



wwPDB EM Validation Summary Report

May 20, 2023 – 09:27 am BST

PDB ID : 7ZNJ
EMDB ID : EMD-14803
Title : Structure of an ALYREF-exon junction complex hexamer
Authors : Pacheco-Fiallos, F.B.; Vorlaender, M.K.; Plaschka, C.
Deposited on : 2022-04-21
Resolution : 2.40 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:

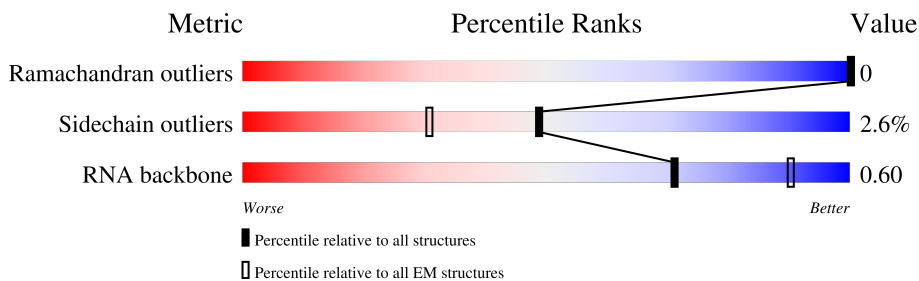
EMDB validation analysis : 0.0.1.dev50
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.32.2

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 2.40 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	382	
1	F	382	
1	K	382	
1	a	382	
1	f	382	
1	k	382	
2	B	146	
2	G	146	

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Mol	Chain	Length	Quality of chain
2	L	146	13% 98% ..
2	b	146	13% 98% ..
2	g	146	12% 97% ..
2	l	146	12% 97% ..
3	C	91	42% 99% .
3	H	91	41% 97% .
3	M	91	40% 98% .
3	c	91	42% 99% .
3	h	91	41% 97% .
3	m	91	41% 98% .
4	D	527	6% 16% . 83%
4	I	527	6% 16% . 83%
4	N	527	5% 17% . 83%
4	d	527	6% 16% . 83%
4	i	527	6% 16% . 83%
4	n	527	6% 16% . 83%
5	E	6	50% 100%
5	J	6	50% 100%
5	O	6	33% 100%
5	e	6	50% 100%
5	j	6	33% 100%
5	o	6	33% 100%

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 35088 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 Eukaryotic initiation factor 4A-III, N-terminally processed.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	382	3071	1939	537	577	18	0	0
1	a	382	3071	1939	537	577	18	0	0
1	F	382	3071	1939	537	577	18	0	0
1	f	382	3071	1939	537	577	18	0	0
1	K	382	3071	1939	537	577	18	0	0
1	k	382	3071	1939	537	577	18	0	0

- Molecule 2 is a protein called Protein mago nashi homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	144	1196	772	200	221	3	0	0
2	b	144	1196	772	200	221	3	0	0
2	G	144	1196	772	200	221	3	0	0
2	g	144	1196	772	200	221	3	0	0
2	L	144	1196	772	200	221	3	0	0
2	l	144	1196	772	200	221	3	0	0

- Molecule 3 is a protein called RNA-binding protein 8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	91	731	463	122	143	3	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	c	91	731	463	122	143	3	0	0
3	H	91	731	463	122	143	3	0	0
3	h	91	731	463	122	143	3	0	0
3	M	91	731	463	122	143	3	0	0
3	m	91	731	463	122	143	3	0	0

- Molecule 4 is a protein called Maltose/maltodextrin-binding periplasmic protein,THO complex subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	90	701	443	122	134	2	0	0
4	d	90	701	443	122	134	2	0	0
4	I	90	701	443	122	134	2	0	0
4	i	90	701	443	122	134	2	0	0
4	N	90	701	443	122	134	2	0	0
4	n	90	701	443	122	134	2	0	0

There are 198 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-344	MET	-	initiating methionine	UNP P0AEY0
D	-343	GLN	-	expression tag	UNP P0AEY0
D	-342	LEU	-	expression tag	UNP P0AEY0
D	-341	SER	-	expression tag	UNP P0AEY0
D	-340	HIS	-	expression tag	UNP P0AEY0
D	-339	HIS	-	expression tag	UNP P0AEY0
D	-338	HIS	-	expression tag	UNP P0AEY0
D	-337	HIS	-	expression tag	UNP P0AEY0
D	-336	HIS	-	expression tag	UNP P0AEY0
D	-335	HIS	-	expression tag	UNP P0AEY0
D	-334	HIS	-	expression tag	UNP P0AEY0

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-333	HIS	-	expression tag	UNP P0AEY0
D	-332	HIS	-	expression tag	UNP P0AEY0
D	-331	HIS	-	expression tag	UNP P0AEY0
D	-329	SER	ALA	conflict	UNP P0AEY0
D	-328	GLY	LEU	conflict	UNP P0AEY0
D	-327	MET	ALA	conflict	UNP P0AEY0
D	40	SER	-	linker	UNP P0AEY0
D	41	SER	-	linker	UNP P0AEY0
D	42	GLY	-	linker	UNP P0AEY0
D	43	LEU	-	linker	UNP P0AEY0
D	44	GLU	-	linker	UNP P0AEY0
D	45	VAL	-	linker	UNP P0AEY0
D	46	LEU	-	linker	UNP P0AEY0
D	47	PHE	-	linker	UNP P0AEY0
D	48	GLN	-	linker	UNP P0AEY0
D	49	GLY	-	linker	UNP P0AEY0
D	50	PRO	-	linker	UNP P0AEY0
D	51	GLY	-	linker	UNP P0AEY0
D	52	SER	-	linker	UNP P0AEY0
D	53	SER	-	linker	UNP P0AEY0
D	54	GLY	-	linker	UNP P0AEY0
D	55	ILE	-	linker	UNP P0AEY0
d	-344	MET	-	initiating methionine	UNP P0AEY0
d	-343	GLN	-	expression tag	UNP P0AEY0
d	-342	LEU	-	expression tag	UNP P0AEY0
d	-341	SER	-	expression tag	UNP P0AEY0
d	-340	HIS	-	expression tag	UNP P0AEY0
d	-339	HIS	-	expression tag	UNP P0AEY0
d	-338	HIS	-	expression tag	UNP P0AEY0
d	-337	HIS	-	expression tag	UNP P0AEY0
d	-336	HIS	-	expression tag	UNP P0AEY0
d	-335	HIS	-	expression tag	UNP P0AEY0
d	-334	HIS	-	expression tag	UNP P0AEY0
d	-333	HIS	-	expression tag	UNP P0AEY0
d	-332	HIS	-	expression tag	UNP P0AEY0
d	-331	HIS	-	expression tag	UNP P0AEY0
d	-329	SER	ALA	conflict	UNP P0AEY0
d	-328	GLY	LEU	conflict	UNP P0AEY0
d	-327	MET	ALA	conflict	UNP P0AEY0
d	40	SER	-	linker	UNP P0AEY0
d	41	SER	-	linker	UNP P0AEY0
d	42	GLY	-	linker	UNP P0AEY0

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Chain	Residue	Modelled	Actual	Comment	Reference
d	43	LEU	-	linker	UNP P0AEY0
d	44	GLU	-	linker	UNP P0AEY0
d	45	VAL	-	linker	UNP P0AEY0
d	46	LEU	-	linker	UNP P0AEY0
d	47	PHE	-	linker	UNP P0AEY0
d	48	GLN	-	linker	UNP P0AEY0
d	49	GLY	-	linker	UNP P0AEY0
d	50	PRO	-	linker	UNP P0AEY0
d	51	GLY	-	linker	UNP P0AEY0
d	52	SER	-	linker	UNP P0AEY0
d	53	SER	-	linker	UNP P0AEY0
d	54	GLY	-	linker	UNP P0AEY0
d	55	ILE	-	linker	UNP P0AEY0
I	-344	MET	-	initiating methionine	UNP P0AEY0
I	-343	GLN	-	expression tag	UNP P0AEY0
I	-342	LEU	-	expression tag	UNP P0AEY0
I	-341	SER	-	expression tag	UNP P0AEY0
I	-340	HIS	-	expression tag	UNP P0AEY0
I	-339	HIS	-	expression tag	UNP P0AEY0
I	-338	HIS	-	expression tag	UNP P0AEY0
I	-337	HIS	-	expression tag	UNP P0AEY0
I	-336	HIS	-	expression tag	UNP P0AEY0
I	-335	HIS	-	expression tag	UNP P0AEY0
I	-334	HIS	-	expression tag	UNP P0AEY0
I	-333	HIS	-	expression tag	UNP P0AEY0
I	-332	HIS	-	expression tag	UNP P0AEY0
I	-331	HIS	-	expression tag	UNP P0AEY0
I	-329	SER	ALA	conflict	UNP P0AEY0
I	-328	GLY	LEU	conflict	UNP P0AEY0
I	-327	MET	ALA	conflict	UNP P0AEY0
I	40	SER	-	linker	UNP P0AEY0
I	41	SER	-	linker	UNP P0AEY0
I	42	GLY	-	linker	UNP P0AEY0
I	43	LEU	-	linker	UNP P0AEY0
I	44	GLU	-	linker	UNP P0AEY0
I	45	VAL	-	linker	UNP P0AEY0
I	46	LEU	-	linker	UNP P0AEY0
I	47	PHE	-	linker	UNP P0AEY0
I	48	GLN	-	linker	UNP P0AEY0
I	49	GLY	-	linker	UNP P0AEY0
I	50	PRO	-	linker	UNP P0AEY0
I	51	GLY	-	linker	UNP P0AEY0

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Chain	Residue	Modelled	Actual	Comment	Reference
I	52	SER	-	linker	UNP P0AEY0
I	53	SER	-	linker	UNP P0AEY0
I	54	GLY	-	linker	UNP P0AEY0
I	55	ILE	-	linker	UNP P0AEY0
i	-344	MET	-	initiating methionine	UNP P0AEY0
i	-343	GLN	-	expression tag	UNP P0AEY0
i	-342	LEU	-	expression tag	UNP P0AEY0
i	-341	SER	-	expression tag	UNP P0AEY0
i	-340	HIS	-	expression tag	UNP P0AEY0
i	-339	HIS	-	expression tag	UNP P0AEY0
i	-338	HIS	-	expression tag	UNP P0AEY0
i	-337	HIS	-	expression tag	UNP P0AEY0
i	-336	HIS	-	expression tag	UNP P0AEY0
i	-335	HIS	-	expression tag	UNP P0AEY0
i	-334	HIS	-	expression tag	UNP P0AEY0
i	-333	HIS	-	expression tag	UNP P0AEY0
i	-332	HIS	-	expression tag	UNP P0AEY0
i	-331	HIS	-	expression tag	UNP P0AEY0
i	-329	SER	ALA	conflict	UNP P0AEY0
i	-328	GLY	LEU	conflict	UNP P0AEY0
i	-327	MET	ALA	conflict	UNP P0AEY0
i	40	SER	-	linker	UNP P0AEY0
i	41	SER	-	linker	UNP P0AEY0
i	42	GLY	-	linker	UNP P0AEY0
i	43	LEU	-	linker	UNP P0AEY0
i	44	GLU	-	linker	UNP P0AEY0
i	45	VAL	-	linker	UNP P0AEY0
i	46	LEU	-	linker	UNP P0AEY0
i	47	PHE	-	linker	UNP P0AEY0
i	48	GLN	-	linker	UNP P0AEY0
i	49	GLY	-	linker	UNP P0AEY0
i	50	PRO	-	linker	UNP P0AEY0
i	51	GLY	-	linker	UNP P0AEY0
i	52	SER	-	linker	UNP P0AEY0
i	53	SER	-	linker	UNP P0AEY0
i	54	GLY	-	linker	UNP P0AEY0
i	55	ILE	-	linker	UNP P0AEY0
N	-344	MET	-	initiating methionine	UNP P0AEY0
N	-343	GLN	-	expression tag	UNP P0AEY0
N	-342	LEU	-	expression tag	UNP P0AEY0
N	-341	SER	-	expression tag	UNP P0AEY0
N	-340	HIS	-	expression tag	UNP P0AEY0

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Chain	Residue	Modelled	Actual	Comment	Reference
N	-339	HIS	-	expression tag	UNP P0AEY0
N	-338	HIS	-	expression tag	UNP P0AEY0
N	-337	HIS	-	expression tag	UNP P0AEY0
N	-336	HIS	-	expression tag	UNP P0AEY0
N	-335	HIS	-	expression tag	UNP P0AEY0
N	-334	HIS	-	expression tag	UNP P0AEY0
N	-333	HIS	-	expression tag	UNP P0AEY0
N	-332	HIS	-	expression tag	UNP P0AEY0
N	-331	HIS	-	expression tag	UNP P0AEY0
N	-329	SER	ALA	conflict	UNP P0AEY0
N	-328	GLY	LEU	conflict	UNP P0AEY0
N	-327	MET	ALA	conflict	UNP P0AEY0
N	40	SER	-	linker	UNP P0AEY0
N	41	SER	-	linker	UNP P0AEY0
N	42	GLY	-	linker	UNP P0AEY0
N	43	LEU	-	linker	UNP P0AEY0
N	44	GLU	-	linker	UNP P0AEY0
N	45	VAL	-	linker	UNP P0AEY0
N	46	LEU	-	linker	UNP P0AEY0
N	47	PHE	-	linker	UNP P0AEY0
N	48	GLN	-	linker	UNP P0AEY0
N	49	GLY	-	linker	UNP P0AEY0
N	50	PRO	-	linker	UNP P0AEY0
N	51	GLY	-	linker	UNP P0AEY0
N	52	SER	-	linker	UNP P0AEY0
N	53	SER	-	linker	UNP P0AEY0
N	54	GLY	-	linker	UNP P0AEY0
N	55	ILE	-	linker	UNP P0AEY0
n	-344	MET	-	initiating methionine	UNP P0AEY0
n	-343	GLN	-	expression tag	UNP P0AEY0
n	-342	LEU	-	expression tag	UNP P0AEY0
n	-341	SER	-	expression tag	UNP P0AEY0
n	-340	HIS	-	expression tag	UNP P0AEY0
n	-339	HIS	-	expression tag	UNP P0AEY0
n	-338	HIS	-	expression tag	UNP P0AEY0
n	-337	HIS	-	expression tag	UNP P0AEY0
n	-336	HIS	-	expression tag	UNP P0AEY0
n	-335	HIS	-	expression tag	UNP P0AEY0
n	-334	HIS	-	expression tag	UNP P0AEY0
n	-333	HIS	-	expression tag	UNP P0AEY0
n	-332	HIS	-	expression tag	UNP P0AEY0
n	-331	HIS	-	expression tag	UNP P0AEY0

