



Full wwPDB X-ray Structure Validation Report ⓘ

Jan 2, 2024 – 04:54 pm GMT

PDB ID : 5ARG
Title : SMYD2 in complex with SGC probe BAY-598
Authors : Hillig, R.C.; Badock, V.; Barak, N.; Stellfeld, T.; Eggert, E.; ter Laak, A.; Weiske, J.; Christ, C.D.; Koehr, S.; Stoeckigt, D.; Mowat, J.; Mueller, T.; Fernandez-Montalvan, A.E.; Hartung, I.V.; Stresemann, C.; Brumby, T.; Weinmann, H.
Deposited on : 2015-09-24
Resolution : 1.99 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](#) ①) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtrriage (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

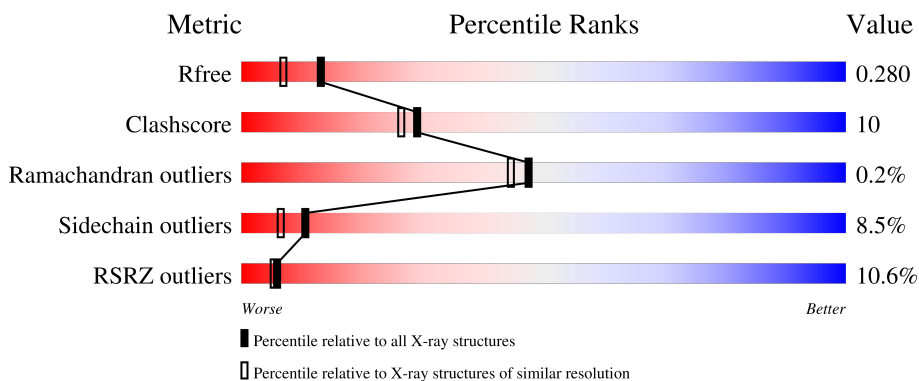
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.99 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	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	433	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	GOL	A	1433	-	-	X	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	SAM	A	1434	-	-	X	-

2 Entry composition i

There are 6 unique types of molecules in this entry. The entry contains 3680 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 N-LYSINE METHYLTRANSFERASE SMYD2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	426	3472	2206	595	640	31	0	8	0

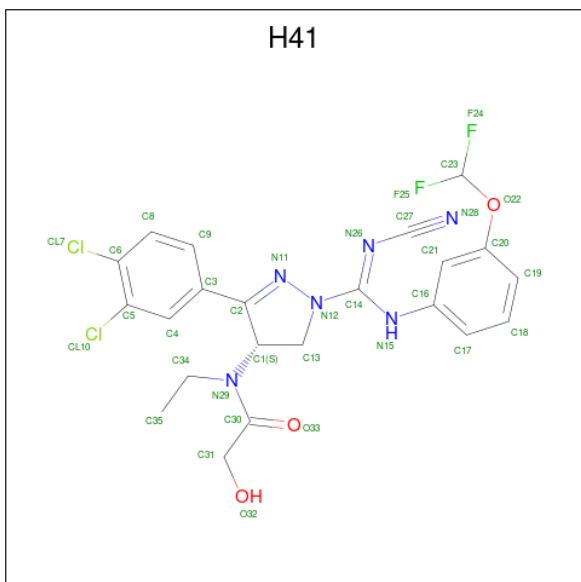
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	GLY	-	expression tag	UNP Q9NRG4

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

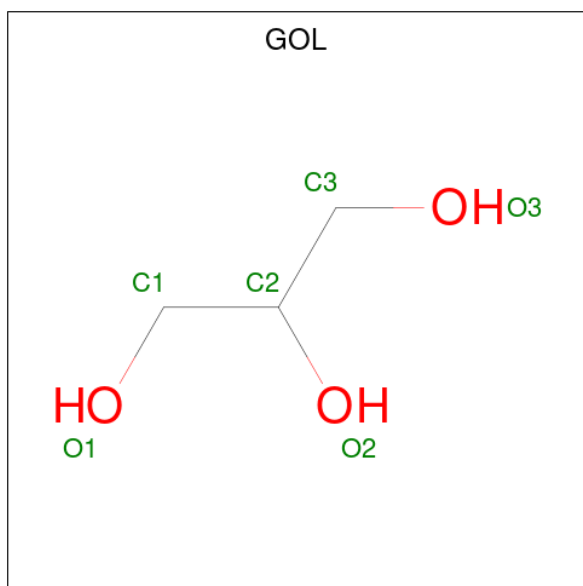
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	3	Total	Zn	0	0
			3	3		

