Full wwPDB X-ray Structure Validation Report (i)

Mar 15, 2025 – 09:10 pm GMT

PDB ID	:	9EOD
Title	:	Human serum albumin with adamantene carboxylic acid
Authors	:	Freitag-Pohl, S.; Pohl, E.
Deposited on	:	2024-03-14
Resolution	:	1.90 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

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

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

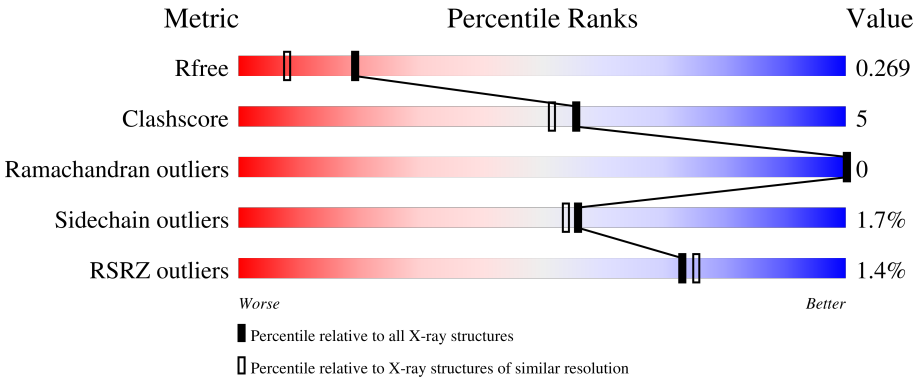
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

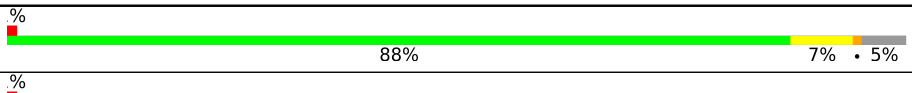
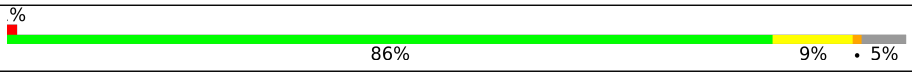
The reported resolution of this entry is 1.90 Å.

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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	7293 (1.90-1.90)
Clashscore	180529	8090 (1.90-1.90)
Ramachandran outliers	177936	8022 (1.90-1.90)
Sidechain outliers	177891	8022 (1.90-1.90)
RSRZ outliers	164620	7292 (1.90-1.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	610	
1	B	610	

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 18075 atoms, of which 8870 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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.

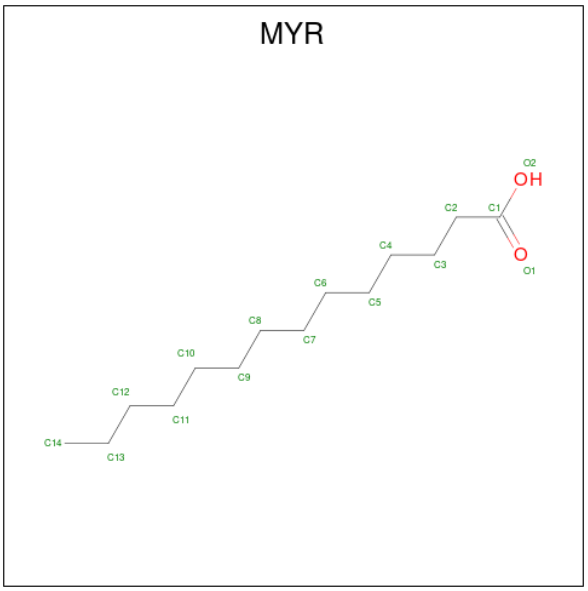
- Molecule 1 is a protein called Albumin.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	581	Total	C	H	N	O	S	198	0	0
			8693	2776	4318	752	806	41			
1	B	582	Total	C	H	N	O	S	191	1	0
			8749	2795	4326	753	834	41			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	586	LEU	-	expression tag	UNP P02768
B	586	LEU	-	expression tag	UNP P02768

- Molecule 2 is MYRISTIC ACID (three-letter code: MYR) (formula: $C_{14}H_{28}O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	H	O	0	0
			43	14	27	2		

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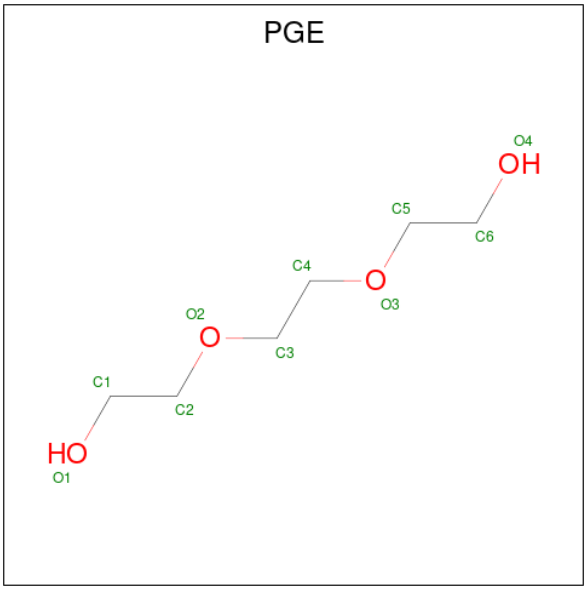
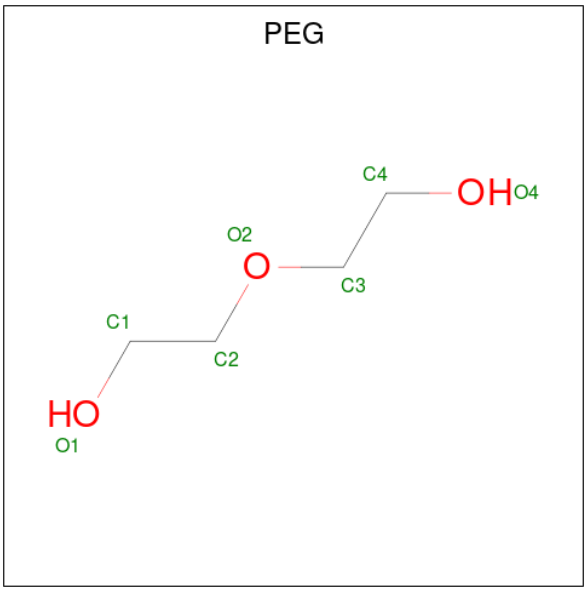
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C H O 43 14 27 2	0	0
2	B	1	Total C H O 43 14 27 2	0	0
2	B	1	Total C H O 43 14 27 2	0	0

- Molecule 3 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: $C_6H_{14}O_4$).



