



Full wwPDB EM Validation Report ⓘ

Aug 12, 2025 – 02:55 PM EDT

PDB ID : 9C2D / pdb_00009c2d
EMDB ID : EMD-45155
Title : Bacteriophage Sf14 Capsid Icosahedral reconstruction
Authors : Subramanian, S.; Kerns, H.R.; Braverman, S.G.; Doore, S.M.
Deposited on : 2024-05-30
Resolution : 3.20 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.dev126
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.45.1

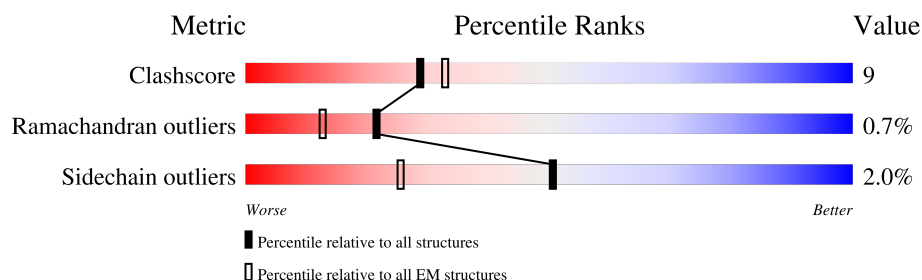
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	367	76% 22% .
1	B	367	74% 24% .
1	C	367	76% 20% .
1	D	367	73% 23% .
1	E	367	74% 23% .
1	F	367	73% 26% .
1	G	367	78% 19% ..
1	H	367	81% 17% .
1	I	367	78% 17% ..

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Mol	Chain	Length	Quality of chain
2	J	125	 80%16%••
2	K	125	 84%14%•
2	L	125	 87%10%••
2	M	125	 82%17%•
2	N	125	 71%27%•
2	O	125	 87%11%••
2	P	125	 84%14%•
2	Q	125	 84%14%•
2	R	125	 81%18%•
3	S	372	 27%5%68%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 35316 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 Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	366	Total	C	N	O	S	0	0
			2906	1845	493	556	12		
1	B	366	Total	C	N	O	S	0	0
			2890	1838	484	555	13		
1	C	366	Total	C	N	O	S	0	0
			2895	1839	493	550	13		
1	D	366	Total	C	N	O	S	0	0
			2845	1807	481	545	12		
1	E	366	Total	C	N	O	S	0	0
			2877	1830	485	549	13		
1	F	366	Total	C	N	O	S	0	0
			2898	1842	488	555	13		
1	G	366	Total	C	N	O	S	0	0
			2903	1843	491	556	13		
1	H	366	Total	C	N	O	S	0	0
			2910	1847	492	559	12		
1	I	356	Total	C	N	O	S	0	0
			2817	1791	474	539	13		

- Molecule 2 is a protein called Structural protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	J	122	Total	C	N	O	S	0	0
			917	583	154	179	1		
2	K	123	Total	C	N	O	S	0	0
			939	597	157	184	1		
2	L	123	Total	C	N	O	S	0	0
			935	595	156	183	1		
2	M	123	Total	C	N	O	S	0	0
			939	597	157	184	1		
2	N	123	Total	C	N	O	S	0	0
			937	596	157	183	1		
2	O	124	Total	C	N	O	S	0	0
			943	601	158	183	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
2	P	123	Total	C	N	O	S	0	0
			926	588	156	181	1		
2	Q	123	Total	C	N	O	S	0	0
			935	595	157	182	1		
2	R	123	Total	C	N	O	S	0	0
			939	597	157	184	1		

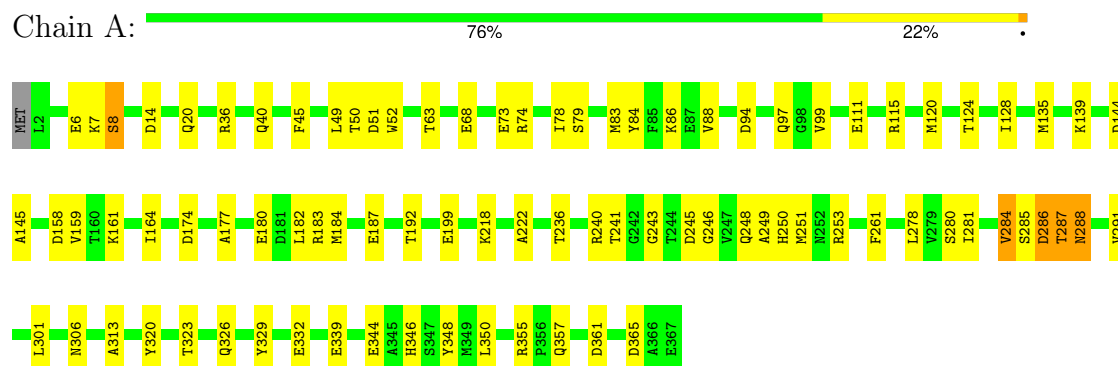
- Molecule 3 is a protein called Tail protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	S	120	Total	C	N	O	S	0	0
			965	633	150	179	3		

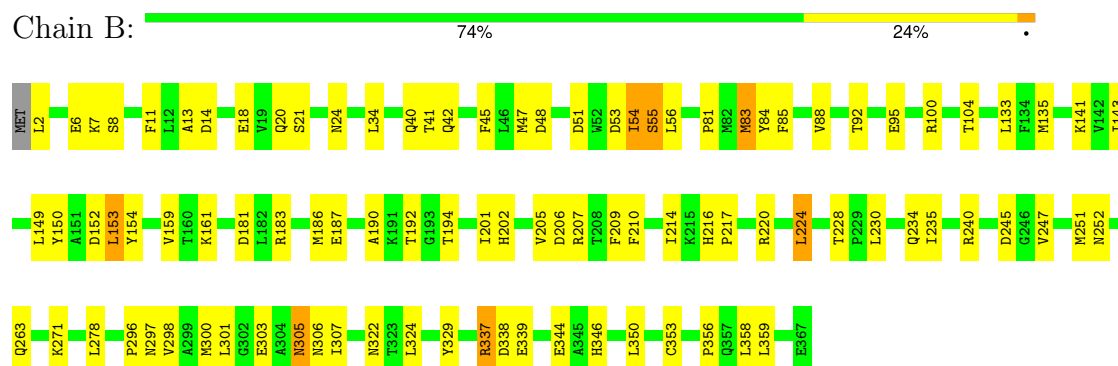
3 Residue-property plots [i](#)

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. 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. 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.