- Molecule 3 is N-[1-(N'-CYANO-N-[3-(DIFLUOROMETHOXY)PHENYL]CARBAMIMIDOYL)-3-(3,4-DICHLOROPHENYL)-4,5-DIHYDRO-1H-PYRAZOL-4-YL]-N-ETHYL-2-HYDROXYACETAMIDE (three-letter code: H41) (formula: C₂₂H₂₀Cl₂F₂N₆O₃).



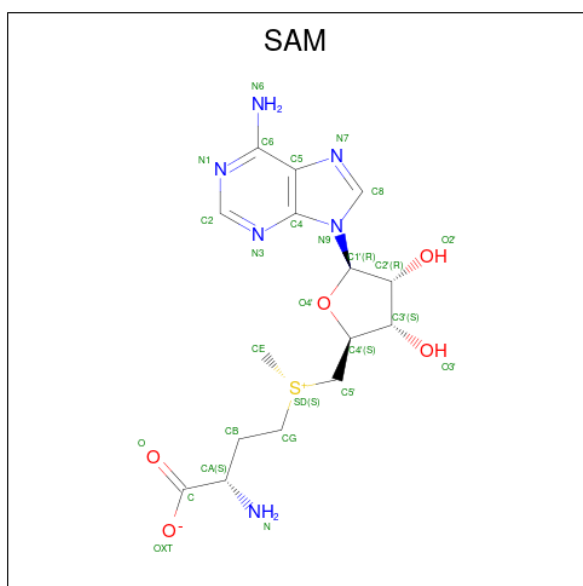
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	Cl	F	N			O
3	A	1	35	22	2	2	6	3	0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
4	A	1	6	3	3	0	0

- Molecule 5 is S-ADENOSYLMETHIONINE (three-letter code: SAM) (formula: $C_{15}H_{22}N_6O_5S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
5	A	1	27	15	6	5	1	0	0

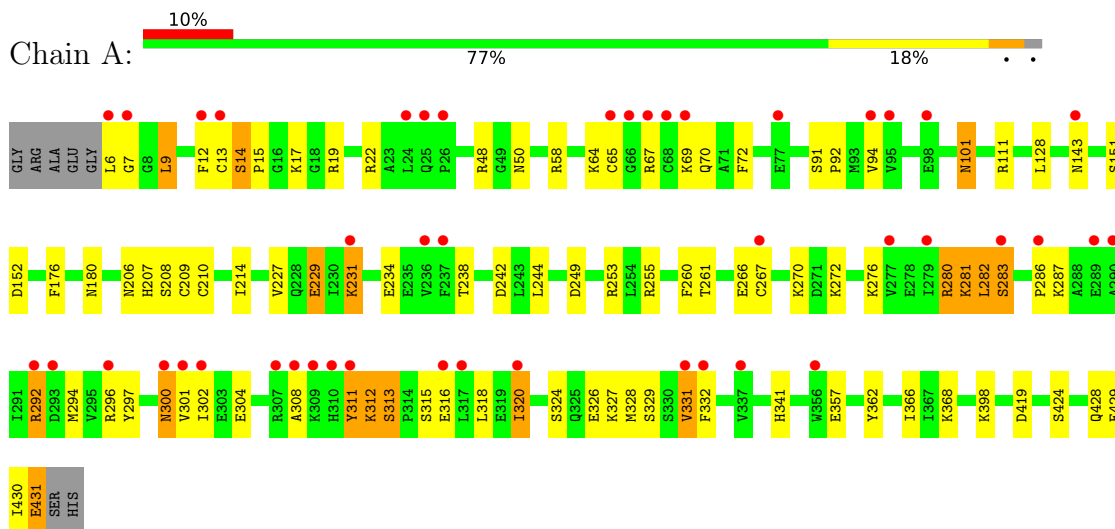
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
6	A	137	137	137	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 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: N-LYSINE METHYLTRANSFERASE SMYD2



