



# wwPDB EM Validation Summary Report i

Jun 27, 2025 – 12:52 AM JST

PDB ID : 8WH4 / pdb\_00008wh4  
EMDB ID : EMD-37528  
Title : MPOX E5 hexamer ssDNA bound apo conformation  
Authors : Zhang, Z.; Dong, C.  
Deposited on : 2023-09-22  
Resolution : 3.03 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>  
with specific help available everywhere you see the i symbol.

The types of validation reports are described at  
<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

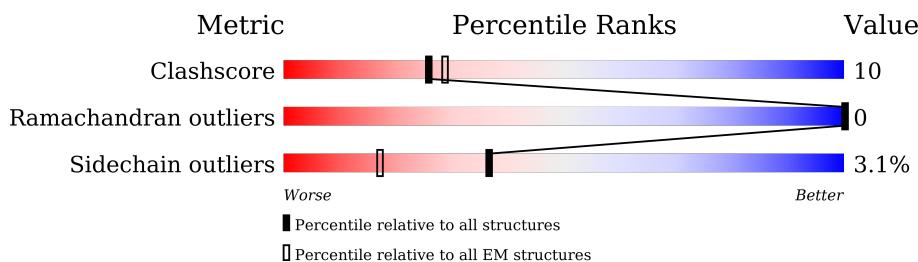
EMDB validation analysis : 0.0.1.dev118  
MolProbity : 4-5-2 with Phenix2.0rc1  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.44

# 1 Overall quality at a glance

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

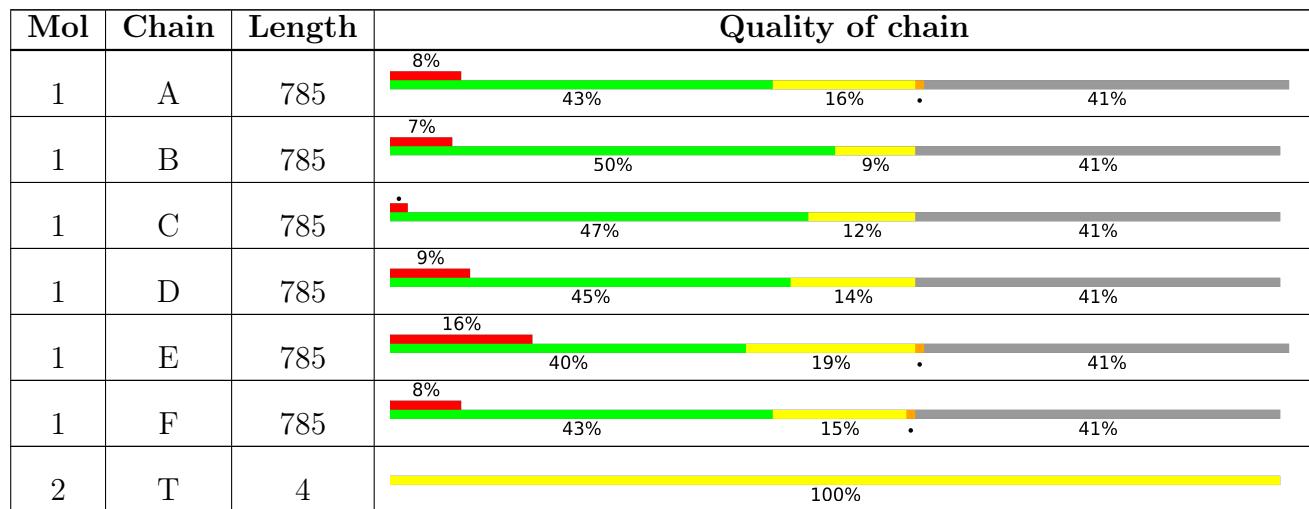
The reported resolution of this entry is 3.03 Å.

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



## 2 Entry composition [\(i\)](#)

There are 2 unique types of molecules in this entry. The entry contains 22354 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 Uncoating factor OPG117.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		
1	B	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		
1	C	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		
1	D	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		
1	E	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		
1	F	463	Total	C	N	O	S	0	0
			3713	2378	628	691	16		

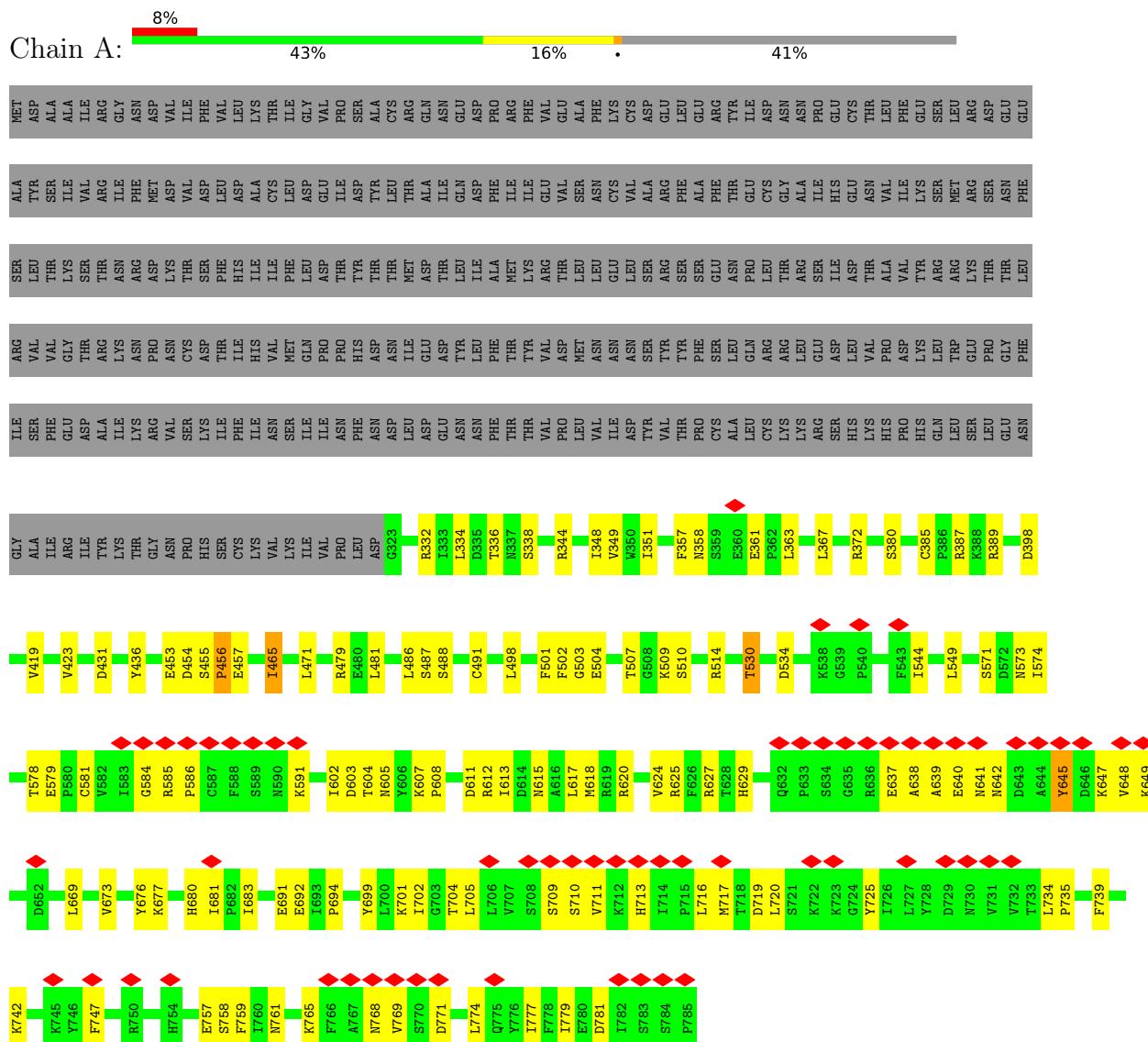
- Molecule 2 is a DNA chain called DNA (5'-D(P\*CP\*CP\*CP\*C)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
2	T	4	Total	C	N	O	P	0	0
			76	36	12	24	4		

