Full wwPDB X-ray Structure Validation Report (i)

Nov 16, 2023 – 01:44 AM JST

PDB ID	:	6KDN
Title	:	HIV-1 reverse transcriptase with Q151M/Y115F/F116Y:DNA:dGTP ternary complex
Authors	:	Yasutake, Y.; Hattori, S.I.; Tamura, N.; Maeda, K.
Deposited on	:	2019-07-02
Resolution	:	2.30 Å(reported)

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

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), 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 ⓘ

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

The reported resolution of this entry is 2.30 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.
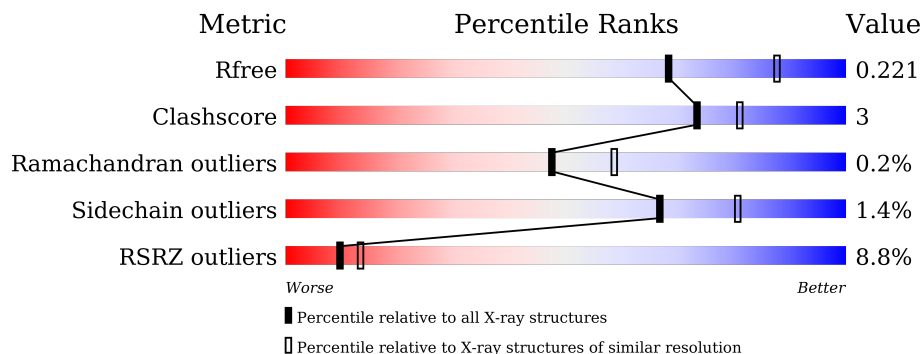
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	557	
1	C	557	
2	B	444	
2	D	444	
3	E	38	
3	F	38	

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 17721 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 HIV-1 reverse transcriptase p66 subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	553	Total 4498	C 2911	N 750	O 829	S 8	0	0	0
1	C	553	Total 4498	C 2911	N 750	O 829	S 8	0	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	MET	-	expression tag	UNP D3XFN5
A	0	VAL	-	expression tag	UNP D3XFN5
A	115	PHE	TYR	engineered mutation	UNP D3XFN5
A	116	TYR	PHE	engineered mutation	UNP D3XFN5
A	151	MET	GLN	engineered mutation	UNP D3XFN5
A	162	SER	CYS	engineered mutation	UNP D3XFN5
A	280	SER	CYS	engineered mutation	UNP D3XFN5
C	-1	MET	-	expression tag	UNP D3XFN5
C	0	VAL	-	expression tag	UNP D3XFN5
C	115	PHE	TYR	engineered mutation	UNP D3XFN5
C	116	TYR	PHE	engineered mutation	UNP D3XFN5
C	151	MET	GLN	engineered mutation	UNP D3XFN5
C	162	SER	CYS	engineered mutation	UNP D3XFN5
C	280	SER	CYS	engineered mutation	UNP D3XFN5

- Molecule 2 is a protein called HIV-1 RT p51 subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	406	Total 3347	C 2178	N 557	O 606	S 6	0	0	0
2	D	406	Total 3347	C 2178	N 557	O 606	S 6	0	0	0

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-15	MET	-	expression tag	UNP P12497
B	-14	ALA	-	expression tag	UNP P12497
B	-13	HIS	-	expression tag	UNP P12497
B	-12	HIS	-	expression tag	UNP P12497
B	-11	HIS	-	expression tag	UNP P12497
B	-10	HIS	-	expression tag	UNP P12497
B	-9	HIS	-	expression tag	UNP P12497
B	-8	HIS	-	expression tag	UNP P12497
B	-7	ALA	-	expression tag	UNP P12497
B	-6	LEU	-	expression tag	UNP P12497
B	-5	GLU	-	expression tag	UNP P12497
B	-4	VAL	-	expression tag	UNP P12497
B	-3	LEU	-	expression tag	UNP P12497
B	-2	PHE	-	expression tag	UNP P12497
B	-1	GLN	-	expression tag	UNP P12497
B	0	GLY	-	expression tag	UNP P12497
B	162	SER	CYS	engineered mutation	UNP P12497
B	280	SER	CYS	engineered mutation	UNP P12497
D	-15	MET	-	expression tag	UNP P12497
D	-14	ALA	-	expression tag	UNP P12497
D	-13	HIS	-	expression tag	UNP P12497
D	-12	HIS	-	expression tag	UNP P12497
D	-11	HIS	-	expression tag	UNP P12497
D	-10	HIS	-	expression tag	UNP P12497
D	-9	HIS	-	expression tag	UNP P12497
D	-8	HIS	-	expression tag	UNP P12497
D	-7	ALA	-	expression tag	UNP P12497
D	-6	LEU	-	expression tag	UNP P12497
D	-5	GLU	-	expression tag	UNP P12497
D	-4	VAL	-	expression tag	UNP P12497
D	-3	LEU	-	expression tag	UNP P12497
D	-2	PHE	-	expression tag	UNP P12497
D	-1	GLN	-	expression tag	UNP P12497
D	0	GLY	-	expression tag	UNP P12497
D	162	SER	CYS	engineered mutation	UNP P12497
D	280	SER	CYS	engineered mutation	UNP P12497

- Molecule 3 is a DNA chain called DNA/RNA (38-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	35	Total 718	C 339	N 128	O 216	P 35	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	F	38	777	369	140	231	37	0	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
4	A	1	1	1	0	0
			Total	Mg		
4	C	1	1	1	0	0

- Molecule 5 is 2'-DEOXYGUANOSINE-5'-TRIPHOSPHATE (three-letter code: DGT) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
5	A	1	31	10	5	13	3	0	0
			Total	C	N	O	P		
5	C	1	31	10	5	13	3	0	0

- Molecule 6 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).
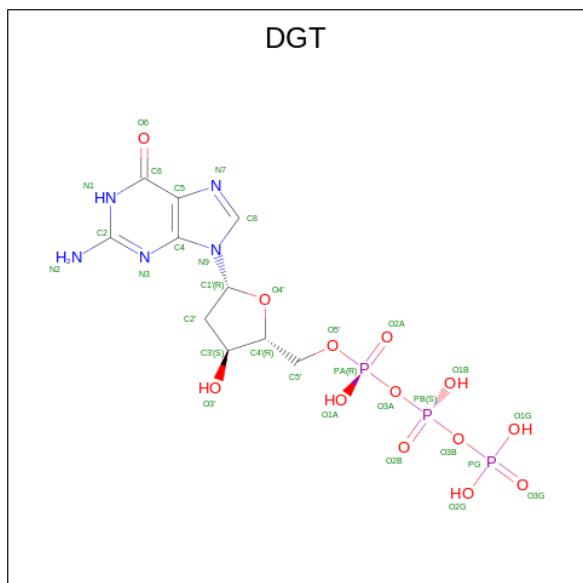
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	D	1	Total 6	C 3	O 3	0	0
6	D	1	Total 6	C 3	O 3	0	0