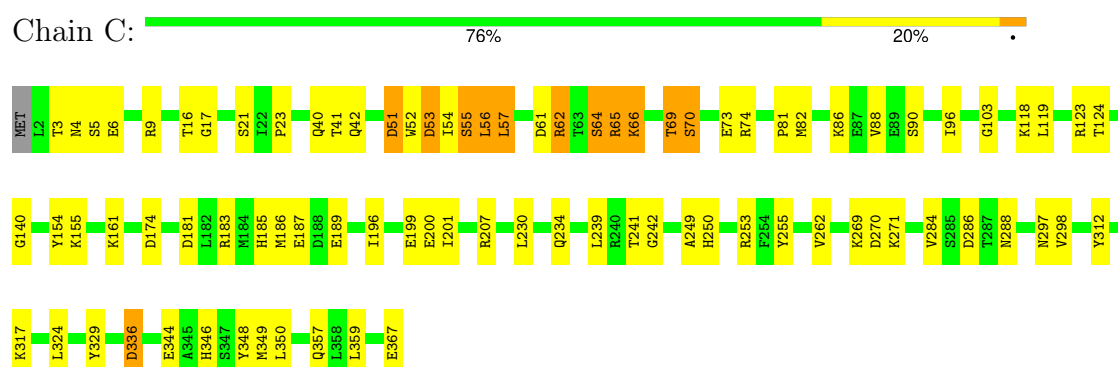
- Molecule 1: Major capsid protein



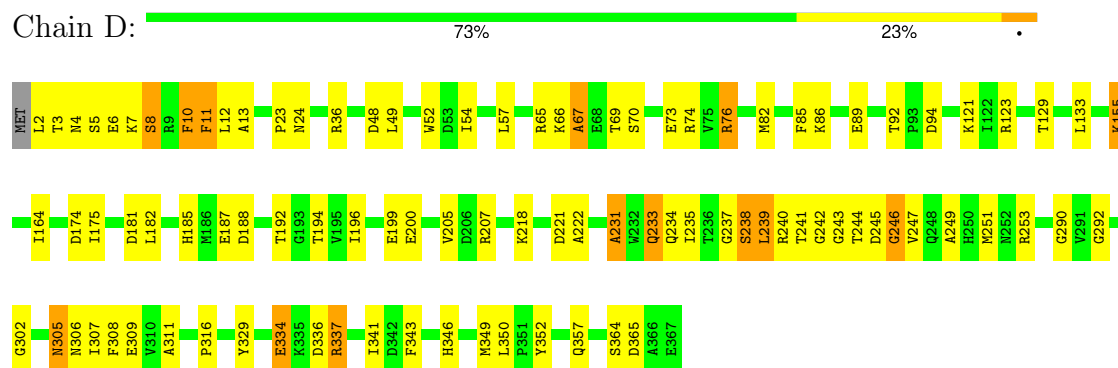
- Molecule 1: Major capsid protein



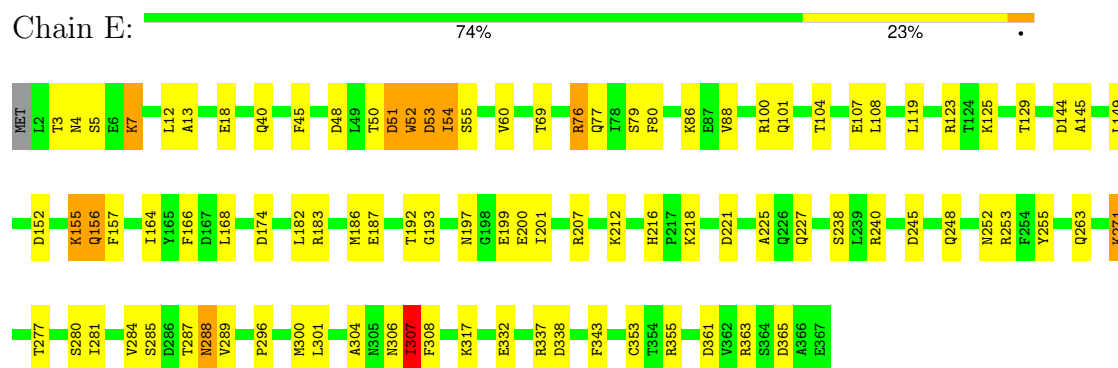
- Molecule 1: Major capsid protein



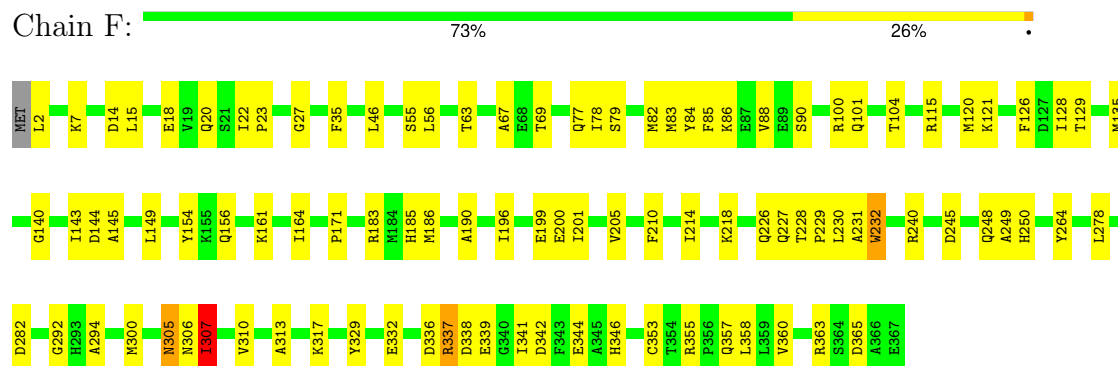
- Molecule 1: Major capsid protein



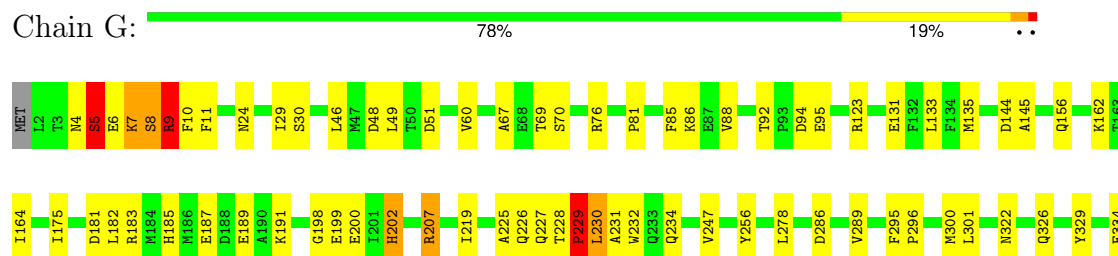
- Molecule 1: Major capsid protein



- Molecule 1: Major capsid protein



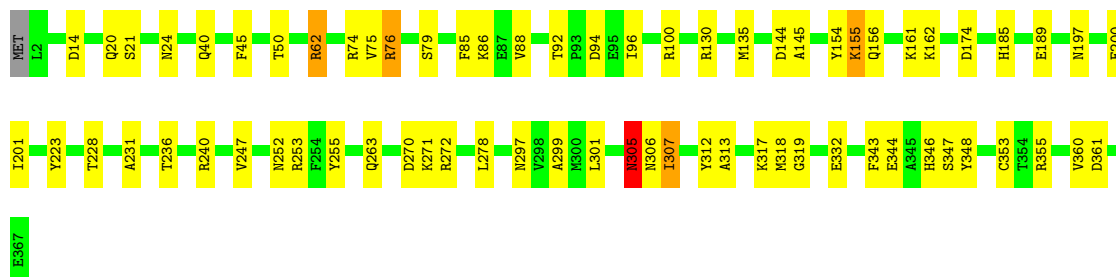
- Molecule 1: Major capsid protein





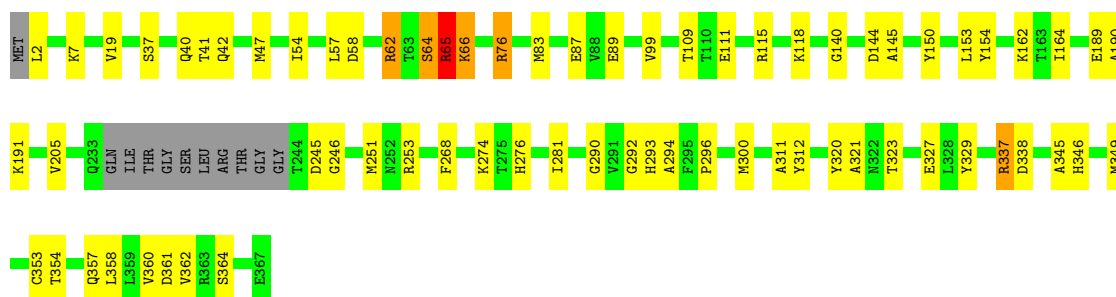
- Molecule 1: Major capsid protein

Chain H: 81% 17%



- Molecule 1: Major capsid protein

Chain I: 78% 17%



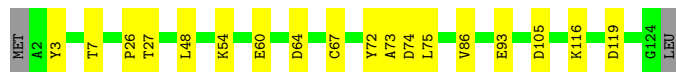
- Molecule 2: Structural protein

Chain J: 80% 16%



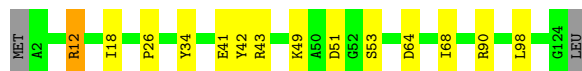
- Molecule 2: Structural protein

Chain K: 84% 14%



- Molecule 2: Structural protein

Chain L: 87% 10%



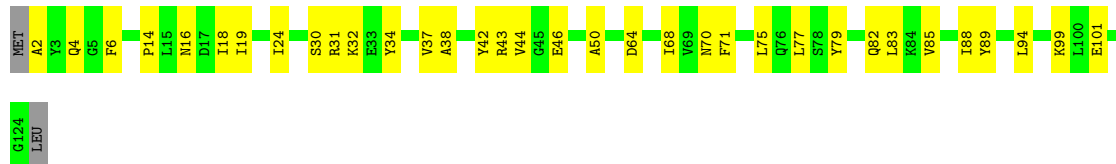
- Molecule 2: Structural protein

Chain M:  82% 17%



- Molecule 2: Structural protein

Chain N:  71% 27%



- Molecule 2: Structural protein

Chain O:  87% 11%



- Molecule 2: Structural protein

Chain P:  84% 14%



- Molecule 2: Structural protein

Chain Q:  84% 14%



- Molecule 2: Structural protein

Chain R:  81% 18%



- Molecule 3: Tail protein

Chain S:  27% 5% 68%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	42269	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	33	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	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	0.24	1/2967 (0.0%)	0.37	2/4016 (0.0%)
1	B	0.27	0/2951	0.48	0/3996
1	C	0.30	0/2956	0.52	0/4001
1	D	0.40	1/2904 (0.0%)	0.70	12/3934 (0.3%)
1	E	0.35	0/2938	0.55	1/3979 (0.0%)
1	F	0.21	0/2959	0.44	2/4005 (0.0%)
1	G	0.25	0/2964	0.50	5/4012 (0.1%)
1	H	0.22	0/2971	0.41	2/4021 (0.0%)
1	I	0.27	0/2877	0.45	0/3896
2	J	0.27	0/932	0.49	0/1261
2	K	0.17	0/955	0.39	0/1292
2	L	0.23	0/951	0.43	0/1287
2	M	0.14	0/955	0.32	0/1292
2	N	0.18	0/953	0.43	0/1289
2	O	0.20	0/959	0.38	0/1298
2	P	0.20	0/941	0.38	0/1273
2	Q	0.24	0/951	0.49	0/1287
2	R	0.15	0/955	0.36	0/1292
3	S	0.17	0/994	0.38	0/1355
All	All	0.27	2/36033 (0.0%)	0.48	24/48786 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2
1	D	0	3
1	E	0	1
1	F	0	1
1	G	0	3
1	H	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	I	0	5
2	J	0	1
2	L	0	1
2	Q	0	1
3	S	0	1
All	All	0	21

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	67	ALA	CA-CB	-7.58	1.48	1.54
1	A	8	SER	CA-CB	-6.56	1.40	1.53

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	229	PRO	N-CA-CB	-11.29	91.39	103.25
1	D	11	PHE	CA-C-N	-9.44	107.98	122.81
1	D	11	PHE	C-N-CA	-9.44	107.98	122.81
1	D	233	GLN	N-CA-C	-9.10	102.31	113.50
1	F	232	TRP	N-CA-C	-8.45	101.84	112.90
1	F	307	ILE	N-CA-C	-7.95	104.96	112.83
1	D	231	ALA	N-CA-C	-7.28	104.78	112.93
1	G	9	ARG	N-CA-C	-6.97	104.65	113.02
1	D	302	GLY	CA-C-O	-6.18	117.97	122.23
1	H	319	GLY	CA-C-N	-6.16	112.94	122.49
1	H	319	GLY	C-N-CA	-6.16	112.94	122.49
1	G	229	PRO	N-CD-CG	-6.16	93.96	103.20
1	D	66	LYS	N-CA-C	-6.11	101.47	110.52
1	D	10	PHE	CB-CA-C	5.88	122.52	112.00
1	G	198	GLY	CA-C-N	-5.76	112.36	122.62
1	G	198	GLY	C-N-CA	-5.76	112.36	122.62
1	E	285	SER	N-CA-C	-5.47	106.96	113.97
1	D	66	LYS	CB-CA-C	5.45	119.37	109.83
1	D	308	PHE	N-CA-CB	-5.44	102.03	110.57
1	D	234	GLN	N-CA-C	-5.33	105.58	112.68
1	A	288	ASN	CA-C-N	-5.28	116.29	123.10
1	A	288	ASN	C-N-CA	-5.28	116.29	123.10
1	D	10	PHE	N-CA-CB	-5.15	102.45	110.39
1	D	11	PHE	CA-C-O	-5.04	115.25	120.70

There are no chirality outliers.

