W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

Full wwPDB EM Validation Report ⓘ

Nov 18, 2024 – 07:15 PM JST

|		
PDB ID	:	8Y45
EMDB ID	:	EMD-38909
Title	:	Cryo-EM structure of opioid receptor with biased agonist
Authors	:	Lin, C.; Chang, Z.
Deposited on	:	2024-01-30
Resolution	:	3.45 Å(reported)
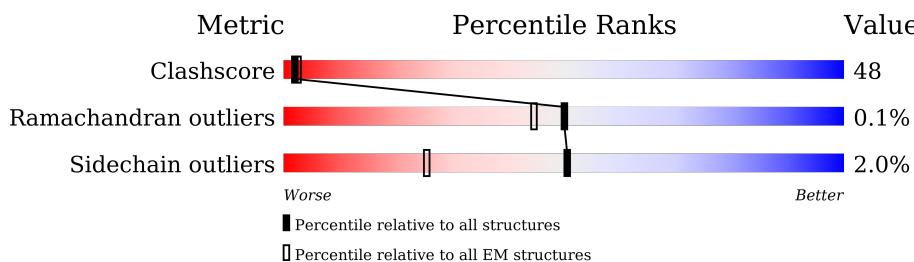
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.45 Å.

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

Metric	Percentile Ranks	Value
Clashscore		48
Ramachandran outliers		0.1%
Sidechain outliers		2.0%

Worse   *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

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 <=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	325	31% 46% 11% 12%
2	B	358	42% 43% 10% 5%
3	D	355	32% 27% • 37%
4	S	266	39% 40% 8% 13%
5	C	71	39% 25% 15% 20%

2 Entity composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 8867 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 Delta-type opioid receptor.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	286	Total 2244	C 1486	N 367	O 370	S 21	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	28	ASP	-	expression tag	UNP P41143
A	29	TYR	-	expression tag	UNP P41143
A	30	LYS	-	expression tag	UNP P41143
A	31	ASP	-	expression tag	UNP P41143
A	32	ASP	-	expression tag	UNP P41143
A	33	ASP	-	expression tag	UNP P41143
A	34	ASP	-	expression tag	UNP P41143
A	35	ALA	-	expression tag	UNP P41143

- Molecule 2 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	340	Total 2603	C 1606	N 469	O 508	S 20	0	0

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-17	MET	-	initiating methionine	UNP P62873
B	-16	PRO	-	expression tag	UNP P62873
B	-15	PRO	-	expression tag	UNP P62873
B	-14	HIS	-	expression tag	UNP P62873
B	-13	HIS	-	expression tag	UNP P62873
B	-12	HIS	-	expression tag	UNP P62873
B	-11	HIS	-	expression tag	UNP P62873
B	-10	LEU	-	expression tag	UNP P62873

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-9	GLU	-	expression tag	UNP P62873
B	-8	VAL	-	expression tag	UNP P62873
B	-7	LEU	-	expression tag	UNP P62873
B	-6	PHE	-	expression tag	UNP P62873
B	-5	GLN	-	expression tag	UNP P62873
B	-4	GLY	-	expression tag	UNP P62873
B	-3	PRO	-	expression tag	UNP P62873
B	-2	GLY	-	expression tag	UNP P62873
B	-1	SER	-	expression tag	UNP P62873
B	0	SER	-	expression tag	UNP P62873
B	1	GLY	-	expression tag	UNP P62873

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(i) subunit alpha-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	D	223	1786	1138	297	339	12	0	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	5	LEU	VAL	variant	UNP P04899
D	47	ASN	SER	conflict	UNP P04899
D	204	ALA	GLY	conflict	UNP P04899
D	246	ALA	GLU	conflict	UNP P04899
D	327	SER	ALA	conflict	UNP P04899
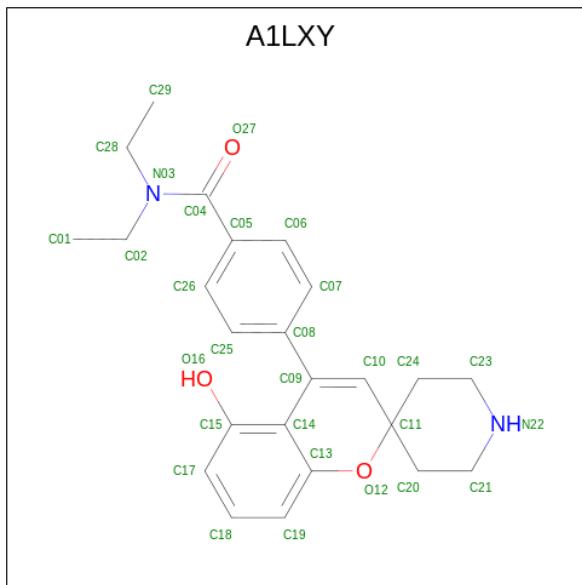
- Molecule 4 is a protein called scFv16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	S	232	1767	1121	291	346	9	0	0

- Molecule 5 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	57	438	274	77	84	3	0	0

- Molecule 6 is {N}, {N}-diethyl-4-(5-oxidanylspiro[chromene-2,4'-piperidine]-4-yl)benzamide (three-letter code: A1LXY) (formula: $C_{24}H_{28}N_2O_3$).

A1LXY
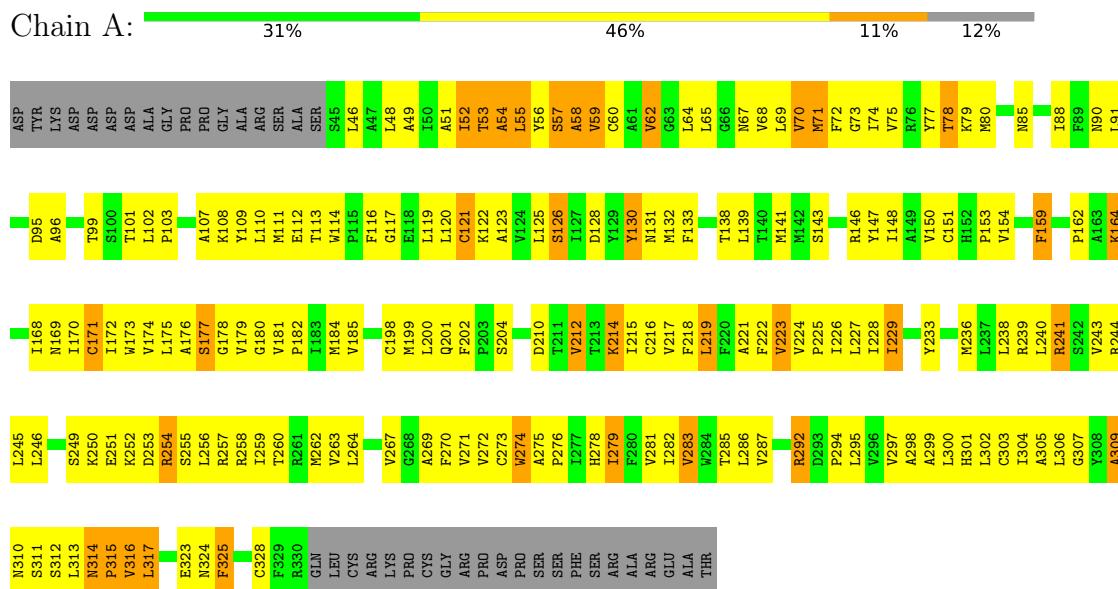
| Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
6	A	1	29	24	2	3	0

3 Residue-property plots ⓘ

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

• Molecule 1: Delta-type opioid receptor

Chain A:

• Molecule 2: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1

Chain B:

• Molecule 3: Guanine nucleotide-binding protein G(i) subunit alpha-2

Chain D:

32% 27% · 37%

• Molecule 4: scFv16

Chain S:

39% 40% 8% 13%

• Molecule 5: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2

Chain C:

39% 25% 15% 20%

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	676428	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI SPIRIT	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	65	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.707	Depositor
Minimum map value	-3.056	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.080	Depositor
Recommended contour level	0.013	Depositor
Map size (Å)	217.6, 217.6, 217.6	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.85, 0.85, 0.85	Depositor

5　Model quality ⓘ

5.1　Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: A1LXY

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	1.10	23/2297 (1.0%)	1.34	27/3132 (0.9%)
2	B	1.15	31/2650 (1.2%)	1.18	22/3592 (0.6%)
3	D	1.08	22/1817 (1.2%)	1.00	5/2438 (0.2%)
4	S	1.21	30/1811 (1.7%)	1.12	13/2458 (0.5%)
5	C	1.34	11/444 (2.5%)	1.74	25/599 (4.2%)
All	All	1.15	117/9019 (1.3%)	1.21	92/12219 (0.8%)

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	A	0	1
2	B	0	1
4	S	0	1
All	All	0	3

All (117) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	S	7	SER	C-N	15.20	1.60	1.33
2	B	93	ILE	C-N	12.77	1.58	1.34
2	B	21	ALA	C-N	10.86	1.59	1.34
1	A	54	ALA	C-N	10.82	1.58	1.34
2	B	18	ILE	C-N	10.24	1.57	1.34
1	A	159	PHE	C-N	9.79	1.56	1.34
2	B	243	THR	C-N	9.40	1.50	1.33
2	B	271	CYS	C-N	9.39	1.50	1.33
5	C	9	ILE	C-N	9.13	1.55	1.34
4	S	90	ASP	C-N	8.56	1.53	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	307	LYS	C-N	8.55	1.53	1.34
2	B	253	PHE	C-N	8.39	1.53	1.34
3	D	217	GLU	C-N	8.38	1.48	1.33
3	D	292	THR	C-N	8.22	1.47	1.33
2	B	188	MET	C-N	8.16	1.52	1.34
5	C	14	LYS	C-N	7.95	1.52	1.34
4	S	111	TRP	C-N	7.94	1.47	1.33
4	S	18	ARG	C-N	7.92	1.52	1.34
2	B	14	LEU	C-N	7.85	1.52	1.34
4	S	91	THR	C-N	7.69	1.51	1.34
4	S	188	LEU	C-N	7.61	1.51	1.34
2	B	205	ASP	C-N	7.59	1.51	1.34
3	D	225	CYS	C-N	7.57	1.51	1.34
3	D	350	LYS	C-N	7.37	1.51	1.34
1	A	180	GLY	C-N	7.24	1.50	1.34
1	A	317	LEU	C-N	7.17	1.50	1.34
2	B	318	LEU	C-N	7.15	1.46	1.33
5	C	13	ARG	C-N	7.14	1.50	1.34
4	S	230	MET	C-N	7.10	1.50	1.34
2	B	117	LEU	C-N	7.09	1.50	1.34
2	B	323	ASP	C-N	7.08	1.45	1.33
4	S	3	GLN	C-N	7.02	1.50	1.34
3	D	289	PRO	C-N	7.00	1.50	1.34
4	S	61	ALA	C-N	7.00	1.50	1.34
4	S	52	SER	CA-CB	-6.82	1.42	1.52
2	B	50	THR	C-N	6.81	1.49	1.34
1	A	62	VAL	C-N	6.80	1.45	1.33
1	A	292	ARG	C-N	6.79	1.49	1.34
4	S	147	VAL	C-N	6.78	1.47	1.34
4	S	5	VAL	C-N	6.76	1.49	1.34
4	S	100	ILE	C-N	6.75	1.49	1.34
4	S	28	ALA	C-N	6.74	1.49	1.34
4	S	71	SER	C-N	6.73	1.49	1.34
5	C	17	GLU	C-N	6.59	1.49	1.34
3	D	287	CYS	C-N	6.57	1.49	1.34
3	D	310	ASP	C-N	6.56	1.49	1.34
3	D	288	PHE	C-N	-6.54	1.21	1.34
2	B	309	ALA	C-N	-6.53	1.21	1.33
5	C	49	PRO	C-N	6.52	1.49	1.34
1	A	219	LEU	C-N	6.46	1.49	1.34
2	B	192	LEU	C-N	6.43	1.48	1.34
4	S	32	PHE	C-N	-6.40	1.21	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	316	VAL	C-N	6.39	1.48	1.34
4	S	185	PRO	C-N	6.36	1.48	1.34
5	C	11	GLN	C-N	6.32	1.48	1.34
3	D	41	ALA	C-N	6.20	1.44	1.33
2	B	204	CYS	C-N	6.19	1.48	1.34
1	A	52	ILE	C-N	6.11	1.48	1.34
2	B	59	TYR	C-N	6.06	1.48	1.34
4	S	199	VAL	C-N	6.06	1.45	1.34
2	B	208	ALA	C-N	6.00	1.47	1.34
4	S	64	VAL	C-N	5.98	1.47	1.34
4	S	191	ARG	C-N	5.98	1.47	1.34
4	S	53	SER	C-N	-5.94	1.22	1.33
2	B	169	TRP	C-N	-5.88	1.20	1.34
3	D	300	ALA	C-N	-5.82	1.20	1.34
1	A	315	PRO	C-N	-5.81	1.20	1.34
4	S	213	THR	C-N	5.80	1.47	1.34
4	S	20	LEU	C-N	5.76	1.47	1.34
2	B	84	SER	CA-CB	-5.76	1.44	1.52
1	A	314	ASN	C-N	-5.76	1.23	1.34
3	D	319	GLU	C-N	5.75	1.47	1.34
4	S	143	ALA	C-N	-5.73	1.20	1.34
3	D	226	VAL	C-N	-5.72	1.20	1.34
2	B	41	GLY	C-N	5.70	1.47	1.34
5	C	12	ALA	C-N	5.68	1.47	1.34
2	B	153	ASP	C-N	-5.68	1.21	1.34
1	A	154	VAL	C-N	5.66	1.47	1.34
1	A	185	VAL	C-N	-5.64	1.21	1.34
3	D	321	TYR	C-N	5.63	1.47	1.34
1	A	323	GLU	C-N	5.63	1.47	1.34
2	B	277	SER	C-N	-5.62	1.21	1.34
2	B	285	LEU	C-N	5.59	1.47	1.34
2	B	47	THR	C-N	-5.58	1.21	1.34
2	B	71	VAL	C-N	-5.53	1.21	1.34
2	B	316	SER	CA-CB	-5.52	1.44	1.52
2	B	178	THR	C-N	5.50	1.46	1.34
1	A	164	LYS	C-N	5.46	1.46	1.34
2	B	209	LYS	C-N	-5.45	1.21	1.34
5	C	8	SER	C-N	5.44	1.46	1.34
4	S	67	ARG	C-N	-5.44	1.21	1.34
3	D	216	PHE	C-N	5.43	1.46	1.34
3	D	218	GLY	C-N	-5.37	1.21	1.34
1	A	241	ARG	C-N	5.33	1.46	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	S	34	MET	C-N	-5.32	1.21	1.34
3	D	253	SER	C-N	-5.30	1.21	1.34
1	A	70	VAL	C-N	-5.29	1.21	1.34
2	B	326	ALA	C-N	-5.26	1.22	1.34
1	A	214	LYS	C-N	5.24	1.46	1.34
3	D	195	LEU	C-N	-5.23	1.22	1.34
5	C	40	TYR	C-N	-5.23	1.22	1.34
5	C	10	ALA	C-N	5.22	1.46	1.34
1	A	148	ILE	C-N	5.21	1.46	1.34
4	S	224	VAL	C-N	5.18	1.42	1.33
3	D	223	ILE	C-N	-5.18	1.22	1.34
3	D	339	ALA	C-N	-5.16	1.22	1.34
2	B	240	ALA	C-N	-5.16	1.22	1.34
1	A	59	VAL	C-N	5.15	1.45	1.34
4	S	158	SER	C-N	5.13	1.45	1.34
1	A	162	PRO	C-N	-5.12	1.22	1.34
3	D	36	LEU	C-N	-5.11	1.22	1.34
4	S	98	ARG	C-N	-5.10	1.22	1.34
1	A	141	MET	C-N	-5.09	1.22	1.34
1	A	223	VAL	C-N	5.06	1.45	1.34
3	D	228	LEU	C-N	5.03	1.45	1.34
4	S	45	LEU	C-N	5.00	1.45	1.34
5	C	58	GLU	C-N	-5.00	1.22	1.34