- Molecule 7 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	125	Total 125	O 125	0	0
7	B	49	Total 49	O 49	0	0
7	E	40	Total 40	O 40	0	0
7	C	107	Total 107	O 107	0	0
7	D	86	Total 86	O 86	0	0
7	F	35	Total 35	O 35	0	0

3 Residue-property plots ⓘ

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.
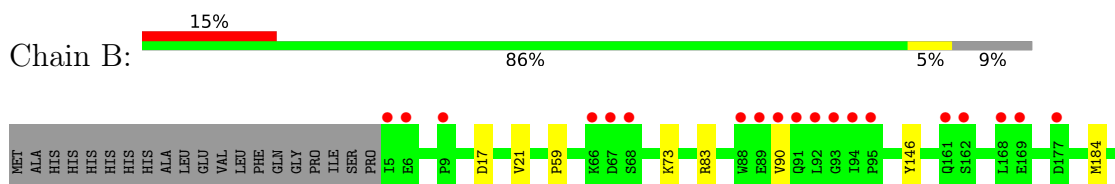
• Molecule 1: HIV-1 reverse transcriptase p66 subunit
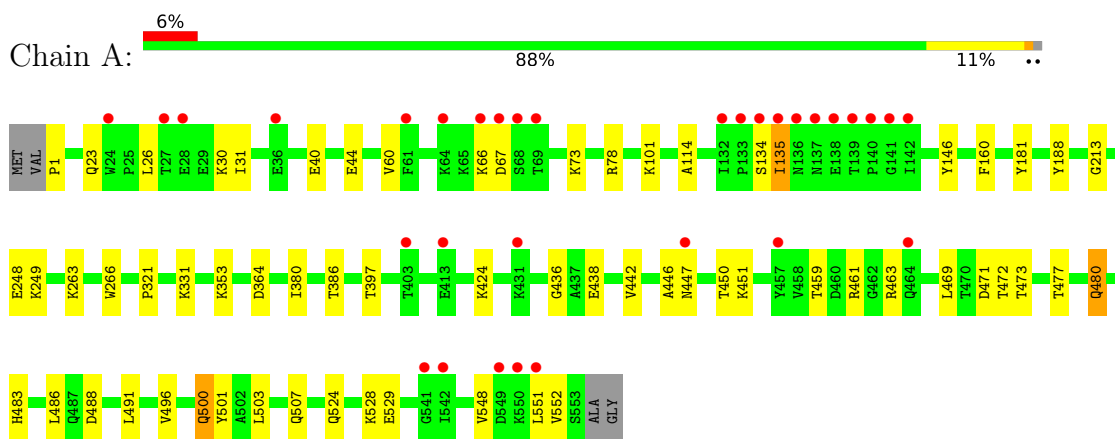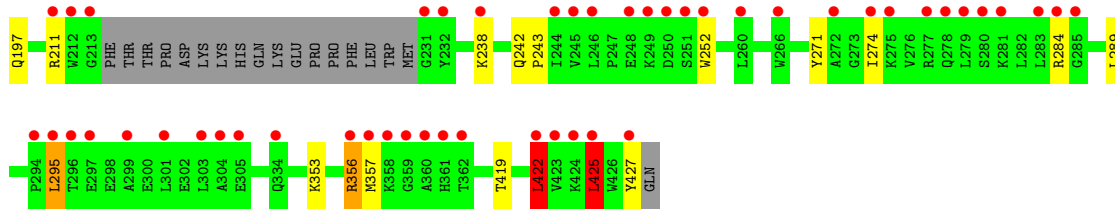

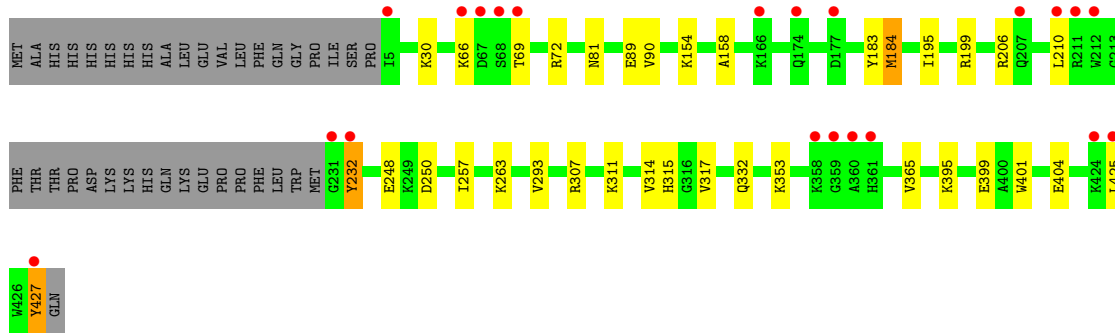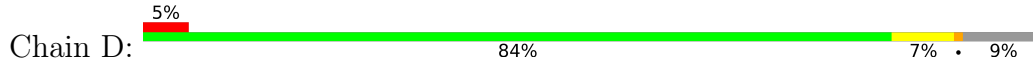• Molecule 1: HIV-1 reverse transcriptase p66 subunit
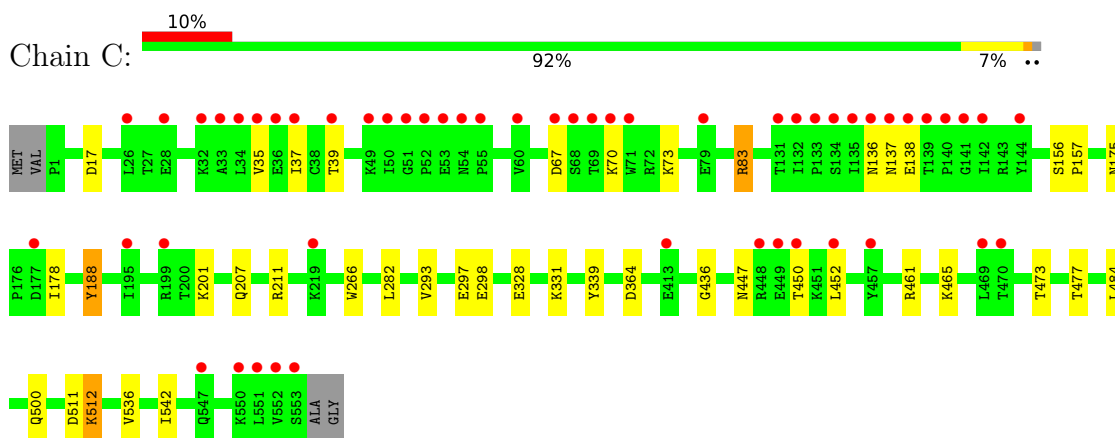
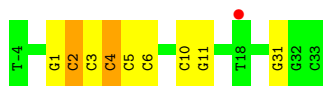• Molecule 2: HIV-1 RT p51 subunit