All (21) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	51	ASP	Mainchain
1	C	69	THR	Mainchain
1	D	337	ARG	Sidechain
1	D	65	ARG	Sidechain
1	D	76	ARG	Sidechain
1	E	76	ARG	Sidechain
1	F	337	ARG	Sidechain
1	G	207	ARG	Sidechain
1	G	337	ARG	Sidechain
1	G	9	ARG	Sidechain
1	H	62	ARG	Sidechain
1	H	76	ARG	Sidechain
1	I	253	ARG	Sidechain
1	I	337	ARG	Sidechain
1	I	62	ARG	Sidechain
1	I	65	ARG	Sidechain
1	I	76	ARG	Sidechain
2	J	12	ARG	Sidechain
2	L	12	ARG	Sidechain
2	Q	12	ARG	Sidechain
3	S	109	LYS	Peptide

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	2906	0	2849	67	0
1	B	2890	0	2822	72	0
1	C	2895	0	2837	60	0
1	D	2845	0	2740	77	0
1	E	2877	0	2799	80	0
1	F	2898	0	2834	82	0
1	G	2903	0	2838	69	0
1	H	2910	0	2851	52	0
1	I	2817	0	2734	44	0
2	J	917	0	909	15	0
2	K	939	0	938	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	L	935	0	932	11	0
2	M	939	0	938	15	0
2	N	937	0	933	27	0
2	O	943	0	945	8	0
2	P	926	0	917	10	0
2	Q	935	0	934	19	0
2	R	939	0	938	16	0
3	S	965	0	916	15	0
All	All	35316	0	34604	645	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 9.