All (92) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	52	ILE	O-C-N	12.29	142.37	122.70
1	A	130	TYR	CB-CA-C	-12.01	86.39	110.40
4	S	77	ASN	O-C-N	10.84	140.04	122.70
1	A	309	ALA	CB-CA-C	-10.66	94.11	110.10
1	A	53	THR	O-C-N	9.83	138.42	122.70
4	S	77	ASN	CA-C-N	-9.73	95.78	117.20
1	A	52	ILE	C-N-CA	-9.58	97.76	121.70
5	C	7	ALA	O-C-N	9.06	137.20	122.70
4	S	67	ARG	O-C-N	9.02	137.14	122.70
1	A	52	ILE	CA-C-N	-8.78	97.89	117.20
5	C	12	ALA	O-C-N	8.68	136.59	122.70
5	C	11	GLN	O-C-N	8.63	136.51	122.70
1	A	177	SER	C-N-CA	-8.56	104.33	122.30
2	B	14	LEU	O-C-N	8.50	136.30	122.70
5	C	8	SER	O-C-N	8.38	136.11	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	216	CYS	CB-CA-C	-7.87	94.67	110.40
4	S	187	LEU	O-C-N	7.57	134.81	122.70
4	S	77	ASN	C-N-CA	-7.45	103.08	121.70
1	A	117	GLY	O-C-N	7.29	134.36	122.70
4	S	79	LEU	O-C-N	7.14	134.12	122.70
5	C	15	LEU	O-C-N	7.11	134.07	122.70
5	C	10	ALA	O-C-N	7.04	133.96	122.70
5	C	7	ALA	CA-C-N	-6.97	101.86	117.20
1	A	53	THR	C-N-CA	-6.97	104.27	121.70
1	A	269	ALA	O-C-N	6.96	133.83	122.70
1	A	53	THR	CA-C-N	-6.90	102.02	117.20
2	B	204	CYS	O-C-N	-6.83	111.77	122.70
2	B	244	GLY	O-C-N	-6.81	111.80	122.70
2	B	192	LEU	O-C-N	-6.80	111.82	122.70
4	S	67	ARG	C-N-CA	-6.79	104.72	121.70
5	C	13	ARG	O-C-N	6.72	133.45	122.70
1	A	315	PRO	O-C-N	6.61	133.28	122.70
1	A	269	ALA	C-N-CA	-6.58	105.24	121.70
5	C	9	ILE	O-C-N	6.55	133.18	122.70
4	S	67	ARG	CA-C-N	-6.54	102.82	117.20
3	D	226	VAL	O-C-N	-6.51	112.28	122.70
2	B	14	LEU	CA-C-N	-6.49	102.93	117.20
2	B	20	ASP	O-C-N	6.47	133.06	122.70
5	C	12	ALA	CA-C-N	-6.46	103.00	117.20
5	C	16	VAL	O-C-N	6.44	133.00	122.70
2	B	190	LEU	O-C-N	6.38	132.91	122.70
5	C	14	LYS	O-C-N	6.36	132.87	122.70
1	A	283	VAL	O-C-N	6.31	132.80	122.70
2	B	210	LEU	O-C-N	6.30	132.79	122.70
5	C	11	GLN	CA-C-N	-6.26	103.43	117.20
1	A	58	ALA	O-C-N	6.22	132.65	122.70
5	C	8	SER	CA-C-N	-6.21	103.53	117.20
2	B	234	PHE	C-N-CA	6.18	137.16	121.70
3	D	228	LEU	O-C-N	6.17	132.57	122.70
2	B	14	LEU	C-N-CA	-6.08	106.49	121.70
2	B	298	ASP	O-C-N	-6.08	112.97	122.70
1	A	325	PHE	O-C-N	-6.04	113.05	122.70
1	A	229	ILE	O-C-N	-6.03	113.05	122.70
2	B	286	LEU	O-C-N	-6.02	113.07	122.70
1	A	54	ALA	O-C-N	5.98	132.27	122.70
4	S	187	LEU	CA-C-N	-5.95	104.11	117.20
3	D	213	ILE	O-C-N	5.90	132.14	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	320	ILE	O-C-N	-5.90	113.26	122.70
1	A	55	LEU	O-C-N	5.87	132.09	122.70
5	C	10	ALA	C-N-CA	-5.86	107.06	121.70
4	S	101	TYR	O-C-N	-5.81	113.41	122.70
2	B	320	VAL	O-C-N	-5.75	113.50	122.70
3	D	291	TYR	O-C-N	-5.74	113.51	122.70
5	C	7	ALA	C-N-CA	-5.70	107.46	121.70
1	A	279	ILE	O-C-N	-5.69	113.60	122.70
4	S	115	THR	O-C-N	5.65	131.74	122.70
2	B	75	GLN	O-C-N	-5.60	113.74	122.70
1	A	57	SER	O-C-N	5.58	131.64	122.70
2	B	18	ILE	O-C-N	5.55	131.58	122.70
2	B	243	THR	O-C-N	5.55	132.64	123.20
5	C	52	THR	O-C-N	5.47	131.50	121.10
1	A	117	GLY	CA-C-N	-5.46	105.19	117.20
2	B	203	ALA	O-C-N	-5.46	113.97	122.70
2	B	266	HIS	O-C-N	-5.44	114.00	122.70
1	A	126	SER	CB-CA-C	-5.42	99.79	110.10
2	B	163	ASP	O-C-N	5.39	131.33	122.70
5	C	10	ALA	CA-C-N	-5.39	105.34	117.20
5	C	13	ARG	C-N-CA	-5.32	108.39	121.70
5	C	41	CYS	O-C-N	-5.29	114.24	122.70
4	S	79	LEU	CA-C-N	-5.25	105.65	117.20
2	B	158	VAL	O-C-N	-5.23	114.33	122.70
5	C	15	LEU	CA-C-N	-5.20	105.75	117.20
1	A	254	ARG	O-C-N	5.18	130.99	122.70
2	B	243	THR	CA-C-N	-5.17	105.86	116.20
5	C	13	ARG	CA-C-N	-5.15	105.86	117.20
1	A	173	TRP	O-C-N	5.13	130.91	122.70
2	B	20	ASP	CA-C-N	-5.10	105.98	117.20
5	C	8	SER	C-N-CA	-5.08	109.01	121.70
1	A	212	VAL	CB-CA-C	-5.07	101.77	111.40
4	S	61	ALA	O-C-N	5.06	130.80	122.70
5	C	17	GLU	O-C-N	5.05	130.78	122.70
5	C	16	VAL	CA-C-N	-5.01	106.18	117.20

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	171	CYS	Mainchain
2	B	148	CYS	Mainchain

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Mol	Chain	Res	Type	Group
4	S	82	GLN	Mainchain

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	2244	0	2362	340	0
2	B	2603	0	2503	250	0
3	D	1786	0	1769	137	0
4	S	1767	0	1685	113	0
5	C	438	0	443	68	0
6	A	29	0	0	2	0
All	All	8867	0	8762	842	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 48.

All (842) 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:A:126:SER:HB3	1:A:184:MET:SD	1.43	1.56
2:B:283:ARG:NE	2:B:300:LEU:HD12	1.29	1.44
1:A:126:SER:CB	1:A:184:MET:SD	2.04	1.44
2:B:22:ARG:CG	5:C:30:VAL:HG11	1.51	1.36
3:D:275:PHE:O	3:D:279:ILE:HG23	1.25	1.35
2:B:34:THR:HG22	5:C:38:MET:SD	1.67	1.32
5:C:8:SER:O	5:C:12:ALA:N	1.57	1.32
2:B:281:SER:HB3	5:C:48:ASP:CB	1.59	1.30
2:B:22:ARG:HG3	5:C:30:VAL:CG1	1.61	1.28
1:A:312:SER:O	1:A:316:VAL:HG23	1.33	1.25
2:B:250:CYS:SG	2:B:273:ILE:HD13	1.81	1.20
5:C:12:ALA:O	5:C:16:VAL:N	1.74	1.19
3:D:275:PHE:O	3:D:279:ILE:CG2	1.94	1.15
2:B:26:ALA:HB1	2:B:33:ILE:HD11	1.23	1.15
4:S:91:THR:HG23	4:S:118:THR:HA	1.29	1.14
2:B:281:SER:CB	5:C:48:ASP:HB2	1.77	1.14

