



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 19, 2026 – 04:05 AM UTC

PDB ID : 6QVL / pdb_00006qvl
Title : Human SHMT2 in complex with pemetrexed
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Deposited on : 2019-03-03
Resolution : 2.28 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 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

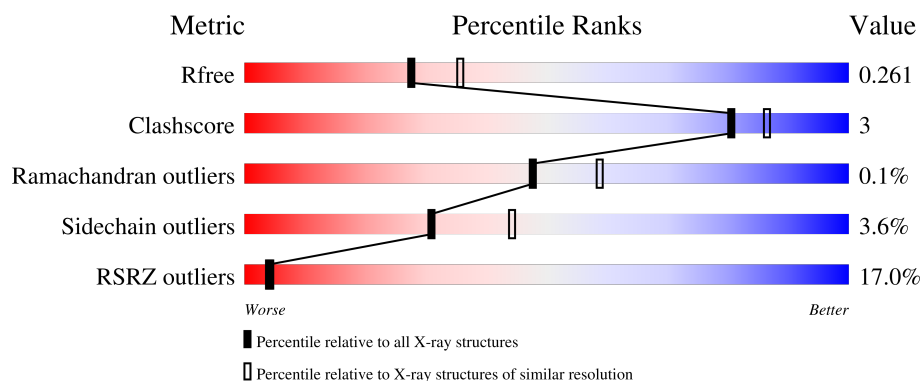
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.28 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	9078 (2.30-2.26)
Clashscore	190562	9802 (2.30-2.26)
Ramachandran outliers	187476	9690 (2.30-2.26)
Sidechain outliers	187428	9691 (2.30-2.26)
RSRZ outliers	180081	9085 (2.30-2.26)

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	504	6% 83% 6% 10%
1	B	504	25% 82% 8% 10%

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
2	GOL	B	601	-	-	X	-

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 7641 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 Serine hydroxymethyltransferase, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	453	Total	C	N	O	S	0	2	0
			3560	2244	640	659	17			
1	B	454	Total	C	N	O	S	0	2	0
			3565	2246	641	662	16			

- Molecule 2 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



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

- Molecule 3 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: C₄H₁₀O₃).

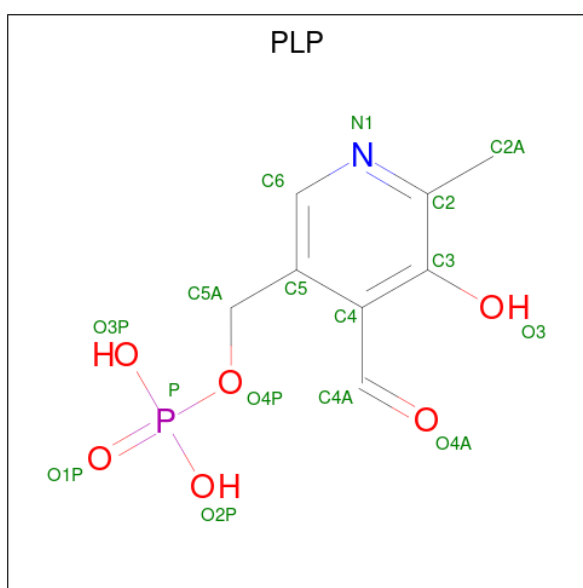


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			7	4	3		

- Molecule 4 is CALCIUM ION (CCD ID: CA) (formula: Ca).

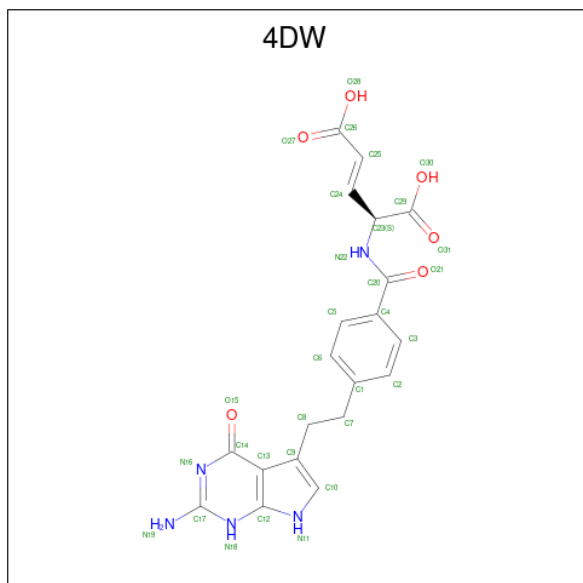
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Ca	0	0
			1	1		