All (645) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:337:ARG:NH2	2:Q:26:PRO:HD3	1.00	1.31
1:G:337:ARG:NH2	2:Q:26:PRO:CD	1.93	1.30
1:G:337:ARG:HH22	2:Q:26:PRO:CD	1.51	1.22
1:I:337:ARG:NH2	2:L:26:PRO:HD3	1.68	1.09
1:G:337:ARG:HH21	2:Q:26:PRO:HD3	1.29	0.92
1:I:337:ARG:HH22	2:L:26:PRO:HD3	1.30	0.90
1:E:40:GLN:HE22	1:E:45:PHE:HB3	1.38	0.89
1:D:243:GLY:HA2	1:D:249:ALA:O	1.74	0.88
1:E:53:ASP:HA	1:F:23:PRO:HG3	1.58	0.85
1:C:52:TRP:HB3	1:C:73:GLU:HG3	1.61	0.82
1:H:74:ARG:HH12	1:H:76:ARG:NH2	1.78	0.81
1:B:51:ASP:HB3	1:C:21:SER:HB3	1.64	0.79
1:B:83:MET:HE3	1:B:150:TYR:CD1	2.20	0.77
1:B:307:ILE:HD12	1:B:353:CYS:SG	2.25	0.77
1:I:337:ARG:NH2	2:L:26:PRO:CD	2.48	0.76
1:D:36:ARG:NH1	1:D:309:GLU:OE2	2.18	0.76
1:I:190:ALA:HB2	1:I:358:LEU:HD21	1.68	0.75
1:C:181:ASP:OD1	1:D:207:ARG:NH2	2.20	0.74
1:D:187:GLU:HA	1:D:196:ILE:HD11	1.70	0.74
1:E:240:ARG:HG3	1:E:252:ASN:HB3	1.68	0.74
1:D:92:THR:HG22	1:D:94:ASP:H	1.53	0.73
1:H:200:GLU:HG2	1:H:299:ALA:HB3	1.69	0.73
1:C:52:TRP:O	1:C:54:ILE:N	2.22	0.72
1:H:92:THR:HG22	1:H:94:ASP:H	1.55	0.72
1:H:144:ASP:OD1	1:H:145:ALA:N	2.23	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:337:ARG:HH21	2:Q:26:PRO:CD	1.90	0.72
1:D:67:ALA:HB1	1:E:88:VAL:HG12	1.72	0.72
1:A:184:MET:SD	1:B:207:ARG:NH1	2.64	0.71
1:B:83:MET:HE3	1:B:150:TYR:CG	2.26	0.70
1:B:206:ASP:OD1	1:B:207:ARG:N	2.24	0.70
1:E:355:ARG:NH2	1:F:20:GLN:O	2.24	0.70
1:C:53:ASP:HA	1:D:23:PRO:HG3	1.72	0.70
1:C:62:ARG:CD	1:D:316:PRO:HG3	2.23	0.69
1:A:139:LYS:NZ	1:A:278:LEU:O	2.23	0.69
1:A:183:ARG:HD2	1:A:199:GLU:HG2	1.73	0.69
2:M:34:TYR:HB2	2:M:85:VAL:HG13	1.75	0.69
1:A:159:VAL:HG11	1:A:357:GLN:HB3	1.73	0.68
1:I:290:GLY:H	1:I:364:SER:HB3	1.58	0.68
2:O:100:LEU:HD11	2:O:109:VAL:HG21	1.74	0.68
1:I:300:MET:HE3	1:I:300:MET:HA	1.75	0.68
1:A:158:ASP:OD2	2:M:8:LYS:NZ	2.27	0.67
1:A:84:TYR:OH	1:A:346:HIS:ND1	2.25	0.67
1:A:111:GLU:OE2	1:A:115:ARG:NH1	2.27	0.67
1:G:334:GLU:N	1:G:334:GLU:OE2	2.27	0.67
1:H:74:ARG:NH1	1:H:76:ARG:NH2	2.42	0.66
1:D:181:ASP:OD1	1:E:207:ARG:NH1	2.28	0.66
1:G:67:ALA:HB2	1:H:86:LYS:HE3	1.76	0.66
1:A:94:ASP:OD2	2:J:16:ASN:ND2	2.28	0.66
1:G:156:GLN:HG2	2:N:6:PHE:HB2	1.78	0.66
1:E:183:ARG:HD3	1:E:199:GLU:HG3	1.78	0.66
1:D:74:ARG:NH1	1:D:76:ARG:NH2	2.45	0.65
1:B:7:LYS:HZ1	2:K:75:LEU:HB2	1.62	0.65
1:D:74:ARG:HH11	1:D:76:ARG:HD3	1.60	0.65
1:E:60:VAL:HA	1:F:85:PHE:HB3	1.79	0.65
1:I:153:LEU:HD21	1:I:353:CYS:H	1.61	0.65
1:B:186:MET:HE2	1:B:201:ILE:HG22	1.79	0.64
1:B:152:ASP:O	1:B:154:TYR:N	2.28	0.64
1:A:355:ARG:NH2	1:B:20:GLN:O	2.30	0.64
2:L:49:LYS:NZ	2:L:53:SER:OG	2.31	0.64
1:B:55:SER:O	1:B:56:LEU:HD22	1.98	0.64
1:H:79:SER:O	1:H:156:GLN:NE2	2.31	0.64
1:A:20:GLN:O	1:F:355:ARG:NH2	2.31	0.63
1:G:229:PRO:O	1:G:231:ALA:N	2.31	0.63
1:H:317:LYS:HE3	1:H:346:HIS:HE1	1.63	0.63
1:G:5:SER:C	1:G:7:LYS:H	2.07	0.63
1:G:60:VAL:HG22	1:H:85:PHE:HA	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:187:GLU:OE2	1:B:240:ARG:NH1	2.32	0.63
1:G:51:ASP:HB3	1:H:21:SER:HB2	1.81	0.63
1:C:317:LYS:HE2	1:C:346:HIS:HE1	1.64	0.62
1:E:186:MET:HB3	1:E:300:MET:HE1	1.80	0.62
1:C:9:ARG:O	1:H:100:ARG:NH1	2.31	0.62
1:E:104:THR:HG21	1:E:107:GLU:HB2	1.80	0.62
1:C:88:VAL:HG12	1:C:344:GLU:HG2	1.81	0.62
2:K:60:GLU:OE1	2:K:60:GLU:N	2.28	0.61
2:R:30:SER:HA	2:R:90:ARG:HB2	1.81	0.61
1:E:287:THR:O	1:E:289:VAL:HG12	1.99	0.61
1:G:4:ASN:HD22	1:G:11:PHE:HB2	1.65	0.61
1:F:78:ILE:HD12	1:F:156:GLN:HG3	1.83	0.61
2:J:22:GLU:OE2	2:J:31:ARG:NH1	2.33	0.61
1:E:183:ARG:NH1	1:E:199:GLU:OE1	2.34	0.61
1:G:225:ALA:O	1:G:227:GLN:N	2.33	0.61
1:A:339:GLU:HG3	2:J:24:ILE:HD12	1.81	0.61
1:E:40:GLN:NE2	1:E:45:PHE:HB3	2.12	0.61
2:M:34:TYR:OH	2:M:64:ASP:OD1	2.11	0.61
2:N:70:ASN:HB2	2:N:79:TYR:HB2	1.83	0.60
2:M:30:SER:HA	2:M:90:ARG:HB2	1.83	0.60
1:A:243:GLY:HA3	1:A:250:HIS:HA	1.82	0.60
1:A:241:THR:HG1	1:A:253:ARG:HE	1.46	0.60
1:A:243:GLY:HA2	1:A:251:MET:HG3	1.84	0.60
1:B:322:ASN:ND2	1:H:96:ILE:O	2.33	0.60
1:B:84:TYR:OH	1:B:346:HIS:ND1	2.30	0.59
1:F:200:GLU:HB2	1:F:300:MET:HB2	1.84	0.59
1:G:355:ARG:NH2	1:H:20:GLN:O	2.34	0.59
1:E:54:ILE:O	1:F:121:LYS:NZ	2.34	0.59
1:G:81:PRO:HG3	2:N:2:ALA:HA	1.83	0.59
1:A:86:LYS:HD3	1:F:67:ALA:HB2	1.84	0.59
1:F:282:ASP:OD2	1:F:282:ASP:N	2.35	0.59
1:G:4:ASN:OD1	1:G:5:SER:N	2.31	0.59
1:G:48:ASP:OD2	1:H:100:ARG:NH2	2.36	0.59
1:A:236:THR:OG1	1:F:226:GLN:NE2	2.34	0.59
1:C:64:SER:O	1:C:66:LYS:N	2.36	0.59
1:E:306:ASN:O	1:E:308:PHE:N	2.36	0.58
2:M:96:ASP:OD1	2:M:110:LYS:NZ	2.36	0.58
1:F:229:PRO:C	1:F:231:ALA:H	2.12	0.58
2:P:18:ILE:HD11	2:P:68:ILE:HG22	1.85	0.58
2:R:95:LYS:HB3	2:R:97:LEU:HD12	1.86	0.58
1:A:313:ALA:HB3	1:A:348:TYR:HD2	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:227:GLN:C	1:F:229:PRO:HD3	2.28	0.58
1:B:181:ASP:OD1	1:C:207:ARG:NH2	2.37	0.58
1:I:87:GLU:HB3	1:I:345:ALA:HB3	1.84	0.58
1:I:111:GLU:OE2	1:I:115:ARG:NH2	2.36	0.58
1:E:144:ASP:OD1	1:E:145:ALA:N	2.36	0.58
2:Q:41:GLU:OE1	2:Q:43:ARG:NH1	2.35	0.57
1:B:84:TYR:HH	1:B:346:HIS:HD1	1.47	0.57
1:E:4:ASN:O	1:E:13:ALA:N	2.30	0.57
1:G:289:VAL:HG12	1:G:365:ASP:HB3	1.87	0.57
1:F:84:TYR:OH	1:F:346:HIS:ND1	2.32	0.57
1:H:252:ASN:ND2	1:H:263:GLN:OE1	2.33	0.57
2:K:48:LEU:HD11	2:K:67:CYS:HB2	1.85	0.57
2:N:34:TYR:HB2	2:N:85:VAL:HG13	1.86	0.57
1:B:159:VAL:HG21	1:B:356:PRO:HG2	1.86	0.57
1:C:96:ILE:O	1:G:322:ASN:ND2	2.37	0.57
1:E:187:GLU:OE2	1:F:240:ARG:NH1	2.37	0.57
1:G:123:ARG:HG3	1:G:123:ARG:HH11	1.69	0.57
1:G:185:HIS:CE1	1:G:189:GLU:HG3	2.40	0.57
1:G:227:GLN:O	1:G:228:THR:C	2.47	0.57
1:D:239:LEU:O	1:D:240:ARG:C	2.48	0.57
1:E:52:TRP:O	1:E:53:ASP:C	2.48	0.56
1:B:329:TYR:HB2	1:B:346:HIS:HB2	1.86	0.56
1:C:253:ARG:NH2	1:C:255:TYR:OH	2.39	0.56
1:D:199:GLU:OE1	1:E:238:SER:OG	2.20	0.56
1:B:51:ASP:N	1:B:51:ASP:OD1	2.38	0.56
1:E:225:ALA:O	1:F:227:GLN:NE2	2.32	0.56
2:R:14:PRO:HG3	2:R:99:LYS:HE2	1.87	0.56
1:D:238:SER:O	1:D:240:ARG:N	2.38	0.56
1:G:144:ASP:OD1	1:G:145:ALA:N	2.38	0.56
1:C:5:SER:OG	1:C:6:GLU:N	2.39	0.56
1:D:237:GLY:C	1:D:239:LEU:H	2.13	0.56
1:A:320:TYR:O	1:A:323:THR:OG1	2.23	0.56
1:F:154:TYR:CZ	1:F:161:LYS:HD3	2.41	0.56
2:K:64:ASP:O	2:K:116:LYS:NZ	2.39	0.56
1:A:313:ALA:HB3	1:A:348:TYR:CD2	2.41	0.56
1:H:40:GLN:HE22	1:H:45:PHE:HB3	1.70	0.56
1:C:70:SER:HB2	1:D:121:LYS:HE2	1.87	0.55
2:Q:51:ASP:OD1	2:Q:52:GLY:N	2.39	0.55
2:K:7:THR:O	2:K:7:THR:HG22	2.06	0.55
1:B:135:MET:HG2	1:B:278:LEU:HB3	1.89	0.55
1:E:193:GLY:HA3	1:F:22:ILE:HD12	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:287:THR:O	1:E:289:VAL:N	2.39	0.55
1:H:301:LEU:HD13	1:H:307:ILE:HD11	1.89	0.55
1:A:14:ASP:O	1:F:46:LEU:N	2.35	0.55
1:E:240:ARG:HA	1:E:252:ASN:HA	1.88	0.55
1:G:286:ASP:HB3	1:G:289:VAL:HG22	1.88	0.55
1:G:329:TYR:HB2	1:G:346:HIS:HB2	1.88	0.55
1:E:166:PHE:HB3	1:E:168:LEU:HD13	1.88	0.55
1:G:135:MET:HG2	1:G:278:LEU:HB3	1.89	0.55
1:E:155:LYS:O	1:E:157:PHE:N	2.40	0.55
1:G:230:LEU:O	1:G:234:GLN:HG3	2.06	0.55
1:D:200:GLU:O	1:D:200:GLU:HG3	2.06	0.54
1:G:94:ASP:HB3	2:Q:16:ASN:HB3	1.89	0.54
2:R:74:ASP:OD1	2:R:75:LEU:N	2.40	0.54
1:C:336:ASP:HB2	2:R:24:ILE:HD11	1.89	0.54
1:D:334:GLU:HG2	1:D:341:ILE:HG22	1.90	0.54
1:F:90:SER:HA	1:F:342:ASP:HA	1.89	0.54
1:F:363:ARG:NH2	1:F:365:ASP:OD2	2.30	0.54
1:I:162:LYS:HB3	1:I:360:VAL:HG12	1.89	0.54
1:H:253:ARG:NH2	1:H:255:TYR:OH	2.41	0.54
1:I:57:LEU:HD23	1:I:57:LEU:H	1.71	0.54
1:F:82:MET:HE1	1:F:313:ALA:HB2	1.88	0.54
1:F:115:ARG:NH2	1:F:332:GLU:OE2	2.39	0.54
1:F:183:ARG:NH1	1:F:199:GLU:OE2	2.40	0.54
1:G:164:ILE:HD12	1:G:360:VAL:HG11	1.88	0.54
1:D:49:LEU:HD13	1:D:76:ARG:NH1	2.23	0.54
2:N:32:LYS:HD3	2:N:34:TYR:CZ	2.43	0.54
1:E:119:LEU:O	1:E:123:ARG:HG3	2.08	0.54
1:F:337:ARG:O	1:F:338:ASP:C	2.50	0.54
1:A:88:VAL:HG12	1:A:344:GLU:HG2	1.89	0.53
1:B:83:MET:CE	1:B:150:TYR:CD1	2.91	0.53
1:G:339:GLU:HG3	2:Q:24:ILE:HD12	1.90	0.53
1:G:183:ARG:NH1	1:G:199:GLU:OE1	2.41	0.53
3:S:30:ARG:HD3	3:S:85:MET:HG3	1.89	0.53
1:B:150:TYR:CZ	2:N:83:LEU:HD11	2.42	0.53
1:C:119:LEU:O	1:C:123:ARG:NH1	2.42	0.53
2:O:22:GLU:OE1	2:O:31:ARG:NH1	2.41	0.53
1:B:245:ASP:HB3	1:B:251:MET:SD	2.49	0.53
3:S:38:PRO:O	3:S:108:VAL:HG21	2.09	0.53
1:B:2:LEU:N	1:B:13:ALA:O	2.42	0.53
1:F:332:GLU:HG3	1:F:341:ILE:HD11	1.91	0.53
2:N:75:LEU:HD12	2:R:7:THR:HG21	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:150:TYR:CE2	2:N:83:LEU:HD11	2.44	0.53
1:C:57:LEU:HB2	1:D:129:THR:HG23	1.90	0.53
1:D:187:GLU:OE2	1:E:240:ARG:NH1	2.40	0.53
1:E:192:THR:HG21	1:E:301:LEU:HD23	1.90	0.53
1:F:190:ALA:HB2	1:F:358:LEU:HD21	1.91	0.53
1:G:5:SER:C	1:G:7:LYS:N	2.65	0.53
1:A:83:MET:HE2	1:A:350:LEU:HD12	1.91	0.53
1:E:52:TRP:C	1:E:52:TRP:CD1	2.87	0.53
1:G:175:ILE:HG21	1:G:219:ILE:HD11	1.90	0.53
1:B:186:MET:HB3	1:B:300:MET:HE1	1.90	0.53
1:C:253:ARG:HG2	1:C:262:VAL:HG22	1.91	0.53
1:D:49:LEU:CD1	1:D:76:ARG:NH1	2.72	0.53
1:F:69:THR:HG21	2:J:95:LYS:HG2	1.91	0.53
1:F:143:ILE:HG22	1:F:149:LEU:HA	1.90	0.53
1:I:245:ASP:OD1	1:I:246:GLY:N	2.41	0.53
1:I:245:ASP:HB2	1:I:251:MET:SD	2.49	0.52
1:D:238:SER:C	1:D:240:ARG:H	2.17	0.52
1:F:227:GLN:O	1:F:228:THR:C	2.52	0.52
1:A:51:ASP:HB3	1:B:21:SER:HB2	1.90	0.52
2:J:30:SER:HA	2:J:90:ARG:HB2	1.91	0.52
1:D:4:ASN:OD1	1:D:5:SER:N	2.41	0.52
1:D:239:LEU:CB	1:D:253:ARG:HB2	2.39	0.52
1:G:229:PRO:O	1:G:232:TRP:N	2.41	0.52
2:P:27:THR:HG22	2:P:27:THR:O	2.10	0.52
1:D:205:VAL:HG12	1:D:292:GLY:HA3	1.90	0.52
1:E:306:ASN:O	1:E:307:ILE:C	2.53	0.52
1:H:174:ASP:OD1	1:H:174:ASP:N	2.42	0.52
1:H:305:ASN:O	1:H:306:ASN:C	2.52	0.52
1:I:189:GLU:HB3	1:I:357:GLN:HG3	1.91	0.52
2:K:119:ASP:OD2	2:L:90:ARG:NH2	2.42	0.52
2:Q:95:LYS:HB3	2:Q:123:THR:HG21	1.92	0.52
1:C:70:SER:CB	1:D:121:LYS:HE2	2.41	0.51
1:E:4:ASN:N	1:E:4:ASN:OD1	2.43	0.51
1:E:155:LYS:C	1:E:157:PHE:H	2.18	0.51