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:48:THR:HA	3:D:51:LYS:CB	1.79	1.13
5:C:14:LYS:O	5:C:18:GLN:N	1.82	1.12
2:B:26:ALA:CB	2:B:33:ILE:HD11	1.78	1.12
1:A:313:LEU:HA	1:A:316:VAL:HB	1.30	1.11
1:A:52:ILE:CG2	1:A:56:TYR:CE1	2.35	1.09
4:S:70:ILE:HD12	4:S:81:LEU:HD12	1.26	1.09
1:A:116:PHE:CD2	1:A:120:LEU:HB2	1.88	1.08
2:B:15:LYS:HZ1	2:B:258:ASP:HB2	1.07	1.07
4:S:11:LEU:HD11	4:S:120:SER:HB2	1.30	1.07
5:C:15:LEU:O	5:C:19:LEU:N	1.87	1.06
2:B:250:CYS:SG	2:B:273:ILE:CD1	2.44	1.05
5:C:9:ILE:HA	5:C:12:ALA:HB3	1.32	1.05
1:A:245:LEU:CD1	3:D:342:ASP:OD1	2.03	1.05
1:A:246:LEU:HD13	3:D:355:PHE:HE1	1.18	1.05
3:D:48:THR:HA	3:D:51:LYS:HB2	1.11	1.05
4:S:70:ILE:HA	4:S:81:LEU:HA	1.39	1.05
1:A:77:TYR:CE2	1:A:328:CYS:SG	2.50	1.05
4:S:71:SER:O	4:S:79:LEU:HD12	1.58	1.04
2:B:26:ALA:HB1	2:B:33:ILE:CD1	1.87	1.03
1:A:257:ARG:O	1:A:260:THR:HG22	1.60	1.02
4:S:71:SER:N	4:S:80:PHE:O	1.94	1.01
2:B:283:ARG:CD	2:B:300:LEU:HD12	1.89	1.00
3:D:186:VAL:HB	3:D:201:ASP:HB3	1.43	1.00
3:D:224:PHE:CE2	3:D:251:PHE:HD2	1.79	1.00
3:D:349:LEU:HG	3:D:355:PHE:HB2	1.01	1.00
4:S:142:GLN:NE2	4:S:229:CYS:SG	2.35	1.00
1:A:67:ASN:ND2	1:A:95:ASP:HB3	1.77	1.00
1:A:299:ALA:HA	1:A:302:LEU:HB2	1.37	1.00
2:B:15:LYS:NZ	2:B:258:ASP:HB2	1.76	0.99
1:A:52:ILE:CG2	1:A:56:TYR:CZ	2.47	0.98
4:S:70:ILE:HD12	4:S:81:LEU:CD1	1.91	0.98
2:B:283:ARG:NE	2:B:300:LEU:CD1	2.26	0.98
1:A:245:LEU:HD11	3:D:342:ASP:OD1	1.61	0.98
2:B:197:ARG:HE	2:B:214:ARG:NH2	1.61	0.98
1:A:313:LEU:HA	1:A:316:VAL:CB	1.93	0.97
1:A:150:VAL:HG21	1:A:236:MET:HG3	1.45	0.97
4:S:138:ILE:HB	4:S:231:GLN:OE1	1.64	0.97
3:D:349:LEU:CG	3:D:355:PHE:HB2	1.93	0.97
1:A:313:LEU:CA	1:A:316:VAL:HB	1.95	0.96
3:D:272:LYS:HB2	3:D:326:CYS:SG	2.06	0.96
3:D:228:LEU:HD21	3:D:269:LEU:HD13	1.45	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:116:PHE:HE2	1:A:120:LEU:N	1.65	0.95
5:C:16:VAL:O	5:C:20:LYS:N	1.99	0.95
1:A:125:LEU:HD11	1:A:198:CYS:SG	2.05	0.95
2:B:22:ARG:HA	5:C:30:VAL:HG12	1.46	0.94
5:C:13:ARG:O	5:C:17:GLU:HB2	1.69	0.93
1:A:126:SER:HB2	1:A:184:MET:SD	2.07	0.93
2:B:340:ASN:HD22	5:C:61:PHE:HB2	1.34	0.92
3:D:349:LEU:HG	3:D:355:PHE:CB	1.96	0.92
1:A:52:ILE:O	1:A:56:TYR:N	2.03	0.92
5:C:9:ILE:HA	5:C:12:ALA:CB	2.00	0.92
3:D:269:LEU:O	3:D:325:THR:OG1	1.88	0.92
1:A:246:LEU:HD13	3:D:355:PHE:CE1	2.05	0.92
3:D:53:MET:SD	3:D:199:MET:SD	2.67	0.91
4:S:70:ILE:HG13	4:S:81:LEU:HB2	1.52	0.90
1:A:312:SER:O	1:A:316:VAL:CG2	2.18	0.90
4:S:64:VAL:CG1	4:S:68:PHE:CD2	2.55	0.90
2:B:283:ARG:HE	2:B:300:LEU:HD12	1.08	0.89
5:C:7:ALA:O	5:C:11:GLN:N	2.05	0.89
4:S:64:VAL:HG11	4:S:68:PHE:CD2	2.08	0.88
1:A:56:TYR:CE1	1:A:305:ALA:HB2	2.08	0.88
1:A:54:ALA:O	1:A:58:ALA:N	2.05	0.87
1:A:74:ILE:HD13	1:A:88:ILE:HG23	1.56	0.87
1:A:102:LEU:HD23	1:A:103:PRO:HD3	1.57	0.87
2:B:250:CYS:HG	2:B:273:ILE:HD13	1.37	0.87
1:A:176:ALA:O	1:A:179:VAL:N	2.07	0.87
1:A:202:PHE:CD2	1:A:210:ASP:HB2	2.10	0.86
1:A:52:ILE:HG23	1:A:56:TYR:CE1	2.10	0.86
2:B:256:ARG:H	2:B:256:ARG:HD2	1.39	0.86
1:A:108:LYS:O	1:A:112:GLU:N	2.08	0.86
2:B:283:ARG:HE	2:B:300:LEU:CD1	1.89	0.85
1:A:299:ALA:O	1:A:302:LEU:N	2.09	0.85
1:A:146:ARG:HD2	3:D:354:LEU:HD12	1.58	0.85
2:B:340:ASN:ND2	5:C:61:PHE:HB2	1.91	0.85
1:A:53:THR:O	1:A:57:SER:N	2.08	0.85
4:S:71:SER:O	4:S:80:PHE:N	2.09	0.85
1:A:52:ILE:HG22	1:A:56:TYR:CE1	2.11	0.84
3:D:48:THR:CA	3:D:51:LYS:HB2	2.03	0.84
1:A:91:LEU:HD22	1:A:138:THR:HG21	1.60	0.84
2:B:15:LYS:HG2	5:C:27:ARG:HH22	1.42	0.83
4:S:64:VAL:HG12	4:S:68:PHE:CG	2.12	0.83
1:A:306:LEU:O	1:A:309:ALA:HB3	1.79	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:310:GLY:O	2:B:337:LYS:NZ	2.12	0.83
2:B:119:ASN:ND2	2:B:144:GLY:O	2.11	0.83
2:B:47:THR:HG22	2:B:339:TRP:CD1	2.14	0.83
1:A:52:ILE:HG21	1:A:56:TYR:CZ	2.13	0.82
2:B:227:SER:OG	2:B:246:ASP:HB3	1.79	0.82
2:B:281:SER:CB	5:C:48:ASP:CB	2.43	0.82
2:B:3:GLU:HG2	5:C:16:VAL:HG11	1.60	0.82
2:B:26:ALA:CA	2:B:33:ILE:HD11	2.10	0.82
2:B:161:SER:HB3	2:B:187:VAL:HG21	1.60	0.81
2:B:278:PHE:HE2	2:B:282:GLY:HA2	1.43	0.81
2:B:15:LYS:HG2	5:C:27:ARG:NH2	1.94	0.81
1:A:64:LEU:HA	1:A:99:THR:HG21	1.62	0.81
3:D:224:PHE:CE2	3:D:251:PHE:CD2	2.68	0.81
1:A:260:THR:O	1:A:263:VAL:HG22	1.80	0.81
1:A:153:PRO:HG3	3:D:345:ILE:HD11	1.63	0.80
3:D:264:SER:OG	3:D:319:GLU:OE2	2.00	0.80
1:A:54:ALA:O	1:A:57:SER:HB3	1.82	0.80
2:B:26:ALA:CB	2:B:33:ILE:CD1	2.53	0.80
1:A:56:TYR:HA	1:A:59:VAL:CG1	2.12	0.79
1:A:146:ARG:HD2	3:D:354:LEU:CD1	2.11	0.79
1:A:133:PHE:CE2	1:A:179:VAL:HG11	2.17	0.79
2:B:281:SER:HB3	5:C:48:ASP:HB2	0.84	0.79
1:A:313:LEU:HA	1:A:316:VAL:CG2	2.12	0.79
1:A:299:ALA:CA	1:A:302:LEU:HB2	2.12	0.79
1:A:72:PHE:O	1:A:75:VAL:N	2.15	0.79
1:A:245:LEU:CG	3:D:342:ASP:OD1	2.31	0.79
1:A:272:VAL:O	1:A:276:PRO:HD3	1.82	0.78
1:A:311:SER:O	1:A:315:PRO:HD2	1.84	0.78
1:A:52:ILE:HA	1:A:55:LEU:HB3	1.66	0.78
4:S:138:ILE:HG13	4:S:231:GLN:HE22	1.47	0.78
4:S:64:VAL:HG11	4:S:68:PHE:CE2	2.18	0.78
1:A:202:PHE:HD2	1:A:210:ASP:HB2	1.47	0.78
5:C:9:ILE:CA	5:C:12:ALA:HB3	2.13	0.78
1:A:313:LEU:O	1:A:316:VAL:N	2.17	0.77
1:A:51:ALA:O	1:A:55:LEU:N	2.16	0.77
2:B:278:PHE:CE2	2:B:282:GLY:HA2	2.19	0.77
2:B:228:ASP:O	2:B:245:SER:HA	1.85	0.77
4:S:98:ARG:HD3	4:S:110:PHE:HB3	1.66	0.77
4:S:6:GLU:OE2	4:S:96:CYS:SG	2.43	0.77
2:B:18:ILE:O	2:B:22:ARG:N	2.17	0.76
1:A:56:TYR:HA	1:A:59:VAL:HG12	1.66	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:272:LYS:HD3	3:D:324:PHE:HB3	1.66	0.76
1:A:67:ASN:HD21	1:A:95:ASP:HB3	1.49	0.76
1:A:130:TYR:HE1	1:A:177:SER:N	1.82	0.76
2:B:283:ARG:CD	2:B:300:LEU:CD1	2.64	0.76
4:S:64:VAL:CG1	4:S:68:PHE:CG	2.67	0.76
3:D:54:LYS:HD2	3:D:190:PHE:HB3	1.68	0.76
1:A:202:PHE:HB2	1:A:210:ASP:OD2	1.86	0.75
3:D:245:HIS:HA	3:D:248:MET:SD	2.27	0.75
1:A:302:LEU:O	1:A:305:ALA:HB3	1.86	0.75
2:B:48:ARG:HG2	2:B:340:ASN:HB3	1.68	0.75
3:D:6:SER:OG	3:D:9:ASP:OD1	2.03	0.75
3:D:47:ASN:O	3:D:51:LYS:N	2.20	0.75
1:A:78:THR:HG21	1:A:85:ASN:ND2	2.02	0.75
3:D:188:THR:O	3:D:198:LYS:HA	1.87	0.75
1:A:51:ALA:O	1:A:54:ALA:HB3	1.86	0.75
4:S:70:ILE:CD1	4:S:81:LEU:HD12	2.10	0.75
1:A:245:LEU:HD13	3:D:346:LYS:HB2	1.68	0.75
4:S:2:VAL:HG12	4:S:26:GLY:O	1.86	0.74
1:A:52:ILE:HG22	1:A:56:TYR:CZ	2.22	0.74
1:A:72:PHE:O	1:A:75:VAL:HB	1.88	0.74
3:D:272:LYS:CD	3:D:324:PHE:HB3	2.18	0.74
3:D:272:LYS:HG3	3:D:325:THR:O	1.88	0.74
1:A:56:TYR:HE1	1:A:305:ALA:HB2	1.52	0.74
1:A:224:VAL:HA	1:A:227:LEU:HG	1.68	0.74
1:A:56:TYR:CA	1:A:59:VAL:HG12	2.16	0.73
2:B:283:ARG:O	2:B:299:ALA:N	2.18	0.73
4:S:244:LYS:O	4:S:245:LEU:HD12	1.86	0.73
4:S:90:ASP:OD1	4:S:119:VAL:HG21	1.87	0.73
1:A:170:ILE:O	1:A:174:VAL:HG22	1.89	0.73
1:A:67:ASN:ND2	1:A:96:ALA:N	2.36	0.73
2:B:47:THR:HG22	2:B:339:TRP:NE1	2.03	0.73
2:B:318:LEU:HG	2:B:329:THR:HG22	1.71	0.73
1:A:243:VAL:HG12	1:A:245:LEU:H	1.53	0.73
1:A:245:LEU:HG	3:D:342:ASP:OD1	1.88	0.73
1:A:246:LEU:CD2	1:A:259:ILE:HD12	2.19	0.73
2:B:22:ARG:CG	5:C:30:VAL:CG1	2.41	0.73
1:A:313:LEU:O	1:A:316:VAL:HB	1.88	0.73
5:C:14:LYS:O	5:C:17:GLU:HB3	1.88	0.73
1:A:91:LEU:HD22	1:A:138:THR:CG2	2.20	0.72
1:A:119:LEU:HD12	1:A:122:LYS:HZ1	1.53	0.72
1:A:299:ALA:O	1:A:303:CYS:N	2.23	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:15:LYS:NZ	2:B:258:ASP:O	2.23	0.72
1:A:116:PHE:HD2	1:A:120:LEU:HB2	1.49	0.72
2:B:161:SER:HB3	2:B:187:VAL:CG2	2.19	0.72
5:C:10:ALA:O	5:C:14:LYS:N	2.23	0.72
2:B:34:THR:CG2	5:C:38:MET:SD	2.64	0.71
1:A:311:SER:O	1:A:314:ASN:HB2	1.89	0.71
2:B:197:ARG:HE	2:B:214:ARG:CZ	2.02	0.71
1:A:90:ASN:OD1	1:A:169:ASN:ND2	2.24	0.71
3:D:187:GLU:OE1	3:D:200:PHE:HD1	1.74	0.71
2:B:61:MET:SD	2:B:70:LEU:HD11	2.31	0.71
2:B:283:ARG:HD2	2:B:300:LEU:CD1	2.20	0.71
3:D:255:CYS:SG	3:D:318:LYS:NZ	2.63	0.71
5:C:16:VAL:O	5:C:20:LYS:HG3	1.91	0.71
2:B:22:ARG:CB	5:C:30:VAL:HG11	2.21	0.70
4:S:244:LYS:C	4:S:245:LEU:HD12	2.11	0.70
1:A:79:LYS:HG3	1:A:80:MET:HE1	1.73	0.70
1:A:246:LEU:HD21	1:A:259:ILE:HD12	1.73	0.70
1:A:243:VAL:HG12	1:A:244:ARG:N	2.06	0.70
1:A:56:TYR:CE1	1:A:305:ALA:CB	2.74	0.70
1:A:130:TYR:OH	1:A:177:SER:HB3	1.92	0.70
1:A:257:ARG:C	1:A:260:THR:HG22	2.12	0.69
1:A:52:ILE:O	1:A:55:LEU:HB3	1.93	0.69
2:B:26:ALA:HB2	5:C:31:SER:HB2	1.73	0.69
4:S:226:VAL:HG22	4:S:244:LYS:HD3	1.75	0.69
1:A:51:ALA:O	1:A:54:ALA:N	2.26	0.69
4:S:70:ILE:CG1	4:S:81:LEU:HB2	2.23	0.69
1:A:176:ALA:O	1:A:177:SER:C	2.28	0.69
2:B:22:ARG:CA	5:C:30:VAL:HG12	2.23	0.68
3:D:224:PHE:HE1	3:D:250:LEU:HD22	1.58	0.68
2:B:60:ALA:HB3	2:B:73:ALA:HB3	1.75	0.68
1:A:251:GLU:HG2	1:A:252:LYS:HE3	1.76	0.68
2:B:82:TRP:HB3	2:B:89:LYS:HA	1.75	0.68
2:B:248:ALA:HB2	2:B:271:CYS:O	1.92	0.68
3:D:188:THR:HB	3:D:199:MET:HB2	1.76	0.68
2:B:15:LYS:NZ	2:B:258:ASP:CB	2.56	0.68
4:S:202:ARG:NH2	4:S:223:ASP:OD1	2.27	0.68
3:D:209:ARG:HA	3:D:212:TRP:NE1	2.09	0.67
5:C:13:ARG:O	5:C:17:GLU:CB	2.40	0.67
1:A:55:LEU:O	1:A:59:VAL:HG12	1.94	0.67
1:A:257:ARG:O	1:A:260:THR:CG2	2.39	0.67
4:S:72:ARG:HA	4:S:79:LEU:HA	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:82:TRP:CB	2:B:89:LYS:HA	2.24	0.67
4:S:19:LYS:HB3	4:S:82:GLN:NE2	2.10	0.67
1:A:52:ILE:HA	1:A:55:LEU:CB	2.25	0.67
1:A:273:CYS:HB3	1:A:310:ASN:HB3	1.75	0.67
4:S:64:VAL:CG1	4:S:68:PHE:CE2	2.77	0.67
3:D:224:PHE:CD2	3:D:251:PHE:CD2	2.83	0.67
1:A:56:TYR:O	1:A:60:CYS:N	2.13	0.67
1:A:282:ILE:HA	1:A:285:THR:OG1	1.94	0.67
3:D:228:LEU:O	3:D:244:MET:HE3	1.94	0.67
2:B:257:ALA:HB1	2:B:259:GLN:NE2	2.10	0.67
1:A:146:ARG:HH11	3:D:354:LEU:HD11	1.60	0.67
4:S:71:SER:C	4:S:79:LEU:HD12	2.13	0.67
1:A:78:THR:CG2	1:A:85:ASN:ND2	2.57	0.66
3:D:54:LYS:CD	3:D:190:PHE:HB3	2.25	0.66
3:D:305:GLN:HG2	3:D:322:THR:HG21	1.78	0.66
1:A:244:ARG:NH2	3:D:321:TYR:CE1	2.64	0.66
2:B:168:LEU:HB3	2:B:177:THR:O	1.96	0.66
4:S:139:VAL:CG1	4:S:162:SER:OG	2.43	0.66
2:B:3:GLU:CG	5:C:16:VAL:HG11	2.26	0.66
2:B:253:PHE:HD1	2:B:260:GLU:HA	1.59	0.66
1:A:314:ASN:HB2	1:A:315:PRO:HD3	1.78	0.66
1:A:125:LEU:CD1	1:A:198:CYS:SG	2.82	0.66
1:A:74:ILE:HG12	1:A:325:PHE:HZ	1.61	0.66
1:A:257:ARG:HA	1:A:260:THR:HG22	1.78	0.66
4:S:12:VAL:HG12	4:S:13:GLN:H	1.59	0.66
4:S:138:ILE:CG1	4:S:231:GLN:HE22	2.09	0.66
1:A:159:PHE:HA	1:A:164:LYS:HE3	1.77	0.65
2:B:30:LEU:HD13	5:C:34:ALA:HB2	1.78	0.65
2:B:163:ASP:O	2:B:186:ASP:HA	1.96	0.65
2:B:43:ILE:HD13	2:B:284:LEU:HD11	1.77	0.65
1:A:225:PRO:O	1:A:229:ILE:HG22	1.96	0.65
2:B:314:ARG:O	2:B:331:SER:OG	2.10	0.65
3:D:49:ILE:HG22	3:D:53:MET:CE	2.27	0.65
3:D:49:ILE:HG22	3:D:53:MET:HE3	1.77	0.65
3:D:246:ALA:O	3:D:249:LYS:N	2.30	0.65
3:D:187:GLU:OE1	3:D:200:PHE:CD1	2.50	0.65
1:A:78:THR:HG21	1:A:85:ASN:HD21	1.62	0.64
2:B:3:GLU:OE1	2:B:7:LEU:HD12	1.97	0.64
3:D:244:MET:HA	3:D:247:SER:HB2	1.79	0.64
1:A:95:ASP:OD2	1:A:315:PRO:CG	2.45	0.64
2:B:215:GLU:HG3	2:B:217:MET:SD	2.37	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:258:ARG:NH2	3:D:355:PHE:OXT	2.31	0.64
2:B:15:LYS:NZ	2:B:258:ASP:C	2.51	0.64
2:B:18:ILE:HD11	5:C:27:ARG:HB2	1.79	0.64
1:A:116:PHE:CE2	1:A:120:LEU:HB2	2.32	0.64
2:B:189:SER:OG	2:B:232:ILE:HG12	1.98	0.64
2:B:48:ARG:NH1	5:C:63:GLU:OE2	2.28	0.63
1:A:116:PHE:CD2	1:A:120:LEU:CB	2.74	0.63
2:B:113:ALA:HB2	2:B:151:PHE:HE1	1.64	0.63
2:B:199:PHE:HE1	2:B:213:VAL:HG22	1.62	0.63
1:A:222:PHE:O	1:A:226:ILE:HD12	1.98	0.63
3:D:46:LYS:O	3:D:50:VAL:HG23	1.98	0.63
3:D:224:PHE:CD2	3:D:251:PHE:HD2	2.16	0.63
1:A:223:VAL:HG12	1:A:227:LEU:HD23	1.78	0.63
1:A:313:LEU:C	1:A:316:VAL:HB	2.17	0.63
2:B:48:ARG:CG	2:B:340:ASN:HB3	2.28	0.63
3:D:187:GLU:OE2	3:D:200:PHE:CE1	2.51	0.63
4:S:70:ILE:HG13	4:S:81:LEU:CB	2.26	0.63
2:B:232:ILE:HG22	2:B:243:THR:OG1	1.98	0.63
4:S:94:TYR:O	4:S:114:GLY:HA3	1.98	0.63
1:A:299:ALA:O	1:A:300:LEU:C	2.38	0.63
2:B:30:LEU:HD23	2:B:33:ILE:HD12	1.81	0.63
2:B:200:VAL:HA	2:B:210:LEU:HA	1.81	0.63
4:S:139:VAL:HG13	4:S:162:SER:CB	2.28	0.63
2:B:22:ARG:CB	5:C:30:VAL:CG1	2.77	0.63
2:B:11:ALA:O	2:B:15:LYS:N	2.29	0.62
3:D:49:ILE:HD12	3:D:225:CYS:SG	2.39	0.62
1:A:56:TYR:HE1	1:A:305:ALA:CB	2.12	0.62
1:A:77:TYR:CZ	1:A:328:CYS:SG	2.92	0.62
2:B:82:TRP:HB2	2:B:88:ASN:O	2.00	0.62
2:B:228:ASP:O	2:B:245:SER:OG	2.16	0.62
1:A:116:PHE:CE2	1:A:120:LEU:HG	2.33	0.62
