



## Full wwPDB EM Validation Report ⓘ

Jul 26, 2023 – 02:20 PM EDT

PDB ID : 8SJD  
EMDB ID : EMD-40553  
Title : Cryo-EM structure of the Hermes transposase bound to two right-ends of its DNA transposon.  
Authors : Lannes, L.; Dyda, F.  
Deposited on : 2023-04-17  
Resolution : 5.10 Å (reported)  
Based on initial models : 8EB5, 6DX0, 4D1Q

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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.dev50  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.34

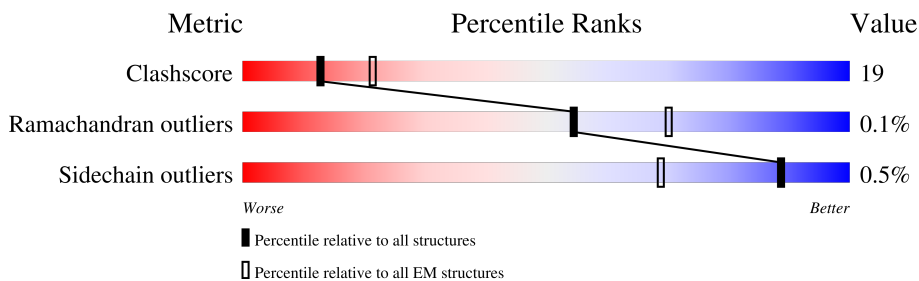
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 5.10 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	612	
1	B	612	
1	C	612	
1	D	612	
2	G	55	
2	J	55	
3	F	46	
3	I	46	

Continued on next page...

*Continued from previous page...*

Mol	Chain	Length	Quality of chain
4	E	7	 <p>86% 71% 29%</p>
4	H	7	 <p>86% 43% 57%</p>

## 2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 19777 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 Hermes transposase.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	C	474	3817	2443	645	710	19	0	0
1	D	479	3857	2467	653	718	19	0	0
1	B	477	3838	2459	648	712	19	0	0
1	A	478	3846	2463	650	714	19	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	2	GLU	GLN	engineered mutation	UNP Q25438
C	128	GLY	LYS	engineered mutation	UNP Q25438
D	2	GLU	GLN	engineered mutation	UNP Q25438
D	128	GLY	LYS	engineered mutation	UNP Q25438
B	2	GLU	GLN	engineered mutation	UNP Q25438
B	128	GLY	LYS	engineered mutation	UNP Q25438
A	2	GLU	GLN	engineered mutation	UNP Q25438
A	128	GLY	LYS	engineered mutation	UNP Q25438

- Molecule 2 is a DNA chain called DNA (55-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	J	55	1119	538	182	345	54	0	0
2	G	55	1122	538	182	347	55	0	0

- Molecule 3 is a DNA chain called DNA (46-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	I	46	Total 945	449	193	258	45	0	0
3	F	46	Total 945	449	193	258	45	0	0

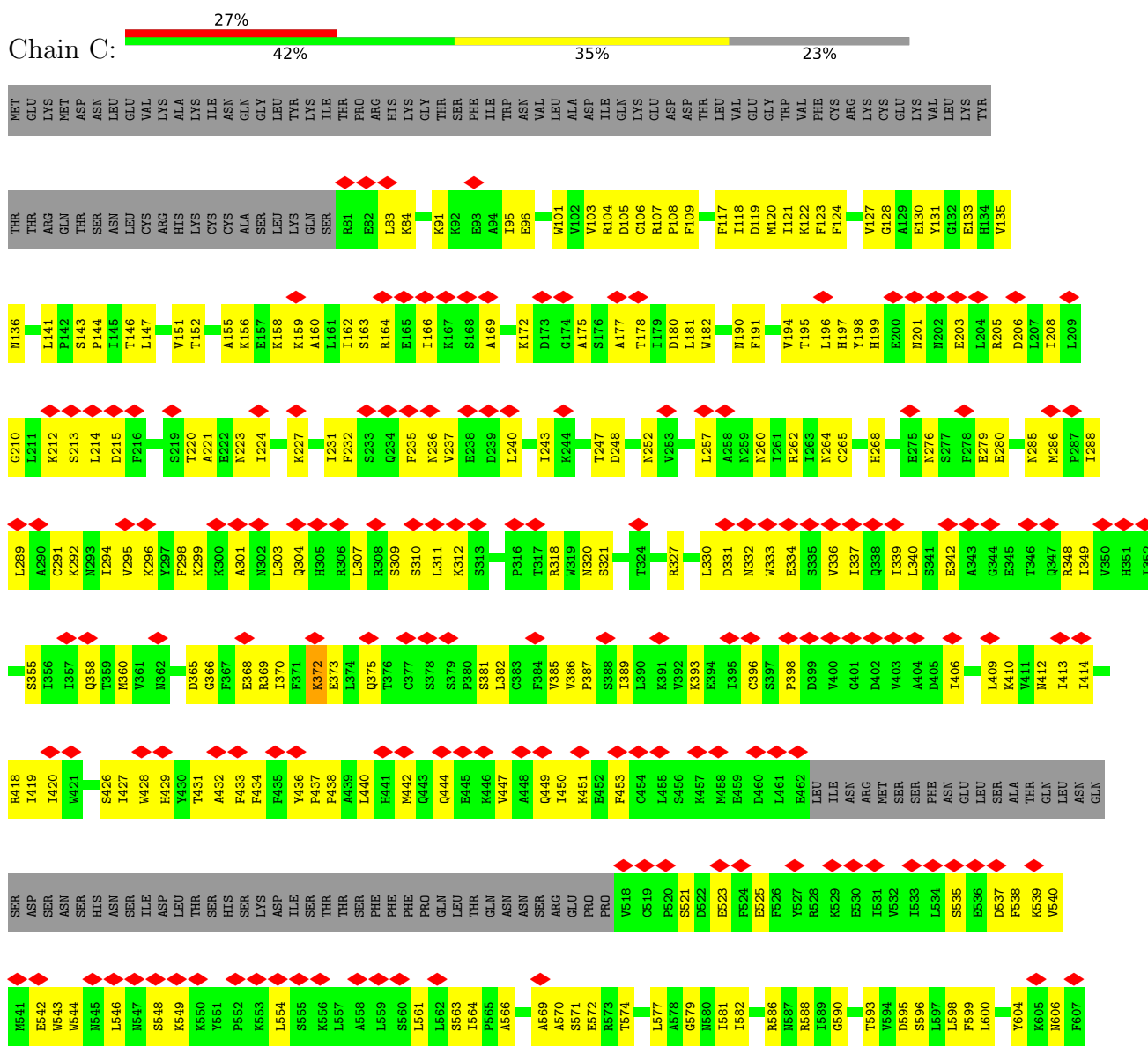
- Molecule 4 is a DNA chain called DNA (8-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	H	7	Total 144	69	30	39	6	0	0
4	E	7	Total 144	69	30	39	6	0	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: Hermes transposase



C608
K609
LEU
ASP
ILE

• Molecule 1: Hermes transposase



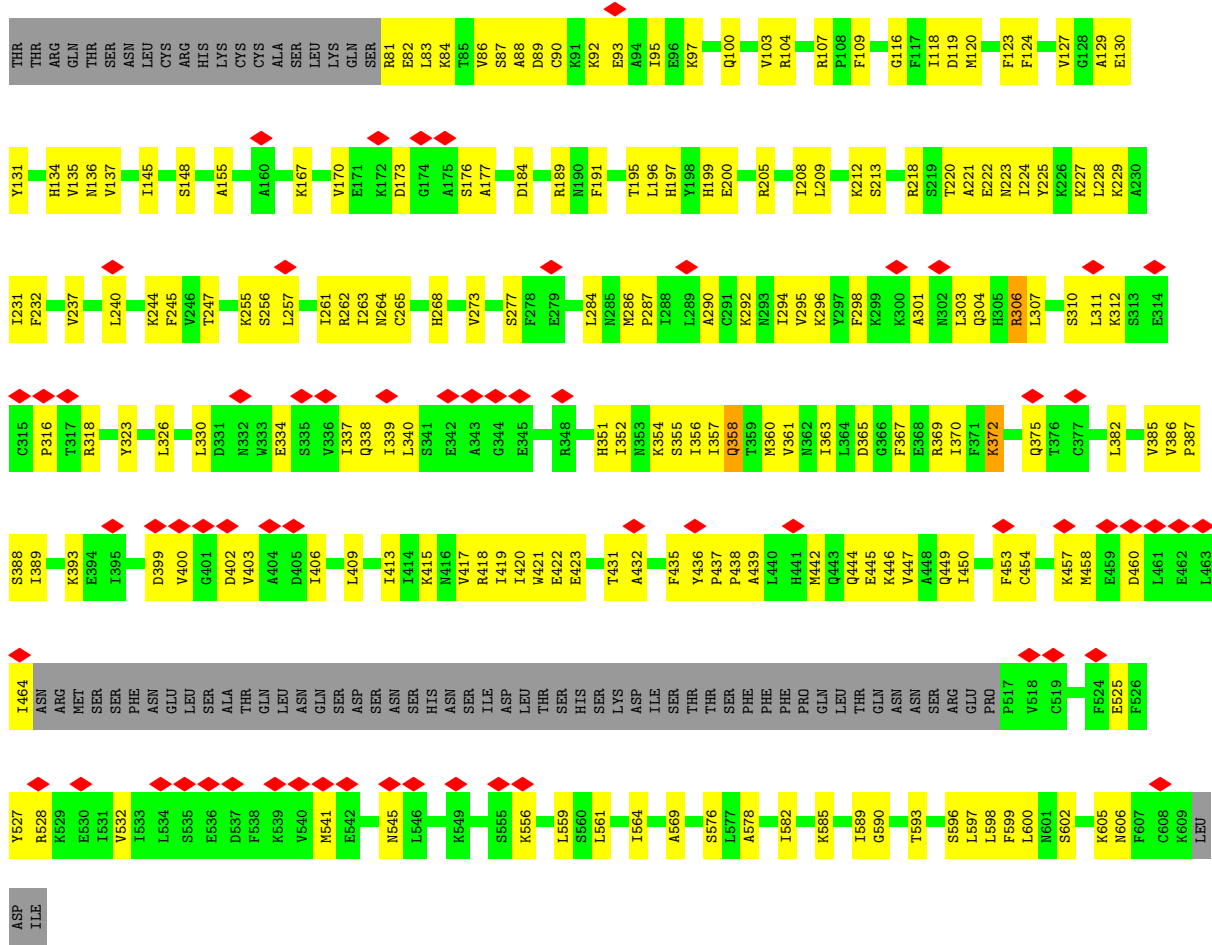
MET	GLU	LYS	MET	GLN	THR	ASP	ASN	ASP	LEU	VAL	VAL	GLY	ALA	LYS	LYS	ILE	ASN	ASN	GLN	GLY	LYS	TYR	LYS	ILE	THR	THR	PRO	ARG	HIS	HIS	GLY	THR	SER	SER	PHE	TRP	TRP	ILE	ASP	ASP	VAL	VAL	GLY	GLY	TRP	VAL	PHE	PHE	ARG	LYS	LYS	CYS	CYS	GLY	VAL	VAL	LEU	LEU	LYS	TYR																																																																																																																																																																																																																
THR	THR	ARG	GLN	THR	SER	ASN	LEU	LEU	VAL	CYS	ARG	HIS	ALA	LYS	LYS	CYS	CYS	ALA	LYS	LYS	GLN	SER	THR	THR	THR	PRO	ARG	HIS	HIS	GLY	THR	SER	SER	PHE	TRP	TRP	ILE	ASP	ASP	VAL	VAL	GLY	GLY	TRP	VAL	PHE	PHE	ARG	LYS	LYS	CYS	CYS	GLY	VAL	VAL	LEU	LEU	LYS	TYR																																																																																																																																																																																																																	
R81	E82	L83	K84	T85	V86	D89	C90	K91	K92	E93	A94	I95	E96	K97	C98	A99	Q100	V102	V103	R104	D105	R107	P108	F109	S115	G116	F117	I118	I121	I125	K126	N201	N202	E203	L204	R205	V135	M136	L141	P142	I145	S148	R149	V153	V154	T152	S153	A155	K156	E157	K158	L159	A160	L161	I162	S163	R164	E165	I166	S168	A169	V170	E171	K172	D173	G174	A175	S176	A177	T178	I179	D180	L181	I187	F191	L192	F195	L196	H197	Y198	H199	E200	N202	E203	L204	R205	D206	L207	I208	L209	G210	K212	S213	L214	D215	F216	A221	K227	F232	F235	N236	V237	E238	D239	L240	I243	K244	F245	V246	T247	D248	R249	G250	A251	N252	S256	L257	I261	M264	C265	S266	L269	L270	S271	N272	V273	L274	H275	F278	E279	M286	P287	L288	L289	A290	C291	N292	N293	I294	V295	K296	T297	F298	K299	K300	A301	R302	L303	Q304	H305	R306	L307	R308	S309	S310	L311	K312	S313	E314	C315	P316	T317	R318	N319	N320	S321	T322	V323	S328	I329	L330	D331	N332	W333	E334	S335	V336	I337	Q338	I339	L340	S341	E342	A343	G344	E345	A406	A407	K408	L409	K410	I413	V417	I420	A421	E422	E423	M424	L425	S426	I427	M428	M429	Y430	T431	A432	F433	F434	F435	Y436	P437	P438	A439	L440	H441	M442	Q443	Q444	E445	K446	V447	A448	Q449	I450	K451	E452	F453	C454	L455	S456	K457	M458	F459	D460	L461	E462	LEU	ILE	ASN	ARG	ASN	MET	SER	PHE	ASN	LYS	GLU	SER	PHE	ASN	L534	L535	F536	L537	T538	G539	O591	G592	T593	L597	L598	F599	L600	R601	S602	N606	F607	C608

