W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

wwPDB EM Validation Summary Report ⓘ

Apr 24, 2023 – 04:17 PM JST

PDB ID	:	7YTC
EMDB ID	:	EMD-34085
Title	:	Cryo-EM structure of human FcmR bound to IgM-Fc/J
Authors	:	Li, Y.; Shen, H.; Xiao, J.
Deposited on	:	2022-08-14
Resolution	:	3.39 Å(reported)

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.39 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
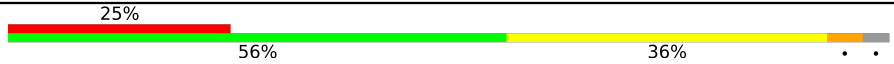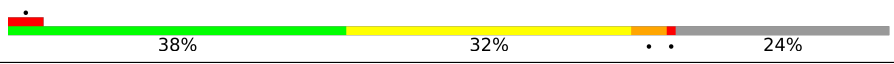
Metric	Percentile Ranks	Value
Clashscore		27
Ramachandran outliers		0.5%
Sidechain outliers		8.4%

Worse   *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures
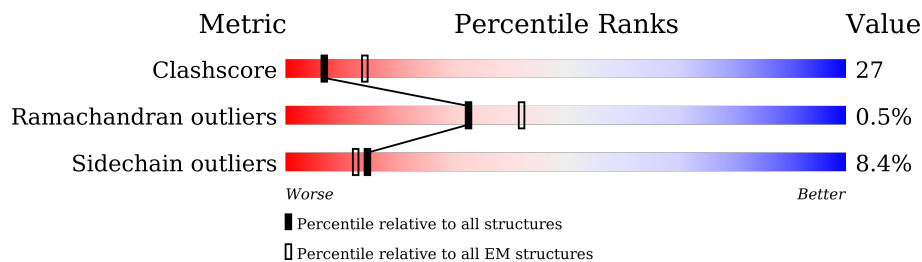
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	232	22% / 71% / 27% ••
1	B	232	20% / 62% / 30% / 6% •
1	C	232	14% / 53% / 36% / 6% ••
1	D	232	19% / 74% / 22% ••
1	E	232	17% / 66% / 28% • •
1	F	232	19% / 63% / 31% • •
1	G	232	19% / 67% / 25% • •
1	H	232	19% / 69% / 22% • • •

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Mol	Chain	Length	Quality of chain
1	K	232	25% / 56% / 36%
1	L	232	38% / 55% / 36% / 7%
2	J	136	38% / 32% / 24%
3	R	107	13% / 39% / 45% / 16%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 19328 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 Immunoglobulin heavy constant mu.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	230	Total 1780	C 1120	N 302	O 350	S 8	0	0
1	B	228	Total 1769	C 1114	N 300	O 347	S 8	0	0
1	C	225	Total 1748	C 1103	N 297	O 340	S 8	0	0
1	D	224	Total 1743	C 1100	N 296	O 339	S 8	0	0
1	E	224	Total 1743	C 1100	N 296	O 339	S 8	0	0
1	F	224	Total 1743	C 1100	N 296	O 339	S 8	0	0
1	G	224	Total 1742	C 1100	N 296	O 338	S 8	0	0
1	H	224	Total 1743	C 1100	N 296	O 339	S 8	0	0
1	K	225	Total 1749	C 1103	N 297	O 341	S 8	0	0
1	L	228	Total 1773	C 1116	N 299	O 349	S 9	0	0

- Molecule 2 is a protein called Immunoglobulin J chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	J	103	Total 825	C 513	N 146	O 159	S 7	0	0

- Molecule 3 is a protein called Fas apoptotic inhibitory molecule 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	R	107	Total 816	C 510	N 144	O 155	S 7	0	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula:

$C_8H_{15}NO_6$).

NAG

Mol	Chain	Residues	Atoms				AltConf
4	A	1	Total	C	N	O	0
			14	8	1	5	
4	B	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	D	1	Total	C	N	O	0
			14	8	1	5	
4	E	1	Total	C	N	O	0
			14	8	1	5	
4	F	1	Total	C	N	O	0
			14	8	1	5	
4	G	1	Total	C	N	O	0
			14	8	1	5	
4	H	1	Total	C	N	O	0
			14	8	1	5	
4	J	1	Total	C	N	O	0
			14	8	1	5	
4	K	1	Total	C	N	O	0
			14	8	1	5	
4	L	1	Total	C	N	O	0
			14	8	1	5	