1:A:250:LYS:HA	1:A:253:ASP:HB2	1.82	0.62
1:A:133:PHE:CD2	1:A:179:VAL:HG11	2.33	0.62
1:A:300:LEU:HD21	6:A:401:A1LXY:O27	2.00	0.62
1:A:219:LEU:HD12	1:A:223:VAL:HG21	1.81	0.62
1:A:218:PHE:CE1	1:A:278:HIS:HB3	2.34	0.62
3:D:48:THR:HA	3:D:51:LYS:HB3	1.78	0.62
4:S:176:TRP:CD1	4:S:189:ILE:HB	2.33	0.62
2:B:191:SER:HG	2:B:234:PHE:HD2	1.46	0.61
1:A:71:MET:O	1:A:75:VAL:HG23	2.00	0.61
1:A:170:ILE:O	1:A:174:VAL:HG13	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:270:PHE:HD1	1:A:274:TRP:CE3	2.19	0.61
2:B:3:GLU:O	2:B:6:GLN:HG3	2.00	0.61
2:B:54:HIS:ND1	2:B:74:SER:HB2	2.15	0.61
1:A:116:PHE:HE2	1:A:120:LEU:H	0.81	0.61
1:A:70:VAL:O	1:A:71:MET:C	2.39	0.61
1:A:271:VAL:O	1:A:275:ALA:HB2	2.01	0.61
3:D:45:GLY:O	3:D:48:THR:HG22	2.01	0.61
1:A:119:LEU:HA	1:A:122:LYS:NZ	2.16	0.60
1:A:214:LYS:HE2	1:A:281:VAL:HB	1.83	0.60
1:A:225:PRO:HA	1:A:228:ILE:HG22	1.82	0.60
1:A:243:VAL:CG1	1:A:244:ARG:N	2.64	0.60
4:S:139:VAL:HG13	4:S:162:SER:HB3	1.84	0.60
1:A:219:LEU:HD12	1:A:223:VAL:CG2	2.31	0.60
2:B:200:VAL:HG22	2:B:210:LEU:HD12	1.83	0.60
3:D:38:LEU:HD21	3:D:50:VAL:CG2	2.30	0.60
4:S:37:VAL:HA	4:S:46:GLU:O	2.02	0.60
4:S:173:TYR:HD2	4:S:233:LEU:HA	1.66	0.60
4:S:51:ILE:HD13	4:S:79:LEU:HD11	1.82	0.60
4:S:174:LEU:HD12	4:S:230:MET:O	2.02	0.60
3:D:275:PHE:O	3:D:279:ILE:HG21	1.97	0.60
1:A:126:SER:OG	1:A:184:MET:SD	2.59	0.60
2:B:187:VAL:HA	2:B:203:ALA:HA	1.82	0.60
2:B:331:SER:HG	2:B:332:TRP:H	1.49	0.60
2:B:277:SER:OG	2:B:278:PHE:N	2.32	0.60
1:A:310:ASN:OD1	1:A:311:SER:N	2.35	0.60
2:B:102:THR:HG21	2:B:148:CYS:HA	1.84	0.60
2:B:130:GLU:OE2	4:S:27:PHE:HA	2.01	0.60
3:D:187:GLU:OE2	3:D:200:PHE:HE1	1.83	0.60
1:A:49:ALA:O	1:A:53:THR:HG23	2.02	0.59
1:A:52:ILE:CA	1:A:55:LEU:HB3	2.31	0.59
1:A:120:LEU:HA	1:A:123:ALA:HB3	1.83	0.59
1:A:257:ARG:CA	1:A:260:THR:HG22	2.32	0.59
1:A:311:SER:O	1:A:315:PRO:CD	2.49	0.59
2:B:26:ALA:C	2:B:28:ALA:H	2.05	0.59
2:B:121:CYS:HB2	2:B:146:LEU:CD2	2.32	0.59
5:C:12:ALA:O	5:C:16:VAL:CB	2.50	0.59
1:A:52:ILE:HG22	1:A:56:TYR:CD1	2.38	0.59
1:A:77:TYR:CD2	1:A:328:CYS:SG	2.88	0.59
1:A:244:ARG:NH2	3:D:321:TYR:HE1	2.00	0.59
1:A:314:ASN:HB2	1:A:315:PRO:CD	2.32	0.59
2:B:28:ALA:O	2:B:30:LEU:HG	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:228:ASP:O	2:B:245:SER:CB	2.51	0.59
1:A:74:ILE:HD13	1:A:88:ILE:CG2	2.30	0.59
1:A:298:ALA:O	1:A:302:LEU:N	2.34	0.59
2:B:340:ASN:HD22	5:C:61:PHE:CB	2.11	0.59
2:B:30:LEU:HD11	5:C:30:VAL:HG22	1.83	0.59
1:A:116:PHE:CE2	1:A:120:LEU:CB	2.86	0.59
2:B:12:GLU:O	2:B:16:ASN:N	2.33	0.59
2:B:274:THR:HG23	2:B:315:VAL:O	2.03	0.59
1:A:245:LEU:CD1	3:D:346:LYS:HB2	2.33	0.59
1:A:272:VAL:O	1:A:276:PRO:CD	2.50	0.59
1:A:267:VAL:O	1:A:271:VAL:HG23	2.02	0.58
2:B:33:ILE:HG22	2:B:33:ILE:O	2.02	0.58
2:B:49:ARG:HH12	5:C:61:PHE:HD1	1.49	0.58
1:A:67:ASN:ND2	1:A:95:ASP:CB	2.60	0.58
2:B:14:LEU:O	2:B:18:ILE:HG12	2.02	0.58
2:B:231:ALA:CB	2:B:275:SER:HA	2.32	0.58
2:B:258:ASP:N	2:B:258:ASP:OD2	2.35	0.58
2:B:200:VAL:HG22	2:B:210:LEU:HG	1.84	0.58
2:B:228:ASP:O	2:B:245:SER:CA	2.51	0.58
2:B:234:PHE:HA	2:B:241:PHE:HA	1.86	0.58
1:A:257:ARG:HD3	1:A:260:THR:HG21	1.85	0.58
1:A:298:ALA:O	1:A:302:LEU:HG	2.03	0.58
1:A:65:LEU:O	1:A:68:VAL:HB	2.04	0.58
1:A:181:VAL:HG23	1:A:182:PRO:HD3	1.86	0.58
2:B:200:VAL:HG23	2:B:234:PHE:CZ	2.39	0.58
1:A:171:CYS:HA	1:A:174:VAL:HG22	1.85	0.58
1:A:299:ALA:O	1:A:302:LEU:HB2	2.04	0.58
4:S:139:VAL:HG12	4:S:162:SER:OG	2.03	0.58
2:B:200:VAL:HG22	2:B:210:LEU:CG	2.34	0.58
1:A:257:ARG:HD3	1:A:260:THR:CG2	2.33	0.57
2:B:199:PHE:CZ	2:B:211:TRP:HB2	2.39	0.57
3:D:248:MET:CE	3:D:288:PHE:HZ	2.17	0.57
4:S:139:VAL:HG13	4:S:162:SER:OG	2.03	0.57
2:B:90:VAL:HG13	4:S:102:TYR:HB2	1.86	0.57
3:D:188:THR:O	3:D:199:MET:N	2.35	0.57
2:B:317:CYS:SG	2:B:330:GLY:HA3	2.44	0.57
1:A:91:LEU:CD2	1:A:138:THR:CG2	2.82	0.57
2:B:200:VAL:HG22	2:B:210:LEU:CD1	2.34	0.57
3:D:47:ASN:O	3:D:51:LYS:HB2	2.04	0.57
1:A:168:ILE:O	1:A:172:ILE:HG13	2.04	0.57
2:B:274:THR:CG2	2:B:315:VAL:O	2.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:29:THR:C	2:B:31:SER:H	2.08	0.57
4:S:144:THR:HG22	4:S:243:THR:HG23	1.87	0.57
1:A:139:LEU:CD2	1:A:229:ILE:HD12	2.34	0.57
2:B:27:ASP:C	2:B:29:THR:H	2.07	0.57
4:S:4:LEU:HD21	4:S:27:PHE:CZ	2.40	0.57
1:A:58:ALA:O	1:A:62:VAL:HG23	2.05	0.57
1:A:60:CYS:HB2	1:A:102:LEU:HD11	1.86	0.57
3:D:272:LYS:HE2	3:D:326:CYS:SG	2.44	0.57
1:A:108:LYS:O	1:A:109:TYR:C	2.38	0.56
2:B:39:PRO:HG3	2:B:301:LYS:NZ	2.20	0.56
4:S:39:GLN:HB2	4:S:45:LEU:HD23	1.87	0.56
3:D:189:HIS:CG	3:D:198:LYS:HG2	2.39	0.56
4:S:9:GLY:HA2	4:S:117:LEU:CD1	2.34	0.56
1:A:91:LEU:CD2	1:A:138:THR:HG22	2.35	0.56
1:A:300:LEU:O	1:A:304:ILE:HG13	2.05	0.56
3:D:224:PHE:HE1	3:D:250:LEU:CD2	2.18	0.56
3:D:262:ASP:OD1	3:D:317:THR:OG1	2.18	0.56
4:S:98:ARG:HD3	4:S:110:PHE:CB	2.34	0.56
2:B:47:THR:HG22	2:B:339:TRP:HE1	1.69	0.56
2:B:30:LEU:CD2	2:B:33:ILE:HD12	2.36	0.56
4:S:40:ALA:HB1	4:S:41:PRO:HD2	1.86	0.56
1:A:259:ILE:O	1:A:263:VAL:HG13	2.06	0.56
2:B:161:SER:CB	2:B:187:VAL:HG21	2.35	0.56
2:B:233:CYS:O	2:B:241:PHE:HB2	2.06	0.56
3:D:49:ILE:CG2	3:D:53:MET:CE	2.84	0.56
4:S:12:VAL:HG12	4:S:13:GLN:N	2.20	0.56
3:D:340:VAL:O	3:D:344:ILE:HG13	2.06	0.56
1:A:224:VAL:HA	1:A:227:LEU:CG	2.35	0.56
2:B:308:LEU:O	2:B:339:TRP:CH2	2.58	0.56
1:A:212:VAL:HG12	1:A:212:VAL:O	2.06	0.56
1:A:275:ALA:HB3	1:A:276:PRO:HD3	1.88	0.55
2:B:191:SER:O	2:B:199:PHE:HB2	2.06	0.55
1:A:270:PHE:CD1	1:A:274:TRP:CE3	2.95	0.55
4:S:71:SER:O	4:S:79:LEU:CD1	2.45	0.55
1:A:74:ILE:HG12	1:A:325:PHE:CZ	2.40	0.55
1:A:240:LEU:HD21	1:A:246:LEU:CD2	2.36	0.55
4:S:11:LEU:HD11	4:S:120:SER:CB	2.21	0.55
1:A:95:ASP:OD2	1:A:315:PRO:HG2	2.07	0.55
2:B:104:ALA:HB2	2:B:149:CYS:O	2.07	0.55
2:B:153:ASP:OD2	2:B:196:THR:HG23	2.07	0.55
2:B:139:LEU:HD23	2:B:169:TRP:CD2	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:146:ARG:NH1	3:D:354:LEU:HG	2.21	0.55
3:D:242:ASN:O	3:D:243:ARG:C	2.42	0.55
1:A:74:ILE:CD1	1:A:88:ILE:HG12	2.37	0.54
1:A:75:VAL:O	1:A:79:LYS:HD3	2.07	0.54
2:B:3:GLU:CG	5:C:16:VAL:CG1	2.85	0.54
4:S:9:GLY:HA2	4:S:117:LEU:HD13	1.89	0.54
4:S:62:ASP:OD1	4:S:63:THR:N	2.40	0.54
3:D:47:ASN:O	3:D:51:LYS:HE2	2.08	0.54
1:A:119:LEU:HD12	1:A:122:LYS:HE2	1.90	0.54
1:A:146:ARG:HD3	3:D:352:CYS:SG	2.47	0.54
1:A:146:ARG:O	1:A:150:VAL:HG22	2.07	0.54
1:A:77:TYR:O	1:A:79:LYS:N	2.40	0.54
1:A:307:GLY:C	1:A:309:ALA:N	2.60	0.54
4:S:61:ALA:O	4:S:65:LYS:HB2	2.08	0.54
1:A:107:ALA:HA	1:A:110:LEU:HB3	1.88	0.54
1:A:297:VAL:HG13	1:A:301:HIS:CD2	2.42	0.54
1:A:313:LEU:O	1:A:316:VAL:CB	2.56	0.54
1:A:53:THR:O	1:A:57:SER:CB	2.56	0.54
4:S:71:SER:OG	4:S:80:PHE:HB2	2.07	0.54
1:A:171:CYS:O	1:A:175:LEU:HD13	2.07	0.54
2:B:273:ILE:HG22	2:B:289:TYR:CD2	2.43	0.54
1:A:181:VAL:CG2	1:A:182:PRO:HD3	2.37	0.54
1:A:313:LEU:CA	1:A:316:VAL:CG2	2.85	0.54
2:B:43:ILE:HD12	2:B:284:LEU:HD21	1.89	0.54
2:B:183:HIS:NE2	2:B:211:TRP:HZ2	2.06	0.54
2:B:197:ARG:HE	2:B:214:ARG:HH22	1.48	0.54
1:A:303:CYS:SG	1:A:304:ILE:N	2.81	0.53
4:S:20:LEU:HD12	4:S:36:TRP:HZ3	1.72	0.53
2:B:80:ILE:HD11	3:D:23:LEU:HD11	1.89	0.53
3:D:244:MET:O	3:D:247:SER:HB2	2.07	0.53
5:C:12:ALA:O	5:C:16:VAL:CA	2.55	0.53
5:C:12:ALA:HA	5:C:15:LEU:HB3	1.89	0.53
1:A:176:ALA:C	1:A:178:GLY:N	2.61	0.53
1:A:313:LEU:O	1:A:316:VAL:CA	2.56	0.53
2:B:168:LEU:HD23	2:B:169:TRP:N	2.23	0.53
2:B:215:GLU:HG3	2:B:217:MET:CE	2.37	0.53
3:D:228:LEU:O	3:D:244:MET:CE	2.57	0.53
3:D:349:LEU:HD21	3:D:355:PHE:HD1	1.73	0.53
1:A:250:LYS:H	1:A:250:LYS:HD2	1.73	0.53
3:D:238:ASP:HB3	3:D:241:MET:HG2	1.89	0.53
1:A:72:PHE:O	1:A:73:GLY:C	2.45	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:11:GLN:HA	5:C:14:LYS:HB3	1.89	0.53
1:A:119:LEU:HD12	1:A:122:LYS:NZ	2.22	0.53
1:A:299:ALA:HA	1:A:302:LEU:CB	2.26	0.53
2:B:29:THR:C	2:B:31:SER:N	2.62	0.53
1:A:91:LEU:HD21	1:A:138:THR:HG22	1.91	0.53
3:D:228:LEU:HG	3:D:269:LEU:HB3	1.91	0.53
4:S:172:THR:O	4:S:191:ARG:HG2	2.08	0.53
1:A:67:ASN:ND2	1:A:95:ASP:C	2.62	0.52
1:A:243:VAL:CG1	1:A:244:ARG:H	2.22	0.52
3:D:209:ARG:O	3:D:213:ILE:HB	2.10	0.52
1:A:111:MET:C	1:A:113:THR:H	2.13	0.52
1:A:171:CYS:CA	1:A:174:VAL:HG22	2.39	0.52
2:B:61:MET:HA	2:B:71:VAL:O	2.09	0.52
2:B:68:ARG:HG2	4:S:103:TYR:CZ	2.45	0.52
2:B:278:PHE:O	2:B:320:VAL:HG11	2.09	0.52
4:S:97:VAL:HG22	4:S:111:TRP:CD2	2.44	0.52
1:A:246:LEU:HD22	1:A:259:ILE:HD12	1.92	0.52
3:D:54:LYS:HD2	3:D:190:PHE:CB	2.38	0.52
3:D:267:LEU:HB3	3:D:321:TYR:O	2.09	0.52
1:A:54:ALA:HA	1:A:57:SER:HB3	1.92	0.52
1:A:219:LEU:HD12	1:A:223:VAL:HB	1.92	0.52
2:B:27:ASP:O	2:B:29:THR:N	2.41	0.52
2:B:163:ASP:OD1	2:B:164:THR:N	2.42	0.52
2:B:273:ILE:HG22	2:B:289:TYR:CE2	2.43	0.52
3:D:224:PHE:CE1	3:D:250:LEU:HD22	2.43	0.52
1:A:294:PRO:HG2	1:A:295:LEU:HD12	1.90	0.52
2:B:186:ASP:O	2:B:188:MET:HG3	2.09	0.52
3:D:53:MET:SD	3:D:199:MET:HE1	2.49	0.52
1:A:116:PHE:CE2	1:A:120:LEU:N	2.53	0.52
1:A:171:CYS:HA	1:A:174:VAL:CG2	2.40	0.52
1:A:257:ARG:HA	1:A:260:THR:CG2	2.38	0.52
2:B:15:LYS:HZ1	2:B:258:ASP:CB	1.99	0.52
2:B:199:PHE:CE2	2:B:211:TRP:CD1	2.98	0.52
2:B:225:HIS:NE2	2:B:251:ARG:HG3	2.24	0.52
3:D:48:THR:CA	3:D:51:LYS:CB	2.70	0.52
1:A:171:CYS:O	1:A:175:LEU:HB2	2.09	0.52
2:B:43:ILE:CD1	2:B:284:LEU:HD11	2.40	0.52
1:A:146:ARG:NH1	3:D:354:LEU:CG	2.73	0.52
2:B:19:ARG:HA	2:B:22:ARG:HB3	1.92	0.52
2:B:295:ASN:OD1	2:B:307:VAL:HG13	2.09	0.52
2:B:314:ARG:C	2:B:331:SER:HG	2.11	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:305:GLN:CG	3:D:322:THR:HG21	2.39	0.52
4:S:51:ILE:HG23	4:S:58:ILE:HG13	1.92	0.51
1:A:51:ALA:C	1:A:53:THR:N	2.61	0.51
1:A:219:LEU:HD12	1:A:223:VAL:CB	2.41	0.51
1:A:51:ALA:O	1:A:54:ALA:CB	2.57	0.51
1:A:282:ILE:HA	1:A:285:THR:HG1	1.73	0.51
2:B:13:GLN:O	2:B:17:GLN:N	2.38	0.51
2:B:22:ARG:HG3	5:C:30:VAL:HG11	0.65	0.51
2:B:104:ALA:HB3	2:B:113:ALA:HB3	1.92	0.51
2:B:233:CYS:O	2:B:242:ALA:N	2.42	0.51
2:B:26:ALA:HA	2:B:33:ILE:HD11	1.90	0.51
2:B:215:GLU:HG3	2:B:217:MET:HE2	1.91	0.51
2:B:251:ARG:NH1	2:B:260:GLU:OE1	2.43	0.51
2:B:26:ALA:C	2:B:28:ALA:N	2.63	0.51
2:B:121:CYS:HB2	2:B:146:LEU:HD22	1.91	0.51
4:S:4:LEU:HD21	4:S:27:PHE:HZ	1.76	0.51
2:B:315:VAL:HA	2:B:331:SER:HA	1.93	0.51
1:A:139:LEU:HD21	1:A:229:ILE:CD1	2.41	0.51
1:A:214:LYS:CE	1:A:281:VAL:HB	2.40	0.51
1:A:201:GLN:N	1:A:201:GLN:OE1	2.43	0.50
2:B:40:VAL:HG21	5:C:51:LEU:HD11	1.93	0.50
1:A:314:ASN:CB	1:A:315:PRO:HD3	2.40	0.50
3:D:283:PRO:HG2	3:D:286:ILE:HG13	1.93	0.50
1:A:54:ALA:C	1:A:57:SER:HB3	2.31	0.50
2:B:18:ILE:HG13	5:C:27:ARG:HD3	1.92	0.50
2:B:29:THR:HG21	2:B:32:GLN:HE21	1.76	0.50
2:B:215:GLU:HG3	2:B:217:MET:HG2	1.94	0.50
4:S:84:THR:OG1	4:S:85:SER:N	2.43	0.50
1:A:313:LEU:C	1:A:316:VAL:H	2.15	0.50
2:B:152:LEU:HD23	2:B:157:ILE:HG21	1.94	0.50
3:D:47:ASN:O	3:D:51:LYS:CA	2.59	0.50
1:A:215:ILE:O	1:A:218:PHE:HB3	2.12	0.50
3:D:227:ALA:O	3:D:244:MET:HE1	2.11	0.50
4:S:139:VAL:CG1	4:S:162:SER:CB	2.90	0.50
4:S:144:THR:CG2	4:S:243:THR:HG23	2.41	0.50
1:A:249:SER:C	1:A:251:GLU:N	2.65	0.49
1:A:310:ASN:O	1:A:311:SER:C	2.50	0.49
4:S:20:LEU:HD12	4:S:36:TRP:CZ3	2.47	0.49
3:D:49:ILE:CG2	3:D:53:MET:HE3	2.41	0.49
4:S:58:ILE:HD12	4:S:58:ILE:H	1.77	0.49
5:C:12:ALA:O	5:C:16:VAL:HB	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:283:VAL:O	1:A:287:VAL:N	2.40	0.49
1:A:314:ASN:CB	1:A:315:PRO:CD	2.90	0.49
2:B:4:LEU:HA	5:C:19:LEU:CD2	2.41	0.49
2:B:283:ARG:HD2	2:B:300:LEU:HD11	1.93	0.49
3:D:48:THR:O	3:D:51:LYS:HB3	2.12	0.49
4:S:72:ARG:HB3	4:S:79:LEU:HD13	1.93	0.49
4:S:73:ASP:O	4:S:77:ASN:N	2.45	0.49
1:A:170:ILE:O	1:A:174:VAL:CG2	2.60	0.49
1:A:53:THR:O	1:A:54:ALA:C	2.48	0.49
1:A:297:VAL:CG1	1:A:301:HIS:HD2	2.26	0.49
2:B:241:PHE:O	2:B:252:LEU:HD12	2.12	0.49
3:D:38:LEU:HD21	3:D:50:VAL:HG22	1.95	0.49
1:A:56:TYR:C	1:A:59:VAL:HG12	2.31	0.49
2:B:68:ARG:NE	2:B:83:ASP:OD1	2.42	0.49
2:B:232:ILE:HG22	2:B:243:THR:CB	2.42	0.49
2:B:256:ARG:HD2	2:B:256:ARG:N	2.17	0.49
3:D:272:LYS:HD2	3:D:324:PHE:HB3	1.94	0.49
1:A:69:LEU:O	1:A:70:VAL:C	2.50	0.48
2:B:17:GLN:O	2:B:21:ALA:N	2.40	0.48
4:S:157:ILE:HG23	4:S:243:THR:HG21	1.94	0.48
1:A:177:SER:O	1:A:178:GLY:C	2.43	0.48
1:A:274:TRP:CH2	1:A:314:ASN:OD1	2.66	0.48
