



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 4, 2026 – 04:34 PM EDT

PDB ID : 37HF / pdb_000037hf
Title : PCSK9 bound to small molecule inhibitor AZD-0780
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Deposited on : 2026-07-21
Resolution : 2.07 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 ⓘ 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:

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

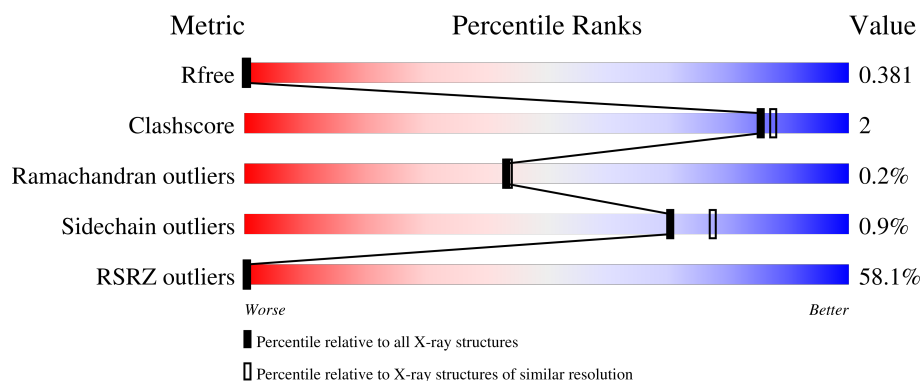
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.07 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}	180053	8172 (2.10-2.06)
Clashscore	190562	8714 (2.10-2.06)
Ramachandran outliers	187476	8641 (2.10-2.06)
Sidechain outliers	187428	8642 (2.10-2.06)
RSRZ outliers	180081	8177 (2.10-2.06)

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 $\leq 5\%$. 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	122	
1	C	122	
2	B	546	
2	D	546	

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 8833 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 Propeptide of Proprotein convertase subtilisin/kexin type 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	91	Total	C	N	O	S	0	0	0
			733	470	132	129	2			
1	C	68	Total	C	N	O	S	0	0	0
			543	349	99	93	2			

- Molecule 2 is a protein called Proprotein convertase subtilisin/kexin type 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	492	Total	C	N	O	S	0	2	0
			3655	2258	672	693	32			
2	D	454	Total	C	N	O	S	0	1	0
			3366	2087	616	634	29			

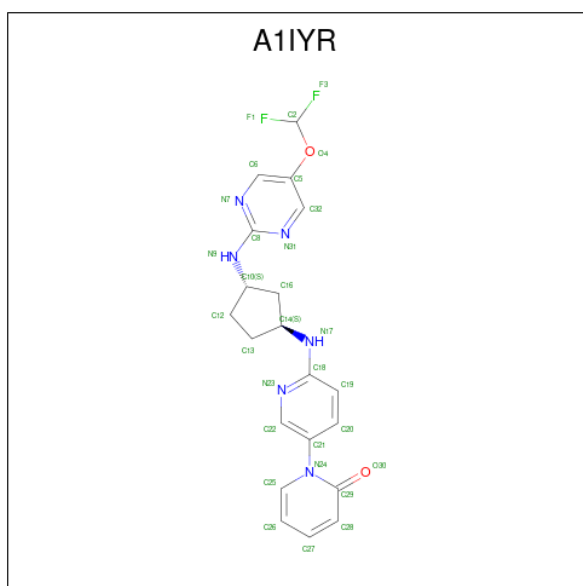
There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	474	ILE	VAL	variant	UNP Q8NBP7
B	670	GLU	GLY	variant	UNP Q8NBP7
B	693	HIS	-	expression tag	UNP Q8NBP7
B	694	HIS	-	expression tag	UNP Q8NBP7
B	695	HIS	-	expression tag	UNP Q8NBP7
B	696	HIS	-	expression tag	UNP Q8NBP7
B	697	HIS	-	expression tag	UNP Q8NBP7
B	698	HIS	-	expression tag	UNP Q8NBP7
D	474	ILE	VAL	variant	UNP Q8NBP7
D	670	GLU	GLY	variant	UNP Q8NBP7
D	693	HIS	-	expression tag	UNP Q8NBP7
D	694	HIS	-	expression tag	UNP Q8NBP7
D	695	HIS	-	expression tag	UNP Q8NBP7
D	696	HIS	-	expression tag	UNP Q8NBP7
D	697	HIS	-	expression tag	UNP Q8NBP7
D	698	HIS	-	expression tag	UNP Q8NBP7

- Molecule 3 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Ca	0	0
			1	1		
3	D	1	Total	Ca	0	0
			1	1		

- Molecule 4 is 1-[6-[(1 {S},3 {S})-3-[[5-[bis(fluoranyl)methoxy]pyrimidin-2-yl]amino]cyclopentyl]amino]pyridin-3-yl]pyridin-2-one (CCD ID: A1IYR) (formula: C₂₀H₂₀F₂N₆O₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	B	1	Total	C	F	N	O	0	0
			30	20	2	6	2		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	39	Total	O	0	0
			39	39		
5	B	232	Total	O	0	0
			232	232		
5	C	28	Total	O	0	0
			28	28		
5	D	205	Total	O	0	0
			205	205		