### 3 Residue-property plots [i](#)

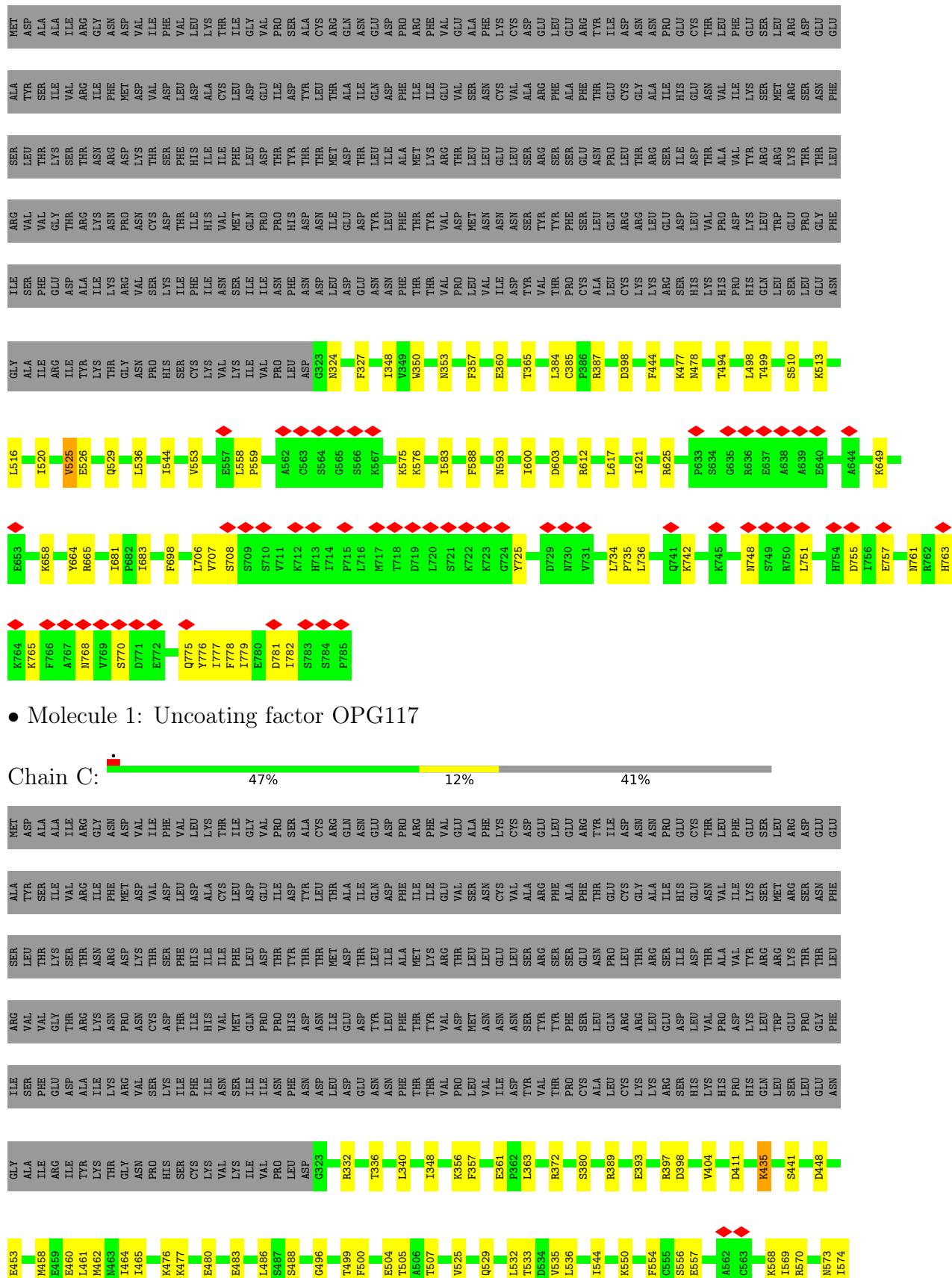
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Uncoating factor OPG117



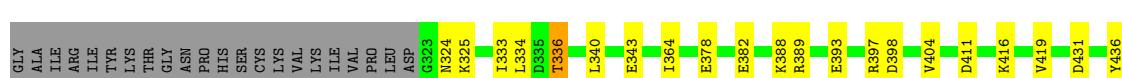
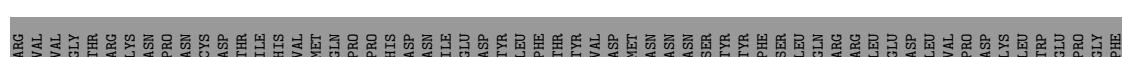
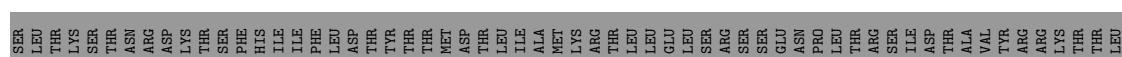
- Molecule 1: Uncoating factor OPG117





