



wwPDB EM Validation Summary Report ⓘ

May 13, 2025 – 04:10 PM EDT

PDB ID : 8W0P / pdb_00008w0p
EMDB ID : EMD-43711
Title : BsaXI – Type IIB R-M system
Authors : Shen, B.W.; Stoddard, B.L.
Deposited on : 2024-02-13
Resolution : 3.26 Å(reported)

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

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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.dev118
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.43.1

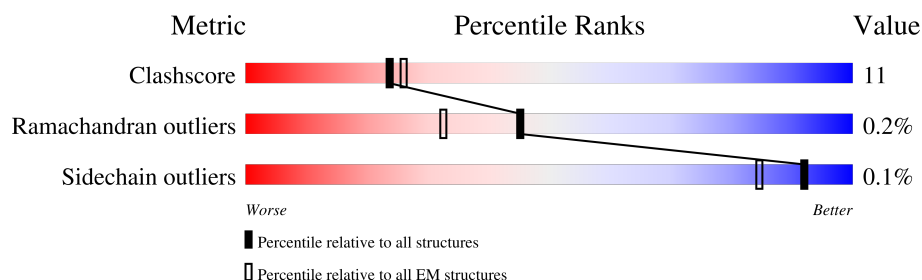
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.26 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	916	25% 72% 28%
1	B	916	26% 74% 26%
2	C	476	72% 28%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 19116 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 RM.BsaXI.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	916	Total	C	N	O	S	0	0
			7573	4853	1255	1457	8		
1	B	916	Total	C	N	O	S	2	0
			7592	4867	1258	1459	8		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	146	VAL	ILE	conflict	UNP A0A4D7QEP1
A	292	LEU	ILE	conflict	UNP A0A4D7QEP1
A	912	GLY	GLU	conflict	UNP A0A4D7QEP1
B	146	VAL	ILE	conflict	UNP A0A4D7QEP1
B	292	LEU	ILE	conflict	UNP A0A4D7QEP1
B	912	GLY	GLU	conflict	UNP A0A4D7QEP1

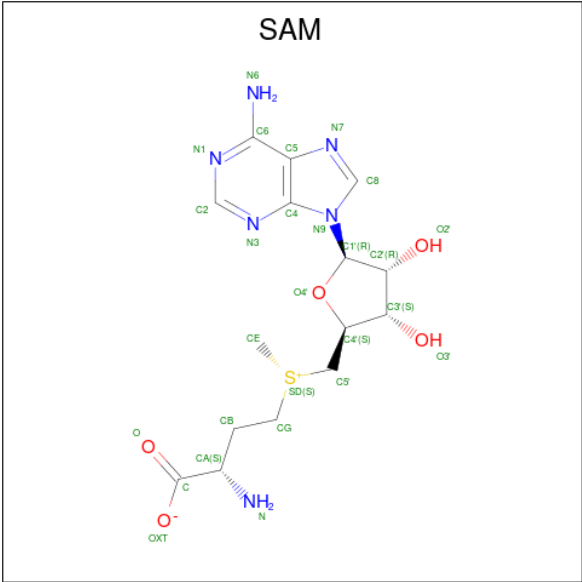
- Molecule 2 is a protein called S.BsaXI.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	475	Total	C	N	O	S	3	0
			3897	2499	641	747	10		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	126	LYS	GLU	conflict	UNP A0A226QBA7
C	437	GLU	GLN	conflict	UNP A0A226QBA7

- Molecule 3 is S-ADENOSYLMETHIONINE (CCD ID: SAM) (formula: C₁₅H₂₂N₆O₅S) (labeled as "Ligand of Interest" by depositor).

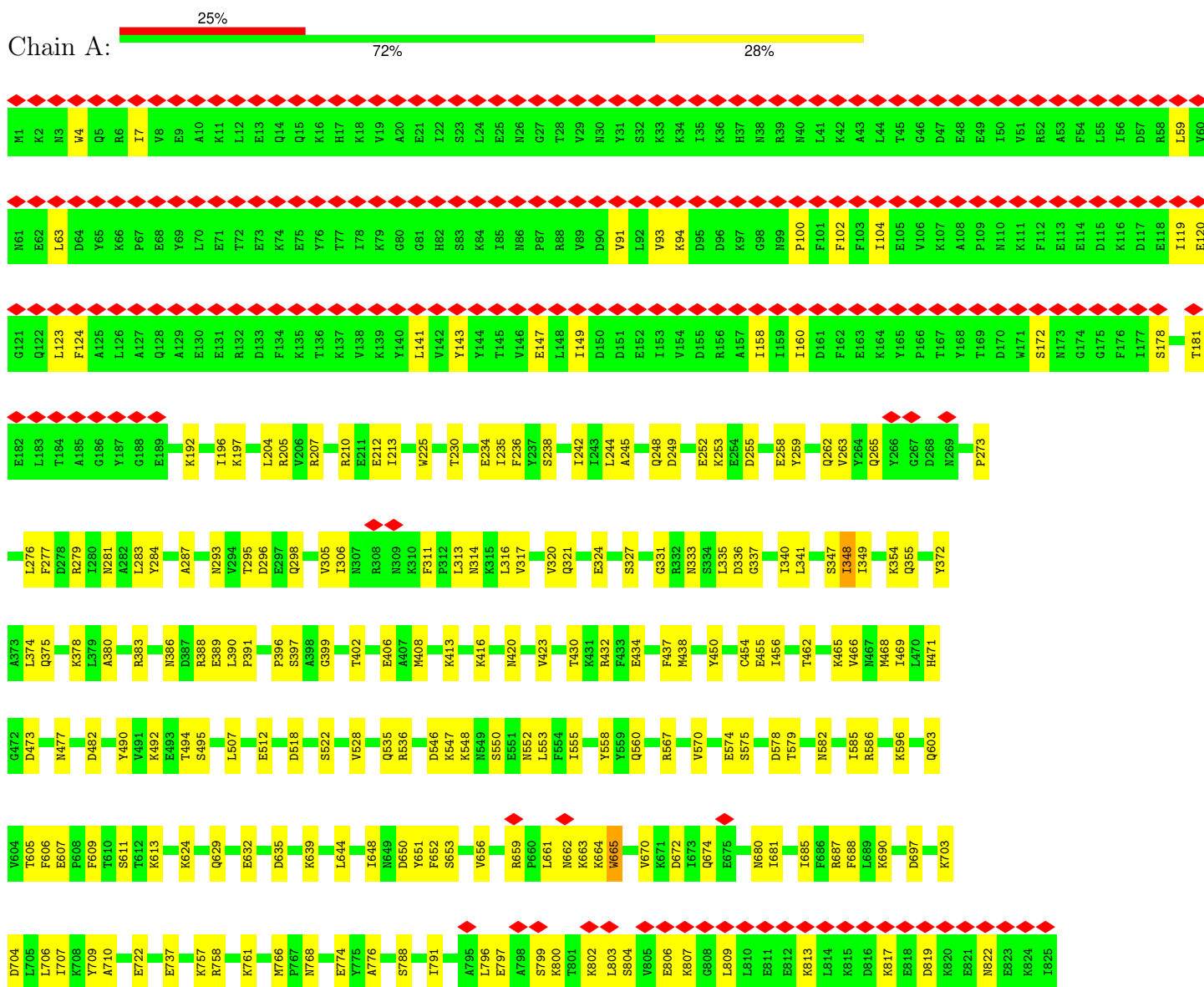


Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	S	0
			27	15	6	5	1	
3	B	1	Total	C	N	O	S	0
			27	15	6	5	1	