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.
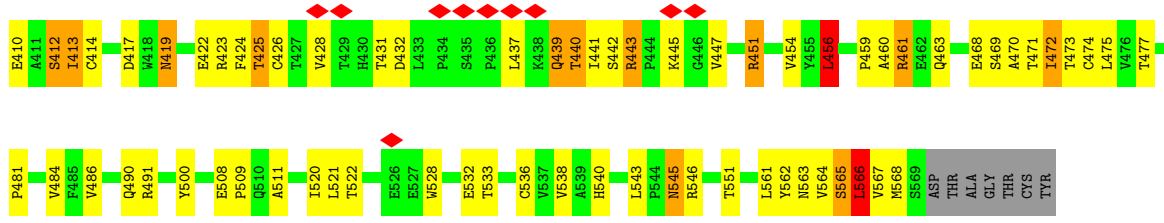
- Molecule 1: Immunoglobulin heavy constant mu
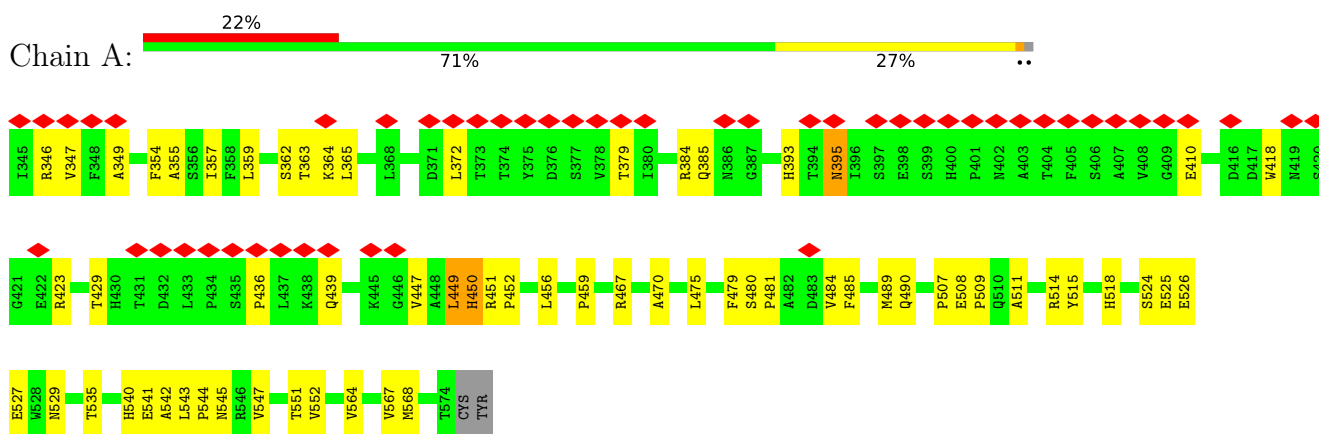
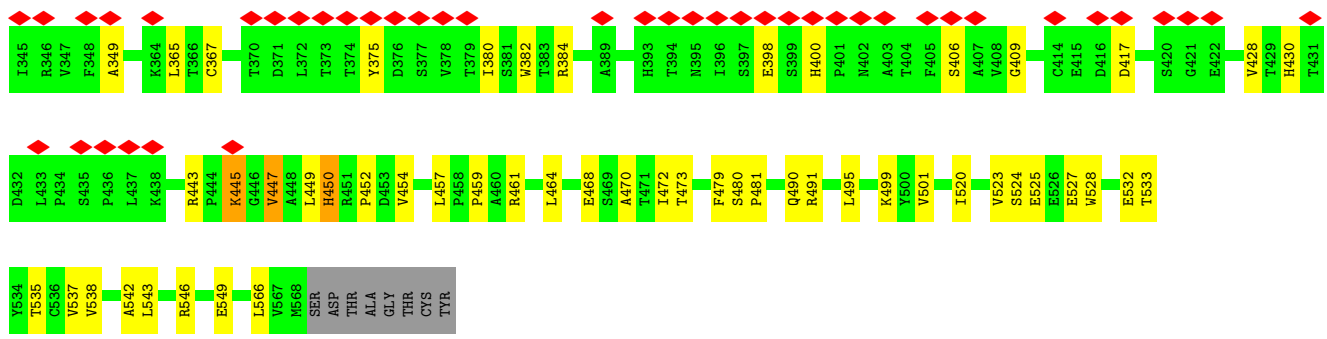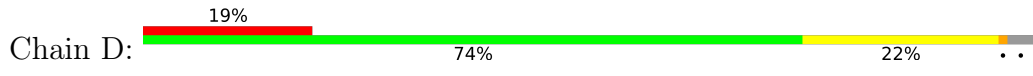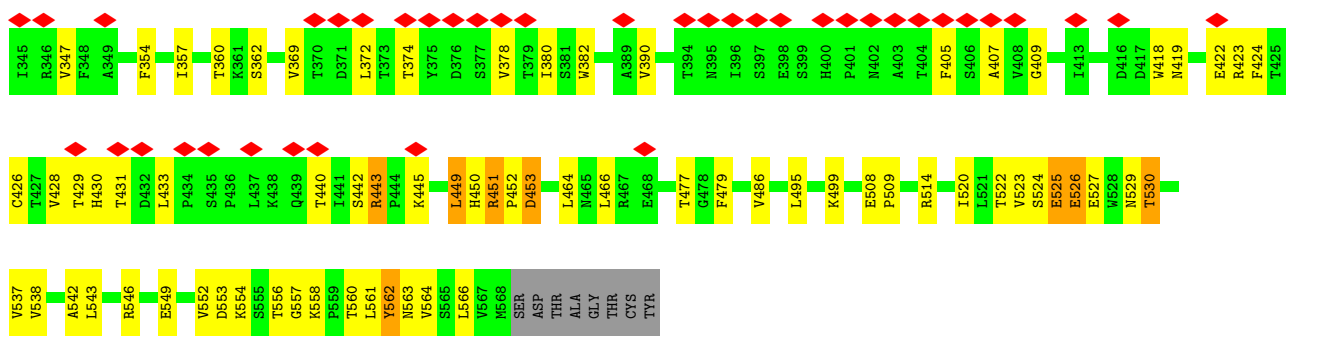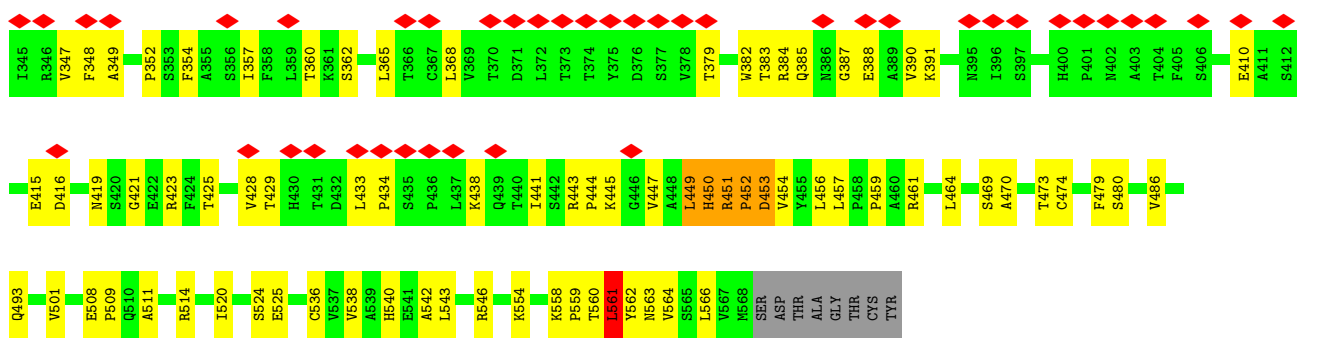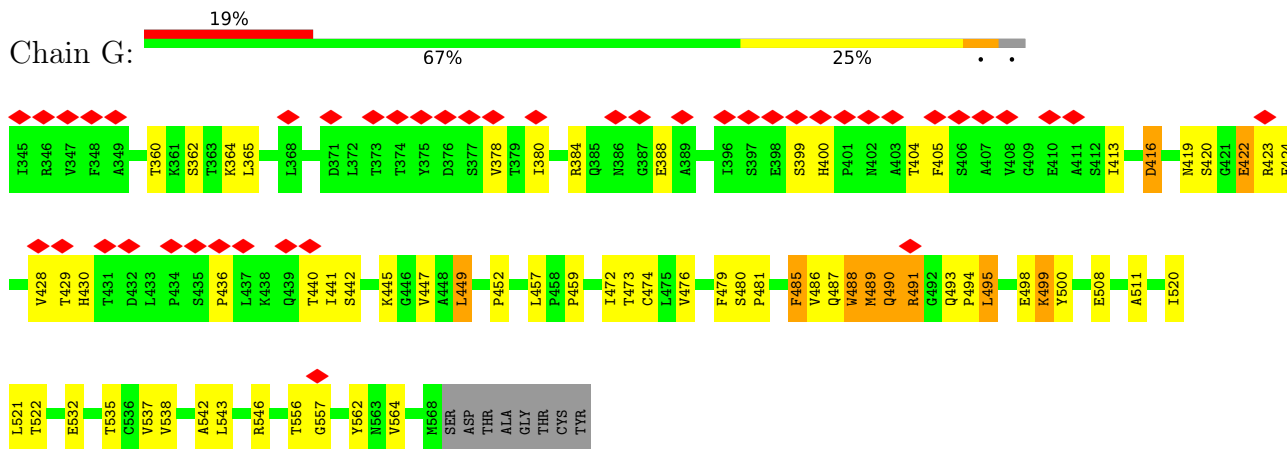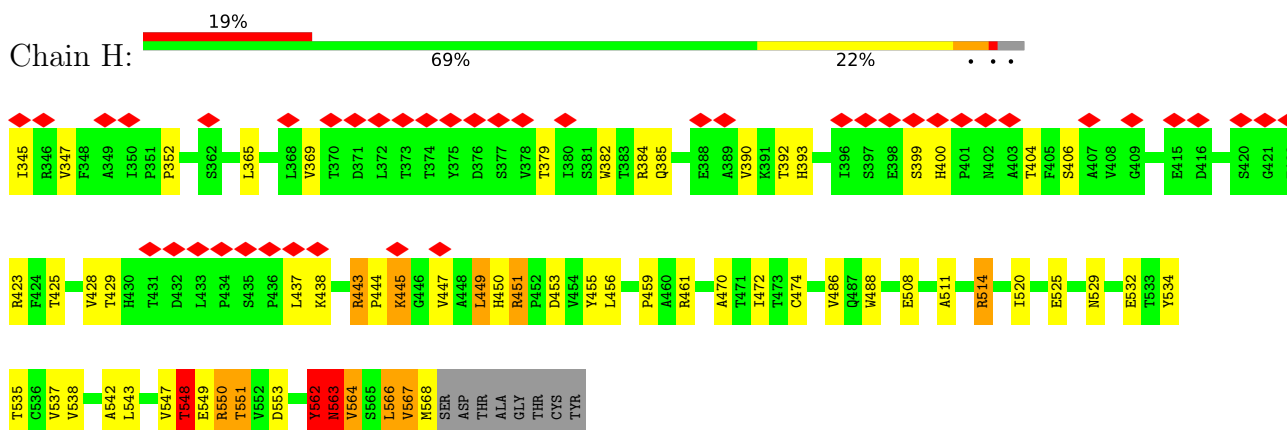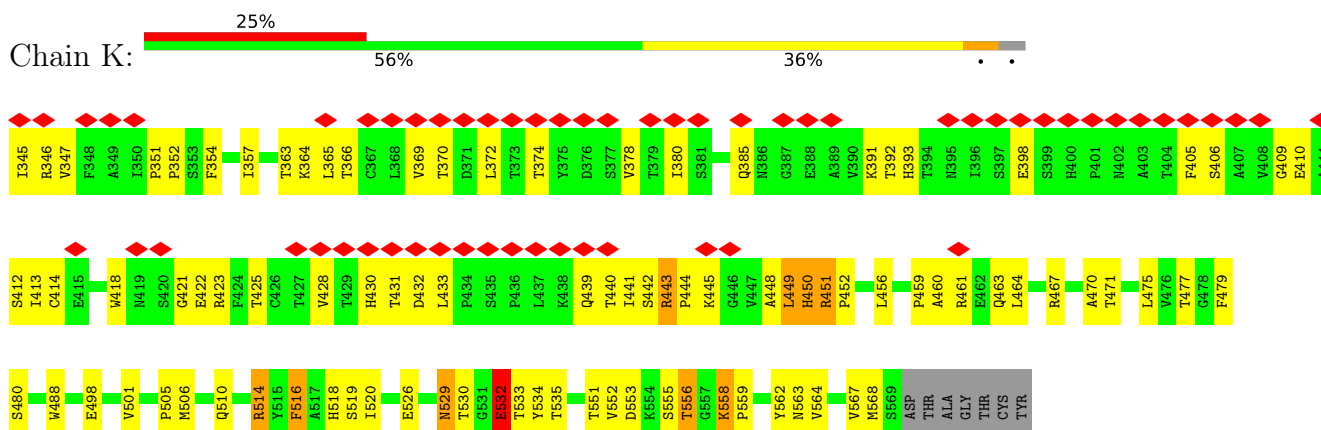- Molecule 1: Immunoglobulin heavy constant mu

- Molecule 1: Immunoglobulin heavy constant mu

• Molecule 1: Immunoglobulin heavy constant mu

Chain D:

• Molecule 1: Immunoglobulin heavy constant mu

Chain E:

• Molecule 1: Immunoglobulin heavy constant mu

Chain F:

• Molecule 1: Immunoglobulin heavy constant mu

Chain G:

• Molecule 1: Immunoglobulin heavy constant mu

Chain H:

• Molecule 1: Immunoglobulin heavy constant mu

Chain K:

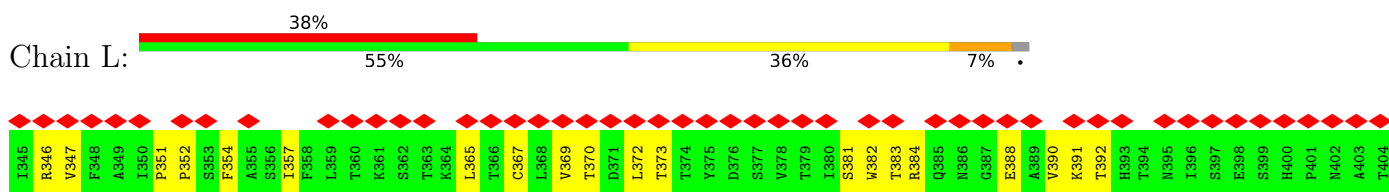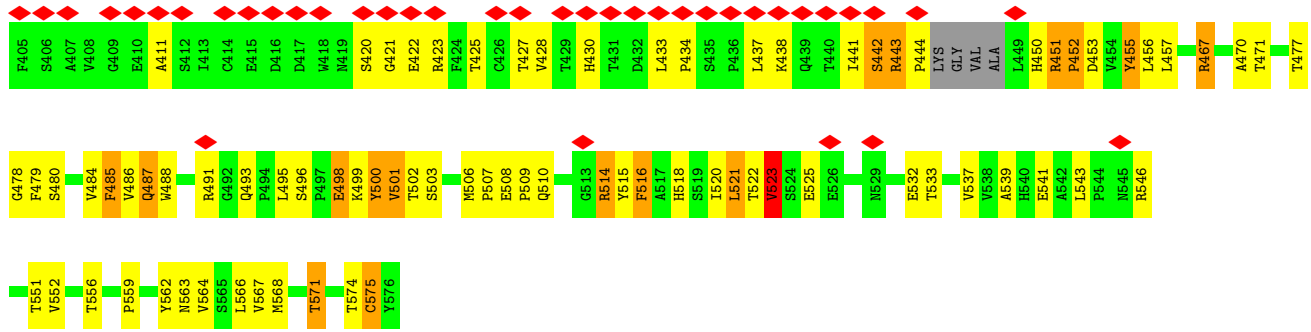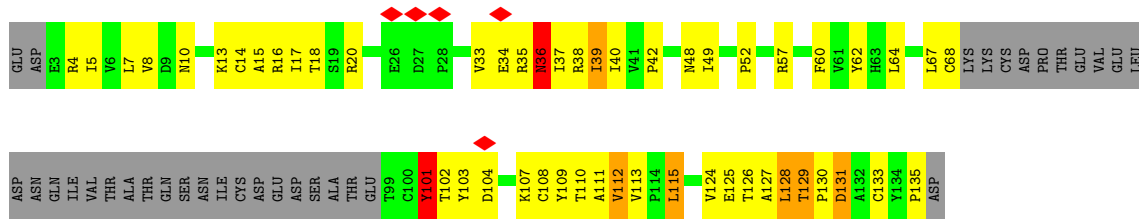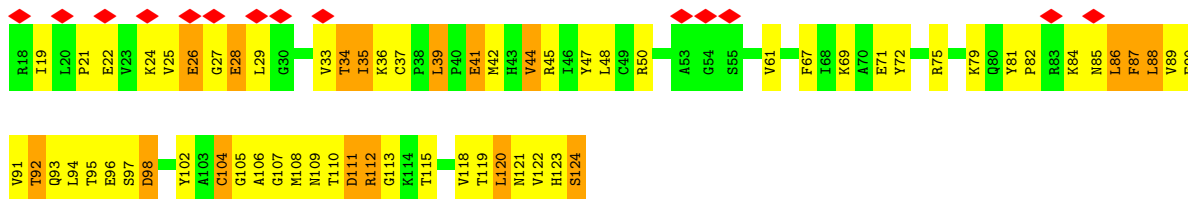• Molecule 1: Immunoglobulin heavy constant mu

Chain L:

F405 S406 A407 V408 G409 E410 A411 S412 I413 C414 E415 D416 D417 W418 N419 S420 G421 E422 R423 F424 T425 C426 T427 V428 T429 H430 T431 D432 L433 P434 S435 P436 L437 K438 Q439 T440 I441 S442 R443 P444 LYS GLY VAL ALA L449 H450 R451 P452 D453 V454 Y455 L456 L457 R467 A470 T471 T477

G478 F479 S480 V484 F485 V486 Q487 W488 R491 G492 Q493 P494 L495 S496 P497 E498 K499 Y500 V501 T502 S503 M506 P507 E508 P509 Q510 G513 R514 Y515 F516 A517 H518 S519 I520 L521 T522 V523 S524 E525 E526 N529 E532 T533 V537 V538 H540 E541 A542 L543 P544 N545 R546

T551 V552 T556 P559 Y562 N563 V564 S565 L566 V567 M568 T571 T574 C575 Y576
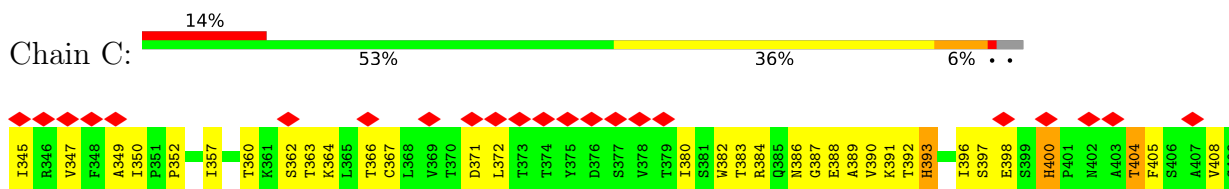
• Molecule 2: Immunoglobulin J chain

Chain J: 38%   32%   24%

GLU ASP E3 R4 I5 V6 L7 V8 D9 N10 K13 C14 A15 R16 I17 T18 S19 R20 E26 D27 P28 V33 E34 R35 N36 I37 R38 I39 I40 V41 P42 N48 I49 P52 R57 F60 V61 Y62 H63 L64 L67 C68 LYS LYS CYS ASP PRO THR GLU VAL GLU LEU

ASP ASN GLN ILE VAL THR ALA THR GLN SER ASN ILE CYS ASP GLU SER ALA THR GLU T99 C100 Y101 T102 Y103 D104 K107 C108 Y109 T110 A111 V112 V113 P114 L115 V124 E125 T126 A127 L128 T129 P130 D131 A132 C133 Y134 P135 ASP

• Molecule 3: Fas apoptotic inhibitory molecule 3

Chain R: 13%   39%   45%   16%

R18 I19 L20 P21 E22 V23 K24 V25 E26 G27 E28 L29 G30 V33 T34 I35 K36 C37 P38 L39 P40 E41 M42 H43 V44 R45 I46 Y47 L48 C49 R50 A53 G54 S55 V61 F67 I68 K69 A70 E71 Y72 R75 K79 Q80 Y81 P82 R83 K84 N85 L86 F87 L88 V89 E90

V91 T92 Q93 L94 T95 E96 S97 D98 Y102 A103 C104 G105 A106 G107 M108 N109 T110 D111 R112 G113 K114 T115 V118 T119 L120 N121 V122 H123 S124

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	515815	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 $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.272	Depositor
Minimum map value	-1.543	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.049	Depositor
Recommended contour level	0.19	Depositor
Map size (Å)	264.96, 264.96, 264.96	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82799995, 0.82799995, 0.82799995	Depositor

5   Model quality ⓘ

5.1   Standard geometry ⓘ

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

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	0.31	0/1825	0.54	0/2500
1	B	0.85	6/1814 (0.3%)	0.87	7/2485 (0.3%)
1	C	0.59	0/1793	0.72	3/2455 (0.1%)
1	D	0.35	0/1788	0.57	0/2449
1	E	0.45	0/1788	0.64	0/2449
1	F	0.49	2/1788 (0.1%)	0.66	3/2449 (0.1%)
1	G	0.67	4/1787 (0.2%)	0.64	2/2447 (0.1%)
1	H	0.58	6/1788 (0.3%)	0.69	4/2449 (0.2%)
1	K	0.54	1/1794 (0.1%)	0.67	1/2457 (0.0%)
1	L	0.48	0/1818	0.74	1/2490 (0.0%)
2	J	0.80	2/838 (0.2%)	0.88	1/1139 (0.1%)
3	R	0.49	0/827	0.83	2/1115 (0.2%)
All	All	0.56	21/19648 (0.1%)	0.70	24/26884 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1

The worst 5 of 21 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	J	101	TYR	CE1-CZ	-8.97	1.26	1.38
1	B	534	TYR	CB-CG	-8.32	1.39	1.51
1	H	562	TYR	CG-CD2	-6.76	1.30	1.39
1	F	453	ASP	CB-CG	-6.70	1.37	1.51
1	G	488	TRP	CZ3-CH2	-6.68	1.29	1.40

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	533	THR	N-CA-C	8.24	133.25	111.00
1	G	480	SER	C-N-CD	-7.83	103.37	120.60
1	B	452	PRO	N-CA-C	7.20	130.83	112.10
1	F	453	ASP	CB-CG-OD1	-7.06	111.94	118.30
2	J	115	LEU	CB-CG-CD2	-7.03	99.04	111.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	562	TYR	Mainchain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1780	0	1739	57	0
1	B	1769	0	1729	74	0
1	C	1748	0	1710	94	0
1	D	1743	0	1707	47	0
1	E	1743	0	1707	98	0
1	F	1743	0	1707	83	0
1	G	1742	0	1707	57	0
1	H	1743	0	1706	84	0
1	K	1749	0	1712	125	0
1	L	1773	0	1719	187	0
2	J	825	0	820	102	0
3	R	816	0	835	136	0
4	A	14	0	13	0	0
4	B	14	0	13	0	0
4	C	14	0	13	2	0
4	D	14	0	13	0	0
4	E	14	0	13	0	0
4	F	14	0	13	2	0
4	G	14	0	13	1	0
4	H	14	0	13	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	J	14	0	13	1	0
4	K	14	0	13	0	0
4	L	14	0	13	1	0
All	All	19328	0	18941	1045	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 27.

