



wwPDB EM Validation Summary Report ⓘ

Mar 8, 2026 – 08:13 AM UTC

PDB ID : 7WE6 / pdb_00007we6
EMDB ID : EMD-32440
Title : Structure of Csy-AcrIF24-dsDNA
Authors : Zhang, L.; Feng, Y.
Deposited on : 2021-12-22
Resolution : 3.20 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

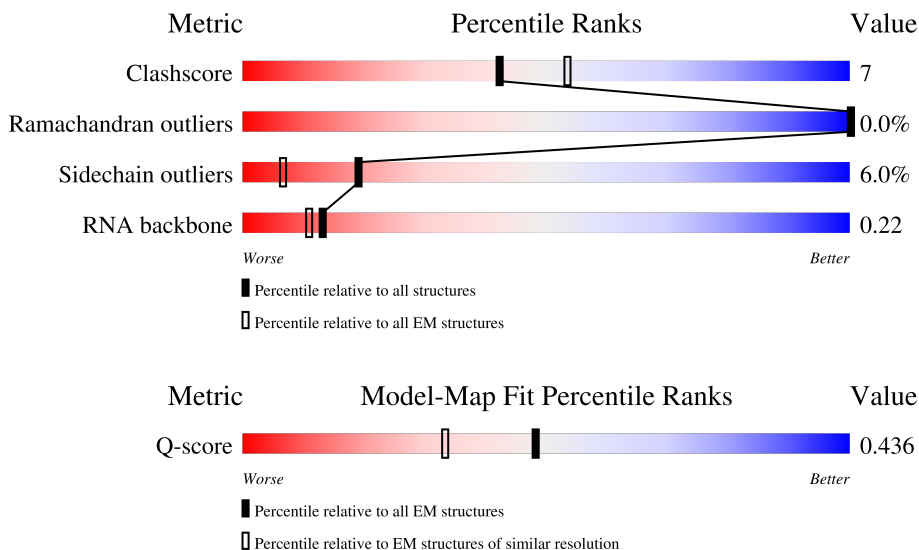
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15020 (2.70 - 3.70)

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	B	327	
1	L	327	
2	C	342	

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Mol	Chain	Length	Quality of chain
2	D	342	12% 84% 14%
2	E	342	5% 83% 15%
2	F	342	5% 81% 17%
2	G	342	75% 20%
2	H	342	21% 78% 18%
2	M	342	46% 68% 18% 14%
2	N	342	13% 79% 18%
2	O	342	84% 13%
2	P	342	5% 82% 14%
2	Q	342	80% 15%
2	R	342	19% 83% 13%
3	I	187	100% 75% 25%
3	S	187	100% 76% 22%
4	U	228	6% 84% 14%
4	V	228	5% 84% 14%
5	J	60	35% 38% 55% 7%
5	T	60	35% 42% 47% 12%
6	A	434	91% 85% 11%
6	X	434	88% 85% 11%
7	K	54	20% 15% 6% 80%
7	Y	54	20% 15% 6% 80%
8	W	54	20% 7% 13% 80%
8	Z	54	20% 7% 13% 80%

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 48324 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 CRISPR type I-F/YPEST-associated protein Csy2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	B	305	Total	C	N	O	S	0	0
			2198	1386	400	409	3		
1	L	305	Total	C	N	O	S	0	0
			2321	1471	431	414	5		

- Molecule 2 is a protein called CRISPR-associated protein Csy3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	293	Total	C	N	O	S	0	0
			2144	1350	379	413	2		
2	D	334	Total	C	N	O	S	0	0
			2531	1590	454	485	2		
2	E	337	Total	C	N	O	S	0	0
			2587	1626	469	490	2		
2	F	335	Total	C	N	O	S	0	0
			2577	1619	470	486	2		
2	G	329	Total	C	N	O	S	0	0
			2523	1586	459	476	2		
2	H	332	Total	C	N	O	S	0	0
			2487	1555	452	478	2		
2	M	293	Total	C	N	O	S	0	0
			2227	1406	396	423	2		
2	N	335	Total	C	N	O	S	0	0
			2571	1613	468	488	2		
2	O	334	Total	C	N	O	S	0	0
			2562	1611	467	482	2		
2	P	335	Total	C	N	O	S	0	0
			2581	1622	471	486	2		
2	Q	333	Total	C	N	O	S	0	0
			2552	1605	465	480	2		
2	R	333	Total	C	N	O	S	0	0
			2529	1588	461	479	1		

- Molecule 3 is a protein called Type I-F CRISPR-associated endoribonuclease Cas6/Csy4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	I	187	Total	C	N	O	S	0	0
			1445	919	264	258	4		
3	S	187	Total	C	N	O	S	1	0
			1445	918	264	258	5		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	183	PHE	SER	conflict	UNP A0A0C6F3X3
S	183	PHE	SER	conflict	UNP A0A0C6F3X3

- Molecule 4 is a protein called AcrIF24.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	U	227	Total	C	N	O	S	0	0
			1758	1124	308	323	3		
4	V	227	Total	C	N	O	S	0	0
			1758	1124	308	323	3		

- Molecule 5 is a RNA chain called RNA (60-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	J	60	Total	C	N	O	P	0	0
			1271	569	223	420	59		
5	T	60	Total	C	N	O	P	0	0
			1271	569	223	420	59		

- Molecule 6 is a protein called Type I-F CRISPR-associated protein Csy1.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	A	424	Total	C	N	O	0	0
			2251	1290	491	470		
6	X	424	Total	C	N	O	0	0
			2251	1290	491	470		

- Molecule 7 is a DNA chain called DNA (5'-D(P*GP*GP*AP*TP*GP*GP*CP*TP*TP*CP*C)-3').

Mol	Chain	Residues	Atoms				AltConf	Trace
7	Y	11	Total	C	O	P	0	0
			121	55	55	11		
7	K	11	Total	C	O	P	0	0
			121	55	55	11		

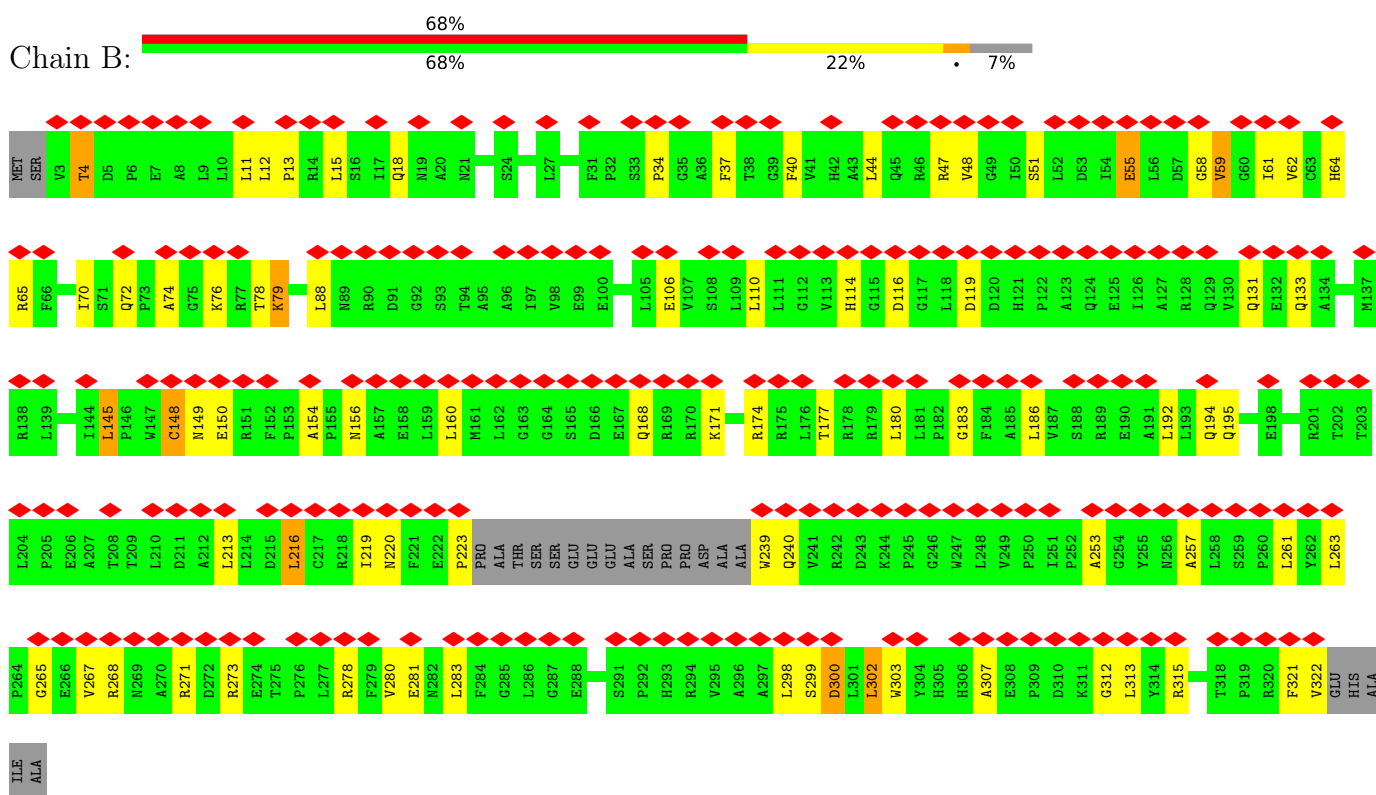
- Molecule 8 is a DNA chain called DNA-r.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	O	P		
8	Z	11	121	55	55	11	0	0
8	W	11	121	55	55	11	0	0