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 2 21	Depositor
Cell constants a, b, c, α , β , γ	106.99Å 109.45Å 122.60Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	109.45 – 2.07 109.45 – 2.07	Depositor EDS
% Data completeness (in resolution range)	40.6 (109.45-2.07) 40.6 (109.45-2.07)	Depositor EDS
R_{merge}	0.54	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.35 (at 2.07Å)	Xtriage
Refinement program	REFMAC 5.8.0431	Depositor
R, R_{free}	0.327 , 0.405 0.309 , 0.381	Depositor DCC
R_{free} test set	1829 reflections (5.12%)	wwPDB-VP
Wilson B-factor (Å ²)	16.4	Xtriage
Anisotropy	0.745	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 74.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	0.000 for k,h,-l	Xtriage
F_o, F_c correlation	0.82	EDS
Total number of atoms	8833	wwPDB-VP
Average B, all atoms (Å ²)	38.0	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 32.47 % 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 9.3440e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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: A1IYR, CA

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	0.47	0/750	0.81	0/1013
1	C	0.48	0/554	0.78	0/744
2	B	0.50	0/3730	0.83	0/5069
2	D	0.50	0/3428	0.83	0/4653
All	All	0.49	0/8462	0.82	0/11479

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 [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	733	0	743	4	0
1	C	543	0	547	4	0
2	B	3655	0	3577	17	0
2	D	3366	0	3302	13	1
3	B	1	0	0	0	0
3	D	1	0	0	0	0
4	B	30	0	0	0	0
5	A	39	0	0	0	0
5	B	232	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	C	28	0	0	0	0
5	D	205	0	0	3	0
All	All	8833	0	8169	36	1

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 2.

All (36) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:507:LEU:O	5:D:1601:HOH:O	2.15	0.64
2:D:185:LEU:HD23	2:D:250:LEU:HB2	1.79	0.62
2:B:502:ALA:HA	2:B:506:LYS:O	2.01	0.61
2:B:443:ALA:O	2:B:445:PRO:HD3	2.03	0.59
2:B:534:CYS:HA	2:B:601:CYS:HA	1.85	0.58
2:D:534:CYS:HA	2:D:601:CYS:HA	1.85	0.57
2:B:201:MET:SD	2:B:248:ARG:NH2	2.81	0.53
2:B:523:ILE:HD13	2:B:648:TYR:HB3	1.92	0.52
2:D:551:HIS:ND1	2:D:585:PRO:O	2.43	0.51
2:B:632:LEU:HD23	2:B:649:ALA:HB1	1.93	0.51
1:A:67:CYS:HB3	1:A:73:ARG:HG2	1.94	0.50
2:D:523:ILE:HD13	2:D:648:TYR:HB3	1.93	0.49
2:B:396:ALA:HA	2:B:399:MET:HE3	1.94	0.49
2:B:638:LEU:HD13	2:B:675:VAL:HG21	1.95	0.49
2:D:396:ALA:HA	2:D:399:MET:HE3	1.95	0.48
2:B:546:MET:N	2:B:546:MET:HE3	2.30	0.47
2:D:473:ALA:HB3	5:D:1611:HOH:O	2.13	0.47
2:B:398:MET:HE3	2:B:444:LEU:HD13	1.97	0.47
2:D:638:LEU:HD13	2:D:675:VAL:HG21	1.97	0.46
2:D:632:LEU:HD23	2:D:649:ALA:HB1	1.98	0.45
1:C:77:THR:HG22	1:C:123:LEU:HD11	2.00	0.44
1:C:118:LEU:HD21	2:D:268:LEU:C	2.43	0.44
1:A:88:LEU:HD22	1:A:116:HIS:CD2	2.53	0.43
2:D:622:VAL:HG13	2:D:656:VAL:HB	2.01	0.43
2:B:470:MET:SD	2:B:470:MET:N	2.87	0.43
2:B:622:VAL:HG13	2:B:656:VAL:HB	2.01	0.43
1:A:151:ALA:HB2	2:B:253:LEU:HD13	2.02	0.42
2:D:522:ALA:N	5:D:1611:HOH:O	2.53	0.42
2:B:186:ASP:CG	2:B:226:HIS:HD1	2.29	0.41
2:B:553:HIS:O	2:B:554:GLN:C	2.63	0.41
2:B:395:ILE:HG22	2:B:399:MET:HE2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:110:LYS:HB2	1:C:125:LYS:HB3	2.03	0.41
2:D:462:SER:HB3	2:D:475:ALA:HB2	2.03	0.41
1:A:138:PRO:O	1:A:139:HIS:HB2	2.21	0.41
1:C:118:LEU:HD12	1:C:119:LEU:N	2.35	0.40
2:B:489:PHE:HA	2:B:646:GLY:HA3	2.04	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:190:GLN:NE2	2:D:546:MET:O[4_555]	2.09	0.11

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	89/122 (73%)	84 (94%)	5 (6%)	0	100	100
1	C	62/122 (51%)	59 (95%)	3 (5%)	0	100	100
2	B	482/546 (88%)	459 (95%)	22 (5%)	1 (0%)	43	44
2	D	431/546 (79%)	409 (95%)	21 (5%)	1 (0%)	43	44
All	All	1064/1336 (80%)	1011 (95%)	51 (5%)	2 (0%)	43	44

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	349	GLY
2	D	349	GLY

5.3.2 Protein sidechains

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	78/103 (76%)	77 (99%)	1 (1%)	61	68
1	C	56/103 (54%)	56 (100%)	0	100	100
2	B	395/437 (90%)	393 (100%)	2 (0%)	81	87
2	D	363/437 (83%)	358 (99%)	5 (1%)	59	66
All	All	892/1080 (83%)	884 (99%)	8 (1%)	70	77