1:D:54:ILE:HD11	1:E:125:LYS:HB2	1.91	0.51
1:F:307:ILE:HG13	1:F:355:ARG:HB2	1.92	0.51
1:D:244:THR:C	1:D:246:GLY:H	2.17	0.51
1:D:245:ASP:O	1:D:247:VAL:N	2.43	0.51
2:M:60:GLU:OE1	2:M:60:GLU:N	2.42	0.51
1:B:2:LEU:HD23	1:B:14:ASP:HA	1.92	0.51
1:E:155:LYS:C	1:E:157:PHE:N	2.68	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:253:ARG:NH2	1:E:255:TYR:OH	2.44	0.51
1:C:230:LEU:O	1:C:234:GLN:HG2	2.10	0.51
1:D:67:ALA:HB1	1:E:86:LYS:O	2.11	0.51
2:N:32:LYS:HB3	2:N:89:TYR:CD1	2.45	0.51
2:N:101:GLU:HA	2:N:101:GLU:OE2	2.10	0.51
1:I:140:GLY:HA3	1:I:154:TYR:CE2	2.46	0.51
1:B:192:THR:HG23	1:B:194:THR:H	1.74	0.51
1:D:336:ASP:O	1:D:337:ARG:C	2.54	0.51
1:A:49:LEU:HD11	1:A:78:ILE:HD13	1.93	0.50
1:B:48:ASP:OD2	1:C:103:GLY:N	2.44	0.50
1:C:64:SER:O	1:C:65:ARG:C	2.53	0.50
1:H:50:THR:HG22	1:H:75:VAL:HG13	1.91	0.50
1:B:41:THR:HG22	1:B:324:LEU:HD22	1.93	0.50
1:D:2:LEU:O	1:D:12:LEU:HB2	2.12	0.50
2:P:106:ALA:O	2:P:110:LYS:HG2	2.11	0.50
1:A:180:GLU:OE1	1:B:240:ARG:NH2	2.42	0.50
1:A:326:GLN:HB2	1:A:329:TYR:CZ	2.46	0.50
1:C:249:ALA:O	1:C:250:HIS:ND1	2.44	0.50
1:H:162:LYS:HB3	1:H:360:VAL:HG22	1.94	0.50
1:I:144:ASP:OD1	1:I:145:ALA:N	2.44	0.50
2:P:83:LEU:H	2:P:83:LEU:HD23	1.76	0.50
1:E:164:ILE:HD13	1:E:182:LEU:HB2	1.93	0.50
1:I:47:MET:HE1	1:I:354:THR:HG23	1.94	0.50
2:L:41:GLU:OE2	2:L:43:ARG:NH2	2.42	0.50
1:D:123:ARG:HG2	1:D:123:ARG:HH11	1.75	0.50
1:D:365:ASP:OD1	1:D:365:ASP:N	2.43	0.50
1:E:3:THR:HG22	1:E:12:LEU:HB3	1.94	0.50
1:E:281:ILE:HD11	1:E:361:ASP:HB3	1.93	0.50
1:F:2:LEU:HB3	1:F:14:ASP:HA	1.94	0.50
1:G:162:LYS:HB3	1:G:360:VAL:HG22	1.93	0.50
1:G:164:ILE:HD13	1:G:182:LEU:HB2	1.92	0.50
2:Q:65:SER:HB3	2:Q:89:TYR:HB3	1.94	0.50
1:D:86:LYS:HD2	1:D:346:HIS:CE1	2.47	0.50
1:C:187:GLU:HA	1:C:196:ILE:HG21	1.94	0.50
1:E:287:THR:OG1	1:E:288:ASN:N	2.45	0.50
1:G:337:ARG:NH2	2:Q:26:PRO:CG	2.68	0.50
1:G:337:ARG:HH22	2:Q:26:PRO:HD3	0.67	0.50
2:R:3:TYR:OH	2:R:6:PHE:HA	2.12	0.50
1:B:24:ASN:HB3	1:B:247:VAL:HG11	1.94	0.49
1:A:124:THR:O	1:A:128:ILE:HG23	2.12	0.49
1:E:221:ASP:OD1	3:S:77:GLN:NE2	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:200:GLU:HB3	1:H:297:ASN:HB3	1.94	0.49
2:P:22:GLU:OE1	2:P:31:ARG:NH1	2.45	0.49
1:B:92:THR:O	1:B:95:GLU:HG2	2.11	0.49
1:D:239:LEU:C	1:D:241:THR:N	2.65	0.49
1:D:7:LYS:CB	1:D:10:PHE:HB2	2.42	0.49
1:D:82:MET:HB3	1:D:350:LEU:HB2	1.94	0.49
1:B:47:MET:HG3	1:C:17:GLY:HA2	1.95	0.49
1:B:297:ASN:OD1	1:B:298:VAL:N	2.44	0.49
1:C:241:THR:OG1	1:C:242:GLY:N	2.36	0.49
1:C:329:TYR:HB2	1:C:346:HIS:HB2	1.93	0.49
1:D:245:ASP:O	1:D:247:VAL:HG23	2.12	0.49
1:E:60:VAL:HG21	1:F:83:MET:HB2	1.94	0.49
1:G:229:PRO:C	1:G:231:ALA:N	2.69	0.49
2:K:72:TYR:O	2:K:74:ASP:N	2.45	0.49
1:H:228:THR:HG23	1:H:231:ALA:H	1.78	0.49
3:S:33:GLN:NE2	3:S:110:PRO:HA	2.28	0.49
1:E:227:GLN:HG2	1:F:227:GLN:CG	2.43	0.49
1:E:277:THR:HG23	1:E:280:SER:HB3	1.94	0.49
2:L:42:TYR:O	2:L:43:ARG:NH1	2.45	0.49
1:B:6:GLU:HG3	2:K:75:LEU:HD21	1.95	0.49
1:E:51:ASP:O	1:E:52:TRP:C	2.56	0.49
2:Q:18:ILE:HD11	2:Q:68:ILE:HG22	1.94	0.49
1:B:205:VAL:HG13	1:B:209:PHE:HB3	1.95	0.49
1:C:286:ASP:C	1:C:288:ASN:H	2.21	0.49
1:E:296:PRO:HB3	1:E:300:MET:SD	2.53	0.49
1:F:229:PRO:HD2	1:F:232:TRP:CE2	2.48	0.49
2:L:34:TYR:OH	2:L:64:ASP:OD2	2.18	0.49
1:D:24:ASN:HB3	1:D:247:VAL:CG2	2.43	0.48
1:G:94:ASP:OD2	2:Q:16:ASN:ND2	2.43	0.48
1:H:185:HIS:CE1	1:H:189:GLU:HG3	2.47	0.48
1:A:144:ASP:OD2	1:A:145:ALA:N	2.45	0.48
1:G:8:SER:HB2	1:G:10:PHE:H	1.77	0.48
1:G:229:PRO:C	1:G:231:ALA:H	2.20	0.48
1:H:307:ILE:CG2	1:H:355:ARG:H	2.26	0.48
2:L:51:ASP:OD2	2:L:53:SER:OG	2.28	0.48
1:A:6:GLU:H	1:A:6:GLU:CD	2.16	0.48
1:B:252:ASN:HB2	1:B:263:GLN:HB3	1.95	0.48
1:B:339:GLU:HG3	2:M:24:ILE:HD13	1.95	0.48
1:C:200:GLU:HG3	1:C:297:ASN:HD22	1.78	0.48
1:F:135:MET:HG2	1:F:278:LEU:HB3	1.95	0.48
1:I:164:ILE:HB	1:I:362:VAL:HG12	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:37:VAL:HG23	2:N:38:ALA:H	1.79	0.48
1:B:88:VAL:HG12	1:B:344:GLU:HG2	1.94	0.48
1:D:69:THR:HA	1:E:88:VAL:O	2.13	0.48
1:F:218:LYS:HD2	3:S:104:TRP:CG	2.48	0.48
1:I:329:TYR:HB2	1:I:346:HIS:HB2	1.96	0.48
1:A:243:GLY:HA2	1:A:251:MET:H	1.79	0.48
1:C:90:SER:O	1:C:118:LYS:NZ	2.47	0.48
1:F:183:ARG:HD3	1:F:199:GLU:HG3	1.95	0.48
1:A:281:ILE:HD11	1:A:361:ASP:OD2	2.13	0.48
1:E:174:ASP:OD1	1:E:174:ASP:N	2.39	0.48
1:B:6:GLU:OE1	1:B:6:GLU:N	2.46	0.48
1:A:280:SER:HA	1:A:291:VAL:HG21	1.96	0.48
1:C:189:GLU:O	1:C:357:GLN:NE2	2.47	0.48
1:F:27:GLY:O	1:F:264:TYR:OH	2.31	0.48
1:I:293:HIS:ND1	1:I:361:ASP:OD1	2.40	0.48
1:A:40:GLN:HE22	1:B:14:ASP:HB2	1.77	0.47
1:A:135:MET:HG2	1:A:278:LEU:HB3	1.96	0.47
1:C:312:TYR:CD1	1:C:349:MET:HB3	2.49	0.47
2:P:14:PRO:HG3	2:P:99:LYS:HE3	1.96	0.47
1:D:311:ALA:O	1:D:349:MET:HA	2.15	0.47
1:F:210:PHE:O	1:F:214:ILE:HG12	2.14	0.47
3:S:33:GLN:HG3	3:S:37:LEU:HD12	1.95	0.47
1:B:41:THR:OG1	1:B:42:GLN:OE1	2.33	0.47
1:D:242:GLY:C	1:D:244:THR:H	2.21	0.47
1:F:101:GLN:O	1:F:104:THR:OG1	2.31	0.47
1:G:228:THR:CB	1:G:229:PRO:HD3	2.44	0.47
1:B:40:GLN:HE22	1:B:45:PHE:HB3	1.78	0.47
1:I:65:ARG:HA	1:I:65:ARG:HD3	1.37	0.47
1:A:40:GLN:HE22	1:A:45:PHE:HB3	1.79	0.47
1:C:82:MET:HB2	1:C:348:TYR:CE1	2.50	0.47
1:E:79:SER:OG	1:E:80:PHE:N	2.47	0.47
1:E:168:LEU:HB3	1:E:212:LYS:HB3	1.97	0.47
1:G:229:PRO:HD2	1:G:230:LEU:H	1.80	0.47
1:I:66:LYS:HD2	1:I:66:LYS:HA	1.59	0.47
2:P:20:LEU:HD12	2:P:121:VAL:HG21	1.95	0.47
3:S:101:TYR:HD2	3:S:115:ASN:HB3	1.80	0.47
1:B:161:LYS:NZ	1:B:359:LEU:O	2.48	0.47
1:B:56:LEU:HG	2:R:124:GLY:HA3	1.97	0.47
1:C:61:ASP:HB3	1:C:64:SER:OG	2.15	0.47
1:C:186:MET:HE3	1:C:201:ILE:HG21	1.97	0.47
1:D:238:SER:C	1:D:240:ARG:N	2.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:301:LEU:HD13	1:E:307:ILE:HD11	1.97	0.47
1:C:161:LYS:NZ	1:C:359:LEU:O	2.48	0.47
1:E:337:ARG:O	1:E:338:ASP:C	2.56	0.47
1:F:307:ILE:HG12	1:F:353:CYS:SG	2.55	0.47
1:H:74:ARG:NH1	1:H:76:ARG:HH21	2.13	0.47
2:N:18:ILE:HG23	2:N:94:LEU:HD22	1.97	0.47
1:D:74:ARG:NH1	1:D:76:ARG:HD3	2.26	0.46
1:E:166:PHE:HB3	1:E:168:LEU:CD1	2.44	0.46
1:F:205:VAL:HG12	1:F:292:GLY:HA3	1.96	0.46
1:H:85:PHE:HE1	1:H:347:SER:HB3	1.79	0.46
1:H:135:MET:HG2	1:H:278:LEU:HB3	1.96	0.46
2:N:14:PRO:HG2	2:N:44:VAL:HG22	1.96	0.46
3:S:37:LEU:HD23	3:S:45:TRP:CZ3	2.50	0.46
1:E:48:ASP:OD2	1:F:15:LEU:HD11	2.15	0.46
1:G:300:MET:HE2	1:G:301:LEU:HG	1.97	0.46
1:C:297:ASN:OD1	1:C:298:VAL:N	2.47	0.46
1:E:101:GLN:O	1:E:104:THR:HG22	2.16	0.46
1:B:305:ASN:O	1:B:306:ASN:C	2.58	0.46
1:C:62:ARG:CZ	1:D:316:PRO:HB3	2.45	0.46
1:E:245:ASP:OD1	1:E:248:GLN:HG2	2.16	0.46
1:D:290:GLY:N	1:D:364:SER:OG	2.45	0.46
1:G:69:THR:OG1	1:G:70:SER:N	2.47	0.46
1:B:34:LEU:H	1:B:34:LEU:HD23	1.79	0.46
1:C:189:GLU:HB3	1:C:357:GLN:HG3	1.97	0.46
1:D:6:GLU:O	1:D:7:LYS:C	2.58	0.46
1:E:307:ILE:H	1:E:307:ILE:HG12	1.48	0.46
2:Q:19:ILE:HD11	2:Q:88:ILE:HG13	1.96	0.46
1:A:245:ASP:OD1	1:A:246:GLY:N	2.44	0.46
1:H:85:PHE:CE1	1:H:347:SER:HB3	2.51	0.46
1:I:89:GLU:HG2	1:I:118:LYS:HD2	1.97	0.46
1:I:37:SER:HB2	1:I:312:TYR:HE2	1.81	0.46
1:A:63:THR:O	2:N:31:ARG:NH1	2.49	0.46
1:D:7:LYS:CB	1:D:11:PHE:HD2	2.29	0.46
2:M:51:ASP:OD2	2:M:51:ASP:N	2.47	0.46
2:N:14:PRO:HG3	2:N:99:LYS:HZ1	1.81	0.46
2:N:19:ILE:HD11	2:N:88:ILE:CD1	2.45	0.46
2:O:36:PRO:HG3	2:O:85:VAL:HG23	1.98	0.46
1:A:161:LYS:HE3	1:A:361:ASP:HB2	1.99	0.46
1:C:3:THR:HG23	1:C:4:ASN:H	1.79	0.46
1:D:231:ALA:C	1:D:233:GLN:H	2.24	0.46
1:A:192:THR:HG21	1:A:301:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:287:THR:C	1:E:289:VAL:H	2.24	0.45
1:F:171:PRO:HG2	3:S:101:TYR:CD1	2.51	0.45
2:R:17:ASP:C	2:R:17:ASP:OD1	2.59	0.45
3:S:87:LEU:O	3:S:91:ILE:HD12	2.15	0.45
1:A:249:ALA:O	1:A:250:HIS:ND1	2.48	0.45
1:B:337:ARG:HB3	1:B:338:ASP:H	1.65	0.45
1:D:24:ASN:HB3	1:D:247:VAL:HG21	1.98	0.45
1:D:175:ILE:HD12	1:D:175:ILE:N	2.31	0.45
1:D:305:ASN:O	1:D:306:ASN:C	2.58	0.45
1:E:216:HIS:HE1	1:E:218:LYS:HD2	1.81	0.45
3:S:33:GLN:HE22	3:S:110:PRO:HA	1.80	0.45
1:C:41:THR:HG22	1:C:324:LEU:HD22	1.97	0.45
1:I:205:VAL:HG12	1:I:292:GLY:HA3	1.98	0.45
3:S:109:LYS:O	3:S:111:PHE:N	2.49	0.45
1:A:40:GLN:NE2	1:A:45:PHE:HB3	2.30	0.45
1:A:365:ASP:OD1	1:A:365:ASP:N	2.50	0.45
1:C:56:LEU:O	1:C:57:LEU:HB3	2.17	0.45
1:D:244:THR:C	1:D:246:GLY:N	2.74	0.45
2:N:68:ILE:HD13	2:N:88:ILE:HG13	1.98	0.45
1:B:8:SER:HB2	1:B:11:PHE:HD2	1.81	0.45
1:C:73:GLU:HG2	1:C:74:ARG:H	1.82	0.45
2:R:13:GLU:H	2:R:13:GLU:CD	2.25	0.45
1:B:48:ASP:OD1	1:B:48:ASP:N	2.47	0.45
1:E:187:GLU:CD	1:F:240:ARG:HH12	2.24	0.45
2:M:22:GLU:OE1	2:M:31:ARG:NH1	2.50	0.45
1:A:97:GLN:HB2	1:I:321:ALA:HB1	1.98	0.45
1:C:42:GLN:HG3	1:D:13:ALA:HA	1.99	0.45
1:D:85:PHE:CZ	1:D:133:LEU:HD11	2.52	0.45
1:D:221:ASP:OD1	1:D:222:ALA:N	2.50	0.45
1:E:100:ARG:NH1	1:E:104:THR:O	2.50	0.45
1:F:120:MET:HE3	1:F:120:MET:HB3	1.82	0.45
1:F:240:ARG:HD2	1:F:250:HIS:O	2.17	0.45
1:E:287:THR:C	1:E:289:VAL:N	2.75	0.45
1:E:363:ARG:NH2	1:E:365:ASP:OD2	2.40	0.45
1:F:185:HIS:NE2	1:F:357:GLN:O	2.40	0.45
1:D:329:TYR:HB2	1:D:346:HIS:HB2	1.98	0.44
1:G:30:SER:HB3	1:G:131:GLU:HG2	1.99	0.44
2:J:116:LYS:HB3	2:J:116:LYS:HE3	1.63	0.44
1:A:249:ALA:N	1:F:196:ILE:O	2.50	0.44
1:C:51:ASP:OD1	1:C:74:ARG:NH2	2.49	0.44
1:G:123:ARG:HG3	1:G:123:ARG:NH1	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:162:LYS:HD3	1:H:185:HIS:ND1	2.32	0.44
2:J:93:GLU:OE2	2:K:27:THR:OG1	2.21	0.44
2:Q:8:LYS:H	2:Q:8:LYS:HG2	1.62	0.44
1:A:332:GLU:OE2	1:A:332:GLU:HA	2.16	0.44
1:F:229:PRO:C	1:F:231:ALA:N	2.76	0.44
1:D:185:HIS:HE1	1:D:357:GLN:O	2.00	0.44
1:E:100:ARG:HA	1:E:108:LEU:HA	1.98	0.44
1:G:29:ILE:HG13	1:G:135:MET:SD	2.57	0.44
1:H:24:ASN:HB2	1:H:247:VAL:HG22	1.99	0.44
1:H:307:ILE:HG22	1:H:353:CYS:SG	2.58	0.44
1:I:58:ASP:OD1	1:I:58:ASP:N	2.51	0.44