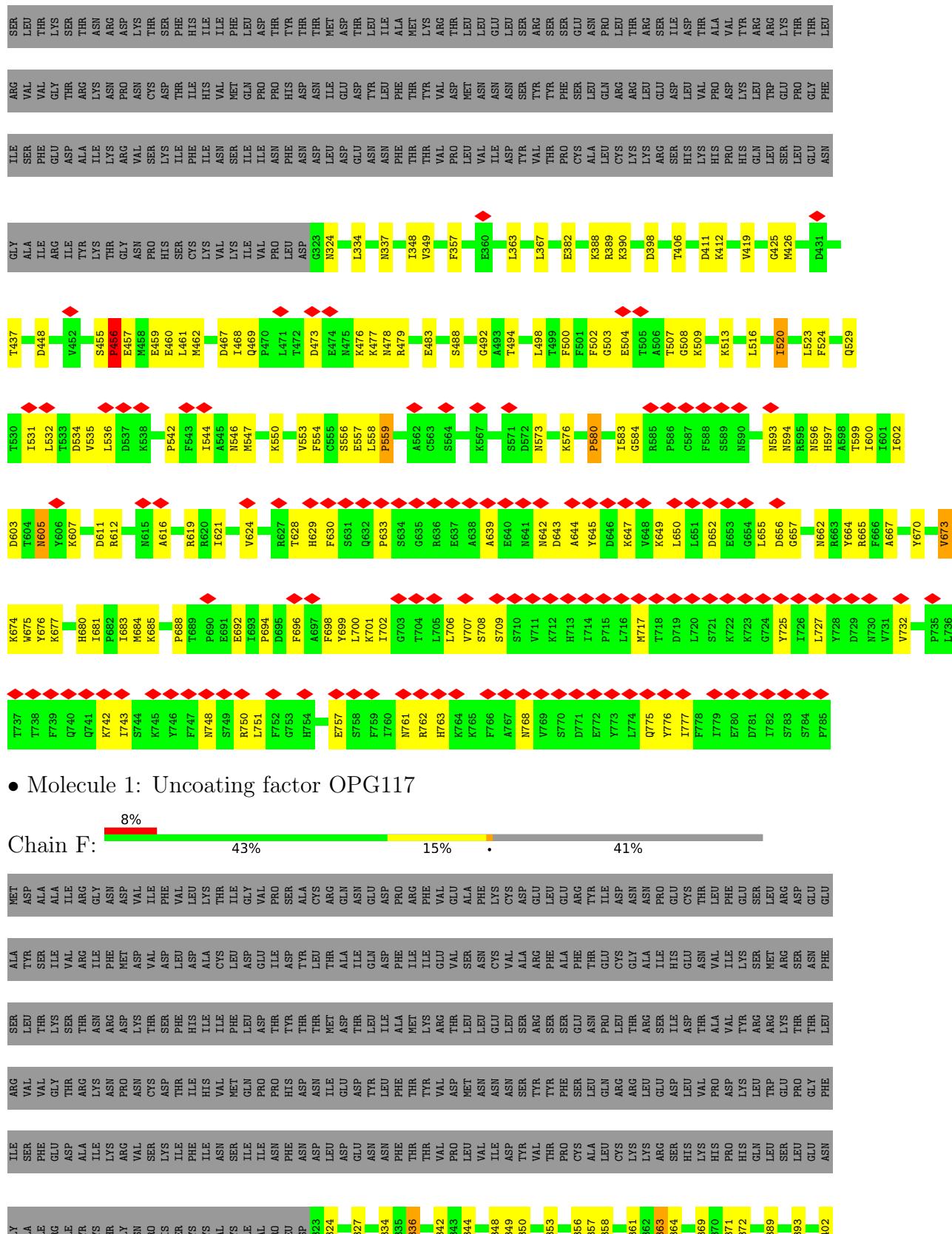


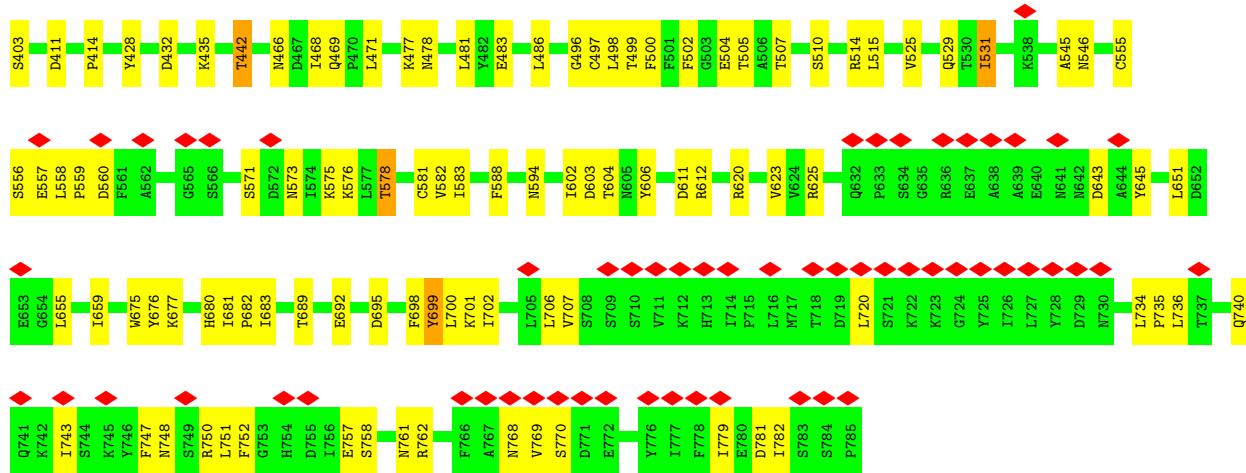
The diagram illustrates the 1973-74 National Hockey League (NHL) regular season schedule. It features ten teams, each represented by a diamond-shaped box containing its name: New York Islanders, Boston Bruins, Montreal Canadiens, Quebec Nordiques, Philadelphia Flyers, St. Louis Blues, Detroit Red Wings, Chicago Black Hawks, Minnesota North Stars, and Los Angeles Kings. The teams are arranged in two rows: the top row contains the first five teams, and the bottom row contains the last five. Between the two rows of teams are ten green rectangular boxes, each representing a game. The boxes are labeled with the date and the names of the two teams playing. The dates range from October 12, 1973, to April 12, 1974. The games are: October 12, Islanders vs. Bruins; October 13, Bruins vs. Islanders; October 14, Bruins vs. Canadiens; October 15, Canadiens vs. Bruins; October 16, Canadiens vs. Nordiques; October 17, Nordiques vs. Canadiens; October 18, Nordiques vs. Flyers; October 19, Flyers vs. Nordiques; October 20, Flyers vs. Blues; October 21, Blues vs. Flyers; October 22, Blues vs. Red Wings; October 23, Red Wings vs. Blues; October 24, Red Wings vs. Black Hawks; October 25, Black Hawks vs. Red Wings; October 26, Black Hawks vs. North Stars; October 27, North Stars vs. Black Hawks; October 28, North Stars vs. Kings; October 29, Kings vs. North Stars; October 30, Kings vs. Red Wings; October 31, Red Wings vs. Kings; November 1, Red Wings vs. Black Hawks; November 2, Black Hawks vs. Red Wings; November 3, Black Hawks vs. Blues; November 4, Blues vs. Black Hawks; November 5, Blues vs. Red Wings; November 6, Red Wings vs. Blues; November 7, Red Wings vs. Canadiens; November 8, Canadiens vs. Red Wings; November 9, Canadiens vs. Nordiques; November 10, Nordiques vs. Canadiens; November 11, Nordiques vs. Flyers; November 12, Flyers vs. Nordiques; November 13, Flyers vs. Blues; November 14, Blues vs. Flyers; November 15, Blues vs. Red Wings; November 16, Red Wings vs. Blues; November 17, Red Wings vs. Black Hawks; November 18, Black Hawks vs. Red Wings; November 19, Black Hawks vs. North Stars; November 20, North Stars vs. Black Hawks; November 21, North Stars vs. Kings; November 22, Kings vs. North Stars; November 23, Kings vs. Red Wings; November 24, Red Wings vs. Kings; November 25, Red Wings vs. Black Hawks; November 26, Black Hawks vs. Red Wings; November 27, Black Hawks vs. Nordiques; November 28, Nordiques vs. Black Hawks; November 29, Nordiques vs. Flyers; November 30, Flyers vs. Nordiques; December 1, Flyers vs. Blues; December 2, Blues vs. Flyers; December 3, Blues vs. Red Wings; December 4, Red Wings vs. Blues; December 5, Red Wings vs. Canadiens; December 6, Canadiens vs. Red Wings; December 7, Canadiens vs. Nordiques; December 8, Nordiques vs. Canadiens; December 9, Nordiques vs. Flyers; December 10, Flyers vs. Nordiques; December 11, Flyers vs. Blues; December 12, Blues vs. Flyers; December 13, Blues vs. Red Wings; December 14, Red Wings vs. Blues; December 15, Red Wings vs. Black Hawks; December 16, Black Hawks vs. Red Wings; December 17, Black Hawks vs. Nordiques; December 18, Nordiques vs. Black Hawks; December 19, Nordiques vs. Flyers; December 20, Flyers vs. Nordiques; December 21, Flyers vs. Blues; December 22, Blues vs. Flyers; December 23, Blues vs. Red Wings; December 24, Red Wings vs. Blues; December 25, Red Wings vs. Canadiens; December 26, Canadiens vs. Red Wings; December 27, Canadiens vs. Nordiques; December 28, Nordiques vs. Canadiens; December 29, Nordiques vs. Flyers; December 30, Flyers vs. Nordiques; December 31, Flyers vs. Blues; January 1, Blues vs. Flyers; January 2, Blues vs. Red Wings; January 3, Red Wings vs. Blues; January 4, Red Wings vs. Canadiens; January 5, Canadiens vs. Red Wings; January 6, Canadiens vs. Nordiques; January 7, Nordiques vs. Canadiens; January 8, Nordiques vs. Flyers; January 9, Flyers vs. Nordiques; January 10, Flyers vs. Blues; January 11, Blues vs. Flyers; January 12, Blues vs. Red Wings; January 13, Red Wings vs. Blues; January 14, Red Wings vs. Canadiens; January 15, Canadiens vs. Red Wings; January 16, Canadiens vs. Nordiques; January 17, Nordiques vs. Canadiens; January 18, Nordiques vs. Flyers; January 19, Flyers vs. Nordiques; January 20, Flyers vs. Blues; January 21, Blues vs. Flyers; January 22, Blues vs. Red Wings; January 23, Red Wings vs. Blues; January 24, Red Wings vs. Canadiens; January 25, Canadiens vs. Red Wings; January 26, Canadiens vs. Nordiques; January 27, Nordiques vs. Canadiens; January 28, Nordiques vs. Flyers; January 29, Flyers vs. Nordiques; January 30, Flyers vs. Blues; January 31, Blues vs. Flyers; February 1, Blues vs. Red Wings; February 2, Red Wings vs. Blues; February 3, Blues vs. Canadiens; February 4, Canadiens vs. Blues; February 5, Canadiens vs. Nordiques; February 6, Nordiques vs. Canadiens; February 7, Nordiques vs. Flyers; February 8, Flyers vs. Nordiques; February 9, Flyers vs. Blues; February 10, Blues vs. Flyers; February 11, Blues vs. Red Wings; February 12, Red Wings vs. Blues; February 13, Red Wings vs. Canadiens; February 14, Canadiens vs. Red Wings; February 15, Canadiens vs. Nordiques; February 16, Nordiques vs. Canadiens; February 17, Nordiques vs. Flyers; February 18, Flyers vs. Nordiques; February 19, Flyers vs. Blues; February 20, Blues vs. Flyers; February 21, Blues vs. Red Wings; February 22, Red Wings vs. Blues; February 23, Red Wings vs. Canadiens; February 24, Canadiens vs. Red Wings; February 25, Canadiens vs. Nordiques; February 26, Nordiques vs. Canadiens; February 27, Nordiques vs. Flyers; February 28, Flyers vs. Nordiques; February 29, Flyers vs. Blues; March 1, Blues vs. Flyers; March 2, Blues vs. Red Wings; March 3, Red Wings vs. Blues; March 4, Blues vs. Canadiens; March 5, Canadiens vs. Blues; March 6, Canadiens vs. Nordiques; March 7, Nordiques vs. Canadiens; March 8, Nordiques vs. Flyers; March 9, Flyers vs. Nordiques; March 10, Flyers vs. Blues; March 11, Blues vs. Flyers; March 12, Blues vs. Red Wings; March 13, Red Wings vs. Blues; March 14, Red Wings vs. Canadiens; March 15, Canadiens vs. Red Wings; March 16, Canadiens vs. Nordiques; March 17, Nordiques vs. Canadiens; March 18, Nordiques vs. Flyers; March 19, Flyers vs. Nordiques; March 20, Flyers vs. Blues; March 21, Blues vs. Flyers; March 22, Blues vs. Red Wings; March 23, Red Wings vs. Blues; March 24, Red Wings vs. Canadiens; March 25, Canadiens vs. Red Wings; March 26, Canadiens vs. Nordiques; March 27, Nordiques vs. Canadiens; March 28, Nordiques vs. Flyers; March 29, Flyers vs. Nordiques; March 30, Flyers vs. Blues; March 31, Blues vs. Flyers; April 1, Blues vs. Red Wings; April 2, Red Wings vs. Blues; April 3, Blues vs. Canadiens; April 4, Canadiens vs. Blues; April 5, Canadiens vs. Nordiques; April 6, Nordiques vs. Canadiens; April 7, Nordiques vs. Flyers; April 8, Flyers vs. Nordiques; April 9, Flyers vs. Blues; April 10, Blues vs. Flyers; April 11, Blues vs. Red Wings; April 12, Red Wings vs. Blues; April 13, Red Wings vs. Canadiens; April 14, Canadiens vs. Red Wings; April 15, Canadiens vs. Nordiques; April 16, Nordiques vs. Canadiens; April 17, Nordiques vs. Flyers; April 18, Flyers vs. Nordiques; April 19, Flyers vs. Blues; April 20, Blues vs. Flyers; April 21, Blues vs. Red Wings; April 22, Red Wings vs. Blues; April 23, Red Wings vs. Canadiens; April 24, Canadiens vs. Red Wings; April 25, Canadiens vs. Nordiques; April 26, Nordiques vs. Canadiens; April 27, Nordiques vs. Flyers; April 28, Flyers vs. Nordiques; April 29, Flyers vs. Blues; April 30, Blues vs. Flyers; April 31, Blues vs. Red Wings; April 32, Red Wings vs. Blues; April 33, Red Wings vs. Canadiens; April 34, Canadiens vs. Red Wings; April 35, Canadiens vs. Nordiques; April 36, Nordiques vs. Canadiens; April 37, Nordiques vs. Flyers; April 38, Flyers vs. Nordiques; April 39, Flyers vs. Blues; April 40, Blues vs. Flyers; April 41, Blues vs. Red Wings; April 42, Red Wings vs. Blues; April 43, Red Wings vs. Canadiens; April 44, Canadiens vs. Red Wings; April 45, Canadiens vs. Nordiques; April 46, Nordiques vs. Canadiens; April 47, Nordiques vs. Flyers; April 48, Flyers vs. Nordiques; April 49, Flyers vs. Blues; April 50, Blues vs. Flyers; April 51, Blues vs. Red Wings; April 52, Red Wings vs. Blues; April 53, Red Wings vs. Canadiens; April 54, Canadiens vs. Red Wings; April 55, Canadiens vs. Nordiques; April 56, Nordiques vs. Canadiens; April 57, Nordiques vs. Flyers; April 58, Flyers vs. Nordiques; April 59, Flyers vs. Blues; April 60, Blues vs. Flyers; April 61, Blues vs. Red Wings; April 62, Red Wings vs. Blues; April 63, Red Wings vs. Canadiens; April 64, Canadiens vs. Red Wings; April 65, Canadiens vs. Nordiques; April 66, Nordiques vs. Canadiens; April 67, Nordiques vs. Flyers; April 68, Flyers vs. Nordiques; April 69, Flyers vs. Blues; April 70, Blues vs. Flyers; April 71, Blues vs. Red Wings; April 72, Red Wings vs. Blues; April 73, Red Wings vs. Canadiens; April 74, Canadiens vs. Red Wings; April 75, Canadiens vs. Nordiques; April 76, Nordiques vs. Canadiens; April 77, Nordiques vs. Flyers; April 78, Flyers vs. Nordiques; April 79, Flyers vs. Blues; April 80, Blues vs. Flyers; April 81, Blues vs. Red Wings; April 82, Red Wings vs. Blues; April 83, Red Wings vs. Canadiens; April 84, Canadiens vs. Red Wings; April 85, Canadiens vs. Nordiques; April 86, Nordiques vs. Canadiens; April 87, Nordiques vs. Flyers; April 88, Flyers vs. Nordiques; April 89, Flyers vs. Blues; April 90, Blues vs. Flyers; April 91, Blues vs. Red Wings; April 92, Red Wings vs. Blues; April 93, Red Wings vs. Canadiens; April 94, Canadiens vs. Red Wings; April 95, Canadiens vs. Nordiques; April 96, Nordiques vs. Canadiens; April 97, Nordiques vs. Flyers; April 98, Flyers vs. Nordiques; April 99, Flyers vs. Blues; April 100, Blues vs. Flyers.