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	136	LYS
2	B	612	GLU
2	B	638	LEU
2	D	255	CYS
2	D	470	MET
2	D	551	HIS
2	D	612	GLU
2	D	638	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	256	GLN
2	B	275	GLN
2	B	278	GLN
2	B	553	HIS
2	D	557	HIS
2	D	587	GLN
2	D	643	HIS

5.3.3 RNA

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 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	$\# Z > 2$
4	A1IYR	B	1502	-	33,33,33	1.49	4 (12%)	37,45,45	3.02	14 (37%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	A1IYR	B	1502	-	-	1/16/25/25	0/4/4/4

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1502	A1IYR	O4-C5	-4.86	1.28	1.38
4	B	1502	A1IYR	C21-N24	-3.80	1.37	1.44
4	B	1502	A1IYR	O30-C29	2.13	1.28	1.23
4	B	1502	A1IYR	C25-C26	2.08	1.39	1.35

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1502	A1IYR	C28-C29-N24	10.70	120.72	114.53
4	B	1502	A1IYR	C25-N24-C29	-8.24	118.97	122.72
4	B	1502	A1IYR	N31-C8-N7	-6.03	120.32	126.43
4	B	1502	A1IYR	N9-C8-N7	4.24	123.47	116.75
4	B	1502	A1IYR	C32-N31-C8	3.83	121.06	115.81
4	B	1502	A1IYR	C22-N23-C18	3.25	120.87	117.83
4	B	1502	A1IYR	N17-C18-N23	3.19	122.02	116.85
4	B	1502	A1IYR	C6-N7-C8	3.05	120.00	115.81
4	B	1502	A1IYR	C6-C5-C32	3.04	118.56	116.59
4	B	1502	A1IYR	C22-C21-N24	2.41	122.88	120.05
4	B	1502	A1IYR	O30-C29-C28	-2.35	117.70	124.35
4	B	1502	A1IYR	C5-C6-N7	-2.23	119.92	122.67
4	B	1502	A1IYR	C19-C18-N23	-2.22	119.22	122.61
4	B	1502	A1IYR	C5-C32-N31	-2.20	119.95	122.67

There are no chirality outliers.

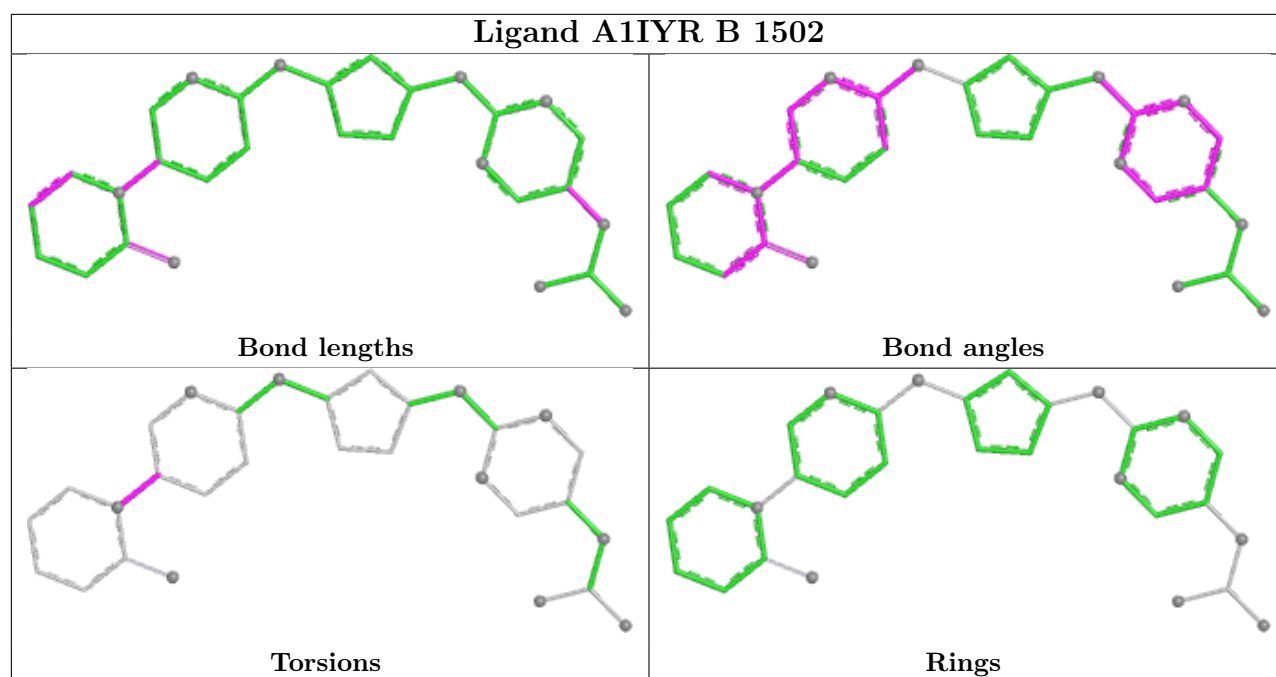
All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1502	A1IYR	C22-C21-N24-C29