• Molecule 2: HIV-1 RT p51 subunit

Chain D:

• Molecule 3: DNA/RNA (38-MER)

Chain E:

• Molecule 3: DNA/RNA (38-MER)

Chain F:
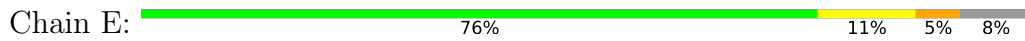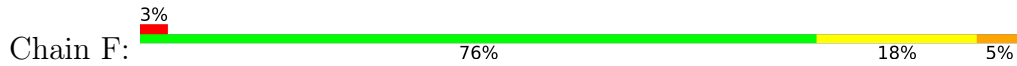
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	H 3	Depositor
Cell constants a, b, c, α, β, γ	284.17Å 284.17Å 95.52Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	48.60 – 2.30 48.60 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.9 (48.60-2.30) 99.9 (48.60-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	1.17 (at 2.29Å)	Xtriage
Refinement program	PHENIX (1.14_3260: ???)	Depositor
R, R_{free}	0.186 , 0.221 0.186 , 0.221	Depositor DCC
R_{free} test set	6460 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	45.3	Xtriage
Anisotropy	0.037	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 40.9	EDS
L-test for twinning [2]	$<\|L\|> = 0.50, <L^2> = 0.33$	Xtriage
Estimated twinning fraction	0.010 for h,-h-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	17721	wwPDB-VP
Average B, all atoms (Å^2)	59.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.31% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5   Model quality ⓘ

5.1   Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, DGT, OMC, MG

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	0.33	0/4616	0.49	0/6268
1	C	0.33	0/4616	0.48	0/6268
2	B	0.29	0/3441	0.51	3/4673 (0.1%)
2	D	0.37	0/3441	0.48	0/4673
3	E	0.50	0/756	0.91	0/1165
3	F	0.50	0/823	0.91	0/1269
All	All	0.35	0/17693	0.55	3/24316 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	425	LEU	CA-CB-CG	6.55	130.36	115.30
2	B	425	LEU	CB-CG-CD2	5.26	119.95	111.00
2	B	422	LEU	CA-CB-CG	5.25	127.37	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts ⓘ

