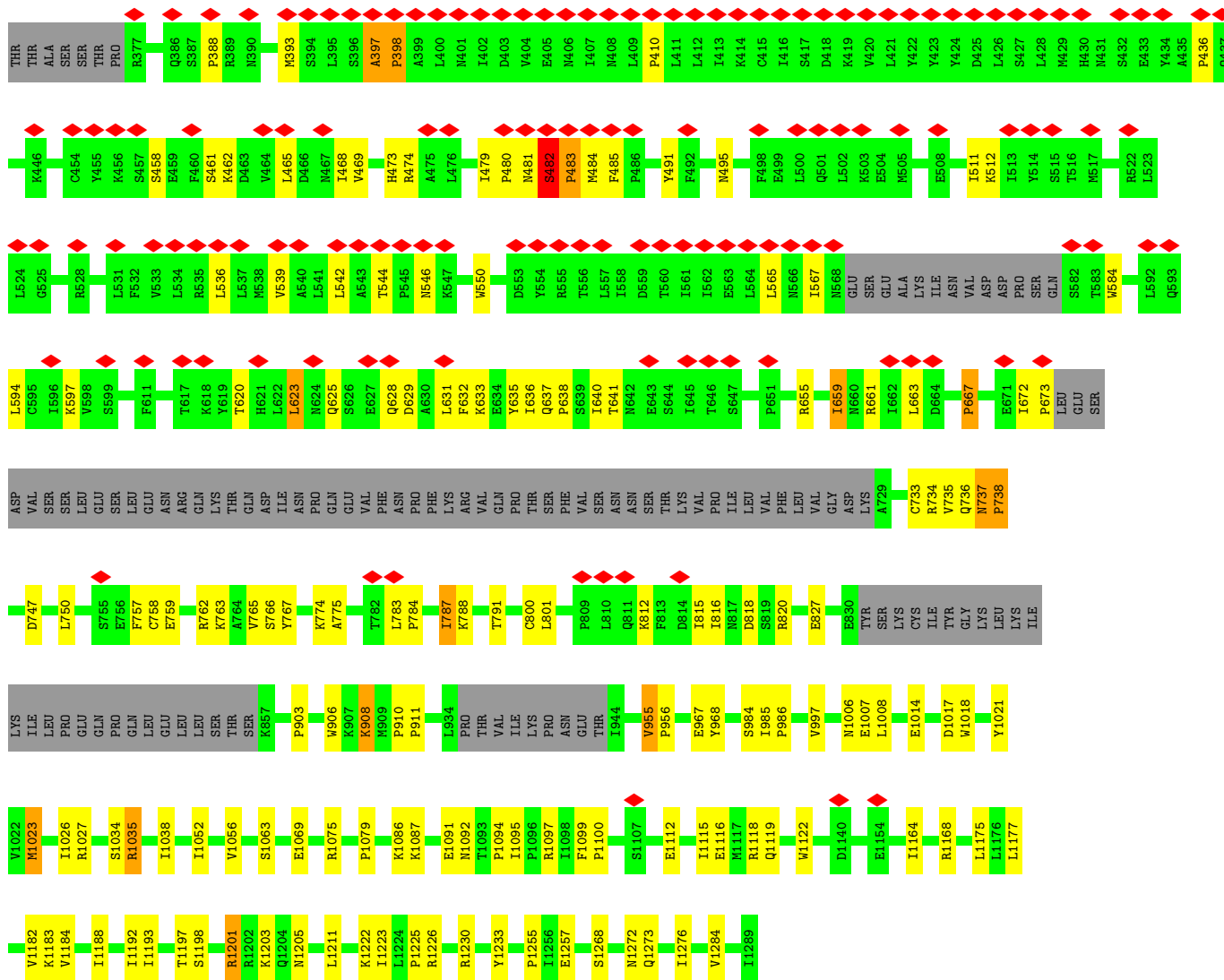
• Molecule 7: Trafficking protein particle complex subunit 20



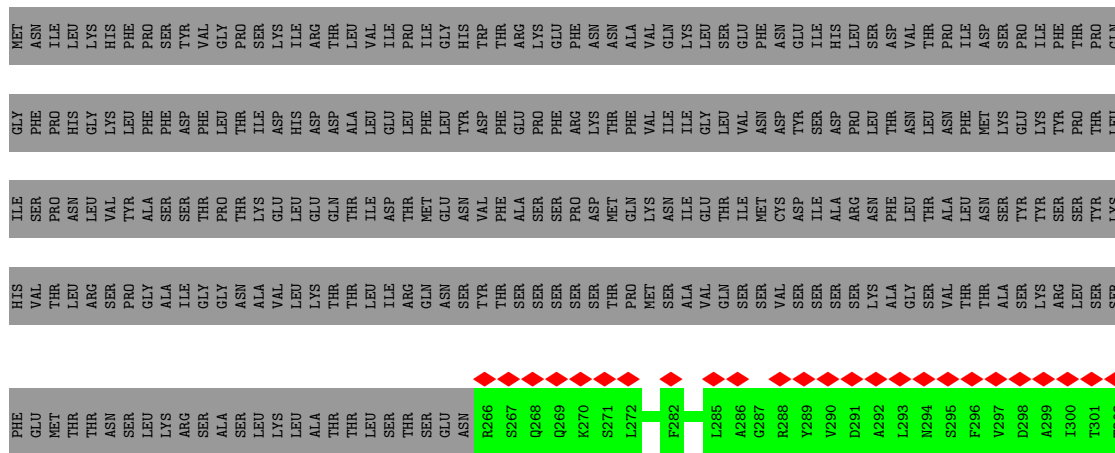


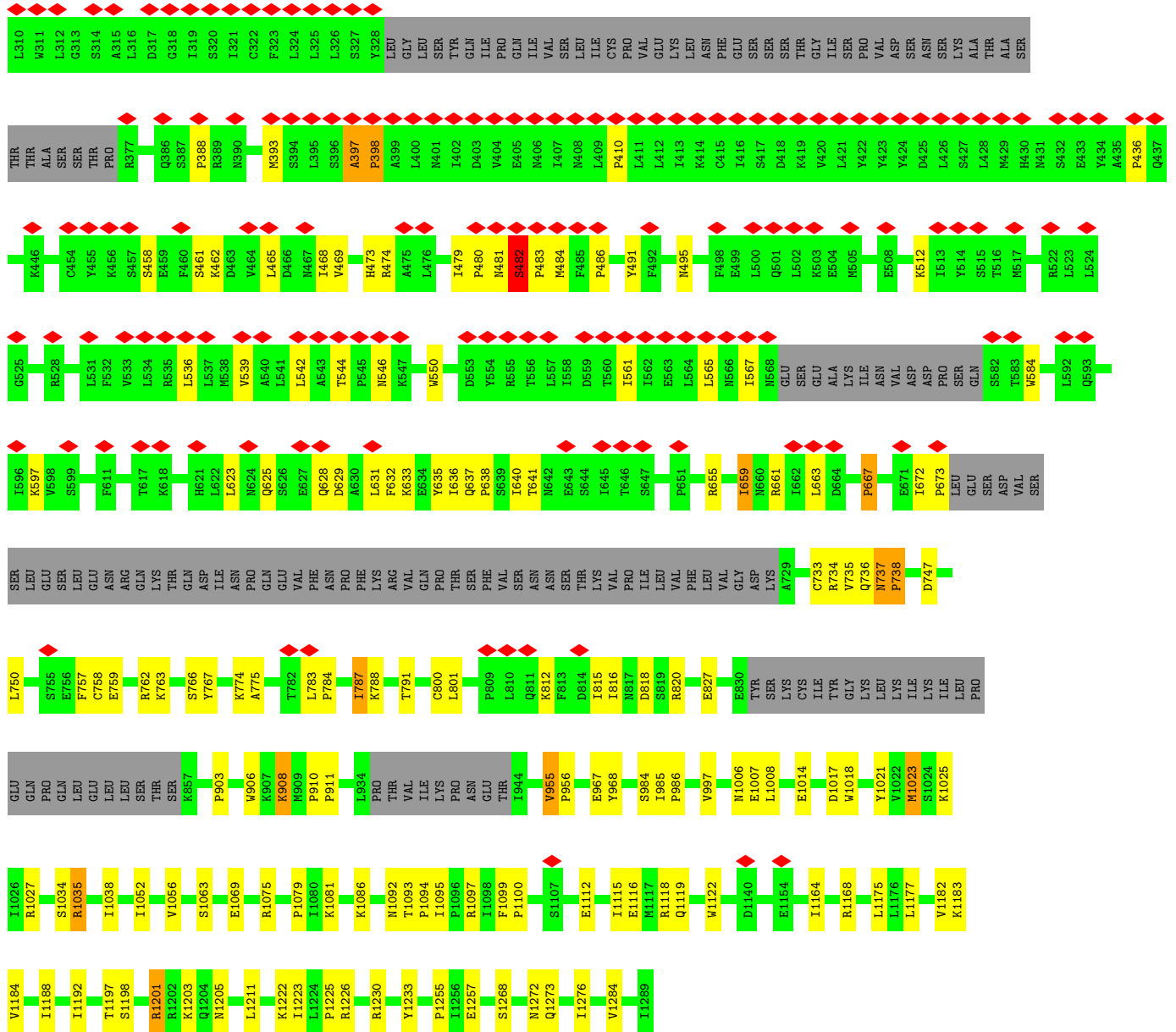
- Molecule 9: Trafficking protein particle complex II-specific subunit 120



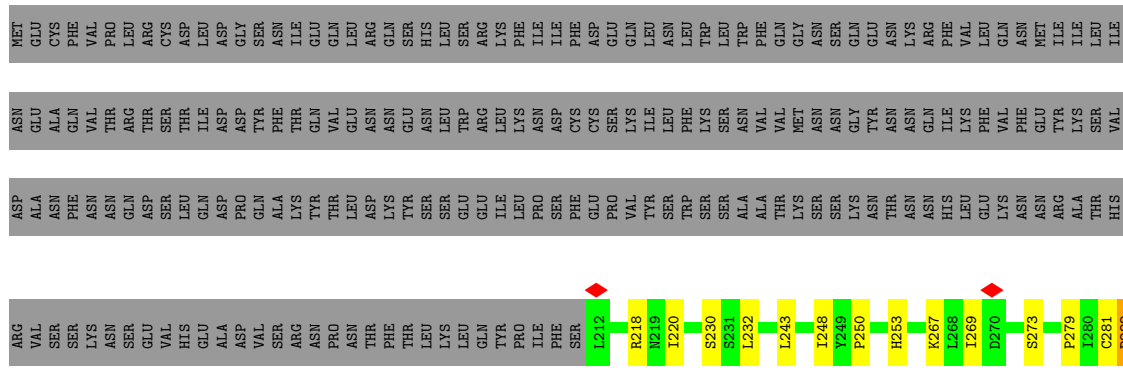
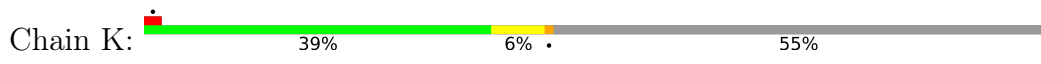


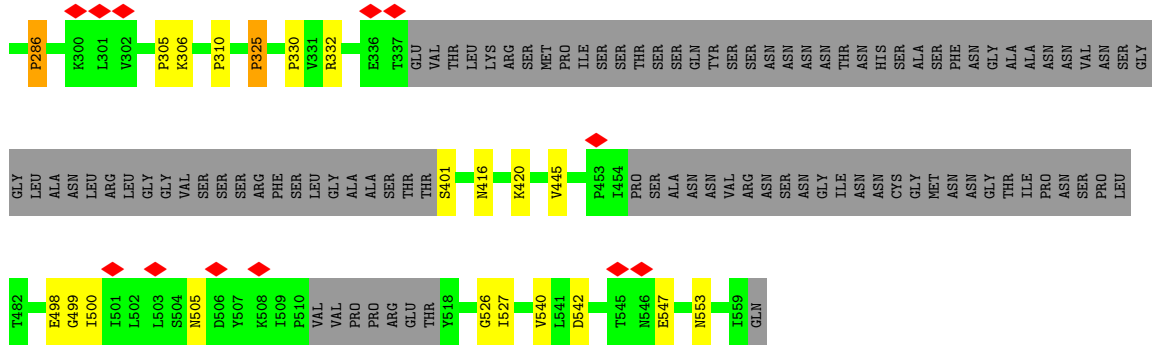
• Molecule 9: Trafficking protein particle complex II-specific subunit 120



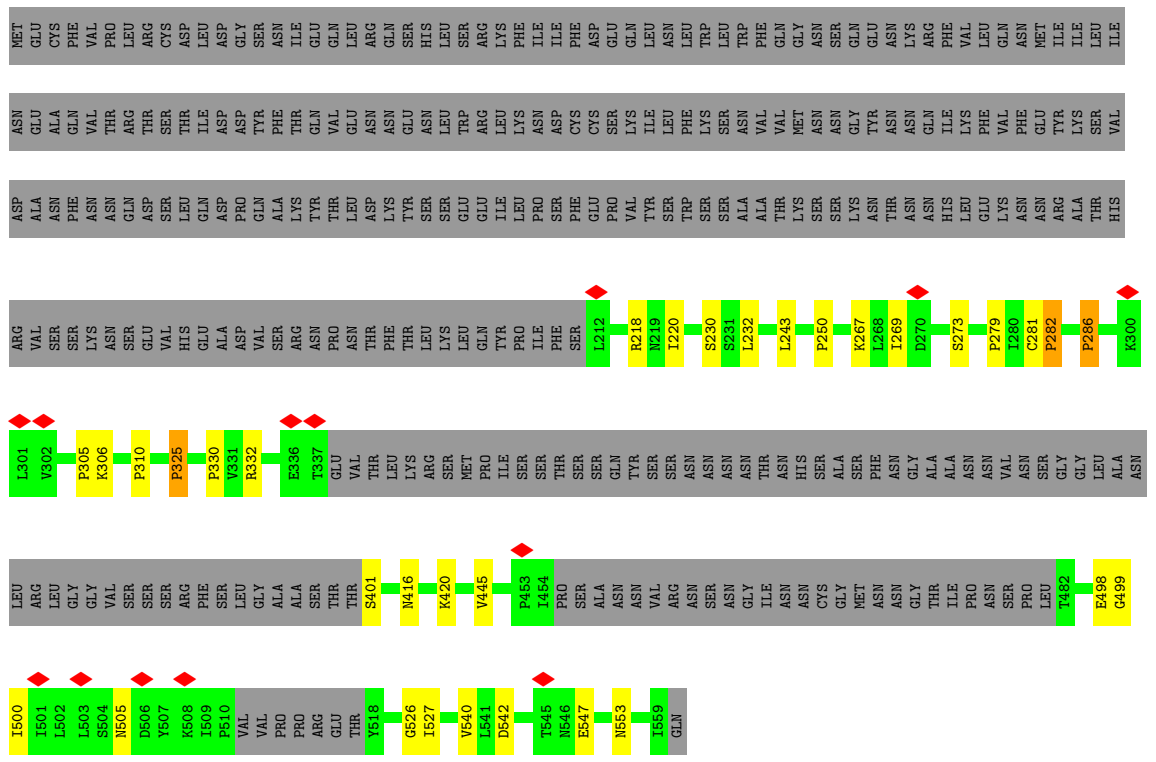
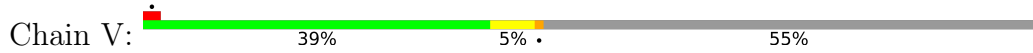


● Molecule 10: Trafficking protein particle complex II-specific subunit 65





• Molecule 10: Trafficking protein particle complex II-specific subunit 65



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15858	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.029	Depositor
Minimum map value	-0.003	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	523.68, 523.68, 523.68	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.091, 1.091, 1.091	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	A	0.39	0/1226	0.80	3/1655 (0.2%)
1	L	0.39	0/1226	0.80	3/1655 (0.2%)
2	B	0.43	0/1481	0.81	2/2000 (0.1%)
2	M	0.43	0/1481	0.81	2/2000 (0.1%)
3	C	0.39	0/1509	0.73	1/2040 (0.0%)
3	F	0.43	0/1497	0.83	6/2024 (0.3%)
3	N	0.39	0/1509	0.73	1/2040 (0.0%)
3	Q	0.43	0/1497	0.83	5/2024 (0.2%)
4	D	0.46	0/1263	0.79	3/1704 (0.2%)
4	O	0.46	0/1263	0.79	3/1704 (0.2%)
5	E	0.46	0/1318	0.79	1/1775 (0.1%)
5	P	0.46	0/1321	0.79	1/1781 (0.1%)
6	G	0.46	0/1643	0.87	11/2214 (0.5%)
6	R	0.46	0/1643	0.87	11/2214 (0.5%)
7	H	0.49	0/1204	0.83	3/1633 (0.2%)
7	S	0.49	0/1204	0.83	3/1633 (0.2%)
8	I	0.35	0/4263	0.67	14/5914 (0.2%)
8	T	0.35	0/4263	0.67	14/5914 (0.2%)
9	J	0.46	1/6358 (0.0%)	0.87	26/8657 (0.3%)
9	U	0.46	1/6358 (0.0%)	0.87	27/8657 (0.3%)
10	K	0.45	0/1582	0.88	9/2169 (0.4%)
10	V	0.45	0/1582	0.88	9/2169 (0.4%)
All	All	0.43	2/46691 (0.0%)	0.81	158/63576 (0.2%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	U	738	PRO	N-CD	10.04	1.61	1.47
9	J	738	PRO	N-CD	9.97	1.61	1.47