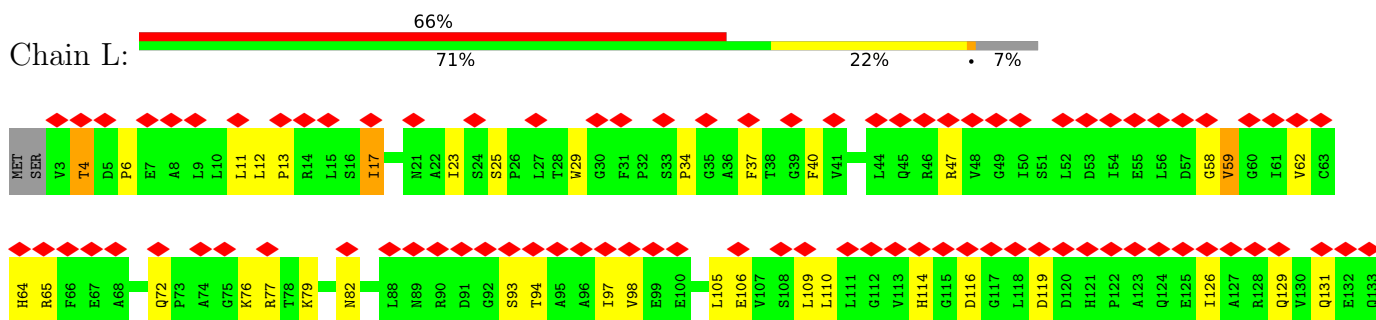
3 Residue-property plots [i](#)

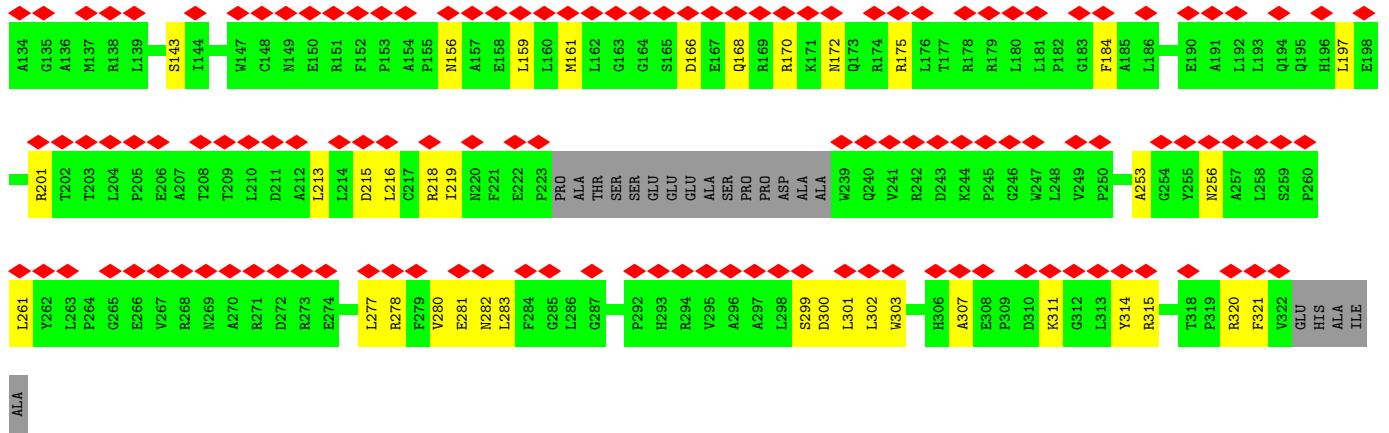
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: CRISPR type I-F/YPEST-associated protein Csy2

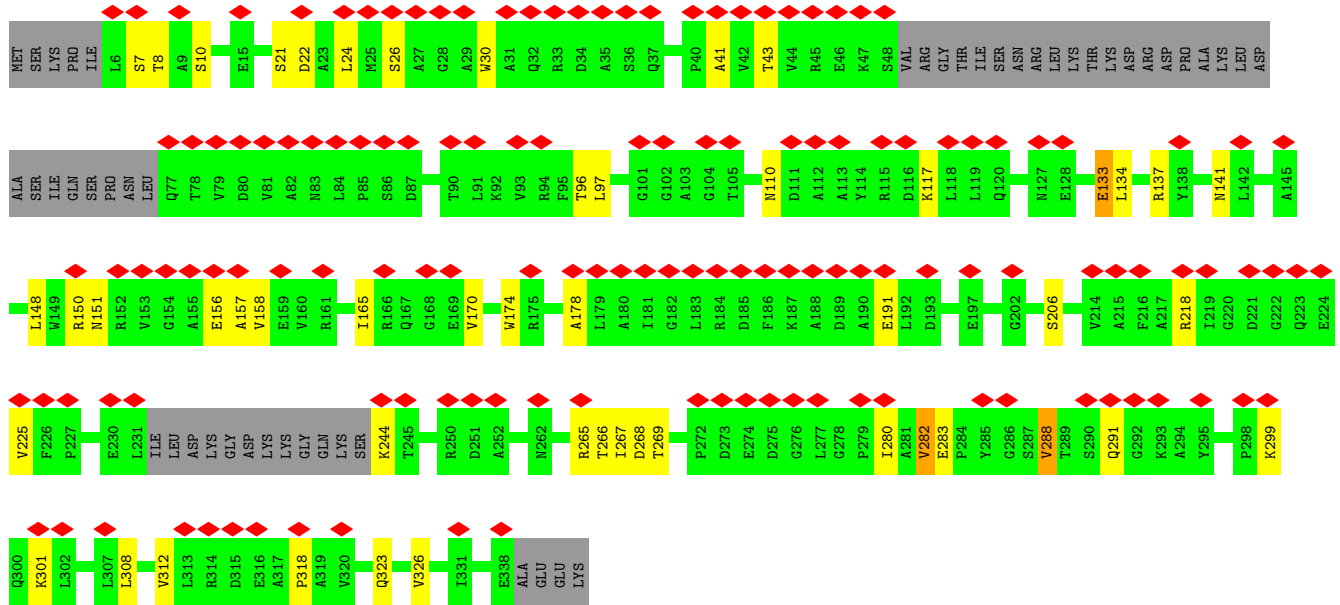


- Molecule 1: CRISPR type I-F/YPEST-associated protein Csy2

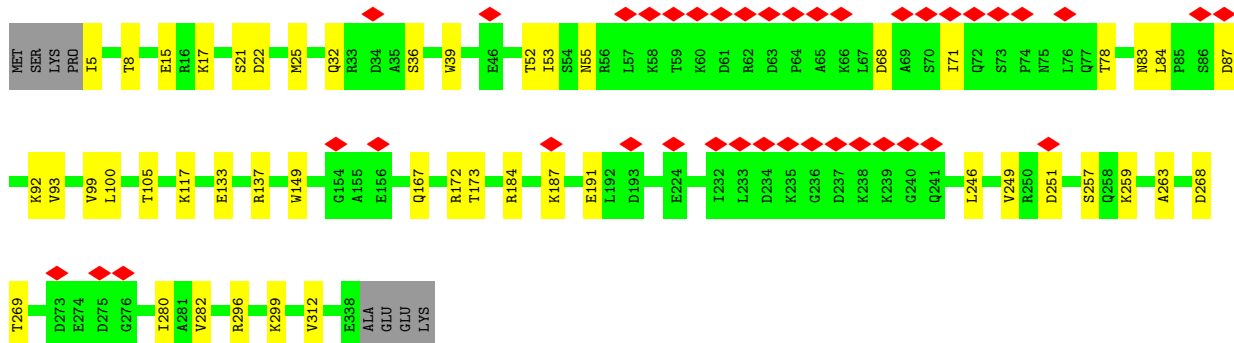
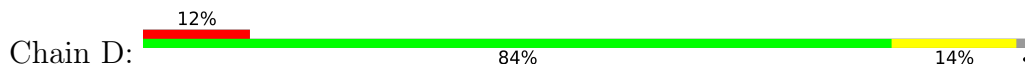




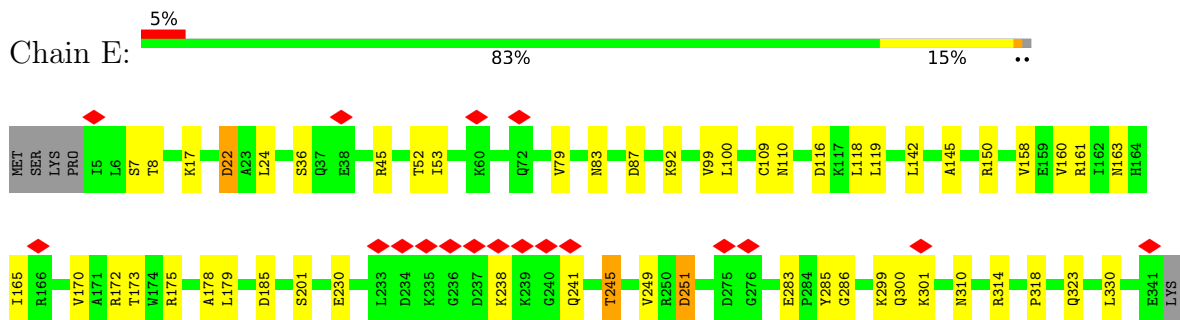
• Molecule 2: CRISPR-associated protein Csy3



