



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 05:16 AM UTC

PDB ID : 3TDO / pdb_00003tdo
Title : Crystal structure of HSC at pH 9.0
Authors : Czyzewski, B.K.; Wang, D.-N.
Deposited on : 2011-08-11
Resolution : 2.20 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

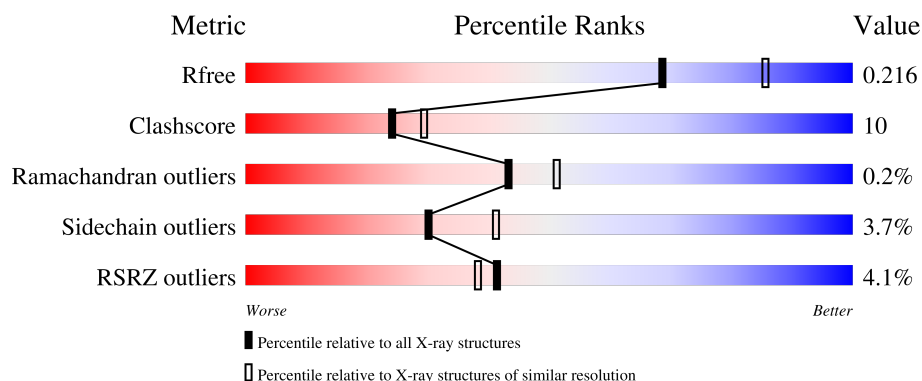
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.20 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	6164 (2.20-2.20)
Clashscore	190562	6851 (2.20-2.20)
Ramachandran outliers	187476	6768 (2.20-2.20)
Sidechain outliers	187428	6769 (2.20-2.20)
RSRZ outliers	180081	6166 (2.20-2.20)

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	268	2% 85% 10%
1	B	268	3% 82% 12%
1	C	268	9% 75% 20%
1	D	268	3% 82% 12%
1	E	268	3% 81% 13%

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
3	BOG	B	302	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 10162 atoms, of which 230 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 Putative formate/nitrite transporter.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	257	Total	C	N	O	S	0	0	0
			1897	1244	299	340	14			
1	B	257	Total	C	N	O	S	0	0	0
			1901	1247	300	340	14			
1	C	266	Total	C	N	O	S	0	0	0
			1969	1290	311	354	14			
1	D	257	Total	C	N	O	S	0	0	0
			1901	1247	300	340	14			
1	E	257	Total	C	N	O	S	0	0	0
			1901	1247	300	340	14			

There are 55 discrepancies between the modelled and reference sequences:

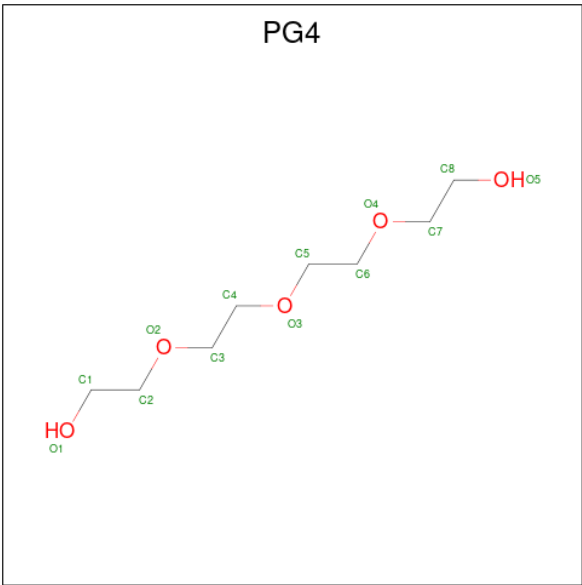
Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	MET	-	initiating methionine	UNP Q186B7
A	-1	GLY	-	expression tag	UNP Q186B7
A	0	ARG	-	expression tag	UNP Q186B7
A	1	ALA	-	expression tag	UNP Q186B7
A	259	ALA	-	expression tag	UNP Q186B7
A	260	ALA	-	expression tag	UNP Q186B7
A	261	ALA	-	expression tag	UNP Q186B7
A	262	GLU	-	expression tag	UNP Q186B7
A	263	ASN	-	expression tag	UNP Q186B7
A	264	LEU	-	expression tag	UNP Q186B7
A	265	TYR	-	expression tag	UNP Q186B7
B	-2	MET	-	initiating methionine	UNP Q186B7
B	-1	GLY	-	expression tag	UNP Q186B7
B	0	ARG	-	expression tag	UNP Q186B7
B	1	ALA	-	expression tag	UNP Q186B7
B	259	ALA	-	expression tag	UNP Q186B7
B	260	ALA	-	expression tag	UNP Q186B7
B	261	ALA	-	expression tag	UNP Q186B7
B	262	GLU	-	expression tag	UNP Q186B7

Continued on next page...

Continued from previous page...