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	52.34Å 69.60Å 131.12Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.72 – 1.99 47.72 – 1.99	Depositor EDS
% Data completeness (in resolution range)	99.9 (47.72-1.99) 99.9 (47.72-1.99)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.37 (at 1.98Å)	Xtrriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.230 , 0.273 0.235 , 0.280	Depositor DCC
R_{free} test set	1683 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	28.3	Xtrriage
Anisotropy	0.318	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 42.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	3680	wwPDB-VP
Average B, all atoms (Å ²)	55.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.20% of the height of the origin peak. No significant pseudotranslation is detected.*

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: SAM, GOL, ZN, H41

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	0.80	1/3571 (0.0%)	0.92	9/4812 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	267	CYS	CB-SG	6.07	1.92	1.82

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	267	CYS	CB-CA-C	7.65	125.69	110.40
1	A	111[A]	ARG	NE-CZ-NH2	-7.04	116.78	120.30
1	A	111[B]	ARG	NE-CZ-NH2	-7.04	116.78	120.30
1	A	242	ASP	CB-CG-OD1	6.95	124.56	118.30
1	A	111[A]	ARG	NE-CZ-NH1	6.32	123.46	120.30
1	A	111[B]	ARG	NE-CZ-NH1	6.32	123.46	120.30
1	A	267	CYS	CA-CB-SG	6.31	125.36	114.00
1	A	419	ASP	CB-CG-OD1	5.29	123.06	118.30
1	A	67	ARG	NE-CZ-NH1	5.18	122.89	120.30

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	3472	0	3444	65	0
2	A	3	0	0	0	0
3	A	35	0	0	1	0
4	A	6	0	8	5	0
5	A	27	0	22	9	0
6	A	137	0	0	2	0
All	All	3680	0	3474	67	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 10.