- Molecule 1: Uncoating factor OPG117







- Molecule 2: DNA (5'-D(P\*CP\*CP\*CP\*C)-3')

Chain T:  100%

C2 C3 C4 C5

## 4 Experimental information i

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	263224	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 ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.406	Depositor
Minimum map value	-0.865	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.027	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	268.8, 268.8, 268.8	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.84, 0.84, 0.84	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.31	2/3793 (0.1%)	0.49	4/5128 (0.1%)
1	B	0.13	0/3793	0.29	0/5128
1	C	0.18	0/3793	0.41	2/5128 (0.0%)
1	D	0.13	0/3793	0.33	0/5128
1	E	0.49	5/3793 (0.1%)	0.83	14/5128 (0.3%)
1	F	0.14	0/3793	0.33	0/5128
2	T	0.25	0/83	0.46	0/124
All	All	0.26	7/22841 (0.0%)	0.48	20/30892 (0.1%)

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	559	PRO	CG-CD	-19.33	0.85	1.50
1	A	456	PRO	CG-CD	-15.22	0.99	1.50
1	E	559	PRO	CB-CG	11.89	2.09	1.49
1	E	559	PRO	CA-CB	-8.57	1.44	1.53
1	E	456	PRO	CG-CD	-8.29	1.22	1.50

The worst 5 of 20 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	559	PRO	N-CD-CG	-24.57	66.34	103.20
1	E	559	PRO	N-CA-CB	-22.64	87.25	102.65
1	E	559	PRO	CA-CB-CG	-19.97	66.56	104.50
1	A	456	PRO	N-CD-CG	-17.10	77.55	103.20
1	E	694	PRO	CA-N-CD	-13.84	92.62	112.00

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	3713	0	3706	108	0
1	B	3713	0	3706	44	0
1	C	3713	0	3706	56	0
1	D	3713	0	3706	83	0
1	E	3713	0	3706	110	0
1	F	3713	0	3706	83	0
2	T	76	0	45	4	0
All	All	22354	0	22281	448	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 10.

The worst 5 of 448 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:E:456:PRO:HG2	1:E:457:GLU:H	1.43	0.81
1:E:456:PRO:HG2	1:E:457:GLU:N	1.94	0.80
1:B:575:LYS:HE3	1:C:557:GLU:HG3	1.67	0.76
1:D:460:GLU:HG3	1:D:664:TYR:HE1	1.50	0.75
1:E:456:PRO:HA	1:E:459:GLU:HG2	1.67	0.74

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	461/785 (59%)	436 (95%)	25 (5%)	0	100 100
1	B	461/785 (59%)	449 (97%)	12 (3%)	0	100 100
1	C	461/785 (59%)	440 (95%)	21 (5%)	0	100 100
1	D	461/785 (59%)	440 (95%)	21 (5%)	0	100 100
1	E	461/785 (59%)	438 (95%)	23 (5%)	0	100 100
1	F	461/785 (59%)	443 (96%)	18 (4%)	0	100 100
All	All	2766/4710 (59%)	2646 (96%)	120 (4%)	0	100 100

There are no Ramachandran outliers to report.

### 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	414/725 (57%)	401 (97%)	13 (3%)	35 65
1	B	414/725 (57%)	406 (98%)	8 (2%)	52 76
1	C	414/725 (57%)	397 (96%)	17 (4%)	26 57
1	D	414/725 (57%)	403 (97%)	11 (3%)	40 68
1	E	414/725 (57%)	400 (97%)	14 (3%)	32 63
1	F	414/725 (57%)	401 (97%)	13 (3%)	35 65
All	All	2484/4350 (57%)	2408 (97%)	76 (3%)	37 65

5 of 76 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	488	SER
1	F	531	ILE
1	E	559	PRO
1	F	356	LYS
1	F	699	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	395	ASN
1	F	641	ASN
1	D	590	ASN
1	F	763	HIS
1	F	324	ASN

### 5.3.3 RNA [\(i\)](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [\(i\)](#)

There are no oligosaccharides in this entry.

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

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.

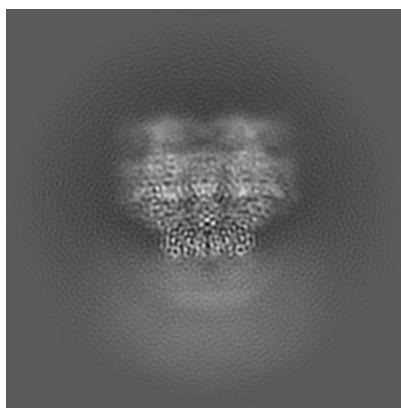
## 6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-37528. These allow visual inspection of the internal detail of the map and identification of artifacts.

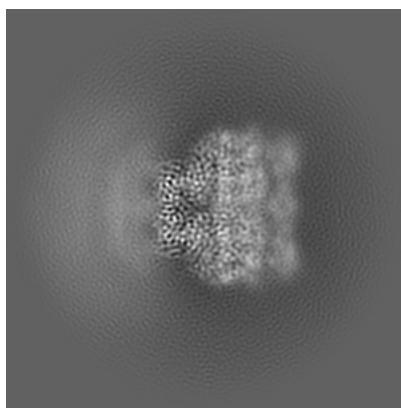
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections (i)

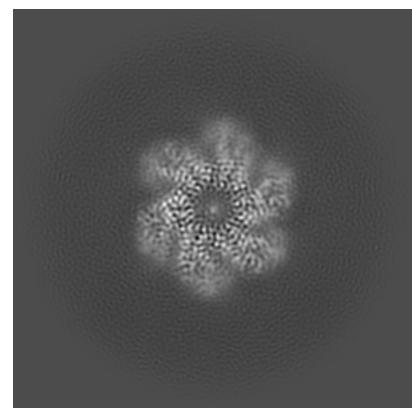
#### 6.1.1 Primary map



X

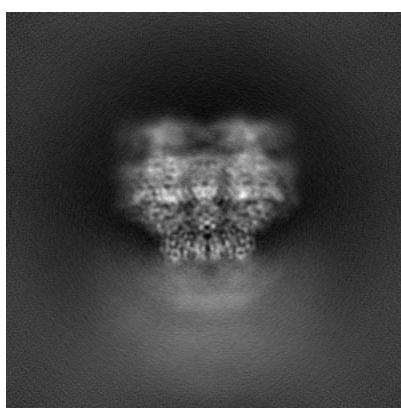


Y

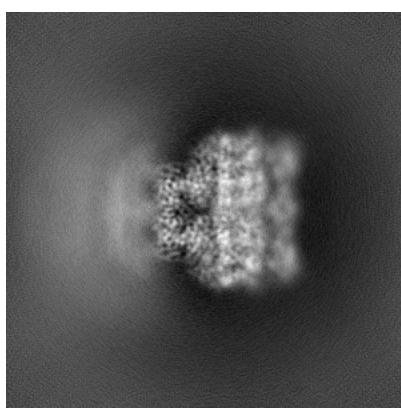


Z

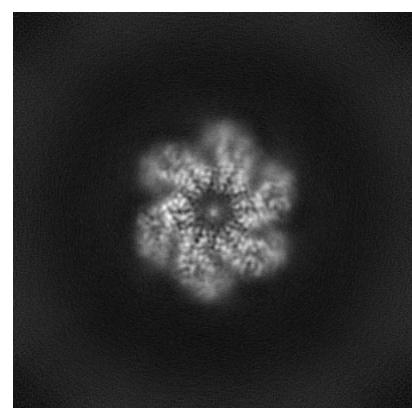
#### 6.1.2 Raw map



X



Y

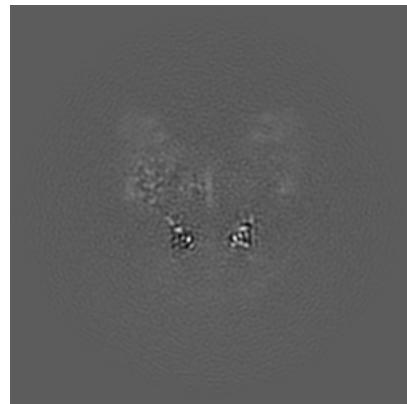


Z

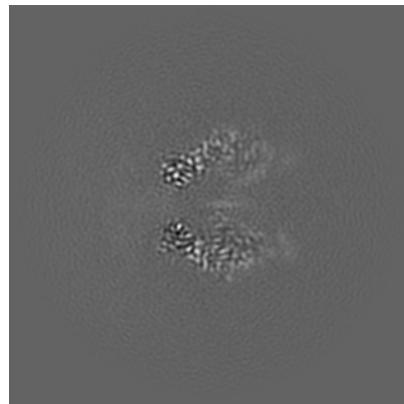
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [\(i\)](#)