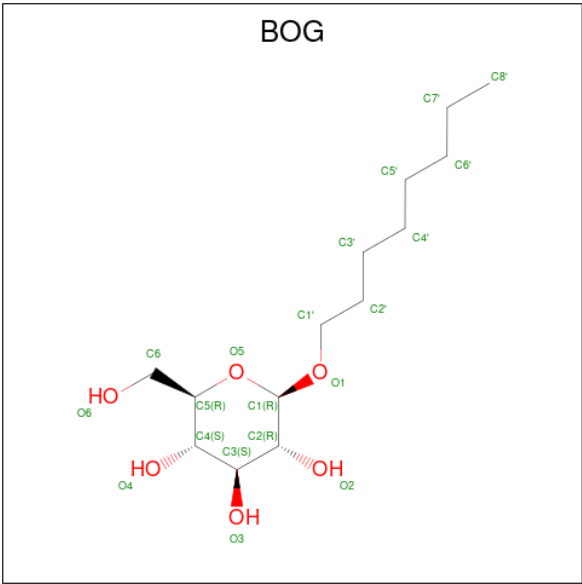
Chain	Residue	Modelled	Actual	Comment	Reference
B	263	ASN	-	expression tag	UNP Q186B7
B	264	LEU	-	expression tag	UNP Q186B7
B	265	TYR	-	expression tag	UNP Q186B7
C	-2	MET	-	initiating methionine	UNP Q186B7
C	-1	GLY	-	expression tag	UNP Q186B7
C	0	ARG	-	expression tag	UNP Q186B7
C	1	ALA	-	expression tag	UNP Q186B7
C	259	ALA	-	expression tag	UNP Q186B7
C	260	ALA	-	expression tag	UNP Q186B7
C	261	ALA	-	expression tag	UNP Q186B7
C	262	GLU	-	expression tag	UNP Q186B7
C	263	ASN	-	expression tag	UNP Q186B7
C	264	LEU	-	expression tag	UNP Q186B7
C	265	TYR	-	expression tag	UNP Q186B7
D	-2	MET	-	initiating methionine	UNP Q186B7
D	-1	GLY	-	expression tag	UNP Q186B7
D	0	ARG	-	expression tag	UNP Q186B7
D	1	ALA	-	expression tag	UNP Q186B7
D	259	ALA	-	expression tag	UNP Q186B7
D	260	ALA	-	expression tag	UNP Q186B7
D	261	ALA	-	expression tag	UNP Q186B7
D	262	GLU	-	expression tag	UNP Q186B7
D	263	ASN	-	expression tag	UNP Q186B7
D	264	LEU	-	expression tag	UNP Q186B7
D	265	TYR	-	expression tag	UNP Q186B7
E	-2	MET	-	initiating methionine	UNP Q186B7
E	-1	GLY	-	expression tag	UNP Q186B7
E	0	ARG	-	expression tag	UNP Q186B7
E	1	ALA	-	expression tag	UNP Q186B7
E	259	ALA	-	expression tag	UNP Q186B7
E	260	ALA	-	expression tag	UNP Q186B7
E	261	ALA	-	expression tag	UNP Q186B7
E	262	GLU	-	expression tag	UNP Q186B7
E	263	ASN	-	expression tag	UNP Q186B7
E	264	LEU	-	expression tag	UNP Q186B7
E	265	TYR	-	expression tag	UNP Q186B7

- Molecule 2 is TETRAETHYLENE GLYCOL (CCD ID: PG4) (formula: C₈H₁₈O₅).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	H	O	0	0
			31	8	18	5		
2	B	1	Total	C	H	O	0	0
			31	8	18	5		
2	C	1	Total	C	H	O	0	0
			31	8	18	5		
2	D	1	Total	C	H	O	0	0
			31	8	18	5		
2	E	1	Total	C	H	O	0	0
			31	8	18	5		

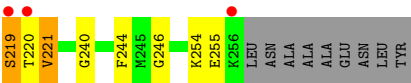
- Molecule 3 is octyl beta-D-glucopyranoside (CCD ID: BOG) (formula: C₁₄H₂₈O₆).



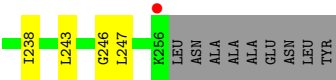
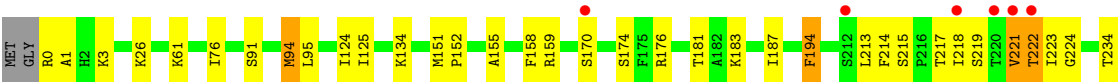
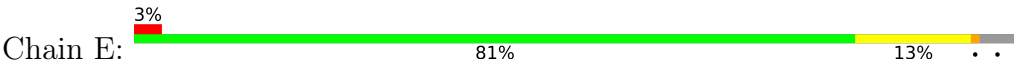
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	H	O	0	0
			48	14	28	6		
3	A	1	Total	C	H	O	0	0
			48	14	28	6		
3	B	1	Total	C	H	O	0	0
			48	14	28	6		
3	B	1	Total	C	H	O	0	0
			48	14	28	6		
3	D	1	Total	C	H	O	0	0
			48	14	28	6		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	45	Total	O	0	0
			45	45		
4	B	52	Total	O	0	0
			52	52		
4	C	15	Total	O	0	0
			15	15		
4	D	48	Total	O	0	0
			48	48		
4	E	38	Total	O	0	0
			38	38		



● Molecule 1: Putative formate/nitrite transporter



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	98.82Å 118.74Å 149.82Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.41 – 2.20 49.41 – 2.20	Depositor EDS
% Data completeness (in resolution range)	99.8 (49.41-2.20) 95.8 (49.41-2.20)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.11 (at 2.20Å)	Xtriage
Refinement program	PHENIX 1.7.1 _743	Depositor
R, R_{free}	0.180 , 0.217 0.179 , 0.216	Depositor DCC
R_{free} test set	2000 reflections (2.22%)	wwPDB-VP
Wilson B-factor (Å ²)	44.5	Xtriage
Anisotropy	0.311	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 59.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	10162	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 4.74% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PG4, BOG

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	0/1929	0.86	2/2615 (0.1%)
1	B	0.64	0/1933	0.84	0/2619
1	C	0.48	0/2002	0.84	4/2714 (0.1%)
1	D	0.61	0/1933	0.87	0/2619
1	E	0.59	0/1933	0.86	2/2619 (0.1%)
All	All	0.59	0/9730	0.85	8/13186 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1
1	C	0	1
All	All	0	2

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	215	SER	CA-C-N	8.69	128.40	119.19
1	E	215	SER	C-N-CA	8.69	128.40	119.19
1	C	260	ALA	N-CA-C	-6.55	104.91	113.17
1	A	132	VAL	N-CA-C	5.39	117.36	112.29
1	C	215	SER	CA-C-N	5.28	124.61	118.85
1	C	215	SER	C-N-CA	5.28	124.61	118.85
1	A	221	VAL	N-CA-C	5.16	120.07	109.34
1	C	132	VAL	N-CA-C	5.05	117.03	112.29

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	0	ARG	Peptide
1	C	0	ARG	Peptide