All (158) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	U	783	LEU	CA-CB-CG	10.41	139.25	115.30
9	J	783	LEU	CA-CB-CG	10.41	139.23	115.30
7	H	46	ASP	CB-CG-OD1	10.33	127.60	118.30
7	S	46	ASP	CB-CG-OD1	10.27	127.55	118.30
6	R	42	ILE	CG1-CB-CG2	-9.82	89.79	111.40
6	G	42	ILE	CG1-CB-CG2	-9.80	89.83	111.40
4	D	16	ILE	CG1-CB-CG2	-9.13	91.31	111.40
4	O	16	ILE	CG1-CB-CG2	-9.13	91.32	111.40
6	G	101	LEU	CA-CB-CG	8.25	134.28	115.30
6	R	101	LEU	CA-CB-CG	8.23	134.24	115.30
9	J	787	ILE	CG1-CB-CG2	-8.07	93.65	111.40
9	U	787	ILE	CG1-CB-CG2	-8.06	93.66	111.40
8	I	976	PRO	N-CA-CB	7.97	112.86	103.30
8	T	976	PRO	N-CA-CB	7.95	112.83	103.30
9	J	750	LEU	CA-CB-CG	7.77	133.17	115.30
9	U	750	LEU	CA-CB-CG	7.75	133.13	115.30
9	J	550	TRP	C-N-CA	7.67	140.87	121.70
9	U	550	TRP	C-N-CA	7.67	140.87	121.70
8	I	1076	PRO	N-CA-CB	7.33	112.10	103.30
8	T	1076	PRO	N-CA-CB	7.30	112.06	103.30
9	J	1052	ILE	CG1-CB-CG2	-7.16	95.65	111.40
9	U	1052	ILE	CG1-CB-CG2	-7.15	95.67	111.40
7	S	26	PRO	N-CA-CB	7.13	111.86	103.30
7	H	26	PRO	N-CA-CB	7.13	111.86	103.30
10	V	325	PRO	N-CA-CB	7.08	111.80	103.30
10	K	325	PRO	N-CA-CB	7.08	111.80	103.30
9	U	673	PRO	N-CA-CB	6.94	111.63	103.30
9	J	673	PRO	N-CA-CB	6.91	111.59	103.30
4	D	120	LEU	CA-CB-CG	6.89	131.14	115.30
8	I	704	PRO	N-CA-CB	6.87	111.54	103.30
8	T	704	PRO	N-CA-CB	6.87	111.54	103.30
4	O	120	LEU	CA-CB-CG	6.85	131.04	115.30
6	R	267	LEU	CA-CB-CG	6.74	130.79	115.30
6	G	267	LEU	CA-CB-CG	6.73	130.77	115.30
9	J	667	PRO	N-CA-CB	6.71	111.36	103.30
9	U	667	PRO	N-CA-CB	6.71	111.36	103.30
6	R	199	LEU	CA-CB-CG	6.67	130.64	115.30
6	G	199	LEU	CA-CB-CG	6.66	130.61	115.30
4	O	110	ILE	CG1-CB-CG2	-6.64	96.80	111.40
4	D	110	ILE	CG1-CB-CG2	-6.61	96.86	111.40
8	T	252	PRO	N-CA-CB	6.58	111.19	103.30
8	I	252	PRO	N-CA-CB	6.56	111.17	103.30
3	Q	99	LEU	CA-CB-CG	6.55	130.37	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	J	997	VAL	CG1-CB-CG2	-6.54	100.44	110.90
3	F	99	LEU	CA-CB-CG	6.53	130.32	115.30
10	V	330	PRO	N-CA-CB	6.53	111.13	103.30
9	U	997	VAL	CG1-CB-CG2	-6.52	100.47	110.90
10	K	330	PRO	N-CA-CB	6.50	111.11	103.30
10	V	282	PRO	N-CA-CB	6.43	111.02	103.30
3	F	17	ILE	CG1-CB-CG2	-6.40	97.32	111.40
10	K	282	PRO	N-CA-CB	6.40	110.98	103.30
3	Q	17	ILE	CG1-CB-CG2	-6.40	97.33	111.40
10	K	310	PRO	N-CA-CB	6.36	110.93	103.30
8	T	483	PRO	N-CA-CB	6.36	110.93	103.30
10	V	310	PRO	N-CA-CB	6.36	110.93	103.30
7	S	46	ASP	CB-CG-OD2	-6.33	112.60	118.30
8	I	483	PRO	N-CA-CB	6.33	110.90	103.30
7	H	46	ASP	CB-CG-OD2	-6.31	112.62	118.30
3	F	185	LYS	CA-CB-CG	6.15	126.94	113.40
3	Q	185	LYS	CA-CB-CG	6.14	126.92	113.40
8	I	1067	PRO	N-CA-CB	6.12	110.64	103.30
2	B	155	LEU	CA-CB-CG	6.11	129.35	115.30
2	M	155	LEU	CA-CB-CG	6.11	129.35	115.30
8	T	1067	PRO	N-CA-CB	6.09	110.61	103.30
8	I	970	PRO	N-CA-CB	6.05	110.56	103.30
8	T	970	PRO	N-CA-CB	6.05	110.56	103.30
10	V	243	LEU	CA-CB-CG	6.04	129.19	115.30
8	T	649	PRO	N-CA-CB	6.03	110.54	103.30
10	K	243	LEU	CA-CB-CG	6.03	129.17	115.30
10	K	305	PRO	N-CA-CB	6.03	110.53	103.30
10	V	305	PRO	N-CA-CB	6.02	110.53	103.30
8	I	649	PRO	N-CA-CB	5.96	110.45	103.30
6	R	101	LEU	CB-CG-CD2	-5.94	100.91	111.00
1	A	144	LEU	CA-CB-CG	5.92	128.91	115.30
6	R	28	PRO	N-CA-CB	5.92	110.40	103.30
9	U	635	TYR	CB-CG-CD2	-5.92	117.45	121.00
1	L	144	LEU	CA-CB-CG	5.91	128.89	115.30
6	G	101	LEU	CB-CG-CD2	-5.91	100.96	111.00
10	V	279	PRO	N-CA-CB	5.90	110.38	103.30
9	J	635	TYR	CB-CG-CD2	-5.88	117.47	121.00
10	K	279	PRO	N-CA-CB	5.88	110.36	103.30
9	J	659	ILE	CG1-CB-CG2	-5.86	98.51	111.40
9	U	659	ILE	CG1-CB-CG2	-5.86	98.52	111.40
6	G	28	PRO	N-CA-CB	5.83	110.30	103.30
3	Q	59	MET	CA-CB-CG	5.81	123.18	113.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	U	1255	PRO	N-CA-CB	5.80	110.26	103.30
6	G	236	ILE	CG1-CB-CG2	-5.80	98.65	111.40
3	F	59	MET	CA-CB-CG	5.79	123.14	113.30
9	J	1255	PRO	N-CA-CB	5.78	110.23	103.30
9	J	410	PRO	N-CA-CB	5.75	110.20	103.30
6	R	236	ILE	CG1-CB-CG2	-5.74	98.77	111.40
8	T	381	PRO	N-CA-CB	5.74	110.19	103.30
9	U	410	PRO	N-CA-CB	5.73	110.17	103.30
8	T	346	PRO	N-CA-CB	5.72	110.17	103.30
9	J	623	LEU	CA-CB-CG	5.71	128.44	115.30
8	T	980	PRO	N-CA-CB	5.71	110.15	103.30
8	I	381	PRO	N-CA-CB	5.70	110.14	103.30
9	U	436	PRO	N-CA-CB	5.70	110.14	103.30
8	I	346	PRO	N-CA-CB	5.69	110.12	103.30
3	Q	90	LEU	CA-CB-CG	5.69	128.38	115.30
9	U	623	LEU	CA-CB-CG	5.68	128.38	115.30
9	J	436	PRO	N-CA-CB	5.66	110.09	103.30
8	I	980	PRO	N-CA-CB	5.65	110.08	103.30
10	K	250	PRO	N-CA-CB	5.65	110.08	103.30
8	T	721	PRO	N-CA-CB	5.63	110.06	103.30
3	F	90	LEU	CA-CB-CG	5.63	128.24	115.30
9	J	388	PRO	N-CA-CB	5.63	110.05	103.30
9	U	388	PRO	N-CA-CB	5.62	110.05	103.30
8	I	721	PRO	N-CA-CB	5.61	110.03	103.30
10	V	250	PRO	N-CA-CB	5.60	110.03	103.30
9	U	398	PRO	N-CA-CB	5.59	110.01	103.30
9	J	398	PRO	N-CA-CB	5.58	109.99	103.30
8	T	639	PRO	N-CA-CB	5.53	109.94	103.30
8	I	639	PRO	N-CA-CB	5.52	109.93	103.30
8	I	572	PRO	N-CA-CB	5.52	109.92	103.30
9	J	737	ASN	N-CA-C	5.52	125.90	111.00
9	U	737	ASN	N-CA-C	5.51	125.87	111.00
9	J	956	PRO	N-CA-CB	5.50	109.90	103.30
6	G	173	ASP	CB-CG-OD1	5.50	123.25	118.30
9	J	908	LYS	C-N-CA	5.50	135.44	121.70
9	U	908	LYS	C-N-CA	5.50	135.45	121.70
8	T	572	PRO	N-CA-CB	5.49	109.89	103.30
9	U	956	PRO	N-CA-CB	5.45	109.84	103.30
6	R	62	MET	CA-CB-CG	5.42	122.51	113.30
6	R	173	ASP	CB-CG-OD1	5.41	123.17	118.30
9	U	986	PRO	N-CA-CB	5.41	109.79	103.30
9	J	986	PRO	N-CA-CB	5.40	109.78	103.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	J	1100	PRO	N-CA-CB	5.40	109.78	103.30
3	N	157	LEU	CA-CB-CG	5.39	127.70	115.30
9	U	1100	PRO	N-CA-CB	5.39	109.77	103.30
1	L	137	LEU	CA-CB-CG	5.39	127.70	115.30
6	G	62	MET	CA-CB-CG	5.38	122.45	113.30
3	C	157	LEU	CA-CB-CG	5.37	127.66	115.30
1	A	137	LEU	CA-CB-CG	5.35	127.61	115.30
9	J	763	LYS	CA-CB-CG	5.34	125.15	113.40
9	U	763	LYS	CA-CB-CG	5.32	125.10	113.40
5	E	36	LEU	CB-CG-CD1	5.24	119.90	111.00
9	J	1023	MET	CB-CG-SD	5.22	128.07	112.40
5	P	36	LEU	CB-CG-CD1	5.22	119.87	111.00
9	U	1023	MET	CB-CG-SD	5.21	128.04	112.40
10	V	286	PRO	N-CA-CB	5.17	109.50	103.30
10	K	286	PRO	N-CA-CB	5.15	109.48	103.30
9	U	1211	LEU	CA-CB-CG	5.14	127.12	115.30
9	J	631	LEU	CA-CB-CG	5.13	127.11	115.30
9	U	631	LEU	CA-CB-CG	5.13	127.10	115.30
9	J	1211	LEU	CA-CB-CG	5.12	127.07	115.30
6	G	170	ARG	CG-CD-NE	5.10	122.52	111.80
6	R	170	ARG	CG-CD-NE	5.10	122.51	111.80
6	G	98	LEU	CA-CB-CG	5.09	127.02	115.30
6	R	98	LEU	CA-CB-CG	5.08	126.98	115.30
1	L	69	LEU	CA-CB-CG	5.07	126.96	115.30
2	M	47	MET	CG-SD-CE	5.05	108.28	100.20
1	A	69	LEU	CA-CB-CG	5.04	126.90	115.30
9	U	815	ILE	CG1-CB-CG2	-5.04	100.30	111.40
9	U	738	PRO	CA-N-CD	-5.04	104.45	111.50
2	B	47	MET	CG-SD-CE	5.03	108.24	100.20
3	F	13	MET	CA-CB-CG	5.02	121.84	113.30
9	J	815	ILE	CG1-CB-CG2	-5.02	100.35	111.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1206	0	1228	71	0
1	L	1206	0	1228	73	0
2	B	1459	0	1381	56	0
2	M	1459	0	1381	53	0
3	C	1482	0	1490	29	0
3	F	1470	0	1476	24	0
3	N	1482	0	1490	26	0
3	Q	1470	0	1476	20	0
4	D	1235	0	1202	25	0
4	O	1235	0	1202	25	0
5	E	1295	0	1296	26	0
5	P	1297	0	1299	24	0
6	G	1610	0	1547	33	0
6	R	1610	0	1547	30	0
7	H	1173	0	1125	51	0
7	S	1173	0	1125	51	0
8	I	4244	0	2176	26	0
8	T	4244	0	2176	25	0
9	J	6256	0	5486	115	0
9	U	6256	0	5486	108	0
10	K	1568	0	1147	13	0
10	V	1568	0	1147	12	0
All	All	45998	0	39111	859	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 10.