- Molecule 5 is PYRIDOXAL-5'-PHOSPHATE (CCD ID: PLP) (formula: C₈H₁₀NO₆P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	N	O	P	0	0
			15	8	1	5	1		
5	B	1	Total	C	N	O	P	0	0
			15	8	1	5	1		

- Molecule 6 is N-{4-[2-(2-amino-4-oxo-4,7-dihydro-3H-pyrrolo[2,3-d]pyrimidin-5-yl)ethyl]benzoyl}-L-glutamic acid (CCD ID: 4DW) (formula: C₂₀H₁₉N₅O₆) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	B	1	Total	C	N	O	0	0
			31	20	5	6		

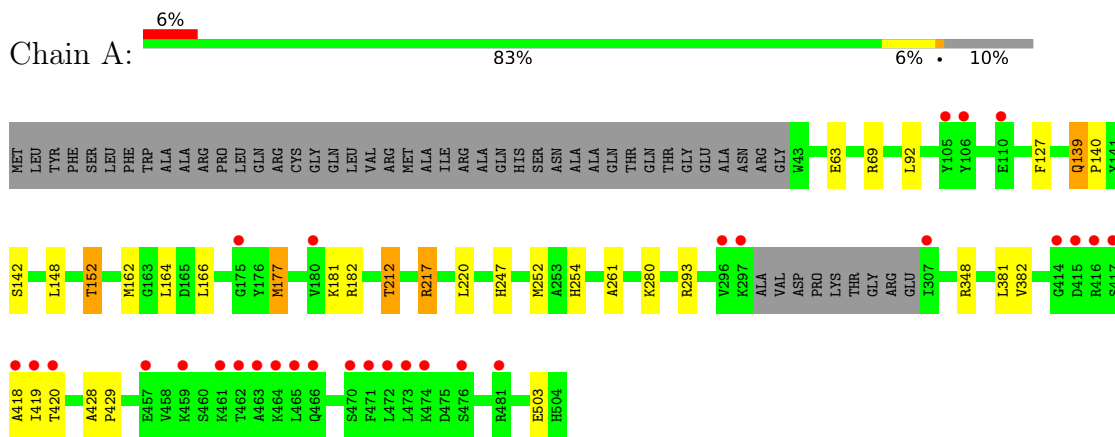
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	258	Total	O	0	0
			258	258		
7	B	171	Total	O	0	0
			171	171		

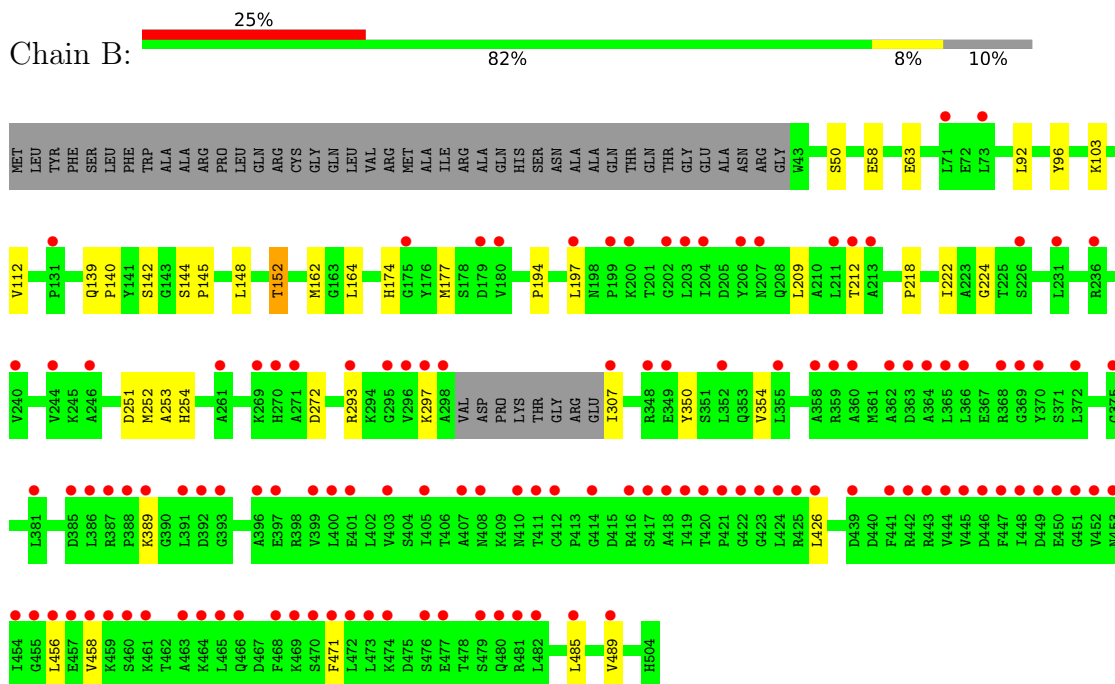
3 Residue-property plots [i](#)