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Chain	Residue	Modelled	Actual	Comment	Reference
n	-329	SER	ALA	conflict	UNP P0AEY0
n	-328	GLY	LEU	conflict	UNP P0AEY0
n	-327	MET	ALA	conflict	UNP P0AEY0
n	40	SER	-	linker	UNP P0AEY0
n	41	SER	-	linker	UNP P0AEY0
n	42	GLY	-	linker	UNP P0AEY0
n	43	LEU	-	linker	UNP P0AEY0
n	44	GLU	-	linker	UNP P0AEY0
n	45	VAL	-	linker	UNP P0AEY0
n	46	LEU	-	linker	UNP P0AEY0
n	47	PHE	-	linker	UNP P0AEY0
n	48	GLN	-	linker	UNP P0AEY0
n	49	GLY	-	linker	UNP P0AEY0
n	50	PRO	-	linker	UNP P0AEY0
n	51	GLY	-	linker	UNP P0AEY0
n	52	SER	-	linker	UNP P0AEY0
n	53	SER	-	linker	UNP P0AEY0
n	54	GLY	-	linker	UNP P0AEY0
n	55	ILE	-	linker	UNP P0AEY0

- Molecule 5 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	6	Total	C	N	O	P	0	0
			117	54	12	46	5		
5	e	6	Total	C	N	O	P	0	0
			117	54	12	46	5		
5	J	6	Total	C	N	O	P	0	0
			117	54	12	46	5		
5	j	6	Total	C	N	O	P	0	0
			117	54	12	46	5		
5	O	6	Total	C	N	O	P	0	0
			117	54	12	46	5		
5	o	6	Total	C	N	O	P	0	0
			117	54	12	46	5		

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

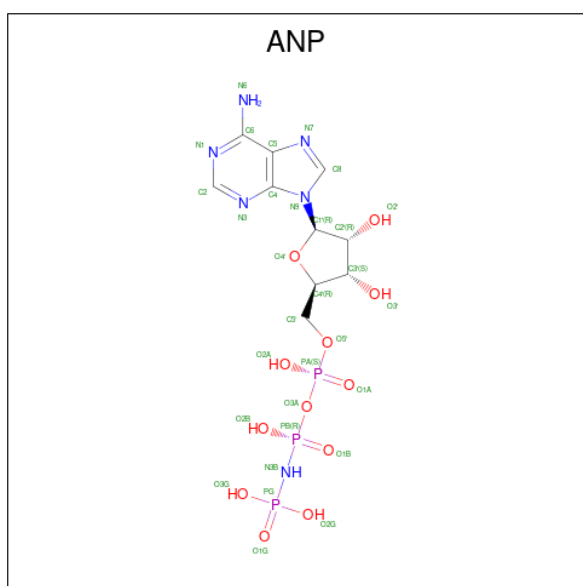
Mol	Chain	Residues	Atoms		AltConf
6	A	1	Total	Mg	0
			1	1	
6	a	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
6	F	1	Total	Mg	0
			1	1	
6	f	1	Total	Mg	0
			1	1	
6	K	1	Total	Mg	0
			1	1	
6	k	1	Total	Mg	0
			1	1	

- Molecule 7 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (three-letter code: ANP) (formula: C₁₀H₁₇N₆O₁₂P₃).

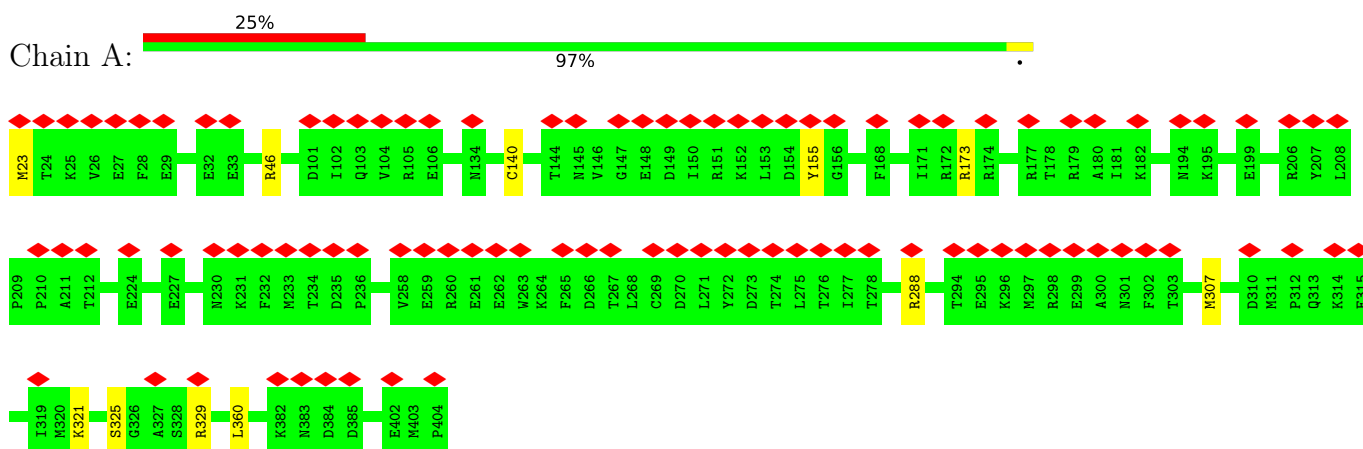


Mol	Chain	Residues	Atoms					AltConf
7	A	1	Total	C	N	O	P	0
			31	10	6	12	3	
7	a	1	Total	C	N	O	P	0
			31	10	6	12	3	
7	F	1	Total	C	N	O	P	0
			31	10	6	12	3	
7	f	1	Total	C	N	O	P	0
			31	10	6	12	3	
7	K	1	Total	C	N	O	P	0
			31	10	6	12	3	
7	k	1	Total	C	N	O	P	0
			31	10	6	12	3	

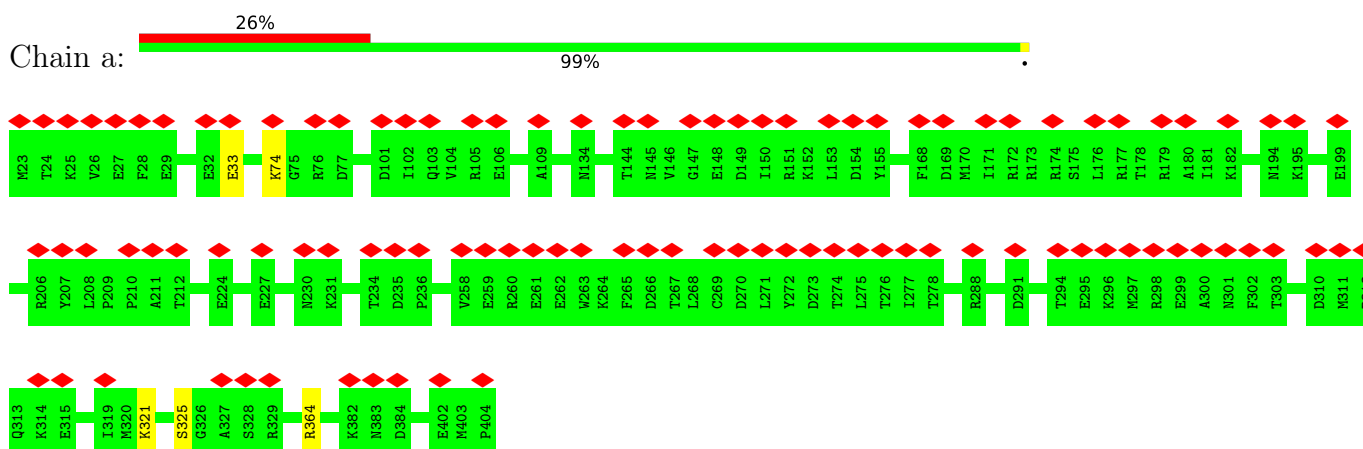
3 Residue-property plots [i](#)

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.

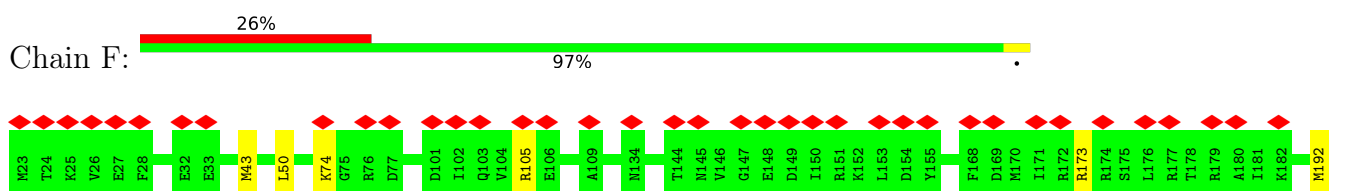
- Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed

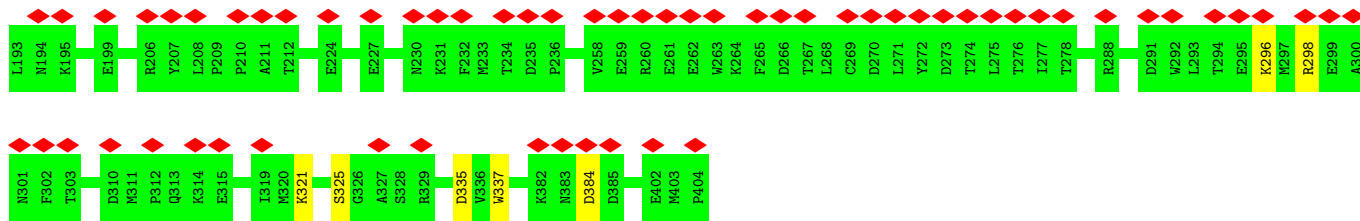


- Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed



- Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed

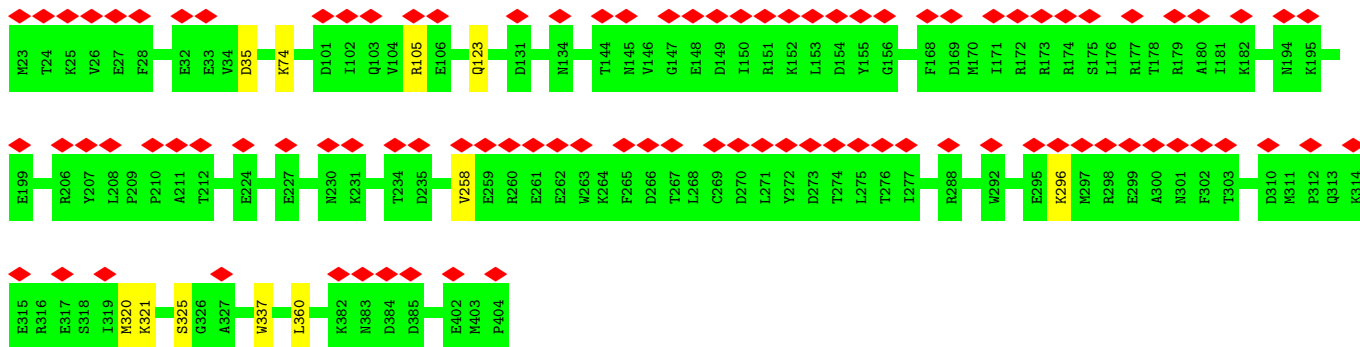




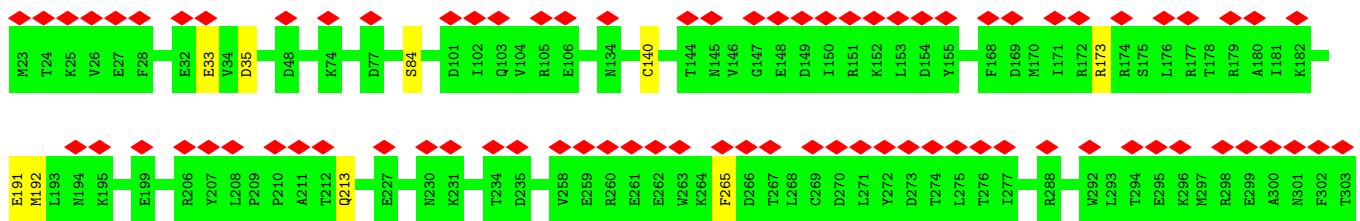
• Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed

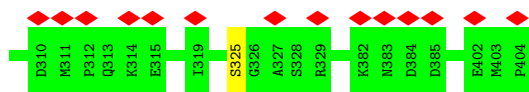


• Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed

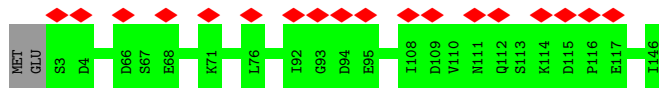


• Molecule 1: Eukaryotic initiation factor 4A-III, N-terminally processed

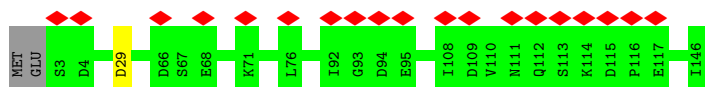




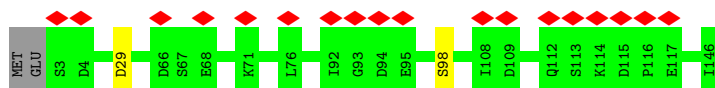
- Molecule 2: Protein mago nashi homolog



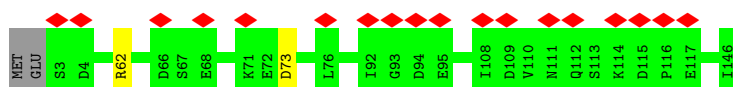
- Molecule 2: Protein mago nashi homolog



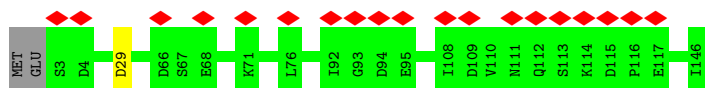
- Molecule 2: Protein mago nashi homolog



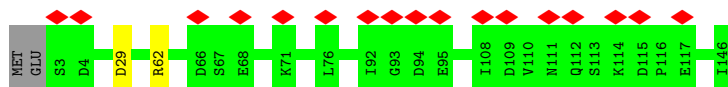
- Molecule 2: Protein mago nashi homolog



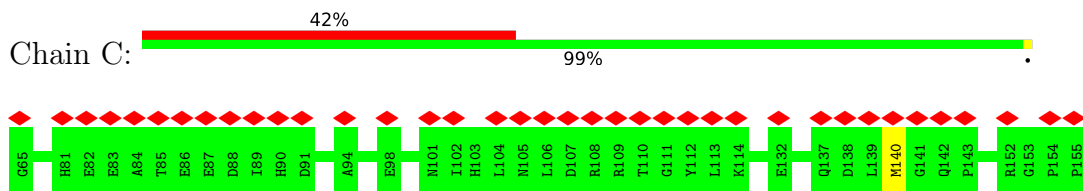
- Molecule 2: Protein mago nashi homolog



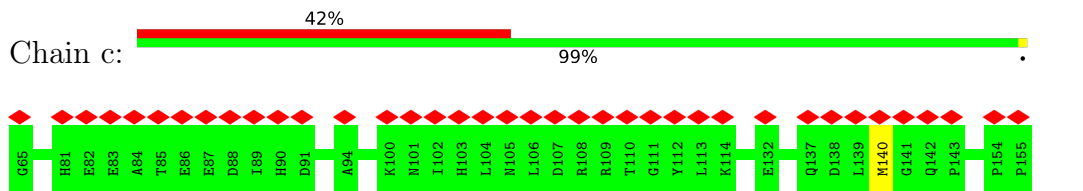
- Molecule 2: Protein mago nashi homolog



