



Full wwPDB EM Validation Report ⓘ

Mar 19, 2026 – 10:28 PM UTC

PDB ID : 7XO8 / pdb_00007xo8
EMDB ID : EMD-33340
Title : SARS-CoV-2 Omicron BA.2 Variant Spike Trimer with three human ACE2 Bound
Authors : Xu, Y.; Wu, C.; Liu, H.; Yin, W.; Xu, H.E.
Deposited on : 2022-05-01
Resolution : 3.48 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

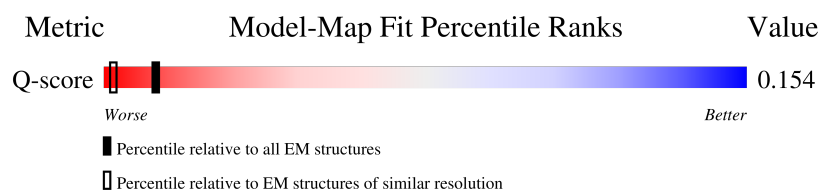
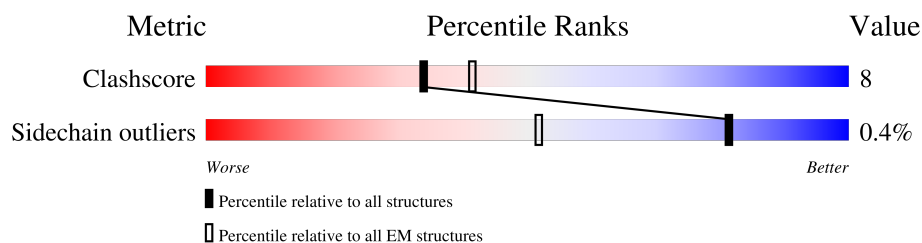
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

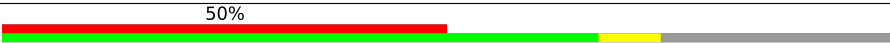
The reported resolution of this entry is 3.48 Å.

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



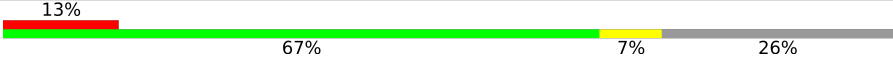
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	13672 (2.98 - 3.98)

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

Mol	Chain	Length	Quality of chain
1	A	1270	
1	B	1270	
1	C	1270	
2	D	805	
2	E	805	

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Mol	Chain	Length	Quality of chain
2	F	805	 A horizontal bar chart showing the quality of chain F. The bar is divided into four segments: a red segment at the beginning labeled '13%', a long green segment labeled '67%', a short yellow segment labeled '7%', and a grey segment at the end labeled '26%'.

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 39126 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 Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1026	Total 8001	C 5124	N 1331	O 1511	S 35	0	0
1	B	1026	Total 8001	C 5124	N 1331	O 1511	S 35	0	0
1	C	1026	Total 8001	C 5124	N 1331	O 1511	S 35	0	0

There are 120 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	22	ILE	THR	variant	UNP P0DTC2
A	?	-	LEU	deletion	UNP P0DTC2
A	?	-	PRO	deletion	UNP P0DTC2
A	?	-	PRO	deletion	UNP P0DTC2
A	27	SER	ALA	variant	UNP P0DTC2
A	142	ASP	GLY	variant	UNP P0DTC2
A	213	GLY	VAL	variant	UNP P0DTC2
A	339	ASP	GLY	variant	UNP P0DTC2
A	371	PHE	SER	variant	UNP P0DTC2
A	373	PRO	SER	variant	UNP P0DTC2
A	375	PHE	SER	variant	UNP P0DTC2
A	376	ALA	THR	variant	UNP P0DTC2
A	405	ASN	ASP	variant	UNP P0DTC2
A	408	SER	ARG	variant	UNP P0DTC2
A	417	ASN	LYS	variant	UNP P0DTC2
A	440	LYS	ASN	variant	UNP P0DTC2
A	477	ASN	SER	variant	UNP P0DTC2
A	478	LYS	THR	variant	UNP P0DTC2
A	484	ALA	GLU	variant	UNP P0DTC2
A	493	ARG	GLN	variant	UNP P0DTC2
A	498	ARG	GLN	variant	UNP P0DTC2
A	501	TYR	ASN	variant	UNP P0DTC2
A	505	HIS	TYR	variant	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	655	TYR	HIS	variant	UNP P0DTC2
A	679	LYS	ASN	variant	UNP P0DTC2
A	681	HIS	PRO	variant	UNP P0DTC2
A	682	GLY	ARG	engineered mutation	UNP P0DTC2
A	683	SER	ARG	engineered mutation	UNP P0DTC2
A	685	SER	ARG	engineered mutation	UNP P0DTC2
A	764	LYS	ASN	variant	UNP P0DTC2
A	796	TYR	ASP	variant	UNP P0DTC2
A	817	PRO	PHE	engineered mutation	UNP P0DTC2
A	892	PRO	ALA	engineered mutation	UNP P0DTC2
A	899	PRO	ALA	engineered mutation	UNP P0DTC2
A	942	PRO	ALA	engineered mutation	UNP P0DTC2
A	954	HIS	GLN	variant	UNP P0DTC2
A	969	LYS	ASN	variant	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	22	ILE	THR	variant	UNP P0DTC2
B	?	-	LEU	deletion	UNP P0DTC2
B	?	-	PRO	deletion	UNP P0DTC2
B	?	-	PRO	deletion	UNP P0DTC2
B	27	SER	ALA	variant	UNP P0DTC2
B	142	ASP	GLY	variant	UNP P0DTC2
B	213	GLY	VAL	variant	UNP P0DTC2
B	339	ASP	GLY	variant	UNP P0DTC2
B	371	PHE	SER	variant	UNP P0DTC2
B	373	PRO	SER	variant	UNP P0DTC2
B	375	PHE	SER	variant	UNP P0DTC2
B	376	ALA	THR	variant	UNP P0DTC2
B	405	ASN	ASP	variant	UNP P0DTC2
B	408	SER	ARG	variant	UNP P0DTC2
B	417	ASN	LYS	variant	UNP P0DTC2
B	440	LYS	ASN	variant	UNP P0DTC2
B	477	ASN	SER	variant	UNP P0DTC2
B	478	LYS	THR	variant	UNP P0DTC2
B	484	ALA	GLU	variant	UNP P0DTC2
B	493	ARG	GLN	variant	UNP P0DTC2
B	498	ARG	GLN	variant	UNP P0DTC2
B	501	TYR	ASN	variant	UNP P0DTC2
B	505	HIS	TYR	variant	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2
B	655	TYR	HIS	variant	UNP P0DTC2
B	679	LYS	ASN	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	681	HIS	PRO	variant	UNP P0DTC2
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2
B	764	LYS	ASN	variant	UNP P0DTC2
B	796	TYR	ASP	variant	UNP P0DTC2
B	817	PRO	PHE	engineered mutation	UNP P0DTC2
B	892	PRO	ALA	engineered mutation	UNP P0DTC2
B	899	PRO	ALA	engineered mutation	UNP P0DTC2
B	942	PRO	ALA	engineered mutation	UNP P0DTC2
B	954	HIS	GLN	variant	UNP P0DTC2
B	969	LYS	ASN	variant	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	22	ILE	THR	variant	UNP P0DTC2
C	?	-	LEU	deletion	UNP P0DTC2
C	?	-	PRO	deletion	UNP P0DTC2
C	?	-	PRO	deletion	UNP P0DTC2
C	27	SER	ALA	variant	UNP P0DTC2
C	142	ASP	GLY	variant	UNP P0DTC2
C	213	GLY	VAL	variant	UNP P0DTC2
C	339	ASP	GLY	variant	UNP P0DTC2
C	371	PHE	SER	variant	UNP P0DTC2
C	373	PRO	SER	variant	UNP P0DTC2
C	375	PHE	SER	variant	UNP P0DTC2
C	376	ALA	THR	variant	UNP P0DTC2
C	405	ASN	ASP	variant	UNP P0DTC2
C	408	SER	ARG	variant	UNP P0DTC2
C	417	ASN	LYS	variant	UNP P0DTC2
C	440	LYS	ASN	variant	UNP P0DTC2
C	477	ASN	SER	variant	UNP P0DTC2
C	478	LYS	THR	variant	UNP P0DTC2
C	484	ALA	GLU	variant	UNP P0DTC2
C	493	ARG	GLN	variant	UNP P0DTC2
C	498	ARG	GLN	variant	UNP P0DTC2
C	501	TYR	ASN	variant	UNP P0DTC2
C	505	HIS	TYR	variant	UNP P0DTC2
C	614	GLY	ASP	variant	UNP P0DTC2
C	655	TYR	HIS	variant	UNP P0DTC2
C	679	LYS	ASN	variant	UNP P0DTC2
C	681	HIS	PRO	variant	UNP P0DTC2
C	682	GLY	ARG	engineered mutation	UNP P0DTC2

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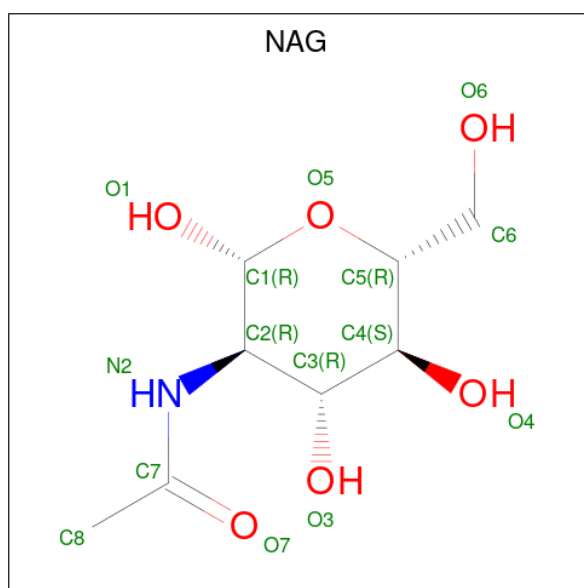
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Chain	Residue	Modelled	Actual	Comment	Reference
C	683	SER	ARG	engineered mutation	UNP P0DTC2
C	685	SER	ARG	engineered mutation	UNP P0DTC2
C	764	LYS	ASN	variant	UNP P0DTC2
C	796	TYR	ASP	variant	UNP P0DTC2
C	817	PRO	PHE	engineered mutation	UNP P0DTC2
C	892	PRO	ALA	engineered mutation	UNP P0DTC2
C	899	PRO	ALA	engineered mutation	UNP P0DTC2
C	942	PRO	ALA	engineered mutation	UNP P0DTC2
C	954	HIS	GLN	variant	UNP P0DTC2
C	969	LYS	ASN	variant	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2

- Molecule 2 is a protein called Angiotensin-converting enzyme 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	595	Total	C	N	O	S	0	0
			4857	3108	804	916	29		
2	F	595	Total	C	N	O	S	0	0
			4857	3108	804	916	29		
2	E	595	Total	C	N	O	S	0	0
			4857	3108	804	916	29		

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				AltConf
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	A	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	

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Mol	Chain	Residues	Atoms				AltConf
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	
3	D	1	Total	C	N	O	0
			14	8	1	5	
3	F	1	Total	C	N	O	0
			14	8	1	5	
3	F	1	Total	C	N	O	0
			14	8	1	5	
3	E	1	Total	C	N	O	0
			14	8	1	5	
3	E	1	Total	C	N	O	0
			14	8	1	5	

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		AltConf
4	D	1	Total	Cl	0
			1	1	
4	F	1	Total	Cl	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
4	E	1	Total	Cl	0
			1	1	

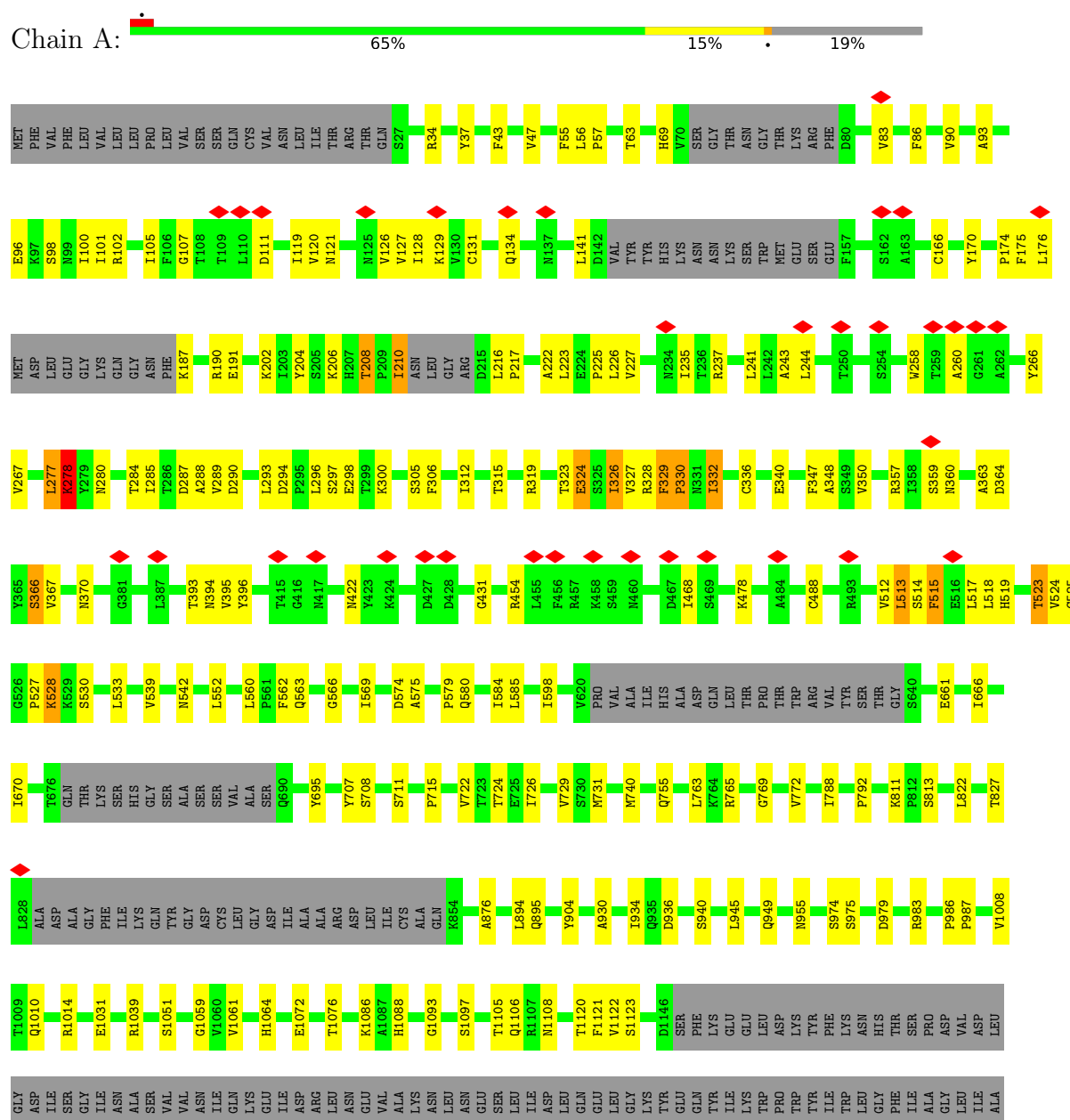
- Molecule 5 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
5	D	1	Total	Zn	0
			1	1	
5	F	1	Total	Zn	0
			1	1	
5	E	1	Total	Zn	0
			1	1	

3 Residue-property plots

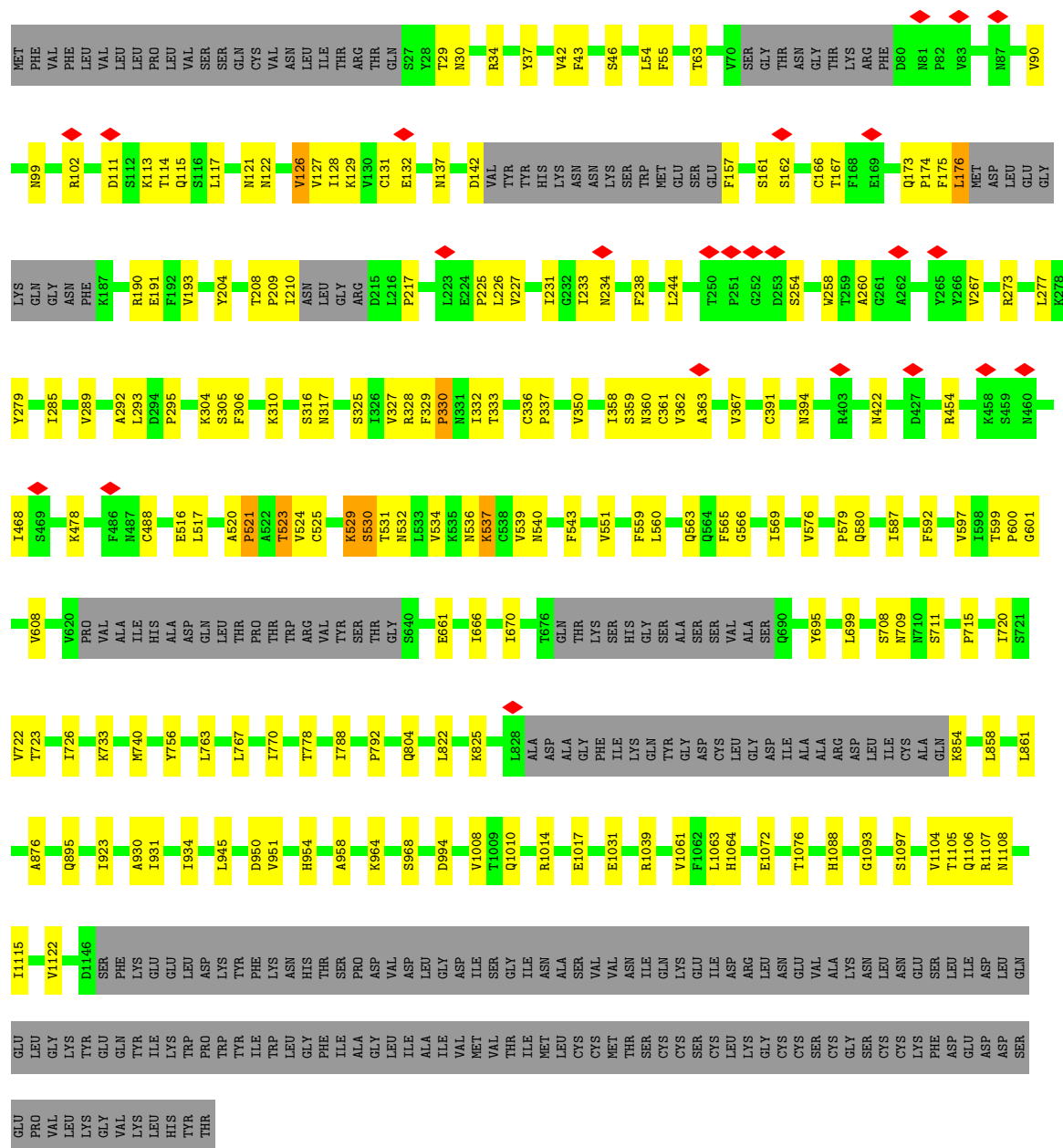
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