All (67) 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:255:ARG:NH1	1:A:261:THR:OG1	2.20	0.75
1:A:282:LEU:HD13	1:A:286:PRO:HD3	1.69	0.75
1:A:180:ASN:ND2	6:A:2045:HOH:O	2.18	0.72
1:A:313:SER:OG	1:A:316:GLU:OE1	2.10	0.70
1:A:282:LEU:O	1:A:283:SER:C	2.32	0.67
1:A:229:GLU:OE2	1:A:231:LYS:NZ	2.28	0.66
1:A:292:ARG:HH11	1:A:292:ARG:HA	1.60	0.66
1:A:280:ARG:NH2	1:A:329:SER:O	2.29	0.66
1:A:296:ARG:O	1:A:300:ASN:HB2	1.96	0.65
1:A:430:ILE:HG22	1:A:430:ILE:O	1.96	0.65
1:A:292:ARG:N	1:A:292:ARG:HD2	2.13	0.62
5:A:1434:SAM:HG2	5:A:1434:SAM:O4'	1.99	0.62
1:A:308:ALA:HB1	1:A:312:LYS:HG3	1.83	0.61
1:A:19:ARG:O	5:A:1434:SAM:N	2.34	0.61
1:A:282:LEU:H	1:A:282:LEU:HD12	1.64	0.61
1:A:282:LEU:HD12	1:A:282:LEU:N	2.17	0.59
1:A:311:TYR:CE1	1:A:312:LYS:HG2	2.37	0.59
1:A:17:LYS:HE3	5:A:1434:SAM:C6	2.34	0.57
1:A:266:GLU:HG2	4:A:1433:GOL:H31	1.86	0.57
1:A:12:PHE:CD1	1:A:22:ARG:HB2	2.40	0.56
1:A:281:LYS:N	1:A:281:LYS:HD2	2.19	0.56
1:A:207:HIS:HB3	1:A:260:PHE:HZ	1.70	0.56
1:A:297:TYR:O	1:A:301:VAL:HG23	2.07	0.55
1:A:206:ASN:OD1	5:A:1434:SAM:C8	2.55	0.54
1:A:424:SER:O	1:A:428:GLN:HG3	2.08	0.54
1:A:64:LYS:HG2	1:A:72:PHE:CE2	2.43	0.54
3:A:1432:H41:C27	3:A:1432:H41:C16	2.87	0.53
1:A:308:ALA:CB	1:A:312:LYS:HG3	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:209:CYS:O	4:A:1433:GOL:H32	2.10	0.51
1:A:64:LYS:CG	1:A:72:PHE:CE2	2.93	0.51
1:A:429:GLU:O	1:A:431:GLU:N	2.44	0.51
1:A:48[A]:ARG:CZ	1:A:70:GLN:HG2	2.41	0.51
1:A:101:ASN:O	1:A:101:ASN:CG	2.49	0.50
1:A:308:ALA:O	1:A:312:LYS:N	2.41	0.50
1:A:282:LEU:CD1	1:A:286:PRO:HD3	2.40	0.49
1:A:294:MET:SD	1:A:328:MET:HA	2.52	0.49
1:A:260:PHE:CE2	5:A:1434:SAM:C6	2.95	0.49
1:A:266:GLU:HG2	4:A:1433:GOL:C3	2.43	0.49
1:A:272:LYS:HD3	4:A:1433:GOL:H12	1.95	0.49
1:A:304:GLU:HB2	6:A:2109:HOH:O	2.12	0.49
1:A:206:ASN:HB3	5:A:1434:SAM:N7	2.30	0.47
1:A:6:LEU:HD11	1:A:128:LEU:HD12	1.95	0.47
1:A:272:LYS:CD	4:A:1433:GOL:H12	2.44	0.47
1:A:12:PHE:CE1	1:A:22:ARG:HB2	2.51	0.46
1:A:324:SER:O	1:A:328:MET:HB2	2.17	0.45
1:A:207:HIS:HA	1:A:238:THR:O	2.15	0.45
1:A:7:GLY:C	1:A:9:LEU:N	2.69	0.45
1:A:316:GLU:O	1:A:320:ILE:HG23	2.16	0.45
1:A:294:MET:HG3	1:A:331:VAL:HG22	1.98	0.44
1:A:19:ARG:HB2	5:A:1434:SAM:OXT	2.17	0.44
1:A:17:LYS:HE3	5:A:1434:SAM:N6	2.32	0.44
1:A:152:ASP:HB3	1:A:176:PHE:CE1	2.53	0.44
1:A:207:HIS:CG	1:A:208:SER:N	2.86	0.43
1:A:281:LYS:N	1:A:281:LYS:CD	2.81	0.43
1:A:244:LEU:O	1:A:276:LYS:HE2	2.18	0.43
1:A:50:ASN:HA	1:A:58[B]:ARG:HH21	1.83	0.42
1:A:294:MET:HB3	1:A:332:PHE:CZ	2.54	0.42
1:A:72:PHE:CD1	1:A:72:PHE:N	2.87	0.42
1:A:65:CYS:O	1:A:69:LYS:HA	2.20	0.42
1:A:302:ILE:HG23	1:A:341:HIS:CE1	2.54	0.42
1:A:362:TYR:O	1:A:366:ILE:HG13	2.20	0.41
1:A:14:SER:HA	1:A:15:PRO:HD3	1.84	0.41
1:A:17:LYS:HE3	5:A:1434:SAM:N1	2.36	0.41
1:A:214:ILE:HD12	1:A:227:VAL:HG11	2.03	0.41
1:A:308:ALA:HB1	1:A:312:LYS:HB2	2.01	0.41
1:A:91:SER:N	1:A:92:PRO:CD	2.85	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	432/433 (100%)	408 (94%)	23 (5%)	1 (0%)	47 44

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	311	TYR

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	384/380 (101%)	352 (92%)	32 (8%)	11 7

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	LEU
1	A	14	SER
1	A	94	VAL
1	A	101	ASN
1	A	143	ASN
1	A	151	SER
1	A	210	CYS
1	A	229	GLU
1	A	231	LYS
1	A	234	GLU

