Full wwPDB EM Validation Report ⓘ

Apr 16, 2026 – 04:37 pm BST

PDB ID	:	9T7J / pdb_00009t7j
EMDB ID	:	EMD-55637
Title	:	cryo-EM structure of AKT phosphorylated mTOR complex 2, overall refinement
Authors	:	Hay, I.M.; Anandapadamanaban, M.; Williams, R.L.
Deposited on	:	2025-11-10
Resolution	:	3.00 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

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

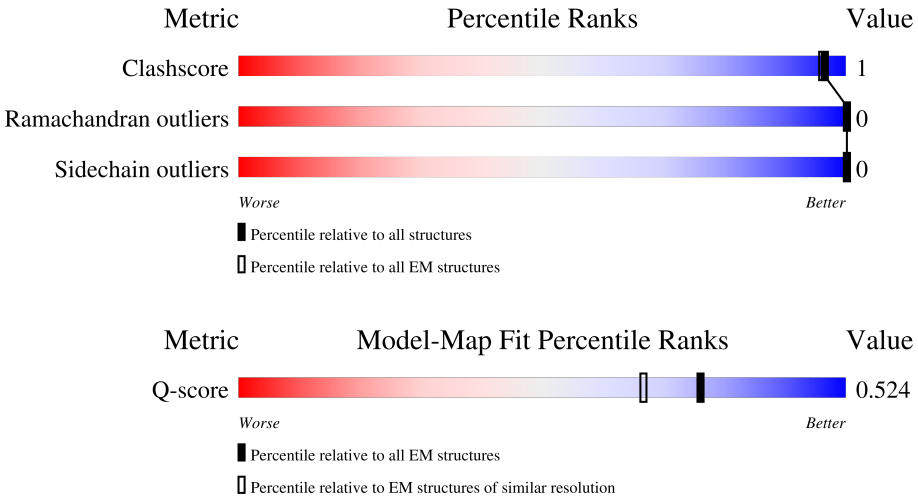
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.00 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	14081 (2.50 - 3.50)

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	2590	66% 32%
1	B	2590	66% 33%
2	C	326	58% 91% 6%
2	D	326	60% 90% 6%

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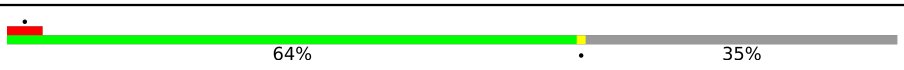
Mol	Chain	Length	Quality of chain
3	E	1734	
3	F	1734	
4	G	522	
4	H	522	

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 52802 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 Serine/threonine-protein kinase mTOR.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1749	Total 14145	C 9037	N 2478	O 2532	S 98	0	0
1	B	1747	Total 14131	C 9029	N 2476	O 2529	S 97	0	0

There are 82 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-40	MET	-	initiating methionine	UNP P42345
A	-39	ALA	-	expression tag	UNP P42345
A	-38	SER	-	expression tag	UNP P42345
A	-37	TRP	-	expression tag	UNP P42345
A	-36	SER	-	expression tag	UNP P42345
A	-35	HIS	-	expression tag	UNP P42345
A	-34	PRO	-	expression tag	UNP P42345
A	-33	GLN	-	expression tag	UNP P42345
A	-32	PHE	-	expression tag	UNP P42345
A	-31	GLU	-	expression tag	UNP P42345
A	-30	LYS	-	expression tag	UNP P42345
A	-29	GLY	-	expression tag	UNP P42345
A	-28	GLY	-	expression tag	UNP P42345
A	-27	GLY	-	expression tag	UNP P42345
A	-26	ALA	-	expression tag	UNP P42345
A	-25	ARG	-	expression tag	UNP P42345
A	-24	GLY	-	expression tag	UNP P42345
A	-23	GLY	-	expression tag	UNP P42345
A	-22	SER	-	expression tag	UNP P42345
A	-21	GLY	-	expression tag	UNP P42345
A	-20	GLY	-	expression tag	UNP P42345
A	-19	GLY	-	expression tag	UNP P42345
A	-18	SER	-	expression tag	UNP P42345
A	-17	TRP	-	expression tag	UNP P42345
A	-16	SER	-	expression tag	UNP P42345
A	-15	HIS	-	expression tag	UNP P42345

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-14	PRO	-	expression tag	UNP P42345
A	-13	GLN	-	expression tag	UNP P42345
A	-12	PHE	-	expression tag	UNP P42345
A	-11	GLU	-	expression tag	UNP P42345
A	-10	LYS	-	expression tag	UNP P42345
A	-9	GLY	-	expression tag	UNP P42345
A	-8	GLU	-	expression tag	UNP P42345
A	-7	ASN	-	expression tag	UNP P42345
A	-6	LEU	-	expression tag	UNP P42345
A	-5	TYR	-	expression tag	UNP P42345
A	-4	PHE	-	expression tag	UNP P42345
A	-3	GLN	-	expression tag	UNP P42345
A	-2	GLY	-	expression tag	UNP P42345
A	-1	GLY	-	expression tag	UNP P42345
A	0	THR	-	expression tag	UNP P42345
B	-40	MET	-	initiating methionine	UNP P42345
B	-39	ALA	-	expression tag	UNP P42345
B	-38	SER	-	expression tag	UNP P42345
B	-37	TRP	-	expression tag	UNP P42345
B	-36	SER	-	expression tag	UNP P42345
B	-35	HIS	-	expression tag	UNP P42345
B	-34	PRO	-	expression tag	UNP P42345
B	-33	GLN	-	expression tag	UNP P42345
B	-32	PHE	-	expression tag	UNP P42345
B	-31	GLU	-	expression tag	UNP P42345
B	-30	LYS	-	expression tag	UNP P42345
B	-29	GLY	-	expression tag	UNP P42345
B	-28	GLY	-	expression tag	UNP P42345
B	-27	GLY	-	expression tag	UNP P42345
B	-26	ALA	-	expression tag	UNP P42345
B	-25	ARG	-	expression tag	UNP P42345
B	-24	GLY	-	expression tag	UNP P42345
B	-23	GLY	-	expression tag	UNP P42345
B	-22	SER	-	expression tag	UNP P42345
B	-21	GLY	-	expression tag	UNP P42345
B	-20	GLY	-	expression tag	UNP P42345
B	-19	GLY	-	expression tag	UNP P42345
B	-18	SER	-	expression tag	UNP P42345
B	-17	TRP	-	expression tag	UNP P42345
B	-16	SER	-	expression tag	UNP P42345
B	-15	HIS	-	expression tag	UNP P42345
B	-14	PRO	-	expression tag	UNP P42345

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-13	GLN	-	expression tag	UNP P42345
B	-12	PHE	-	expression tag	UNP P42345
B	-11	GLU	-	expression tag	UNP P42345
B	-10	LYS	-	expression tag	UNP P42345
B	-9	GLY	-	expression tag	UNP P42345
B	-8	GLU	-	expression tag	UNP P42345
B	-7	ASN	-	expression tag	UNP P42345
B	-6	LEU	-	expression tag	UNP P42345
B	-5	TYR	-	expression tag	UNP P42345
B	-4	PHE	-	expression tag	UNP P42345
B	-3	GLN	-	expression tag	UNP P42345
B	-2	GLY	-	expression tag	UNP P42345
B	-1	GLY	-	expression tag	UNP P42345
B	0	THR	-	expression tag	UNP P42345

- Molecule 2 is a protein called Target of rapamycin complex subunit LST8.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	315	Total	C	N	O	S	0	0
			2443	1518	434	473	18		
2	D	315	Total	C	N	O	S	0	0
			2443	1518	434	473	18		

- Molecule 3 is a protein called Rapamycin-insensitive companion of mTOR.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	1119	Total	C	N	O	S	0	0
			8990	5732	1584	1625	49		
3	F	1119	Total	C	N	O	S	0	0
			8990	5732	1584	1625	49		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	-25	MET	-	initiating methionine	UNP Q6R327
E	-24	ALA	-	expression tag	UNP Q6R327
E	-23	ASP	-	expression tag	UNP Q6R327
E	-22	TYR	-	expression tag	UNP Q6R327
E	-21	LYS	-	expression tag	UNP Q6R327
E	-20	ASP	-	expression tag	UNP Q6R327
E	-19	HIS	-	expression tag	UNP Q6R327
E	-18	ASP	-	expression tag	UNP Q6R327

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-17	GLY	-	expression tag	UNP Q6R327
E	-16	ASP	-	expression tag	UNP Q6R327
E	-15	TYR	-	expression tag	UNP Q6R327
E	-14	LYS	-	expression tag	UNP Q6R327
E	-13	ASP	-	expression tag	UNP Q6R327
E	-12	HIS	-	expression tag	UNP Q6R327
E	-11	ASP	-	expression tag	UNP Q6R327
E	-10	ILE	-	expression tag	UNP Q6R327
E	-9	ASP	-	expression tag	UNP Q6R327
E	-8	TYR	-	expression tag	UNP Q6R327
E	-7	LYS	-	expression tag	UNP Q6R327
E	-6	ASP	-	expression tag	UNP Q6R327
E	-5	ASP	-	expression tag	UNP Q6R327
E	-4	ASP	-	expression tag	UNP Q6R327
E	-3	ASP	-	expression tag	UNP Q6R327
E	-2	LYS	-	expression tag	UNP Q6R327
E	-1	GLY	-	expression tag	UNP Q6R327
E	0	THR	-	expression tag	UNP Q6R327
F	-25	MET	-	initiating methionine	UNP Q6R327
F	-24	ALA	-	expression tag	UNP Q6R327
F	-23	ASP	-	expression tag	UNP Q6R327
F	-22	TYR	-	expression tag	UNP Q6R327
F	-21	LYS	-	expression tag	UNP Q6R327
F	-20	ASP	-	expression tag	UNP Q6R327
F	-19	HIS	-	expression tag	UNP Q6R327
F	-18	ASP	-	expression tag	UNP Q6R327
F	-17	GLY	-	expression tag	UNP Q6R327
F	-16	ASP	-	expression tag	UNP Q6R327
F	-15	TYR	-	expression tag	UNP Q6R327
F	-14	LYS	-	expression tag	UNP Q6R327
F	-13	ASP	-	expression tag	UNP Q6R327
F	-12	HIS	-	expression tag	UNP Q6R327
F	-11	ASP	-	expression tag	UNP Q6R327
F	-10	ILE	-	expression tag	UNP Q6R327
F	-9	ASP	-	expression tag	UNP Q6R327
F	-8	TYR	-	expression tag	UNP Q6R327
F	-7	LYS	-	expression tag	UNP Q6R327
F	-6	ASP	-	expression tag	UNP Q6R327
F	-5	ASP	-	expression tag	UNP Q6R327
F	-4	ASP	-	expression tag	UNP Q6R327
F	-3	ASP	-	expression tag	UNP Q6R327
F	-2	LYS	-	expression tag	UNP Q6R327

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Chain	Residue	Modelled	Actual	Comment	Reference
F	-1	GLY	-	expression tag	UNP Q6R327
F	0	THR	-	expression tag	UNP Q6R327

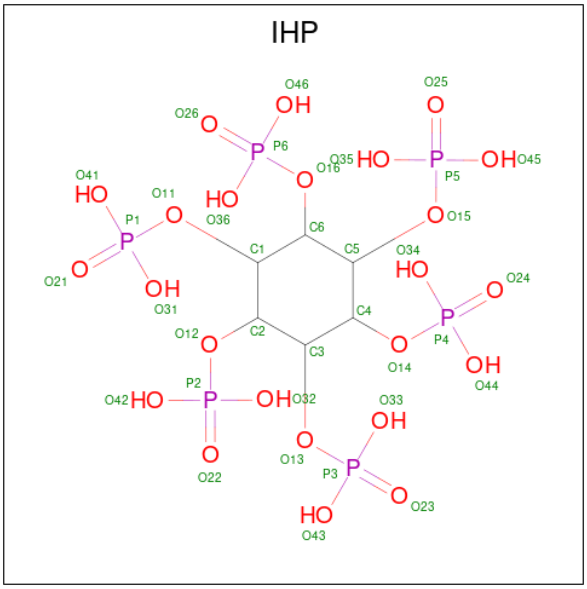
- Molecule 4 is a protein called Target of rapamycin complex 2 subunit MAPKAP1.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	G	93	Total	C	N	O	P	S	0	0
			735	456	126	148	1	4		
4	H	93	Total	C	N	O	P	S	0	0
			735	456	126	148	1	4		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	1	ACE	-	acetylation	UNP Q9BPZ7
H	1	ACE	-	acetylation	UNP Q9BPZ7

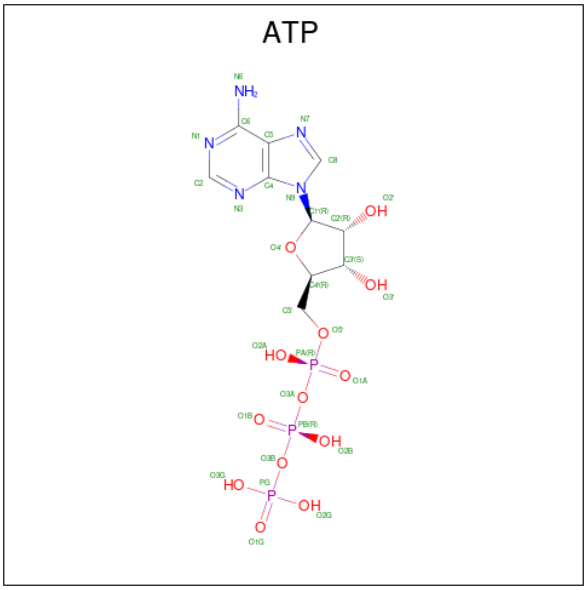
- Molecule 5 is INOSITOL HEXAKISPHOSPHATE (CCD ID: IHP) (formula: $C_6H_{18}O_{24}P_6$).



Mol	Chain	Residues	Atoms				AltConf
5	A	1	Total	C	O	P	0
			36	6	24	6	
5	B	1	Total	C	O	P	0
			36	6	24	6	

- Molecule 6 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$)

(labeled as "Ligand of Interest" by depositor).