The worst 5 of 1045 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)
2:J:49:ILE:HG13	2:J:103:TYR:CE1	1.34	1.62
1:E:418:TRP:CD2	1:E:443:ARG:CD	1.81	1.61
1:E:418:TRP:CD2	1:E:443:ARG:HD2	1.09	1.60
1:E:418:TRP:CE2	1:E:443:ARG:HD2	1.18	1.59
1:E:418:TRP:CE2	1:E:443:ARG:CD	1.86	1.54

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	228/232 (98%)	213 (93%)	15 (7%)	0	100	100
1	B	226/232 (97%)	192 (85%)	29 (13%)	5 (2%)	6	29
1	C	223/232 (96%)	198 (89%)	25 (11%)	0	100	100
1	D	222/232 (96%)	207 (93%)	15 (7%)	0	100	100
1	E	222/232 (96%)	205 (92%)	16 (7%)	1 (0%)	29	61
1	F	222/232 (96%)	206 (93%)	16 (7%)	0	100	100
1	G	222/232 (96%)	193 (87%)	28 (13%)	1 (0%)	29	61

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	H	222/232 (96%)	202 (91%)	20 (9%)	0	100	100
1	K	223/232 (96%)	204 (92%)	18 (8%)	1 (0%)	34	67
1	L	224/232 (97%)	205 (92%)	16 (7%)	3 (1%)	12	39
2	J	99/136 (73%)	82 (83%)	16 (16%)	1 (1%)	15	46
3	R	105/107 (98%)	98 (93%)	6 (6%)	1 (1%)	15	46
All	All	2438/2563 (95%)	2205 (90%)	220 (9%)	13 (0%)	32	61

5 of 13 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	532	GLU
1	B	494	PRO
1	B	497	PRO
1	B	491	ARG
1	L	452	PRO

5.3.2   Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	204/206 (99%)	198 (97%)	6 (3%)	42	69
1	B	203/206 (98%)	180 (89%)	23 (11%)	6	21
1	C	201/206 (98%)	163 (81%)	38 (19%)	1	4
1	D	200/206 (97%)	196 (98%)	4 (2%)	55	77
1	E	200/206 (97%)	183 (92%)	17 (8%)	10	35
1	F	200/206 (97%)	195 (98%)	5 (2%)	47	72
1	G	200/206 (97%)	183 (92%)	17 (8%)	10	35
1	H	200/206 (97%)	187 (94%)	13 (6%)	17	46
1	K	201/206 (98%)	188 (94%)	13 (6%)	17	46
1	L	204/206 (99%)	185 (91%)	19 (9%)	9	31
2	J	97/128 (76%)	89 (92%)	8 (8%)	11	37

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	R	92/92 (100%)	70 (76%)	22 (24%)	0	2
All	All	2202/2280 (97%)	2017 (92%)	185 (8%)	14	36

5 of 185 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	514	ARG
1	K	558	LYS
1	H	562	TYR
2	J	131	ASP
1	L	485	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
1	G	430	HIS
1	H	400	HIS
3	R	109	ASN
1	K	518	HIS
1	L	518	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

11 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	$\#\|Z\| > 2$
4	NAG	E	601	1	14,14,15	0.21	0	17,19,21	0.37	0
4	NAG	L	601	1	14,14,15	0.25	0	17,19,21	0.55	0
4	NAG	H	601	1	14,14,15	0.31	0	17,19,21	0.65	1 (5%)
4	NAG	G	601	1	14,14,15	0.24	0	17,19,21	0.45	0
4	NAG	B	601	1	14,14,15	0.22	0	17,19,21	0.54	0
4	NAG	A	601	1	14,14,15	0.25	0	17,19,21	0.38	0
4	NAG	F	601	1	14,14,15	0.38	0	17,19,21	0.55	0
4	NAG	K	601	1	14,14,15	0.36	0	17,19,21	0.34	0
4	NAG	D	601	1	14,14,15	0.27	0	17,19,21	0.40	0
4	NAG	J	201	2	14,14,15	0.52	0	17,19,21	0.38	0
4	NAG	C	601	-	14,14,15	0.16	0	17,19,21	0.50	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	E	601	1	-	1/6/23/26	0/1/1/1
4	NAG	L	601	1	-	2/6/23/26	0/1/1/1
4	NAG	H	601	1	-	0/6/23/26	0/1/1/1
4	NAG	G	601	1	-	1/6/23/26	0/1/1/1
4	NAG	B	601	1	-	2/6/23/26	0/1/1/1
4	NAG	A	601	1	-	2/6/23/26	0/1/1/1
4	NAG	F	601	1	-	2/6/23/26	0/1/1/1
4	NAG	K	601	1	-	4/6/23/26	0/1/1/1
4	NAG	D	601	1	-	2/6/23/26	0/1/1/1
4	NAG	J	201	2	-	2/6/23/26	0/1/1/1
4	NAG	C	601	-	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	H	601	NAG	C1-O5-C5	2.15	115.11	112.19

There are no chirality outliers.

5 of 22 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	F	601	NAG	C4-C5-C6-O6
4	L	601	NAG	O5-C5-C6-O6
4	C	601	NAG	O5-C5-C6-O6
4	K	601	NAG	O5-C5-C6-O6
4	J	201	NAG	C4-C5-C6-O6

There are no ring outliers.

5 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	L	601	NAG	1	0
4	G	601	NAG	1	0
4	F	601	NAG	2	0
4	J	201	NAG	1	0
4	C	601	NAG	2	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

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6   Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-34085. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1   Orthogonal projections ⓘ
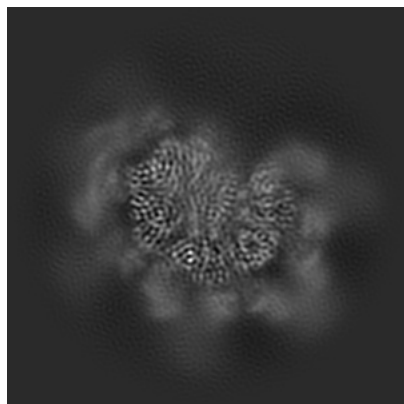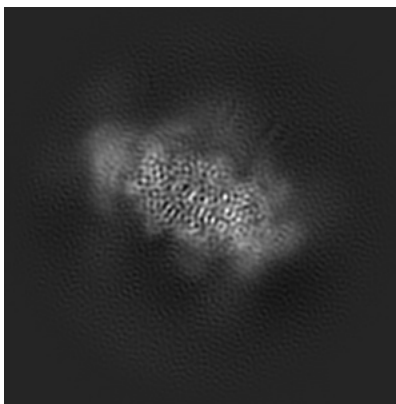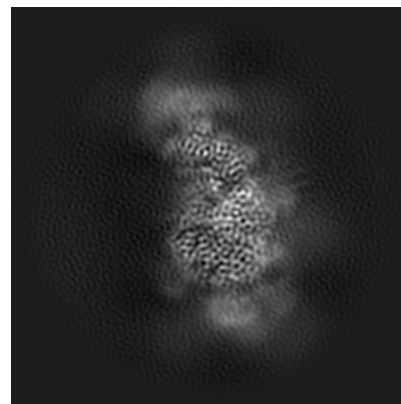
6.1.1   Primary map

