Full wwPDB EM Validation Report

Sep 29, 2025 – 10:53 AM EDT

PDB ID	:	9E2S / pdb_00009e2s
EMDB ID	:	EMD-47463
Title	:	Apo TRiC in closed conformation
Authors	:	Zhao, Y.; Chiu, W.
Deposited on	:	2024-10-22
Resolution	:	3.70 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:

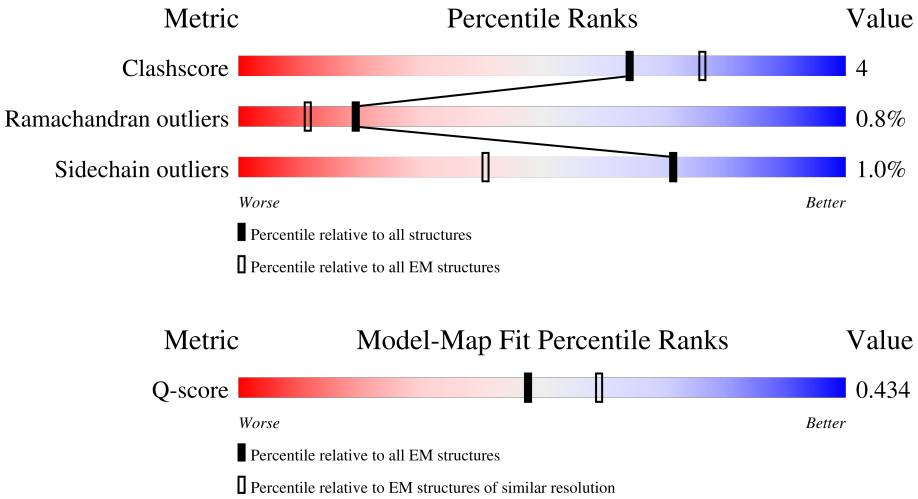
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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)	:	2.46

1 Overall quality at a glance

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

The reported resolution of this entry is 3.70 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	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	11569 (3.20 - 4.20)

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	B	547	83% 14%
1	b	547	85% 11%
2	C	553	83% 11% 6%
2	c	553	83% 11% 6%

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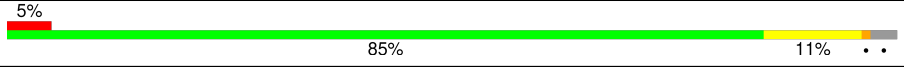
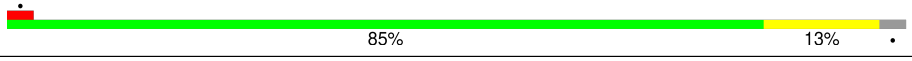
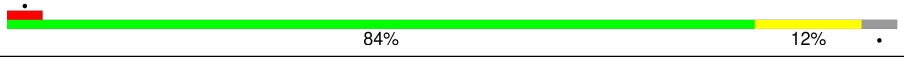
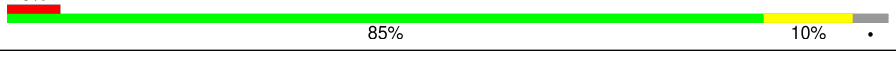
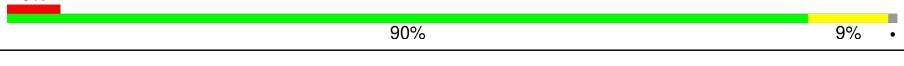
Mol	Chain	Length	Quality of chain
3	D	541	
3	d	541	
4	E	535	
4	e	535	
5	F	539	
5	f	539	
6	G	556	
6	g	556	
7	H	545	
7	h	545	
8	I	531	
8	i	531	

2 Entry composition (i)

There are 12 unique types of molecules in this entry. The entry contains 64646 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 T-complex protein 1 subunit theta.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	529	Total	C	N	O	S	0	0
			4029	2543	685	774	27		
1	b	529	Total	C	N	O	S	0	0
			4029	2543	685	774	27		

- Molecule 2 is a protein called T-complex protein 1 subunit eta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	520	Total	C	N	O	S	0	0
			3996	2526	691	756	23		
2	c	520	Total	C	N	O	S	0	0
			3996	2526	691	756	23		

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	473	GLY	-	insertion	UNP Q99832
C	474	SER	-	insertion	UNP Q99832
C	475	HIS	-	insertion	UNP Q99832
C	476	HIS	-	insertion	UNP Q99832
C	477	HIS	-	insertion	UNP Q99832
C	478	HIS	-	insertion	UNP Q99832
C	479	HIS	-	insertion	UNP Q99832
C	480	HIS	-	insertion	UNP Q99832
C	481	GLY	-	insertion	UNP Q99832
C	482	SER	-	insertion	UNP Q99832
c	473	GLY	-	insertion	UNP Q99832
c	474	SER	-	insertion	UNP Q99832
c	475	HIS	-	insertion	UNP Q99832
c	476	HIS	-	insertion	UNP Q99832
c	477	HIS	-	insertion	UNP Q99832
c	478	HIS	-	insertion	UNP Q99832
c	479	HIS	-	insertion	UNP Q99832

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Chain	Residue	Modelled	Actual	Comment	Reference
c	480	HIS	-	insertion	UNP Q99832
c	481	GLY	-	insertion	UNP Q99832
c	482	SER	-	insertion	UNP Q99832

- Molecule 3 is a protein called T-complex protein 1 subunit epsilon.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	525	Total	C	N	O	S	0	0
			4050	2537	708	775	30		
3	d	525	Total	C	N	O	S	0	0
			4050	2537	708	775	30		

- Molecule 4 is a protein called T-complex protein 1 subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	521	Total	C	N	O	S	0	0
			3918	2452	690	757	19		
4	e	521	Total	C	N	O	S	0	0
			3918	2452	690	757	19		

- Molecule 5 is a protein called T-complex protein 1 subunit delta.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	F	519	Total	C	N	O	S	0	0
			3920	2451	682	764	23		
5	f	519	Total	C	N	O	S	0	0
			3920	2451	682	764	23		

- Molecule 6 is a protein called T-complex protein 1 subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	532	Total	C	N	O	S	0	0
			4041	2533	707	778	23		
6	g	532	Total	C	N	O	S	0	0
			4041	2533	707	778	23		

- Molecule 7 is a protein called T-complex protein 1 subunit gamma.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	523	Total	C	N	O	S	0	0
			4066	2535	719	782	30		

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Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	523	Total 4066	C 2535	N 719	O 782	S 30	0	0

- Molecule 8 is a protein called T-complex protein 1 subunit zeta.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	527	Total 4039	C 2537	N 707	O 774	S 21	0	0
8	i	527	Total 4039	C 2537	N 707	O 774	S 21	0	0

- Molecule 9 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
9	B	1	Total 1	Mg 1	0
9	C	1	Total 1	Mg 1	0
9	D	1	Total 1	Mg 1	0
9	E	1	Total 1	Mg 1	0
9	F	1	Total 1	Mg 1	0
9	G	1	Total 1	Mg 1	0
9	H	1	Total 1	Mg 1	0
9	I	1	Total 1	Mg 1	0
9	b	1	Total 1	Mg 1	0
9	c	1	Total 1	Mg 1	0
9	d	1	Total 1	Mg 1	0
9	e	1	Total 1	Mg 1	0
9	f	1	Total 1	Mg 1	0
9	g	1	Total 1	Mg 1	0

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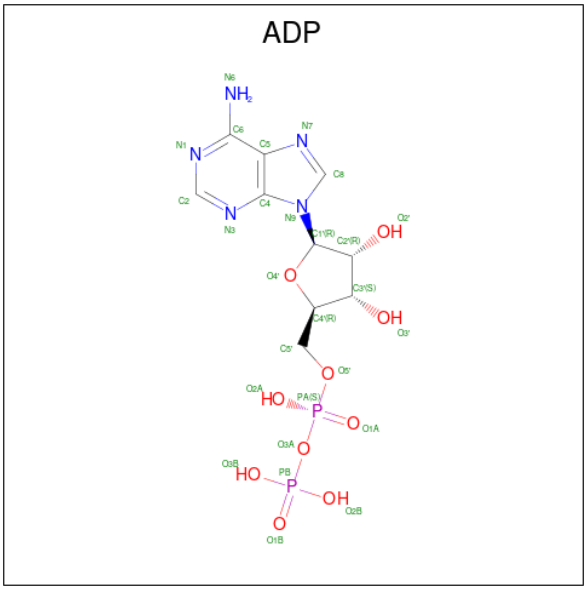
Mol	Chain	Residues	Atoms	AltConf
9	h	1	Total Mg 1 1	0
9	i	1	Total Mg 1 1	0

- Molecule 10 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms	AltConf
10	B	1	Total C N O P 27 10 5 10 2	0
10	C	1	Total C N O P 27 10 5 10 2	0
10	D	1	Total C N O P 27 10 5 10 2	0
10	E	1	Total C N O P 27 10 5 10 2	0
10	F	1	Total C N O P 27 10 5 10 2	0
10	G	1	Total C N O P 27 10 5 10 2	0
10	H	1	Total C N O P 27 10 5 10 2	0
10	I	1	Total C N O P 27 10 5 10 2	0
10	b	1	Total C N O P 27 10 5 10 2	0

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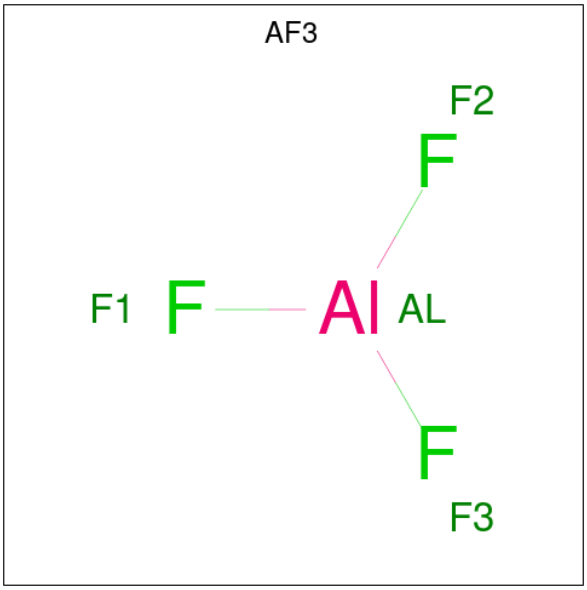
Mol	Chain	Residues	Atoms					AltConf
10	c	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	d	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	e	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	f	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	g	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	h	1	Total	C	N	O	P	0
			27	10	5	10	2	
10	i	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 11 is ALUMINUM FLUORIDE (CCD ID: AF3) (formula: AlF_3) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
11	B	1	Total	Al	F	0
			4	1	3	
11	C	1	Total	Al	F	0
			4	1	3	
11	D	1	Total	Al	F	0
			4	1	3	
11	E	1	Total	Al	F	0
			4	1	3	

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Mol	Chain	Residues	Atoms	AltConf
11	F	1	Total Al F 4 1 3	0
11	G	1	Total Al F 4 1 3	0
11	H	1	Total Al F 4 1 3	0
11	I	1	Total Al F 4 1 3	0
11	b	1	Total Al F 4 1 3	0
11	c	1	Total Al F 4 1 3	0
11	d	1	Total Al F 4 1 3	0
11	e	1	Total Al F 4 1 3	0
11	f	1	Total Al F 4 1 3	0
11	g	1	Total Al F 4 1 3	0
11	h	1	Total Al F 4 1 3	0
11	i	1	Total Al F 4 1 3	0

- Molecule 12 is water.

Mol	Chain	Residues	Atoms	AltConf
12	B	1	Total O 1 1	0
12	C	1	Total O 1 1	0
12	D	1	Total O 1 1	0
12	E	1	Total O 1 1	0
12	F	1	Total O 1 1	0
12	G	1	Total O 1 1	0
12	H	1	Total O 1 1	0

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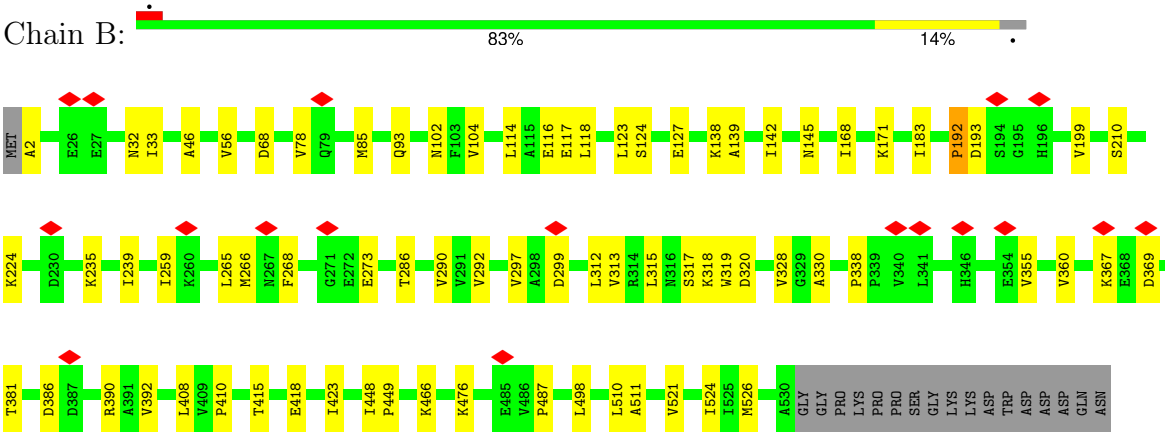
Mol	Chain	Residues	Atoms	AltConf
12	I	1	Total O 1 1	0
12	b	1	Total O 1 1	0
12	c	1	Total O 1 1	0
12	d	1	Total O 1 1	0
12	e	1	Total O 1 1	0
12	f	1	Total O 1 1	0
12	g	1	Total O 1 1	0
12	h	1	Total O 1 1	0
12	i	1	Total O 1 1	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

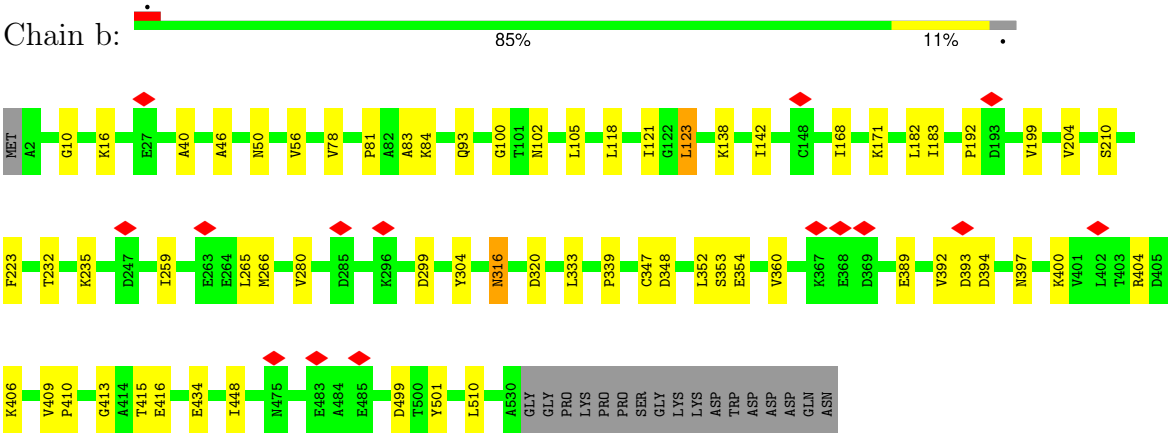
• Molecule 1: T-complex protein 1 subunit theta

Chain B:



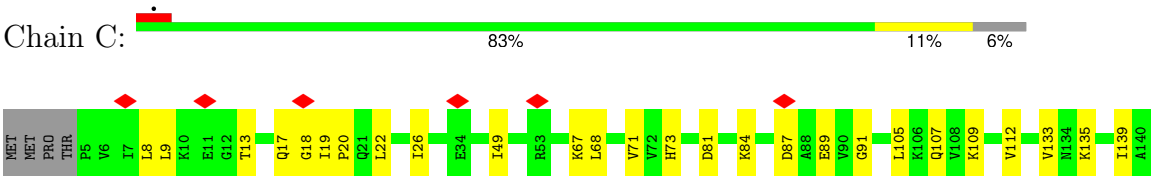
• Molecule 1: T-complex protein 1 subunit theta

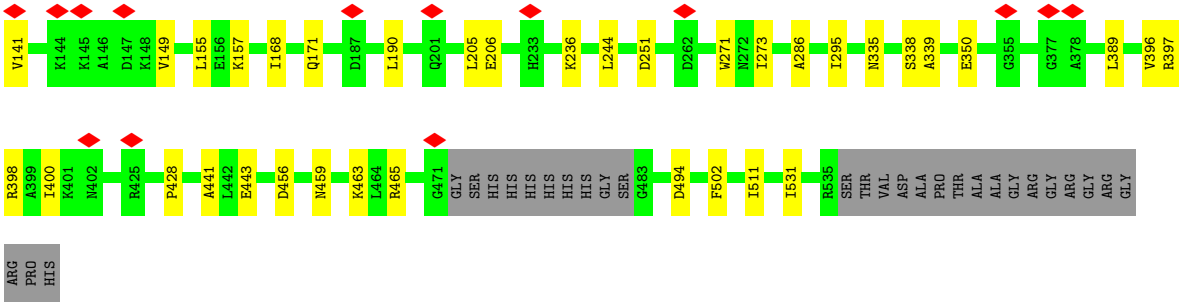
Chain b:



• Molecule 2: T-complex protein 1 subunit eta

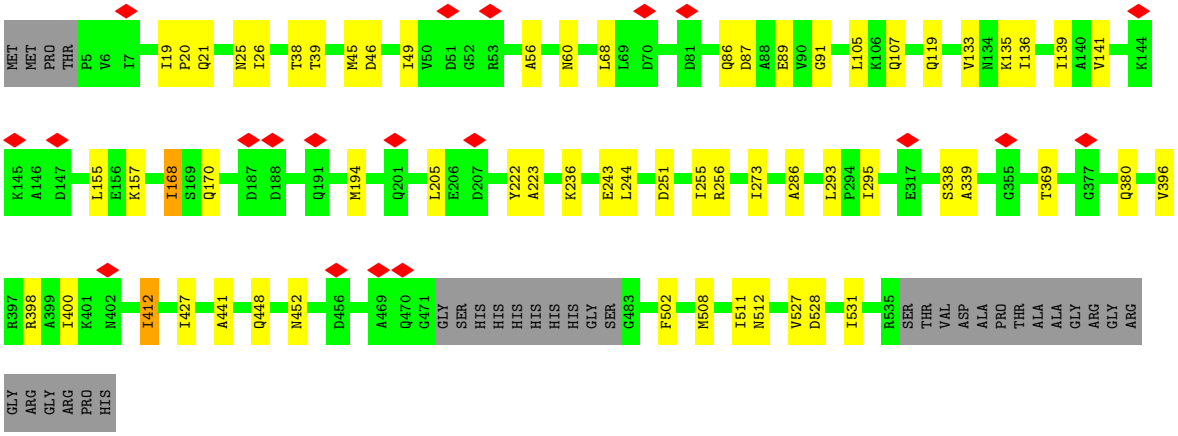
Chain C:





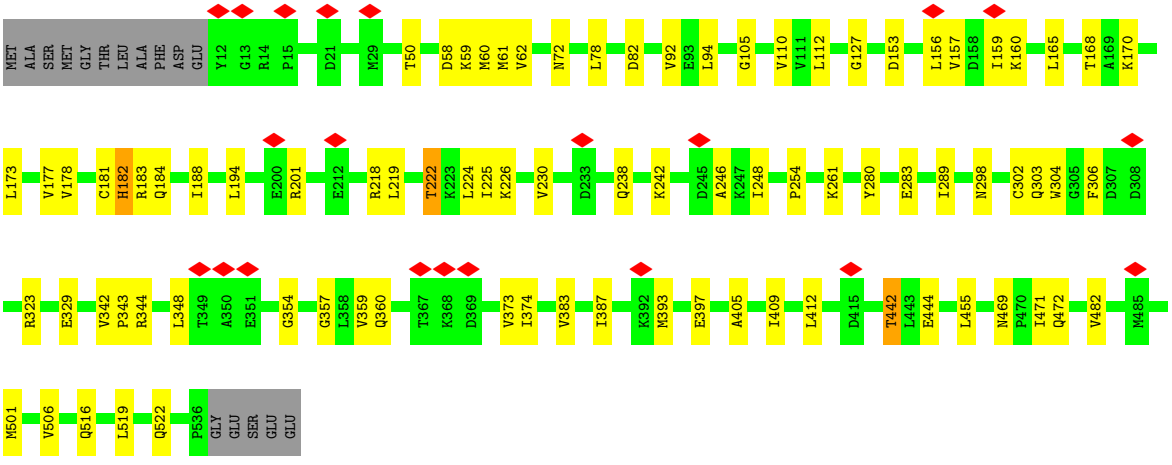
• Molecule 2: T-complex protein 1 subunit eta

Chain c:



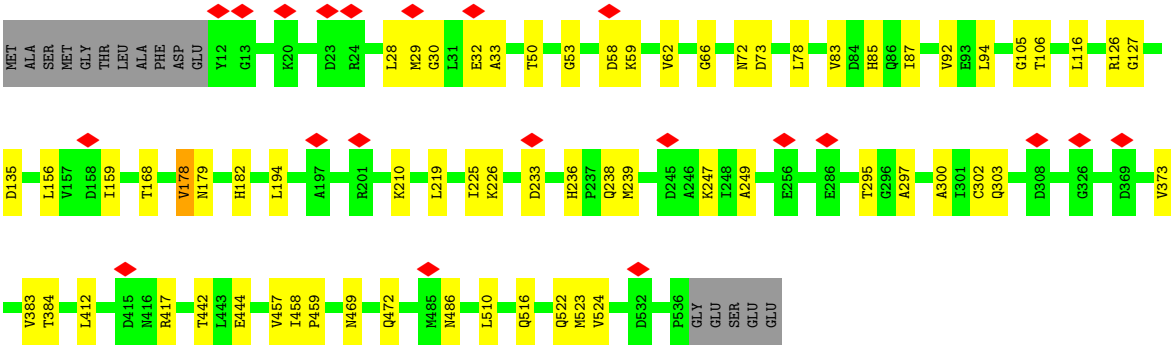
• Molecule 3: T-complex protein 1 subunit epsilon

Chain D:



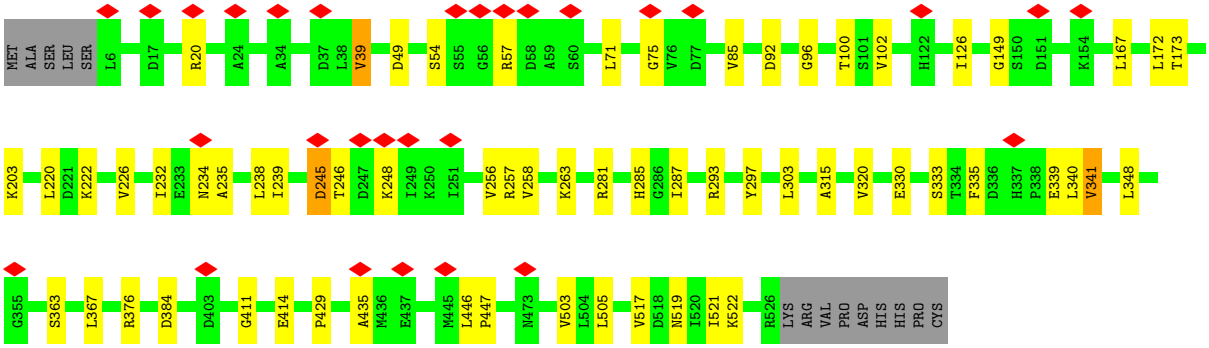
• Molecule 3: T-complex protein 1 subunit epsilon

Chain d:



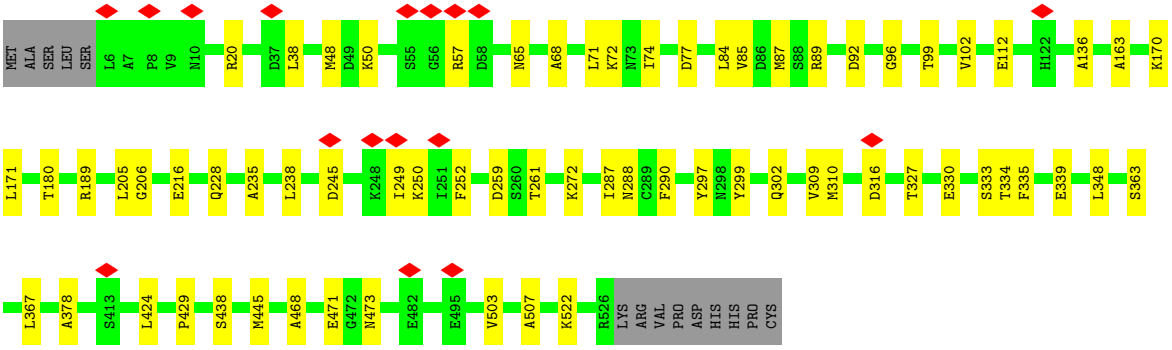
• Molecule 4: T-complex protein 1 subunit beta

Chain E:



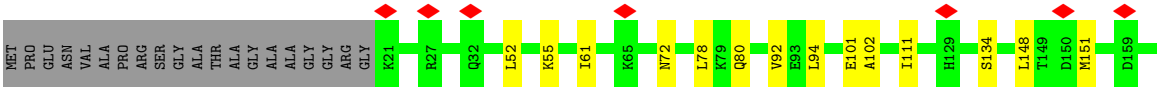
• Molecule 4: T-complex protein 1 subunit beta

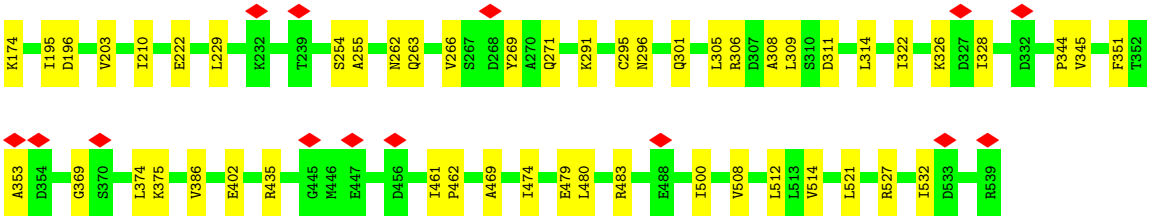
Chain e:



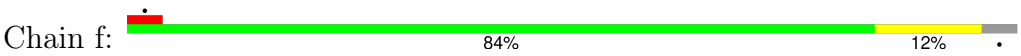
• Molecule 5: T-complex protein 1 subunit delta

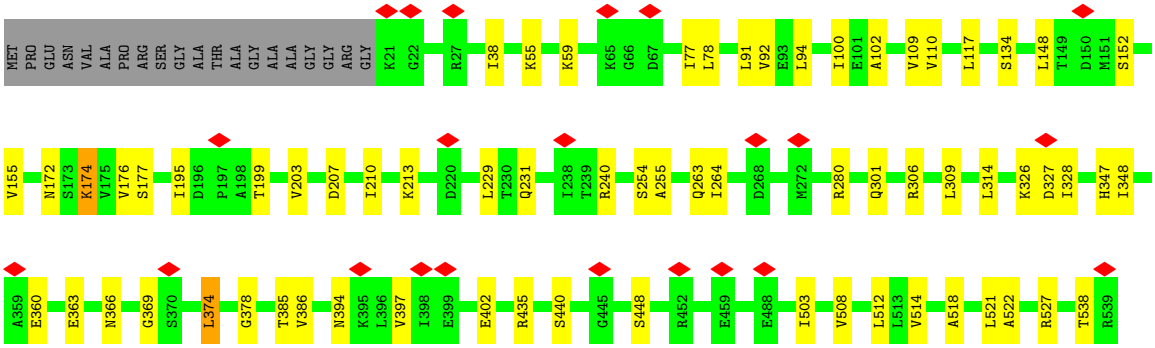
Chain F:



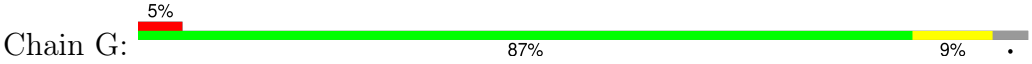


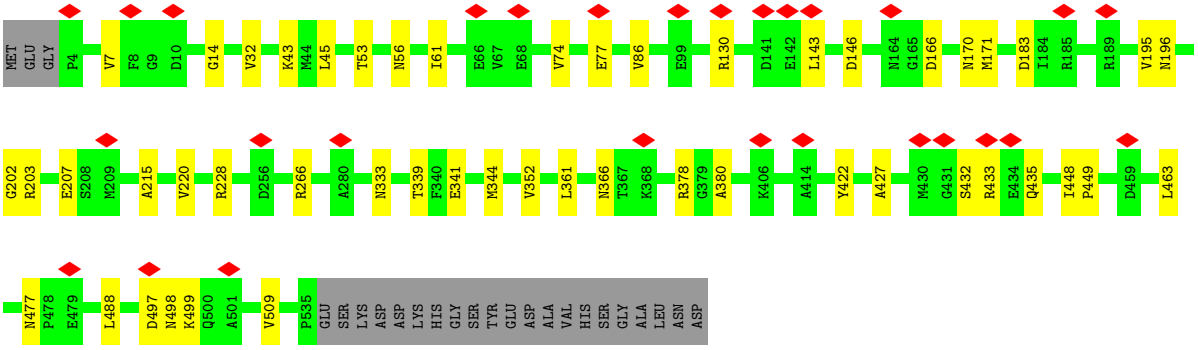
• Molecule 5: T-complex protein 1 subunit delta



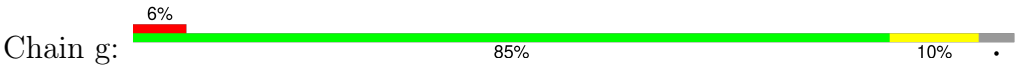


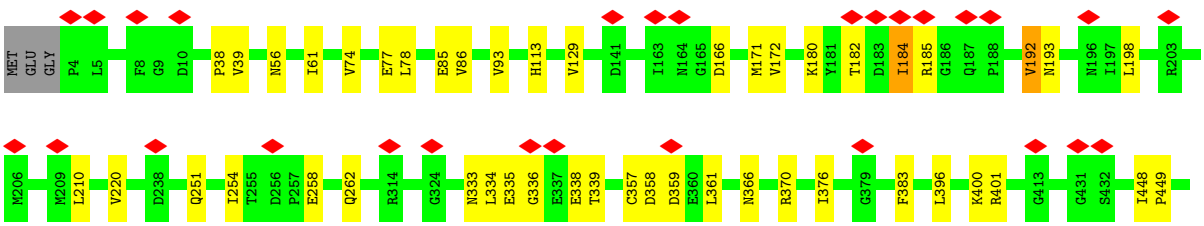
• Molecule 6: T-complex protein 1 subunit alpha

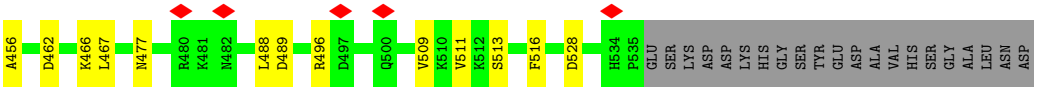




• Molecule 6: T-complex protein 1 subunit alpha

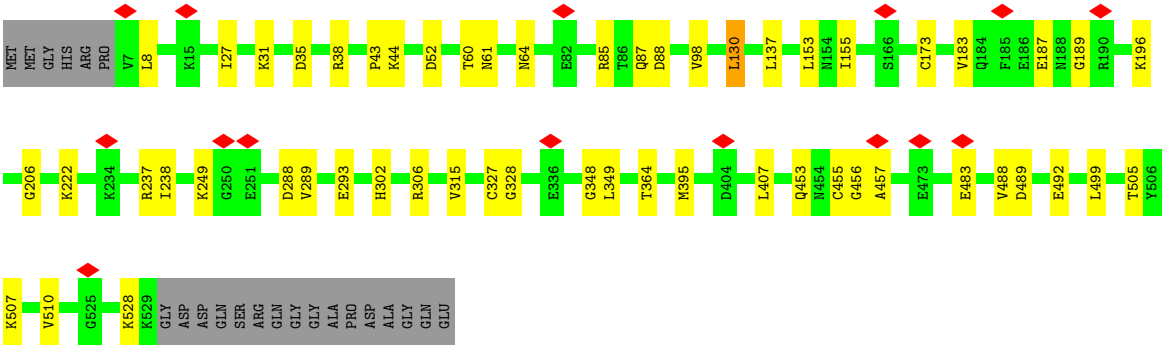






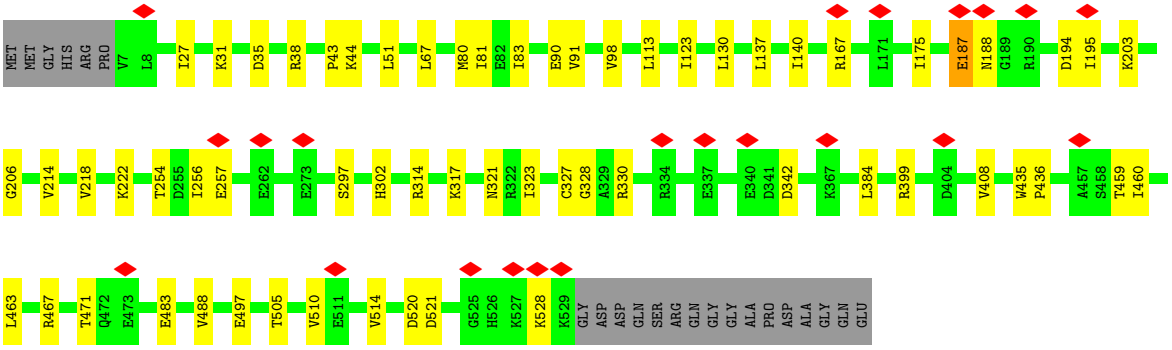
• Molecule 7: T-complex protein 1 subunit gamma

Chain H:



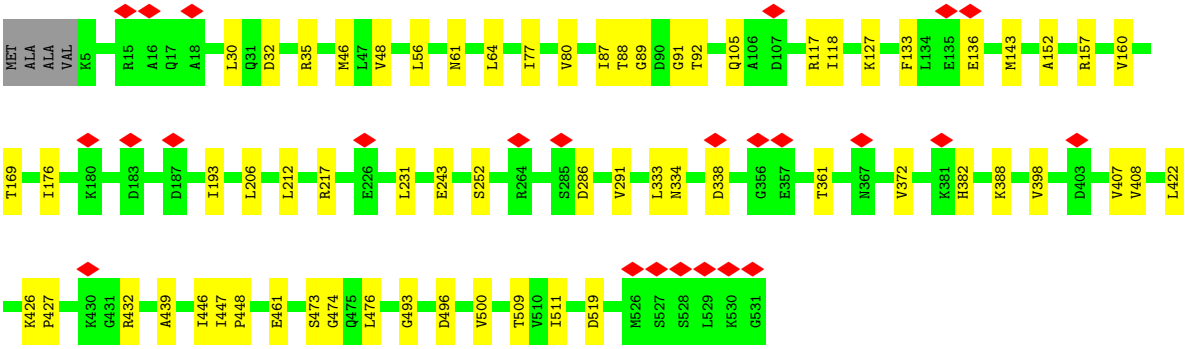
• Molecule 7: T-complex protein 1 subunit gamma

Chain h:



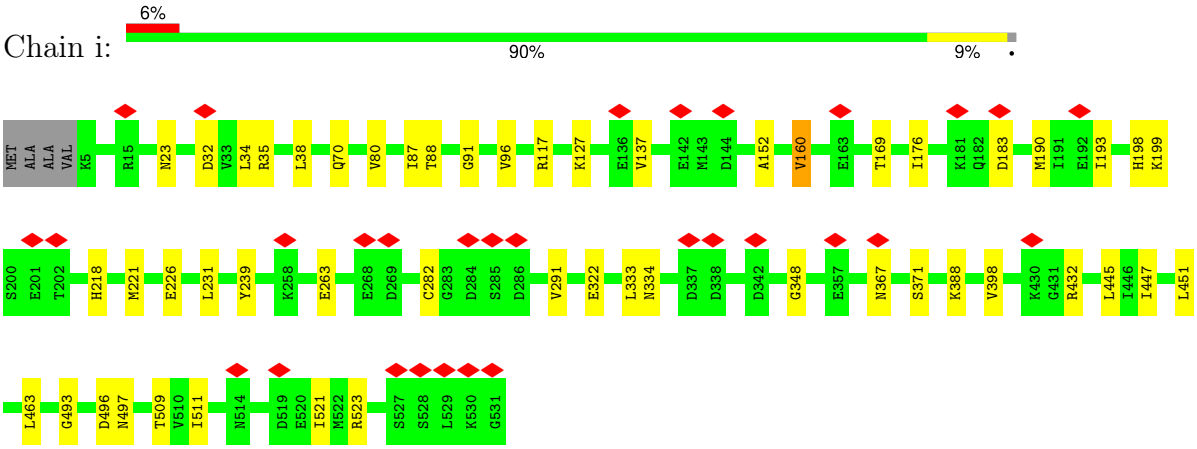
• Molecule 8: T-complex protein 1 subunit zeta

Chain I:



• Molecule 8: T-complex protein 1 subunit zeta

Chain i:


6%
90%
9%
MET ALA ALA VAL K5 R15 N23 D32 V33 L34 R35 L38 Q70 V80 I87 T88 G91 V96 R117 K127 E136 V137 E142 M143 D144 A152 V160 E163 T169 I176 K181 Q182 D183 M190 I191 E192 I193 H198 K199
S200 E201 T202 H218 M221 E226 L231 Y239 K258 E263 E268 D269 C282 G283 D284 S285 D286 V291 E322 L333 N334 D337 D338 D342 G348 E357 N367 S371 K388 V398 K430 G431 R432 L445 I446 I447 L451
L463 G493 D496 N497 T509 V510 I511 N514 D519 E520 I521 M522 R523 S527 S528 L529 K530 G531

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	40464	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 ($e^-/Å^2$)	1.21	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.108	Depositor
Minimum map value	-0.057	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.022	Depositor
Map size (Å)	352.0, 352.0, 352.0	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, AF3, ADP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	B	0.06	0/4087	0.17	0/5525
1	b	0.07	0/4087	0.18	0/5525
2	C	0.06	0/4051	0.16	0/5465
2	c	0.06	0/4051	0.17	0/5465
3	D	0.07	0/4099	0.19	0/5522
3	d	0.07	0/4099	0.21	0/5522
4	E	0.07	0/3961	0.18	0/5341
4	e	0.07	0/3961	0.18	0/5341
5	F	0.06	0/3952	0.19	0/5333
5	f	0.07	0/3952	0.19	0/5333
6	G	0.06	0/4081	0.17	0/5510
6	g	0.07	0/4081	0.18	0/5510
7	H	0.06	0/4111	0.18	0/5544
7	h	0.07	0/4111	0.18	0/5544
8	I	0.07	0/4086	0.17	0/5505
8	i	0.06	0/4086	0.18	0/5505
All	All	0.07	0/64856	0.18	0/87490

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	B	4029	0	4099	44	0
1	b	4029	0	4099	33	0
2	C	3996	0	4100	36	0
2	c	3996	0	4100	39	0
3	D	4050	0	4174	47	0
3	d	4050	0	4174	34	0
4	E	3918	0	4031	37	0
4	e	3918	0	4031	35	0
5	F	3920	0	4128	37	0
5	f	3920	0	4128	41	0
6	G	4041	0	4205	25	0
6	g	4041	0	4205	33	0
7	H	4066	0	4207	30	0
7	h	4066	0	4207	32	0
8	I	4039	0	4179	38	0
8	i	4039	0	4179	27	0
9	B	1	0	0	0	0
9	C	1	0	0	0	0
9	D	1	0	0	0	0
9	E	1	0	0	0	0
9	F	1	0	0	0	0
9	G	1	0	0	0	0
9	H	1	0	0	0	0
9	I	1	0	0	0	0
9	b	1	0	0	0	0
9	c	1	0	0	0	0
9	d	1	0	0	0	0
9	e	1	0	0	0	0
9	f	1	0	0	0	0
9	g	1	0	0	0	0
9	h	1	0	0	0	0
9	i	1	0	0	0	0
10	B	27	0	12	0	0
10	C	27	0	12	0	0
10	D	27	0	12	0	0
10	E	27	0	12	0	0
10	F	27	0	12	0	0
10	G	27	0	12	0	0
10	H	27	0	12	0	0
10	I	27	0	12	0	0
10	b	27	0	12	0	0
10	c	27	0	12	0	0
10	d	27	0	12	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	e	27	0	12	0	0
10	f	27	0	12	0	0
10	g	27	0	12	1	0
10	h	27	0	12	0	0
10	i	27	0	12	0	0
11	B	4	0	0	0	0
11	C	4	0	0	0	0
11	D	4	0	0	0	0
11	E	4	0	0	0	0
11	F	4	0	0	0	0
11	G	4	0	0	0	0
11	H	4	0	0	0	0
11	I	4	0	0	0	0
11	b	4	0	0	0	0
11	c	4	0	0	0	0
11	d	4	0	0	0	0
11	e	4	0	0	0	0
11	f	4	0	0	0	0
11	g	4	0	0	0	0
11	h	4	0	0	0	0
11	i	4	0	0	0	0
12	B	1	0	0	0	0
12	C	1	0	0	0	0
12	D	1	0	0	0	0
12	E	1	0	0	0	0
12	F	1	0	0	0	0
12	G	1	0	0	0	0
12	H	1	0	0	0	0
12	I	1	0	0	0	0
12	b	1	0	0	0	0
12	c	1	0	0	0	0
12	d	1	0	0	0	0
12	e	1	0	0	0	0
12	f	1	0	0	0	0
12	g	1	0	0	0	0
12	h	1	0	0	0	0
12	i	1	0	0	0	0
All	All	64646	0	66438	511	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 4.

All (511) 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)
5:f:134:SER:HB3	5:f:527:ARG:HE	1.58	0.67
2:c:155:LEU:HD11	2:c:400:ILE:HD11	1.75	0.67
5:F:78:LEU:HB3	5:F:92:VAL:HG12	1.75	0.67
3:d:78:LEU:HB3	3:d:92:VAL:HG22	1.78	0.66
5:f:94:LEU:HD11	5:f:521:LEU:HB3	1.78	0.64
1:b:266:MET:HG2	2:c:273:ILE:HD11	1.78	0.63
5:F:291:LYS:HD3	5:F:322:ILE:HD11	1.81	0.62
1:b:416:GLU:HG2	1:b:448:ILE:HD13	1.82	0.61
4:E:246:THR:HG22	4:E:248:LYS:HG2	1.83	0.60
3:D:78:LEU:HB3	3:D:92:VAL:HG22	1.84	0.60
4:e:71:LEU:HB3	4:e:85:VAL:HG22	1.84	0.60
5:F:134:SER:HB3	5:F:527:ARG:HE	1.67	0.59
2:c:155:LEU:HD22	2:c:396:VAL:HG13	1.83	0.59
6:g:78:LEU:HD11	6:g:516:PHE:HB3	1.84	0.59
4:e:333:SER:O	4:e:335:PHE:N	2.34	0.59
4:E:71:LEU:HB3	4:E:85:VAL:HG22	1.84	0.59
3:D:181:CYS:HB3	3:D:184:GLN:HB3	1.84	0.58
7:h:302:HIS:HB2	8:i:334:ASN:HB2	1.84	0.58
1:B:46:ALA:O	1:B:102:ASN:ND2	2.36	0.58
3:d:168:THR:HG21	3:d:412:LEU:HD11	1.86	0.58
3:d:105:GLY:O	3:d:516:GLN:NE2	2.37	0.58
2:C:26:ILE:HD12	2:C:105:LEU:HB3	1.86	0.58
7:h:327:CYS:SG	7:h:328:GLY:N	2.77	0.57
6:G:463:LEU:HD22	6:G:488:LEU:HD11	1.85	0.57
5:F:94:LEU:HD11	5:F:521:LEU:HB3	1.86	0.57
7:H:64:ASN:ND2	7:H:88:ASP:OD2	2.38	0.57
8:I:118:ILE:HG21	8:I:432:ARG:HB2	1.87	0.56
5:f:148:LEU:HB3	5:f:512:LEU:HD11	1.88	0.56
4:e:228:GLN:NE2	4:e:309:VAL:O	2.39	0.56
1:B:85:MET:SD	8:I:382:HIS:NE2	2.79	0.56
3:d:302:CYS:SG	3:d:303:GLN:N	2.72	0.56
2:C:244:LEU:HB2	2:C:295:ILE:HG23	1.88	0.55
5:F:148:LEU:HB3	5:F:512:LEU:HD11	1.89	0.55
6:g:86:VAL:HG11	6:g:509:VAL:HG22	1.86	0.55
1:B:292:VAL:HG22	1:B:313:VAL:HB	1.89	0.55
7:H:43:PRO:O	8:I:117:ARG:NH2	2.39	0.55
3:d:238:GLN:HE22	4:e:330:GLU:HA	1.72	0.55
2:C:155:LEU:HD22	2:C:396:VAL:HG13	1.88	0.55
6:G:202:GLY:HA3	6:G:378:ARG:HH21	1.72	0.55
4:e:468:ALA:HB1	4:e:473:ASN:HB2	1.87	0.55
2:C:205:LEU:H	3:D:522:GLN:HE22	1.53	0.55
8:I:61:ASN:HB2	8:I:92:THR:HG21	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:461:GLU:OE2	8:i:432:ARG:NH1	2.40	0.55
7:H:302:HIS:HB2	8:I:334:ASN:HB2	1.87	0.55
7:H:87:GLN:NE2	7:H:505:THR:OG1	2.37	0.54
1:b:46:ALA:O	1:b:102:ASN:ND2	2.40	0.54
4:E:333:SER:O	4:E:335:PHE:N	2.35	0.54
3:D:177:VAL:HG12	3:D:397:GLU:HG2	1.90	0.54
7:h:35:ASP:HA	7:h:38:ARG:HE	1.73	0.54
5:F:72:ASN:HD22	5:F:174:LYS:HG2	1.72	0.54
1:b:168:ILE:HD11	1:b:183:ILE:HD12	1.89	0.54
2:c:244:LEU:HB2	2:c:295:ILE:HG23	1.89	0.54
5:f:91:LEU:HD12	5:f:110:VAL:HG13	1.90	0.54
5:f:210:ILE:HG21	5:f:402:GLU:HG3	1.88	0.54
8:i:198:HIS:HD2	8:i:199:LYS:HG3	1.73	0.54
1:B:266:MET:HG2	2:C:273:ILE:HD11	1.90	0.53
8:I:212:LEU:HB2	8:I:361:THR:HB	1.90	0.53
6:g:467:LEU:HD11	6:g:488:LEU:HD13	1.89	0.53
1:B:32:ASN:HD21	1:B:524:ILE:HD11	1.73	0.53
1:B:273:GLU:OE1	2:C:335:ASN:ND2	2.42	0.53
8:i:80:VAL:HG21	8:i:511:ILE:HD11	1.91	0.53
5:F:102:ALA:HB1	5:F:514:VAL:HG22	1.90	0.53
7:H:327:CYS:SG	7:H:328:GLY:N	2.81	0.53
3:d:50:THR:OG1	3:d:59:LYS:NZ	2.42	0.53
1:b:410:PRO:O	1:b:415:THR:OG1	2.26	0.53
7:h:98:VAL:HB	7:h:505:THR:HG23	1.91	0.53
2:C:49:ILE:HG21	2:C:68:LEU:HB3	1.91	0.53
1:b:316:ASN:OD1	1:b:316:ASN:N	2.41	0.53
3:d:226:LYS:HA	3:d:383:VAL:HG12	1.90	0.53
3:d:469:ASN:HB3	3:d:472:GLN:HB2	1.91	0.53
3:D:157:VAL:HG13	3:D:165:LEU:HD11	1.90	0.53
4:e:245:ASP:N	4:e:245:ASP:OD1	2.38	0.53
6:g:258:GLU:O	6:g:262:GLN:NE2	2.41	0.53
1:B:138:LYS:HE3	1:B:142:ILE:HD11	1.91	0.52
4:E:376:ARG:NH2	5:F:101:GLU:OE2	2.43	0.52
1:b:118:LEU:HD13	1:b:123:LEU:HD22	1.91	0.52
4:e:48:MET:O	4:e:65:ASN:ND2	2.41	0.52
6:g:333:ASN:ND2	6:g:339:THR:OG1	2.41	0.52
1:b:138:LYS:HE3	1:b:142:ILE:HD11	1.90	0.52
3:d:85:HIS:O	3:d:87:ILE:N	2.39	0.52
3:D:50:THR:OG1	3:D:59:LYS:NZ	2.42	0.52
5:F:196:ASP:N	5:F:196:ASP:OD1	2.41	0.52
6:g:182:THR:HG23	6:g:185:ARG:HD3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:175:ILE:HG23	7:h:214:VAL:HB	1.92	0.52
3:D:62:VAL:HB	4:E:522:LYS:HA	1.92	0.52
5:f:78:LEU:HB3	5:f:92:VAL:HG12	1.90	0.52
1:B:317:SER:HB2	1:B:320:ASP:HB2	1.92	0.52
7:h:467:ARG:O	7:h:471:THR:OG1	2.27	0.52
2:c:21:GLN:OE1	2:c:25:ASN:ND2	2.42	0.52
3:d:417:ARG:HE	3:d:510:LEU:HD23	1.74	0.52
4:E:54:SER:OG	4:E:57:ARG:NH2	2.43	0.52
5:f:254:SER:OG	5:f:255:ALA:N	2.43	0.52
2:C:168:ILE:HG22	2:C:205:LEU:HD21	1.92	0.52
7:H:455:CYS:SG	7:H:456:GLY:N	2.83	0.52
2:c:133:VAL:HG22	2:c:511:ILE:HG23	1.92	0.51
5:f:229:LEU:HB2	5:f:374:LEU:HB3	1.91	0.51
2:C:89:GLU:O	2:C:398:ARG:NH2	2.43	0.51
2:C:463:LYS:NZ	2:C:494:ASP:OD1	2.43	0.51
3:D:173:LEU:HD11	3:D:405:ALA:HB2	1.92	0.51
3:D:238:GLN:HE22	4:E:330:GLU:HA	1.74	0.51
5:F:255:ALA:O	5:F:306:ARG:NH2	2.43	0.51
4:E:92:ASP:HA	4:E:96:GLY:HA2	1.91	0.51
7:H:249:LYS:HG2	8:I:243:GLU:HG3	1.93	0.51
4:e:272:LYS:HG3	5:f:347:HIS:HE2	1.76	0.51
5:f:263:GLN:NE2	6:g:251:GLN:OE1	2.43	0.51
6:G:228:ARG:HG3	6:G:352:VAL:HG22	1.92	0.51
7:H:237:ARG:H	7:H:288:ASP:HB2	1.74	0.51
3:d:28:LEU:HD21	3:d:32:GLU:HB2	1.93	0.51
4:e:102:VAL:HB	4:e:503:VAL:HG13	1.93	0.51
1:B:317:SER:O	1:B:319:TRP:N	2.44	0.51
1:B:418:GLU:OE2	1:B:476:LYS:NZ	2.43	0.51
5:F:474:ILE:HD11	3:d:126:ARG:HB3	1.92	0.51
2:c:49:ILE:HG21	2:c:68:LEU:HB3	1.91	0.51
3:d:178:VAL:HG13	3:d:219:LEU:HD21	1.92	0.51
8:i:127:LYS:HD3	8:i:509:THR:HG21	1.92	0.51
4:E:339:GLU:HG2	4:E:340:LEU:HG	1.92	0.51
7:h:521:ASP:N	7:h:521:ASP:OD1	2.42	0.51
5:F:222:GLU:OE2	5:F:375:LYS:NZ	2.41	0.51
5:F:479:GLU:OE2	5:F:483:ARG:NH2	2.44	0.51
6:g:171:MET:HE3	6:g:210:LEU:HB2	1.93	0.51
3:D:181:CYS:O	3:D:183:ARG:N	2.45	0.51
5:f:360:GLU:HB2	5:f:378:GLY:HA3	1.93	0.51
1:b:40:ALA:HA	1:b:105:LEU:HD21	1.93	0.50
5:F:55:LYS:HD2	5:F:469:ALA:HA	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:408:LEU:HD12	1:B:498:LEU:HB3	1.92	0.50
5:F:195:ILE:HG21	5:F:203:VAL:HG22	1.94	0.50
5:F:483:ARG:NH1	5:F:500:ILE:O	2.45	0.50
2:c:107:GLN:HG3	2:c:441:ALA:HB2	1.91	0.50
5:f:366:ASN:OD1	5:f:366:ASN:N	2.44	0.50
6:G:333:ASN:ND2	6:G:339:THR:OG1	2.45	0.50
4:E:245:ASP:OD1	4:E:245:ASP:N	2.36	0.50
5:F:210:ILE:HG21	5:F:402:GLU:HG3	1.92	0.50
7:H:349:LEU:HD23	7:H:364:THR:HB	1.94	0.50
3:d:247:LYS:HB2	3:d:297:ALA:HA	1.94	0.50
1:B:68:ASP:OD1	1:B:171:LYS:NZ	2.43	0.50
3:D:178:VAL:HG13	3:D:219:LEU:HD21	1.93	0.50
2:C:9:LEU:HD13	2:C:13:THR:HG21	1.94	0.50
2:c:236:LYS:HB2	2:c:286:ALA:HA	1.93	0.50
1:B:466:LYS:NZ	1:B:487:PRO:O	2.44	0.49
2:C:133:VAL:HG22	2:C:511:ILE:HG23	1.93	0.49
2:C:236:LYS:HB2	2:C:286:ALA:HA	1.93	0.49
3:d:53:GLY:H	10:d:601:ADP:H5'1	1.77	0.49
2:C:87:ASP:HA	2:C:91:GLY:HA2	1.92	0.49
3:D:60:MET:HE2	4:E:517:VAL:HG11	1.94	0.49
3:D:59:LYS:HG3	4:E:519:ASN:HB3	1.93	0.49
4:E:293:ARG:HA	4:E:315:ALA:HB3	1.94	0.49
8:I:88:THR:HB	8:I:500:VAL:HG22	1.93	0.49
1:B:2:ALA:O	8:i:70:GLN:NE2	2.46	0.49
5:f:301:GLN:HA	5:f:328:ILE:HB	1.94	0.49
3:D:170:LYS:O	3:D:182:HIS:NE2	2.40	0.49
3:d:28:LEU:HD22	3:d:33:ALA:HB2	1.94	0.49
6:G:207:GLU:OE2	7:H:507:LYS:NZ	2.44	0.49
7:H:206:GLY:HA3	8:I:87:ILE:HG13	1.93	0.49
5:f:240:ARG:NH1	5:f:363:GLU:OE1	2.44	0.49
3:D:61:MET:HE1	4:E:521:ILE:HD12	1.93	0.49
6:g:129:VAL:HG22	6:g:511:VAL:HG13	1.95	0.49
7:h:130:LEU:HD22	7:h:510:VAL:HG11	1.94	0.49
2:C:155:LEU:HD11	2:C:400:ILE:HD11	1.94	0.49
7:H:130:LEU:HB2	7:H:510:VAL:HG21	1.94	0.49
1:b:232:THR:HG23	1:b:352:LEU:HB3	1.95	0.49
1:B:93:GLN:HG2	1:B:510:LEU:HD12	1.95	0.48
8:I:231:LEU:HD23	8:I:291:VAL:HG22	1.95	0.48
2:C:456:ASP:OD2	2:C:459:ASN:ND2	2.45	0.48
6:G:166:ASP:O	6:G:170:ASN:ND2	2.41	0.48
7:H:306:ARG:NH1	8:I:338:ASP:OD2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:480:LEU:HD13	5:F:500:ILE:HD12	1.95	0.48
6:G:196:ASN:ND2	6:G:215:ALA:O	2.42	0.48
7:h:67:LEU:HB3	7:h:81:ILE:HD12	1.95	0.48
1:B:299:ASP:OD1	1:B:299:ASP:N	2.39	0.48
6:G:341:GLU:HB2	6:G:344:MET:HE2	1.94	0.48
6:G:432:SER:OG	6:G:433:ARG:N	2.46	0.48
1:B:142:ILE:HA	1:B:145:ASN:HD22	1.78	0.48
1:b:280:VAL:HG11	1:b:304:TYR:HB3	1.95	0.48
7:h:459:THR:O	7:h:463:LEU:HB2	2.14	0.48
7:H:489:ASP:HB3	7:H:492:GLU:HG2	1.94	0.48
5:f:102:ALA:HB1	5:f:514:VAL:HG22	1.96	0.48
6:g:192:VAL:HG13	6:g:400:LYS:HD2	1.95	0.48
5:F:254:SER:OG	5:F:255:ALA:N	2.45	0.48
7:H:35:ASP:HA	7:H:38:ARG:HE	1.78	0.48
3:d:486:ASN:OD1	3:d:486:ASN:N	2.47	0.48
5:f:195:ILE:HG21	5:f:203:VAL:HG22	1.95	0.48
5:f:255:ALA:O	5:f:306:ARG:NH2	2.46	0.48
8:I:143:MET:HE1	8:I:407:VAL:HB	1.96	0.47
7:h:218:VAL:HG21	7:h:323:ILE:HG12	1.96	0.47
3:D:58:ASP:OD1	3:D:72:ASN:ND2	2.46	0.47
5:f:199:THR:O	5:f:199:THR:OG1	2.33	0.47
8:i:38:LEU:HD21	8:i:447:ILE:HG23	1.97	0.47
4:e:468:ALA:HA	4:e:471:GLU:HG2	1.95	0.47
6:G:130:ARG:NH2	6:G:422:TYR:OH	2.47	0.47
1:b:499:ASP:N	1:b:499:ASP:OD1	2.47	0.47
4:e:378:ALA:HB2	5:f:521:LEU:HD22	1.96	0.47
7:h:43:PRO:O	8:i:117:ARG:NH2	2.47	0.47
8:i:445:LEU:HD13	8:i:463:LEU:HD11	1.96	0.47
1:B:297:VAL:HG11	1:B:312:LEU:HD21	1.96	0.47
4:E:238:LEU:HD23	4:E:287:ILE:HD13	1.97	0.47
4:e:238:LEU:HD23	4:e:287:ILE:HD13	1.96	0.47
3:D:230:VAL:HG12	3:D:329:GLU:HG2	1.96	0.47
4:E:203:LYS:NZ	4:E:384:ASP:OD1	2.46	0.47
8:I:80:VAL:HG21	8:I:511:ILE:HD11	1.97	0.47
1:b:81:PRO:HA	1:b:84:LYS:HB2	1.97	0.47
2:c:205:LEU:H	3:d:522:GLN:HE22	1.62	0.47
4:e:38:LEU:O	4:e:50:LYS:NZ	2.42	0.47
6:g:56:ASN:HA	6:g:61:ILE:HD11	1.96	0.47
1:B:224:LYS:HA	1:B:360:VAL:HG12	1.96	0.47
3:D:218:ARG:HG2	4:E:505:LEU:HD13	1.96	0.47
8:I:127:LYS:HD3	8:I:509:THR:HG21	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:135:LYS:O	2:c:139:ILE:HG12	2.14	0.47
5:F:308:ALA:HB3	5:F:326:LYS:HD2	1.97	0.47
4:E:414:GLU:HG2	4:E:446:LEU:HD23	1.98	0.47
5:f:174:LYS:HG2	5:f:176:VAL:HG22	1.96	0.47
6:g:39:VAL:HG11	6:g:456:ALA:HA	1.97	0.47
1:B:367:LYS:HG3	1:B:369:ASP:H	1.80	0.46
2:C:350:GLU:H	3:D:201:ARG:HH22	1.63	0.46
5:F:295:CYS:SG	5:F:296:ASN:N	2.89	0.46
7:H:196:LYS:NZ	7:H:395:MET:SD	2.84	0.46
7:H:238:ILE:HG12	7:H:289:VAL:HB	1.96	0.46
8:I:105:GLN:HB3	8:I:439:ALA:HB1	1.96	0.46
1:b:50:ASN:ND2	2:c:119:GLN:OE1	2.48	0.46
3:d:94:LEU:HD22	3:d:523:MET:HG2	1.98	0.46
1:B:259:ILE:HD12	1:B:265:LEU:HD12	1.96	0.46
3:D:225:ILE:HD13	3:D:373:VAL:HG21	1.97	0.46
3:D:254:PRO:HB3	3:D:304:TRP:HB2	1.97	0.46
8:I:193:ILE:HG21	8:I:388:LYS:HG3	1.97	0.46
5:f:59:LYS:HD2	5:f:77:ILE:HD13	1.97	0.46
1:B:328:VAL:HG23	1:B:330:ALA:H	1.80	0.46
7:H:130:LEU:HD22	7:H:510:VAL:HG11	1.97	0.46
1:b:299:ASP:OD1	1:b:299:ASP:N	2.44	0.46
7:h:330:ARG:NH1	7:h:342:ASP:OD1	2.43	0.46
1:B:381:THR:HG22	2:C:81:ASP:HB3	1.97	0.46
1:b:333:LEU:HD11	1:b:339:PRO:HB3	1.98	0.46
1:b:347:CYS:SG	1:b:348:ASP:N	2.85	0.46
5:f:109:VAL:HG23	5:f:522:ALA:HB2	1.98	0.46
5:f:326:LYS:HE2	5:f:326:LYS:HB3	1.82	0.46
8:i:23:ASN:HD21	8:i:521:ILE:HD11	1.80	0.46
1:b:78:VAL:HG11	1:b:83:ALA:HB3	1.96	0.46
6:g:357:CYS:O	6:g:359:ASP:N	2.49	0.46
1:B:104:VAL:HG13	1:B:511:ALA:HB2	1.97	0.46
2:C:443:GLU:OE2	2:C:465:ARG:NH2	2.48	0.46
5:F:61:ILE:HG21	5:F:80:GLN:HB3	1.98	0.46
2:c:168:ILE:HG22	2:c:205:LEU:HD21	1.98	0.46
5:f:280:ARG:NH1	6:g:338:GLU:OE2	2.48	0.46
5:f:394:ASN:HB3	5:f:397:VAL:HG23	1.98	0.46
2:C:107:GLN:HG3	2:C:441:ALA:HB2	1.97	0.46
6:G:45:LEU:HB2	6:G:53:THR:HB	1.97	0.46
1:b:259:ILE:HD12	1:b:265:LEU:HD12	1.97	0.46
4:E:348:LEU:HD23	4:E:363:SER:HB2	1.98	0.46
7:H:52:ASP:N	7:H:52:ASP:OD1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:39:THR:O	2:c:39:THR:OG1	2.34	0.46
3:D:94:LEU:HD11	3:D:519:LEU:HG	1.98	0.46
3:D:188:ILE:HG12	3:D:224:LEU:HD23	1.98	0.46
4:e:259:ASP:OD1	4:e:259:ASP:N	2.49	0.46
6:g:462:ASP:OD1	6:g:466:LYS:NZ	2.47	0.46
7:h:137:LEU:HD23	7:h:140:ILE:HD11	1.98	0.46
1:B:138:LYS:O	1:B:142:ILE:HG13	2.16	0.45
2:c:87:ASP:HA	2:c:91:GLY:HA2	1.98	0.45
2:c:243:GLU:HB2	2:c:293:LEU:HD13	1.98	0.45
4:e:74:ILE:HD13	5:f:538:THR:HG22	1.97	0.45
3:D:501:MET:HB3	3:D:506:VAL:HB	1.99	0.45
7:H:27:ILE:HG22	7:H:31:LYS:HE2	1.98	0.45
2:C:338:SER:OG	2:C:339:ALA:N	2.39	0.45
4:e:299:TYR:HD1	4:e:302:GLN:HE21	1.64	0.45
2:C:157:LYS:HD2	2:C:502:PHE:HB3	1.97	0.45
2:c:21:GLN:NE2	2:c:528:ASP:O	2.49	0.45
6:g:166:ASP:N	6:g:166:ASP:OD1	2.48	0.45
3:D:222:THR:HG23	3:D:387:ILE:HA	1.99	0.45
4:E:102:VAL:HB	4:E:503:VAL:HG13	1.98	0.45
6:G:171:MET:HE2	6:G:171:MET:HB3	1.89	0.45
6:g:180:LYS:O	6:g:370:ARG:NH2	2.50	0.45
1:b:56:VAL:HG13	2:c:531:ILE:HB	1.97	0.45
2:c:448:GLN:O	2:c:452:ASN:ND2	2.41	0.45
5:f:231:GLN:NE2	5:f:327:ASP:O	2.47	0.45
7:h:317:LYS:O	7:h:321:ASN:ND2	2.46	0.45
3:D:226:LYS:HA	3:D:383:VAL:HG12	1.99	0.45
8:I:152:ALA:HB3	8:I:169:THR:HG23	1.99	0.45
8:i:34:LEU:HD12	8:i:96:VAL:HG11	1.99	0.45
2:c:170:GLN:NE2	3:d:135:ASP:OD1	2.47	0.45
7:H:453:GLN:HA	7:H:457:ALA:HA	1.98	0.44
3:d:233:ASP:OD1	3:d:233:ASP:N	2.49	0.44
4:e:348:LEU:HB3	4:e:363:SER:HB3	1.98	0.44
8:i:231:LEU:HD23	8:i:291:VAL:HG22	1.99	0.44
4:E:232:ILE:HG21	4:E:235:ALA:HB2	1.99	0.44
2:c:157:LYS:HD2	2:c:502:PHE:HB3	1.99	0.44
3:d:58:ASP:HA	3:d:72:ASN:HD22	1.82	0.44
4:e:170:LYS:HB3	4:e:171:LEU:H	1.61	0.44
5:f:172:ASN:HA	5:f:177:SER:HA	1.99	0.44
7:h:80:MET:O	7:h:83:ILE:HG13	2.16	0.44
3:d:249:ALA:HB3	3:d:300:ALA:HA	2.00	0.44
2:C:19:ILE:HB	2:C:20:PRO:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:39:VAL:HG22	4:E:100:THR:HG23	1.98	0.44
5:F:229:LEU:HB2	5:F:374:LEU:HB2	1.98	0.44
6:G:43:LYS:HD2	6:G:61:ILE:HD13	1.98	0.44
3:d:73:ASP:O	3:d:106:THR:OG1	2.34	0.44
7:H:222:LYS:HA	7:H:222:LYS:HD3	1.79	0.44
7:h:123:ILE:HD12	7:h:514:VAL:HG22	2.00	0.44
5:F:311:ASP:OD1	5:F:311:ASP:N	2.46	0.44
8:I:157:ARG:HD3	8:I:157:ARG:HA	1.82	0.44
1:b:118:LEU:HD22	1:b:123:LEU:HD13	2.00	0.44
2:c:45:MET:O	2:c:60:ASN:ND2	2.51	0.44
5:f:109:VAL:HB	5:f:518:ALA:HB1	2.00	0.44
6:g:335:GLU:HB3	6:g:336:GLY:H	1.62	0.44
7:H:60:THR:OG1	7:H:61:ASN:N	2.51	0.44
2:c:136:ILE:HG12	2:c:412:ILE:HD11	2.00	0.44
2:c:251:ASP:N	2:c:251:ASP:OD1	2.50	0.44
4:e:163:ALA:HB3	4:e:180:THR:HG23	2.00	0.44
6:g:86:VAL:HG13	6:g:401:ARG:HG3	1.99	0.44
8:i:32:ASP:HA	8:i:35:ARG:HD2	2.00	0.44
2:C:271:TRP:CD2	3:D:344:ARG:HD2	2.53	0.44
4:E:256:VAL:HB	5:F:262:ASN:HA	1.98	0.44
6:G:203:ARG:NH1	6:G:207:GLU:OE1	2.46	0.44
2:c:46:ASP:N	2:c:46:ASP:OD1	2.51	0.44
3:d:442:THR:C	3:d:444:GLU:H	2.25	0.44
4:e:92:ASP:HA	4:e:96:GLY:HA2	1.99	0.44
4:e:235:ALA:HA	4:e:288:ASN:HD21	1.83	0.44
6:g:74:VAL:O	6:g:77:GLU:HG3	2.18	0.44
8:I:133:PHE:HA	8:I:136:GLU:HG2	1.99	0.44
4:e:316:ASP:OD1	4:e:316:ASP:N	2.49	0.44
5:f:435:ARG:HA	5:f:435:ARG:HD3	1.79	0.44
4:E:49:ASP:HB2	5:F:532:ILE:HG12	1.99	0.43
7:H:155:ILE:HD11	7:H:407:LEU:HD11	2.00	0.43
5:f:152:SER:HB3	5:f:512:LEU:HD22	2.00	0.43
1:B:139:ALA:HB2	1:B:423:ILE:HD11	2.00	0.43
2:C:251:ASP:OD1	2:C:251:ASP:N	2.51	0.43
2:c:86:GLN:OE1	2:c:512:ASN:ND2	2.45	0.43
5:f:440:SER:HB2	5:f:448:SER:HA	2.00	0.43
7:h:51:LEU:HD12	8:i:523:ARG:HB2	2.01	0.43
2:c:89:GLU:O	2:c:398:ARG:NH2	2.47	0.43
8:i:87:ILE:HD13	8:i:87:ILE:HA	1.90	0.43
1:B:268:PHE:HD1	8:I:252:SER:HA	1.83	0.43
1:B:526:MET:HG2	8:I:48:VAL:HB	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:285:HIS:HD2	4:E:341:VAL:HG11	1.83	0.43
6:G:228:ARG:HD3	7:H:189:GLY:HA3	2.01	0.43
7:H:98:VAL:HB	7:H:505:THR:HG23	2.01	0.43
7:h:194:ASP:O	7:h:399:ARG:NH1	2.45	0.43
3:D:359:VAL:HG22	3:D:374:ILE:HG12	2.00	0.43
4:E:258:VAL:HB	4:E:263:LYS:HD2	2.01	0.43
6:G:497:ASP:O	6:G:499:LYS:N	2.51	0.43
3:d:62:VAL:HB	4:e:522:LYS:HA	2.00	0.43
1:B:521:VAL:HG11	8:I:46:MET:HE2	1.99	0.43
3:D:112:LEU:HD11	3:D:455:LEU:HD12	2.01	0.43
3:D:469:ASN:HB3	3:D:472:GLN:HB2	2.01	0.43
4:E:257:ARG:HG3	5:F:263:GLN:HE21	1.83	0.43
6:g:172:VAL:HG13	6:g:396:LEU:HD23	2.01	0.43
8:i:496:ASP:HB3	8:i:497:ASN:H	1.64	0.43
2:C:171:GLN:NE2	2:C:206:GLU:OE2	2.52	0.43
5:F:345:VAL:HG11	5:F:351:PHE:HB2	2.00	0.43
6:G:143:LEU:HD22	6:G:146:ASP:H	1.83	0.43
1:b:171:LYS:NZ	1:b:394:ASP:OD2	2.46	0.43
4:e:250:LYS:HB3	4:e:252:PHE:HD2	1.84	0.43
8:i:190:MET:O	8:i:371:SER:OG	2.36	0.43
4:E:281:ARG:NH1	4:E:335:PHE:O	2.51	0.43
5:F:52:LEU:HD22	5:F:111:ILE:HG13	2.01	0.43
8:I:217:ARG:HA	8:I:217:ARG:HD3	1.74	0.43
8:I:408:VAL:O	8:I:496:ASP:N	2.52	0.43
2:c:21:GLN:HE22	2:c:527:VAL:HG12	1.84	0.43
3:D:302:CYS:SG	3:D:303:GLN:N	2.92	0.43
3:D:342:VAL:HG21	3:D:348:LEU:HD13	2.00	0.43
5:F:435:ARG:HD3	5:F:435:ARG:HA	1.75	0.43
6:G:86:VAL:HG11	6:G:509:VAL:HG13	2.01	0.43
6:G:166:ASP:OD1	6:G:166:ASP:N	2.50	0.43
7:h:520:ASP:OD1	7:h:520:ASP:N	2.51	0.43
3:D:442:THR:C	3:D:444:GLU:H	2.27	0.42
4:E:220:LEU:HD22	4:E:222:LYS:HG2	2.01	0.42
5:F:309:LEU:HD21	5:F:314:LEU:HD13	2.00	0.42
8:I:286:ASP:OD1	8:I:286:ASP:N	2.49	0.42
3:d:295:THR:HG23	3:d:297:ALA:H	1.84	0.42
6:g:366:ASN:OD1	6:g:366:ASN:N	2.52	0.42
2:C:17:GLN:HB3	2:C:18:GLY:H	1.70	0.42
4:E:446:LEU:HB3	4:E:447:PRO:HD3	2.00	0.42
6:G:74:VAL:O	6:G:77:GLU:HG3	2.19	0.42
8:I:426:LYS:N	8:I:427:PRO:HD2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:26:ILE:HD12	2:c:105:LEU:HB3	2.00	0.42
2:c:194:MET:O	2:c:369:THR:OG1	2.33	0.42
2:c:508:MET:HE2	2:c:508:MET:HB2	1.92	0.42
7:h:203:LYS:HB3	7:h:384:LEU:HD13	2.00	0.42
8:i:193:ILE:HG21	8:i:388:LYS:HG3	2.00	0.42
4:e:102:VAL:HG23	4:e:507:ALA:HB2	2.02	0.42
4:e:205:LEU:HD23	5:f:100:ILE:HD12	2.01	0.42
6:g:93:VAL:HB	6:g:513:SER:HB2	2.01	0.42
7:h:90:GLU:HG3	7:h:91:VAL:HG13	2.01	0.42
8:i:152:ALA:HB3	8:i:169:THR:HG23	2.01	0.42
8:i:239:TYR:OH	8:i:263:GLU:OE1	2.34	0.42
1:B:78:VAL:HG22	2:C:9:LEU:HD23	2.01	0.42
1:B:183:ILE:HD11	1:B:392:VAL:HA	2.00	0.42
7:H:137:LEU:HB3	7:H:499:LEU:HD11	2.01	0.42
1:b:406:LYS:H	1:b:406:LYS:HG3	1.64	0.42
7:h:222:LYS:HE2	7:h:314:ARG:HB2	2.01	0.42
1:B:286:THR:HG21	1:B:338:PRO:HB2	2.01	0.42
4:E:226:VAL:HG11	5:F:344:PRO:HG2	2.01	0.42
1:b:93:GLN:HG2	1:b:510:LEU:HD12	2.00	0.42
4:e:259:ASP:HA	5:f:264:ILE:HG23	2.02	0.42
4:E:167:LEU:HD22	4:E:172:LEU:HD22	2.01	0.42
8:I:447:ILE:HB	8:I:448:PRO:HD3	2.01	0.42
2:c:56:ALA:O	2:c:380:GLN:NE2	2.53	0.42
6:g:333:ASN:HB2	6:g:334:LEU:H	1.70	0.42
2:C:205:LEU:H	3:D:522:GLN:NE2	2.18	0.42
5:F:345:VAL:HG21	5:F:351:PHE:HD1	1.85	0.42
1:b:183:ILE:HD11	1:b:392:VAL:HA	2.01	0.42
1:B:239:ILE:HA	1:B:290:VAL:HG13	2.01	0.42
3:D:405:ALA:O	3:D:409:ILE:HG12	2.20	0.42
3:d:179:ASN:O	3:d:182:HIS:ND1	2.53	0.42
3:d:210:LYS:HB3	3:d:384:THR:HG22	2.01	0.42
4:e:72:LYS:HG2	4:e:89:ARG:HH21	1.85	0.42
3:D:105:GLY:HA3	3:D:516:GLN:HE22	1.85	0.42
3:D:159:ILE:HD12	3:D:194:LEU:HD13	2.02	0.42
7:H:44:LYS:NZ	7:H:483:GLU:O	2.48	0.42
2:c:222:TYR:HB3	2:c:223:ALA:H	1.61	0.42
1:B:239:ILE:HD12	1:B:328:VAL:HG11	2.02	0.42
5:f:503:ILE:HD12	5:f:503:ILE:HA	1.94	0.42
6:g:254:ILE:HB	7:h:256:ILE:HG12	2.02	0.42
8:I:473:SER:OG	8:I:474:GLY:N	2.53	0.41
2:c:338:SER:OG	2:c:339:ALA:N	2.42	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:112:GLU:HB3	4:e:438:SER:HB3	2.02	0.41
6:g:448:ILE:HB	6:g:449:PRO:HD3	2.01	0.41
5:f:309:LEU:HD21	5:f:314:LEU:HD13	2.02	0.41
6:g:38:PRO:HD3	10:g:601:ADP:C8	2.55	0.41
7:h:435:TRP:HB2	7:h:436:PRO:HD3	2.03	0.41
1:B:118:LEU:HD22	1:B:123:LEU:HD22	2.03	0.41
1:B:410:PRO:O	1:B:415:THR:OG1	2.34	0.41
1:B:448:ILE:HB	1:B:449:PRO:HD3	2.02	0.41
8:I:422:LEU:O	8:I:426:LYS:HG2	2.21	0.41
1:b:409:VAL:HG13	1:b:501:TYR:HB2	2.02	0.41
3:d:116:LEU:HD23	3:d:524:VAL:HG21	2.01	0.41
3:d:236:HIS:HB3	3:d:239:MET:HG3	2.03	0.41
4:e:189:ARG:HH12	4:e:216:GLU:HA	1.85	0.41
6:g:401:ARG:HD3	6:g:401:ARG:HA	1.80	0.41
6:g:528:ASP:OD1	6:g:528:ASP:N	2.52	0.41
4:E:303:LEU:HD23	4:E:303:LEU:HA	1.95	0.41
8:I:446:ILE:HD12	8:I:446:ILE:HA	1.89	0.41
2:c:508:MET:SD	2:c:508:MET:N	2.92	0.41
6:g:198:LEU:HB2	6:g:376:ILE:HG23	2.01	0.41
6:g:489:ASP:HB2	6:g:496:ARG:HG2	2.03	0.41
3:D:242:LYS:HB3	3:D:360:GLN:HG3	2.02	0.41
8:I:56:LEU:H	8:I:382:HIS:HB2	1.86	0.41
8:I:206:LEU:HD11	8:I:372:VAL:HB	2.03	0.41
3:d:159:ILE:HD12	3:d:194:LEU:HD22	2.01	0.41
7:h:206:GLY:HA3	8:i:87:ILE:HG13	2.02	0.41
8:i:87:ILE:HG22	8:i:88:THR:HG23	2.01	0.41
1:B:386:ASP:HB3	1:B:390:ARG:HH21	1.86	0.41
2:C:26:ILE:HG21	2:C:109:LYS:HD2	2.02	0.41
6:G:448:ILE:HB	6:G:449:PRO:HD3	2.01	0.41
7:H:293:GLU:HA	7:H:315:VAL:HG22	2.02	0.41
2:c:256:ARG:NH2	7:h:257:GLU:OE2	2.38	0.41
5:f:213:LYS:HD2	5:f:213:LYS:HA	1.93	0.41
1:B:56:VAL:HG22	2:C:531:ILE:HD12	2.02	0.41
4:E:234:ASN:OD1	4:E:234:ASN:N	2.53	0.41
5:F:301:GLN:HA	5:F:328:ILE:HB	2.03	0.41
1:b:223:PHE:HE1	1:b:320:ASP:HB3	1.84	0.41
3:d:225:ILE:HD13	3:d:373:VAL:HG21	2.01	0.41
4:e:136:ALA:HB2	4:e:424:LEU:HD22	2.02	0.41
8:i:183:ASP:OD1	8:i:183:ASP:N	2.52	0.41
8:i:218:HIS:HB3	8:i:221:MET:HG3	2.01	0.41
1:B:33:ILE:HG21	1:B:116:GLU:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:153:ASP:OD1	3:D:153:ASP:N	2.53	0.41
3:D:168:THR:HG21	3:D:412:LEU:HD11	2.02	0.41
3:D:248:ILE:N	3:D:354:GLY:O	2.47	0.41
5:F:266:VAL:HG13	5:F:271:GLN:HB2	2.02	0.41
8:I:30:LEU:HD12	8:I:77:ILE:HD12	2.02	0.41
1:B:124:SER:OG	1:B:127:GLU:OE1	2.32	0.41
2:C:22:LEU:HD23	2:C:112:VAL:HG11	2.03	0.41
2:C:190:LEU:HD13	2:C:397:ARG:HD2	2.03	0.41
3:D:393:MET:H	3:D:393:MET:HG2	1.67	0.41
8:I:32:ASP:OD1	8:I:35:ARG:NH1	2.54	0.41
8:I:476:LEU:HD13	8:I:476:LEU:HA	1.94	0.41
1:b:204:VAL:HG11	1:b:389:GLU:HG3	2.03	0.41
3:d:458:ILE:HB	3:d:459:PRO:HD3	2.03	0.41
7:h:27:ILE:HG22	7:h:31:LYS:HE2	2.02	0.41
2:C:71:VAL:HG12	2:C:73:HIS:H	1.86	0.41
2:C:135:LYS:O	2:C:139:ILE:HG12	2.21	0.41
4:E:239:ILE:HG21	4:E:320:VAL:HG13	2.03	0.41
5:F:269:TYR:HB2	6:G:266:ARG:HG2	2.03	0.41
6:G:56:ASN:HA	6:G:61:ILE:HD11	2.01	0.41
6:G:366:ASN:OD1	6:G:366:ASN:N	2.53	0.41
7:H:153:LEU:HD22	7:H:173:CYS:HB3	2.03	0.41
8:I:176:ILE:HG13	8:I:398:VAL:HG11	2.01	0.41
8:I:519:ASP:OD1	8:I:519:ASP:N	2.54	0.41
1:b:353:SER:OG	1:b:354:GLU:N	2.54	0.41
1:b:400:LYS:HE3	1:b:404:ARG:HD2	2.03	0.41
2:c:398:ARG:HA	2:c:398:ARG:HD3	1.88	0.41
4:e:68:ALA:HB2	4:e:99:THR:HG21	2.03	0.41
4:e:87:MET:HE2	4:e:87:MET:HB3	2.00	0.41
4:e:290:PHE:N	4:e:310:MET:O	2.54	0.41
3:D:306:PHE:HD1	3:D:323:ARG:HD3	1.87	0.40
4:e:77:ASP:OD1	4:e:77:ASP:N	2.51	0.40
5:f:38:ILE:HD12	5:f:117:LEU:HB3	2.02	0.40
1:B:192:PRO:HB2	1:B:193:ASP:H	1.67	0.40
5:F:461:ILE:HB	5:F:462:PRO:HD3	2.03	0.40
6:G:427:ALA:HB1	6:G:435:GLN:HG3	2.03	0.40
1:b:393:ASP:O	1:b:397:ASN:ND2	2.47	0.40
5:f:207:ASP:HB3	5:f:385:THR:HG22	2.02	0.40
5:f:348:ILE:HD12	5:f:348:ILE:HA	1.97	0.40
6:g:184:ILE:H	6:g:184:ILE:HG12	1.67	0.40
7:h:408:VAL:HG23	7:h:497:GLU:HG3	2.02	0.40
8:i:176:ILE:HG13	8:i:398:VAL:HG11	2.01	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:168:ILE:HD11	1:B:183:ILE:HD12	2.02	0.40
3:D:261:LYS:HE3	3:D:261:LYS:HB3	1.96	0.40
3:D:289:ILE:HD13	3:D:289:ILE:HA	1.95	0.40
1:b:182:LEU:HD23	1:b:182:LEU:HA	1.89	0.40
1:b:259:ILE:HG13	2:c:255:ILE:HG12	2.04	0.40
5:f:55:LYS:HB3	6:g:113:HIS:CE1	2.55	0.40
7:h:113:LEU:HA	7:h:113:LEU:HD23	1.86	0.40
8:i:190:MET:HE1	8:i:322:GLU:HG2	2.03	0.40
1:B:114:LEU:O	1:B:117:GLU:HG2	2.22	0.40
4:E:348:LEU:HD12	4:E:348:LEU:HA	1.91	0.40
7:h:44:LYS:HE3	7:h:483:GLU:HA	2.04	0.40
7:h:187:GLU:HB3	7:h:188:ASN:H	1.69	0.40
2:C:67:LYS:HE2	2:C:84:LYS:HE2	2.04	0.40
3:D:246:ALA:HA	3:D:298:ASN:HB3	2.02	0.40
3:D:280:TYR:HA	3:D:283:GLU:HB2	2.02	0.40
4:E:126:ILE:HA	4:E:435:ALA:HB2	2.04	0.40
2:c:19:ILE:HB	2:c:20:PRO:HD3	2.03	0.40
8:i:451:LEU:HD23	8:i:451:LEU:HA	1.98	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	B	527/547 (96%)	477 (90%)	46 (9%)	4 (1%)	16	49
1	b	527/547 (96%)	471 (89%)	49 (9%)	7 (1%)	10	40
2	C	516/553 (93%)	464 (90%)	50 (10%)	2 (0%)	30	62
2	c	516/553 (93%)	468 (91%)	46 (9%)	2 (0%)	30	62
3	D	523/541 (97%)	470 (90%)	47 (9%)	6 (1%)	12	43
3	d	523/541 (97%)	465 (89%)	54 (10%)	4 (1%)	16	49