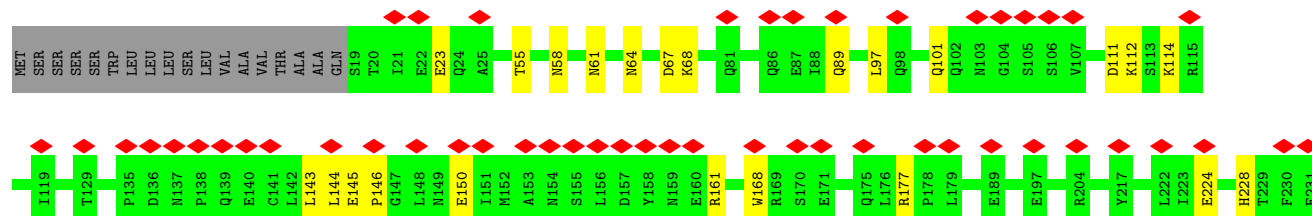


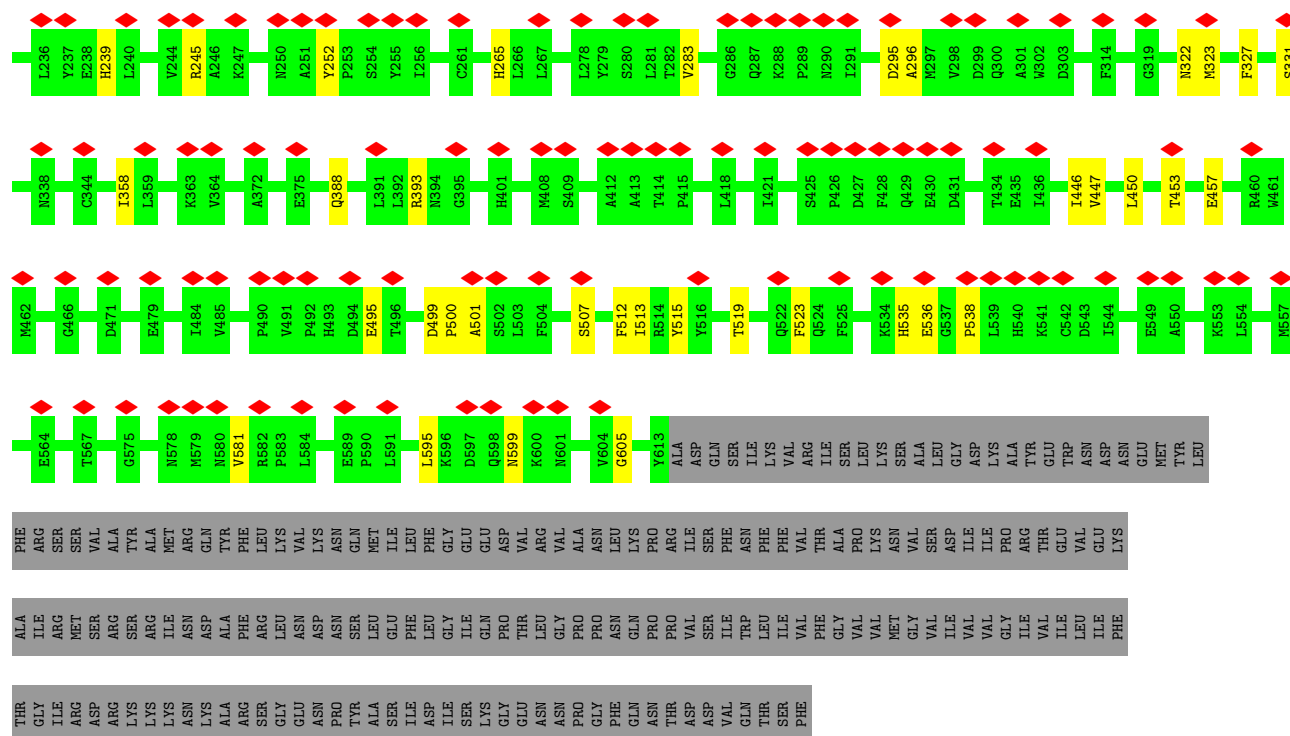
Chain B: 8% 66% 14% 19%



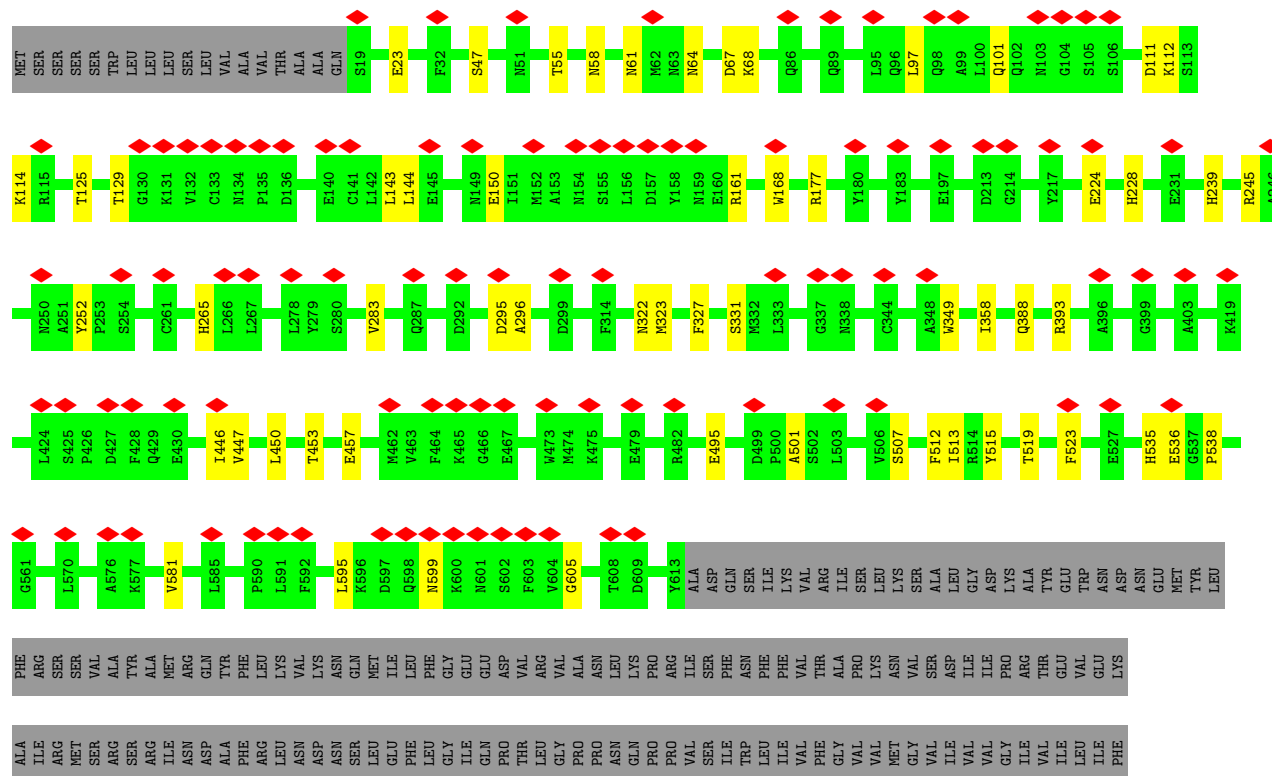


• Molecule 2: Angiotensin-converting enzyme 2





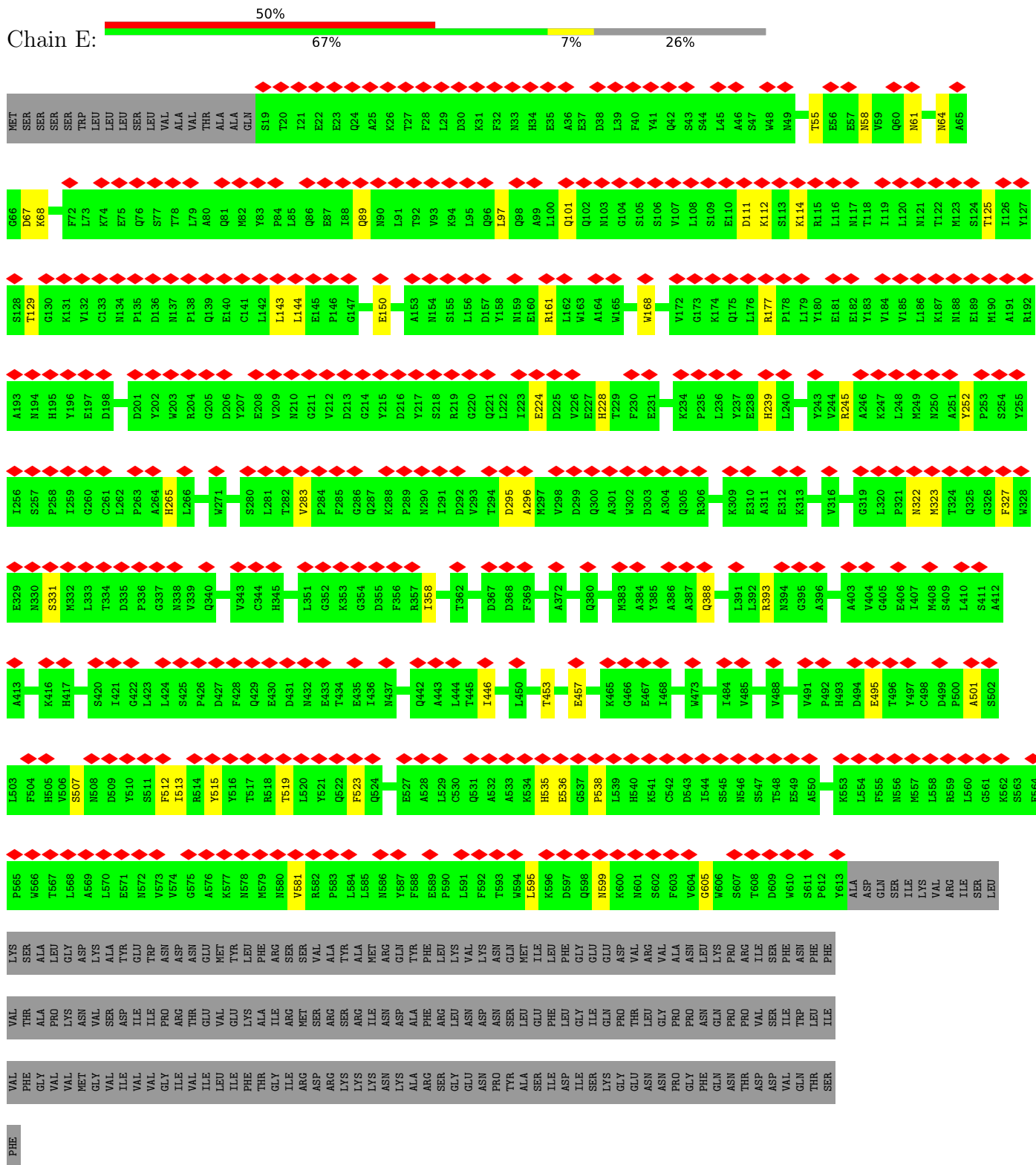
• Molecule 2: Angiotensin-converting enzyme 2



THR
GLY
ILE
ARG
ASP
ARG
LYS
LYS
LYS
ASN
ALA
ARG
SER
GLY
GLU
ASN
PRO
TYR
ALA
SER
ILE
ASP
ILE
SER
LYS
GLY
GLU
ASN
ASN
PRO
GLY
PHE
GLN
ASN
THR
ASP
VAL
GLN
THR
SER
PHE

● Molecule 2: Angiotensin-converting enzyme 2

Chain E:



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	84219	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.211	Depositor
Minimum map value	-0.041	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.01	Depositor
Map size ($\text{\AA}$)	395.52, 395.52, 395.52	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.824, 0.824, 0.824	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, NAG, CL

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	0.28	0/8192	0.53	8/11154 (0.1%)
1	B	0.24	1/8192 (0.0%)	0.45	5/11154 (0.0%)
1	C	0.30	0/8192	0.58	13/11154 (0.1%)
2	D	0.11	0/4994	0.24	0/6785
2	E	0.11	0/4994	0.24	0/6785
2	F	0.11	0/4994	0.24	0/6785
All	All	0.23	1/39558 (0.0%)	0.44	26/53817 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	337	PRO	C-N	-5.44	1.26	1.34

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	530	SER	N-CA-C	10.28	122.42	108.23
1	C	330	PRO	N-CA-C	7.67	122.30	111.33
1	A	340	GLU	N-CA-C	-7.20	103.95	114.39
1	C	329	PHE	CA-C-O	-7.08	111.98	120.41
1	C	521	PRO	CB-CA-C	-6.78	100.37	111.56
1	A	523	THR	N-CA-C	-6.76	105.03	113.28
1	B	330	PRO	N-CA-C	6.68	121.16	110.40
1	C	523	THR	CB-CA-C	6.28	122.92	110.42
1	A	330	PRO	N-CA-C	6.23	120.76	111.41
1	C	529	LYS	CA-C-O	-6.06	114.22	120.89
1	A	278	LYS	CB-CA-C	-6.03	101.14	110.78
1	C	209	PRO	CB-CA-C	-5.88	102.33	111.22
1	C	126	VAL	CA-C-O	-5.70	115.45	121.44
1	C	175	PHE	N-CA-C	-5.68	104.52	112.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	528	LYS	CB-CA-C	5.67	120.31	110.72
1	C	337	PRO	N-CA-CB	-5.64	98.61	102.73
1	A	328	ARG	CB-CA-C	5.62	118.80	109.53
1	C	536	ASN	CB-CA-C	5.49	120.12	112.11
1	B	337	PRO	N-CA-C	-5.42	105.16	112.48
1	B	338	PHE	CA-C-N	-5.38	111.74	120.72
1	B	338	PHE	C-N-CA	-5.38	111.74	120.72
1	A	366	SER	N-CA-C	-5.34	99.44	110.80
1	C	329	PHE	CA-CB-CG	5.24	119.04	113.80
1	A	329	PHE	CA-C-O	-5.23	115.69	120.50
1	B	338	PHE	O-C-N	5.12	128.21	122.22
1	C	293	LEU	N-CA-C	-5.08	103.78	111.56

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8001	0	7800	188	0
1	B	8001	0	7795	190	0
1	C	8001	0	7802	196	0
2	D	4857	0	4638	41	0
2	E	4857	0	4638	38	0
2	F	4857	0	4638	35	0
3	A	154	0	143	0	0
3	B	154	0	143	3	0
3	C	154	0	143	0	0
3	D	28	0	26	6	0
3	E	28	0	26	6	0
3	F	28	0	26	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	F	1	0	0	0	0
5	D	1	0	0	0	0
5	E	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	F	1	0	0	0	0
All	All	39126	0	37818	628	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 8.