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	1897	0	1996	28	0
1	B	1901	0	2007	36	0
1	C	1969	0	2071	70	0
1	D	1901	0	2007	33	0
1	E	1901	0	2007	39	0
2	A	13	18	18	2	0
2	B	13	18	18	4	0
2	C	13	18	18	2	0
2	D	13	18	18	1	0
2	E	13	18	18	4	0
3	A	40	56	56	4	0
3	B	40	56	56	14	0
3	D	20	28	28	0	0
4	A	45	0	0	3	0
4	B	52	0	0	0	0
4	C	15	0	0	0	0
4	D	48	0	0	2	0
4	E	38	0	0	3	0
All	All	9932	230	10318	201	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 (201) 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:C:258:ASN:HA	1:C:260:ALA:N	1.49	1.27

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:258:ASN:HA	1:C:260:ALA:H	0.99	1.05
1:C:0:ARG:O	1:C:0:ARG:HD3	1.55	1.04
1:B:61:LYS:HD3	2:B:301:PG4:H21	1.40	1.04
1:C:213:LEU:HD23	1:C:221:VAL:HG11	1.38	1.03
1:E:222:THR:HG23	1:E:223:ILE:N	1.78	0.96
1:C:258:ASN:CA	1:C:260:ALA:H	1.79	0.94
1:C:258:ASN:N	1:C:259:ALA:HB3	1.83	0.92
1:D:254:LYS:HD2	1:D:255:GLU:H	1.38	0.86
1:D:215:SER:OG	1:D:217:THR:HG23	1.75	0.86
1:A:101:ILE:HD12	1:A:101:ILE:H	1.45	0.81
3:B:302:BOG:C2'	1:C:181:THR:HG21	2.10	0.81
1:B:133:ASP:O	1:B:217:THR:HG21	1.80	0.80
1:C:14:ILE:HD12	1:C:99:VAL:HG13	1.62	0.80
1:C:213:LEU:CD2	1:C:221:VAL:HG11	2.11	0.80
1:A:254:LYS:HD2	1:A:255:GLU:H	1.47	0.78
3:B:302:BOG:H3'2	1:E:181:THR:HG21	1.64	0.78
1:C:0:ARG:HD3	1:C:0:ARG:C	2.09	0.77
1:D:132:VAL:O	1:D:217:THR:HG21	1.85	0.76
1:B:254:LYS:HE2	1:B:256:LYS:CE	2.15	0.76
1:B:254:LYS:HE2	1:B:256:LYS:NZ	2.01	0.76
3:B:302:BOG:H2'1	1:C:181:THR:HG21	1.66	0.75
1:C:258:ASN:CA	1:C:260:ALA:N	2.41	0.75
1:B:254:LYS:HE2	1:B:256:LYS:HE3	1.67	0.74
1:E:0:ARG:N	4:E:434:HOH:O	2.19	0.73
1:E:222:THR:CG2	1:E:223:ILE:N	2.50	0.72
1:B:181:THR:HG21	3:B:302:BOG:C3'	2.21	0.71
1:A:61:LYS:NZ	2:A:301:PG4:H12	2.06	0.71
1:D:254:LYS:HD2	1:D:255:GLU:N	2.04	0.70
1:C:213:LEU:HD23	1:C:221:VAL:CG1	2.20	0.70
1:C:213:LEU:CD2	1:C:221:VAL:CG1	2.69	0.69
1:E:94:MET:HE2	1:E:95:LEU:N	2.08	0.69
1:B:113:VAL:HG11	3:B:303:BOG:H6'1	1.74	0.68
1:C:250:TYR:CE1	1:C:254:LYS:HD3	2.28	0.68
1:B:61:LYS:CD	2:B:301:PG4:H21	2.21	0.67
1:B:181:THR:HG21	3:B:302:BOG:H3'1	1.78	0.66
1:E:124:ILE:HG13	1:E:214:PHE:CE2	2.30	0.66
1:B:87:ASN:O	1:B:91:SER:HB3	1.96	0.66
1:A:221:VAL:N	4:A:443:HOH:O	2.24	0.65
1:E:151:MET:HG3	1:E:152:PRO:HD2	1.78	0.65
1:E:217:THR:O	4:E:429:HOH:O	2.14	0.65
3:B:302:BOG:H2'2	1:C:181:THR:HG21	1.77	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:0:ARG:HH22	1:D:3:LYS:HG3	1.62	0.64
1:C:220:THR:HG23	1:C:220:THR:O	1.97	0.64
1:A:0:ARG:HH12	1:A:3:LYS:HB2	1.61	0.64
1:C:14:ILE:HD12	1:C:99:VAL:CG1	2.28	0.64
1:B:254:LYS:HE2	1:B:256:LYS:HZ1	1.62	0.63
1:C:227:ILE:O	1:C:231:VAL:HG23	1.98	0.63
1:E:94:MET:HE2	1:E:94:MET:C	2.24	0.63
1:A:254:LYS:HD2	1:A:255:GLU:N	2.14	0.62
1:C:25:VAL:O	1:C:29:VAL:HG23	1.99	0.62
1:C:221:VAL:CG1	1:C:222:THR:N	2.62	0.62
1:B:222:THR:HG23	1:B:225:GLY:H	1.65	0.61
1:D:219:SER:OG	4:D:436:HOH:O	2.16	0.61
1:A:61:LYS:HZ2	2:A:301:PG4:H12	1.65	0.61
1:A:155:ALA:O	1:A:159:ARG:HG3	1.99	0.61
1:A:222:THR:N	4:A:443:HOH:O	1.90	0.61
1:A:116:LEU:CD1	3:A:303:BOG:H8'3	2.29	0.61
1:C:219:SER:O	1:C:220:THR:HG22	2.01	0.60
1:D:220:THR:O	1:D:220:THR:OG1	2.21	0.59
1:C:102:LYS:N	1:C:102:LYS:HD3	2.17	0.59
