Full wwPDB X-ray Structure Validation Report (i)

Dec 5, 2023 – 11:15 pm GMT

PDB ID	:	2UUK
Title	:	Thrombin-hirugen-gw420128 ternary complex at 1.39A resolution
Authors	:	Ahmed, H.U.; Blakeley, M.P.; Cianci, M.; Cruickshank, D.W.J.; Hubbard, J.A.; Helliwell, J.R.
Deposited on	:	2007-03-03
Resolution	:	1.39 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:

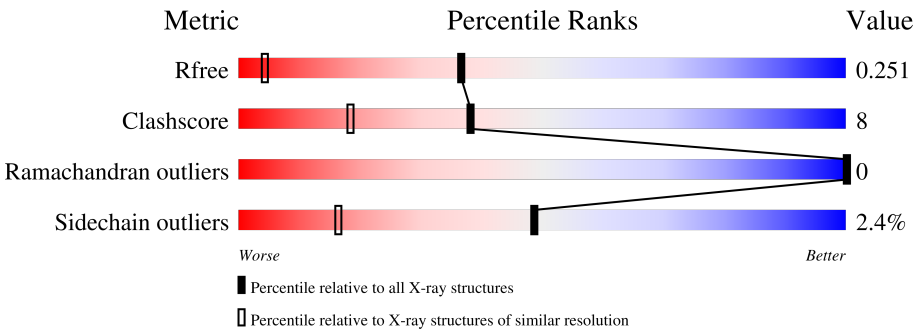
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 1.39 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}	130704	1714 (1.40-1.40)
Clashscore	141614	1812 (1.40-1.40)
Ramachandran outliers	138981	1763 (1.40-1.40)
Sidechain outliers	138945	1762 (1.40-1.40)

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%

Mol	Chain	Length	Quality of chain
1	A	36	50% 25% • 22%
2	B	259	82% 13% •• •
3	H	10	70% 30%

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 2795 atoms, of which 0 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 HUMAN ALPHA THROMBIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	28	248	156	40	51	1	0	3	0

- Molecule 2 is a protein called THROMBIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	252	2073	1322	364	373	14	0	9	0

- Molecule 3 is a protein called HIRUDIN I.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	H	10	94	59	10	24	1	0	0	0

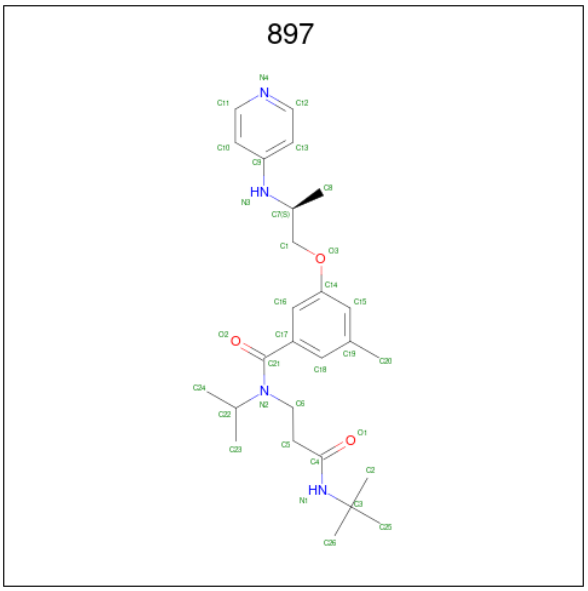
- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Na		
4	B	1	1	1	0	0

- Molecule 5 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Ca		
5	B	1	1	1	0	0

- Molecule 6 is N-[3-(TERT-BUTYLAMINO)-3-OXOPROPYL]-N-ISOPROPYL-3-METHYL-5-{[(2S)-2-(PYRIDIN-4-YLAMINO)PROPYL]OXY}BENZAMIDE (three-letter code: 897) (formula: $C_{26}H_{38}N_4O_3$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
6	B	1	33	26	4	3	0	0

- Molecule 7 is water.

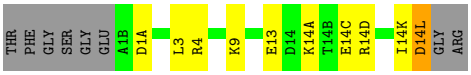
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
7	A	44	44	44	0	0
			Total	O		
7	B	294	294	294	0	0
			Total	O		
7	H	7	7	7	0	0

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. 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. 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.