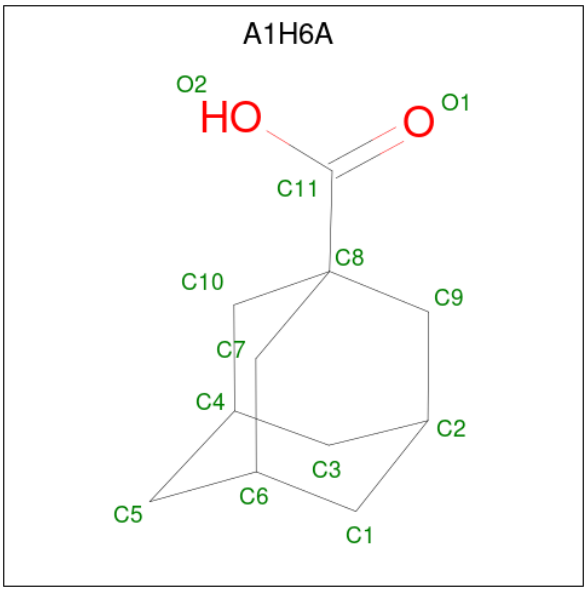
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C H O 24 6 14 4	1	0
3	B	1	Total C H O 24 6 14 4	1	0

- Molecule 4 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	H	O	1	0
			17	4	10	3		
4	A	1	Total	C	H	O	1	0
			17	4	10	3		
4	B	1	Total	C	H	O	1	0
			17	4	10	3		

- Molecule 5 is adamantane-1-carboxylic acid (three-letter code: A1H6A) (formula: $C_{11}H_{16}O_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	H	O	0	0
			28	11	15	2		
5	A	1	Total	C	H	O	0	0
			28	11	15	2		
5	B	1	Total	C	H	O	0	1
			56	22	30	4		

- Molecule 6 is water.

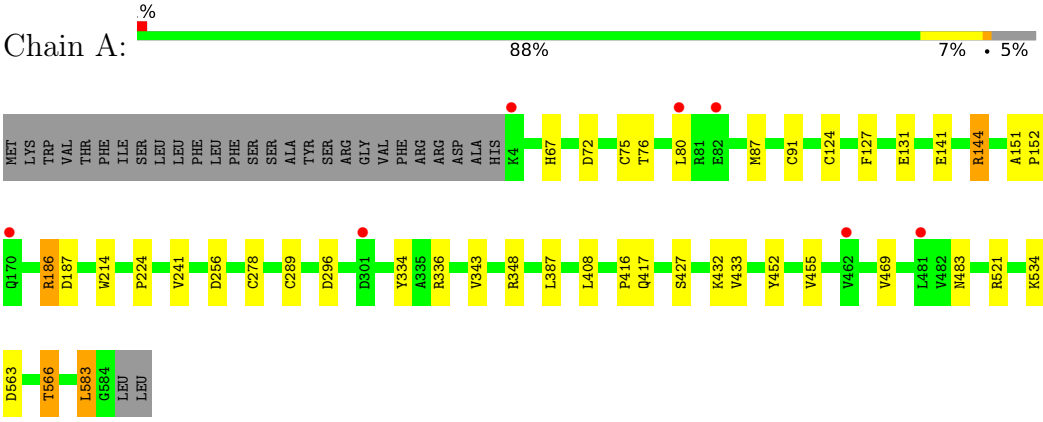
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	112	Total	O	0	0
			112	112		
6	B	138	Total	O	0	0
			138	138		

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 electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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.

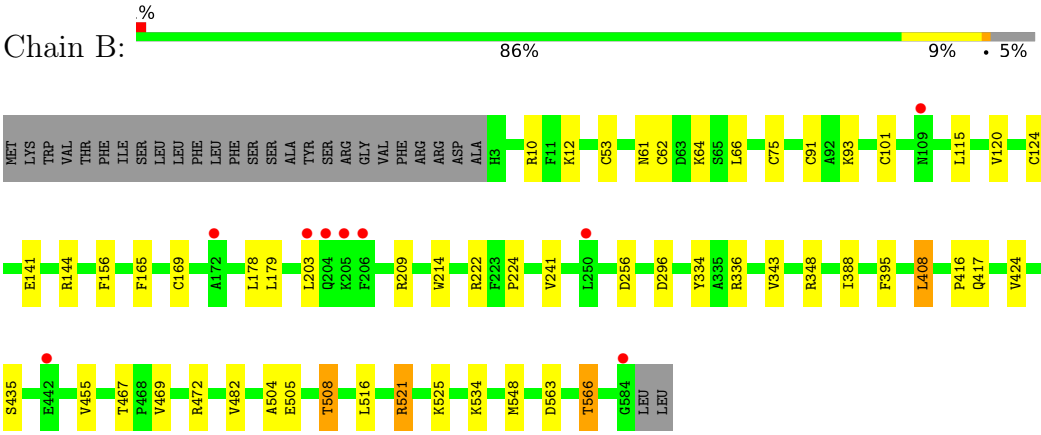
• Molecule 1: Albumin

Chain A:



• Molecule 1: Albumin

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	174.86Å 38.13Å 190.97Å 90.00° 106.15° 90.00°	Depositor
Resolution (Å)	52.97 – 1.90 52.97 – 1.90	Depositor EDS
% Data completeness (in resolution range)	99.8 (52.97-1.90) 99.8 (52.97-1.90)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	0.11	Depositor
$< I/\sigma(I) >$ [1]	2.49 (at 1.90Å)	Xtriage
Refinement program	REFMAC 5.8.0403	Depositor
R, R_{free}	0.217 , 0.268 0.218 , 0.269	Depositor DCC
R_{free} test set	4886 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	35.5	Xtriage
Anisotropy	0.160	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 26.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	18075	wwPDB-VP
Average B, all atoms (Å^2)	43.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 24.44 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.8347e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PEG, A1H6A, MYR, PGE