1:E:222:THR:HG23	1:E:223:ILE:H	1.66	0.59
1:B:254:LYS:HZ3	1:B:256:LYS:HD2	1.69	0.58
1:C:20:LEU:HD11	1:C:110:TYR:HD2	1.69	0.58
1:E:91:SER:OG	1:E:246:GLY:HA3	2.03	0.58
1:C:100:SER:OG	1:C:102:LYS:HE3	2.04	0.58
1:C:258:ASN:HA	1:C:259:ALA:C	2.26	0.58
1:A:213:LEU:HD21	1:A:222:THR:HA	1.86	0.57
1:C:258:ASN:CG	1:C:260:ALA:HB3	2.30	0.57
1:E:219:SER:HB3	1:E:221:VAL:HG23	1.86	0.57
1:A:221:VAL:O	1:A:222:THR:OG1	2.20	0.57
1:B:194:PHE:CD1	1:B:194:PHE:C	2.83	0.56
1:D:36:LEU:HD23	1:D:36:LEU:C	2.31	0.56
1:D:126:PHE:CE2	1:D:132:VAL:HG13	2.40	0.56
3:B:302:BOG:C3'	1:E:181:THR:HG21	2.34	0.56
1:B:0:ARG:O	1:B:0:ARG:HG2	2.06	0.56
1:E:194:PHE:C	1:E:194:PHE:CD1	2.84	0.56
1:B:181:THR:HG21	3:B:302:BOG:H3'2	1.88	0.55
1:C:219:SER:OG	1:C:220:THR:N	2.37	0.55
1:C:258:ASN:H	1:C:259:ALA:HB3	1.68	0.55
1:A:110:TYR:CE1	3:A:302:BOG:H2'1	2.42	0.55
1:A:76:ILE:HG13	1:A:187:ILE:HD11	1.87	0.55
1:C:10:THR:O	1:C:14:ILE:HD13	2.07	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:194:PHE:C	1:D:194:PHE:CD1	2.84	0.54
1:E:0:ARG:HH22	1:E:3:LYS:HB2	1.72	0.54
1:A:0:ARG:HG2	1:A:1:ALA:N	2.22	0.54
1:A:213:LEU:HD21	1:A:222:THR:CA	2.37	0.54
1:A:255:GLU:HA	1:A:255:GLU:OE1	2.08	0.54
1:B:106:LYS:HG3	3:B:303:BOG:O6	2.07	0.54
1:E:151:MET:HG3	1:E:152:PRO:CD	2.37	0.54
1:A:234:THR:O	1:A:238:ILE:HG13	2.08	0.53
1:C:221:VAL:HG13	1:C:222:THR:N	2.22	0.53
3:B:302:BOG:H2'1	1:E:181:THR:HG21	1.90	0.53
1:C:151:MET:HG3	1:C:152:PRO:HD2	1.91	0.53
1:E:218:ILE:HD12	1:E:218:ILE:N	2.24	0.53
1:B:142:ALA:HB2	1:B:218:ILE:HG23	1.91	0.53
1:E:0:ARG:O	1:E:176:ARG:NH2	2.37	0.53
1:D:151:MET:HG3	1:D:152:PRO:HD2	1.91	0.52
1:E:61:LYS:HG2	2:E:301:PG4:H31	1.91	0.52
1:C:194:PHE:C	1:C:194:PHE:CD1	2.87	0.52
1:B:215:SER:HB3	1:B:218:ILE:HD12	1.92	0.52
1:B:256:LYS:HD2	1:E:26:LYS:HE3	1.92	0.52
1:B:148:LYS:NZ	2:B:301:PG4:H72	2.24	0.51
1:B:5:THR:HG21	1:B:172:LEU:HD11	1.91	0.51
1:C:101:ILE:HD12	1:C:101:ILE:N	2.24	0.51
3:B:302:BOG:H2'2	1:D:181:THR:HG21	1.92	0.51
1:E:0:ARG:HG2	1:E:1:ALA:N	2.26	0.51
1:C:173:CYS:O	1:C:177:THR:HG22	2.11	0.50
1:C:155:ALA:O	1:C:159:ARG:HG3	2.11	0.50
1:E:76:ILE:HG13	1:E:187:ILE:HD11	1.93	0.50
1:A:116:LEU:HD13	3:A:303:BOG:H8'3	1.92	0.50
1:D:91:SER:OG	1:D:246:GLY:HA3	2.11	0.50
1:D:218:ILE:CG2	1:D:219:SER:N	2.73	0.50
1:C:221:VAL:O	1:C:222:THR:OG1	2.25	0.49
1:B:155:ALA:O	1:B:159:ARG:HG3	2.12	0.49
1:A:151:MET:HG3	1:A:152:PRO:HD2	1.94	0.49
1:C:213:LEU:HD21	1:C:221:VAL:HG13	1.94	0.49
1:C:257:LEU:C	1:C:259:ALA:HB3	2.36	0.49
1:C:153:PHE:CD1	1:C:153:PHE:C	2.91	0.48
1:D:148:LYS:HE3	2:D:301:PG4:H81	1.95	0.48
1:A:221:VAL:CA	4:A:443:HOH:O	2.60	0.48
1:B:102:LYS:HB2	1:B:102:LYS:NZ	2.28	0.48
1:C:256:LYS:O	1:C:259:ALA:HB2	2.14	0.48
1:E:61:LYS:CE	2:E:301:PG4:H22	2.44	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:148:LYS:HZ1	2:B:301:PG4:H72	1.79	0.47
1:B:42:ILE:HD11	1:B:204:ALA:HB1	1.96	0.47
1:E:221:VAL:O	1:E:222:THR:HG22	2.14	0.47
1:E:61:LYS:HE2	2:E:301:PG4:H22	1.95	0.47
1:E:174:SER:HA	1:E:183:LYS:HG2	1.96	0.47
1:C:101:ILE:HD12	1:C:101:ILE:H	1.80	0.47
1:C:14:ILE:CD1	1:C:99:VAL:HG13	2.40	0.47
1:B:254:LYS:CE	1:B:256:LYS:HE3	2.41	0.47
1:A:116:LEU:HD11	3:A:303:BOG:H8'3	1.94	0.47
1:C:9:LEU:HD23	1:C:175:PHE:CE2	2.50	0.47