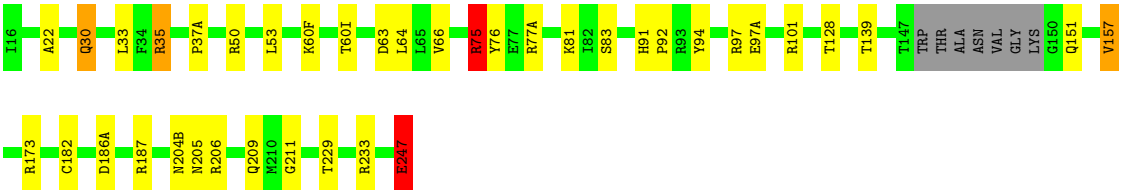
- Molecule 1: HUMAN ALPHA THROMBIN

Chain A:



- Molecule 2: THROMBIN

Chain B:



- Molecule 3: HIRUDIN I

Chain H:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	70.35Å 71.44Å 72.12Å 90.00° 100.03° 90.00°	Depositor
Resolution (Å)	18.55 – 1.39 18.55 – 1.39	Depositor EDS
% Data completeness (in resolution range)	95.9 (18.55-1.39) 95.9 (18.55-1.39)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.78 (at 1.40Å)	Xtriage
Refinement program	SHELXL-97	Depositor
R, R_{free}	0.118 , 0.173 0.226 , 0.251	Depositor DCC
R_{free} test set	3345 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å^2)	13.1	Xtriage
Anisotropy	0.072	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.41 , 63.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	2795	wwPDB-VP
Average B, all atoms (Å^2)	23.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.72% of the height of the origin peak. No significant pseudotranslation is detected.*

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: NA, CA, 897, TYS

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	0.78	0/259	1.57	3/343 (0.9%)
2	B	1.91	4/2155 (0.2%)	1.46	30/2912 (1.0%)
3	H	2.05	1/78 (1.3%)	1.35	0/103
All	All	1.83	5/2492 (0.2%)	1.47	33/3358 (1.0%)

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	1	0

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	247	GLU	C-O	82.54	2.80	1.23
3	H	64	LEU	C-O	17.62	1.56	1.23
2	B	157[A]	VAL	C-N	7.74	1.51	1.34
2	B	157[B]	VAL	C-N	7.74	1.51	1.34
2	B	128	THR	C-N	-5.47	1.21	1.34

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	75	ARG	NE-CZ-NH1	-26.51	107.05	120.30
1	A	14(D)	ARG	CD-NE-CZ	13.43	142.41	123.60
2	B	101	ARG	NE-CZ-NH2	11.06	125.83	120.30
2	B	91	HIS	CG-ND1-CE1	10.84	123.37	108.20
2	B	233	ARG	NE-CZ-NH2	-9.25	115.68	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	75	ARG	NH1-CZ-NH2	8.43	128.67	119.40
2	B	173	ARG	NE-CZ-NH1	-8.23	116.18	120.30
2	B	50	ARG	CG-CD-NE	8.14	128.90	111.80
2	B	30[A]	GLN	CB-CG-CD	8.13	132.74	111.60
2	B	30[B]	GLN	CB-CG-CD	8.13	132.74	111.60
2	B	35	ARG	NE-CZ-NH1	8.13	124.36	120.30
2	B	75	ARG	NE-CZ-NH2	7.96	124.28	120.30
2	B	35	ARG	NE-CZ-NH2	-7.84	116.38	120.30
2	B	94	TYR	CB-CG-CD1	7.80	125.68	121.00
2	B	187	ARG	NE-CZ-NH2	-7.63	116.48	120.30
2	B	92	PRO	O-C-N	-7.42	110.83	122.70
2	B	30[A]	GLN	OE1-CD-NE2	-7.30	105.12	121.90
2	B	30[B]	GLN	OE1-CD-NE2	-7.30	105.12	121.90
2	B	91	HIS	ND1-CG-CD2	-7.06	96.12	106.00
1	A	14(D)	ARG	NE-CZ-NH1	6.95	123.77	120.30
2	B	92	PRO	C-N-CA	6.46	137.85	121.70
1	A	4	ARG	NE-CZ-NH2	6.36	123.48	120.30
2	B	94	TYR	CB-CG-CD2	-6.25	117.25	121.00
2	B	97	ARG	NE-CZ-NH2	-5.85	117.37	120.30
2	B	97	ARG	NE-CZ-NH1	5.77	123.18	120.30
2	B	206	ARG	CD-NE-CZ	5.69	131.57	123.60
2	B	186(A)	ASP	CB-CG-OD1	5.67	123.41	118.30
2	B	187	ARG	NE-CZ-NH1	5.67	123.14	120.30
2	B	50	ARG	CD-NE-CZ	5.52	131.33	123.60
2	B	77(A)	ARG	NE-CZ-NH1	5.24	122.92	120.30
2	B	30[A]	GLN	CG-CD-OE1	5.24	132.08	121.60
2	B	30[B]	GLN	CG-CD-OE1	5.24	132.08	121.60
2	B	97(A)	GLU	OE1-CD-OE2	5.16	129.49	123.30