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Mol	Chain	Res	Type
1	A	249	ASP
1	A	253	ARG
1	A	270	LYS
1	A	280	ARG
1	A	281	LYS
1	A	282	LEU
1	A	283	SER
1	A	287	LYS
1	A	292	ARG
1	A	300	ASN
1	A	312	LYS
1	A	313	SER
1	A	315	SER
1	A	318	LEU
1	A	320	ILE
1	A	326	GLU
1	A	327	LYS
1	A	331	VAL
1	A	357	GLU
1	A	368	LYS
1	A	398	LYS
1	A	431	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	51	HIS
1	A	79	GLN
1	A	101	ASN
1	A	119	HIS
1	A	143	ASN
1	A	180	ASN
1	A	228	GLN
1	A	300	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 3 are monoatomic - leaving 3 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
5	SAM	A	1434	-	24,29,29	1.41	2 (8%)	23,42,42	2.06	5 (21%)
4	GOL	A	1433	-	5,5,5	0.61	0	5,5,5	0.87	0
3	H41	A	1432	-	36,37,37	1.99	6 (16%)	38,51,51	1.38	6 (15%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	SAM	A	1434	-	-	2/12/33/33	0/3/3/3
4	GOL	A	1433	-	-	2/4/4/4	-
3	H41	A	1432	-	-	4/27/43/43	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1432	H41	C31-C30	6.39	1.58	1.52
3	A	1432	H41	C16-N15	-5.01	1.31	1.41
3	A	1432	H41	C6-CL7	-3.71	1.64	1.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1432	H41	C1-N29	3.54	1.50	1.46
5	A	1434	SAM	O4'-C1'	3.47	1.45	1.41
5	A	1434	SAM	C5-C4	2.65	1.47	1.40
3	A	1432	H41	C17-C16	2.40	1.43	1.39
3	A	1432	H41	C2-N11	2.05	1.32	1.29

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	1434	SAM	O4'-C4'-C5'	5.11	121.79	108.88
5	A	1434	SAM	CG-SD-C5'	4.62	115.18	103.40
5	A	1434	SAM	N3-C2-N1	-3.74	122.83	128.68
3	A	1432	H41	C3-C2-C1	3.49	130.66	124.42
5	A	1434	SAM	OXT-C-CA	3.22	124.34	113.38
3	A	1432	H41	O33-C30-C31	2.91	122.03	118.41
5	A	1434	SAM	O-C-CA	-2.74	112.47	122.14
3	A	1432	H41	C2-N11-N12	2.62	112.00	108.55
3	A	1432	H41	C8-C9-C3	2.24	123.38	120.78
3	A	1432	H41	C4-C5-CL10	2.20	122.04	118.49
3	A	1432	H41	C1-C2-N11	-2.09	110.43	115.20

There are no chirality outliers.

All (8) torsion outliers are listed below:

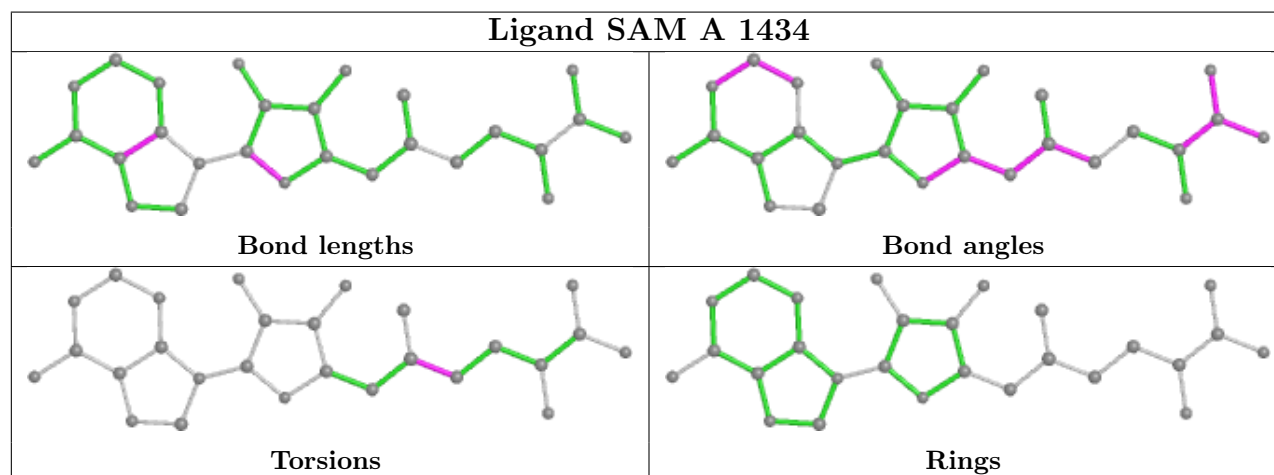
Mol	Chain	Res	Type	Atoms
5	A	1434	SAM	CB-CG-SD-CE
5	A	1434	SAM	CB-CG-SD-C5'
3	A	1432	H41	C35-C34-N29-C1
4	A	1433	GOL	O2-C2-C3-O3
3	A	1432	H41	C21-C16-N15-C14
4	A	1433	GOL	O1-C1-C2-C3
3	A	1432	H41	C17-C16-N15-C14
3	A	1432	H41	C13-C1-N29-C34