K609
LEU
ASP
ILE

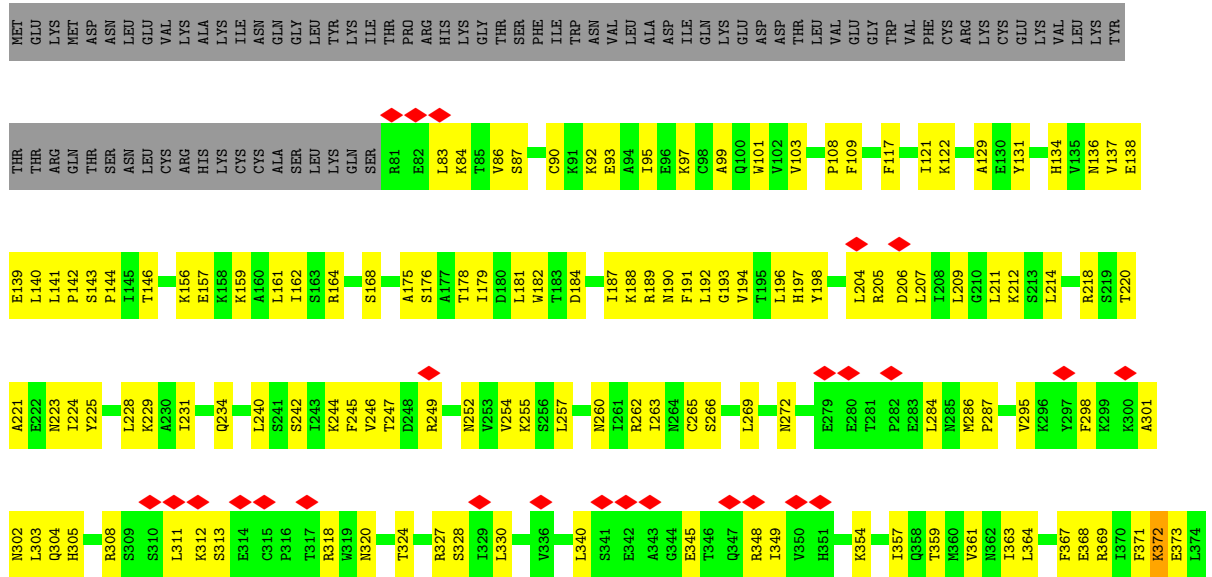
• Molecule 1: Hermes transposase



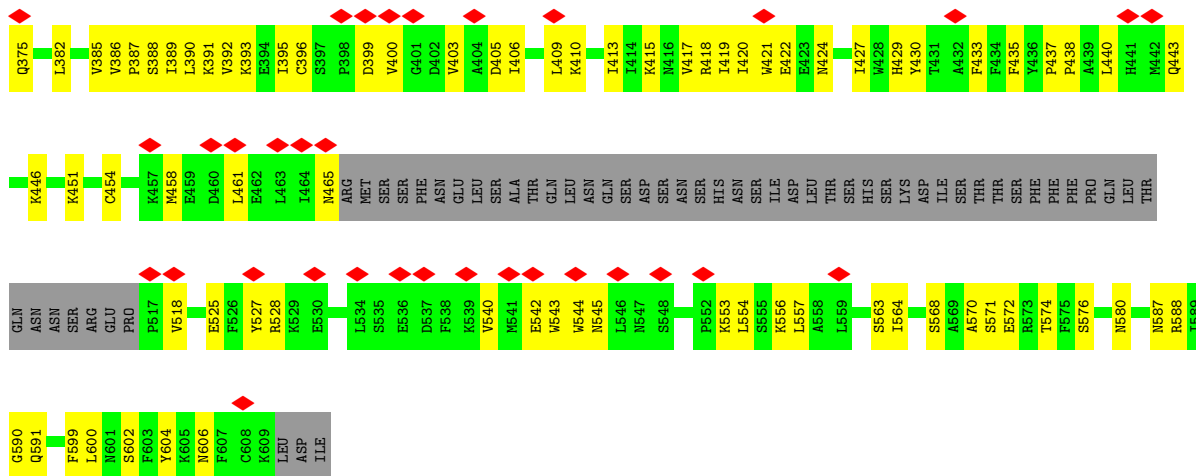
MET	GLU	LYS	MET	ASP	ASN	ASP	LEU	GLU	VAL	VAL	LYS	ALA	LYS	LYS	ILE	ASN	ASN	GLN	GLY	LYS	TYR	LYS	ILE	THR	THR	PRO	ARG	HIS	HIS	GLY	THR	SER	SER	PHE	TRP	TRP	ILE	ASP	ASP	VAL	VAL	GLY	GLY	TRP	VAL	PHE	PHE	ARG	LYS	LYS	CYS	CYS	GLY	VAL	VAL	LEU	LEU	LYS	TYR
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



• Molecule 1: Hermes transposase







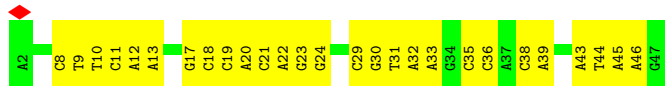
• Molecule 2: DNA (55-MER)



• Molecule 2: DNA (55-MER)



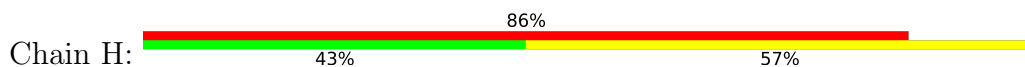
• Molecule 3: DNA (46-MER)



• Molecule 3: DNA (46-MER)

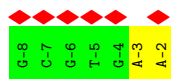
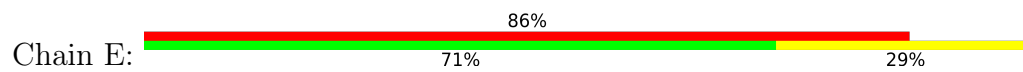


• Molecule 4: DNA (8-MER)





• Molecule 4: DNA (8-MER)



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53656	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	48.7	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.045	Depositor
Minimum map value	-0.020	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.01	Depositor
Map size ( $\text{\AA}$ )	249.40001, 249.40001, 249.40001	wwPDB
Map dimensions	290, 290, 290	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.86, 0.86, 0.86	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.28	0/3919	0.49	0/5287
1	B	0.28	0/3911	0.52	0/5276
1	C	0.26	0/3889	0.48	0/5246
1	D	0.26	0/3931	0.47	0/5304
2	G	0.55	0/1251	1.03	0/1930
2	J	0.58	0/1248	1.05	0/1926
3	F	0.56	0/1066	0.81	0/1642
3	I	0.58	0/1066	0.85	0/1642
4	E	0.51	0/162	0.83	0/249
4	H	0.50	0/162	0.89	0/249
All	All	0.36	0/20605	0.64	0/28751

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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	3846	0	3916	164	0
1	B	3838	0	3910	153	0
1	C	3817	0	3884	172	0
1	D	3857	0	3922	139	0
2	G	1122	0	629	44	0
2	J	1119	0	630	50	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	F	945	0	513	28	0
3	I	945	0	513	22	0
4	E	144	0	80	2	0
4	H	144	0	80	2	0
All	All	19777	0	18077	700	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 19.

All (700) 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:B:367:PHE:HA	1:B:370:ILE:HD12	1.61	0.83
2:J:6:DC:H2''	2:J:7:DT:H5'	1.66	0.78
1:B:205:ARG:HH21	1:B:606:ASN:HB3	1.48	0.78
1:A:465:ASN:HD21	1:A:556:LYS:HE2	1.48	0.78
1:D:354:LYS:HG2	1:D:358:GLN:HE22	1.48	0.77
1:C:257:LEU:HD23	1:C:262:ARG:HG3	1.67	0.77
1:A:525:GLU:HA	1:A:528:ARG:HG2	1.67	0.77
1:A:386:VAL:HG23	1:A:429:HIS:HE1	1.51	0.76
3:F:33:DA:H2'	3:F:34:DG:C8	2.21	0.76
2:G:43:DC:N4	3:F:5:DG:O6	2.19	0.75
2:J:8:DA:H2'	2:J:9:DT:H71	1.66	0.75
1:A:272:ASN:ND2	4:E:-2:DA:OP2	2.18	0.75
1:B:541:MET:O	1:B:545:ASN:ND2	2.19	0.75
1:A:320:ASN:ND2	1:A:368:GLU:OE1	2.20	0.74
1:A:403:VAL:HG12	1:A:406:ILE:HG12	1.70	0.74
1:D:334:GLU:O	1:D:338:GLN:NE2	2.21	0.73
1:B:318:ARG:HH22	2:J:45:DC:H5''	1.55	0.72
2:J:31:DC:H2''	2:J:32:DT:H5'	1.72	0.71
1:A:137:VAL:HG13	1:A:141:LEU:HD23	1.72	0.71
1:D:417:VAL:HG13	1:D:421:TRP:HD1	1.55	0.71
1:A:295:VAL:HG22	1:A:311:LEU:HD13	1.70	0.71
1:A:364:LEU:HA	1:A:367:PHE:HD2	1.54	0.70
1:C:546:LEU:O	1:C:549:LYS:NZ	2.24	0.70
1:B:221:ALA:HA	1:B:224:ILE:HD12	1.73	0.70
2:J:29:DG:H2''	2:J:30:DG:H5'	1.74	0.70
2:G:38:DA:H2'	2:G:39:DA:H8	1.55	0.70
1:D:374:LEU:HD22	1:D:385:VAL:HG22	1.74	0.69
1:A:179:ILE:HG22	1:A:194:VAL:HA	1.74	0.69
3:F:34:DG:H2''	3:F:35:DC:H2'	1.73	0.69

Continued on next page...

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:586:ARG:NH2	2:J:5:DT:OP1	2.25	0.69
1:A:302:ASN:O	1:A:305:HIS:ND1	2.22	0.68
1:C:119:ASP:HA	1:C:122:LYS:HE2	1.76	0.68
1:C:118:ILE:HG22	1:C:122:LYS:NZ	2.08	0.68
2:G:13:DG:H1'	2:G:14:DC:H5'	1.75	0.68
2:G:2:DT:H2''	2:G:3:DT:H5'	1.75	0.68
3:F:2:DA:H2''	3:F:3:DG:H5''	1.76	0.68
1:C:304:GLN:HE22	1:C:311:LEU:HB2	1.57	0.67
1:A:164:ARG:NH1	1:A:168:SER:OG	2.26	0.67
1:B:247:THR:O	1:B:265:CYS:N	2.27	0.67
4:H:-3:DA:H2''	4:H:-2:DA:H5''	1.75	0.67
1:A:218:ARG:O	1:A:223:ASN:ND2	2.28	0.66
1:A:340:LEU:HD22	1:A:345:GLU:HB3	1.76	0.66
1:C:83:LEU:HB2	1:D:136:ASN:HB2	1.76	0.66
1:C:177:ALA:HB2	1:C:196:LEU:HD13	1.77	0.66
1:D:244:LYS:HD2	1:D:564:ILE:HD11	1.76	0.66
1:C:243:ILE:O	1:C:260:ASN:ND2	2.25	0.66
1:D:434:PHE:HB2	1:D:450:ILE:HD13	1.78	0.66
1:A:176:SER:HB3	1:A:564:ILE:HG12	1.77	0.66
3:F:11:DC:H2''	3:F:12:DA:H5'	1.78	0.66
1:C:310:SER:O	1:C:312:LYS:NZ	2.25	0.66
1:D:320:ASN:ND2	1:D:368:GLU:OE2	2.27	0.65
1:B:301:ALA:HB3	1:B:303:LEU:HD22	1.77	0.65
1:D:214:LEU:HA	1:D:227:LYS:HE2	1.78	0.65
1:C:190:ASN:ND2	1:C:215:ASP:O	2.28	0.65
1:C:197:HIS:ND1	1:C:563:SER:O	2.29	0.65
1:D:191:PHE:HB3	1:D:211:LEU:HG	1.79	0.65
1:A:435:PHE:O	1:A:527:TYR:OH	2.14	0.65
1:A:247:THR:O	1:A:265:CYS:N	2.29	0.65
1:A:576:SER:O	1:A:580:ASN:ND2	2.30	0.64
1:B:195:THR:HA	1:B:209:LEU:H	1.61	0.64
1:A:385:VAL:HB	1:A:429:HIS:NE2	2.13	0.64
1:A:602:SER:O	1:A:606:ASN:ND2	2.28	0.64
1:B:385:VAL:O	1:B:388:SER:OG	2.16	0.64
1:C:385:VAL:HG21	1:C:429:HIS:HB3	1.80	0.64
1:C:103:VAL:HG11	1:D:600:LEU:HD22	1.78	0.64
1:C:191:PHE:HA	1:C:213:SER:HA	1.80	0.64
1:A:420:ILE:O	1:A:424:ASN:ND2	2.31	0.64
2:G:38:DA:H2'	2:G:39:DA:C8	2.32	0.64
1:C:586:ARG:NH2	2:G:5:DT:OP1	2.28	0.63
2:J:22:DT:H2''	2:J:23:DG:H2'	1.79	0.63

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:525:GLU:OE1	1:D:528:ARG:NH2	2.31	0.63
1:C:91:LYS:O	1:C:95:ILE:HG12	1.97	0.63
1:A:255:LYS:HD2	2:G:52:DA:H5'	1.80	0.63
1:C:210:GLY:HA2	1:C:598:LEU:HD11	1.79	0.63
1:B:403:VAL:HG12	1:B:406:ILE:HG12	1.81	0.63
1:C:339:ILE:HA	1:C:342:GLU:HG2	1.78	0.63
1:C:431:THR:HG21	1:C:453:PHE:HD2	1.64	0.63
1:A:162:ILE:HD11	1:A:599:PHE:HZ	1.63	0.62
1:A:312:LYS:HG2	1:A:313:SER:H	1.64	0.62
1:D:517:PRO:O	1:D:519:CYS:N	2.31	0.62
1:C:206:ASP:O	1:C:606:ASN:ND2	2.32	0.62
1:B:290:ALA:HB3	1:B:352:ILE:HD11	1.79	0.62
1:B:417:VAL:HG13	1:B:421:TRP:HD1	1.63	0.62
2:J:43:DC:H2'	2:J:44:DT:C6	2.35	0.62
1:C:136:ASN:HB2	1:D:83:LEU:HB3	1.81	0.62
1:B:81:ARG:HE	1:B:82:GLU:HG3	1.64	0.62
1:D:318:ARG:NH2	3:F:47:DG:O5'	2.32	0.62
2:J:40:DG:H2''	2:J:41:DT:H5'	1.81	0.62
1:A:117:PHE:O	1:A:121:ILE:HG12	1.99	0.62
1:A:220:THR:HG23	1:A:223:ASN:H	1.64	0.61
2:J:26:DT:O2	3:I:23:DG:N2	2.32	0.61
1:D:382:LEU:HD22	1:D:564:ILE:HB	1.82	0.61
1:C:262:ARG:NH2	1:C:264:ASN:OD1	2.33	0.61
1:C:451:LYS:NZ	1:C:525:GLU:OE2	2.25	0.61
1:B:218:ARG:O	1:B:223:ASN:ND2	2.34	0.61
1:A:301:ALA:HB3	1:A:303:LEU:HD22	1.80	0.61
1:C:144:PRO:HA	1:C:147:LEU:HD12	1.83	0.61
1:D:309:SER:OG	1:D:332:ASN:ND2	2.33	0.61
1:A:419:ILE:HG13	1:A:420:ILE:HD12	1.83	0.61
1:A:156:LYS:HA	1:A:159:LYS:HE2	1.83	0.60
1:A:298:PHE:HB3	1:A:304:GLN:HG2	1.83	0.60
1:A:387:PRO:HD3	1:A:433:PHE:CZ	2.35	0.60
1:C:248:ASP:O	1:C:262:ARG:NH1	2.34	0.60
1:D:169:ALA:HA	1:D:172:LYS:HD3	1.83	0.60
1:D:309:SER:O	1:D:332:ASN:ND2	2.35	0.60
1:B:417:VAL:HG13	1:B:421:TRP:CD1	2.35	0.60
2:J:44:DT:H5''	2:J:44:DT:H6	1.65	0.60
1:C:135:VAL:HA	1:D:84:LYS:HG2	1.83	0.60
1:D:441:HIS:NE2	1:D:442:MET:SD	2.75	0.60
1:B:432:ALA:HA	1:B:561:LEU:HD11	1.83	0.60
1:D:427:ILE:HD12	1:D:430:TYR:HD2	1.66	0.60