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	14(L)	ASP	CA

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	248	0	256	13	0
2	B	2073	0	2041	22	0
3	H	94	0	74	1	0
4	B	1	0	0	0	0
5	B	1	0	0	0	0
6	B	33	0	38	2	0
7	A	44	0	0	2	0
7	B	294	0	0	12	0
7	H	7	0	0	0	0
All	All	2795	0	2409	37	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 8.

All (37) 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)
6:B:2250:897:H12	7:B:1278:HOH:O	1.55	1.02
1:A:14(K):ILE:HG13	1:A:14(L):ASP:N	1.90	0.87
1:A:9[B]:LYS:HE3	7:A:1010:HOH:O	1.85	0.77
1:A:14(K):ILE:O	1:A:14(L):ASP:OD1	2.07	0.72
1:A:9[B]:LYS:HG2	7:A:1009:HOH:O	1.95	0.67
2:B:53:LEU:HD23	7:B:1258:HOH:O	1.94	0.67
2:B:151:GLN:HG2	7:B:1174:HOH:O	1.95	0.66
1:A:14(K):ILE:O	1:A:14(L):ASP:CB	2.43	0.65
2:B:81:LYS:HG3	7:B:1146:HOH:O	1.97	0.64
2:B:53:LEU:CD2	7:B:1258:HOH:O	2.45	0.63
2:B:247:GLU:OE1	2:B:247:GLU:HA	2.00	0.62
1:A:14(K):ILE:CG1	1:A:14(L):ASP:N	2.63	0.61
1:A:14(A):LYS:HB2	7:B:1029:HOH:O	2.04	0.58
1:A:14(K):ILE:O	1:A:14(L):ASP:HB2	2.03	0.58
2:B:209:GLN:CD	7:B:1258:HOH:O	2.42	0.57
2:B:22:ALA:HB2	2:B:157[B]:VAL:HG23	1.86	0.57
2:B:75:ARG:NH1	7:B:1103:HOH:O	2.38	0.56
2:B:33[A]:LEU:CD2	2:B:66:VAL:HG12	2.37	0.55
2:B:35:ARG:HD2	2:B:37(A):PRO:O	2.07	0.55
2:B:139:THR:HG22	2:B:157[B]:VAL:HG22	1.88	0.54
6:B:2250:897:C12	7:B:1278:HOH:O	2.29	0.53
2:B:75:ARG:CZ	7:B:1103:HOH:O	2.58	0.51
1:A:14(K):ILE:C	1:A:14(L):ASP:OD1	2.51	0.48
2:B:30[B]:GLN:NE2	2:B:139:THR:OG1	2.43	0.48
2:B:22:ALA:HB2	2:B:157[B]:VAL:CG2	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:75:ARG:HG2	3:H:57:GLU:OE1	2.13	0.47
1:A:14(A):LYS:HD2	7:B:1029:HOH:O	2.14	0.47
2:B:66:VAL:CG2	2:B:83:SER:HB2	2.45	0.47
2:B:60(F):LYS:NZ	7:B:1079:HOH:O	2.49	0.45
2:B:75:ARG:HG2	2:B:76:TYR:N	2.33	0.43
1:A:13[B]:GLU:HG3	1:A:14(C):GLU:CD	2.38	0.43
1:A:3:LEU:O	1:A:9[B]:LYS:HE2	2.19	0.43
2:B:60(I):THR:HG22	2:B:63:ASP:OD2	2.19	0.42
2:B:75:ARG:HE	2:B:75:ARG:HB3	1.51	0.42
2:B:204(B):ASN:O	2:B:205[B]:ASN:HB3	2.20	0.41
2:B:211:GLY:HA2	2:B:229:THR:O	2.20	0.41
1:A:14(K):ILE:O	1:A:14(L):ASP:CG	2.58	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	29/36 (81%)	28 (97%)	1 (3%)	0	100	100
2	B	257/259 (99%)	249 (97%)	8 (3%)	0	100	100
3	H	7/10 (70%)	7 (100%)	0	0	100	100
All	All	293/305 (96%)	284 (97%)	9 (3%)	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	29/31 (94%)	27 (93%)	2 (7%)	15 1
2	B	228/225 (101%)	224 (98%)	4 (2%)	59 28
3	H	9/9 (100%)	9 (100%)	0	100 100
All	All	266/265 (100%)	260 (98%)	6 (2%)	49 18