3 Residue-property plots

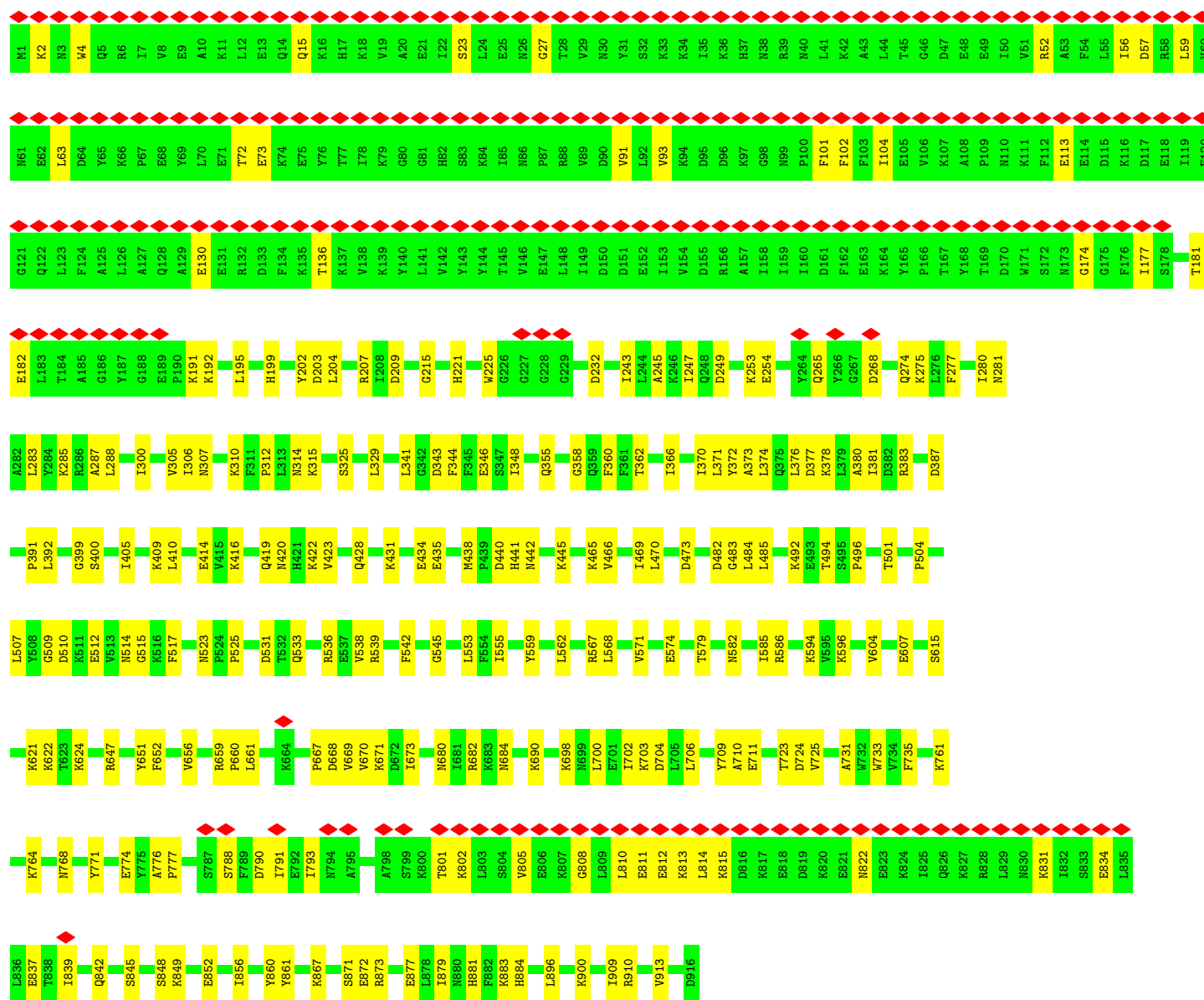
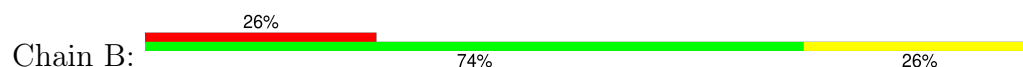
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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





• Molecule 1: RM.BsaXI



• Molecule 2: S.BsaXI



I129	Y289	Y405	K133	S298	V409	I130	Q137	G304	G307	I308	P309	I310	D319	K328	A329	T330	K334	N335	N336	M337	F341	L347	V358	A361	E365	T369	E370	D371	I372	I373	Y374	P375	Y378	L381	K382	I383	V387	I388	K391	A394	L395	L396	F397	R403	L404
Y130	S299	Y406	K134	S299	V410	I131	Q138	G305	G308	I309	P310	I311	D320	K329	A330	T331	K335	N336	N337	M338	F342	L348	V359	A362	E366	T370	E371	D372	I373	I374	Y375	P376	Y379	L382	K383	I384	V388	I389	K392	A395	L396	L397	F398	R404	L405
I142	Y149	Y418	N143	S144	S421	I143	Q139	G306	G309	I310	P311	I312	D321	K330	A331	T332	K336	N337	N338	M339	F343	L349	V360	A363	E367	T371	E372	D373	I374	I375	Y376	P377	Y380	L383	K384	I385	V389	I390	K393	A396	L398	L399	F399	R405	L406
N144	Y159	Y428	R145	S145	S422	N145	Q140	G307	G310	I311	P312	I313	D322	K331	A332	T333	K337	N338	N339	M340	F344	L350	V361	A364	E368	T372	E373	D374	I375	I376	Y377	P378	Y381	L384	K385	I386	V390	I391	K394	A397	L400	L401	F400	R406	L407
S144	F155	Y429	R146	S146	S423	N146	Q141	G308	G311	I312	P313	I314	D323	K332	A333	T334	K338	N339	N340	M341	F345	L351	V362	A365	E369	T373	E374	D375	I376	I377	Y378	P379	Y382	L385	K386	I387	V391	I392	K395	A398	L402	L403	F401	R407	L408
R145	F156	Y430	R147	S147	S424	N147	Q142	G309	G312	I313	P314	I315	D324	K333	A334	T335	K339	N340	N341	M342	F346	L352	V363	A366	E370	T374	E375	D376	I377	I378	Y379	P380	Y383	L386	K387	I388	V392	I393	K396	A399	L404	L405	F402	R408	L409
Y149	F157	Y431	R148	S148	S425	N148	Q143	G310	G313	I314	P315	I316	D325	K334	A335	T336	K340	N341	N342	M343	F347	L353	V364	A367	E371	T375	E376	D377	I378	I379	Y380	P381	Y384	L387	K388	I389	V393	I394	K397	A400	L406	L407	F403	R409	L410
I152	F158	Y432	R149	S149	S426	N149	Q144	G311	G314	I315	P316	I317	D326	K335	A336	T337	K341	N342	N343	M344	F348	L354	V365	A368	E372	T376	E377	D378	I379	I380	Y381	P382	Y385	L388	K389	I390	V394	I395	K398	A401	L408	L409	F404	R410	L411
D175	I159	Y433	D176	D176	S427	N150	Q145	G312	G315	I316	P317	I318	D327	K336	A337	T338	K342	N343	N344	M345	F349	L355	V366	A369	E373	T377	E378	D379	I380	I381	Y382	P383	Y386	L389	K390	I391	V395	I396	K399	A402	L409	L410	F405	R411	L412
D176	I160	Y434	D177	D177	S428	N151	Q146	G313	G316	I317	P318	I319	D328	K337	A338	T339	K343	N344	N345	M346	F350	L356	V367	A370	E374	T378	E379	D380	I381	I382	Y383	P384	Y387	L390	K391	I392	V396	I397	K400	A403	L410	L411	F406	R412	L413
L177	I161	Y435	L177	L177	S429	N152	Q147	G314	G317	I318	P319	I320	D329	K338	A339	T340	K344	N345	N346	M347	F351	L357	V368	A371	E375	T379	E380	D381	I382	I383	Y384	P385	Y388	L391	K392	I393	V397	I398	K401	A404	L411	L412	F407	R413	L414
I180	I180	Y436	I180	I180	S430	N153	Q148	G315	G318	I319	P320	I321	D330	K339	A340	T341	K345	N346	N347	M348	F352	L358	V369	A372	E376	T380	E381	D382	I383	I384	Y385	P386	Y389	L392	K393	I394	V398	I399	K402	A405	L412	L413	F408	R414	L415
V186	I191	Y437	V186	V186	S431	N154	Q149	G316	G319	I320	P321	I322	D331	K340	A341	T342	K346	N347	N348	M349	F353	L359	V370	A373	E377	T381	E382	D383	I384	I385	Y386	P387	Y390	L393	K394	I395	V400	I400	K403	A406	L413	L414	F409	R415	L416
L191	I192	Y438	L191	L191	S432	N155	Q150	G317	G320	I321	P322	I323	D332	K341	A342	T343	K347	N348	N349	M350	F354	L360	V371	A374	E378	T382	E383	D384	I385	I386	Y387	P388	Y391	L394	K395	I396	V401	I401	K404	A407	L414	L415	F410	R416	L417
L197	I193	Y439	L197	L197	S433	N156	Q151	G318	G321	I322	P323	I324	D333	K342	A343	T344	K348	N349	N350	M351	F355	L361	V372	A375	E379	T383	E384	D385	I386	I387	Y388	P389	Y392	L395	K396	I397	V402	I402	K405	A408	L415	L416	F411	R417	L418
I198	I194	Y440	I198	I198	S434	N157	Q152	G319	G322	I323	P324	I325	D334	K343	A344	T345	K349	N350	N351	M352	F356	L362	V373	A376	E380	T384	E385	D386	I387	I388	Y389	P390	Y393	L396	K397	I398	V403	I403	K406	A409	L416	L417	F412	R418	L419
I201	I201	Y441	I201	I201	S435	N158	Q153	G320	G323	I324	P325	I326	D335	K344	A345	T346	K350	N351	N352	M353	F357	L363	V374	A377	E381	T385	E386	D387	I388	I389	Y390	P391	Y394	L397	K398	I399	V404	I404	K407	A410	L417	L418	F413	R419	L420
K206	K206	Y442	K206	K206	S436	N159	Q154	G321	G324	I325	P326	I327	D336	K345	A346	T347	K351	N352	N353	M354	F358	L364	V375	A378	E382	T386	E387	D388	I389	I390	Y391	P392	Y395	L398	K399	I400	V405	I405	K408	A411	L418	L419	F414	R420	L421
K209	K209	Y443	K209	K209	S437	N160	Q155	G322	G325	I326	P327	I328	D337	K346	A347	T348	K352	N353	N354	M355	F359	L365	V376	A379	E383	T387	E388	D389	I390	I391	Y392	P393	Y396	L399	K400	I401	V406	I406	K409	A412	L419	L420	F415	R421	L422
E210	E210	Y444	E210	E210	S438	N161	Q156	G323	G326	I327	P328	I329	D338	K347	A348	T349	K353	N354	N355	M356	F360	L366	V377	A380	E384	T388	E389	D390	I391	I392	Y393	P394	Y397	L400	K401	I402	V407	I407	K410	A413	L420	L421	F416	R422	L423
R216	R216	Y445	R216	R216	S439	N162	Q157	G324	G327	I328	P329	I330	D339	K348	A349	T350	K354	N355	N356	M357	F361	L367	V378	A381	E385	T389	E390	D391	I392	I393	Y394	P395	Y398	L401	K402	I403	V408	I408	K411	A414	L421	L422	F417	R423	L424
S217	S217	Y446	S217	S217	S440	N163	Q158	G325	G328	I329	P330	I331	D340	K349	A350	T351	K355	N356	N357	M358	F362	L368	V379	A382	E386	T390	E391	D392	I393	I394	Y395	P396	Y399	L402	K403	I404	V409	I409	K412	A415	L422	L423	F418	R424	L425
K218	K218	Y447	K218	K218	S441	N164	Q159	G326	G329	I330	P331	I332	D341	K350	A351	T352	K356	N357	N358	M359	F363	L369	V380	A383	E387	T391	E392	D393	I394	I395	Y396	P397	Y400	L403	K404	I405	V410	I410	K413	A416	L423	L424	F419	R425	L426
I221	I221	Y448	I221	I221	S442	N165	Q160	G327	G330	I331	P332	I333	D342	K351	A352	T353	K357	N358	N359	M360	F364	L370	V381	A384	E388	T392	E393	D394	I395	I396	Y397	P398	Y401	L404	K405	I406	V411	I411	K414	A417	L424	L425	F420	R426	L427
F226	F226	Y449	F226	F226	S443	N166	Q161	G328	G331	I332	P333	I334	D343	K352	A353	T354	K358	N359	N360	M361	F365	L371	V382	A385	E389	T393	E394	D395	I396	I397	Y398	P399	Y402	L405	K406	I407	V412	I412	K415	A418	L425	L426	F421	R427	L428
L237	L237	Y450	L237	L237	S444	N167	Q162	G329	G332	I333	P334	I335	D344	K353	A354	T355	K359	N360	N361	M362	F366	L372	V383	A386	E390	T394	E395	D396	I397	I398	Y399	P400	Y403	L406	K407	I408	V413	I413	K416	A419	L426	L427	F422	R428	L429
T259	T259	Y451	T259	T259	S445	N168	Q163	G330	G333	I334	P335	I336	D345	K354	A355	T356	K360	N361	N362	M363	F367	L373	V384	A387	E391	T395	E396	D397	I398	I399	Y400	P401	Y404	L407	K408	I409	V414	I414	K417	A420	L427	L428	F423	R429	L430
I260	I260	Y452	I260	I260	S446	N169	Q164	G331	G334	I335	P336	I337	D346	K355	A356	T357	K361	N362	N363	M364	F368	L374	V385	A388	E392	T396	E397	D398	I399	I400	Y401	P402	Y405	L408	K409	I410	V415	I415	K418	A421	L428	L429	F424	R430	L431
R265	R265	Y453	R265	R265	S447	N170	Q165	G332	G335	I336	P337	I338	D347	K356	A357	T358	K362	N363	N364	M365	F369	L375	V386	A389	E393	T397	E398	D399	I400	I401	Y402	P403	Y406	L409	K410	I411	V416	I416	K419	A422	L429	L430	F425	R431	L432
L276	L276	Y454	L276	L276	S448	N171	Q166	G333	G336	I337	P338	I339	D348	K357	A358	T359	K363	N364	N365	M366	F370	L376	V387	A390	E394	T398	E399	D400	I401	I402	Y403	P404	Y407	L410	K411	I412	V417	I417	K420	A423	L430	L431	F426	R432	L433
I280	I280	Y455	I280	I280	S449	N172	Q167	G334	G337	I338	P339	I340	D349	K358	A359	T360	K364	N365	N366	M367	F371	L377	V388	A391	E395	T399	E400	D401	I402	I403	Y404	P405	Y408	L411	K412	I413	V418	I418	K421	A424	L431	L432	F427	R433	L434
L286	L286	Y456	L286	L286	S450	N173	Q168	G335	G338	I339	P340	I341	D350	K359	A360	T361	K365	N366	N367	M368	F372	L378	V389	A392	E396	T400	E401	D402	I403	I404	Y405	P406	Y409	L412	K413	I414	V419	I419	K422	A425	L432	L433	F428	R434	L435