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.44	0/4464	0.73	1/6060 (0.0%)
1	B	0.46	0/4515	0.75	2/6131 (0.0%)
All	All	0.45	0/8979	0.74	3/12191 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
1	B	0	3
All	All	0	7

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	336	ARG	NE-CZ-NH2	-8.24	116.18	120.30
1	B	472	ARG	NE-CZ-NH2	-7.75	116.42	120.30
1	B	336	ARG	NE-CZ-NH2	-7.16	116.72	120.30

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	144	ARG	Sidechain
1	A	186	ARG	Sidechain
1	A	348	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	A	521	ARG	Sidechain
1	B	144	ARG	Sidechain
1	B	209	ARG	Sidechain
1	B	521	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4375	4318	4154	30	0
1	B	4423	4326	4178	36	0
2	A	32	54	54	1	0
2	B	32	54	54	2	0
3	A	10	14	14	0	0
3	B	10	14	14	0	0
4	A	14	20	20	0	0
4	B	7	10	10	0	0
5	A	26	30	0	0	0
5	B	26	30	0	1	0
6	A	112	0	0	1	0
6	B	138	0	0	3	0
All	All	9205	8870	8498	66	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 5.

All (66) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:187:ASP:OD2	1:A:432:LYS:NZ	2.04	0.89
1:B:417:GLN:O	1:B:469:VAL:HG11	1.86	0.76
1:B:214:TRP:CD1	1:B:343:VAL:HG11	2.33	0.64
1:A:241:VAL:HG22	1:A:256:ASP:HB3	1.81	0.62
1:B:61:ASN:HD22	1:B:64:LYS:HE2	1.64	0.62
1:B:408:LEU:HD13	1:B:427:SER:CB	2.29	0.62
1:A:417:GLN:HB3	1:A:469:VAL:HG13	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:408:LEU:HD13	1:B:427:SER:HB2	1.83	0.60
1:A:548:MET:HG2	2:A:602:MYR:H31	1.84	0.60
1:B:10:ARG:HG3	1:B:66:LEU:HD11	1.84	0.59
1:A:417:GLN:HB3	1:A:469:VAL:CG1	2.33	0.59
1:A:417:GLN:CB	1:A:469:VAL:CG1	2.80	0.59
1:A:214:TRP:CD1	1:A:343:VAL:HG11	2.38	0.58
1:B:504:ALA:O	1:B:508:THR:HG23	2.03	0.58
1:B:516:LEU:O	1:B:521:ARG:NH2	2.37	0.57
1:B:348:ARG:CG	1:B:482:VAL:HG13	2.33	0.57
1:A:563:ASP:OD2	1:A:566:THR:HG23	2.05	0.57
1:B:241:VAL:HG22	1:B:256:ASP:HB3	1.88	0.56
1:A:131:GLU:OE2	1:A:162:LYS:HE3	2.05	0.56
1:B:433:VAL:HG23	5:B:605[B]:A1H6A:O1	2.06	0.55
1:B:348:ARG:HG2	1:B:482:VAL:HG13	1.88	0.54
1:B:224:PRO:HD2	1:B:296:ASP:HB3	1.92	0.52
1:A:417:GLN:O	1:A:469:VAL:HG11	2.09	0.52
1:A:563:ASP:CG	1:A:566:THR:HG23	2.31	0.51
1:A:80:LEU:HD11	1:A:87:MET:CE	2.41	0.50
1:B:222:ARG:NH1	6:B:709:HOH:O	2.44	0.50
1:B:408:LEU:HD11	1:B:424:VAL:HA	1.94	0.49
1:B:563:ASP:CG	1:B:566:THR:HG23	2.33	0.49
1:B:521:ARG:HG2	1:B:525:LYS:HE2	1.94	0.48
1:B:467:THR:O	1:B:467:THR:HG22	2.14	0.48
1:A:417:GLN:HB2	1:A:469:VAL:CG1	2.44	0.48
1:A:67:HIS:CD2	6:A:797:HOH:O	2.67	0.47
1:A:433:VAL:HG22	1:A:452:TYR:HB3	1.96	0.47
1:A:417:GLN:C	1:A:469:VAL:HG11	2.35	0.47
1:B:115:LEU:HD11	1:B:141:GLU:HB3	1.95	0.47
1:B:61:ASN:ND2	1:B:64:LYS:HE2	2.28	0.47
1:B:395:PHE:CZ	1:B:435:SER:HA	2.50	0.47
1:B:127:PHE:CE1	1:B:131:GLU:HG3	2.49	0.46
1:B:348:ARG:HG2	1:B:482:VAL:CG1	2.45	0.46
1:A:124:CYS:CB	1:A:169:CYS:SG	3.04	0.46
1:A:127:PHE:CE1	1:A:131:GLU:HG3	2.50	0.46
1:B:563:ASP:OD2	1:B:566:THR:HG23	2.15	0.46
1:A:408:LEU:HD13	1:A:427:SER:HB2	1.98	0.45
1:B:222:ARG:HG3	6:B:707:HOH:O	2.17	0.45
1:A:80:LEU:HD11	1:A:87:MET:HE2	1.99	0.45
1:A:151:ALA:HB3	1:A:152:PRO:HD3	1.99	0.45
1:A:547:VAL:HG21	1:A:583:LEU:HD21	1.98	0.44
1:A:72:ASP:O	1:A:76:THR:HG23	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:348:ARG:HG3	1:B:482:VAL:HG13	2.00	0.44
1:B:75:CYS:SG	1:B:91:CYS:CB	3.06	0.43
1:A:416:PRO:O	1:A:534:LYS:HE2	2.18	0.43
1:B:416:PRO:O	1:B:534:LYS:HE2	2.19	0.43
1:A:75:CYS:SG	1:A:91:CYS:CB	3.06	0.43
1:B:222:ARG:NE	6:B:707:HOH:O	2.42	0.42
1:B:53:CYS:SG	1:B:62:CYS:CB	3.05	0.42
1:A:278:CYS:HG	1:A:289:CYS:HG	0.53	0.42
1:B:120:VAL:CG2	1:B:179:LEU:HD21	2.50	0.41
1:B:388:ILE:HG13	2:B:601:MYR:H82	2.02	0.41
1:B:548:MET:HG2	2:B:602:MYR:H41	2.03	0.41
1:A:141:GLU:HA	1:A:144:ARG:HD3	2.03	0.41
1:A:417:GLN:HB2	1:A:469:VAL:HG12	2.01	0.41
1:B:124:CYS:CB	1:B:169:CYS:SG	3.05	0.41
1:B:165:PHE:CE1	1:B:178:LEU:HD21	2.56	0.41
1:A:224:PRO:HD2	1:A:296:ASP:HB3	2.02	0.41
1:A:387:LEU:HD23	1:A:387:LEU:HA	1.93	0.41
1:B:93:LYS:NZ	1:B:101:CYS:SG	2.94	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 X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	579/610 (95%)	570 (98%)	9 (2%)	0	100	100
1	B	581/610 (95%)	572 (98%)	9 (2%)	0	100	100
All	All	1160/1220 (95%)	1142 (98%)	18 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	444/534 (83%)	438 (99%)	6 (1%)	62	62
1	B	456/534 (85%)	447 (98%)	9 (2%)	50	47
All	All	900/1068 (84%)	885 (98%)	15 (2%)	56	54