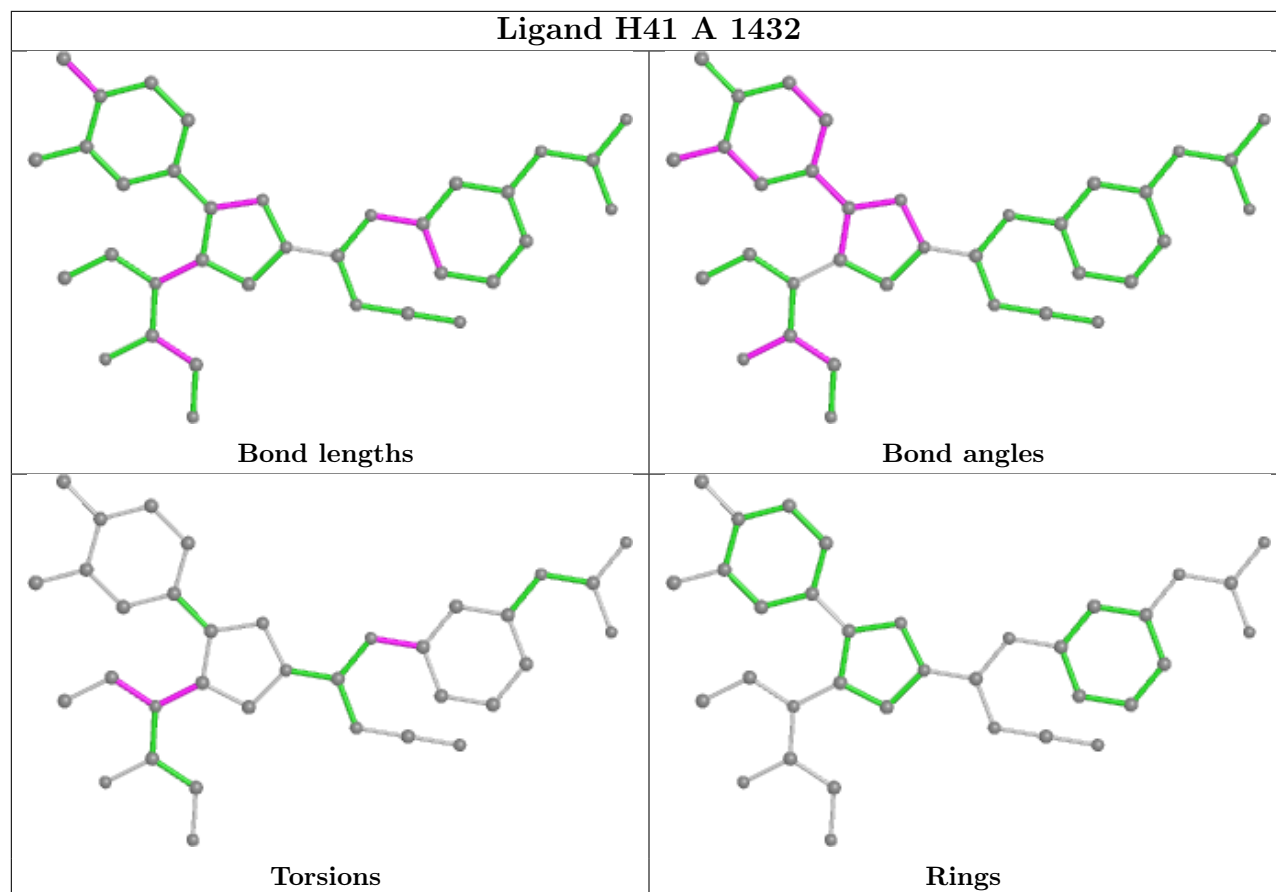
There are no ring outliers.