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	E	519/535 (97%)	470 (91%)	41 (8%)	8 (2%)	8	38
4	e	519/535 (97%)	456 (88%)	55 (11%)	8 (2%)	8	38
5	F	517/539 (96%)	471 (91%)	43 (8%)	3 (1%)	22	54
5	f	517/539 (96%)	475 (92%)	41 (8%)	1 (0%)	44	72
6	G	530/556 (95%)	472 (89%)	53 (10%)	5 (1%)	14	47
6	g	530/556 (95%)	475 (90%)	50 (9%)	5 (1%)	14	47
7	H	521/545 (96%)	475 (91%)	44 (8%)	2 (0%)	30	62
7	h	521/545 (96%)	476 (91%)	43 (8%)	2 (0%)	30	62
8	I	525/531 (99%)	476 (91%)	45 (9%)	4 (1%)	16	49
8	i	525/531 (99%)	470 (90%)	49 (9%)	6 (1%)	12	43
All	All	8356/8694 (96%)	7531 (90%)	756 (9%)	69 (1%)	19	49

All (69) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	29	MET
1	B	192	PRO
3	D	82	ASP
8	I	91	GLY
1	b	192	PRO
6	g	193	ASN
8	i	226	GLU
1	B	318	LYS
3	D	182	HIS
4	E	411	GLY
5	F	353	ALA
6	G	498	ASN
7	H	528	LYS
4	e	20	ARG
6	g	192	VAL
6	g	358	ASP
7	h	187	GLU
7	h	297	SER
8	i	91	GLY
1	B	235	LYS
3	D	160	LYS
4	E	20	ARG
4	E	149	GLY

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Mol	Chain	Res	Type
5	F	305	LEU
5	F	369	GLY
6	G	14	GLY
7	H	348	GLY
8	I	493	GLY
1	b	16	LYS
1	b	235	LYS
3	d	30	GLY
3	d	127	GLY
4	e	327	THR
4	e	334	THR
4	e	429	PRO
5	f	369	GLY
8	i	282	CYS
1	B	210	SER
4	E	367	LEU
4	E	429	PRO
6	G	183	ASP
6	G	380	ALA
4	e	297	TYR
6	g	477	ASN
2	C	141	VAL
3	D	343	PRO
4	E	297	TYR
1	b	210	SER
1	b	413	GLY
3	d	66	GLY
4	e	57	ARG
4	e	367	LEU
6	g	85	GLU
8	i	160	VAL
4	E	75	GLY
4	E	341	VAL
6	G	477	ASN
2	c	141	VAL
8	i	348	GLY
3	D	357	GLY
8	I	89	GLY
4	e	206	GLY
2	C	428	PRO
1	b	10	GLY
8	i	493	GLY

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Mol	Chain	Res	Type
3	D	127	GLY
8	I	160	VAL
1	b	100	GLY
2	c	168	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	436/451 (97%)	433 (99%)	3 (1%)	81	88
1	b	436/451 (97%)	430 (99%)	6 (1%)	62	76
2	C	427/451 (95%)	424 (99%)	3 (1%)	81	88
2	c	427/451 (95%)	424 (99%)	3 (1%)	81	88
3	D	444/456 (97%)	438 (99%)	6 (1%)	62	76
3	d	444/456 (97%)	440 (99%)	4 (1%)	75	84
4	E	414/427 (97%)	411 (99%)	3 (1%)	81	88
4	e	414/427 (97%)	409 (99%)	5 (1%)	67	79
5	F	442/452 (98%)	439 (99%)	3 (1%)	81	88
5	f	442/452 (98%)	437 (99%)	5 (1%)	70	80
6	G	444/463 (96%)	439 (99%)	5 (1%)	70	80
6	g	444/463 (96%)	440 (99%)	4 (1%)	75	84
7	H	454/469 (97%)	448 (99%)	6 (1%)	65	77
7	h	454/469 (97%)	448 (99%)	6 (1%)	65	77
8	I	440/442 (100%)	438 (100%)	2 (0%)	86	92
8	i	440/442 (100%)	436 (99%)	4 (1%)	75	84
All	All	7002/7222 (97%)	6934 (99%)	68 (1%)	71	82

All (68) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	199	VAL
1	B	315	LEU
1	B	355	VAL
2	C	8	LEU
2	C	149	VAL
2	C	389	LEU
3	D	110	VAL
3	D	156	LEU
3	D	222	THR
3	D	442	THR
3	D	471	ILE
3	D	482	VAL
4	E	39	VAL
4	E	173	THR
4	E	245	ASP
5	F	151	MET
5	F	386	VAL
5	F	508	VAL
6	G	7	VAL
6	G	32	VAL
6	G	195	VAL
6	G	220	VAL
6	G	361	LEU
7	H	8	LEU
7	H	85	ARG
7	H	130	LEU
7	H	183	VAL
7	H	187	GLU
7	H	488	VAL
8	I	64	LEU
8	I	333	LEU
1	b	121	ILE
1	b	123	LEU
1	b	199	VAL
1	b	316	ASN
1	b	360	VAL
1	b	434	GLU
2	c	38	THR
2	c	412	ILE
2	c	427	ILE
3	d	83	VAL
3	d	156	LEU
3	d	178	VAL

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Mol	Chain	Res	Type
3	d	457	VAL
4	e	84	LEU
4	e	249	ILE
4	e	261	THR
4	e	339	GLU
4	e	445	MET
5	f	155	VAL
5	f	174	LYS
5	f	374	LEU
5	f	386	VAL
5	f	508	VAL
6	g	184	ILE
6	g	220	VAL
6	g	361	LEU
6	g	383	PHE
7	h	167	ARG
7	h	195	ILE
7	h	254	THR
7	h	460	ILE
7	h	488	VAL
7	h	528	LYS
8	i	137	VAL
8	i	160	VAL
8	i	333	LEU
8	i	367	ASN

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

Mol	Chain	Res	Type
1	B	32	ASN
1	B	80	HIS
1	B	145	ASN
1	B	175	ASN
1	B	359	GLN
2	C	25	ASN
2	C	60	ASN
2	C	107	GLN
2	C	432	GLN
2	C	498	ASN
3	D	22	GLN
3	D	37	HIS
3	D	238	GLN

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Mol	Chain	Res	Type
3	D	312	HIS
3	D	317	ASN
3	D	391	ASN
3	D	515	GLN
3	D	516	GLN
3	D	522	GLN
4	E	227	ASN
4	E	285	HIS
4	E	294	GLN
4	E	298	ASN
4	E	337	HIS
4	E	469	HIS
4	E	473	ASN
4	E	502	GLN
5	F	72	ASN
5	F	178	GLN
5	F	250	GLN
5	F	263	GLN
5	F	296	ASN
5	F	406	HIS
6	G	20	GLN
6	G	103	ASN
6	G	139	ASN
6	G	164	ASN
6	G	205	GLN
6	G	262	GLN
6	G	333	ASN
7	H	235	ASN
7	H	284	GLN
7	H	308	ASN
7	H	474	ASN
7	H	504	GLN
8	I	68	GLN
8	I	346	HIS
8	I	470	HIS
1	b	50	ASN
2	c	21	GLN
2	c	25	ASN
2	c	60	ASN
2	c	119	GLN
2	c	346	GLN
2	c	359	ASN

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Mol	Chain	Res	Type
2	c	402	ASN
2	c	431	GLN
3	d	72	ASN
3	d	278	GLN
3	d	291	GLN
3	d	376	GLN
3	d	391	ASN
3	d	435	GLN
3	d	469	ASN
3	d	503	GLN
3	d	522	GLN
4	e	157	GLN
4	e	195	ASN
4	e	227	ASN
4	e	294	GLN
4	e	380	GLN
4	e	381	GLN
4	e	391	HIS
4	e	419	HIS
5	f	72	ASN
5	f	250	GLN
5	f	296	ASN
6	g	20	GLN
6	g	30	ASN
6	g	164	ASN
6	g	333	ASN
6	g	492	ASN
7	h	71	GLN
7	h	221	ASN
7	h	235	ASN
7	h	420	HIS
7	h	472	GLN
7	h	474	ASN
7	h	504	GLN
8	i	61	ASN
8	i	198	HIS
8	i	294	GLN
8	i	367	ASN
8	i	497	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 48 ligands modelled in this entry, 16 are monoatomic - leaving 32 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	$\#\|Z\| > 2$
11	AF3	H	603	-	0,3,3	-	-	-		
11	AF3	f	601	-	0,3,3	-	-	-		
10	ADP	F	602	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	b	601	1	0,3,3	-	-	-		
11	AF3	I	601	8	0,3,3	-	-	-		
11	AF3	e	602	4,10	0,3,3	-	-	-		
10	ADP	E	602	9	24,29,29	0.97	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	c	603	-	0,3,3	-	-	-		
10	ADP	d	601	9,11	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	d	603	10	0,3,3	-	-	-		
10	ADP	H	602	9	24,29,29	0.94	1 (4%)	29,45,45	1.19	2 (6%)
10	ADP	D	603	9,11	24,29,29	0.94	1 (4%)	29,45,45	1.19	2 (6%)
11	AF3	i	601	8	0,3,3	-	-	-		
10	ADP	e	601	9,11	24,29,29	0.92	0	29,45,45	1.18	2 (6%)
10	ADP	i	603	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	g	602	-	0,3,3	-	-	-		

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
10	ADP	G	603	9,11	24,29,29	0.92	0	29,45,45	1.17	2 (6%)
10	ADP	f	602	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	G	601	6,10	0,3,3	-	-	-		
11	AF3	h	602	7	0,3,3	-	-	-		
10	ADP	g	601	9	24,29,29	0.94	1 (4%)	29,45,45	1.19	2 (6%)
11	AF3	B	603	1	0,3,3	-	-	-		
11	AF3	E	601	-	0,3,3	-	-	-		
10	ADP	c	602	9	24,29,29	0.95	1 (4%)	29,45,45	1.18	2 (6%)
10	ADP	C	602	9	24,29,29	0.95	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	F	603	-	0,3,3	-	-	-		
10	ADP	h	603	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	C	603	2	0,3,3	-	-	-		
10	ADP	I	602	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
10	ADP	B	602	9	24,29,29	0.94	1 (4%)	29,45,45	1.18	2 (6%)
11	AF3	D	601	10	0,3,3	-	-	-		
10	ADP	b	602	9	24,29,29	0.98	1 (4%)	29,45,45	1.19	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
10	ADP	h	603	9	-	1/12/32/32	0/3/3/3
10	ADP	F	602	9	-	1/12/32/32	0/3/3/3
10	ADP	H	602	9	-	1/12/32/32	0/3/3/3
10	ADP	D	603	9,11	-	1/12/32/32	0/3/3/3
10	ADP	I	602	9	-	1/12/32/32	0/3/3/3
10	ADP	e	601	9,11	-	2/12/32/32	0/3/3/3
10	ADP	E	602	9	-	6/12/32/32	0/3/3/3
10	ADP	B	602	9	-	1/12/32/32	0/3/3/3
10	ADP	d	601	9,11	-	1/12/32/32	0/3/3/3
10	ADP	g	601	9	-	3/12/32/32	0/3/3/3
10	ADP	i	603	9	-	1/12/32/32	0/3/3/3
10	ADP	c	602	9	-	0/12/32/32	0/3/3/3
10	ADP	b	602	9	-	6/12/32/32	0/3/3/3
10	ADP	G	603	9,11	-	2/12/32/32	0/3/3/3
10	ADP	C	602	9	-	1/12/32/32	0/3/3/3
10	ADP	f	602	9	-	1/12/32/32	0/3/3/3

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	b	602	ADP	PA-O3A	2.57	1.62	1.59
10	E	602	ADP	PA-O3A	2.43	1.62	1.59
10	C	602	ADP	PA-O3A	2.27	1.61	1.59
10	c	602	ADP	PA-O3A	2.27	1.61	1.59
10	B	602	ADP	PA-O3A	2.23	1.61	1.59
10	g	601	ADP	PA-O3A	2.22	1.61	1.59
10	H	602	ADP	PA-O3A	2.21	1.61	1.59
10	d	601	ADP	PA-O3A	2.20	1.61	1.59
10	h	603	ADP	PA-O3A	2.20	1.61	1.59
10	F	602	ADP	PA-O3A	2.19	1.61	1.59
10	i	603	ADP	PA-O3A	2.19	1.61	1.59
10	f	602	ADP	PA-O3A	2.18	1.61	1.59
10	I	602	ADP	PA-O3A	2.17	1.61	1.59
10	D	603	ADP	PA-O3A	2.17	1.61	1.59

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	g	601	ADP	N3-C2-N1	-3.67	123.70	128.67
10	e	601	ADP	N3-C2-N1	-3.66	123.70	128.67
10	I	602	ADP	N3-C2-N1	-3.66	123.70	128.67
10	B	602	ADP	N3-C2-N1	-3.66	123.71	128.67
10	H	602	ADP	N3-C2-N1	-3.66	123.71	128.67
10	i	603	ADP	N3-C2-N1	-3.66	123.71	128.67
10	b	602	ADP	N3-C2-N1	-3.66	123.71	128.67
10	D	603	ADP	N3-C2-N1	-3.66	123.71	128.67
10	F	602	ADP	N3-C2-N1	-3.66	123.71	128.67
10	G	603	ADP	N3-C2-N1	-3.66	123.71	128.67
10	d	601	ADP	N3-C2-N1	-3.66	123.71	128.67
10	C	602	ADP	N3-C2-N1	-3.66	123.71	128.67
10	c	602	ADP	N3-C2-N1	-3.65	123.71	128.67
10	E	602	ADP	N3-C2-N1	-3.65	123.71	128.67
10	f	602	ADP	N3-C2-N1	-3.65	123.71	128.67
10	h	603	ADP	N3-C2-N1	-3.65	123.71	128.67
10	g	601	ADP	C4-C5-N7	-2.61	106.58	109.34
10	i	603	ADP	C4-C5-N7	-2.61	106.58	109.34
10	c	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	I	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	b	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	E	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	H	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	F	602	ADP	C4-C5-N7	-2.60	106.59	109.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	B	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	G	603	ADP	C4-C5-N7	-2.60	106.59	109.34
10	d	601	ADP	C4-C5-N7	-2.60	106.59	109.34
10	e	601	ADP	C4-C5-N7	-2.60	106.59	109.34
10	C	602	ADP	C4-C5-N7	-2.60	106.59	109.34
10	h	603	ADP	C4-C5-N7	-2.59	106.60	109.34
10	f	602	ADP	C4-C5-N7	-2.59	106.60	109.34
10	D	603	ADP	C4-C5-N7	-2.58	106.61	109.34

There are no chirality outliers.

All (29) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
10	E	602	ADP	PA-O3A-PB-O3B
10	b	602	ADP	PA-O3A-PB-O2B
10	b	602	ADP	C5'-O5'-PA-O1A
10	b	602	ADP	C5'-O5'-PA-O2A
10	b	602	ADP	C5'-O5'-PA-O3A
10	B	602	ADP	PB-O3A-PA-O5'
10	D	603	ADP	PB-O3A-PA-O5'
10	F	602	ADP	PB-O3A-PA-O5'
10	H	602	ADP	PB-O3A-PA-O5'
10	I	602	ADP	PB-O3A-PA-O5'
10	d	601	ADP	PB-O3A-PA-O5'
10	f	602	ADP	PB-O3A-PA-O5'
10	g	601	ADP	PB-O3A-PA-O5'
10	h	603	ADP	PB-O3A-PA-O5'
10	i	603	ADP	PB-O3A-PA-O5'
10	E	602	ADP	C5'-O5'-PA-O1A
10	E	602	ADP	C5'-O5'-PA-O2A
10	E	602	ADP	C5'-O5'-PA-O3A
10	G	603	ADP	PB-O3A-PA-O1A
10	G	603	ADP	PB-O3A-PA-O2A
10	e	601	ADP	PB-O3A-PA-O1A
10	e	601	ADP	PB-O3A-PA-O2A
10	E	602	ADP	PA-O3A-PB-O1B
10	E	602	ADP	PA-O3A-PB-O2B
10	b	602	ADP	PA-O3A-PB-O3B
10	b	602	ADP	PA-O3A-PB-O1B
10	C	602	ADP	O4'-C4'-C5'-O5'
10	g	601	ADP	PB-O3A-PA-O1A
10	g	601	ADP	PB-O3A-PA-O2A

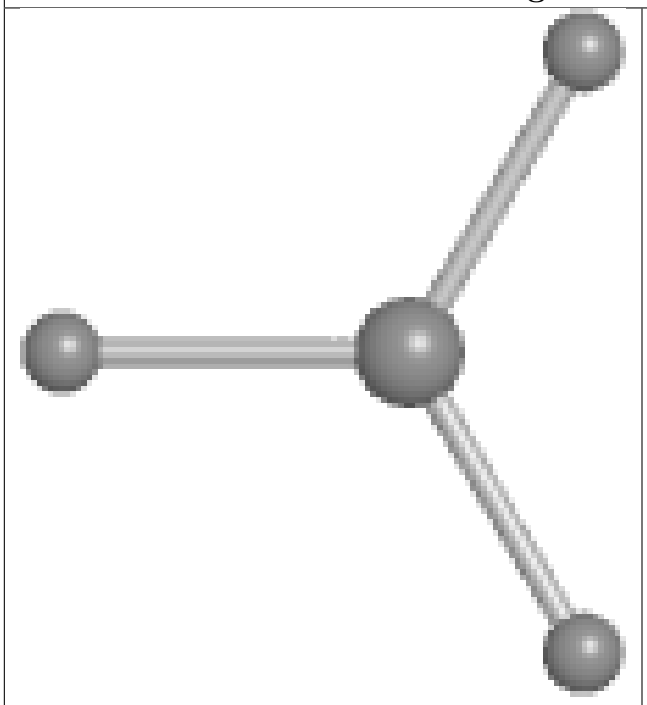
There are no ring outliers.