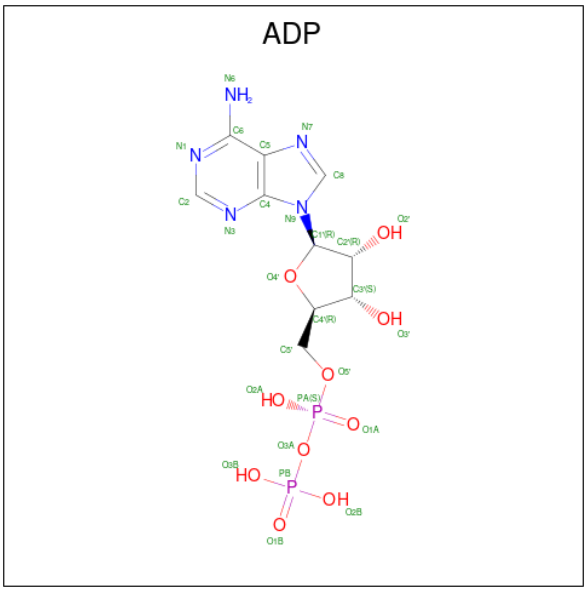


Mol	Chain	Residues	Atoms					AltConf
6	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
6	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 7 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
7	E	1	Total	Zn	0
			1	1	
7	F	1	Total	Zn	0
			1	1	

- Molecule 8 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



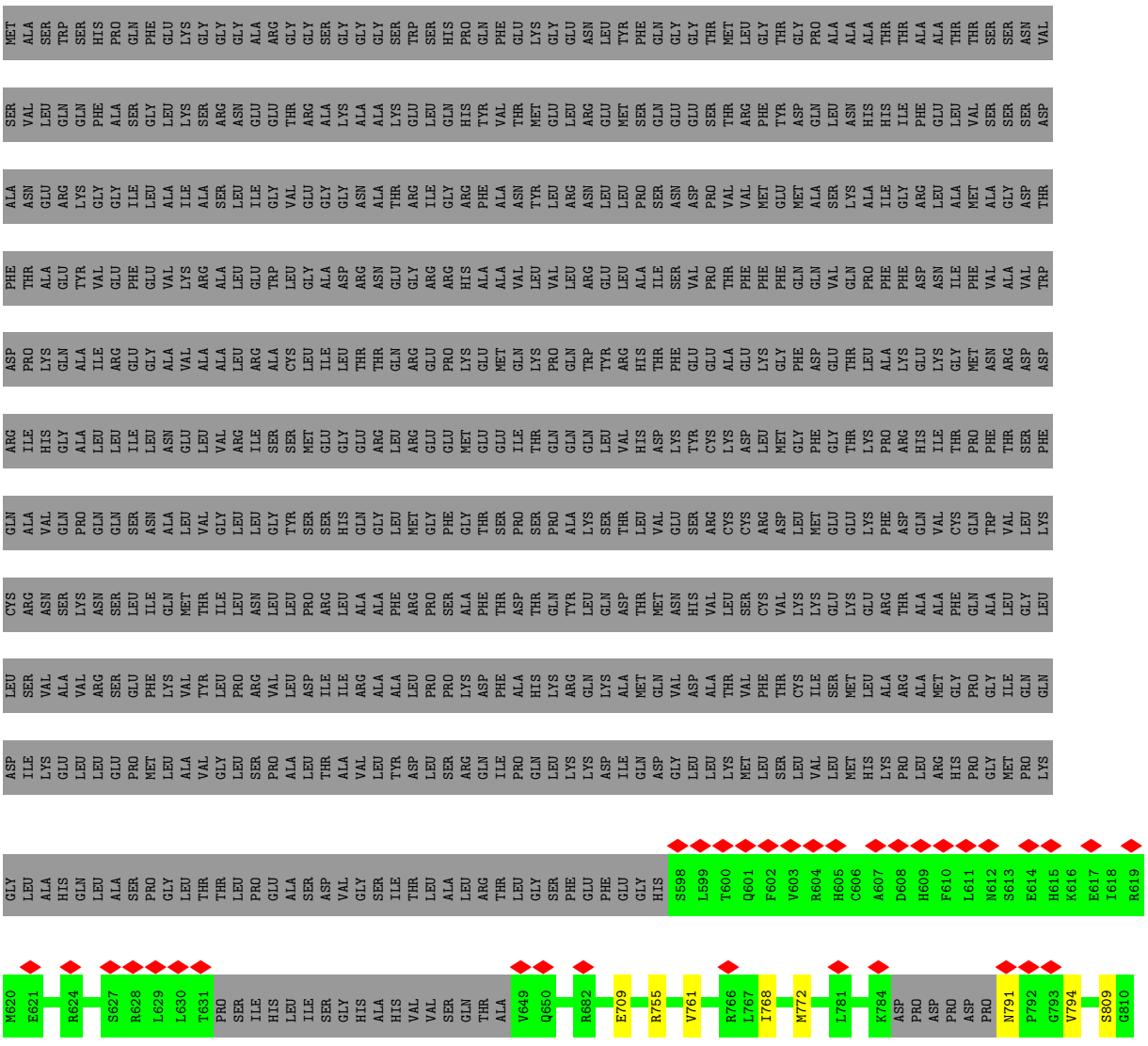
Mol	Chain	Residues	Atoms					AltConf
8	E	1	Total	C	N	O	P	0
			27	10	5	10	2	
8	F	1	Total	C	N	O	P	0
			27	10	5	10	2	

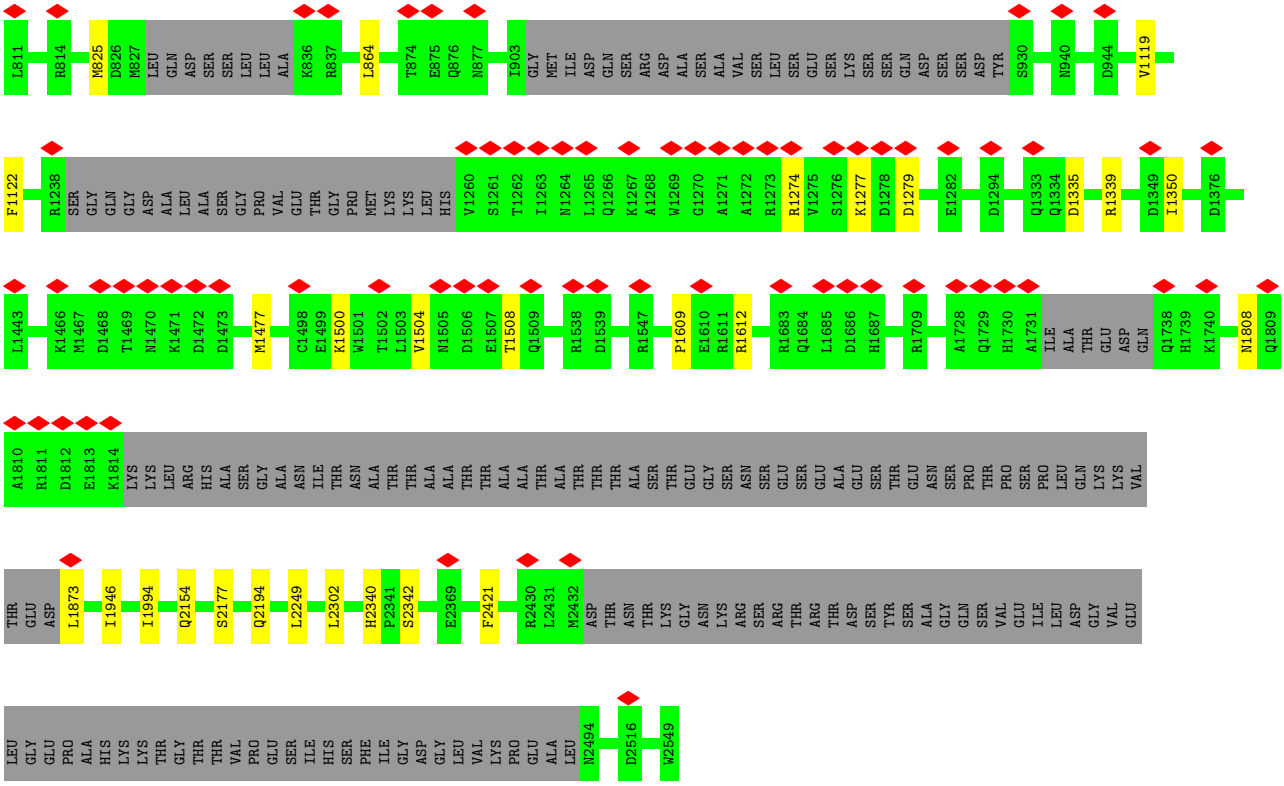
3 Residue-property plots (i)

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: Serine/threonine-protein kinase mTOR

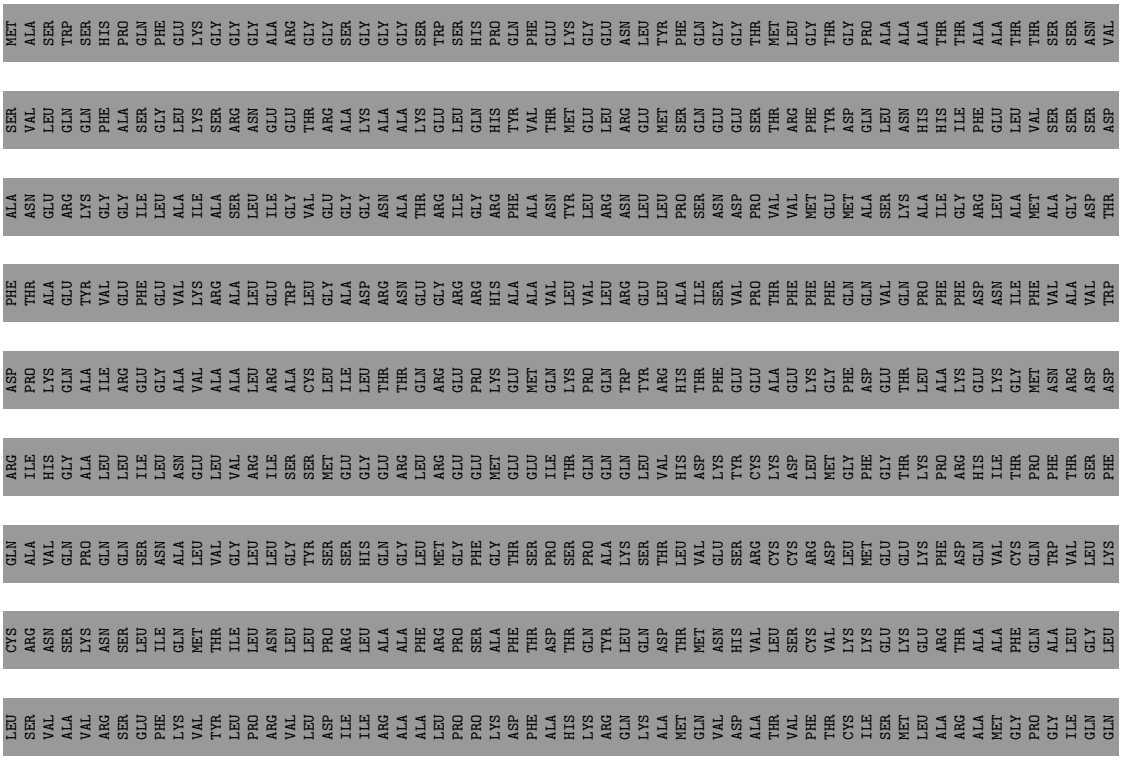
Chain A:

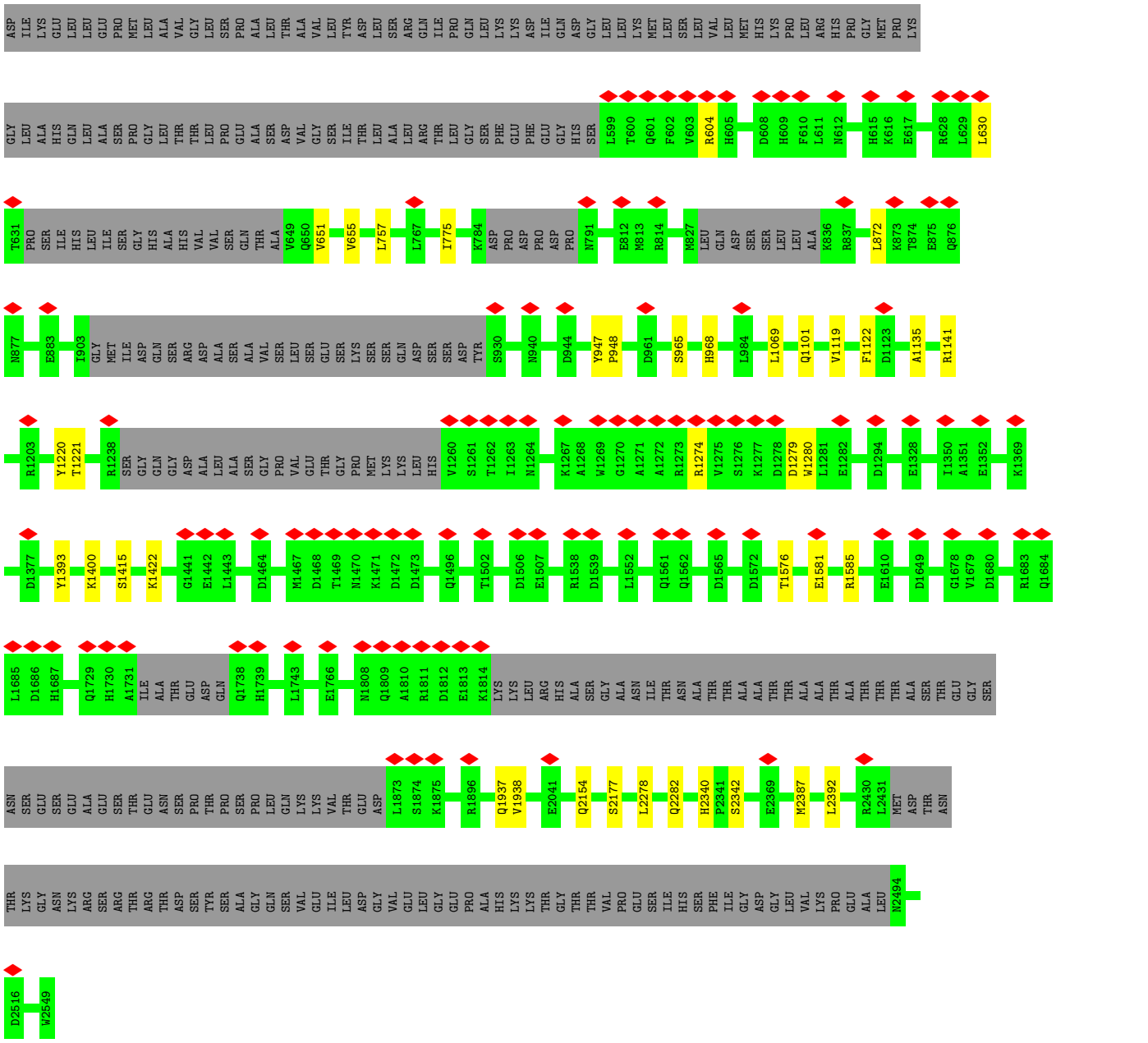




• Molecule 1: Serine/threonine-protein kinase mTOR

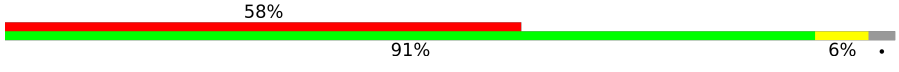
Chain B:

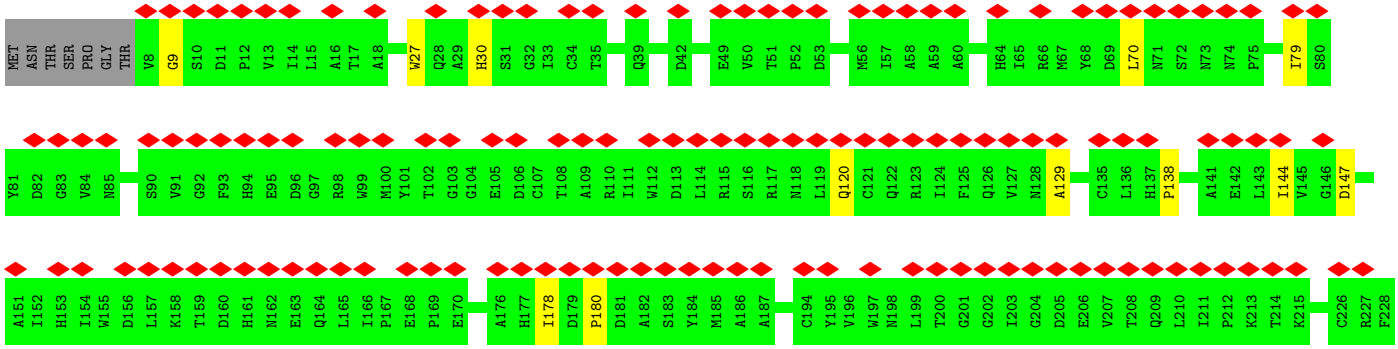




• Molecule 2: Target of rapamycin complex subunit LST8

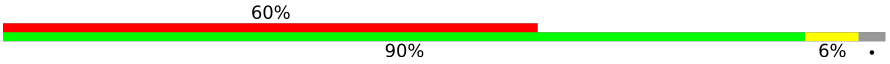
Chain C:

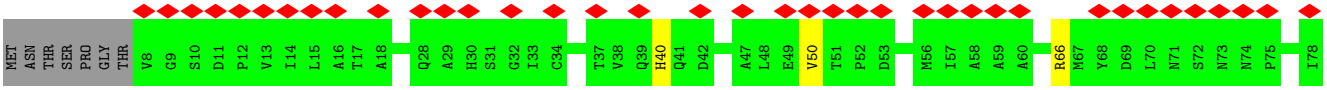


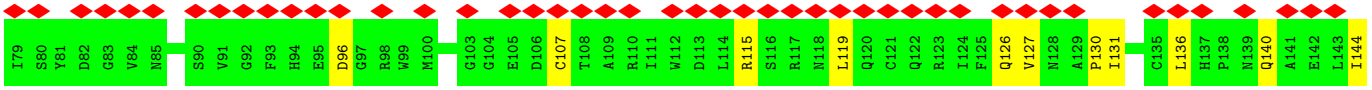


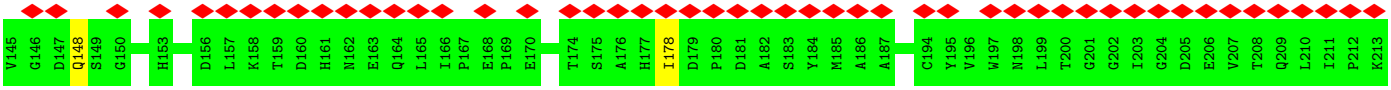
• Molecule 2: Target of rapamycin complex subunit LST8

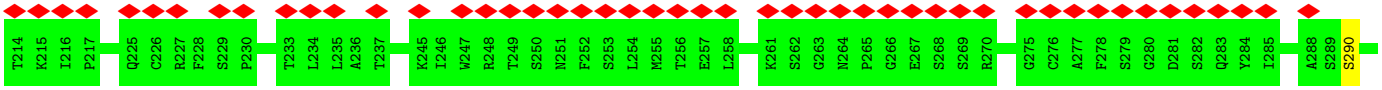
Chain D:

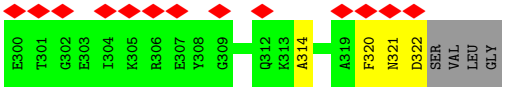






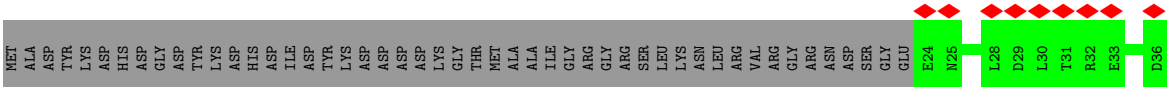


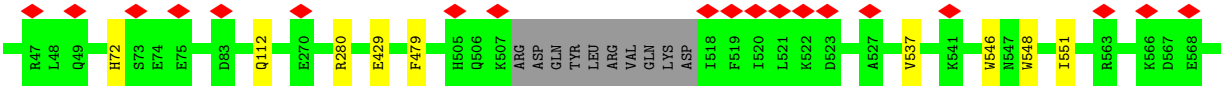


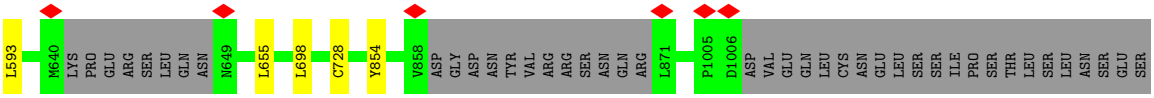


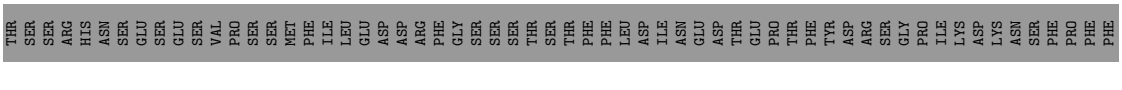
• Molecule 3: Rapamycin-insensitive companion of mTOR

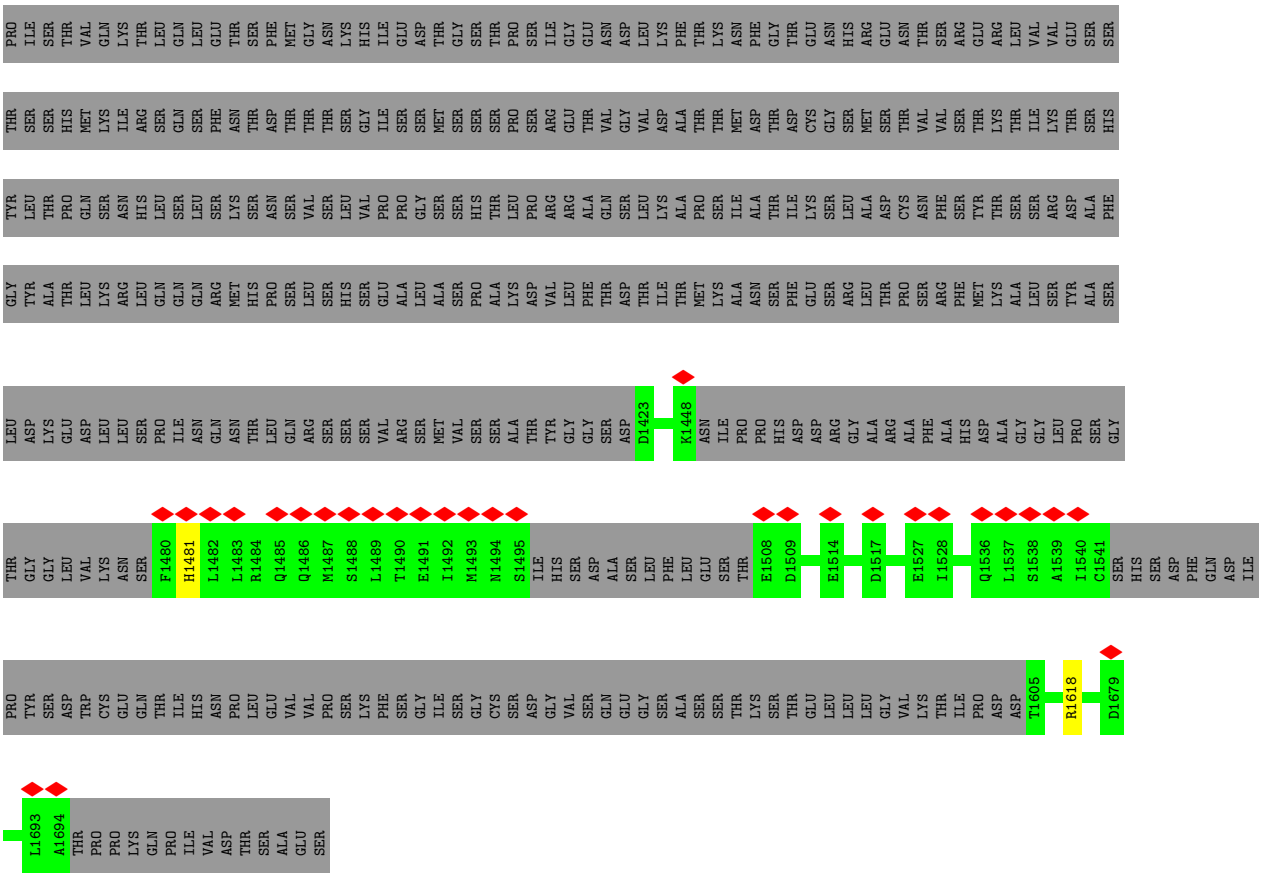
Chain E:





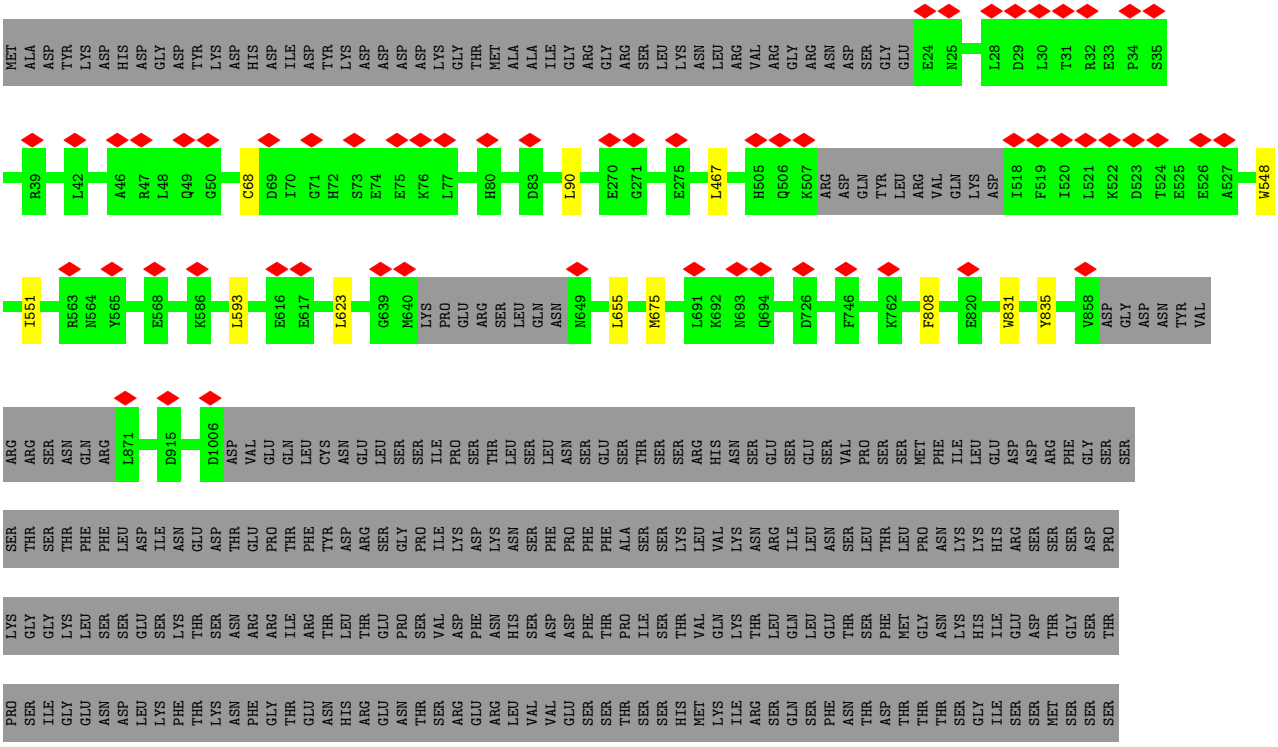


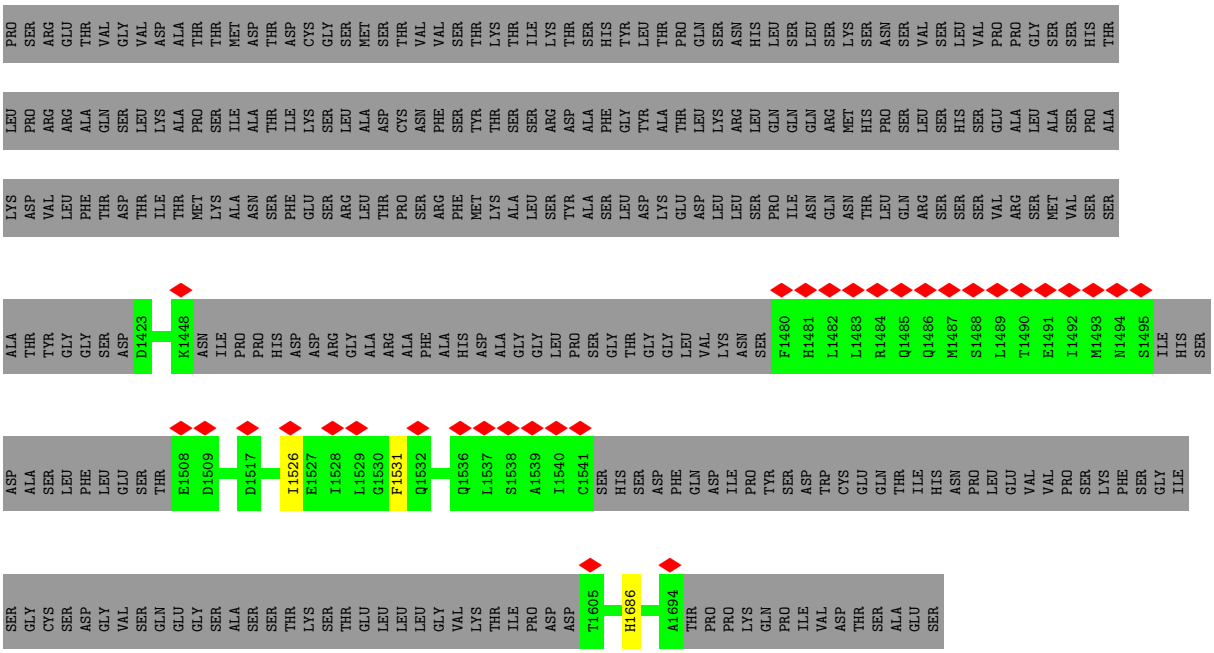




• Molecule 3: Rapamycin-insensitive companion of mTOR

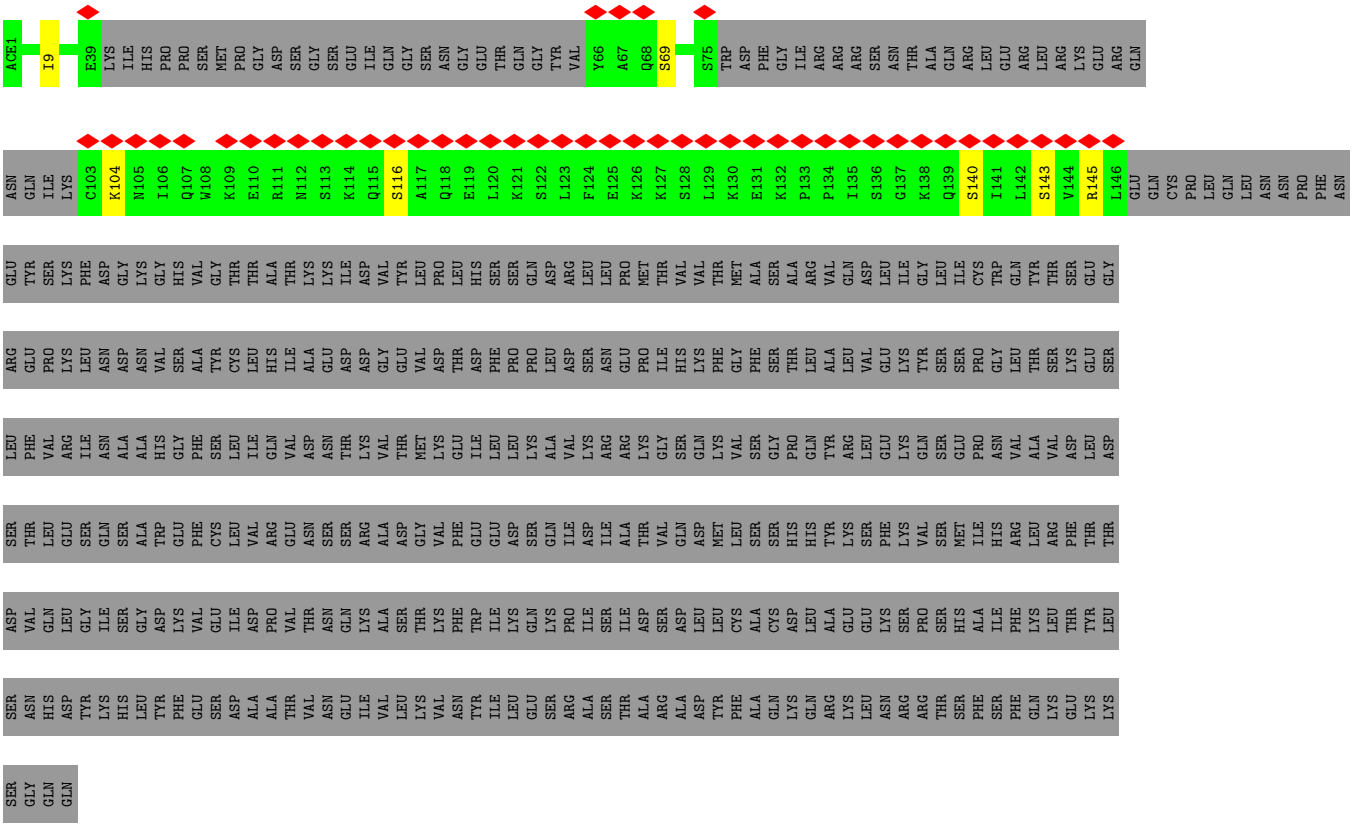
Chain F:





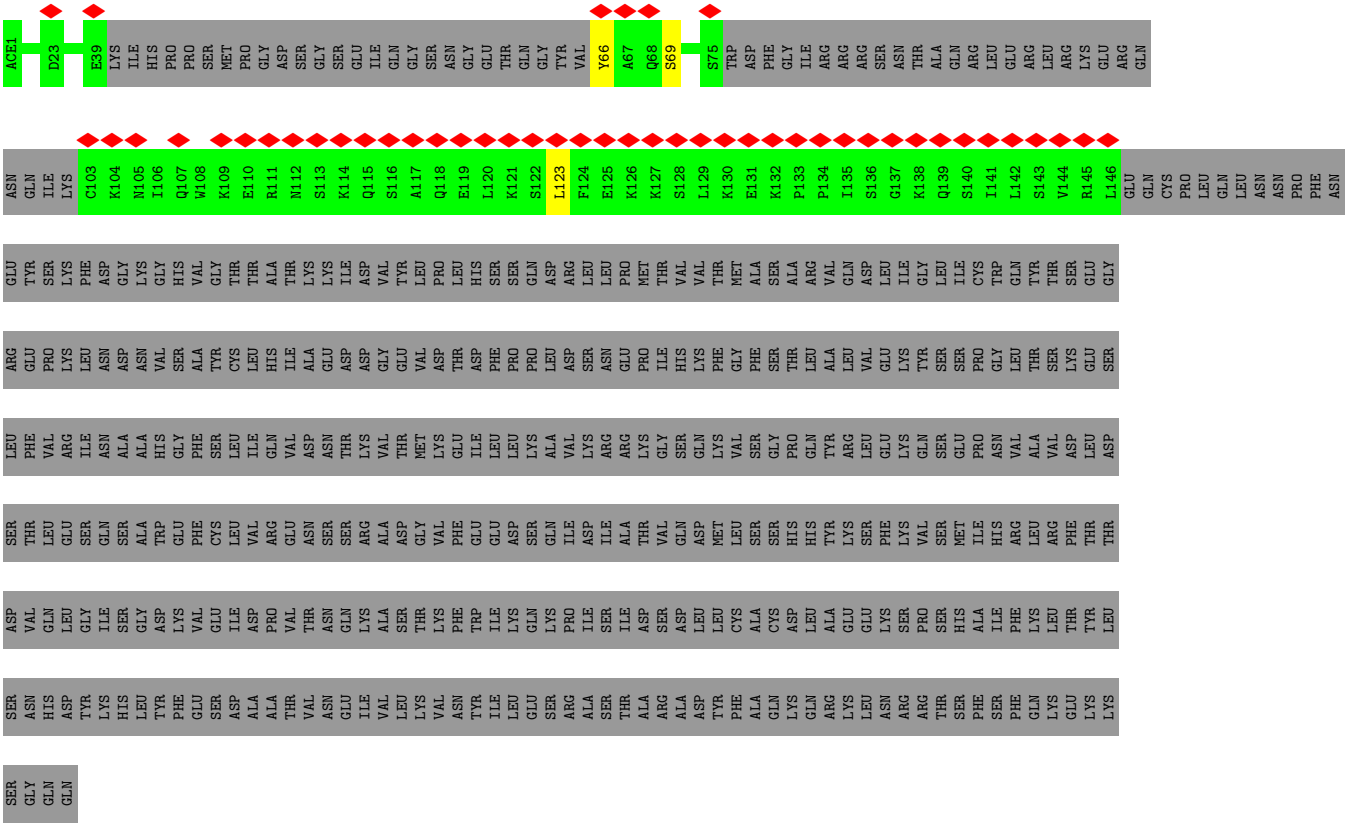
• Molecule 4: Target of rapamycin complex 2 subunit MAPKAP1

Chain G:



• Molecule 4: Target of rapamycin complex 2 subunit MAPKAP1

Chain H:


ACE1 D23 E39 LYS ILE HIS PRO PRO SER MET PRO GLY ASP SER GLY SER GLU ILE GLN GLY SER ASN GLY GLU THR GLN GLY TYR VAL Y66 A67 Q68 S69 S75 TRP ASP PHE GLY ILE ARG ARG ARG SER ASN THR ALA GLN ARG LEU GLU ARG LEU ARG LYS GLU ARG GLN
ASN GLN ILE LYS C103 K104 N105 I106 Q107 W108 K109 E110 R111 N112 S113 K114 Q115 S116 A117 Q118 E119 L120 K121 S122 L123 F124 E125 K126 K127 S128 L129 K130 E131 K132 P133 P134 I135 S136 G137 K138 Q139 S140 I141 L142 S143 V144 R145 L146 GLU GLN CYS PRO LEU GLN LEU ASN ASN PRO PHE ASN
GLU TYR SER LYS PHE ASP GLY LYS GLY HIS VAL GLY THR THR ALA THR LYS LYS ILE ASP VAL TYR LEU PRO LEU HIS SER SER GLN ASP ARG LEU LEU PRO MET THR VAL THR MET ALA SER ALA ARG VAL GLN ASP LEU ILE GLY LEU ILE CYS TRP GLN TYR THR SER LYS GLU GLY
ARG GLU PRO LYS LEU ASN ASP ASN VAL SER ALA TYR CYS LEU HIS ILE ALA GLU ASP ASP GLY GLU VAL ASP THR ASP PHE PRO PRO LEU ASP SER ASN GLU PRO ILE HIS LYS PHE GLY PHE SER THR LEU ALA LEU VAL GLU LYS TYR SER SER PRO GLY LEU THR SER LYS GLU SER
LEU PHE VAL ARG ILE ASN ALA ALA HIS GLY PHE SER LEU ILE GLN VAL ASP ASN THR LYS VAL THR MET LYS GLU ILE LEU LEU LEU LYS ALA VAL LYS ARG ARG LYS GLY SER GLN LYS VAL SER GLY PRO GLN TYR ARG LEU GLU GLU LYS GLN SER GLU PRO ASN VAL ALA VAL ASP LEU ASP
SER THR LEU GLU SER GLN SER ALA TRP GLU PHE CYS LEU VAL ARG GLU ASN SER SER ARG ALA ASP GLY VAL PHE GLU GLU ASP SER GLN ILE ASP ILE ALA THR VAL GLN ASP MET LEU SER SER HIS HIS TYR LYS SER PHE LYS VAL SER MET ILE HIS ARG LEU ARG PHE THR THR
ASP VAL GLN LEU GLY ILE SER GLY ASP LYS VAL GLU ILE ASP PRO VAL THR ASN GLN LYS ALA SER THR LYS PHE TRP ILE LYS GLN LYS PRO ILE SER ILE ALA ASP SER ASP LEU LEU CYS ALA CYS ASP LEU ALA GLU GLU LYS SER PRO SER HIS ALA ILE PHE LYS LEU THR TYR LEU
SER ASN HIS ASP TYR LYS HIS LEU TYR PHE GLU SER ASP ALA ALA THR VAL ASN GLU ILE VAL LEU LYS VAL ASN TYR ILE LEU GLU SER ARG ALA SER THR ALA ARG ALA ASP TYR PHE ALA GLN LYS GLN ARG LYS LEU ASN ARG ARG THR SER PHE SER PHE GLN LYS GLU LYS LYS
SER GLY GLN GLN

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	210421	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2800	Depositor
Magnification	130000	Depositor
Image detector	TFS FALCON 4i (4k x 4k)	Depositor
Maximum map value	0.036	Depositor
Minimum map value	-0.004	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.008	Depositor
Map size (Å)	488.96, 488.96, 488.96	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.955, 0.955, 0.955	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SEP, IHP, ZN, ADP, ACE, ATP

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	0.16	0/14448	0.41	0/19562
1	B	0.15	0/14434	0.40	0/19544
2	C	0.13	0/2501	0.43	0/3408
2	D	0.12	0/2501	0.41	0/3408
3	E	0.15	0/9154	0.39	0/12384
3	F	0.13	0/9154	0.38	0/12384
4	G	0.13	0/730	0.41	0/978
4	H	0.11	0/730	0.35	0/978
All	All	0.15	0/53652	0.40	0/72646

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	14145	0	14307	21	0
1	B	14131	0	14293	23	0
2	C	2443	0	2327	11	0
2	D	2443	0	2327	12	0
3	E	8990	0	9187	10	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	F	8990	0	9187	9	0
4	G	735	0	738	5	0
4	H	735	0	739	2	0
5	A	36	0	6	0	0
5	B	36	0	6	0	0
6	A	31	0	12	0	0
6	B	31	0	12	0	0
7	E	1	0	0	0	0
7	F	1	0	0	0	0
8	E	27	0	12	0	0
8	F	27	0	12	0	0
All	All	52802	0	53165	86	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 1.

All (86) 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:C:27:TRP:HH2	2:C:310:GLY:H	1.49	0.59
1:B:2154:GLN:HE21	1:B:2177:SER:HA	1.67	0.57
2:C:79:ILE:HG23	4:G:104:LYS:HB3	1.86	0.57
1:A:1274:ARG:HD3	1:A:1279:ASP:HB3	1.87	0.57
1:A:1119:VAL:HA	1:A:1122:PHE:CE2	2.40	0.56
2:C:30:HIS:CD2	4:G:145:ARG:H	2.24	0.56
1:A:772:MET:SD	1:A:809:SER:HB2	2.47	0.55
2:C:9:GLY:HA3	2:C:70:LEU:HB3	1.87	0.55
2:D:50:VAL:HG21	2:D:321:ASN:HB2	1.88	0.54
3:F:68:CYS:HG	4:H:66:TYR:N	2.05	0.54
3:E:548:TRP:HA	3:E:551:ILE:HD12	1.91	0.53
2:D:127:VAL:HG21	2:D:131:ILE:HD11	1.91	0.53
1:A:2249:LEU:HB3	1:A:2302:LEU:HD21	1.92	0.52
2:D:40:HIS:CE1	2:D:66:ARG:HH21	2.27	0.52
1:B:757:LEU:HD21	1:B:775:ILE:HG23	1.93	0.51
1:B:1119:VAL:HA	1:B:1122:PHE:CE2	2.46	0.51
1:B:965:SER:HA	1:B:968:HIS:CD2	2.47	0.50
1:B:2387:MET:HE1	1:B:2392:LEU:HA	1.94	0.50
2:D:107:CYS:HA	2:D:130:PRO:HA	1.93	0.50
3:F:1526:ILE:HA	3:F:1531:PHE:HB2	1.94	0.50
3:E:1481:HIS:CD2	3:E:1618:ARG:HG3	2.47	0.50
3:F:548:TRP:HA	3:F:551:ILE:HD12	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2340:HIS:CE1	1:A:2342:SER:HB2	2.47	0.49
2:C:120:GLN:HB3	4:G:116:SER:HB2	1.95	0.48
1:A:1335:ASP:HB3	1:A:1339:ARG:NH1	2.29	0.48
1:B:1101:GLN:HB3	1:B:1141:ARG:HD3	1.96	0.48
1:B:1274:ARG:HD3	1:B:1279:ASP:HB3	1.96	0.47
1:A:2154:GLN:HE21	1:A:2177:SER:HA	1.79	0.47
2:C:278:PHE:HE1	2:C:299:VAL:HG11	1.80	0.47
3:E:593:LEU:HD23	3:E:655:LEU:HD23	1.95	0.47
1:B:1069:LEU:HD23	3:F:467:LEU:HD12	1.96	0.47
2:C:144:ILE:HD12	2:C:178:ILE:HD11	1.96	0.47
1:A:1277:LYS:HE3	1:A:1350:ILE:HG23	1.97	0.47
2:C:138:PRO:HG3	2:C:180:PRO:HA	1.97	0.47
3:F:593:LEU:HD23	3:F:655:LEU:HD23	1.97	0.47
3:E:429:GLU:HG2	3:E:479:PHE:CZ	2.50	0.47
1:A:1808:ASN:ND2	1:A:1873:LEU:HD13	2.31	0.46
3:F:831:TRP:HA	3:F:835:TYR:HB2	1.97	0.46
2:C:230:PRO:HD3	2:C:278:PHE:HB2	1.97	0.46
1:B:604:ARG:NH2	1:B:651:VAL:HG22	2.31	0.45
3:E:698:LEU:HD12	3:E:728:CYS:SG	2.55	0.45
1:B:2340:HIS:CE1	1:B:2342:SER:HB2	2.52	0.45
2:C:129:ALA:HB3	2:C:147:ASP:HB3	1.98	0.45
1:A:791:ASN:O	1:A:794:VAL:HG22	2.17	0.45
1:B:1122:PHE:HB3	1:B:1135:ALA:HB3	1.98	0.45
1:A:761:VAL:HG22	1:A:768:ILE:HG21	1.99	0.44
1:B:630:LEU:HD21	1:B:655:VAL:HB	1.98	0.44
1:A:2194:GLN:HG3	1:A:2421:PHE:HZ	1.82	0.44
1:B:1581:GLU:OE2	1:B:1585:ARG:HD3	2.16	0.44
1:A:2340:HIS:HE1	1:A:2342:SER:HB2	1.83	0.44
1:B:1274:ARG:HG3	1:B:1280:TRP:CE3	2.53	0.43
2:D:119:LEU:HD21	4:H:123:LEU:HD11	2.01	0.43
1:B:872:LEU:HB3	1:B:1576:THR:HG22	2.01	0.43
2:D:96:ASP:HB3	2:D:115:ARG:HH12	1.82	0.43
3:E:854:TYR:CE2	4:G:9:ILE:HD11	2.54	0.43
1:A:2154:GLN:HG3	1:A:2177:SER:HA	2.00	0.43
3:E:537:VAL:HA	3:E:546:TRP:CD1	2.53	0.43
3:F:623:LEU:HD23	3:F:675:MET:HE3	2.01	0.43
2:D:136:LEU:HD11	2:D:140:GLN:HA	2.01	0.42
3:E:280:ARG:HA	3:E:280:ARG:HD3	1.91	0.42
3:E:429:GLU:HG2	3:E:479:PHE:HZ	1.82	0.42
2:C:258:LEU:HD13	2:C:297:TRP:CG	2.55	0.42
4:G:140:SER:HA	4:G:143:SER:OG	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1393:TYR:CZ	1:B:1422:LYS:HD3	2.54	0.42
2:D:290:SER:HA	2:D:314:ALA:HB1	2.00	0.42
1:A:1946:ILE:HD11	1:A:1994:ILE:HD12	2.01	0.42
1:B:1937:GLN:HG3	1:B:1938:VAL:HG13	2.02	0.41
1:A:1504:VAL:HG21	1:A:1508:THR:HG21	2.03	0.41
1:B:604:ARG:HH22	1:B:651:VAL:HG22	1.85	0.41
1:B:947:TYR:HB2	1:B:948:PRO:HD3	2.02	0.41
1:A:825:MET:HE1	1:A:864:LEU:HD13	2.02	0.41
2:D:144:ILE:HD12	2:D:178:ILE:HD11	2.03	0.41
1:B:2278:LEU:HB3	1:B:2282:GLN:HB2	2.02	0.41
1:A:709:GLU:OE2	1:A:755:ARG:HD3	2.21	0.41
1:A:1477:MET:HE2	1:A:1500:LYS:HE2	2.03	0.41
1:A:2421:PHE:C	1:A:2421:PHE:CD1	2.97	0.41
3:F:90:LEU:HD13	3:F:1686:HIS:HA	2.03	0.41
1:B:1400:LYS:HE2	1:B:1415:SER:HB3	2.02	0.40
1:B:2340:HIS:HE1	1:B:2342:SER:HB2	1.86	0.40
1:A:1609:PRO:HA	1:A:1612:ARG:HG3	2.03	0.40
1:B:1220:TYR:CD2	1:B:1221:THR:HG22	2.55	0.40
2:D:107:CYS:HB2	2:D:126:GLN:HE22	1.86	0.40
2:D:130:PRO:HB2	2:D:148:GLN:HG3	2.02	0.40
2:D:320:PHE:CZ	2:D:322:ASP:HB3	2.57	0.40
3:E:72:HIS:CE1	3:E:112:GLN:HG3	2.57	0.40
3:F:808:PHE:N	3:F:808:PHE:CD1	2.89	0.40