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:388:SER:O	1:A:392:VAL:HG23	2.02	0.60
1:C:221:ALA:HB2	1:C:252:ASN:HB2	1.84	0.60
1:A:386:VAL:HA	1:A:389:ILE:HD12	1.82	0.60
3:I:45:DA:H2'	3:I:46:DA:C8	2.34	0.60
1:D:205:ARG:NH1	1:D:606:ASN:O	2.34	0.60
1:C:118:ILE:HG22	1:C:122:LYS:HZ3	1.67	0.60
1:D:403:VAL:HB	1:D:406:ILE:HG12	1.84	0.60
1:D:422:GLU:HA	1:D:425:LEU:HD12	1.83	0.60
1:B:356:ILE:HG23	1:B:406:ILE:HD11	1.84	0.60
1:D:573:ARG:NH2	2:G:1:DC:OP2	2.34	0.59
1:D:247:THR:O	1:D:265:CYS:N	2.35	0.59
1:D:514:ARG:NH2	1:D:519:CYS:SG	2.76	0.59
1:B:330:LEU:HD13	1:B:361:VAL:HG21	1.83	0.59
1:A:318:ARG:HH21	2:G:45:DC:H5''	1.66	0.59
2:G:35:DT:H2''	2:G:36:DT:H72	1.83	0.59
1:A:197:HIS:ND1	1:A:563:SER:O	2.34	0.59
4:H:-7:DC:H2''	4:H:-6:DG:C8	2.38	0.59
1:D:264:ASN:ND2	1:D:424:ASN:OD1	2.36	0.58
1:C:156:LYS:HA	1:C:159:LYS:HE3	1.85	0.58
1:C:437:PRO:HD3	1:C:540:VAL:HG23	1.86	0.58
1:D:298:PHE:HA	1:D:303:LEU:HB2	1.86	0.58
1:B:382:LEU:HD11	1:B:561:LEU:HG	1.86	0.58
1:C:286:MET:SD	1:C:286:MET:N	2.76	0.58
1:C:318:ARG:O	1:C:321:SER:OG	2.18	0.58
1:B:437:PRO:HG2	1:B:438:PRO:HD3	1.86	0.58
1:B:525:GLU:HA	1:B:528:ARG:HG2	1.85	0.58
1:B:590:GLY:O	1:B:593:THR:OG1	2.18	0.58
1:D:152:THR:HG22	1:D:156:LYS:HZ1	1.68	0.58
1:A:176:SER:OG	1:A:563:SER:O	2.21	0.58
1:A:587:ASN:ND2	2:J:44:DT:OP1	2.28	0.58
2:G:28:DT:H2''	2:G:29:DG:C8	2.38	0.58
3:F:35:DC:H2''	3:F:36:DC:C6	2.39	0.58
1:B:354:LYS:HA	1:B:357:ILE:HD12	1.85	0.58
1:B:116:GLY:O	1:B:120:MET:HG2	2.04	0.57
1:C:427:ILE:HD12	1:C:449:GLN:HB3	1.85	0.57
1:C:120:MET:HE1	1:D:97:LYS:HG2	1.85	0.57
1:C:419:ILE:HG13	1:C:420:ILE:HG13	1.85	0.57
1:C:571:SER:O	1:C:574:THR:OG1	2.20	0.57
1:C:175:ALA:HA	1:C:198:TYR:HB3	1.87	0.57
1:D:148:SER:OG	1:D:149:ARG:NH2	2.36	0.57
1:D:380:PRO:HB3	1:D:562:LEU:HD22	1.87	0.57

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:556:LYS:HD2	1:B:559:LEU:HD12	1.87	0.57
1:A:461:LEU:HD21	1:A:556:LYS:HD3	1.87	0.57
1:A:399:ASP:OD1	1:A:400:VAL:N	2.38	0.57
1:C:295:VAL:O	1:C:299:LYS:HG3	2.05	0.57
1:A:191:PHE:HB3	1:A:211:LEU:HD11	1.87	0.57
1:B:363:ILE:HG22	1:B:367:PHE:CE2	2.40	0.56
1:B:200:GLU:OE1	1:B:205:ARG:NH1	2.35	0.56
1:C:105:ASP:HB3	1:C:107:ARG:HE	1.71	0.56
1:D:91:LYS:O	1:D:95:ILE:HG12	2.04	0.56
1:B:306:ARG:O	1:B:306:ARG:NH1	2.35	0.56
1:A:396:CYS:HA	1:A:410:LYS:HD3	1.87	0.56
1:C:169:ALA:HA	1:C:172:LYS:HE2	1.86	0.56
1:A:324:THR:O	1:A:327:ARG:NH2	2.38	0.56
1:C:95:ILE:HG22	1:D:150:LYS:HG2	1.87	0.56
1:D:166:ILE:O	1:D:170:VAL:HG23	2.05	0.56
1:A:330:LEU:HD13	1:A:361:VAL:HG21	1.86	0.56
1:B:294:ILE:HD12	1:B:340:LEU:HD11	1.86	0.56
1:A:454:CYS:O	1:A:458:MET:HG2	2.06	0.56
1:A:284:LEU:HD21	1:A:405:ASP:HB3	1.86	0.56
1:C:214:LEU:HD13	1:C:224:ILE:HD13	1.88	0.56
1:A:303:LEU:HA	1:A:305:HIS:CE1	2.40	0.56
1:D:160:ALA:O	1:D:164:ARG:NH2	2.34	0.55
1:A:184:ASP:OD1	1:A:188:LYS:N	2.39	0.55
1:D:457:LYS:O	1:D:461:LEU:N	2.39	0.55
1:B:95:ILE:HG22	1:A:142:PRO:HG3	1.88	0.55
1:B:318:ARG:HG2	2:J:48:DG:H22	1.71	0.55
1:D:210:GLY:HA2	1:D:598:LEU:HD11	1.87	0.55
2:J:1:DC:H2"	2:J:2:DT:H5"	1.89	0.55
1:C:180:ASP:OD1	1:C:181:LEU:N	2.32	0.55
1:C:372:LYS:HA	1:C:375:GLN:HG2	1.89	0.55
1:B:273:VAL:HG22	1:B:420:ILE:HG13	1.89	0.55
1:C:365:ASP:OD1	1:C:366:GLY:N	2.40	0.55
3:F:3:DG:H2"	3:F:4:DA:H5"	1.88	0.55
3:F:40:DT:H2"	3:F:41:DA:H5"	1.89	0.55
1:C:240:LEU:HD23	1:C:260:ASN:HD22	1.72	0.55
1:B:184:ASP:OD1	1:B:189:ARG:N	2.39	0.55
1:B:585:LYS:NZ	3:F:6:DA:OP1	2.38	0.55
1:B:454:CYS:O	1:B:458:MET:N	2.40	0.55
1:C:182:TRP:N	1:C:191:PHE:O	2.30	0.54
1:C:195:THR:HG22	1:C:208:ILE:HG23	1.89	0.54
1:B:437:PRO:HB2	1:B:532:VAL:HB	1.89	0.54