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1(A)	ASP
1	A	14(L)	ASP
2	B	64	LEU
2	B	75	ARG
2	B	182	CYS
2	B	247	GLU

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

Mol	Chain	Res	Type
2	B	244	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	$\#\|Z\| > 2$
3	TYS	H	63	3	15,16,17	1.07	1 (6%)	18,22,24	1.55	2 (11%)

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
3	TYS	H	63	3	-	0/10/11/13	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	H	63	TYS	OH-S	-2.88	1.53	1.58

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	H	63	TYS	O3-S-OH	4.39	116.40	105.83
3	H	63	TYS	OH-S-O1	-4.07	95.85	107.71

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 3 ligands modelled in this entry, 2 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	897	B	2250	-	30,34,34	1.87	8 (26%)	31,47,47	3.73	8 (25%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	897	B	2250	-	-	3/30/31/31	0/2/2/2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	B	2250	897	C5-C4	-4.42	1.43	1.51
6	B	2250	897	C6-C5	-3.93	1.44	1.52
6	B	2250	897	O2-C21	2.98	1.29	1.23
6	B	2250	897	C2-C3	2.97	1.59	1.52
6	B	2250	897	C10-C11	2.78	1.40	1.35
6	B	2250	897	C16-C14	2.55	1.41	1.36
6	B	2250	897	C15-C14	-2.44	1.38	1.43
6	B	2250	897	C15-C19	2.18	1.43	1.36

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	B	2250	897	C13-C12-N4	-15.10	111.97	124.76
6	B	2250	897	C11-N4-C12	8.69	130.09	117.08
6	B	2250	897	C13-C9-N3	-6.72	116.49	125.69
6	B	2250	897	C10-C11-N4	-4.60	117.47	124.79
6	B	2250	897	C12-C13-C9	3.59	123.02	120.67
6	B	2250	897	O1-C4-N1	-3.39	117.59	123.05
6	B	2250	897	C3-N1-C4	3.06	129.79	126.32
6	B	2250	897	C5-C4-N1	2.55	119.84	115.71

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	2250	897	C16-C14-O3-C1
6	B	2250	897	C16-C17-C21-O2
6	B	2250	897	C13-C9-N3-C7