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	4498	0	4553	45	0
1	C	4498	0	4553	24	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	3347	0	3379	18	0
2	D	3347	0	3379	19	0
3	E	718	0	397	4	0
3	F	777	0	432	5	0
4	A	1	0	0	0	0
4	C	1	0	0	0	0
5	A	31	0	12	1	0
5	C	31	0	12	0	0
6	A	6	0	8	0	0
6	B	12	0	16	0	0
6	D	12	0	16	0	0
7	A	125	0	0	1	0
7	B	49	0	0	0	0
7	C	107	0	0	2	0
7	D	86	0	0	0	0
7	E	40	0	0	0	0
7	F	35	0	0	0	0
All	All	17721	0	16757	112	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 (112) 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:31:ILE:HG21	1:A:134:SER:HA	1.62	0.80
1:A:473:THR:O	1:A:477:THR:HG23	1.84	0.76
2:B:271:TYR:HB2	2:B:274:ILE:HD11	1.69	0.75
3:F:3:DC:H2'	3:F:4:OMC:C6	2.29	0.68
1:A:500:GLN:H	1:A:500:GLN:CD	1.97	0.68
2:B:422:LEU:CD2	2:B:422:LEU:H	2.06	0.68
1:A:331:LYS:NZ	1:C:297:GLU:OE2	2.25	0.67
1:A:500:GLN:CD	1:A:500:GLN:N	2.50	0.65
2:D:248:GLU:OE1	2:D:307:ARG:NH2	2.30	0.64
1:A:31:ILE:HD13	1:A:135:ILE:H	1.63	0.63
1:C:67:ASP:OD2	1:C:70:LYS:HE2	1.99	0.62
2:B:422:LEU:H	2:B:422:LEU:HD23	1.64	0.62
3:E:1:DG:H2'	3:E:2:OMC:C6	2.35	0.60
3:E:3:DC:H2'	3:E:4:OMC:C6	2.36	0.60
1:A:331:LYS:NZ	1:A:364:ASP:OD2	2.34	0.60
2:B:73:LYS:NZ	2:B:146:TYR:OH	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:242:GLN:OE1	2:B:243:PRO:HD2	2.02	0.60
1:A:438:GLU:OE2	1:A:459:THR:HG21	2.03	0.59
1:A:463:ARG:NH2	1:A:488:ASP:O	2.36	0.58
1:A:436:GLY:O	1:A:461:ARG:NH2	2.36	0.58
2:B:271:TYR:HB2	2:B:274:ILE:CD1	2.34	0.57
2:B:425:LEU:H	2:B:425:LEU:HD22	1.69	0.57
1:C:511:ASP:OD1	1:C:512:LYS:NZ	2.39	0.56
3:F:1:DG:H2'	3:F:2:OMC:C6	2.41	0.56
1:C:136:ASN:O	1:C:138:GLU:N	2.37	0.55
1:A:380:ILE:HD11	1:A:386:THR:HG23	1.89	0.55
2:D:395:LYS:NZ	2:D:399:GLU:OE2	2.39	0.54
1:A:447:ASN:HB3	1:A:450:THR:HB	1.89	0.54
1:C:447:ASN:HB3	1:C:450:THR:HG22	1.88	0.54
1:A:459:THR:HB	1:A:463:ARG:H	1.72	0.54
1:A:500:GLN:NE2	1:A:501:TYR:H	2.06	0.54
1:A:446:ALA:HB2	1:A:477:THR:HG21	1.90	0.53
1:A:483:HIS:ND1	1:A:524:GLN:OE1	2.42	0.53
1:A:469:LEU:HD21	1:A:480:GLN:HG2	1.91	0.53
2:B:422:LEU:CD2	2:B:422:LEU:N	2.71	0.53
2:D:89:GLU:HG2	2:D:90:VAL:HG13	1.91	0.53
1:C:331:LYS:NZ	1:C:364:ASP:OD1	2.42	0.52
2:D:263:LYS:HA	2:D:425:LEU:HD22	1.90	0.52
1:C:536:VAL:HB	1:C:542:ILE:HD12	1.92	0.52
1:A:248:GLU:O	1:A:249:LYS:HD2	2.10	0.51
1:C:298:GLU:OE2	1:C:298:GLU:N	2.37	0.51
2:D:90:VAL:HG11	2:D:158:ALA:HA	1.92	0.50
1:A:472:THR:HG21	1:A:477:THR:HG22	1.93	0.50
2:D:314:VAL:HG12	2:D:315:HIS:O	2.11	0.50
1:A:451:LYS:HG3	1:A:471:ASP:H	1.78	0.49
3:F:10:DC:H2"	3:F:11:DG:C8	2.48	0.49
1:A:40:GLU:O	1:A:44:GLU:HG3	2.13	0.49
1:A:73:LYS:NZ	1:A:146:TYR:OH	2.37	0.48
2:D:263:LYS:HG3	2:D:425:LEU:HD13	1.96	0.47
1:A:266:TRP:CE2	3:E:31:DG:H4'	2.50	0.47
1:C:207:GLN:O	1:C:211:ARG:HG3	2.14	0.47
2:B:238:LYS:O	2:B:238:LYS:HG2	2.15	0.47
1:C:450:THR:HG23	1:C:452:LEU:H	1.79	0.47
1:A:459:THR:HG22	1:A:461:ARG:H	1.80	0.46
1:A:1:PRO:HB2	1:A:213:GLY:HA2	1.98	0.46
2:D:353:LYS:HE2	2:D:427:TYR:HE1	1.81	0.46
1:A:114:ALA:HB1	1:A:160:PHE:CZ	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:450:THR:O	1:A:451:LYS:HG2	2.16	0.46
2:D:317:VAL:HG23	2:D:317:VAL:O	2.15	0.46
2:B:90:VAL:HG12	2:B:90:VAL:O	2.16	0.46
1:C:266:TRP:CE2	3:F:31:DG:H4'	2.50	0.46
2:D:206:ARG:O	2:D:210:LEU:HG	2.16	0.45
1:A:438:GLU:CG	1:A:459:THR:CG2	2.95	0.45
2:D:69:THR:HG22	2:D:69:THR:O	2.17	0.45
1:C:500:GLN:HG3	7:C:761:HOH:O	2.17	0.44
1:A:491:LEU:HB3	1:A:529:GLU:HB2	1.99	0.44
1:A:26:LEU:HD22	1:A:30:LYS:HD2	1.99	0.44
1:A:472:THR:HG23	1:A:473:THR:N	2.33	0.44
2:D:30:LYS:NZ	2:D:404:GLU:OE1	2.51	0.44
2:B:242:GLN:HE21	2:B:353:LYS:HE3	1.83	0.43
5:A:602:DGT:N2	3:E:0:DC:O2	2.40	0.43
2:B:252:TRP:CD1	2:B:295:LEU:HD21	2.53	0.43
2:B:17:ASP:O	2:B:83:ARG:NH1	2.45	0.43
1:A:101:LYS:HE3	1:A:321:PRO:HG3	1.99	0.43
1:A:181:TYR:HB2	1:A:188:TYR:HB3	2.00	0.43
1:A:548:VAL:O	1:A:552:VAL:HG23	2.17	0.43
1:C:175:ASN:HB3	1:C:178:ILE:HD12	1.99	0.43
1:C:465:LYS:HD3	1:C:484:LEU:HD11	2.01	0.43
1:C:17:ASP:O	1:C:83:ARG:HD2	2.19	0.42
2:D:195:ILE:HG13	2:D:199:ARG:HE	1.84	0.42
1:A:397:THR:HG21	1:A:424:LYS:HA	2.02	0.42
2:B:21:VAL:HB	2:B:59:PRO:HD3	2.00	0.42
1:C:436:GLY:O	1:C:461:ARG:NH2	2.53	0.42
2:D:66:LYS:HD2	2:D:232:TYR:HB3	2.02	0.42
2:D:81:ASN:O	2:D:154:LYS:NZ	2.51	0.42
1:C:37:ILE:HD11	1:C:73:LYS:HD2	2.01	0.41
2:B:425:LEU:H	2:B:425:LEU:CD2	2.33	0.41
3:F:5:DC:H2"	3:F:6:DC:H5'	2.01	0.41
2:B:356:ARG:HG2	2:B:357:MET:N	2.35	0.41
1:A:331:LYS:HE2	7:C:736:HOH:O	2.20	0.41
2:D:183:TYR:CE2	2:D:184:MET:HG3	2.56	0.41
2:D:257:ILE:HD12	2:D:293:VAL:CG2	2.51	0.41
1:A:23:GLN:OE1	1:A:60:VAL:HG12	2.21	0.41
1:A:31:ILE:CG2	1:A:134:SER:HA	2.41	0.41
1:C:473:THR:O	1:C:477:THR:HG23	2.20	0.41
1:A:101:LYS:CE	1:A:321:PRO:HG3	2.50	0.41
1:A:503:LEU:O	1:A:507:GLN:HB2	2.20	0.41
1:C:35:VAL:O	1:C:39:THR:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:263:LYS:NZ	7:A:713:HOH:O	2.52	0.41
1:A:442:VAL:HG22	1:A:496:VAL:O	2.21	0.41
2:B:197:GLN:HA	2:B:197:GLN:OE1	2.21	0.41
1:A:31:ILE:HD13	1:A:135:ILE:N	2.32	0.41
1:C:156:SER:HB2	1:C:157:PRO:HD3	2.03	0.41
1:C:282:LEU:HB3	1:C:293:VAL:HG11	2.03	0.41
2:B:419:THR:O	2:B:419:THR:HG23	2.21	0.40
1:C:328:GLU:O	1:C:339:TYR:HA	2.21	0.40
2:D:332:GLN:CD	2:D:427:TYR:HB2	2.42	0.40
2:D:365:VAL:HG11	2:D:401:TRP:HB2	2.03	0.40
1:A:31:ILE:CD1	1:A:135:ILE:H	2.32	0.40
1:C:188:TYR:CD1	1:C:188:TYR:C	2.93	0.40
1:A:486:LEU:O	1:A:528:LYS:NZ	2.54	0.40
1:C:178:ILE:HD11	1:C:201:LYS:HG3	2.04	0.40

There are no symmetry-related clashes.