2:B:57:LYS:NZ	3:D:217:GLU:OE2	2.47	0.48
2:B:166:CYS:HB2	2:B:180:PHE:HD2	1.77	0.48
1:A:119:LEU:HD12	1:A:122:LYS:CE	2.43	0.48
1:A:305:ALA:C	1:A:307:GLY:N	2.67	0.48
1:A:313:LEU:HA	1:A:316:VAL:HG21	1.92	0.48
4:S:190:TYR:O	4:S:191:ARG:C	2.50	0.48
1:A:67:ASN:HD22	1:A:96:ALA:N	2.11	0.48
1:A:324:ASN:OD1	1:A:325:PHE:N	2.47	0.48
2:B:51:LEU:HB2	2:B:336:LEU:HB2	1.94	0.48
1:A:72:PHE:O	1:A:75:VAL:CB	2.61	0.48
1:A:297:VAL:CG1	1:A:301:HIS:CD2	2.96	0.48
2:B:80:ILE:HG22	2:B:82:TRP:HE3	1.77	0.48
4:S:88:SER:HA	4:S:119:VAL:CG1	2.44	0.48
1:A:67:ASN:HD21	1:A:96:ALA:N	2.09	0.48
1:A:116:PHE:CE2	1:A:120:LEU:CG	2.96	0.48
1:A:119:LEU:CD1	1:A:122:LYS:HZ1	2.22	0.48
2:B:4:LEU:HA	5:C:19:LEU:HD23	1.96	0.48
2:B:199:PHE:CE2	2:B:211:TRP:HB2	2.49	0.48
3:D:189:HIS:HA	3:D:197:PHE:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:240:LEU:CD2	1:A:246:LEU:HD23	2.44	0.48
4:S:6:GLU:HG3	4:S:22:CYS:SG	2.54	0.48
2:B:45:MET:SD	2:B:308:LEU:HD21	2.54	0.48
1:A:130:TYR:CE1	1:A:177:SER:CA	2.97	0.48
1:A:252:LYS:O	1:A:255:SER:HB2	2.13	0.48
1:A:299:ALA:O	1:A:302:LEU:CA	2.62	0.48
2:B:168:LEU:C	2:B:169:TRP:CD1	2.87	0.47
3:D:53:MET:SD	3:D:199:MET:CE	3.02	0.47
4:S:98:ARG:CD	4:S:110:PHE:HB3	2.41	0.47
2:B:215:GLU:HG3	2:B:217:MET:CG	2.44	0.47
1:A:262:MET:C	1:A:264:LEU:N	2.66	0.47
2:B:153:ASP:OD2	2:B:196:THR:CG2	2.63	0.47
1:A:70:VAL:HG13	1:A:71:MET:N	2.30	0.47
1:A:119:LEU:HA	1:A:122:LYS:HZ1	1.79	0.47
5:C:8:SER:O	5:C:11:GLN:HB2	2.14	0.47
2:B:16:ASN:O	2:B:20:ASP:N	2.33	0.47
2:B:22:ARG:CA	5:C:30:VAL:CG1	2.93	0.47
2:B:51:LEU:HD23	2:B:82:TRP:CZ2	2.50	0.47
2:B:250:CYS:SG	2:B:273:ILE:HD12	2.50	0.47
3:D:349:LEU:HD21	3:D:355:PHE:CD1	2.49	0.47
4:S:88:SER:HA	4:S:119:VAL:HG11	1.96	0.47
5:C:12:ALA:O	5:C:16:VAL:HG23	2.14	0.47
1:A:218:PHE:HE1	1:A:278:HIS:HB3	1.75	0.47
1:A:297:VAL:HG12	1:A:301:HIS:HD2	1.80	0.47
1:A:311:SER:HA	1:A:314:ASN:OD1	2.15	0.47
2:B:123:ILE:HG13	2:B:171:ILE:HD12	1.97	0.47
2:B:208:ALA:N	2:B:222:PHE:O	2.48	0.47
3:D:188:THR:HG21	3:D:199:MET:CE	2.45	0.47
1:A:102:LEU:CD2	1:A:103:PRO:HD3	2.36	0.47
1:A:130:TYR:CE1	1:A:177:SER:N	2.73	0.47
1:A:243:VAL:HG12	1:A:245:LEU:N	2.26	0.47
2:B:18:ILE:CD1	5:C:27:ARG:HB2	2.44	0.47
3:D:49:ILE:HD13	3:D:268:PHE:CD2	2.50	0.47
1:A:48:LEU:O	1:A:51:ALA:HB3	2.15	0.47
1:A:101:THR:HG21	1:A:128:ASP:CG	2.36	0.47
3:D:349:LEU:CD2	3:D:355:PHE:CD1	2.98	0.47
4:S:232:HIS:CD2	4:S:237:LEU:HD21	2.50	0.47
1:A:74:ILE:HD11	1:A:88:ILE:HG12	1.96	0.46
1:A:64:LEU:HA	1:A:99:THR:CG2	2.37	0.46
1:A:108:LYS:O	1:A:111:MET:N	2.46	0.46
4:S:64:VAL:HG13	4:S:68:PHE:CE1	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:9:ILE:O	5:C:12:ALA:HB3	2.14	0.46
1:A:313:LEU:O	1:A:317:LEU:N	2.47	0.46
4:S:73:ASP:O	4:S:78:THR:N	2.36	0.46
1:A:130:TYR:CE1	1:A:177:SER:HA	2.51	0.46
1:A:243:VAL:HG12	1:A:244:ARG:H	1.79	0.46
2:B:191:SER:OG	2:B:192:LEU:N	2.49	0.46
3:D:43:GLU:C	3:D:243:ARG:HH22	2.18	0.46
1:A:279:ILE:O	1:A:282:ILE:HG22	2.16	0.46
2:B:239:ASN:HB2	2:B:256:ARG:CZ	2.45	0.46
2:B:274:THR:O	2:B:274:THR:OG1	2.33	0.46
4:S:70:ILE:HB	4:S:81:LEU:HD12	1.97	0.46
1:A:251:GLU:O	1:A:252:LYS:HE2	2.16	0.46
4:S:64:VAL:CG1	4:S:68:PHE:CD1	2.98	0.46
4:S:243:THR:O	4:S:245:LEU:CD1	2.64	0.46
1:A:132:MET:HE3	1:A:274:TRP:HE1	1.80	0.46
1:A:218:PHE:CD1	1:A:278:HIS:HB3	2.51	0.46
3:D:48:THR:C	3:D:51:LYS:H	2.20	0.46
4:S:67:ARG:O	4:S:84:THR:OG1	2.34	0.46
1:A:52:ILE:HG21	1:A:56:TYR:OH	2.15	0.46
2:B:231:ALA:HB3	2:B:275:SER:HA	1.96	0.46
3:D:49:ILE:O	3:D:53:MET:HB2	2.16	0.46
1:A:74:ILE:HD11	1:A:88:ILE:CD1	2.45	0.46
1:A:143:SER:HB2	1:A:233:TYR:CE2	2.51	0.46
1:A:227:LEU:HD12	1:A:228:ILE:N	2.30	0.46
3:D:312:ASN:HB2	3:D:320:ILE:HD11	1.97	0.46
1:A:270:PHE:HD1	1:A:274:TRP:HE3	1.62	0.46
2:B:18:ILE:CG2	2:B:259:GLN:HE22	2.28	0.46
1:A:199:MET:C	1:A:200:LEU:HD12	2.36	0.45
2:B:84:SER:O	2:B:85:TYR:C	2.54	0.45
1:A:250:LYS:HD2	1:A:250:LYS:N	2.30	0.45
2:B:165:THR:HG23	2:B:180:PHE:O	2.16	0.45
2:B:254:ASP:O	2:B:257:ALA:O	2.35	0.45
4:S:70:ILE:CD1	4:S:81:LEU:HB2	2.47	0.45
1:A:72:PHE:HA	1:A:75:VAL:CG2	2.47	0.45
2:B:22:ARG:O	2:B:26:ALA:HB3	2.16	0.45
4:S:188:LEU:HA	4:S:199:VAL:HG11	1.99	0.45
4:S:2:VAL:HA	4:S:26:GLY:HA3	1.98	0.45
4:S:161:SER:H	4:S:210:THR:HG23	1.81	0.45
1:A:119:LEU:HA	1:A:122:LYS:HZ3	1.82	0.45
1:A:119:LEU:O	1:A:122:LYS:HG2	2.17	0.45
5:C:14:LYS:O	5:C:17:GLU:CB	2.62	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:18:ILE:HG13	5:C:27:ARG:CD	2.47	0.45
2:B:51:LEU:N	2:B:336:LEU:O	2.38	0.45
4:S:149:VAL:HG11	4:S:219:LEU:HD13	1.99	0.45
4:S:175:TYR:HD1	4:S:190:TYR:HA	1.81	0.45
1:A:46:LEU:O	1:A:49:ALA:HB3	2.17	0.45
1:A:52:ILE:C	1:A:55:LEU:HB3	2.37	0.45
1:A:273:CYS:O	1:A:276:PRO:HD2	2.17	0.45
2:B:27:ASP:C	2:B:29:THR:N	2.70	0.45
2:B:48:ARG:HA	2:B:48:ARG:HD3	1.65	0.45
2:B:293:ASN:HB2	2:B:309:ALA:HB2	1.99	0.45
3:D:189:HIS:CG	3:D:198:LYS:CG	3.00	0.45
1:A:54:ALA:CA	1:A:57:SER:HB3	2.46	0.44
2:B:233:CYS:SG	2:B:276:VAL:O	2.66	0.44
2:B:235:PHE:CB	2:B:240:ALA:HB3	2.47	0.44
4:S:64:VAL:HG13	4:S:68:PHE:CZ	2.53	0.44
1:A:146:ARG:HH11	3:D:354:LEU:CD1	2.27	0.44
3:D:43:GLU:O	3:D:243:ARG:NH2	2.49	0.44
1:A:56:TYR:HH	1:A:301:HIS:C	2.18	0.44
2:B:22:ARG:HA	5:C:30:VAL:CG1	2.32	0.44
2:B:200:VAL:CG2	2:B:210:LEU:HD12	2.46	0.44
3:D:49:ILE:CG2	3:D:53:MET:HE2	2.47	0.44
3:D:231:TYR:CE1	3:D:275:PHE:CE1	3.05	0.44
4:S:73:ASP:OD1	4:S:76:LYS:HG2	2.18	0.44
1:A:130:TYR:O	1:A:131:ASN:C	2.54	0.44
1:A:240:LEU:HD21	1:A:246:LEU:HD22	2.00	0.44
1:A:311:SER:OG	1:A:312:SER:N	2.50	0.44
2:B:243:THR:HG22	2:B:251:ARG:O	2.16	0.44
2:B:254:ASP:HB3	2:B:261:LEU:HD11	1.99	0.44
3:D:189:HIS:ND1	3:D:198:LYS:CG	2.80	0.44
3:D:246:ALA:O	3:D:247:SER:C	2.56	0.44
3:D:276:GLU:HG2	3:D:297:TYR:HB2	1.99	0.44
3:D:291:TYR:OH	3:D:299:GLU:HG2	2.17	0.44
5:C:17:GLU:HA	5:C:20:LYS:HB2	1.98	0.44
5:C:17:GLU:O	5:C:20:LYS:HB2	2.18	0.44
1:A:56:TYR:O	1:A:59:VAL:CG1	2.66	0.44
1:A:130:TYR:HE1	1:A:177:SER:CA	2.30	0.44
1:A:204:SER:HB2	1:A:210:ASP:CG	2.38	0.44
1:A:239:ARG:O	1:A:243:VAL:HG23	2.17	0.44
2:B:168:LEU:O	2:B:169:TRP:CG	2.70	0.44
1:A:52:ILE:C	1:A:55:LEU:N	2.70	0.44
2:B:4:LEU:HG	2:B:5:ASP:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:88:SER:HA	4:S:119:VAL:HB	1.99	0.44
1:A:262:MET:O	1:A:263:VAL:C	2.52	0.44
1:A:294:PRO:HG2	1:A:295:LEU:CD1	2.48	0.44
1:A:292:ARG:HD2	1:A:292:ARG:O	2.17	0.44
4:S:244:LYS:HZ2	4:S:246:GLU:HG3	1.83	0.44
1:A:238:LEU:O	1:A:241:ARG:HB3	2.17	0.44
1:A:303:CYS:C	1:A:305:ALA:N	2.70	0.44
2:B:289:TYR:O	2:B:315:VAL:HG22	2.17	0.44
3:D:348:ASN:HA	3:D:351:ASP:OD1	2.17	0.44
4:S:235:TYR:HB2	4:S:236:PRO:HD3	2.00	0.44
1:A:299:ALA:C	1:A:302:LEU:HB2	2.38	0.43
2:B:277:SER:OG	2:B:320:VAL:HG12	2.18	0.43
1:A:67:ASN:O	1:A:68:VAL:C	2.55	0.43
1:A:224:VAL:O	1:A:227:LEU:HG	2.18	0.43
2:B:139:LEU:HD12	2:B:139:LEU:N	2.32	0.43
3:D:49:ILE:CD1	3:D:268:PHE:HD2	2.31	0.43
4:S:50:TYR:O	4:S:58:ILE:HA	2.18	0.43
1:A:217:VAL:O	1:A:221:ALA:HB3	2.18	0.43
3:D:284:LEU:CD1	3:D:300:ALA:HB1	2.48	0.43
3:D:222:ILE:O	3:D:223:ILE:C	2.56	0.43
4:S:246:GLU:C	4:S:247:LEU:HD12	2.39	0.43
3:D:49:ILE:CD1	3:D:268:PHE:CD2	3.02	0.43
1:A:254:ARG:O	1:A:257:ARG:HB3	2.19	0.43
6:A:401:A1LXY:C08	6:A:401:A1LXY:O16	2.67	0.43
1:A:283:VAL:HA	1:A:286:LEU:HB2	2.01	0.43
2:B:279:SER:HB2	5:C:50:LEU:HD12	2.01	0.43
1:A:111:MET:C	1:A:113:THR:N	2.72	0.43
2:B:32:GLN:C	2:B:34:THR:H	2.21	0.43
2:B:33:ILE:O	2:B:33:ILE:CG2	2.67	0.43
2:B:111:TYR:CD2	2:B:155:ASN:HB2	2.54	0.43
2:B:253:PHE:CD1	2:B:260:GLU:HA	2.48	0.43
3:D:231:TYR:OH	3:D:279:ILE:HG22	2.19	0.43
3:D:248:MET:HE2	3:D:288:PHE:HZ	1.83	0.43
1:A:146:ARG:NH1	3:D:354:LEU:HD21	2.34	0.43
2:B:10:GLU:O	2:B:13:GLN:HB3	2.18	0.43
2:B:22:ARG:HH21	2:B:259:GLN:CD	2.22	0.43
1:A:305:ALA:C	1:A:307:GLY:H	2.22	0.42
3:D:283:PRO:HA	3:D:295:ASN:HD21	1.83	0.42
4:S:69:THR:HG22	4:S:82:GLN:O	2.19	0.42
2:B:215:GLU:CG	2:B:217:MET:HG2	2.48	0.42
4:S:70:ILE:HD12	4:S:81:LEU:HD13	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:165:LEU:HD12	4:S:212:PHE:CE2	2.54	0.42
1:A:56:TYR:O	1:A:59:VAL:HG12	2.20	0.42
1:A:258:ARG:O	1:A:259:ILE:C	2.53	0.42
1:A:282:ILE:O	1:A:286:LEU:N	2.52	0.42
1:A:307:GLY:C	1:A:309:ALA:H	2.21	0.42
2:B:200:VAL:HG23	2:B:234:PHE:HZ	1.82	0.42
2:B:229:ILE:HD13	2:B:244:GLY:O	2.19	0.42
3:D:188:THR:O	3:D:198:LYS:CA	2.61	0.42
1:A:69:LEU:O	1:A:72:PHE:N	2.52	0.42
3:D:6:SER:C	3:D:8:GLU:H	2.21	0.42
4:S:204:SER:O	4:S:214:LEU:HD12	2.18	0.42
1:A:77:TYR:O	1:A:79:LYS:HB2	2.20	0.42
1:A:114:TRP:CH2	1:A:121:CYS:HA	2.55	0.42
1:A:283:VAL:C	1:A:286:LEU:H	2.23	0.42
2:B:119:ASN:HA	2:B:144:GLY:O	2.18	0.42
2:B:205:ASP:OD1	2:B:205:ASP:N	2.51	0.42
3:D:49:ILE:HG22	3:D:53:MET:HE2	2.00	0.42
5:C:7:ALA:N	5:C:10:ALA:HB3	2.35	0.42
1:A:67:ASN:HD22	1:A:95:ASP:C	2.23	0.42
4:S:70:ILE:HG13	4:S:81:LEU:CA	2.50	0.42
1:A:170:ILE:O	1:A:174:VAL:CG1	2.67	0.42
2:B:119:ASN:ND2	2:B:144:GLY:C	2.74	0.42
4:S:73:ASP:N	4:S:78:THR:O	2.29	0.42
1:A:78:THR:HG23	1:A:85:ASN:ND2	2.35	0.41
2:B:80:ILE:HD11	3:D:23:LEU:CD1	2.50	0.41
1:A:224:VAL:CA	1:A:227:LEU:HG	2.44	0.41
1:A:299:ALA:C	1:A:302:LEU:H	2.22	0.41
3:D:53:MET:HG2	3:D:190:PHE:CE2	2.55	0.41
4:S:178:LEU:HD21	4:S:180:ARG:HH11	1.85	0.41
1:A:139:LEU:HD23	1:A:229:ILE:HD12	2.01	0.41
4:S:3:GLN:O	4:S:25:SER:O	2.39	0.41
1:A:116:PHE:CG	1:A:120:LEU:HD12	2.55	0.41
1:A:222:PHE:O	1:A:226:ILE:CD1	2.68	0.41
3:D:41:ALA:HB2	3:D:250:LEU:HD13	2.02	0.41
1:A:198:CYS:N	1:A:199:MET:HE3	2.35	0.41
2:B:208:ALA:O	2:B:222:PHE:N	2.39	0.41
2:B:313:ASN:HB3	2:B:331:SER:OG	2.20	0.41
3:D:257:ASN:OD1	3:D:258:LYS:N	2.53	0.41
4:S:106:SER:OG	4:S:109:ASP:OD2	2.37	0.41
2:B:39:PRO:HG3	2:B:301:LYS:HZ1	1.85	0.41
2:B:298:ASP:OD2	2:B:301:LYS:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:8:SER:O	5:C:12:ALA:CA	2.57	0.41
1:A:53:THR:O	1:A:57:SER:HB2	2.21	0.41
1:A:171:CYS:C	1:A:174:VAL:HG22	2.41	0.41
2:B:60:ALA:HB3	2:B:73:ALA:CB	2.47	0.41
2:B:314:ARG:HD3	2:B:332:TRP:CZ3	2.56	0.41
1:A:172:ILE:C	1:A:174:VAL:N	2.71	0.41
1:A:307:GLY:O	1:A:310:ASN:CG	2.59	0.41
3:D:189:HIS:HE2	3:D:196:HIS:HB3	1.85	0.41
4:S:4:LEU:HD11	4:S:27:PHE:CE1	2.56	0.41
4:S:244:LYS:HZ3	4:S:244:LYS:HG3	1.58	0.41
1:A:102:LEU:HD23	1:A:102:LEU:H	1.84	0.41
1:A:146:ARG:CG	3:D:354:LEU:HD11	2.50	0.41
1:A:295:LEU:HD12	1:A:295:LEU:N	2.36	0.41
1:A:304:ILE:HG13	1:A:304:ILE:H	1.73	0.41
2:B:22:ARG:NH2	2:B:259:GLN:HG3	2.36	0.41
2:B:197:ARG:NE	2:B:214:ARG:NH2	2.47	0.41
2:B:271:CYS:HB2	2:B:291:ASP:OD1	2.21	0.41
3:D:329:ASP:C	3:D:331:LYS:H	2.24	0.41
5:C:14:LYS:O	5:C:17:GLU:CA	2.68	0.41
2:B:13:GLN:HA	2:B:16:ASN:HB2	2.03	0.41
2:B:15:LYS:O	2:B:19:ARG:N	2.49	0.41
4:S:12:VAL:CG1	4:S:13:GLN:H	2.32	0.41
4:S:138:ILE:HB	4:S:231:GLN:CD	2.39	0.41
1:A:56:TYR:CA	1:A:59:VAL:CG1	2.85	0.40
1:A:146:ARG:HD2	3:D:354:LEU:HD11	2.00	0.40
1:A:256:LEU:HD23	1:A:256:LEU:C	2.41	0.40
1:A:299:ALA:O	1:A:302:LEU:CB	2.69	0.40
2:B:18:ILE:HG22	2:B:259:GLN:HE22	1.85	0.40
2:B:130:GLU:O	4:S:27:PHE:HB2	2.21	0.40
2:B:239:ASN:HB3	2:B:256:ARG:NH2	2.36	0.40
1:A:299:ALA:C	1:A:301:HIS:N	2.71	0.40
2:B:62:HIS:O	2:B:70:LEU:HD12	2.22	0.40
2:B:279:SER:OG	5:C:50:LEU:HD12	2.22	0.40
1:A:53:THR:OG1	1:A:54:ALA:N	2.55	0.40
2:B:28:ALA:C	2:B:30:LEU:N	2.74	0.40
2:B:199:PHE:O	2:B:211:TRP:N	2.22	0.40
2:B:283:ARG:HE	2:B:300:LEU:HB2	1.87	0.40
3:D:291:TYR:CD1	3:D:303:TYR:CD2	3.09	0.40
1:A:85:ASN:O	1:A:88:ILE:HG22	2.21	0.40
1:A:147:TYR:HD1	1:A:151:CYS:HG	1.65	0.40
5:C:9:ILE:C	5:C:12:ALA:HB3	2.41	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:107:ALA:O	1:A:110:LEU:HB3	2.21	0.40
1:A:283:VAL:O	1:A:286:LEU:N	2.53	0.40
2:B:150:ARG:O	2:B:158:VAL:CG2	2.70	0.40
2:B:191:SER:HG	2:B:192:LEU:H	1.69	0.40
2:B:270:ILE:HD12	2:B:270:ILE:HA	1.82	0.40
5:C:7:ALA:O	5:C:10:ALA:HB3	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	284/325 (87%)	245 (86%)	38 (13%)	1 (0%)	30	64
2	B	338/358 (94%)	300 (89%)	38 (11%)	0	100	100
3	D	219/355 (62%)	199 (91%)	20 (9%)	0	100	100
4	S	228/266 (86%)	207 (91%)	21 (9%)	0	100	100
5	C	55/71 (78%)	54 (98%)	1 (2%)	0	100	100
All	All	1124/1375 (82%)	1005 (89%)	118 (10%)	1 (0%)	50	79