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	194038	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.950	Depositor
Minimum map value	-0.363	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	414.336, 414.336, 414.336	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.079, 1.079, 1.079	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.14	0/7727	0.37	0/10409
1	B	0.13	0/7751	0.35	0/10442
2	C	0.14	0/3968	0.35	0/5350
All	All	0.14	0/19446	0.36	0/26201

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	7573	0	7522	166	0
1	B	7592	0	7537	157	0
2	C	3897	0	3946	89	0
3	A	27	0	22	1	0
3	B	27	0	22	4	0
All	All	19116	0	19049	408	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 11.

The worst 5 of 408 close contacts within the same asymmetric unit are listed below, sorted by

their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:494:THR:HG22	1:A:495:SER:H	1.44	0.81
1:B:221:HIS:HA	1:B:225:TRP:HD1	1.47	0.78
1:B:494:THR:HG22	1:B:496:PRO:HD2	1.63	0.77
1:A:143:TYR:HB3	1:A:158:ILE:HG22	1.66	0.77
1:A:586:ARG:NH1	2:C:17:SER:O	2.19	0.75

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	914/916 (100%)	868 (95%)	42 (5%)	4 (0%)	30	60
1	B	916/916 (100%)	875 (96%)	40 (4%)	1 (0%)	48	77
2	C	476/476 (100%)	457 (96%)	19 (4%)	0	100	100
All	All	2306/2308 (100%)	2200 (95%)	101 (4%)	5 (0%)	45	71

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	665	TRP
1	A	886	VAL
1	B	710	ALA
1	A	348	ILE
1	A	710	ALA

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	831/831 (100%)	831 (100%)	0	100	100
1	B	833/831 (100%)	831 (100%)	2 (0%)	92	95
2	C	442/440 (100%)	440 (100%)	2 (0%)	86	90
All	All	2106/2102 (100%)	2102 (100%)	4 (0%)	92	95

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	441[A]	HIS
1	B	441[B]	HIS
2	C	265[A]	ARG
2	C	265[B]	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 21 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	477	ASN
2	C	86	ASN
2	C	465	GLN
2	C	257	ASN
1	B	677	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

2 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	SAM	A	1001	-	23,29,29	1.25	3 (13%)	20,42,42	1.68	2 (10%)
3	SAM	B	1001	-	23,29,29	1.28	3 (13%)	20,42,42	1.69	2 (10%)

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	SAM	A	1001	-	-	2/13/33/33	0/3/3/3
3	SAM	B	1001	-	-	1/13/33/33	0/3/3/3

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1001	SAM	C2-N3	4.12	1.38	1.32
3	A	1001	SAM	C2-N3	4.02	1.38	1.32
3	B	1001	SAM	C2-N1	2.56	1.38	1.33
3	A	1001	SAM	C2-N1	2.48	1.38	1.33
3	B	1001	SAM	OXT-C	-2.29	1.23	1.30

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1001	SAM	N3-C2-N1	-6.17	120.29	128.67
3	A	1001	SAM	N3-C2-N1	-6.06	120.44	128.67
3	A	1001	SAM	OXT-C-O	-2.70	117.96	124.08
3	B	1001	SAM	OXT-C-O	-2.65	118.06	124.08

There are no chirality outliers.