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	186	ARG
1	A	334	TYR
1	A	455	VAL
1	A	483	ASN
1	A	566	THR
1	A	583	LEU
1	B	12	LYS
1	B	156	PHE
1	B	203	LEU
1	B	334	TYR
1	B	408	LEU
1	B	455	VAL
1	B	505	GLU
1	B	508	THR
1	B	566	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	67	HIS
1	A	429	ASN
1	B	3	HIS
1	B	61	ASN
1	B	429	ASN
1	B	503	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)

13 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	A1H6A	A	607	-	15,15,15	0.47	0	24,24,24	0.68	1 (4%)
4	PEG	A	605	-	6,6,6	0.28	0	5,5,5	0.29	0
5	A1H6A	B	605[A]	-	15,15,15	0.50	0	24,24,24	0.74	2 (8%)
4	PEG	B	604	-	6,6,6	0.36	0	5,5,5	0.24	0
5	A1H6A	A	606	-	15,15,15	0.50	0	24,24,24	0.81	1 (4%)
2	MYR	A	602	-	15,15,15	0.58	0	15,15,15	0.61	0
3	PGE	A	603	-	9,9,9	0.30	0	8,8,8	0.25	0
5	A1H6A	B	605[B]	-	15,15,15	0.48	0	24,24,24	0.57	0
2	MYR	A	601	-	15,15,15	0.56	0	15,15,15	0.54	0
3	PGE	B	603	-	9,9,9	0.31	0	8,8,8	0.34	0
2	MYR	B	602	-	15,15,15	0.51	0	15,15,15	0.57	0
4	PEG	A	604	-	6,6,6	0.28	0	5,5,5	0.27	0
2	MYR	B	601	-	15,15,15	0.67	0	15,15,15	0.61	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns.

'-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	A1H6A	A	607	-	-	0/6/33/33	0/4/3/3
4	PEG	A	605	-	-	1/4/4/4	-
5	A1H6A	B	605[A]	-	-	0/6/33/33	0/4/3/3
4	PEG	B	604	-	-	2/4/4/4	-
5	A1H6A	A	606	-	-	0/6/33/33	0/4/3/3
2	MYR	A	602	-	-	10/13/13/13	-
3	PGE	A	603	-	-	5/7/7/7	-
5	A1H6A	B	605[B]	-	-	0/6/33/33	0/4/3/3
2	MYR	A	601	-	-	10/13/13/13	-
3	PGE	B	603	-	-	2/7/7/7	-
2	MYR	B	602	-	-	9/13/13/13	-
4	PEG	A	604	-	-	3/4/4/4	-
2	MYR	B	601	-	-	8/13/13/13	-

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	606	A1H6A	C9-C8-C11	2.54	115.33	110.01
5	A	607	A1H6A	O1-C11-C8	-2.09	117.62	122.74
5	B	605[A]	A1H6A	O2-C11-C8	2.00	118.88	114.43
5	B	605[A]	A1H6A	O1-C11-C8	-2.00	117.83	122.74

There are no chirality outliers.

All (50) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	MYR	C1-C2-C3-C4
2	A	602	MYR	C1-C2-C3-C4
2	A	602	MYR	C11-C10-C9-C8
3	A	603	PGE	O1-C1-C2-O2
2	A	602	MYR	C10-C11-C12-C13
2	A	602	MYR	C5-C6-C7-C8
2	B	601	MYR	C9-C10-C11-C12
2	B	602	MYR	C11-C10-C9-C8
2	B	602	MYR	C7-C8-C9-C10
2	B	602	MYR	C10-C11-C12-C13
3	A	603	PGE	O3-C5-C6-O4
2	A	601	MYR	C11-C10-C9-C8