All (628) 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:C:176:LEU:HD13	1:C:176:LEU:O	1.18	1.33
1:A:518:LEU:HD12	1:A:519:HIS:N	1.43	1.31
1:B:533:LEU:HD12	1:B:533:LEU:O	1.27	1.31
1:C:517:LEU:HD12	1:C:517:LEU:O	1.19	1.25
1:A:518:LEU:CD1	1:A:519:HIS:H	1.51	1.24
1:C:173:GLN:CG	1:C:174:PRO:HD2	1.72	1.17
1:A:393:THR:HG21	1:A:518:LEU:N	1.66	1.10
1:C:244:LEU:HD13	1:C:258:TRP:HB3	1.33	1.09
1:C:362:VAL:O	1:C:524:VAL:HG13	1.49	1.09
1:C:173:GLN:HG2	1:C:174:PRO:HD2	1.30	1.09
1:A:393:THR:HG21	1:A:518:LEU:H	1.06	1.08
1:C:363:ALA:HB2	1:C:524:VAL:CG1	1.83	1.07
1:C:176:LEU:HD22	1:C:190:ARG:HH22	1.13	1.06
1:C:332:ILE:HD13	1:C:529:LYS:HE2	1.39	1.04
1:C:363:ALA:HB2	1:C:524:VAL:HG12	1.38	1.04
1:C:360:ASN:OD1	1:C:523:THR:OG1	1.75	1.03
1:A:43:PHE:HD1	1:B:563:GLN:OE1	1.41	1.03
1:C:517:LEU:O	1:C:517:LEU:CD1	2.07	1.02
1:A:357:ARG:NH2	1:A:359:SER:CB	2.25	1.00
1:B:244:LEU:HD13	1:B:258:TRP:HB3	1.40	1.00
1:B:644:GLN:NE2	3:B:1304:NAG:H82	1.76	1.00
1:A:360:ASN:HA	1:A:523:THR:OG1	1.62	1.00
1:C:277:LEU:HD23	1:C:285:ILE:HD13	1.43	0.99
1:C:176:LEU:O	1:C:176:LEU:CD1	2.10	0.99
1:A:244:LEU:HD13	1:A:258:TRP:HB3	1.40	0.98
1:C:173:GLN:HG2	1:C:174:PRO:CD	1.94	0.98
2:D:89:GLN:NE2	3:D:904:NAG:H81	1.78	0.98
1:C:176:LEU:HD22	1:C:190:ARG:NH2	1.80	0.97
1:B:336:CYS:HB3	1:B:338:PHE:CD1	1.98	0.96
2:E:89:GLN:NE2	3:E:904:NAG:H81	1.79	0.96
1:A:43:PHE:CD1	1:B:563:GLN:OE1	2.19	0.96
1:C:115:GLN:NE2	1:C:132:GLU:CD	2.24	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:533:LEU:O	1:B:533:LEU:CD1	2.14	0.95
1:A:393:THR:CG2	1:A:518:LEU:H	1.78	0.94
1:A:518:LEU:HD12	1:A:519:HIS:H	1.04	0.94
1:C:115:GLN:HE22	1:C:132:GLU:CD	1.77	0.93
1:C:173:GLN:HG3	1:C:174:PRO:HD2	1.51	0.92
1:A:357:ARG:NH2	1:A:359:SER:HB3	1.85	0.91
1:B:323:THR:HG23	1:B:324:GLU:N	1.83	0.90
1:A:518:LEU:CD1	1:A:519:HIS:N	2.20	0.90
1:C:115:GLN:HB3	1:C:233:ILE:CD1	2.02	0.90
2:D:89:GLN:NE2	3:D:904:NAG:C8	2.36	0.89
1:C:394:ASN:HB2	1:C:516:GLU:HB2	1.55	0.89
1:B:170:TYR:HE1	1:C:360:ASN:HD22	1.20	0.88
2:E:89:GLN:NE2	3:E:904:NAG:C8	2.36	0.88
1:B:170:TYR:CE1	1:C:360:ASN:ND2	2.42	0.88
1:A:393:THR:CG2	1:A:518:LEU:HG	2.03	0.87
1:B:43:PHE:HD1	1:C:563:GLN:OE1	1.57	0.87
1:B:336:CYS:CB	1:B:338:PHE:CD1	2.58	0.86
1:C:599:THR:HG22	1:C:601:GLY:H	1.41	0.84
1:C:244:LEU:CD2	1:C:260:ALA:HB2	2.07	0.84
1:B:336:CYS:SG	1:B:338:PHE:HE1	2.01	0.84
1:C:363:ALA:CB	1:C:524:VAL:HG12	2.08	0.84
1:A:393:THR:HG21	1:A:518:LEU:HG	1.58	0.84
1:C:244:LEU:HD22	1:C:258:TRP:HE3	1.43	0.83
1:B:170:TYR:HE1	1:C:360:ASN:ND2	1.75	0.82
1:C:359:SER:O	1:C:361:CYS:SG	2.37	0.82
1:B:43:PHE:HB3	1:C:565:PHE:O	1.80	0.81
1:B:363:ALA:HB2	1:B:524:VAL:CG1	2.09	0.81
1:C:115:GLN:HB3	1:C:233:ILE:HD11	1.61	0.81
1:B:533:LEU:HD13	1:B:535:LYS:HE2	1.63	0.81
1:A:367:VAL:HG13	1:A:370:ASN:OD1	1.81	0.80
1:C:46:SER:HA	1:C:279:TYR:O	1.82	0.80
1:A:530:SER:CB	1:A:580:GLN:NE2	2.45	0.80
1:B:644:GLN:HE21	3:B:1304:NAG:H82	1.43	0.80
1:B:336:CYS:HB3	1:B:338:PHE:HD1	1.45	0.79
1:B:46:SER:HA	1:B:279:TYR:O	1.82	0.79
1:B:323:THR:HG23	1:B:324:GLU:H	1.47	0.79
1:C:244:LEU:HD13	1:C:258:TRP:CB	2.12	0.78
1:B:323:THR:CG2	1:B:324:GLU:N	2.47	0.77
1:A:43:PHE:HD1	1:B:563:GLN:CD	1.91	0.77
1:A:393:THR:CB	1:A:518:LEU:HG	2.14	0.77
1:C:127:VAL:HG13	1:C:129:LYS:HZ1	1.48	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:388:GLN:O	2:F:393:ARG:NH1	2.18	0.77
1:B:323:THR:CG2	1:B:324:GLU:H	1.98	0.76
2:D:388:GLN:O	2:D:393:ARG:NH1	2.18	0.76
2:E:388:GLN:O	2:E:393:ARG:NH1	2.18	0.76
1:B:533:LEU:HD13	1:B:535:LYS:CE	2.15	0.76
1:A:765:ARG:CZ	1:B:957:GLN:NE2	2.48	0.76
1:B:43:PHE:CD1	1:C:563:GLN:OE1	2.38	0.76
1:C:328:ARG:HB2	1:C:543:PHE:CE1	2.21	0.76
2:D:89:GLN:HE21	3:D:904:NAG:H81	1.50	0.76
1:B:393:THR:OG1	1:B:517:LEU:HD12	1.87	0.75
1:A:357:ARG:HH22	1:A:359:SER:CB	1.95	0.74
1:B:126:VAL:HG13	1:B:174:PRO:HA	1.70	0.74
1:A:126:VAL:HG13	1:A:174:PRO:HA	1.70	0.74
1:A:394:ASN:O	1:A:515:PHE:HA	1.87	0.74
2:E:501:ALA:O	2:E:507:SER:OG	2.06	0.73
1:B:336:CYS:CB	1:B:338:PHE:HD1	1.96	0.73
1:B:43:PHE:CE2	1:C:559:PHE:CE1	2.76	0.73
2:D:501:ALA:O	2:D:507:SER:OG	2.06	0.73
1:B:43:PHE:CB	1:C:565:PHE:O	2.36	0.73
1:C:176:LEU:HD13	1:C:176:LEU:C	2.11	0.73
1:B:43:PHE:HD1	1:C:563:GLN:CD	1.96	0.73
1:C:362:VAL:C	1:C:524:VAL:HG13	2.13	0.73
2:F:501:ALA:O	2:F:507:SER:OG	2.06	0.72
1:B:290:ASP:HB3	1:B:293:LEU:HD22	1.69	0.72
1:A:518:LEU:HD13	1:A:519:HIS:H	1.53	0.72
1:B:336:CYS:HG	1:B:338:PHE:HE1	1.34	0.72
1:C:126:VAL:O	1:C:127:VAL:HG23	1.90	0.72
2:E:89:GLN:HE21	3:E:904:NAG:H81	1.50	0.72
1:B:170:TYR:OH	1:C:360:ASN:ND2	2.23	0.72
2:D:89:GLN:HE22	3:D:904:NAG:C8	2.01	0.72
1:A:170:TYR:HE1	1:B:360:ASN:OD1	1.73	0.71
1:A:393:THR:HB	1:A:518:LEU:HG	1.72	0.71
1:A:530:SER:OG	1:A:580:GLN:NE2	2.23	0.71
1:B:336:CYS:CB	1:B:338:PHE:CE1	2.74	0.71
1:C:115:GLN:CB	1:C:233:ILE:HD13	2.21	0.71
2:E:89:GLN:HE22	3:E:904:NAG:C8	2.01	0.71
1:A:395:VAL:HG21	1:A:524:VAL:HG11	1.70	0.70
1:C:524:VAL:HG12	1:C:525:CYS:H	1.55	0.70
1:C:29:THR:HG22	1:C:30:ASN:N	2.06	0.70
1:B:336:CYS:SG	1:B:338:PHE:CE1	2.84	0.70
1:C:115:GLN:HB3	1:C:233:ILE:HD13	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:173:GLN:CG	1:C:174:PRO:CD	2.58	0.69
1:C:530:SER:OG	1:C:531:THR:N	2.13	0.69
1:C:115:GLN:NE2	1:C:132:GLU:OE1	2.25	0.68
1:C:332:ILE:HD13	1:C:529:LYS:CE	2.21	0.68
1:A:895:GLN:NE2	1:B:711:SER:OG	2.27	0.68
1:C:29:THR:HG22	1:C:30:ASN:H	1.59	0.68
1:A:740:MET:HE2	1:B:319:ARG:HD2	1.74	0.68
1:B:69:HIS:HE1	1:B:244:LEU:HD11	1.58	0.67
1:C:524:VAL:HG12	1:C:525:CYS:N	2.09	0.67
1:C:778:THR:HG22	1:C:778:THR:O	1.94	0.67
1:B:395:VAL:HG21	1:B:524:VAL:HG11	1.75	0.67
1:A:69:HIS:HE1	1:A:244:LEU:HD11	1.59	0.67
1:A:107:GLY:H	1:A:237:ARG:HB3	1.60	0.67
2:D:177:ARG:NH2	2:D:495:GLU:O	2.28	0.67
1:A:367:VAL:HG12	1:A:367:VAL:O	1.93	0.67
2:E:177:ARG:NH2	2:E:495:GLU:O	2.28	0.66
1:A:792:PRO:HG3	1:B:707:TYR:HB3	1.77	0.66
1:B:127:VAL:HG13	1:B:129:LYS:HE2	1.77	0.66
2:F:177:ARG:NH2	2:F:495:GLU:O	2.28	0.66
1:C:127:VAL:HG13	1:C:129:LYS:NZ	2.10	0.66
1:A:329:PHE:C	1:A:579:PRO:HB2	2.20	0.66
1:A:357:ARG:NH1	1:C:167:THR:O	2.18	0.66
1:A:43:PHE:HA	1:B:563:GLN:HE22	1.59	0.66
1:C:115:GLN:CB	1:C:233:ILE:CD1	2.74	0.66
1:C:1076:THR:HB	1:C:1097:SER:HB3	1.78	0.66
1:A:360:ASN:HA	1:A:523:THR:HG1	1.60	0.65
1:B:575:ALA:HB1	1:B:584:ILE:HD11	1.78	0.65
1:B:226:LEU:HG	1:B:227:VAL:HG23	1.79	0.65
2:F:453:THR:HG23	2:F:512:PHE:CD2	2.32	0.65
1:A:326:ILE:HG23	1:A:539:VAL:HG21	1.77	0.65
1:A:69:HIS:CE1	1:A:244:LEU:HD11	2.31	0.65
1:A:127:VAL:HG13	1:A:129:LYS:HE2	1.77	0.65
1:B:69:HIS:CE1	1:B:244:LEU:HD11	2.31	0.65
2:E:453:THR:HG23	2:E:512:PHE:CD2	2.32	0.65
1:A:43:PHE:HA	1:B:563:GLN:NE2	2.12	0.65
1:A:765:ARG:NH2	1:B:957:GLN:NE2	2.45	0.65
1:A:575:ALA:HB1	1:A:584:ILE:HD11	1.78	0.64
1:B:107:GLY:H	1:B:237:ARG:HB3	1.60	0.64
1:A:327:VAL:HG13	1:A:542:ASN:HB3	1.79	0.64
1:A:525:CYS:SG	1:A:528:LYS:CE	2.85	0.64
2:D:453:THR:HG23	2:D:512:PHE:CD2	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:226:LEU:HG	1:A:227:VAL:HG23	1.79	0.64
1:A:525:CYS:SG	1:A:528:LYS:HE3	2.36	0.64
1:B:290:ASP:HB3	1:B:293:LEU:CD2	2.27	0.64
2:F:161:ARG:NH1	2:F:252:TYR:OH	2.31	0.64
2:E:161:ARG:NH1	2:E:252:TYR:OH	2.31	0.64
1:C:127:VAL:CG1	1:C:129:LYS:HZ1	2.10	0.64
1:C:328:ARG:NH2	1:C:532:ASN:HA	2.12	0.63
2:D:161:ARG:NH1	2:D:252:TYR:OH	2.31	0.63
1:A:731:MET:HG2	1:A:955:ASN:HD21	1.64	0.63
1:A:755:GLN:O	1:B:968:SER:HB2	1.99	0.63
2:F:144:LEU:HD22	2:F:168:TRP:CZ2	2.34	0.63
2:E:144:LEU:HD22	2:E:168:TRP:CZ2	2.34	0.63
1:A:222:ALA:HB2	1:A:285:ILE:CG2	2.30	0.62
1:B:83:VAL:HA	1:B:237:ARG:HH22	1.65	0.62
2:D:144:LEU:HD22	2:D:168:TRP:CZ2	2.34	0.62
1:B:43:PHE:CD2	1:C:559:PHE:CZ	2.88	0.62
1:C:576:VAL:HG12	1:C:587:ILE:HD11	1.82	0.62
1:A:83:VAL:HA	1:A:237:ARG:HH22	1.65	0.62
1:B:731:MET:HG2	1:B:955:ASN:HD21	1.64	0.62
1:B:363:ALA:HB2	1:B:524:VAL:HG13	1.80	0.61
1:C:121:ASN:CG	1:C:122:ASN:H	2.06	0.61
1:B:170:TYR:CZ	1:C:360:ASN:ND2	2.68	0.61
1:A:393:THR:CG2	1:A:518:LEU:N	2.47	0.61
2:F:322:ASN:OD1	2:F:323:MET:N	2.34	0.61
2:D:322:ASN:OD1	2:D:323:MET:N	2.34	0.61
2:D:239:HIS:O	2:D:599:ASN:ND2	2.34	0.61
2:E:322:ASN:OD1	2:E:323:MET:N	2.34	0.61
2:F:239:HIS:O	2:F:599:ASN:ND2	2.34	0.61
1:A:422:ASN:OD1	1:A:454:ARG:HB3	2.01	0.61
1:C:422:ASN:OD1	1:C:454:ARG:HB3	2.01	0.61
1:A:395:VAL:CG2	1:A:524:VAL:HG11	2.30	0.60
1:B:1088:HIS:HB3	1:B:1120:THR:CG2	2.31	0.60
1:C:127:VAL:HG12	1:C:128:ILE:N	2.16	0.60
1:C:115:GLN:NE2	1:C:132:GLU:CG	2.64	0.60
1:A:518:LEU:HD12	1:A:519:HIS:CA	2.31	0.60
1:C:113:LYS:HA	1:C:132:GLU:HB3	1.83	0.60
1:A:1088:HIS:HB3	1:A:1120:THR:CG2	2.31	0.60
1:C:244:LEU:HD22	1:C:258:TRP:CE3	2.30	0.60
1:C:520:ALA:HB1	1:C:521:PRO:HD2	1.84	0.60
1:B:329:PHE:C	1:B:579:PRO:HB2	2.27	0.59
1:B:323:THR:HG21	1:B:537:LYS:HD3	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:239:HIS:O	2:E:599:ASN:ND2	2.34	0.59
1:B:422:ASN:OD1	1:B:454:ARG:HB3	2.01	0.59
1:A:530:SER:HB2	1:A:580:GLN:NE2	2.16	0.59
2:E:89:GLN:HE22	3:E:904:NAG:H82	1.67	0.59
1:B:1106:GLN:HG3	1:B:1108:ASN:H	1.68	0.59
1:C:244:LEU:CD2	1:C:260:ALA:CB	2.80	0.59
1:B:788:ILE:HD11	1:C:699:LEU:HB2	1.85	0.59
1:B:244:LEU:HD22	1:B:260:ALA:HB2	1.85	0.59
1:A:96:GLU:HG2	1:A:101:ILE:HG12	1.84	0.58
1:A:395:VAL:HG13	1:A:515:PHE:HD2	1.67	0.58
1:B:1093:GLY:HA3	1:B:1105:THR:O	2.03	0.58
1:A:111:ASP:HA	1:A:134:GLN:HG2	1.84	0.58
1:B:336:CYS:HB3	1:B:338:PHE:CE1	2.39	0.58
1:B:763:LEU:HG	1:B:1008:VAL:HG21	1.85	0.58