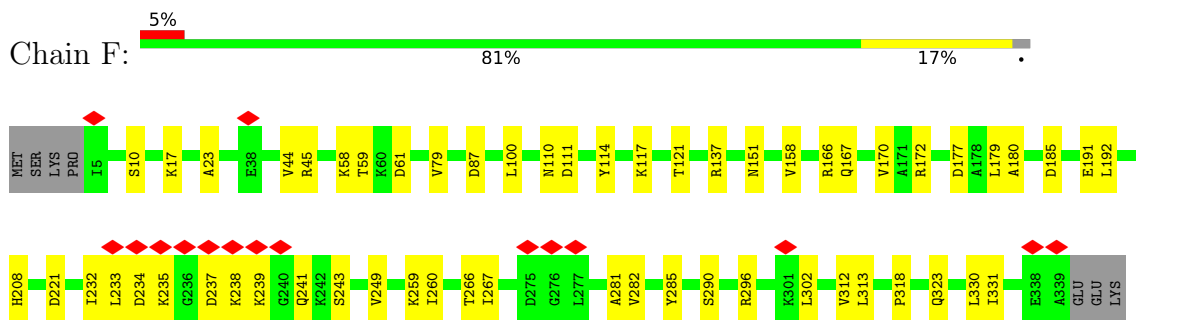
• Molecule 2: CRISPR-associated protein Csy3



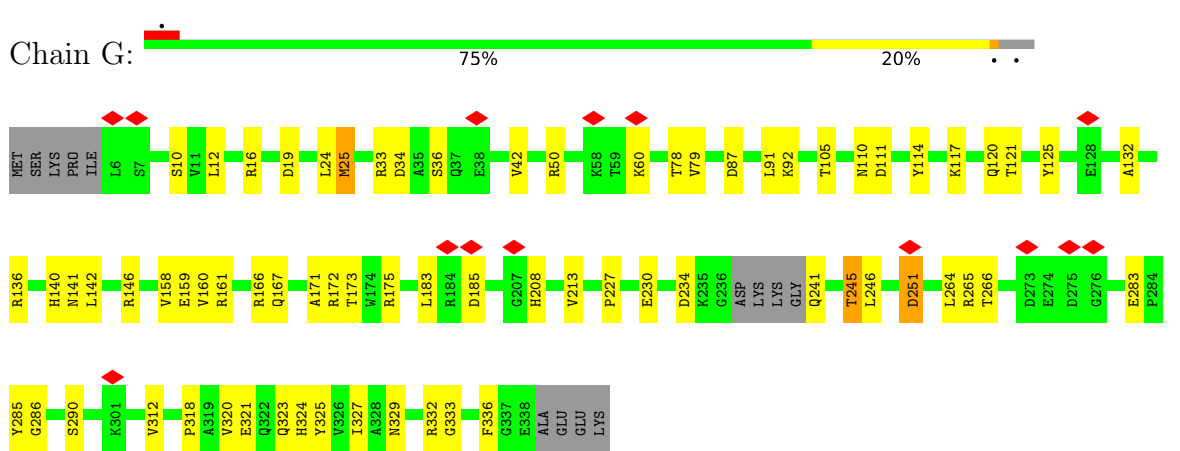
• Molecule 2: CRISPR-associated protein Csy3



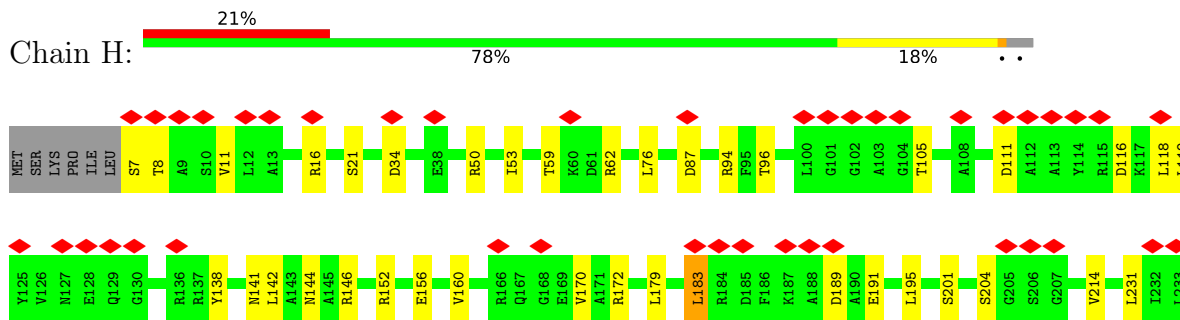
• Molecule 2: CRISPR-associated protein Csy3

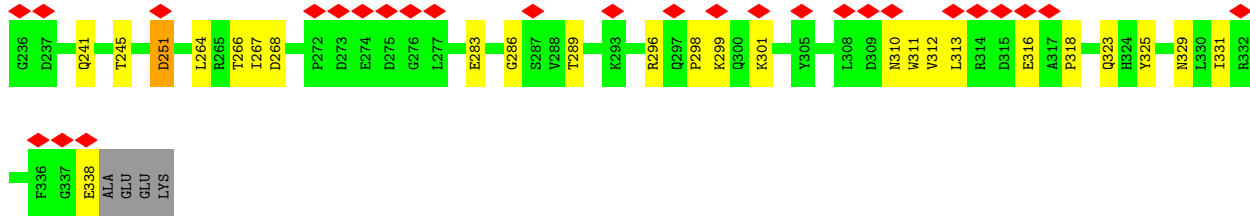


• Molecule 2: CRISPR-associated protein Csy3

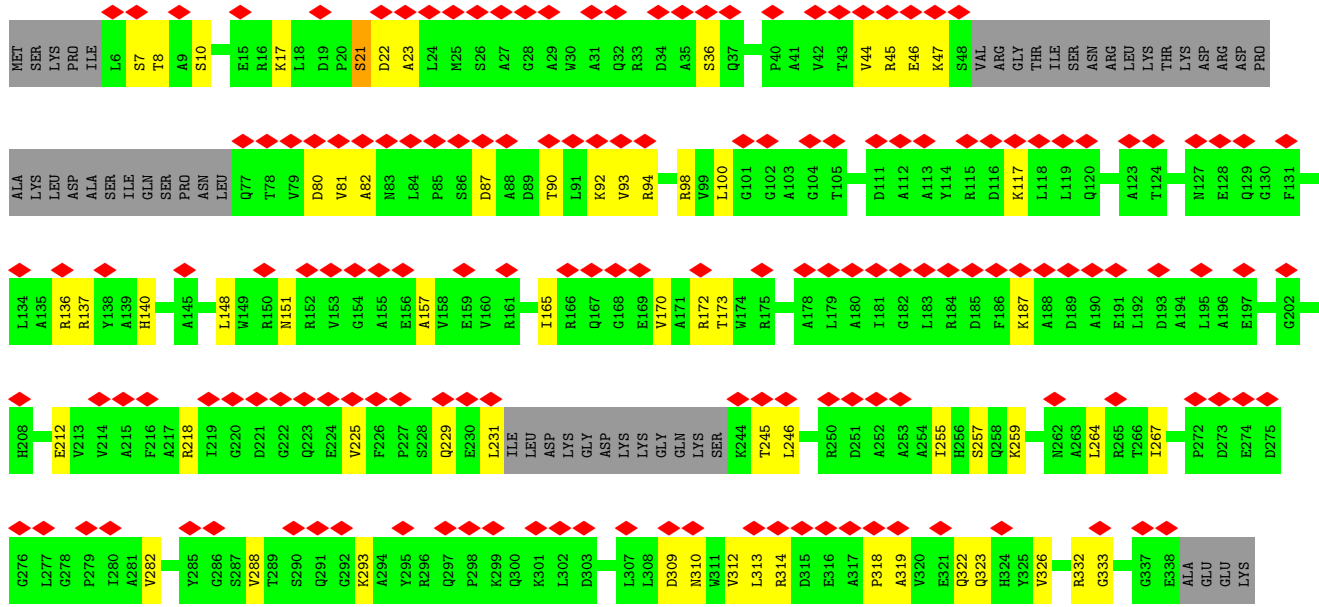


• Molecule 2: CRISPR-associated protein Csy3

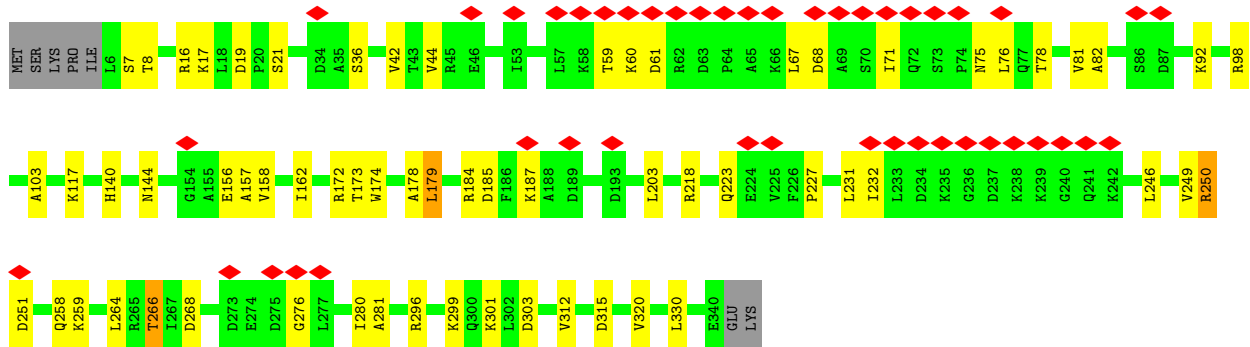
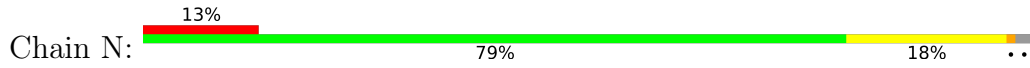




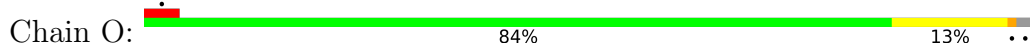
• Molecule 2: CRISPR-associated protein Csy3