All (859) 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)
9:U:481:ASN:ND2	9:U:484:MET:HE2	1.32	1.44
9:U:481:ASN:HD22	9:U:484:MET:CE	1.33	1.41
1:L:79:ILE:CG2	1:L:81:GLN:OE1	1.67	1.41
1:A:79:ILE:CG2	1:A:81:GLN:OE1	1.68	1.40
9:J:482:SER:HB3	9:J:483:PRO:CD	1.53	1.33
1:A:63:LEU:HD12	1:A:77:MET:CE	1.58	1.33
1:L:63:LEU:HD12	1:L:77:MET:CE	1.58	1.31
9:U:482:SER:HB3	9:U:483:PRO:CD	1.62	1.25
7:S:37:ASN:HB3	7:S:38:PRO:CD	1.73	1.18
7:H:37:ASN:HB3	7:H:38:PRO:CD	1.73	1.16
7:S:32:ASP:OD1	7:S:36:LEU:HD23	1.46	1.15
2:M:177:LYS:CB	2:M:185:TYR:HE1	1.60	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:R:168:LYS:HD3	6:R:170:ARG:HH22	1.01	1.15
2:B:177:LYS:CB	2:B:185:TYR:HE1	1.60	1.14
7:H:32:ASP:OD1	7:H:36:LEU:HD23	1.46	1.13
6:G:168:LYS:HD3	6:G:170:ARG:HH22	1.01	1.13
9:J:479:ILE:HG22	9:J:480:PRO:HD2	1.24	1.11
2:B:177:LYS:HB2	2:B:185:TYR:CE1	1.85	1.11
1:L:63:LEU:HD12	1:L:77:MET:HE1	1.30	1.10
2:M:177:LYS:HB2	2:M:185:TYR:CE1	1.85	1.09
9:U:482:SER:HB3	9:U:483:PRO:HD3	1.18	1.09
7:H:37:ASN:CB	7:H:38:PRO:HD2	1.83	1.09
2:M:177:LYS:HB2	2:M:185:TYR:HE1	0.96	1.08
9:J:482:SER:CB	9:J:483:PRO:HD2	1.83	1.07
1:L:63:LEU:HA	1:L:77:MET:CE	1.84	1.07
7:S:37:ASN:CB	7:S:38:PRO:HD2	1.83	1.07
1:A:63:LEU:HA	1:A:77:MET:CE	1.84	1.07
1:A:63:LEU:CD1	1:A:77:MET:HE1	1.84	1.06
2:B:177:LYS:HB2	2:B:185:TYR:HE1	0.96	1.06
1:L:63:LEU:CD1	1:L:77:MET:HE1	1.84	1.05
1:A:63:LEU:HD12	1:A:77:MET:HE1	1.28	1.05
7:S:37:ASN:CB	7:S:38:PRO:CD	2.35	1.05
9:J:1069:GLU:OE1	9:U:1069:GLU:OE1	1.73	1.04
1:A:63:LEU:HA	1:A:77:MET:HE1	1.39	1.04
1:A:79:ILE:HG23	1:A:81:GLN:OE1	0.86	1.03
1:L:79:ILE:HG23	1:L:81:GLN:OE1	0.85	1.02
1:A:79:ILE:HG23	1:A:81:GLN:CD	1.79	1.02
7:H:37:ASN:CB	7:H:38:PRO:CD	2.35	1.01
1:L:61:PRO:HB2	1:L:79:ILE:HD13	1.41	1.01
1:L:79:ILE:HG23	1:L:81:GLN:CD	1.79	1.01
1:L:63:LEU:CD1	1:L:77:MET:CE	2.39	0.99
1:A:79:ILE:HG22	1:A:81:GLN:H	1.22	0.99
9:U:482:SER:CB	9:U:483:PRO:CD	2.42	0.98
1:A:63:LEU:CD1	1:A:77:MET:CE	2.39	0.97
1:A:61:PRO:HB2	1:A:79:ILE:HD13	1.41	0.97
1:L:79:ILE:HG22	1:L:81:GLN:H	1.22	0.97
9:J:481:ASN:HD22	9:J:484:MET:HE1	1.29	0.96
1:L:63:LEU:HA	1:L:77:MET:HE1	1.45	0.96
7:S:37:ASN:O	7:S:41:LEU:HG	1.66	0.96
7:S:37:ASN:HB3	7:S:38:PRO:HD2	0.96	0.95
7:H:37:ASN:O	7:H:41:LEU:HG	1.66	0.95
6:R:168:LYS:HD2	6:R:170:ARG:HH12	1.32	0.94
6:R:168:LYS:HD3	6:R:170:ARG:NH2	1.83	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:37:ASN:HB3	7:H:38:PRO:HD2	0.96	0.94
6:G:168:LYS:HD3	6:G:170:ARG:NH2	1.82	0.93
9:J:481:ASN:HB2	9:J:484:MET:HE2	1.50	0.93
9:J:482:SER:HB3	9:J:483:PRO:HD2	0.93	0.92
6:G:168:LYS:HD2	6:G:170:ARG:HH12	1.32	0.91
2:M:177:LYS:CB	2:M:185:TYR:CE1	2.49	0.91
2:M:176:LEU:HB2	2:M:186:LEU:CD1	2.01	0.91
2:B:176:LEU:HB2	2:B:186:LEU:CD1	2.01	0.91
1:L:63:LEU:HD12	1:L:77:MET:HE2	1.49	0.90
1:A:54:TRP:NE1	1:A:78:LEU:HD12	1.86	0.90
1:L:54:TRP:NE1	1:L:78:LEU:HD12	1.86	0.89
1:A:63:LEU:HD12	1:A:77:MET:HE2	1.51	0.89
2:M:174:ASP:O	2:M:187:LEU:HD23	1.73	0.89
2:B:174:ASP:O	2:B:187:LEU:HD23	1.73	0.88
1:A:62:LEU:O	1:A:77:MET:SD	2.31	0.88
1:L:62:LEU:O	1:L:77:MET:SD	2.31	0.87
1:A:61:PRO:HG2	1:A:79:ILE:HA	1.55	0.87
9:J:482:SER:CB	9:J:483:PRO:CD	2.45	0.87
1:L:61:PRO:HG2	1:L:79:ILE:HA	1.55	0.86
9:U:481:ASN:HD22	9:U:484:MET:HE2	0.80	0.86
2:B:177:LYS:CB	2:B:185:TYR:CE1	2.49	0.85
2:B:187:LEU:HD23	2:B:187:LEU:O	1.77	0.84
2:B:176:LEU:HB2	2:B:186:LEU:HD11	1.59	0.84
2:M:176:LEU:HB2	2:M:186:LEU:HD11	1.59	0.84
2:M:187:LEU:HD23	2:M:187:LEU:O	1.77	0.84
9:U:481:ASN:HB3	9:U:484:MET:HG2	1.57	0.84
9:U:481:ASN:ND2	9:U:484:MET:CE	2.10	0.83
9:J:481:ASN:ND2	9:J:484:MET:HE1	1.92	0.83
7:S:37:ASN:CG	7:S:38:PRO:HD3	1.98	0.83
9:J:479:ILE:HG22	9:J:480:PRO:CD	2.09	0.83
1:A:61:PRO:HG2	1:A:79:ILE:HD12	1.60	0.82
7:H:37:ASN:CG	7:H:38:PRO:HD3	1.99	0.82
1:A:79:ILE:CG2	1:A:81:GLN:HB2	2.10	0.82
1:L:61:PRO:HG2	1:L:79:ILE:HD12	1.60	0.81
9:J:479:ILE:CG2	9:J:480:PRO:HD2	2.09	0.81
2:M:181:ARG:HA	2:M:184:PHE:CE1	2.16	0.80
1:L:61:PRO:CG	1:L:79:ILE:HD12	2.11	0.80
2:B:181:ARG:HA	2:B:184:PHE:CE1	2.16	0.80
1:L:79:ILE:CG2	1:L:81:GLN:HB2	2.10	0.80
1:A:61:PRO:CG	1:A:79:ILE:HD12	2.11	0.80
1:A:61:PRO:HD2	1:A:79:ILE:HD12	1.64	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:481:ASN:CB	9:J:484:MET:HE2	2.12	0.79
7:S:32:ASP:O	7:S:36:LEU:HG	1.83	0.79
7:H:38:PRO:O	7:H:42:HIS:N	2.16	0.79
7:S:38:PRO:HB3	9:U:584:TRP:CZ2	2.18	0.78
7:H:38:PRO:HB3	9:J:584:TRP:CZ2	2.18	0.78
7:S:38:PRO:O	7:S:42:HIS:N	2.16	0.78
5:E:169:ASN:CB	5:E:169:ASN:C	2.52	0.78
1:A:54:TRP:CE2	1:A:78:LEU:HD12	2.19	0.77
9:J:481:ASN:HB2	9:J:484:MET:CE	2.14	0.77
2:M:174:ASP:O	2:M:187:LEU:CD2	2.32	0.77
2:M:177:LYS:O	2:M:185:TYR:CE1	2.37	0.77
1:L:54:TRP:CE2	1:L:78:LEU:HD12	2.19	0.77
1:L:61:PRO:HD2	1:L:79:ILE:HD12	1.64	0.77
7:H:32:ASP:O	7:H:36:LEU:HG	1.84	0.77
1:A:63:LEU:CA	1:A:77:MET:HE1	2.14	0.76
2:B:177:LYS:O	2:B:185:TYR:CE1	2.37	0.76
1:L:61:PRO:CD	1:L:79:ILE:HD12	2.15	0.76
2:B:174:ASP:O	2:B:187:LEU:CD2	2.32	0.76
9:U:481:ASN:HB2	9:U:484:MET:HE3	1.67	0.76
1:A:61:PRO:CD	1:A:79:ILE:HD12	2.15	0.75
6:R:168:LYS:CD	6:R:170:ARG:HH22	1.93	0.75
9:U:482:SER:CB	9:U:483:PRO:HD2	2.17	0.74
1:A:61:PRO:CB	1:A:79:ILE:HD13	2.16	0.74
9:J:481:ASN:CB	9:J:484:MET:CE	2.65	0.74
9:J:735:VAL:HG23	9:J:735:VAL:O	1.88	0.74
9:J:491:TYR:O	9:J:495:ASN:HB2	1.88	0.73
1:L:61:PRO:CB	1:L:79:ILE:HD13	2.16	0.73
1:L:61:PRO:HG2	1:L:79:ILE:CD1	2.19	0.73
9:U:491:TYR:O	9:U:495:ASN:HB2	1.88	0.73
1:A:61:PRO:HG2	1:A:79:ILE:CD1	2.19	0.72
1:L:63:LEU:CA	1:L:77:MET:HE1	2.19	0.72
9:U:735:VAL:HG23	9:U:735:VAL:O	1.88	0.72
1:A:61:PRO:CG	1:A:79:ILE:CD1	2.67	0.72
7:H:37:ASN:CG	7:H:38:PRO:CD	2.57	0.72
6:G:168:LYS:CD	6:G:170:ARG:HH22	1.93	0.72
1:L:61:PRO:CG	1:L:79:ILE:CD1	2.67	0.72
2:M:176:LEU:HD13	2:M:186:LEU:HD13	1.73	0.71
9:U:479:ILE:C	9:U:481:ASN:H	1.92	0.71
1:A:61:PRO:CG	1:A:79:ILE:HA	2.21	0.71
1:A:79:ILE:HG22	1:A:81:GLN:N	2.03	0.70
9:J:481:ASN:HD22	9:J:484:MET:CE	2.03	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:U:481:ASN:CB	9:U:484:MET:HE3	2.21	0.70
7:S:37:ASN:CG	7:S:38:PRO:CD	2.57	0.70
2:B:176:LEU:HD13	2:B:186:LEU:HD13	1.73	0.70
1:L:79:ILE:HG22	1:L:81:GLN:N	2.03	0.70
1:L:54:TRP:HE1	1:L:78:LEU:HD12	1.57	0.69
1:L:61:PRO:CG	1:L:79:ILE:HA	2.21	0.68
1:A:77:MET:HB3	1:A:109:PHE:CE1	2.28	0.68
9:J:481:ASN:HB3	9:J:484:MET:HG2	1.74	0.68
1:A:79:ILE:HG21	1:A:81:GLN:HB2	1.76	0.68
7:H:38:PRO:O	7:H:42:HIS:HB2	1.94	0.68
9:J:800:CYS:SG	9:J:801:LEU:N	2.67	0.67
1:L:77:MET:HB3	1:L:109:PHE:CE1	2.28	0.67
1:L:79:ILE:HG21	1:L:81:GLN:HB2	1.76	0.67
7:S:38:PRO:O	7:S:42:HIS:HB2	1.94	0.67
1:L:61:PRO:HD2	1:L:79:ILE:CD1	2.25	0.67
9:U:800:CYS:SG	9:U:801:LEU:N	2.67	0.66
2:B:47:MET:HB2	3:C:63:ILE:HD11	1.78	0.66
1:A:54:TRP:HE1	1:A:78:LEU:HD12	1.57	0.66
1:A:61:PRO:HD2	1:A:79:ILE:CD1	2.25	0.65
7:H:2:PRO:HB2	7:H:29:PHE:CE1	2.31	0.65
7:S:2:PRO:HB2	7:S:29:PHE:CE1	2.31	0.65
1:A:54:TRP:CZ2	1:A:78:LEU:CD1	2.80	0.64
1:L:54:TRP:CZ2	1:L:78:LEU:CD1	2.80	0.64
2:M:47:MET:HB2	3:N:63:ILE:HD11	1.78	0.64
9:U:479:ILE:O	9:U:481:ASN:N	2.29	0.64
7:S:52:GLN:HG3	7:S:104:ILE:HG21	1.78	0.64
9:J:628:GLN:O	9:J:632:PHE:HB2	1.98	0.64
9:U:628:GLN:O	9:U:632:PHE:HB2	1.98	0.64
7:H:52:GLN:HG3	7:H:104:ILE:HG21	1.78	0.64
4:O:20:GLU:HB2	4:O:24:ALA:CB	2.28	0.63
7:H:36:LEU:HA	7:H:40:ILE:HG21	1.80	0.63
7:H:36:LEU:HD12	7:H:36:LEU:C	2.19	0.63
7:S:36:LEU:C	7:S:36:LEU:HD12	2.19	0.63
2:M:177:LYS:O	2:M:185:TYR:CD1	2.51	0.63
1:A:61:PRO:HG2	1:A:79:ILE:CA	2.27	0.63
2:B:177:LYS:O	2:B:185:TYR:CD1	2.51	0.63
4:D:20:GLU:HB2	4:D:24:ALA:CB	2.28	0.62
3:N:49:PHE:HB3	3:N:138:LEU:HB2	1.81	0.62
3:N:187:GLU:H	4:O:133:ARG:HH11	1.48	0.62
5:E:140:PHE:HB3	5:E:179:LEU:HD12	1.81	0.62
9:J:1182:VAL:HG11	9:J:1188:ILE:HD11	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:S:36:LEU:HA	7:S:40:ILE:HG21	1.80	0.62
1:L:61:PRO:HG2	1:L:79:ILE:CA	2.27	0.62
9:U:1182:VAL:HG11	9:U:1188:ILE:HD11	1.82	0.62
9:J:393:MET:O	9:J:397:ALA:HB3	2.00	0.62
5:P:140:PHE:HB3	5:P:179:LEU:HD12	1.81	0.62
3:C:187:GLU:H	4:D:133:ARG:HH11	1.48	0.61
9:U:393:MET:O	9:U:397:ALA:HB3	2.00	0.61
3:C:49:PHE:HB3	3:C:138:LEU:HB2	1.81	0.61
7:H:35:GLU:O	7:H:40:ILE:CG2	2.49	0.61
7:H:87:CYS:SG	7:H:88:TYR:N	2.74	0.61
1:A:79:ILE:HG21	1:A:81:GLN:OE1	1.90	0.61
7:S:35:GLU:O	7:S:40:ILE:CG2	2.49	0.61
7:S:87:CYS:SG	7:S:88:TYR:N	2.74	0.60
9:J:1112:GLU:O	9:J:1116:GLU:HB2	2.02	0.60
9:U:1075:ARG:HD2	10:V:505:ASN:HB2	1.83	0.60
7:H:4:TYR:HB3	7:H:114:ILE:HB	1.84	0.60
3:C:68:ILE:HD13	3:C:151:SER:HB2	1.84	0.60
1:A:54:TRP:CE2	1:A:78:LEU:CD1	2.85	0.60
6:R:168:LYS:CD	6:R:170:ARG:HH12	2.11	0.60
7:S:4:TYR:HB3	7:S:114:ILE:HB	1.84	0.60
1:L:54:TRP:CE2	1:L:78:LEU:CD1	2.85	0.60
10:V:445:VAL:HG12	10:V:540:VAL:HG12	1.83	0.60
10:K:445:VAL:HG12	10:K:540:VAL:HG12	1.83	0.59
3:N:68:ILE:HD13	3:N:151:SER:HB2	1.84	0.59
9:U:1112:GLU:O	9:U:1116:GLU:HB2	2.02	0.59
2:M:181:ARG:HA	2:M:184:PHE:HE1	1.67	0.59
2:B:183:THR:C	2:B:184:PHE:HD1	2.06	0.59
3:F:101:ILE:HD11	3:F:121:GLU:HG3	1.85	0.59
1:L:105:ILE:HA	1:L:108:ILE:HG12	1.85	0.59
2:M:183:THR:C	2:M:184:PHE:HD1	2.06	0.59
9:J:1075:ARG:HD2	10:K:505:ASN:HB2	1.83	0.58
7:S:47:ILE:O	7:S:51:LEU:HB2	2.04	0.58
3:N:92:LYS:O	3:N:96:LYS:HB2	2.04	0.58
1:A:61:PRO:CB	1:A:79:ILE:HA	2.34	0.58
3:Q:101:ILE:HD11	3:Q:121:GLU:HG3	1.85	0.58
9:J:479:ILE:CG1	9:J:485:PHE:HB2	2.33	0.58
9:U:659:ILE:HG23	9:U:738:PRO:HB3	1.86	0.58
7:H:47:ILE:O	7:H:51:LEU:HB2	2.04	0.58
9:U:1175:LEU:HG	9:U:1192:ILE:HG22	1.85	0.58
10:V:416:ASN:O	10:V:420:LYS:NZ	2.37	0.58
1:A:105:ILE:HA	1:A:108:ILE:HG12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:O:20:GLU:HB2	4:O:24:ALA:HB1	1.86	0.58
9:U:479:ILE:C	9:U:481:ASN:N	2.56	0.58
9:J:659:ILE:HG23	9:J:738:PRO:HB3	1.86	0.57
3:Q:108:TRP:HB3	3:Q:112:LYS:HA	1.85	0.57
8:T:1003:THR:O	9:U:1230:ARG:NH2	2.37	0.57
9:U:661:ARG:NH2	9:U:733:CYS:HA	2.19	0.57
3:C:92:LYS:O	3:C:96:LYS:HB2	2.04	0.57
9:U:481:ASN:CB	9:U:484:MET:CE	2.81	0.57
5:E:169:ASN:CB	5:E:170:LEU:N	2.68	0.57
9:J:1175:LEU:HG	9:J:1192:ILE:HG22	1.85	0.57
7:S:29:PHE:CD1	7:S:29:PHE:N	2.73	0.57
1:L:61:PRO:CB	1:L:79:ILE:HA	2.34	0.57
2:M:157:MET:HA	2:M:160:ILE:HG22	1.87	0.57
7:H:29:PHE:N	7:H:29:PHE:CD1	2.73	0.57
10:K:416:ASN:O	10:K:420:LYS:NZ	2.37	0.57
1:L:79:ILE:HG21	1:L:81:GLN:OE1	1.90	0.57
8:I:1003:THR:O	9:J:1230:ARG:NH2	2.37	0.57
3:F:108:TRP:HB3	3:F:112:LYS:HA	1.85	0.56
7:H:37:ASN:O	7:H:41:LEU:CG	2.49	0.56
2:B:42:GLN:H	3:C:23:GLU:HB3	1.69	0.56
4:D:20:GLU:HB2	4:D:24:ALA:HB1	1.86	0.56
2:M:42:GLN:H	3:N:23:GLU:HB3	1.69	0.56
7:S:88:TYR:OH	7:S:130:MET:SD	2.62	0.56
9:J:661:ARG:NH2	9:J:733:CYS:HA	2.20	0.56
6:G:277:ARG:HH11	7:H:53:TRP:HB3	1.71	0.56
4:D:19:ARG:HH22	4:D:20:GLU:HG2	1.69	0.56
4:O:19:ARG:HH22	4:O:20:GLU:HG2	1.69	0.56
9:U:458:SER:O	9:U:462:LYS:NZ	2.39	0.56
6:G:168:LYS:CD	6:G:170:ARG:HH12	2.11	0.56
7:H:88:TYR:OH	7:H:130:MET:SD	2.62	0.56
2:M:238:CYS:SG	2:M:239:LEU:N	2.78	0.56
5:P:10:ASN:HA	5:P:138:LEU:HD23	1.88	0.56
2:B:157:MET:HA	2:B:160:ILE:HG22	1.87	0.56
2:B:181:ARG:HA	2:B:184:PHE:HE1	1.66	0.56
3:Q:29:LEU:HD12	6:R:191:LEU:HD22	1.88	0.56
6:R:277:ARG:HH11	7:S:53:TRP:HB3	1.71	0.55
2:B:238:CYS:SG	2:B:239:LEU:N	2.78	0.55
9:U:1115:ILE:HD11	9:U:1201:ARG:HH21	1.72	0.55
8:I:599:PHE:HA	8:I:636:LYS:HA	1.88	0.55
9:U:542:LEU:HD11	9:U:597:LYS:HB3	1.88	0.55
9:J:1115:ILE:HD11	9:J:1201:ARG:HH21	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:29:LEU:HD12	6:G:191:LEU:HD22	1.88	0.55
9:J:458:SER:O	9:J:462:LYS:NZ	2.39	0.55
2:M:181:ARG:C	2:M:184:PHE:HE1	2.11	0.55
9:J:542:LEU:HD11	9:J:597:LYS:HB3	1.88	0.54
9:U:481:ASN:ND2	9:U:484:MET:SD	2.76	0.54
9:U:1008:LEU:O	9:U:1023:MET:SD	2.66	0.54
1:L:80:LYS:O	1:L:80:LYS:HG2	2.08	0.54
9:U:1017:ASP:OD1	9:U:1017:ASP:N	2.40	0.54
2:B:184:PHE:HD1	2:B:184:PHE:N	2.05	0.54
8:T:599:PHE:HA	8:T:636:LYS:HA	1.89	0.54
5:E:10:ASN:HA	5:E:138:LEU:HD23	1.88	0.54
5:E:190:VAL:HG21	5:E:202:ILE:HG23	1.90	0.54
2:M:184:PHE:CD1	2:M:184:PHE:N	2.76	0.54
6:R:168:LYS:HD2	6:R:170:ARG:NH1	2.14	0.54
2:M:184:PHE:HD1	2:M:184:PHE:N	2.05	0.54
4:D:103:LEU:HD23	4:D:106:ILE:HD11	1.90	0.54
3:F:26:ASN:ND2	3:F:28:GLU:OE2	2.41	0.54
9:J:638:PRO:HA	9:J:641:THR:HG22	1.90	0.54
9:J:1008:LEU:O	9:J:1023:MET:SD	2.66	0.54
3:Q:26:ASN:ND2	3:Q:28:GLU:OE2	2.41	0.54
1:A:80:LYS:O	1:A:80:LYS:HG2	2.08	0.53
3:Q:82:ASN:OD1	3:Q:85:LYS:N	2.41	0.53
2:B:187:LEU:CD2	2:B:187:LEU:H	2.22	0.53
4:D:92:SER:OG	4:D:93:ASP:N	2.40	0.53
6:G:250:VAL:HG13	6:G:268:ILE:HG22	1.89	0.53
4:O:92:SER:OG	4:O:93:ASP:N	2.40	0.53
2:B:181:ARG:C	2:B:184:PHE:HE1	2.11	0.53
9:J:1017:ASP:N	9:J:1017:ASP:OD1	2.40	0.53
1:L:54:TRP:CZ2	1:L:78:LEU:HD12	2.43	0.53
2:M:187:LEU:CD2	2:M:187:LEU:H	2.22	0.53
4:O:114:TYR:O	4:O:118:ASN:ND2	2.41	0.53
9:U:1203:LYS:HG2	9:U:1205:ASN:H	1.73	0.53
1:A:61:PRO:HB2	1:A:79:ILE:CD1	2.28	0.53
3:F:71:PHE:O	3:F:75:THR:OG1	2.25	0.53
6:G:94:ILE:HA	6:G:97:ARG:HD3	1.90	0.53
3:Q:71:PHE:O	3:Q:75:THR:OG1	2.25	0.53
4:D:114:TYR:O	4:D:118:ASN:ND2	2.41	0.53
5:E:20:ASN:HB2	5:E:23:ASN:HD21	1.73	0.53
9:J:735:VAL:O	9:J:736:GLN:NE2	2.41	0.53
2:M:177:LYS:HB3	2:M:185:TYR:CE1	2.43	0.53
3:Q:49:PHE:O	3:Q:53:ASN:ND2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:R:94:ILE:HA	6:R:97:ARG:HD3	1.90	0.53
9:U:735:VAL:O	9:U:736:GLN:NE2	2.41	0.53
7:H:37:ASN:OD1	7:H:38:PRO:HD3	2.08	0.53
5:P:190:VAL:HG21	5:P:202:ILE:HG23	1.90	0.53
3:C:48:ASP:OD1	3:C:48:ASP:N	2.38	0.53
6:R:250:VAL:HG13	6:R:268:ILE:HG22	1.89	0.53
9:U:638:PRO:HA	9:U:641:THR:HG22	1.90	0.53
1:A:54:TRP:CZ2	1:A:78:LEU:HD12	2.43	0.53
3:C:186:ASP:OD1	4:D:133:ARG:NH1	2.42	0.53
3:N:186:ASP:OD1	4:O:133:ARG:NH1	2.42	0.53
4:O:103:LEU:HD23	4:O:106:ILE:HD11	1.90	0.53
3:F:49:PHE:O	3:F:53:ASN:ND2	2.41	0.52
9:J:474:ARG:HH12	9:J:491:TYR:HA	1.75	0.52
9:J:1203:LYS:HG2	9:J:1205:ASN:H	1.73	0.52
7:S:37:ASN:OD1	7:S:38:PRO:HD3	2.08	0.52
1:L:10:LEU:HA	1:L:86:ILE:HG22	1.92	0.52
2:B:187:LEU:CD2	2:B:187:LEU:N	2.73	0.52
3:C:161:VAL:HG12	3:C:178:VAL:HG13	1.91	0.52
6:R:89:ASP:OD1	6:R:89:ASP:N	2.42	0.52
6:G:168:LYS:HD2	6:G:170:ARG:NH1	2.14	0.52
1:L:62:LEU:C	1:L:77:MET:SD	2.88	0.52
9:U:481:ASN:HB3	9:U:484:MET:CG	2.34	0.52
1:A:10:LEU:HA	1:A:86:ILE:HG22	1.92	0.52
2:B:185:TYR:HB3	2:B:261:HIS:HA	1.92	0.52
6:G:89:ASP:N	6:G:89:ASP:OD1	2.42	0.52
9:J:1006:ASN:ND2	10:K:498:GLU:OE2	2.43	0.52
3:N:161:VAL:HG12	3:N:178:VAL:HG13	1.91	0.52
3:C:86:THR:HA	3:C:89:VAL:HG12	1.92	0.52
7:H:2:PRO:CB	7:H:29:PHE:CE1	2.92	0.52
1:L:61:PRO:CD	1:L:79:ILE:CD1	2.85	0.52
7:S:2:PRO:CB	7:S:29:PHE:CE1	2.92	0.52
3:N:8:ARG:HE	3:N:10:LEU:H	1.57	0.51
5:P:20:ASN:HB2	5:P:23:ASN:HD21	1.74	0.51
5:E:137:GLY:O	5:E:139:LYS:NZ	2.44	0.51
3:F:53:ASN:HD21	3:F:138:LEU:HA	1.76	0.51
1:L:61:PRO:CB	1:L:79:ILE:CD1	2.87	0.51
2:M:187:LEU:CD2	2:M:187:LEU:N	2.73	0.51
1:A:62:LEU:C	1:A:77:MET:SD	2.88	0.51
1:L:42:ILE:O	1:L:46:TYR:CB	2.59	0.51
1:L:63:LEU:HA	1:L:77:MET:HE2	1.83	0.51
3:N:132:MET:HA	3:N:135:MET:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:ILE:O	1:A:46:TYR:CB	2.59	0.51
1:A:61:PRO:CD	1:A:79:ILE:CD1	2.85	0.51
2:B:181:ARG:CA	2:B:184:PHE:HE1	2.23	0.51
7:H:31:GLN:CA	7:H:31:GLN:NE2	2.73	0.51
5:P:113:ASN:ND2	5:P:115:ASN:OD1	2.43	0.51
3:Q:49:PHE:HB3	3:Q:138:LEU:HB2	1.92	0.51
9:U:1006:ASN:ND2	10:V:498:GLU:OE2	2.43	0.51
4:D:11:ARG:HG2	4:D:85:GLY:HA3	1.93	0.51
2:M:181:ARG:CA	2:M:184:PHE:HE1	2.23	0.51
7:S:31:GLN:NE2	7:S:31:GLN:CA	2.73	0.51
9:J:1034:SER:OG	9:J:1035:ARG:N	2.44	0.51
2:M:186:LEU:O	2:M:260:PHE:HB2	2.11	0.51
3:C:8:ARG:HE	3:C:10:LEU:H	1.57	0.51
5:E:113:ASN:ND2	5:E:115:ASN:OD1	2.43	0.51
5:P:137:GLY:O	5:P:139:LYS:NZ	2.44	0.51
1:A:100:ASP:O	1:A:104:ALA:HB2	2.11	0.51
5:E:115:ASN:HA	5:E:133:GLN:HE21	1.75	0.51
6:R:167:THR:O	7:S:131:ARG:NH2	2.42	0.51
9:U:474:ARG:HH12	9:U:491:TYR:HA	1.75	0.51
9:U:633:LYS:HA	9:U:636:ILE:HG12	1.93	0.51
2:B:144:PRO:HD2	2:B:147:LYS:HB3	1.93	0.50
3:C:53:ASN:ND2	3:C:139:TRP:O	2.42	0.50
9:J:1272:ASN:ND2	9:J:1273:GLN:O	2.44	0.50
2:M:139:ILE:HG22	2:M:147:LYS:HB2	1.92	0.50
9:U:1272:ASN:ND2	9:U:1273:GLN:O	2.44	0.50
2:M:178:THR:OG1	2:M:184:PHE:CD1	2.52	0.50
3:N:147:VAL:O	3:N:151:SER:HB3	2.10	0.50
9:U:735:VAL:HG13	9:U:827:GLU:HG3	1.94	0.50
9:U:1034:SER:OG	9:U:1035:ARG:N	2.44	0.50
2:B:135:SER:HB2	2:B:149:LYS:HE2	1.92	0.50
2:B:139:ILE:HG22	2:B:147:LYS:HB2	1.92	0.50
10:K:401:SER:O	10:K:553:ASN:ND2	2.44	0.50
2:M:181:ARG:CA	2:M:184:PHE:CE1	2.92	0.50
3:N:86:THR:HA	3:N:89:VAL:HG12	1.92	0.50
3:Q:53:ASN:HD21	3:Q:138:LEU:HA	1.76	0.50
10:V:401:SER:O	10:V:553:ASN:ND2	2.44	0.50
2:B:177:LYS:HB3	2:B:185:TYR:CE1	2.43	0.50
2:B:186:LEU:O	2:B:260:PHE:HB2	2.11	0.50
9:J:818:ASP:HB3	9:J:820:ARG:HG3	1.94	0.50
9:J:1268:SER:HA	9:J:1276:ILE:HA	1.94	0.50
1:L:63:LEU:HD13	1:L:77:MET:HE1	1.83	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:M:55:LEU:HD11	3:N:41:LEU:HD21	1.94	0.50
2:M:124:ARG:NH1	2:M:216:GLU:OE2	2.45	0.50
3:N:53:ASN:ND2	3:N:139:TRP:O	2.42	0.50
8:T:994:GLU:CB	8:T:1030:ASP:HA	2.42	0.50
2:B:184:PHE:N	2:B:184:PHE:CD1	2.76	0.50
5:E:2:ALA:N	5:E:219:GLN:OE1	2.45	0.50
7:S:37:ASN:O	7:S:41:LEU:CG	2.49	0.50
9:U:1268:SER:HA	9:U:1276:ILE:HA	1.94	0.50
2:B:184:PHE:O	2:B:262:VAL:HG12	2.11	0.50
3:C:132:MET:HA	3:C:135:MET:HB2	1.92	0.50
3:C:147:VAL:O	3:C:151:SER:HB3	2.11	0.50
3:F:82:ASN:OD1	3:F:85:LYS:N	2.41	0.50
9:J:735:VAL:HG13	9:J:827:GLU:HG3	1.94	0.50
2:M:184:PHE:O	2:M:262:VAL:HG12	2.11	0.50
5:P:115:ASN:HA	5:P:133:GLN:HE21	1.75	0.50
9:U:1014:GLU:OE2	9:U:1027:ARG:NH1	2.45	0.50
1:L:100:ASP:O	1:L:104:ALA:HB2	2.11	0.50
4:O:113:LYS:HA	4:O:117:ASN:HD22	1.77	0.50
2:B:124:ARG:NH1	2:B:216:GLU:OE2	2.45	0.50
2:B:181:ARG:CA	2:B:184:PHE:CE1	2.92	0.50
2:B:187:LEU:HD23	2:B:187:LEU:C	2.31	0.50
3:F:49:PHE:HB3	3:F:138:LEU:HB2	1.92	0.50
6:G:97:ARG:NH2	7:H:145:LEU:O	2.45	0.50
7:H:32:ASP:HA	7:H:35:GLU:CD	2.32	0.50
9:J:565:LEU:HB2	9:J:567:ILE:HG12	1.94	0.50
9:J:633:LYS:HA	9:J:636:ILE:HG12	1.93	0.50
9:U:818:ASP:HB3	9:U:820:ARG:HG3	1.94	0.50
2:B:154:LEU:O	2:B:184:PHE:CE2	2.65	0.50
8:I:994:GLU:CB	8:I:1030:ASP:HA	2.41	0.50
2:M:137:LEU:HD13	2:M:140:PHE:HD2	1.76	0.50
2:M:154:LEU:O	2:M:184:PHE:CE2	2.65	0.50
3:N:48:ASP:OD1	3:N:48:ASP:N	2.38	0.50
6:R:97:ARG:NH2	7:S:145:LEU:O	2.45	0.50
7:S:32:ASP:HA	7:S:35:GLU:CD	2.32	0.50
5:E:8:VAL:HG23	5:E:16:ILE:HB	1.94	0.49
9:J:1014:GLU:OE2	9:J:1027:ARG:NH1	2.45	0.49
2:M:185:TYR:HB3	2:M:261:HIS:HA	1.92	0.49
3:N:17:ILE:HA	3:N:20:ASN:HB2	1.94	0.49
9:U:735:VAL:O	9:U:736:GLN:HG2	2.13	0.49
4:D:113:LYS:HA	4:D:117:ASN:HD22	1.77	0.49
9:J:1222:LYS:NZ	9:J:1223:ILE:O	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:968:TYR:HA	9:J:984:SER:HA	1.95	0.49
4:O:11:ARG:HG2	4:O:85:GLY:HA3	1.93	0.49
5:P:8:VAL:HG23	5:P:16:ILE:HB	1.94	0.49
3:Q:144:LEU:HA	3:Q:147:VAL:HG12	1.95	0.49
9:J:735:VAL:O	9:J:736:GLN:HG2	2.13	0.49
9:J:737:ASN:OD1	9:J:737:ASN:C	2.51	0.49
5:P:2:ALA:N	5:P:219:GLN:OE1	2.45	0.49
7:S:2:PRO:CB	7:S:29:PHE:HE1	2.26	0.49
3:F:96:LYS:HG2	3:F:100:ASN:HD22	1.78	0.49
4:O:69:SER:OG	5:P:123:CYS:SG	2.66	0.49
2:M:135:SER:HB2	2:M:149:LYS:HE2	1.92	0.49
2:M:144:PRO:HD2	2:M:147:LYS:HB3	1.93	0.49
9:U:565:LEU:HB2	9:U:567:ILE:HG12	1.94	0.49
1:A:63:LEU:CB	1:A:77:MET:HE1	2.41	0.49
2:B:55:LEU:HD11	3:C:41:LEU:HD21	1.94	0.49
2:B:137:LEU:HD13	2:B:140:PHE:HD2	1.76	0.49
9:J:735:VAL:O	9:J:735:VAL:CG2	2.60	0.49
4:O:99:TYR:HB3	4:O:102:VAL:HB	1.95	0.49
6:R:172:ARG:NH2	7:S:86:ASN:O	2.46	0.49
4:D:71:SER:HB2	5:E:121:GLN:HG2	1.93	0.49