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 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, 95th 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	91/122 (74%)	1.32	21 (23%) 2 2	13, 24, 35, 42	0
1	C	68/122 (55%)	6.06	68 (100%) 0 0	46, 65, 82, 93	0
2	B	492/546 (90%)	1.29	100 (20%) 3 3	7, 18, 38, 58	2 (0%)
2	D	454/546 (83%)	5.91	453 (99%) 0 0	27, 56, 76, 94	1 (0%)
All	All	1105/1336 (82%)	3.48	642 (58%) 0 0	7, 36, 74, 94	3 (0%)

All (642) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	D	415	LEU	13.3
1	C	98	LEU	13.1
2	D	371	ALA	12.4
2	D	624	VAL	12.2
2	D	304	LEU	12.2
2	D	606	LEU	12.1
1	C	95	ALA	11.9
2	D	632	LEU	11.9
1	C	123	LEU	11.8
2	D	655	VAL	11.5
2	D	599	SER	11.5
2	D	615	ILE	11.2
2	D	187	THR	11.0
2	D	380	VAL	11.0
2	D	280	VAL	10.9
2	D	184	LEU	10.5
2	D	346	VAL	10.2
2	D	369	ILE	10.2
2	D	509	CYS	10.1
2	D	676	ALA	10.1
2	D	672	VAL	10.0

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Mol	Chain	Res	Type	RSRZ
2	D	348	LEU	9.9
2	D	648	TYR	9.9
2	D	279	PRO	9.9
2	D	183	TYR	9.8
2	D	524	ALA	9.8
2	D	287	LEU	9.8
2	D	626	CYS	9.7
2	D	318	PHE	9.6
2	D	283	LEU	9.6
2	D	557	HIS	9.6
2	D	367	ASP	9.5
2	D	480	ASP	9.4
2	D	625	ALA	9.4
2	D	534	CYS	9.3
2	D	540	PRO	9.2
2	D	436	LEU	9.2
2	D	445	PRO	9.2
2	D	539	ALA	9.2
1	C	114	VAL	9.2
2	D	608	CYS	9.2
2	D	558	VAL	9.1
2	D	241	VAL	9.1
2	D	478	ALA	9.1
2	D	182	VAL	9.0
2	D	463	ALA	9.0
2	D	483	LEU	8.9
2	D	453	TRP	8.9
1	C	63	THR	8.7
2	D	440	LEU	8.7
2	D	370	GLY	8.7
2	D	460	VAL	8.7
2	D	368	ILE	8.7
2	D	338	ALA	8.7
2	D	529	LEU	8.7
2	D	461	TRP	8.6
2	D	523	ILE	8.6
2	D	345	PRO	8.6
2	D	579	LEU	8.6
2	D	156	TRP	8.6
1	C	152	GLN	8.6
2	D	520	VAL	8.5
2	D	675	VAL	8.5

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Mol	Chain	Res	Type	RSRZ
2	D	637	ALA	8.4
2	D	508	VAL	8.4
1	C	62	ALA	8.4
2	D	407	THR	8.3
2	D	157	ASN	8.3
2	D	673	THR	8.2
2	D	257	GLY	8.2
2	D	430	PRO	8.2
2	D	307	ALA	8.2
2	D	408	LEU	8.2
2	D	528	LEU	8.2
1	C	115	PHE	8.1
2	D	382	GLN	8.1
2	D	261	VAL	8.1
2	D	604	PRO	8.1
1	C	72	TRP	8.0
1	C	128	GLY	8.0
2	D	349	GLY	8.0
1	C	151	ALA	8.0
2	D	372	SER	8.0
2	D	617	ALA	8.0
2	D	502	ALA	8.0
2	D	610	VAL	8.0
2	D	485	SER	7.9
1	C	100	ALA	7.9
2	D	427	ALA	7.9
1	C	108	LEU	7.9
1	C	96	ARG	7.9
2	D	455	LEU	7.9
2	D	507	LEU	7.9
2	D	418	PHE	7.9
2	D	409	ALA	7.8
1	C	124	VAL	7.8
1	C	149	VAL	7.8
2	D	611	LYS	7.7
1	C	119	LEU	7.7
2	D	535	SER	7.7
2	D	286	LEU	7.7
2	D	616	PRO	7.7
2	D	510	ARG	7.7
2	D	521	TYR	7.7
2	D	276	LEU	7.6

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Mol	Chain	Res	Type	RSRZ
2	D	400	LEU	7.6
2	D	358	CYS	7.6
2	D	588	CYS	7.6
2	D	252	VAL	7.6
1	C	102	ALA	7.5
2	D	619	GLN	7.5
2	D	416	ILE	7.5
2	D	329	SER	7.5
2	D	155	PRO	7.5
2	D	475	ALA	7.5
2	D	677	ILE	7.4
2	D	428	TRP	7.4
2	D	630	TRP	7.4
2	D	312	VAL	7.4
2	D	645	LEU	7.4
2	D	550	VAL	7.3
2	D	559	LEU	7.3
2	D	292	GLY	7.3
2	D	484	LEU	7.3
2	D	650	VAL	7.3
2	D	282	PRO	7.3
2	D	406	LEU	7.2
2	D	391	HIS	7.2
2	D	602	HIS	7.2
2	D	474	ILE	7.2
2	D	634	GLY	7.2
2	D	386	SER	7.2
2	B	453	TRP	7.2
2	D	277	VAL	7.2
2	D	347	THR	7.2
2	B	280	VAL	7.1
2	D	435	VAL	7.1
2	D	581	PRO	7.1
2	D	477	CYS	7.1
1	C	121	GLY	7.1
2	D	333	VAL	7.0
2	D	479	PRO	7.0
1	C	111	ILE	7.0
1	C	117	GLY	7.0
2	D	224	ASP	7.0
2	D	322	ALA	7.0
1	C	118	LEU	7.0