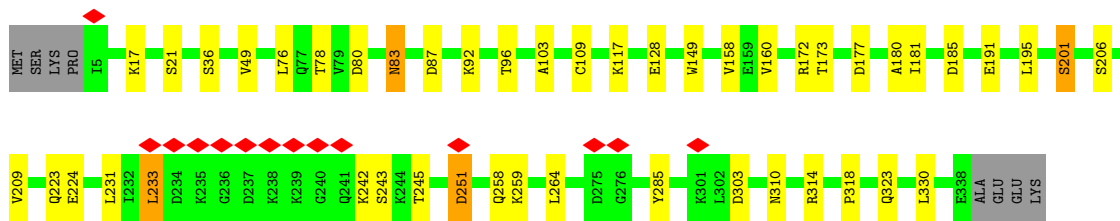


• Molecule 2: CRISPR-associated protein Csy3

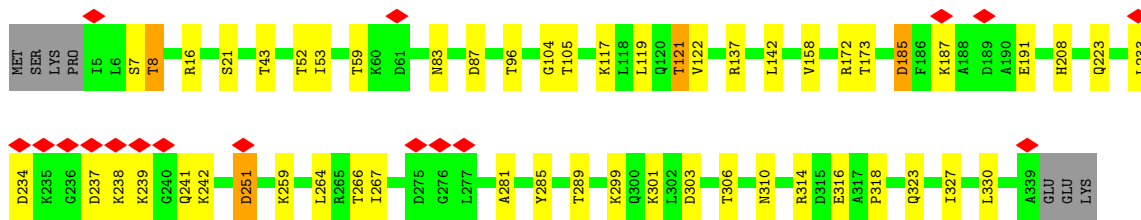
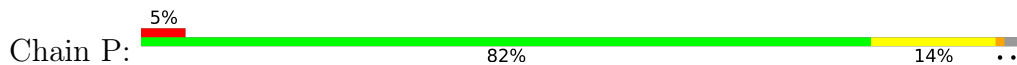


• Molecule 2: CRISPR-associated protein Csy3

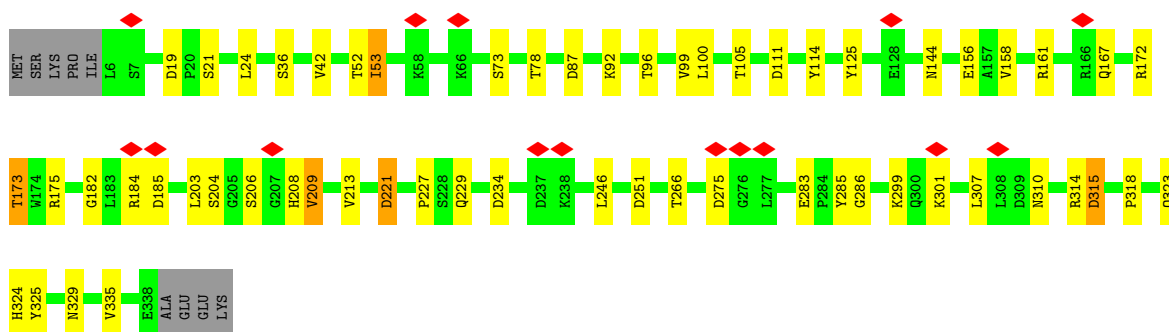
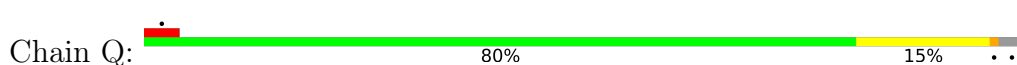




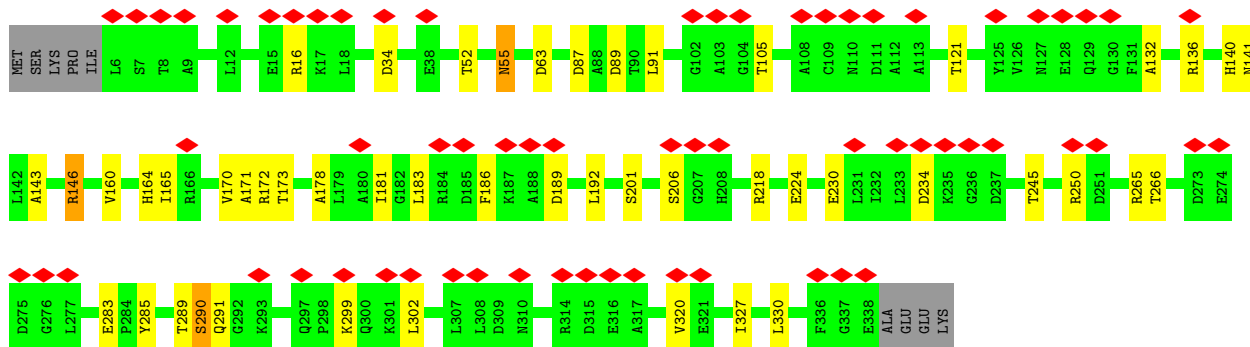
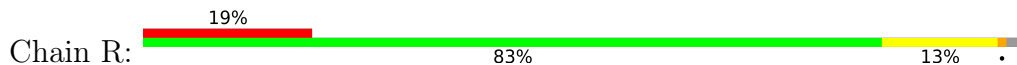
• Molecule 2: CRISPR-associated protein Csy3



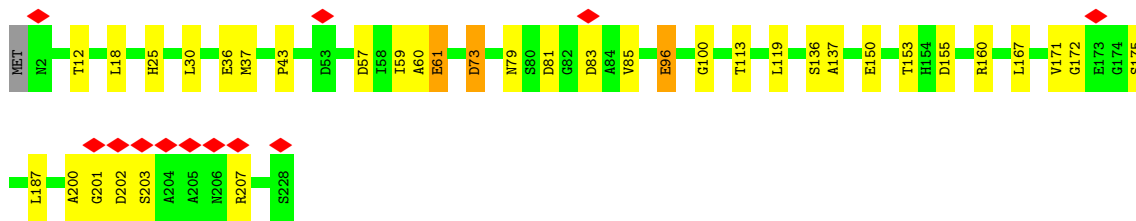
• Molecule 2: CRISPR-associated protein Csy3



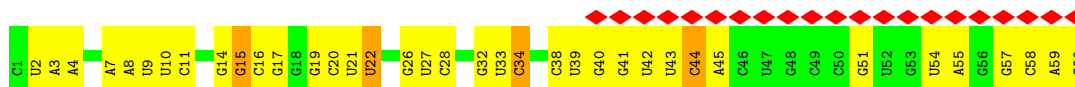
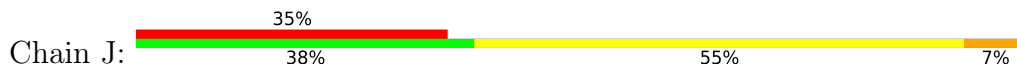
• Molecule 2: CRISPR-associated protein Csy3



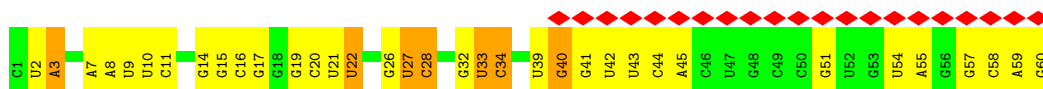
• Molecule 3: Type I-F CRISPR-associated endoribonuclease Cas6/Csy4



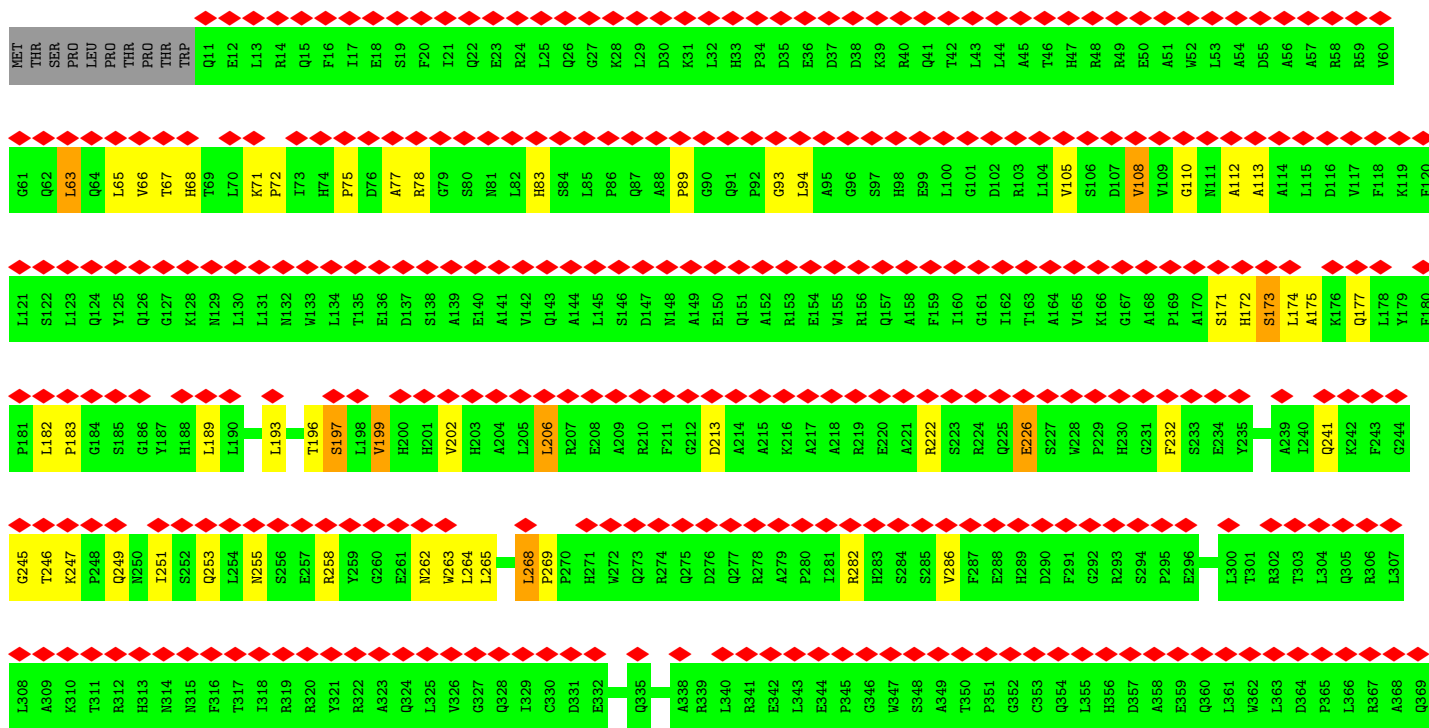
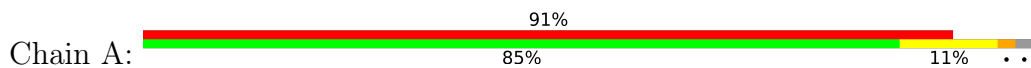
• Molecule 5: RNA (60-MER)