4:O:71:SER:HB2	5:P:121:GLN:HG2	1.93	0.49
3:F:144:LEU:HA	3:F:147:VAL:HG12	1.94	0.49
1:L:37:ASN:O	1:L:41:ASN:ND2	2.45	0.49
2:B:177:LYS:C	2:B:185:TYR:CE1	2.86	0.48
7:H:31:GLN:NE2	7:H:31:GLN:N	2.61	0.48
7:H:157:ARG:NH1	7:H:162:ASP:OD2	2.46	0.48
7:S:31:GLN:NE2	7:S:31:GLN:N	2.61	0.48
7:S:157:ARG:NH1	7:S:162:ASP:OD2	2.46	0.48
3:C:17:ILE:HA	3:C:20:ASN:HB2	1.94	0.48
4:D:99:TYR:HB3	4:D:102:VAL:HB	1.95	0.48
2:M:177:LYS:C	2:M:185:TYR:CE1	2.86	0.48
9:U:762:ARG:HE	9:U:791:THR:HG21	1.79	0.48
9:U:968:TYR:HA	9:U:984:SER:HA	1.95	0.48
3:F:53:ASN:ND2	3:F:137:SER:O	2.47	0.48
9:J:762:ARG:HE	9:J:791:THR:HG21	1.79	0.48
9:J:1021:TYR:HD2	9:J:1079:PRO:HG2	1.79	0.48
6:G:275:LEU:O	6:G:279:GLY:N	2.45	0.48
10:V:542:ASP:HB3	10:V:547:GLU:HB3	1.96	0.48
1:A:63:LEU:HA	1:A:77:MET:SD	2.53	0.48
3:N:138:LEU:O	3:N:169:ARG:NH1	2.40	0.48
2:B:223:ARG:HE	2:B:235:GLU:HB3	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:172:ARG:NH2	7:H:86:ASN:O	2.46	0.48
7:H:2:PRO:CB	7:H:29:PHE:HE1	2.26	0.48
10:K:542:ASP:HB3	10:K:547:GLU:HB3	1.96	0.48
9:J:1094:PRO:HD3	9:J:1122:TRP:HE1	1.78	0.48
9:U:1094:PRO:HD3	9:U:1122:TRP:HE1	1.78	0.48
4:D:17:PHE:CZ	4:D:20:GLU:HA	2.48	0.48
2:M:127:GLY:HA2	2:M:130:ILE:HD12	1.96	0.47
8:T:989:GLN:N	8:T:1082:ASN:O	2.47	0.47
3:F:182:ARG:NH1	3:F:183:ILE:O	2.47	0.47
7:H:38:PRO:HB3	9:J:584:TRP:CH2	2.49	0.47
3:Q:53:ASN:ND2	3:Q:137:SER:O	2.46	0.47
1:A:37:ASN:O	1:A:41:ASN:ND2	2.45	0.47
2:B:186:LEU:HD12	2:B:186:LEU:HA	1.78	0.47
4:D:67:ILE:HA	5:E:124:THR:HG22	1.96	0.47
4:D:69:SER:OG	5:E:123:CYS:SG	2.66	0.47
9:J:393:MET:O	9:J:397:ALA:CB	2.62	0.47
9:J:479:ILE:HD11	9:J:485:PHE:HB2	1.97	0.47
10:K:500:ILE:HG22	10:K:526:GLY:HA2	1.96	0.47
3:Q:182:ARG:NH1	3:Q:183:ILE:O	2.47	0.47
1:L:61:PRO:HB2	1:L:79:ILE:CD1	2.28	0.47
6:R:201:LYS:NZ	6:R:206:ASP:OD1	2.46	0.47
10:V:500:ILE:HG22	10:V:526:GLY:HA2	1.96	0.47
2:B:127:GLY:HA2	2:B:130:ILE:HD12	1.96	0.47
2:B:226:LEU:O	2:B:230:GLY:N	2.47	0.47
6:R:275:LEU:O	6:R:279:GLY:N	2.46	0.47
3:F:82:ASN:O	3:F:86:THR:OG1	2.33	0.47
6:G:201:LYS:NZ	6:G:206:ASP:OD1	2.46	0.47
9:J:482:SER:HB3	9:J:483:PRO:HD3	1.76	0.47
1:L:63:LEU:HA	1:L:77:MET:SD	2.53	0.47
4:O:17:PHE:CZ	4:O:20:GLU:HA	2.48	0.47
4:O:67:ILE:HA	5:P:124:THR:HG22	1.96	0.47
8:I:676:LEU:HA	8:I:689:VAL:HA	1.97	0.47
2:M:187:LEU:HD23	2:M:187:LEU:C	2.31	0.47
2:M:223:ARG:HE	2:M:235:GLU:HB3	1.79	0.47
2:M:226:LEU:O	2:M:230:GLY:N	2.47	0.47
3:Q:96:LYS:HG2	3:Q:100:ASN:HD22	1.78	0.47
9:U:393:MET:O	9:U:397:ALA:CB	2.62	0.47
9:U:483:PRO:O	9:U:486:PRO:HG3	2.15	0.47
9:J:479:ILE:CG1	9:J:484:MET:O	2.63	0.47
7:S:157:ARG:HA	7:S:157:ARG:HD2	1.74	0.47
9:U:737:ASN:C	9:U:737:ASN:OD1	2.51	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:U:1021:TYR:HD2	9:U:1079:PRO:HG2	1.78	0.47
9:J:747:ASP:OD1	9:J:747:ASP:N	2.44	0.47
7:S:32:ASP:HA	7:S:35:GLU:OE2	2.15	0.47
10:V:218:ARG:HA	10:V:232:LEU:HA	1.97	0.47
2:B:60:GLU:OE1	2:B:61:ARG:NH2	2.48	0.46
7:H:38:PRO:HB3	9:J:584:TRP:CE2	2.50	0.46
8:I:598:ASP:HA	8:I:603:LYS:HA	1.97	0.46
1:L:63:LEU:CB	1:L:77:MET:HE1	2.44	0.46
6:R:171:ARG:NH2	7:S:84:THR:O	2.46	0.46
9:U:967:GLU:N	9:U:985:ILE:O	2.45	0.46
2:M:110:LYS:O	2:M:209:LYS:NZ	2.44	0.46
6:R:171:ARG:HD3	7:S:86:ASN:HB2	1.96	0.46
6:R:180:LEU:HD12	6:R:199:LEU:HD12	1.98	0.46
7:S:38:PRO:HB3	9:U:584:TRP:CH2	2.50	0.46
7:H:32:ASP:HA	7:H:35:GLU:OE2	2.15	0.46
9:J:1197:THR:OG1	9:J:1198:SER:N	2.48	0.46
1:L:80:LYS:HB3	1:L:80:LYS:HE3	1.43	0.46
6:G:172:ARG:HH12	7:H:104:ILE:HG22	1.81	0.46
8:I:860:ASN:ND2	8:I:966:ARG:O	2.49	0.46
9:J:1056:VAL:O	9:J:1063:SER:OG	2.32	0.46
1:L:79:ILE:CG2	1:L:81:GLN:CB	2.88	0.46
2:M:60:GLU:OE1	2:M:61:ARG:NH2	2.48	0.46
2:B:110:LYS:O	2:B:209:LYS:NZ	2.44	0.46
3:C:138:LEU:O	3:C:169:ARG:NH1	2.40	0.46
9:J:1092:ASN:O	9:J:1122:TRP:NE1	2.49	0.46
4:O:20:GLU:HB2	4:O:24:ALA:HB3	1.97	0.46
5:P:32:GLU:HA	5:P:35:ILE:HD12	1.98	0.46
8:T:598:ASP:HA	8:T:603:LYS:HA	1.98	0.46
8:T:860:ASN:ND2	8:T:966:ARG:O	2.49	0.46
1:A:79:ILE:CG2	1:A:81:GLN:CB	2.88	0.46
6:G:197:ASP:OD2	6:G:214:ASN:ND2	2.49	0.46
8:I:590:ASP:H	8:I:613:ARG:HA	1.81	0.46
9:J:1119:GLN:OE1	9:J:1168:ARG:NH1	2.49	0.46
1:L:61:PRO:CG	1:L:79:ILE:HD13	2.42	0.46
1:A:61:PRO:CB	1:A:79:ILE:CD1	2.86	0.46
6:R:172:ARG:HH12	7:S:104:ILE:HG22	1.81	0.46
7:S:32:ASP:OD1	7:S:36:LEU:CD2	2.39	0.46
9:U:1056:VAL:O	9:U:1063:SER:OG	2.32	0.46
6:G:167:THR:O	7:H:131:ARG:NH2	2.42	0.46
6:G:180:LEU:HD12	6:G:199:LEU:HD12	1.98	0.46
2:M:185:TYR:HB2	2:M:260:PHE:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Q:90:LEU:O	3:Q:94:ALA:CB	2.64	0.46
9:U:1197:THR:OG1	9:U:1198:SER:N	2.49	0.46
2:B:174:ASP:O	2:B:187:LEU:O	2.34	0.46
3:F:85:LYS:HA	3:F:88:GLU:HG2	1.98	0.46
9:J:903:PRO:HA	9:J:906:TRP:HB3	1.98	0.46
3:Q:82:ASN:O	3:Q:86:THR:OG1	2.33	0.46
8:T:940:LEU:O	8:T:944:LEU:N	2.47	0.46
8:I:793:ARG:NH2	8:I:831:GLY:O	2.49	0.46
9:J:1095:ILE:O	9:J:1097:ARG:NH1	2.45	0.46
10:K:218:ARG:HA	10:K:232:LEU:HA	1.97	0.46
3:N:8:ARG:HG3	3:N:11:LYS:H	1.81	0.46
6:R:197:ASP:OD2	6:R:214:ASN:ND2	2.49	0.46
9:U:628:GLN:O	9:U:632:PHE:CB	2.63	0.46
6:R:184:HIS:NE2	6:R:196:SER:O	2.49	0.45
1:A:42:ILE:O	1:A:46:TYR:HB3	2.16	0.45
2:B:178:THR:OG1	2:B:184:PHE:CE1	2.65	0.45
6:G:171:ARG:HD3	7:H:86:ASN:HB2	1.96	0.45
9:U:481:ASN:CG	9:U:484:MET:HE2	2.22	0.45
1:A:24:ASN:ND2	1:A:28:ASN:OD1	2.50	0.45
7:H:31:GLN:N	7:H:31:GLN:HE21	2.14	0.45
7:S:31:GLN:N	7:S:31:GLN:HE21	2.14	0.45
7:S:38:PRO:HB3	9:U:584:TRP:CE2	2.49	0.45
7:S:165:VAL:O	7:S:169:ALA:N	2.48	0.45
9:U:1092:ASN:O	9:U:1122:TRP:NE1	2.49	0.45
9:U:1222:LYS:NZ	9:U:1223:ILE:O	2.42	0.45
3:C:8:ARG:HG3	3:C:11:LYS:H	1.81	0.45
4:D:7:TRP:HA	4:D:17:PHE:HB2	1.99	0.45
9:J:967:GLU:N	9:J:985:ILE:O	2.45	0.45
7:S:29:PHE:CD2	7:S:36:LEU:CD2	3.00	0.45
8:I:989:GLN:N	8:I:1082:ASN:O	2.47	0.45
9:J:625:GLN:NE2	9:J:747:ASP:O	2.48	0.45
3:N:144:LEU:HA	3:N:147:VAL:HG22	1.99	0.45
8:T:676:LEU:HA	8:T:689:VAL:HA	1.97	0.45
1:A:129:ASP:OD1	1:A:129:ASP:N	2.50	0.45
3:C:144:LEU:HA	3:C:147:VAL:HG22	1.99	0.45
5:E:32:GLU:HA	5:E:35:ILE:HD12	1.98	0.45
3:F:119:LEU:O	3:F:174:THR:OG1	2.35	0.45
9:U:757:PHE:HA	9:U:766:SER:HB3	1.98	0.45
9:U:1119:GLN:OE1	9:U:1168:ARG:NH1	2.49	0.45
6:G:167:THR:OG1	6:G:168:LYS:N	2.50	0.45
9:J:628:GLN:O	9:J:632:PHE:CB	2.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:663:LEU:HA	9:J:734:ARG:HH21	1.82	0.45
9:J:738:PRO:HG2	9:J:784:PRO:HG2	1.98	0.45
1:L:129:ASP:N	1:L:129:ASP:OD1	2.50	0.45
8:T:590:ASP:H	8:T:613:ARG:HA	1.81	0.45
2:B:185:TYR:HB2	2:B:260:PHE:O	2.16	0.45
3:F:90:LEU:O	3:F:94:ALA:CB	2.64	0.45
9:J:536:LEU:HA	9:J:539:VAL:HG12	1.99	0.45
9:U:536:LEU:HA	9:U:539:VAL:HG12	1.99	0.45
4:D:20:GLU:HB2	4:D:24:ALA:HB3	1.97	0.45
7:H:165:VAL:O	7:H:169:ALA:N	2.48	0.45
9:J:479:ILE:CG2	9:J:480:PRO:CD	2.83	0.45
4:O:64:LYS:O	5:P:126:GLN:NE2	2.50	0.45
8:T:793:ARG:NH2	8:T:831:GLY:O	2.49	0.45
2:M:174:ASP:O	2:M:187:LEU:O	2.34	0.45
5:P:53:LYS:HG2	5:P:55:LEU:HB3	1.99	0.45
9:U:663:LEU:HA	9:U:734:ARG:HH21	1.82	0.45
4:D:142:ASN:HB2	4:D:145:PHE:HB3	1.99	0.44
7:H:29:PHE:CD2	7:H:36:LEU:CD2	3.00	0.44
6:G:184:HIS:NE2	6:G:196:SER:O	2.49	0.44
7:H:4:TYR:N	7:H:114:ILE:O	2.49	0.44
1:L:67:PHE:HD2	1:L:74:VAL:HG23	1.83	0.44
5:P:8:VAL:HG22	5:P:17:TYR:HB3	1.99	0.44
9:U:738:PRO:HG2	9:U:784:PRO:HG2	1.98	0.44
9:U:774:LYS:HD3	9:U:775:ALA:H	1.82	0.44
5:E:8:VAL:HG22	5:E:17:TYR:HB3	1.99	0.44
9:U:1115:ILE:HA	9:U:1118:ARG:HB3	1.98	0.44
2:B:191:TYR:HD2	2:B:194:ILE:HG12	1.83	0.44
5:E:53:LYS:HG2	5:E:55:LEU:HB3	1.99	0.44
7:S:36:LEU:C	7:S:36:LEU:CD1	2.85	0.44
9:U:903:PRO:HA	9:U:906:TRP:HB3	1.98	0.44
1:A:61:PRO:HG2	1:A:79:ILE:O	2.18	0.44
4:D:64:LYS:O	5:E:126:GLN:NE2	2.50	0.44
9:J:757:PHE:HA	9:J:766:SER:HB3	1.98	0.44
9:J:758:CYS:HA	9:J:801:LEU:HB2	1.99	0.44
6:G:246:PHE:HA	6:G:274:VAL:HG11	2.00	0.44
7:H:31:GLN:NE2	7:H:31:GLN:HA	2.29	0.44
3:Q:85:LYS:HA	3:Q:88:GLU:HG2	1.98	0.44
6:R:254:ARG:HD3	6:R:262:GLN:HA	2.00	0.44
9:U:481:ASN:CG	9:U:484:MET:CE	2.83	0.44
1:A:10:LEU:O	1:A:18:ILE:N	2.47	0.44
9:J:774:LYS:HD3	9:J:775:ALA:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:K:499:GLY:O	10:K:527:ILE:N	2.51	0.44
1:L:42:ILE:O	1:L:46:TYR:HB3	2.16	0.44
6:R:167:THR:OG1	6:R:168:LYS:N	2.50	0.44
7:S:31:GLN:NE2	7:S:31:GLN:HA	2.29	0.44
9:U:1177:LEU:HD13	9:U:1284:VAL:HG11	2.00	0.44
1:A:80:LYS:HE3	1:A:80:LYS:HB3	1.43	0.44
8:I:940:LEU:O	8:I:944:LEU:N	2.47	0.44
4:O:7:TRP:HA	4:O:17:PHE:HB2	1.99	0.44
5:P:112:THR:OG1	5:P:113:ASN:N	2.50	0.44
10:V:499:GLY:O	10:V:527:ILE:N	2.51	0.44
1:A:67:PHE:HD2	1:A:74:VAL:HG23	1.83	0.44
3:C:11:LYS:HD2	3:C:92:LYS:HE3	2.00	0.44
7:H:93:ASP:HB2	7:H:100:ILE:HD11	2.00	0.44
9:J:1115:ILE:HA	9:J:1118:ARG:HB3	1.98	0.44
9:J:1177:LEU:HD13	9:J:1284:VAL:HG11	2.00	0.44
10:K:267:LYS:H	10:K:273:SER:HA	1.83	0.44
1:L:17:PRO:HB3	1:L:20:ILE:HD11	2.00	0.44
1:L:30:MET:SD	1:L:30:MET:N	2.85	0.44
3:N:11:LYS:HD2	3:N:92:LYS:HE3	2.00	0.44
5:P:130:PHE:N	5:P:142:ALA:O	2.50	0.44
6:R:246:PHE:HA	6:R:274:VAL:HG11	2.00	0.44
7:S:171:LYS:HE3	7:S:171:LYS:HB3	1.90	0.44
1:L:24:ASN:ND2	1:L:28:ASN:OD1	2.50	0.43
3:Q:26:ASN:OD1	3:Q:26:ASN:N	2.50	0.43
8:T:795:GLU:HA	8:T:796:PRO:HD3	1.86	0.43
9:U:458:SER:O	9:U:461:SER:OG	2.35	0.43
8:I:399:GLU:O	8:I:403:GLN:N	2.51	0.43
8:I:583:SER:HA	8:I:617:TYR:HA	2.01	0.43
9:J:758:CYS:SG	9:J:759:GLU:N	2.91	0.43
3:Q:119:LEU:O	3:Q:174:THR:OG1	2.35	0.43
8:T:803:GLU:O	8:T:856:LYS:N	2.52	0.43
6:G:171:ARG:NH2	7:H:84:THR:O	2.46	0.43
7:H:5:PHE:HB3	7:H:18:ILE:HG22	1.99	0.43
1:L:61:PRO:HG2	1:L:79:ILE:O	2.18	0.43
2:M:191:TYR:HD2	2:M:194:ILE:HG12	1.83	0.43
4:O:110:ILE:HD11	4:O:148:VAL:HG13	2.00	0.43
4:O:142:ASN:HB2	4:O:145:PHE:HB3	1.99	0.43
7:S:5:PHE:HB3	7:S:18:ILE:HG22	1.99	0.43
9:U:758:CYS:SG	9:U:759:GLU:N	2.91	0.43
9:U:758:CYS:HA	9:U:801:LEU:HB2	1.99	0.43
10:V:267:LYS:H	10:V:273:SER:HA	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:17:PHE:CE2	4:D:20:GLU:HA	2.53	0.43
7:H:36:LEU:C	7:H:36:LEU:CD1	2.85	0.43
9:U:469:VAL:O	9:U:473:HIS:ND1	2.52	0.43
5:E:115:ASN:HB2	5:E:120:ARG:CZ	2.48	0.43
2:M:143:ASN:HA	2:M:147:LYS:HD3	2.00	0.43
5:P:115:ASN:HB2	5:P:120:ARG:CZ	2.48	0.43
8:T:399:GLU:O	8:T:403:GLN:N	2.51	0.43
9:U:465:LEU:HA	9:U:468:ILE:HG22	2.01	0.43
9:U:1086:LYS:HA	9:U:1086:LYS:HD3	1.74	0.43
5:E:112:THR:OG1	5:E:113:ASN:N	2.50	0.43
5:E:130:PHE:N	5:E:142:ALA:O	2.50	0.43
8:T:583:SER:HA	8:T:617:TYR:HA	2.01	0.43
9:U:735:VAL:O	9:U:735:VAL:CG2	2.60	0.43
9:U:1184:VAL:HG13	9:U:1257:GLU:H	1.84	0.43
8:T:853:PHE:O	8:T:974:THR:N	2.51	0.43
9:U:544:THR:HG22	9:U:546:ASN:H	1.83	0.43
10:V:306:LYS:HA	10:V:332:ARG:HA	2.01	0.43
1:A:17:PRO:HB3	1:A:20:ILE:HD11	2.00	0.43
8:I:675:GLU:O	8:I:690:GLU:N	2.52	0.43
4:D:10:ASP:HA	4:D:86:LEU:HD13	2.01	0.43
4:O:17:PHE:CE2	4:O:20:GLU:HA	2.54	0.43
8:T:675:GLU:O	8:T:690:GLU:N	2.52	0.43
1:L:42:ILE:O	1:L:46:TYR:HB2	2.19	0.43
2:M:128:PHE:O	2:M:132:LEU:N	2.47	0.43
5:P:9:ILE:HB	5:P:139:LYS:HB2	2.01	0.43
7:S:93:ASP:HB2	7:S:100:ILE:HD11	2.00	0.43
9:U:629:ASP:HA	9:U:632:PHE:HB3	2.01	0.43
4:D:48:ILE:O	4:D:52:ARG:N	2.52	0.42
3:F:166:ASP:OD1	3:F:169:ARG:N	2.45	0.42
9:J:544:THR:HG22	9:J:546:ASN:H	1.83	0.42
4:O:10:ASP:HA	4:O:86:LEU:HD13	2.01	0.42
1:A:41:ASN:HA	1:A:44:LEU:HB2	2.01	0.42
3:C:109:SER:OG	3:C:111:ASN:OD1	2.29	0.42
9:J:737:ASN:OD1	9:J:738:PRO:N	2.52	0.42
3:N:177:LYS:HE2	3:N:177:LYS:HB3	1.89	0.42
8:T:770:SER:N	8:T:789:ASN:O	2.52	0.42
9:U:767:TYR:HB2	9:U:787:ILE:HD11	2.02	0.42
8:I:770:SER:N	8:I:789:ASN:O	2.52	0.42
9:J:481:ASN:HB3	9:J:484:MET:CE	2.49	0.42
9:J:594:LEU:HD23	9:J:594:LEU:HA	1.91	0.42
9:J:910:PRO:HA	9:J:911:PRO:HD3	1.79	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Q:90:LEU:O	3:Q:94:ALA:HB2	2.19	0.42
8:T:889:TRP:O	8:T:893:TRP:N	2.48	0.42
9:U:908:LYS:HD2	9:U:908:LYS:HA	1.83	0.42
4:D:110:ILE:HD11	4:D:148:VAL:HG13	2.00	0.42
3:F:90:LEU:O	3:F:94:ALA:HB2	2.19	0.42
6:G:254:ARG:HD3	6:G:262:GLN:HA	2.00	0.42
8:I:748:LYS:N	8:I:755:PHE:O	2.49	0.42
8:I:979:LEU:O	8:I:1075:PHE:N	2.52	0.42
9:J:735:VAL:HA	9:J:788:LYS:HD2	2.01	0.42
9:U:737:ASN:OD1	9:U:738:PRO:N	2.52	0.42
8:I:853:PHE:O	8:I:974:THR:N	2.51	0.42
9:U:482:SER:HB3	9:U:483:PRO:HD2	1.67	0.42
9:U:625:GLN:NE2	9:U:747:ASP:O	2.48	0.42
1:A:63:LEU:HD13	1:A:77:MET:HE1	1.86	0.42
2:B:143:ASN:HA	2:B:147:LYS:HD3	2.00	0.42
3:F:101:ILE:HD12	3:F:101:ILE:HA	1.89	0.42
1:L:43:SER:HA	1:L:46:TYR:HB3	2.01	0.42
3:N:188:ILE:HG23	4:O:133:ARG:HG2	2.02	0.42
9:U:800:CYS:HB3	9:U:812:LYS:HB3	2.02	0.42
1:A:117:ILE:HD12	1:A:117:ILE:HA	1.94	0.42
2:B:137:LEU:HD12	3:C:28:GLU:HG3	2.02	0.42
2:B:178:THR:OG1	2:B:184:PHE:CD1	2.52	0.42
8:I:803:GLU:O	8:I:856:LYS:N	2.51	0.42
9:J:481:ASN:CB	9:J:484:MET:HE1	2.46	0.42
6:R:86:LYS:HA	6:R:86:LYS:HD3	1.87	0.42
9:U:735:VAL:HA	9:U:788:LYS:HD2	2.00	0.42
8:I:989:GLN:HA	8:I:1034:TYR:HA	2.02	0.42
9:J:1086:LYS:HA	9:J:1086:LYS:HD3	1.74	0.42
9:U:1025:LYS:HD2	9:U:1025:LYS:HA	1.91	0.42
9:U:1038:ILE:HD11	9:U:1164:ILE:HD12	2.02	0.42
3:F:20:ASN:HB3	3:F:21:LYS:H	1.67	0.42
9:J:469:VAL:O	9:J:473:HIS:ND1	2.52	0.42
9:J:1018:TRP:HB2	9:J:1079:PRO:HG3	2.01	0.42
9:J:1184:VAL:HG13	9:J:1257:GLU:H	1.84	0.42
9:U:1081:LYS:HB3	9:U:1081:LYS:HE2	1.86	0.42
6:G:186:THR:O	6:G:186:THR:OG1	2.35	0.42
8:I:790:SER:O	8:I:793:ARG:NH1	2.45	0.42
1:L:41:ASN:HA	1:L:44:LEU:HB2	2.01	0.42
9:U:655:ARG:HH11	9:U:816:ILE:HG21	1.85	0.42
9:U:1095:ILE:O	9:U:1097:ARG:NH1	2.45	0.42
1:A:42:ILE:O	1:A:46:TYR:HB2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:187:LEU:H	2:B:187:LEU:HD22	1.85	0.41
5:E:9:ILE:HB	5:E:139:LYS:HB2	2.01	0.41
7:H:4:TYR:OH	7:H:37:ASN:OD1	2.25	0.41
3:N:141:SER:HB3	3:N:144:LEU:HG	2.02	0.41
4:O:48:ILE:O	4:O:52:ARG:N	2.52	0.41
6:R:207:ASN:OD1	6:R:207:ASN:N	2.52	0.41
9:U:512:LYS:HA	9:U:512:LYS:HD2	1.82	0.41
9:U:637:GLN:HA	9:U:640:ILE:HG12	2.02	0.41
3:C:177:LYS:HE2	3:C:177:LYS:HB3	1.89	0.41
6:G:207:ASN:OD1	6:G:207:ASN:N	2.52	0.41
8:I:795:GLU:HA	8:I:796:PRO:HD3	1.86	0.41
9:J:465:LEU:HA	9:J:468:ILE:HG22	2.01	0.41
9:J:479:ILE:HG13	9:J:484:MET:O	2.20	0.41
9:J:637:GLN:HA	9:J:640:ILE:HG12	2.01	0.41
9:J:767:TYR:HB2	9:J:787:ILE:HD11	2.02	0.41
10:K:248:ILE:O	10:K:253:HIS:N	2.53	0.41
10:K:306:LYS:HA	10:K:332:ARG:HA	2.01	0.41
1:L:142:ASP:OD1	1:L:142:ASP:N	2.53	0.41
8:T:979:LEU:O	8:T:1075:PHE:N	2.52	0.41
9:J:629:ASP:HA	9:J:632:PHE:HB3	2.01	0.41
9:J:1038:ILE:HD11	9:J:1164:ILE:HD12	2.02	0.41
1:L:10:LEU:O	1:L:18:ILE:N	2.47	0.41
3:N:152:LEU:HD22	3:N:157:LEU:HD11	2.03	0.41
5:P:178:PHE:HD2	5:P:179:LEU:HD22	1.85	0.41
8:T:989:GLN:HA	8:T:1034:TYR:HA	2.02	0.41
9:U:747:ASP:OD1	9:U:747:ASP:N	2.44	0.41
1:A:17:PRO:HD2	8:I:464:TRP:HB2	2.01	0.41
5:E:135:LEU:HD11	3:F:79:ARG:HE	1.86	0.41
9:J:800:CYS:HB3	9:J:812:LYS:HB3	2.02	0.41
10:V:220:ILE:HA	10:V:230:SER:HA	2.02	0.41
10:K:220:ILE:HA	10:K:230:SER:HA	2.02	0.41
1:L:10:LEU:HB2	1:L:18:ILE:HB	2.03	0.41
4:O:139:LYS:HE2	4:O:139:LYS:HB2	1.92	0.41
6:R:170:ARG:HB3	6:R:171:ARG:H	1.77	0.41
9:U:1018:TRP:HB2	9:U:1079:PRO:HG3	2.01	0.41
9:U:1225:PRO:O	9:U:1233:TYR:OH	2.30	0.41
4:D:110:ILE:HD13	4:D:110:ILE:HG21	1.93	0.41
8:I:320:SER:HA	8:I:324:LEU:H	1.86	0.41
9:J:655:ARG:HH11	9:J:816:ILE:HG21	1.85	0.41
1:A:48:GLU:HB2	1:A:54:TRP:HZ3	1.86	0.41
1:A:132:SER:O	1:A:136:SER:HB3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:125:ASN:O	2:B:129:GLN:NE2	2.54	0.41
2:B:203:ALA:HB3	2:B:206:GLU:HG2	2.02	0.41
3:C:188:ILE:HG23	4:D:133:ARG:HG2	2.02	0.41
3:F:26:ASN:OD1	3:F:26:ASN:N	2.50	0.41
9:J:1091:GLU:HA	9:J:1118:ARG:HD3	2.03	0.41
1:L:97:GLY:N	1:L:101:GLU:OE1	2.53	0.41
1:L:132:SER:O	1:L:136:SER:HB3	2.21	0.41
2:M:125:ASN:O	2:M:129:GLN:NE2	2.54	0.41
9:U:561:ILE:HD13	9:U:561:ILE:HA	1.88	0.41
9:U:735:VAL:O	9:U:736:GLN:CG	2.69	0.41
1:A:10:LEU:HB2	1:A:18:ILE:HB	2.02	0.41
6:G:176:ILE:HG13	6:G:177:LEU:HG	2.03	0.41
9:J:758:CYS:HB3	9:J:765:VAL:HG12	2.03	0.41
9:J:1225:PRO:O	9:J:1233:TYR:OH	2.30	0.41
1:L:17:PRO:HD2	8:T:464:TRP:HB2	2.01	0.41
2:M:137:LEU:HD12	3:N:28:GLU:HG3	2.02	0.41
8:T:748:LYS:N	8:T:755:PHE:O	2.49	0.41
1:A:79:ILE:HG22	1:A:81:GLN:HB2	1.97	0.41
3:C:92:LYS:HE2	3:C:92:LYS:HB2	1.88	0.41
3:C:104:ASN:N	3:C:118:ILE:O	2.48	0.41
5:E:3:ILE:HG12	5:E:144:SER:HB2	2.03	0.41
3:F:28:GLU:H	3:F:28:GLU:HG2	1.58	0.41
8:I:998:ASP:O	8:I:999:ALA:HB3	2.21	0.41
9:J:458:SER:O	9:J:461:SER:OG	2.35	0.41
9:J:511:ILE:HD13	9:J:511:ILE:HA	1.93	0.41
9:J:655:ARG:HA	9:J:655:ARG:HD3	1.91	0.41
9:J:1026:ILE:HD12	9:J:1026:ILE:HA	1.94	0.41
9:J:1193:ILE:HD13	9:J:1193:ILE:HA	1.95	0.41
1:L:117:ILE:HD12	1:L:117:ILE:HA	1.94	0.41
3:N:109:SER:OG	3:N:111:ASN:OD1	2.29	0.41
6:R:172:ARG:HH22	7:S:104:ILE:HB	1.85	0.41
6:R:225:GLU:HA	6:R:254:ARG:HH22	1.86	0.41
9:U:910:PRO:HA	9:U:911:PRO:HD3	1.79	0.41
9:U:1093:THR:OG1	9:U:1118:ARG:NH2	2.47	0.41
1:A:43:SER:HA	1:A:46:TYR:HB3	2.01	0.41
5:E:23:ASN:OD1	5:E:23:ASN:N	2.54	0.41
6:G:172:ARG:HH22	7:H:104:ILE:HB	1.86	0.41
9:J:512:LYS:HD2	9:J:512:LYS:HA	1.82	0.41
9:J:620:THR:HA	9:J:623:LEU:HD23	2.03	0.41
5:P:23:ASN:OD1	5:P:23:ASN:N	2.54	0.41
9:U:1183:LYS:HE2	9:U:1183:LYS:HB3	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:11:ILE:HG12	1:A:44:LEU:HD11	2.03	0.40
1:A:13:GLU:HB3	1:A:83:GLY:HA3	2.03	0.40
3:C:26:ASN:OD1	3:C:26:ASN:N	2.54	0.40
6:G:236:ILE:HA	6:G:236:ILE:HD12	1.86	0.40
8:I:517:SER:O	8:I:521:TRP:N	2.54	0.40
9:J:1087:LYS:HE2	9:J:1087:LYS:HB3	1.97	0.40
8:T:320:SER:HA	8:T:324:LEU:H	1.86	0.40
3:C:152:LEU:HD22	3:C:157:LEU:HD11	2.03	0.40
9:J:908:LYS:HD2	9:J:908:LYS:HA	1.83	0.40
9:J:1183:LYS:HB3	9:J:1183:LYS:HE2	1.83	0.40
8:T:790:SER:O	8:T:793:ARG:NH1	2.45	0.40
2:B:128:PHE:O	2:B:132:LEU:N	2.46	0.40
6:G:192:PHE:HB3	6:G:217:THR:HG21	2.03	0.40
9:J:735:VAL:O	9:J:736:GLN:CG	2.69	0.40
1:L:96:SER:OG	1:L:101:GLU:OE1	2.33	0.40
5:P:169:ASN:HB2	5:P:170:LEU:H	1.71	0.40
8:T:802:SER:O	8:T:839:TYR:OH	2.38	0.40
5:E:178:PHE:HD2	5:E:179:LEU:HD22	1.85	0.40
6:G:225:GLU:HA	6:G:254:ARG:HH22	1.86	0.40
6:G:272:ARG:O	6:G:276:ASP:N	2.49	0.40
7:H:108:GLY:O	7:H:110:LYS:NZ	2.55	0.40
8:I:802:SER:O	8:I:839:TYR:OH	2.38	0.40
2:M:203:ALA:HB3	2:M:206:GLU:HG2	2.02	0.40
5:P:135:LEU:HD11	3:Q:79:ARG:HE	1.86	0.40
1:A:142:ASP:OD1	1:A:142:ASP:N	2.53	0.40
3:C:141:SER:HB3	3:C:144:LEU:HG	2.02	0.40
1:L:13:GLU:HB3	1:L:83:GLY:HA3	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	148/152 (97%)	129 (87%)	19 (13%)	0	100	100
1	L	148/152 (97%)	129 (87%)	19 (13%)	0	100	100
2	B	189/268 (70%)	165 (87%)	23 (12%)	1 (0%)	29	69
2	M	189/268 (70%)	165 (87%)	23 (12%)	1 (0%)	29	69
3	C	182/193 (94%)	169 (93%)	13 (7%)	0	100	100
3	F	180/193 (93%)	164 (91%)	16 (9%)	0	100	100
3	N	182/193 (94%)	169 (93%)	13 (7%)	0	100	100
3	Q	180/193 (93%)	164 (91%)	16 (9%)	0	100	100
4	D	147/159 (92%)	125 (85%)	22 (15%)	0	100	100
4	O	147/159 (92%)	125 (85%)	22 (15%)	0	100	100
5	E	153/219 (70%)	139 (91%)	14 (9%)	0	100	100
5	P	153/219 (70%)	139 (91%)	14 (9%)	0	100	100
6	G	199/283 (70%)	176 (88%)	23 (12%)	0	100	100
6	R	199/283 (70%)	176 (88%)	23 (12%)	0	100	100
7	H	142/175 (81%)	124 (87%)	16 (11%)	2 (1%)	11	46
7	S	142/175 (81%)	124 (87%)	16 (11%)	2 (1%)	11	46
8	I	791/1102 (72%)	649 (82%)	127 (16%)	15 (2%)	8	38
8	T	791/1102 (72%)	649 (82%)	127 (16%)	15 (2%)	8	38
9	J	861/1289 (67%)	693 (80%)	160 (19%)	8 (1%)	17	57
9	U	861/1289 (67%)	692 (80%)	161 (19%)	8 (1%)	17	57
10	K	243/560 (43%)	183 (75%)	55 (23%)	5 (2%)	7	36
10	V	243/560 (43%)	183 (75%)	55 (23%)	5 (2%)	7	36
All	All	6470/9186 (70%)	5431 (84%)	977 (15%)	62 (1%)	20	54