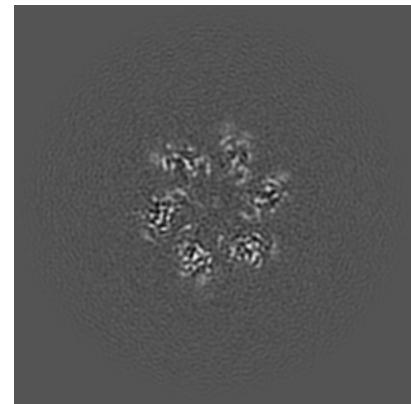
### 6.2.1 Primary map



X Index: 160

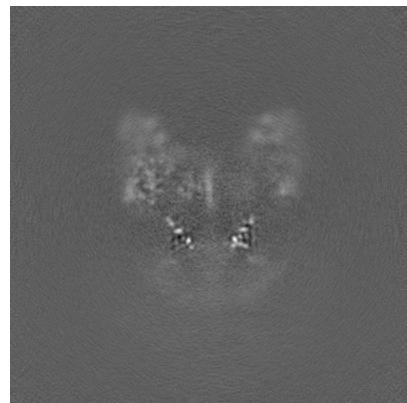


Y Index: 160

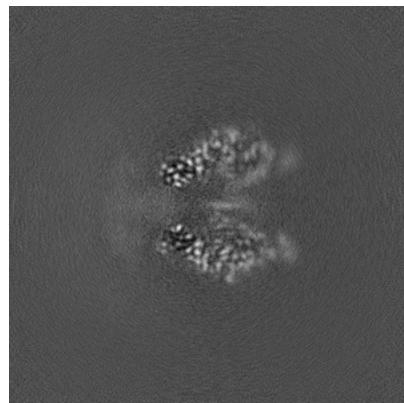


Z Index: 160

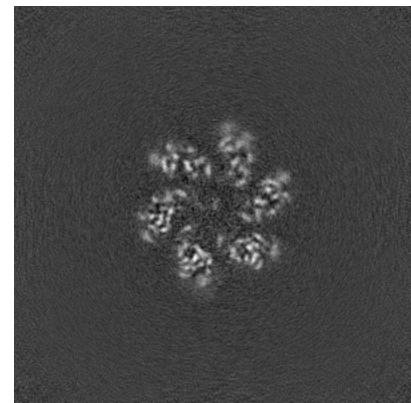
### 6.2.2 Raw map



X Index: 160



Y Index: 160

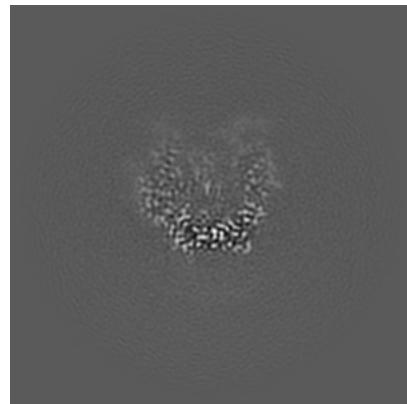


Z Index: 160

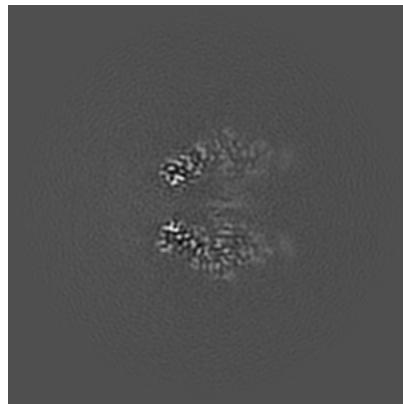
The images above show central slices of the map in three orthogonal directions.

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

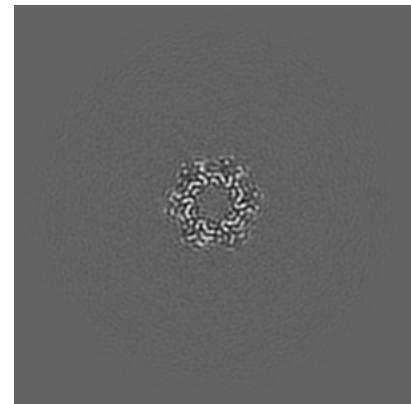
### 6.3.1 Primary map



X Index: 138

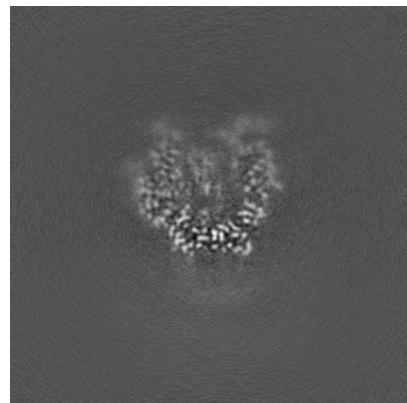


Y Index: 158

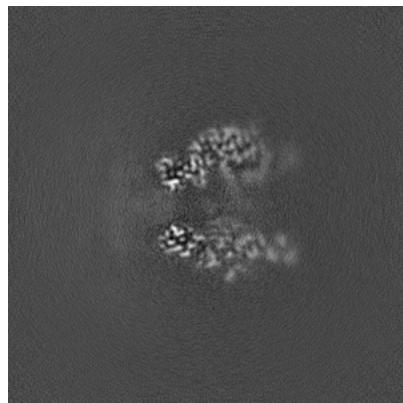


Z Index: 134

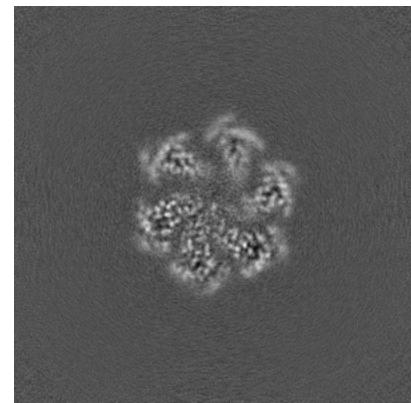
### 6.3.2 Raw map



X Index: 138



Y Index: 164

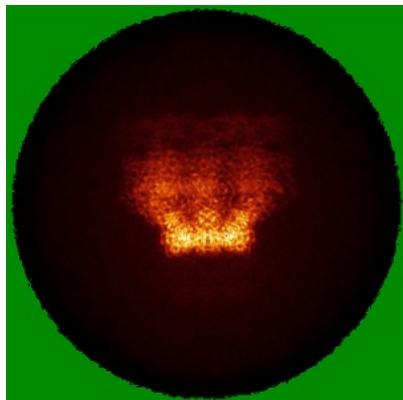


Z Index: 173

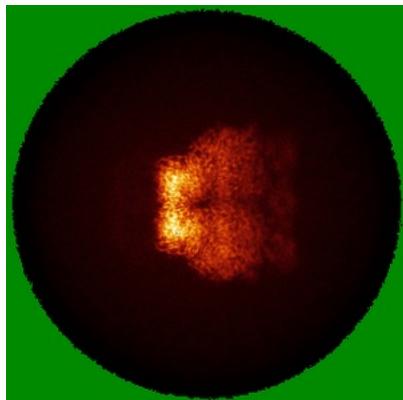
The images above show the largest variance slices of the map in three orthogonal directions.

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

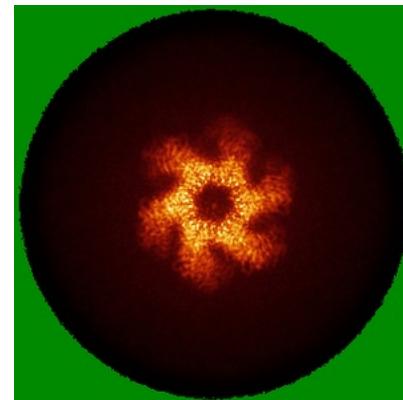
### 6.4.1 Primary map



X

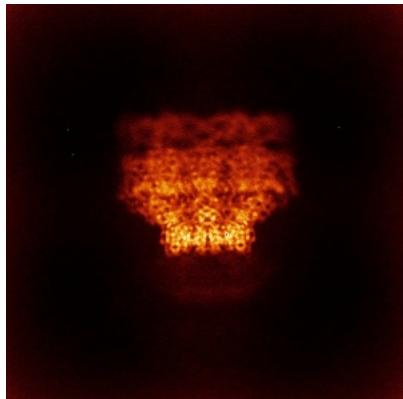


Y

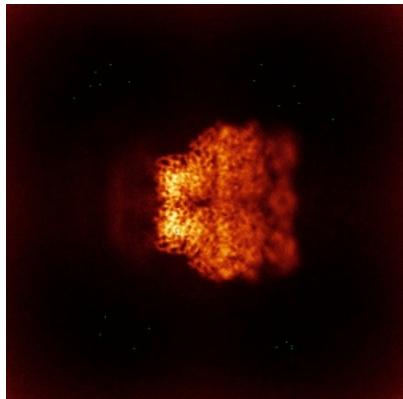


Z

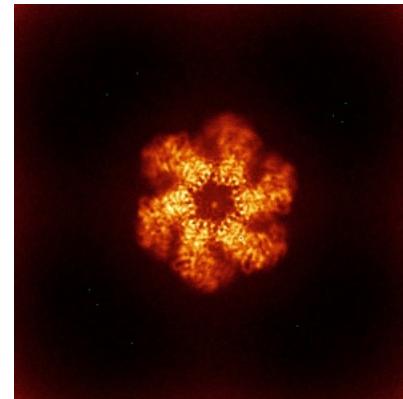
### 6.4.2 Raw map



X



Y

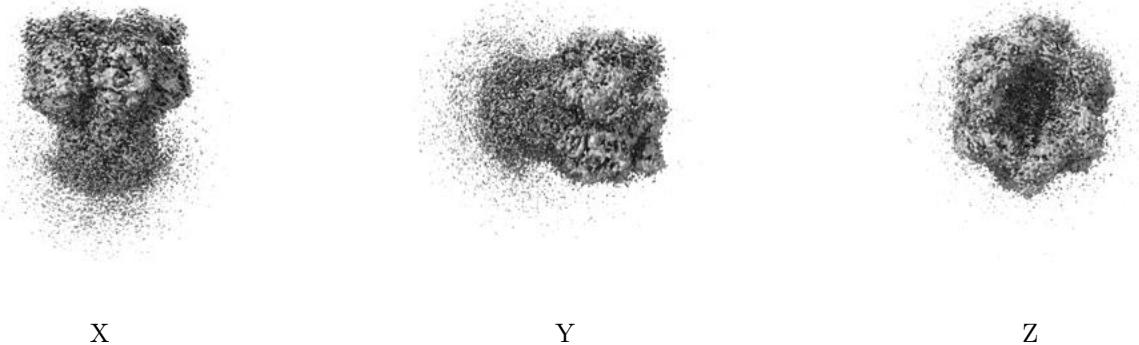


Z

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.