• Molecule 5: RNA (60-MER)



• Molecule 6: Type I-F CRISPR-associated protein Csy1



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	474421	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1300	Depositor
Maximum defocus (nm)	1700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.062	Depositor
Minimum map value	-0.020	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.016	Depositor
Map size (\AA)	308.0, 308.0, 308.0	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.1, 1.1, 1.1	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	B	0.25	0/2248	0.55	0/3077
1	L	0.25	0/2378	0.56	0/3246
2	C	0.25	0/2182	0.53	0/2977
2	D	0.35	0/2578	0.54	1/3507 (0.0%)
2	E	0.38	0/2634	0.52	0/3575
2	F	0.39	0/2624	0.54	0/3561
2	G	0.37	0/2569	0.52	0/3488
2	H	0.28	0/2530	0.52	0/3440
2	M	0.25	0/2269	0.50	0/3087
2	N	0.35	0/2618	0.49	0/3555
2	O	0.39	0/2609	0.52	0/3542
2	P	0.39	0/2628	0.51	2/3565 (0.1%)
2	Q	0.36	0/2599	0.48	0/3528
2	R	0.29	0/2576	0.49	0/3502
3	I	0.25	0/1484	0.54	0/2016
3	S	0.24	0/1487	0.58	0/2020
4	U	0.39	0/1809	0.56	2/2474 (0.1%)
4	V	0.39	0/1809	0.56	2/2474 (0.1%)
5	J	0.35	0/1419	0.44	0/2208
5	T	0.35	0/1419	0.44	0/2208
6	A	0.23	0/2292	0.54	1/3000 (0.0%)
6	X	0.23	0/2292	0.54	1/3000 (0.0%)
7	K	0.38	0/131	0.81	0/194
7	Y	0.38	0/131	0.81	0/194
8	W	0.83	0/131	1.00	0/194
8	Z	0.83	0/131	1.00	0/194
All	All	0.33	0/49577	0.53	9/67826 (0.0%)

There are no bond length outliers.

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	V	61	GLU	CA-CB-CG	7.20	128.49	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
4	U	61	GLU	CA-CB-CG	7.12	128.35	114.10
4	V	96	GLU	CA-CB-CG	6.41	126.92	114.10
4	U	96	GLU	CA-CB-CG	6.39	126.89	114.10
6	A	226	GLU	CA-CB-CG	6.35	126.80	114.10

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	B	2198	0	2017	53	0
1	L	2321	0	2248	49	0
2	C	2144	0	2026	25	0
2	D	2531	0	2464	24	0
2	E	2587	0	2563	26	0
2	F	2577	0	2562	28	0
2	G	2523	0	2492	37	0
2	H	2487	0	2405	41	0
2	M	2227	0	2167	32	0
2	N	2571	0	2537	35	0
2	O	2562	0	2540	24	0
2	P	2581	0	2573	29	0
2	Q	2552	0	2531	31	0
2	R	2529	0	2471	27	0
3	I	1445	0	1387	27	0
3	S	1445	0	1383	28	0
4	U	1758	0	1720	18	0
4	V	1758	0	1720	17	0
5	J	1271	0	647	14	0
5	T	1271	0	647	15	0
6	A	2251	0	1413	42	0
6	X	2251	0	1413	40	0
7	K	121	0	67	5	0
7	Y	121	0	67	5	0
8	W	121	0	67	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	Z	121	0	67	12	0
All	All	48324	0	44194	618	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 7.

The worst 5 of 618 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)
6:A:245:GLY:HA3	7:Y:33:DG:OP2	1.45	1.17
6:X:245:GLY:HA3	7:K:33:DG:OP2	1.45	1.15
6:A:112:ALA:C	8:Z:12:DC:H4'	1.72	1.15
6:X:112:ALA:C	8:W:12:DC:H4'	1.72	1.14
6:X:112:ALA:O	8:W:12:DC:H4'	1.69	0.92

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	B	301/327 (92%)	268 (89%)	33 (11%)	0	100	100
1	L	301/327 (92%)	275 (91%)	25 (8%)	1 (0%)	36	68
2	C	287/342 (84%)	268 (93%)	19 (7%)	0	100	100
2	D	332/342 (97%)	312 (94%)	20 (6%)	0	100	100
2	E	335/342 (98%)	312 (93%)	23 (7%)	0	100	100
2	F	333/342 (97%)	312 (94%)	21 (6%)	0	100	100
2	G	325/342 (95%)	306 (94%)	19 (6%)	0	100	100
2	H	330/342 (96%)	302 (92%)	28 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	M	287/342 (84%)	273 (95%)	14 (5%)	0	100	100
2	N	333/342 (97%)	316 (95%)	17 (5%)	0	100	100
2	O	332/342 (97%)	307 (92%)	25 (8%)	0	100	100
2	P	333/342 (97%)	313 (94%)	20 (6%)	0	100	100
2	Q	331/342 (97%)	306 (92%)	25 (8%)	0	100	100
2	R	331/342 (97%)	314 (95%)	17 (5%)	0	100	100
3	I	185/187 (99%)	174 (94%)	11 (6%)	0	100	100
3	S	186/187 (100%)	179 (96%)	7 (4%)	0	100	100
4	U	225/228 (99%)	207 (92%)	18 (8%)	0	100	100
4	V	225/228 (99%)	207 (92%)	18 (8%)	0	100	100
6	A	422/434 (97%)	392 (93%)	30 (7%)	0	100	100
6	X	422/434 (97%)	392 (93%)	30 (7%)	0	100	100
All	All	6156/6456 (95%)	5735 (93%)	420 (7%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	L	13	PRO

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	B	203/270 (75%)	187 (92%)	16 (8%)	11	40
1	L	232/270 (86%)	223 (96%)	9 (4%)	28	62
2	C	202/274 (74%)	190 (94%)	12 (6%)	18	50
2	D	253/274 (92%)	243 (96%)	10 (4%)	28	61
2	E	262/274 (96%)	249 (95%)	13 (5%)	22	55
2	F	262/274 (96%)	247 (94%)	15 (6%)	18	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	G	255/274 (93%)	237 (93%)	18 (7%)	13	44
2	H	244/274 (89%)	233 (96%)	11 (4%)	24	58
2	M	221/274 (81%)	209 (95%)	12 (5%)	20	53
2	N	260/274 (95%)	246 (95%)	14 (5%)	20	53
2	O	259/274 (94%)	241 (93%)	18 (7%)	14	45
2	P	263/274 (96%)	250 (95%)	13 (5%)	22	55
2	Q	258/274 (94%)	241 (93%)	17 (7%)	15	47
2	R	251/274 (92%)	234 (93%)	17 (7%)	14	46
3	I	145/160 (91%)	141 (97%)	4 (3%)	38	68
3	S	145/160 (91%)	142 (98%)	3 (2%)	47	71
4	U	181/182 (100%)	168 (93%)	13 (7%)	13	44
4	V	181/182 (100%)	168 (93%)	13 (7%)	13	44
6	A	117/365 (32%)	103 (88%)	14 (12%)	5	23
6	X	117/365 (32%)	102 (87%)	15 (13%)	4	20
All	All	4311/5242 (82%)	4054 (94%)	257 (6%)	19	50

5 of 257 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	A	108	VAL
6	A	213	ASP
3	I	131	ILE
2	H	251	ASP
6	X	65	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 81 such sidechains are listed below:

Mol	Chain	Res	Type
2	R	32	GLN
6	A	237	ASN
2	R	151	ASN
2	R	329	ASN
6	X	98	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	J	59/60 (98%)	28 (47%)	1 (1%)
5	T	59/60 (98%)	28 (47%)	1 (1%)
All	All	118/120 (98%)	56 (47%)	2 (1%)

5 of 56 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
5	J	3	A
5	J	8	A
5	J	9	U
5	J	10	U
5	J	11	C

All (2) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	J	16	C
5	T	16	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

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.

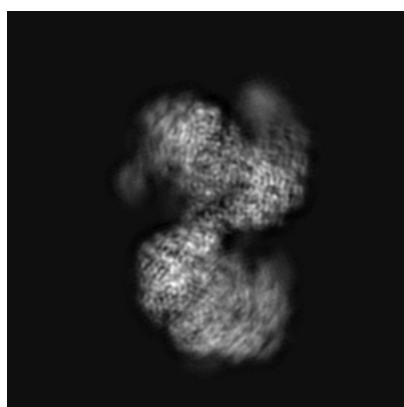
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-32440. These allow visual inspection of the internal detail of the map and identification of artifacts.