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	1731/2590 (67%)	1707 (99%)	24 (1%)	0	100	100
1	B	1729/2590 (67%)	1701 (98%)	28 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	C	313/326 (96%)	298 (95%)	15 (5%)	0	100	100
2	D	313/326 (96%)	299 (96%)	14 (4%)	0	100	100
3	E	1103/1734 (64%)	1070 (97%)	33 (3%)	0	100	100
3	F	1103/1734 (64%)	1073 (97%)	30 (3%)	0	100	100
4	G	86/522 (16%)	79 (92%)	7 (8%)	0	100	100
4	H	86/522 (16%)	79 (92%)	7 (8%)	0	100	100
All	All	6464/10344 (62%)	6306 (98%)	158 (2%)	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	1549/2248 (69%)	1549 (100%)	0	100	100
1	B	1547/2248 (69%)	1547 (100%)	0	100	100
2	C	267/276 (97%)	267 (100%)	0	100	100
2	D	267/276 (97%)	267 (100%)	0	100	100
3	E	1005/1562 (64%)	1005 (100%)	0	100	100
3	F	1005/1562 (64%)	1005 (100%)	0	100	100
4	G	85/469 (18%)	85 (100%)	0	100	100
4	H	85/469 (18%)	85 (100%)	0	100	100
All	All	5810/9110 (64%)	5810 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (94) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	605	HIS

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Mol	Chain	Res	Type
1	A	615	HIS
1	A	743	HIS
1	A	1015	GLN
1	A	1106	ASN
1	A	1311	ASN
1	A	1330	ASN
1	A	1398	HIS
1	A	1420	ASN
1	A	1509	GLN
1	A	1782	HIS
1	A	1791	HIS
1	A	1808	ASN
1	A	1937	GLN
1	A	1992	ASN
1	A	2003	ASN
1	A	2007	GLN
1	A	2154	GLN
1	A	2167	GLN
1	A	2180	HIS
1	A	2395	ASN
1	A	2428	ASN
1	A	2515	HIS
1	B	605	HIS
1	B	609	HIS
1	B	694	GLN
1	B	736	GLN
1	B	743	HIS
1	B	759	HIS
1	B	962	GLN
1	B	968	HIS
1	B	1015	GLN
1	B	1106	ASN
1	B	1207	GLN
1	B	1233	GLN
1	B	1308	GLN
1	B	1330	ASN
1	B	1420	ASN
1	B	1439	HIS
1	B	1716	HIS
1	B	1791	HIS
1	B	1898	ASN
1	B	1937	GLN

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Mol	Chain	Res	Type
1	B	1992	ASN
1	B	2003	ASN
1	B	2007	GLN
1	B	2028	HIS
1	B	2117	GLN
1	B	2154	GLN
1	B	2180	HIS
1	B	2540	GLN
2	C	30	HIS
2	C	64	HIS
2	C	71	ASN
2	C	73	ASN
2	C	198	ASN
2	C	242	GLN
2	C	251	ASN
2	D	39	GLN
2	D	126	GLN
2	D	161	HIS
2	D	283	GLN
3	E	37	ASN
3	E	209	ASN
3	E	233	HIS
3	E	435	ASN
3	E	440	HIS
3	E	480	HIS
3	E	600	GLN
3	E	894	HIS
3	E	944	GLN
3	E	1485	GLN
3	E	1494	ASN
3	F	242	GLN
3	F	261	HIS
3	F	432	HIS
3	F	440	HIS
3	F	480	HIS
3	F	600	GLN
3	F	694	GLN
3	F	872	GLN
3	F	885	GLN
3	F	932	ASN
3	F	988	HIS
3	F	999	HIS

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Mol	Chain	Res	Type
3	F	1485	GLN
3	F	1494	ASN
3	F	1535	ASN
3	F	1632	HIS
3	F	1662	HIS
4	G	115	GLN
4	H	13	HIS
4	H	105	ASN
4	H	107	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues 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	SEP	H	69	4	8,9,10	1.51	1 (12%)	8,12,14	1.45	2 (25%)
4	SEP	G	69	4	8,9,10	1.49	1 (12%)	8,12,14	1.34	2 (25%)

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	SEP	H	69	4	-	1/5/8/10	-
4	SEP	G	69	4	-	1/5/8/10	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	H	69	SEP	P-O1P	3.32	1.61	1.50
4	G	69	SEP	P-O1P	3.26	1.61	1.50

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	H	69	SEP	P-OG-CB	-2.94	110.19	118.30
4	G	69	SEP	P-OG-CB	-2.48	111.47	118.30
4	H	69	SEP	OG-CB-CA	2.14	110.23	108.14
4	G	69	SEP	OG-CB-CA	2.11	110.19	108.14

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	69	SEP	N-CA-CB-OG
4	H	69	SEP	N-CA-CB-OG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 2 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	$\#\|Z\| > 2$
6	ATP	B	2601	-	29,33,33	0.31	0	44,52,52	0.49	1 (2%)
6	ATP	A	2602	-	29,33,33	0.31	0	44,52,52	0.49	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	IHP	A	2601	-	36,36,36	1.85	6 (16%)	54,60,60	0.92	2 (3%)
8	ADP	F	1801	-	27,29,29	1.36	4 (14%)	42,45,45	2.00	8 (19%)
8	ADP	E	1802	-	27,29,29	1.36	4 (14%)	42,45,45	1.87	9 (21%)
5	IHP	B	2602	-	36,36,36	1.86	6 (16%)	54,60,60	0.92	1 (1%)

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
6	ATP	B	2601	-	-	0/22/38/38	0/3/3/3
6	ATP	A	2602	-	-	3/22/38/38	0/3/3/3
5	IHP	A	2601	-	-	6/30/54/54	0/1/1/1
8	ADP	F	1801	-	-	11/16/32/32	0/3/3/3
8	ADP	E	1802	-	-	6/16/32/32	0/3/3/3
5	IHP	B	2602	-	-	9/30/54/54	0/1/1/1

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	F	1801	ADP	C5-C4	4.65	1.47	1.39
5	B	2602	IHP	P2-O12	4.61	1.68	1.59
5	A	2601	IHP	P2-O12	4.57	1.67	1.59
8	E	1802	ADP	C5-C4	4.54	1.47	1.39
5	B	2602	IHP	P5-O15	4.26	1.67	1.59
5	A	2601	IHP	P5-O15	4.24	1.67	1.59
5	A	2601	IHP	P4-O14	4.23	1.67	1.59
5	B	2602	IHP	P4-O14	4.21	1.67	1.59
5	A	2601	IHP	P6-O16	4.14	1.67	1.59
5	B	2602	IHP	P6-O16	4.07	1.67	1.59
5	B	2602	IHP	P3-O13	4.03	1.66	1.59
5	B	2602	IHP	P1-O11	3.98	1.66	1.59
5	A	2601	IHP	P1-O11	3.96	1.66	1.59
5	A	2601	IHP	P3-O13	3.89	1.66	1.59
8	F	1801	ADP	C5-C6	2.70	1.48	1.41
8	E	1802	ADP	C5-C6	2.66	1.48	1.41
8	E	1802	ADP	C8-N7	2.34	1.36	1.31
8	F	1801	ADP	C8-N7	2.27	1.35	1.31
8	F	1801	ADP	C5-N7	-2.25	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	E	1802	ADP	C5-N7	-2.22	1.34	1.39

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	F	1801	ADP	C5-C4-N3	-6.91	117.73	126.75
8	E	1802	ADP	C5-C4-N3	-6.28	118.56	126.75
8	F	1801	ADP	N3-C4-N9	5.49	136.13	127.08
8	E	1802	ADP	N3-C4-N9	4.89	135.14	127.08
8	F	1801	ADP	C2-N3-C4	4.16	121.59	111.75
8	E	1802	ADP	C2-N3-C4	3.87	120.90	111.75
8	E	1802	ADP	C4-C5-N7	-3.25	106.66	110.62
8	F	1801	ADP	N3-C2-N1	-3.22	123.56	128.60
8	E	1802	ADP	N3-C2-N1	-3.17	123.64	128.60
8	F	1801	ADP	C4-C5-N7	-3.11	106.83	110.62
8	F	1801	ADP	PA-O3A-PB	-3.11	122.16	132.83
5	B	2602	IHP	C5-C4-C3	-2.90	104.06	110.41
5	A	2601	IHP	C5-C4-C3	-2.81	104.26	110.41
8	E	1802	ADP	C5-N7-C8	2.71	107.36	103.51
8	F	1801	ADP	C5-N7-C8	2.67	107.30	103.51
8	E	1802	ADP	C4-N9-C8	2.42	108.35	105.73
5	A	2601	IHP	C6-C1-C2	2.42	115.71	110.41
8	E	1802	ADP	PA-O3A-PB	-2.26	125.08	132.83
8	F	1801	ADP	C4-N9-C8	2.12	108.03	105.73
8	E	1802	ADP	C6-C5-N7	2.12	135.97	132.02
6	B	2601	ATP	PB-O3B-PG	2.10	140.01	132.83

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	2602	IHP	C2-C1-O11-P1
5	B	2602	IHP	C3-O13-P3-O23
8	E	1802	ADP	C5'-O5'-PA-O1A
8	E	1802	ADP	C5'-O5'-PA-O3A
8	F	1801	ADP	PA-O3A-PB-O2B
8	F	1801	ADP	C5'-O5'-PA-O2A
8	F	1801	ADP	C3'-C4'-C5'-O5'
6	A	2602	ATP	O4'-C4'-C5'-O5'
8	F	1801	ADP	O4'-C4'-C5'-O5'
6	A	2602	ATP	C3'-C4'-C5'-O5'
5	B	2602	IHP	C6-C1-O11-P1

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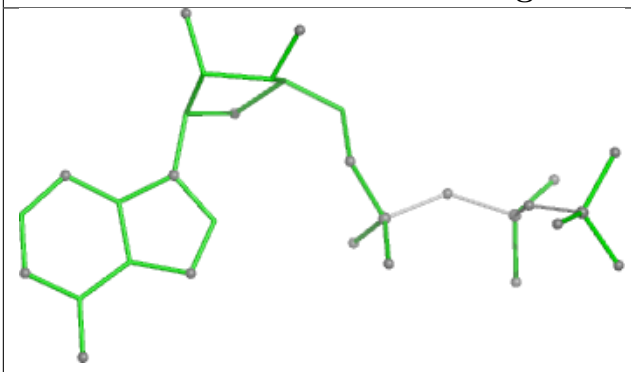
Mol	Chain	Res	Type	Atoms
8	E	1802	ADP	PB-O3A-PA-O1A
8	F	1801	ADP	C4'-C5'-O5'-PA
8	F	1801	ADP	C5'-O5'-PA-O3A
6	A	2602	ATP	PB-O3A-PA-O1A
8	F	1801	ADP	C2'-C1'-N9-C4
8	E	1802	ADP	C5'-O5'-PA-O2A
8	F	1801	ADP	C5'-O5'-PA-O1A
8	E	1802	ADP	PB-O3A-PA-O2A
8	F	1801	ADP	C2'-C1'-N9-C8
5	A	2601	IHP	C1-O11-P1-O21
5	A	2601	IHP	C2-O12-P2-O22
5	B	2602	IHP	C2-O12-P2-O22
5	B	2602	IHP	C4-O14-P4-O24
8	F	1801	ADP	PA-O3A-PB-O3B
5	A	2601	IHP	C1-O11-P1-O31
5	A	2601	IHP	C1-O11-P1-O41
5	A	2601	IHP	C2-O12-P2-O32
5	A	2601	IHP	C5-O15-P5-O35
5	B	2602	IHP	C2-O12-P2-O42
5	B	2602	IHP	C3-O13-P3-O43
5	B	2602	IHP	C4-O14-P4-O44
5	B	2602	IHP	C6-O16-P6-O46
8	F	1801	ADP	O4'-C1'-N9-C8
8	E	1802	ADP	O4'-C4'-C5'-O5'

There are no ring outliers.

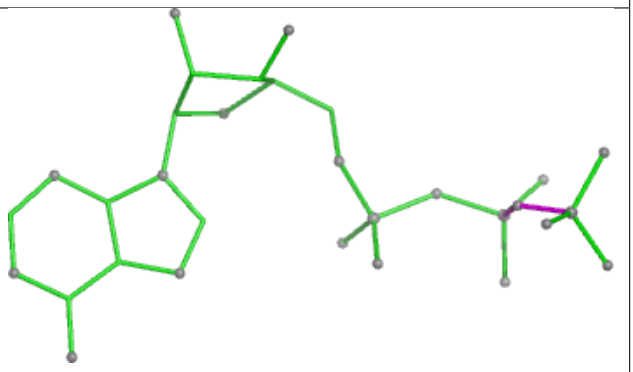
No monomer is involved in short contacts.

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 then 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.