1:C:221:VAL:HG12	1:C:222:THR:H	1.80	0.47
1:A:240:GLY:O	1:A:244:PHE:HB2	2.14	0.46
1:C:17:ILE:HA	1:C:107:ILE:HD11	1.97	0.46
1:C:14:ILE:HD11	1:C:98:GLY:C	2.40	0.46
1:C:213:LEU:CD2	1:C:221:VAL:HG13	2.45	0.46
1:C:136:PRO:HA	1:C:139:GLU:OE1	2.16	0.46
1:C:222:THR:O	1:C:225:GLY:N	2.30	0.46
1:C:14:ILE:HD11	1:C:98:GLY:HA3	1.98	0.46
1:C:213:LEU:HD21	1:C:221:VAL:CG1	2.46	0.46
1:E:61:LYS:NZ	2:E:301:PG4:H22	2.31	0.46
1:C:102:LYS:HD3	1:C:102:LYS:H	1.81	0.46
1:C:245:MET:O	1:C:249:THR:HG23	2.16	0.46
1:C:240:GLY:O	1:C:244:PHE:HB2	2.16	0.46
1:C:257:LEU:HA	1:C:259:ALA:HB3	1.97	0.46
1:D:145:ALA:HB1	1:D:221:VAL:HG11	1.98	0.45
1:D:126:PHE:CE2	1:D:132:VAL:CG1	2.99	0.45
1:A:166:LEU:HD21	1:B:40:ILE:HG21	1.98	0.45
1:E:234:THR:O	1:E:238:ILE:HG13	2.16	0.45
1:C:14:ILE:HD11	1:C:98:GLY:CA	2.47	0.45
1:A:194:PHE:C	1:A:194:PHE:CD1	2.95	0.45
1:B:91:SER:OG	1:B:246:GLY:HA3	2.17	0.45
1:E:218:ILE:HA	4:E:429:HOH:O	2.17	0.45
1:D:31:SER:CB	1:D:114:GLY:HA3	2.48	0.44
1:B:144:THR:HG22	1:B:148:LYS:HE2	2.00	0.44
1:E:222:THR:HG23	1:E:224:GLY:N	2.33	0.44
1:E:151:MET:HE3	1:E:151:MET:HB2	1.82	0.44
1:C:148:LYS:NZ	2:C:301:PG4:H32	2.32	0.43
1:D:127:VAL:O	4:D:406:HOH:O	2.21	0.43
1:C:255:GLU:O	1:C:257:LEU:O	2.34	0.43
1:B:158:PHE:HD1	1:E:125:ILE:HG23	1.83	0.43
1:C:25:VAL:HG13	1:C:26:LYS:N	2.32	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:5:THR:HG21	1:D:172:LEU:HD11	1.99	0.43
1:D:215:SER:HG	1:D:217:THR:HG23	1.80	0.43
1:C:61:LYS:NZ	2:C:301:PG4:O4	2.35	0.43
1:D:42:ILE:HD11	1:D:204:ALA:HB1	2.01	0.43
3:B:302:BOG:C2'	1:E:181:THR:HG21	2.49	0.43
1:E:0:ARG:CG	1:E:1:ALA:N	2.81	0.43
1:C:27:TYR:OH	1:C:107:ILE:HG23	2.19	0.43
1:E:155:ALA:O	1:E:159:ARG:HG3	2.19	0.43
1:C:36:LEU:C	1:C:36:LEU:HD23	2.44	0.42
1:D:10:THR:O	1:D:14:ILE:HG13	2.19	0.42
1:B:25:VAL:O	1:B:29:VAL:HG23	2.19	0.42
1:D:210:SER:O	1:D:214:PHE:HB2	2.20	0.42
1:A:125:ILE:HG23	1:D:158:PHE:HD1	1.84	0.42
1:D:154:THR:O	1:D:158:PHE:HD2	2.03	0.42
1:C:217:THR:O	1:C:218:ILE:HG12	2.20	0.42
1:C:221:VAL:CG1	1:C:222:THR:H	2.29	0.42
1:D:240:GLY:O	1:D:244:PHE:HB2	2.20	0.42
1:D:126:PHE:HE2	1:D:132:VAL:CG1	2.33	0.42
1:D:218:ILE:CG2	1:D:219:SER:H	2.33	0.42
1:B:106:LYS:HG3	3:B:303:BOG:C6	2.50	0.41
1:D:107:ILE:HD13	1:D:107:ILE:HA	1.96	0.41
1:C:23:SER:HB3	1:C:26:LYS:HB2	2.00	0.41
1:A:146:ALA:HB2	1:A:220:THR:HB	2.02	0.41
1:B:0:ARG:NH1	1:B:3:LYS:H	2.17	0.41
1:C:76:ILE:HG13	1:C:187:ILE:HD11	2.00	0.41
1:D:218:ILE:HG23	1:D:219:SER:H	1.85	0.41
1:E:213:LEU:HD21	1:E:222:THR:O	2.20	0.41
1:C:0:ARG:C	1:C:0:ARG:CD	2.80	0.41
1:D:28:LEU:HD23	1:D:28:LEU:HA	1.92	0.41
1:B:251:ILE:HA	1:B:254:LYS:HD3	2.02	0.41
1:A:213:LEU:CD2	1:A:222:THR:HA	2.51	0.41
1:B:142:ALA:CB	1:B:218:ILE:HG23	2.51	0.40
1:D:31:SER:HB3	1:D:114:GLY:HA3	2.03	0.40
1:C:257:LEU:CA	1:C:259:ALA:HB3	2.51	0.40
1:E:243:LEU:O	1:E:247:LEU:HB3	2.21	0.40
1:C:125:ILE:HG23	1:E:158:PHE:HD1	1.87	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	255/268 (95%)	252 (99%)	3 (1%)	0	100	100
1	B	255/268 (95%)	252 (99%)	3 (1%)	0	100	100
1	C	264/268 (98%)	252 (96%)	10 (4%)	2 (1%)	16	16
1	D	255/268 (95%)	250 (98%)	5 (2%)	0	100	100
1	E	255/268 (95%)	251 (98%)	4 (2%)	0	100	100
All	All	1284/1340 (96%)	1257 (98%)	25 (2%)	2 (0%)	43	51