All (3) torsion outliers are listed below:

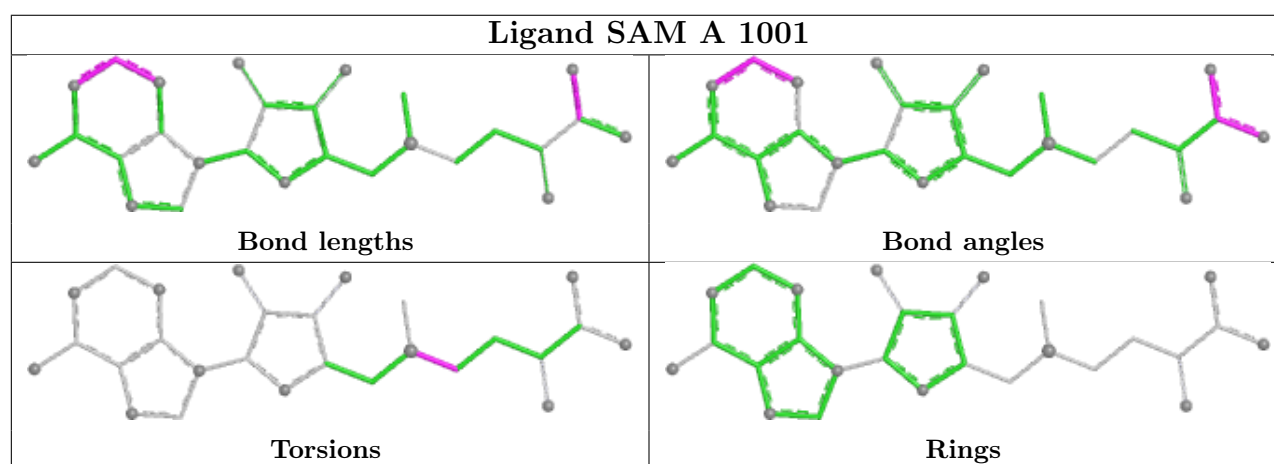
Mol	Chain	Res	Type	Atoms
3	A	1001	SAM	CB-CG-SD-CE
3	A	1001	SAM	CB-CG-SD-C5'
3	B	1001	SAM	C-CA-CB-CG

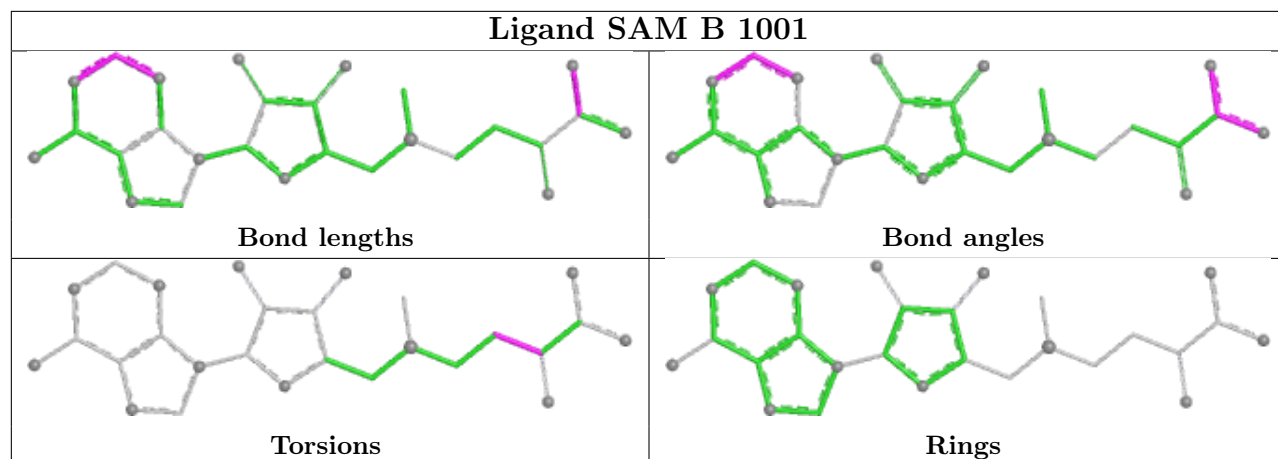
There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1001	SAM	1	0
3	B	1001	SAM	4	0

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





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.

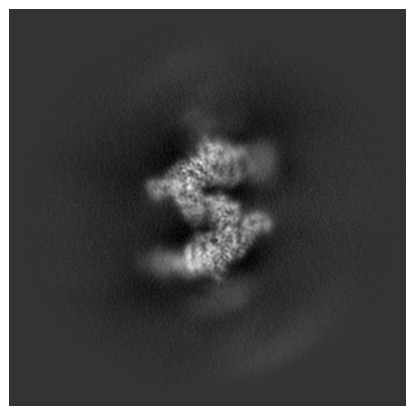
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43711. These allow visual inspection of the internal detail of the map and identification of artifacts.

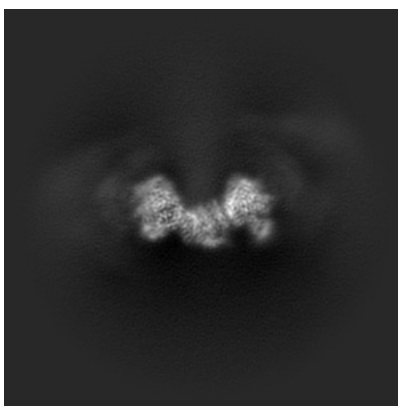
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

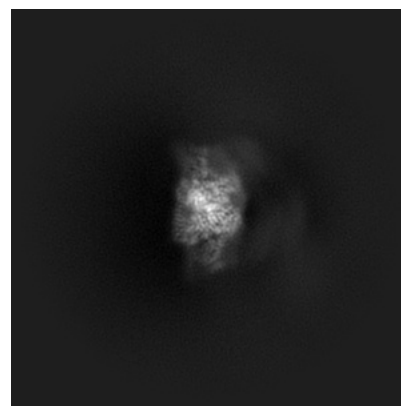
6.1.1 Primary map



X

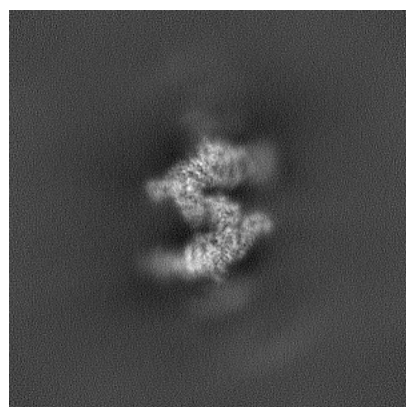


Y

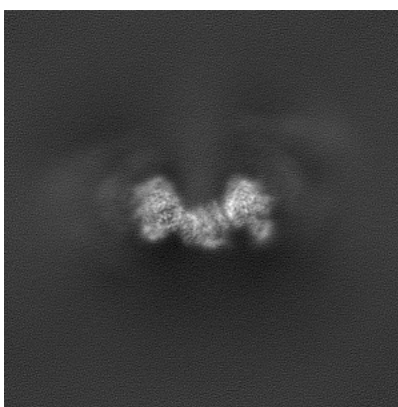


Z

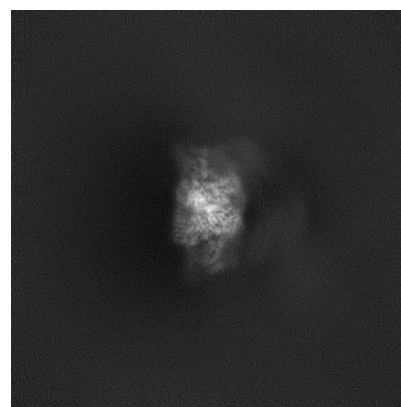
6.1.2 Raw map



X



Y

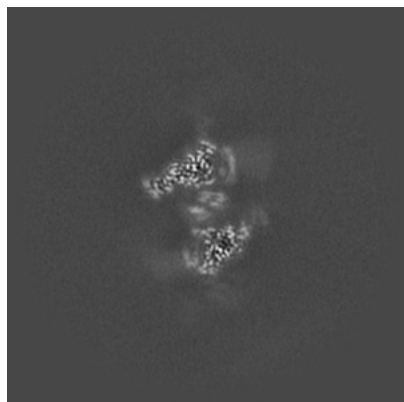


Z

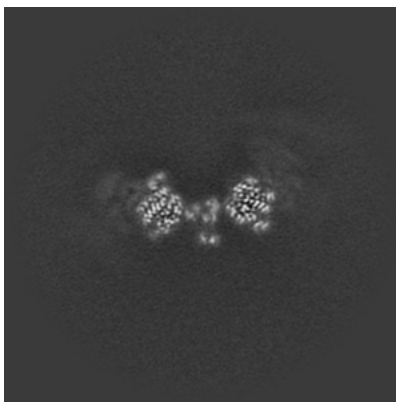
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