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	551/557 (99%)	527 (96%)	22 (4%)	2 (0%)	34	42
1	C	551/557 (99%)	530 (96%)	20 (4%)	1 (0%)	47	58
2	B	402/444 (90%)	382 (95%)	20 (5%)	0	100	100
2	D	402/444 (90%)	388 (96%)	14 (4%)	0	100	100
All	All	1906/2002 (95%)	1827 (96%)	76 (4%)	3 (0%)	47	58

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	137	ASN

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Mol	Chain	Res	Type
1	A	67	ASP
1	A	135	ILE

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	492/494 (100%)	486 (99%)	6 (1%)	71	84
1	C	492/494 (100%)	489 (99%)	3 (1%)	86	94
2	B	365/400 (91%)	356 (98%)	9 (2%)	47	65
2	D	365/400 (91%)	359 (98%)	6 (2%)	62	78
All	All	1714/1788 (96%)	1690 (99%)	24 (1%)	67	81

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	66	LYS
1	A	78	ARG
1	A	353	LYS
1	A	480	GLN
1	A	500	GLN
1	A	551	LEU
2	B	184	MET
2	B	211	ARG
2	B	284	ARG
2	B	289	LEU
2	B	295	LEU
2	B	356	ARG
2	B	422	LEU
2	B	425	LEU
2	B	427	TYR
1	C	83	ARG
1	C	188	TYR
1	C	512	LYS
2	D	72	ARG

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Mol	Chain	Res	Type
2	D	184	MET
2	D	232	TYR
2	D	250	ASP
2	D	311	LYS
2	D	427	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	221	HIS
1	A	373	GLN
1	A	480	GLN
1	A	500	GLN
2	B	182	GLN
2	B	269	GLN
1	C	136	ASN
1	C	221	HIS
1	C	278	GLN
1	C	334	GLN
1	C	464	GLN
1	C	547	GLN
2	D	182	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

4 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	OMC	F	2	3	19,22,23	2.79	8 (42%)	26,31,34	0.74	0
3	OMC	E	4	3	19,22,23	2.78	8 (42%)	26,31,34	0.73	0
3	OMC	E	2	3	19,22,23	2.76	8 (42%)	26,31,34	0.79	0
3	OMC	F	4	3	19,22,23	2.80	8 (42%)	26,31,34	0.67	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OMC	F	2	3	-	0/9/27/28	0/2/2/2
3	OMC	E	4	3	-	0/9/27/28	0/2/2/2
3	OMC	E	2	3	-	0/9/27/28	0/2/2/2
3	OMC	F	4	3	-	0/9/27/28	0/2/2/2

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	4	OMC	C2-N3	6.07	1.48	1.36
3	F	4	OMC	C2-N3	6.05	1.48	1.36
3	F	2	OMC	C6-C5	6.02	1.49	1.35
3	F	4	OMC	C6-C5	5.94	1.48	1.35
3	E	2	OMC	C6-C5	5.90	1.48	1.35
3	F	2	OMC	C2-N3	5.87	1.48	1.36
3	E	4	OMC	C6-C5	5.86	1.48	1.35
3	E	2	OMC	C2-N3	5.75	1.48	1.36
3	F	4	OMC	C4-N3	4.88	1.44	1.34
3	E	2	OMC	C2-N1	4.82	1.50	1.40
3	F	2	OMC	C4-N3	4.80	1.44	1.34
3	E	4	OMC	C4-N3	4.74	1.44	1.34
3	E	2	OMC	C4-N3	4.73	1.44	1.34
3	F	2	OMC	C2-N1	4.69	1.50	1.40
3	F	4	OMC	C2-N1	4.69	1.50	1.40
3	E	4	OMC	C2-N1	4.68	1.50	1.40
3	F	2	OMC	C6-N1	3.15	1.45	1.38
3	F	4	OMC	C6-N1	3.04	1.45	1.38
3	E	2	OMC	C6-N1	3.03	1.45	1.38
3	E	4	OMC	C4-N4	2.95	1.40	1.33
3	E	4	OMC	C6-N1	2.94	1.45	1.38
3	F	4	OMC	C4-N4	2.87	1.40	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	2	OMC	C4-N4	2.87	1.40	1.33
3	E	2	OMC	C4-N4	2.85	1.40	1.33
3	E	4	OMC	C5-C4	2.78	1.49	1.42
3	F	2	OMC	C5-C4	2.74	1.49	1.42
3	E	2	OMC	C5-C4	2.73	1.49	1.42
3	F	4	OMC	C5-C4	2.72	1.49	1.42
3	E	2	OMC	O2-C2	-2.30	1.19	1.23
3	E	4	OMC	O2-C2	-2.23	1.19	1.23
3	F	4	OMC	O2-C2	-2.21	1.19	1.23
3	F	2	OMC	O2-C2	-2.17	1.19	1.23

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	F	2	OMC	1	0
3	E	4	OMC	1	0
3	E	2	OMC	1	0
3	F	4	OMC	1	0

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 9 ligands modelled in this entry, 2 are 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	DGT	C	602	4	26,33,33	3.74	13 (50%)	32,52,52	1.37	6 (18%)
5	DGT	A	602	4	26,33,33	3.70	13 (50%)	32,52,52	1.39	7 (21%)
6	GOL	D	502	-	5,5,5	0.57	0	5,5,5	0.25	0
6	GOL	A	603	-	5,5,5	0.23	0	5,5,5	0.90	0
6	GOL	B	501	-	5,5,5	0.35	0	5,5,5	0.21	0
6	GOL	D	501	-	5,5,5	0.35	0	5,5,5	0.35	0
6	GOL	B	502	-	5,5,5	0.40	0	5,5,5	0.20	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	DGT	C	602	4	-	3/18/34/34	0/3/3/3
5	DGT	A	602	4	-	5/18/34/34	0/3/3/3
6	GOL	D	502	-	-	0/4/4/4	-
6	GOL	A	603	-	-	4/4/4/4	-
6	GOL	B	501	-	-	2/4/4/4	-
6	GOL	D	501	-	-	2/4/4/4	-
6	GOL	B	502	-	-	2/4/4/4	-