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: Serine hydroxymethyltransferase, mitochondrial



- Molecule 1: Serine hydroxymethyltransferase, mitochondrial



4 Data and refinement statistics

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, α , β , γ	160.21Å 160.21Å 209.44Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	52.63 – 2.28 52.63 – 2.28	Depositor EDS
% Data completeness (in resolution range)	100.0 (52.63-2.28) 100.0 (52.63-2.28)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.71 (at 2.27Å)	Xtriage
Refinement program	REFMAC 5.8.0158	Depositor
R, R_{free}	0.212 , 0.259 0.217 , 0.261	Depositor DCC
R_{free} test set	3602 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	31.9	Xtriage
Anisotropy	0.010	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 27.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	7641	wwPDB-VP
Average B, all atoms (Å ²)	41.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.86% 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: CA, PEG, PLP, GOL, 4DW

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	0.62	0/3631	0.86	3/4908 (0.1%)
1	B	0.64	0/3636	0.87	0/4915
All	All	0.63	0/7267	0.87	3/9823 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	139	GLN	CA-C-N	-6.70	113.06	119.90
1	A	139	GLN	C-N-CA	-6.70	113.06	119.90
1	A	181	LYS	N-CA-C	6.27	117.75	108.60

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	3560	0	3556	17	0
1	B	3565	0	3555	22	0
2	A	12	0	16	0	0
2	B	6	0	8	4	0
3	A	7	0	10	0	0
4	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	15	0	6	1	0
5	B	15	0	6	0	0
6	B	31	0	17	0	0
7	A	258	0	0	4	0
7	B	171	0	0	4	0
All	All	7641	0	7174	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 3.