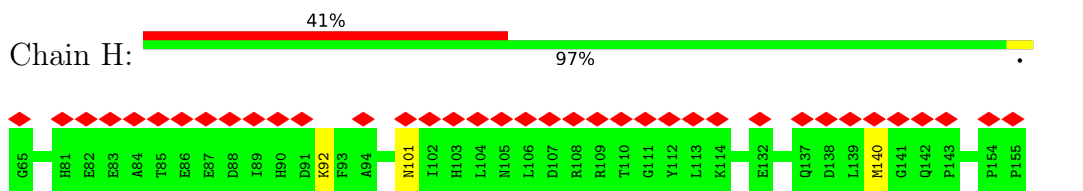
- Molecule 3: RNA-binding protein 8A



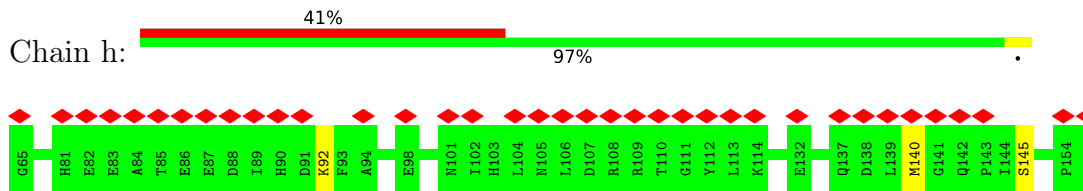
• Molecule 3: RNA-binding protein 8A



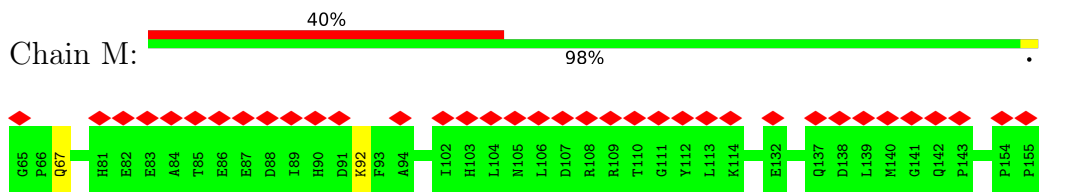
• Molecule 3: RNA-binding protein 8A



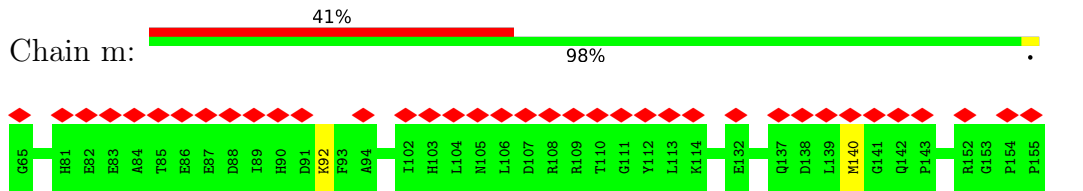
• Molecule 3: RNA-binding protein 8A



• Molecule 3: RNA-binding protein 8A



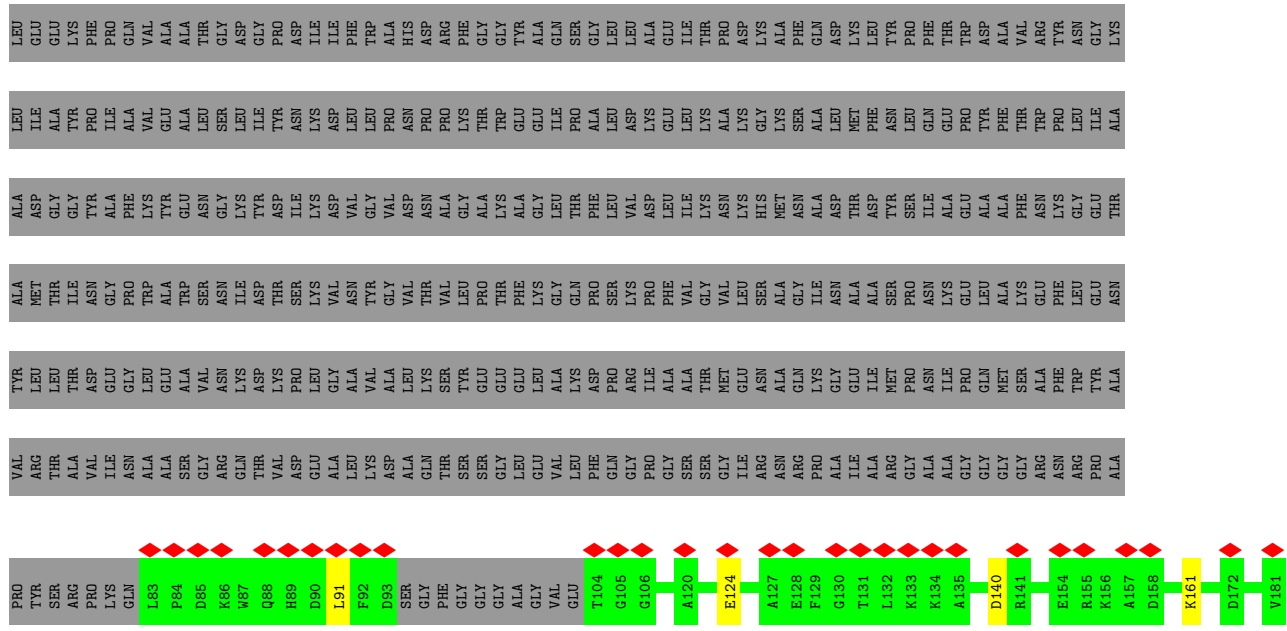
• Molecule 3: RNA-binding protein 8A



• Molecule 4: Maltose/maltodextrin-binding periplasmic protein, THO complex subunit 4

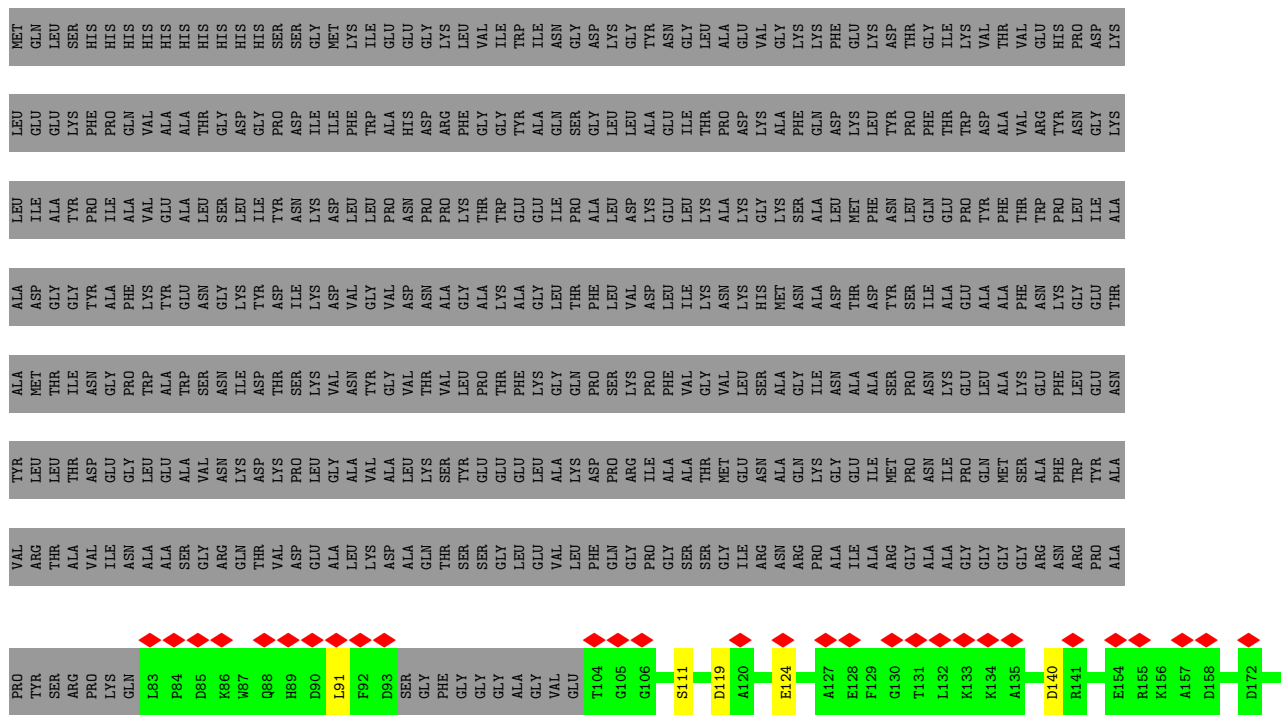


MET	GLN	LEU	SER	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	SER	SER	GLY	MET	LYS	ILE	GLU	GLU	GLY	GLY	LYS	LEU	VAL	ILE	TRP	ILE	ASN	GLY	ASP	LYS	GLY	TYR	ASN	GLY	LEU	ALA	GLU	VAL	GLY	LYS	LYS	PHE	GLU	LYS	ASP	THR	GLY	ILE	LYS	VAL	THR	VAL	GLU	HIS	PRO	ASP	LYS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----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

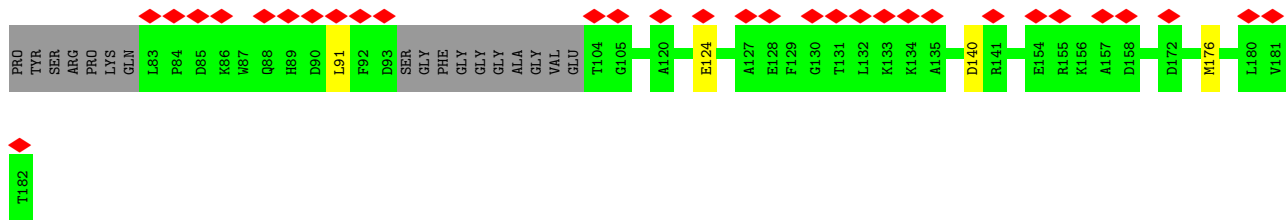


◆
T182

● Molecule 4: Maltose/maltodextrin-binding periplasmic protein, THO complex subunit 4



◆ ◆
V181
T182



• Molecule 4: Maltose/maltodextrin-binding periplasmic protein,THO complex subunit 4

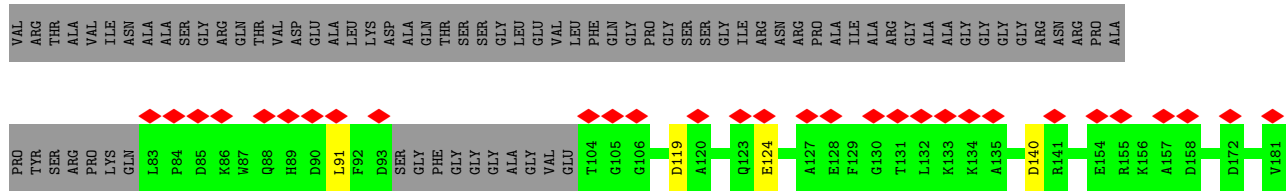


MET	GLN	SER	ARG	PRO	LYS	GLN	L83	P84	D85	K86	W87	Q88	H89	D90	L91	F92	D93	SER	GLY	PHE	GLY	GLY	GLY	ALA	VAL	T104	G105	A120	E124	A127	E128	F129	G130	T131	L132	K133	K134	A135	D140	R141	E154	R155	K156	A157	D158	D172	M176	L180	V181							
LEU	GLU	GLY	ILE	THR	ASP	PRO	GLN	VAL	ALA	THR	GLY	ASP	PRO	SER	ILE	MET	TRP	ILE	GLU	GLY	LEU	VAL	TRP	ILE	GLY	ILE	GLN	ASN	GLY	LEU	ALA	ASP	LYS	VAL	GLY	ASP	TYR	ASP	LEU	TRP	TRP	VAL	THR	VAL	ARG	GLU	HIS	PRO	ASP	GLY	LEU	LYS				
LEU	ILE	ALA	TYR	PRO	ILE	ALA	VAL	VAL	ALA	THR	SER	LEU	ILE	TYR	ASN	ASP	LEU	PRO	ALA	ASN	VAL	THR	TRP	THR	ALA	ILE	GLN	ASN	GLY	LEU	ALA	ASP	LYS	VAL	GLY	ASP	LEU	TRP	TRP	VAL	THR	VAL	ARG	GLU	HIS	PRO	ASP	GLY	LEU	LYS						
ALA	ASP	GLY	TYR	ALA	PHE	LYS	TYR	THR	ASP	ASN	VAL	ASP	VAL	TYR	THR	ASP	GLY	VAL	VAL	VAL	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
ALA	MET	THR	ILE	ASN	GLY	PRO	TRP	TRP	ALA	TRP	SER	ASN	ILE	ASP	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
TYR	LEU	THR	THR	ASP	GLY	GLY	LEU	GLU	ALA	VAL	ASN	LYS	ASP	PRO	LYS	GLY	ALA	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	
VAL	ARG	THR	ALA	VAL	ILE	ASN	ALA	ALA	SER	GLY	ARG	GLN	THR	VAL	THR	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR

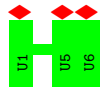
• Molecule 4: Maltose/maltodextrin-binding periplasmic protein,THO complex subunit 4



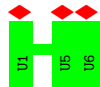
MET	GLN	SER	ARG	PRO	LYS	GLN	L83	P84	D85	K86	W87	Q88	H89	D90	L91	F92	D93	SER	GLY	PHE	GLY	GLY	GLY	ALA	VAL	T104	G105	S111	D119	A120	Q123	E124	A127	E128	F129	G130	T131	L132	K133	K134	A135	D140	R141	E154	R155	K156	A157	D172	V181	T182								
LEU	GLU	GLY	ILE	THR	ASP	PRO	GLN	VAL	ALA	THR	GLY	ASP	PRO	SER	ILE	MET	TRP	ILE	GLU	GLY	LEU	VAL	TRP	ILE	GLY	ILE	GLN	ASN	GLY	LEU	ALA	ASP	LYS	VAL	GLY	ASP	LEU	TRP	TRP	VAL	THR	VAL	ARG	GLU	HIS	PRO	ASP	GLY	LEU	LYS								
LEU	ILE	ALA	TYR	PRO	ILE	ALA	VAL	VAL	ALA	THR	SER	LEU	ILE	TYR	ASN	ASP	LEU	PRO	ALA	ASN	VAL	THR	TRP	THR	ALA	ILE	GLN	ASN	GLY	LEU	ALA	ASP	LYS	VAL	GLY	ASP	LEU	TRP	TRP	VAL	THR	VAL	ARG	GLU	HIS	PRO	ASP	GLY	LEU	LYS								
ALA	ASP	GLY	TYR	ALA	PHE	LYS	TYR	THR	ASP	ASN	VAL	ASP	VAL	TYR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
ALA	MET	THR	ILE	ASN	GLY	PRO	TRP	TRP	ALA	TRP	SER	ASN	ILE	ASP	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
TYR	LEU	THR	THR	ASP	GLY	GLY	LEU	GLU	ALA	VAL	ASN	LYS	ASP	PRO	LYS	GLY	ALA	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL



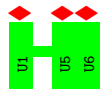
• Molecule 5: RNA



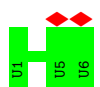
• Molecule 5: RNA



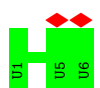
• Molecule 5: RNA



• Molecule 5: RNA



• Molecule 5: RNA



• Molecule 5: RNA





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D3	Depositor
Number of particles used	1564602	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.556	Depositor
Minimum map value	-2.617	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.079	Depositor
Recommended contour level	0.5	Depositor
Map size (Å)	302.4, 302.4, 302.4	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.945, 0.945, 0.945	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.27	0/3120	0.59	1/4209 (0.0%)
1	F	0.27	0/3120	0.60	1/4209 (0.0%)
1	K	0.26	0/3120	0.57	1/4209 (0.0%)
1	a	0.26	0/3120	0.59	0/4209
1	f	0.25	0/3120	0.58	0/4209
1	k	0.26	0/3120	0.58	1/4209 (0.0%)
2	B	0.26	0/1225	0.50	0/1648
2	G	0.26	0/1225	0.50	0/1648
2	L	0.27	0/1225	0.53	0/1648
2	b	0.26	0/1225	0.49	0/1648
2	g	0.26	0/1225	0.50	0/1648
2	l	0.26	0/1225	0.52	0/1648
3	C	0.25	0/749	0.52	0/1013
3	H	0.25	0/749	0.51	0/1013
3	M	0.25	0/749	0.51	0/1013
3	c	0.25	0/749	0.52	0/1013
3	h	0.25	0/749	0.51	0/1013
3	m	0.25	0/749	0.52	0/1013
4	D	0.29	0/714	0.66	3/961 (0.3%)
4	I	0.27	0/714	0.59	1/961 (0.1%)
4	N	0.27	0/714	0.52	0/961
4	d	0.26	0/714	0.57	1/961 (0.1%)
4	i	0.27	0/714	0.59	1/961 (0.1%)
4	n	0.26	0/714	0.54	1/961 (0.1%)
5	E	0.15	0/128	0.76	0/196
5	J	0.14	0/128	0.75	0/196
5	O	0.15	0/128	0.75	0/196
5	e	0.15	0/128	0.76	0/196
5	j	0.15	0/128	0.76	0/196
5	o	0.15	0/128	0.76	0/196
All	All	0.26	0/35616	0.57	11/48162 (0.0%)

There are no bond length outliers.