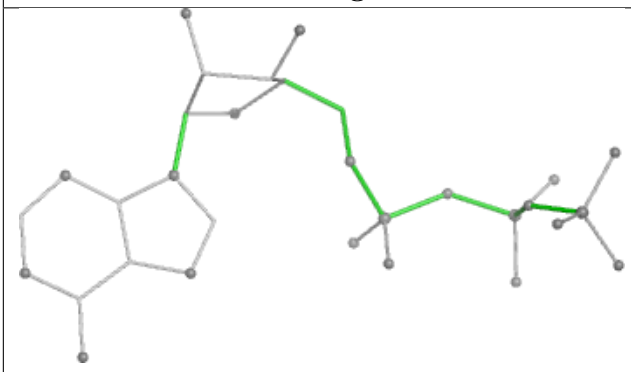
Ligand ATP B 2601



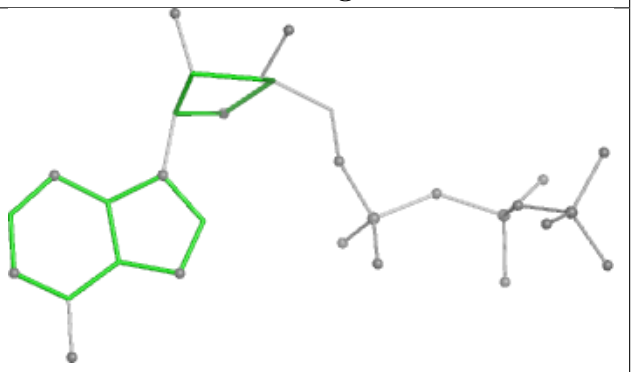
Bond lengths



Bond angles

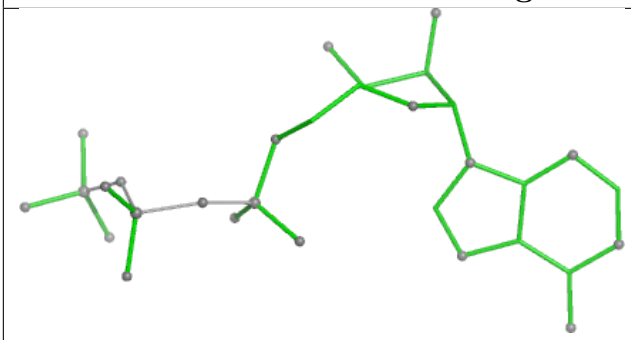


Torsions

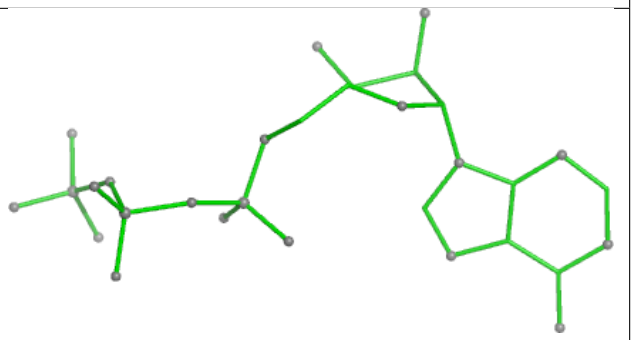


Rings

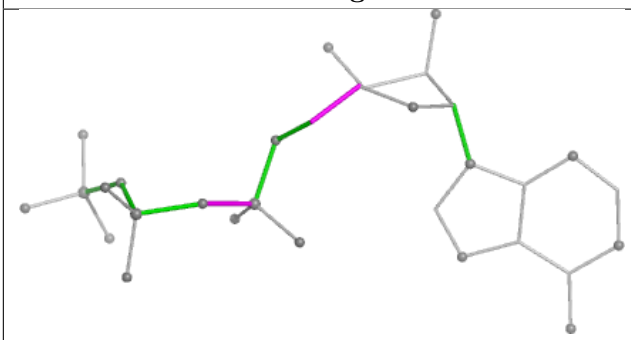
Ligand ATP A 2602



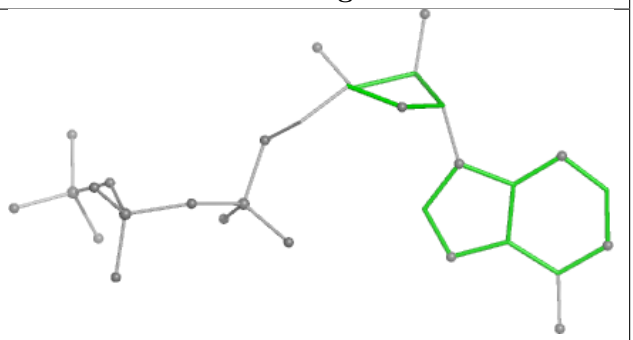
Bond lengths



Bond angles

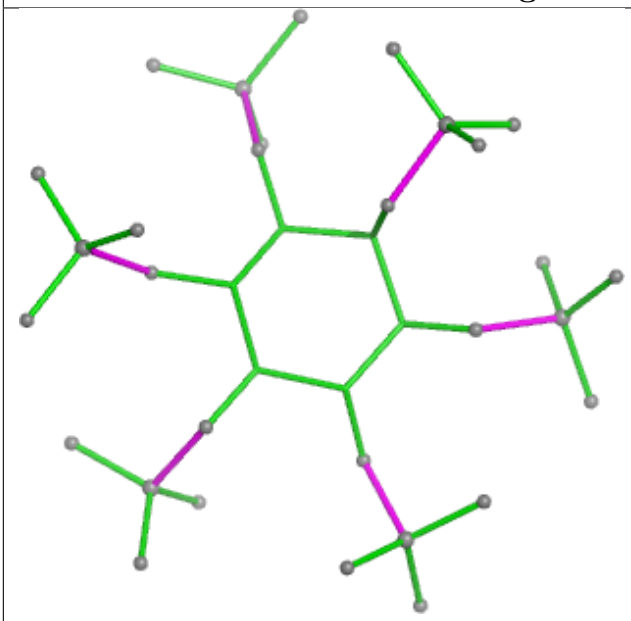


Torsions

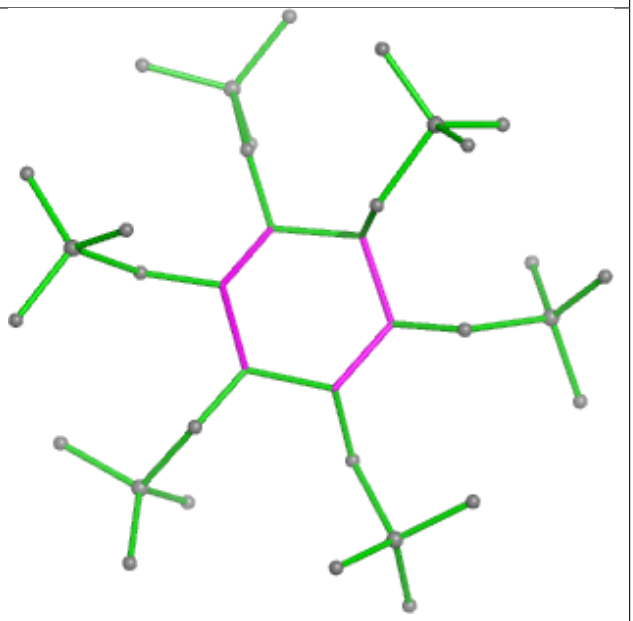


Rings

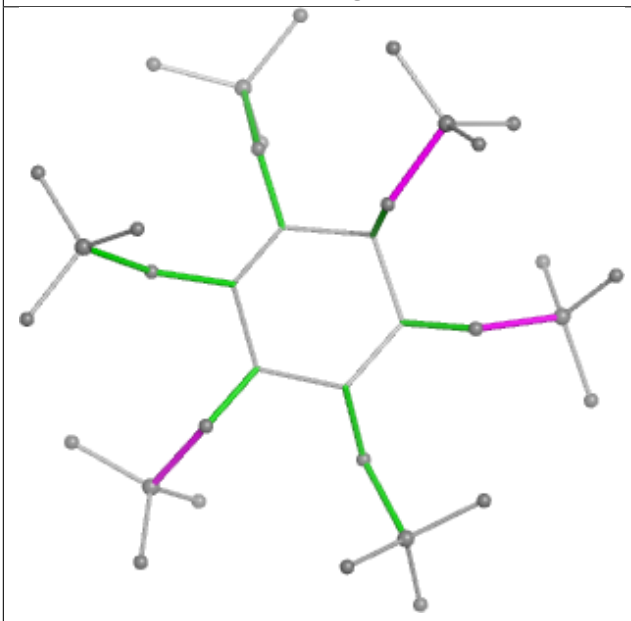
Ligand IHP A 2601



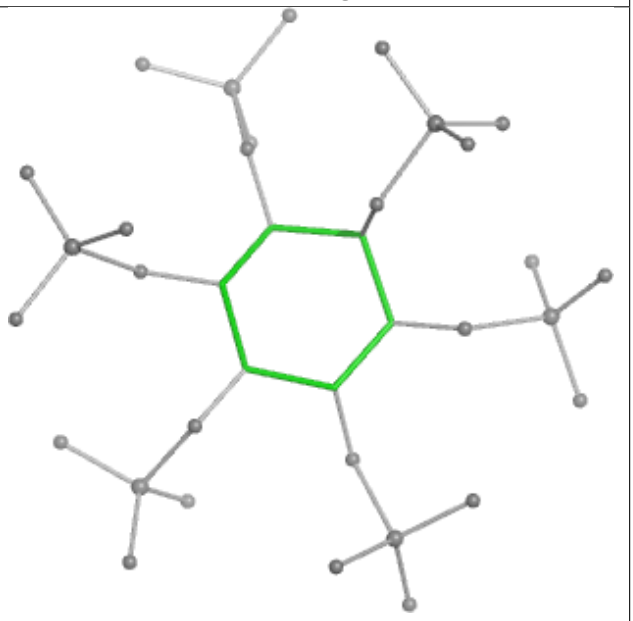
Bond lengths



Bond angles

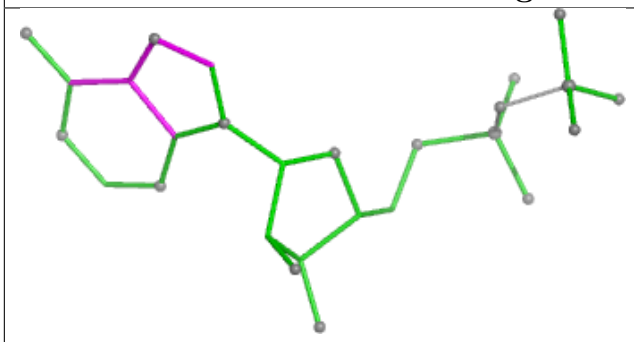


Torsions

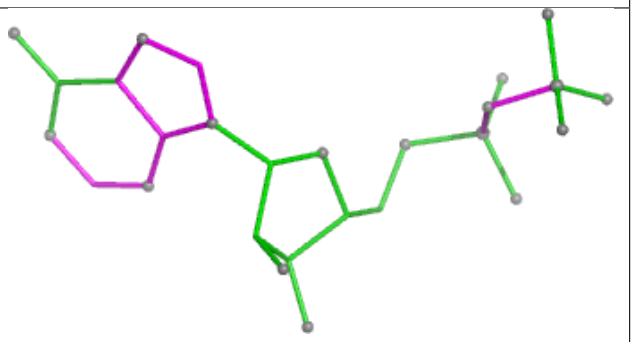


Rings

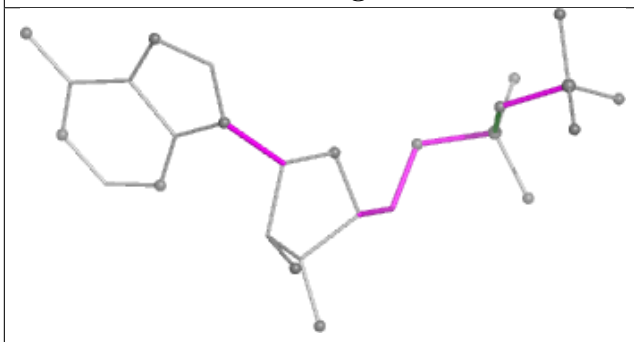
Ligand ADP F 1801



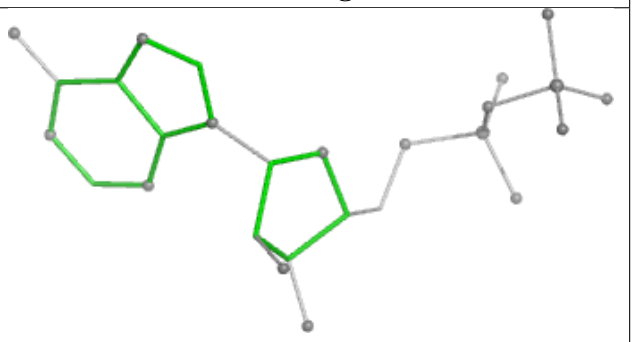
Bond lengths



Bond angles

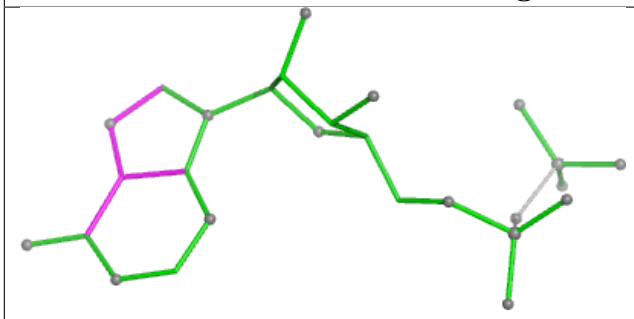


Torsions

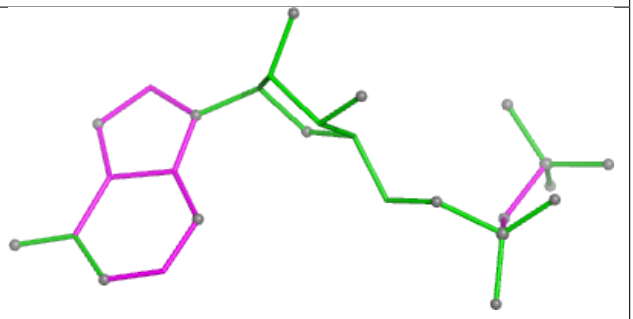


Rings

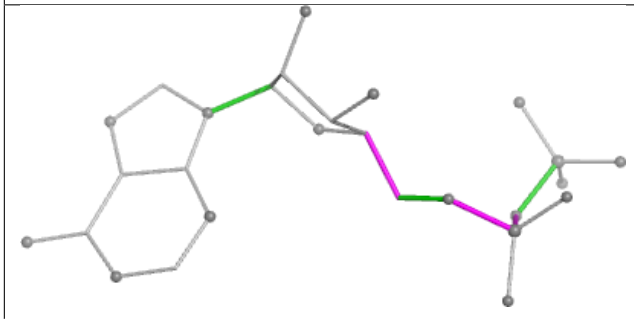
Ligand ADP E 1802



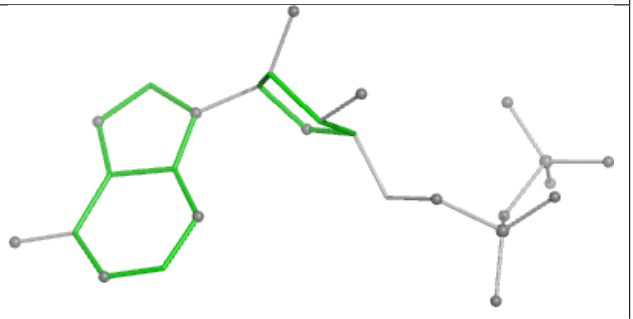
Bond lengths



Bond angles

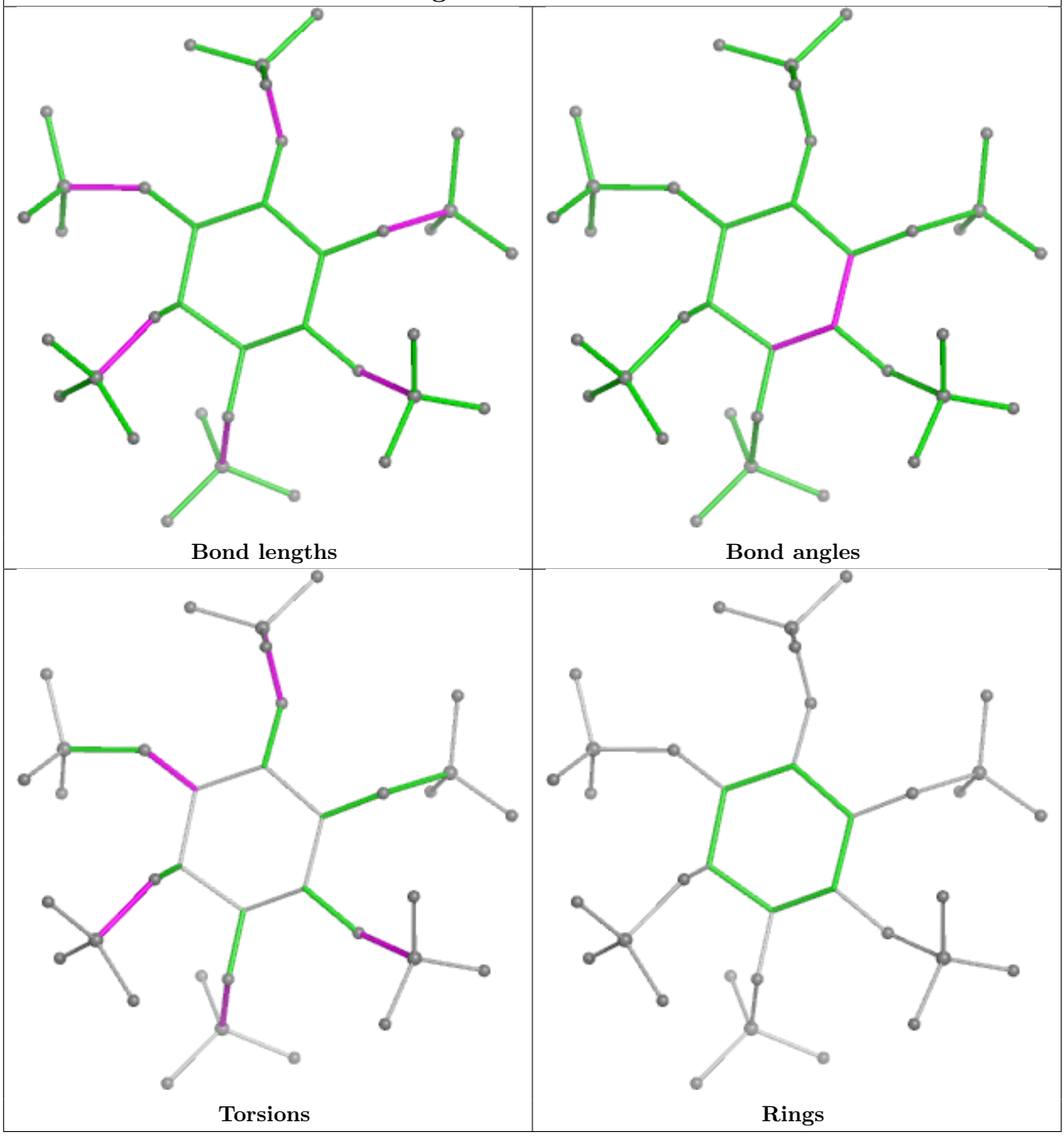


Torsions



Rings

Ligand IHP B 2602



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.

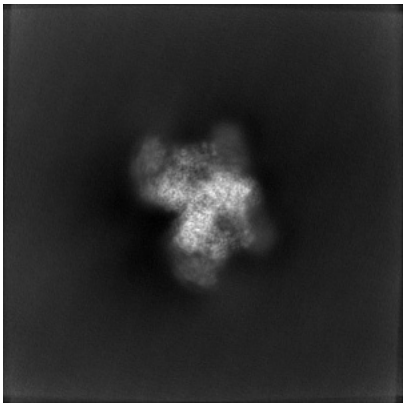
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-55637. These allow visual inspection of the internal detail of the map and identification of artifacts.