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Mol	Chain	Res	Type	Atoms
2	A	602	MYR	C6-C7-C8-C9
4	B	604	PEG	O2-C3-C4-O4
2	A	601	MYR	C3-C4-C5-C6
2	B	601	MYR	C6-C7-C8-C9
2	B	601	MYR	C3-C4-C5-C6
4	A	604	PEG	O2-C3-C4-O4
2	A	602	MYR	C2-C3-C4-C5
2	B	602	MYR	C4-C5-C6-C7
2	A	601	MYR	C5-C6-C7-C8
3	B	603	PGE	O1-C1-C2-O2
2	B	601	MYR	C10-C11-C12-C13
2	A	602	MYR	C11-C12-C13-C14
2	A	602	MYR	C4-C5-C6-C7
3	A	603	PGE	O2-C3-C4-O3
2	B	602	MYR	C9-C10-C11-C12
2	A	601	MYR	C7-C8-C9-C10
2	A	601	MYR	C10-C11-C12-C13
2	A	601	MYR	C11-C12-C13-C14
2	B	601	MYR	C7-C8-C9-C10
4	A	604	PEG	O1-C1-C2-O2
2	B	602	MYR	C6-C7-C8-C9
4	A	604	PEG	C4-C3-O2-C2
4	B	604	PEG	C4-C3-O2-C2
3	A	603	PGE	C6-C5-O3-C4
2	B	602	MYR	O2-C1-C2-C3
2	B	602	MYR	O1-C1-C2-C3
2	A	601	MYR	O2-C1-C2-C3
2	A	601	MYR	O1-C1-C2-C3
4	A	605	PEG	C1-C2-O2-C3
3	B	603	PGE	O2-C3-C4-O3
2	B	601	MYR	C11-C12-C13-C14
2	B	601	MYR	O2-C1-C2-C3
2	B	601	MYR	O1-C1-C2-C3
2	A	602	MYR	O2-C1-C2-C3
3	A	603	PGE	C4-C3-O2-C2
2	A	601	MYR	C9-C10-C11-C12
2	A	602	MYR	O1-C1-C2-C3
2	B	602	MYR	C3-C4-C5-C6

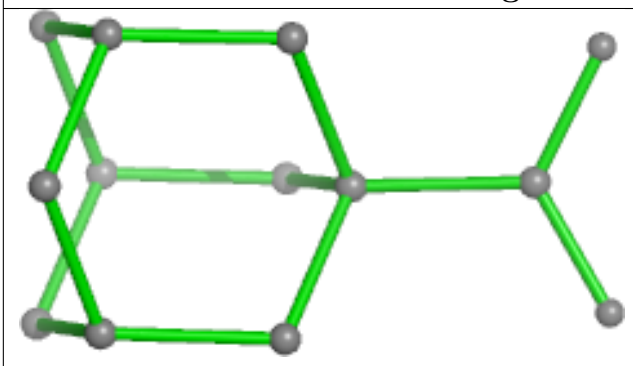
There are no ring outliers.

4 monomers are involved in 4 short contacts:

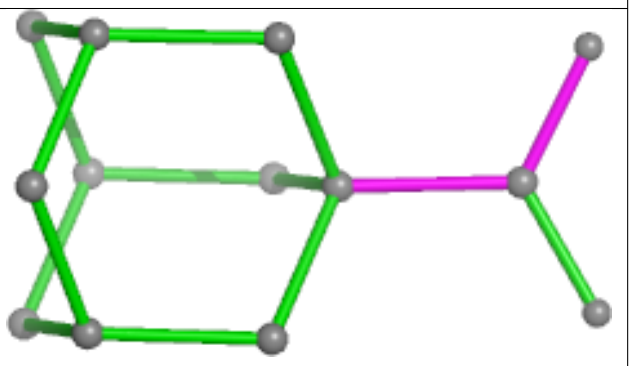
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	602	MYR	1	0
5	B	605[B]	A1H6A	1	0
2	B	602	MYR	1	0
2	B	601	MYR	1	0

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.

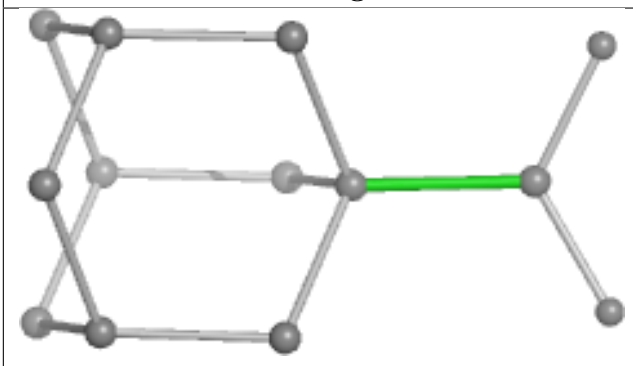
Ligand A1H6A A 607



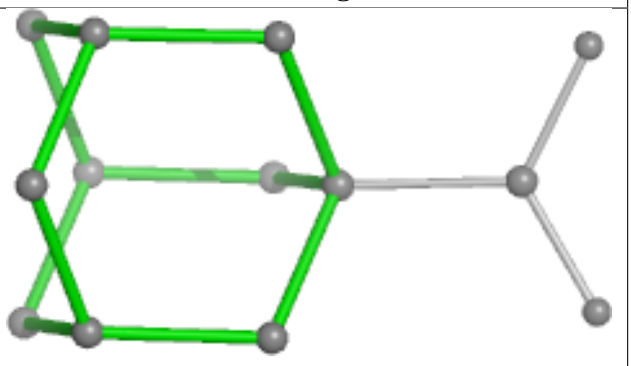
Bond lengths



Bond angles

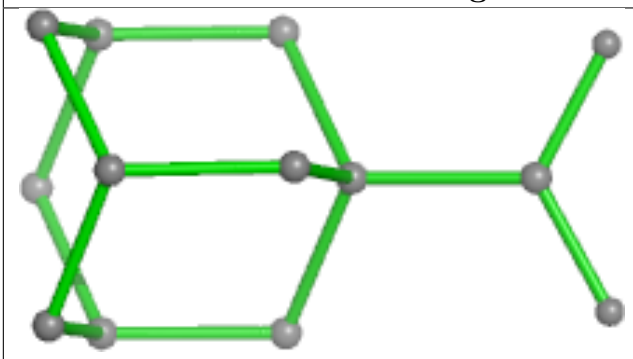


Torsions

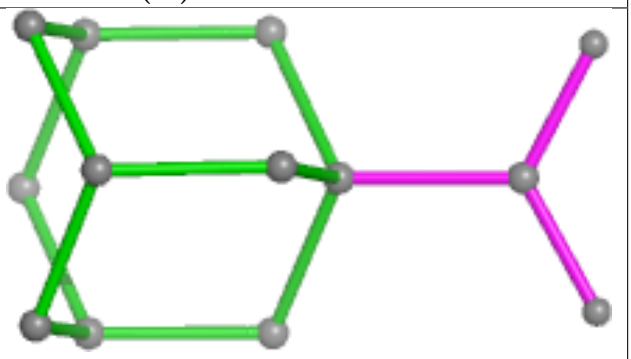


Rings

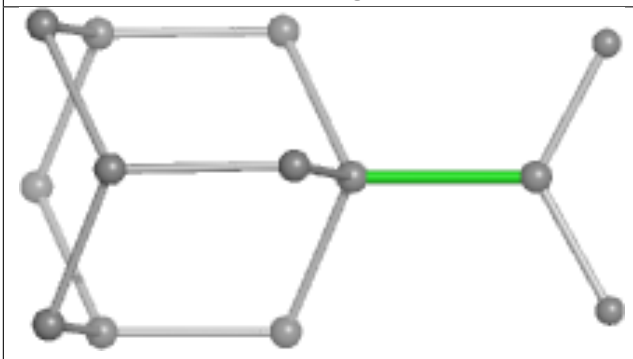
Ligand A1H6A B 605 (A)