2 monomers are involved in 2 short contacts:

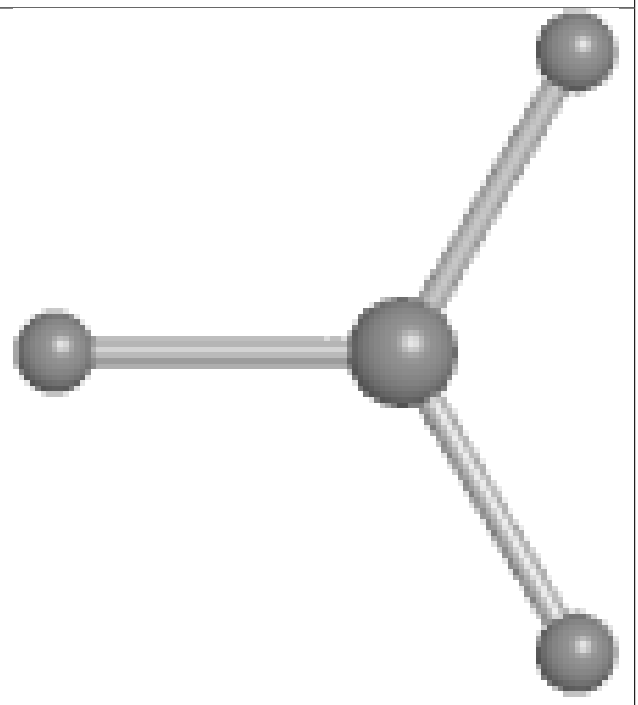
Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	d	601	ADP	1	0
10	g	601	ADP	1	0

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.

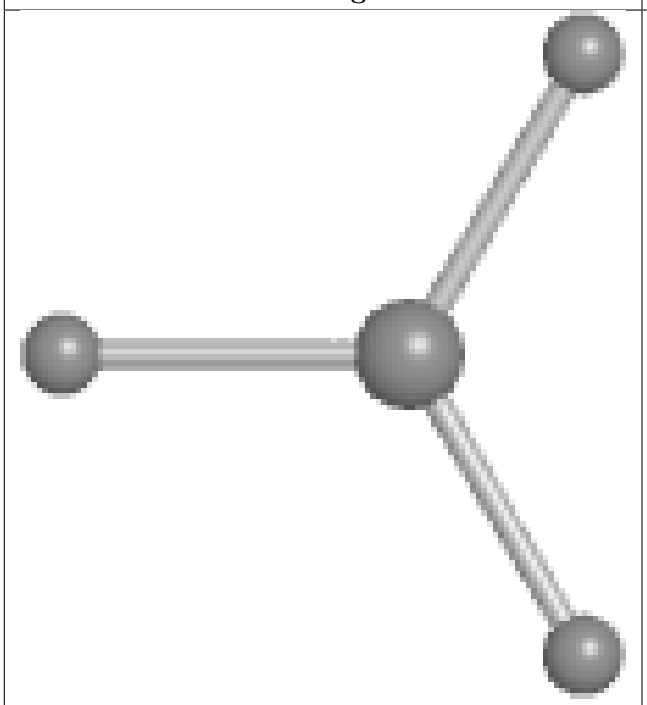
Ligand AF3 H 603



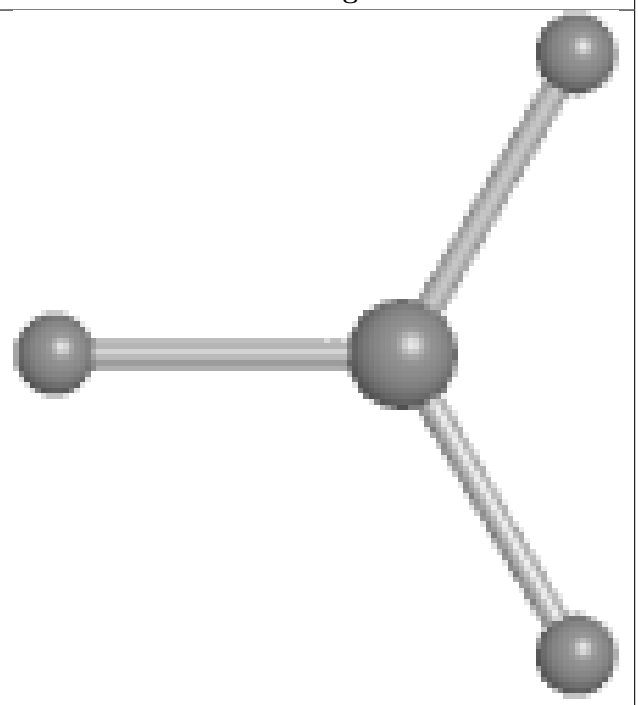
Bond lengths



Bond angles

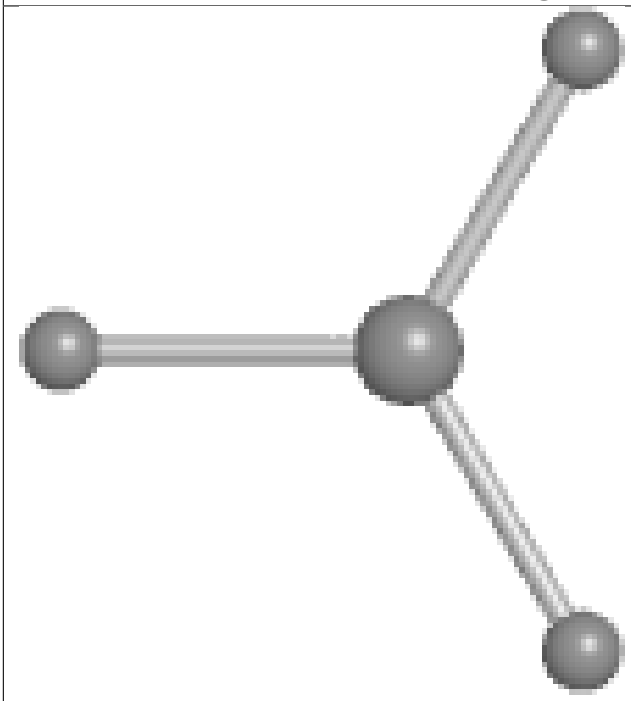


Torsions



Rings

Ligand AF3 f 601



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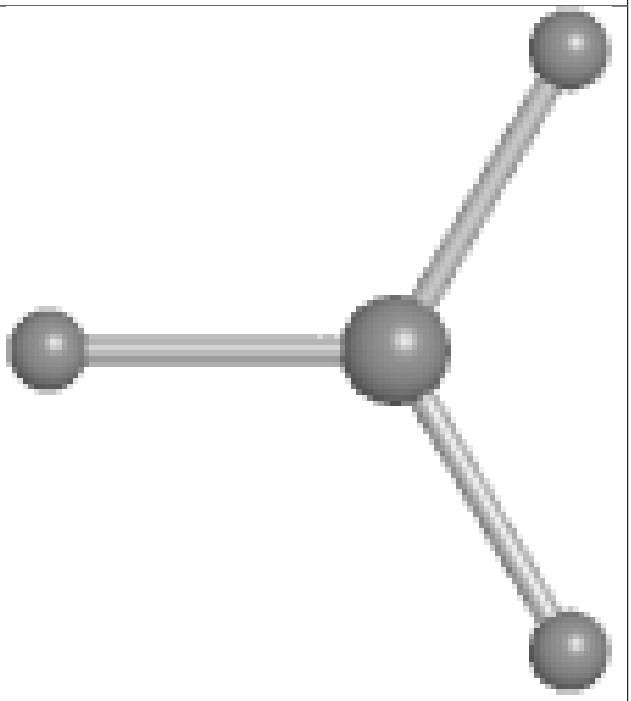

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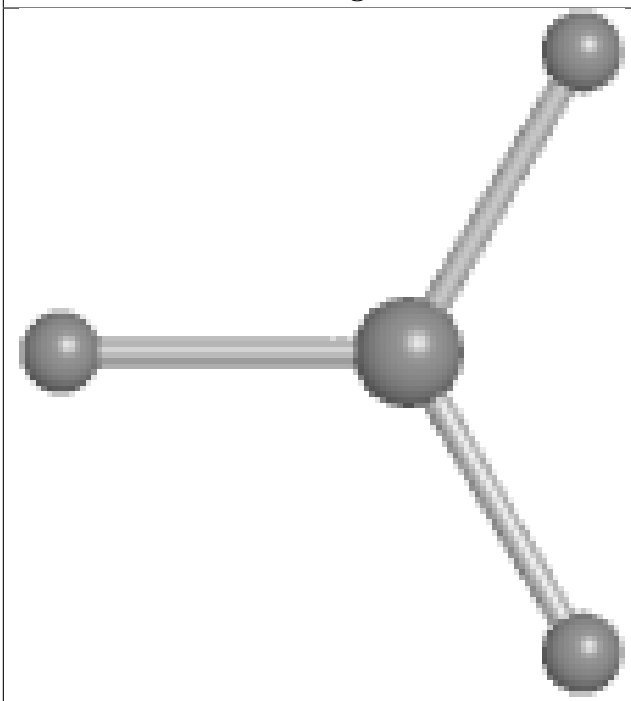

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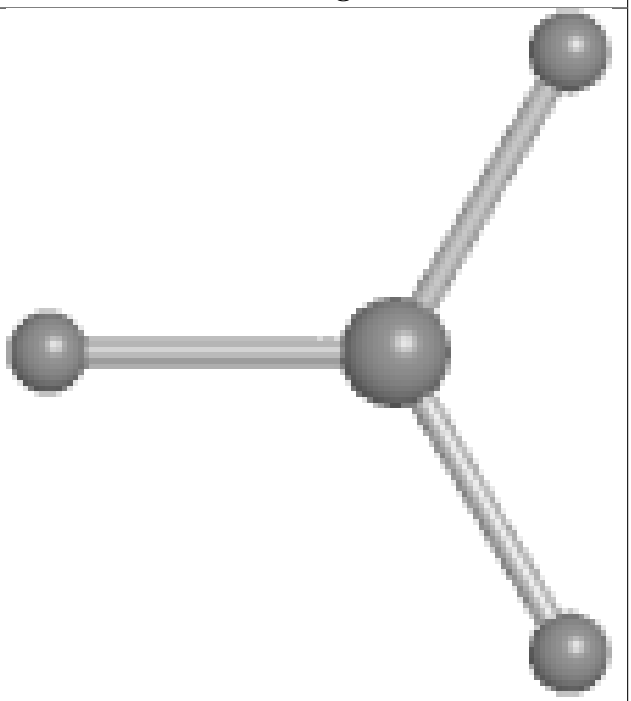
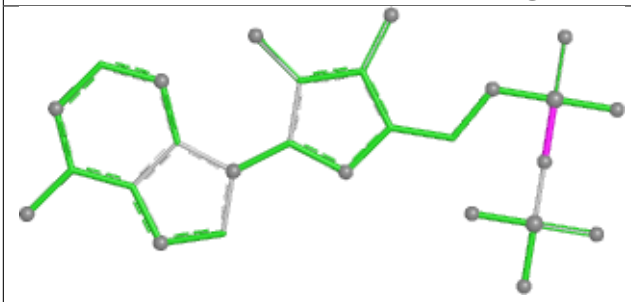


Rings

Ligand ADP F 602



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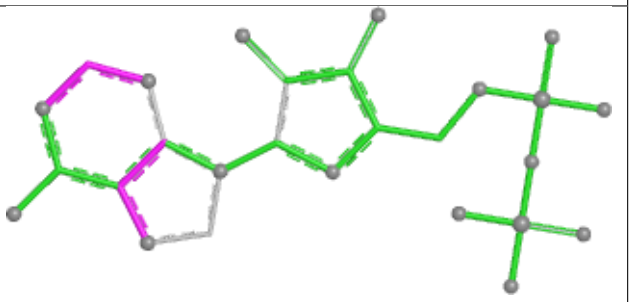

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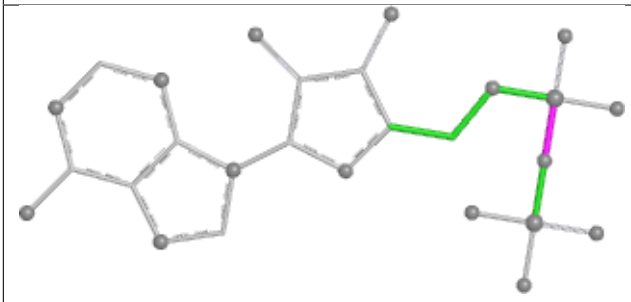

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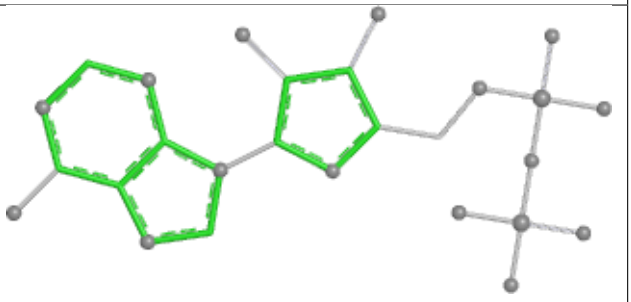
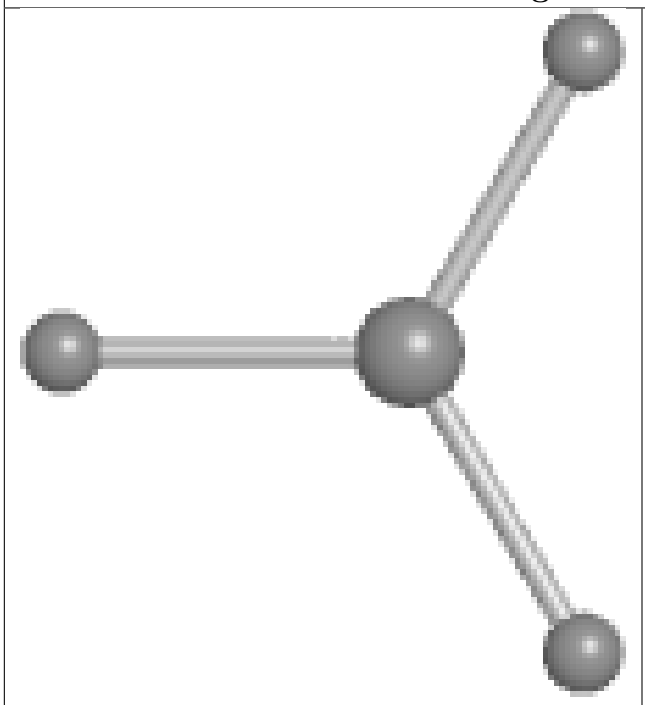


Rings

Ligand AF3 b 601



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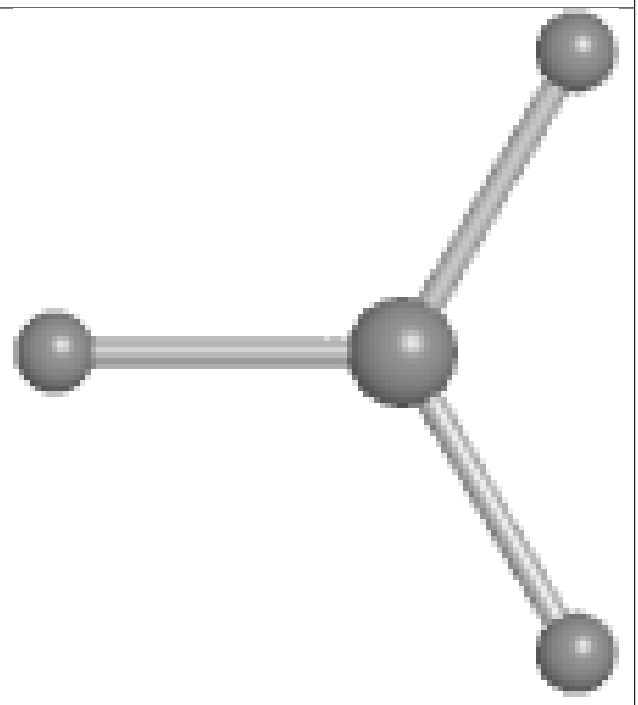

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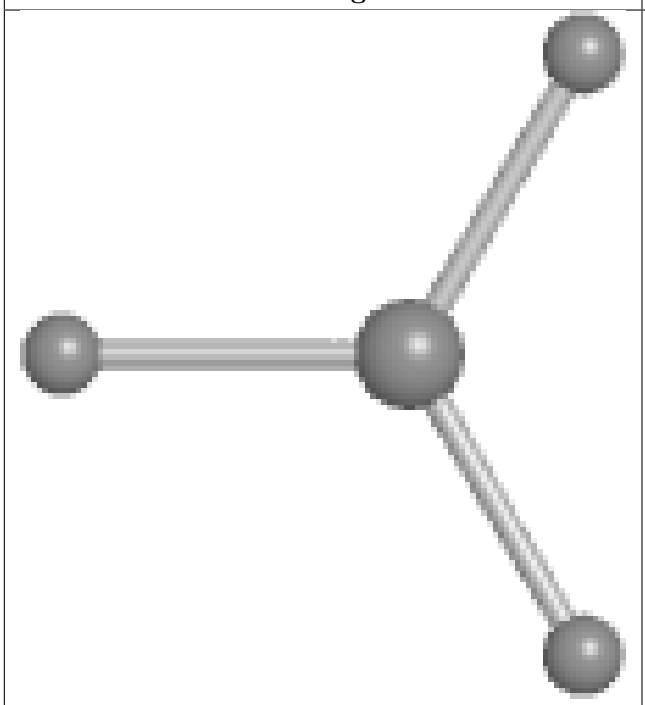

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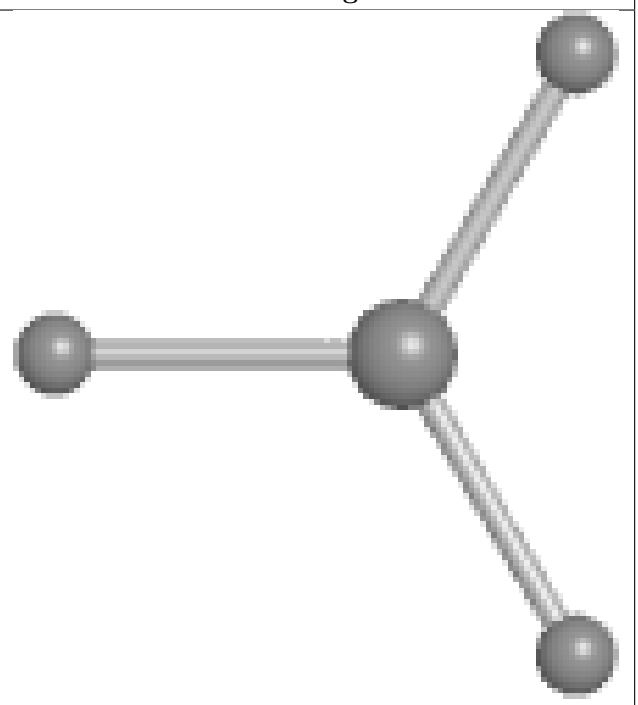
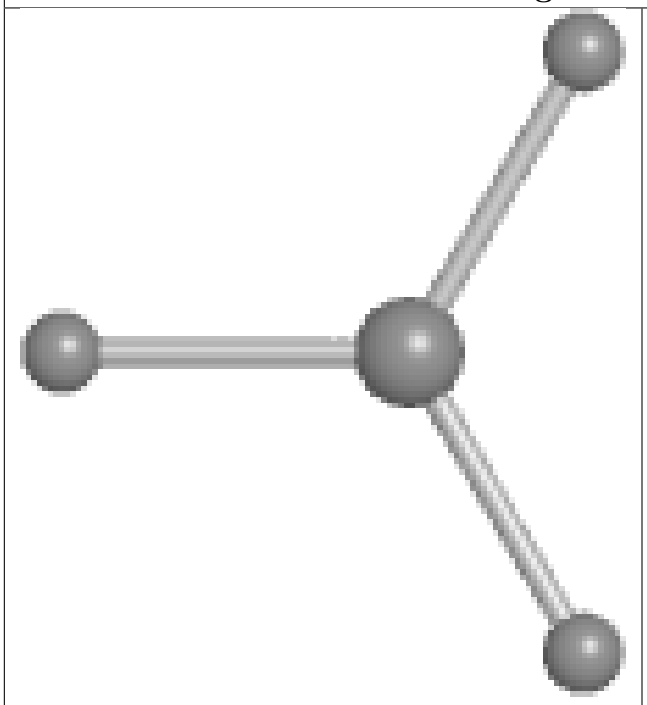
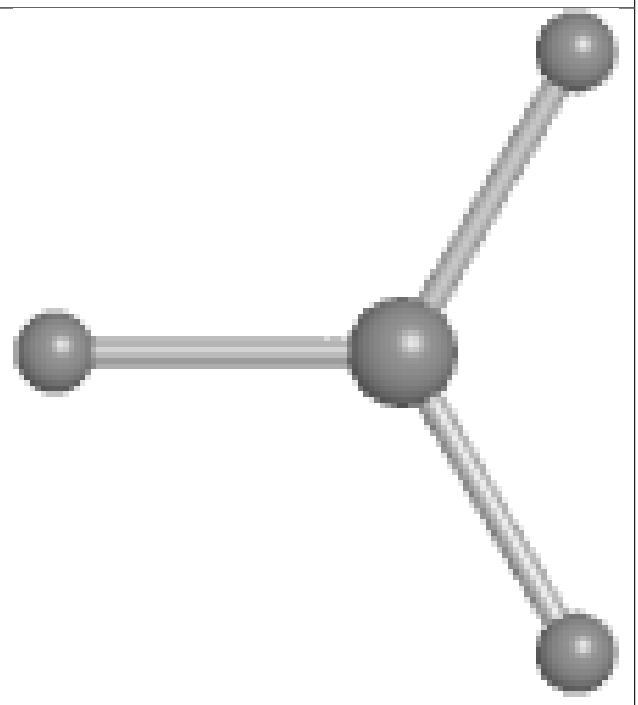


Rings

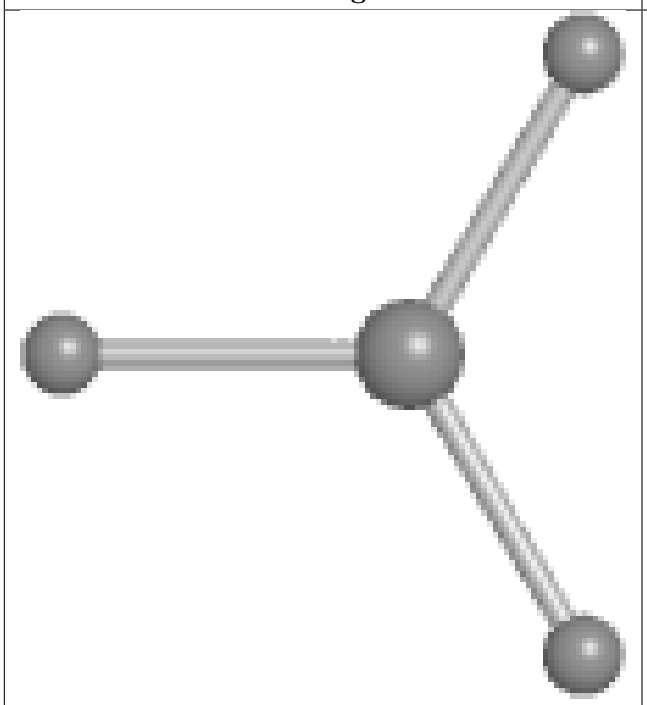
Ligand AF3 I 601



Bond lengths



Bond angles



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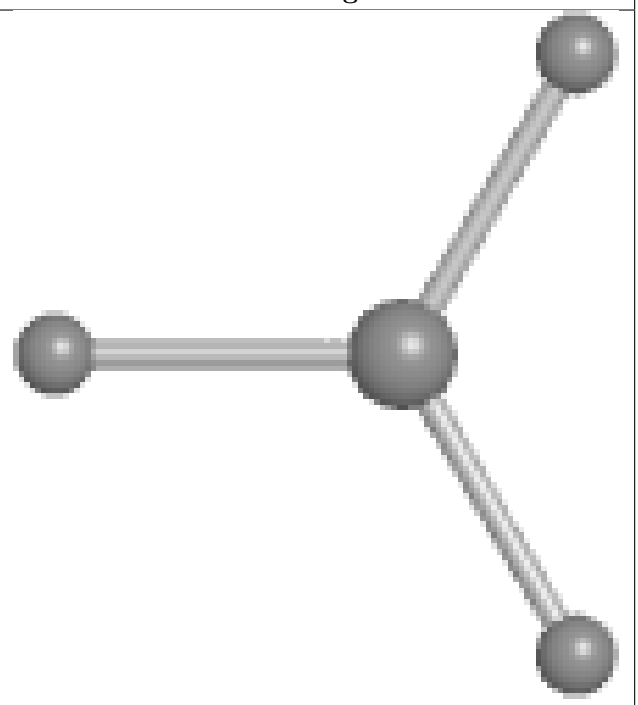
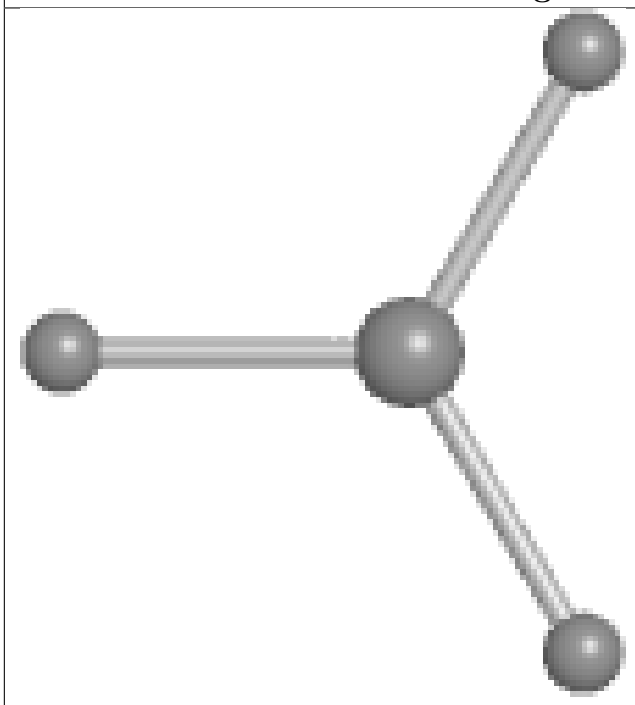


Rings

Ligand AF3 e 602



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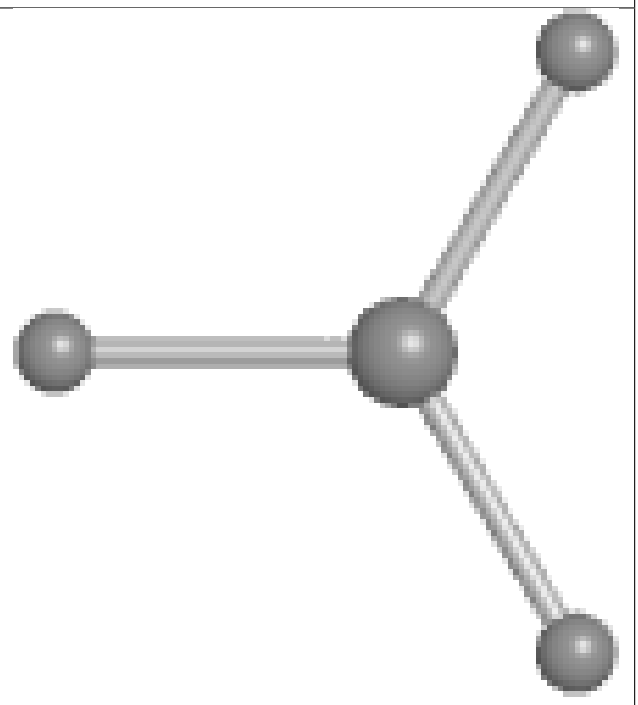
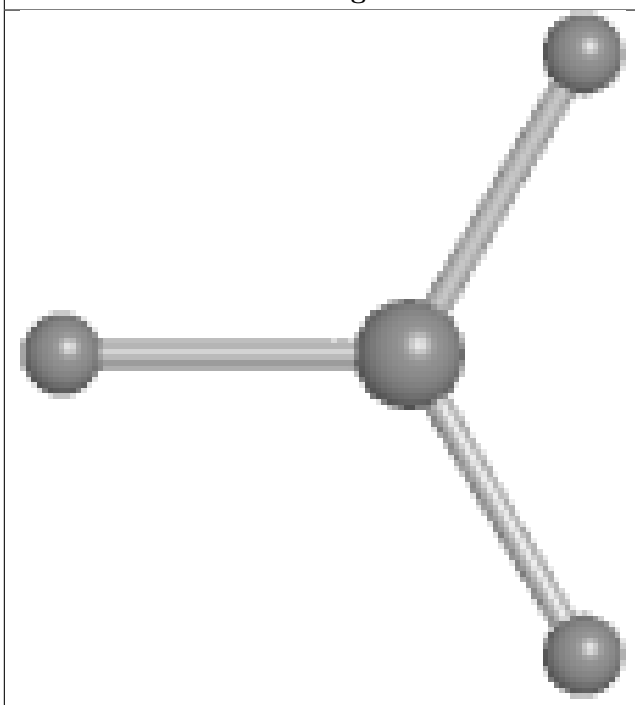


Bond angles



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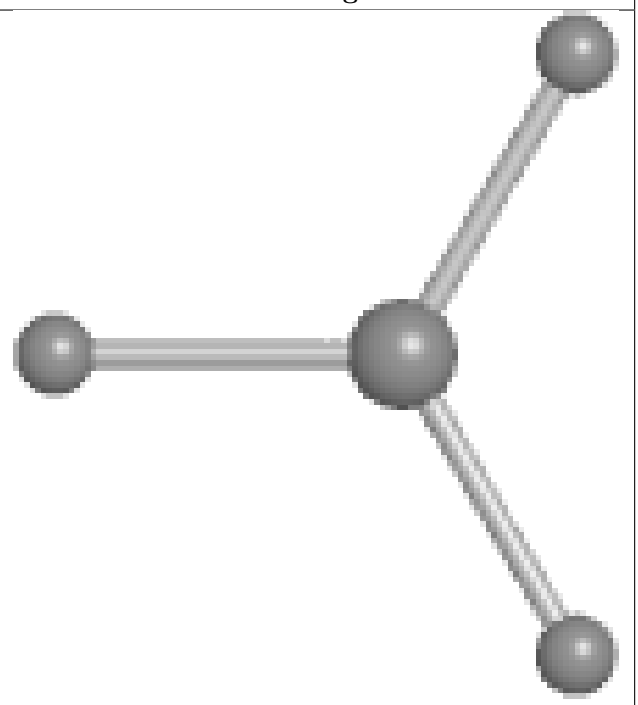
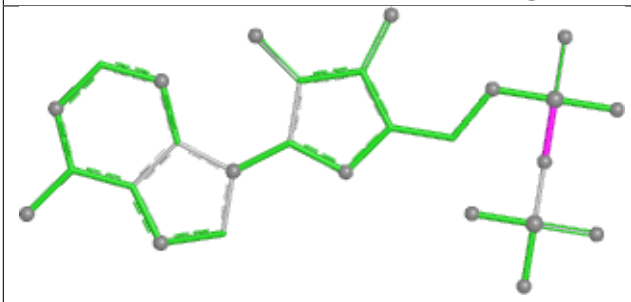


Rings

Ligand ADP E 602



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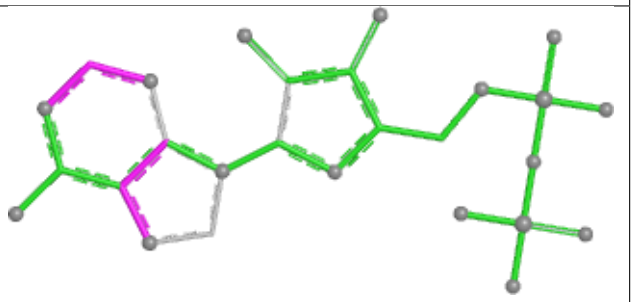
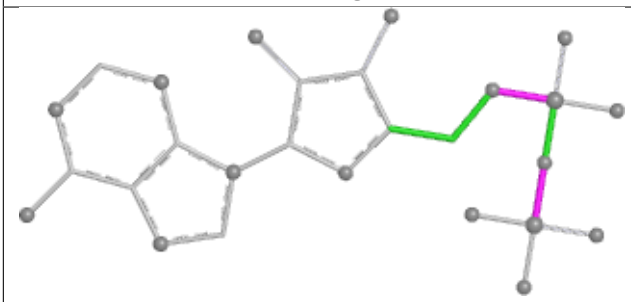


Bond angles



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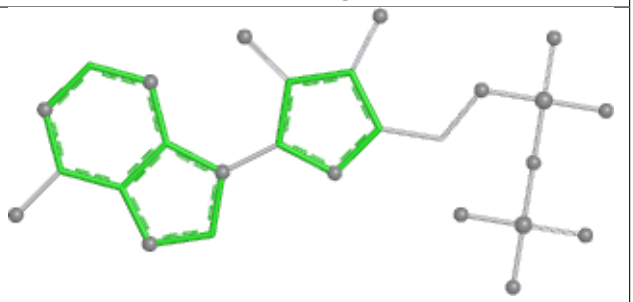
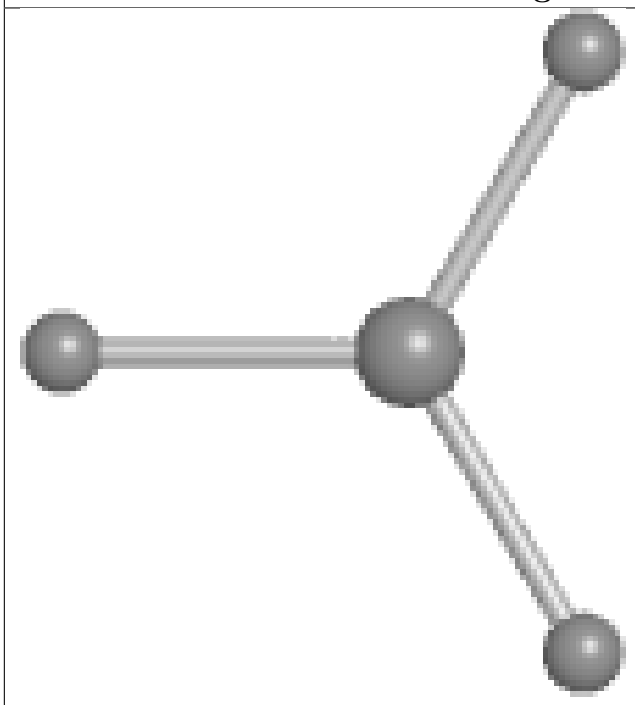