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	C	602	DGT	O4'-C1'	8.89	1.62	1.42
5	A	602	DGT	O4'-C1'	8.72	1.61	1.42
5	A	602	DGT	O4'-C4'	-7.52	1.28	1.45
5	C	602	DGT	O4'-C4'	-7.51	1.28	1.45
5	C	602	DGT	C2'-C1'	-6.78	1.33	1.52
5	A	602	DGT	C2'-C1'	-6.69	1.33	1.52
5	C	602	DGT	C2-N3	5.92	1.47	1.33
5	A	602	DGT	C2-N3	5.81	1.47	1.33
5	A	602	DGT	C2-N2	5.44	1.47	1.34
5	C	602	DGT	C2-N2	5.43	1.47	1.34
5	A	602	DGT	C4-N3	5.19	1.49	1.37
5	C	602	DGT	C4-N3	5.16	1.49	1.37
5	C	602	DGT	C6-N1	4.46	1.44	1.37
5	A	602	DGT	C6-N1	4.36	1.44	1.37
5	C	602	DGT	O6-C6	-4.16	1.14	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	602	DGT	O6-C6	-4.11	1.14	1.23
5	A	602	DGT	C5-C6	3.49	1.54	1.47
5	C	602	DGT	C5-C6	3.47	1.54	1.47
5	C	602	DGT	O3'-C3'	-2.96	1.37	1.43
5	A	602	DGT	O3'-C3'	-2.88	1.37	1.43
5	A	602	DGT	C2-N1	2.84	1.44	1.37
5	C	602	DGT	C2-N1	2.81	1.44	1.37
5	C	602	DGT	PA-O5'	2.47	1.69	1.59
5	A	602	DGT	C5-C4	-2.40	1.37	1.43
5	A	602	DGT	PA-O5'	2.39	1.69	1.59
5	C	602	DGT	C5-C4	-2.32	1.37	1.43

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	602	DGT	C5-C6-N1	3.34	119.85	113.95
5	C	602	DGT	C5-C6-N1	3.32	119.81	113.95
5	C	602	DGT	C2-N1-C6	-2.85	119.84	125.10
5	A	602	DGT	C2-N1-C6	-2.77	119.99	125.10
5	C	602	DGT	C8-N7-C5	2.62	107.98	102.99
5	A	602	DGT	C8-N7-C5	2.58	107.91	102.99
5	A	602	DGT	PB-O3B-PG	-2.55	124.07	132.83
5	C	602	DGT	PB-O3B-PG	-2.49	124.27	132.83
5	A	602	DGT	O6-C6-C5	-2.20	120.07	124.37
5	C	602	DGT	PA-O3A-PB	-2.19	125.31	132.83
5	C	602	DGT	O6-C6-C5	-2.15	120.17	124.37
5	A	602	DGT	PA-O3A-PB	-2.15	125.44	132.83
5	A	602	DGT	N2-C2-N1	2.01	121.00	116.71

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	602	DGT	PB-O3B-PG-O2G
5	C	602	DGT	PB-O3B-PG-O1G
6	A	603	GOL	O1-C1-C2-O2
6	A	603	GOL	O1-C1-C2-C3
6	B	501	GOL	C1-C2-C3-O3
6	D	501	GOL	O1-C1-C2-O2
6	A	603	GOL	C1-C2-C3-O3
6	B	502	GOL	O1-C1-C2-C3
6	D	501	GOL	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
6	A	603	GOL	O2-C2-C3-O3
5	A	602	DGT	PB-O3A-PA-O2A
6	B	501	GOL	O2-C2-C3-O3
5	C	602	DGT	PA-O3A-PB-O1B
6	B	502	GOL	O1-C1-C2-O2
5	A	602	DGT	PB-O3B-PG-O1G
5	C	602	DGT	PB-O3B-PG-O2G
5	A	602	DGT	PA-O3A-PB-O1B
5	A	602	DGT	PA-O3A-PB-O2B

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	602	DGT	1	0

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

Ligand DGT C 602

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT A 602

Bond lengths

Bond angles

Torsions

Rings
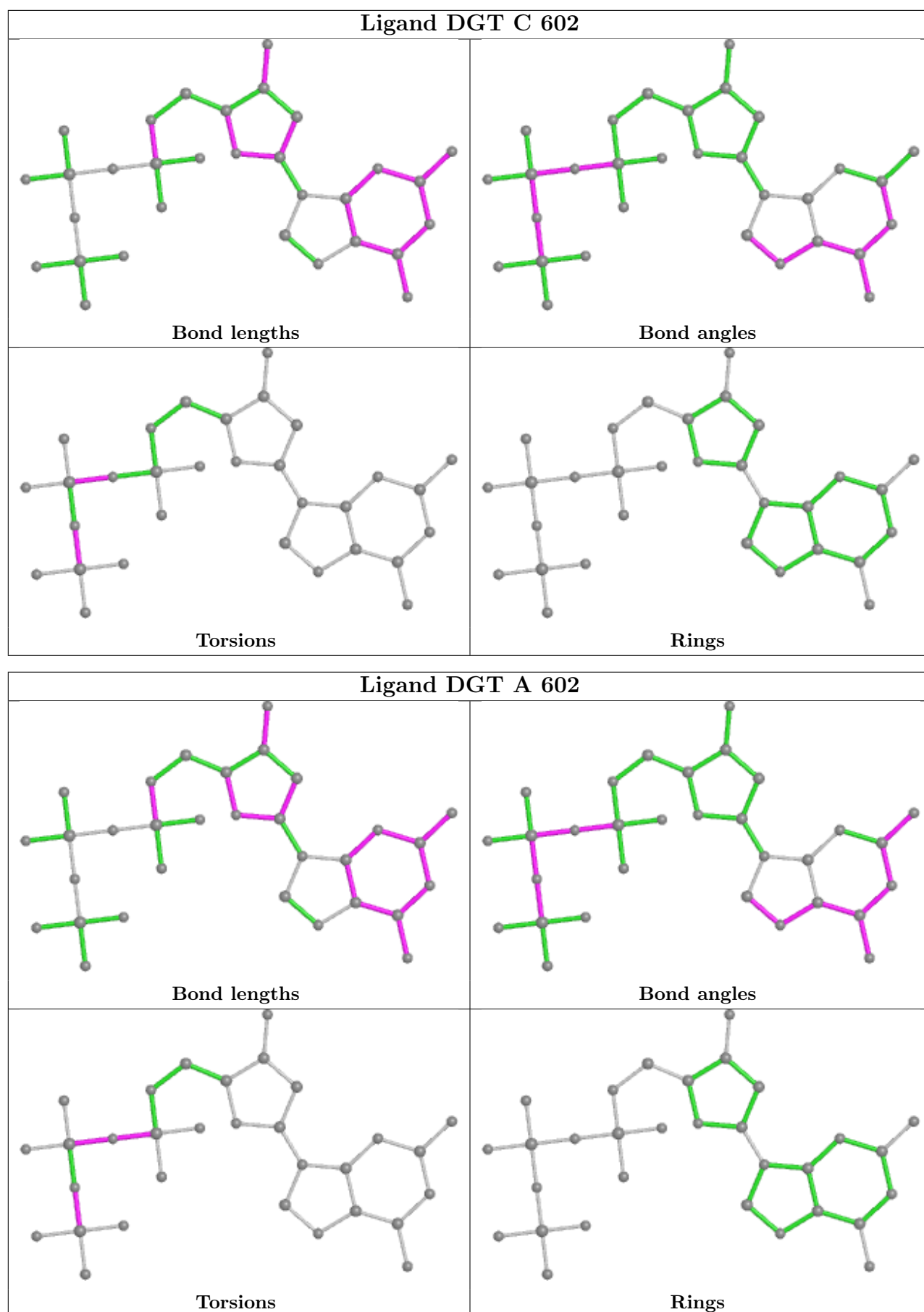
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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(Å²)	Q<0.9
1	A	553/557 (99%)	0.43	32 (5%)	23	29	27, 52, 98, 152	0
1	C	553/557 (99%)	0.48	53 (9%)	8	10	27, 52, 93, 173	0
2	B	406/444 (91%)	0.88	68 (16%)	1	2	30, 64, 130, 172	0
2	D	406/444 (91%)	0.36	21 (5%)	27	34	27, 49, 94, 189	0
3	E	33/38 (86%)	-0.15	0	100	100	31, 50, 80, 129	0
3	F	36/38 (94%)	-0.08	1 (2%)	53	60	34, 60, 108, 145	0
All	All	1987/2078 (95%)	0.50	175 (8%)	10	13	27, 53, 110, 189	0