The worst 5 of 11 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	91	LEU	CA-CB-CG	9.52	137.20	115.30
4	I	91	LEU	CA-CB-CG	9.12	136.28	115.30
4	d	91	LEU	CA-CB-CG	8.66	135.22	115.30
4	i	91	LEU	CA-CB-CG	6.91	131.20	115.30
4	n	91	LEU	CA-CB-CG	6.73	130.77	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	380/382 (100%)	375 (99%)	5 (1%)	0	100	100
1	F	380/382 (100%)	376 (99%)	4 (1%)	0	100	100
1	K	380/382 (100%)	377 (99%)	3 (1%)	0	100	100
1	a	380/382 (100%)	377 (99%)	3 (1%)	0	100	100
1	f	380/382 (100%)	376 (99%)	4 (1%)	0	100	100
1	k	380/382 (100%)	377 (99%)	3 (1%)	0	100	100
2	B	142/146 (97%)	140 (99%)	2 (1%)	0	100	100
2	G	142/146 (97%)	139 (98%)	3 (2%)	0	100	100
2	L	142/146 (97%)	140 (99%)	2 (1%)	0	100	100
2	b	142/146 (97%)	138 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	g	142/146 (97%)	137 (96%)	5 (4%)	0	100	100
2	l	142/146 (97%)	140 (99%)	2 (1%)	0	100	100
3	C	89/91 (98%)	88 (99%)	1 (1%)	0	100	100
3	H	89/91 (98%)	88 (99%)	1 (1%)	0	100	100
3	M	89/91 (98%)	88 (99%)	1 (1%)	0	100	100
3	c	89/91 (98%)	88 (99%)	1 (1%)	0	100	100
3	h	89/91 (98%)	89 (100%)	0	0	100	100
3	m	89/91 (98%)	89 (100%)	0	0	100	100
4	D	86/527 (16%)	85 (99%)	1 (1%)	0	100	100
4	I	86/527 (16%)	86 (100%)	0	0	100	100
4	N	86/527 (16%)	86 (100%)	0	0	100	100
4	d	86/527 (16%)	86 (100%)	0	0	100	100
4	i	86/527 (16%)	86 (100%)	0	0	100	100
4	n	86/527 (16%)	86 (100%)	0	0	100	100
All	All	4182/6876 (61%)	4137 (99%)	45 (1%)	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	338/338 (100%)	328 (97%)	10 (3%)	41	61
1	F	338/338 (100%)	326 (96%)	12 (4%)	35	54
1	K	338/338 (100%)	328 (97%)	10 (3%)	41	61
1	a	338/338 (100%)	333 (98%)	5 (2%)	65	80
1	f	338/338 (100%)	326 (96%)	12 (4%)	35	54
1	k	338/338 (100%)	329 (97%)	9 (3%)	44	65
2	B	132/134 (98%)	132 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	G	132/134 (98%)	130 (98%)	2 (2%)	65	80
2	L	132/134 (98%)	131 (99%)	1 (1%)	81	91
2	b	132/134 (98%)	131 (99%)	1 (1%)	81	91
2	g	132/134 (98%)	130 (98%)	2 (2%)	65	80
2	l	132/134 (98%)	130 (98%)	2 (2%)	65	80
3	C	76/76 (100%)	75 (99%)	1 (1%)	69	84
3	H	76/76 (100%)	73 (96%)	3 (4%)	32	50
3	M	76/76 (100%)	74 (97%)	2 (3%)	46	66
3	c	76/76 (100%)	75 (99%)	1 (1%)	69	84
3	h	76/76 (100%)	73 (96%)	3 (4%)	32	50
3	m	76/76 (100%)	74 (97%)	2 (3%)	46	66
4	D	73/417 (18%)	71 (97%)	2 (3%)	44	65
4	I	73/417 (18%)	69 (94%)	4 (6%)	21	35
4	N	73/417 (18%)	70 (96%)	3 (4%)	30	48
4	d	73/417 (18%)	69 (94%)	4 (6%)	21	35
4	i	73/417 (18%)	70 (96%)	3 (4%)	30	48
4	n	73/417 (18%)	70 (96%)	3 (4%)	30	48
All	All	3714/5790 (64%)	3617 (97%)	97 (3%)	49	66

5 of 97 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	g	62	ARG
1	K	320	MET
3	h	92	LYS
1	K	35	ASP
2	L	29	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	a	213	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	E	5/6 (83%)	0	0
5	J	5/6 (83%)	0	0
5	O	5/6 (83%)	0	0
5	e	5/6 (83%)	0	0
5	j	5/6 (83%)	0	0
5	o	5/6 (83%)	0	0
All	All	30/36 (83%)	0	0

There are no RNA backbone outliers to report.

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 for Mogul analysis.

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	$\# Z > 2$
7	ANP	f	502	6	29,33,33	1.08	4 (13%)	31,52,52	1.00	2 (6%)
7	ANP	A	502	6	29,33,33	1.08	4 (13%)	31,52,52	1.02	2 (6%)
7	ANP	a	502	6	29,33,33	1.08	4 (13%)	31,52,52	1.00	2 (6%)
7	ANP	K	502	6	29,33,33	1.09	4 (13%)	31,52,52	1.01	2 (6%)
7	ANP	F	502	6	29,33,33	1.10	4 (13%)	31,52,52	1.00	2 (6%)
7	ANP	k	502	6	29,33,33	1.07	4 (13%)	31,52,52	1.02	2 (6%)

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
7	ANP	f	502	6	-	3/14/38/38	0/3/3/3
7	ANP	A	502	6	-	3/14/38/38	0/3/3/3
7	ANP	a	502	6	-	3/14/38/38	0/3/3/3
7	ANP	K	502	6	-	3/14/38/38	0/3/3/3
7	ANP	F	502	6	-	3/14/38/38	0/3/3/3
7	ANP	k	502	6	-	3/14/38/38	0/3/3/3

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	a	502	ANP	PB-O3A	-2.57	1.55	1.59
7	F	502	ANP	PB-O3A	-2.55	1.55	1.59
7	K	502	ANP	PB-O3A	-2.52	1.55	1.59
7	F	502	ANP	PG-N3B	2.49	1.69	1.63
7	f	502	ANP	PB-O3A	-2.48	1.55	1.59

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	k	502	ANP	PB-O3A-PA	-3.36	120.79	132.62
7	A	502	ANP	PB-O3A-PA	-3.28	121.06	132.62
7	K	502	ANP	PB-O3A-PA	-3.28	121.08	132.62
7	a	502	ANP	PB-O3A-PA	-3.26	121.14	132.62
7	F	502	ANP	PB-O3A-PA	-3.20	121.34	132.62

There are no chirality outliers.

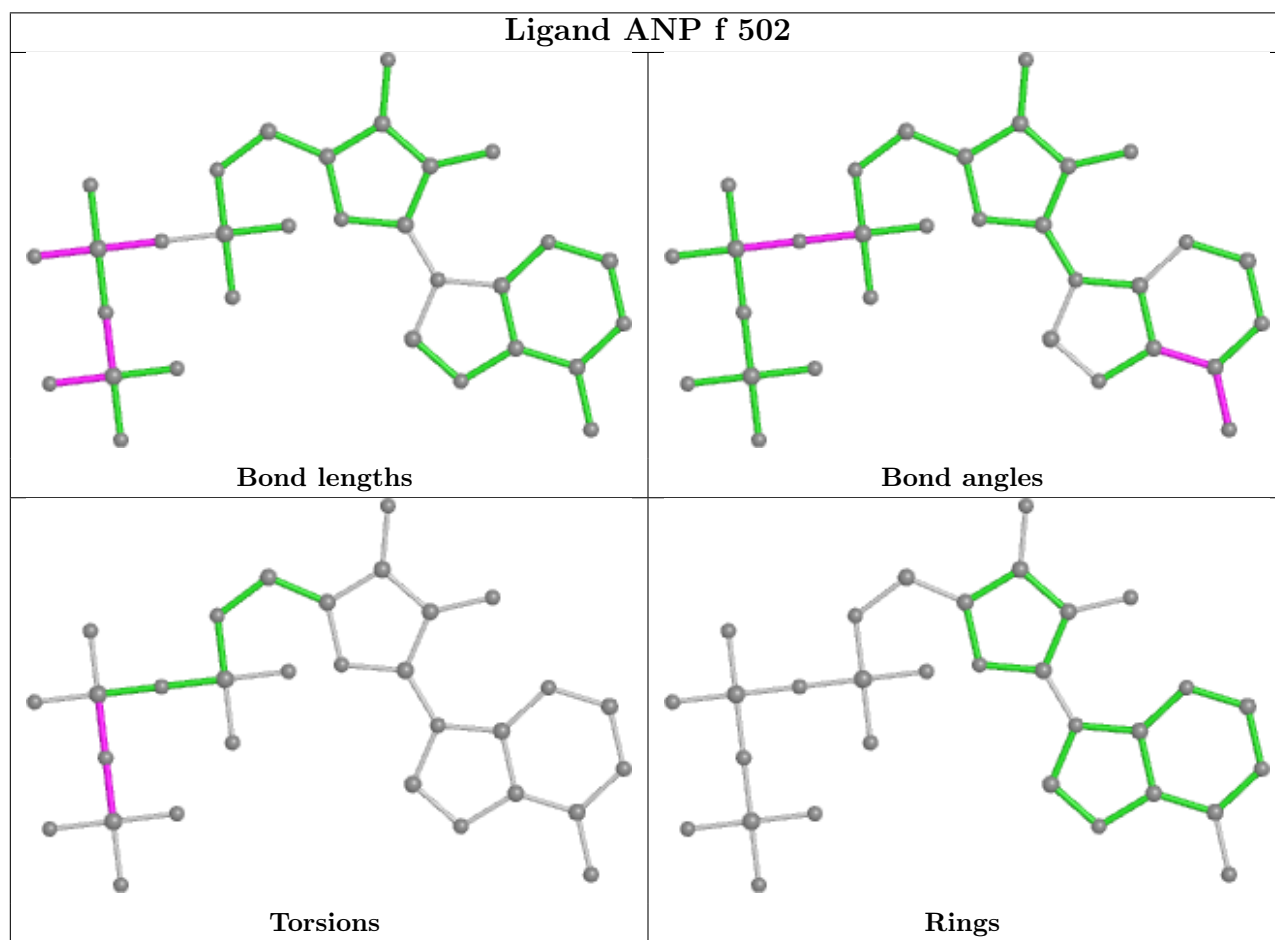
5 of 18 torsion outliers are listed below:

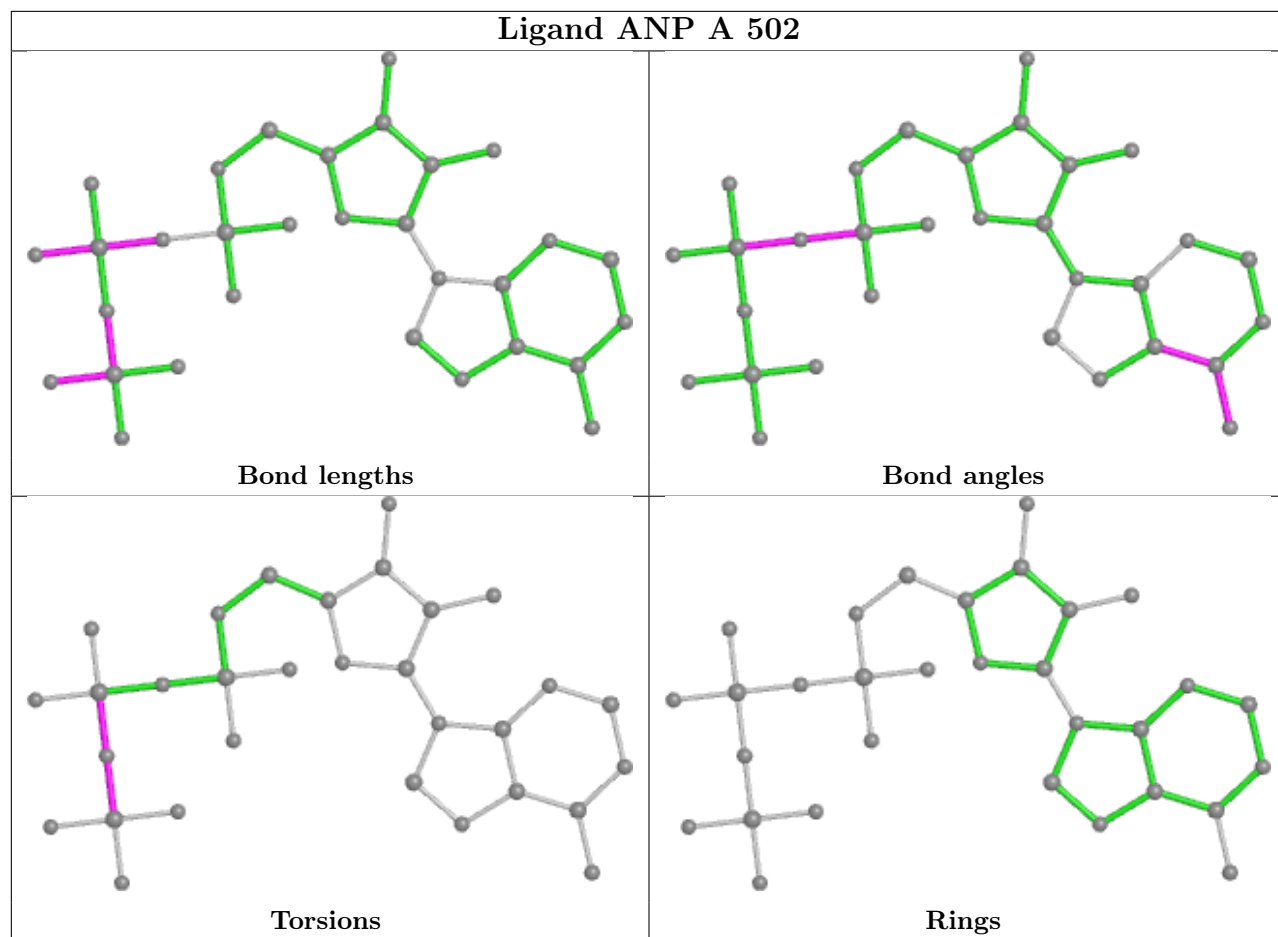
Mol	Chain	Res	Type	Atoms
7	A	502	ANP	PB-N3B-PG-O1G
7	A	502	ANP	PG-N3B-PB-O1B
7	A	502	ANP	PG-N3B-PB-O3A
7	a	502	ANP	PB-N3B-PG-O1G
7	a	502	ANP	PG-N3B-PB-O1B