All (62) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	H	26	PRO
7	H	37	ASN
8	I	252	PRO
8	I	638	PHE
8	I	647	VAL
8	I	976	PRO
8	I	980	PRO
8	I	1067	PRO

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Mol	Chain	Res	Type
8	I	1076	PRO
9	J	482	SER
9	J	667	PRO
9	J	1099	PHE
10	K	325	PRO
7	S	26	PRO
7	S	37	ASN
8	T	252	PRO
8	T	638	PHE
8	T	647	VAL
8	T	976	PRO
8	T	980	PRO
8	T	1067	PRO
8	T	1076	PRO
9	U	482	SER
9	U	667	PRO
9	U	1099	PHE
10	V	325	PRO
8	I	639	PRO
8	I	704	PRO
8	I	1054	ILE
10	K	269	ILE
8	T	639	PRO
8	T	704	PRO
8	T	1054	ILE
10	V	269	ILE
8	I	571	PHE
9	J	398	PRO
9	J	672	ILE
10	K	282	PRO
10	K	286	PRO
8	T	571	PHE
9	U	398	PRO
9	U	480	PRO
9	U	672	ILE
10	V	282	PRO
10	V	286	PRO
8	I	1004	ILE
9	J	397	ALA
8	T	1004	ILE
9	U	397	ALA
10	K	281	CYS