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)
1:A:212:THR:HG21	7:A:825:HOH:O	1.88	0.72
1:B:212:THR:HG21	7:B:818:HOH:O	1.90	0.71
1:A:148:LEU:O	1:A:152:THR:HG23	1.96	0.65
1:B:293[A]:ARG:NH2	7:B:704:HOH:O	2.34	0.61
1:B:224:GLY:HA2	2:B:601:GOL:C3	2.32	0.60
1:B:148:LEU:O	1:B:152:THR:HG23	2.02	0.60
1:B:224:GLY:HA2	2:B:601:GOL:H32	1.89	0.53
1:B:174:HIS:CD2	1:B:222:ILE:HG21	2.46	0.51
1:A:162:MET:HE1	1:A:212:THR:CG2	2.42	0.50
1:A:217[A]:ARG:NE	7:A:703:HOH:O	2.44	0.49
1:A:293:ARG:NH1	7:A:704:HOH:O	2.45	0.49
1:A:177:MET:HB3	1:A:182:ARG:HA	1.94	0.49
1:B:485:LEU:O	1:B:489:VAL:HG23	2.12	0.49
1:A:162:MET:HE1	1:A:212:THR:HG23	1.95	0.47
1:A:220:LEU:HD23	1:A:247:HIS:HB2	1.97	0.47
1:B:162:MET:HE1	1:B:212:THR:HG23	1.97	0.46
1:B:144:SER:HB2	1:B:145:PRO:HD3	1.97	0.46
1:B:162:MET:CE	7:B:708:HOH:O	2.64	0.45
1:A:127:PHE:CE1	1:A:252:MET:HE1	2.51	0.45
1:A:92:LEU:HD23	1:B:63:GLU:HG2	1.97	0.45
1:A:419:ILE:HG21	7:A:907:HOH:O	2.17	0.44
1:B:162:MET:HG3	1:B:218:PRO:HB3	1.99	0.43
1:B:350:TYR:O	1:B:354:VAL:HG23	2.19	0.43
1:B:252:MET:O	1:B:253:ALA:C	2.61	0.43
1:A:428:ALA:N	1:A:429:PRO:CD	2.82	0.43
1:B:139:GLN:N	1:B:140:PRO:CD	2.82	0.42
1:B:194:PRO:C	7:B:708:HOH:O	2.61	0.42
1:A:381:LEU:C	1:A:381:LEU:HD12	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:224:GLY:HA2	2:B:601:GOL:H31	1.99	0.42
1:B:272:ASP:HA	1:B:293[B]:ARG:HD2	2.02	0.42
1:B:389:LYS:O	1:B:456:LEU:HD21	2.19	0.42
1:A:139:GLN:O	1:A:140:PRO:C	2.60	0.41
1:A:63:GLU:HG2	1:B:92:LEU:HD23	2.02	0.41
1:A:280:LYS:NZ	5:A:605:PLP:O3	2.53	0.41
1:B:458:VAL:HG13	1:B:471:PHE:CD1	2.56	0.41
1:B:251:ASP:O	2:B:601:GOL:H31	2.21	0.40
1:A:261:ALA:HB1	1:A:348:ARG:HA	2.02	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	451/504 (90%)	434 (96%)	16 (4%)	1 (0%)	43	53
1	B	452/504 (90%)	431 (95%)	21 (5%)	0	100	100
All	All	903/1008 (90%)	865 (96%)	37 (4%)	1 (0%)	48	59

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	418	ALA

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	376/413 (91%)	363 (96%)	13 (4%)	32	45
1	B	376/413 (91%)	361 (96%)	15 (4%)	28	40
All	All	752/826 (91%)	724 (96%)	28 (4%)	31	43

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	69	ARG
1	A	142	SER
1	A	152	THR
1	A	164	LEU
1	A	166	LEU
1	A	177	MET
1	A	212	THR
1	A	217[A]	ARG
1	A	217[B]	ARG
1	A	254	HIS
1	A	382	VAL
1	A	420	THR
1	A	503	GLU
1	B	50	SER
1	B	58	GLU
1	B	96	TYR
1	B	103	LYS
1	B	112	VAL
1	B	142	SER
1	B	152	THR
1	B	164	LEU
1	B	177	MET
1	B	197	LEU
1	B	209	LEU
1	B	254	HIS
1	B	297	LYS
1	B	307	ILE
1	B	426	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	504	HIS
1	B	61	GLN
1	B	133	GLN
1	B	329	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 1 is monoatomic - leaving 7 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	PLP	A	605	1	15,15,16	2.84	3 (20%)	21,22,23	1.99	5 (23%)
2	GOL	B	601	-	5,5,5	0.59	0	5,5,5	1.29	0
3	PEG	A	603	-	6,6,6	0.62	0	5,5,5	0.58	0
2	GOL	A	601	-	5,5,5	0.34	0	5,5,5	0.56	0
6	4DW	B	602	-	30,33,33	0.60	0	37,46,46	1.13	3 (8%)
2	GOL	A	602	-	5,5,5	0.46	0	5,5,5	0.42	0
5	PLP	B	603	1	15,15,16	3.06	3 (20%)	21,22,23	2.12	6 (28%)

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	PLP	A	605	1	-	4/6/6/8	0/1/1/1
2	GOL	B	601	-	-	2/4/4/4	-
3	PEG	A	603	-	-	4/4/4/4	-
2	GOL	A	601	-	-	2/4/4/4	-
6	4DW	B	602	-	-	2/22/22/22	0/3/3/3
2	GOL	A	602	-	-	1/4/4/4	-
5	PLP	B	603	1	-	0/6/6/8	0/1/1/1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	603	PLP	C5-C4	8.17	1.49	1.40
5	A	605	PLP	C5-C4	7.71	1.49	1.40
5	B	603	PLP	C3-C2	7.05	1.48	1.41
5	A	605	PLP	C3-C2	6.22	1.47	1.41
5	A	605	PLP	C3-C4	3.95	1.47	1.40
5	B	603	PLP	C3-C4	3.90	1.47	1.40