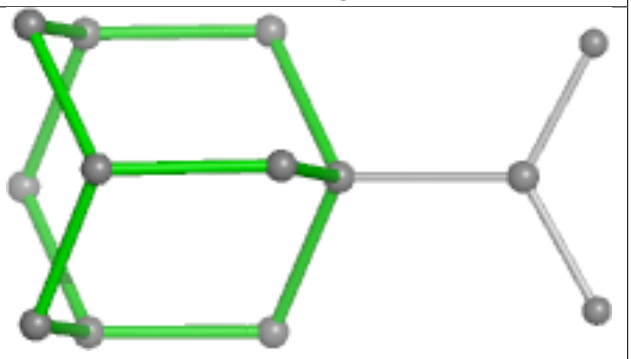
Bond lengths



Bond angles

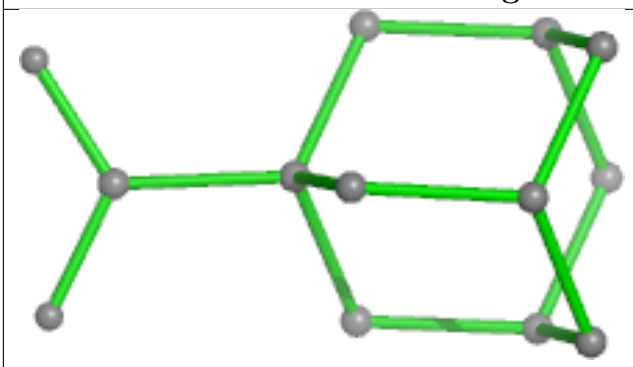


Torsions

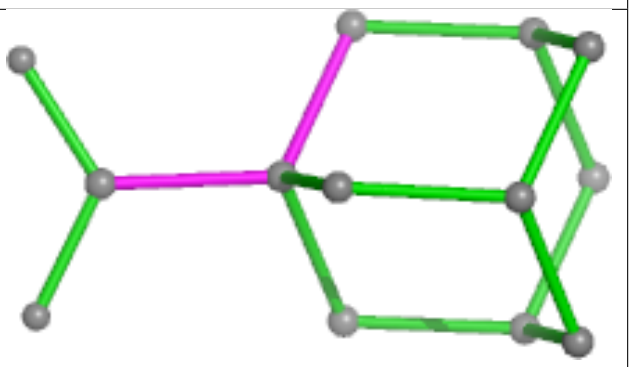


Rings

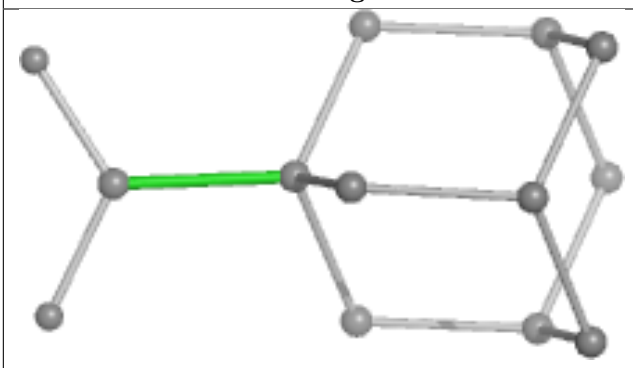
Ligand A1H6A A 606



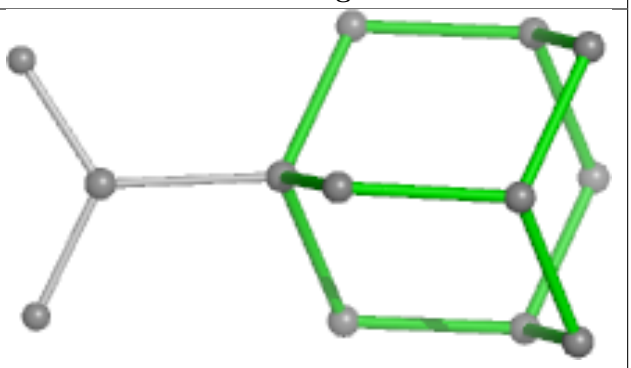
Bond lengths



Bond angles

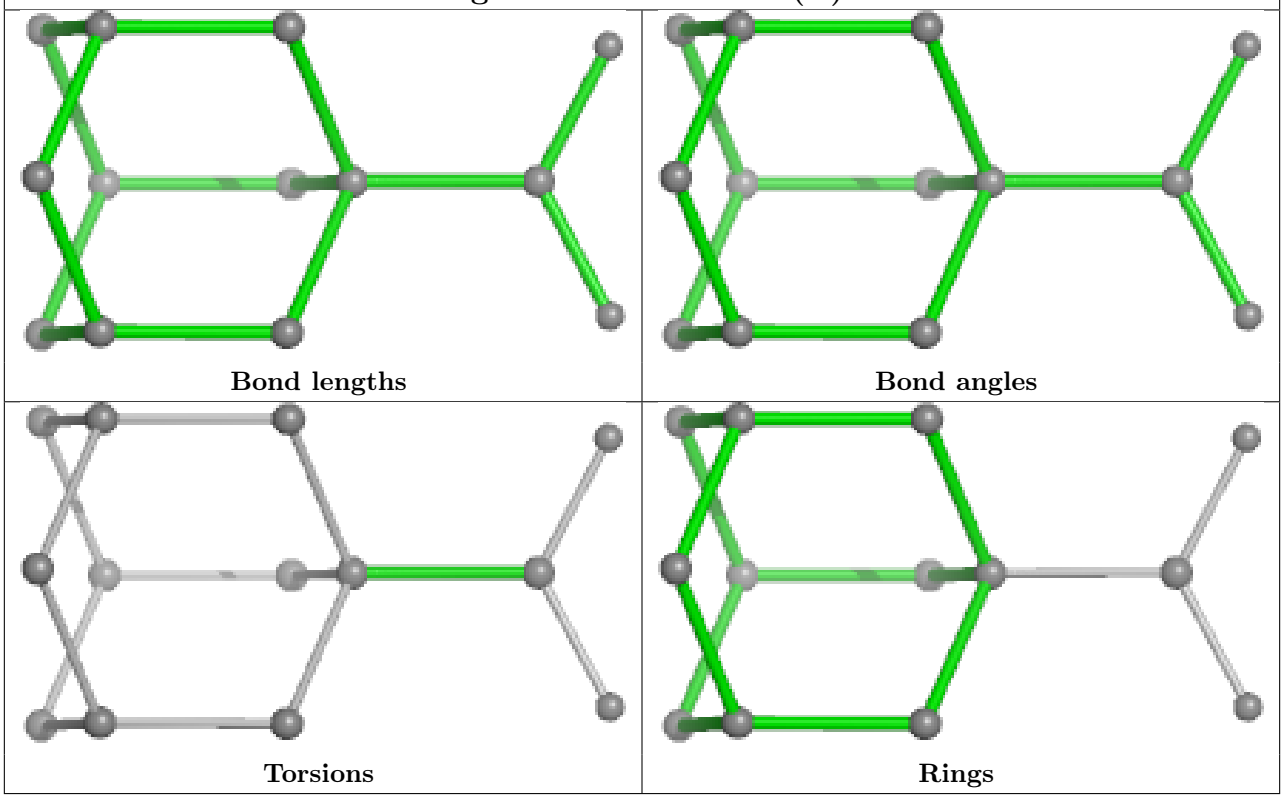


Torsions



Rings

Ligand A1H6A B 605 (B)



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	581/610 (95%)	0.14	7 (1%)	76	78	27, 41, 56, 80	0
1	B	582/610 (95%)	0.20	9 (1%)	71	74	26, 41, 59, 74	1 (0%)
All	All	1163/1220 (95%)	0.17	16 (1%)	73	75	26, 41, 57, 80	1 (0%)

All (16) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	584	GLY	4.0
1	B	203	LEU	4.0
1	A	481	LEU	3.8
1	B	206	PHE	3.5
1	B	109	ASN	2.7
1	B	250	LEU	2.6
1	A	462	VAL	2.5
1	A	301	ASP	2.4
1	A	4	LYS	2.2
1	B	442	GLU	2.2
1	B	172	ALA	2.2
1	A	170	GLN	2.1
1	B	204	GLN	2.1
1	B	205	LYS	2.1
1	A	80	LEU	2.0
1	A	82	GLU	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