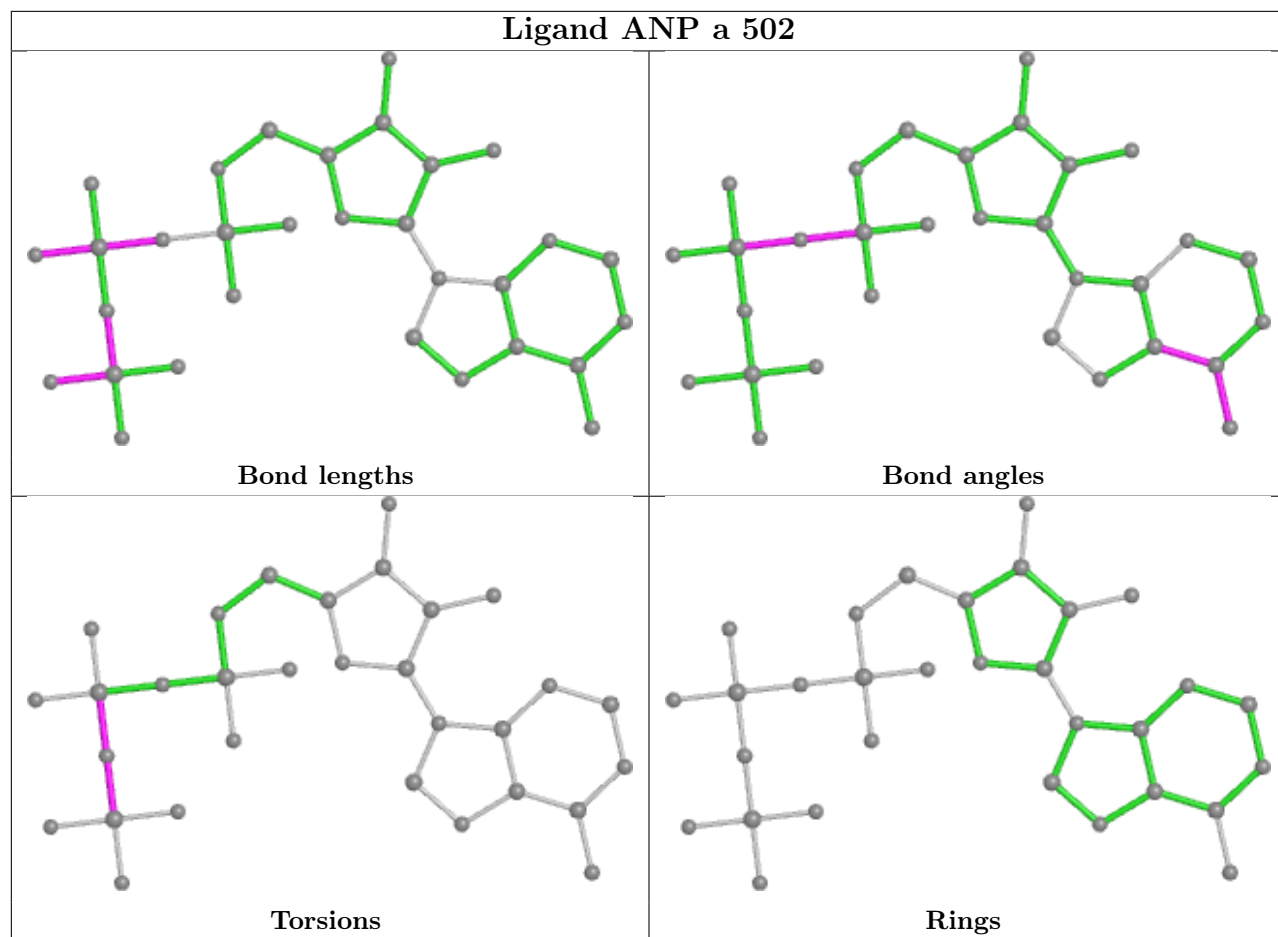
There are no ring outliers.

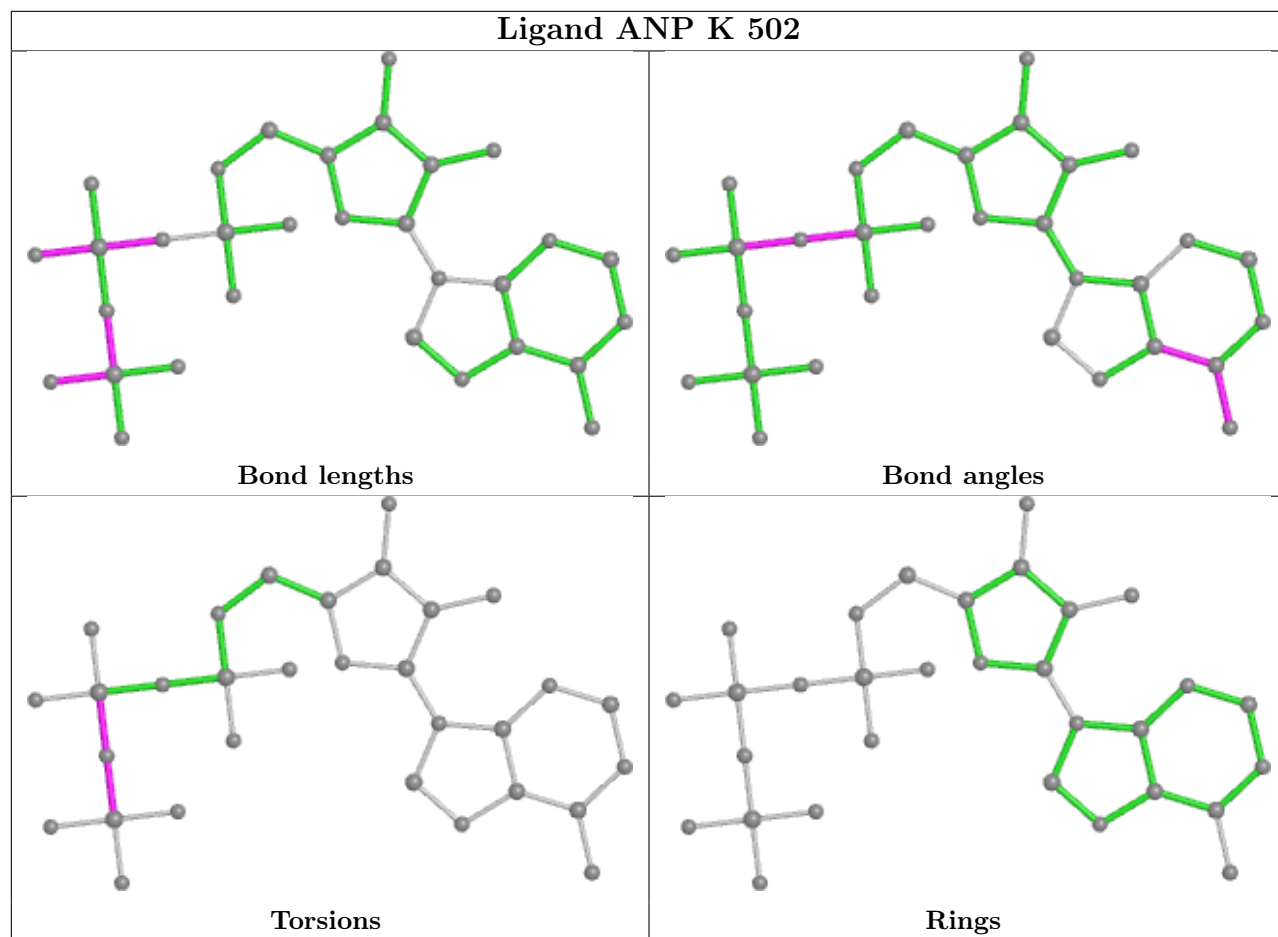
No monomer is involved in short contacts.

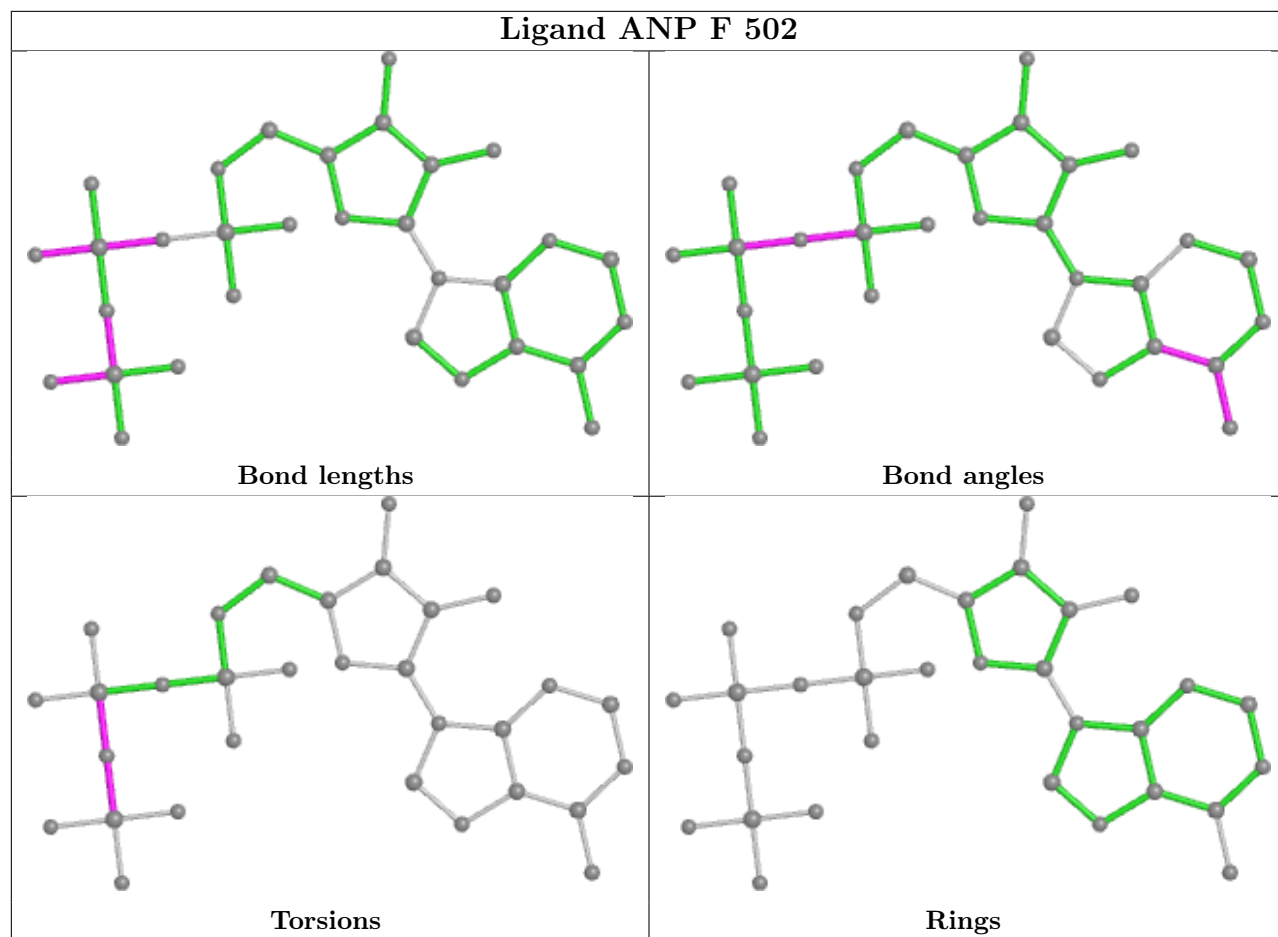
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

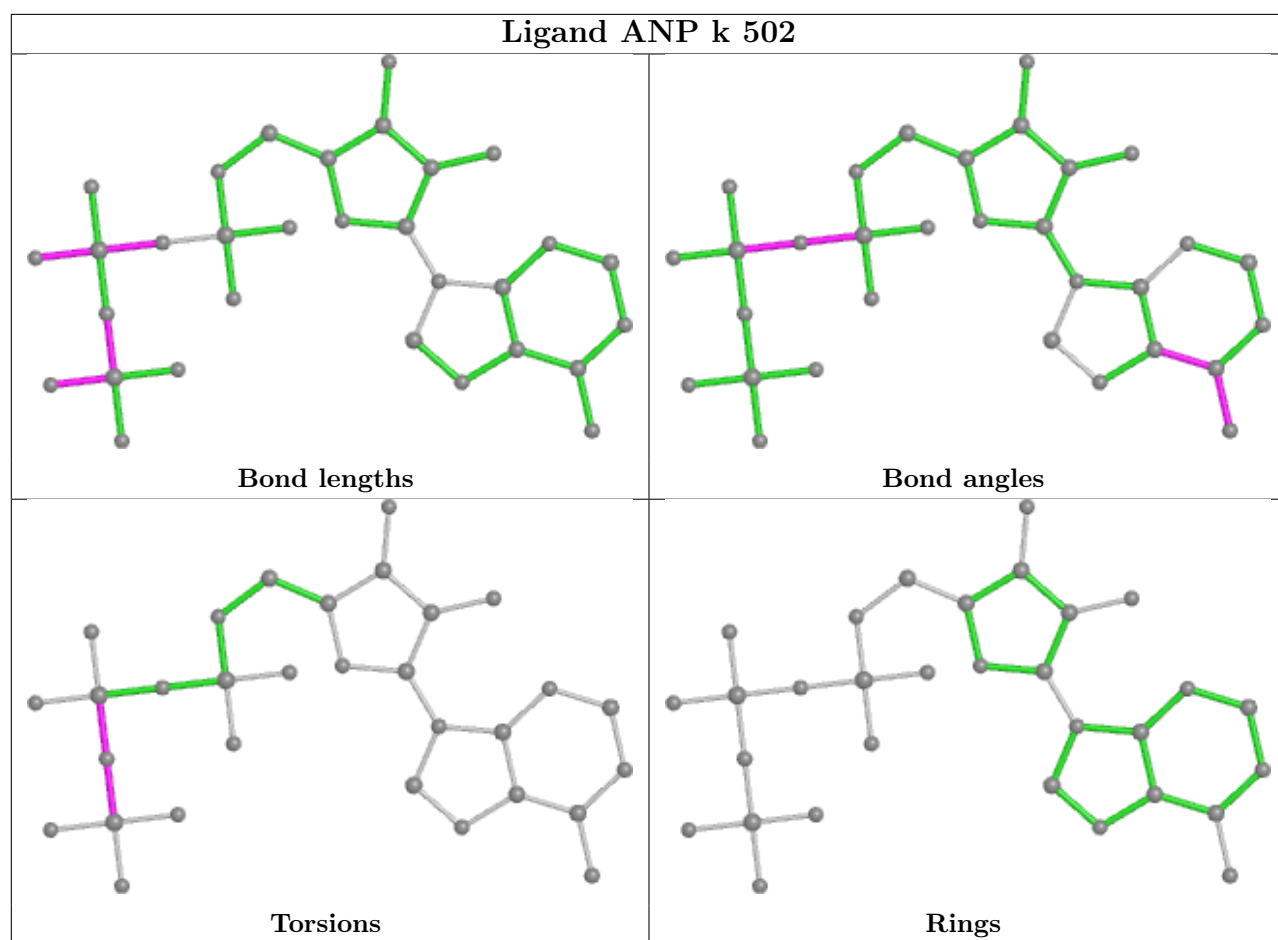












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

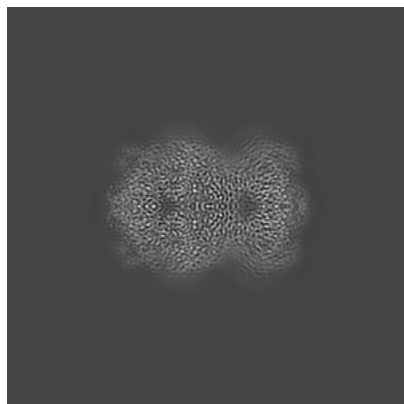
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14803. These allow visual inspection of the internal detail of the map and identification of artifacts.