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:43:DA:H2''	3:I:44:DT:H5'	1.89	0.54
1:C:590:GLY:O	1:C:593:THR:OG1	2.23	0.54
1:B:576:SER:HB2	2:J:46:DT:H1'	1.88	0.54
1:A:518:VAL:O	1:A:553:LYS:NZ	2.37	0.54
1:D:554:LEU:HD12	1:D:557:LEU:HD12	1.90	0.54
1:D:121:ILE:O	1:D:125:ILE:HG12	2.07	0.54
1:B:399:ASP:OD1	1:B:400:VAL:N	2.41	0.54
1:A:194:VAL:HG21	1:A:231:ILE:HD13	1.88	0.54
1:D:141:LEU:HD12	1:D:142:PRO:HD2	1.90	0.54
1:D:195:THR:HA	1:D:209:LEU:H	1.73	0.54
1:B:423:GLU:OE2	1:B:423:GLU:N	2.41	0.54
1:A:197:HIS:CE1	1:A:204:LEU:HB3	2.43	0.54
2:J:16:DT:H2''	2:J:17:DA:H5'	1.89	0.54
2:J:53:DC:H2'	2:J:54:DG:C8	2.43	0.54
2:G:22:DT:H2''	2:G:23:DG:N7	2.23	0.54
1:A:340:LEU:HD12	1:A:349:ILE:HD12	1.90	0.54
2:G:36:DT:H2''	2:G:37:DG:H2'	1.88	0.54
1:A:386:VAL:O	1:A:390:LEU:HG	2.08	0.53
1:B:310:SER:O	1:B:312:LYS:NZ	2.34	0.53
2:J:27:DG:H2'	2:J:28:DT:C6	2.43	0.53
1:B:298:PHE:HA	1:B:303:LEU:HD21	1.91	0.53
1:A:196:LEU:HB2	1:A:209:LEU:HD11	1.90	0.53
1:A:390:LEU:HA	1:A:393:LYS:HE3	1.90	0.53
3:F:19:DC:H2''	3:F:20:DA:O5'	2.07	0.53
1:C:178:THR:HG1	1:C:571:SER:HG	1.56	0.53
1:D:544:TRP:HZ3	1:D:551:TYR:HB2	1.73	0.53
1:A:368:GLU:HA	1:A:371:PHE:HB2	1.91	0.53
1:C:521:SER:O	1:C:525:GLU:HG2	2.09	0.53
1:B:295:VAL:HG22	1:B:311:LEU:HD13	1.89	0.53
1:A:178:THR:HG21	1:A:568:SER:HB3	1.91	0.53
1:C:434:PHE:HB2	1:C:450:ILE:HD13	1.91	0.53
1:D:403:VAL:HG12	1:D:405:ASP:H	1.74	0.53
1:D:437:PRO:HB2	1:D:438:PRO:HD3	1.90	0.53
1:B:418:ARG:HG2	1:B:422:GLU:OE2	2.08	0.53
2:J:25:DC:O2	3:I:24:DG:N2	2.42	0.53
3:I:30:DG:H2'	3:I:31:DT:C6	2.44	0.53
1:C:131:TYR:O	1:D:84:LYS:NZ	2.30	0.53
1:D:323:TYR:HE1	1:D:361:VAL:HG12	1.74	0.53
1:B:109:PHE:HB3	1:A:144:PRO:HB3	1.90	0.53
3:F:36:DC:H2''	3:F:37:DA:N7	2.24	0.53
1:C:199:HIS:NE2	1:C:201:ASN:O	2.42	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:212:LYS:HG3	1:B:231:ILE:HD11	1.91	0.53
1:B:602:SER:O	1:B:606:ASN:ND2	2.42	0.53
1:A:327:ARG:NH2	1:A:328:SER:OG	2.33	0.53
1:D:435:PHE:HB3	1:D:544:TRP:HE1	1.73	0.52
1:B:87:SER:OG	1:B:90:CYS:SG	2.51	0.52
1:B:88:ALA:HB1	1:B:92:LYS:NZ	2.23	0.52
1:B:135:VAL:HG12	1:A:84:LYS:HG3	1.92	0.52
1:A:587:ASN:OD1	1:A:588:ARG:N	2.42	0.52
2:J:36:DT:H1'	2:J:37:DG:C8	2.44	0.52
2:G:15:DT:H2''	2:G:16:DT:H72	1.91	0.52
1:B:130:GLU:HG3	1:B:131:TYR:CD1	2.44	0.52
1:C:398:PRO:HA	1:C:410:LYS:HD2	1.91	0.52
1:A:143:SER:O	1:A:146:THR:OG1	2.18	0.52
1:C:440:LEU:HD23	1:C:440:LEU:H	1.75	0.52
1:B:232:PHE:HB3	1:B:237:VAL:HB	1.89	0.52
1:D:451:LYS:NZ	1:D:525:GLU:OE2	2.42	0.52
1:B:176:SER:OG	1:B:197:HIS:O	2.19	0.52
2:J:44:DT:H2'	2:J:45:DC:O4'	2.10	0.52
1:D:577:LEU:O	1:D:581:ILE:HG13	2.10	0.52
1:B:120:MET:HG3	1:A:101:TRP:HB2	1.91	0.52
1:A:386:VAL:HG23	1:A:429:HIS:CE1	2.39	0.52
1:C:386:VAL:HA	1:C:389:ILE:HD12	1.91	0.52
1:D:199:HIS:NE2	1:D:201:ASN:O	2.44	0.51
1:B:84:LYS:NZ	1:B:86:VAL:HA	2.25	0.51
1:A:138:GLU:N	1:A:138:GLU:OE1	2.43	0.51
1:C:124:PHE:HA	1:C:127:VAL:HG22	1.92	0.51
3:I:19:DC:H2''	3:I:20:DA:H5'	1.92	0.51
2:G:33:DT:H2''	2:G:34:DG:N7	2.25	0.51
1:D:101:TRP:NE1	1:D:105:ASP:OD2	2.44	0.51
1:B:83:LEU:HD13	1:A:136:ASN:HA	1.91	0.51
2:J:11:DT:H2''	2:J:12:DG:C8	2.45	0.51
1:C:203:GLU:HB3	1:C:205:ARG:NH1	2.26	0.51
3:F:45:DA:H2'	3:F:46:DA:C8	2.45	0.51
1:D:340:LEU:HD21	1:D:348:ARG:HH11	1.76	0.51
1:C:159:LYS:HB2	1:C:235:PHE:HE1	1.75	0.51
1:A:415:LYS:O	1:A:419:ILE:HG12	2.11	0.51
3:I:12:DA:H4'	3:I:13:DA:H5'	1.93	0.51
1:B:131:TYR:CZ	1:A:86:VAL:HG23	2.46	0.51
1:B:87:SER:OG	1:A:131:TYR:OH	2.29	0.51
1:C:355:SER:O	1:C:358:GLN:HG3	2.11	0.50
1:A:240:LEU:O	1:A:260:ASN:ND2	2.44	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:107:ARG:NH2	3:F:6:DA:OP1	2.45	0.50
1:A:430:TYR:HB3	1:A:446:LYS:HE2	1.93	0.50
1:D:86:VAL:O	1:D:91:LYS:NZ	2.44	0.50
1:B:442:MET:O	1:B:442:MET:HG2	2.12	0.50
1:A:218:ARG:HE	2:G:51:DC:P	2.34	0.50
2:J:12:DG:H2''	2:J:13:DG:H2'	1.93	0.50
1:D:544:TRP:HH2	1:D:554:LEU:HD23	1.77	0.50
2:J:38:DA:H2''	2:J:39:DA:H5'	1.94	0.50
1:B:365:ASP:O	1:B:369:ARG:HG3	2.12	0.50
1:A:286:MET:HG2	1:A:287:PRO:HD3	1.91	0.50
1:A:590:GLY:N	3:I:8:DC:OP1	2.42	0.50
2:G:35:DT:H2''	2:G:36:DT:C5	2.46	0.50
2:G:40:DG:H2'	2:G:41:DT:C6	2.46	0.50
2:G:43:DC:N3	3:F:5:DG:N1	2.49	0.50
1:C:144:PRO:HB3	1:D:109:PHE:HB3	1.93	0.50
1:C:327:ARG:NH1	1:C:331:ASP:OD1	2.44	0.50
1:D:382:LEU:HA	1:D:566:ALA:HB2	1.93	0.50
2:J:9:DT:H2''	2:J:10:DG:H5'	1.93	0.50
1:D:440:LEU:HA	1:D:443:GLN:HG2	1.94	0.50
1:D:591:GLN:OE1	1:D:591:GLN:N	2.41	0.50
1:B:585:LYS:NZ	1:A:108:PRO:HG3	2.26	0.49
1:C:220:THR:OG1	1:C:223:ASN:OD1	2.30	0.49
1:C:301:ALA:HB3	1:C:303:LEU:HD22	1.92	0.49
1:D:602:SER:O	1:D:606:ASN:ND2	2.41	0.49
1:B:104:ARG:HD3	1:A:604:TYR:HD2	1.76	0.49
1:D:159:LYS:HD2	1:D:235:PHE:HE1	1.76	0.49
1:D:266:SER:HB2	1:D:567:SER:HB3	1.94	0.49
1:A:249:ARG:HB2	4:E:-3:DA:O3'	2.12	0.49
1:B:173:ASP:OD2	1:B:244:LYS:NZ	2.44	0.49
1:B:244:LYS:HG3	1:B:261:ILE:HG21	1.94	0.49
1:B:369:ARG:O	1:B:372:LYS:HG3	2.12	0.49
1:A:198:TYR:O	1:A:205:ARG:N	2.46	0.49
1:D:117:PHE:O	1:D:121:ILE:HG12	2.13	0.49
1:B:286:MET:HB3	1:B:287:PRO:HD3	1.94	0.49
1:B:330:LEU:HD12	1:B:357:ILE:HG22	1.94	0.49
1:C:544:TRP:O	1:C:548:SER:N	2.45	0.49
1:B:89:ASP:HA	1:B:92:LYS:HE2	1.93	0.49
1:A:330:LEU:HD12	1:A:357:ILE:HG22	1.95	0.49
1:A:246:VAL:HG22	1:A:263:ILE:HB	1.94	0.49
1:A:427:ILE:HA	1:A:430:TYR:CD2	2.47	0.49
1:B:136:ASN:HA	1:A:83:LEU:HD13	1.94	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:21:DC:H2''	3:I:22:DA:N7	2.27	0.49
1:A:375:GLN:HB3	3:F:2:DA:H5''	1.94	0.49
1:C:155:ALA:HA	1:C:600:LEU:HD21	1.94	0.49
1:D:269:LEU:HB3	1:D:421:TRP:CZ3	2.48	0.49
1:C:160:ALA:O	1:C:163:SER:OG	2.23	0.48
1:C:437:PRO:HB2	1:C:438:PRO:HD3	1.94	0.48
1:B:130:GLU:HG3	1:B:131:TYR:HD1	1.78	0.48
2:J:25:DC:H4'	2:J:26:DT:OP1	2.12	0.48
1:C:333:TRP:O	1:C:337:ILE:HG23	2.13	0.48
1:B:191:PHE:CE1	1:B:213:SER:HB3	2.47	0.48
1:A:570:ALA:O	1:A:574:THR:HG23	2.13	0.48
3:I:32:DA:H4'	3:I:33:DA:OP1	2.13	0.48
1:C:436:TYR:CE2	1:C:438:PRO:HD2	2.48	0.48
1:C:106:CYS:SG	1:D:581:ILE:HG12	2.53	0.48
1:C:385:VAL:HG23	1:C:386:VAL:HG23	1.96	0.48
1:C:436:TYR:CD2	1:C:438:PRO:HD2	2.49	0.48
1:D:181:LEU:HD12	1:D:191:PHE:O	2.13	0.48
1:D:387:PRO:HD3	1:D:433:PHE:CD1	2.49	0.48
1:B:92:LYS:HA	1:B:95:ILE:HG12	1.95	0.48
1:B:316:PRO:HG2	1:B:318:ARG:HG3	1.96	0.48
1:C:298:PHE:CE1	1:C:307:LEU:HD11	2.47	0.48
1:B:173:ASP:O	1:B:244:LYS:NZ	2.43	0.48
1:B:123:PHE:HB2	1:A:97:LYS:HE2	1.95	0.48
1:C:84:LYS:HE3	1:D:135:VAL:HG22	1.95	0.48
1:C:135:VAL:HG12	1:D:84:LYS:HD2	1.95	0.48
1:A:229:LYS:HZ2	1:A:240:LEU:HD21	1.79	0.48
1:A:363:ILE:HG22	1:A:367:PHE:CE2	2.48	0.48
2:J:6:DC:C6	2:J:7:DT:H72	2.48	0.48
2:J:29:DG:C2'	2:J:30:DG:H5'	2.44	0.48
1:D:212:LYS:HD3	1:D:213:SER:H	1.78	0.48
1:B:454:CYS:HA	1:B:457:LYS:HB3	1.94	0.48
1:A:417:VAL:HG13	1:A:421:TRP:HE3	1.79	0.48
3:I:20:DA:H1'	3:I:21:DC:H5'	1.94	0.48
2:G:25:DC:H2''	2:G:26:DT:H5''	1.95	0.48
1:A:382:LEU:HD11	1:A:564:ILE:HB	1.95	0.48
1:D:359:THR:HG21	1:D:406:ILE:HG13	1.96	0.47
1:A:175:ALA:HB1	1:A:196:LEU:HD11	1.96	0.47
1:C:118:ILE:HA	1:C:121:ILE:HG12	1.96	0.47
1:A:196:LEU:HB3	1:A:209:LEU:HD21	1.95	0.47
1:A:318:ARG:NH2	2:G:45:DC:H5''	2.28	0.47
3:F:35:DC:H2''	3:F:36:DC:C5	2.49	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:108:PRO:HB2	2:J:4:DA:H5'	1.97	0.47
1:C:164:ARG:HH22	1:C:236:ASN:HB2	1.79	0.47
1:D:578:ALA:O	1:D:582:ILE:HG22	2.14	0.47
1:B:145:ILE:HD12	1:B:145:ILE:H	1.79	0.47
1:A:389:ILE:HG12	1:A:421:TRP:CZ3	2.50	0.47
1:C:596:SER:O	1:C:600:LEU:HD23	2.14	0.47
1:B:124:PHE:CD2	1:A:121:ILE:HD12	2.49	0.47
1:A:372:LYS:NZ	1:A:373:GLU:OE2	2.28	0.47
2:J:3:DT:H2''	2:J:4:DA:C8	2.50	0.47
2:G:10:DG:H2''	2:G:11:DT:H5'	1.96	0.47
1:D:169:ALA:O	1:D:172:LYS:HG2	2.15	0.47
1:A:437:PRO:HB2	1:A:438:PRO:HD3	1.97	0.47
1:C:143:SER:O	1:C:146:THR:OG1	2.27	0.47
1:B:431:THR:HG21	1:B:453:PHE:HD2	1.80	0.47
1:A:194:VAL:HG21	1:A:231:ILE:HG21	1.97	0.47
1:D:330:LEU:HD22	1:D:357:ILE:HG22	1.96	0.47
1:B:167:LYS:HA	1:B:170:VAL:HG12	1.96	0.47
3:I:8:DC:H2'	3:I:9:DT:C5	2.50	0.47
1:C:280:GLU:OE1	1:C:412:ASN:ND2	2.48	0.47
1:C:298:PHE:HB3	1:C:304:GLN:NE2	2.29	0.47
1:B:415:LYS:HA	1:B:418:ARG:NH1	2.30	0.47
1:B:439:ALA:HA	1:B:442:MET:SD	2.55	0.47
2:J:2:DT:H2'	2:J:3:DT:H71	1.97	0.47
1:C:320:ASN:ND2	1:C:368:GLU:OE1	2.34	0.47
1:C:595:ASP:OD1	1:C:596:SER:N	2.48	0.47
1:A:357:ILE:O	1:A:361:VAL:HG23	2.16	0.47
2:G:32:DT:H2'	2:G:33:DT:H71	1.95	0.47
1:D:333:TRP:HA	1:D:336:VAL:HG22	1.96	0.46
1:B:199:HIS:CE1	1:B:559:LEU:HD22	2.50	0.46
1:B:357:ILE:O	1:B:361:VAL:HG23	2.15	0.46
1:A:179:ILE:HD12	1:A:192:LEU:HD21	1.96	0.46
1:D:232:PHE:HB3	1:D:237:VAL:HB	1.96	0.46
3:I:9:DT:H2'	3:I:10:DT:H71	1.96	0.46
3:F:22:DA:H8	3:F:22:DA:H5'	1.80	0.46
1:B:255:LYS:HG3	2:J:53:DC:OP1	2.15	0.46
1:A:242:SER:O	1:A:244:LYS:NZ	2.41	0.46
1:B:129:ALA:HA	1:A:129:ALA:HA	1.97	0.46
1:B:590:GLY:N	3:F:8:DC:OP1	2.44	0.46
1:C:163:SER:HA	1:C:235:PHE:CD2	2.50	0.46
1:C:426:SER:HG	1:C:428:TRP:HE3	1.63	0.46
1:D:104:ARG:O	1:D:104:ARG:NE	2.48	0.46

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:ALA:HA	1:A:224:ILE:HD12	1.98	0.46
1:C:393:LYS:HA	1:C:396:CYS:SG	2.56	0.46
1:B:118:ILE:HG13	1:B:119:ASP:N	2.31	0.46
1:B:290:ALA:HB2	1:B:351:HIS:HE1	1.81	0.46
2:G:27:DG:N3	2:G:28:DT:H5'	2.31	0.46
1:D:195:THR:HG22	1:D:208:ILE:HG23	1.97	0.46
1:D:431:THR:HG22	1:D:450:ILE:HG23	1.96	0.46
1:B:598:LEU:HD12	1:B:599:PHE:N	2.30	0.46
1:A:451:LYS:HA	1:A:454:CYS:SG	2.56	0.46
1:C:276:ASN:O	1:C:279:GLU:HG2	2.16	0.46
1:C:295:VAL:HG12	1:C:299:LYS:NZ	2.30	0.46
1:A:266:SER:HA	1:A:269:LEU:HD12	1.98	0.46
2:J:22:DT:H2''	2:J:23:DG:H5'	1.97	0.46
1:C:152:THR:HG22	1:C:156:LYS:HZ1	1.81	0.46
1:C:437:PRO:HG2	1:C:538:PHE:CZ	2.50	0.46
1:C:523:GLU:OE1	1:C:554:LEU:HB2	2.16	0.46
1:A:437:PRO:HG3	1:A:543:TRP:CZ3	2.50	0.46
1:C:333:TRP:CD1	1:C:337:ILE:HD13	2.51	0.46
1:A:298:PHE:HA	1:A:303:LEU:HD21	1.98	0.46
3:F:8:DC:H2''	3:F:9:DT:H5'	1.98	0.46
1:D:176:SER:O	1:D:197:HIS:N	2.44	0.45
1:D:306:ARG:HD3	1:D:306:ARG:H	1.80	0.45
1:B:227:LYS:O	1:B:231:ILE:HG12	2.16	0.45
1:B:298:PHE:C	1:B:304:GLN:HE22	2.20	0.45
1:B:304:GLN:HA	1:B:307:LEU:HD23	1.98	0.45
1:B:382:LEU:HD23	1:B:382:LEU:H	1.81	0.45
3:I:23:DG:H2''	3:I:24:DG:C8	2.51	0.45
2:G:13:DG:H2''	2:G:14:DC:H2'	1.98	0.45
1:C:101:TRP:CH2	1:C:107:ARG:HG3	2.51	0.45
1:D:155:ALA:O	1:D:159:LYS:HG3	2.17	0.45
1:D:301:ALA:HB3	1:D:303:LEU:HG	1.96	0.45
1:B:360:MET:HE1	1:B:406:ILE:HD12	1.97	0.45
1:C:96:GLU:HB3	1:D:150:LYS:HZ1	1.81	0.45
1:C:369:ARG:HA	1:C:372:LYS:HG3	1.97	0.45
1:B:306:ARG:HD2	1:B:339:ILE:HD11	1.98	0.45
1:B:564:ILE:O	1:B:564:ILE:HG13	2.17	0.45
1:A:369:ARG:O	1:A:372:LYS:HG3	2.16	0.45
1:C:294:ILE:HD11	1:C:348:ARG:HB3	1.98	0.45
1:D:365:ASP:OD1	1:D:366:GLY:N	2.48	0.45
1:A:157:GLU:O	1:A:161:LEU:HD23	2.16	0.45
1:C:442:MET:O	1:C:442:MET:HG2	2.17	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:570:ALA:O	1:C:574:THR:HG23	2.16	0.45
2:J:45:DC:H2''	2:J:46:DT:H5'	1.99	0.45
1:D:286:MET:N	1:D:287:PRO:HD2	2.31	0.45
1:D:571:SER:O	1:D:574:THR:OG1	2.29	0.45
1:B:247:THR:N	1:B:263:ILE:O	2.36	0.45
2:G:44:DT:H2'	2:G:45:DC:O4'	2.16	0.45
1:C:158:LYS:HD3	1:C:600:LEU:HD11	1.99	0.45
1:C:370:ILE:O	1:C:373:GLU:HG2	2.16	0.45
1:C:595:ASP:HA	1:C:598:LEU:HG	1.98	0.45
1:D:290:ALA:O	1:D:294:ILE:HG12	2.16	0.45
1:D:382:LEU:HB2	1:D:564:ILE:O	2.16	0.45
1:A:194:VAL:HG12	1:A:209:LEU:HD12	1.98	0.45
1:C:118:ILE:HG22	1:C:122:LYS:HZ2	1.80	0.45
1:C:141:LEU:HD22	1:D:118:ILE:HD12	1.99	0.45
3:I:10:DT:H2''	3:I:11:DC:H5''	1.99	0.45
1:C:414:ILE:O	1:C:418:ARG:HG2	2.16	0.45
1:D:99:ALA:HA	1:D:102:VAL:HG12	1.98	0.45
1:D:298:PHE:HB3	1:D:304:GLN:OE1	2.17	0.45
1:D:340:LEU:HD21	1:D:348:ARG:NH1	2.31	0.45
1:B:100:GLN:HA	1:B:103:VAL:HG12	1.99	0.45
1:B:334:GLU:OE2	1:B:338:GLN:NE2	2.48	0.45
2:J:27:DG:H2'	2:J:28:DT:H6	1.81	0.45
1:C:285:ASN:O	1:C:289:LEU:N	2.40	0.45
1:B:103:VAL:HG21	1:A:600:LEU:HD13	1.99	0.45
1:C:327:ARG:NH2	1:C:330:LEU:HD23	2.32	0.44
1:C:387:PRO:HD3	1:C:433:PHE:CZ	2.52	0.44
1:C:569:ALA:HA	1:C:572:GLU:OE2	2.17	0.44
1:B:265:CYS:SG	1:B:268:HIS:ND1	2.74	0.44
1:A:298:PHE:HA	1:A:303:LEU:CD2	2.47	0.44
1:C:158:LYS:HE2	1:C:604:TYR:HE1	1.80	0.44
1:C:296:LYS:HD2	1:C:296:LYS:O	2.18	0.44
1:B:389:ILE:O	1:B:393:LYS:HG3	2.17	0.44
1:A:354:LYS:HA	1:A:357:ILE:HD12	1.98	0.44
1:B:177:ALA:HB2	1:B:196:LEU:HA	1.98	0.44
1:A:90:CYS:HA	1:A:93:GLU:CD	2.38	0.44
1:C:385:VAL:HG11	1:C:429:HIS:HD2	1.81	0.44
1:D:292:LYS:HD2	1:D:314:GLU:HG3	1.99	0.44
1:D:593:THR:O	1:D:597:LEU:HD23	2.18	0.44
1:B:298:PHE:HB3	1:B:304:GLN:NE2	2.33	0.44
1:A:198:TYR:CE1	1:A:205:ARG:HB2	2.52	0.44
1:A:303:LEU:H	1:A:303:LEU:HD23	1.81	0.44