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Mol	Chain	Res	Type	RSRZ
2	D	411	LEU	6.9
2	D	446	PRO	6.9
1	C	122	PHE	6.9
2	D	284	VAL	6.9
2	D	649	ALA	6.9
2	D	395	ILE	6.9
2	D	421	LYS	6.9
2	D	585	PRO	6.9
2	D	448	THR	6.9
2	D	657	ARG	6.8
2	D	641	THR	6.8
2	D	305	ALA	6.8
2	D	514	ALA	6.8
2	D	205	PHE	6.8
2	D	381	SER	6.8
2	D	328	ALA	6.8
2	D	180	VAL	6.8
2	D	285	VAL	6.8
2	D	264	THR	6.7
2	D	566	TRP	6.7
1	C	99	GLN	6.7
2	D	473	ALA	6.7
2	D	250	LEU	6.7
2	D	225	SER	6.7
2	D	230	LEU	6.7
2	D	488	SER	6.7
2	D	472	THR	6.7
2	D	344	GLN	6.7
2	D	330	ALA	6.6
2	D	586	ASN	6.6
1	C	64	PHE	6.6
2	D	609	LYS	6.6
2	D	350	THR	6.6
2	D	429	PHE	6.6
1	C	112	LEU	6.6
2	D	536	VAL	6.6
1	C	116	HIS	6.6
2	D	419	SER	6.6
2	D	465	SER	6.6
2	D	300	ALA	6.5
2	D	573	THR	6.5
2	D	622	VAL	6.5

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Mol	Chain	Res	Type	RSRZ
2	D	654	CYS	6.5
2	D	326	SER	6.5
2	D	532	ALA	6.4
2	D	596	ILE	6.4
2	D	635	CYS	6.4
2	D	618	PRO	6.4
2	D	434	ARG	6.4
2	D	294	SER	6.4
2	D	644	VAL	6.4
2	D	327	PRO	6.4
2	D	424	ILE	6.3
1	C	150	PHE	6.3
2	D	486	CYS	6.3
2	D	603	ALA	6.3
2	D	392	VAL	6.3
2	D	653	THR	6.3
2	D	600	CYS	6.2
2	D	678	CYS	6.2
2	D	638	LEU	6.2
2	D	228	THR	6.2
2	D	288	PRO	6.2
1	C	70	ASP	6.2
2	D	383	SER	6.2
2	D	439	ASN	6.2
2	D	500	MET	6.1
2	D	274	SER	6.1
2	D	607	GLU	6.1
2	D	317	ASN	6.1
2	D	293	TYR	6.1
2	D	185	LEU	6.1
2	D	234	VAL	6.1
2	D	296	VAL	6.1
2	D	339	THR	6.1
2	D	245	ALA	6.0
2	D	314	ALA	6.0
2	D	671	ALA	6.0
1	C	109	THR	6.0
2	D	289	LEU	6.0
2	D	275	GLN	6.0
2	D	154	ILE	6.0
2	D	629	GLY	6.0
2	D	315	ALA	6.0

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Mol	Chain	Res	Type	RSRZ
2	D	311	LEU	6.0
2	D	531	GLN	5.9
2	D	481	GLU	5.9
1	C	94	THR	5.9
2	D	301	CYS	5.9
2	D	363	ALA	5.9
2	D	522	ALA	5.9
2	D	268	LEU	5.9
2	D	331	PRO	5.9
2	D	462	SER	5.9
2	D	674	ALA	5.8
1	C	74	LEU	5.8
1	C	120	PRO	5.8
2	B	279	PRO	5.8
2	D	359	VAL	5.8
1	C	130	LEU	5.8
1	C	69	LYS	5.8
2	D	385	THR	5.8
2	D	464	HIS	5.8
2	D	468	THR	5.8
2	D	355	PHE	5.8
2	D	471	ALA	5.8
2	D	158	LEU	5.8
2	D	498	GLU	5.7
2	D	336	VAL	5.7
2	D	561	GLY	5.7
2	D	589	VAL	5.7
1	C	131	LEU	5.7
2	D	266	ILE	5.7
2	D	397	ALA	5.7
2	D	627	GLU	5.7
2	D	547	GLY	5.7
1	C	103	ALA	5.7
2	D	393	ALA	5.7
2	D	530	PRO	5.6
1	C	77	THR	5.6
2	B	573	THR	5.6
2	D	633	THR	5.6
2	D	202	VAL	5.6
2	D	656	VAL	5.6
2	D	438	PRO	5.6
2	D	527	CYS	5.6