1:A:290:ASP:HB3	1:A:293:LEU:HD22	1.85	0.58
1:A:1093:GLY:HA3	1:A:1105:THR:O	2.03	0.58
2:D:89:GLN:HE22	3:D:904:NAG:H82	1.67	0.58
1:B:96:GLU:HG2	1:B:101:ILE:HG12	1.84	0.58
1:A:396:TYR:O	1:A:514:SER:N	2.37	0.58
1:A:1106:GLN:HG3	1:A:1108:ASN:H	1.68	0.58
1:B:47:VAL:HG12	1:C:569:ILE:HG12	1.86	0.58
1:C:46:SER:CA	1:C:279:TYR:O	2.51	0.58
1:A:34:ARG:NH2	1:A:191:GLU:OE1	2.37	0.58
1:A:280:ASN:HD21	1:A:284:THR:HB	1.69	0.58
1:C:1106:GLN:HG3	1:C:1108:ASN:H	1.69	0.58
1:B:328:ARG:HB3	1:B:579:PRO:HD2	1.84	0.57
2:F:67:ASP:OD1	2:F:68:LYS:N	2.36	0.57
2:E:67:ASP:OD1	2:E:68:LYS:N	2.36	0.57
1:A:244:LEU:HD22	1:A:260:ALA:HB2	1.85	0.57
1:A:326:ILE:HD11	1:A:552:LEU:HD11	1.85	0.57
1:A:763:LEU:HG	1:A:1008:VAL:HG21	1.85	0.57
1:C:328:ARG:HH22	1:C:532:ASN:HA	1.68	0.57
1:B:111:ASP:HA	1:B:134:GLN:HG2	1.84	0.57
1:A:170:TYR:CE1	1:B:360:ASN:OD1	2.54	0.57
1:B:46:SER:CA	1:B:279:TYR:O	2.50	0.57
1:B:755:GLN:O	1:C:968:SER:HB2	2.05	0.57
1:A:222:ALA:HB2	1:A:285:ILE:HG23	1.87	0.57
1:A:350:VAL:HG12	1:A:422:ASN:HB3	1.86	0.57
1:A:822:LEU:HD22	1:A:945:LEU:HD21	1.87	0.57
1:B:822:LEU:HD22	1:B:945:LEU:HD21	1.87	0.57
1:B:129:LYS:NZ	1:B:170:TYR:H	2.03	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:67:ASP:OD1	2:D:68:LYS:N	2.36	0.57
1:A:129:LYS:NZ	1:A:170:TYR:H	2.03	0.57
2:D:89:GLN:NE2	3:D:904:NAG:H82	2.20	0.57
1:B:34:ARG:NH2	1:B:191:GLU:OE1	2.37	0.57
1:A:1031:GLU:OE1	1:A:1039:ARG:NH2	2.38	0.56
1:B:1031:GLU:OE1	1:B:1039:ARG:NH2	2.38	0.56
1:C:233:ILE:HG22	1:C:234:ASN:N	2.20	0.56
1:B:334:ASN:O	1:B:335:LEU:HD23	2.05	0.56
1:C:350:VAL:HG12	1:C:422:ASN:HB3	1.86	0.56
1:B:244:LEU:HD22	1:B:258:TRP:HD1	1.69	0.56
1:B:756:TYR:HH	1:B:998:THR:HG1	1.53	0.56
1:C:277:LEU:CD2	1:C:285:ILE:HD13	2.28	0.56
1:C:537:LYS:H	1:C:551:VAL:HG13	1.70	0.56
1:A:244:LEU:HD22	1:A:258:TRP:HD1	1.69	0.56
1:B:350:VAL:HG12	1:B:422:ASN:HB3	1.86	0.56
1:A:560:LEU:HB2	1:A:563:GLN:HG3	1.88	0.56
1:B:37:TYR:H	1:B:55:PHE:HE1	1.54	0.56
1:B:336:CYS:HB2	1:B:338:PHE:CD1	2.40	0.56
1:A:277:LEU:HB3	1:A:285:ILE:HD11	1.88	0.55
1:A:37:TYR:H	1:A:55:PHE:HE1	1.54	0.55
1:C:29:THR:CG2	1:C:30:ASN:H	2.18	0.55
2:D:97:LEU:O	2:D:101:GLN:N	2.37	0.55
1:A:478:LYS:NZ	1:A:488:CYS:SG	2.79	0.55
1:B:189:LEU:HB3	1:B:208:THR:O	2.06	0.55
1:B:284:THR:CG2	1:C:560:LEU:HD21	2.36	0.55
1:C:708:SER:HB2	1:C:711:SER:HB3	1.87	0.55
1:C:127:VAL:CG1	1:C:128:ILE:H	2.20	0.55
1:A:330:PRO:N	1:A:579:PRO:HB2	2.21	0.55
1:C:126:VAL:O	1:C:127:VAL:CG2	2.54	0.55
1:C:244:LEU:HD21	1:C:260:ALA:CB	2.37	0.55
1:C:1031:GLU:OE1	1:C:1039:ARG:NH2	2.39	0.55
1:B:533:LEU:CD1	1:B:535:LYS:CE	2.84	0.55
1:B:560:LEU:HB2	1:B:563:GLN:HG3	1.88	0.54
1:C:478:LYS:NZ	1:C:488:CYS:SG	2.79	0.54
2:E:331:SER:OG	2:E:358:ILE:O	2.25	0.54
1:C:273:ARG:NH1	1:C:292:ALA:HB3	2.22	0.54
1:C:720:ILE:HG13	1:C:923:ILE:HG23	1.89	0.54
1:C:391:CYS:HA	1:C:525:CYS:SG	2.47	0.54
1:C:767:LEU:HD23	1:C:770:ILE:HD12	1.89	0.54
2:D:331:SER:OG	2:D:358:ILE:O	2.25	0.54
1:B:43:PHE:CD1	1:C:563:GLN:CD	2.83	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:560:LEU:HB2	1:C:563:GLN:HB2	1.89	0.54
1:B:468:ILE:O	1:B:468:ILE:HG22	2.08	0.54
1:B:478:LYS:NZ	1:B:488:CYS:SG	2.79	0.54
1:B:393:THR:OG1	1:B:517:LEU:CD1	2.53	0.54
2:F:331:SER:OG	2:F:358:ILE:O	2.25	0.54
1:A:187:LYS:HA	1:A:210:ILE:HG23	1.88	0.54
1:B:47:VAL:CG1	1:C:569:ILE:HG12	2.37	0.54
1:B:979:ASP:OD1	1:B:983:ARG:NE	2.41	0.54
1:C:468:ILE:HG22	1:C:468:ILE:O	2.08	0.54
1:B:323:THR:CG2	1:B:537:LYS:HD3	2.37	0.54
1:A:566:GLY:HA2	1:C:43:PHE:H	1.73	0.53
1:B:43:PHE:HA	1:C:563:GLN:NE2	2.23	0.53
1:C:358:ILE:HG22	1:C:361:CYS:HB2	1.89	0.53
1:A:290:ASP:HB3	1:A:293:LEU:CD2	2.38	0.53
1:A:979:ASP:OD1	1:A:983:ARG:NE	2.41	0.53
1:C:127:VAL:CG1	1:C:129:LYS:NZ	2.70	0.53
2:E:595:LEU:O	2:E:599:ASN:N	2.40	0.53
1:A:129:LYS:HZ2	1:A:170:TYR:H	1.55	0.53
2:D:595:LEU:O	2:D:599:ASN:N	2.40	0.53
1:B:86:PHE:HE1	1:B:90:VAL:HG12	1.73	0.53
1:C:29:THR:CG2	1:C:30:ASN:N	2.71	0.53
1:B:34:ARG:HE	1:B:217:PRO:HD2	1.73	0.53
1:A:34:ARG:HE	1:A:217:PRO:HD2	1.73	0.53
1:A:711:SER:OG	1:C:895:GLN:NE2	2.42	0.53
1:A:86:PHE:HE1	1:A:90:VAL:HG12	1.73	0.53
1:C:1104:VAL:HG23	1:C:1115:ILE:HG12	1.91	0.52
2:F:97:LEU:O	2:F:101:GLN:N	2.37	0.52
1:A:904:TYR:OH	1:B:1107:ARG:HG2	2.09	0.52
1:C:117:LEU:HD21	1:C:231:ILE:HG21	1.91	0.52
2:F:535:HIS:NE2	2:F:538:PRO:O	2.41	0.52
1:A:244:LEU:CD2	1:A:260:ALA:HB2	2.40	0.52
1:A:724:THR:HG22	1:A:934:ILE:HD11	1.91	0.52
1:C:244:LEU:HD21	1:C:260:ALA:HB2	1.92	0.52
1:A:468:ILE:HG22	1:A:468:ILE:O	2.08	0.52
1:B:289:VAL:HG11	1:B:300:LYS:HD2	1.91	0.52
1:C:121:ASN:CG	1:C:122:ASN:N	2.68	0.52
1:C:34:ARG:NH2	1:C:191:GLU:OE1	2.43	0.52
1:A:357:ARG:NH2	1:A:359:SER:OG	2.42	0.52
1:C:37:TYR:H	1:C:55:PHE:HE1	1.56	0.52
1:C:111:ASP:O	1:C:114:THR:OG1	2.25	0.52
2:D:61:ASN:O	2:D:64:ASN:OD1	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:708:SER:HB2	1:B:711:SER:HB3	1.92	0.51
1:C:127:VAL:CG1	1:C:128:ILE:N	2.72	0.51
1:A:530:SER:CB	1:A:580:GLN:HE21	2.21	0.51
1:C:127:VAL:HG12	1:C:128:ILE:H	1.75	0.51
1:A:1076:THR:HB	1:A:1097:SER:HB3	1.93	0.51
1:C:524:VAL:CG1	1:C:525:CYS:H	2.22	0.51
2:D:535:HIS:NE2	2:D:538:PRO:O	2.41	0.51
1:B:244:LEU:CD2	1:B:260:ALA:HB2	2.40	0.51
2:F:595:LEU:O	2:F:599:ASN:N	2.40	0.51
1:A:131:CYS:HA	1:A:166:CYS:HA	1.93	0.51
1:C:277:LEU:N	1:C:277:LEU:HD12	2.26	0.51
2:E:61:ASN:O	2:E:64:ASN:OD1	2.28	0.51
1:B:131:CYS:HA	1:B:166:CYS:HA	1.93	0.51
1:B:724:THR:HG22	1:B:934:ILE:HD11	1.91	0.51
1:A:121:ASN:HA	1:A:126:VAL:HG12	1.93	0.51
1:A:287:ASP:OD1	1:A:288:ALA:N	2.44	0.50
1:A:319:ARG:HD2	1:C:740:MET:HE2	1.92	0.50
1:A:364:ASP:O	1:A:366:SER:N	2.45	0.50
1:A:290:ASP:O	1:A:297:SER:HB3	2.11	0.50
1:B:1076:THR:HB	1:B:1097:SER:HB3	1.93	0.50
1:C:804:GLN:NE2	1:C:931:ILE:O	2.45	0.50
2:D:224:GLU:O	2:D:228:HIS:ND1	2.43	0.50
2:F:224:GLU:O	2:F:228:HIS:ND1	2.43	0.50
2:E:515:TYR:O	2:E:519:THR:OG1	2.25	0.50
1:B:363:ALA:HB2	1:B:524:VAL:HG12	1.92	0.50
2:E:535:HIS:NE2	2:E:538:PRO:O	2.41	0.50
1:A:563:GLN:NE2	1:C:42:VAL:O	2.45	0.50
1:A:708:SER:HB2	1:A:711:SER:HB3	1.92	0.50
1:A:729:VAL:HG23	1:A:1059:GLY:HA2	1.93	0.50
2:F:125:THR:O	2:F:129:THR:OG1	2.26	0.50
1:A:357:ARG:HH22	1:A:359:SER:HB2	1.72	0.50
1:B:43:PHE:HB2	1:C:565:PHE:O	2.10	0.50
2:F:61:ASN:O	2:F:64:ASN:OD1	2.28	0.50
2:E:97:LEU:O	2:E:101:GLN:N	2.37	0.50
1:B:722:VAL:HG22	1:B:930:ALA:HB1	1.94	0.50
1:B:729:VAL:HG23	1:B:1059:GLY:HA2	1.94	0.50
1:B:187:LYS:HA	1:B:210:ILE:H	1.77	0.50
1:A:811:LYS:HZ2	1:A:813:SER:H	1.59	0.49
1:A:43:PHE:HB3	1:B:565:PHE:O	2.12	0.49
1:B:43:PHE:HB3	1:C:566:GLY:HA2	1.93	0.49
1:B:43:PHE:CE2	1:C:559:PHE:CZ	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:244:LEU:CD2	1:B:260:ALA:CB	2.90	0.49
1:B:119:ILE:HG13	1:B:128:ILE:HG13	1.95	0.49
1:B:121:ASN:HA	1:B:126:VAL:HG12	1.93	0.49
1:C:524:VAL:CG1	1:C:525:CYS:N	2.75	0.49
1:B:936:ASP:O	1:B:940:SER:OG	2.30	0.49
1:C:34:ARG:HE	1:C:217:PRO:HD2	1.76	0.49
2:E:245:ARG:NH1	2:E:605:GLY:O	2.43	0.49
1:A:1031:GLU:OE2	1:B:1039:ARG:NE	2.40	0.49
1:B:119:ILE:HD11	1:B:175:PHE:CE2	2.48	0.49
2:F:245:ARG:NH1	2:F:605:GLY:O	2.43	0.49
2:E:114:LYS:HE3	2:E:114:LYS:HA	1.94	0.49
2:E:143:LEU:HD23	2:E:143:LEU:H	1.77	0.49
1:A:119:ILE:HD11	1:A:175:PHE:CE2	2.48	0.49
1:B:974:SER:OG	1:B:975:SER:N	2.45	0.49
2:F:143:LEU:HD23	2:F:143:LEU:H	1.77	0.49
1:A:974:SER:OG	1:A:975:SER:N	2.45	0.49
2:E:89:GLN:NE2	3:E:904:NAG:H82	2.20	0.49
2:E:224:GLU:O	2:E:228:HIS:ND1	2.43	0.49
1:B:202:LYS:NZ	1:B:225:PRO:HB3	2.28	0.49
1:C:362:VAL:HG12	1:C:363:ALA:H	1.77	0.49
1:C:1093:GLY:HA3	1:C:1105:THR:O	2.13	0.49
2:F:114:LYS:HE3	2:F:114:LYS:HA	1.94	0.49
1:A:393:THR:HB	1:A:518:LEU:CG	2.42	0.49
1:C:316:SER:OG	1:C:317:ASN:N	2.41	0.49
2:D:245:ARG:NH1	2:D:605:GLY:O	2.43	0.49
2:D:143:LEU:H	2:D:143:LEU:HD23	1.77	0.48
1:A:722:VAL:HG22	1:A:930:ALA:HB1	1.94	0.48
1:C:233:ILE:CG2	1:C:234:ASN:N	2.76	0.48
2:D:114:LYS:HE3	2:D:114:LYS:HA	1.94	0.48
1:A:244:LEU:CD2	1:A:260:ALA:CB	2.90	0.48
1:A:336:CYS:SG	1:A:363:ALA:HA	2.52	0.48
1:B:102:ARG:HB3	1:B:141:LEU:HD23	1.95	0.48
1:B:105:ILE:HD12	1:B:241:LEU:HD21	1.95	0.48
1:C:273:ARG:HH11	1:C:292:ALA:HB3	1.78	0.48
1:C:951:VAL:O	1:C:954:HIS:HB2	2.13	0.48
1:A:202:LYS:NZ	1:A:225:PRO:HB3	2.28	0.48
1:A:323:THR:OG1	1:A:324:GLU:N	2.47	0.48
1:C:99:ASN:O	1:C:102:ARG:NH2	2.46	0.48
1:A:105:ILE:HD12	1:A:241:LEU:HD21	1.95	0.48
1:A:119:ILE:HG13	1:A:128:ILE:HG13	1.95	0.48
1:C:131:CYS:SG	1:C:166:CYS:N	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:325:SER:HB2	1:C:540:ASN:HB2	1.96	0.48
1:C:778:THR:O	1:C:778:THR:CG2	2.62	0.48
1:C:825:LYS:HE2	1:C:825:LYS:HB3	1.71	0.48
1:A:1088:HIS:HB3	1:A:1120:THR:HG22	1.96	0.47
1:B:34:ARG:HH11	1:B:217:PRO:HG2	1.79	0.47
1:C:1088:HIS:CD2	1:C:1122:VAL:HG22	2.49	0.47
1:A:34:ARG:HH11	1:A:217:PRO:HG2	1.79	0.47
2:D:161:ARG:NE	2:D:265:HIS:O	2.47	0.47
1:A:393:THR:HB	1:A:518:LEU:CD2	2.44	0.47
1:A:936:ASP:O	1:A:940:SER:OG	2.30	0.47
1:B:661:GLU:O	1:B:695:TYR:OH	2.29	0.47
2:E:125:THR:O	2:E:129:THR:OG1	2.26	0.47
1:A:34:ARG:HD2	1:A:216:LEU:HB3	1.96	0.47
1:C:289:VAL:HG23	1:C:306:PHE:CE2	2.50	0.47
1:A:102:ARG:HB3	1:A:141:LEU:HD23	1.95	0.47
1:A:1123:SER:O	1:A:1123:SER:OG	2.30	0.47
1:B:34:ARG:HD2	1:B:216:LEU:HB3	1.97	0.47
1:B:290:ASP:O	1:B:297:SER:HB3	2.14	0.47
2:E:161:ARG:NE	2:E:265:HIS:O	2.47	0.47
1:A:367:VAL:O	1:A:367:VAL:CG1	2.62	0.47
1:B:287:ASP:OD1	1:B:288:ALA:N	2.47	0.47
1:C:244:LEU:HD22	1:C:260:ALA:HB2	1.90	0.47
1:C:597:VAL:HG12	1:C:599:THR:OG1	2.14	0.47