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Mol	Chain	Res	Type
10	V	281	CYS
2	B	99	ILE
9	J	955	VAL
2	M	99	ILE
9	U	955	VAL
8	I	1029	ILE
9	J	483	PRO
8	T	1029	ILE
8	I	345	ASN
8	I	483	PRO
8	T	345	ASN
8	T	483	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	140/142 (99%)	137 (98%)	3 (2%)	53	72
1	L	140/142 (99%)	137 (98%)	3 (2%)	53	72
2	B	142/248 (57%)	139 (98%)	3 (2%)	53	72
2	M	142/248 (57%)	139 (98%)	3 (2%)	53	72
3	C	169/178 (95%)	169 (100%)	0	100	100
3	F	168/178 (94%)	167 (99%)	1 (1%)	86	92
3	N	169/178 (95%)	169 (100%)	0	100	100
3	Q	168/178 (94%)	167 (99%)	1 (1%)	86	92
4	D	135/145 (93%)	132 (98%)	3 (2%)	52	71
4	O	135/145 (93%)	132 (98%)	3 (2%)	52	71
5	E	145/199 (73%)	145 (100%)	0	100	100
5	P	146/199 (73%)	146 (100%)	0	100	100
6	G	168/249 (68%)	164 (98%)	4 (2%)	49	69
6	R	168/249 (68%)	164 (98%)	4 (2%)	49	69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	H	126/152 (83%)	122 (97%)	4 (3%)	39	61
7	S	126/152 (83%)	122 (97%)	4 (3%)	39	61
8	I	76/1023 (7%)	76 (100%)	0	100	100
8	T	76/1023 (7%)	76 (100%)	0	100	100
9	J	550/1213 (45%)	544 (99%)	6 (1%)	73	84
9	U	550/1213 (45%)	544 (99%)	6 (1%)	73	84
10	K	93/518 (18%)	93 (100%)	0	100	100
10	V	93/518 (18%)	93 (100%)	0	100	100
All	All	3825/8490 (45%)	3777 (99%)	48 (1%)	70	82