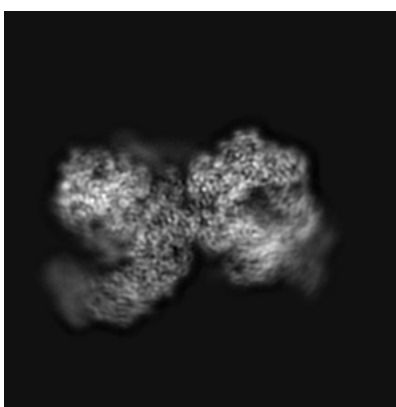
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

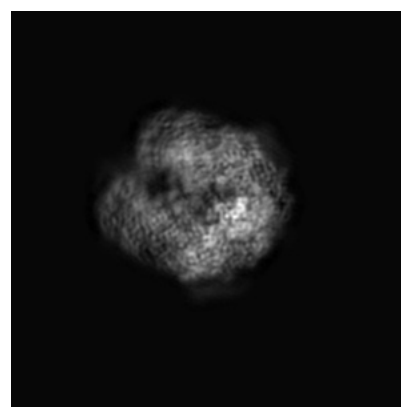
6.1.1 Primary map



X



Y

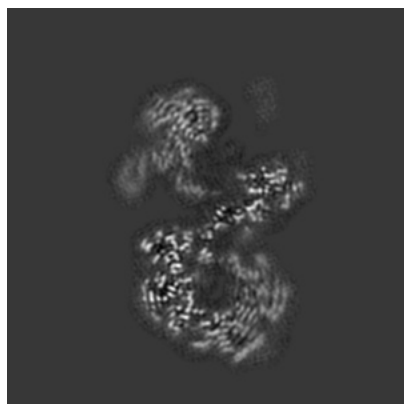


Z

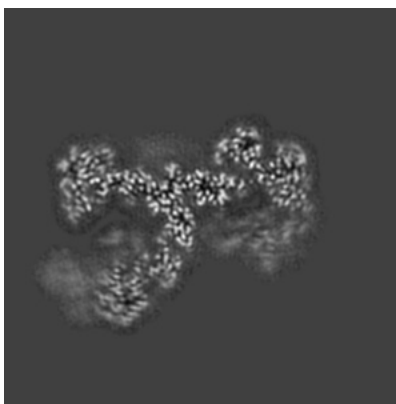
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

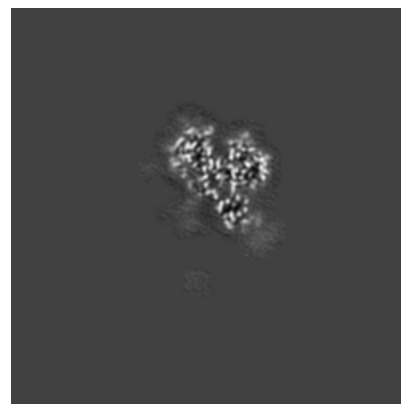
6.2.1 Primary map



X Index: 140



Y Index: 140

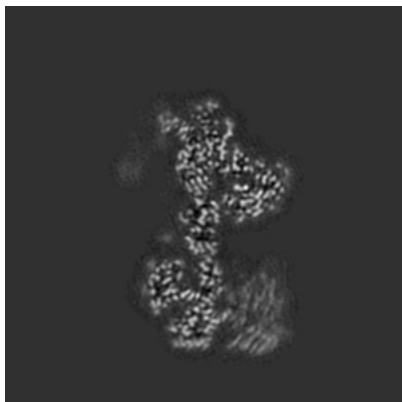


Z Index: 140

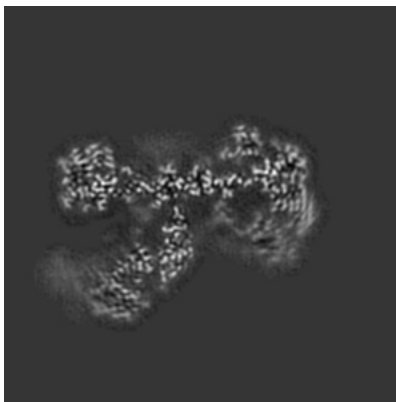
The images above show central slices of the map in three orthogonal directions.

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

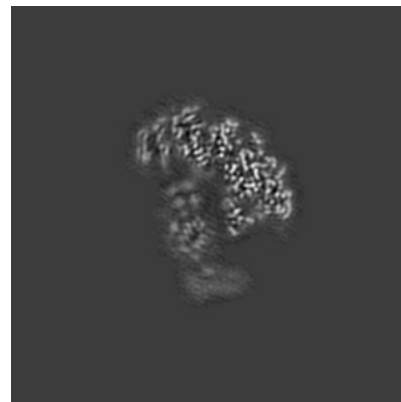
6.3.1 Primary map



X Index: 158



Y Index: 135

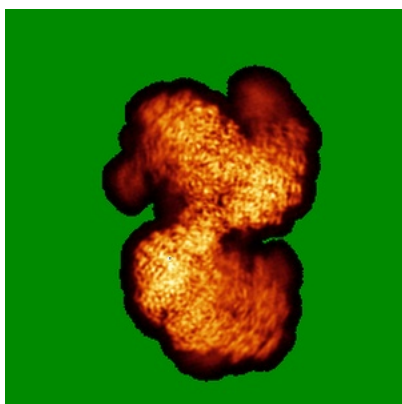


Z Index: 164

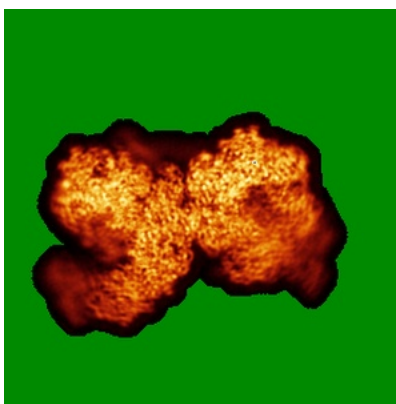
The images above show the largest variance slices of the map in three orthogonal directions.

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

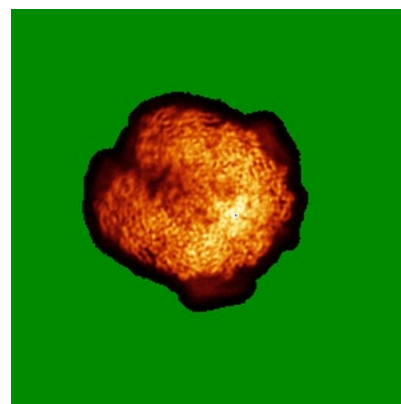
6.4.1 Primary map



X



Y



Z

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

This section was not generated.