3 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1434	SAM	9	0
4	A	1433	GOL	5	0
3	A	1432	H41	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 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	426/433 (98%)	0.68	45 (10%) 6 5	18, 50, 105, 157	0

All (45) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	277	VAL	6.2
1	A	289	GLU	4.4
1	A	310	HIS	4.1
1	A	6	LEU	4.1
1	A	302	ILE	4.0
1	A	301	VAL	4.0
1	A	290	ALA	3.7
1	A	308	ALA	3.6
1	A	68	CYS	3.6
1	A	66	GLY	3.6
1	A	65	CYS	3.5
1	A	94	VAL	3.4
1	A	311	TYR	3.3
1	A	332	PHE	3.2
1	A	98	GLU	3.2
1	A	356	TRP	3.1
1	A	316	GLU	3.0
1	A	331	VAL	2.9
1	A	237	PHE	2.9
1	A	283	SER	2.8
1	A	293	ASP	2.8
1	A	69	LYS	2.7
1	A	7	GLY	2.7
1	A	95	VAL	2.7
1	A	24	LEU	2.7
1	A	317	LEU	2.6
1	A	296	ARG	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	231	LYS	2.5
1	A	143	ASN	2.5
1	A	67	ARG	2.5
1	A	26	PRO	2.4
1	A	286	PRO	2.4
1	A	292	ARG	2.4
1	A	279	ILE	2.3
1	A	320	ILE	2.3
1	A	25	GLN	2.3
1	A	77	GLU	2.3
1	A	337[A]	VAL	2.3
1	A	307	ARG	2.2
1	A	12	PHE	2.2
1	A	13[A]	CYS	2.2
1	A	236	VAL	2.1
1	A	300	ASN	2.1
1	A	267	CYS	2.1
1	A	309	LYS	2.1

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

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, 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(\AA^2)	Q<0.9
5	SAM	A	1434	27/27	0.84	0.18	19,41,75,87	0
4	GOL	A	1433	6/6	0.87	0.18	33,42,49,56	0
2	ZN	A	1003	1/1	0.88	0.09	50,50,50,50	0
2	ZN	A	1004	1/1	0.91	0.11	36,36,36,36	0
2	ZN	A	1005	1/1	0.91	0.10	41,41,41,41	1