1:B:328:ARG:NH2	1:B:533:LEU:HB3	2.30	0.47
1:B:533:LEU:CD1	1:B:535:LYS:HE2	2.38	0.47
1:B:1086:LYS:HD2	1:B:1122:VAL:HG21	1.97	0.47
1:A:533:LEU:HD12	1:A:533:LEU:HA	1.77	0.46
1:A:574:ASP:OD1	1:A:574:ASP:N	2.48	0.46
1:A:1010:GLN:HB3	1:A:1014:ARG:HH11	1.80	0.46
1:B:574:ASP:OD1	1:B:574:ASP:N	2.48	0.46
1:A:56:LEU:HD12	1:A:57:PRO:HD2	1.98	0.46
1:A:731:MET:HE1	1:A:1014:ARG:HB3	1.97	0.46
1:A:289:VAL:HG11	1:A:300:LYS:HD2	1.96	0.46
1:A:293:LEU:HG	1:A:294:ASP:OD1	2.16	0.46
1:B:827:THR:OG1	1:B:949:GLN:NE2	2.48	0.46
1:A:1086:LYS:HD2	1:A:1122:VAL:HG21	1.97	0.46
1:B:731:MET:HE1	1:B:1014:ARG:HB3	1.97	0.46
1:C:950:ASP:OD1	1:C:951:VAL:N	2.45	0.46
1:A:393:THR:HG21	1:A:518:LEU:CA	2.43	0.46
1:A:827:THR:OG1	1:A:949:GLN:NE2	2.48	0.46
1:A:894:LEU:HD11	1:B:715:PRO:HG3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:293:LEU:HG	1:B:294:ASP:OD1	2.16	0.46
1:C:226:LEU:HG	1:C:227:VAL:HG13	1.96	0.46
1:B:1088:HIS:HB3	1:B:1120:THR:HG22	1.96	0.46
2:F:111:ASP:OD1	2:F:112:LYS:N	2.48	0.46
1:A:176:LEU:HD23	1:A:190:ARG:NH2	2.31	0.46
1:A:347:PHE:HB3	1:A:348:ALA:H	1.62	0.46
2:D:515:TYR:O	2:D:519:THR:OG1	2.25	0.46
2:E:111:ASP:OD1	2:E:112:LYS:N	2.48	0.46
2:E:457:GLU:OE2	2:E:513:ILE:N	2.49	0.46
2:F:515:TYR:O	2:F:519:THR:OG1	2.25	0.46
1:A:393:THR:HG23	1:A:517:LEU:HA	1.98	0.45
1:A:562:PHE:CE2	1:C:225:PRO:HD2	2.51	0.45
1:B:1010:GLN:HB3	1:B:1014:ARG:HH11	1.80	0.45
1:C:715:PRO:HA	1:C:1072:GLU:HA	1.98	0.45
1:C:934:ILE:HG21	1:C:1063:LEU:HD21	1.97	0.45
2:F:161:ARG:NE	2:F:265:HIS:O	2.47	0.45
2:F:457:GLU:OE2	2:F:513:ILE:N	2.49	0.45
1:A:722:VAL:HB	1:A:934:ILE:HD12	1.98	0.45
1:C:362:VAL:HG12	1:C:363:ALA:N	2.31	0.45
2:D:446:ILE:HG21	2:D:523:PHE:CZ	2.52	0.45
1:A:363:ALA:O	1:A:527:PRO:HD3	2.16	0.45
1:A:202:LYS:HZ1	1:A:225:PRO:HB3	1.81	0.45
1:A:305:SER:OG	1:A:306:PHE:N	2.49	0.45
1:A:569:ILE:O	1:C:964:LYS:NZ	2.50	0.45
1:B:283:GLY:O	1:C:560:LEU:HD11	2.16	0.45
1:B:336:CYS:HB2	1:B:338:PHE:HD1	1.73	0.45
1:C:763:LEU:HG	1:C:1008:VAL:HG21	1.98	0.45
1:B:43:PHE:CZ	1:C:559:PHE:CD1	3.04	0.45
1:B:305:SER:OG	1:B:306:PHE:N	2.49	0.45
1:C:137:ASN:ND2	1:C:254:SER:HB3	2.31	0.45
1:C:537:LYS:O	1:C:539:VAL:HG13	2.16	0.45
1:C:756:TYR:OH	1:C:994:ASP:OD1	2.34	0.45
2:D:150:GLU:OE2	2:D:150:GLU:HA	2.17	0.45
1:A:93:ALA:H	1:A:266:TYR:HB2	1.81	0.45
1:B:722:VAL:HB	1:B:934:ILE:HD12	1.98	0.45
1:C:176:LEU:CD1	1:C:176:LEU:C	2.78	0.45
1:C:722:VAL:HG22	1:C:930:ALA:HB1	1.98	0.45
2:F:150:GLU:OE2	2:F:150:GLU:HA	2.17	0.45
2:E:150:GLU:OE2	2:E:150:GLU:HA	2.17	0.45
1:B:93:ALA:H	1:B:266:TYR:HB2	1.82	0.45
1:B:1123:SER:O	1:B:1123:SER:OG	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:715:PRO:HA	1:B:1072:GLU:HA	1.99	0.45
1:B:788:ILE:HG23	1:B:876:ALA:HB2	1.99	0.45
1:C:661:GLU:O	1:C:695:TYR:OH	2.29	0.45
1:B:56:LEU:HD12	1:B:57:PRO:HD2	1.98	0.45
1:C:310:LYS:HG3	1:C:600:PRO:HA	1.98	0.45
1:A:707:TYR:HB3	1:C:792:PRO:HG3	1.97	0.44
1:B:176:LEU:HD23	1:B:190:ARG:NH2	2.31	0.44
2:D:457:GLU:OE2	2:D:513:ILE:N	2.49	0.44
1:A:788:ILE:HG23	1:A:876:ALA:HB2	1.99	0.44
1:C:330:PRO:HA	1:C:580:GLN:OE1	2.16	0.44
1:A:47:VAL:HB	1:B:569:ILE:HD13	1.99	0.44
1:A:715:PRO:HA	1:A:1072:GLU:HA	1.99	0.44
1:B:43:PHE:HB2	1:C:563:GLN:HG2	2.00	0.44
1:B:644:GLN:HE22	3:B:1304:NAG:H82	1.74	0.44
1:C:958:ALA:HB2	1:C:1014:ARG:HH22	1.83	0.44
2:F:446:ILE:HG21	2:F:523:PHE:CZ	2.52	0.44
1:A:904:TYR:OH	1:B:1094:VAL:CG1	2.65	0.44
1:B:856:ASN:C	1:B:858:LEU:H	2.24	0.44
1:C:363:ALA:HB2	1:C:524:VAL:HG11	1.88	0.44
1:C:822:LEU:HD22	1:C:945:LEU:HD21	1.98	0.44
2:E:64:ASN:HA	2:E:67:ASP:OD2	2.18	0.44
1:A:357:ARG:NH2	1:A:359:SER:HB2	2.25	0.44
1:A:661:GLU:O	1:A:695:TYR:OH	2.29	0.44
1:C:193:VAL:HB	1:C:204:TYR:HD1	1.82	0.44
2:E:446:ILE:HG21	2:E:523:PHE:CZ	2.52	0.44
1:B:533:LEU:HD13	1:B:535:LYS:CG	2.47	0.44
2:D:295:ASP:OD1	2:D:296:ALA:N	2.50	0.44
1:A:986:PRO:N	1:A:987:PRO:HD2	2.33	0.44
1:C:161:SER:OG	1:C:162:SER:N	2.50	0.44
1:C:362:VAL:CG1	1:C:363:ALA:H	2.31	0.44
2:D:64:ASN:HA	2:D:67:ASP:OD2	2.18	0.44
2:E:295:ASP:OD1	2:E:296:ALA:N	2.50	0.44
1:A:332:ILE:H	1:A:332:ILE:HG13	1.33	0.44
1:B:330:PRO:N	1:B:579:PRO:HB2	2.33	0.44
2:F:295:ASP:OD1	2:F:296:ALA:N	2.50	0.44
1:C:363:ALA:CB	1:C:524:VAL:CG1	2.72	0.44
1:C:517:LEU:O	1:C:517:LEU:CG	2.62	0.43
1:C:537:LYS:HE3	1:C:537:LYS:HB2	1.48	0.43
1:B:367:VAL:HG12	1:B:367:VAL:O	2.18	0.43
1:C:788:ILE:HG23	1:C:876:ALA:HB2	1.99	0.43
2:D:111:ASP:OD1	2:D:112:LYS:N	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:37:TYR:OH	1:C:54:LEU:O	2.29	0.43
2:F:64:ASN:HA	2:F:67:ASP:OD2	2.18	0.43
1:A:513:LEU:H	1:A:513:LEU:HG	1.65	0.43
1:A:518:LEU:HD12	1:A:519:HIS:C	2.43	0.43
1:A:43:PHE:HB3	1:B:566:GLY:HA2	2.01	0.43
1:C:63:THR:OG1	1:C:267:VAL:HB	2.18	0.43
2:D:55:THR:OG1	2:D:58:ASN:ND2	2.52	0.43
2:D:536:GLU:N	2:D:536:GLU:OE1	2.52	0.43
2:F:536:GLU:N	2:F:536:GLU:OE1	2.52	0.43
1:A:187:LYS:HG2	1:A:210:ILE:C	2.43	0.43
1:B:202:LYS:HZ1	1:B:225:PRO:HB3	1.84	0.43
1:B:986:PRO:N	1:B:987:PRO:HD2	2.33	0.43
1:C:367:VAL:O	1:C:367:VAL:HG12	2.18	0.43
1:A:666:ILE:HD12	1:A:670:ILE:HG22	2.01	0.43
1:C:90:VAL:HG11	1:C:238:PHE:CE2	2.54	0.43
1:C:1010:GLN:HB3	1:C:1014:ARG:HH11	1.84	0.43
2:E:283:VAL:O	2:E:283:VAL:HG13	2.19	0.43
2:D:327:PHE:CE1	2:D:358:ILE:HD12	2.54	0.43
2:E:536:GLU:OE1	2:E:536:GLU:N	2.52	0.43
1:A:726:ILE:HG12	1:A:1061:VAL:HG22	2.01	0.42
1:A:769:GLY:HA2	1:A:772:VAL:HG12	2.01	0.42
1:C:854:LYS:N	1:C:858:LEU:O	2.52	0.42
2:E:327:PHE:CE1	2:E:358:ILE:HD12	2.54	0.42
1:A:206:LYS:HG3	1:A:208:THR:HG22	2.00	0.42
1:B:330:PRO:HA	1:B:579:PRO:HB2	2.00	0.42
1:B:726:ILE:HG12	1:B:1061:VAL:HG22	2.01	0.42
1:C:115:GLN:HB2	1:C:233:ILE:HD13	1.99	0.42
1:C:950:ASP:O	1:C:954:HIS:N	2.46	0.42
2:D:283:VAL:HG13	2:D:283:VAL:O	2.19	0.42
2:E:55:THR:OG1	2:E:58:ASN:ND2	2.52	0.42
1:A:533:LEU:HD21	1:A:585:LEU:HD11	2.00	0.42
1:A:1051:SER:OG	1:A:1064:HIS:ND1	2.48	0.42
1:B:120:VAL:CG2	1:B:127:VAL:HB	2.50	0.42
1:B:769:GLY:HA2	1:B:772:VAL:HG12	2.01	0.42
1:C:592:PHE:CD1	1:C:592:PHE:C	2.97	0.42
2:F:55:THR:OG1	2:F:58:ASN:ND2	2.52	0.42
1:A:204:TYR:HB3	1:A:223:LEU:HB3	2.02	0.42
1:A:512:VAL:O	1:A:512:VAL:HG12	2.19	0.42
1:B:334:ASN:O	1:B:335:LEU:CD2	2.68	0.42
1:B:533:LEU:CD1	1:B:535:LYS:HE3	2.49	0.42
1:A:120:VAL:CG2	1:A:127:VAL:HB	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:666:ILE:HD12	1:B:670:ILE:HG22	2.01	0.42
1:C:363:ALA:HB3	1:C:525:CYS:HA	2.02	0.42
1:A:904:TYR:CZ	1:B:1107:ARG:HD3	2.54	0.42
1:B:298:GLU:HG2	1:B:315:THR:HB	2.02	0.42
1:C:733:LYS:O	1:C:861:LEU:N	2.53	0.42
2:F:327:PHE:CE1	2:F:358:ILE:HD12	2.54	0.42
1:A:904:TYR:CE2	1:B:1107:ARG:HD3	2.55	0.42
1:C:569:ILE:H	1:C:569:ILE:HG13	1.68	0.42
1:C:304:LYS:HE3	1:C:304:LYS:HB2	1.91	0.42
1:C:666:ILE:HD12	1:C:670:ILE:HG22	2.02	0.41
1:A:63:THR:OG1	1:A:267:VAL:HB	2.20	0.41
1:A:278:LYS:N	1:A:287:ASP:O	2.46	0.41
1:A:298:GLU:HG2	1:A:315:THR:HB	2.02	0.41
1:C:34:ARG:HH11	1:C:217:PRO:HG2	1.85	0.41
1:A:765:ARG:CZ	1:B:957:GLN:CD	2.93	0.41
1:C:173:GLN:HG2	1:C:174:PRO:CG	2.48	0.41
1:B:204:TYR:HB3	1:B:223:LEU:HB3	2.02	0.41
1:B:243:ALA:O	1:B:244:LEU:HD23	2.20	0.41
1:B:1051:SER:OG	1:B:1064:HIS:ND1	2.48	0.41
1:A:312:ILE:HD12	1:A:598:ILE:HG12	2.03	0.41
1:B:312:ILE:HD12	1:B:598:ILE:HG12	2.03	0.41
1:B:372:ALA:O	1:B:374:PHE:N	2.51	0.41
2:D:447:VAL:HA	2:D:450:LEU:HD12	2.03	0.41
1:B:733:LYS:O	1:B:861:LEU:N	2.53	0.41
1:C:131:CYS:HG	1:C:166:CYS:HB3	0.99	0.41
2:F:283:VAL:O	2:F:283:VAL:HG13	2.19	0.41
1:B:63:THR:OG1	1:B:267:VAL:HB	2.20	0.41
1:C:142:ASP:HB3	1:C:157:PHE:CD2	2.56	0.41
1:A:431:GLY:HA2	1:A:515:PHE:CE1	2.56	0.41
1:A:1120:THR:HG22	1:A:1121:PHE:N	2.35	0.41
1:B:1019:ARG:NH2	1:C:1017:GLU:OE1	2.54	0.41
1:C:328:ARG:O	1:C:579:PRO:HG2	2.20	0.41
1:A:119:ILE:HD11	1:A:175:PHE:HE2	1.85	0.41
1:A:740:MET:CE	1:B:319:ARG:HD2	2.49	0.41
1:A:904:TYR:OH	1:B:1094:VAL:HG11	2.21	0.41
1:C:295:PRO:HB2	1:C:608:VAL:HG21	2.02	0.41
1:C:305:SER:OG	1:C:306:PHE:N	2.54	0.41
1:A:86:PHE:HB3	1:A:235:ILE:O	2.21	0.41
1:C:723:THR:OG1	1:C:1064:HIS:HB2	2.20	0.41
2:D:581:VAL:HG22	2:D:581:VAL:O	2.21	0.41
1:B:129:LYS:HZ2	1:B:170:TYR:H	1.66	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242:LEU:HD12	1:B:242:LEU:HA	1.91	0.40
1:B:283:GLY:O	1:C:560:LEU:CD1	2.69	0.40
1:B:310:LYS:HG3	1:B:600:PRO:HA	2.03	0.40
1:C:726:ILE:HG12	1:C:1061:VAL:HG22	2.02	0.40
1:B:1120:THR:HG22	1:B:1121:PHE:N	2.35	0.40
2:D:499:ASP:N	2:D:500:PRO:CD	2.84	0.40
1:A:243:ALA:O	1:A:244:LEU:HD23	2.20	0.40
1:B:86:PHE:HB3	1:B:235:ILE:O	2.21	0.40
1:C:709:ASN:OD1	1:C:709:ASN:N	2.42	0.40
2:E:581:VAL:O	2:E:581:VAL:HG22	2.21	0.40
1:A:121:ASN:OD1	1:A:121:ASN:N	2.55	0.40
1:B:121:ASN:OD1	1:B:121:ASN:N	2.55	0.40
1:C:1093:GLY:HA2	1:C:1107:ARG:HG3	2.03	0.40
2:F:581:VAL:HG22	2:F:581:VAL:O	2.21	0.40
1:A:98:SER:H	1:A:100:ILE:CD1	2.35	0.40
1:A:296:LEU:HG	1:A:300:LYS:HE3	2.04	0.40
1:C:327:VAL:O	1:C:328:ARG:HG2	2.22	0.40
2:D:23:GLU:HA	2:D:23:GLU:OE1	2.22	0.40
2:D:145:GLU:CB	2:D:146:PRO:CD	3.00	0.40
2:F:23:GLU:HA	2:F:23:GLU:OE1	2.21	0.40
2:F:47:SER:HG	2:F:349:TRP:HZ3	1.66	0.40
2:F:447:VAL:HA	2:F:450:LEU:HD12	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	890/1110 (80%)	881 (99%)	9 (1%)	68	75
1	B	890/1110 (80%)	887 (100%)	3 (0%)	86	83
1	C	890/1110 (80%)	883 (99%)	7 (1%)	73	76
2	D	526/711 (74%)	526 (100%)	0	100	100
2	E	526/711 (74%)	526 (100%)	0	100	100
2	F	526/711 (74%)	526 (100%)	0	100	100
All	All	4248/5463 (78%)	4229 (100%)	19 (0%)	81	81