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:159:LYS:HB2	1:C:235:PHE:CE1	2.52	0.44
1:B:225:TYR:O	1:B:228:LEU:HG	2.17	0.44
2:J:3:DT:H2''	2:J:4:DA:H8	1.82	0.44
2:G:12:DG:H2''	2:G:13:DG:N7	2.32	0.44
2:G:20:DT:H2'	2:G:21:DT:H71	1.99	0.44
1:C:291:CYS:O	1:C:295:VAL:HG23	2.17	0.44
1:D:299:LYS:HD3	1:D:300:LYS:HZ1	1.83	0.44
2:J:45:DC:C2'	2:J:46:DT:H5'	2.48	0.44
1:C:198:TYR:CE2	1:C:205:ARG:HG2	2.52	0.44
1:C:588:ARG:O	2:G:6:DC:H5'	2.18	0.44
1:B:415:LYS:O	1:B:419:ILE:HG13	2.17	0.44
1:A:245:PHE:CD2	1:A:257:LEU:HD11	2.52	0.44
2:G:21:DT:H2'	2:G:22:DT:H71	2.00	0.44
1:C:332:ASN:HB3	1:C:336:VAL:HG13	2.00	0.44
1:C:381:SER:OG	1:C:566:ALA:N	2.36	0.44
1:D:318:ARG:HH21	3:F:47:DG:P	2.41	0.44
1:D:376:THR:OG1	1:D:381:SER:HB3	2.18	0.44
1:B:229:LYS:HD3	1:B:240:LEU:HD21	2.00	0.44
1:B:355:SER:O	1:B:358:GLN:HG3	2.17	0.44
1:B:93:GLU:OE1	1:B:97:LYS:NZ	2.46	0.44
1:B:284:LEU:HD11	1:B:409:LEU:HD13	1.99	0.44
1:A:359:THR:O	1:A:363:ILE:HG12	2.18	0.44
1:A:391:LYS:O	1:A:395:ILE:HG13	2.18	0.44
2:J:23:DG:H2''	2:J:24:DC:C5	2.52	0.44
1:D:438:PRO:O	1:D:441:HIS:ND1	2.43	0.43
1:D:105:ASP:HB3	1:D:107:ARG:HG2	2.00	0.43
1:B:148:SER:HA	1:A:109:PHE:HE1	1.82	0.43
2:G:6:DC:C6	2:G:7:DT:H72	2.53	0.43
1:C:118:ILE:C	1:C:122:LYS:HZ3	2.22	0.43
1:D:212:LYS:HE2	1:D:212:LYS:HA	1.98	0.43
1:B:435:PHE:O	1:B:527:TYR:OH	2.25	0.43
1:A:386:VAL:N	1:A:387:PRO:HD2	2.33	0.43
1:C:117:PHE:O	1:C:121:ILE:HG12	2.18	0.43
1:B:435:PHE:HA	1:B:527:TYR:HE2	1.83	0.43
1:A:187:ILE:HD13	1:A:189:ARG:HH12	1.83	0.43
1:A:190:ASN:HB2	1:A:214:LEU:HB2	2.01	0.43
1:A:231:ILE:HA	1:A:234:GLN:OE1	2.19	0.43
1:A:418:ARG:HA	1:A:422:GLU:CD	2.39	0.43
3:I:45:DA:H2'	3:I:46:DA:H8	1.79	0.43
3:F:10:DT:H2''	3:F:11:DC:C6	2.54	0.43
1:C:164:ARG:NH2	1:C:236:ASN:HB2	2.33	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:369:ARG:O	1:C:372:LYS:HG3	2.18	0.43
1:D:169:ALA:HA	1:D:172:LYS:CD	2.48	0.43
1:D:221:ALA:HB1	1:D:256:SER:HB2	2.00	0.43
1:B:578:ALA:O	1:B:582:ILE:HG22	2.18	0.43
1:B:589:ILE:HD12	3:F:7:DA:O3'	2.18	0.43
3:F:34:DG:H1'	3:F:35:DC:H5'	2.01	0.43
1:D:158:LYS:NZ	1:D:600:LEU:HG	2.34	0.43
2:J:33:DT:H2''	2:J:34:DG:H5'	2.00	0.43
1:C:147:LEU:O	1:C:151:VAL:HG23	2.18	0.43
1:C:437:PRO:HB3	1:C:543:TRP:CE2	2.54	0.43
1:D:590:GLY:O	1:D:593:THR:OG1	2.35	0.43
1:A:156:LYS:HA	1:A:159:LYS:HG2	2.00	0.43
1:C:131:TYR:CE2	1:D:86:VAL:HA	2.53	0.43
1:C:135:VAL:HG21	1:D:125:ILE:HG21	2.01	0.43
1:C:381:SER:HG	1:C:566:ALA:H	1.59	0.43
1:C:386:VAL:N	1:C:387:PRO:HD2	2.33	0.43
1:D:417:VAL:HG13	1:D:421:TRP:CD1	2.44	0.43
1:B:155:ALA:HA	1:B:600:LEU:HD21	2.01	0.43
1:B:290:ALA:O	1:B:294:ILE:HG12	2.18	0.43
1:A:542:GLU:HA	1:A:545:ASN:HB2	2.01	0.43
3:I:35:DC:H2''	3:I:36:DC:H5''	1.99	0.43
2:G:3:DT:H2''	2:G:4:DA:H8	1.83	0.43
2:G:34:DG:H1'	2:G:35:DT:H5'	2.00	0.43
1:C:120:MET:CE	1:D:97:LYS:HG2	2.49	0.43
1:C:123:PHE:HB2	1:D:97:LYS:NZ	2.34	0.43
1:B:137:VAL:HG21	1:A:122:LYS:HG2	2.01	0.43
1:B:402:ASP:HB3	1:B:406:ILE:HB	2.00	0.43
2:J:33:DT:H1'	2:J:34:DG:H5'	2.01	0.43
1:C:382:LEU:HB2	1:C:564:ILE:O	2.19	0.43
1:D:334:GLU:HG3	1:D:338:GLN:HE22	1.83	0.43
1:D:413:ILE:O	1:D:417:VAL:HG23	2.19	0.43
1:B:145:ILE:O	1:B:148:SER:OG	2.26	0.43
2:G:52:DA:H2''	2:G:53:DC:H2'	2.01	0.43
3:F:22:DA:H5'	3:F:22:DA:C8	2.54	0.43
1:C:130:GLU:HG3	1:C:131:TYR:HD1	1.84	0.42
1:C:577:LEU:O	1:C:581:ILE:HG23	2.18	0.42
1:B:386:VAL:N	1:B:387:PRO:HD2	2.33	0.42
1:A:182:TRP:HA	2:G:48:DG:H8	1.84	0.42
1:A:196:LEU:O	1:A:207:LEU:N	2.52	0.42
1:A:254:VAL:O	1:A:262:ARG:NH2	2.52	0.42
1:C:285:ASN:HA	1:C:288:ILE:HB	2.01	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:288:ILE:O	1:C:292:LYS:HG3	2.20	0.42
1:D:208:ILE:HG12	1:D:574:THR:HG22	2.01	0.42
1:D:409:LEU:O	1:D:413:ILE:HG13	2.19	0.42
1:B:124:PHE:CE2	1:A:121:ILE:HD12	2.54	0.42
1:A:386:VAL:HB	1:A:433:PHE:CD2	2.54	0.42
2:J:41:DT:H1'	2:J:42:DT:H5'	2.01	0.42
1:C:104:ARG:HH21	1:D:115:SER:HB2	1.83	0.42
1:B:436:TYR:CD2	1:B:438:PRO:HD2	2.54	0.42
1:B:447:VAL:HA	1:B:450:ILE:HG12	2.02	0.42
1:A:409:LEU:O	1:A:413:ILE:HG13	2.18	0.42
1:A:440:LEU:HD12	1:A:443:GLN:HG3	2.00	0.42
1:C:109:PHE:HB2	2:J:5:DT:OP2	2.20	0.42
1:C:232:PHE:HB3	1:C:237:VAL:O	2.19	0.42
1:D:314:GLU:O	1:D:321:SER:OG	2.30	0.42
1:A:540:VAL:HA	1:A:543:TRP:HB2	2.01	0.42
1:B:120:MET:SD	1:A:97:LYS:HB3	2.58	0.42
1:A:225:TYR:O	1:A:228:LEU:HG	2.18	0.42
1:A:308:ARG:H	1:A:308:ARG:HG2	1.61	0.42
1:A:554:LEU:HA	1:A:557:LEU:HD12	2.00	0.42
1:A:588:ARG:O	3:I:8:DC:H5'	2.20	0.42
1:C:120:MET:O	1:C:124:PHE:HD2	2.02	0.42
1:C:334:GLU:O	1:C:337:ILE:HG12	2.20	0.42
1:D:370:ILE:O	1:D:374:LEU:HG	2.20	0.42
1:B:199:HIS:NE2	1:B:559:LEU:HD22	2.34	0.42
1:A:252:ASN:HA	2:G:52:DA:H4'	2.02	0.42
1:C:340:LEU:HD21	1:C:349:ILE:HD12	2.01	0.42
1:C:539:LYS:HB2	1:C:542:GLU:HG3	2.01	0.42
1:B:277:SER:HB3	1:B:413:ILE:HG12	2.02	0.42
1:B:460:ASP:O	1:B:464:ILE:N	2.36	0.42
1:A:571:SER:O	1:A:574:THR:OG1	2.28	0.42
2:G:22:DT:H2''	2:G:23:DG:C8	2.55	0.42
1:C:101:TRP:HE1	1:D:117:PHE:HA	1.85	0.42
1:D:304:GLN:NE2	1:D:310:SER:HB3	2.35	0.42
1:B:334:GLU:O	1:B:337:ILE:HG12	2.19	0.42
1:A:181:LEU:HB2	2:G:49:DT:OP2	2.19	0.42
1:A:212:LYS:HA	1:A:591:GLN:NE2	2.35	0.42
1:A:461:LEU:HD11	1:A:556:LYS:HE3	2.01	0.42
2:G:19:DG:H2'	2:G:20:DT:H71	2.01	0.42
1:C:133:GLU:OE1	1:D:126:LYS:HG3	2.20	0.42
1:C:214:LEU:HA	1:C:227:LYS:HD2	2.01	0.42
1:B:446:LYS:HA	1:B:449:GLN:OE1	2.20	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:309:SER:HB3	1:C:332:ASN:OD1	2.19	0.42
1:C:582:ILE:HD12	1:C:582:ILE:HA	1.92	0.42
1:D:427:ILE:HG12	1:D:453:PHE:CD2	2.55	0.42
1:B:208:ILE:HG12	1:B:602:SER:HB2	2.02	0.42
1:B:262:ARG:HH12	1:B:264:ASN:HA	1.85	0.42
1:C:162:ILE:O	1:C:166:ILE:HG12	2.21	0.41
1:D:286:MET:SD	1:D:287:PRO:HD3	2.60	0.41
1:B:220:THR:HG23	1:B:222:GLU:HG2	2.02	0.41
1:B:221:ALA:HB1	1:B:256:SER:OG	2.20	0.41
1:B:221:ALA:HB3	1:B:255:LYS:NZ	2.35	0.41
1:A:176:SER:N	1:A:197:HIS:O	2.53	0.41
2:J:43:DC:H2'	2:J:44:DT:H6	1.83	0.41
3:I:38:DC:C2	3:I:39:DA:N7	2.88	0.41
1:A:340:LEU:O	1:A:345:GLU:N	2.52	0.41
2:G:28:DT:H2''	2:G:29:DG:C5	2.55	0.41
2:G:52:DA:H2''	2:G:53:DC:H5'	2.02	0.41
1:D:296:LYS:O	1:D:300:LYS:HG2	2.20	0.41
1:D:407:ALA:HA	1:D:410:LYS:HE3	2.01	0.41
1:D:437:PRO:HG2	1:D:538:PHE:CZ	2.56	0.41
1:B:292:LYS:O	1:B:296:LYS:HG3	2.20	0.41
1:C:310:SER:HB2	3:I:45:DA:H5'	2.02	0.41
1:C:382:LEU:HD22	1:C:564:ILE:HB	2.03	0.41
1:B:134:HIS:O	1:A:84:LYS:HG2	2.21	0.41
1:B:245:PHE:HB2	1:B:257:LEU:HD21	2.02	0.41
1:B:596:SER:O	1:B:600:LEU:HD23	2.20	0.41
1:A:137:VAL:HA	1:A:140:LEU:HB3	2.03	0.41
1:A:572:GLU:N	1:A:572:GLU:OE1	2.53	0.41
3:F:32:DA:H2''	3:F:33:DA:C8	2.55	0.41
1:C:444:GLN:O	1:C:447:VAL:HG22	2.19	0.41
1:B:323:TYR:O	1:B:326:LEU:HG	2.21	0.41
1:B:605:LYS:HB3	1:B:605:LYS:HE3	1.89	0.41
1:A:86:VAL:HG22	1:A:87:SER:H	1.85	0.41
2:J:39:DA:H2''	2:J:40:DG:H8	1.85	0.41
2:J:45:DC:H2'	2:J:46:DT:C6	2.55	0.41
1:C:336:VAL:HA	1:C:339:ILE:HG12	2.03	0.41
1:D:145:ILE:O	1:D:149:ARG:HG2	2.20	0.41
1:A:99:ALA:O	1:A:103:VAL:HG13	2.21	0.41
1:A:387:PRO:HD3	1:A:433:PHE:CE2	2.56	0.41
2:J:10:DG:H2''	2:J:11:DT:C7	2.50	0.41
1:C:194:VAL:HG21	1:C:231:ILE:HD13	2.03	0.41
1:D:179:ILE:HD11	1:D:192:LEU:HD11	2.03	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:222:GLU:H	1:B:222:GLU:CD	2.24	0.41
1:A:540:VAL:HG22	1:A:544:TRP:CZ3	2.56	0.41
2:J:17:DA:H1'	2:J:18:DC:H5'	2.03	0.41
2:G:3:DT:H2''	2:G:4:DA:C8	2.55	0.41
1:C:124:PHE:CD1	1:D:121:ILE:HG23	2.56	0.41
1:A:244:LYS:N	1:A:244:LYS:HD2	2.35	0.41
3:I:29:DC:H2''	3:I:30:DG:C8	2.56	0.41
1:C:265:CYS:HB3	1:C:268:HIS:HB2	2.03	0.41
1:C:437:PRO:HG2	1:C:538:PHE:CE2	2.56	0.41
1:C:437:PRO:HB3	1:C:543:TRP:CZ2	2.55	0.41
1:C:537:ASP:OD1	1:C:537:ASP:N	2.51	0.41
1:C:599:PHE:CD2	1:C:600:LEU:HD22	2.56	0.41
1:D:153:SER:O	1:D:156:LYS:HG2	2.21	0.41
1:D:339:ILE:O	1:D:342:GLU:HG2	2.21	0.41
1:B:124:PHE:HA	1:B:127:VAL:HG22	2.03	0.41
1:B:205:ARG:HD2	1:B:205:ARG:HA	1.72	0.41
1:A:92:LYS:O	1:A:95:ILE:HG22	2.21	0.41
1:A:139:GLU:OE1	1:A:139:GLU:N	2.53	0.41
1:A:197:HIS:HA	1:A:206:ASP:HA	2.03	0.41
3:I:17:DG:C4	3:I:18:DC:C5	3.09	0.41
1:D:198:TYR:CE2	1:D:205:ARG:HG3	2.56	0.41
1:B:173:ASP:HB2	1:B:464:ILE:HD13	2.02	0.41
1:B:444:GLN:HB3	1:B:445:GLU:OE1	2.21	0.41
2:J:40:DG:H2''	2:J:41:DT:C5'	2.51	0.41
1:C:105:ASP:O	1:C:107:ARG:NE	2.54	0.40
1:C:220:THR:O	1:C:224:ILE:HG12	2.21	0.40
1:C:247:THR:O	1:C:262:ARG:NH1	2.52	0.40
2:G:35:DT:H2''	2:G:36:DT:C7	2.49	0.40
3:F:41:DA:H1'	3:F:42:DG:H5'	2.02	0.40
1:C:212:LYS:HA	1:C:212:LYS:HD2	1.86	0.40
1:C:360:MET:HE3	1:C:406:ILE:HD12	2.02	0.40
1:C:436:TYR:HA	1:C:437:PRO:HD3	1.98	0.40
1:B:84:LYS:HZ2	1:B:86:VAL:HA	1.86	0.40
1:B:191:PHE:HA	1:B:213:SER:HA	2.03	0.40
1:A:229:LYS:HZ3	1:A:240:LEU:HD11	1.86	0.40
1:A:387:PRO:O	1:A:391:LYS:HG2	2.20	0.40
1:A:540:VAL:HG13	1:A:544:TRP:HZ3	1.86	0.40
1:C:579:GLY:HA2	1:C:582:ILE:HG22	2.04	0.40
1:D:340:LEU:HB3	1:D:346:THR:HA	2.04	0.40
1:A:179:ILE:HA	1:A:193:GLY:O	2.22	0.40
2:G:14:DC:C6	2:G:15:DT:H72	2.56	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:128:GLY:HA2	1:D:125:ILE:HG23	2.04	0.40
1:C:409:LEU:O	1:C:413:ILE:HG13	2.22	0.40
1:C:535:SER:OG	1:C:538:PHE:HB2	2.22	0.40
1:D:436:TYR:HA	1:D:437:PRO:HD3	1.98	0.40
1:D:516:PRO:HB2	1:D:518:VAL:HG23	2.02	0.40
1:B:84:LYS:N	1:A:134:HIS:O	2.55	0.40
1:B:593:THR:O	1:B:597:LEU:HD23	2.22	0.40
1:C:432:ALA:HA	1:C:561:LEU:HD13	2.04	0.40
1:D:303:LEU:HA	1:D:306:ARG:HH12	1.86	0.40
1:B:124:PHE:N	1:B:124:PHE:CD1	2.89	0.40
1:B:375:GLN:HE21	1:B:569:ALA:HB2	1.86	0.40
1:A:403:VAL:HG13	1:A:405:ASP:H	1.86	0.40
2:J:10:DG:H2''	2:J:11:DT:H71	2.03	0.40
2:J:39:DA:H2''	2:J:40:DG:C8	2.56	0.40
3:F:38:DC:H2''	3:F:39:DA:H8	1.87	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	474/612 (78%)	444 (94%)	30 (6%)	0	100	100
1	B	473/612 (77%)	442 (93%)	31 (7%)	0	100	100
1	C	470/612 (77%)	441 (94%)	29 (6%)	0	100	100
1	D	475/612 (78%)	449 (94%)	25 (5%)	1 (0%)	47	81
All	All	1892/2448 (77%)	1776 (94%)	115 (6%)	1 (0%)	54	85