X   Y   Z

6.1.2   Raw map

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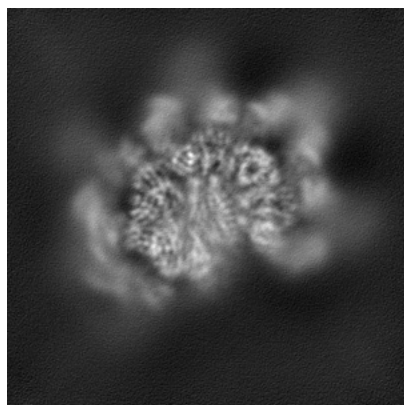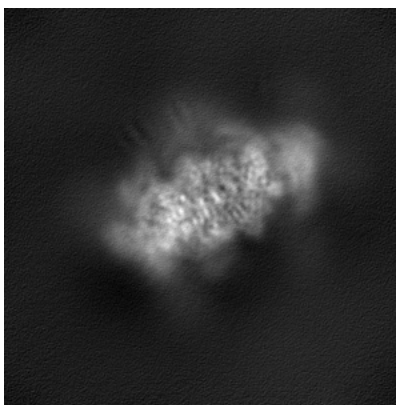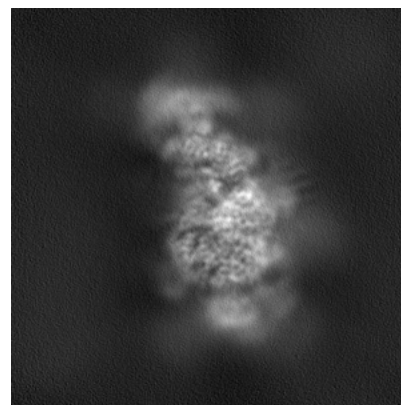
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
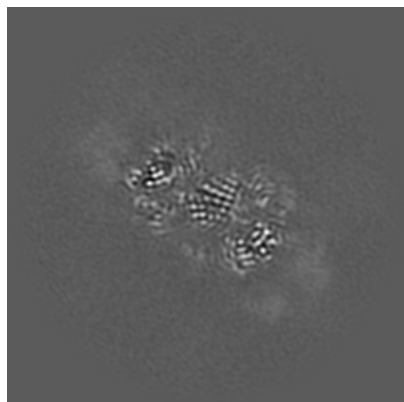
6.2.1 Primary map
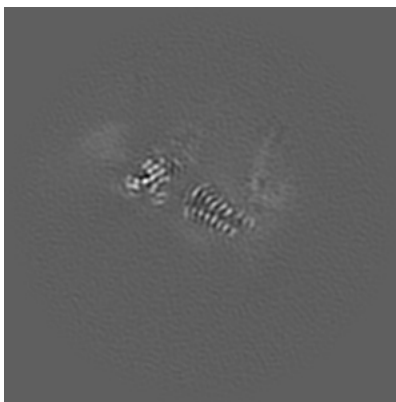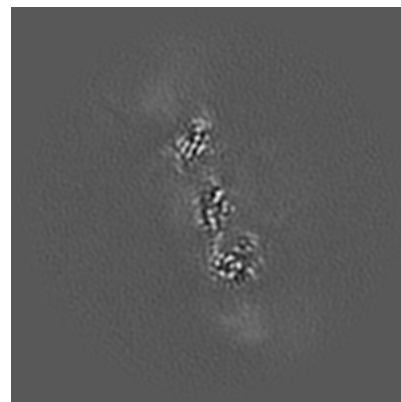
X Index: 160   Y Index: 160   Z Index: 160

6.2.2 Raw map
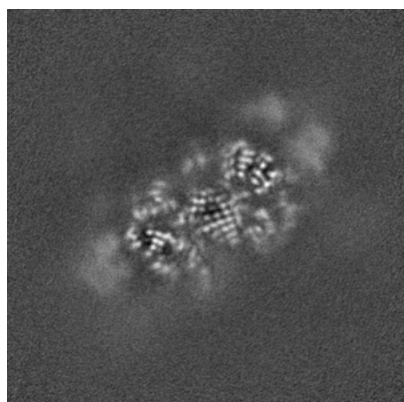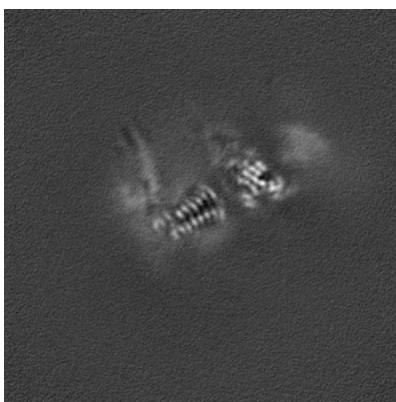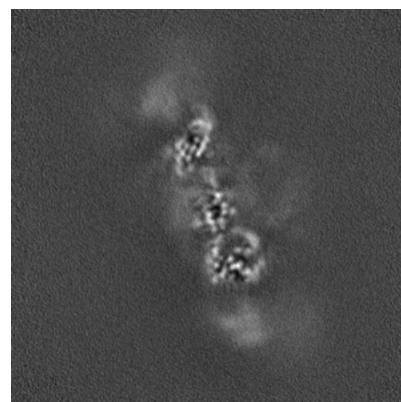
X Index: 160   Y Index: 160   Z Index: 160

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
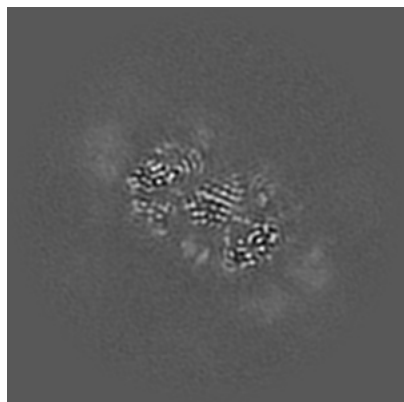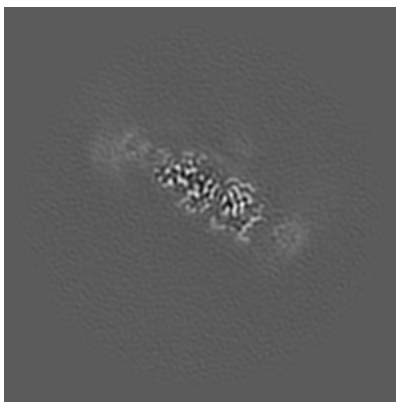
| X Index: 162 | Y Index: 117 | Z Index: 120 |
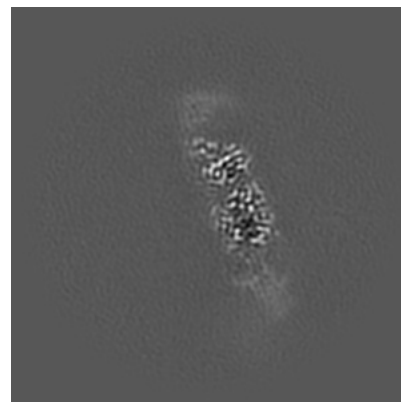
6.3.2 Raw map
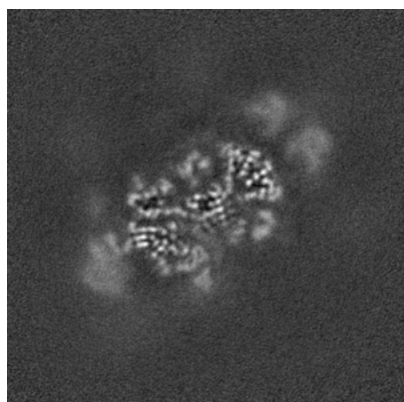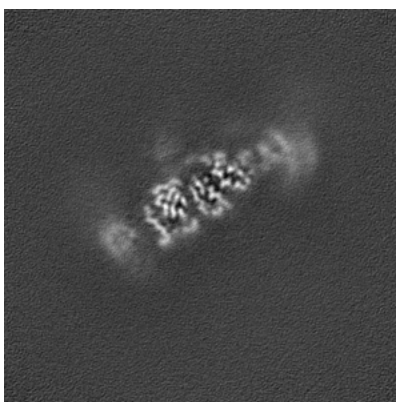
| X Index: 166 | Y Index: 117 | Z Index: 199 |
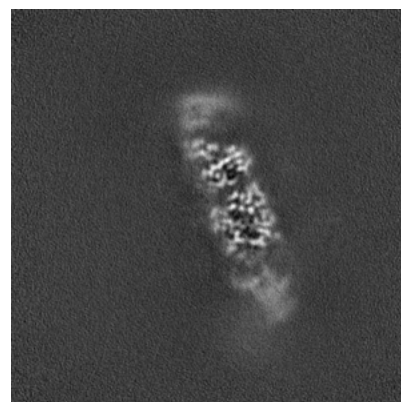
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
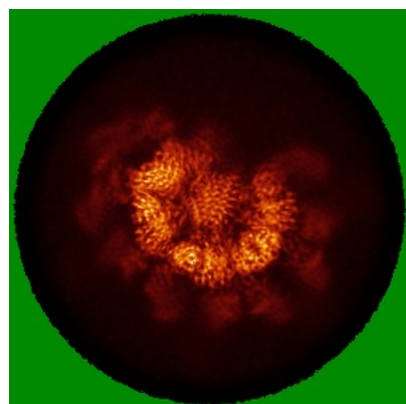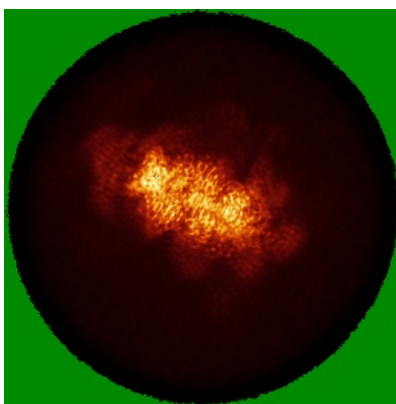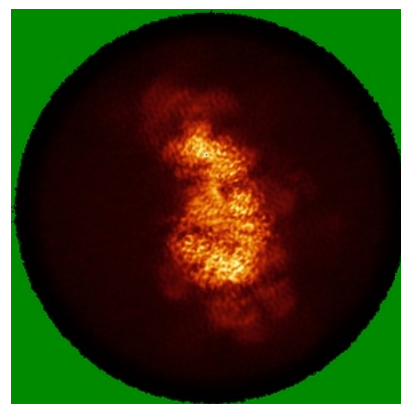
| X | Y | Z |