1:F:88:VAL:HG12	1:F:344:GLU:HG2	1.99	0.44
1:F:307:ILE:HG12	1:F:307:ILE:O	2.18	0.44
1:A:286:ASP:C	1:A:288:ASN:H	2.25	0.44
1:C:286:ASP:O	1:C:288:ASN:N	2.41	0.44
1:E:48:ASP:HB2	1:F:18:GLU:HB2	2.00	0.44
1:F:229:PRO:O	1:F:230:LEU:HB2	2.18	0.44
1:H:313:ALA:HB3	1:H:348:TYR:CD2	2.52	0.44
1:B:183:ARG:O	1:B:187:GLU:HG3	2.18	0.44
1:C:140:GLY:HA3	1:C:154:TYR:HE2	1.83	0.44
1:F:63:THR:HG22	2:K:86:VAL:HG11	1.99	0.44
1:B:210:PHE:O	1:B:214:ILE:HG23	2.18	0.44
1:B:230:LEU:O	1:B:234:GLN:HG2	2.17	0.44
1:F:69:THR:O	2:J:124:GLY:N	2.37	0.44
1:F:337:ARG:O	1:F:339:GLU:N	2.51	0.44
2:J:71:PHE:HA	2:J:78:SER:HA	2.00	0.44
2:O:32:LYS:HB2	2:O:89:TYR:CD1	2.52	0.44
1:H:130:ARG:NH1	1:H:312:TYR:OH	2.50	0.43
2:K:3:TYR:CE1	2:M:76:GLN:HG3	2.53	0.43
2:K:93:GLU:HG2	2:K:119:ASP:HB2	2.00	0.43
2:P:44:VAL:HG23	2:P:70:ASN:OD1	2.17	0.43
1:I:320:TYR:O	1:I:323:THR:OG1	2.29	0.43
2:N:44:VAL:HG12	2:N:68:ILE:C	2.42	0.43
1:C:86:LYS:HD2	1:C:346:HIS:NE2	2.33	0.43
1:G:191:LYS:HB2	1:G:191:LYS:HE3	1.70	0.43
1:G:296:PRO:HB3	1:G:300:MET:SD	2.58	0.43
1:B:85:PHE:CZ	1:B:133:LEU:HD11	2.54	0.43
1:E:197:ASN:HA	1:F:249:ALA:HB3	2.00	0.43
1:I:294:ALA:HB3	1:I:360:VAL:HG23	2.01	0.43
1:A:86:LYS:NZ	2:K:26:PRO:O	2.50	0.43
1:B:216:HIS:CD2	1:B:217:PRO:HD2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:192:THR:HG23	1:D:194:THR:H	1.82	0.43
1:D:309:GLU:HB2	1:D:352:TYR:CZ	2.53	0.43
1:F:35:PHE:HB3	1:F:310:VAL:HG23	2.00	0.43
1:A:36:ARG:CZ	1:A:306:ASN:HD22	2.31	0.43
1:C:81:PRO:O	1:C:350:LEU:HD13	2.18	0.43
1:C:269:LYS:HE2	1:C:269:LYS:HB3	1.83	0.43
1:D:12:LEU:HD23	1:D:12:LEU:H	1.84	0.43
1:G:5:SER:HB2	1:G:6:GLU:H	1.52	0.43
1:G:181:ASP:OD1	1:G:182:LEU:N	2.51	0.43
1:H:223:TYR:OH	1:H:255:TYR:O	2.24	0.43
1:E:271:LYS:HB3	1:E:271:LYS:HE2	1.86	0.43
1:E:307:ILE:HG22	1:E:353:CYS:SG	2.59	0.43
1:A:52:TRP:HB3	1:A:73:GLU:HG2	2.01	0.43
1:F:79:SER:HB3	2:J:7:THR:OG1	2.19	0.43
1:F:126:PHE:HA	1:F:129:THR:HG22	2.01	0.43
1:I:65:ARG:O	1:I:66:LYS:C	2.61	0.43
1:C:123:ARG:HG3	1:C:124:THR:HG23	2.01	0.43
1:I:274:LYS:HE3	1:I:276:HIS:NE2	2.34	0.43
2:L:18:ILE:HD11	2:L:68:ILE:HG22	2.01	0.43
1:A:164:ILE:HD13	1:A:182:LEU:HB2	2.00	0.43
1:B:40:GLN:NE2	1:B:45:PHE:HB3	2.33	0.43
1:F:56:LEU:HD12	1:F:56:LEU:HA	1.92	0.43
2:N:42:TYR:HB2	2:N:71:PHE:HB3	2.00	0.43
1:A:240:ARG:NH2	1:A:248:GLN:OE1	2.51	0.42
1:B:153:LEU:HD13	1:B:353:CYS:H	1.84	0.42
1:F:140:GLY:HA3	1:F:154:TYR:CE2	2.54	0.42
1:I:99:VAL:O	1:I:109:THR:HG22	2.19	0.42
2:O:74:ASP:OD1	2:O:74:ASP:C	2.62	0.42
2:P:84:LYS:HD3	2:P:84:LYS:HA	1.80	0.42
2:Q:93:GLU:OE2	2:R:27:THR:OG1	2.27	0.42
1:H:201:ILE:HD13	1:H:201:ILE:HA	1.84	0.42
2:N:16:ASN:ND2	2:N:16:ASN:O	2.52	0.42
1:C:239:LEU:HD23	1:C:239:LEU:HA	1.83	0.42
1:F:128:ILE:HG13	1:F:129:THR:N	2.33	0.42
1:H:155:LYS:HZ2	1:H:155:LYS:HG3	1.75	0.42
1:I:64:SER:O	1:I:65:ARG:HB2	2.19	0.42
1:I:337:ARG:O	1:I:338:ASP:C	2.62	0.42
2:M:17:ASP:C	2:M:17:ASP:OD1	2.62	0.42
2:M:18:ILE:HG22	2:M:97:LEU:HD12	2.02	0.42
2:N:42:TYR:O	2:N:43:ARG:HD3	2.19	0.42
2:R:110:LYS:HD3	2:R:120:PHE:CD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:68:GLU:OE1	1:B:271:LYS:NZ	2.40	0.42
1:A:79:SER:OG	2:M:7:THR:OG1	2.29	0.42
1:B:224:LEU:HD12	1:B:224:LEU:HA	1.79	0.42
1:H:361:ASP:C	1:H:361:ASP:OD2	2.61	0.42
2:O:16:ASN:HB2	2:O:79:TYR:OH	2.20	0.42
2:R:22:GLU:HG3	2:R:24:ILE:HG22	2.01	0.42
1:B:81:PRO:O	1:B:350:LEU:HD13	2.19	0.42
1:F:77:GLN:HB3	2:J:9:LEU:HB2	2.01	0.42
1:D:48:ASP:HB2	1:E:18:GLU:HB2	2.02	0.42
1:D:242:GLY:HA3	1:D:251:MET:HB2	2.01	0.42
1:G:229:PRO:CD	1:G:230:LEU:H	2.32	0.42
1:H:270:ASP:OD2	1:H:272:ARG:NH2	2.47	0.42
2:N:83:LEU:HD22	2:R:3:TYR:CD2	2.53	0.42
2:P:34:TYR:N	2:P:85:VAL:O	2.39	0.42
1:A:240:ARG:O	1:A:250:HIS:HB3	2.19	0.42
1:D:89:GLU:HB3	1:D:343:PHE:HB2	2.01	0.42
2:N:30:SER:HB2	2:N:88:ILE:HG23	2.01	0.42
3:S:95:LYS:HE3	3:S:95:LYS:HB3	1.68	0.42
1:A:120:MET:HE2	1:A:120:MET:HB2	1.84	0.42
1:C:183:ARG:HE	1:C:199:GLU:HG3	1.85	0.42
1:D:237:GLY:C	1:D:239:LEU:N	2.74	0.42
1:G:46:LEU:N	1:H:14:ASP:O	2.48	0.42
1:G:88:VAL:HG12	1:G:344:GLU:HG2	2.02	0.42
1:G:200:GLU:HB2	1:G:300:MET:HB3	2.02	0.42
1:G:229:PRO:HD2	1:G:230:LEU:N	2.34	0.42
1:H:154:TYR:CZ	1:H:161:LYS:HG3	2.54	0.42
1:I:41:THR:O	1:I:42:GLN:NE2	2.53	0.42
1:I:281:ILE:HD11	1:I:361:ASP:HB3	2.01	0.42
1:E:40:GLN:NE2	1:F:14:ASP:OD1	2.53	0.42
1:F:317:LYS:HD3	1:F:317:LYS:HA	1.93	0.42
2:K:54:LYS:H	2:K:54:LYS:HG2	1.71	0.42
1:A:50:THR:HA	1:A:74:ARG:O	2.20	0.41
1:A:281:ILE:HB	1:A:284:VAL:HG22	2.01	0.41
1:B:54:ILE:HA	1:C:23:PRO:HB3	2.02	0.41
1:E:252:ASN:ND2	1:E:263:GLN:OE1	2.46	0.41
1:G:9:ARG:H	1:G:9:ARG:HG2	1.34	0.41
1:H:88:VAL:HG12	1:H:344:GLU:HG2	2.02	0.41
2:J:32:LYS:NZ	2:J:64:ASP:OD2	2.45	0.41
2:M:15:LEU:HD23	2:M:15:LEU:HA	1.84	0.41
1:D:7:LYS:CB	1:D:11:PHE:H	2.33	0.41
2:K:105:ASP:OD1	2:K:105:ASP:C	2.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:24:ILE:O	2:N:24:ILE:HG22	2.20	0.41
2:O:60:GLU:OE2	2:O:60:GLU:N	2.52	0.41
1:A:6:GLU:O	1:A:7:LYS:HB2	2.20	0.41
1:A:218:LYS:HA	1:A:218:LYS:HD2	1.94	0.41
1:B:296:PRO:HG2	1:B:307:ILE:HD11	2.01	0.41
1:C:185:HIS:HE1	1:C:357:GLN:O	2.03	0.41
1:E:149:LEU:HD21	1:E:152:ASP:HB2	2.02	0.41
1:E:332:GLU:HG3	1:E:343:PHE:CE1	2.55	0.41
1:F:14:ASP:OD1	1:F:14:ASP:N	2.52	0.41
1:F:305:ASN:O	1:F:306:ASN:C	2.63	0.41
1:H:40:GLN:NE2	1:H:45:PHE:HB3	2.34	0.41
1:I:2:LEU:HD12	1:I:2:LEU:HA	1.92	0.41
1:I:312:TYR:CD1	1:I:349:MET:HB3	2.54	0.41
1:C:270:ASP:OD1	1:C:271:LYS:N	2.52	0.41
1:C:367:GLU:HA	1:C:367:GLU:OE1	2.20	0.41
1:E:186:MET:SD	1:E:201:ILE:HG21	2.61	0.41
1:G:86:LYS:HG3	1:G:346:HIS:CD2	2.56	0.41
1:I:296:PRO:HG3	1:I:358:LEU:HD13	2.02	0.41
1:A:253:ARG:HA	1:A:261:PHE:O	2.21	0.41
1:F:226:GLN:HG2	1:F:229:PRO:HB3	2.02	0.41
1:G:24:ASN:HB3	1:G:247:VAL:HG21	2.02	0.41
1:H:197:ASN:ND2	1:H:200:GLU:OE1	2.54	0.41
1:A:174:ASP:HB3	1:A:177:ALA:HB3	2.03	0.41
1:A:222:ALA:HB2	1:B:220:ARG:NH2	2.36	0.41
1:C:174:ASP:OD1	1:C:174:ASP:N	2.53	0.41
1:D:57:LEU:HB2	1:E:129:THR:HG21	2.03	0.41
1:F:186:MET:HG3	1:F:201:ILE:HG21	2.03	0.41
1:F:245:ASP:OD1	1:F:248:GLN:HB3	2.20	0.41
1:G:49:LEU:HD13	1:G:76:ARG:NH2	2.36	0.41
1:G:92:THR:O	1:G:95:GLU:HG2	2.20	0.41
2:O:105:ASP:OD1	2:O:108:ALA:N	2.47	0.41
1:A:99:VAL:HG21	2:J:15:LEU:HD11	2.02	0.41
1:B:149:LEU:HD21	1:B:152:ASP:HB2	2.02	0.41
1:F:164:ILE:HD12	1:F:360:VAL:HG21	2.03	0.41
1:B:224:LEU:HD13	1:B:235:ILE:HG21	2.02	0.41
1:F:186:MET:HE1	1:F:358:LEU:O	2.21	0.41
1:F:329:TYR:HB2	1:F:346:HIS:HB2	2.02	0.41
1:G:202:HIS:HB3	1:G:295:PHE:CE1	2.56	0.41
2:M:62:GLN:H	2:M:62:GLN:HG2	1.72	0.41
2:Q:18:ILE:HA	2:Q:95:LYS:HG3	2.02	0.41
1:B:141:LYS:HD2	1:B:143:ILE:HD11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:154:TYR:HD2	1:B:159:VAL:HG23	1.86	0.41
1:F:240:ARG:HB3	1:F:250:HIS:HB2	2.03	0.41
1:G:85:PHE:CZ	1:G:133:LEU:HD11	2.56	0.41
1:H:307:ILE:O	1:H:353:CYS:HA	2.20	0.41
1:I:83:MET:HE3	1:I:150:TYR:CD2	2.56	0.41
2:R:20:LEU:HD23	2:R:20:LEU:HA	1.89	0.41
3:S:33:GLN:HG3	3:S:37:LEU:CD1	2.51	0.41
1:A:7:LYS:HA	1:A:7:LYS:HD2	1.77	0.41
1:B:53:ASP:O	1:B:54:ILE:C	2.63	0.41
1:C:62:ARG:HD2	1:D:316:PRO:HG3	2.03	0.41
1:D:67:ALA:CB	1:E:88:VAL:HG12	2.48	0.41
1:D:164:ILE:HD13	1:D:182:LEU:HB2	2.02	0.41
1:G:187:GLU:OE1	1:H:240:ARG:NH1	2.37	0.41
1:I:268:PHE:O	1:I:276:HIS:N	2.50	0.41
1:D:3:THR:HG23	1:D:8:SER:O	2.21	0.40
1:D:155:LYS:HE3	1:D:155:LYS:HB2	1.39	0.40
1:D:174:ASP:HA	1:D:218:LYS:HD2	2.02	0.40
1:E:7:LYS:HE3	1:E:7:LYS:HB2	1.30	0.40
2:J:51:ASP:OD1	2:J:52:GLY:N	2.54	0.40
2:N:16:ASN:OD1	2:N:68:ILE:HB	2.21	0.40
1:F:144:ASP:OD1	1:F:145:ALA:N	2.53	0.40
1:H:332:GLU:HG3	1:H:343:PHE:CE2	2.55	0.40
1:I:40:GLN:OE1	1:I:311:ALA:HB1	2.20	0.40
2:J:6:PHE:O	2:J:6:PHE:CG	2.73	0.40
2:N:50:ALA:HA	2:N:64:ASP:OD1	2.21	0.40
1:A:285:SER:C	1:A:287:THR:H	2.29	0.40
1:B:190:ALA:HA	1:B:358:LEU:HD21	2.03	0.40
1:E:77:GLN:OE1	1:F:100:ARG:NH2	2.49	0.40
1:E:119:LEU:HD23	1:E:119:LEU:HA	1.93	0.40
1:F:171:PRO:HG2	3:S:101:TYR:CG	2.57	0.40
1:G:256:TYR:HE1	1:H:236:THR:HG22	1.85	0.40
1:H:271:LYS:HB2	1:H:271:LYS:HE2	1.77	0.40
1:I:327:GLU:OE1	1:I:327:GLU:N	2.45	0.40
1:A:128:ILE:HD11	1:F:55:SER:O	2.21	0.40
1:B:100:ARG:NH1	1:B:104:THR:O	2.51	0.40
1:D:188:ASP:N	1:D:188:ASP:OD1	2.55	0.40
1:F:294:ALA:HB3	1:F:360:VAL:HG13	2.03	0.40
1:H:223:TYR:O	1:H:231:ALA:HB1	2.21	0.40
1:I:54:ILE:HD13	1:I:54:ILE:HA	1.93	0.40
1:D:52:TRP:HZ3	1:D:54:ILE:HD13	1.87	0.40
1:F:86:LYS:HD2	1:F:346:HIS:CE1	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:326:GLN:HG3	1:G:329:TYR:CZ	2.56	0.40
1:H:317:LYS:O	1:H:318:MET:C	2.65	0.40
2:L:98:LEU:HD23	2:L:98:LEU:HA	1.92	0.40
2:N:77:LEU:HD23	2:N:77:LEU:HA	1.86	0.40
2:R:64:ASP:O	2:R:116:LYS:HE2	2.21	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	364/367 (99%)	352 (97%)	11 (3%)	1 (0%)	37	69
1	B	364/367 (99%)	344 (94%)	19 (5%)	1 (0%)	37	69
1	C	364/367 (99%)	341 (94%)	18 (5%)	5 (1%)	9	40
1	D	364/367 (99%)	329 (90%)	29 (8%)	6 (2%)	8	37
1	E	364/367 (99%)	331 (91%)	27 (7%)	6 (2%)	8	37
1	F	364/367 (99%)	350 (96%)	14 (4%)	0	100	100
1	G	364/367 (99%)	342 (94%)	17 (5%)	5 (1%)	9	40
1	H	364/367 (99%)	350 (96%)	13 (4%)	1 (0%)	37	69
1	I	352/367 (96%)	341 (97%)	9 (3%)	2 (1%)	22	57
2	J	120/125 (96%)	111 (92%)	8 (7%)	1 (1%)	16	51
2	K	121/125 (97%)	116 (96%)	4 (3%)	1 (1%)	16	51
2	L	121/125 (97%)	117 (97%)	4 (3%)	0	100	100
2	M	121/125 (97%)	114 (94%)	7 (6%)	0	100	100
2	N	121/125 (97%)	108 (89%)	12 (10%)	1 (1%)	16	51
2	O	122/125 (98%)	122 (100%)	0	0	100	100
2	P	121/125 (97%)	117 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	Q	121/125 (97%)	117 (97%)	4 (3%)	0	100	100
2	R	121/125 (97%)	118 (98%)	3 (2%)	0	100	100
3	S	118/372 (32%)	109 (92%)	8 (7%)	1 (1%)	16	51
All	All	4471/4800 (93%)	4229 (95%)	211 (5%)	31 (1%)	21	54