All (175) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	301	LEU	14.5
2	D	67	ASP	10.2
2	B	88	TRP	9.8
2	B	357	MET	8.3
2	D	360	ALA	8.3
2	B	90	VAL	8.2
2	B	360	ALA	8.1
1	C	68	SER	8.1
2	D	359	GLY	7.4
2	B	295	LEU	7.3
1	A	140	PRO	7.2
2	B	361	HIS	7.1
2	D	231	GLY	6.9
2	B	93	GLY	6.4
2	B	212	TRP	6.3
1	A	138	GLU	6.3
1	C	138	GLU	6.2
1	C	137	ASN	6.0
1	C	69	THR	5.9

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Mol	Chain	Res	Type	RSRZ
1	C	140	PRO	5.9
2	B	92	LEU	5.6
2	B	281	LYS	5.6
1	A	133	PRO	5.5
2	B	5	ILE	5.4
2	B	94	ILE	5.4
1	A	28	GLU	5.4
1	C	141	GLY	5.4
1	C	135	ILE	5.3
2	B	89	GLU	5.3
2	D	425	LEU	5.3
2	B	91	GLN	5.2
2	D	212	TRP	5.2
1	A	139	THR	5.2
2	B	297	GLU	5.1
1	C	142	ILE	5.1
1	C	132	ILE	5.0
1	C	35	VAL	4.8
2	B	245	VAL	4.8
2	B	278	GLN	4.8
1	C	53	GLU	4.8
1	A	69	THR	4.8
2	D	361	HIS	4.8
2	D	174	GLN	4.7
1	C	52	PRO	4.7
1	A	142	ILE	4.5
1	C	136	ASN	4.5
2	B	238	LYS	4.4
2	D	66	LYS	4.4
2	D	232	TYR	4.4
2	B	213	GLY	4.3
1	C	26	LEU	4.3
2	B	359	GLY	4.3
2	D	5	ILE	4.2
2	B	6	GLU	4.2
2	B	299	ALA	4.1
1	C	49	LYS	4.1
1	C	133	PRO	4.1
2	B	250	ASP	4.0
2	D	68	SER	4.0
1	C	553	SER	4.0
2	B	252	TRP	4.0

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Mol	Chain	Res	Type	RSRZ
2	B	66	LYS	4.0
2	D	424	LYS	4.0
1	A	551	LEU	3.9
1	C	32	LYS	3.9
1	C	67	ASP	3.9
2	B	248	GLU	3.8
1	A	141	GLY	3.8
2	B	279	LEU	3.8
2	B	249	LYS	3.8
1	A	137	ASN	3.7
2	D	211	ARG	3.7
1	A	68	SER	3.7
1	A	550	LYS	3.6
1	C	28	GLU	3.6
2	B	251	SER	3.6
1	C	449	GLU	3.6
1	A	27	THR	3.5
2	B	95	PRO	3.5
2	B	272	ALA	3.4
2	D	69	THR	3.4
2	B	274	ILE	3.4
1	A	541	GLY	3.3
2	B	362	THR	3.3
1	A	136	ASN	3.3
1	C	452	LEU	3.2
2	B	296	THR	3.2
1	A	67	ASP	3.2
1	C	34	LEU	3.2
1	C	37	ILE	3.2
2	B	423	VAL	3.2
2	B	422	LEU	3.2
2	B	232	TYR	3.1
1	C	550	LYS	3.1
1	A	36	GLU	3.1
1	C	131	THR	3.1
2	B	67	ASP	3.1
1	C	39	THR	3.1
1	C	139	THR	3.1
1	C	50	ILE	3.0
1	A	135	ILE	3.0
1	A	542	ILE	3.0
1	C	55	PRO	3.0