6.4.2 Raw map

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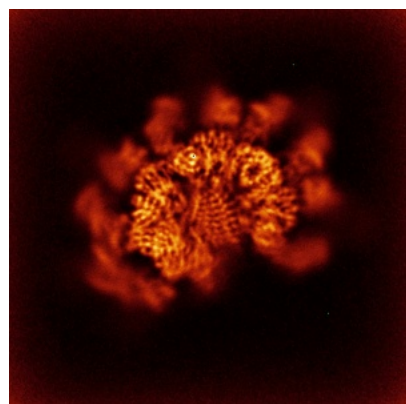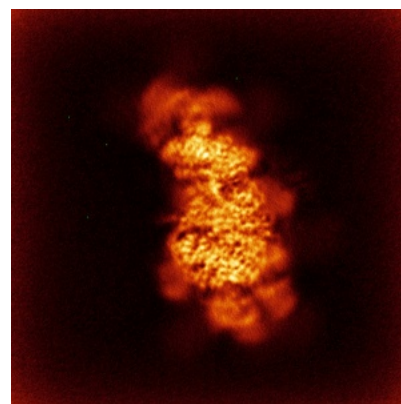
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.19. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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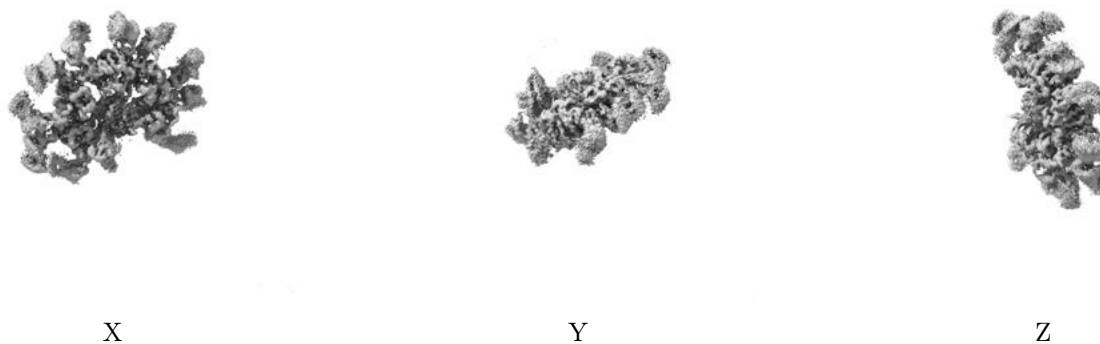
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation ⓘ

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

7　Map analysis ⓘ

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

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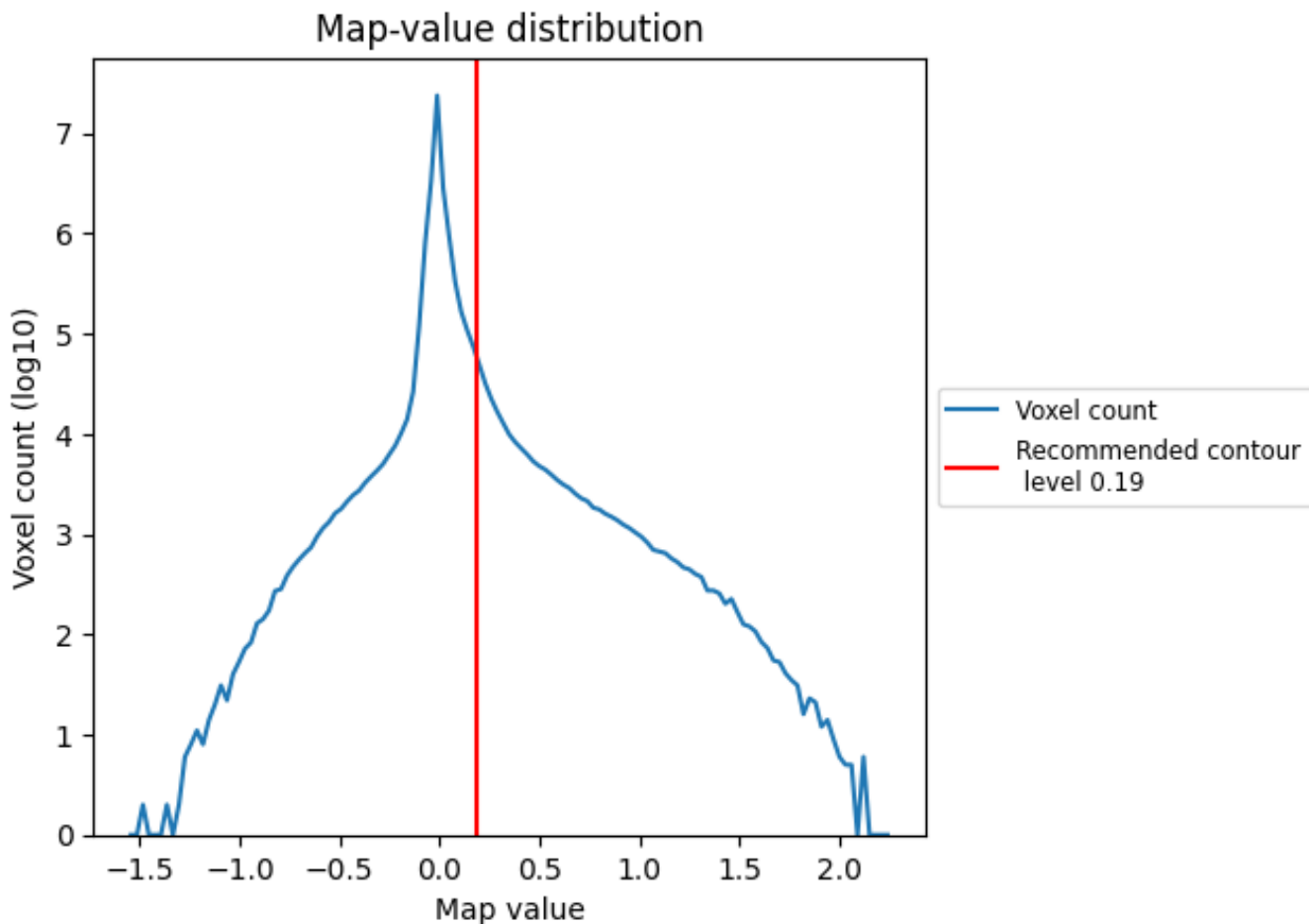
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2   Volume estimate ⓘ
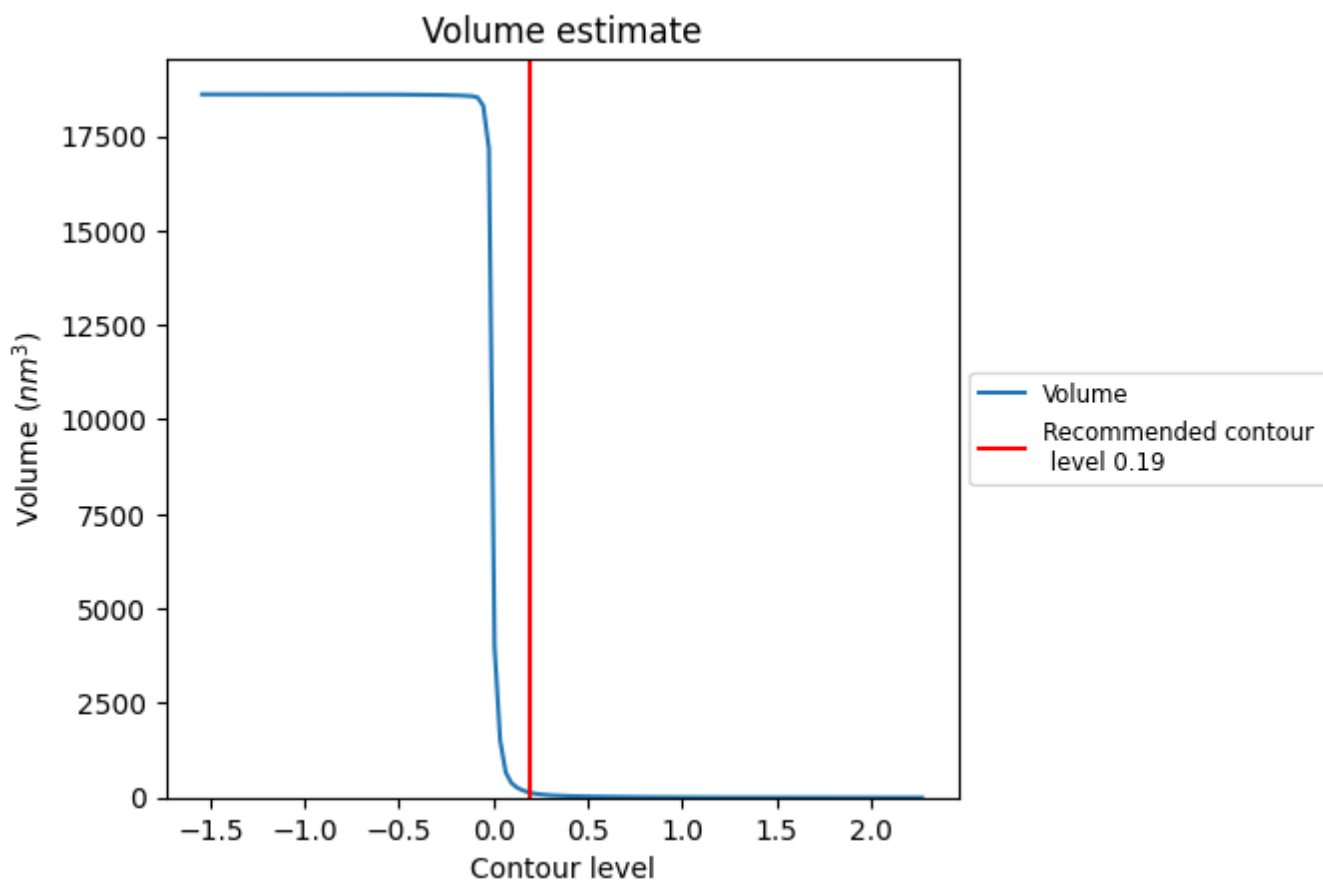
The volume at the recommended contour level is 137 nm^3; this corresponds to an approximate mass of 124 kDa.