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

Mol	Chain	Res	Type
1	A	208	THR
1	A	210	ILE
1	A	277	LEU
1	A	278	LYS
1	A	324	GLU
1	A	326	ILE
1	A	332	ILE
1	A	513	LEU
1	A	515	PHE
1	B	210	ILE
1	B	328	ARG
1	B	333	THR
1	C	176	LEU
1	C	208	THR
1	C	210	ILE
1	C	333	THR
1	C	336	CYS
1	C	534	VAL
1	C	537	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (105) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	125	ASN
1	A	188	ASN
1	A	314	GLN
1	A	360	ASN
1	A	474	GLN
1	A	481	ASN

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Mol	Chain	Res	Type
1	A	563	GLN
1	A	580	GLN
1	A	606	ASN
1	A	607	GLN
1	A	613	GLN
1	A	658	ASN
1	A	703	ASN
1	A	755	GLN
1	A	804	GLN
1	A	895	GLN
1	A	925	ASN
1	A	935	GLN
1	A	949	GLN
1	A	955	ASN
1	A	965	GLN
1	A	978	ASN
1	A	1048	HIS
1	A	1088	HIS
1	A	1106	GLN
1	A	1119	ASN
1	B	125	ASN
1	B	134	GLN
1	B	188	ASN
1	B	314	GLN
1	B	317	ASN
1	B	360	ASN
1	B	474	GLN
1	B	481	ASN
1	B	563	GLN
1	B	606	ASN
1	B	607	GLN
1	B	613	GLN
1	B	644	GLN
1	B	658	ASN
1	B	703	ASN
1	B	755	GLN
1	B	804	GLN
1	B	895	GLN
1	B	925	ASN
1	B	935	GLN
1	B	949	GLN
1	B	955	ASN

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Mol	Chain	Res	Type
1	B	957	GLN
1	B	965	GLN
1	B	978	ASN
1	B	1005	GLN
1	B	1048	HIS
1	B	1088	HIS
1	B	1106	GLN
1	B	1119	ASN
1	C	52	GLN
1	C	115	GLN
1	C	125	ASN
1	C	165	ASN
1	C	314	GLN
1	C	474	GLN
1	C	481	ASN
1	C	536	ASN
1	C	563	GLN
1	C	606	ASN
1	C	607	GLN
1	C	658	ASN
1	C	895	GLN
1	C	925	ASN
1	C	935	GLN
1	C	955	ASN
1	C	965	GLN
1	C	1048	HIS
1	C	1054	GLN
1	C	1088	HIS
1	C	1106	GLN
1	C	1119	ASN
2	D	51	ASN
2	D	58	ASN
2	D	89	GLN
2	D	96	GLN
2	D	101	GLN
2	D	340	GLN
2	D	373	HIS
2	D	505	HIS
2	D	578	ASN
2	F	51	ASN
2	F	58	ASN
2	F	96	GLN

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Mol	Chain	Res	Type
2	F	101	GLN
2	F	239	HIS
2	F	340	GLN
2	F	373	HIS
2	F	505	HIS
2	F	578	ASN
2	E	51	ASN
2	E	58	ASN
2	E	89	GLN
2	E	96	GLN
2	E	101	GLN
2	E	239	HIS
2	E	340	GLN
2	E	505	HIS
2	E	578	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 45 ligands modelled in this entry, 6 are monoatomic - leaving 39 for Mogul analysis.

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
3	NAG	A	1306	1	14,14,15	0.31	0	17,19,21	0.56	0
3	NAG	C	1308	1	14,14,15	0.36	0	17,19,21	0.58	0
3	NAG	B	1302	1	14,14,15	0.50	0	17,19,21	0.92	0
3	NAG	A	1311	1	14,14,15	0.53	0	17,19,21	0.67	0
3	NAG	C	1301	1	14,14,15	0.35	0	17,19,21	0.62	0
3	NAG	C	1305	1	14,14,15	0.29	0	17,19,21	0.80	1 (5%)
3	NAG	F	903	2	14,14,15	0.27	0	17,19,21	0.65	0
3	NAG	B	1303	1	14,14,15	0.35	0	17,19,21	0.49	0
3	NAG	C	1303	1	14,14,15	0.36	0	17,19,21	0.60	0
3	NAG	C	1310	1	14,14,15	0.40	0	17,19,21	0.75	0
3	NAG	B	1301	1	14,14,15	0.38	0	17,19,21	0.55	0
3	NAG	C	1309	1	14,14,15	0.30	0	17,19,21	0.67	0
3	NAG	B	1310	1	14,14,15	0.30	0	17,19,21	0.57	0
3	NAG	A	1302	1	14,14,15	0.47	0	17,19,21	0.98	1 (5%)
3	NAG	A	1307	1	14,14,15	0.34	0	17,19,21	0.67	0
3	NAG	B	1304	1	14,14,15	0.41	0	17,19,21	0.75	0
3	NAG	C	1311	1	14,14,15	0.30	0	17,19,21	0.62	0
3	NAG	A	1309	1	14,14,15	0.35	0	17,19,21	0.85	1 (5%)
3	NAG	D	904	2	14,14,15	0.40	0	17,19,21	0.76	0
3	NAG	A	1303	1	14,14,15	0.36	0	17,19,21	0.53	0
3	NAG	B	1308	1	14,14,15	0.29	0	17,19,21	0.90	1 (5%)
3	NAG	F	904	2	14,14,15	0.33	0	17,19,21	0.60	0
3	NAG	C	1304	1	14,14,15	0.26	0	17,19,21	0.58	0
3	NAG	B	1305	1	14,14,15	0.38	0	17,19,21	0.55	0
3	NAG	C	1302	1	14,14,15	0.40	0	17,19,21	0.89	1 (5%)
3	NAG	B	1309	1	14,14,15	0.35	0	17,19,21	1.23	2 (11%)
3	NAG	C	1306	1	14,14,15	0.39	0	17,19,21	0.76	0
3	NAG	E	903	2	14,14,15	0.34	0	17,19,21	0.79	0
3	NAG	B	1306	1	14,14,15	0.38	0	17,19,21	0.56	0
3	NAG	B	1307	1	14,14,15	0.26	0	17,19,21	0.48	0
3	NAG	A	1304	1	14,14,15	0.26	0	17,19,21	0.52	0
3	NAG	A	1308	1	14,14,15	0.31	0	17,19,21	0.51	0
3	NAG	A	1305	1	14,14,15	0.45	0	17,19,21	1.15	1 (5%)
3	NAG	C	1307	1	14,14,15	0.37	0	17,19,21	0.60	0
3	NAG	E	904	2	14,14,15	0.41	0	17,19,21	0.76	0
3	NAG	A	1310	1	14,14,15	0.37	0	17,19,21	0.91	0
3	NAG	A	1301	1	14,14,15	0.34	0	17,19,21	0.60	0
3	NAG	B	1311	1	14,14,15	0.41	0	17,19,21	1.37	3 (17%)
3	NAG	D	903	2	14,14,15	0.36	0	17,19,21	0.80	0

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
3	NAG	A	1306	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1308	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1302	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1311	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1301	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1305	1	-	2/6/23/26	0/1/1/1
3	NAG	F	903	2	-	2/6/23/26	0/1/1/1
3	NAG	B	1303	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1303	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1310	1	-	1/6/23/26	0/1/1/1
3	NAG	B	1301	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1309	1	-	3/6/23/26	0/1/1/1
3	NAG	B	1310	1	-	4/6/23/26	0/1/1/1
3	NAG	A	1302	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1307	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1304	1	-	1/6/23/26	0/1/1/1
3	NAG	C	1311	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1309	1	-	5/6/23/26	0/1/1/1
3	NAG	D	904	2	-	1/6/23/26	0/1/1/1
3	NAG	A	1303	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1308	1	-	2/6/23/26	0/1/1/1
3	NAG	F	904	2	-	2/6/23/26	0/1/1/1
3	NAG	C	1304	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1305	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1302	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1309	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1306	1	-	1/6/23/26	0/1/1/1
3	NAG	E	903	2	-	2/6/23/26	0/1/1/1
3	NAG	B	1306	1	-	4/6/23/26	0/1/1/1
3	NAG	B	1307	1	-	5/6/23/26	0/1/1/1
3	NAG	A	1304	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1308	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1305	1	-	1/6/23/26	0/1/1/1
3	NAG	C	1307	1	-	2/6/23/26	0/1/1/1
3	NAG	E	904	2	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	A	1310	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1301	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1311	1	-	4/6/23/26	0/1/1/1
3	NAG	D	903	2	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1309	NAG	C1-O5-C5	3.94	117.46	112.19
3	A	1305	NAG	C1-O5-C5	3.93	117.45	112.19
3	A	1309	NAG	C1-O5-C5	2.79	115.93	112.19
3	A	1302	NAG	O5-C1-C2	2.68	115.43	111.29
3	C	1302	NAG	O5-C1-C2	2.62	115.35	111.29
3	B	1311	NAG	O5-C1-C2	-2.59	107.28	111.29
3	B	1311	NAG	C1-O5-C5	2.58	115.64	112.19
3	B	1311	NAG	C2-N2-C7	-2.58	119.45	122.90
3	B	1308	NAG	C4-C3-C2	-2.33	107.60	111.02
3	B	1309	NAG	O5-C1-C2	-2.28	107.76	111.29
3	C	1305	NAG	C1-O5-C5	2.02	114.90	112.19

There are no chirality outliers.

All (71) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1302	NAG	C8-C7-N2-C2
3	A	1302	NAG	O7-C7-N2-C2
3	A	1306	NAG	C8-C7-N2-C2
3	A	1306	NAG	O7-C7-N2-C2
3	B	1308	NAG	C8-C7-N2-C2
3	B	1308	NAG	O7-C7-N2-C2
3	C	1311	NAG	C8-C7-N2-C2
3	C	1311	NAG	O7-C7-N2-C2
3	D	903	NAG	O7-C7-N2-C2
3	F	903	NAG	C8-C7-N2-C2
3	F	903	NAG	O7-C7-N2-C2
3	E	903	NAG	C8-C7-N2-C2
3	E	903	NAG	O7-C7-N2-C2
3	D	903	NAG	C8-C7-N2-C2
3	A	1309	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
3	A	1304	NAG	C8-C7-N2-C2
3	B	1307	NAG	C8-C7-N2-C2
3	C	1305	NAG	C8-C7-N2-C2
3	A	1309	NAG	C8-C7-N2-C2
3	A	1310	NAG	C8-C7-N2-C2
3	B	1306	NAG	C8-C7-N2-C2
3	B	1311	NAG	C8-C7-N2-C2
3	C	1303	NAG	C8-C7-N2-C2
3	C	1304	NAG	C8-C7-N2-C2
3	C	1305	NAG	O7-C7-N2-C2
3	F	904	NAG	C8-C7-N2-C2
3	B	1311	NAG	O5-C5-C6-O6
3	A	1309	NAG	C4-C5-C6-O6
3	A	1304	NAG	O7-C7-N2-C2
3	A	1308	NAG	C8-C7-N2-C2
3	A	1309	NAG	O7-C7-N2-C2
3	A	1310	NAG	O7-C7-N2-C2
3	B	1305	NAG	C8-C7-N2-C2
3	B	1306	NAG	O7-C7-N2-C2
3	B	1307	NAG	O7-C7-N2-C2
3	B	1311	NAG	O7-C7-N2-C2
3	C	1302	NAG	C8-C7-N2-C2
3	C	1303	NAG	O7-C7-N2-C2
3	C	1304	NAG	O7-C7-N2-C2
3	C	1307	NAG	C8-C7-N2-C2
3	C	1309	NAG	C8-C7-N2-C2
3	F	904	NAG	O7-C7-N2-C2
3	A	1307	NAG	C8-C7-N2-C2
3	A	1308	NAG	O7-C7-N2-C2
3	C	1309	NAG	O7-C7-N2-C2
3	B	1311	NAG	C4-C5-C6-O6
3	B	1303	NAG	C8-C7-N2-C2
3	B	1305	NAG	O7-C7-N2-C2
3	C	1302	NAG	O7-C7-N2-C2
3	C	1307	NAG	O7-C7-N2-C2
3	A	1307	NAG	O7-C7-N2-C2
3	B	1306	NAG	C4-C5-C6-O6
3	B	1303	NAG	O7-C7-N2-C2
3	B	1306	NAG	O5-C5-C6-O6
3	C	1309	NAG	O5-C5-C6-O6
3	A	1305	NAG	O5-C5-C6-O6
3	B	1310	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	A	1311	NAG	C8-C7-N2-C2
3	A	1311	NAG	O7-C7-N2-C2
3	B	1310	NAG	O7-C7-N2-C2
3	B	1310	NAG	C4-C5-C6-O6
3	B	1307	NAG	C4-C5-C6-O6
3	B	1310	NAG	O5-C5-C6-O6
3	A	1309	NAG	C1-C2-N2-C7
3	B	1304	NAG	C1-C2-N2-C7
3	B	1307	NAG	C1-C2-N2-C7
3	C	1306	NAG	C1-C2-N2-C7
3	C	1310	NAG	C1-C2-N2-C7
3	D	904	NAG	C1-C2-N2-C7
3	E	904	NAG	C1-C2-N2-C7
3	B	1307	NAG	O5-C5-C6-O6

There are no ring outliers.

3 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1304	NAG	3	0
3	D	904	NAG	6	0
3	E	904	NAG	6	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

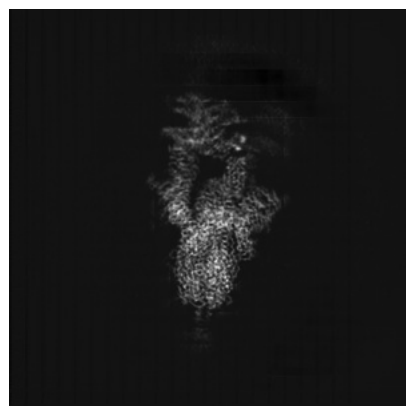
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-33340. These allow visual inspection of the internal detail of the map and identification of artifacts.

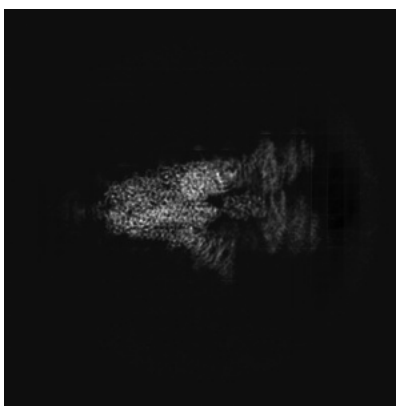
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

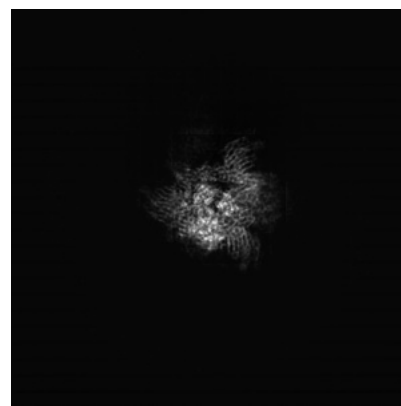
6.1.1 Primary map



X

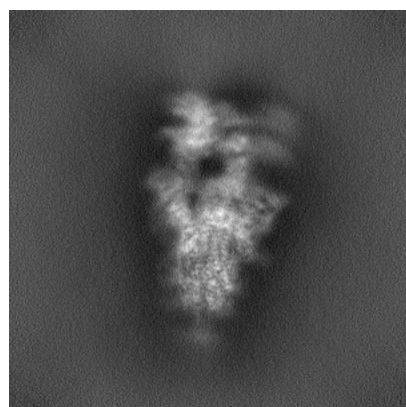


Y

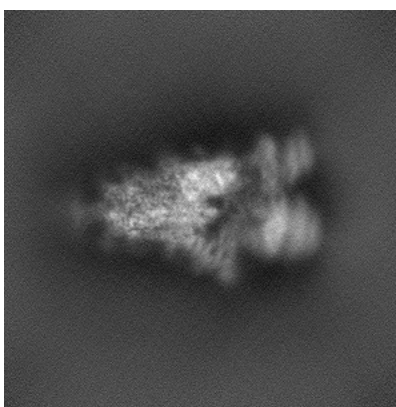


Z

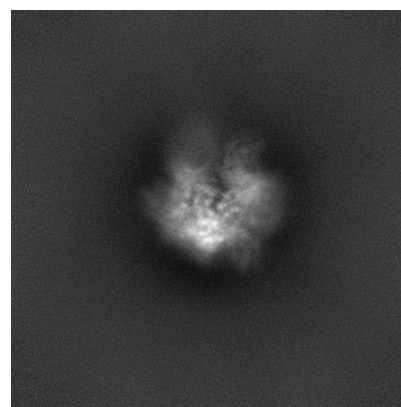
6.1.2 Raw map



X



Y



Z

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

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 240

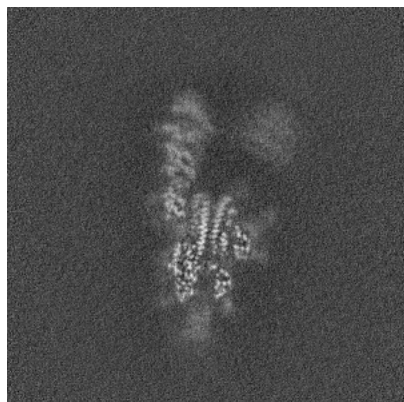


Y Index: 240

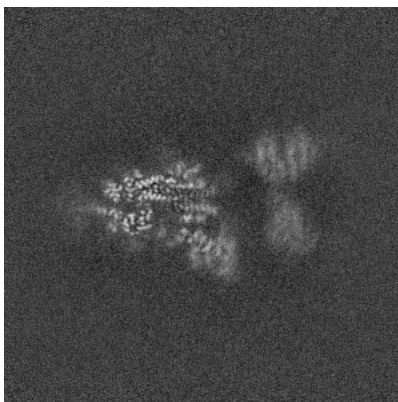


Z Index: 240

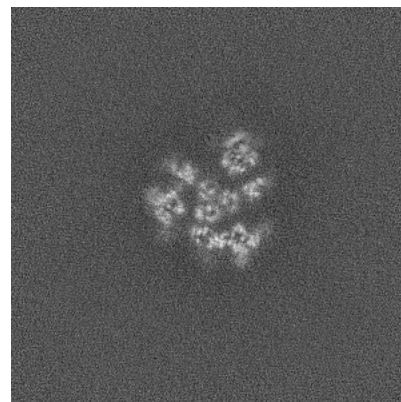
6.2.2 Raw map



X Index: 240



Y Index: 240



Z Index: 240

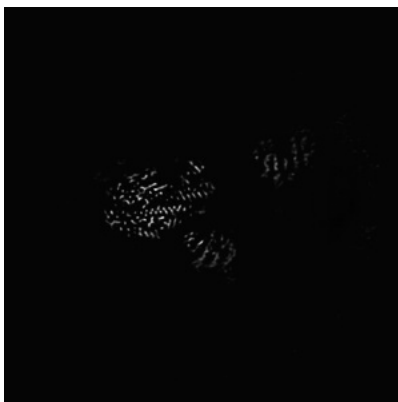
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