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	218	ILE
1	C	259	ALA

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	206/214 (96%)	202 (98%)	4 (2%)	50	66
1	B	207/214 (97%)	199 (96%)	8 (4%)	28	39
1	C	213/214 (100%)	198 (93%)	15 (7%)	14	16
1	D	207/214 (97%)	202 (98%)	5 (2%)	43	58
1	E	207/214 (97%)	201 (97%)	6 (3%)	37	51
All	All	1040/1070 (97%)	1002 (96%)	38 (4%)	30	41

All (38) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	132	VAL
1	A	194	PHE
1	A	221	VAL
1	A	243	LEU
1	B	0	ARG
1	B	24	LYS
1	B	91	SER
1	B	102	LYS
1	B	105	SER
1	B	194	PHE
1	B	219	SER
1	B	256	LYS
1	C	0	ARG
1	C	4	GLU
1	C	14	ILE
1	C	100	SER
1	C	102	LYS
1	C	154	THR
1	C	169	VAL
1	C	194	PHE
1	C	217	THR
1	C	219	SER
1	C	221	VAL
1	C	223	ILE
1	C	243	LEU
1	C	257	LEU
1	C	262	GLU
1	D	0	ARG
1	D	194	PHE
1	D	217	THR
1	D	219	SER
1	D	221	VAL
1	E	94	MET
1	E	134	LYS
1	E	170	SER
1	E	194	PHE
1	E	221	VAL
1	E	222	THR

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

Mol	Chain	Res	Type
1	E	2	HIS

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](#)

10 ligands 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	BOG	A	303	-	20,20,20	1.36	3 (15%)	25,25,25	2.11	6 (24%)
2	PG4	A	301	-	12,12,12	0.63	0	11,11,11	1.70	3 (27%)
3	BOG	D	302	-	20,20,20	1.28	2 (10%)	25,25,25	1.48	4 (16%)
2	PG4	D	301	-	12,12,12	0.50	0	11,11,11	1.86	3 (27%)
2	PG4	E	301	-	12,12,12	0.53	0	11,11,11	1.94	6 (54%)
2	PG4	B	301	-	12,12,12	0.45	0	11,11,11	2.22	7 (63%)
3	BOG	A	302	-	20,20,20	1.31	3 (15%)	25,25,25	1.38	3 (12%)
3	BOG	B	303	-	20,20,20	1.22	2 (10%)	25,25,25	1.40	3 (12%)
2	PG4	C	301	-	12,12,12	0.62	0	11,11,11	1.64	1 (9%)
3	BOG	B	302	-	20,20,20	1.19	2 (10%)	25,25,25	1.59	7 (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
3	BOG	A	303	-	-	6/11/31/31	0/1/1/1
2	PG4	A	301	-	-	8/10/10/10	-
3	BOG	D	302	-	-	6/11/31/31	0/1/1/1
2	PG4	D	301	-	-	6/10/10/10	-
2	PG4	E	301	-	-	4/10/10/10	-
2	PG4	B	301	-	-	6/10/10/10	-
3	BOG	A	302	-	-	4/11/31/31	0/1/1/1
3	BOG	B	303	-	-	6/11/31/31	0/1/1/1
2	PG4	C	301	-	-	7/10/10/10	-
3	BOG	B	302	-	-	6/11/31/31	0/1/1/1

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	303	BOG	C3-C2	-3.77	1.42	1.52
3	B	303	BOG	C3-C2	-3.70	1.42	1.52
3	D	302	BOG	C3-C2	-3.64	1.42	1.52
3	B	302	BOG	C3-C2	-3.63	1.42	1.52
3	A	302	BOG	C3-C2	-3.63	1.42	1.52
3	A	303	BOG	O5-C1	3.12	1.49	1.41
3	A	302	BOG	O5-C1	3.01	1.49	1.41
3	D	302	BOG	O5-C1	2.96	1.49	1.41
3	B	302	BOG	O5-C1	2.66	1.48	1.41
3	B	303	BOG	O5-C1	2.61	1.48	1.41
3	A	303	BOG	O1-C1	2.31	1.44	1.40
3	A	302	BOG	C4-C3	-2.03	1.47	1.52