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Mol	Chain	Res	Type	RSRZ
2	D	601	CYS	5.6
2	D	459	THR	5.6
2	D	598	ALA	5.6
2	D	571	LEU	5.6
2	D	489	PHE	5.6
1	C	73	ARG	5.6
2	D	495	ARG	5.6
2	D	560	THR	5.6
2	D	310	VAL	5.6
2	D	587	GLN	5.5
2	D	249	SER	5.5
1	C	65	HIS	5.5
2	D	253	LEU	5.5
2	D	605	GLY	5.5
2	D	499	ARG	5.5
1	C	133	LEU	5.5
2	D	647	ALA	5.4
2	D	254	ASN	5.4
2	D	491	ARG	5.4
2	D	679	CYS	5.4
2	D	470	MET	5.4
2	D	207	ASN	5.3
2	D	263	GLY	5.3
2	D	519	GLY	5.3
2	D	361	LEU	5.3
2	D	469	ARG	5.3
2	D	189	ILE	5.3
2	D	563	SER	5.3
2	D	636	SER	5.3
2	D	297	LEU	5.3
2	D	612	GLU	5.2
2	D	643	HIS	5.2
1	C	71	PRO	5.2
2	D	273	LYS	5.2
2	D	594	ALA	5.2
2	D	466	GLY	5.2
2	D	623	THR	5.2
2	D	227	GLY	5.2
2	D	259	GLY	5.2
2	D	552	CYS	5.2
2	D	423	VAL	5.2
2	D	631	THR	5.2

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Mol	Chain	Res	Type	RSRZ
2	D	209	PRO	5.2
2	D	546	MET	5.2
2	D	324	LEU	5.2
1	C	67	CYS	5.2
2	D	425	ASN	5.2
2	D	568	VAL	5.2
2	D	494	LYS	5.1
2	D	538	THR	5.1
2	D	549	ARG	5.1
2	D	208	VAL	5.1
2	D	516	GLY	5.1
1	C	97	ARG	5.1
2	D	319	ARG	5.1
2	D	652	ASN	5.1
2	D	621	GLN	5.1
2	D	614	GLY	5.1
2	D	437	THR	5.1
2	D	290	ALA	5.0
2	D	334	ILE	5.0
2	D	542	ALA	5.0
2	D	681	SER	5.0
2	D	295	ARG	5.0
2	D	341	ALA	5.0
1	C	126	MET	5.0
2	D	577	PRO	5.0
2	D	646	GLY	5.0
2	D	533	ASN	5.0
2	D	456	PHE	5.0
2	D	335	THR	5.0
2	D	512	HIS	5.0
2	D	404	PRO	5.0
2	D	482	GLU	5.0
2	D	248	ARG	5.0
2	D	487	SER	4.9
2	D	325	TYR	4.9
2	D	299	ALA	4.9
2	D	306	ARG	4.9
2	D	414	ARG	4.9
1	C	148	SER	4.9
2	D	291	GLY	4.9
2	D	153	SER	4.8
2	D	332[A]	GLU	4.8

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Mol	Chain	Res	Type	RSRZ
2	D	413	GLN	4.8
2	D	188	SER	4.8
1	C	106	GLY	4.8
2	D	270	PHE	4.8
2	D	226	HIS	4.8
2	D	580	ARG	4.8
2	D	186	ASP	4.8
2	D	492	SER	4.8
2	D	544	ALA	4.8
2	D	298	ASN	4.7
2	B	162	THR	4.7
2	D	417	HIS	4.7
1	C	125	LYS	4.7
2	D	160	ARG	4.7
2	D	203	THR	4.7
2	D	548	THR	4.7
2	B	244	GLY	4.7
1	C	78	TYR	4.6
1	C	113	HIS	4.6
2	D	323	CYS	4.6
2	D	390	ALA	4.6
2	D	572	GLY	4.6
2	D	515	PHE	4.6
2	D	262	SER	4.6
2	D	308	GLY	4.6
2	D	551	HIS	4.6
2	D	511	ALA	4.6
2	D	265	LEU	4.6
2	D	651	ASP	4.6
2	D	271	ILE	4.6
2	B	273	LYS	4.6
2	D	493	GLY	4.5
2	D	422	ASP	4.5
2	D	526	CYS	4.5
2	D	256	GLN	4.5
2	D	412	ARG	4.5
2	B	604	PRO	4.5
2	D	239	ALA	4.5
2	D	576	PRO	4.5
2	D	351	LEU	4.5
2	D	201	MET	4.5
2	D	260	THR	4.5

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Mol	Chain	Res	Type	RSRZ
2	D	384	GLY	4.5
1	A	116	HIS	4.5
2	D	553	HIS	4.5
1	C	104	ARG	4.4
2	D	231	ALA	4.4
2	D	309	VAL	4.4
2	B	619	GLN	4.4
1	C	107	TYR	4.4
2	D	313	THR	4.4
2	D	442	ALA	4.4
2	D	403	GLU	4.4
2	D	316	GLY	4.3
1	C	79	VAL	4.3
1	C	66	ARG	4.3
2	D	501	GLU	4.3
2	D	525	ARG	4.3
2	D	562	CYS	4.3
2	D	353	THR	4.3
2	B	221	SER	4.3
2	D	496	ARG	4.2
1	C	68	ALA	4.2
2	D	204	ASP	4.2
2	D	229	HIS	4.2
2	D	613	HIS	4.2
1	C	101	GLN	4.2
2	D	433	GLN	4.2
2	D	457	CYS	4.2
2	D	554	GLN	4.2
2	D	258	LYS	4.2
2	D	242	ALA	4.1
2	D	680	ARG	4.1
2	D	278	GLN	4.1
2	D	537	HIS	4.1
2	D	181	GLU	4.1
1	C	147	SER	4.0
2	B	382	GLN	4.0
2	D	302	GLN	4.0
2	D	233	VAL	4.0
2	B	161	ILE	4.0
2	D	360	ASP	4.0
1	C	105	ARG	4.0
2	D	303	ARG	4.0