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 ⓘ
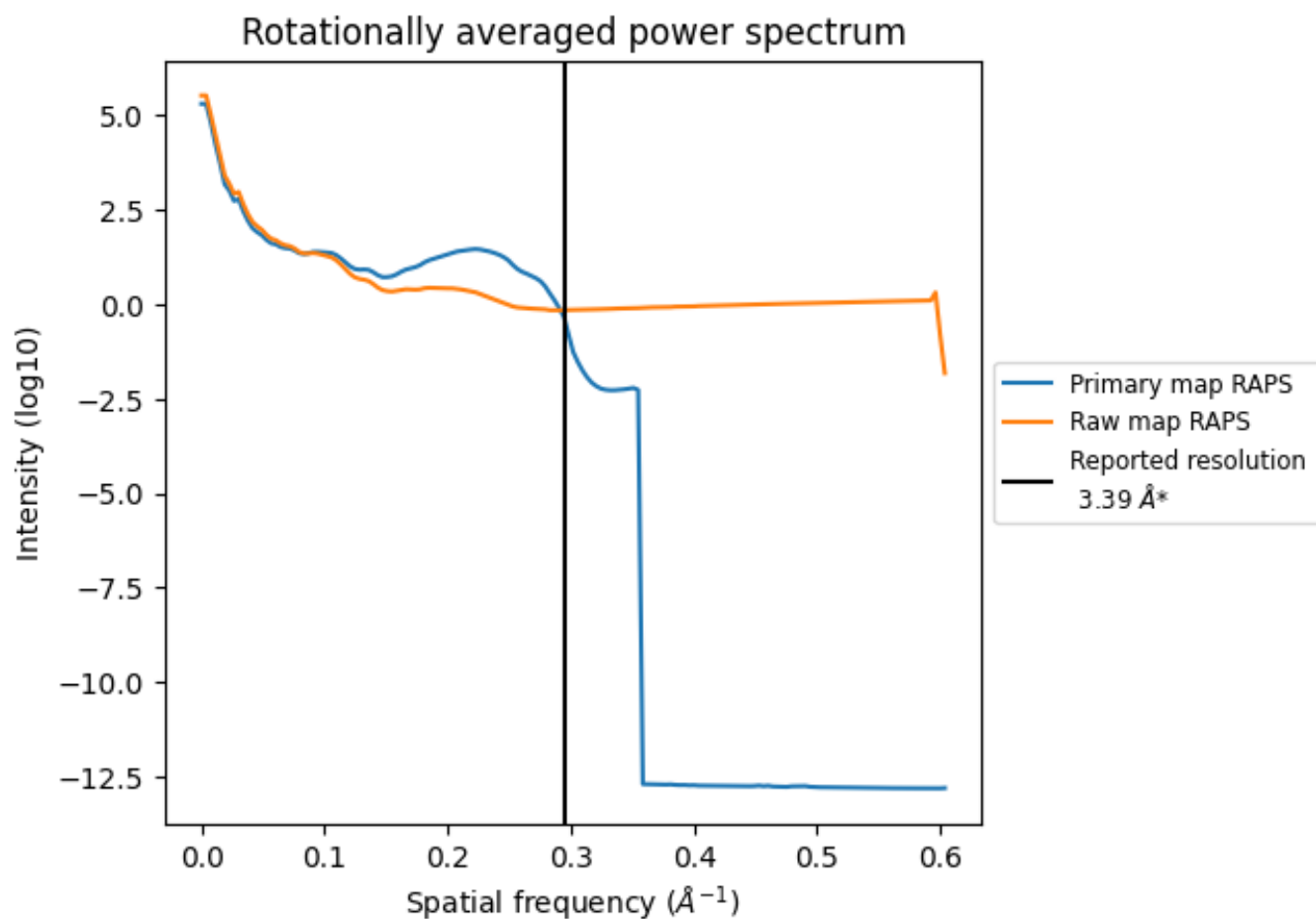
*Reported resolution corresponds to spatial frequency of 0.295 Å^{-1}

8 Fourier-Shell correlation ⓘ

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

8.1 FSC ⓘ
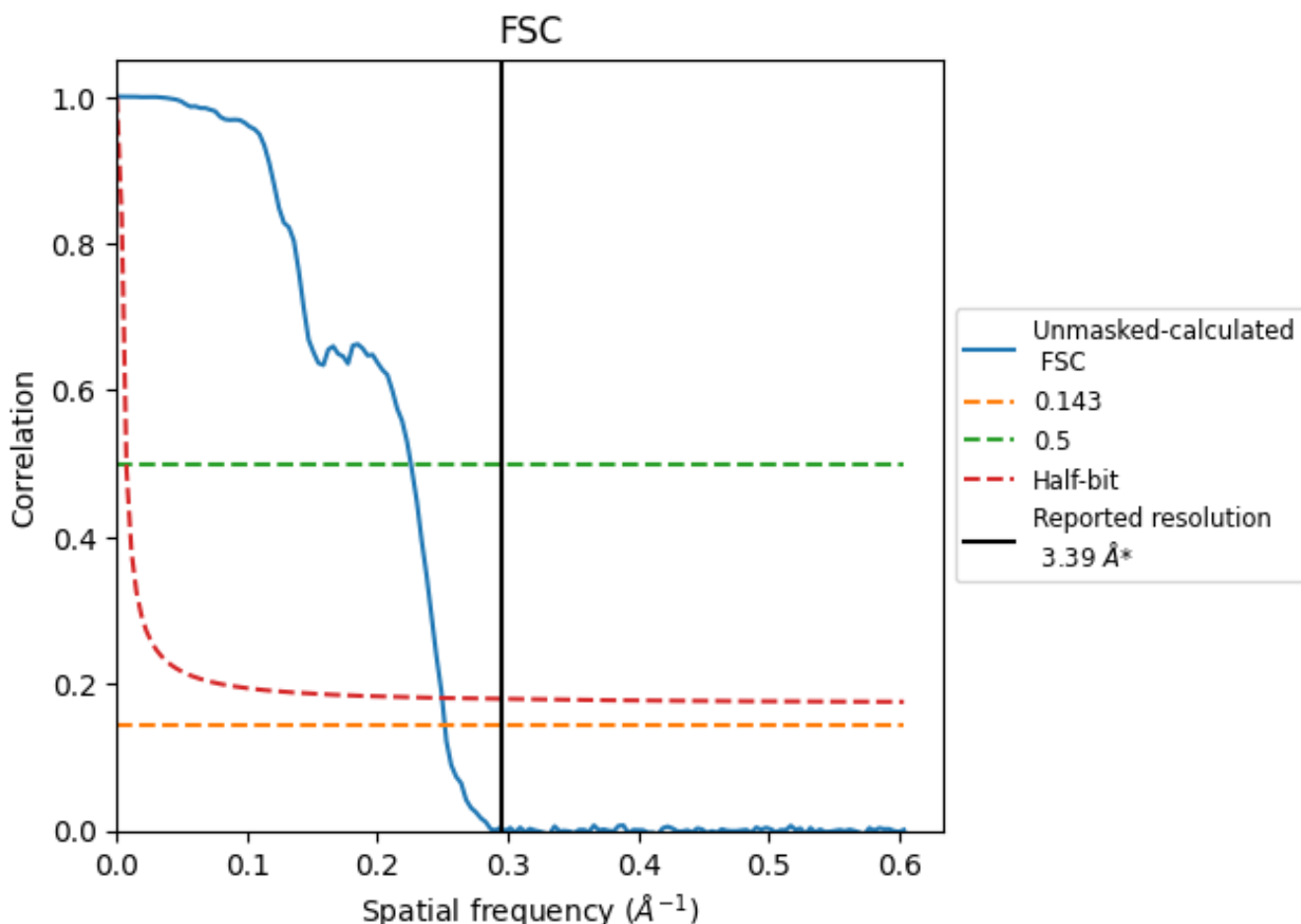
*Reported resolution corresponds to spatial frequency of 0.295 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.39	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.97	4.43	4.01

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.97 differs from the reported value 3.39 by more than 10 %

9　Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-34085 and PDB model 7YTC. Per-residue inclusion information can be found in section 3 on page 6.