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	603	PLP	O4P-C5A-C5	6.12	120.82	109.36
5	A	605	PLP	O4P-C5A-C5	5.54	119.74	109.36
5	B	603	PLP	C4A-C4-C5	4.67	125.76	120.94
5	A	605	PLP	C4A-C4-C5	3.58	124.62	120.94
6	B	602	4DW	C14-C13-C9	3.55	134.85	129.16
6	B	602	4DW	C13-C12-N18	-3.52	120.61	123.46
5	A	605	PLP	C6-N1-C2	2.94	124.53	119.20
6	B	602	4DW	O15-C14-N16	-2.61	115.88	120.27
5	B	603	PLP	C6-N1-C2	2.55	123.82	119.20
5	A	605	PLP	C3-C2-N1	-2.46	117.85	120.96
5	B	603	PLP	C4A-C4-C3	-2.39	116.54	120.52
5	B	603	PLP	O3-C3-C2	2.27	122.28	117.58
5	A	605	PLP	C2A-C2-N1	2.07	121.55	117.64
5	B	603	PLP	C2A-C2-N1	2.01	121.43	117.64

There are no chirality outliers.

All (15) torsion outliers are listed below:

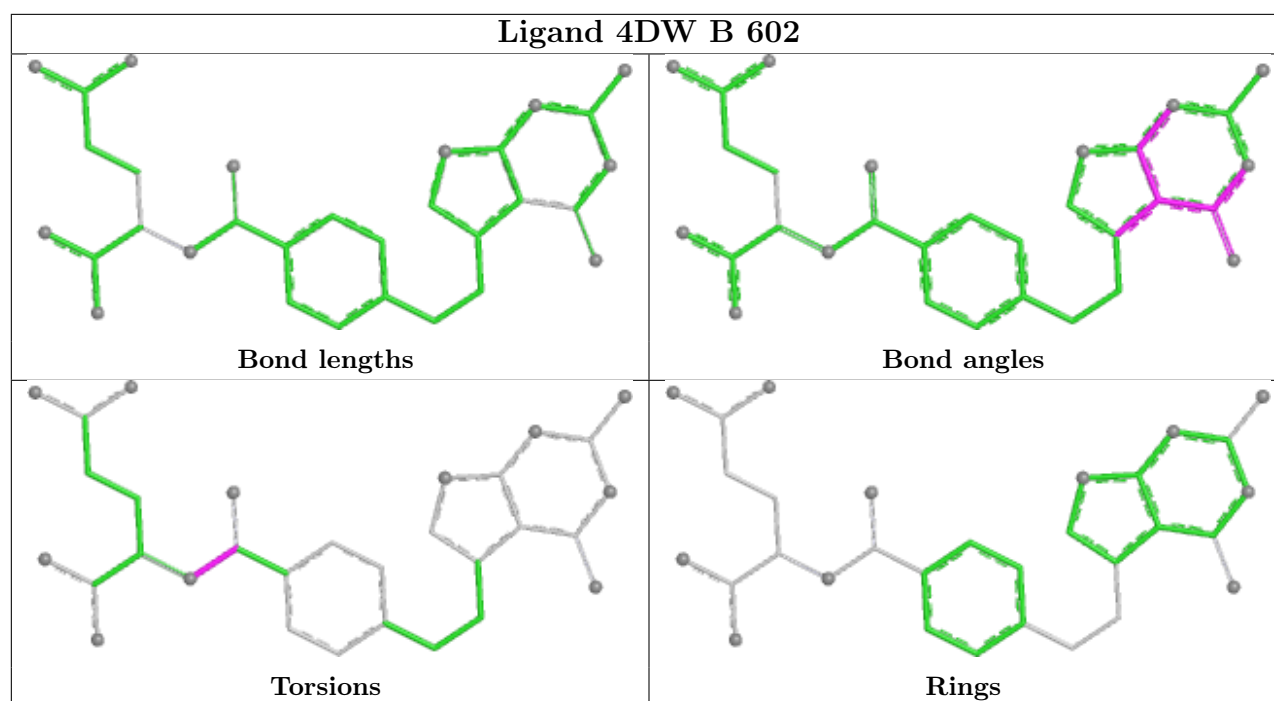
Mol	Chain	Res	Type	Atoms
2	A	601	GOL	C1-C2-C3-O3
2	B	601	GOL	O2-C2-C3-O3
5	A	605	PLP	C4-C5-C5A-O4P
5	A	605	PLP	C6-C5-C5A-O4P
6	B	602	4DW	C4-C20-N22-C23
6	B	602	4DW	O21-C20-N22-C23
3	A	603	PEG	O2-C3-C4-O4
2	B	601	GOL	C1-C2-C3-O3
2	A	601	GOL	O2-C2-C3-O3
3	A	603	PEG	O1-C1-C2-O2
5	A	605	PLP	C5A-O4P-P-O1P
2	A	602	GOL	O2-C2-C3-O3
3	A	603	PEG	C1-C2-O2-C3
3	A	603	PEG	C4-C3-O2-C2
5	A	605	PLP	C5A-O4P-P-O2P