All (31) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	153	LEU
1	C	53	ASP
1	C	65	ARG
1	E	54	ILE
1	E	288	ASN
1	E	307	ILE
1	G	229	PRO
1	H	305	ASN
1	I	65	ARG
1	D	8	SER
1	D	235	ILE
1	D	239	LEU
1	D	246	GLY
1	E	156	GLN
1	G	230	LEU
1	I	64	SER
2	K	73	ALA
1	D	73	GLU
1	D	305	ASN
1	E	53	ASP
1	G	7	LYS
1	G	226	GLN
1	C	16	THR
1	E	304	ALA
3	S	40	THR
1	C	284	VAL
2	J	6	PHE
1	A	286	ASP
1	C	55	SER
1	G	5	SER
2	N	4	GLN

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	A	313/317 (99%)	310 (99%)	3 (1%)	73	87
1	B	310/317 (98%)	299 (96%)	11 (4%)	31	63
1	C	310/317 (98%)	299 (96%)	11 (4%)	31	63
1	D	297/317 (94%)	292 (98%)	5 (2%)	56	78
1	E	305/317 (96%)	290 (95%)	15 (5%)	21	54
1	F	311/317 (98%)	307 (99%)	4 (1%)	65	83
1	G	312/317 (98%)	307 (98%)	5 (2%)	58	79
1	H	314/317 (99%)	310 (99%)	4 (1%)	65	83
1	I	301/317 (95%)	294 (98%)	7 (2%)	45	72
2	J	93/99 (94%)	91 (98%)	2 (2%)	47	73
2	K	97/99 (98%)	97 (100%)	0	100	100
2	L	96/99 (97%)	95 (99%)	1 (1%)	73	87
2	M	97/99 (98%)	96 (99%)	1 (1%)	73	87
2	N	96/99 (97%)	94 (98%)	2 (2%)	48	74
2	O	97/99 (98%)	95 (98%)	2 (2%)	48	74
2	P	94/99 (95%)	93 (99%)	1 (1%)	70	86
2	Q	96/99 (97%)	96 (100%)	0	100	100
2	R	97/99 (98%)	97 (100%)	0	100	100
3	S	101/307 (33%)	101 (100%)	0	100	100
All	All	3737/4051 (92%)	3663 (98%)	74 (2%)	50	75