Rings

Ligand AF3 c 603



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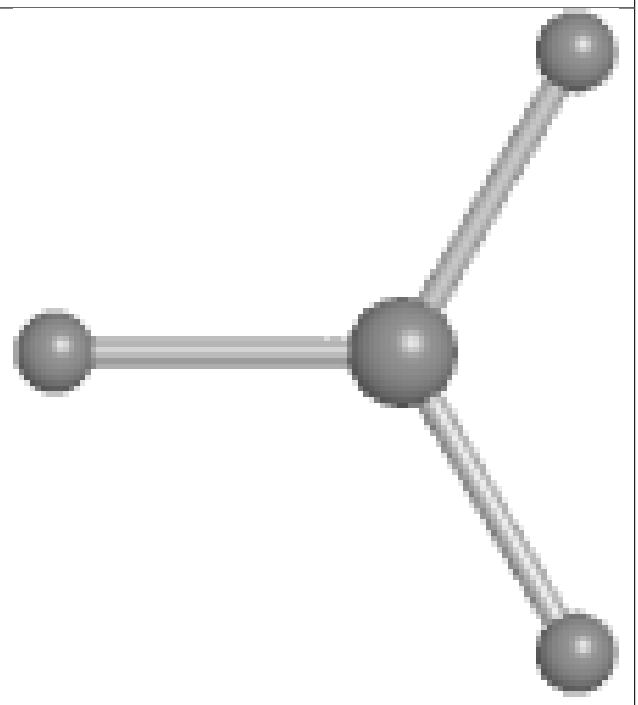
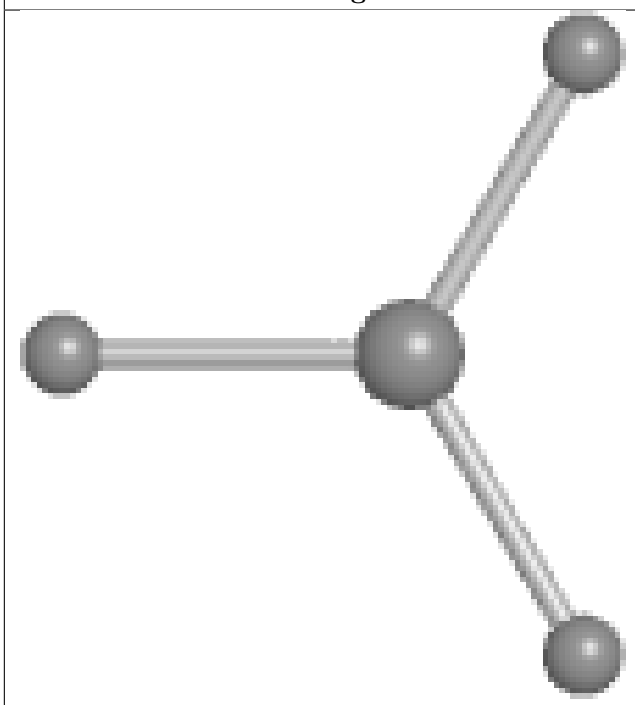


Bond angles



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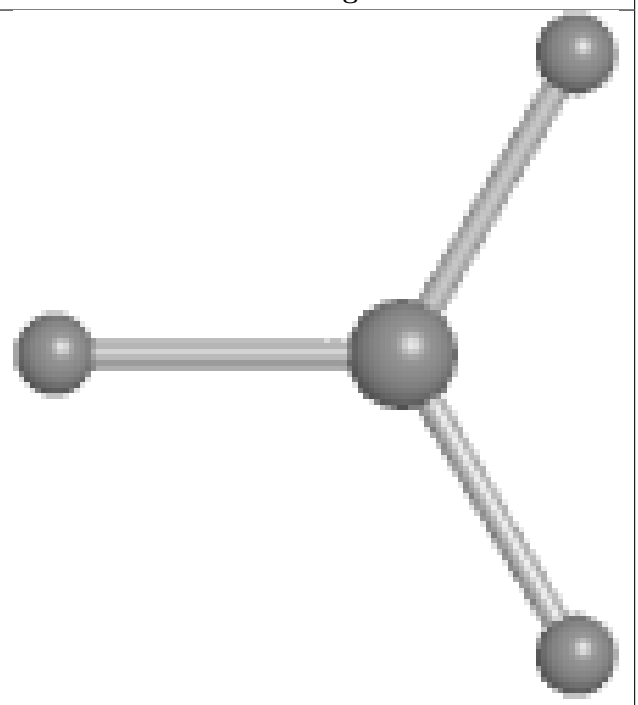
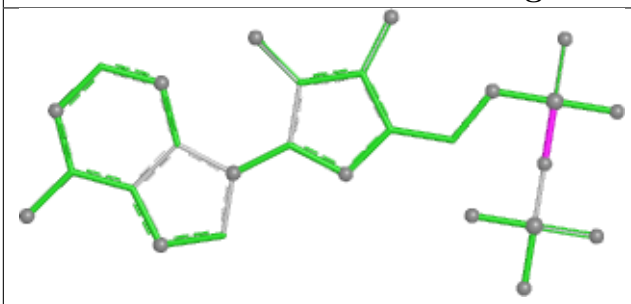
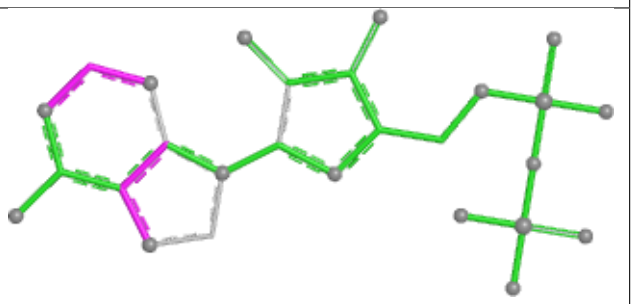


Rings

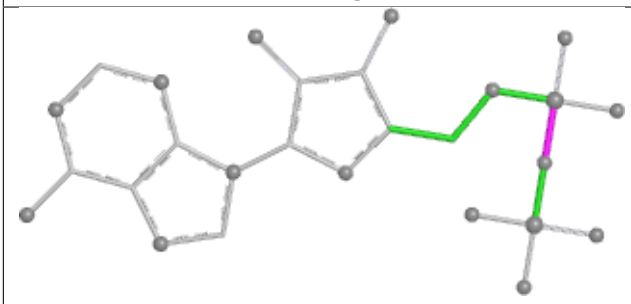
Ligand ADP d 601



Bond lengths



Bond angles



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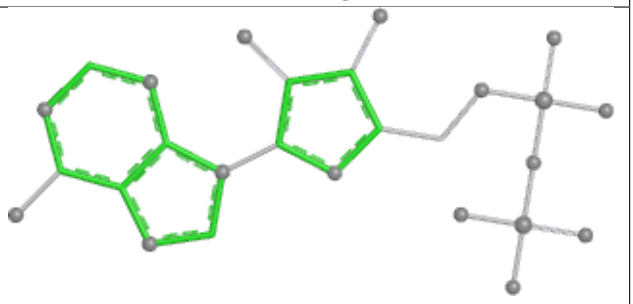

Rings

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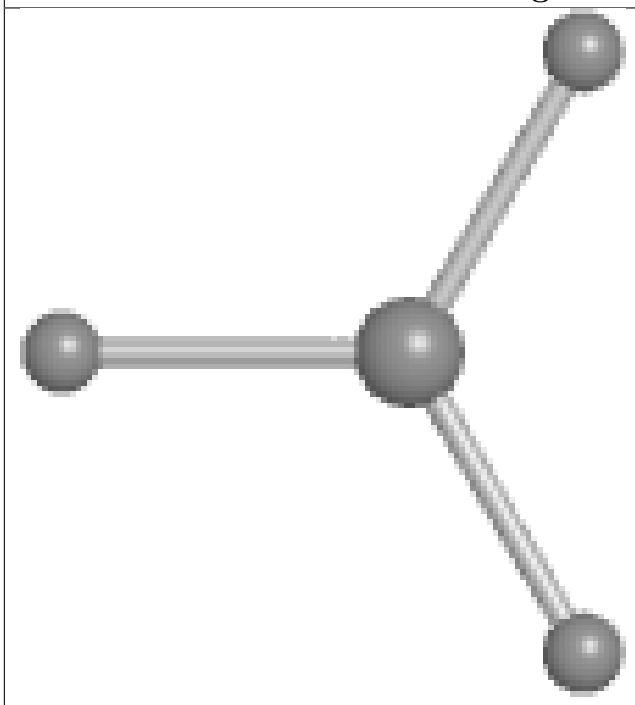

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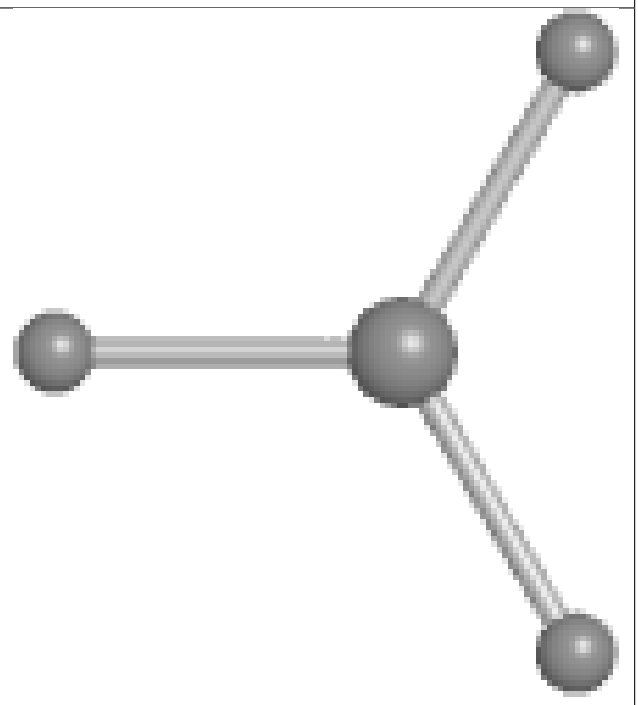

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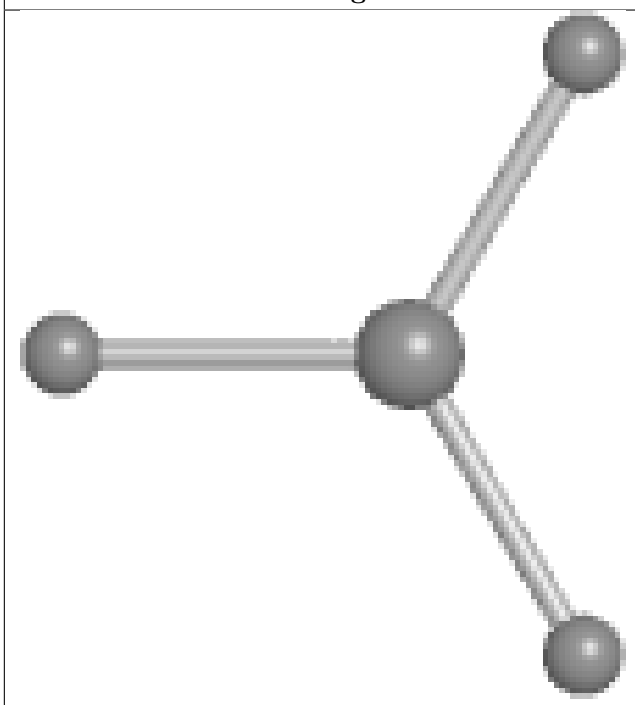

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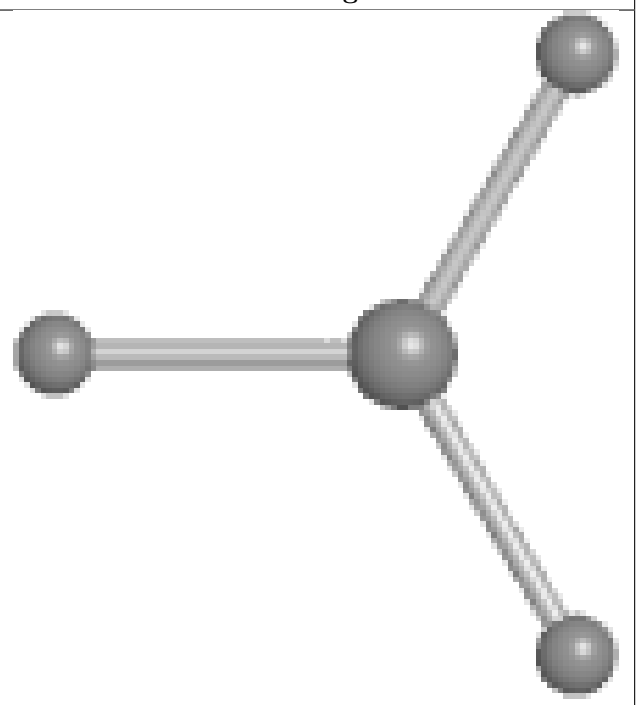

Rings

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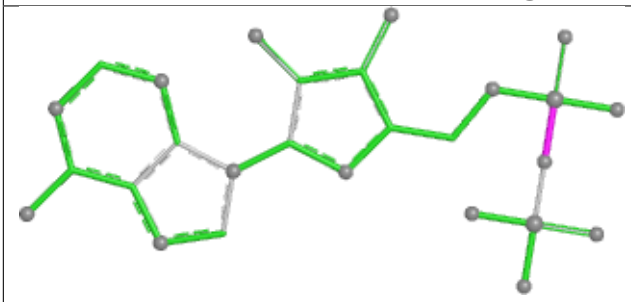

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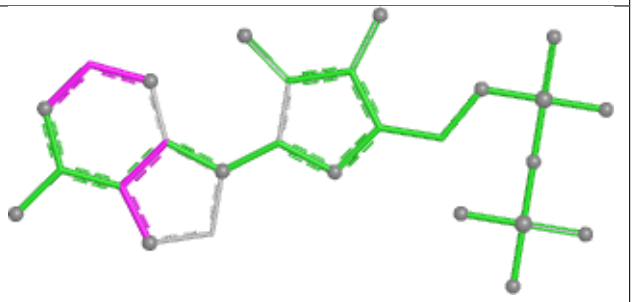

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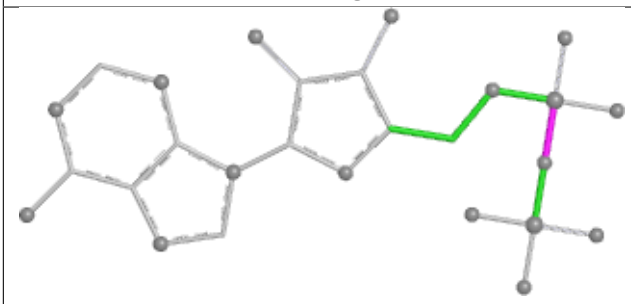

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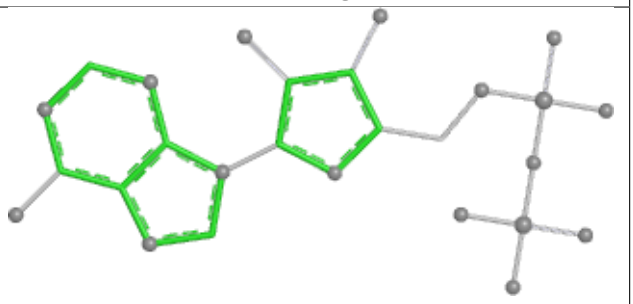

Rings

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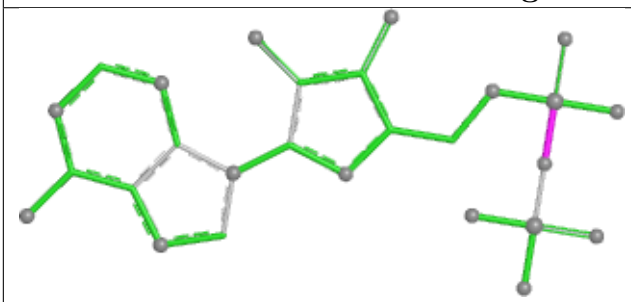

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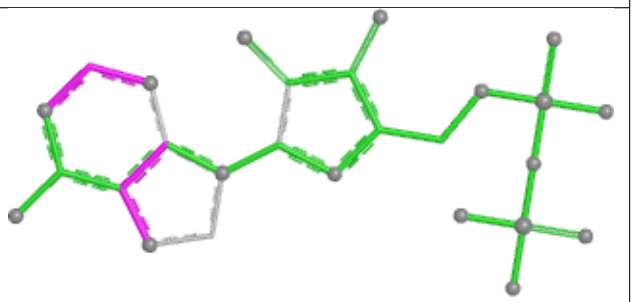

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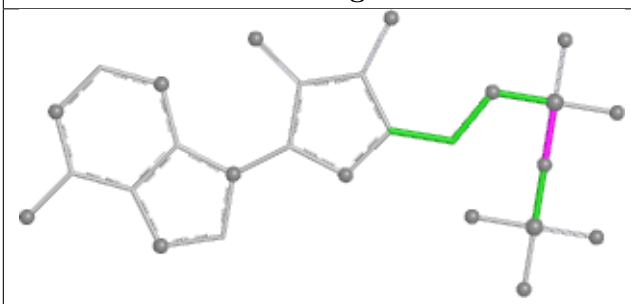

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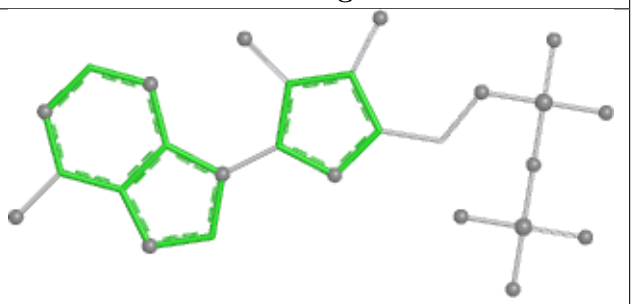

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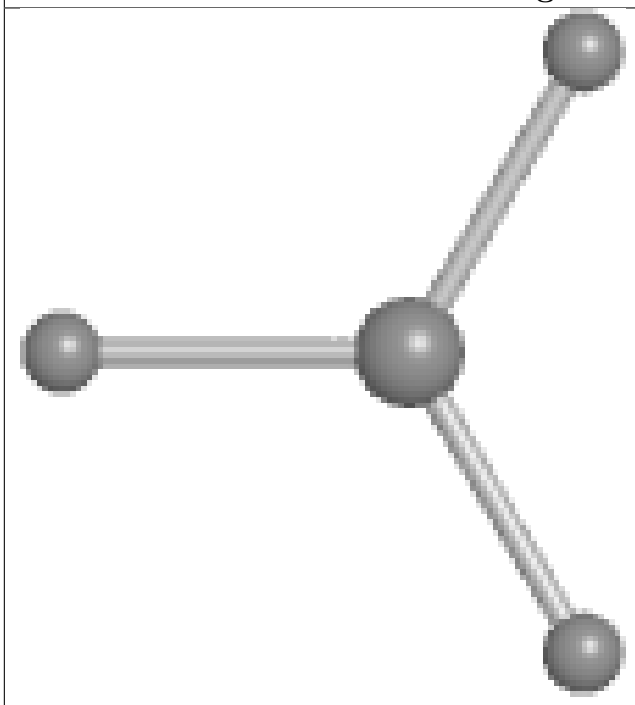

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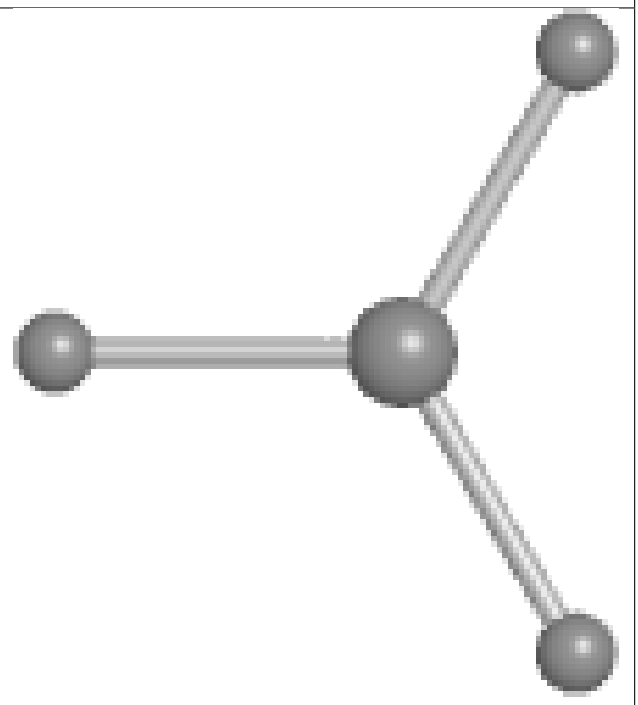

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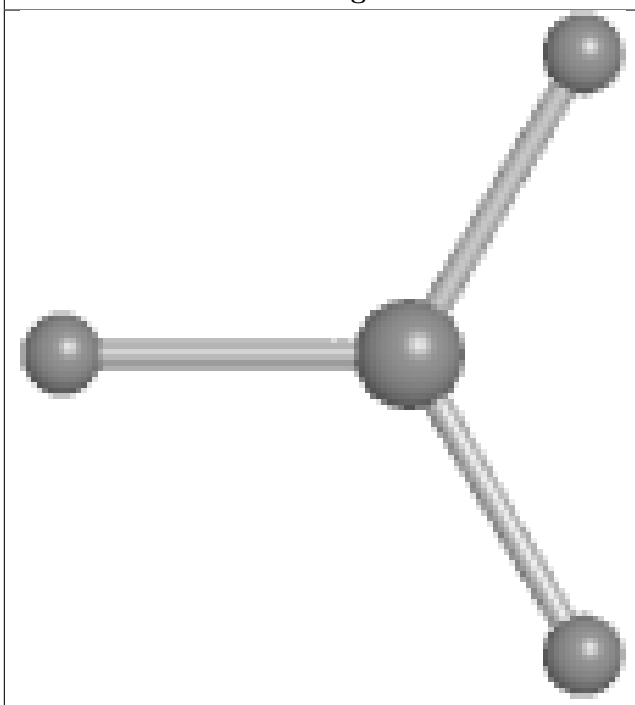

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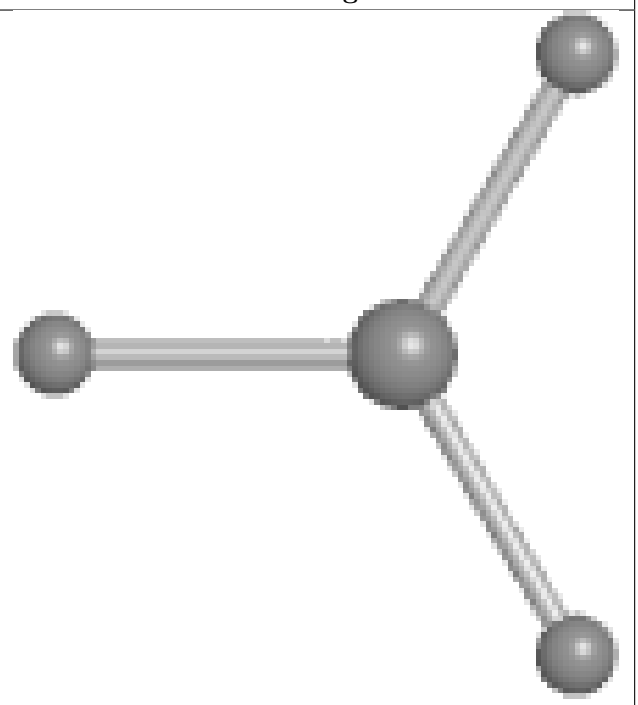

Rings

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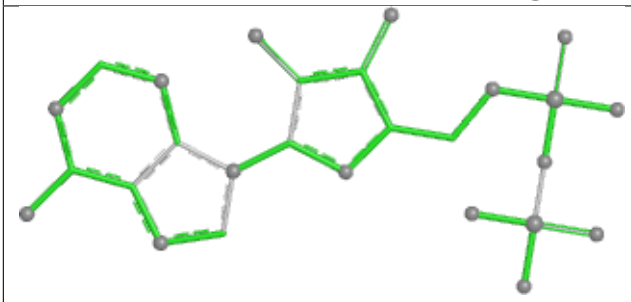
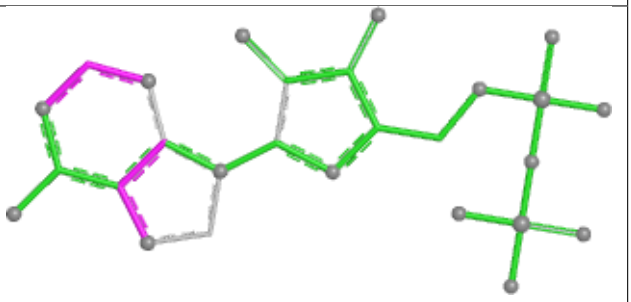
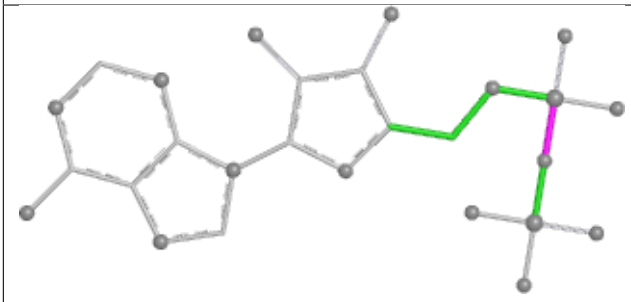
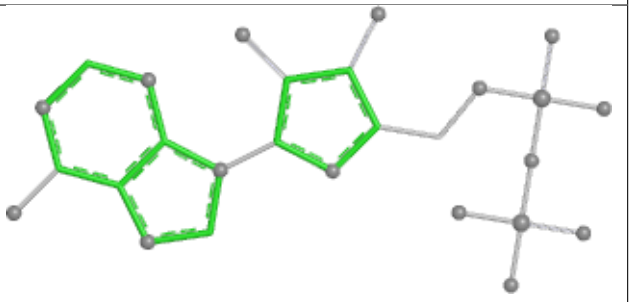
 Bond lengths	 Bond angles
 Torsions	 Rings

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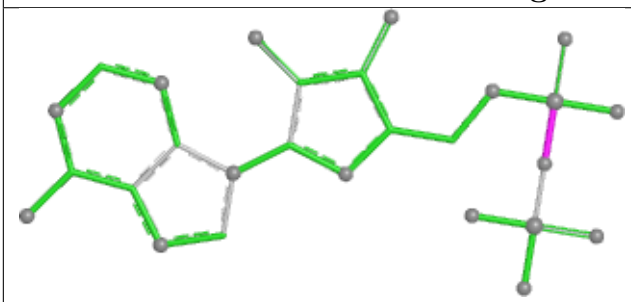
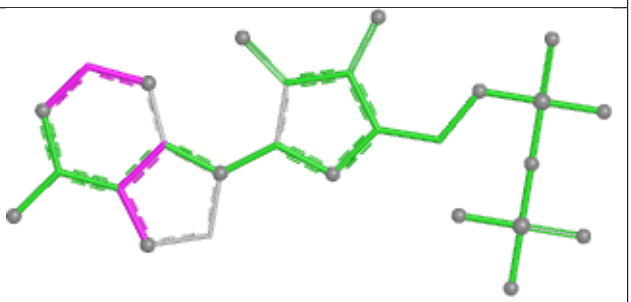
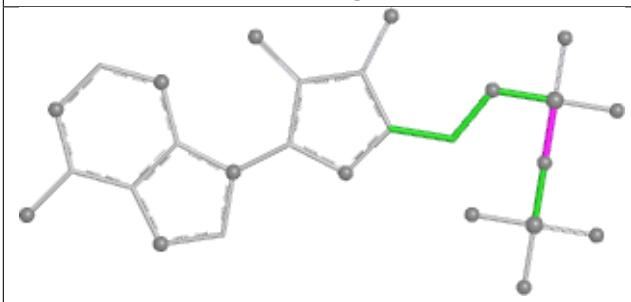
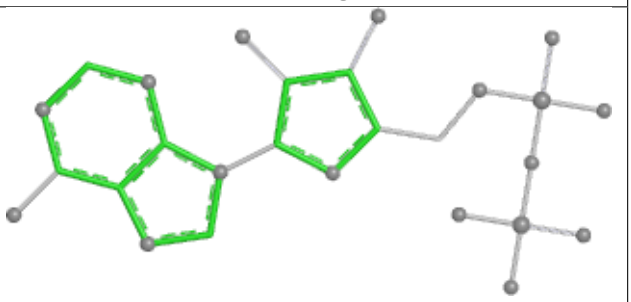
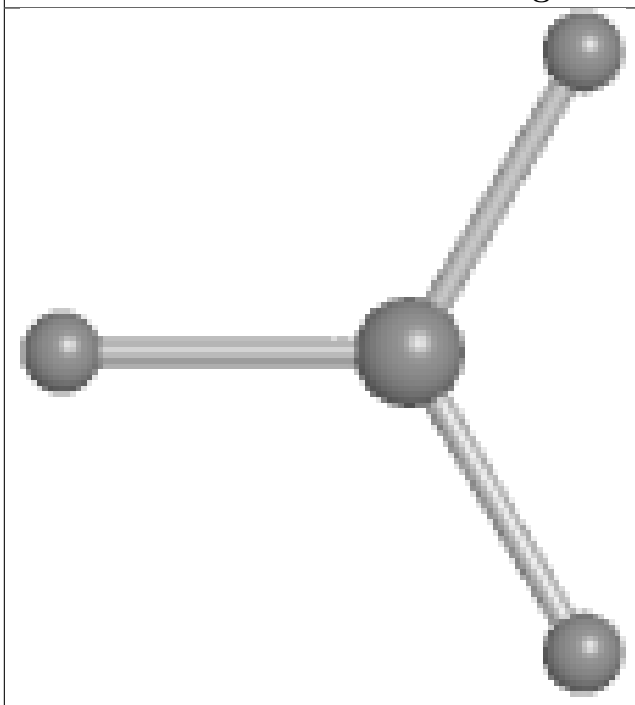
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand AF3 g 602



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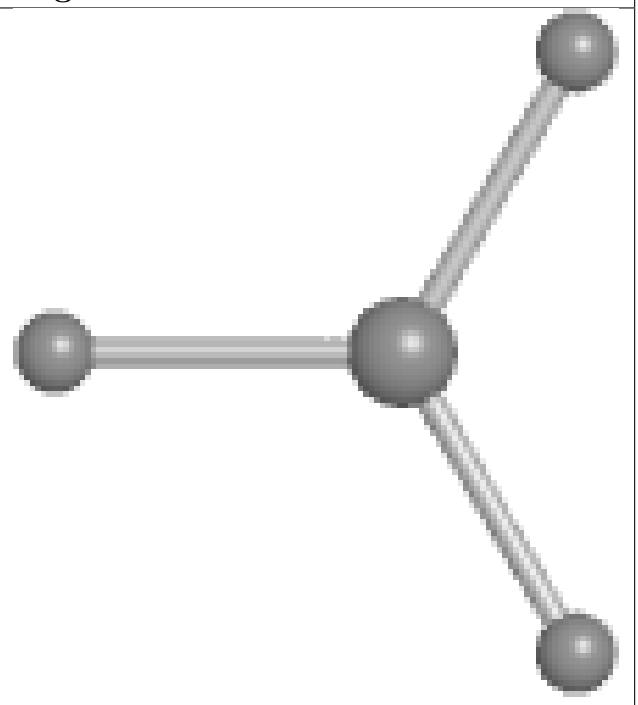

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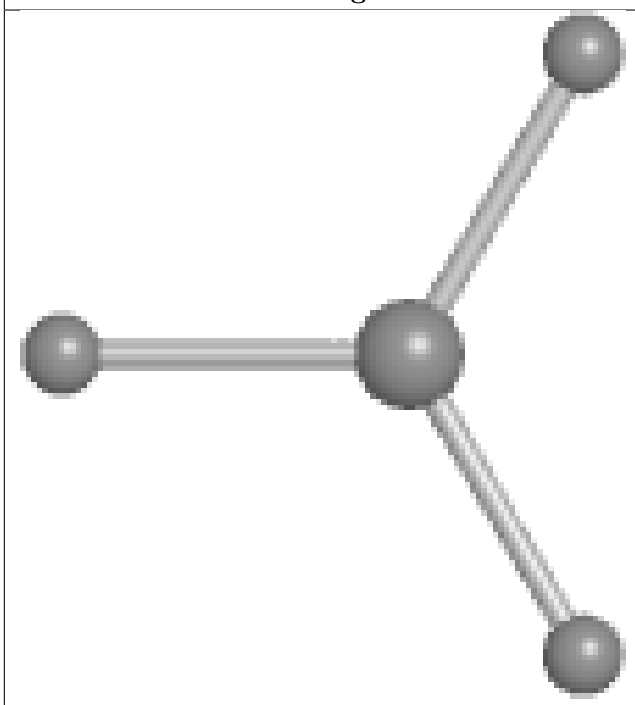

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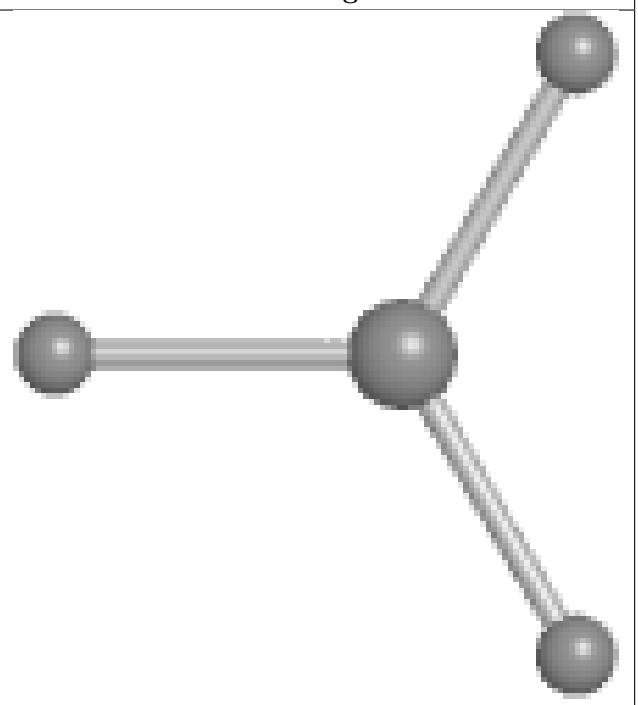

Rings

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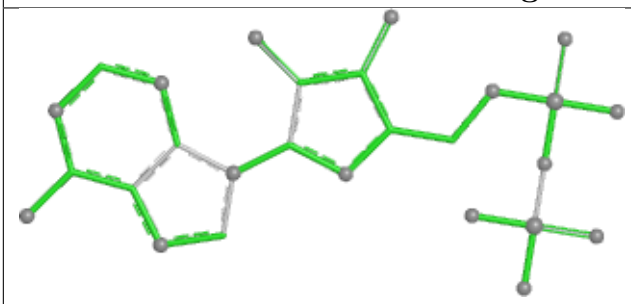