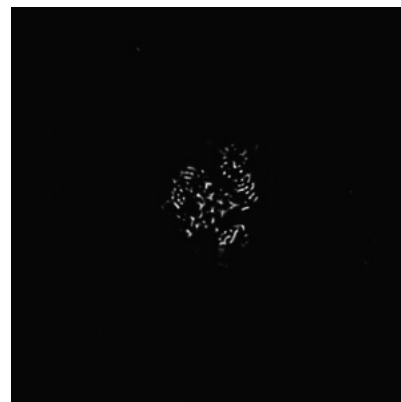
6.3.1 Primary map



X Index: 238



Y Index: 248

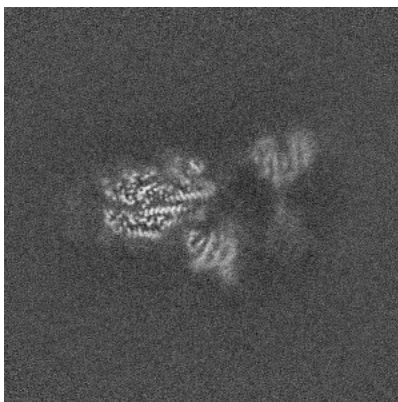


Z Index: 223

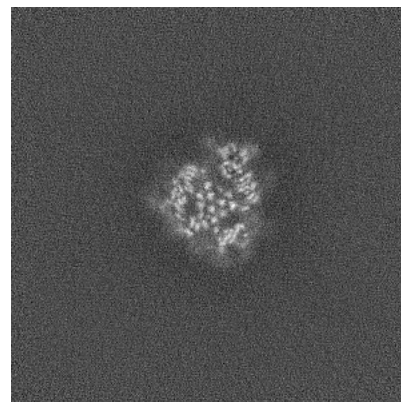
6.3.2 Raw map



X Index: 238



Y Index: 247

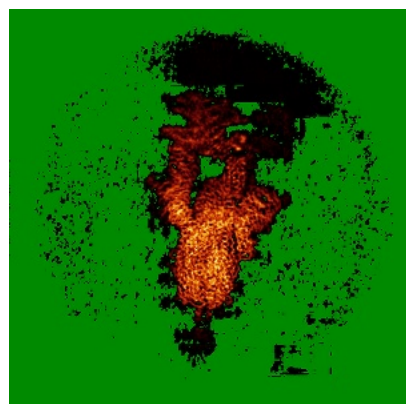


Z Index: 224

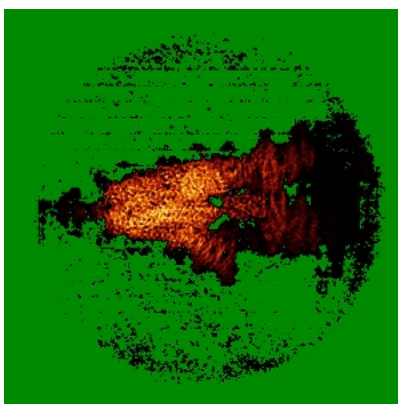
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

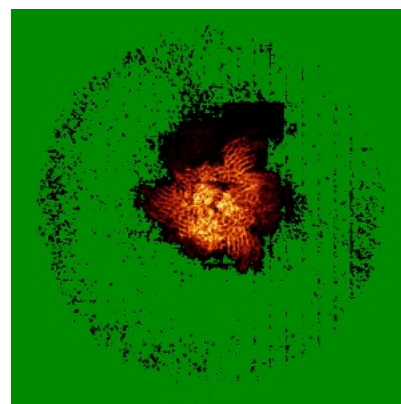
6.4.1 Primary map



X

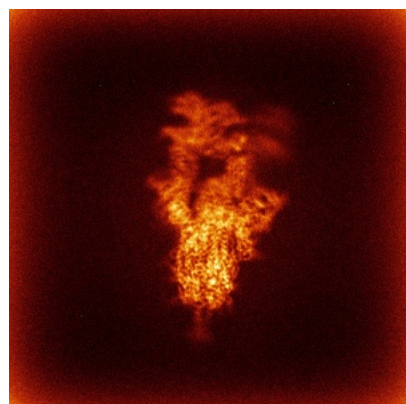


Y

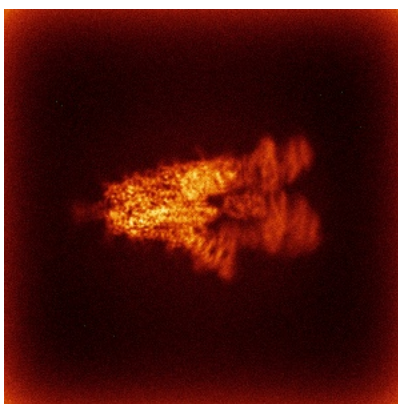


Z

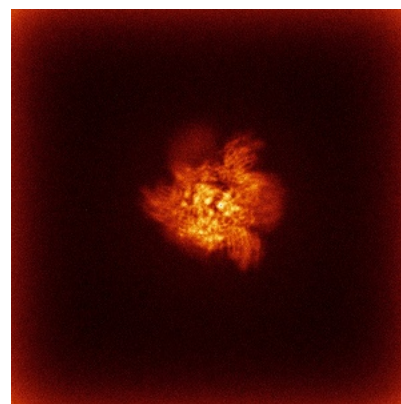
6.4.2 Raw map



X



Y

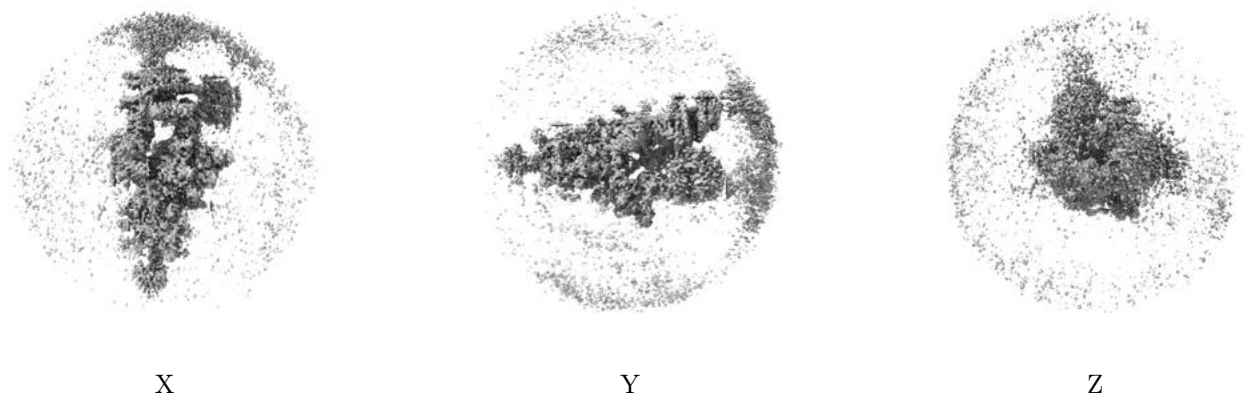


Z

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

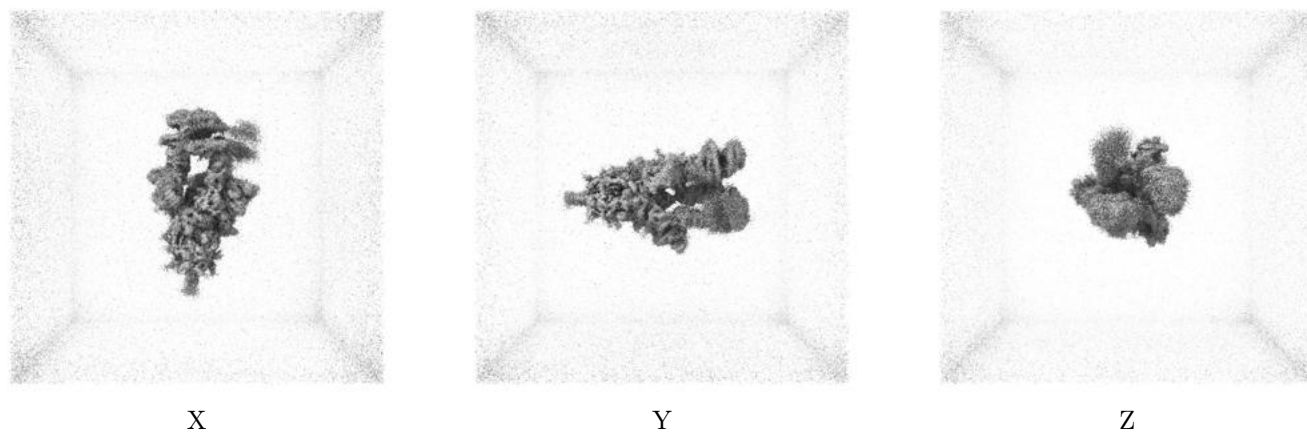
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

6.5.2 Raw map



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

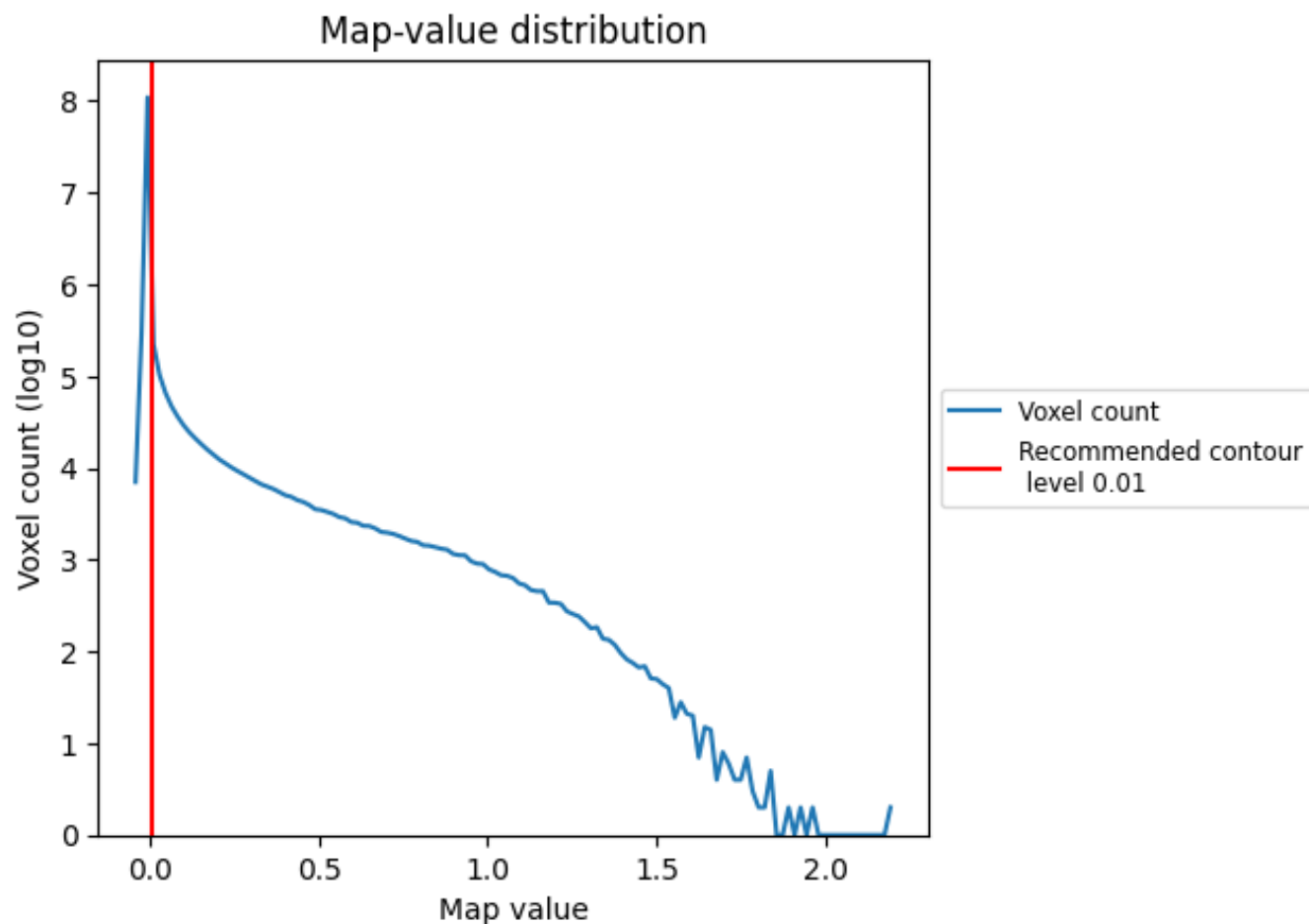
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

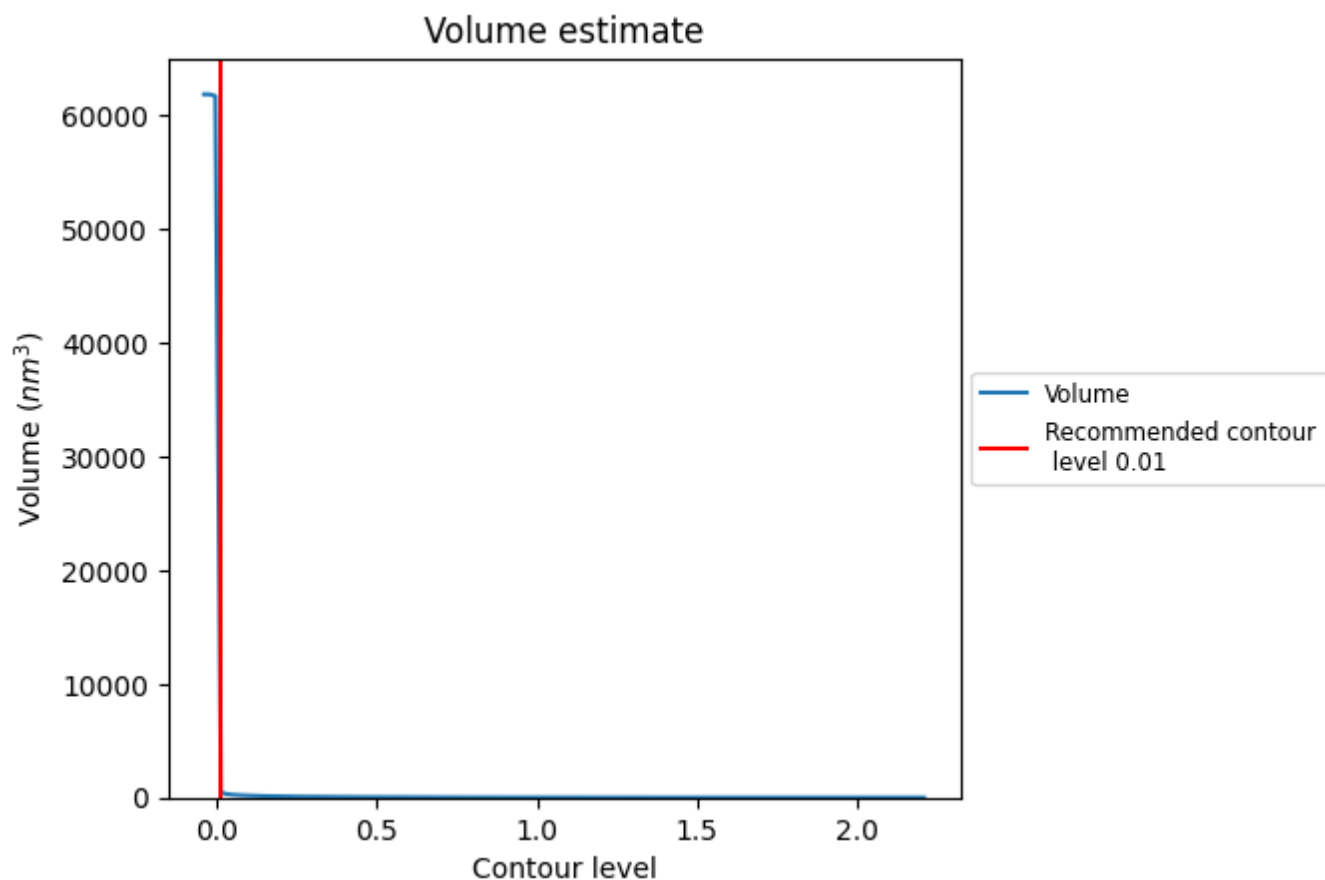
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