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Mol	Chain	Res	Type	RSRZ
2	D	490	SER	4.0
2	D	578	VAL	4.0
1	A	117	GLY	4.0
2	B	452	GLY	4.0
2	D	396	ALA	3.9
2	B	555	GLN	3.9
2	D	570	ASP	3.9
2	D	620	GLU	3.9
2	D	362	PHE	3.9
1	C	110	LYS	3.9
2	D	190	GLN	3.9
2	D	454	GLN	3.9
2	D	659	ARG	3.9
2	B	556	GLY	3.8
2	D	399	MET	3.8
2	B	622	VAL	3.8
2	D	352	GLY	3.8
2	D	517	GLY	3.8
2	D	388	ALA	3.8
2	B	188	SER	3.8
2	D	642	SER	3.8
2	D	364	PRO	3.8
2	D	590	GLY	3.8
2	B	603	ALA	3.7
2	D	402	ALA	3.7
2	B	554	GLN	3.7
2	D	211	GLU	3.7
2	D	426	GLU	3.7
2	D	518	GLU	3.7
2	B	602	HIS	3.7
2	D	467	PRO	3.6
2	B	277	VAL	3.6
2	B	468	THR	3.6
2	D	420	ALA	3.6
2	D	365	GLY	3.6
2	D	431	GLU	3.6
2	B	671	ALA	3.6
2	D	389	ALA	3.6
2	D	159	GLU	3.5
2	D	232	GLY	3.5
2	D	441	VAL	3.5
2	D	410	GLU	3.5

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Mol	Chain	Res	Type	RSRZ
2	D	243	LYS	3.5
2	B	637	ALA	3.5
2	D	458	ARG	3.5
1	C	76	GLY	3.4
2	B	153	SER	3.4
2	D	398	MET	3.4
2	B	160[A]	ARG	3.4
2	D	342	GLN	3.4
2	D	340	ASN	3.4
1	C	127	SER	3.4
2	D	244	GLY	3.4
1	C	75	PRO	3.4
2	D	476	ARG	3.4
2	B	212	ASP	3.4
2	D	497	GLY	3.4
2	B	533	ASN	3.3
2	B	196	ILE	3.3
2	B	163	PRO	3.3
2	D	387	GLN	3.3
2	D	394	GLY	3.3
2	B	208	VAL	3.3
2	D	565	HIS	3.3
2	B	606	LEU	3.3
2	D	321	ASP	3.3
2	D	343	ASP	3.3
2	D	432	ASP	3.3
1	C	80	VAL	3.3
2	B	676	ALA	3.3
2	D	575	LYS	3.3
2	D	267	GLY	3.2
1	A	136	LYS	3.2
1	C	146	ASP	3.2
2	D	574	HIS	3.2
1	A	119	LEU	3.2
1	C	144	GLU	3.2
2	D	640	GLY	3.2
2	D	513	ASN	3.2
2	D	238	ASP	3.1
2	D	366	GLU	3.1
2	B	618	PRO	3.1
2	D	251	ARG	3.1
2	B	607	GLU	3.1

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Mol	Chain	Res	Type	RSRZ
2	D	545	SER	3.1
2	D	541	PRO	3.1
1	C	145	GLU	3.1
2	D	247	MET	3.1
2	B	470	MET	3.0
2	D	405	GLU	3.0
2	D	569	GLU	3.0
2	B	220	ALA	3.0
2	B	179	LEU	3.0
2	D	281	GLY	3.0
2	D	210	GLU	3.0
2	B	536	VAL	3.0
2	D	236	GLY	3.0
1	C	129	ASP	3.0
2	B	428	TRP	3.0
2	D	269	GLU	2.9
2	D	658	SER	2.9
2	D	272	ARG	2.9
1	A	72	TRP	2.9
1	C	132	GLU	2.9
2	B	491	ARG	2.9
2	D	447	SER	2.9
2	D	592	ARG	2.9
2	D	206	GLU	2.9
2	D	356	GLY	2.9
2	B	570	ASP	2.8
2	B	659	ARG	2.8
2	D	237	ARG	2.8
2	D	597	HIS	2.8
2	B	431	GLU	2.8
2	B	391	HIS	2.8
2	B	552	CYS	2.8
2	B	242	ALA	2.7
1	A	108	LEU	2.7
2	D	235	SER	2.7
2	B	471	ALA	2.7
2	B	558	VAL	2.7
2	B	574	HIS	2.7
2	B	201	MET	2.7
1	A	104	ARG	2.7
2	D	255	CYS	2.6
1	A	88	LEU	2.6