All (48) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	79	ILE
1	A	80	LYS
1	A	113	ARG
2	B	184	PHE
2	B	185	TYR
2	B	187	LEU
4	D	19	ARG
4	D	20	GLU
4	D	95	LYS
3	F	185	LYS
6	G	172	ARG
6	G	205	ARG
6	G	277	ARG
6	G	281	ARG
7	H	29	PHE
7	H	31	GLN
7	H	32	ASP
7	H	40	ILE
9	J	482	SER
9	J	955	VAL
9	J	1007	GLU
9	J	1035	ARG
9	J	1201	ARG
9	J	1226	ARG
1	L	79	ILE
1	L	80	LYS

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Mol	Chain	Res	Type
1	L	113	ARG
2	M	184	PHE
2	M	185	TYR
2	M	187	LEU
4	O	19	ARG
4	O	20	GLU
4	O	95	LYS
3	Q	185	LYS
6	R	172	ARG
6	R	205	ARG
6	R	277	ARG
6	R	281	ARG
7	S	29	PHE
7	S	31	GLN
7	S	32	ASP
7	S	40	ILE
9	U	482	SER
9	U	955	VAL
9	U	1007	GLU
9	U	1035	ARG
9	U	1201	ARG
9	U	1226	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
4	D	117	ASN
3	F	100	ASN
7	H	31	GLN
9	J	481	ASN
9	J	593	GLN
9	J	736	GLN
9	J	772	ASN
4	O	117	ASN
3	Q	100	ASN
6	R	257	GLN
7	S	31	GLN
9	U	481	ASN
9	U	593	GLN
9	U	772	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

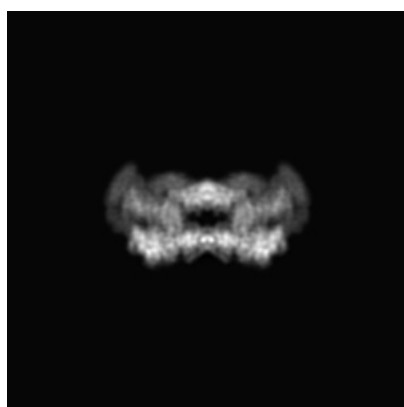
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-31027. These allow visual inspection of the internal detail of the map and identification of artifacts.

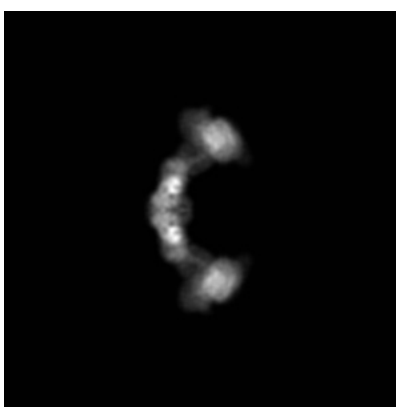
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

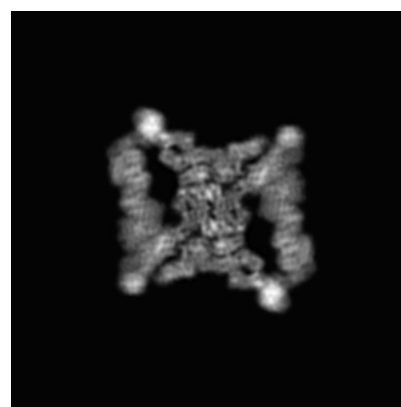
6.1.1 Primary map



X



Y

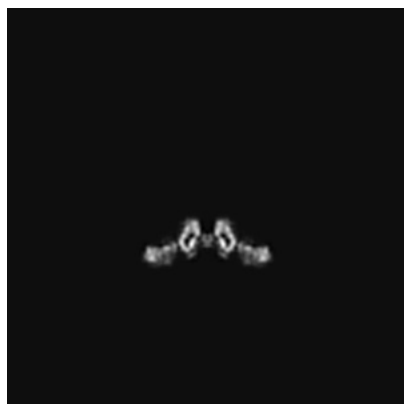


Z

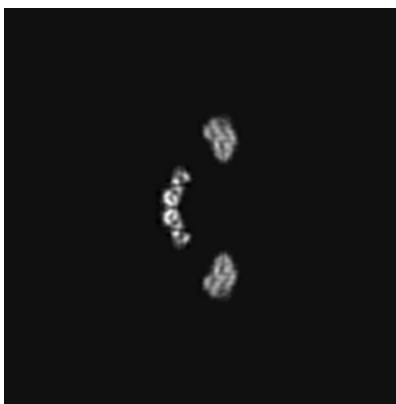
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 240



Y Index: 240



Z Index: 240

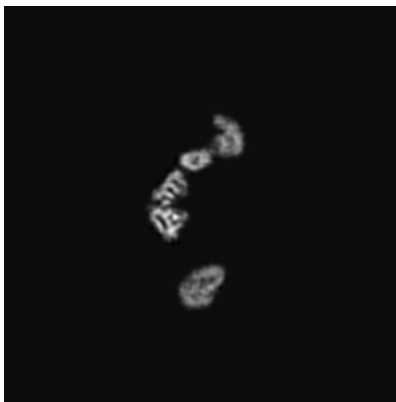
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [\(i\)](#)

6.3.1 Primary map



X Index: 328



Y Index: 283

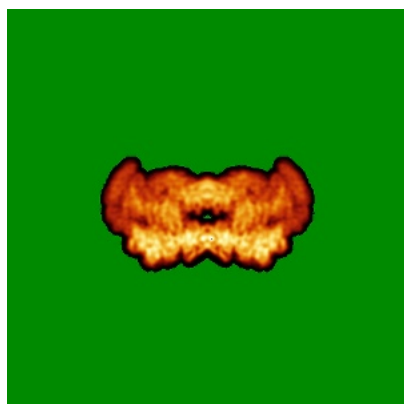


Z Index: 204

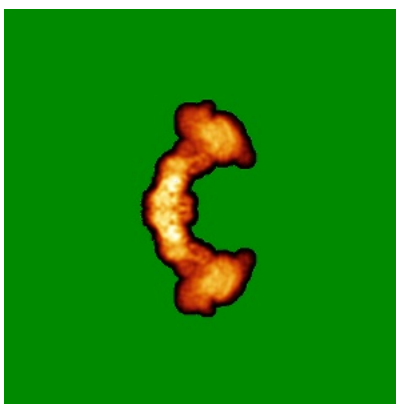
The images above show the largest variance slices of the map in three orthogonal directions.

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

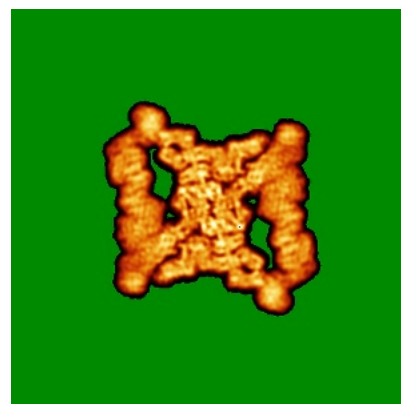
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

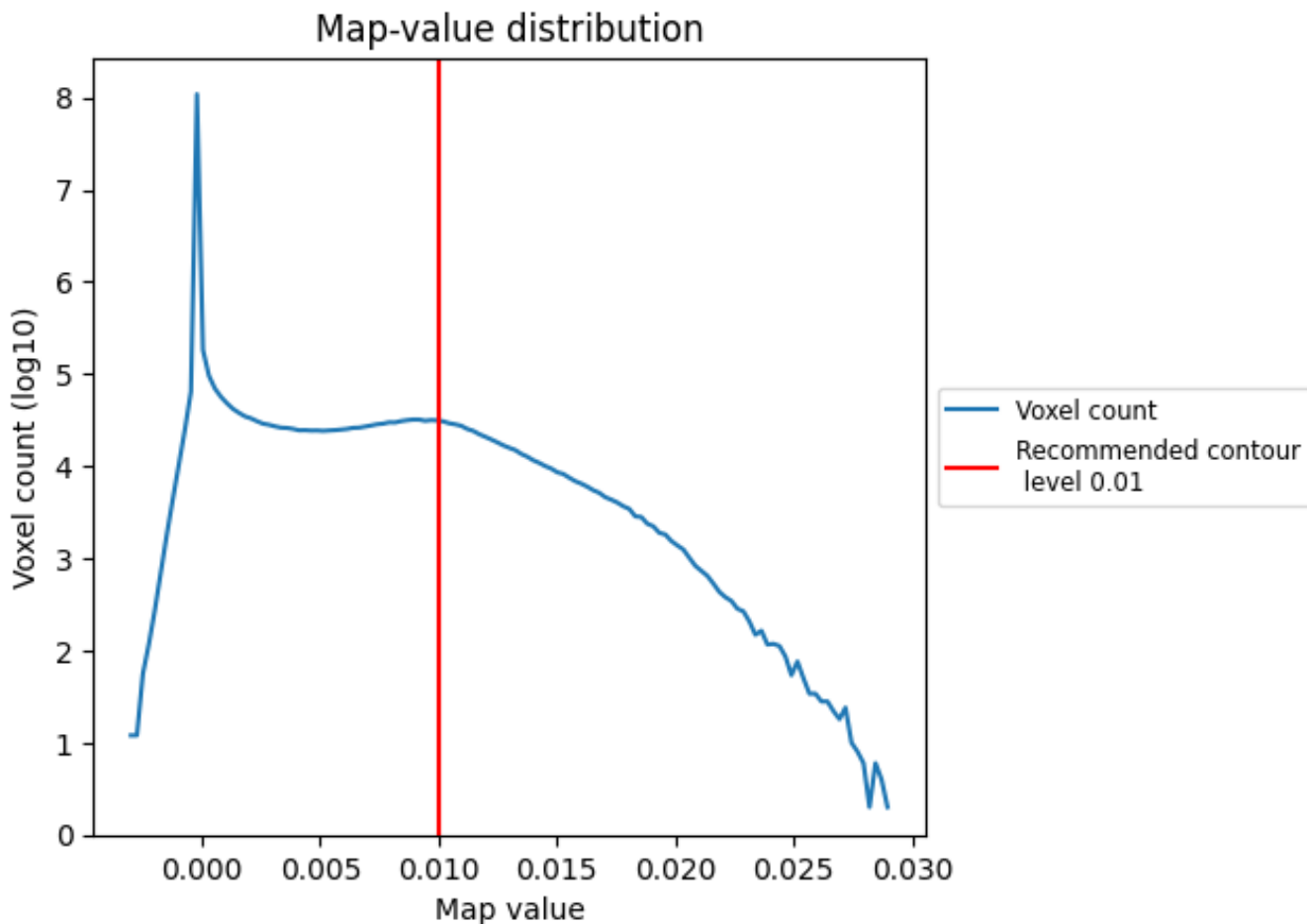
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