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	303	BOG	C1'-O1-C1	6.45	124.69	113.68
3	B	303	BOG	O1-C1-C2	4.23	114.69	108.27
3	A	303	BOG	O5-C5-C4	4.18	117.24	109.70
3	D	302	BOG	O1-C1-C2	4.12	114.53	108.27
3	B	302	BOG	O5-C1-C2	3.49	117.53	110.37
3	B	303	BOG	C1'-O1-C1	3.36	119.42	113.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	303	BOG	C1-O5-C5	3.11	119.80	113.72
2	B	301	PG4	O4-C6-C5	3.10	124.48	110.35
3	A	302	BOG	C1'-O1-C1	3.01	118.83	113.68
3	A	302	BOG	O1-C1-C2	2.97	112.78	108.27
3	B	302	BOG	O5-C1-O1	-2.87	103.26	110.04
3	B	302	BOG	C3-C4-C5	2.86	115.41	110.23
3	D	302	BOG	C1'-O1-C1	2.82	118.50	113.68
3	A	303	BOG	O1-C1'-C2'	2.82	118.93	109.37
3	A	302	BOG	O1-C1'-C2'	2.77	118.77	109.37
3	B	302	BOG	O5-C5-C4	2.72	114.60	109.70
3	D	302	BOG	O1-C1'-C2'	2.53	117.95	109.37
3	A	303	BOG	O5-C1-C2	2.52	115.54	110.37
2	B	301	PG4	O3-C5-C6	2.50	121.75	110.35
2	B	301	PG4	O4-C7-C8	2.49	121.09	110.11
3	B	302	BOG	O6-C6-C5	2.47	119.75	111.33
2	E	301	PG4	O4-C6-C5	2.43	121.45	110.35
2	E	301	PG4	C5-O3-C4	2.41	123.80	113.26
2	B	301	PG4	O2-C3-C4	2.40	121.28	110.35
2	E	301	PG4	O2-C3-C4	2.35	121.08	110.35
2	B	301	PG4	C5-O3-C4	2.35	123.53	113.26
3	A	303	BOG	O1-C1-C2	2.34	111.83	108.27
2	D	301	PG4	O3-C4-C3	2.32	120.92	110.35
2	B	301	PG4	C7-O4-C6	2.30	123.33	113.26
2	A	301	PG4	C7-O4-C6	2.28	123.24	113.26
2	B	301	PG4	C3-O2-C2	2.27	123.18	113.26
2	E	301	PG4	C3-O2-C2	2.25	123.10	113.26
2	A	301	PG4	C3-O2-C2	2.19	122.86	113.26
2	D	301	PG4	C7-O4-C6	2.18	122.79	113.26
3	B	302	BOG	O1-C1'-C2'	2.17	116.73	109.37
2	E	301	PG4	C7-O4-C6	2.10	122.44	113.26
3	D	302	BOG	O6-C6-C5	2.09	118.46	111.33
2	C	301	PG4	O2-C3-C4	2.09	119.86	110.35
3	B	302	BOG	O3-C3-C2	-2.04	105.56	110.38
2	A	301	PG4	O4-C6-C5	2.03	119.59	110.35
2	E	301	PG4	O2-C2-C1	2.02	119.04	110.11
2	D	301	PG4	O4-C6-C5	2.02	119.55	110.35
3	B	303	BOG	O1-C1'-C2'	2.00	116.16	109.37

There are no chirality outliers.

All (59) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	303	BOG	O5-C1-O1-C1'
3	B	302	BOG	C2'-C1'-O1-C1
3	B	303	BOG	O5-C1-O1-C1'
3	D	302	BOG	O5-C1-O1-C1'
3	A	302	BOG	O5-C5-C6-O6
3	A	302	BOG	C4-C5-C6-O6
3	B	302	BOG	C4-C5-C6-O6
3	A	303	BOG	O5-C5-C6-O6
3	B	302	BOG	O5-C5-C6-O6
3	D	302	BOG	O5-C5-C6-O6
3	B	303	BOG	O5-C5-C6-O6
2	E	301	PG4	O2-C3-C4-O3
3	A	303	BOG	C2-C1-O1-C1'
3	A	303	BOG	C4-C5-C6-O6
2	B	301	PG4	O2-C3-C4-O3
2	A	301	PG4	O3-C5-C6-O4
2	C	301	PG4	O3-C5-C6-O4
2	A	301	PG4	O2-C3-C4-O3
2	D	301	PG4	O2-C3-C4-O3
2	E	301	PG4	O4-C7-C8-O5
3	B	302	BOG	O5-C1-O1-C1'
2	E	301	PG4	O3-C5-C6-O4
2	C	301	PG4	O2-C3-C4-O3
3	D	302	BOG	C4-C5-C6-O6
2	A	301	PG4	O4-C7-C8-O5
2	B	301	PG4	O1-C1-C2-O2
2	D	301	PG4	O4-C7-C8-O5
3	B	303	BOG	C4-C5-C6-O6
2	C	301	PG4	O4-C7-C8-O5
2	B	301	PG4	O3-C5-C6-O4
2	D	301	PG4	O1-C1-C2-O2
2	D	301	PG4	O3-C5-C6-O4
3	A	303	BOG	C1'-C2'-C3'-C4'
3	D	302	BOG	O1-C1'-C2'-C3'
2	A	301	PG4	C4-C3-O2-C2
3	B	302	BOG	C1'-C2'-C3'-C4'
2	D	301	PG4	C5-C6-O4-C7
2	B	301	PG4	C8-C7-O4-C6
2	A	301	PG4	O1-C1-C2-O2
2	C	301	PG4	C4-C3-O2-C2
3	D	302	BOG	C3'-C4'-C5'-C6'
2	A	301	PG4	C1-C2-O2-C3
2	B	301	PG4	C1-C2-O2-C3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	A	301	PG4	C6-C5-O3-C4
2	C	301	PG4	C6-C5-O3-C4
2	B	301	PG4	C5-C6-O4-C7
3	D	302	BOG	C1'-C2'-C3'-C4'
3	B	303	BOG	C4'-C5'-C6'-C7'
3	B	302	BOG	C5'-C6'-C7'-C8'
2	E	301	PG4	C4-C3-O2-C2
3	B	303	BOG	C2'-C3'-C4'-C5'
2	C	301	PG4	O1-C1-C2-O2
3	B	303	BOG	C1'-C2'-C3'-C4'
3	A	302	BOG	C2'-C1'-O1-C1
2	A	301	PG4	C3-C4-O3-C5
2	C	301	PG4	C5-C6-O4-C7
3	A	303	BOG	O1-C1'-C2'-C3'
3	A	302	BOG	C1'-C2'-C3'-C4'
2	D	301	PG4	C3-C4-O3-C5