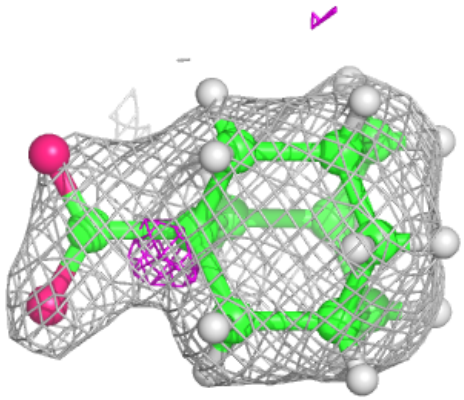
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

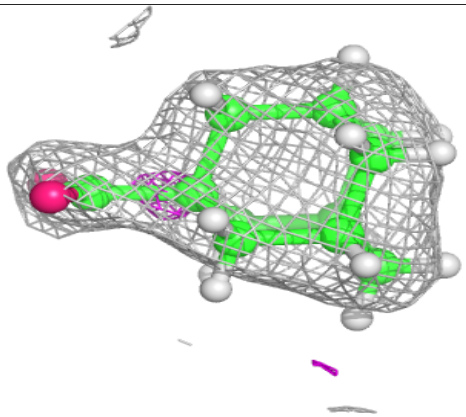
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	A1H6A	B	605[A]	13/13	0.84	0.11	37,41,52,57	28
5	A1H6A	B	605[B]	13/13	0.84	0.11	37,41,42,43	28
4	PEG	A	605	7/7	0.88	0.16	49,53,64,66	1
4	PEG	A	604	7/7	0.89	0.14	56,58,62,67	1
4	PEG	B	604	7/7	0.90	0.14	54,59,64,65	1
5	A1H6A	A	606	13/13	0.90	0.10	51,56,62,66	0
5	A1H6A	A	607	13/13	0.90	0.20	53,58,70,76	28
2	MYR	B	601	16/16	0.90	0.13	31,46,53,54	0
3	PGE	B	603	10/10	0.90	0.12	42,50,53,60	1
2	MYR	A	601	16/16	0.91	0.12	37,48,59,63	0
3	PGE	A	603	10/10	0.91	0.14	51,56,69,69	1
2	MYR	A	602	16/16	0.92	0.12	40,44,59,79	0
2	MYR	B	602	16/16	0.93	0.10	41,49,57,76	0

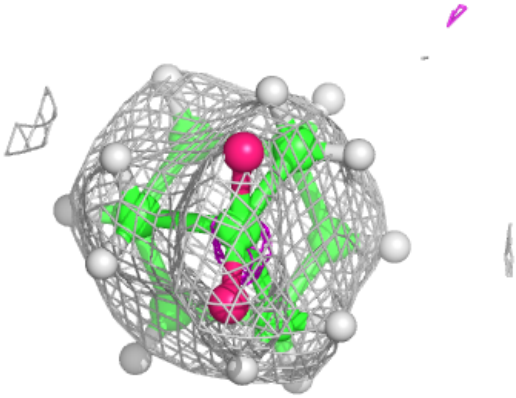
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around A1H6A B 605 (A):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