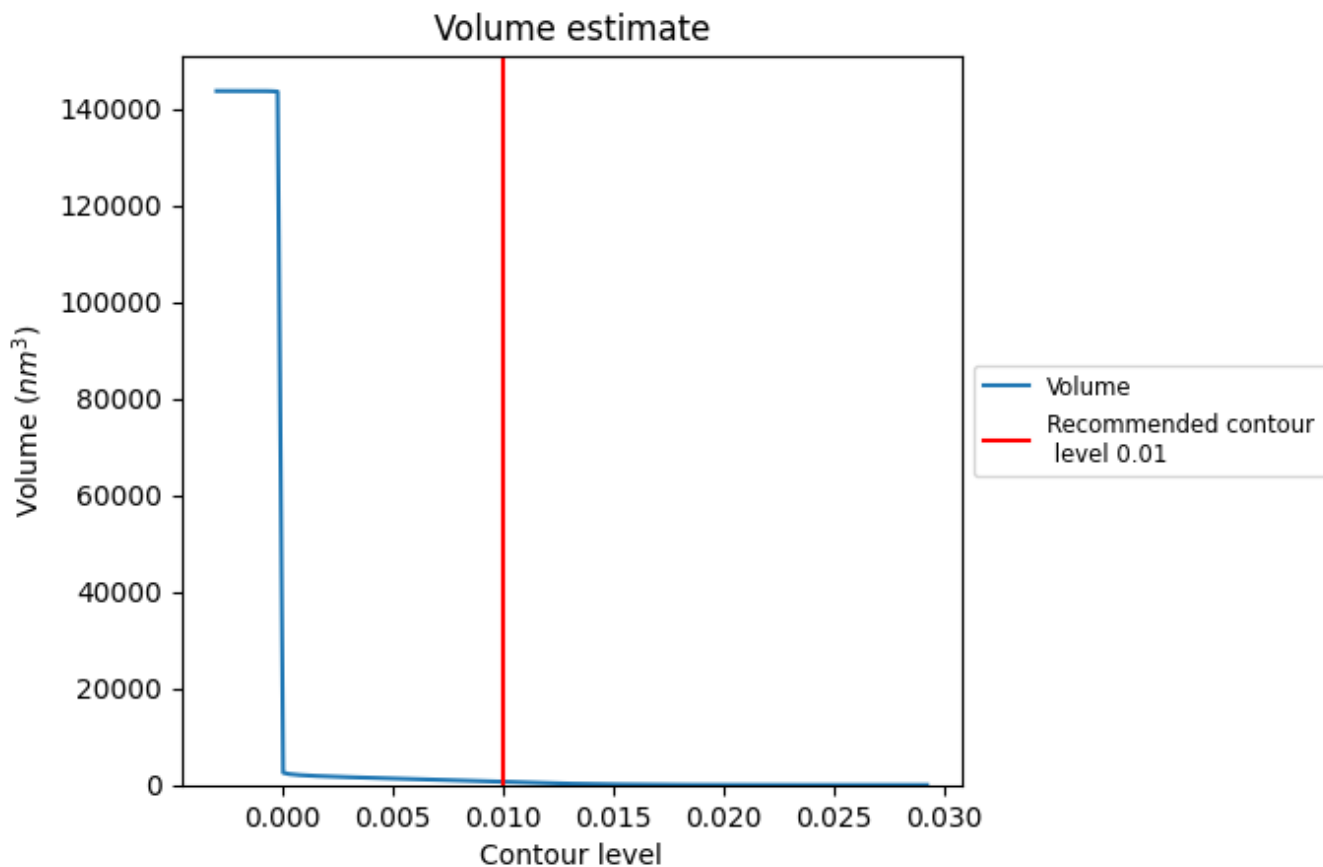
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

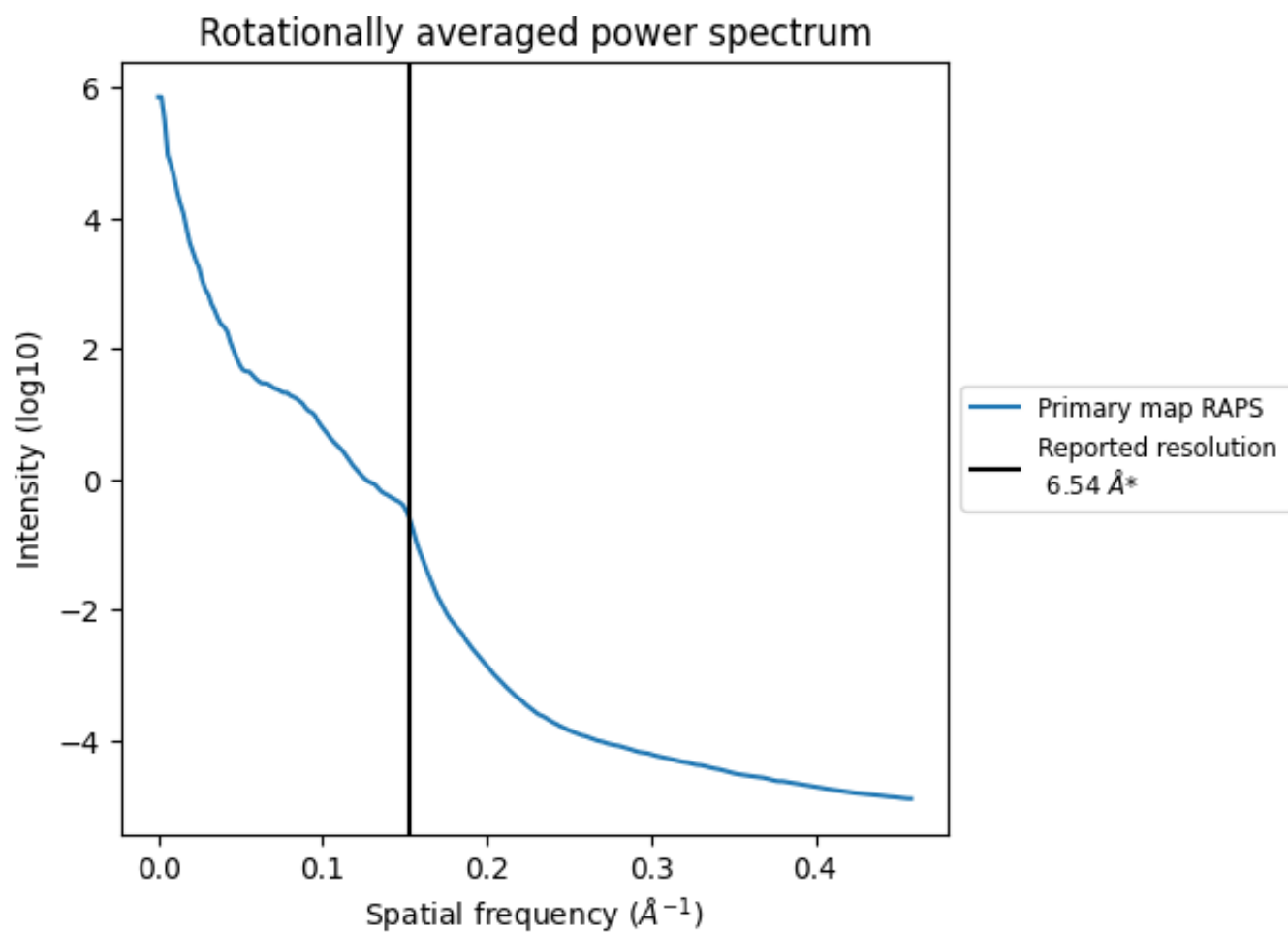
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 631 nm^3 ; this corresponds to an approximate mass of 570 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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.153 Å⁻¹

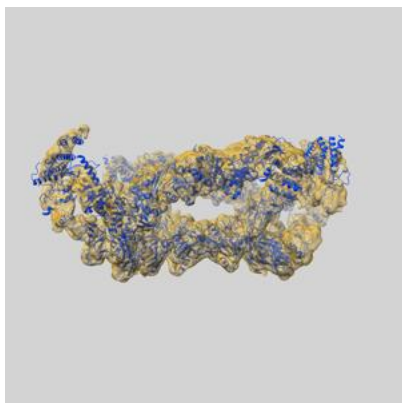
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

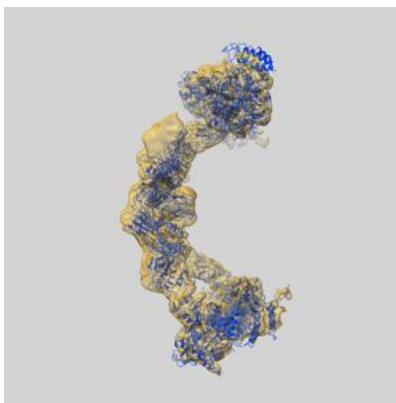
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-31027 and PDB model 7E93. Per-residue inclusion information can be found in section 3 on page 7.

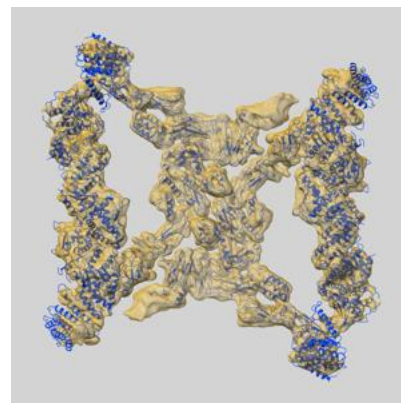
9.1 Map-model overlay [i](#)



X



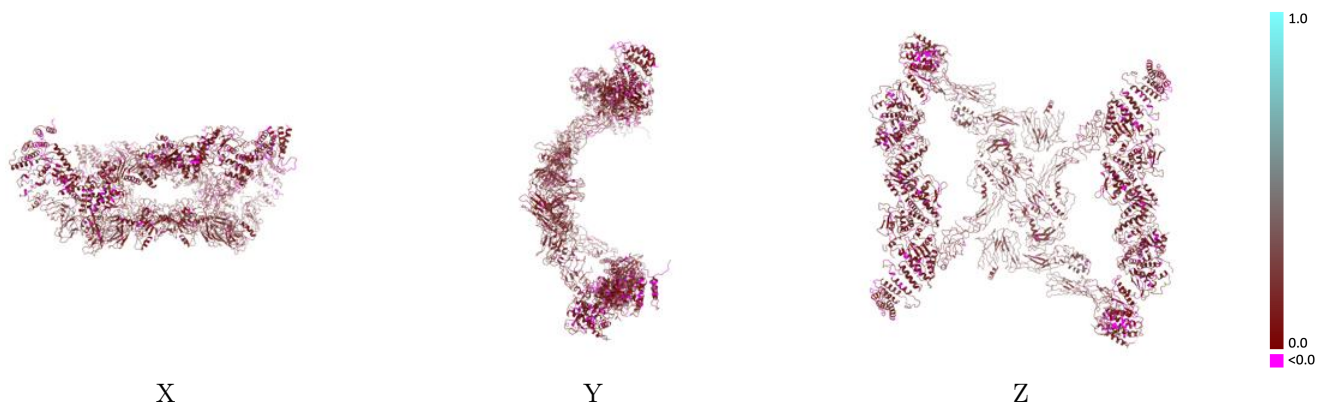
Y



Z

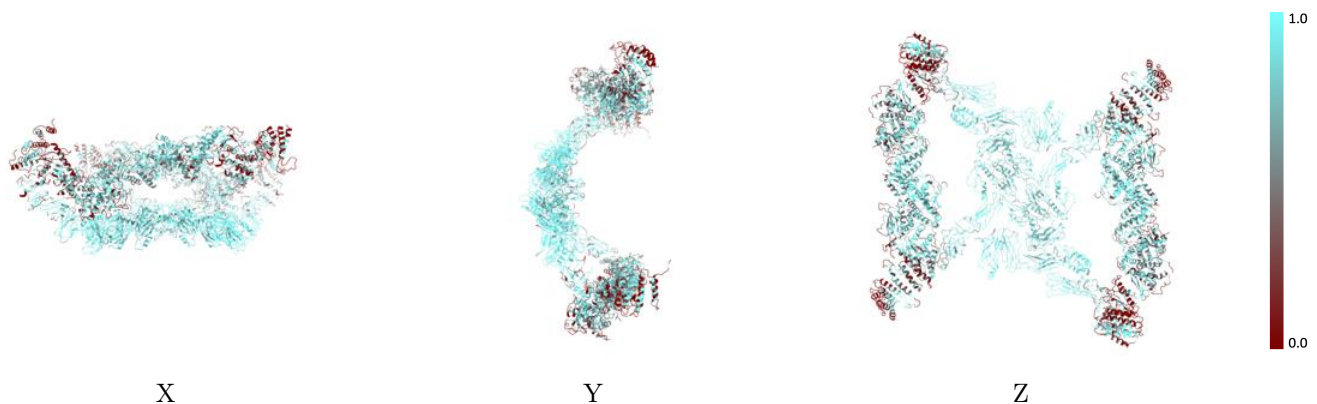
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



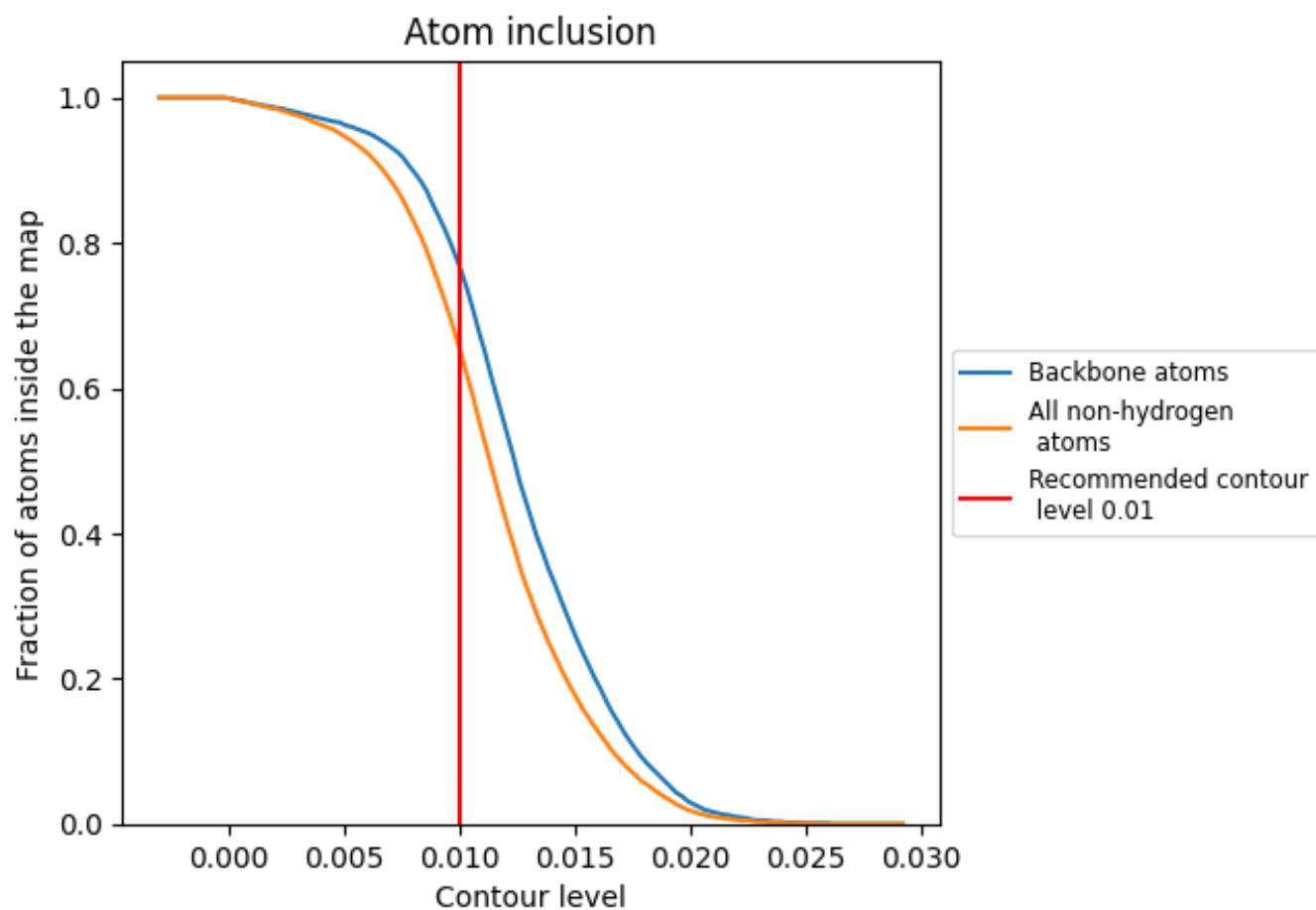
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).















































9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 66% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6560	 0.1530
A	 0.2520	 0.0920
B	 0.5540	 0.1370
C	 0.4750	 0.1150
D	 0.6930	 0.1440
E	 0.6990	 0.1510
F	 0.7460	 0.1410
G	 0.5860	 0.1330
H	 0.6060	 0.1230
I	 0.7390	 0.1900
J	 0.6900	 0.1630
K	 0.8360	 0.1840
L	 0.2520	 0.0920
M	 0.5560	 0.1380
N	 0.4760	 0.1130
O	 0.6920	 0.1440
P	 0.6980	 0.1520
Q	 0.7460	 0.1430
R	 0.5860	 0.1340
S	 0.6050	 0.1220
T	 0.7390	 0.1890
U	 0.6900	 0.1610
V	 0.8360	 0.1810