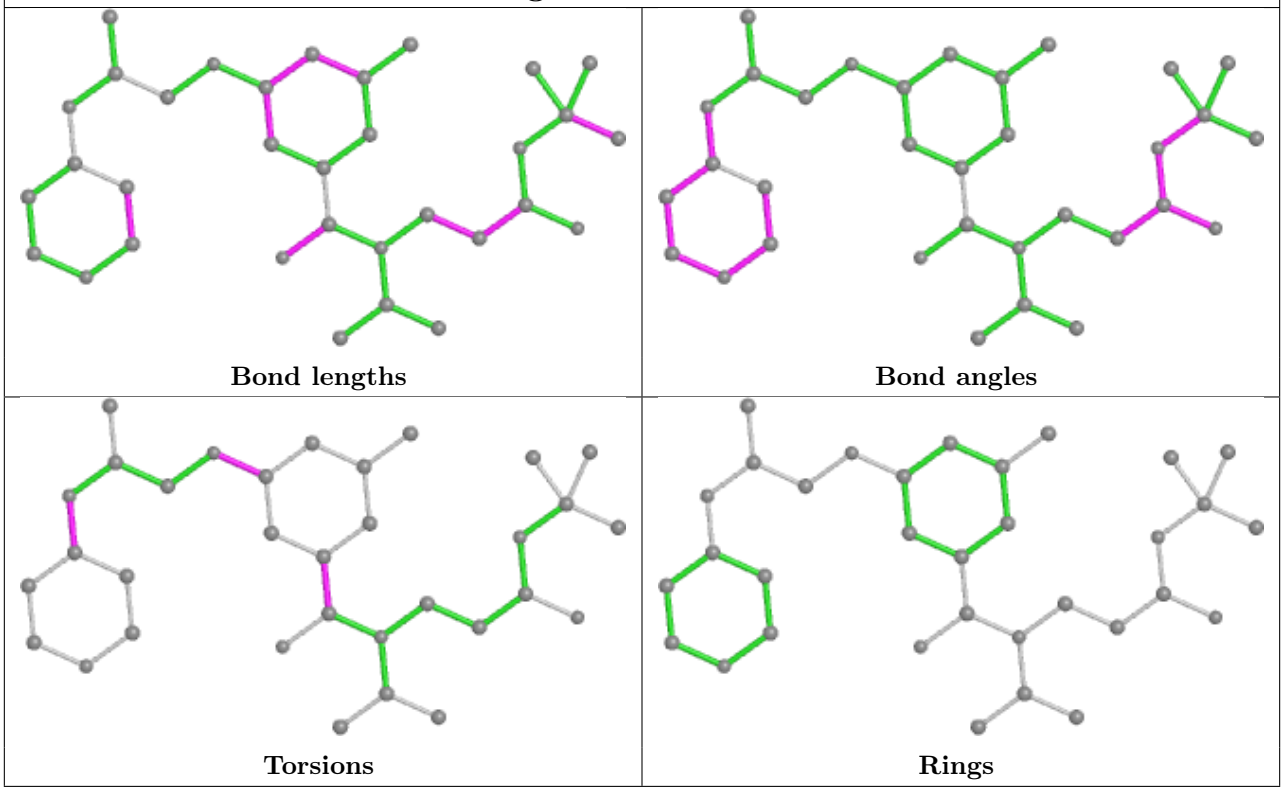
There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	B	2250	897	2	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 897 B 2250



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 (i)

6.1 Protein, DNA and RNA chains (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

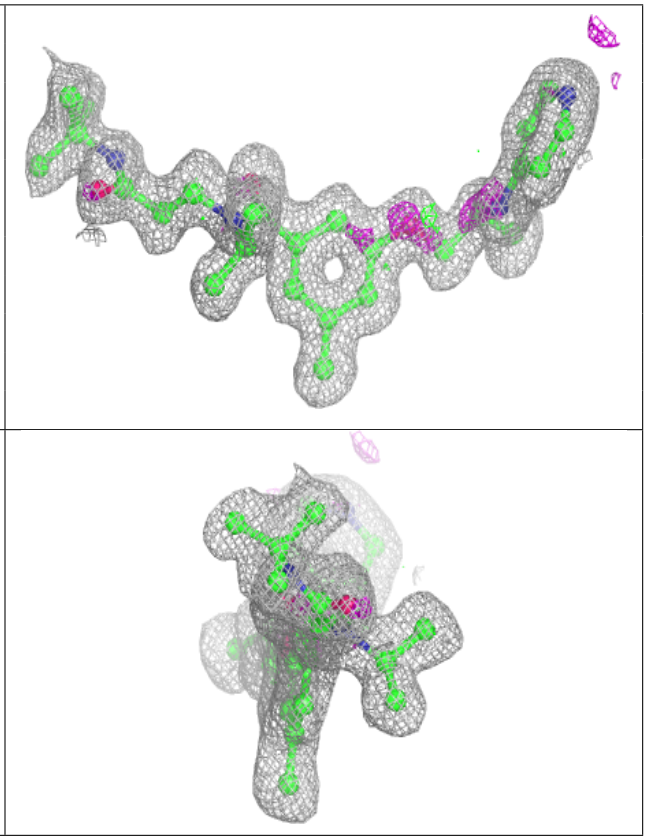
6.4 Ligands (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

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 897 B 2250:

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



6.5 Other polymers (i)

Unable to reproduce the depositors R factor - this section is therefore empty.