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Mol	Chain	Res	Type	RSRZ
2	B	168	LEU	3.0
2	B	305	GLU	3.0
1	C	219	LYS	3.0
1	A	66	LYS	2.9
1	C	469	LEU	2.9
1	A	549	ASP	2.9
2	B	275	LYS	2.9
1	C	470	THR	2.9
1	C	71	TRP	2.9
1	C	144	TYR	2.9
2	B	303	LEU	2.8
1	C	70	LYS	2.8
1	C	54	ASN	2.8
2	D	210	LEU	2.7
2	B	427	TYR	2.7
1	A	447	ASN	2.7
1	C	450	THR	2.7
2	B	260	LEU	2.7
2	D	207	GLN	2.7
1	C	79	GLU	2.6
3	F	18	DT	2.6
1	C	33	ALA	2.6
1	C	448	ARG	2.6
2	B	231	GLY	2.6
2	B	284	ARG	2.6
1	C	552	VAL	2.6
1	C	551	LEU	2.5
1	A	457	TYR	2.5
2	B	424	LYS	2.5
1	A	134	SER	2.5
1	C	36	GLU	2.5
2	D	358	LYS	2.5
1	A	132	ILE	2.5
1	A	413	GLU	2.4
2	B	177	ASP	2.4
1	A	61	PHE	2.4
2	D	177	ASP	2.3
1	A	464	GLN	2.3
2	B	285	GLY	2.3
2	B	277	ARG	2.3
2	B	358	LYS	2.3
1	C	547	GLN	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	413	GLU	2.3
1	C	195	ILE	2.3
2	B	283	LEU	2.2
1	C	457	TYR	2.2
1	A	64	LYS	2.2
2	D	166	LYS	2.2
2	B	9	PRO	2.2
1	A	24	TRP	2.2
1	C	134	SER	2.2
2	B	161	GLN	2.2
1	C	60	VAL	2.2
1	C	51	GLY	2.2
2	D	427	TYR	2.2
2	B	294	PRO	2.2
1	C	199	ARG	2.1
2	B	211	ARG	2.1
1	C	177	ASP	2.1
2	B	244	ILE	2.1
2	B	266	TRP	2.1
2	B	356	ARG	2.1
2	B	68	SER	2.1
2	B	162	SER	2.1
2	B	334	GLN	2.0
1	A	431	LYS	2.0
1	A	403	THR	2.0
2	B	304	ALA	2.0
2	B	280	SER	2.0
2	B	169	GLU	2.0
2	B	246	LEU	2.0
2	B	425	LEU	2.0

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

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	OMC	E	2	21/22	0.97	0.17	30,34,39,43	0
3	OMC	F	2	21/22	0.97	0.16	37,42,47,51	0
3	OMC	E	4	21/22	0.98	0.19	26,30,37,43	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	OMC	F	4	21/22	0.98	0.18	26,36,40,41	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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.

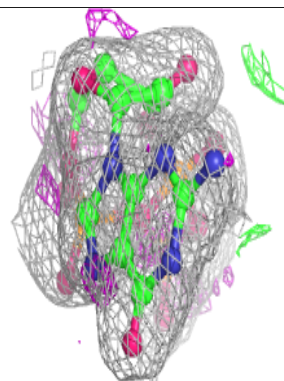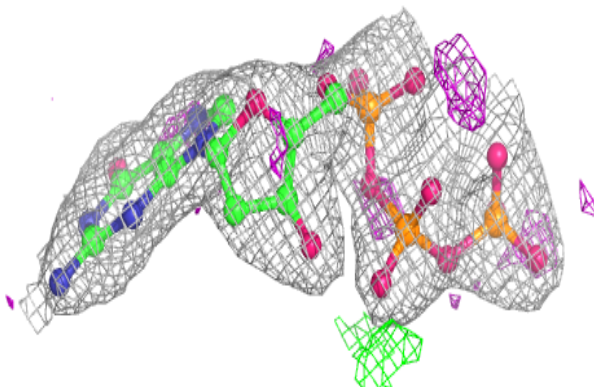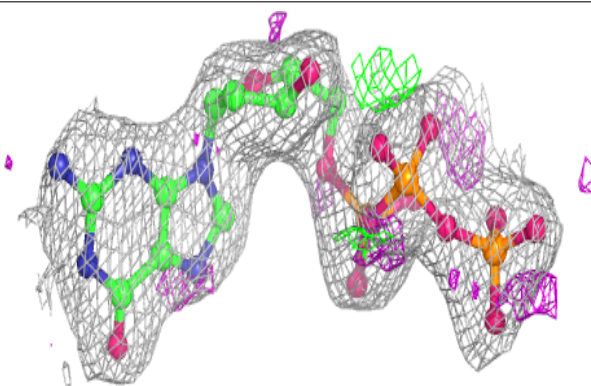| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	MG	A	601	1/1	0.75	0.10	49,49,49,49	0
6	GOL	B	501	6/6	0.77	0.27	53,67,68,71	0
6	GOL	D	502	6/6	0.85	0.22	46,51,55,56	0
6	GOL	A	603	6/6	0.86	0.29	60,67,68,72	0
4	MG	C	601	1/1	0.89	0.33	56,56,56,56	0
6	GOL	B	502	6/6	0.92	0.23	38,49,50,54	0
5	DGT	C	602	31/31	0.93	0.13	43,54,75,81	0
6	GOL	D	501	6/6	0.94	0.23	38,50,50,50	0
5	DGT	A	602	31/31	0.95	0.15	40,50,58,64	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 DGT C 602:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
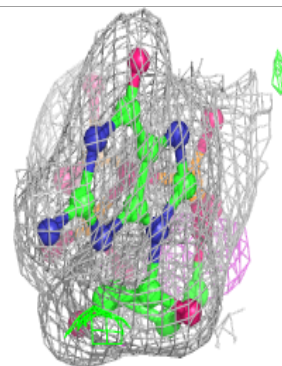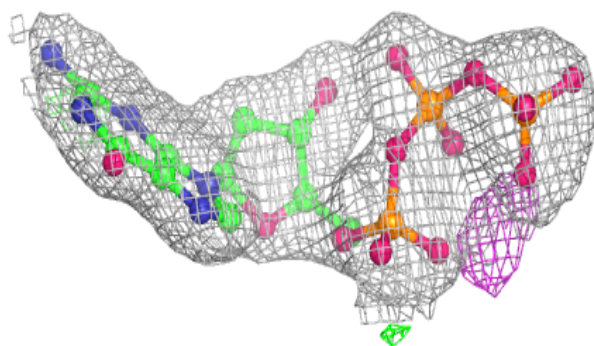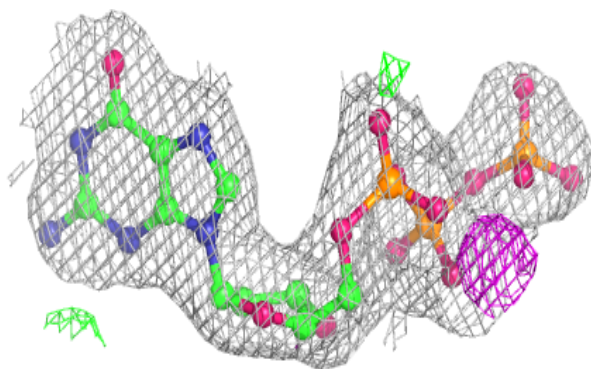
Electron density around DGT A 602:

$2mF_o$-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 ⓘ

There are no such residues in this entry.