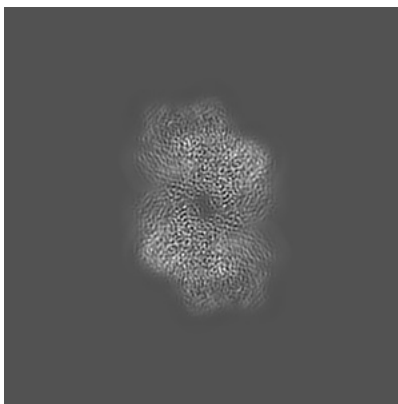
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



X

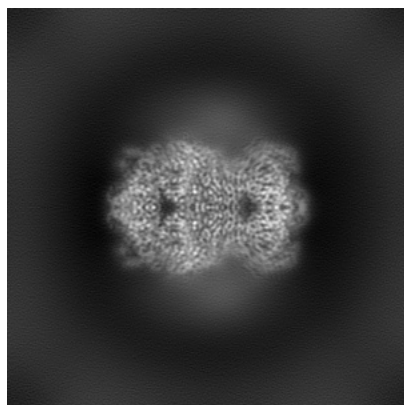


Y

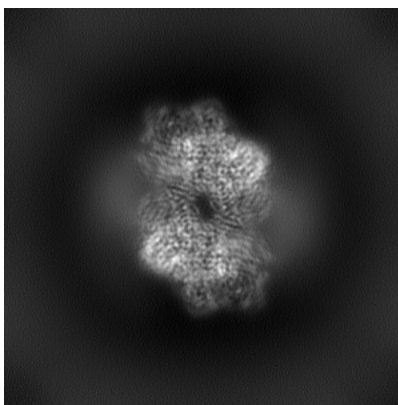


Z

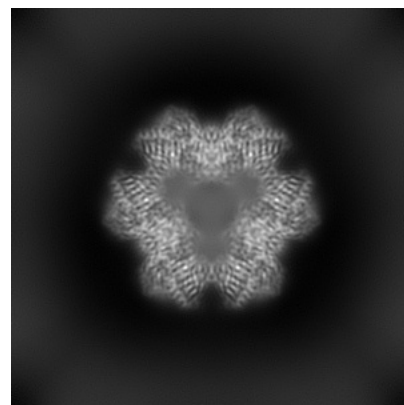
6.1.2 Raw map



X



Y



Z

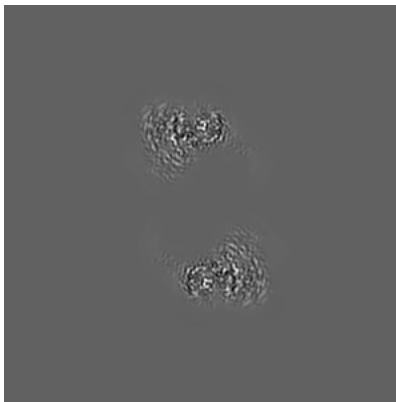
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

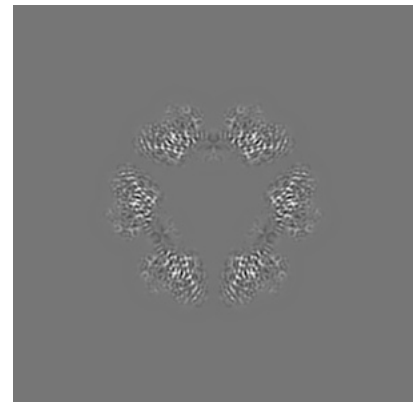
6.2.1 Primary map



X Index: 160

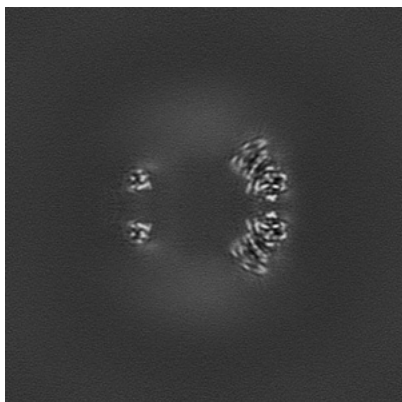


Y Index: 160

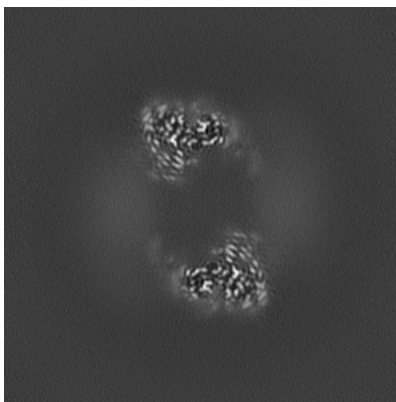


Z Index: 160

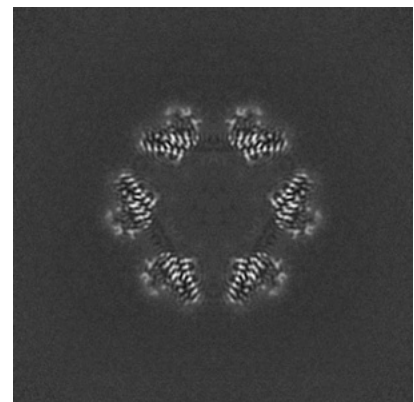
6.2.2 Raw map



X Index: 160



Y Index: 160

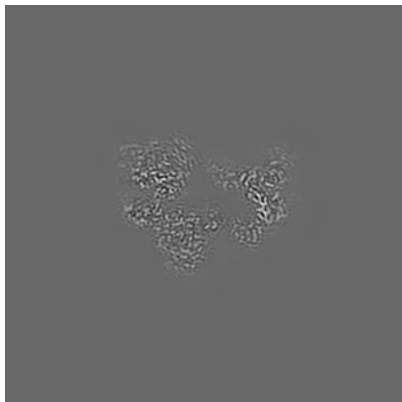


Z Index: 160

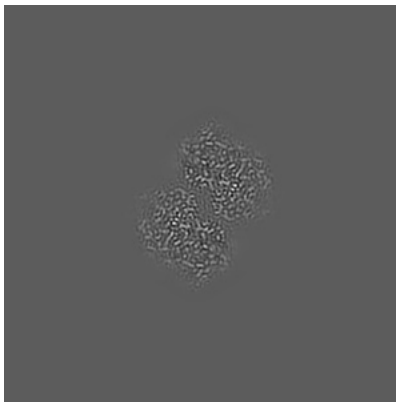
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

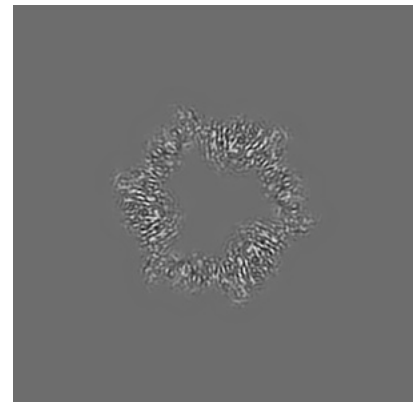
6.3.1 Primary map



X Index: 201

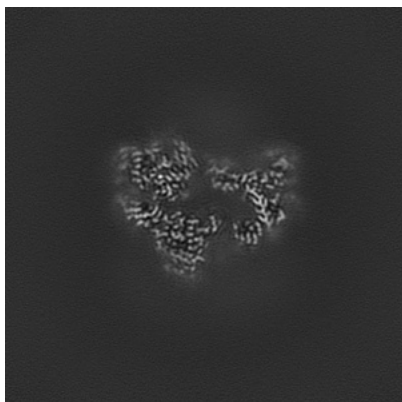


Y Index: 211

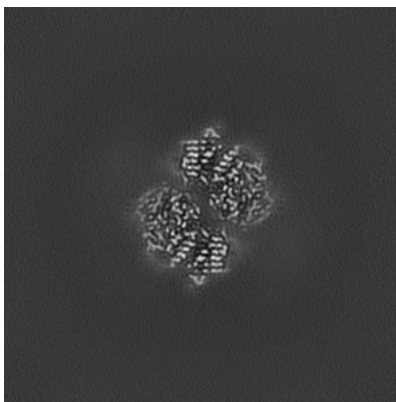


Z Index: 176

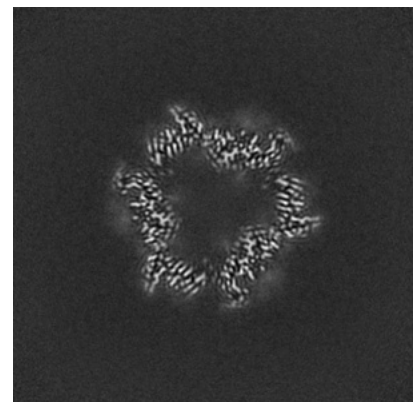
6.3.2 Raw map



X Index: 202



Y Index: 208

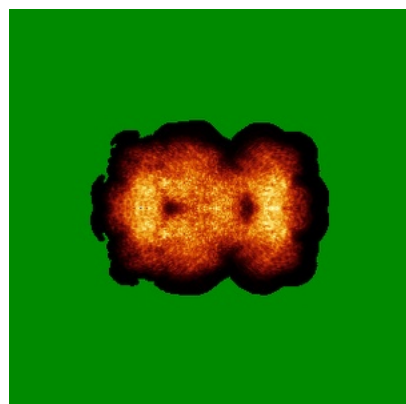


Z Index: 172

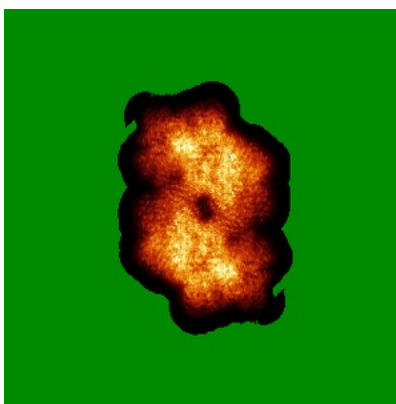
The images above show the largest variance slices of the map in three orthogonal directions.

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

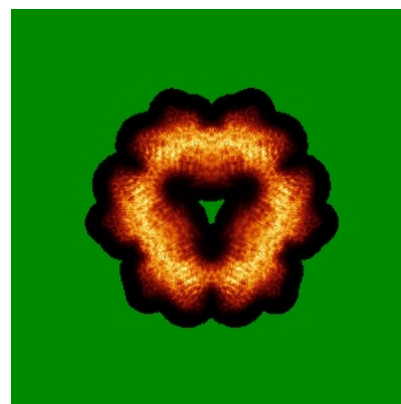
6.4.1 Primary map



X

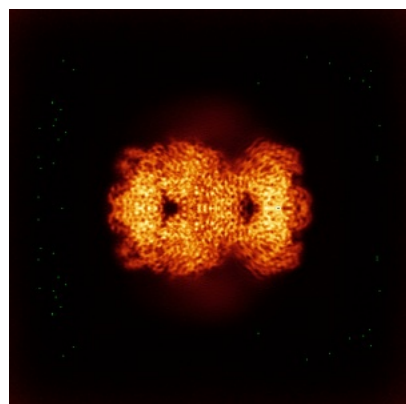


Y

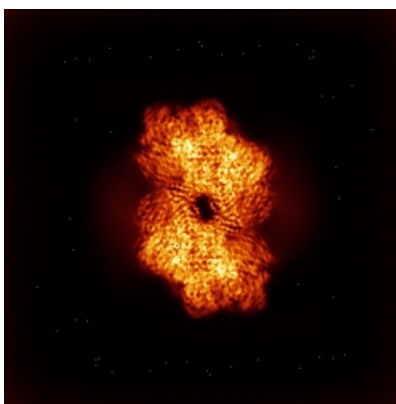


Z

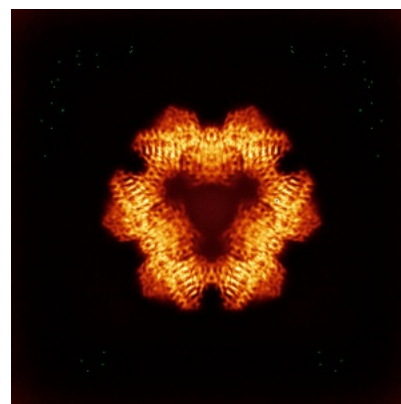
6.4.2 Raw map



X



Y

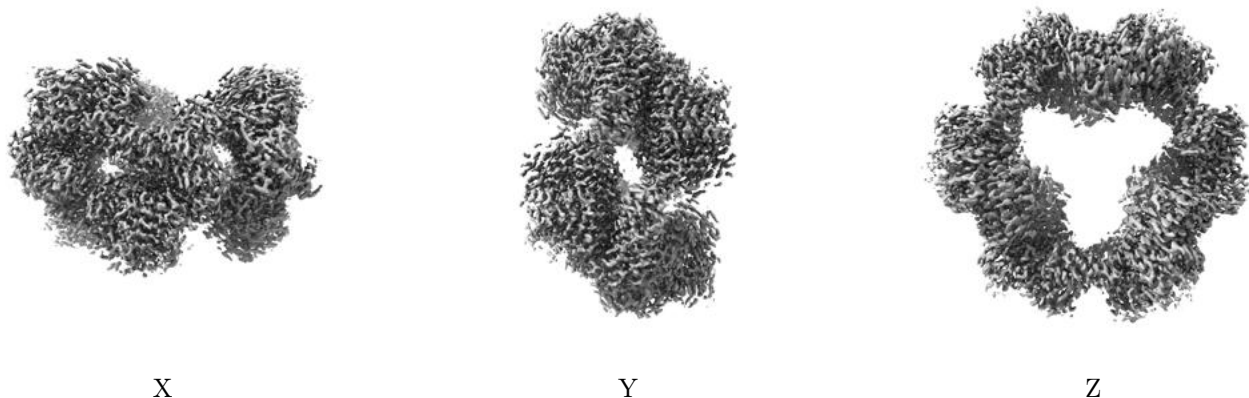


Z

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.