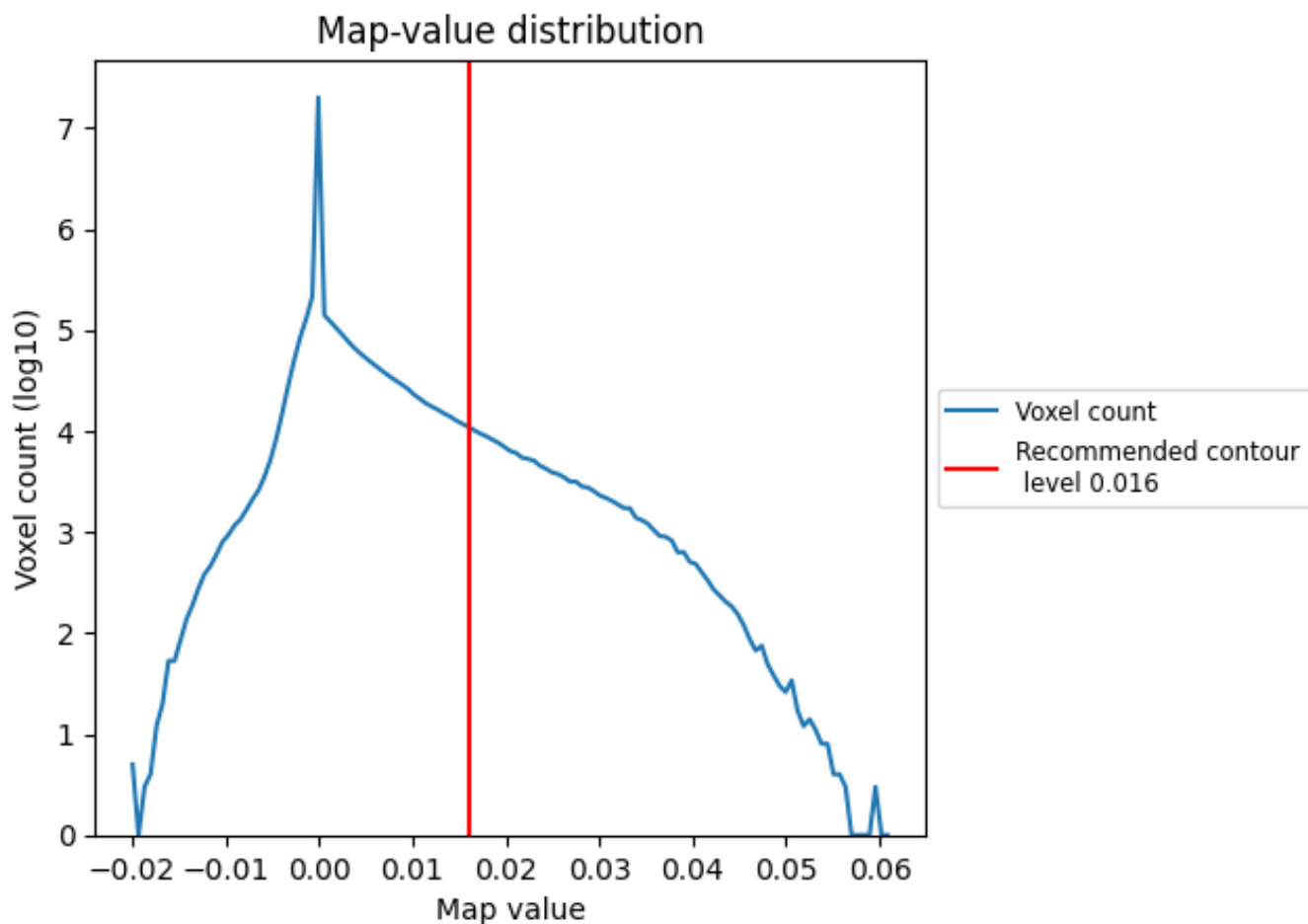
6.6 Mask visualisation

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

7 Map analysis [i](#)

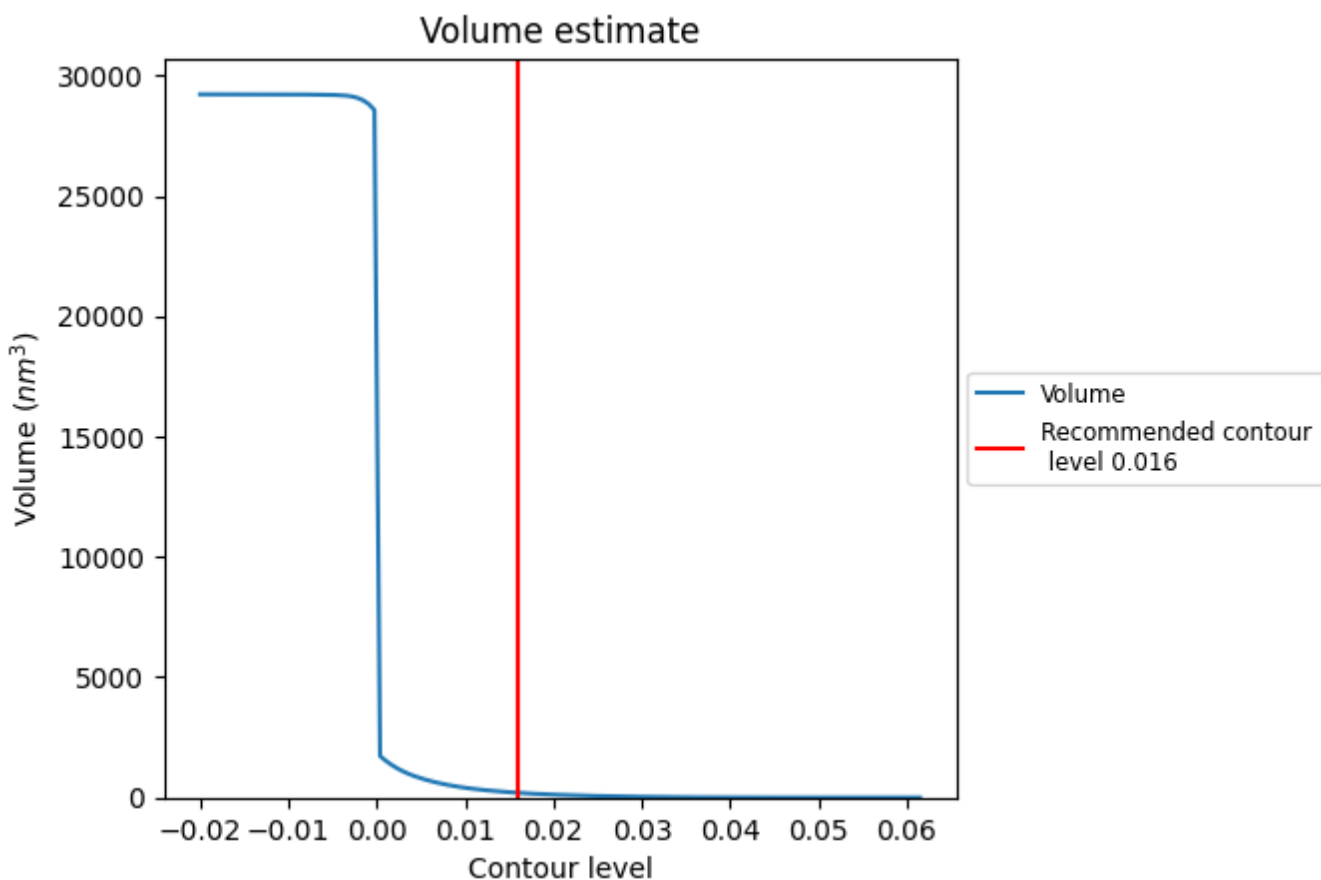
This section contains the results of statistical analysis of the map.

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.

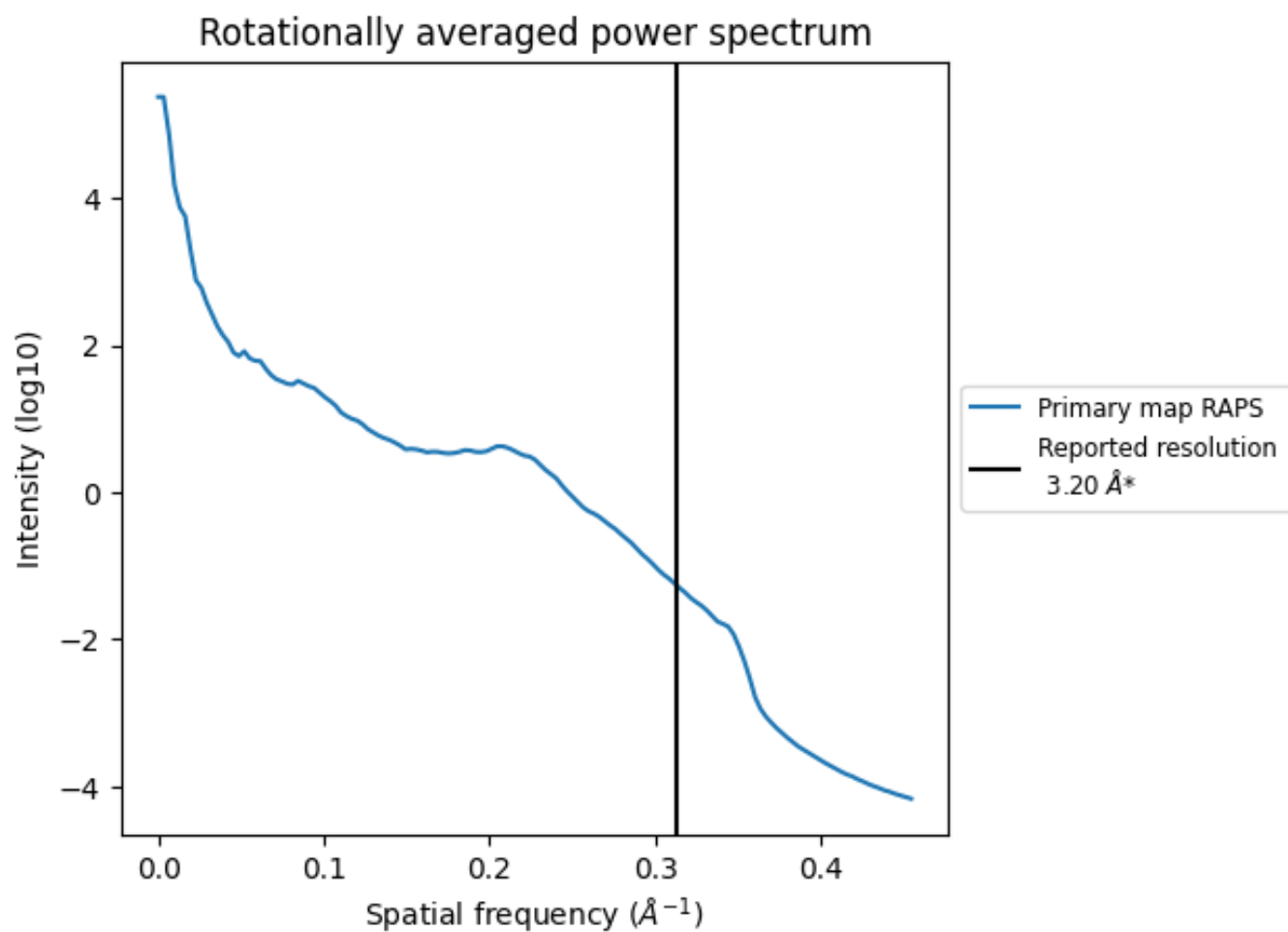
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 197 nm³; this corresponds to an approximate mass of 178 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](#)