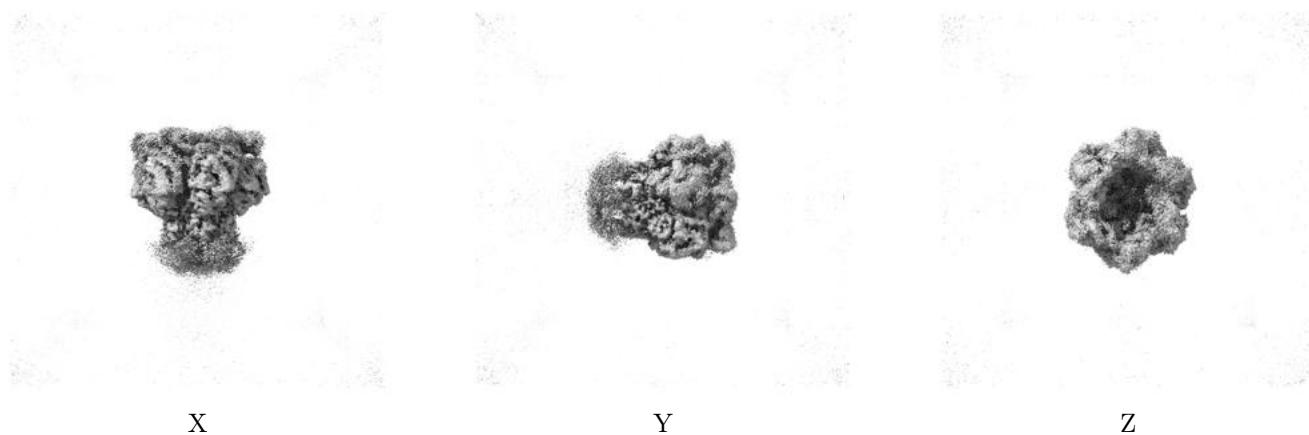
## 6.5 Orthogonal surface views [\(i\)](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.06. 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.

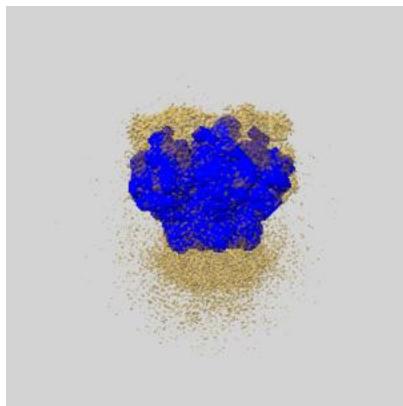
## 6.6 Mask visualisation [\(i\)](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

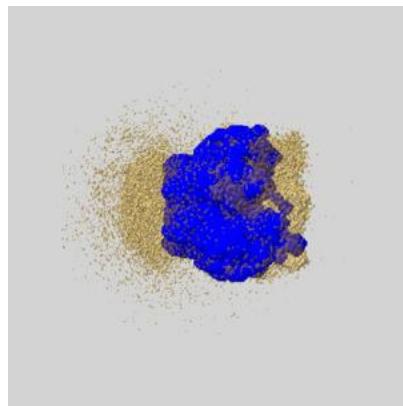
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

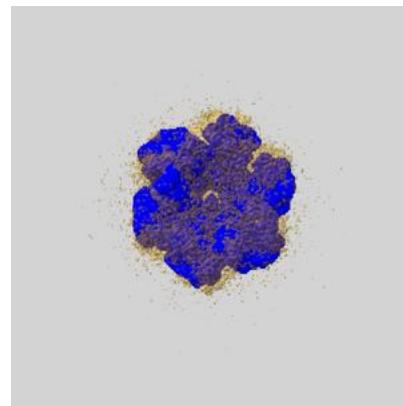
### 6.6.1 emd\_37528\_msk\_1.map [\(i\)](#)



X



Y

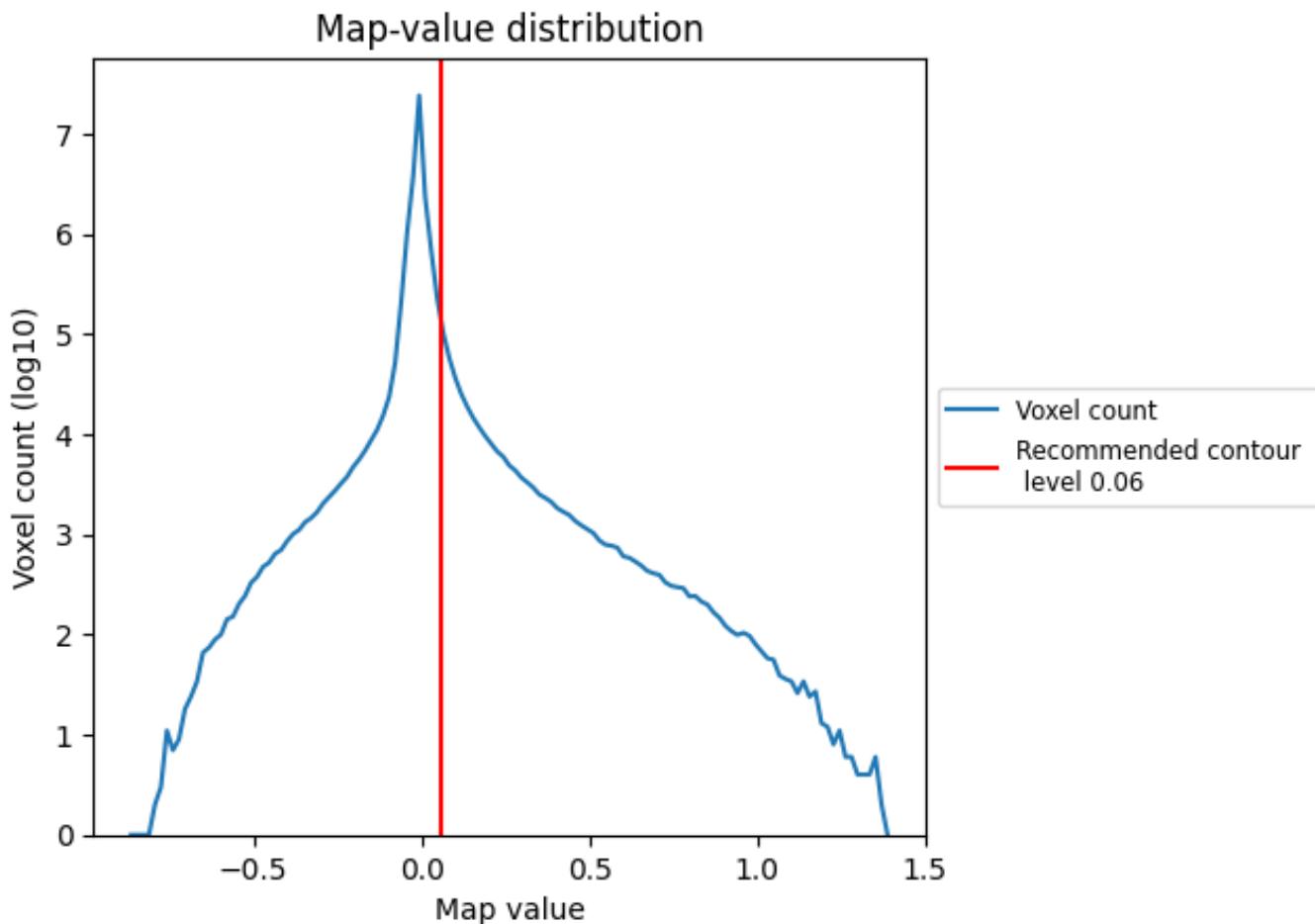


Z

## 7 Map analysis (i)

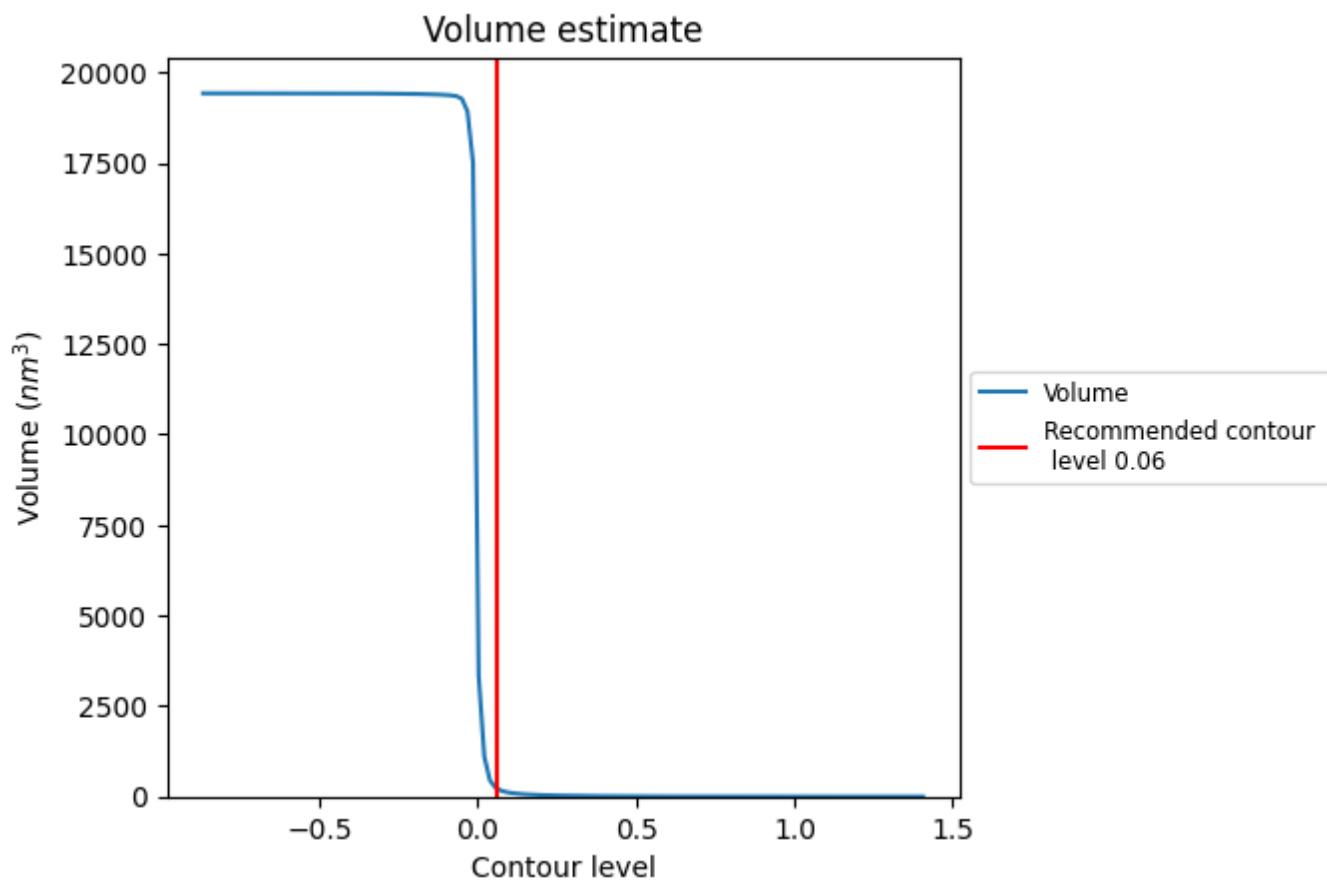
This section contains the results of statistical analysis of the map.