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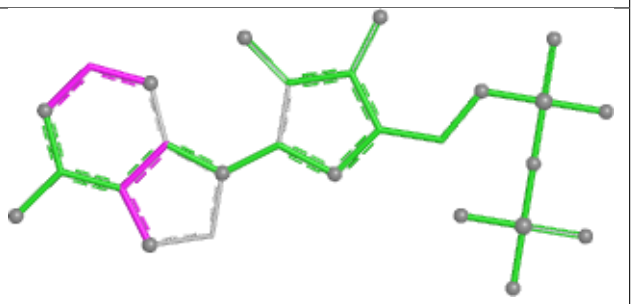

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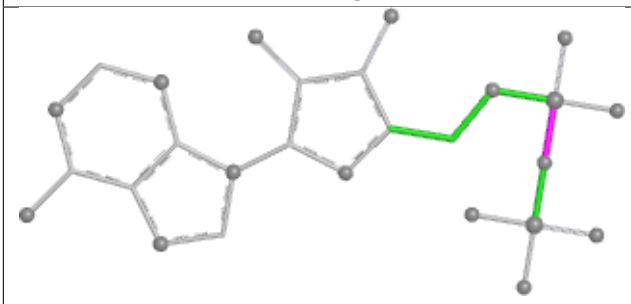

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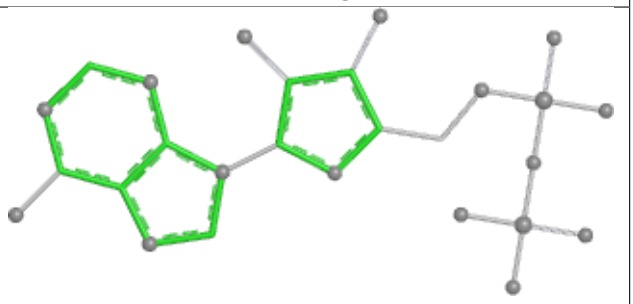
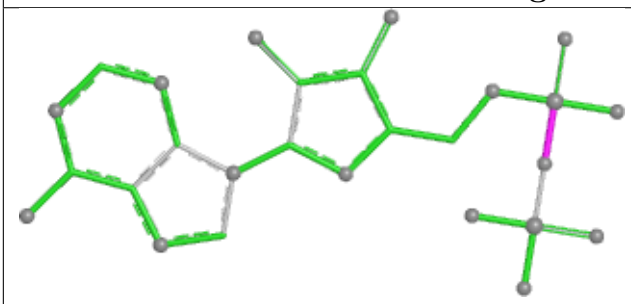


Rings

Ligand ADP f 602



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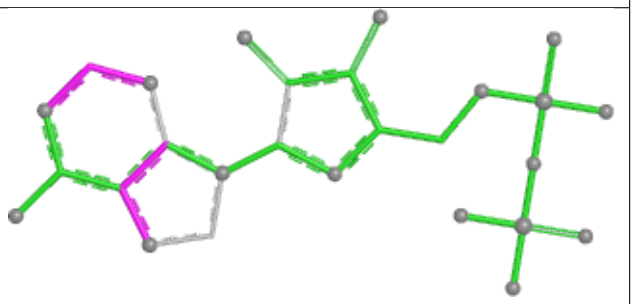

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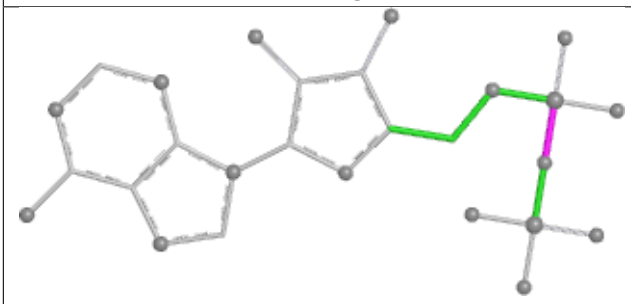

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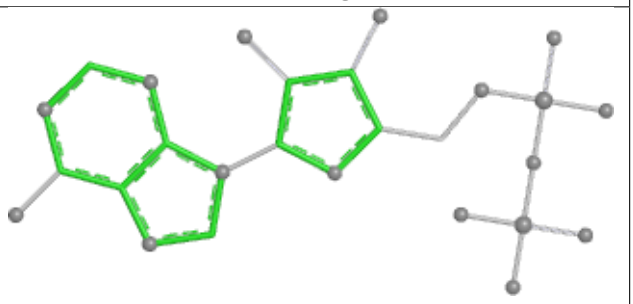

Rings

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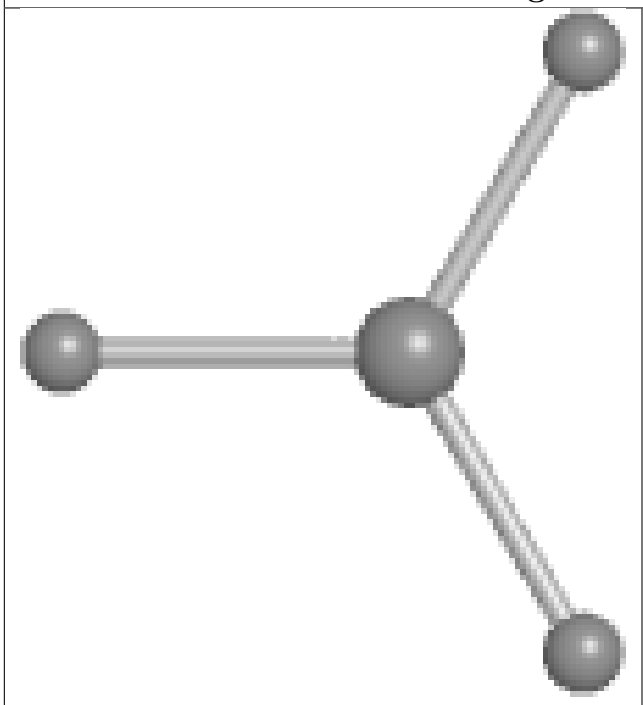

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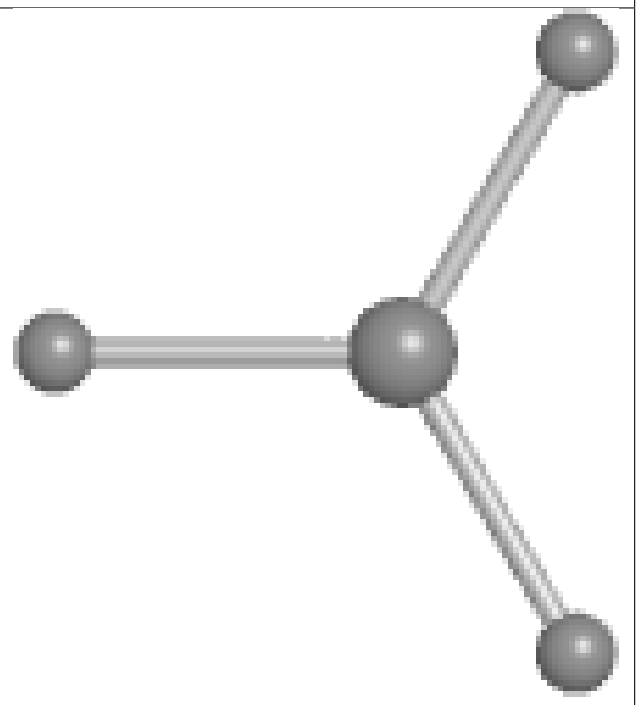

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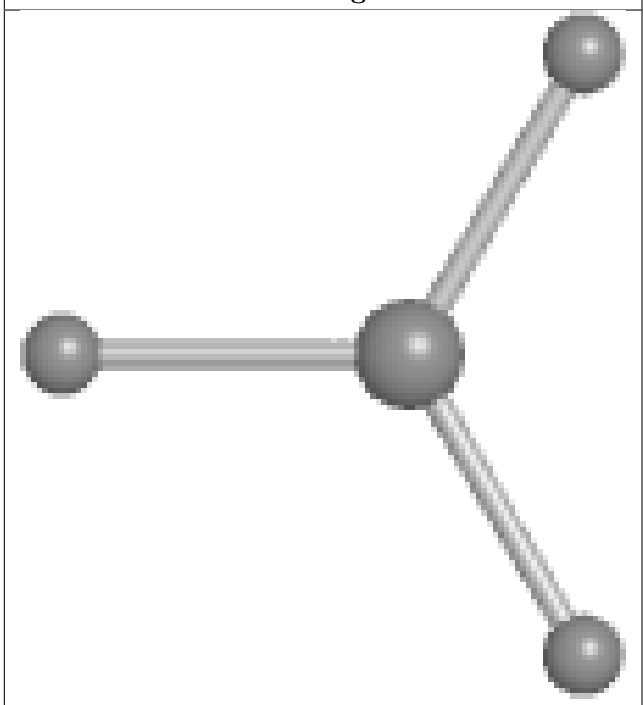

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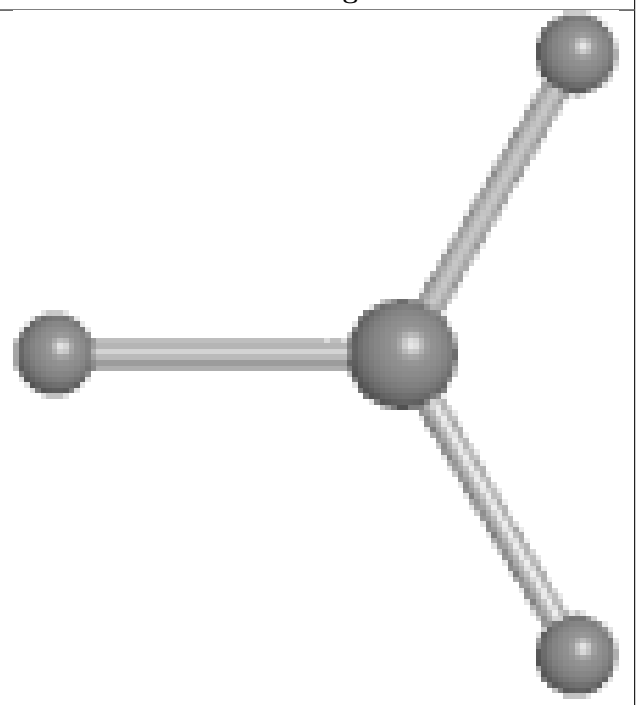
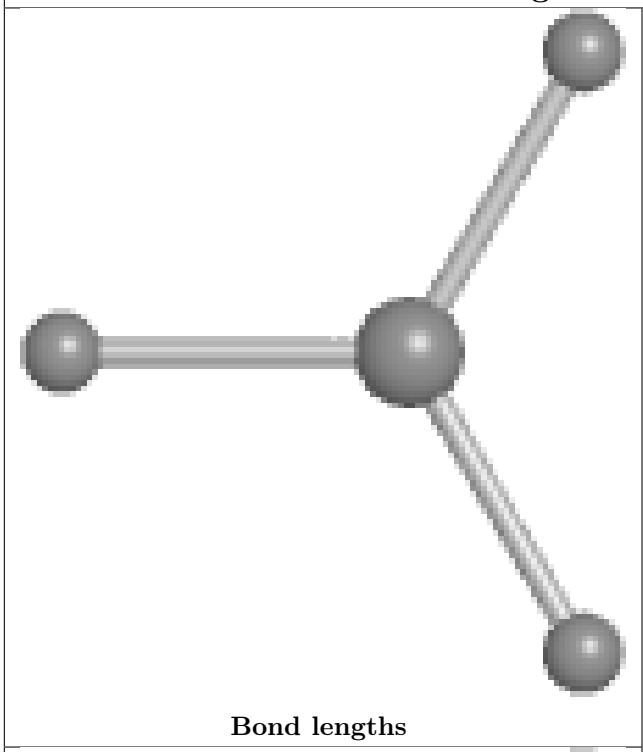


Rings

Ligand AF3 h 602



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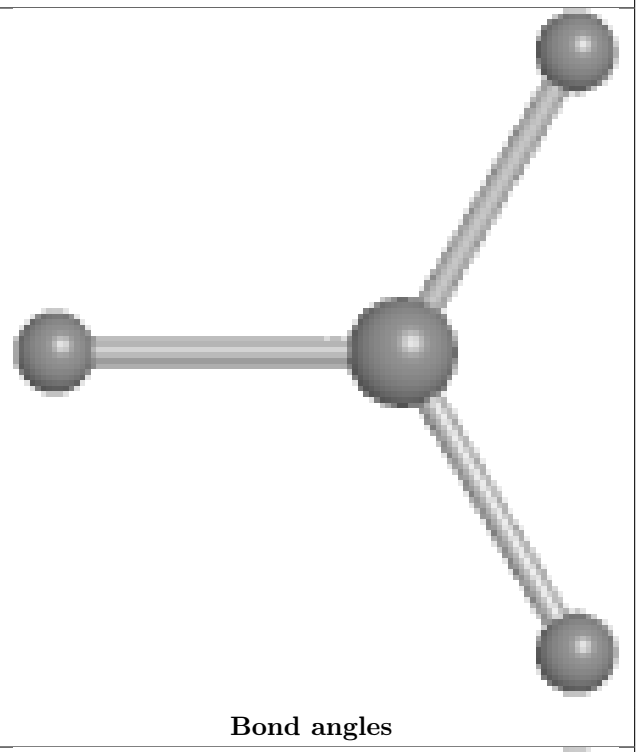

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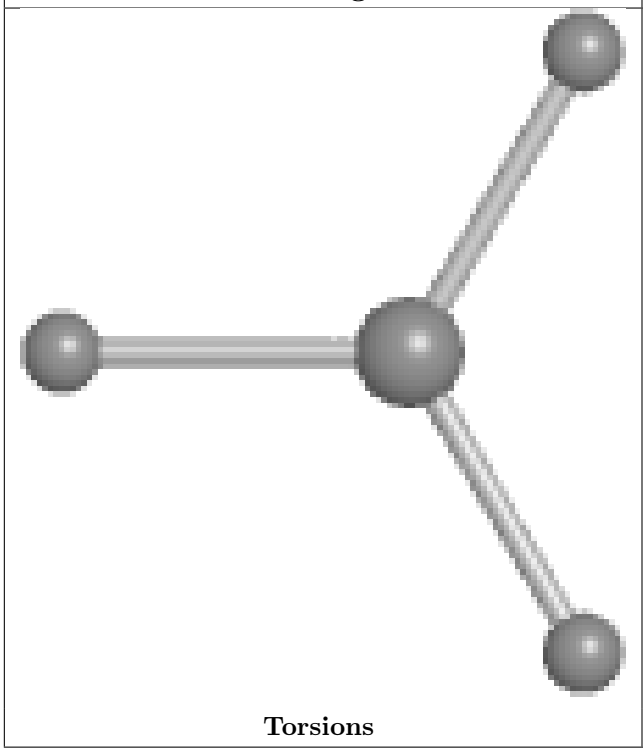

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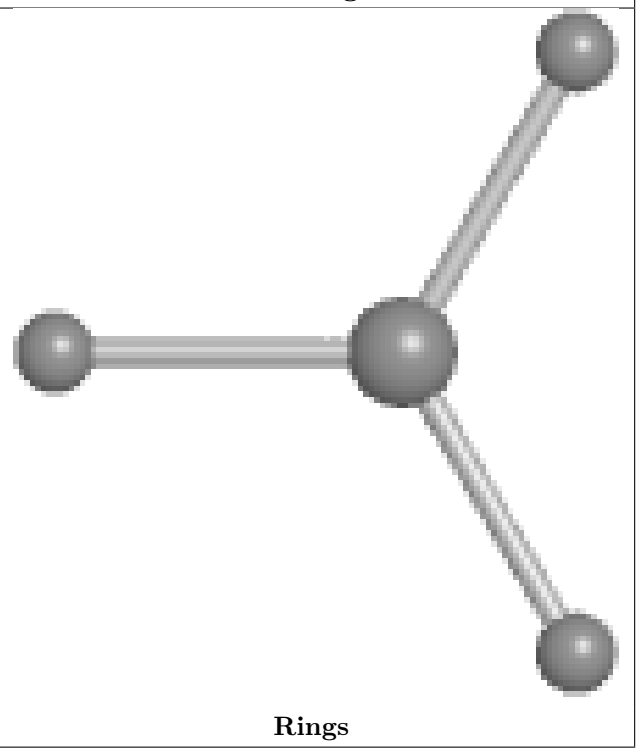
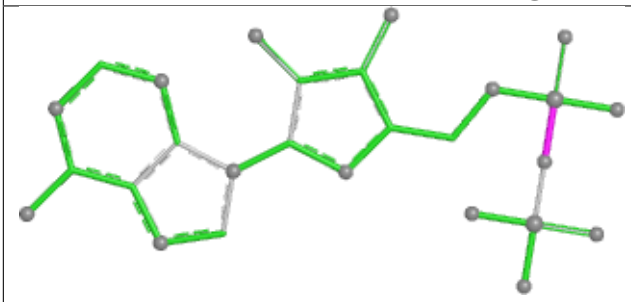


Rings

Ligand ADP g 601



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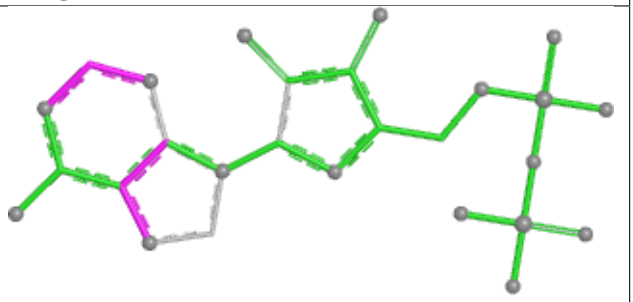

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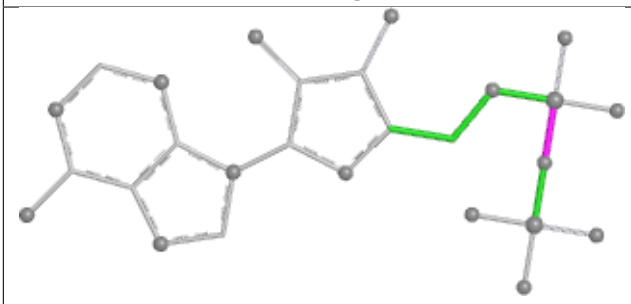

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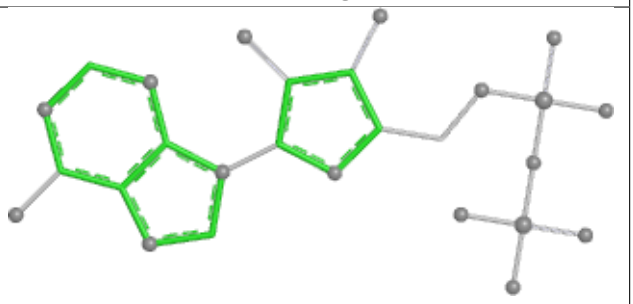
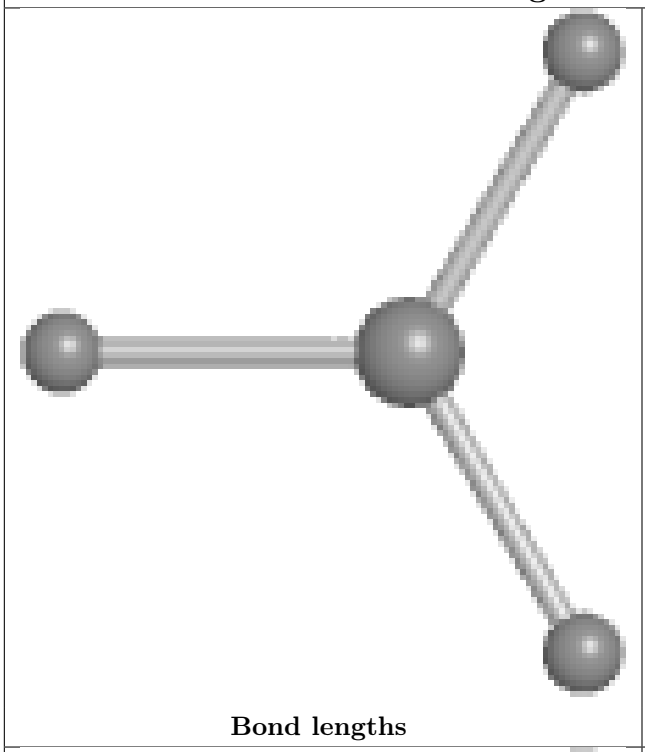


Rings

Ligand AF3 B 603



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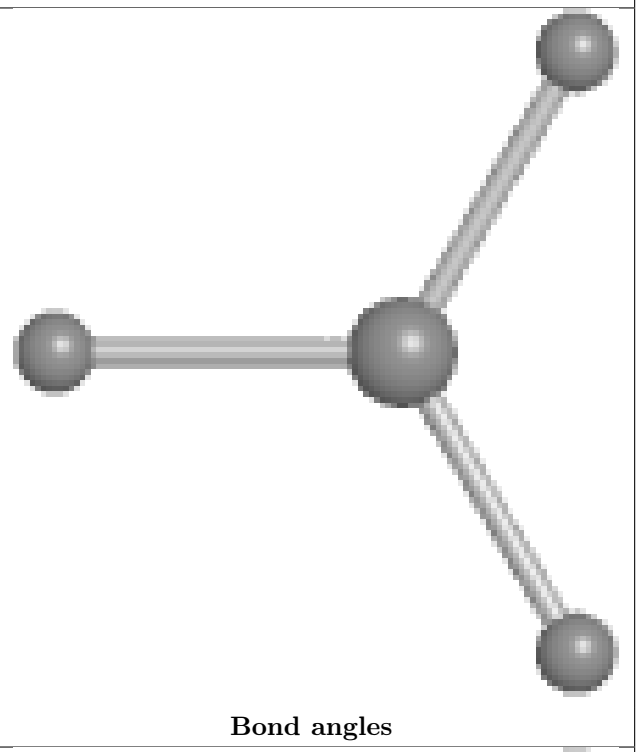
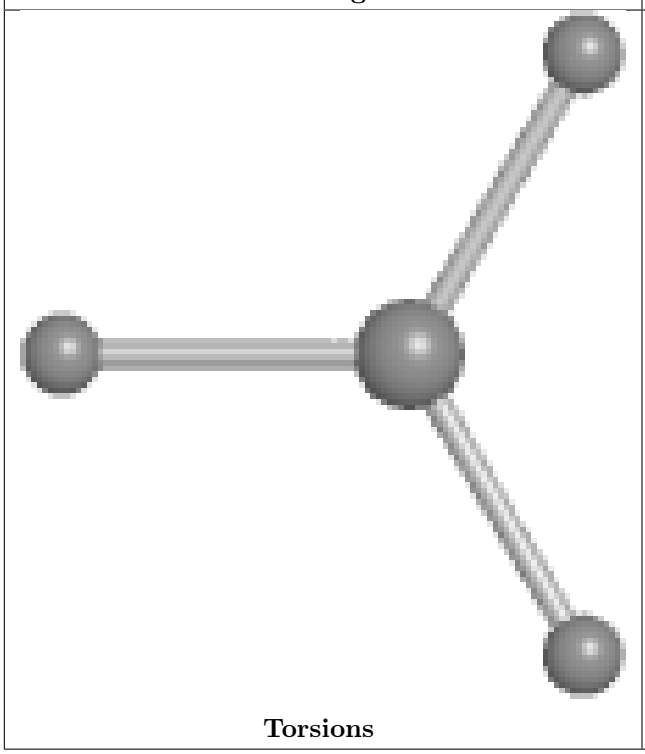


Bond angles



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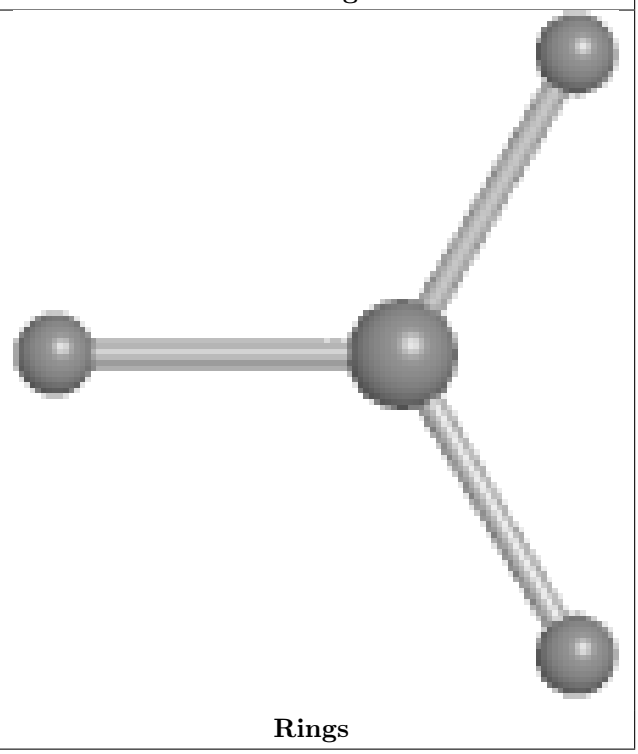
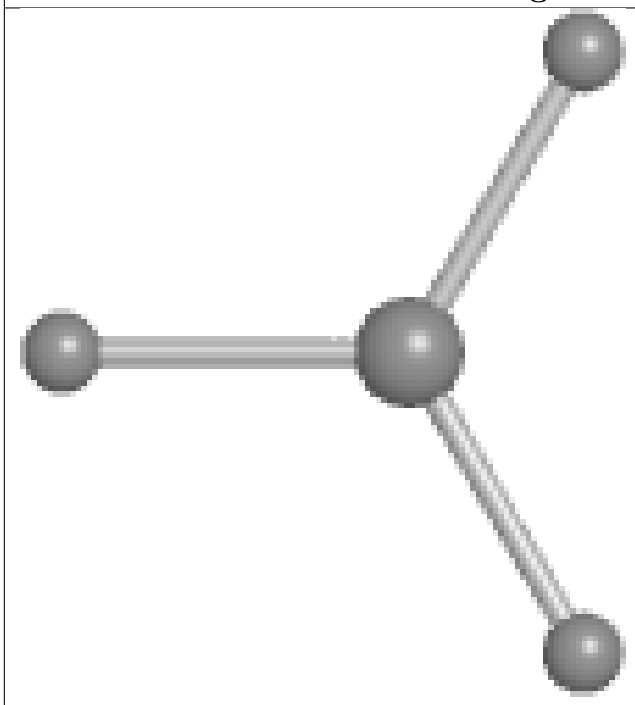


Rings

Ligand AF3 E 601



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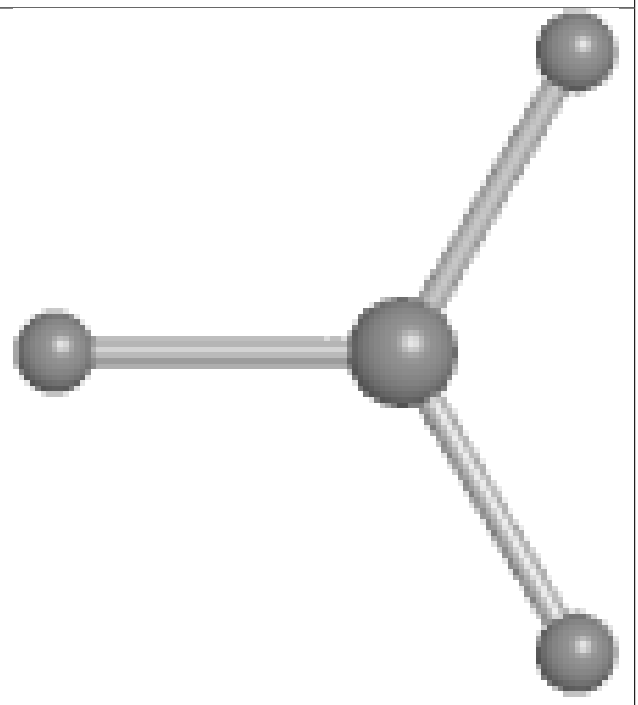
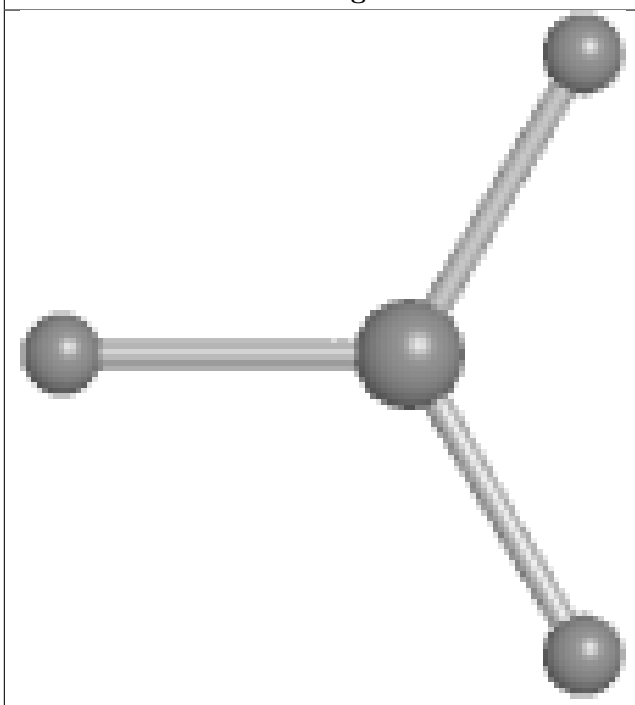


Bond angles



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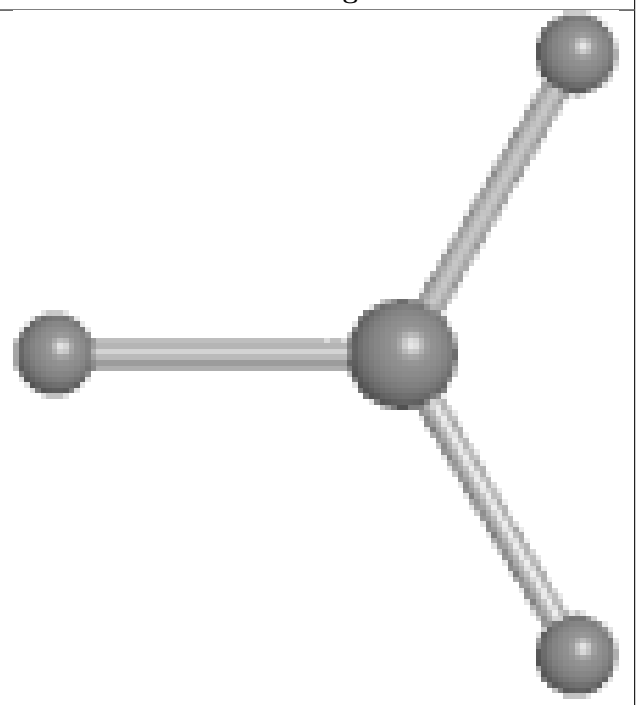
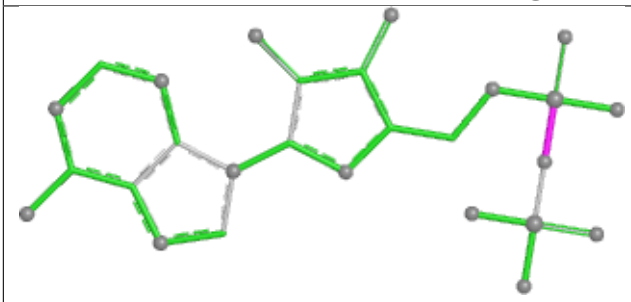
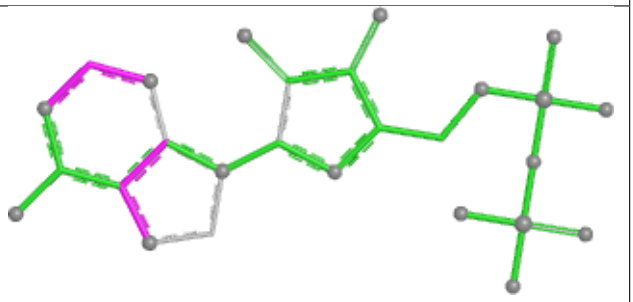
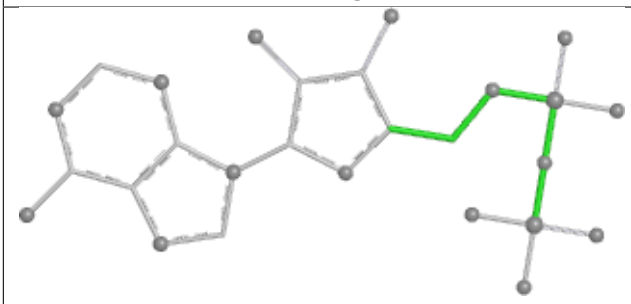
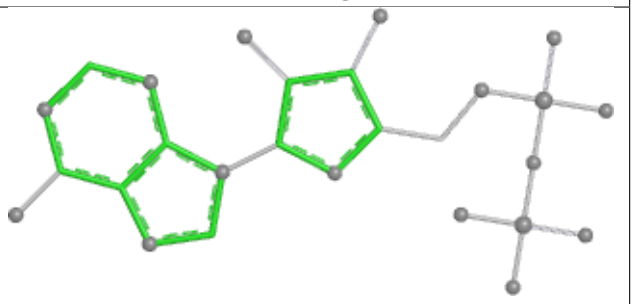
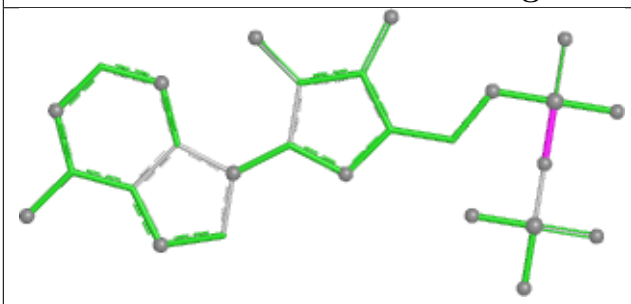
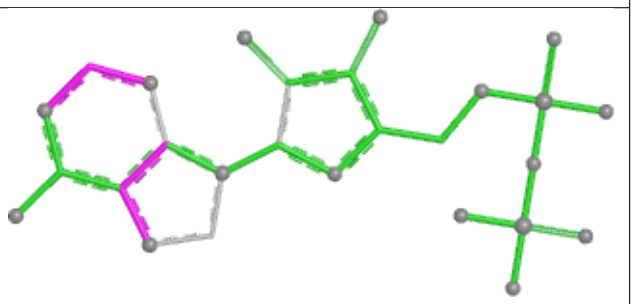
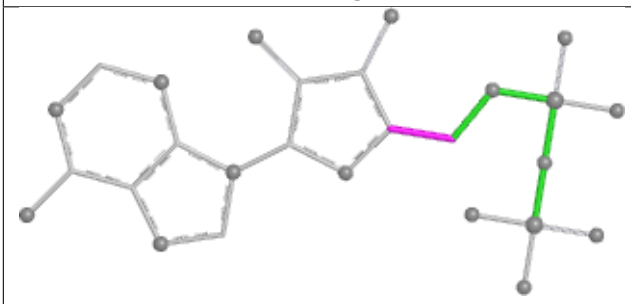
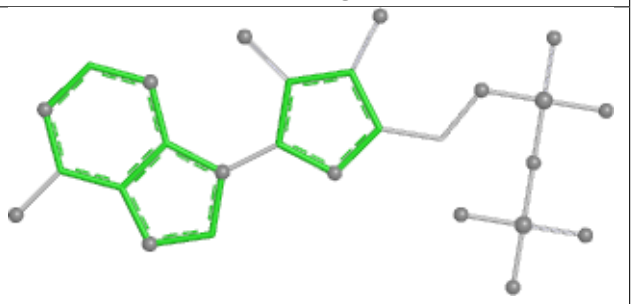
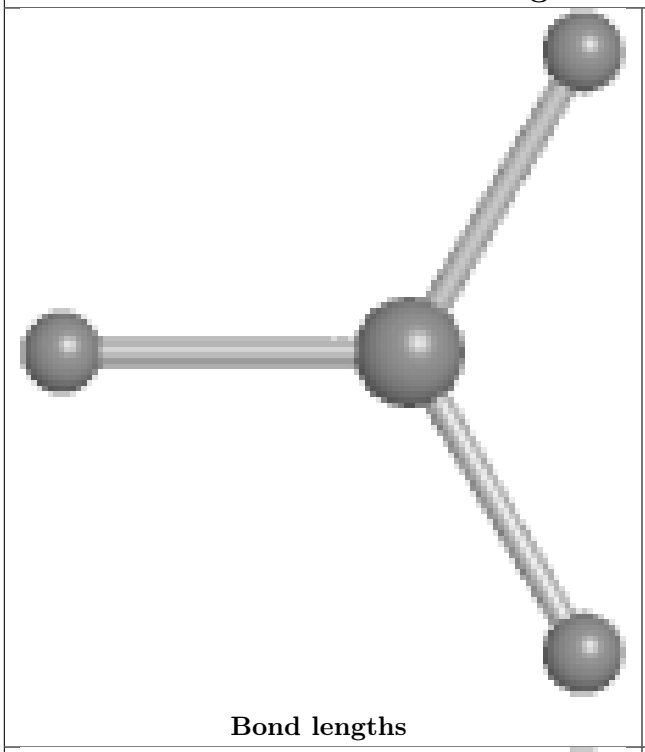