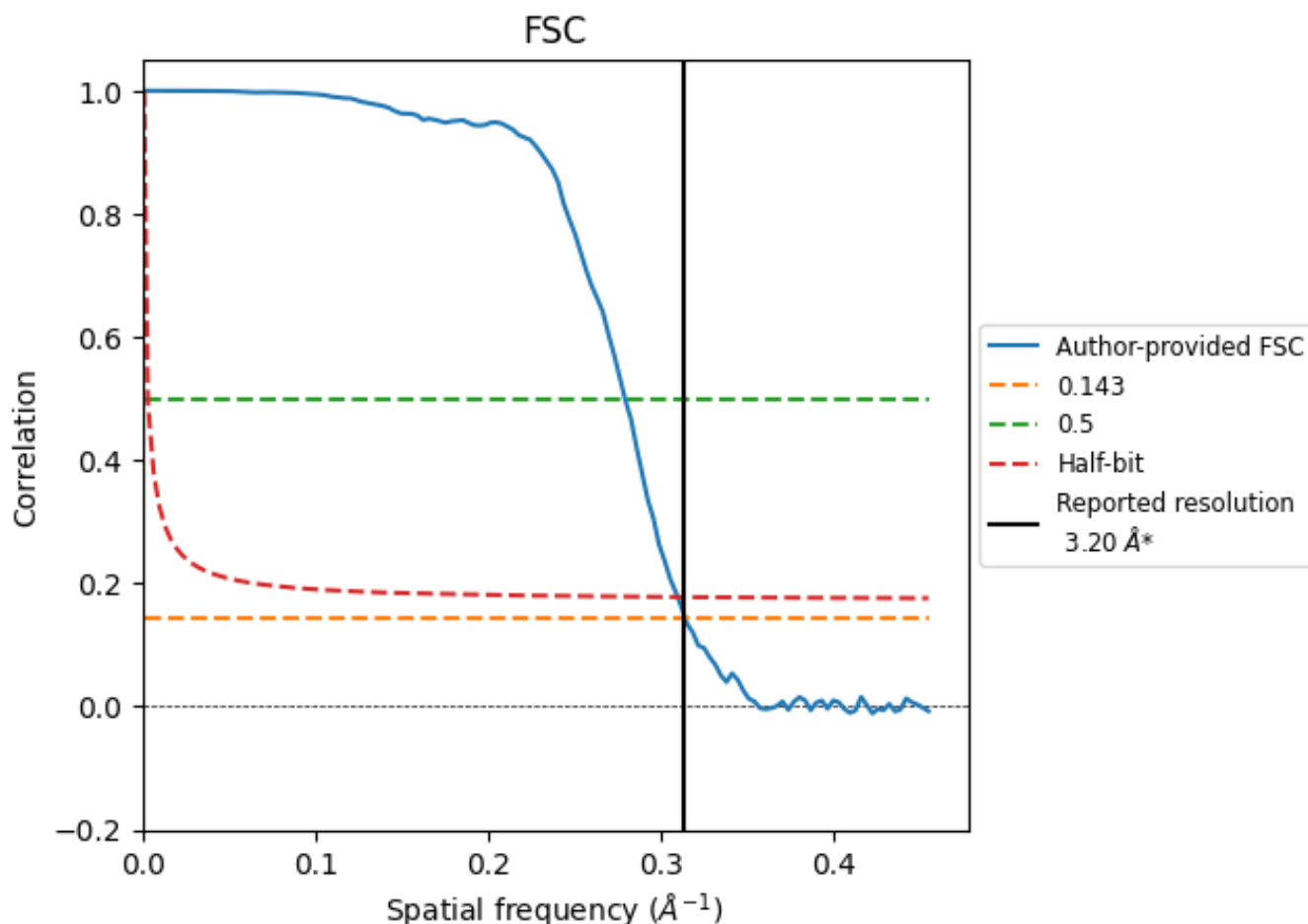


*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.312\AA^{-1}

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.19	3.58	3.23
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

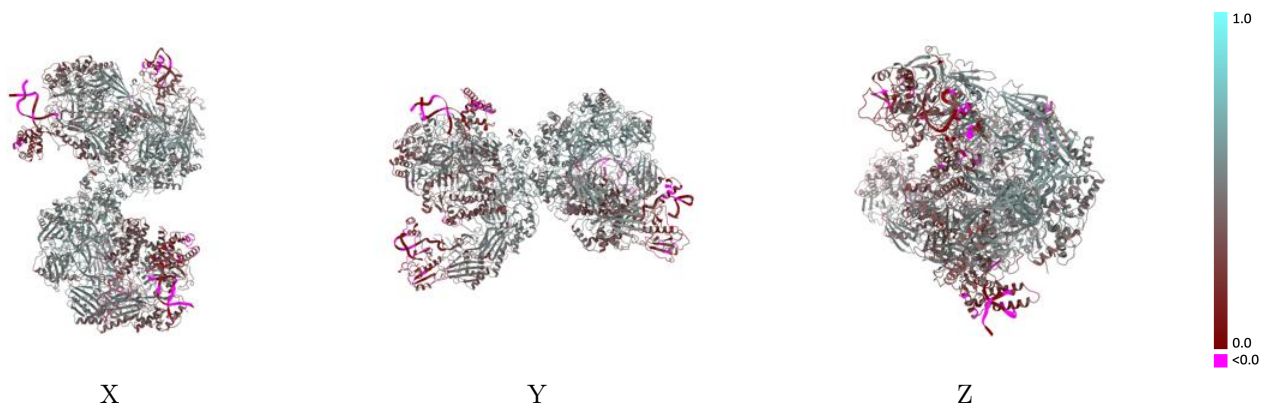
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-32440 and PDB model 7WE6. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)

This section was not generated.

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

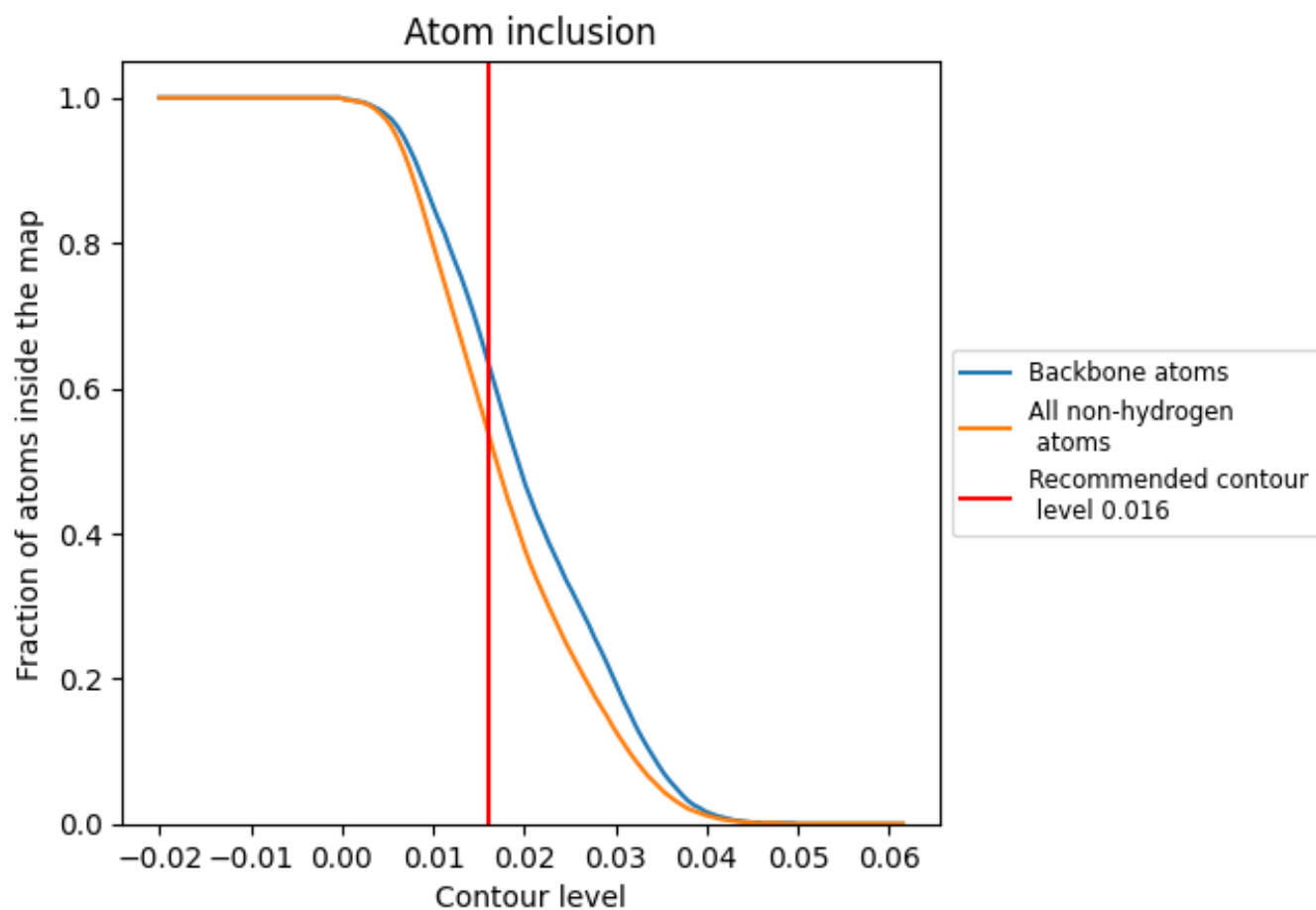


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.























































9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 54% 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 (0.016) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5400	 0.4360
A	 0.1050	 0.3140
B	 0.2650	 0.4070
C	 0.4460	 0.4360
D	 0.6940	 0.4900
E	 0.7700	 0.5140
F	 0.7840	 0.5170
G	 0.7650	 0.5030
H	 0.6030	 0.4480
I	 0.0000	 0.1880
J	 0.5510	 0.3860
K	 0.0000	 0.0120
L	 0.2920	 0.3940
M	 0.3920	 0.4250
N	 0.6780	 0.4860
O	 0.7750	 0.5200
P	 0.7810	 0.5170
Q	 0.7620	 0.5010
R	 0.6050	 0.4290
S	 0.0010	 0.1760
T	 0.5550	 0.3770
U	 0.7690	 0.5230
V	 0.7630	 0.5230
W	 0.0000	 0.0340
X	 0.1340	 0.3320
Y	 0.0000	 0.0490
Z	 0.0000	 0.0280