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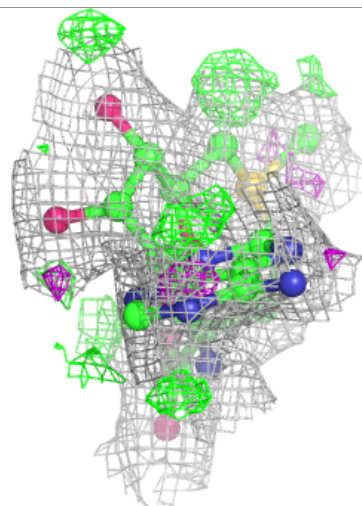
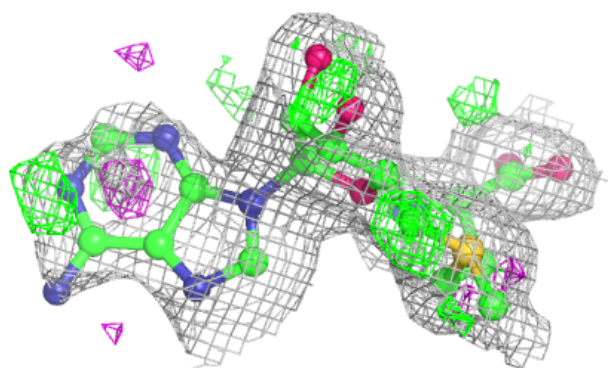
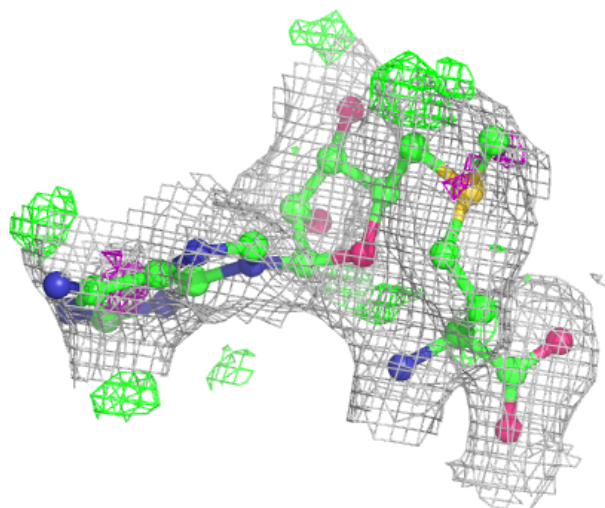
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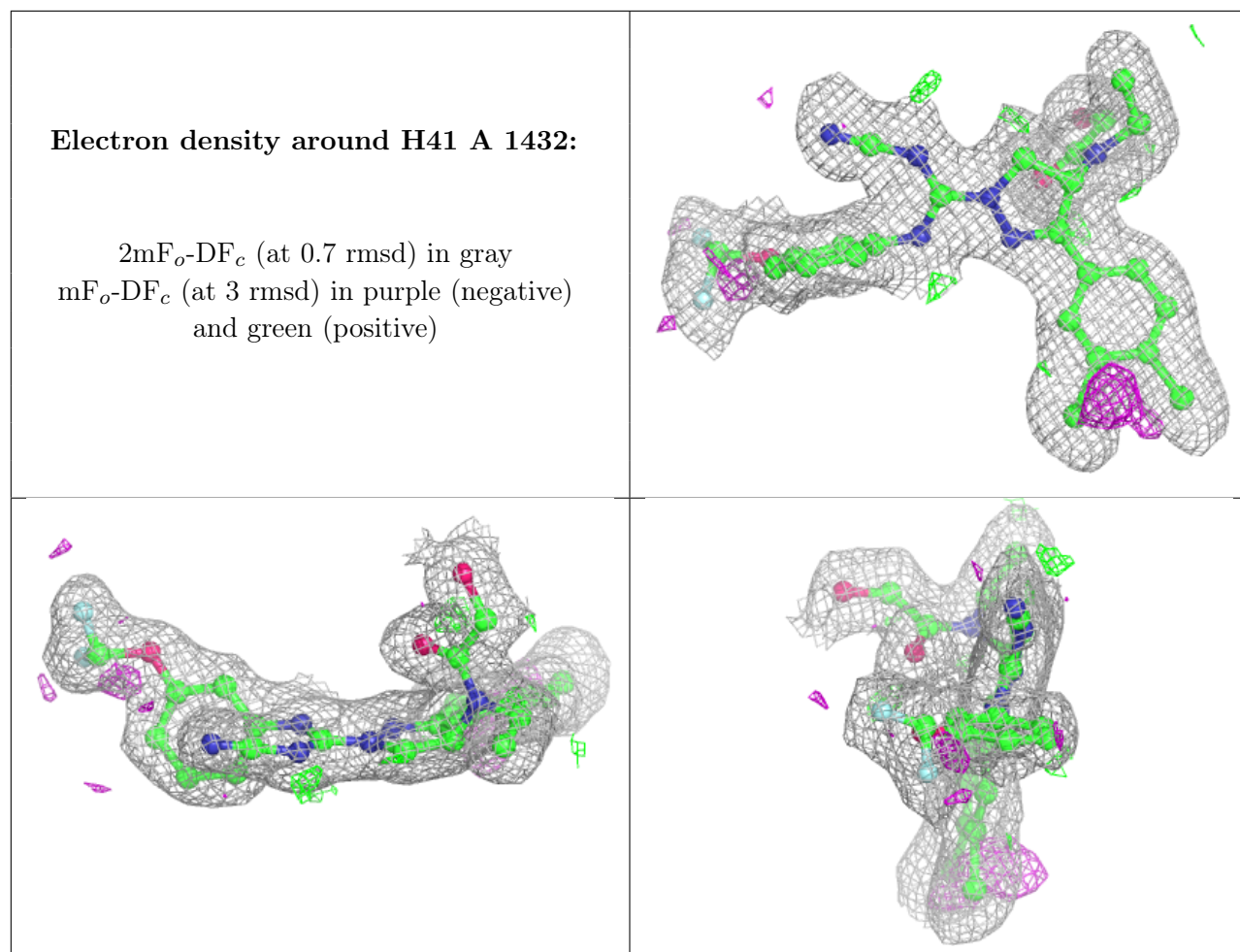
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	H41	A	1432	35/35	0.94	0.12	14,23,34,37	0

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 SAM A 1434:

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





6.5 Other polymers [i](#)

There are no such residues in this entry.