### 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.

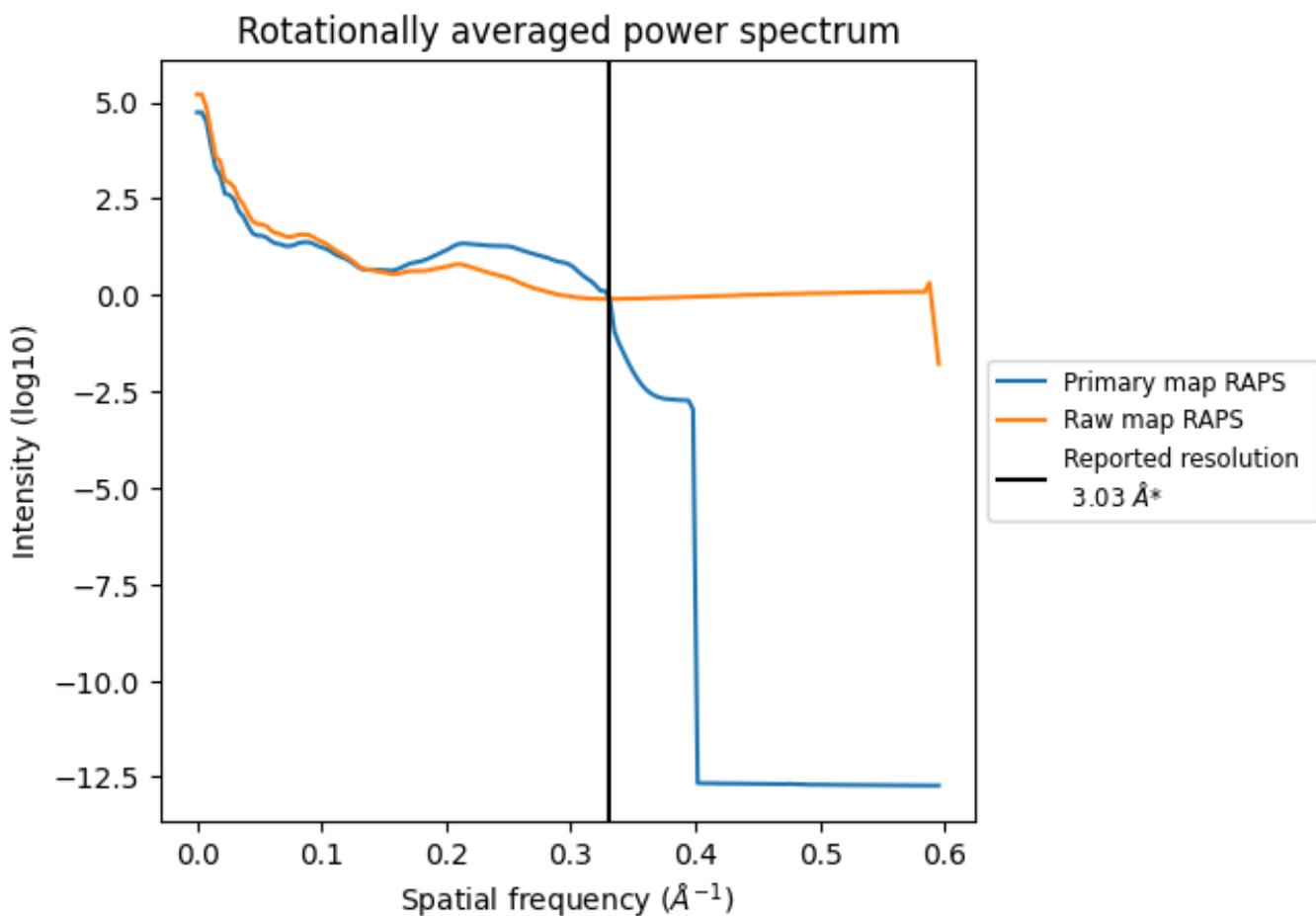
## 7.2 Volume estimate (i)



The volume at the recommended contour level is  $234 \text{ nm}^3$ ; this corresponds to an approximate mass of 211 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)

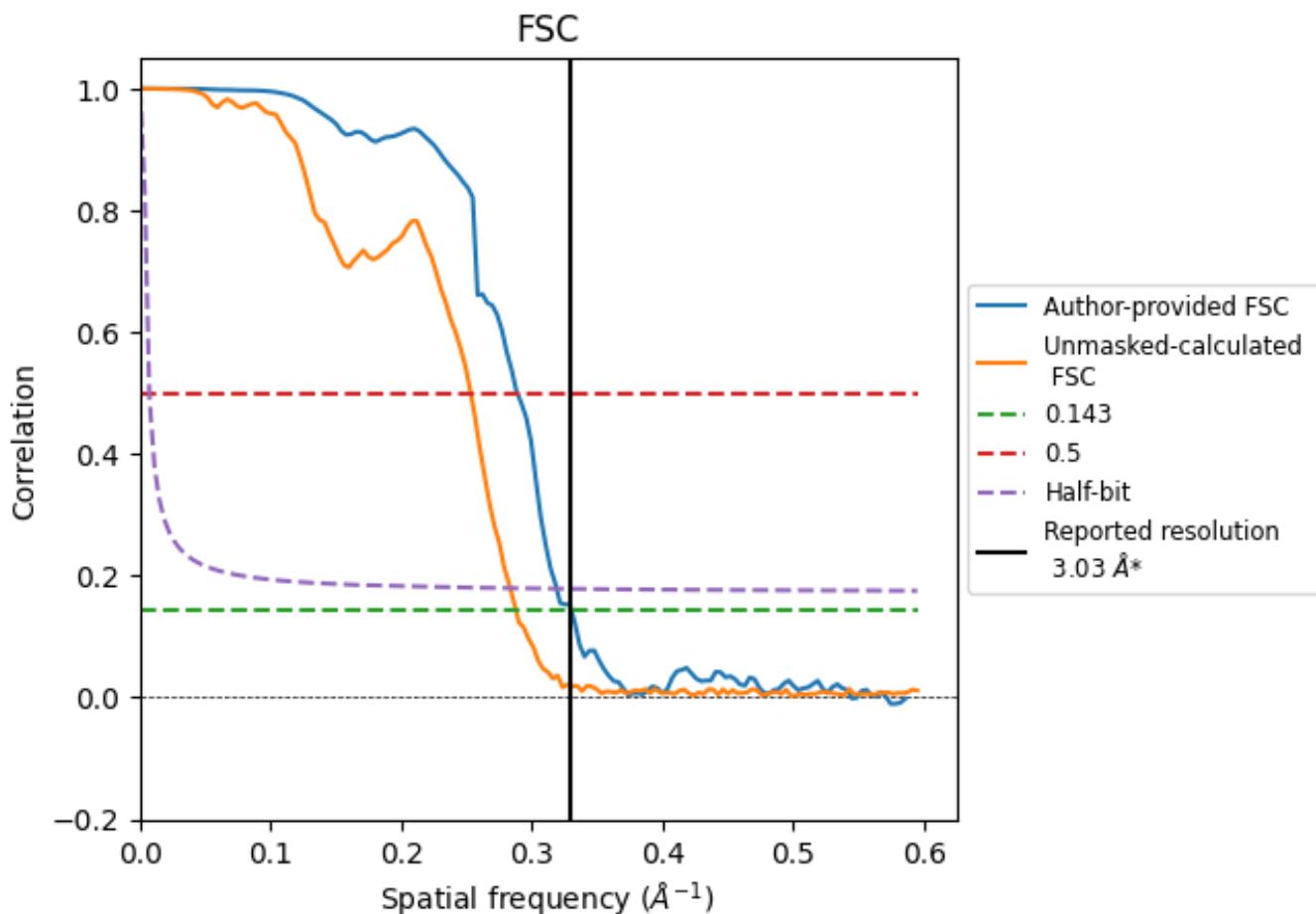


\*Reported resolution corresponds to spatial frequency of 0.330 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [\(i\)](#)

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

### 8.1 FSC [\(i\)](#)



\*Reported resolution corresponds to spatial frequency of 0.330  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [\(i\)](#)