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	78	THR

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	247/278 (89%)	244 (99%)	3 (1%)	67	82
2	B	279/298 (94%)	269 (96%)	10 (4%)	30	60
3	D	195/309 (63%)	195 (100%)	0	100	100
4	S	193/215 (90%)	187 (97%)	6 (3%)	35	64
5	C	46/58 (79%)	46 (100%)	0	100	100
All	All	960/1158 (83%)	941 (98%)	19 (2%)	50	73

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	71	MET
1	A	121	CYS
1	A	274	TRP
2	B	3	GLU
2	B	4	LEU
2	B	6	GLN
2	B	79	LEU
2	B	187	VAL
2	B	247	ASP
2	B	256	ARG
2	B	258	ASP
2	B	259	GLN
2	B	294	CYS
4	S	57	THR
4	S	59	TYR
4	S	87	ARG
4	S	88	SER
4	S	234	GLU
4	S	244	LYS

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

Mol	Chain	Res	Type
1	A	67	ASN
1	A	301	HIS
1	A	314	ASN
2	B	9	GLN

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Mol	Chain	Res	Type
2	B	32	GLN
2	B	110	ASN
2	B	259	GLN
2	B	266	HIS
2	B	311	HIS
2	B	340	ASN
3	D	47	ASN
3	D	214	HIS
4	S	35	HIS
4	S	231	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 ⓘ

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
6	A1LXY	A	401	-	31,32,32	2.15	7 (22%)	38,46,46	1.99	12 (31%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	A1LXY	A	401	-	-	5/16/40/40	1/4/4/4

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	401	A1LXY	C10-C09	6.01	1.40	1.34
6	A	401	A1LXY	C24-C11	5.59	1.59	1.52
6	A	401	A1LXY	C04-N03	5.44	1.46	1.34
6	A	401	A1LXY	C14-C15	3.52	1.47	1.41
6	A	401	A1LXY	C19-C13	3.04	1.45	1.39
6	A	401	A1LXY	C05-C04	2.15	1.53	1.50
6	A	401	A1LXY	C26-C25	2.10	1.42	1.38

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	401	A1LXY	C24-C11-C20	-5.91	103.30	109.69
6	A	401	A1LXY	C23-C24-C11	4.05	115.40	111.98
6	A	401	A1LXY	O12-C13-C19	3.41	121.82	116.61
6	A	401	A1LXY	C08-C09-C10	3.39	124.39	119.94
6	A	401	A1LXY	O12-C11-C10	-3.27	104.98	109.83
6	A	401	A1LXY	C21-C20-C11	2.93	114.45	111.98
6	A	401	A1LXY	C05-C04-N03	2.88	122.37	118.72
6	A	401	A1LXY	C25-C08-C09	2.55	124.27	120.98
6	A	401	A1LXY	C17-C15-C14	2.33	123.17	120.17
6	A	401	A1LXY	O27-C04-N03	-2.32	118.50	122.34
6	A	401	A1LXY	C14-C09-C08	-2.22	118.80	122.97
6	A	401	A1LXY	C25-C08-C07	-2.18	115.48	118.59

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	401	A1LXY	C01-C02-N03-C04
6	A	401	A1LXY	C01-C02-N03-C28
6	A	401	A1LXY	C07-C08-C09-C10
6	A	401	A1LXY	C25-C08-C09-C10
6	A	401	A1LXY	C25-C08-C09-C14
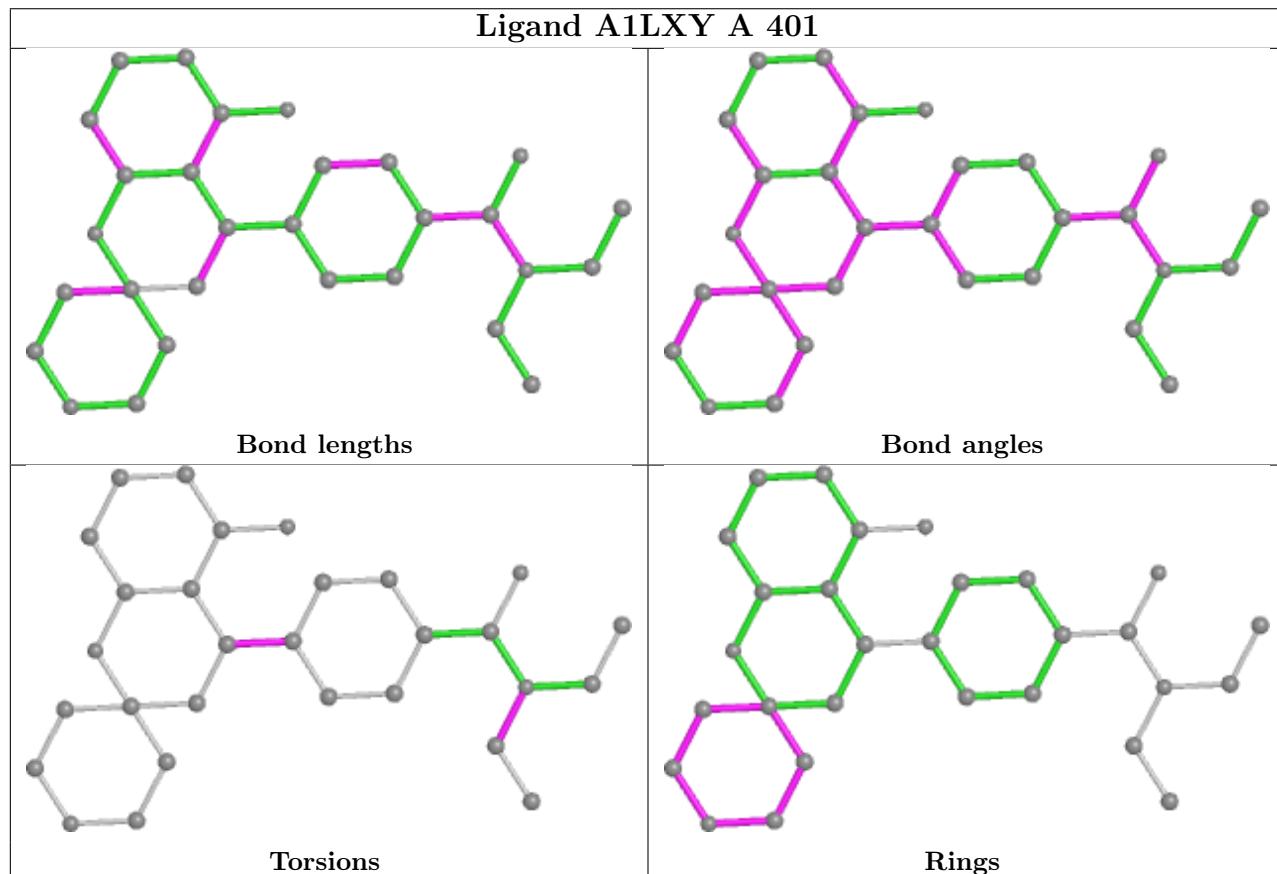
All (1) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	401	A1LXY	C11-C20-C21-C23-C24-N22

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	401	A1LXY	2	0

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

Ligand A1LXY A 401

Bond lengths   Bond angles

Torsions   Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.
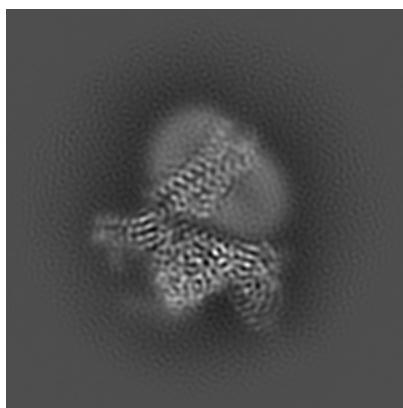
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-38909. These allow visual inspection of the internal detail of the map and identification of artifacts.
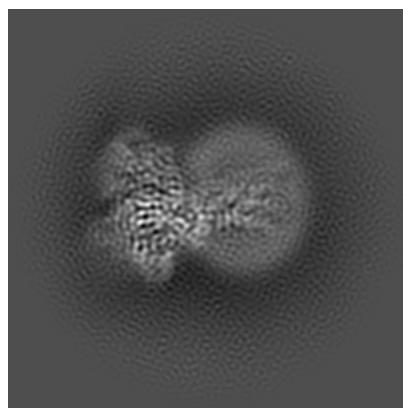
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ
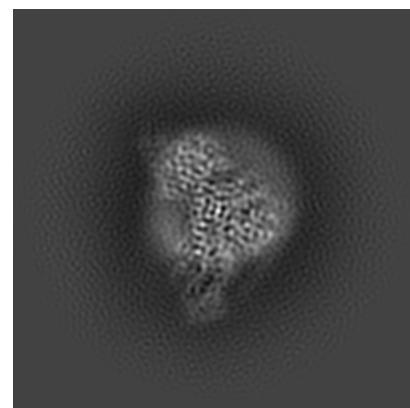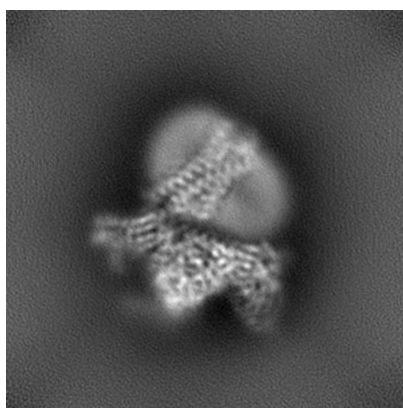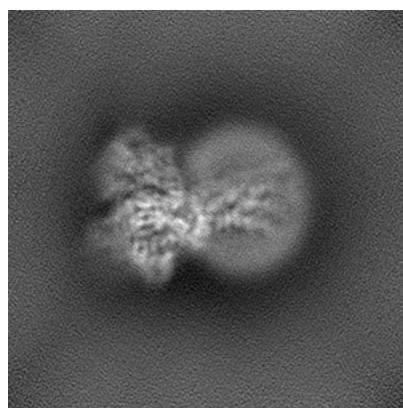
6.1.1 Primary map