9.1　Map-model overlay ⓘ

| X | Y | Z |
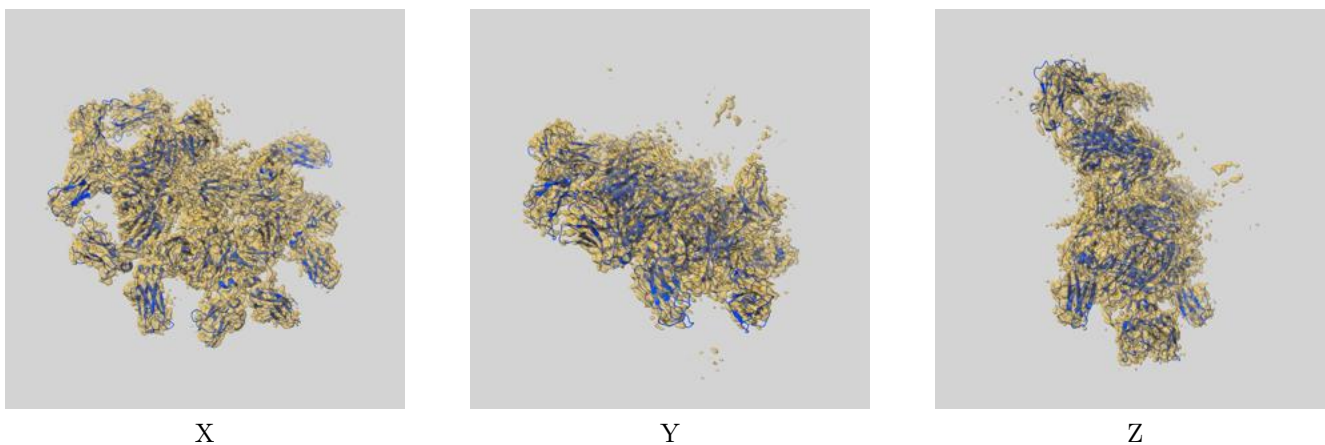
The images above show the 3D surface view of the map at the recommended contour level 0.19 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model ⓘ

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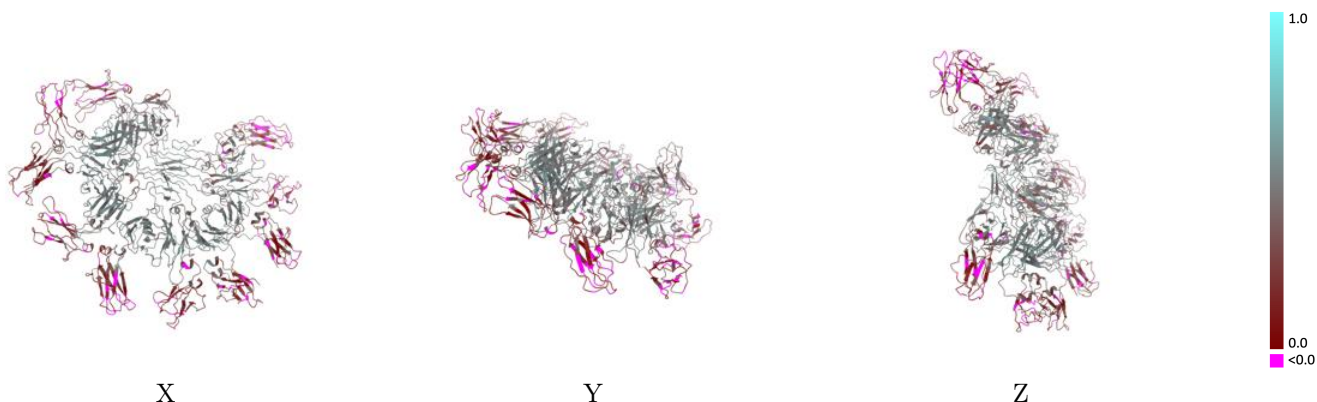
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3　Atom inclusion mapped to coordinate model ⓘ

X	Y	Z
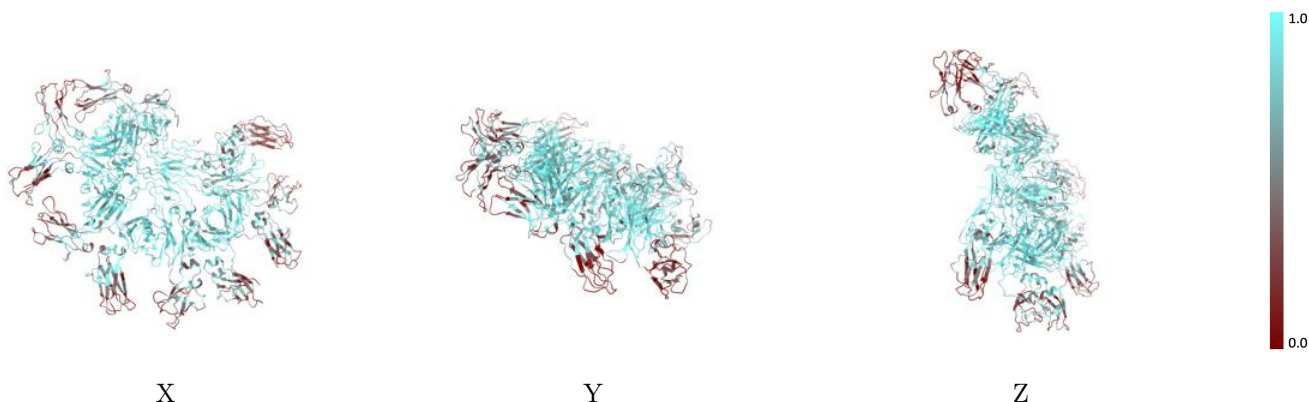
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.19).

9.4   Atom inclusion ⓘ
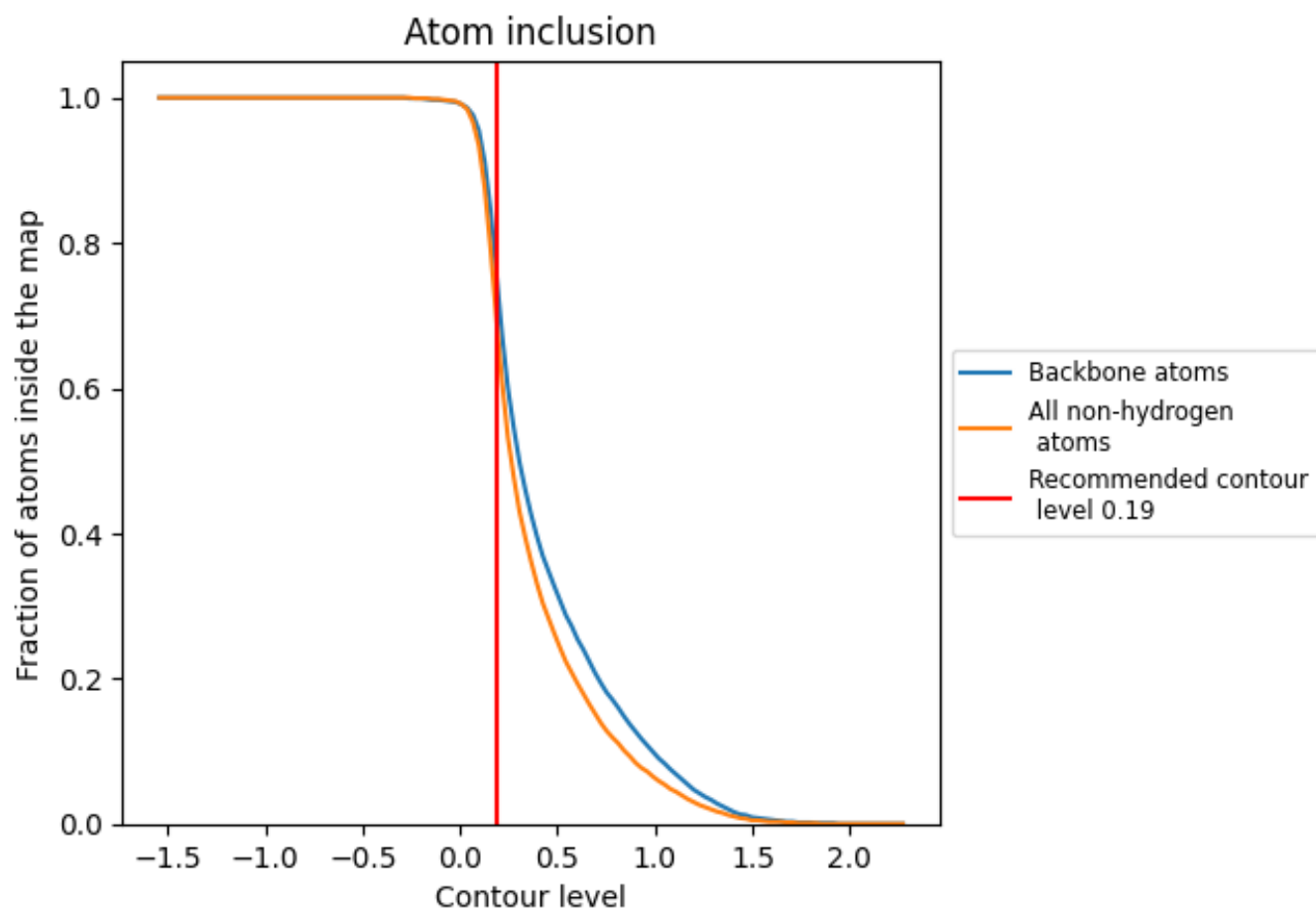
At the recommended contour level, 75% of all backbone atoms, 68% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.19) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6830	0.3670
A	0.6600	0.3460
B	0.7060	0.3700
C	0.7240	0.4040
D	0.6920	0.3820
E	0.6950	0.3590
F	0.6850	0.3660
G	0.6910	0.3680
H	0.7060	0.3640
J	0.8200	0.4610
K	0.6380	0.3290
L	0.5630	0.3100
R	0.6950	0.4200

1.0

0.0
<0.0