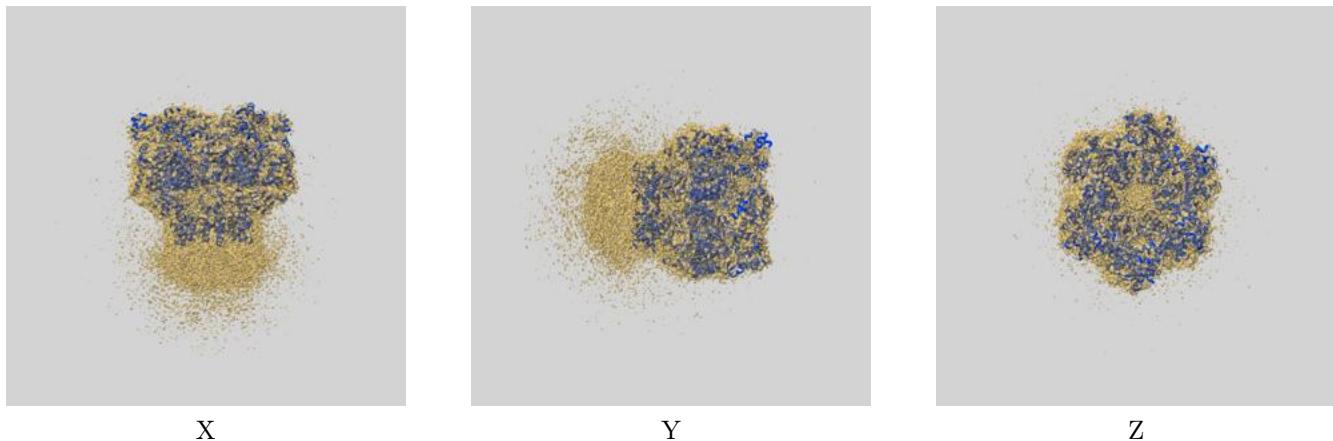
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.03	-	-
Author-provided FSC curve	3.03	3.46	3.13
Unmasked-calculated*	3.47	3.95	3.53

\*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 3.47 differs from the reported value 3.03 by more than 10 %

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

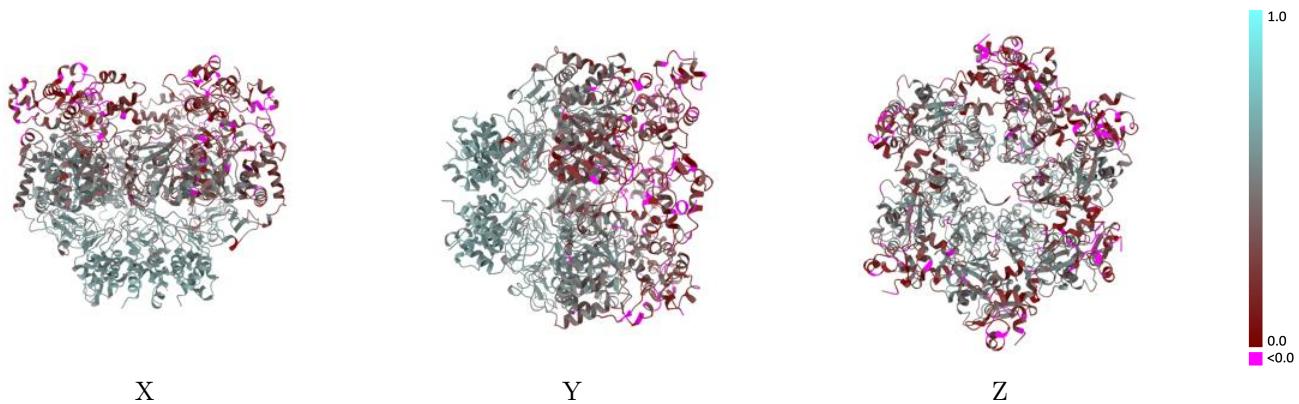
This section contains information regarding the fit between EMDB map EMD-37528 and PDB model 8WH4. Per-residue inclusion information can be found in section [3](#) on page [4](#).

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



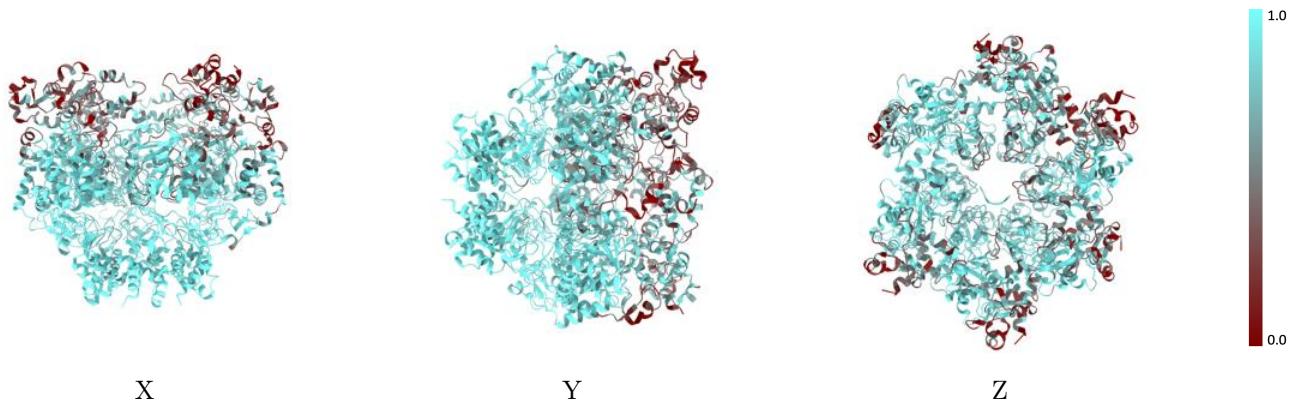
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



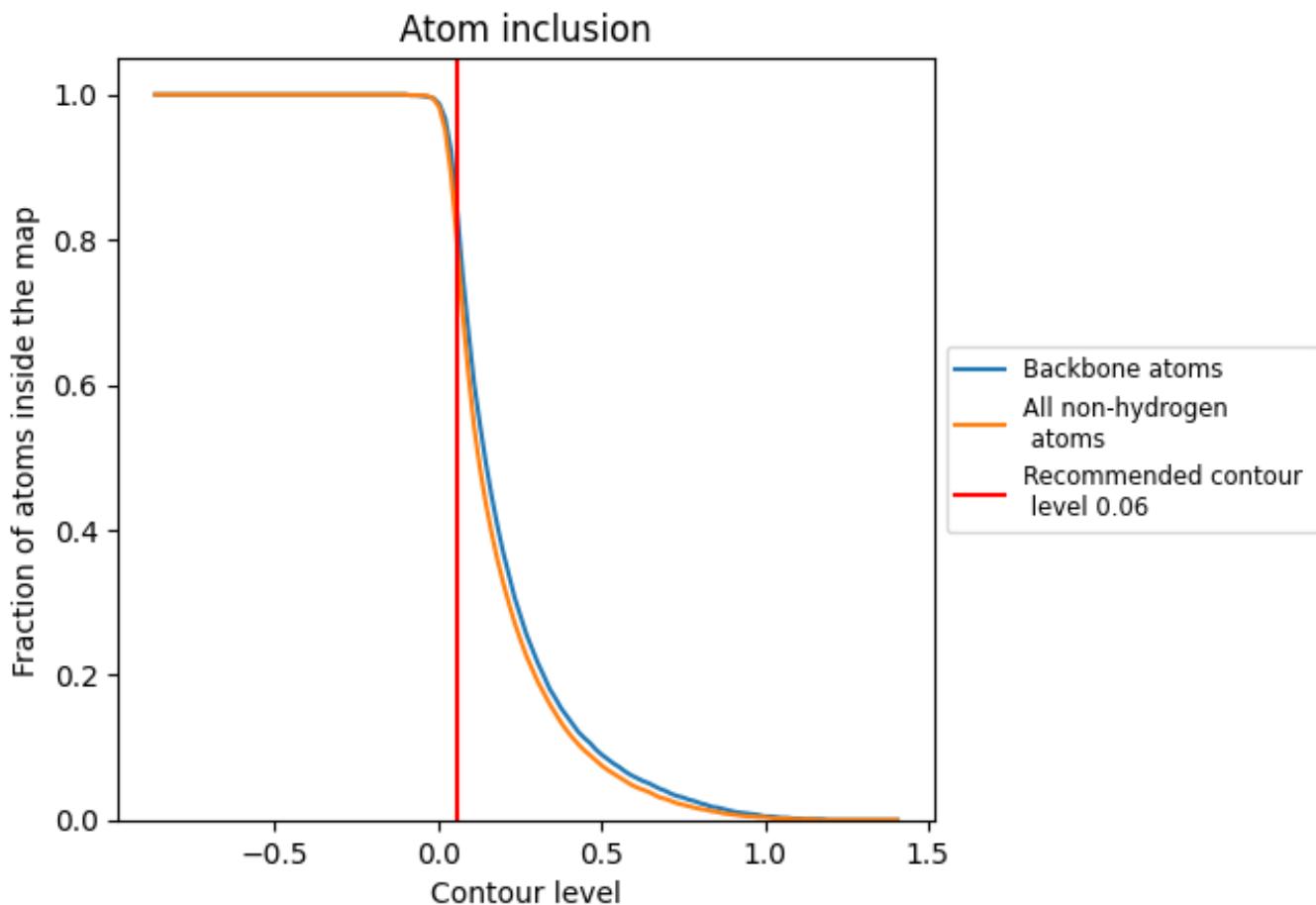
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.06).

## 9.4 Atom inclusion [\(i\)](#)



At the recommended contour level, 83% of all backbone atoms, 79% 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 (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7870	0.4040
A	0.7890	0.3990
B	0.8150	0.4530
C	0.8820	0.4630
D	0.7650	0.3670
E	0.6590	0.3140
F	0.8100	0.4300
T	0.9080	0.3940