X Y Z
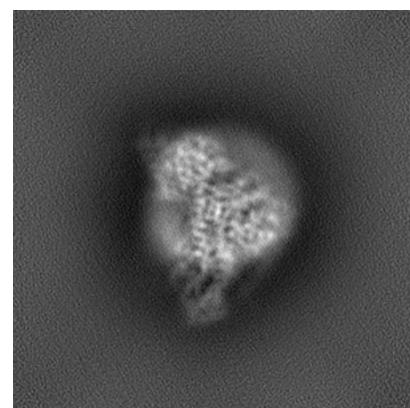
6.1.2 Raw map

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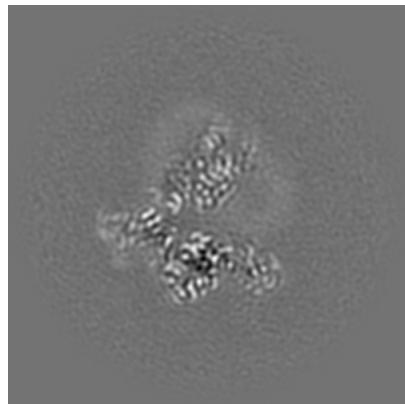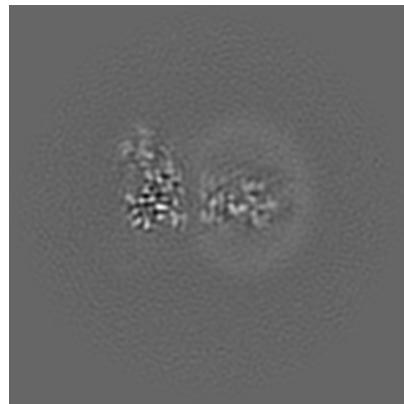
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
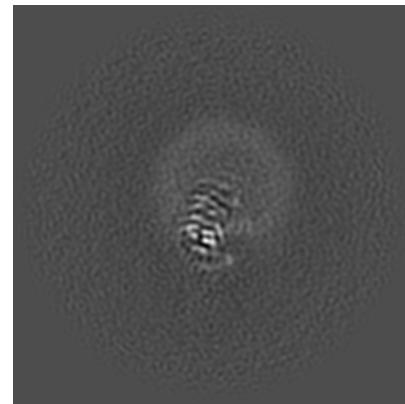
6.2.1 Primary map
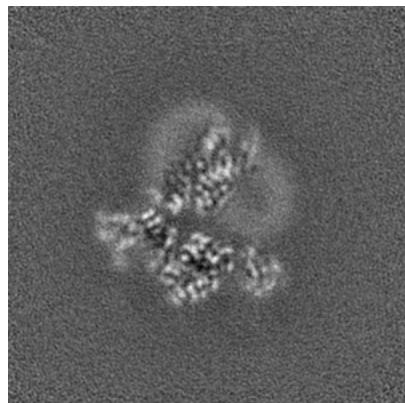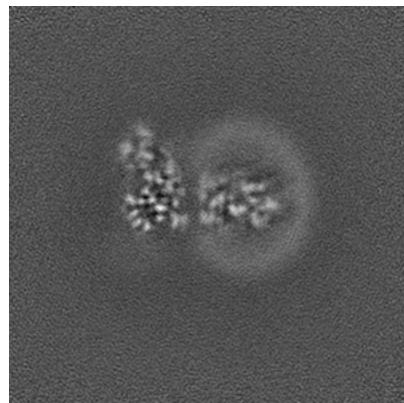
| X Index: 128 | Y Index: 128 | Z Index: 128 |
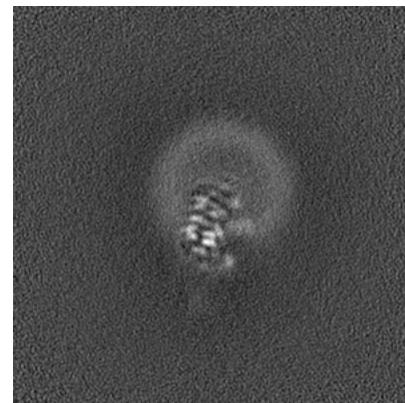
6.2.2 Raw map
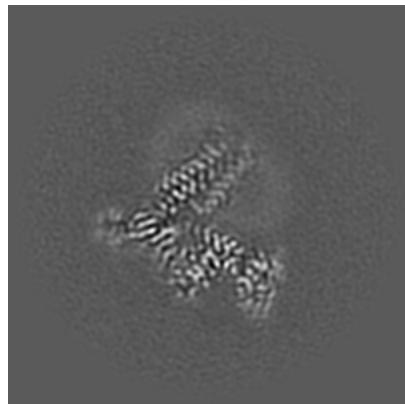
| X Index: 128 | Y Index: 128 | Z Index: 128 |
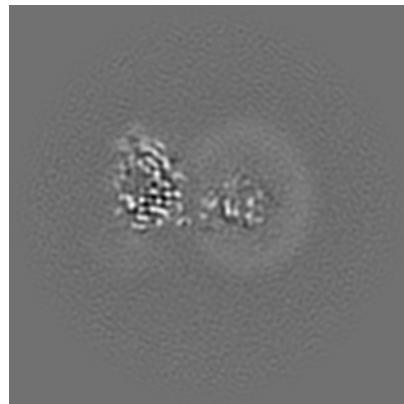
The images above show central slices of the map in three orthogonal directions.

6.3   Largest variance slices ⓘ
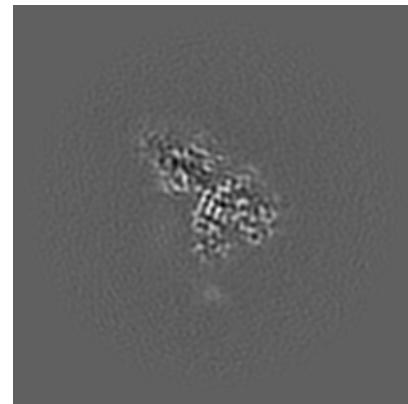
6.3.1   Primary map
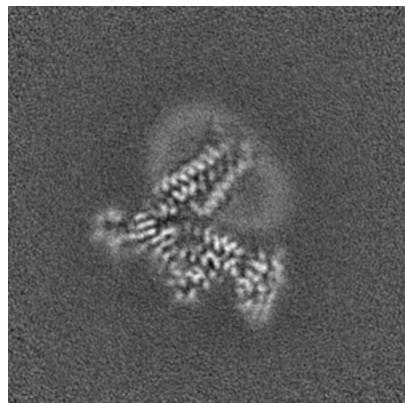
X Index: 120   Y Index: 122   Z Index: 95
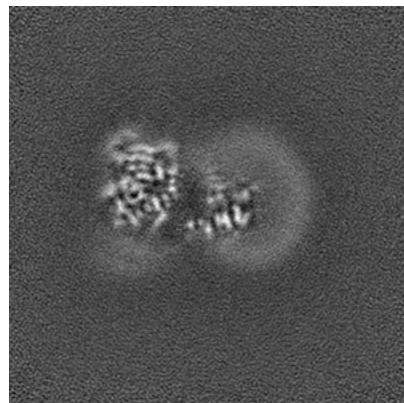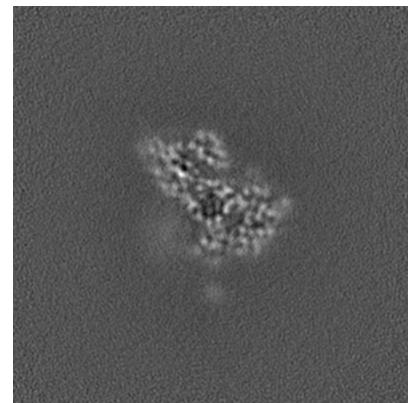
6.3.2   Raw map

X Index: 120   Y Index: 112   Z Index: 88
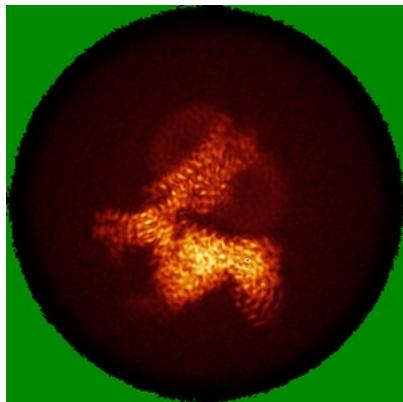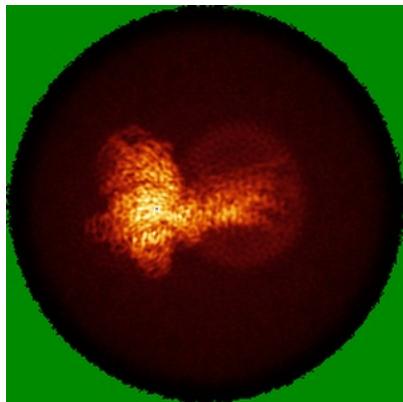
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)
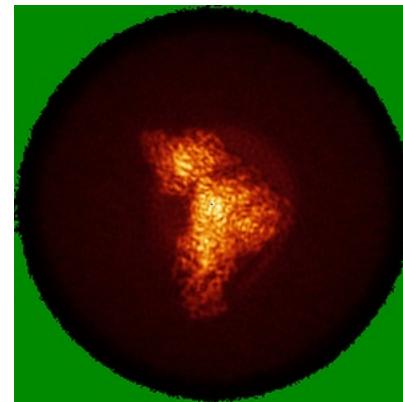
6.4.1 Primary map
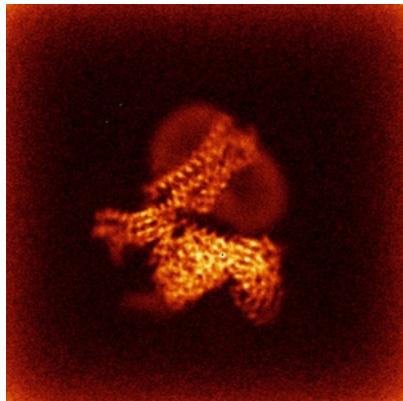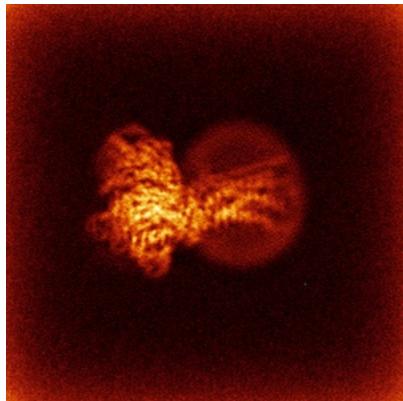
| X | Y | Z |
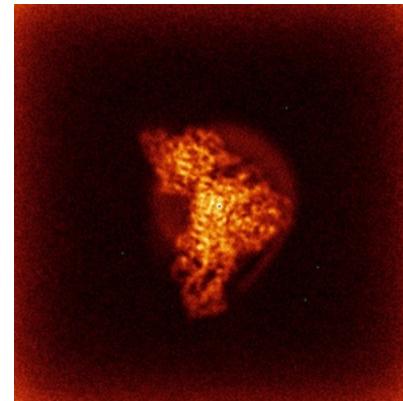
6.4.2 Raw map

| X | Y | Z |

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

6.5 Orthogonal surface views ⓘ
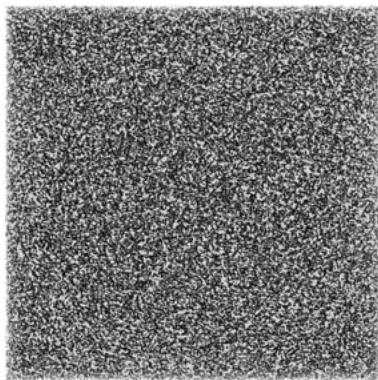
6.5.1 Primary map

X Y Z
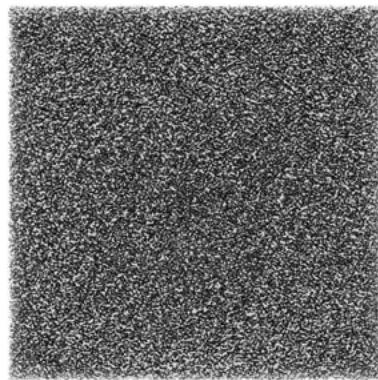
The images above show the 3D surface view of the map at the recommended contour level 0.013. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.
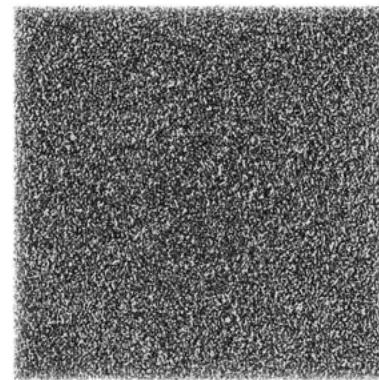
6.5.2 Raw map

X Y Z

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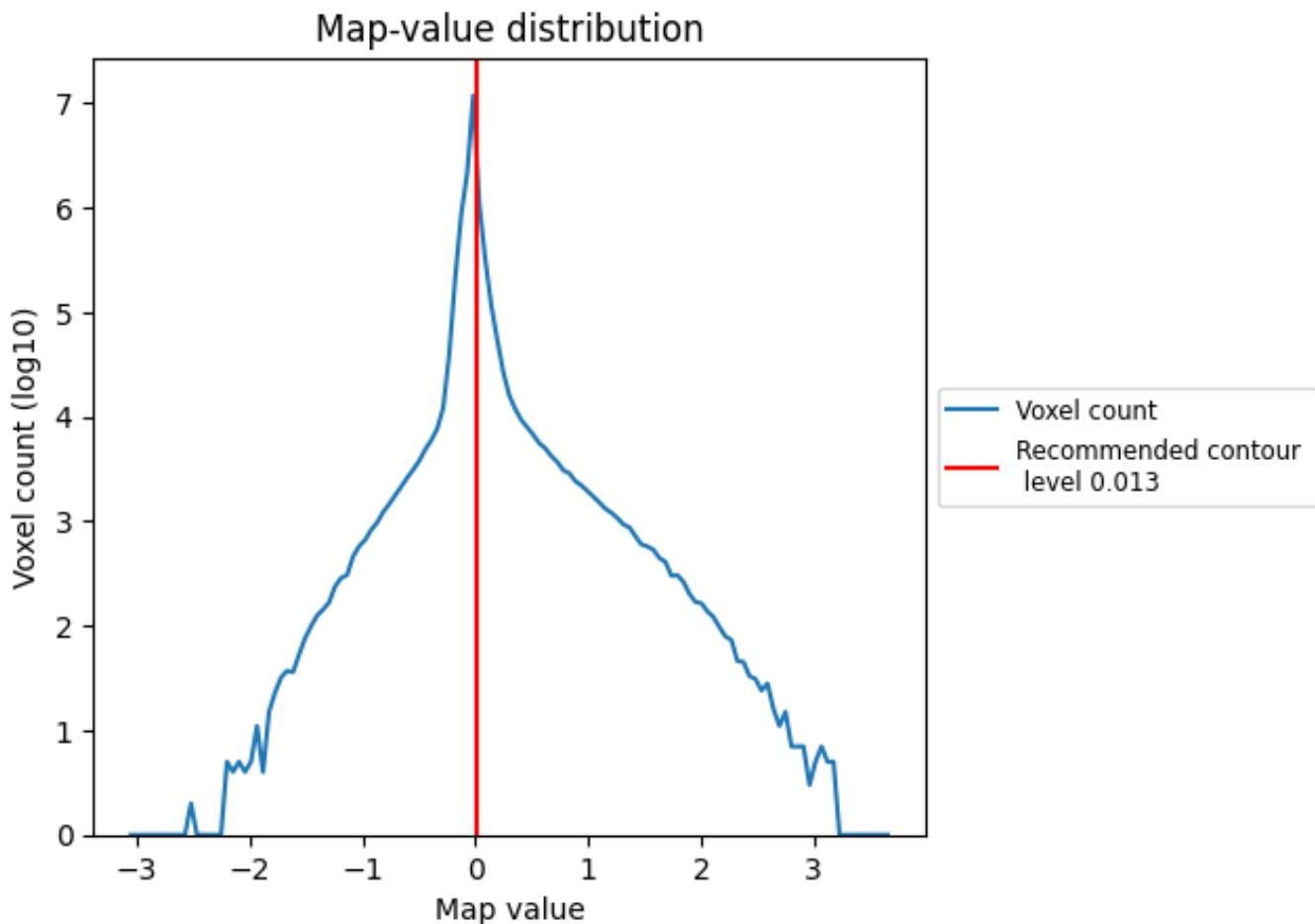
6.6 Mask visualisation ⓘ