Rings

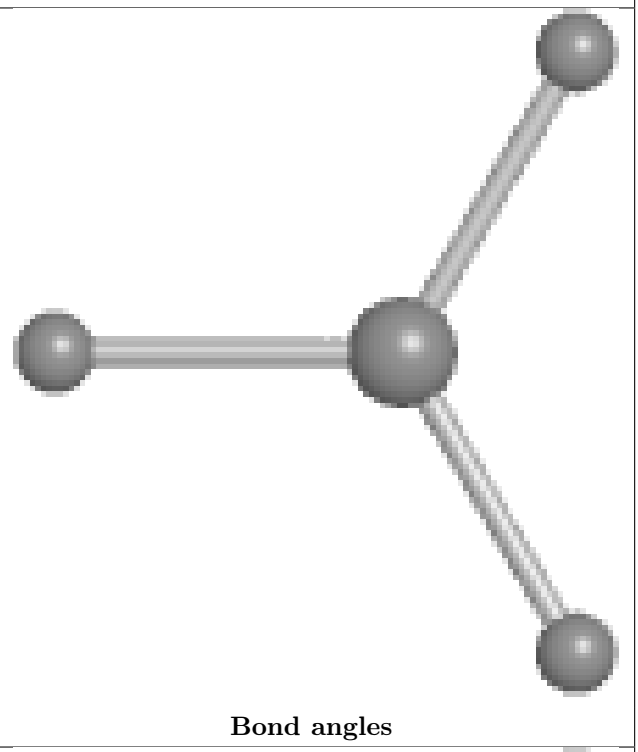
Ligand ADP c 602	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand ADP C 602	
	
Bond lengths	Bond angles
	
Torsions	Rings

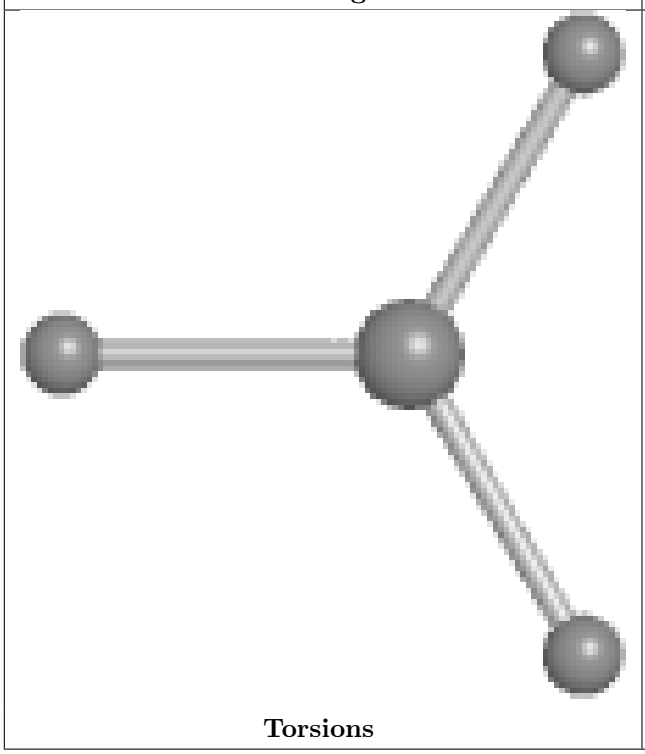
Ligand AF3 F 603



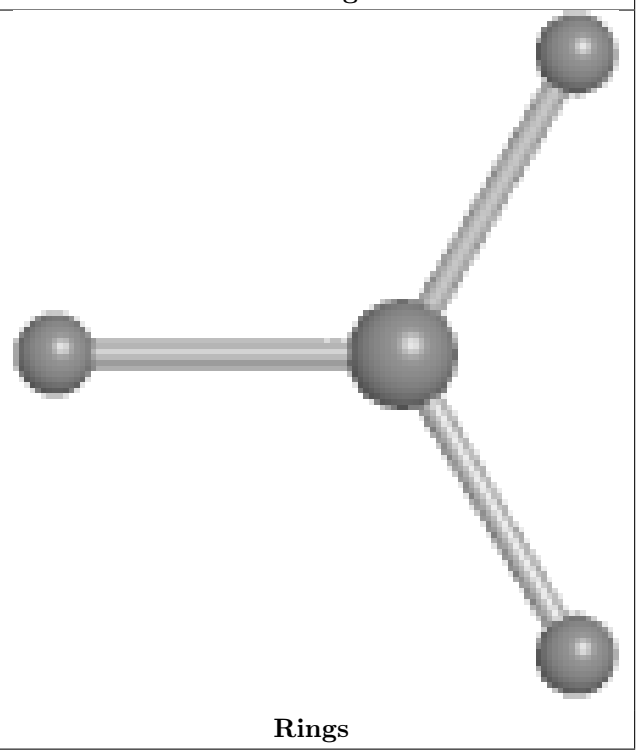
Bond lengths



Bond angles

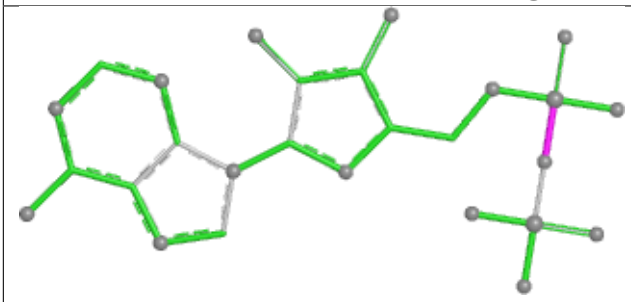


Torsions

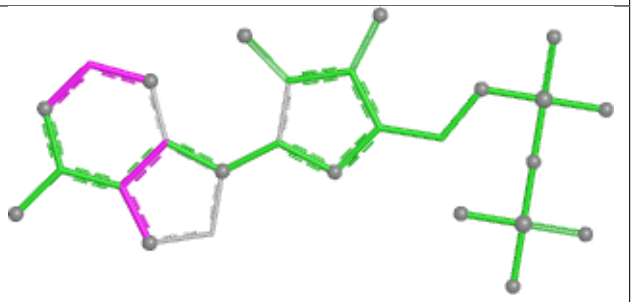


Rings

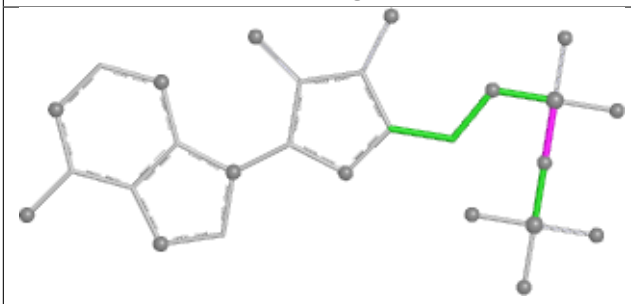
Ligand ADP h 603



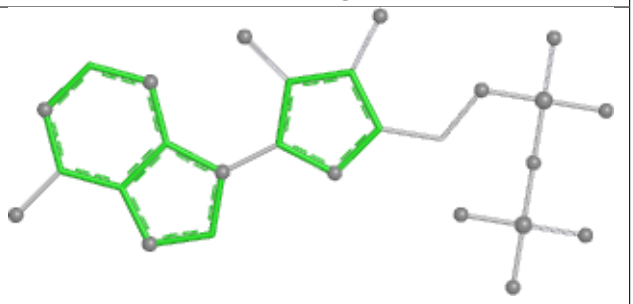
Bond lengths



Bond angles

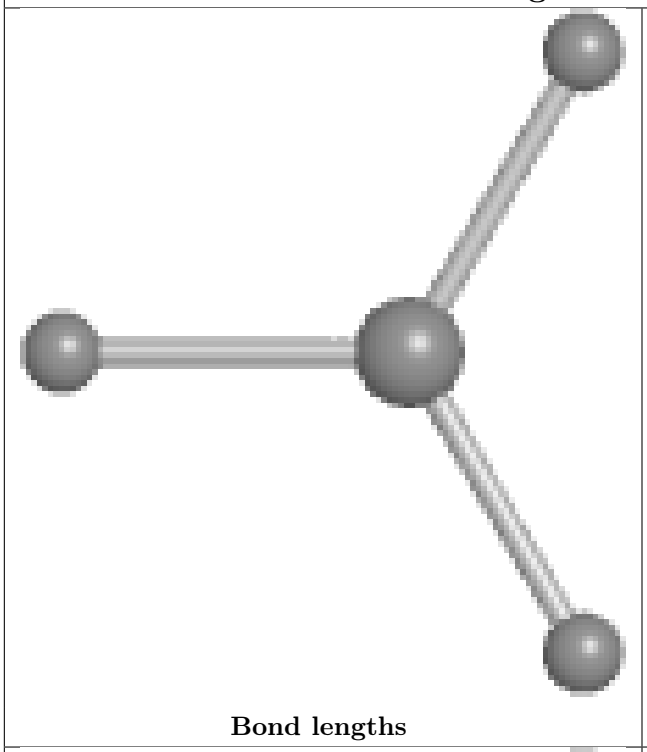


Torsions

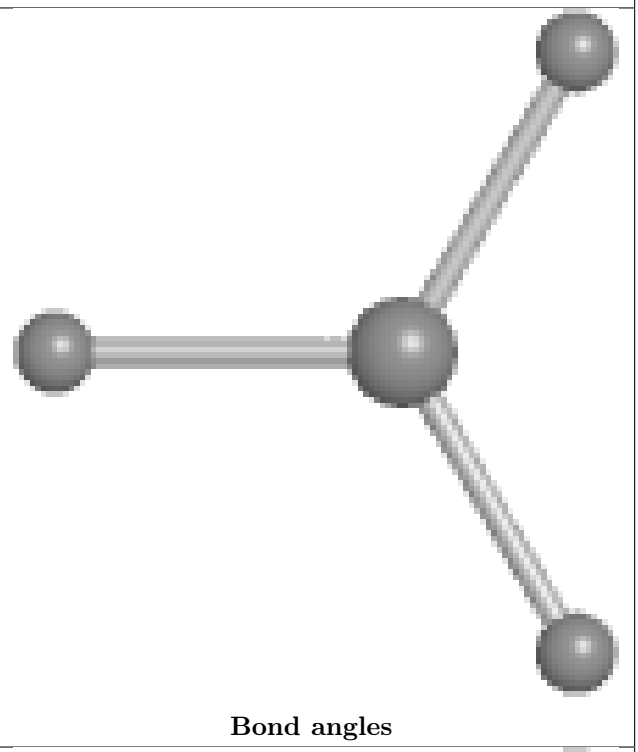


Rings

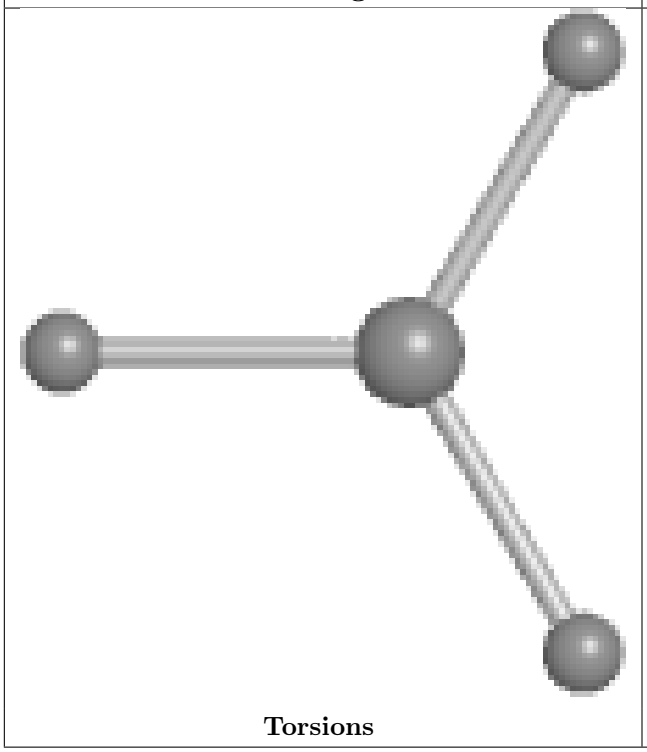
Ligand AF3 C 603



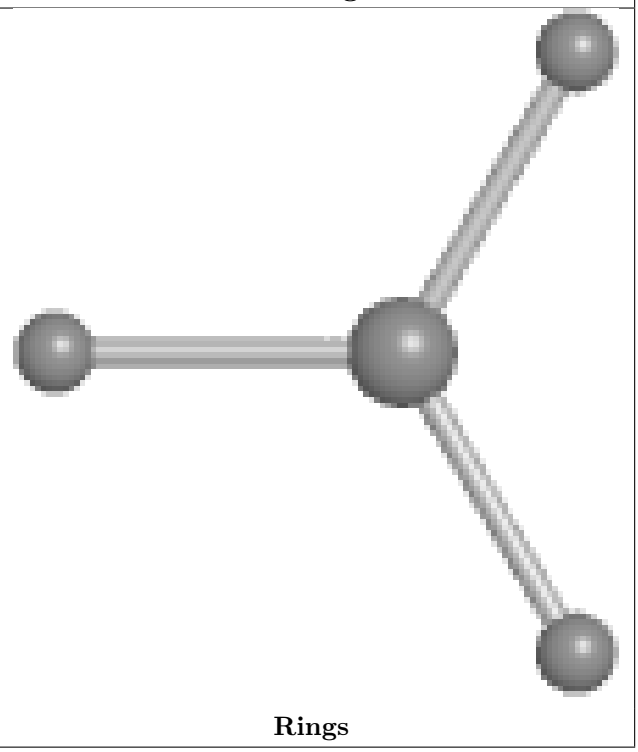
Bond lengths



Bond angles

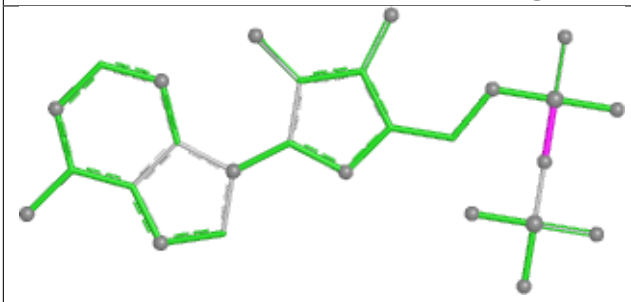


Torsions

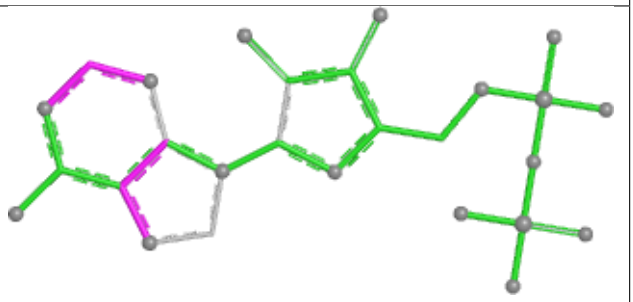


Rings

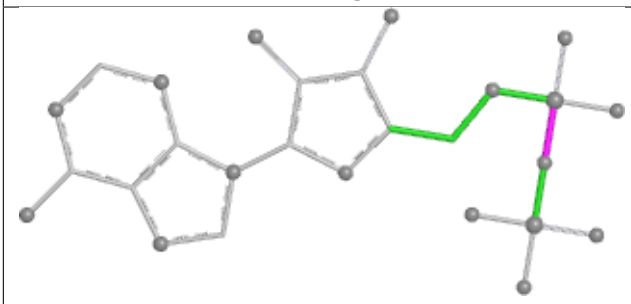
Ligand ADP I 602



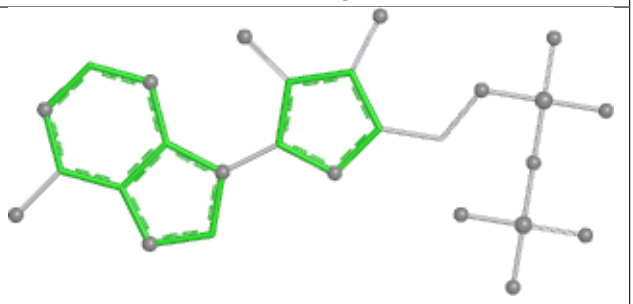
Bond lengths



Bond angles

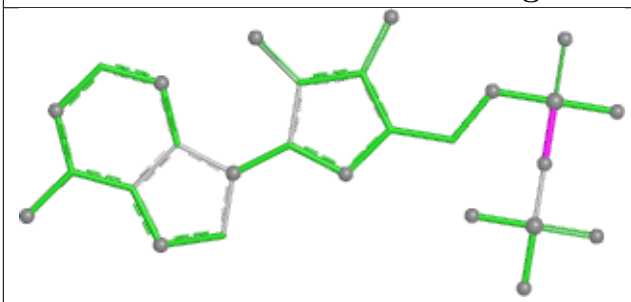


Torsions

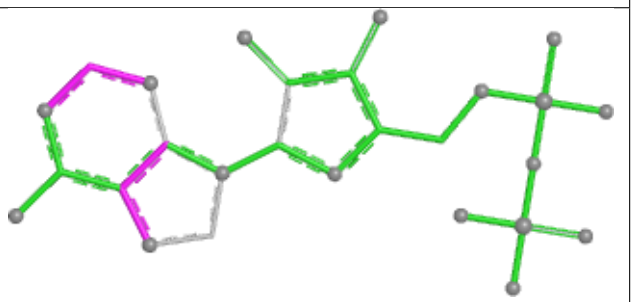


Rings

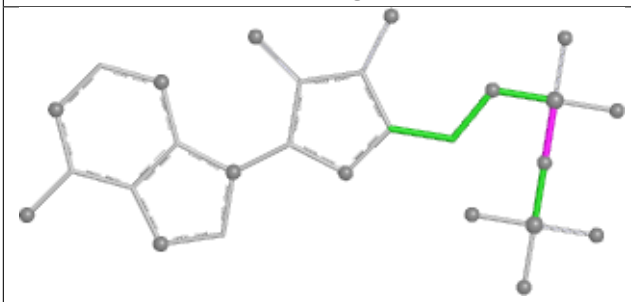
Ligand ADP B 602



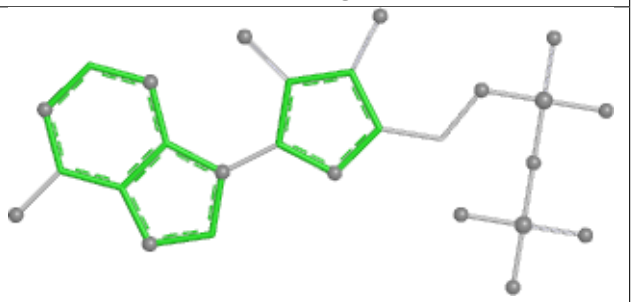
Bond lengths



Bond angles

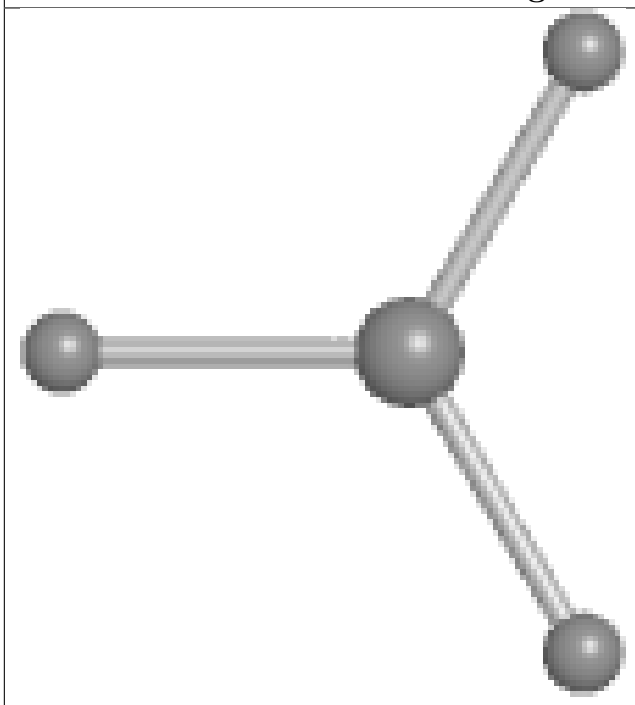


Torsions

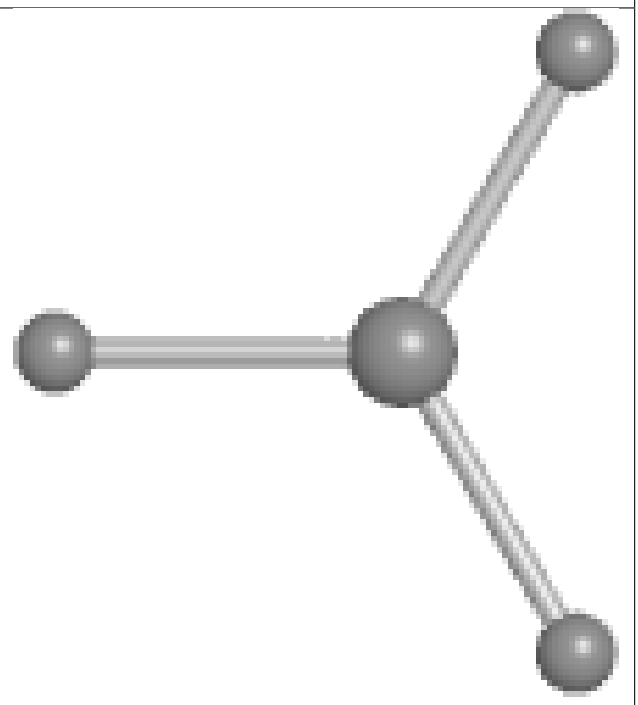


Rings

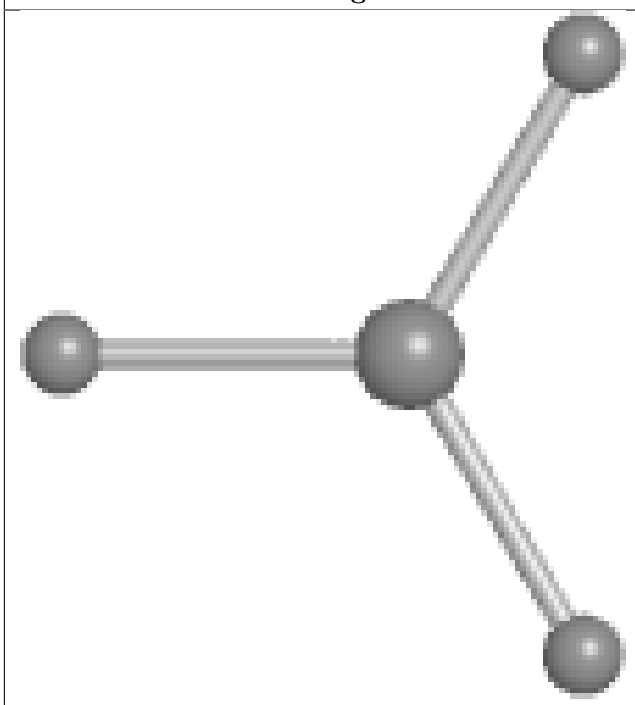
Ligand AF3 D 601



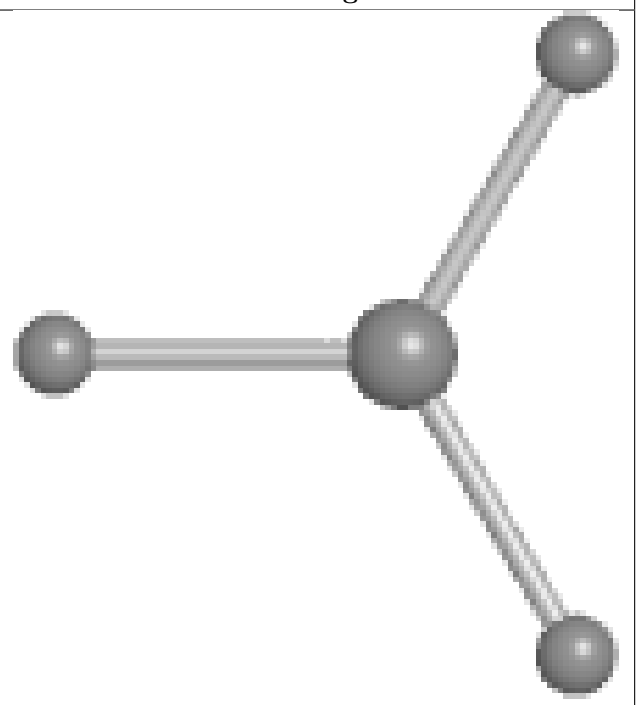
Bond lengths



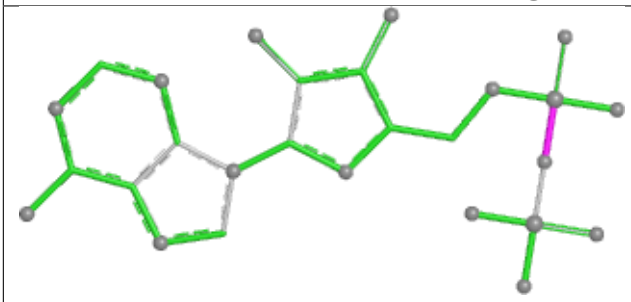
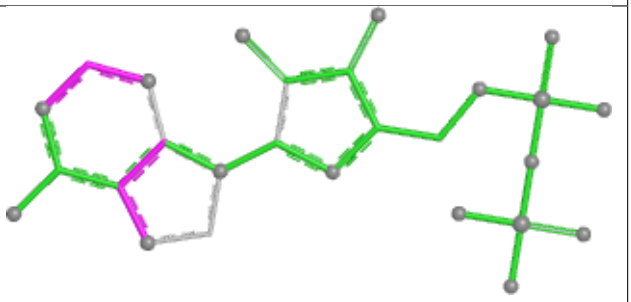
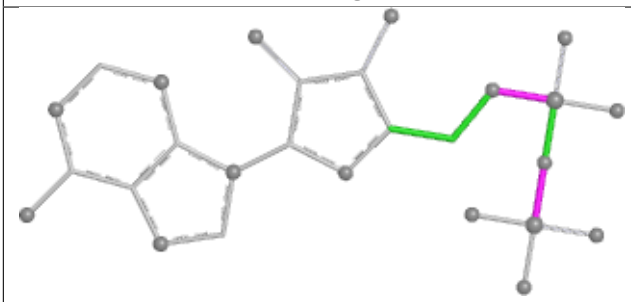
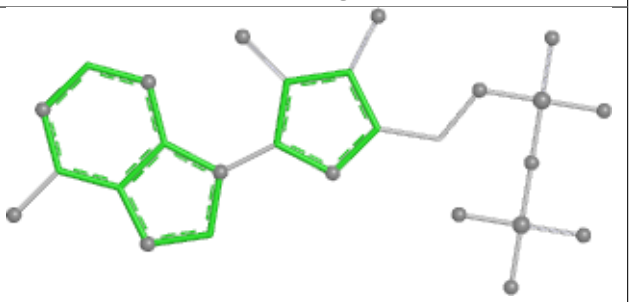
Bond angles



Torsions



Rings

Ligand ADP b 602	
 Bond lengths	 Bond angles
 Torsions	 Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

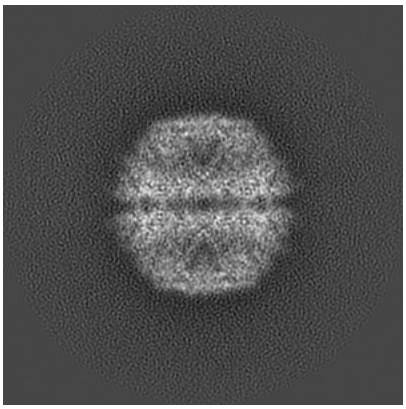
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47463. These allow visual inspection of the internal detail of the map and identification of artifacts.