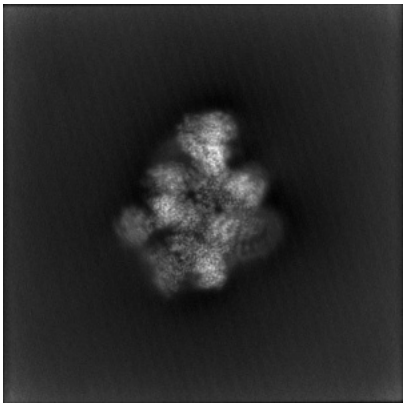
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

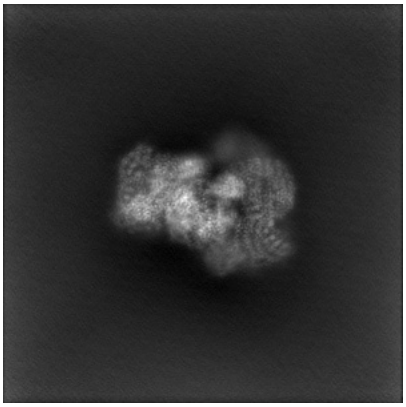
6.1.1 Primary map



X



Y

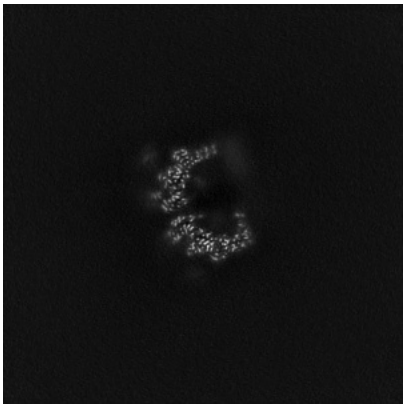


Z

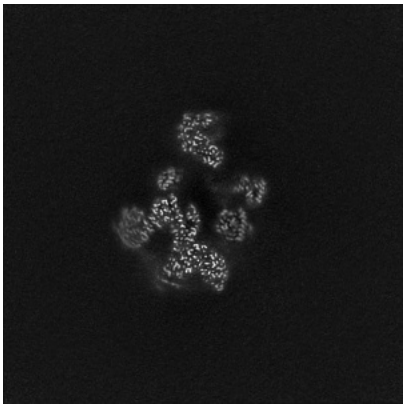
The images above show the map projected in three orthogonal directions.

6.2 Central slices

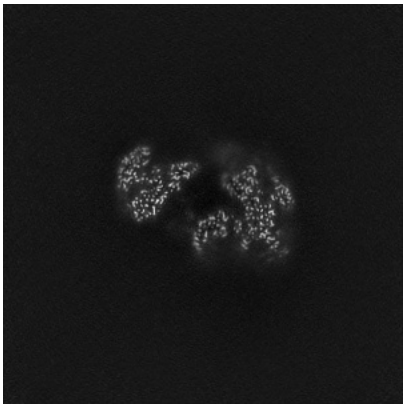
6.2.1 Primary map



X Index: 256



Y Index: 256

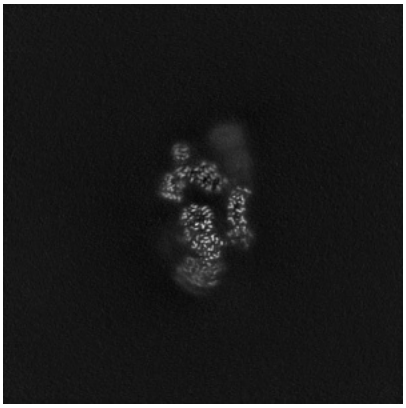


Z Index: 256

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

6.3 Largest variance slices (i)

6.3.1 Primary map



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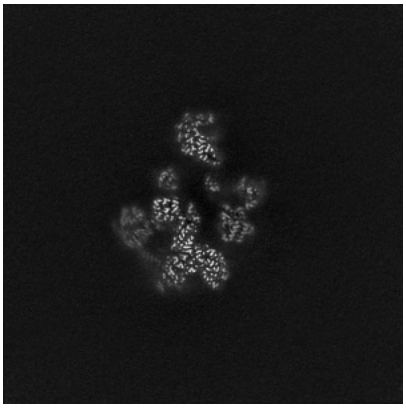
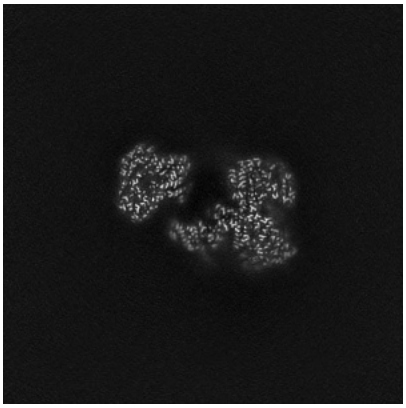


Y Index: 252

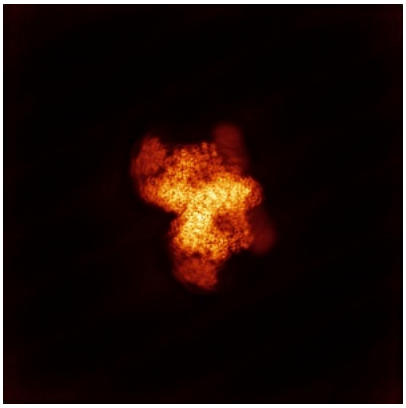


Z Index: 270

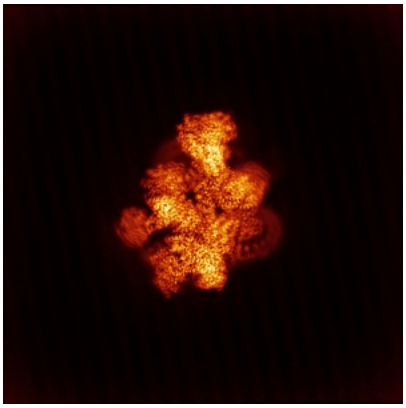
The images above show the largest variance slices of the map in three orthogonal directions.

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

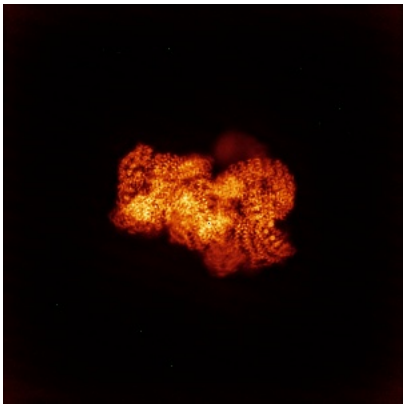
6.4.1 Primary map



X



Y

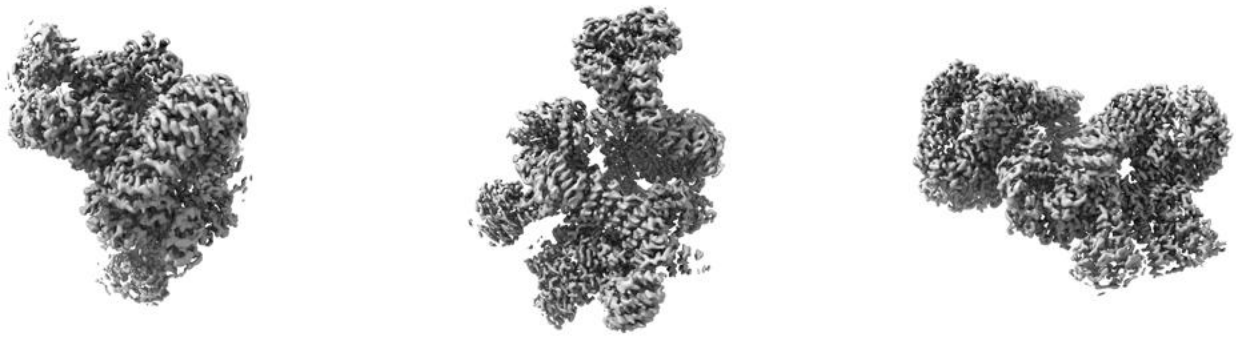


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.008. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

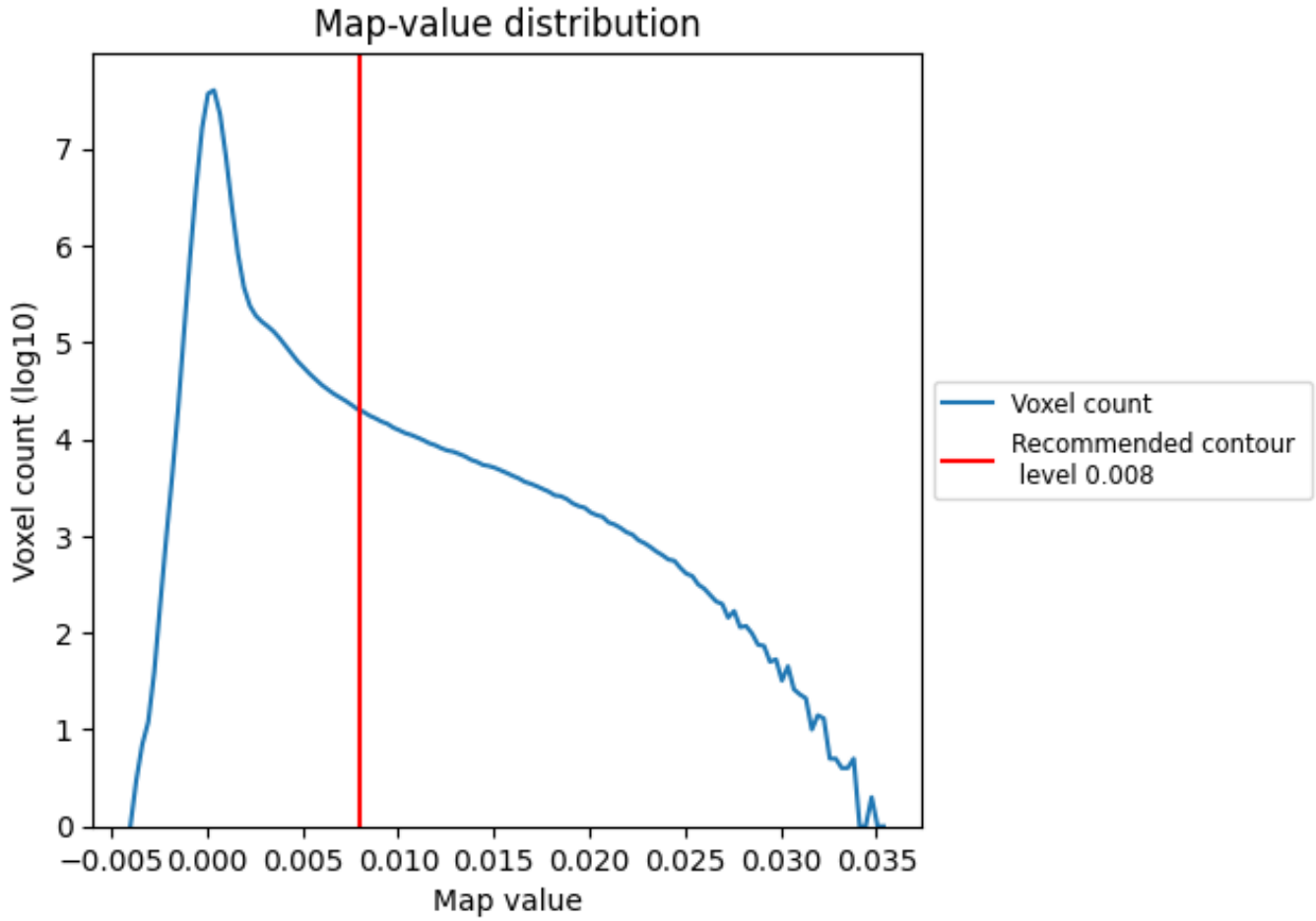
6.6 Mask visualisation (i)