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

7 Map analysis ⓘ
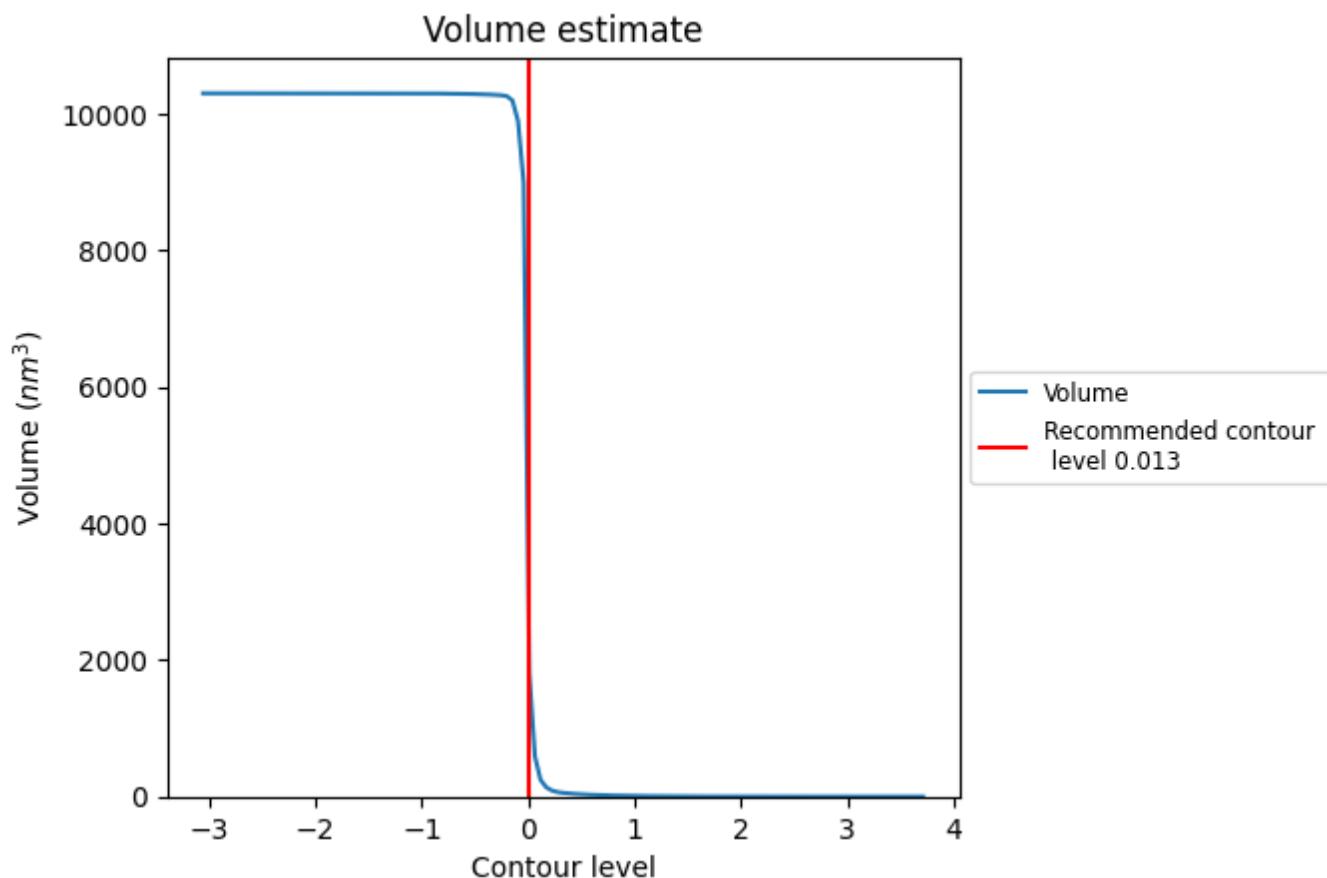
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ

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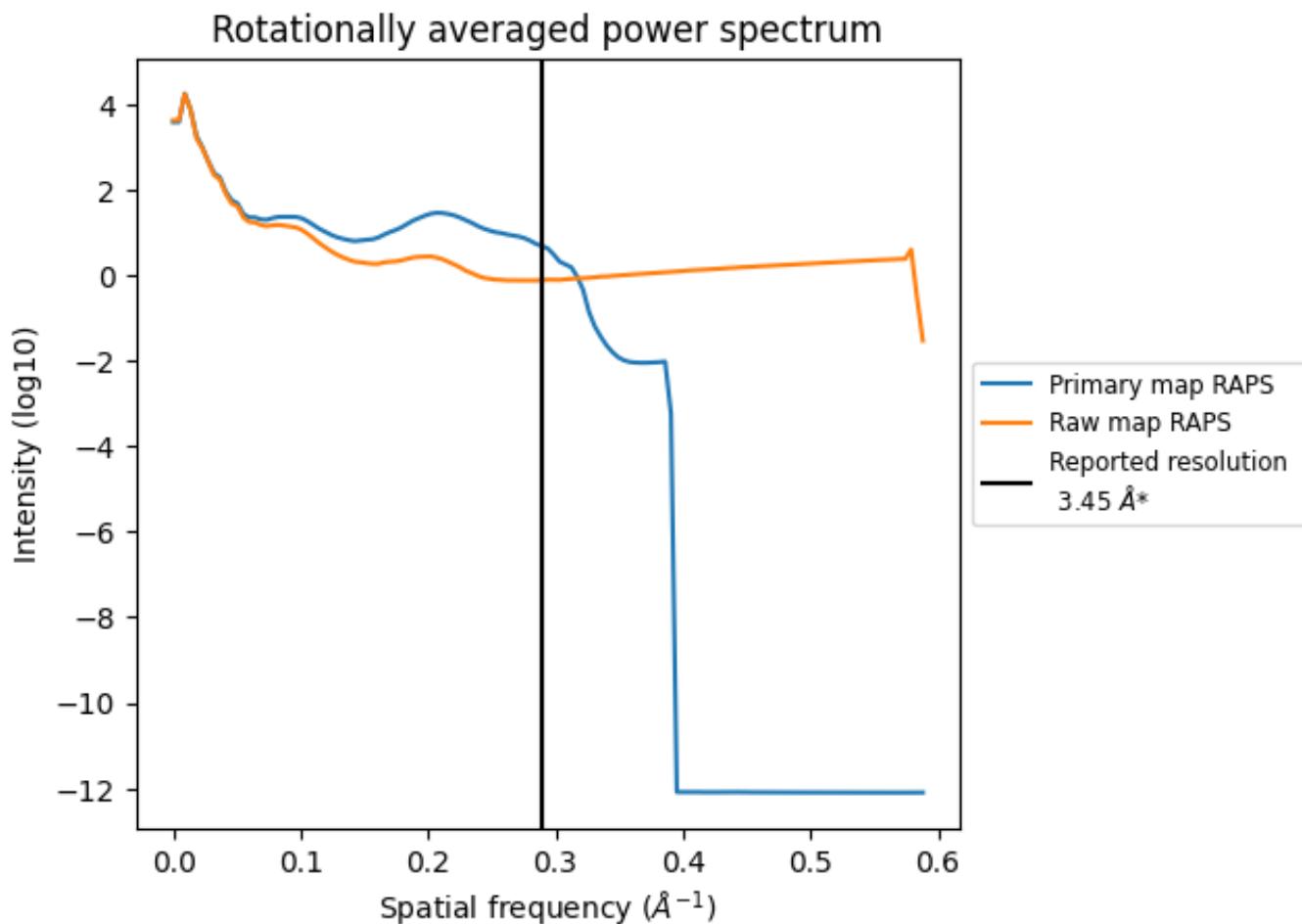
7.2 Volume estimate ⓘ

The volume at the recommended contour level is 1715 nm^3; this corresponds to an approximate mass of 1549 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)
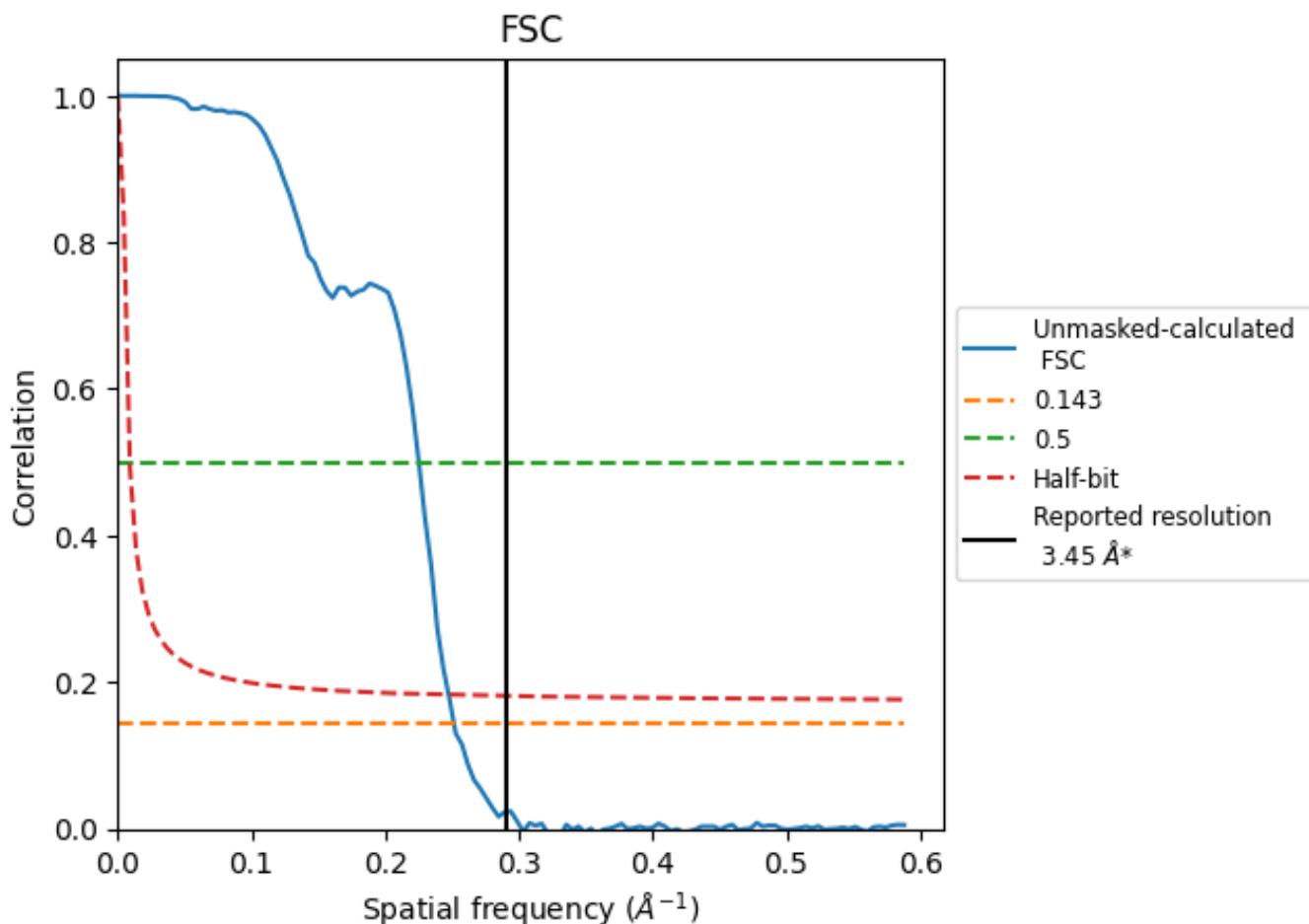
*Reported resolution corresponds to spatial frequency of 0.290 Å^{-1}

8 Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC ⓘ

*Reported resolution corresponds to spatial frequency of 0.290 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.45	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.98	4.44	4.04

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.98 differs from the reported value 3.45 by more than 10 %

9 Map-model fit (i)
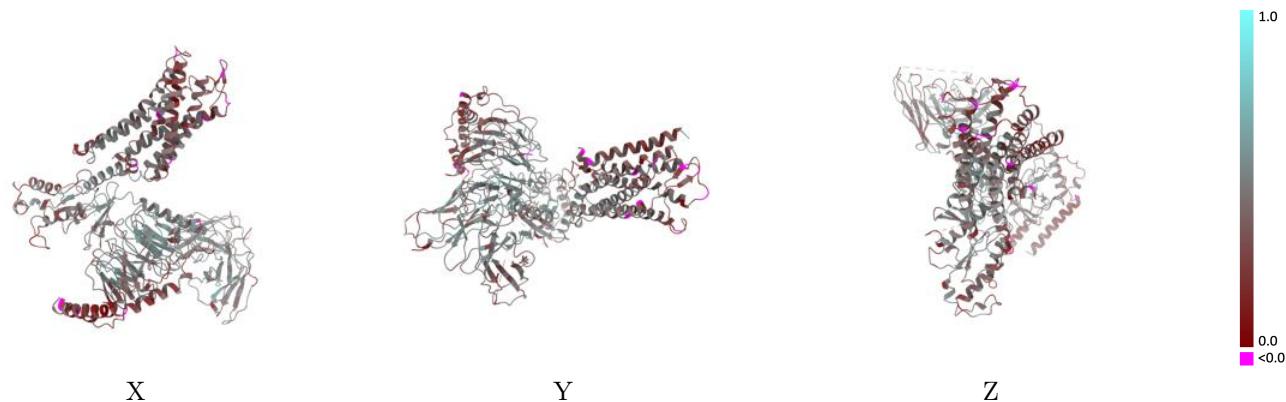
This section contains information regarding the fit between EMDB map EMD-38909 and PDB model 8Y45. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay (i)

| X | Y | Z |
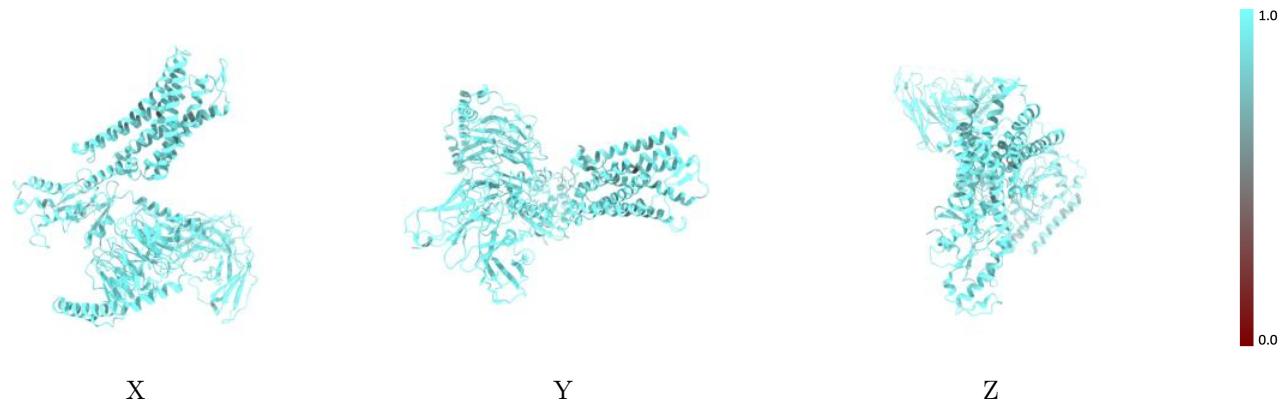
The images above show the 3D surface view of the map at the recommended contour level 0.013 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ

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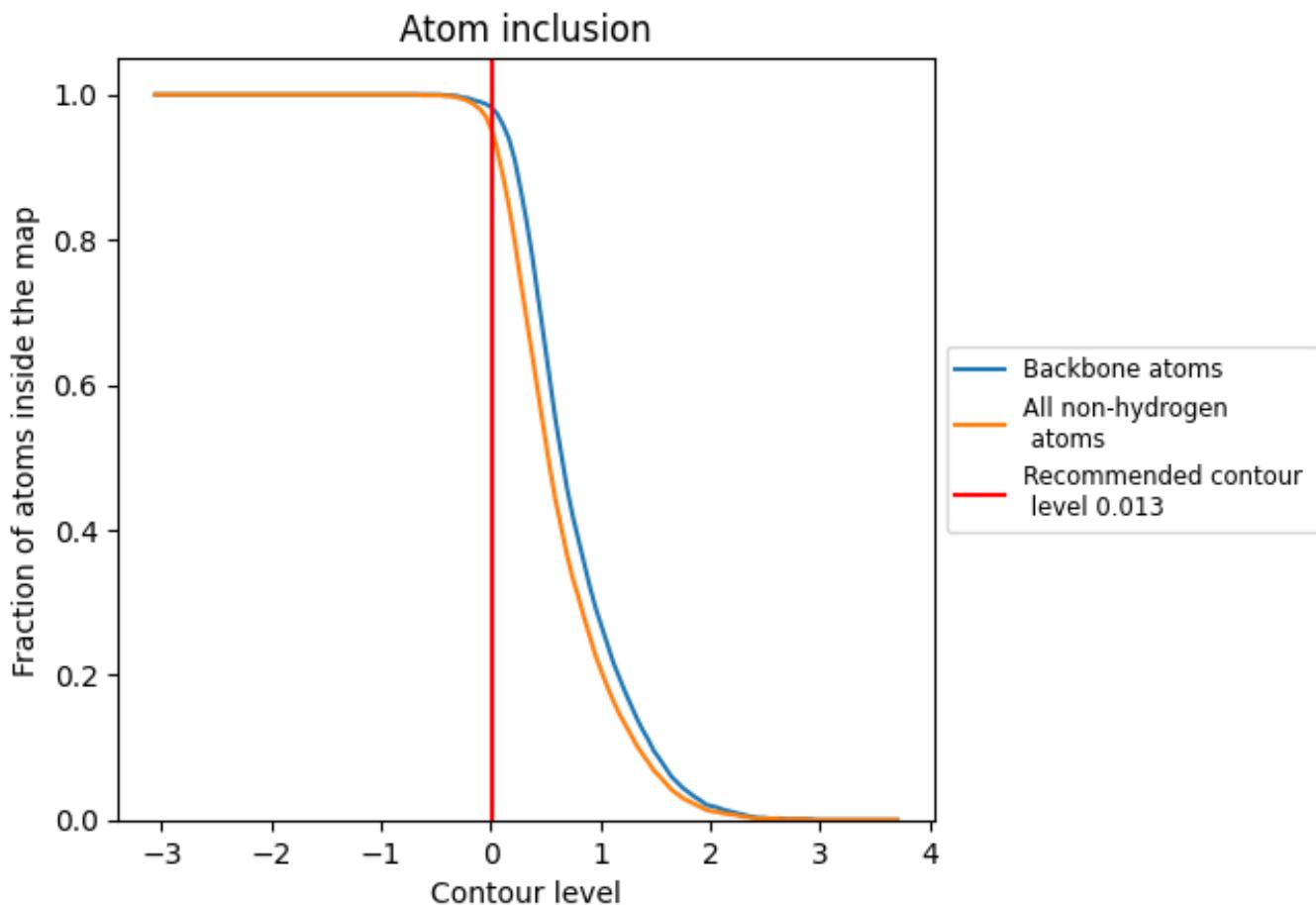
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3   Atom inclusion mapped to coordinate model ⓘ

X   Y   Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.013).

9.4　Atom inclusion　ⓘ

At the recommended contour level, 98% of all backbone atoms, 95% 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 (0.013) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9500	0.4070
A	0.9370	0.3520
B	0.9600	0.4430
C	0.9120	0.2650
D	0.9490	0.4180
S	0.9640	0.4480

1.0

0.0
<0.0