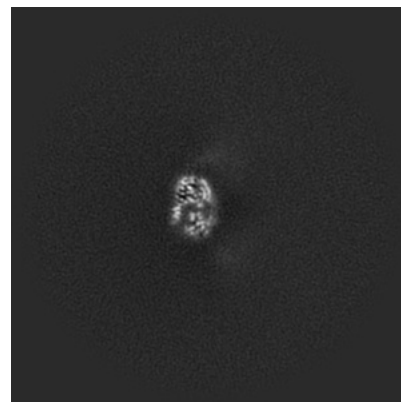
6.2.1 Primary map



X Index: 192

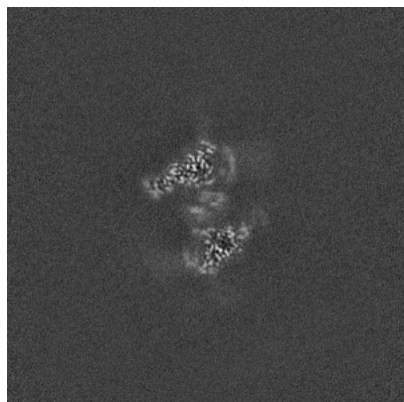


Y Index: 192

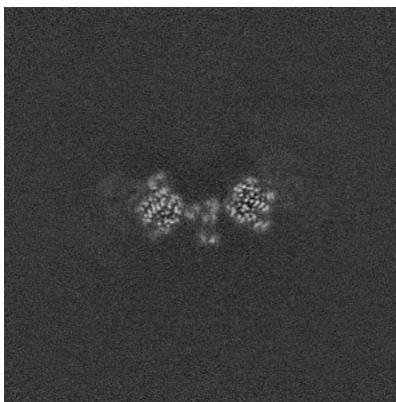


Z Index: 192

6.2.2 Raw map



X Index: 192



Y Index: 192

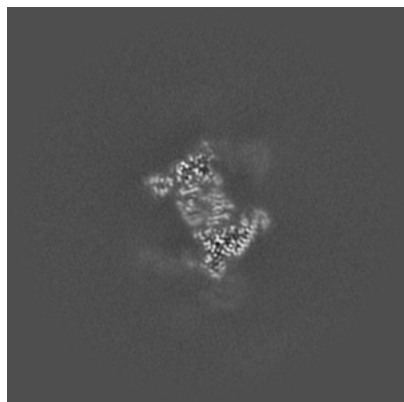


Z Index: 192

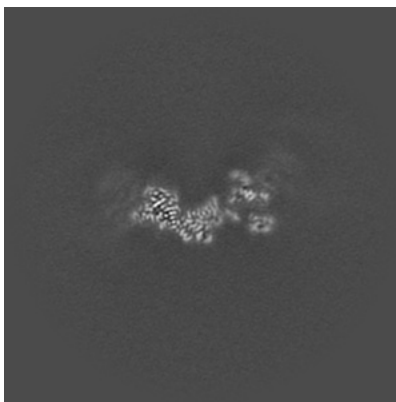
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

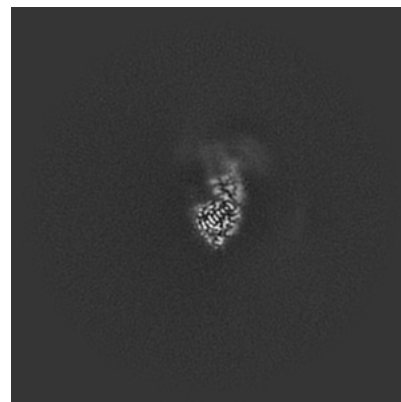
6.3.1 Primary map



X Index: 186



Y Index: 202

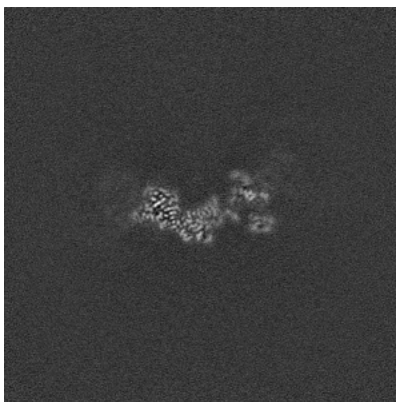


Z Index: 231

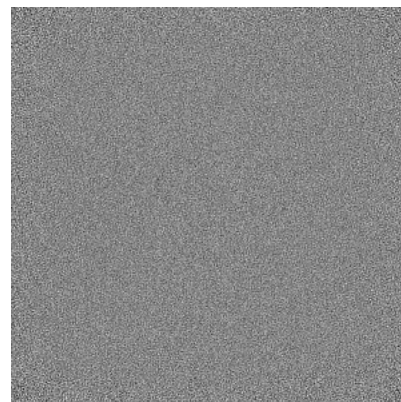
6.3.2 Raw map



X Index: 186



Y Index: 202

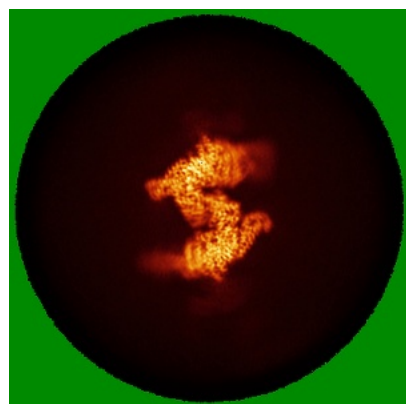


Z Index: 0

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

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

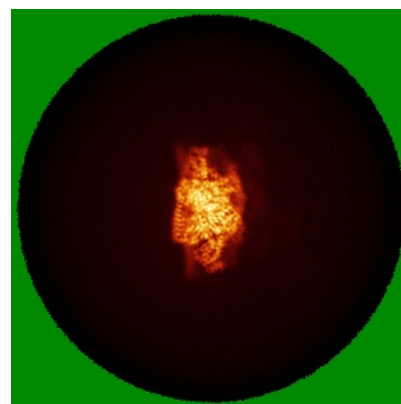
6.4.1 Primary map



X

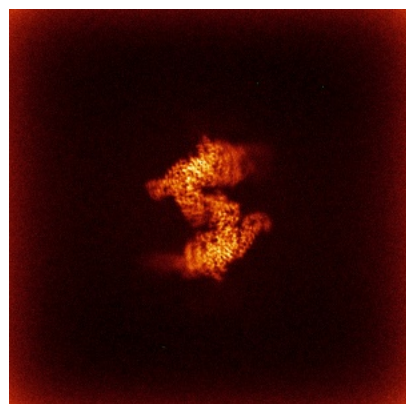


Y

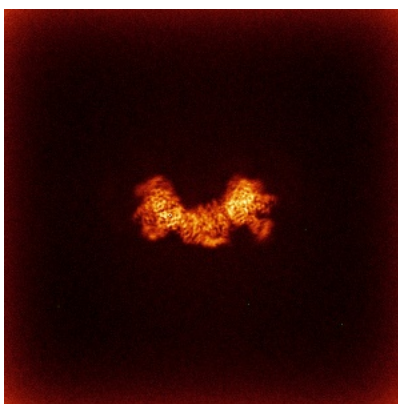


Z

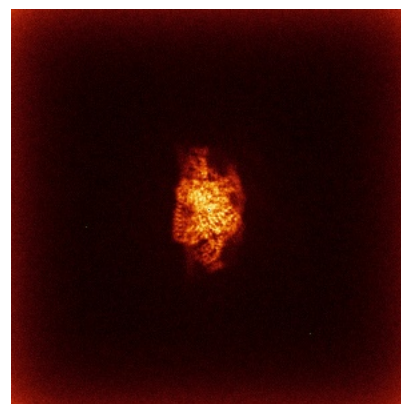
6.4.2 Raw map



X



Y

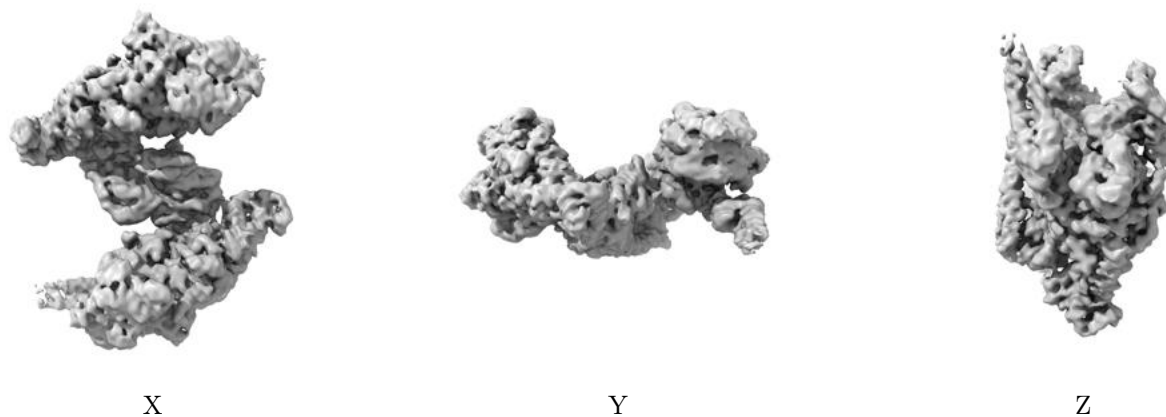


Z

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.