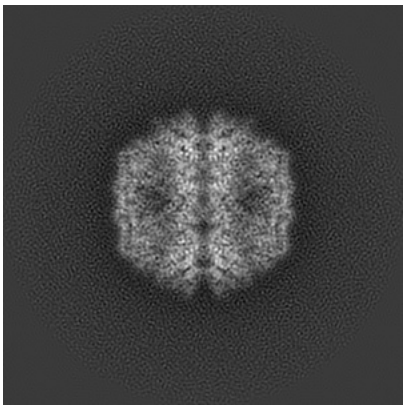
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

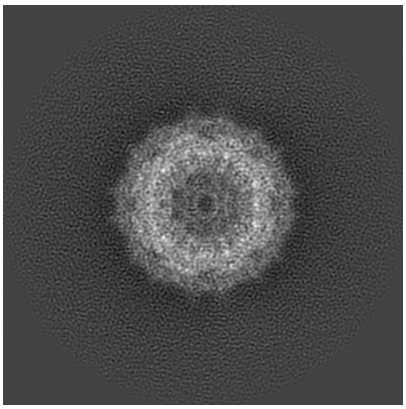
6.1.1 Primary map



X

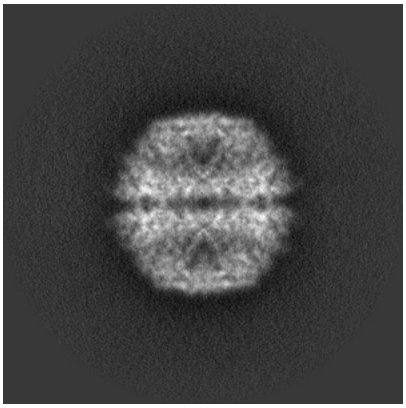


Y

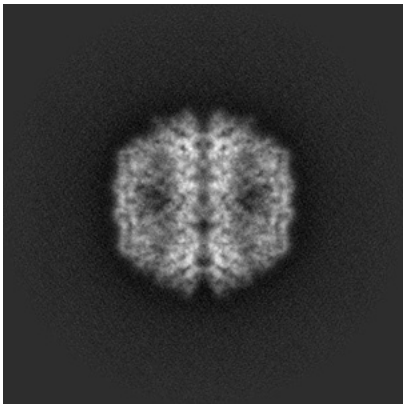


Z

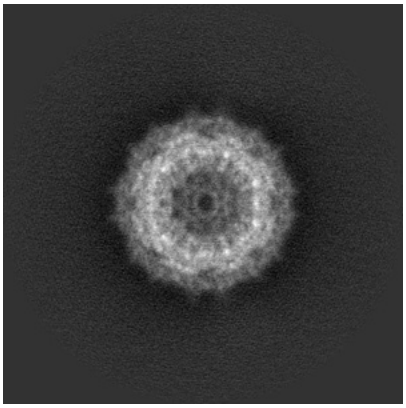
6.1.2 Raw map



X



Y

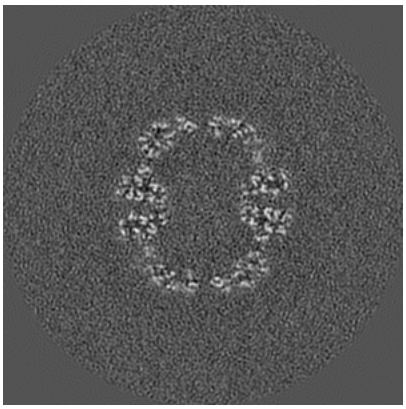


Z

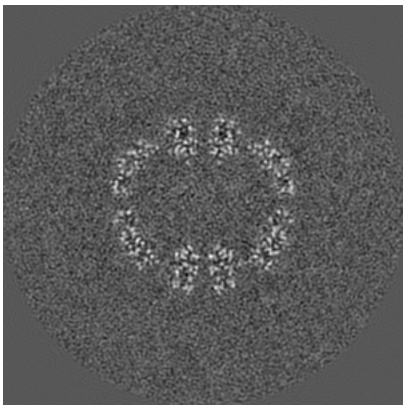
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

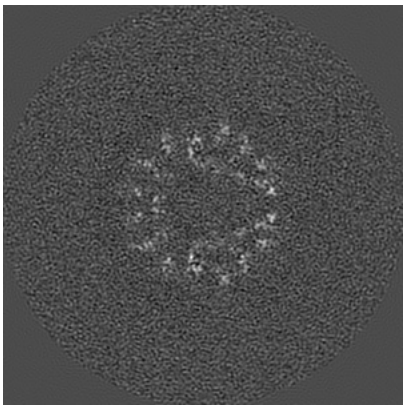
6.2.1 Primary map



X Index: 160

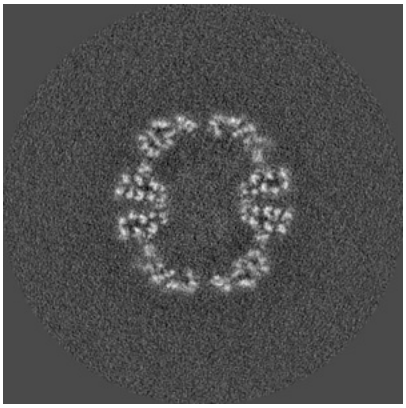


Y Index: 160

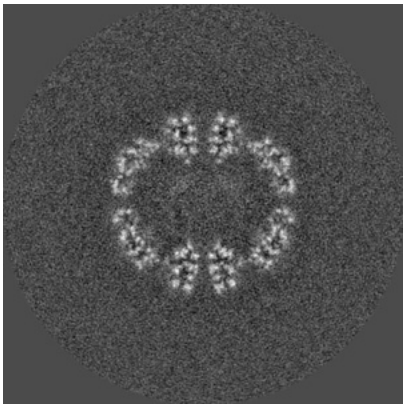


Z Index: 160

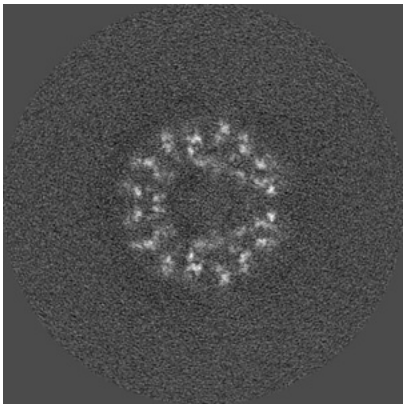
6.2.2 Raw map



X Index: 160



Y Index: 160

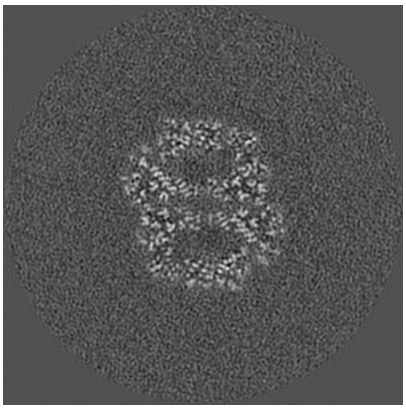


Z Index: 160

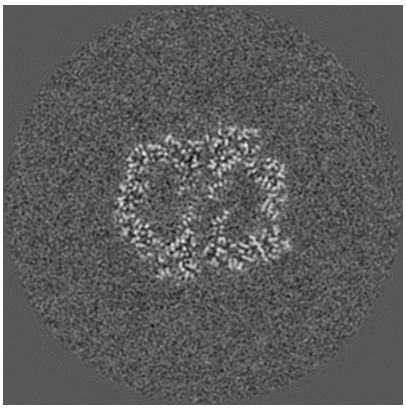
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

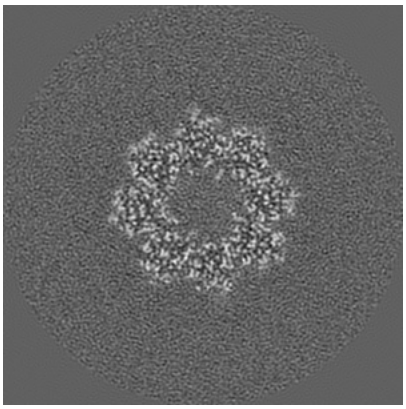
6.3.1 Primary map



X Index: 131

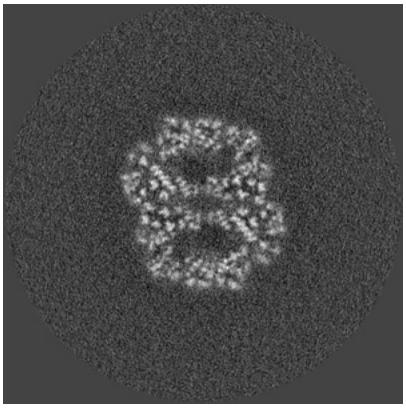


Y Index: 132

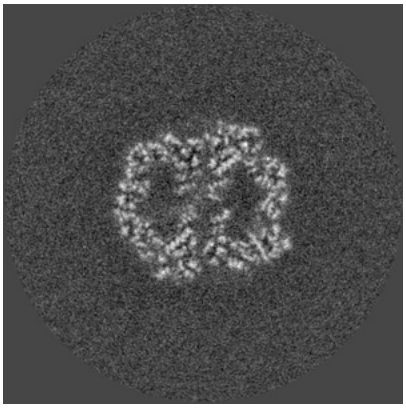


Z Index: 173

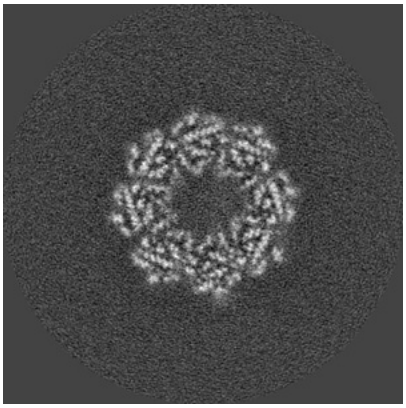
6.3.2 Raw map



X Index: 131



Y Index: 132

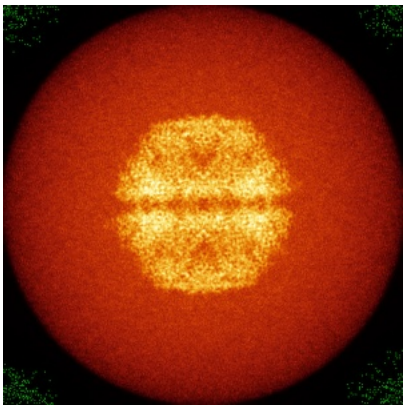


Z Index: 170

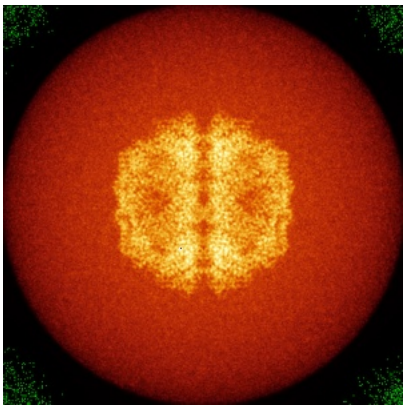
The images above show the largest variance slices of the map in three orthogonal directions.

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

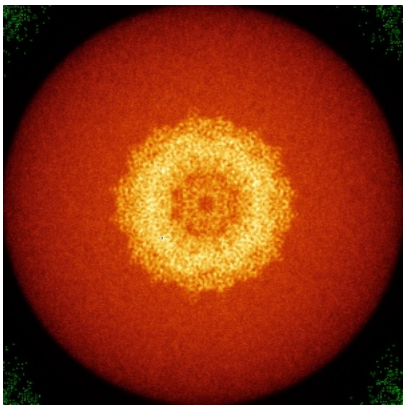
6.4.1 Primary map



X

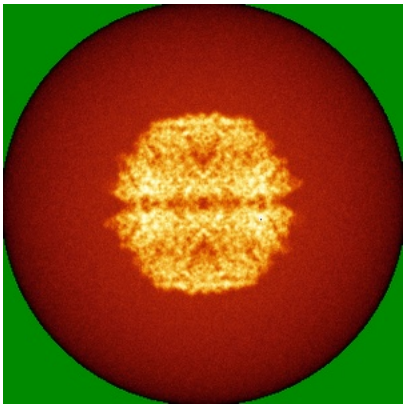


Y

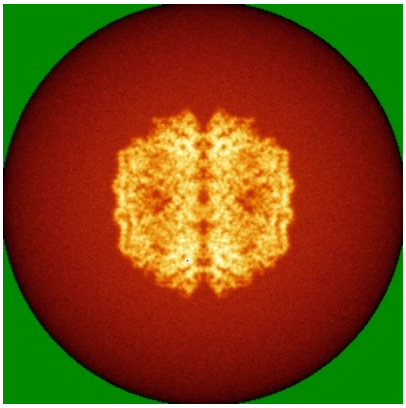


Z

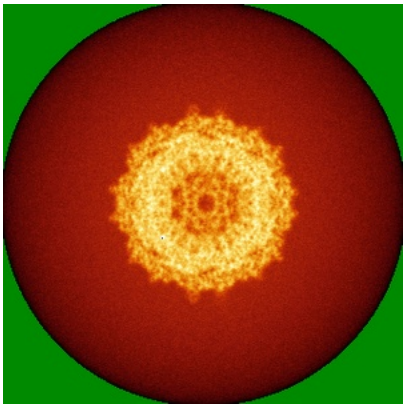
6.4.2 Raw map



X



Y

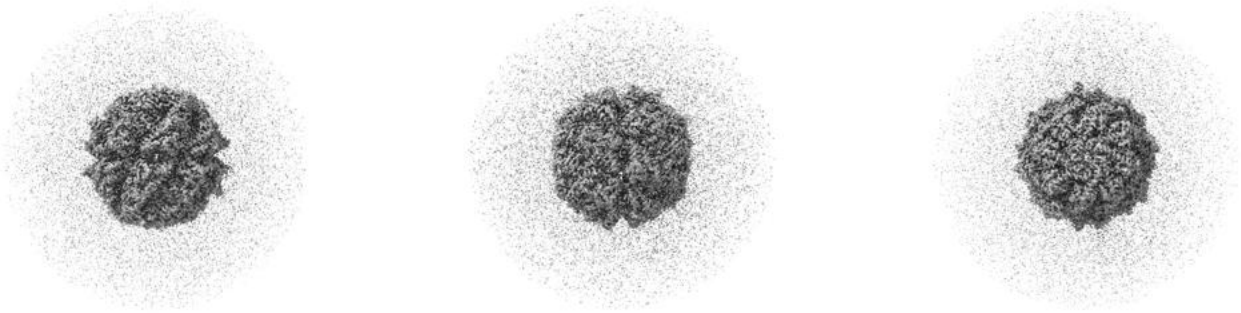


Z

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



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.022. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

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

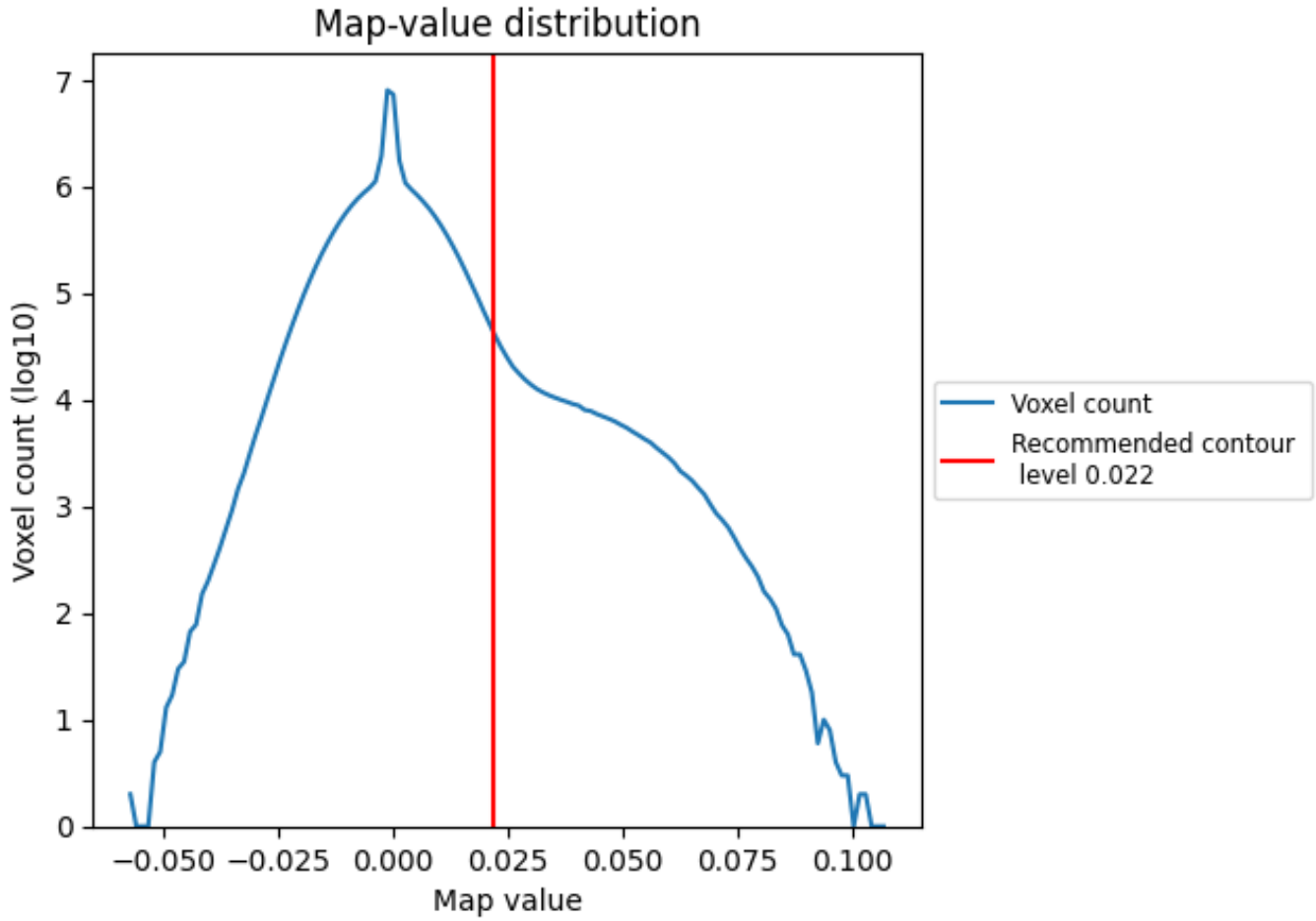
6.6 Mask visualisation (i)

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

7 Map analysis

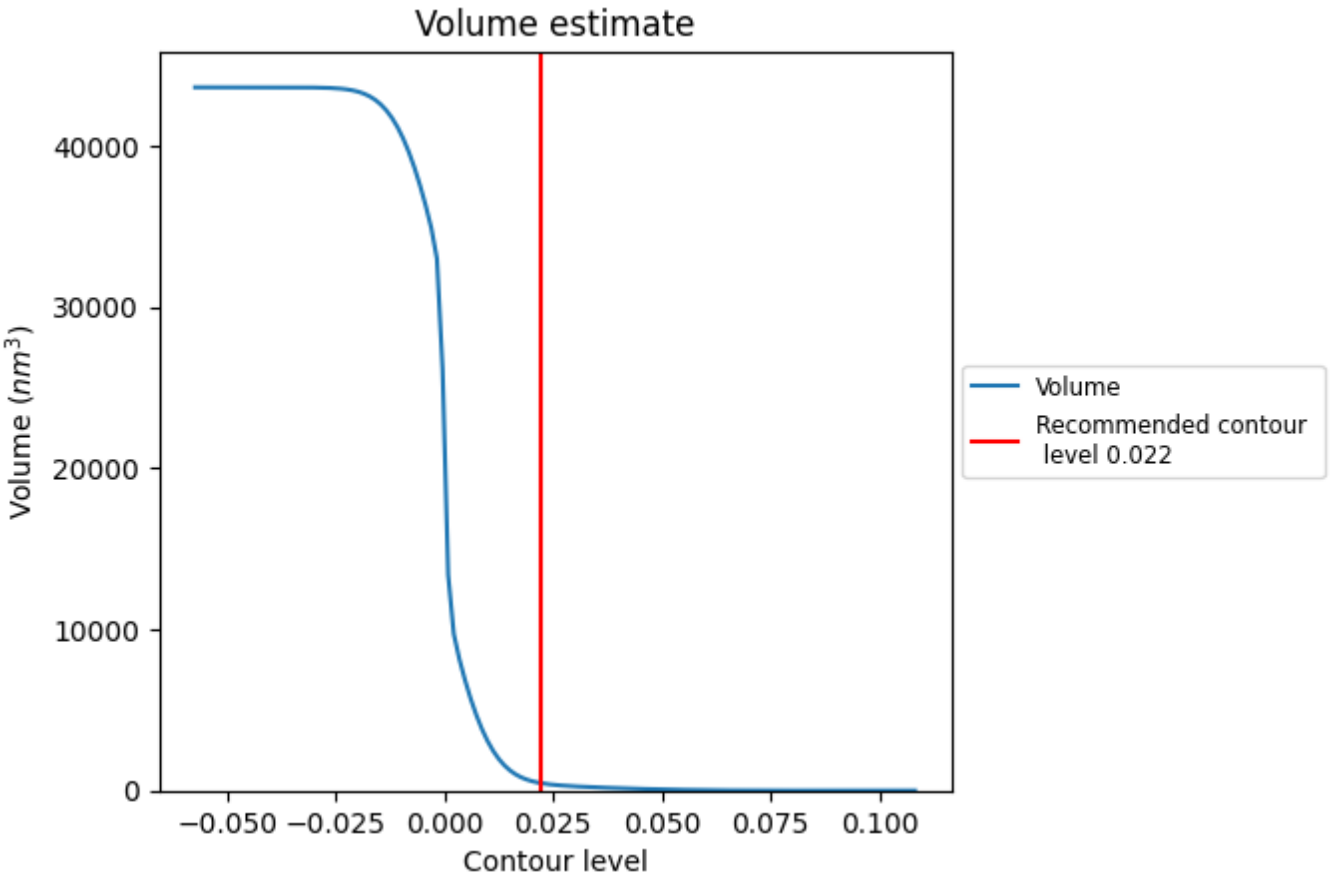
This section contains the results of statistical analysis of the map.

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.

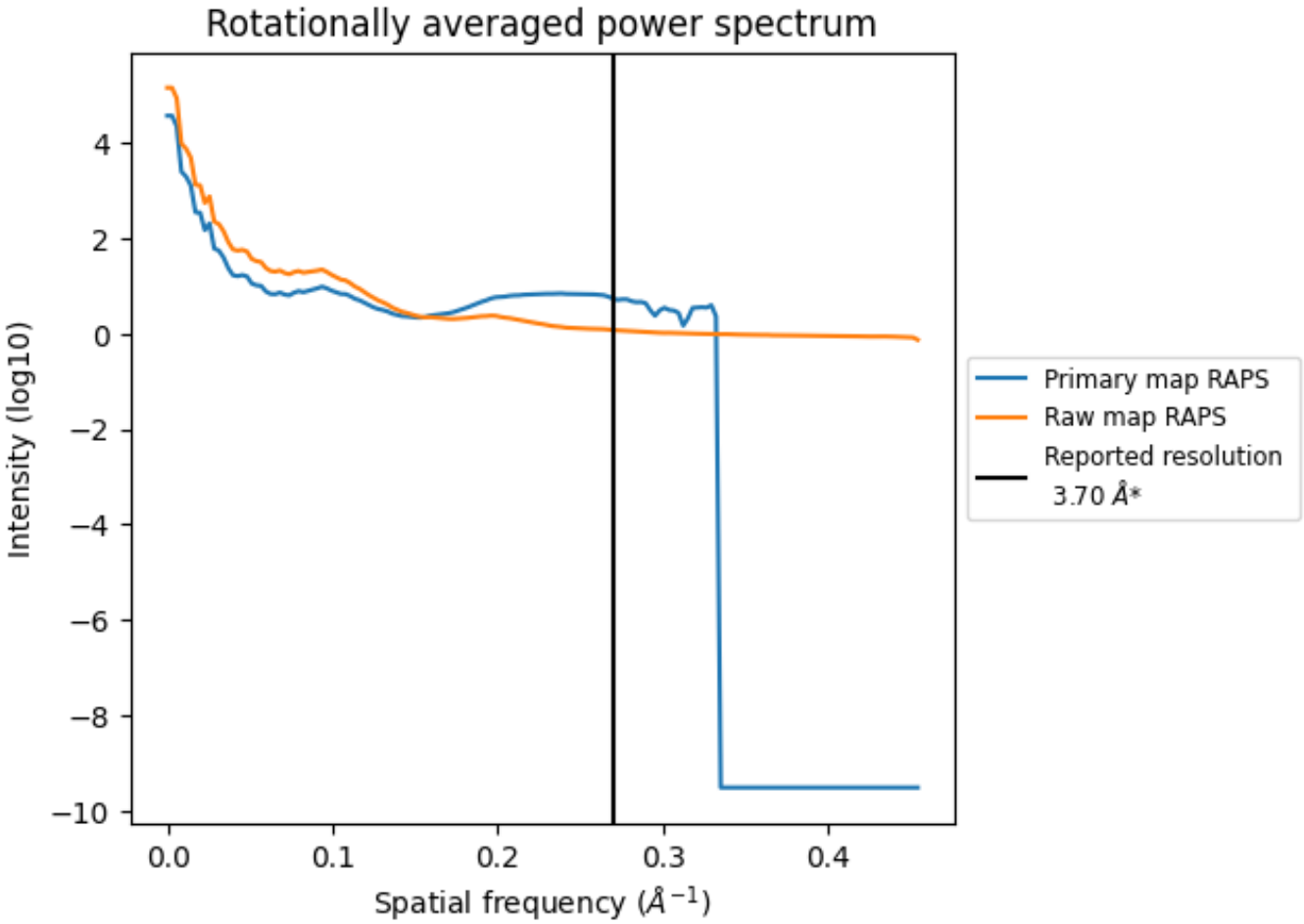
7.2 Volume estimate



The volume at the recommended contour level is 471 nm^3; this corresponds to an approximate mass of 425 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)

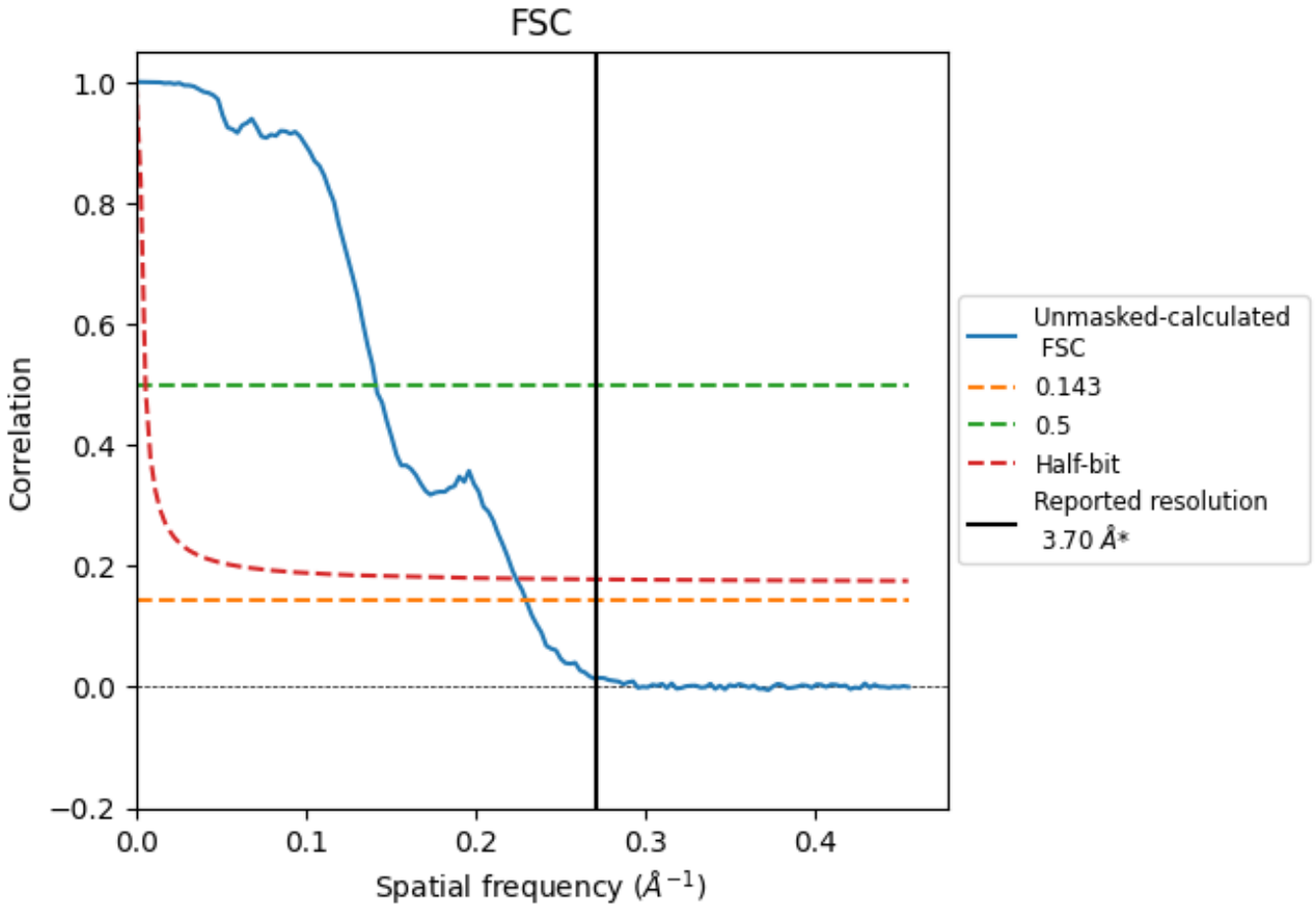


*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8.2 Resolution estimates (i)

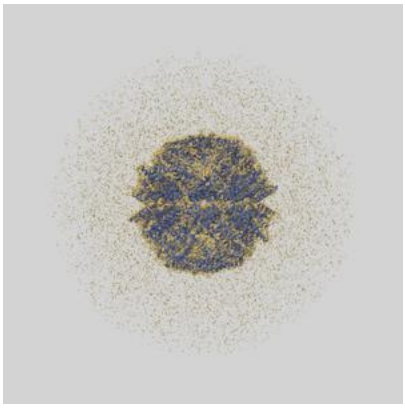
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.36	7.08	4.47

*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 4.36 differs from the reported value 3.7 by more than 10 %

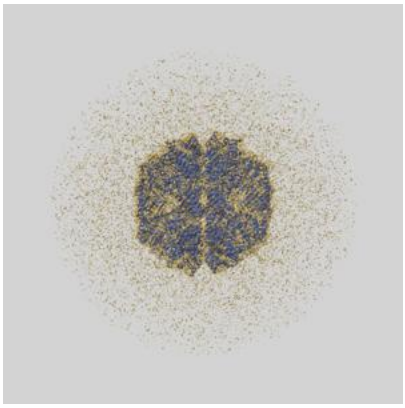
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-47463 and PDB model 9E2S. Per-residue inclusion information can be found in section 3 on page 11.

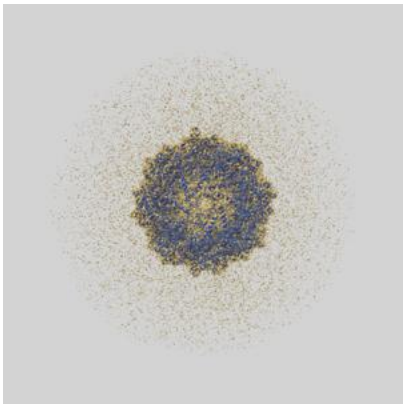
9.1 Map-model overlay



X



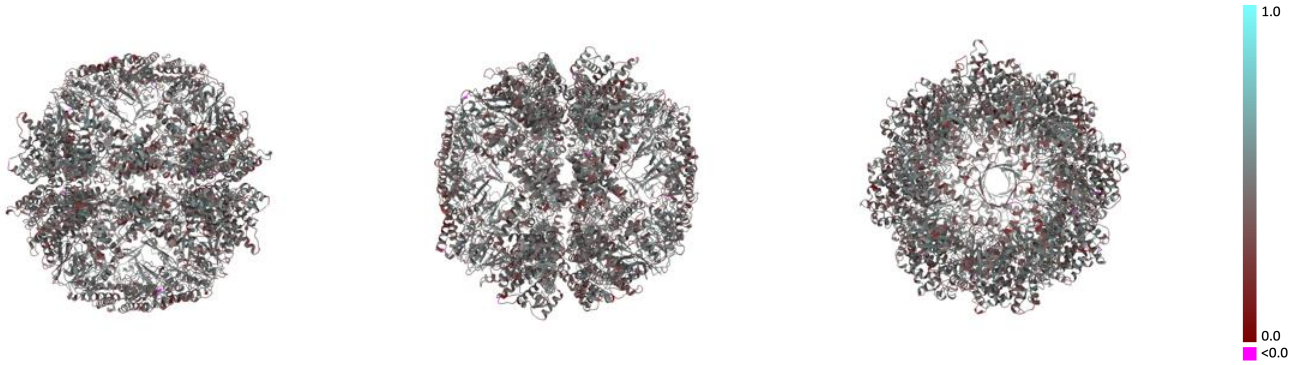
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.022 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.

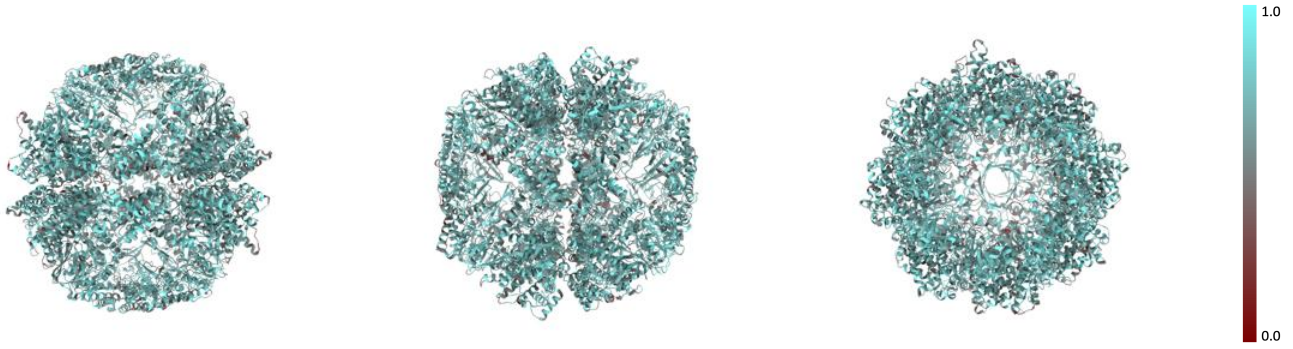
9.2 Q-score mapped to coordinate model (i)



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.

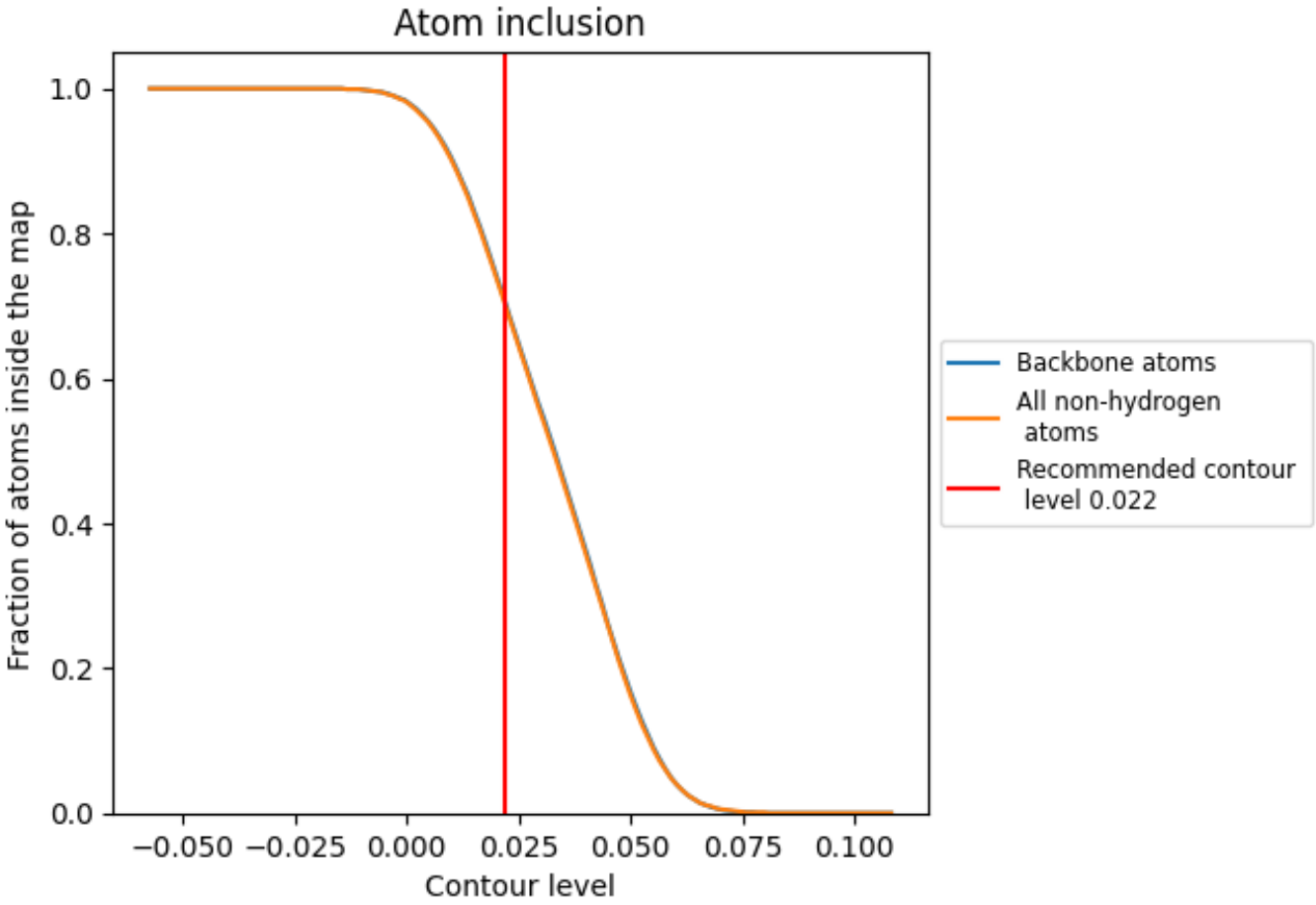
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.022).

9.4 Atom inclusion (i)



At the recommended contour level, 70% of all backbone atoms, 70% 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 (0.022) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7010	0.4340
B	0.7110	0.4330
C	0.7170	0.4390
D	0.7090	0.4350
E	0.7140	0.4340
F	0.6890	0.4310
G	0.7000	0.4300
H	0.7260	0.4380
I	0.7100	0.4300
b	0.7130	0.4410
c	0.7100	0.4430
d	0.7010	0.4300
e	0.7090	0.4370
f	0.6970	0.4350
g	0.6990	0.4280
h	0.7140	0.4300
i	0.7010	0.4240