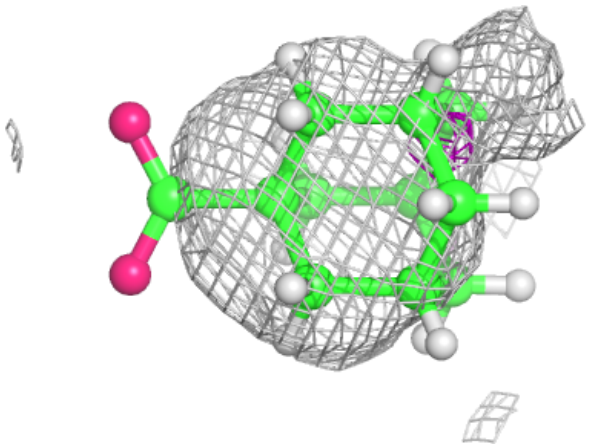


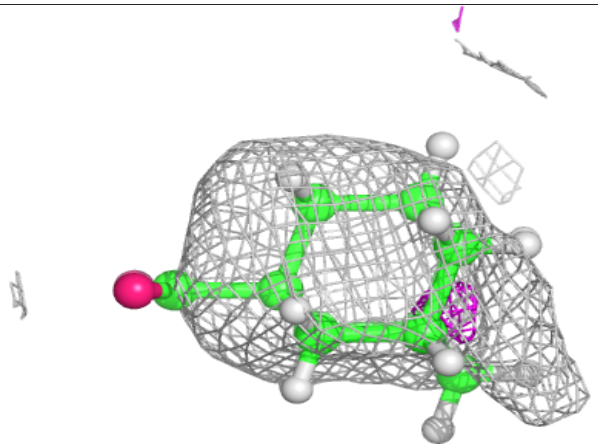


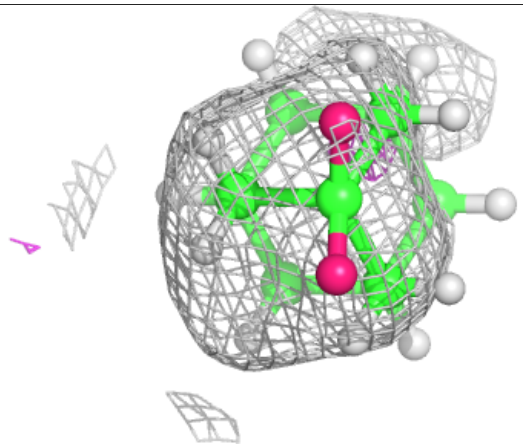


Electron density around A1H6A B 605 (B):

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

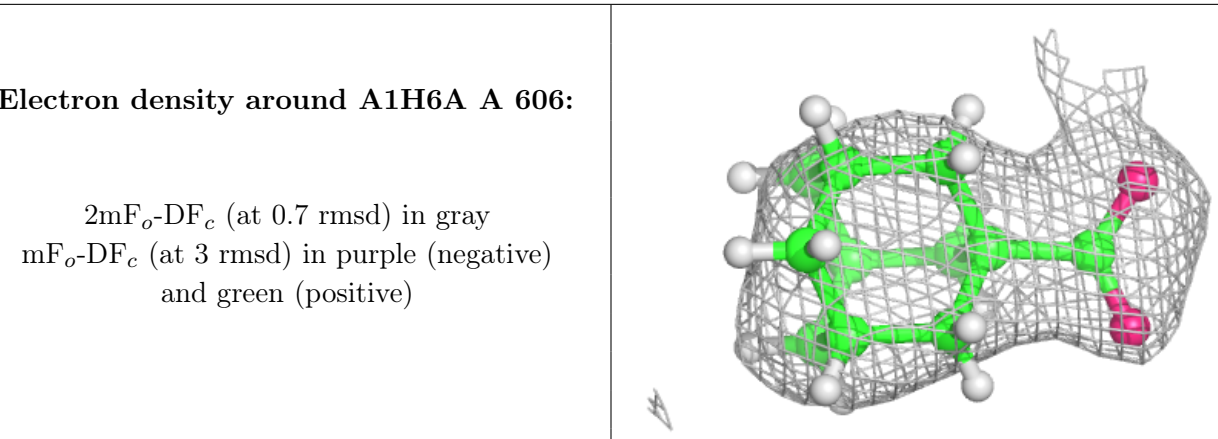






Electron density around A1H6A A 606:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around A1H6A A 607:

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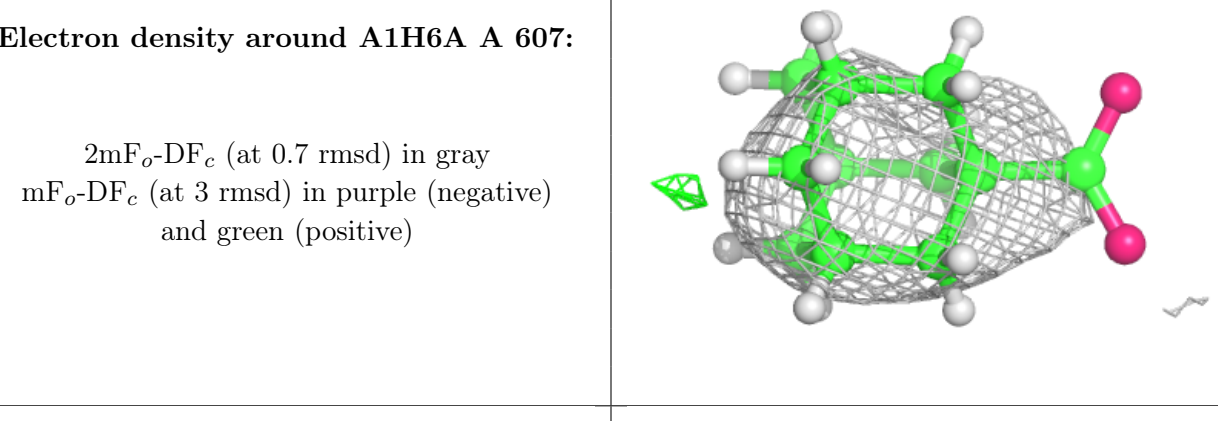
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.