There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	605	PLP	1	0
2	B	601	GOL	4	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	453/504 (89%)	0.14	30 (6%) 24 25	12, 29, 68, 114	2 (0%)
1	B	454/504 (90%)	1.25	124 (27%) 1 1	22, 44, 81, 103	2 (0%)
All	All	907/1008 (89%)	0.70	154 (16%) 4 4	12, 37, 75, 114	4 (0%)

All (154) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	298	ALA	8.9
1	A	417	SER	6.2
1	A	307	ILE	6.1
1	B	473	LEU	6.0
1	A	418	ALA	6.0
1	B	420	THR	5.6
1	B	399	VAL	5.3
1	A	419	ILE	5.1
1	B	307	ILE	5.0
1	B	419	ILE	4.8
1	A	105	TYR	4.7
1	B	180	VAL	4.5
1	A	416	ARG	4.2
1	B	456	LEU	4.2
1	B	369	GLY	4.1
1	B	366	LEU	4.1
1	B	416	ARG	4.1
1	B	418	ALA	4.0
1	B	461	LYS	3.9
1	A	463	ALA	3.9
1	B	414	GLY	3.9
1	B	422	GLY	3.9
1	B	469	LYS	3.8
1	A	420	THR	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	375	GLY	3.6
1	B	423	GLY	3.6
1	B	396	ALA	3.6
1	A	296	VAL	3.5
1	B	296	VAL	3.5
1	A	466	GLN	3.5
1	B	393	GLY	3.5
1	A	415	ASP	3.5
1	B	179	ASP	3.4
1	B	410	ASN	3.4
1	A	465	LEU	3.3
1	B	474	LYS	3.3
1	A	464	LYS	3.3
1	B	480	GLN	3.2
1	B	464	LYS	3.2
1	B	411	THR	3.2
1	B	458	VAL	3.1
1	A	470	SER	3.1
1	B	447	PHE	3.1
1	B	421	PRO	3.1
1	A	459	LYS	3.1
1	B	197	LEU	3.1
1	B	359	ARG	3.1
1	B	466	GLN	3.1
1	B	476	SER	3.0
1	B	453	ASN	3.0
1	B	200	LYS	3.0
1	B	387	ARG	3.0
1	B	471	PHE	3.0
1	B	212	THR	3.0
1	B	460	SER	3.0
1	B	397	GLU	3.0
1	B	472	LEU	2.9
1	B	457	GLU	2.9
1	B	297	LYS	2.9
1	B	454	ILE	2.9
1	B	392	ASP	2.9
1	B	388	PRO	2.8
1	B	439[A]	ASP	2.8
1	B	441	PHE	2.8
1	A	297	LYS	2.8
1	B	244	VAL	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	465	LEU	2.8
1	A	476	SER	2.7
1	B	202	GLY	2.7
1	A	180	VAL	2.7
1	B	444	VAL	2.7
1	B	448	ILE	2.7
1	B	485	LEU	2.7
1	B	463	ALA	2.7
1	B	450	GLU	2.7
1	A	473	LEU	2.7
1	B	365	LEU	2.7
1	B	370	TYR	2.6
1	B	455	GLY	2.6
1	B	391	LEU	2.6
1	B	403	VAL	2.6
1	B	293[A]	ARG	2.5
1	B	408	ASN	2.5
1	B	352	LEU	2.5
1	B	400	LEU	2.5
1	B	470	SER	2.5
1	B	203	LEU	2.5
1	B	269	LYS	2.5
1	A	471	PHE	2.4
1	B	71	LEU	2.4
1	B	206	TYR	2.4
1	B	175	GLY	2.4
1	B	349	GLU	2.4
1	B	204	ILE	2.4
1	B	389	LYS	2.4
1	B	213	ALA	2.4
1	B	424	LEU	2.4
1	A	175	GLY	2.4
1	B	362	ALA	2.4
1	B	449	ASP	2.3
1	B	405	ILE	2.3
1	B	445	VAL	2.3
1	B	199	PRO	2.3
1	B	452	VAL	2.3
1	B	360	ALA	2.3
1	B	236	ARG	2.3
1	B	481	ARG	2.3
1	A	474	LYS	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	414	GLY	2.3
1	B	364	ALA	2.3
1	B	73	LEU	2.2
1	B	240	VAL	2.3
1	B	468	PHE	2.2
1	B	489	VAL	2.3
1	B	363	ASP	2.2
1	B	442	ARG	2.2
1	B	271	ALA	2.2
1	A	462	THR	2.2
1	A	461	LYS	2.2
1	B	372	LEU	2.2
1	B	446	ASP	2.2
1	B	407	ALA	2.2
1	B	417	SER	2.2
1	B	355	LEU	2.2
1	B	426	LEU	2.2
1	B	412	CYS	2.2
1	B	261	ALA	2.2
1	A	106	TYR	2.2
1	B	482	LEU	2.2
1	B	385	ASP	2.2
1	A	457	GLU	2.2
1	B	459	LYS	2.2
1	B	246	ALA	2.2
1	B	479	SER	2.2
1	B	211	LEU	2.1
1	B	131	PRO	2.1
1	B	401	GLU	2.1
1	B	295	GLY	2.1
1	B	348	ARG	2.1
1	B	386	LEU	2.1
1	B	207	ASN	2.1
1	A	472	LEU	2.1
1	B	451	GLY	2.1
1	A	481	ARG	2.1
1	B	443	ARG	2.1
1	B	358	ALA	2.1
1	B	477	GLU	2.1
1	B	381	LEU	2.1
1	B	368	ARG	2.1
1	B	425	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	110	GLU	2.0
1	B	270	HIS	2.0
1	B	231	LEU	2.0
1	B	226	SER	2.0