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	518	VAL

### 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	437/565 (77%)	435 (100%)	2 (0%)	88	93
1	B	436/565 (77%)	433 (99%)	3 (1%)	84	90
1	C	434/565 (77%)	433 (100%)	1 (0%)	93	96
1	D	439/565 (78%)	437 (100%)	2 (0%)	88	93
All	All	1746/2260 (77%)	1738 (100%)	8 (0%)	89	93

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	372	LYS
1	D	306	ARG
1	D	308	ARG
1	B	306	ARG
1	B	358	GLN
1	B	372	LYS
1	A	348	ARG
1	A	372	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	332	ASN
1	D	338	GLN
1	B	416	ASN
1	A	465	ASN
1	A	580	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



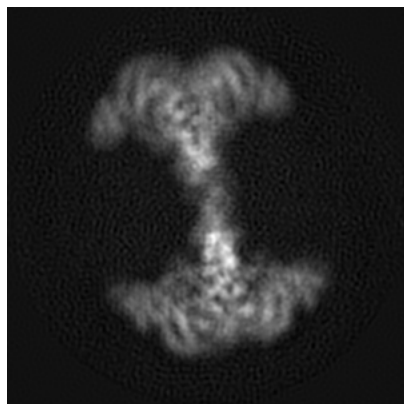
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-40553. These allow visual inspection of the internal detail of the map and identification of artifacts.

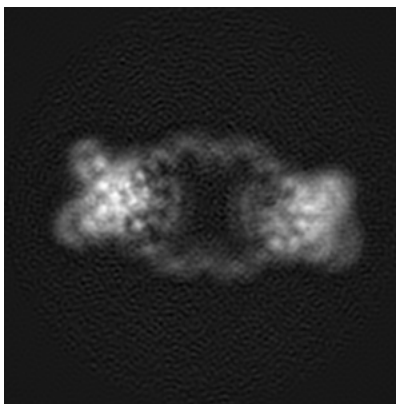
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

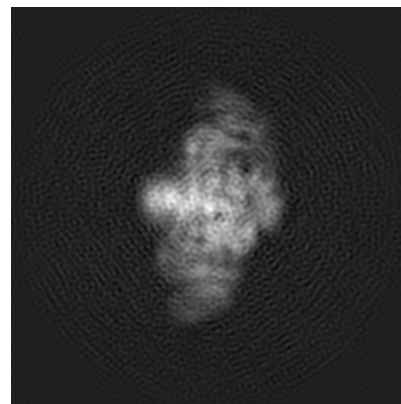
#### 6.1.1 Primary map



X

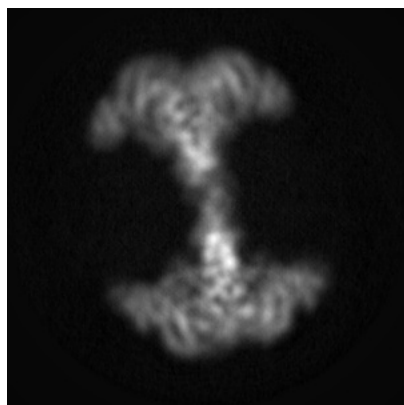


Y

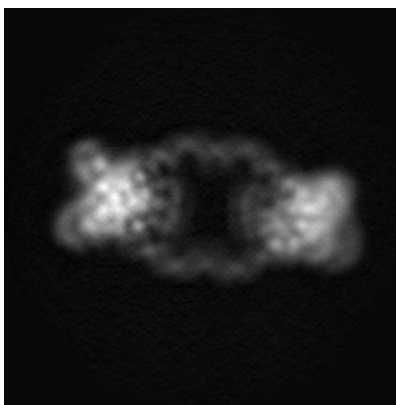


Z

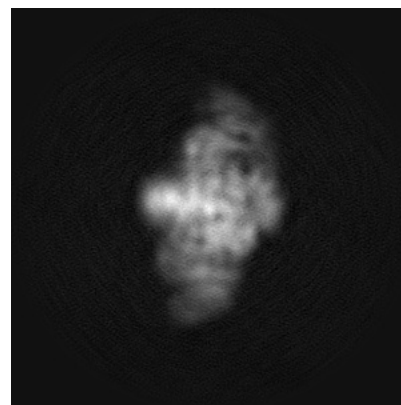
#### 6.1.2 Raw map



X



Y

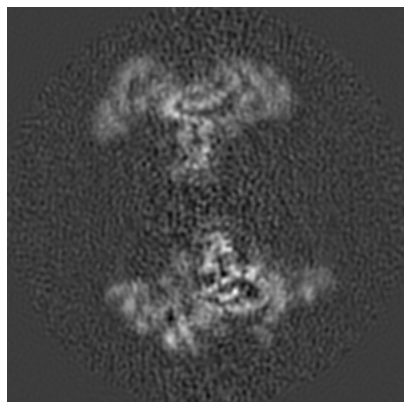


Z

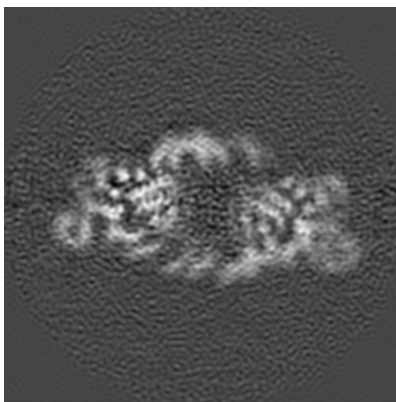
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

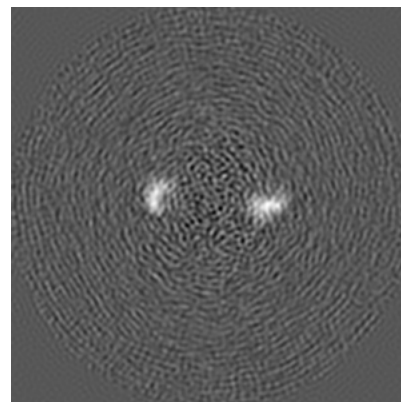
### 6.2.1 Primary map



X Index: 145

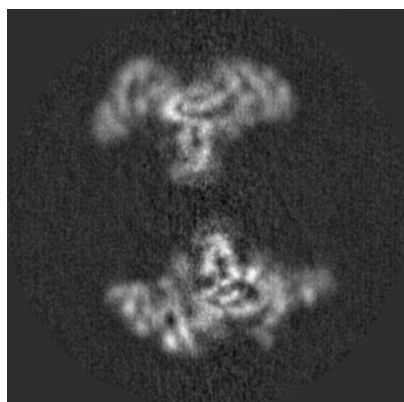


Y Index: 145

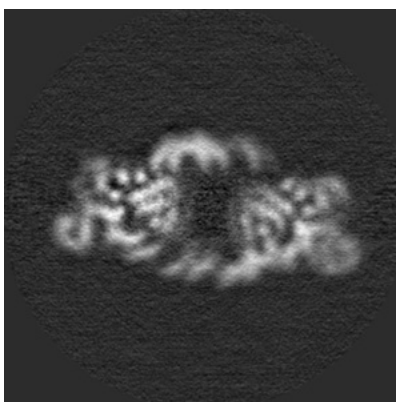


Z Index: 145

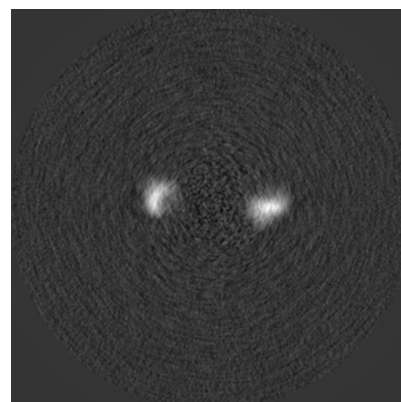
### 6.2.2 Raw map



X Index: 145



Y Index: 145

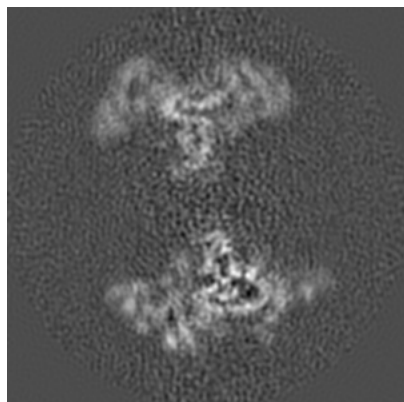


Z Index: 145

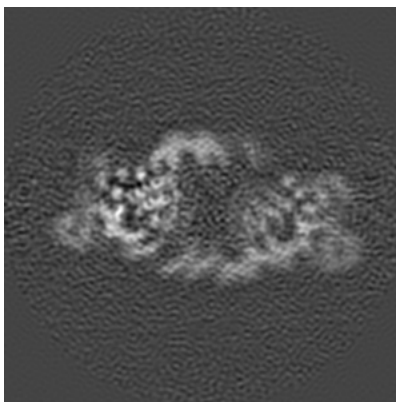
The images above show central slices of the map in three orthogonal directions.