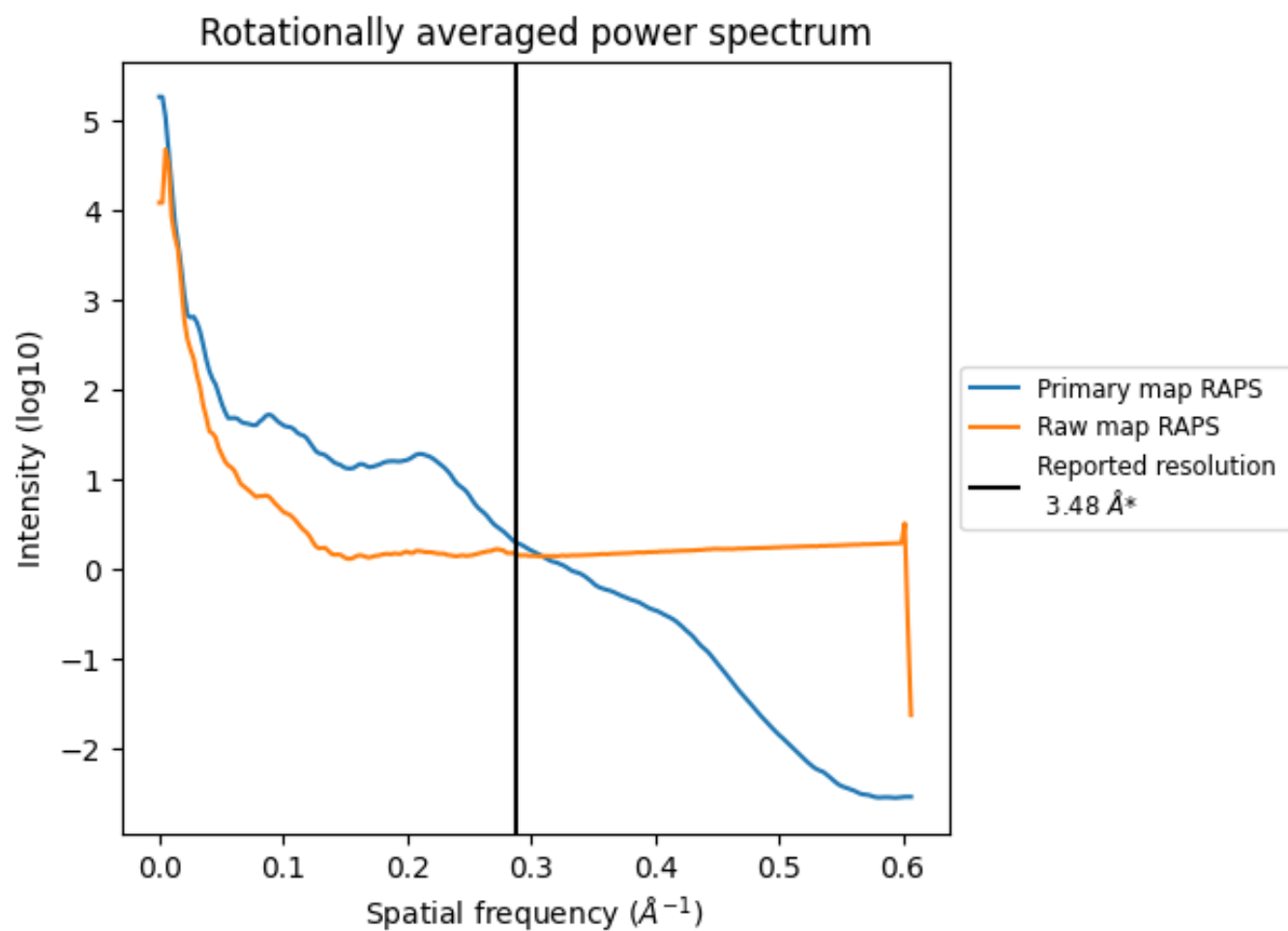
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 5471 nm^3 ; this corresponds to an approximate mass of 4942 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

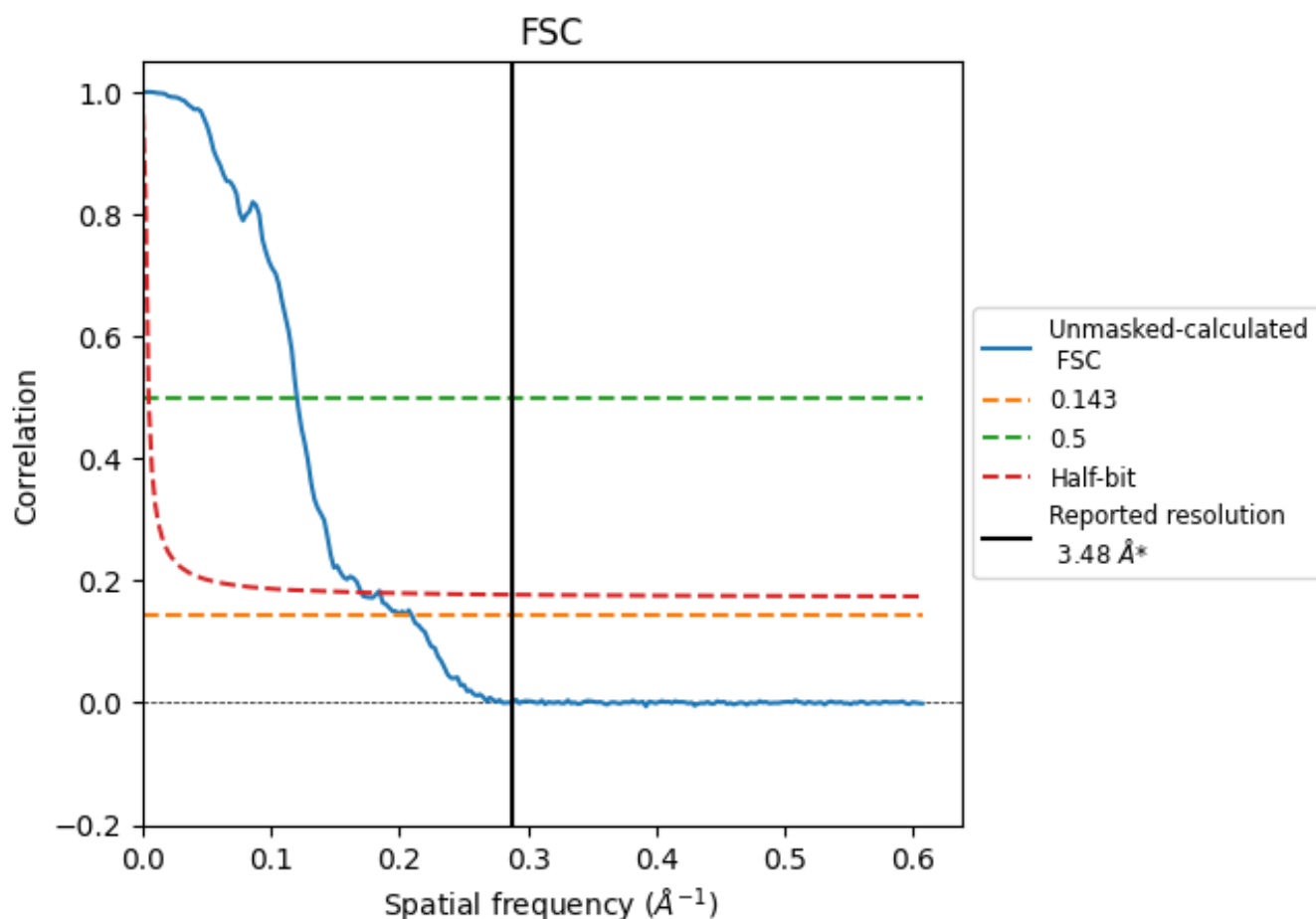


*Reported resolution corresponds to spatial frequency of 0.287 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of $0.287 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

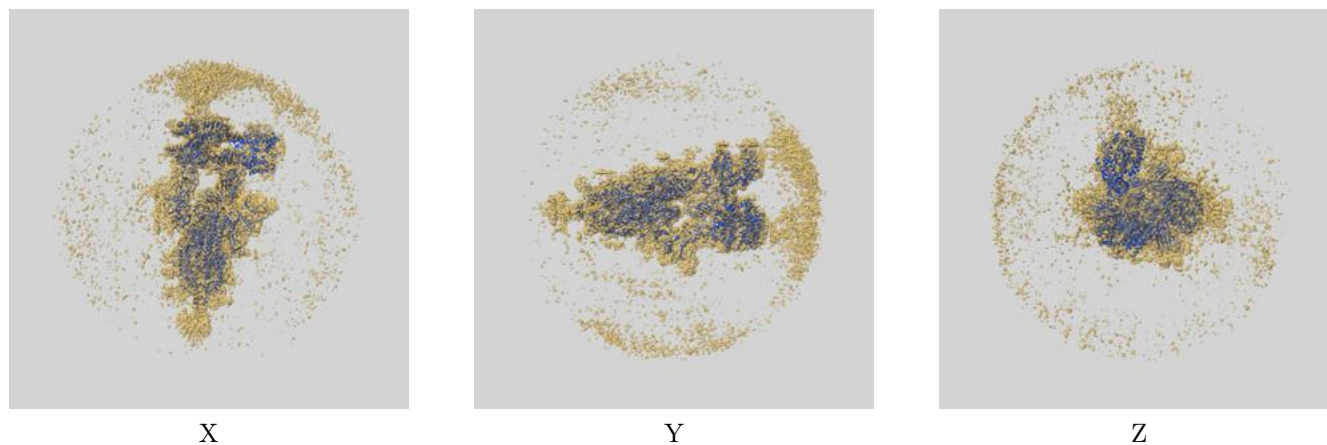
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.48	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.88	8.31	5.86

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.88 differs from the reported value 3.48 by more than 10 %

9 Map-model fit [i](#)

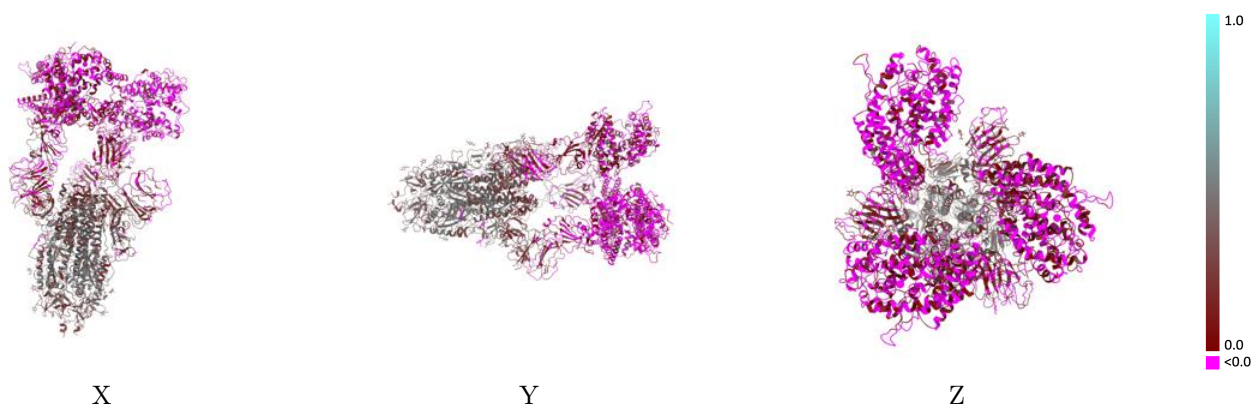
This section contains information regarding the fit between EMDB map EMD-33340 and PDB model 7XO8. Per-residue inclusion information can be found in section [3](#) on page [11](#).

9.1 Map-model overlay [i](#)



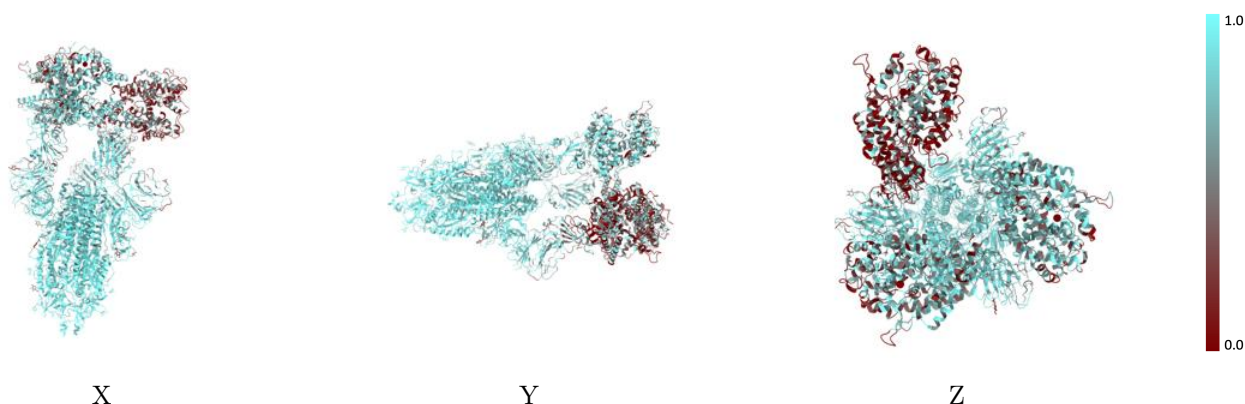
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



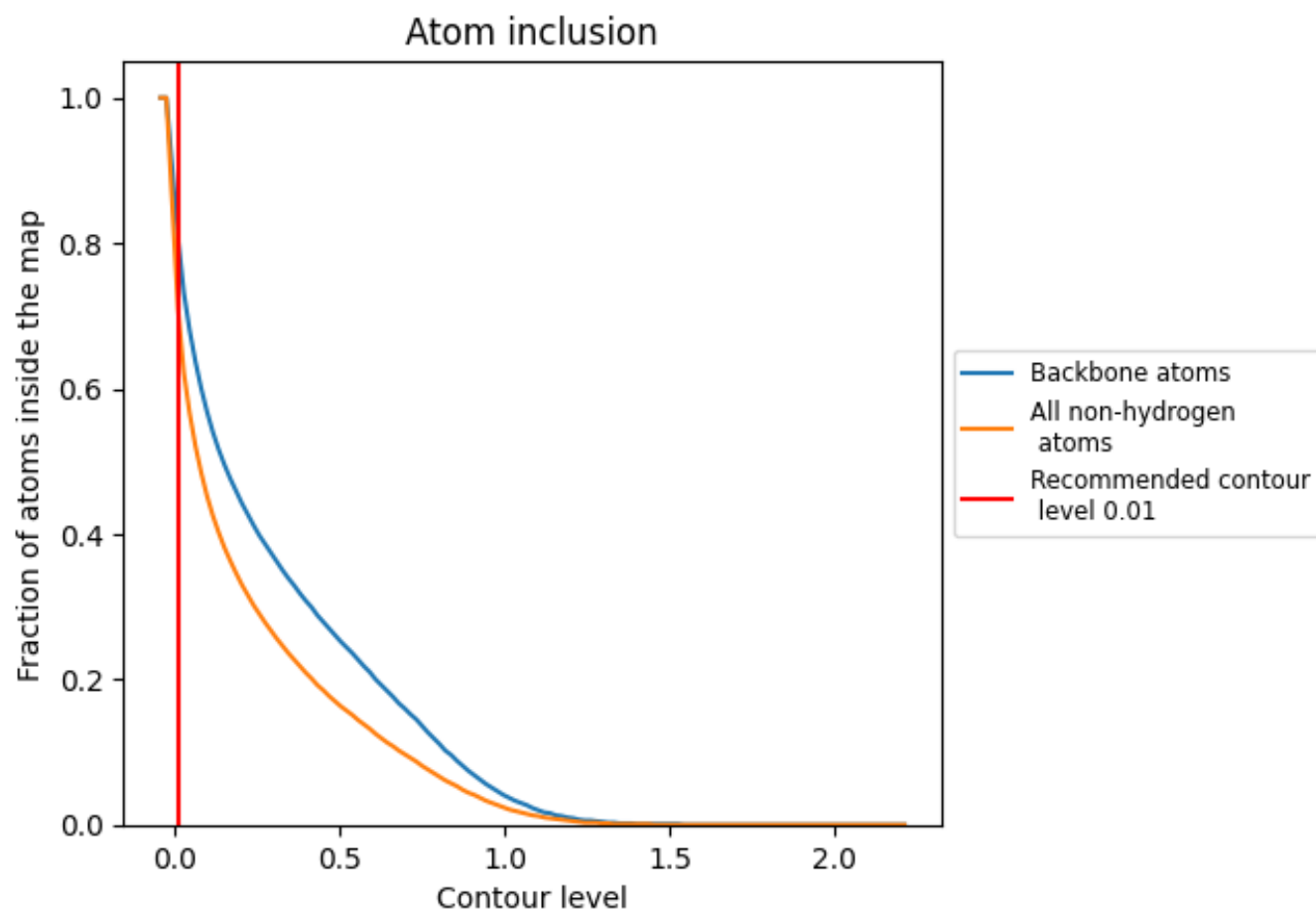
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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

9.4 Atom inclusion [i](#)



At the recommended contour level, 82% of all backbone atoms, 72% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7180	0.1540
A	0.8640	0.2720
B	0.8010	0.2480
C	0.8630	0.2610
D	0.5910	-0.0140
E	0.2810	-0.0680
F	0.6590	0.0170

1.0

0.0

<0.0