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 oligosaccharides in this entry.

6.4 Ligands [i](#)

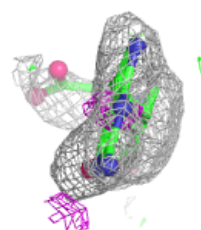
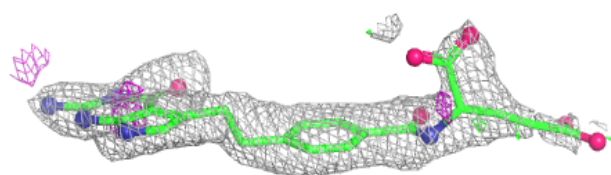
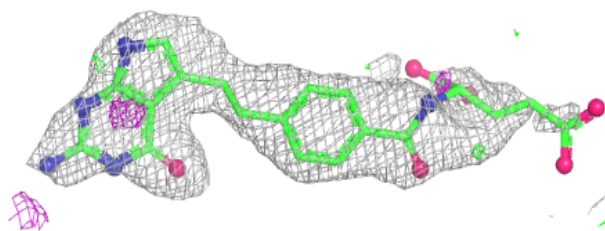
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	GOL	B	601	6/6	0.74	0.28	64,65,67,67	0
3	PEG	A	603	7/7	0.77	0.27	51,59,66,67	0
6	4DW	B	602	31/31	0.81	0.20	57,67,98,103	0
2	GOL	A	602	6/6	0.85	0.20	75,78,80,80	0
2	GOL	A	601	6/6	0.90	0.14	48,57,57,62	0
5	PLP	B	603	15/16	0.95	0.11	28,42,45,48	0
4	CA	A	604	1/1	0.97	0.08	64,64,64,64	0
5	PLP	A	605	15/16	0.98	0.05	22,25,26,26	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 4DW B 602:

$2mF_o-DF_c$ (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.