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

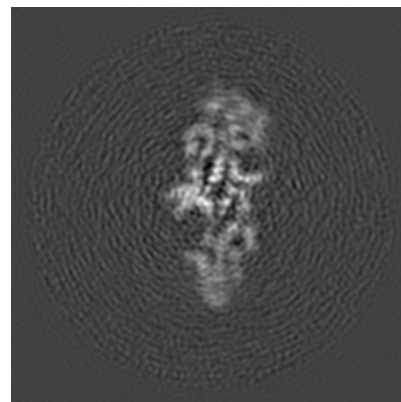
### 6.3.1 Primary map



X Index: 144

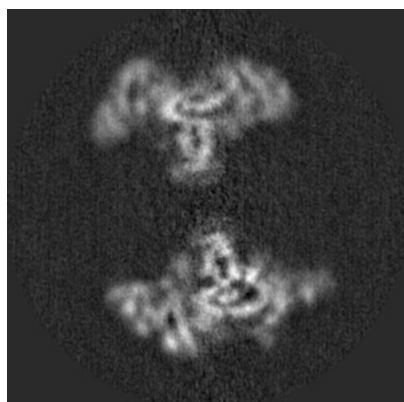


Y Index: 147

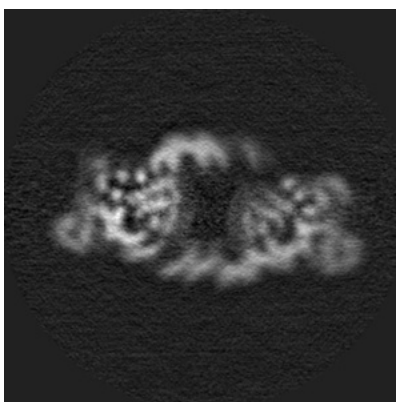


Z Index: 83

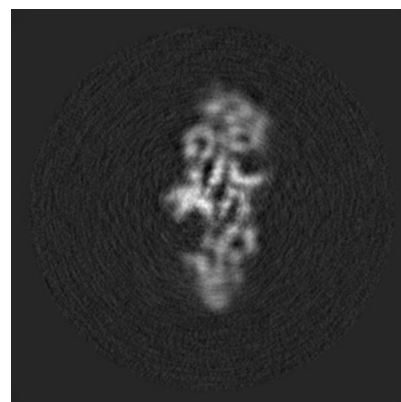
### 6.3.2 Raw map



X Index: 144



Y Index: 147

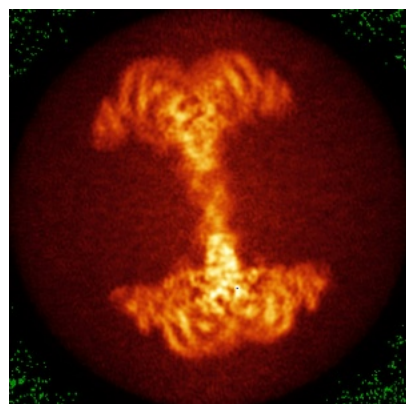


Z Index: 83

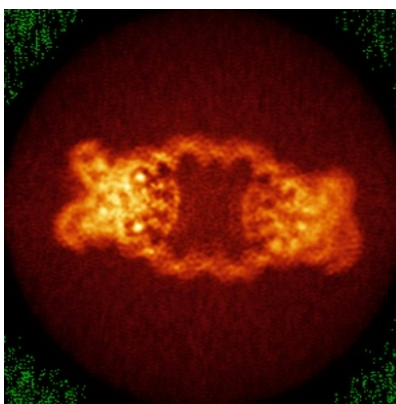
The images above show the largest variance slices of the map in three orthogonal directions.

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

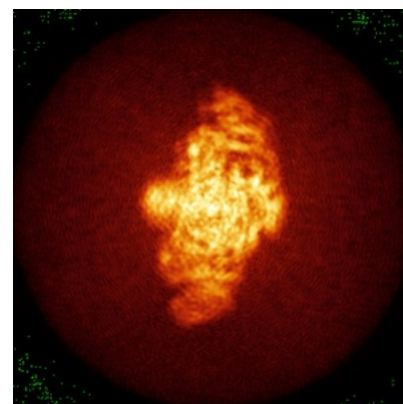
### 6.4.1 Primary map



X



Y

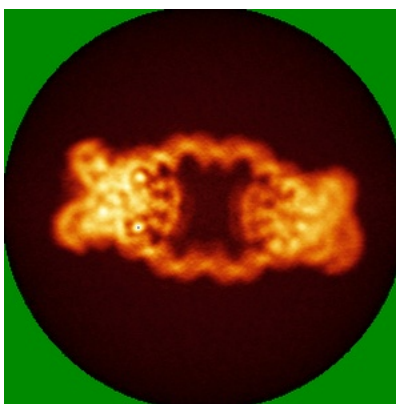


Z

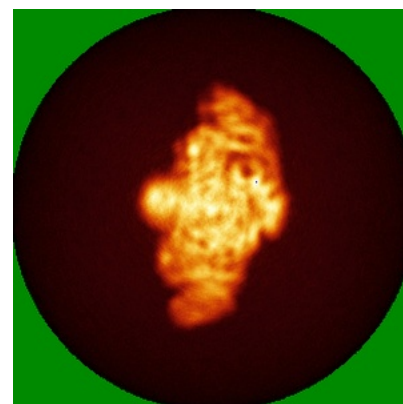
### 6.4.2 Raw map



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 [i](#)

### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. 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



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.

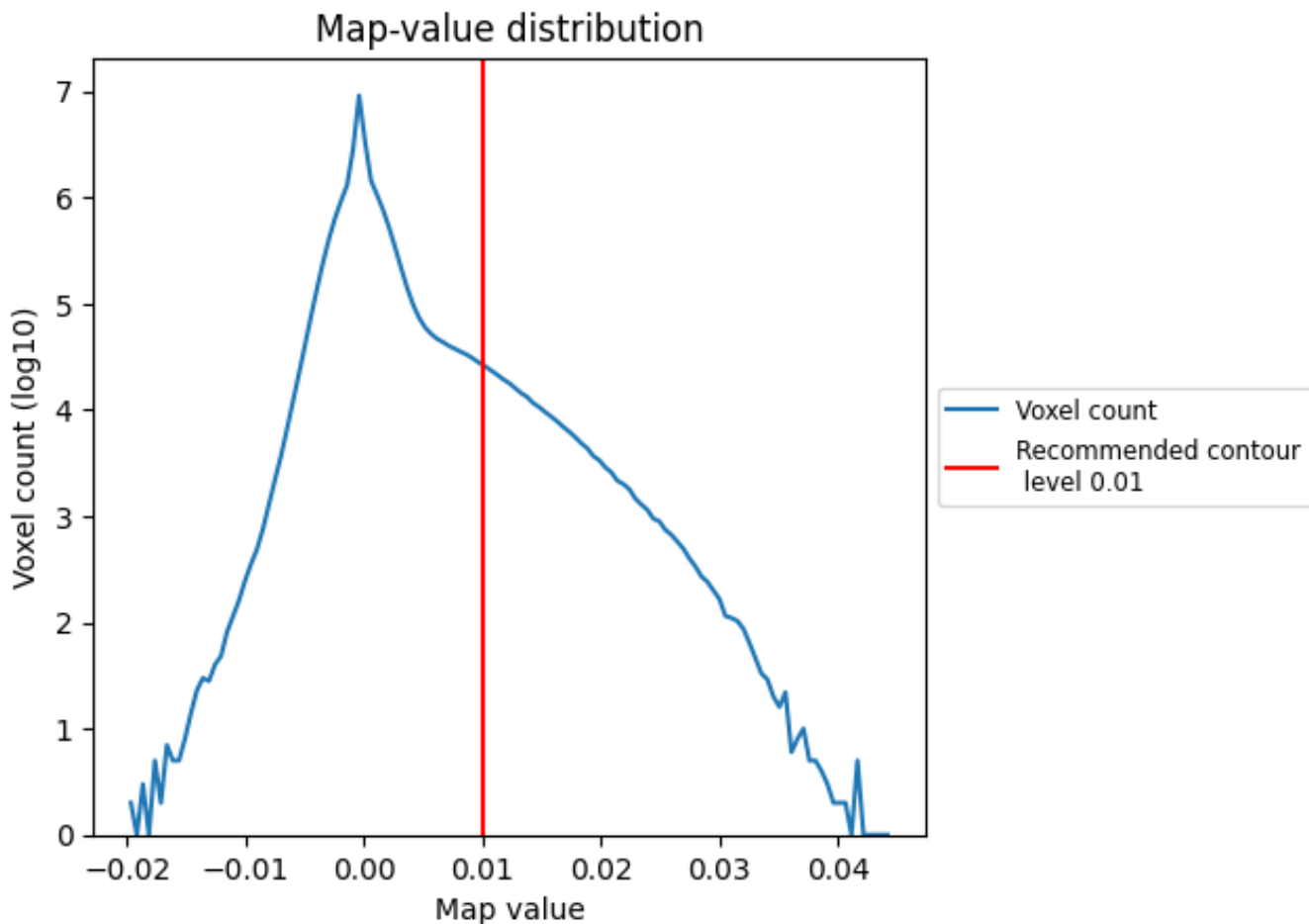
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

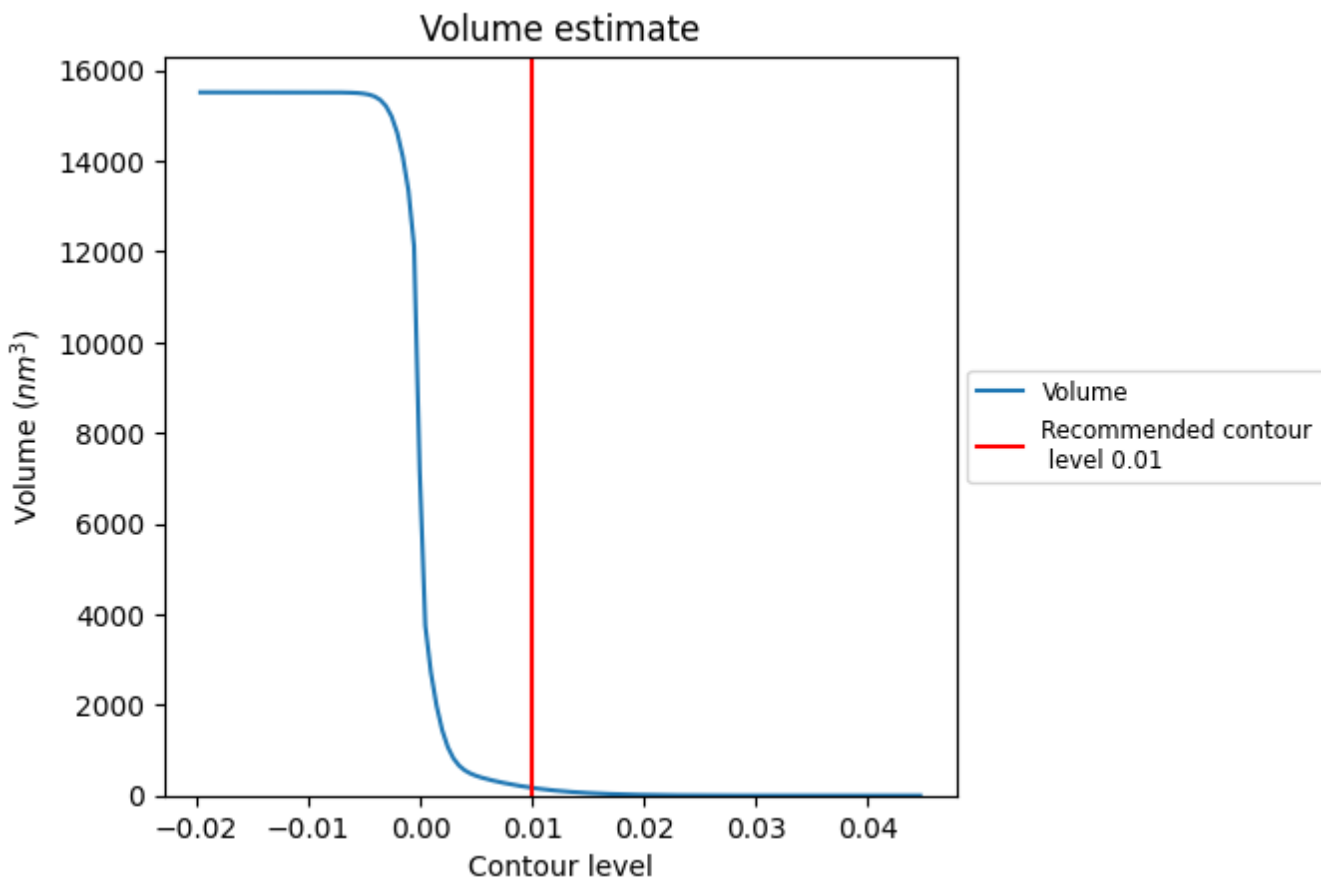
This section contains the results of statistical analysis of the map.

### 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.

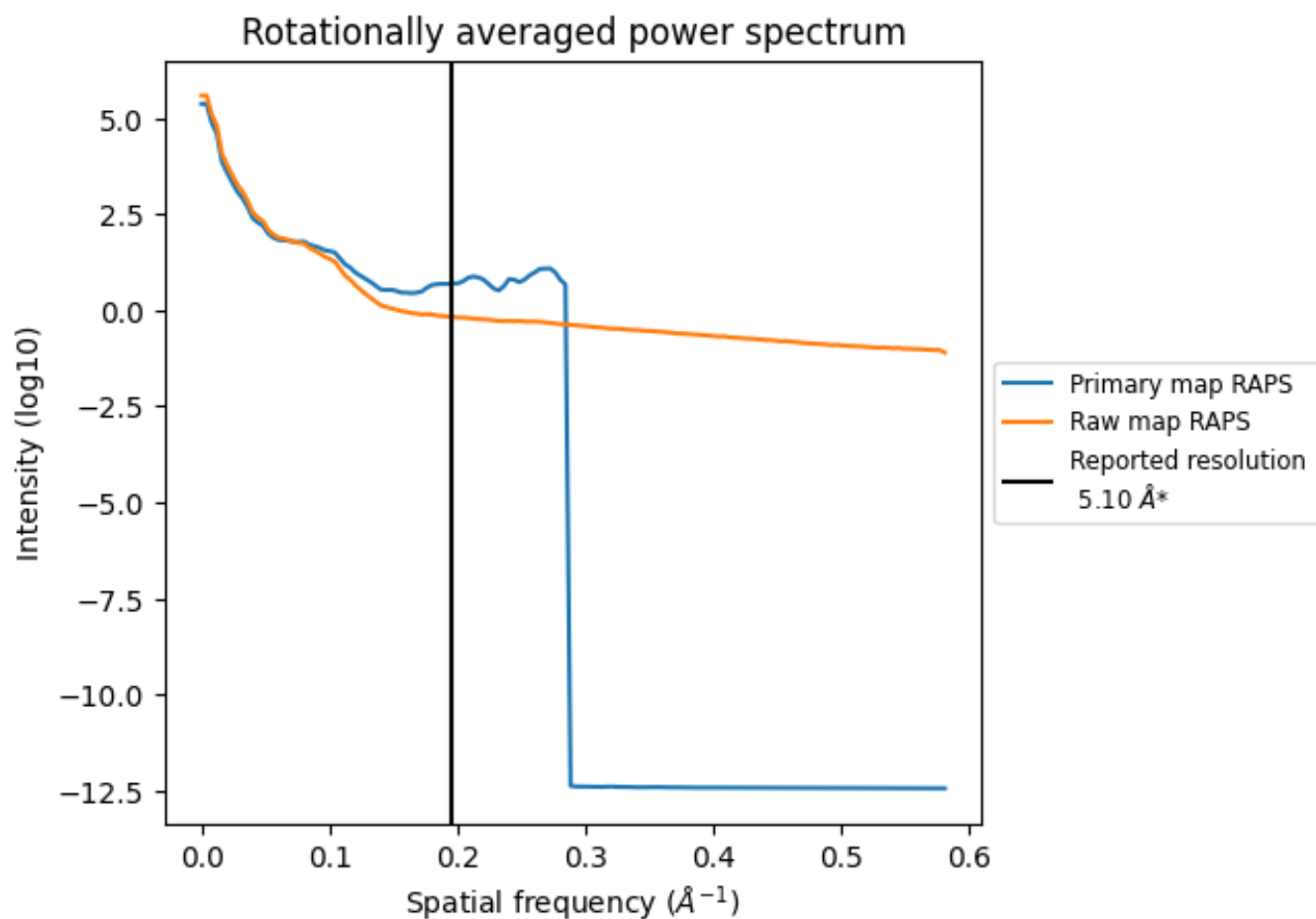
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 172 nm<sup>3</sup>; this corresponds to an approximate mass of 155 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](#)