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Mol	Chain	Res	Type	RSRZ
2	D	246	SER	2.6
2	B	516	GLY	2.6
2	B	322	ALA	2.6
2	B	571	LEU	2.6
2	B	180	VAL	2.5
2	B	568	VAL	2.5
2	B	419	SER	2.5
2	B	278	GLN	2.5
2	B	517	GLY	2.5
2	D	320	ASP	2.5
2	D	401	SER	2.5
2	B	534	CYS	2.5
2	D	543	GLU	2.5
2	D	564	SER	2.5
2	D	357	ARG	2.5
1	A	87	HIS	2.4
1	A	106	GLY	2.4
2	D	240	GLY	2.4
2	B	223	CYS	2.4
2	D	595	SER	2.4
2	B	616	PRO	2.4
2	B	330	ALA	2.4
2	B	303	ARG	2.4
2	D	591	HIS	2.4
2	B	628	GLU	2.3
2	D	593	GLU	2.3
2	B	584	GLN	2.3
2	D	354	ASN	2.3
2	B	281	GLY	2.3
2	B	194	ARG	2.3
2	B	633	THR	2.3
2	B	621	GLN	2.3
2	B	502	ALA	2.3
2	B	497	GLY	2.3
2	B	274	SER	2.3
2	B	557	HIS	2.3
1	A	85	GLU	2.3
2	B	159	GLU	2.3
2	B	347	THR	2.3
2	B	454	GLN	2.3
2	B	600	CYS	2.3
2	B	522	ALA	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	84	GLU	2.3
2	B	405	GLU	2.3
2	B	459	THR	2.3
1	A	97	ARG	2.3
2	B	482	GLU	2.2
2	B	283	LEU	2.2
1	A	93	ARG	2.2
1	A	86	THR	2.2
2	B	641	THR	2.2
2	B	508	VAL	2.2
2	B	681	SER	2.2
2	D	639	PRO	2.2
1	A	102	ALA	2.1
2	B	197	GLU	2.1
2	B	630	TRP	2.1
2	B	424	ILE	2.1
2	B	348	LEU	2.1
2	B	609	LYS	2.1
2	B	658	SER	2.1
1	A	107	TYR	2.1
2	B	585	PRO	2.1
1	A	68	ALA	2.1
2	B	532	ALA	2.1
2	B	632	LEU	2.1
2	B	538	THR	2.1
2	D	337	GLY	2.1
1	A	83	LYS	2.1
1	A	120	PRO	2.0
1	A	82	LEU	2.0
2	B	319	ARG	2.0
2	B	553	HIS	2.0
2	B	506	LYS	2.0
2	B	264	THR	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 ⓘ

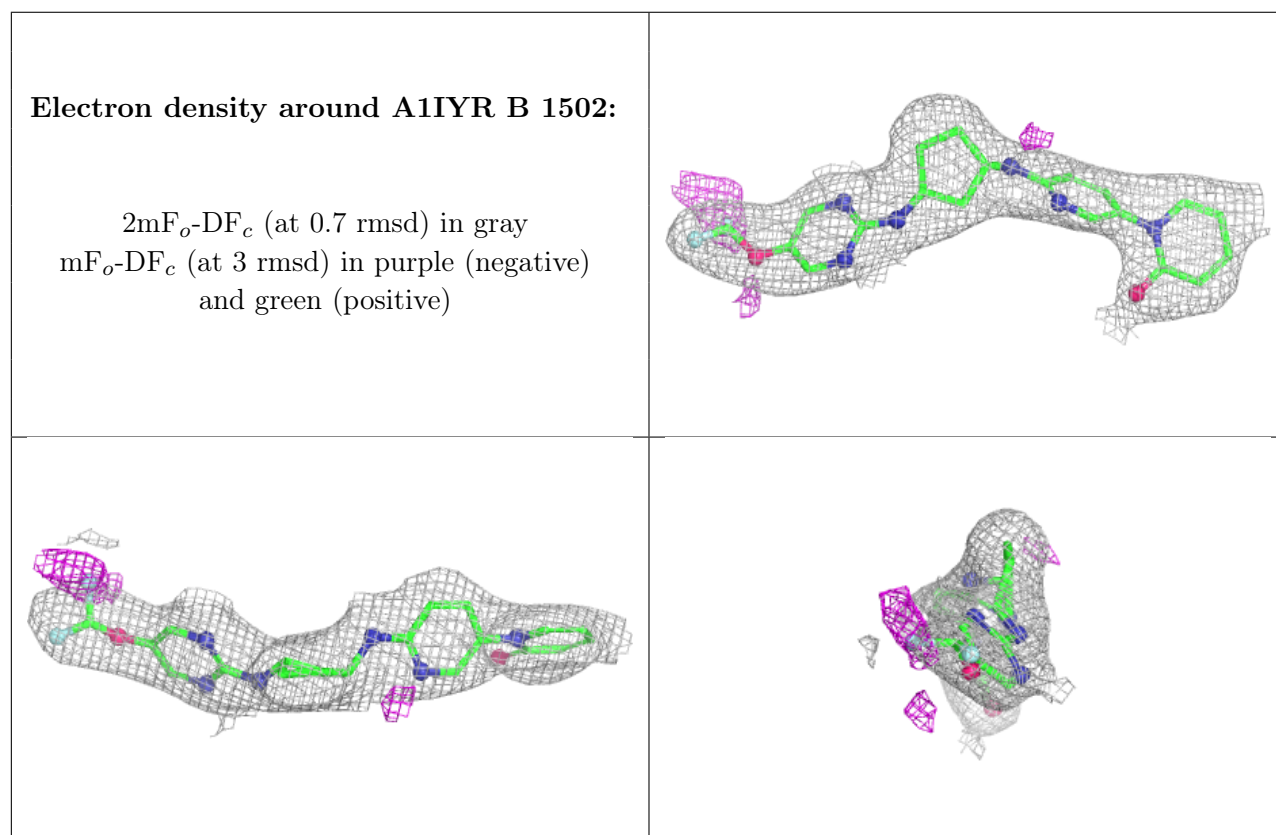
There are no oligosaccharides in this entry.

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, 95th 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
3	CA	B	1501	1/1	0.83	0.08	10,10,10,10	0
3	CA	D	1501	1/1	0.84	0.14	49,49,49,49	0
4	A1IYR	B	1502	30/30	0.85	0.12	14,16,19,19	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.



6.5 Other polymers [i](#)

There are no such residues in this entry.