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

7 Map analysis

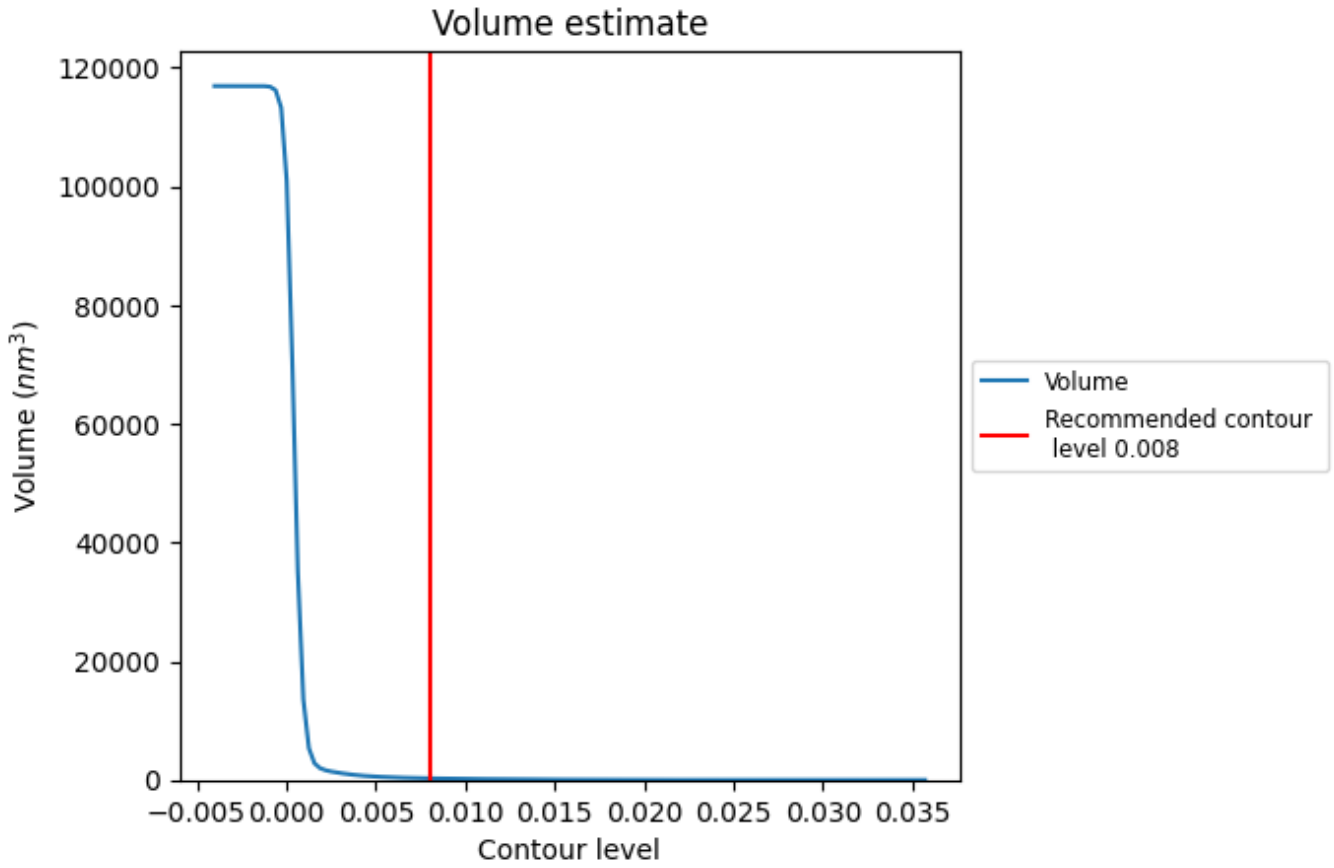
This section contains the results of statistical analysis of the map.

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.

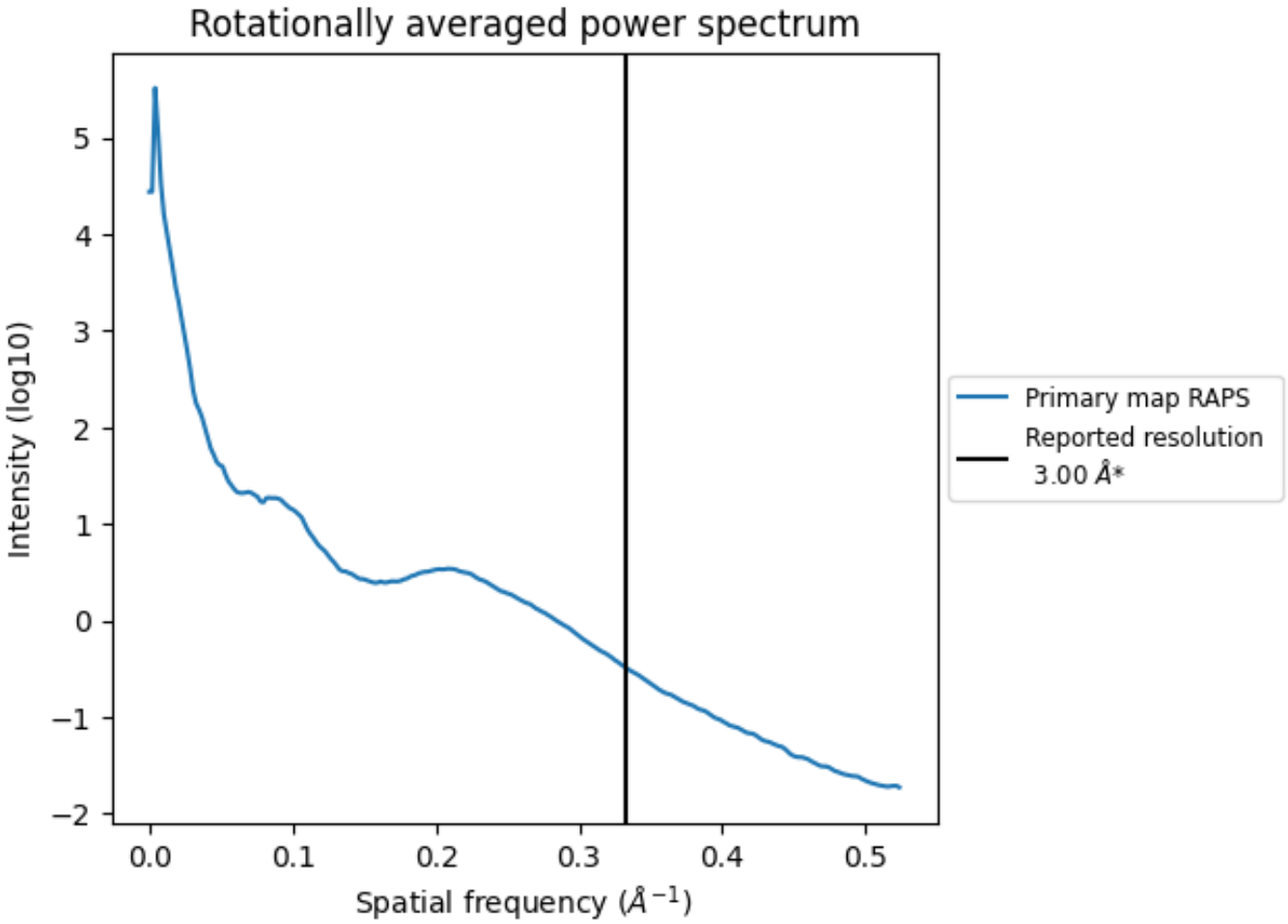
7.2 Volume estimate



The volume at the recommended contour level is 271 nm^3; this corresponds to an approximate mass of 245 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 0.333 Å^{-1}

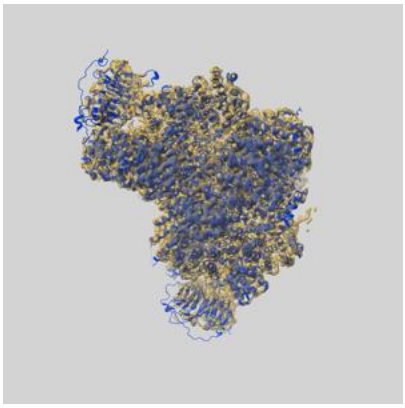
8 Fourier-Shell correlation (i)

This section was not generated. No FSC curve or half-maps provided.

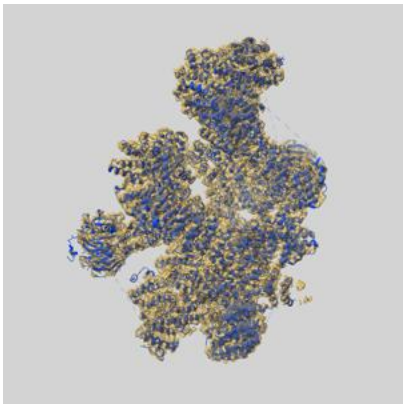
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-55637 and PDB model 9T7J. Per-residue inclusion information can be found in section 3 on page 11.

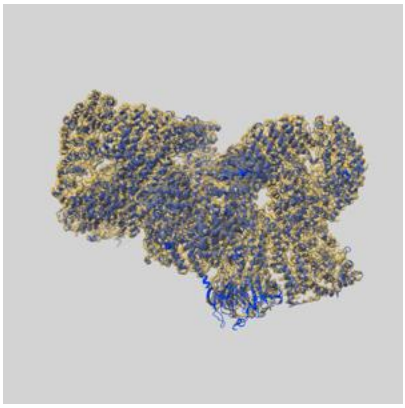
9.1 Map-model overlay



X



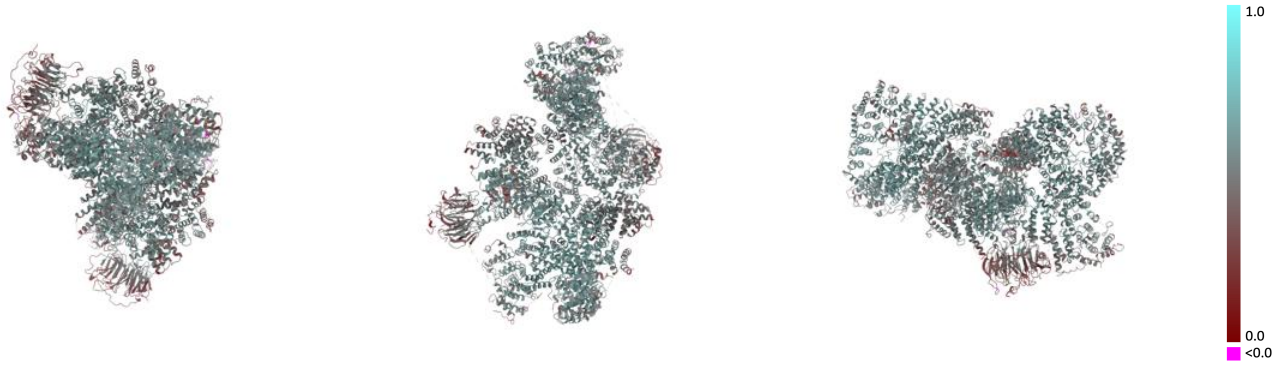
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.008 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.

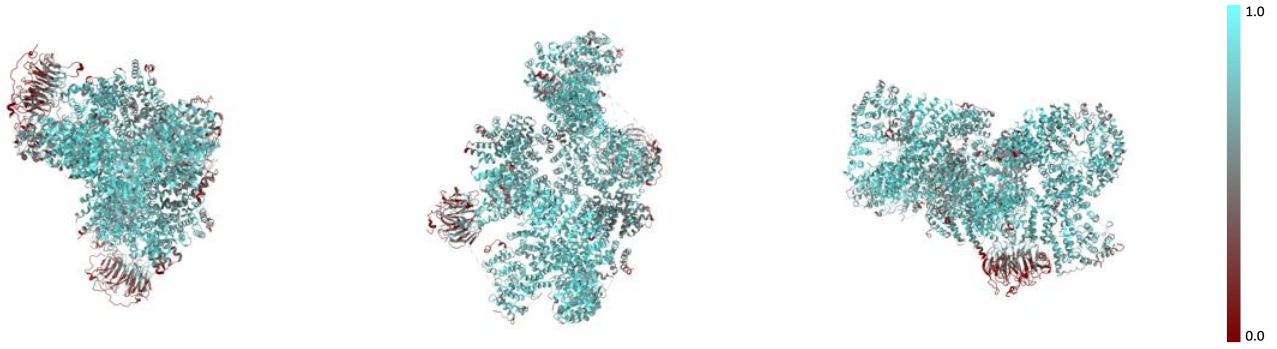
9.2 Q-score mapped to coordinate model (i)



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.

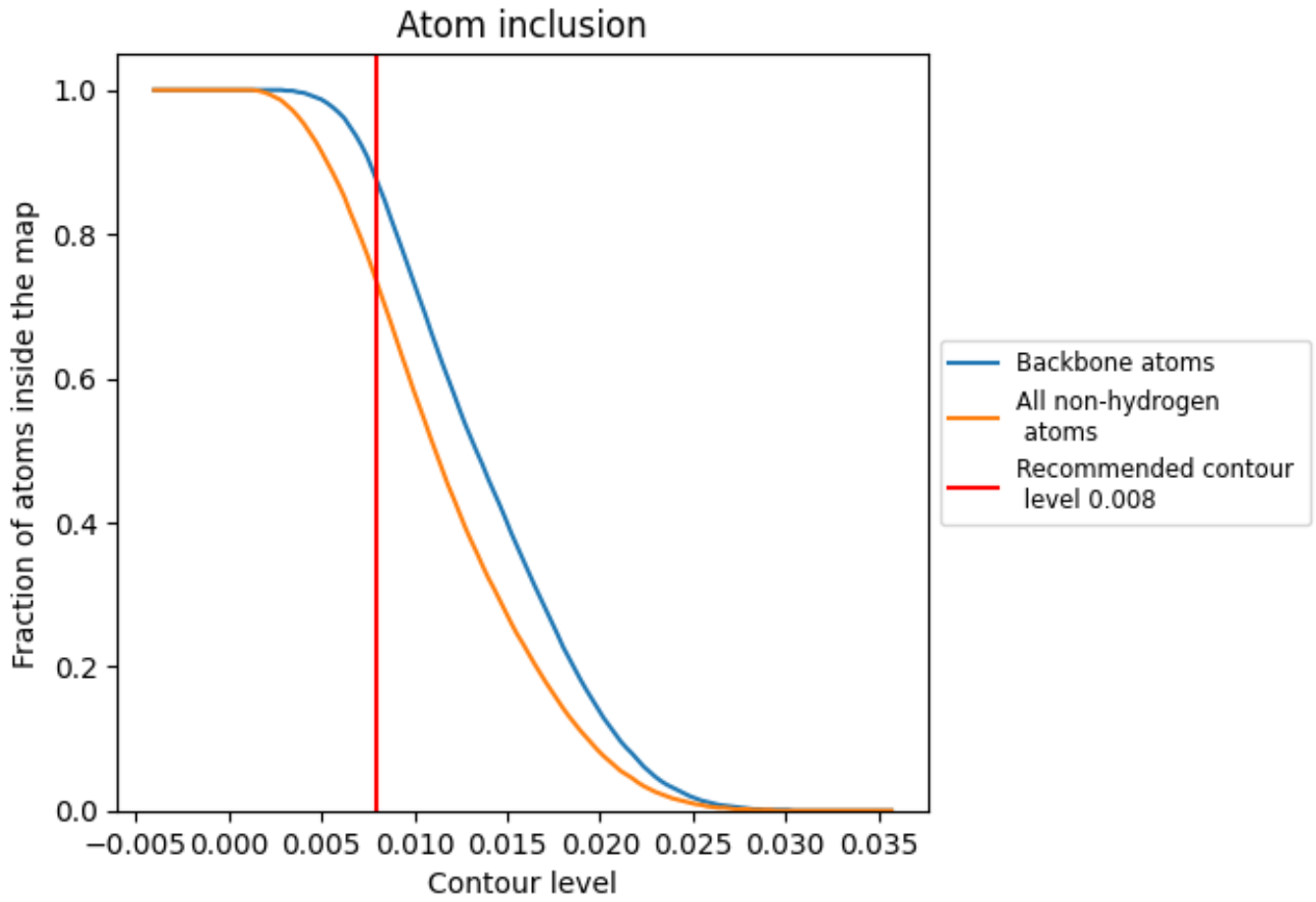
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.008).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 73% 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 (0.008) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7320	0.5240
A	0.7920	0.5460
B	0.7680	0.5320
C	0.3570	0.3770
D	0.3400	0.3740
E	0.8120	0.5640
F	0.7620	0.5350
G	0.4350	0.4100
H	0.4020	0.4030