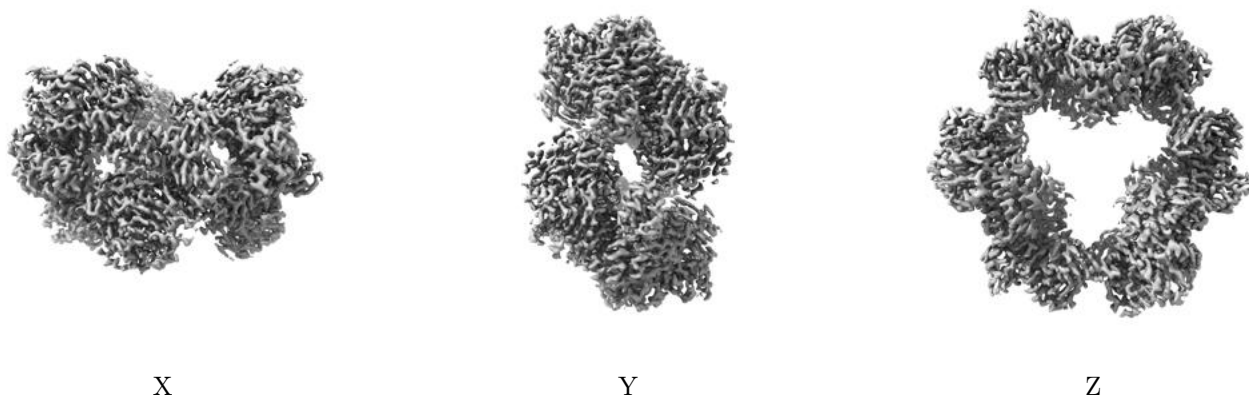
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.5. 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.

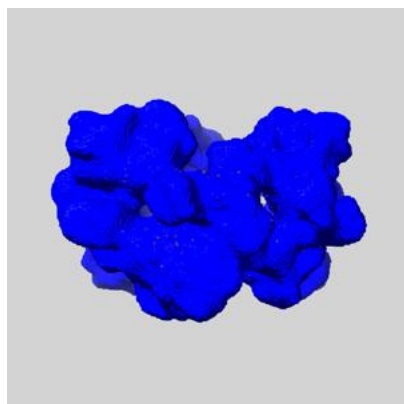
6.6 Mask visualisation [i](#)

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

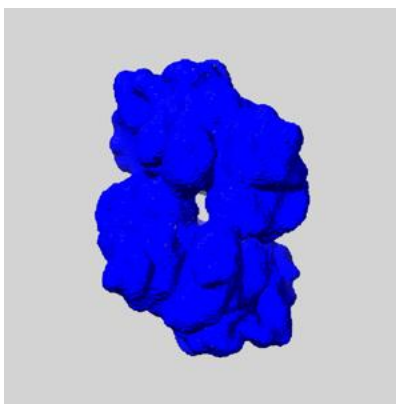
A mask typically either:

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

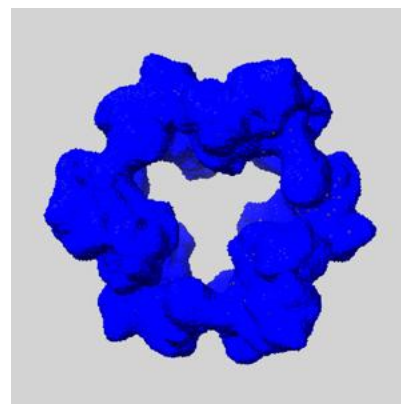
6.6.1 emd_14803_msk_1.map [i](#)



X



Y

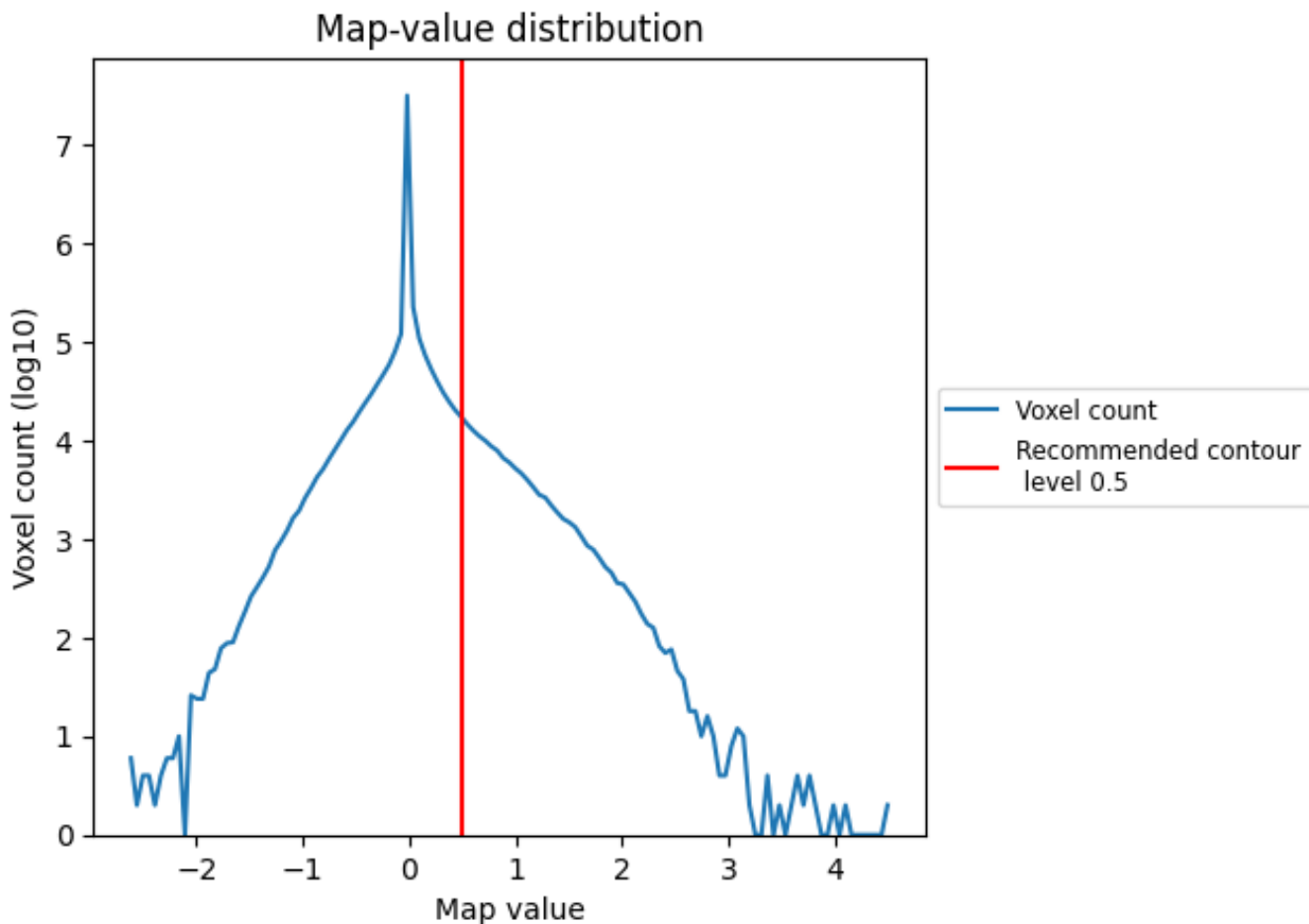


Z

7 Map analysis [i](#)

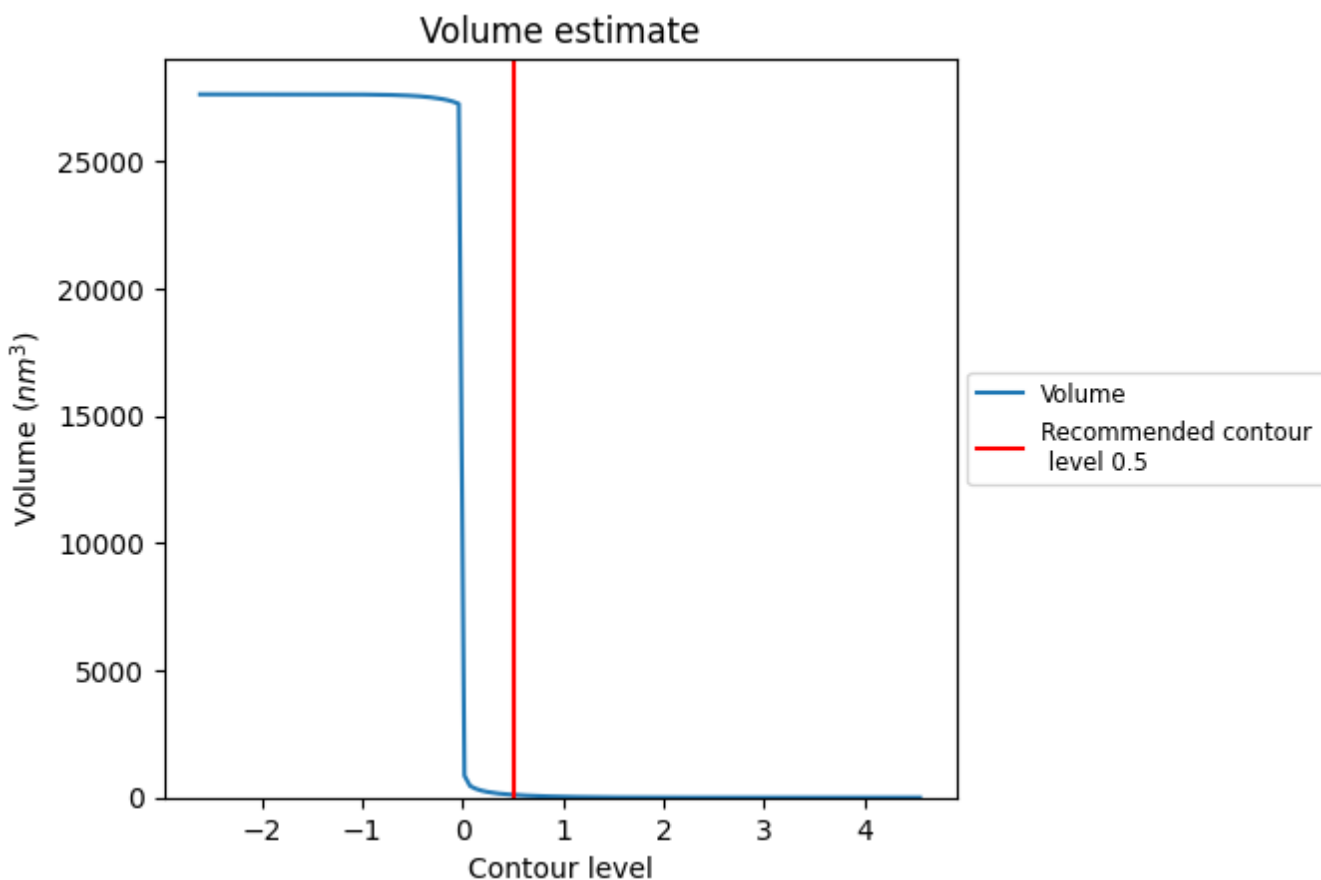
This section contains the results of statistical analysis of the map.

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.

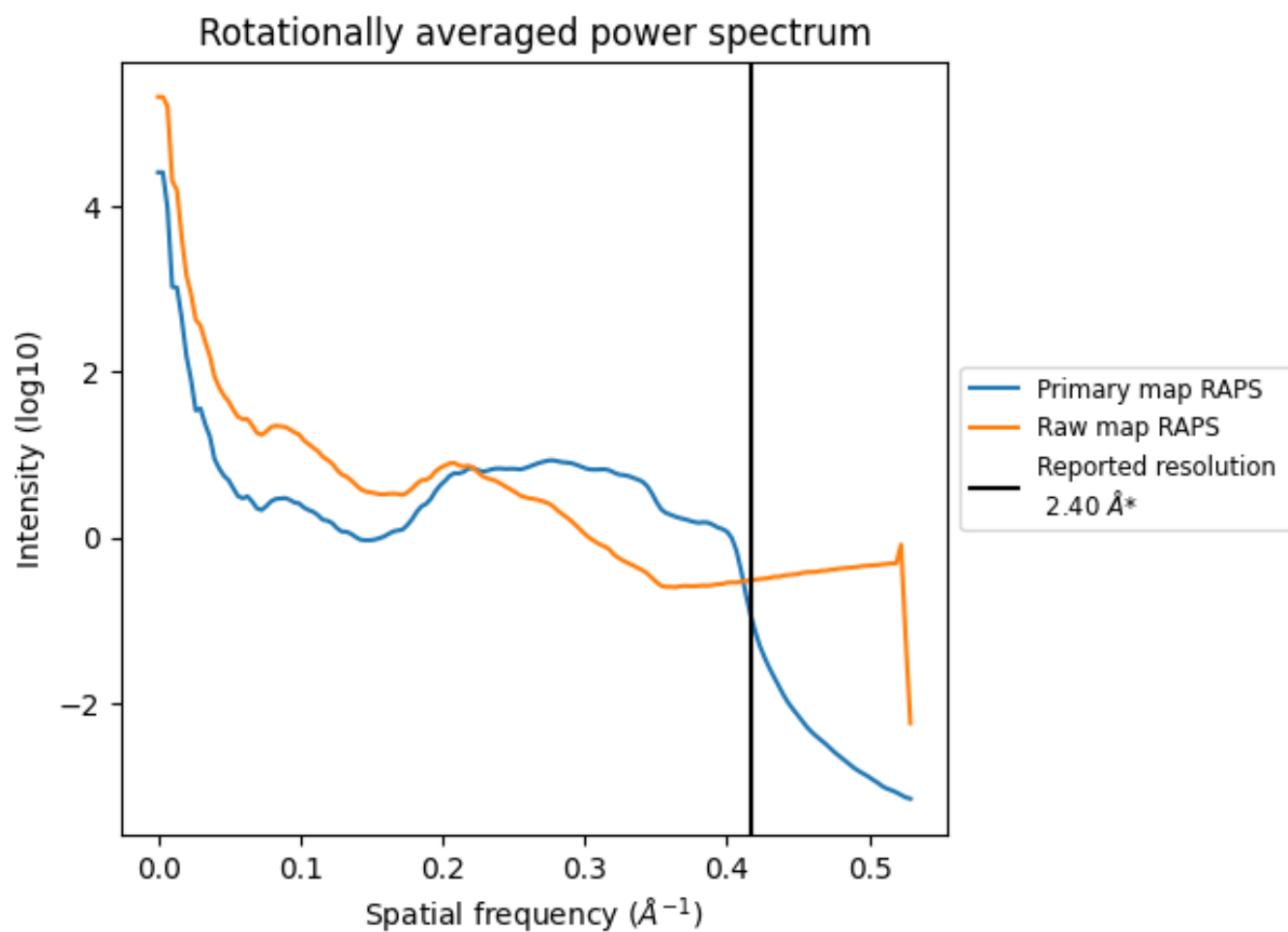
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 109 nm^3 ; this corresponds to an approximate mass of 99 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