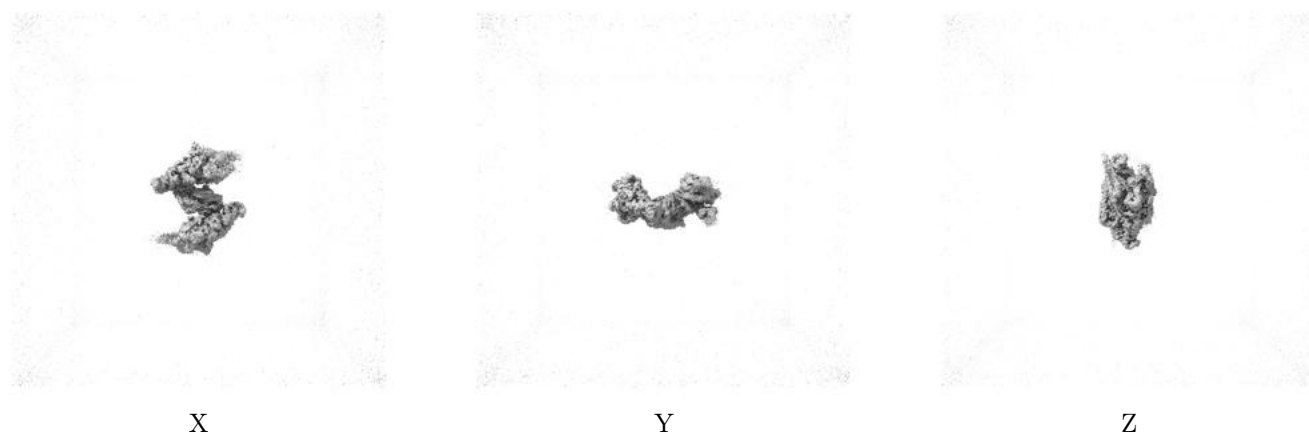
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.15. 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.

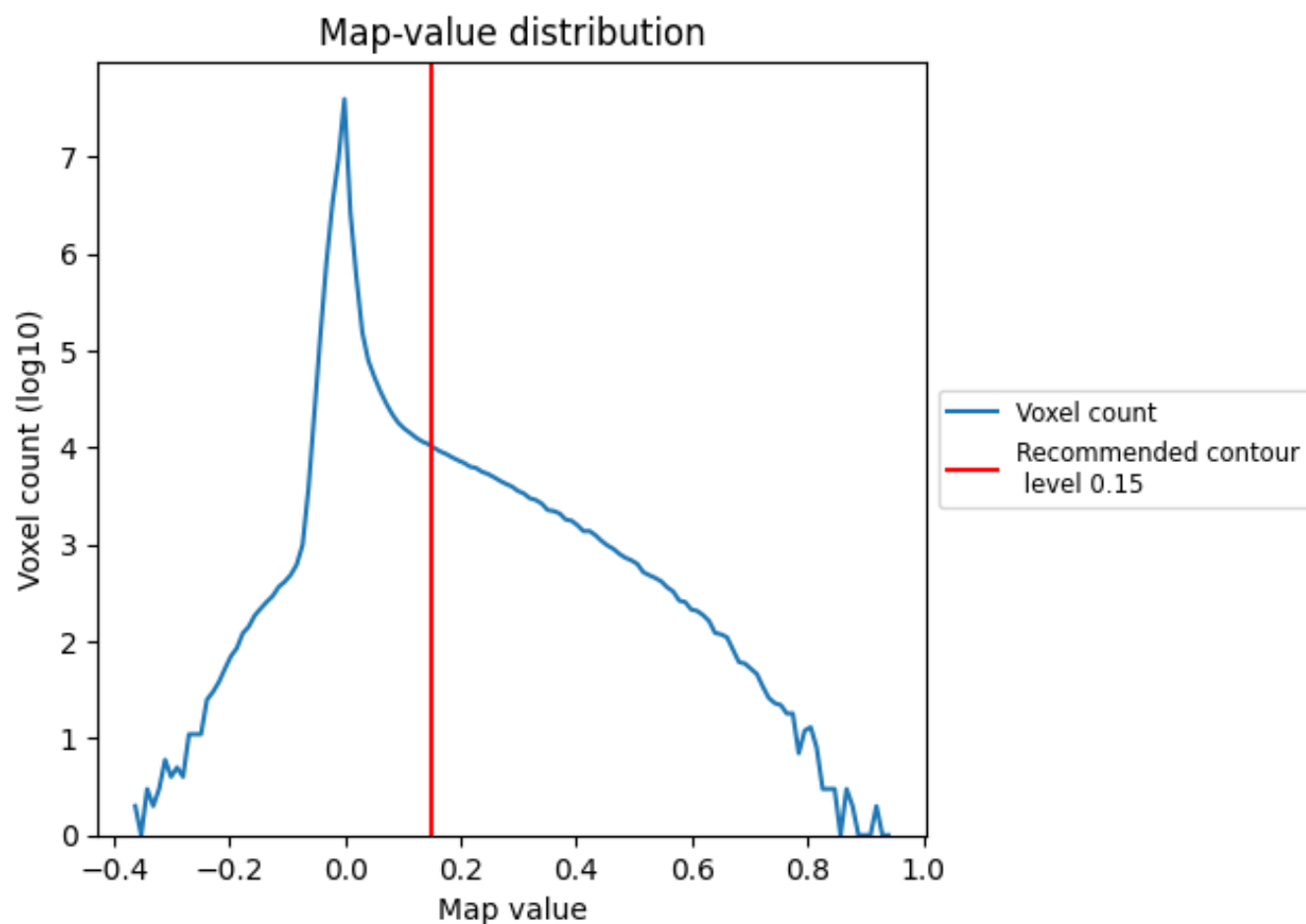
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

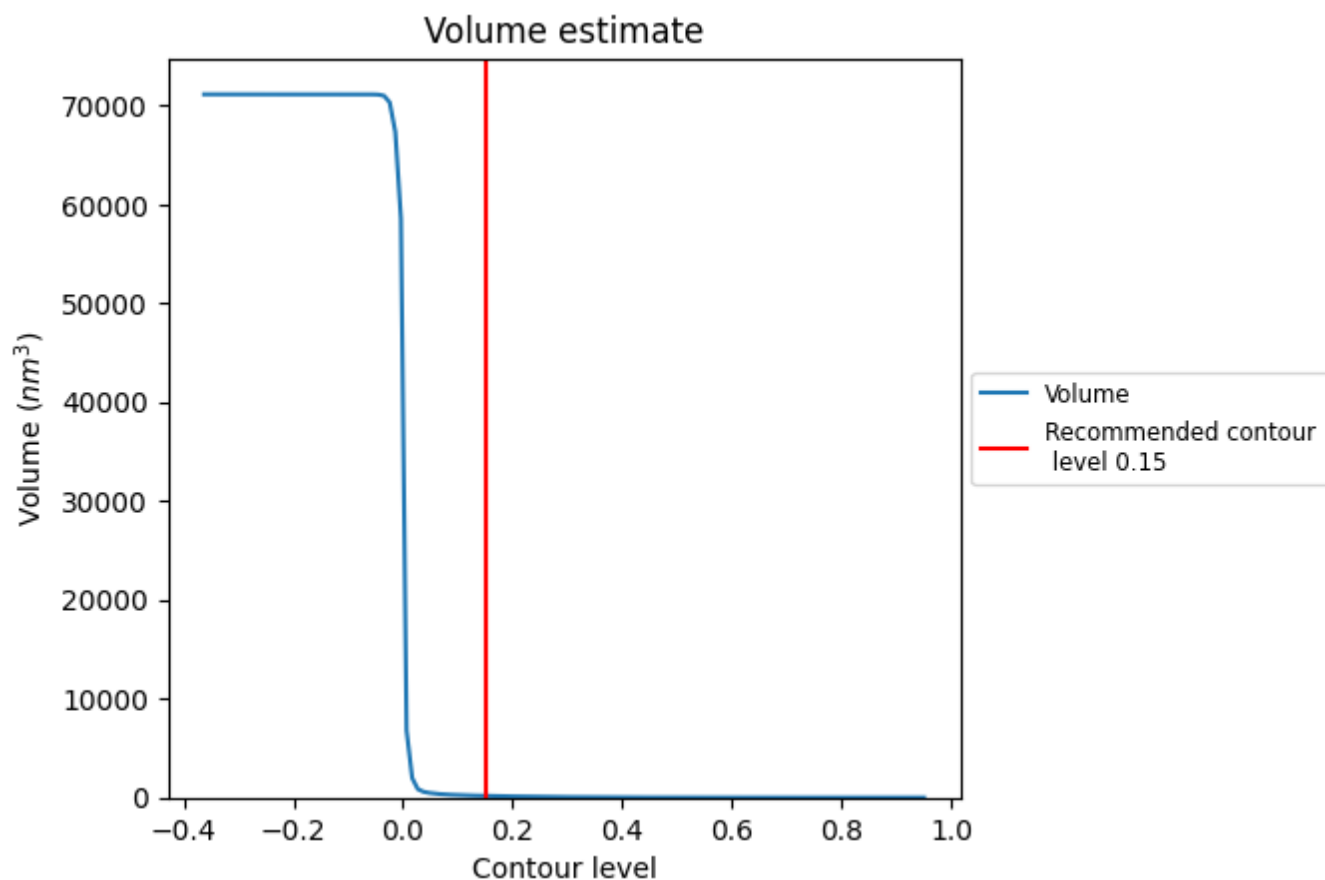
This section contains the results of statistical analysis of the map.