All (74) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	SER
1	A	284	VAL
1	A	287	THR
1	B	18	GLU

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Mol	Chain	Res	Type
1	B	54	ILE
1	B	55	SER
1	B	83	MET
1	B	202	HIS
1	B	224	LEU
1	B	228	THR
1	B	301	LEU
1	B	303	GLU
1	B	305	ASN
1	B	337	ARG
1	C	40	GLN
1	C	55	SER
1	C	56	LEU
1	C	57	LEU
1	C	62	ARG
1	C	64	SER
1	C	66	LYS
1	C	69	THR
1	C	70	SER
1	C	155	LYS
1	C	336	ASP
1	D	70	SER
1	D	155	LYS
1	D	238	SER
1	D	307	ILE
1	D	334	GLU
1	E	5	SER
1	E	7	LYS
1	E	50	THR
1	E	51	ASP
1	E	52	TRP
1	E	55	SER
1	E	69	THR
1	E	76	ARG
1	E	155	LYS
1	E	156	GLN
1	E	200	GLU
1	E	271	LYS
1	E	284	VAL
1	E	307	ILE
1	E	317	LYS
1	F	7	LYS

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Mol	Chain	Res	Type
1	F	305	ASN
1	F	307	ILE
1	F	336	ASP
1	G	5	SER
1	G	8	SER
1	G	9	ARG
1	G	202	HIS
1	G	207	ARG
1	H	62	ARG
1	H	155	LYS
1	H	305	ASN
1	H	307	ILE
1	I	7	LYS
1	I	19	VAL
1	I	62	ARG
1	I	65	ARG
1	I	66	LYS
1	I	76	ARG
1	I	191	LYS
2	J	12	ARG
2	J	79	TYR
2	L	12	ARG
2	M	91	ASP
2	N	46	GLU
2	N	82	GLN
2	O	78	SER
2	O	79	TYR
2	P	91	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	40	GLN
1	A	42	GLN
1	A	185	HIS
1	B	136	GLN
1	B	202	HIS
1	B	305	ASN
1	C	4	ASN
1	C	185	HIS
1	C	346	HIS
1	D	24	ASN

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Mol	Chain	Res	Type
1	D	250	HIS
1	D	265	ASN
1	E	24	ASN
1	E	40	GLN
1	E	216	HIS
1	G	24	ASN
1	G	77	GLN
1	G	233	GLN
1	G	326	GLN
1	H	4	ASN
1	H	77	GLN
1	H	136	GLN
1	H	202	HIS
1	I	202	HIS
1	I	248	GLN
1	I	250	HIS
1	I	297	ASN
1	I	305	ASN
2	J	80	HIS
2	K	4	GLN
2	K	59	GLN
2	L	62	GLN
2	L	82	GLN
2	M	62	GLN
2	N	59	GLN
2	O	4	GLN
2	P	80	HIS
2	Q	82	GLN

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 [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

This section contains visualisations of the EMDB entry EMD-45155. 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

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

6.5 Orthogonal surface views

This section was not generated.

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 ⓘ

This section was not generated.

7.2 Volume estimate versus contour level ⓘ

This section was not generated.

7.3 Rotationally averaged power spectrum ⓘ

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation ⓘ

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

9 Map-model fit

This section was not generated.