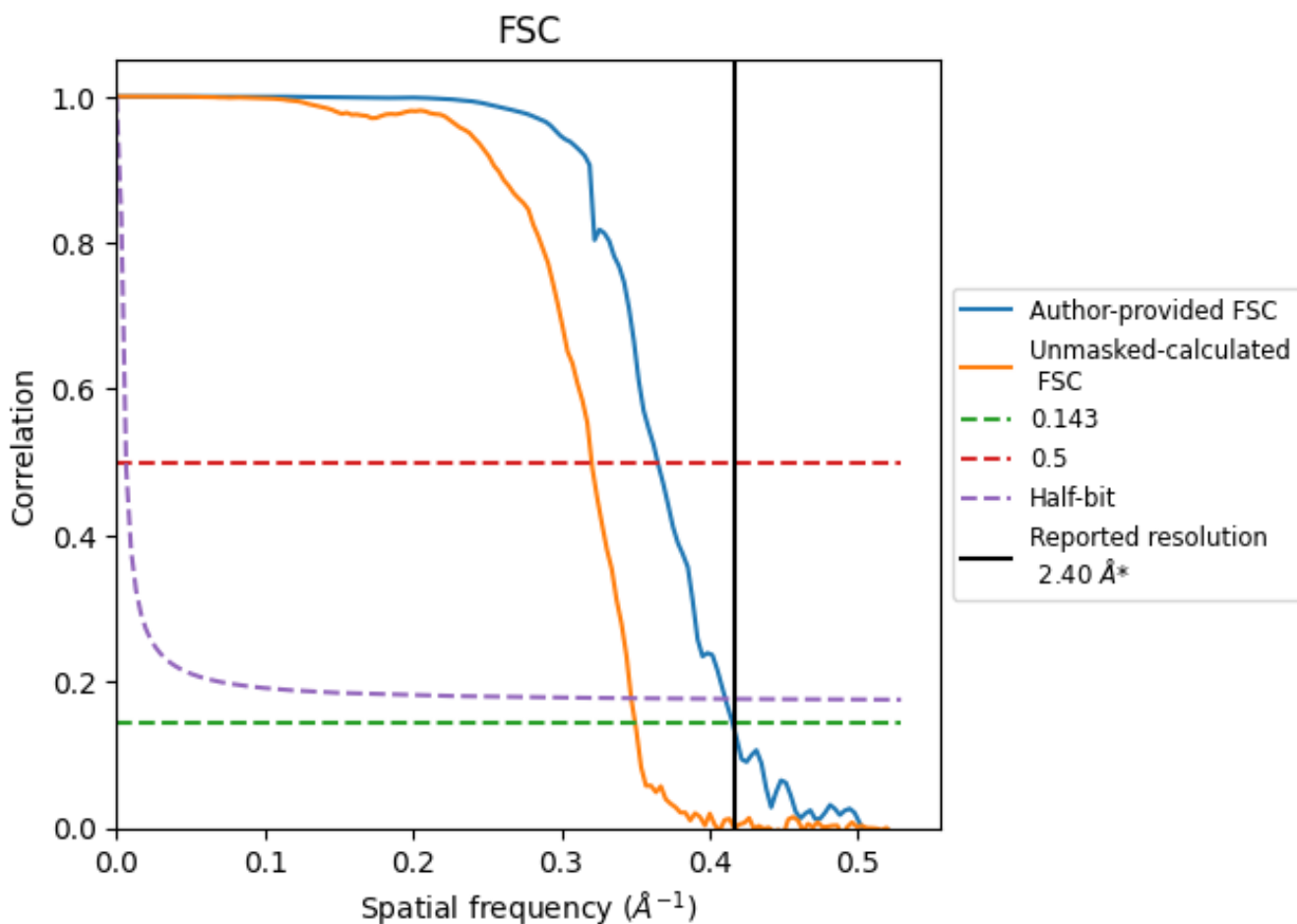


*Reported resolution corresponds to spatial frequency of 0.417 Å⁻¹

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 0.417 Å⁻¹

8.2 Resolution estimates [i](#)

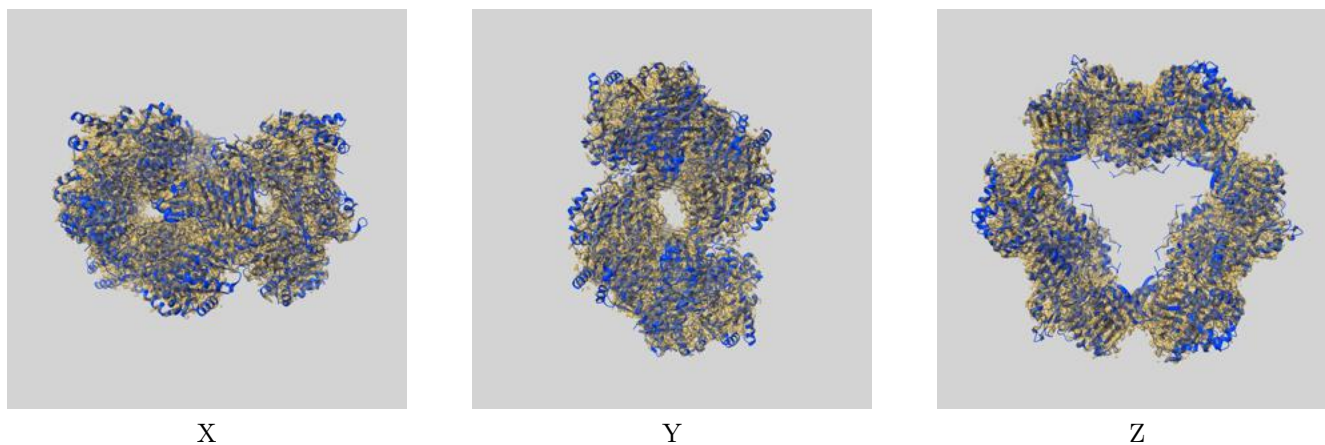
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.40	-	-
Author-provided FSC curve	2.41	2.74	2.44
Unmasked-calculated*	2.86	3.12	2.88

*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 2.86 differs from the reported value 2.4 by more than 10 %

9 Map-model fit [i](#)

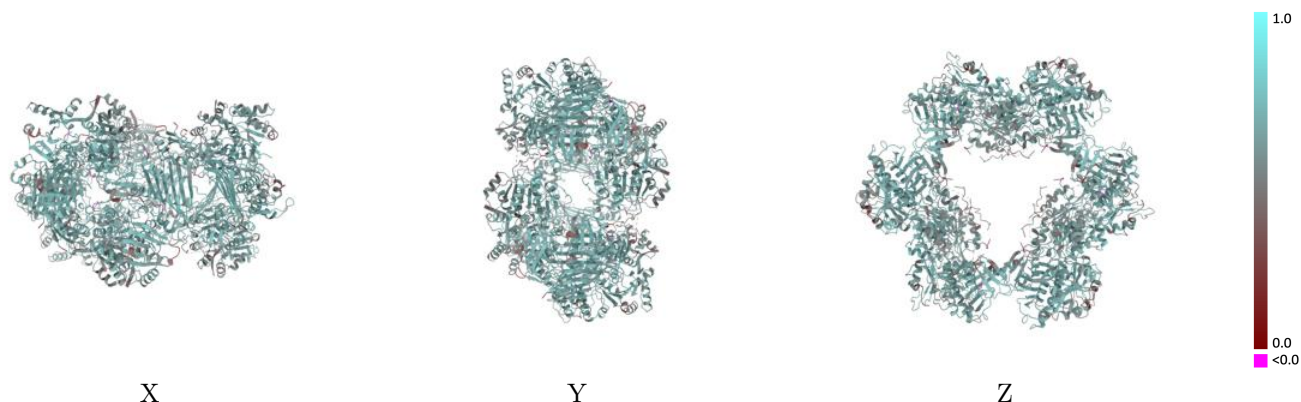
This section contains information regarding the fit between EMDB map EMD-14803 and PDB model 7ZMJ. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



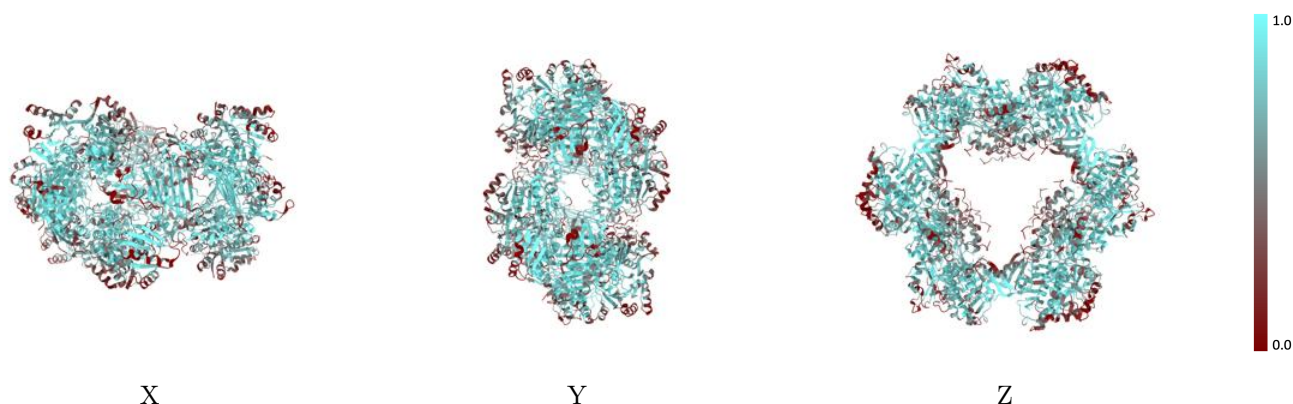
The images above show the 3D surface view of the map at the recommended contour level 0.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



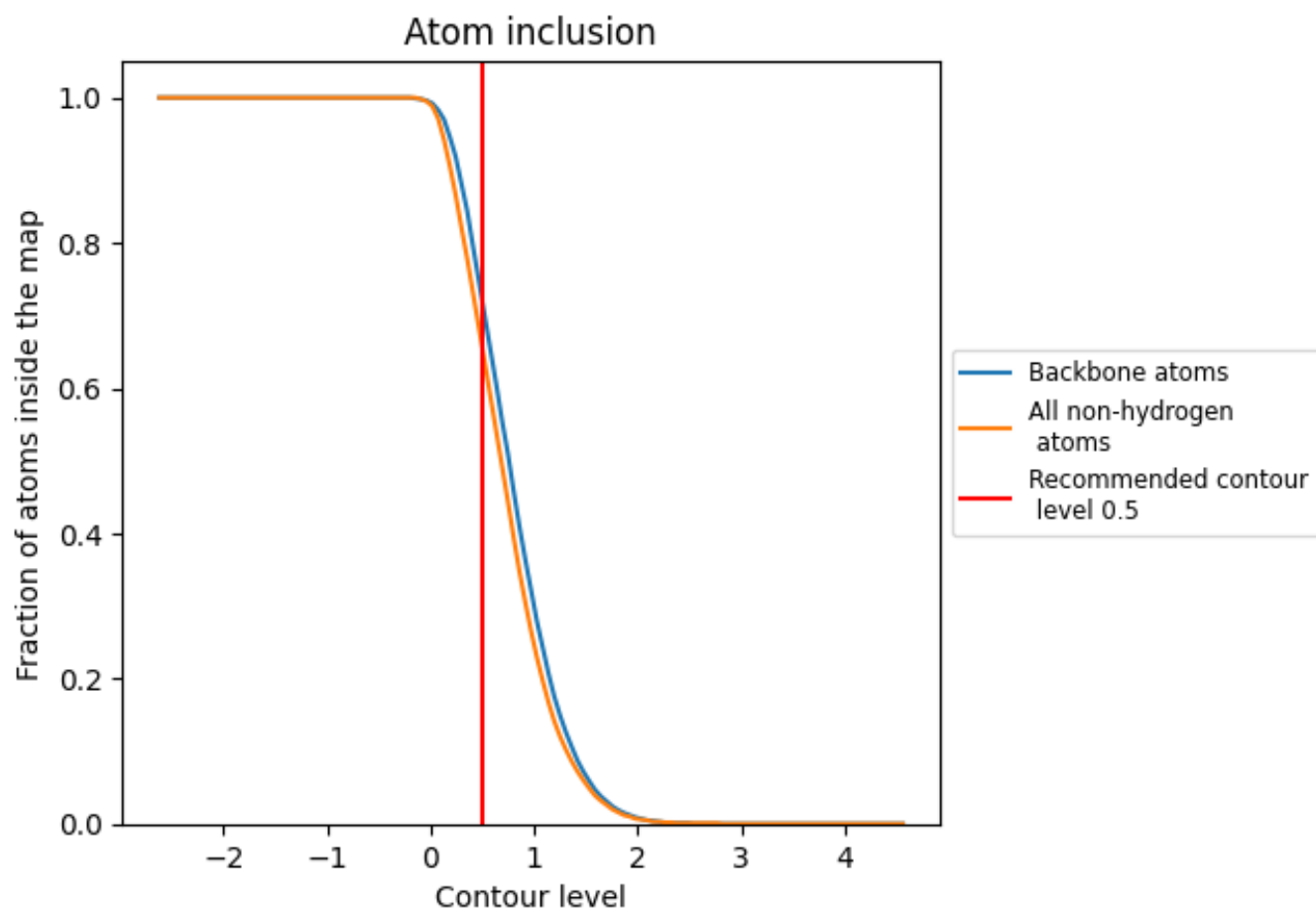
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.5).































































9.4 Atom inclusion [i](#)



At the recommended contour level, 72% of all backbone atoms, 65% 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 (0.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6540	 0.6080
A	 0.6420	 0.6110
B	 0.8020	 0.6560
C	 0.5180	 0.5570
D	 0.5830	 0.5780
E	 0.5040	 0.5420
F	 0.6460	 0.6100
G	 0.8080	 0.6580
H	 0.5210	 0.5570
I	 0.5970	 0.5800
J	 0.5210	 0.5490
K	 0.6530	 0.6130
L	 0.8020	 0.6570
M	 0.5250	 0.5580
N	 0.5960	 0.5860
O	 0.5380	 0.5490
a	 0.6410	 0.6080
b	 0.8030	 0.6560
c	 0.5170	 0.5530
d	 0.6000	 0.5760
e	 0.5210	 0.5380
f	 0.6470	 0.6130
g	 0.8120	 0.6570
h	 0.5150	 0.5590
i	 0.5810	 0.5760
j	 0.5560	 0.5410
k	 0.6450	 0.6090
l	 0.8030	 0.6580
m	 0.5250	 0.5580
n	 0.5900	 0.5750
o	 0.5300	 0.5360