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.

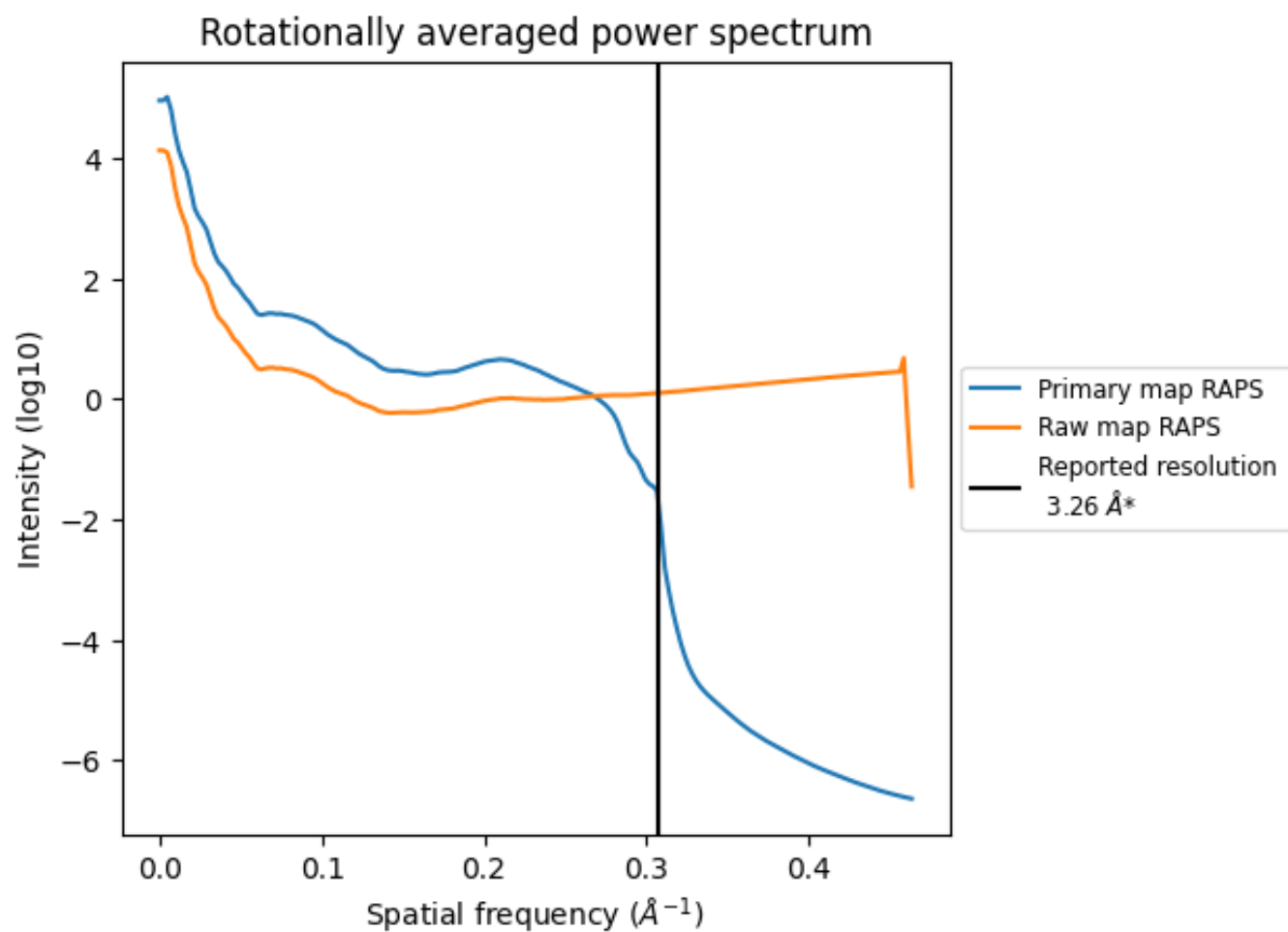
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 171 nm³; 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 ⓘ

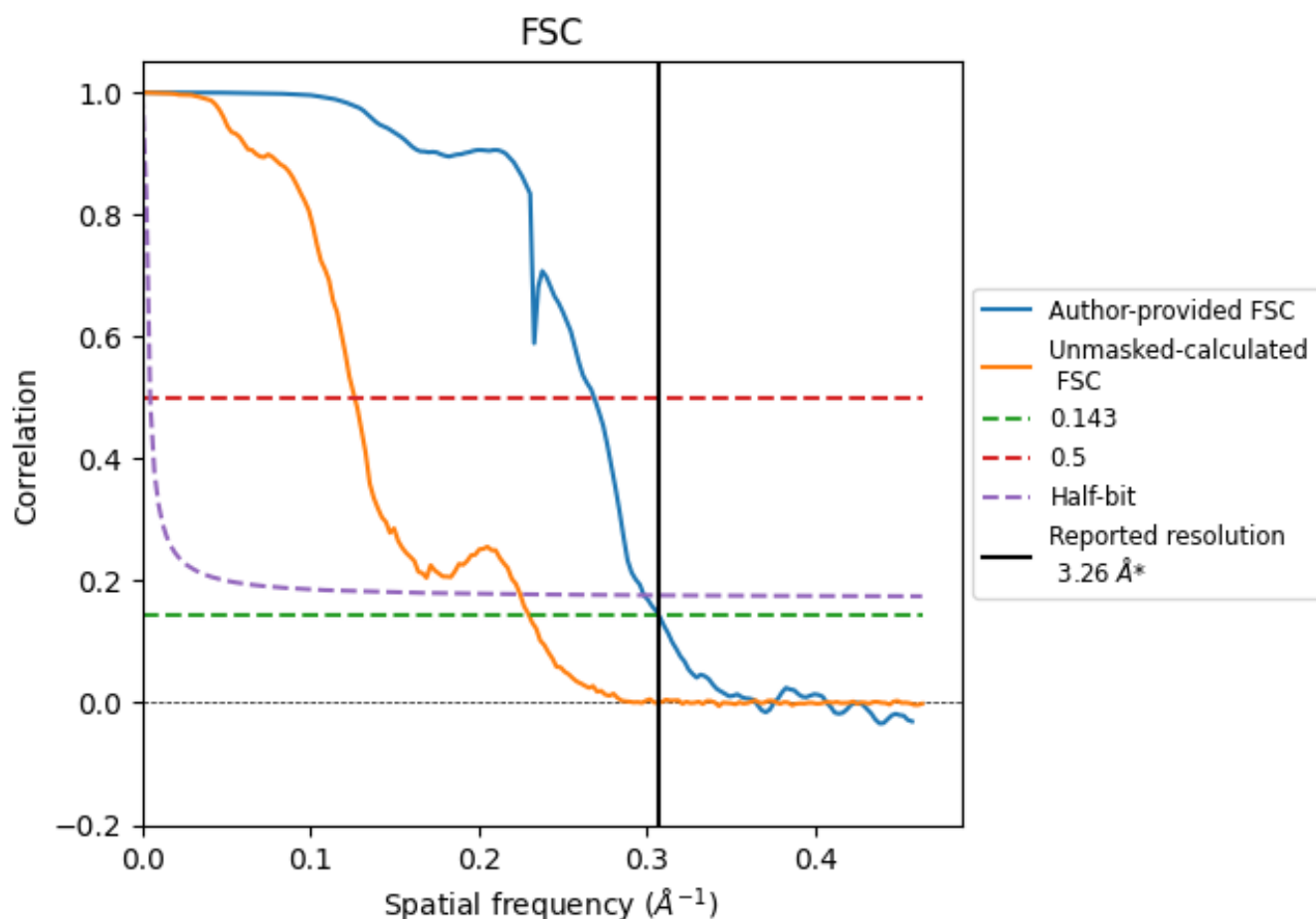


*Reported resolution corresponds to spatial frequency of 0.307 $\text{\AA}^{-1}$

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 $0.307 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

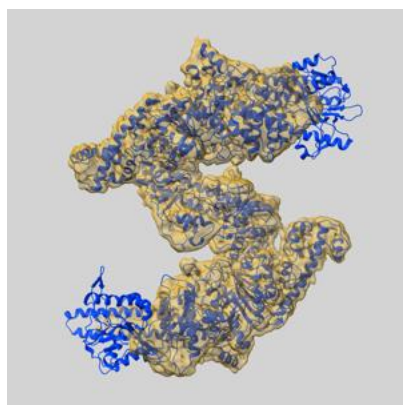
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.26	-	-
Author-provided FSC curve	3.26	3.72	3.36
Unmasked-calculated*	4.35	7.92	4.45