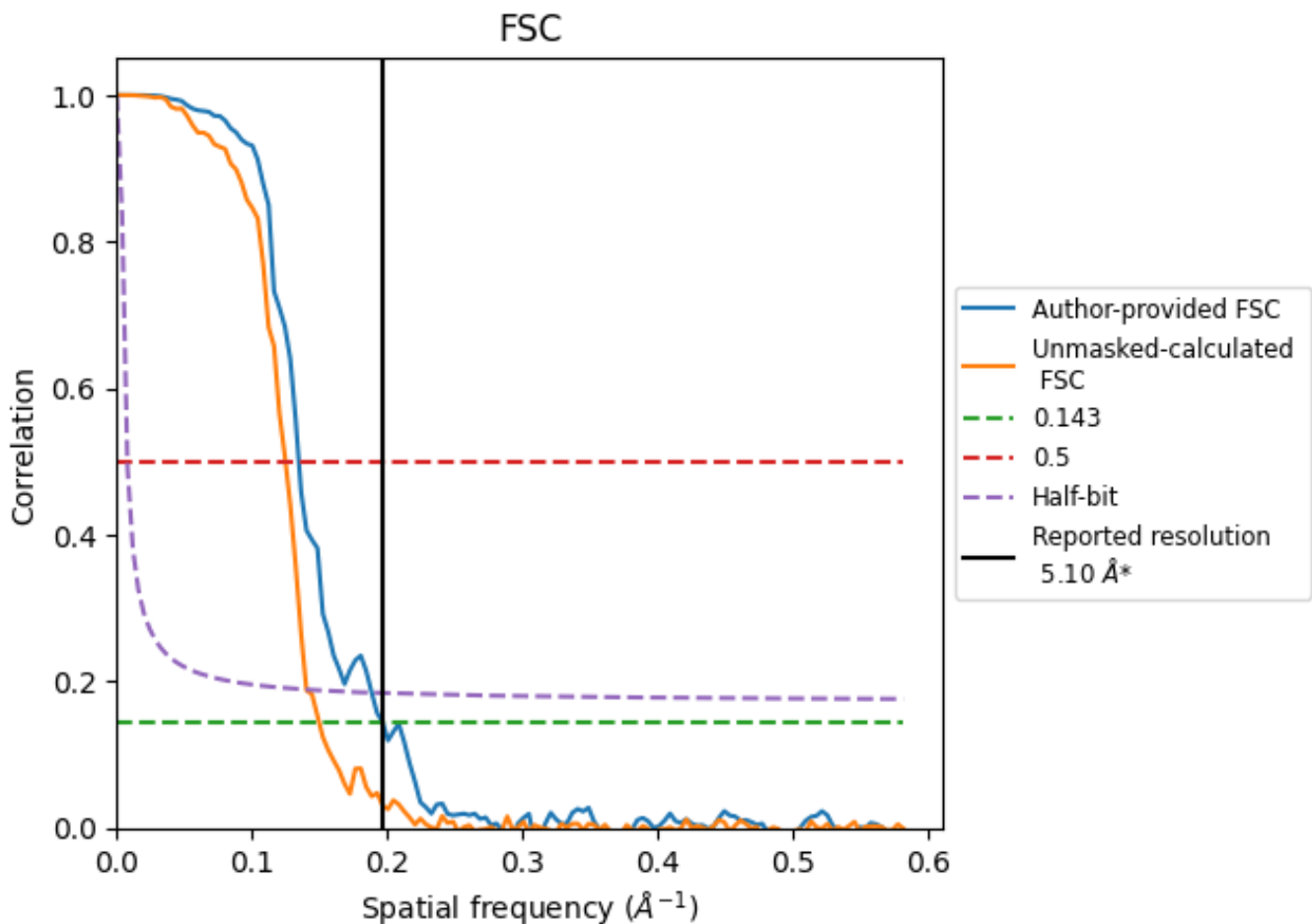
\*Reported resolution corresponds to spatial frequency of 0.196 Å<sup>-1</sup>



## 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 0.196 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

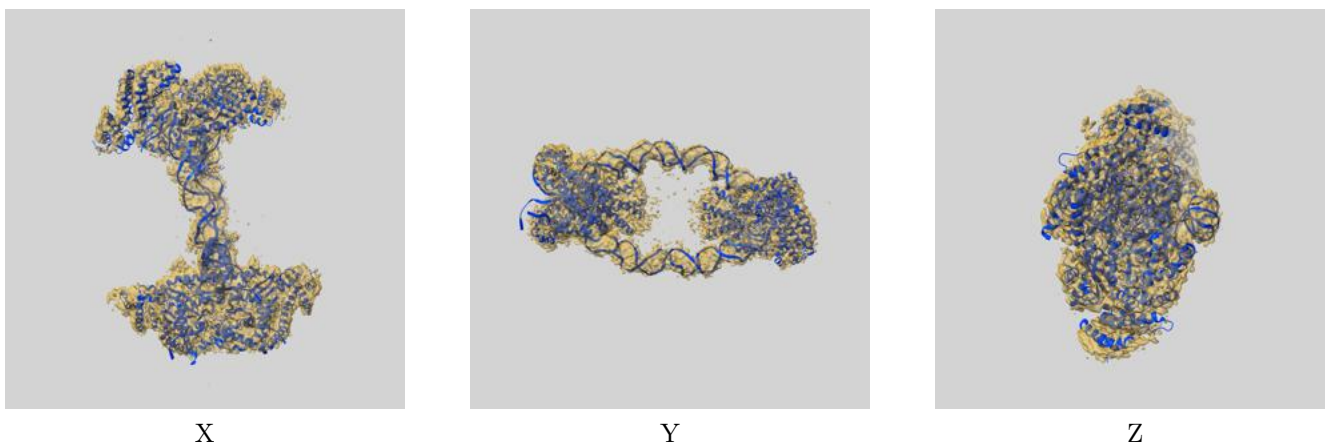
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.10	-	-
Author-provided FSC curve	5.09	7.43	5.31
Unmasked-calculated*	6.68	8.02	7.13

\*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 6.68 differs from the reported value 5.1 by more than 10 %

## 9 Map-model fit [i](#)

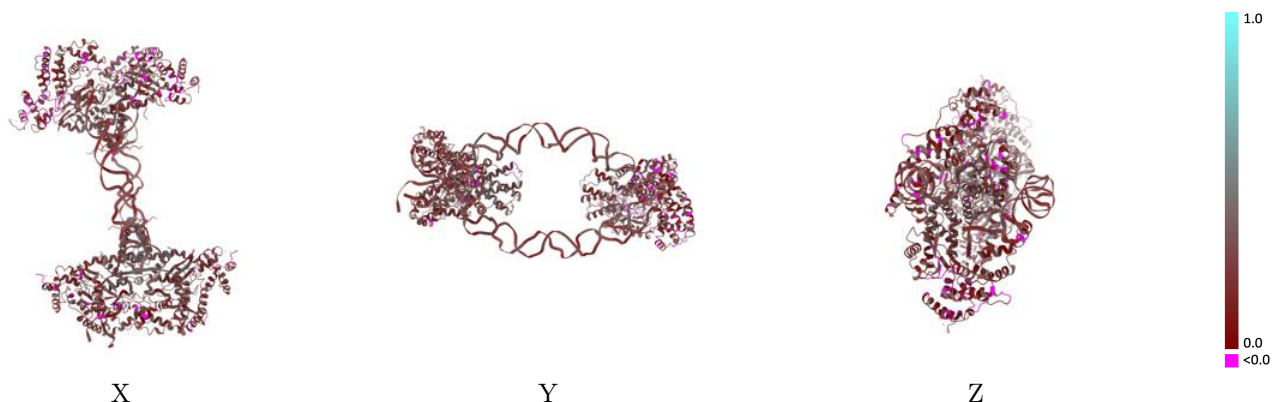
This section contains information regarding the fit between EMDB map EMD-40553 and PDB model 8SJD. Per-residue inclusion information can be found in section 3 on page 6.

### 9.1 Map-model overlay [i](#)



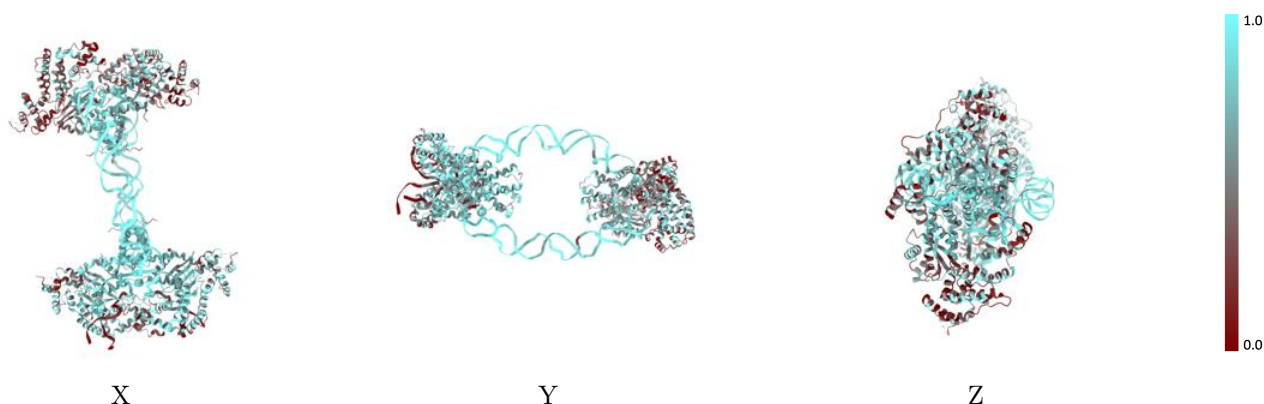
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



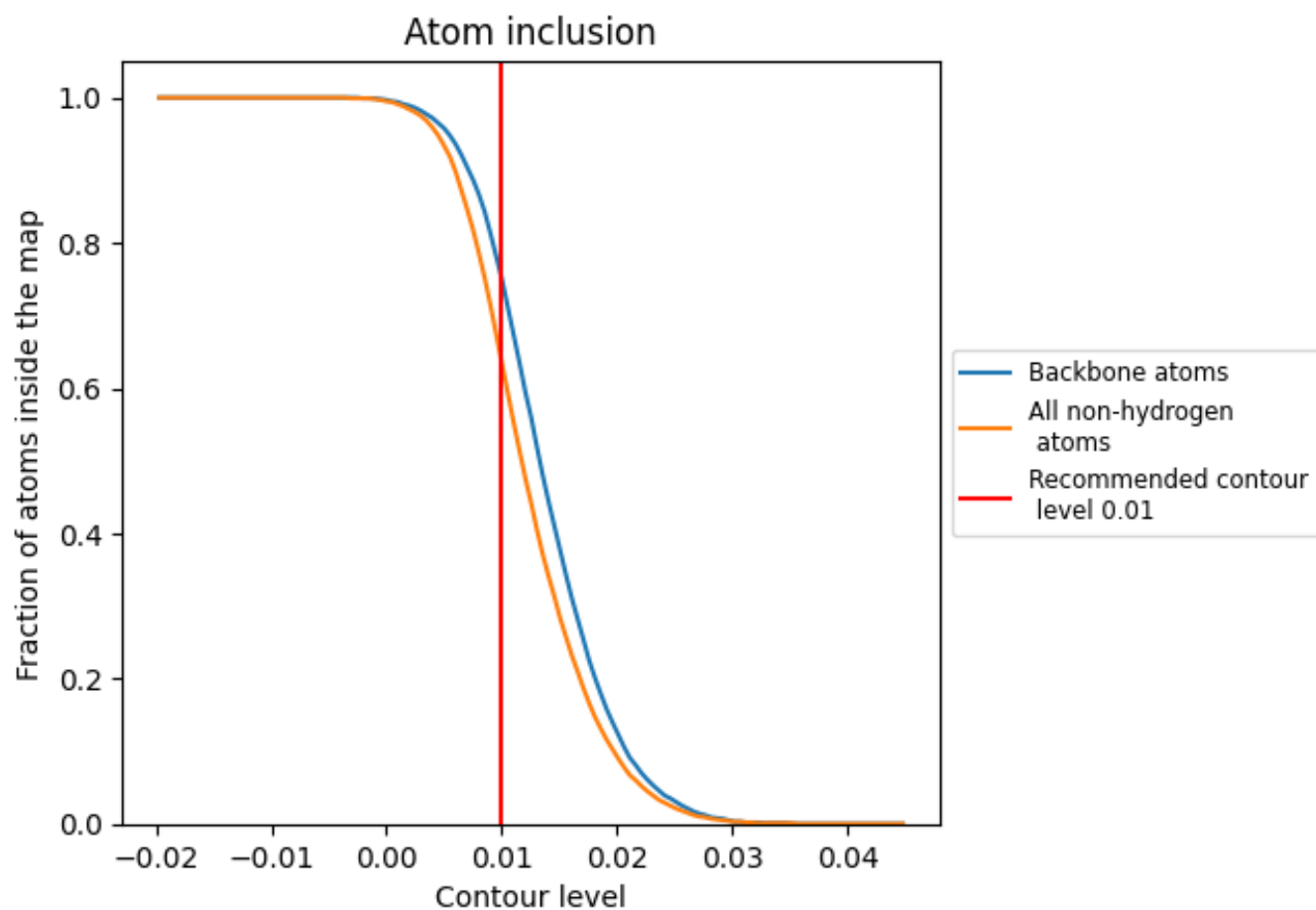
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 75% of all backbone atoms, 64% 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	 0.6350	 0.2440
A	 0.6970	 0.2680
B	 0.6960	 0.2700
C	 0.5200	 0.2260
D	 0.4770	 0.1980
E	 0.1390	 0.2850
F	 0.8760	 0.2710
G	 0.7740	 0.2600
H	 0.1530	 0.2270
I	 0.8550	 0.2540
J	 0.7340	 0.2460