*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 4.35 differs from the reported value 3.26 by more than 10 %

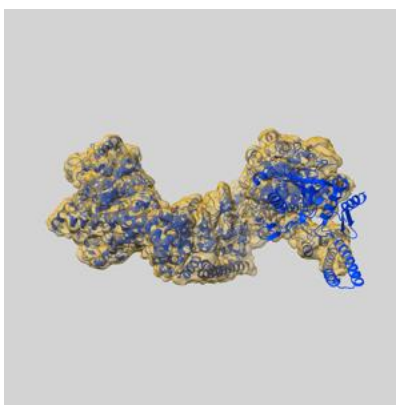
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-43711 and PDB model 8W0P. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

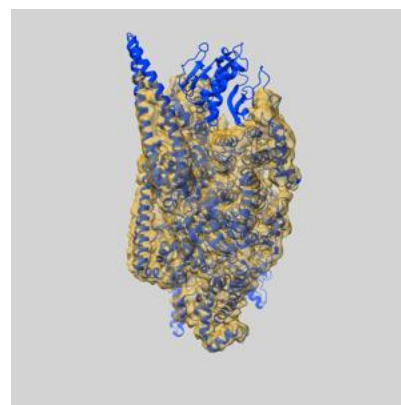
9.1 Map-model overlay [i](#)



X



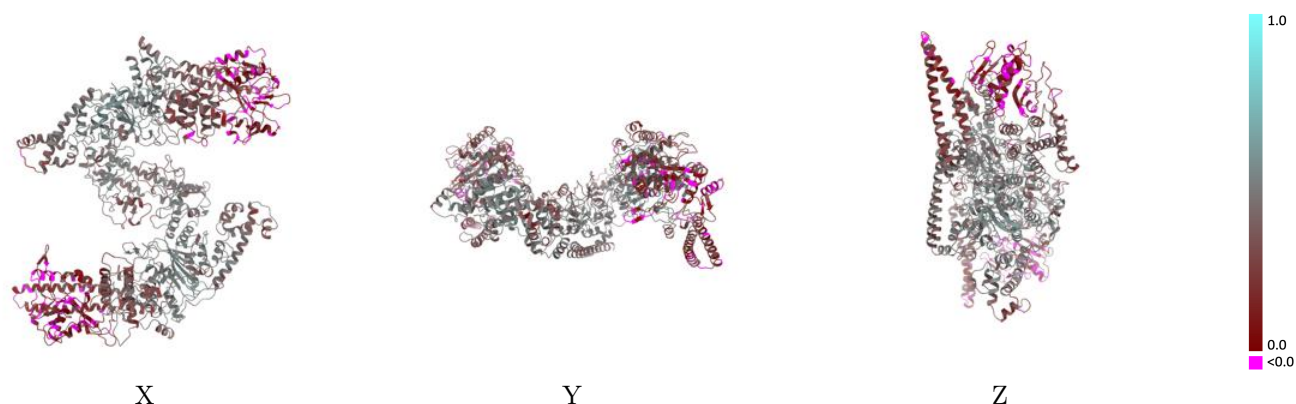
Y



Z

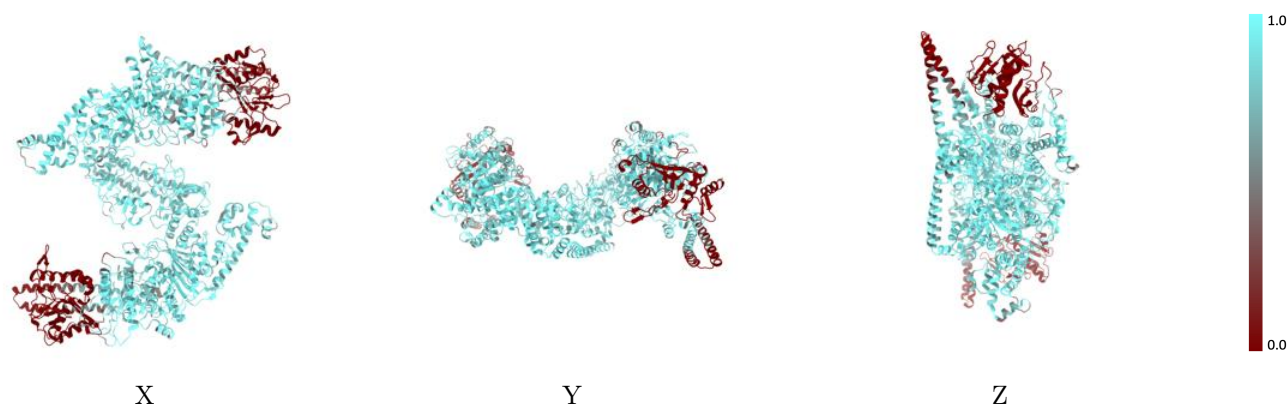
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



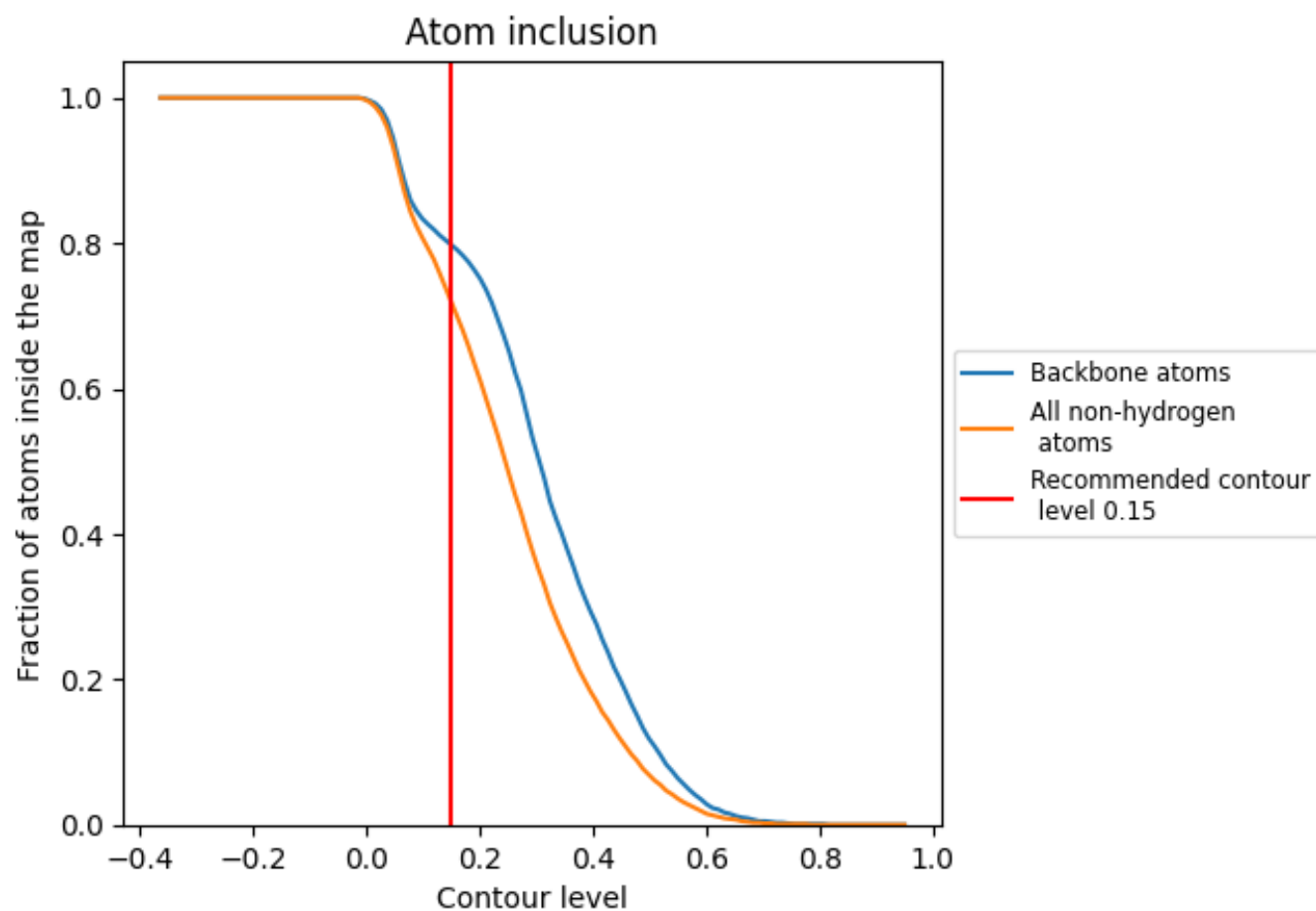
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.15).

9.4 Atom inclusion [i](#)



At the recommended contour level, 80% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7200	0.3570
A	0.6760	0.3370
B	0.6630	0.3330
C	0.9160	0.4420