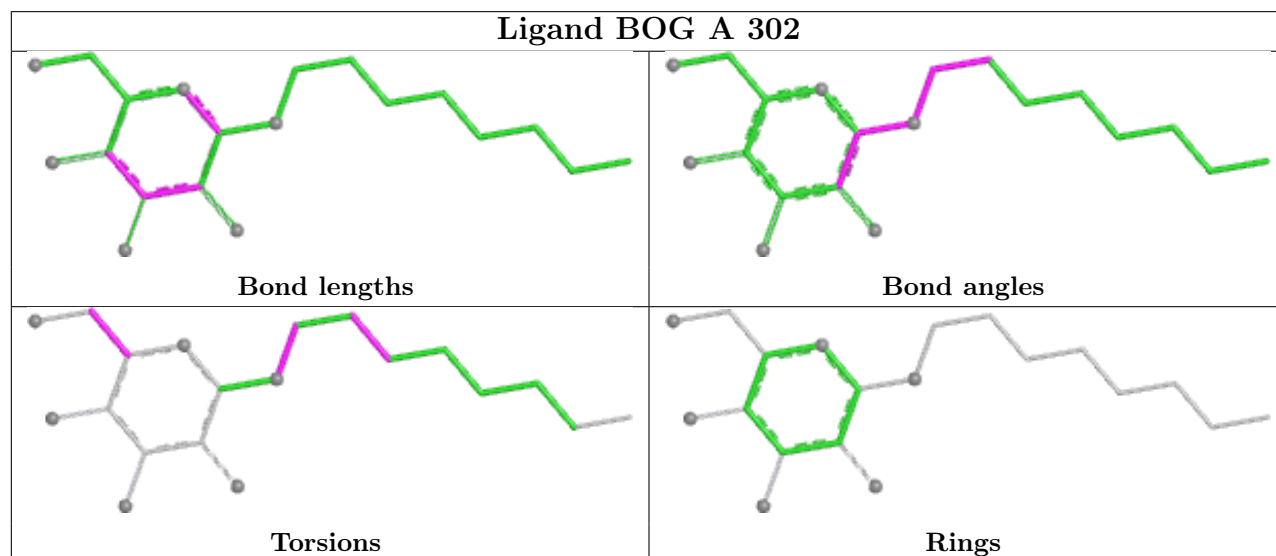
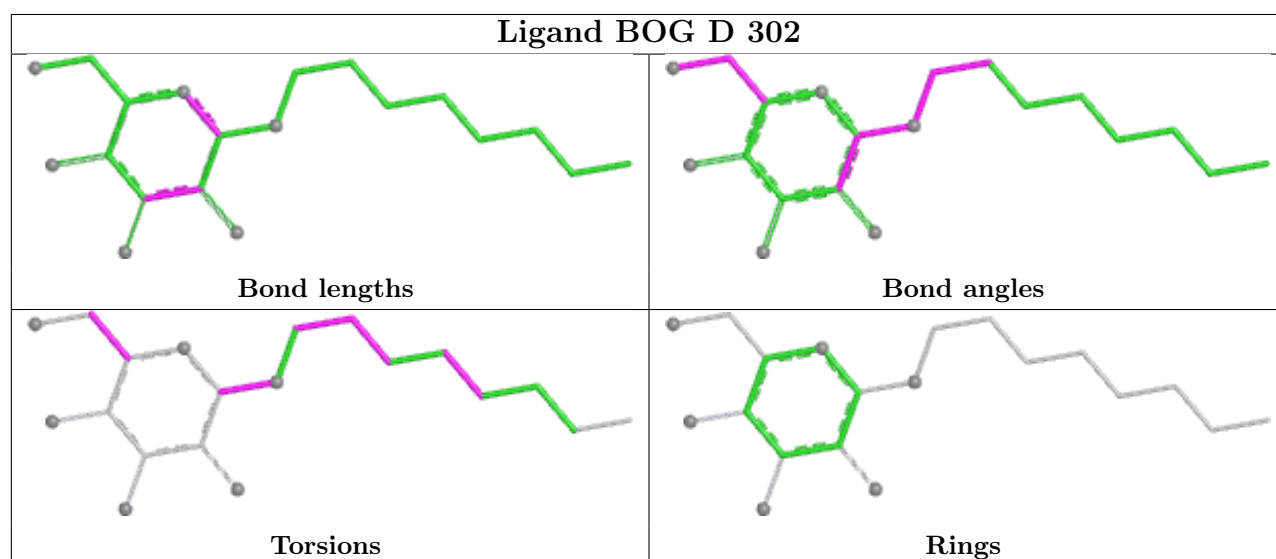
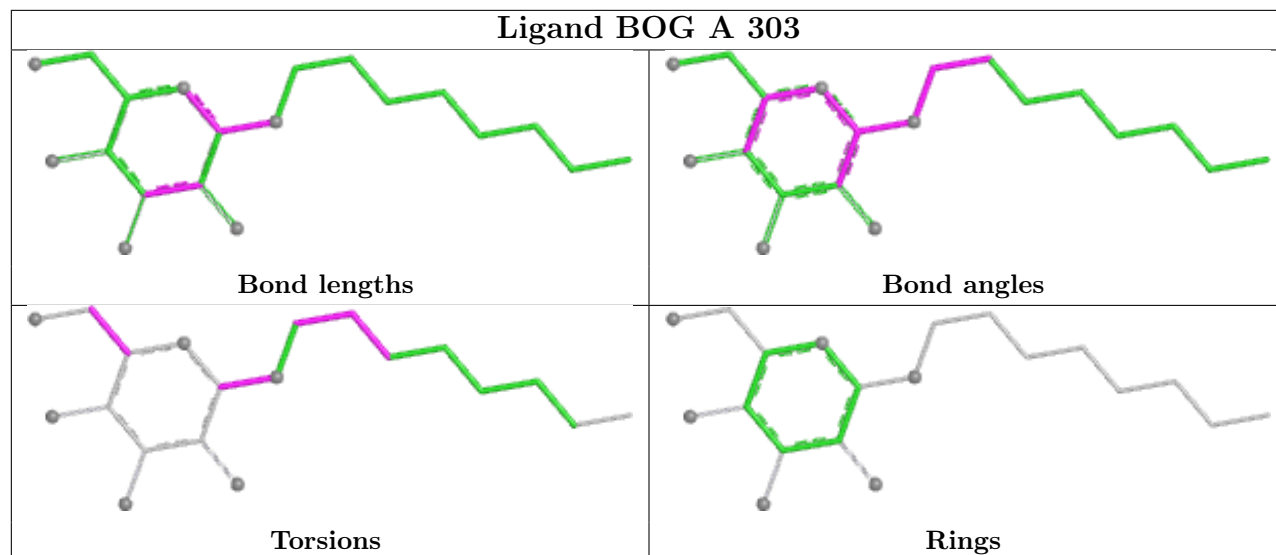
There are no ring outliers.

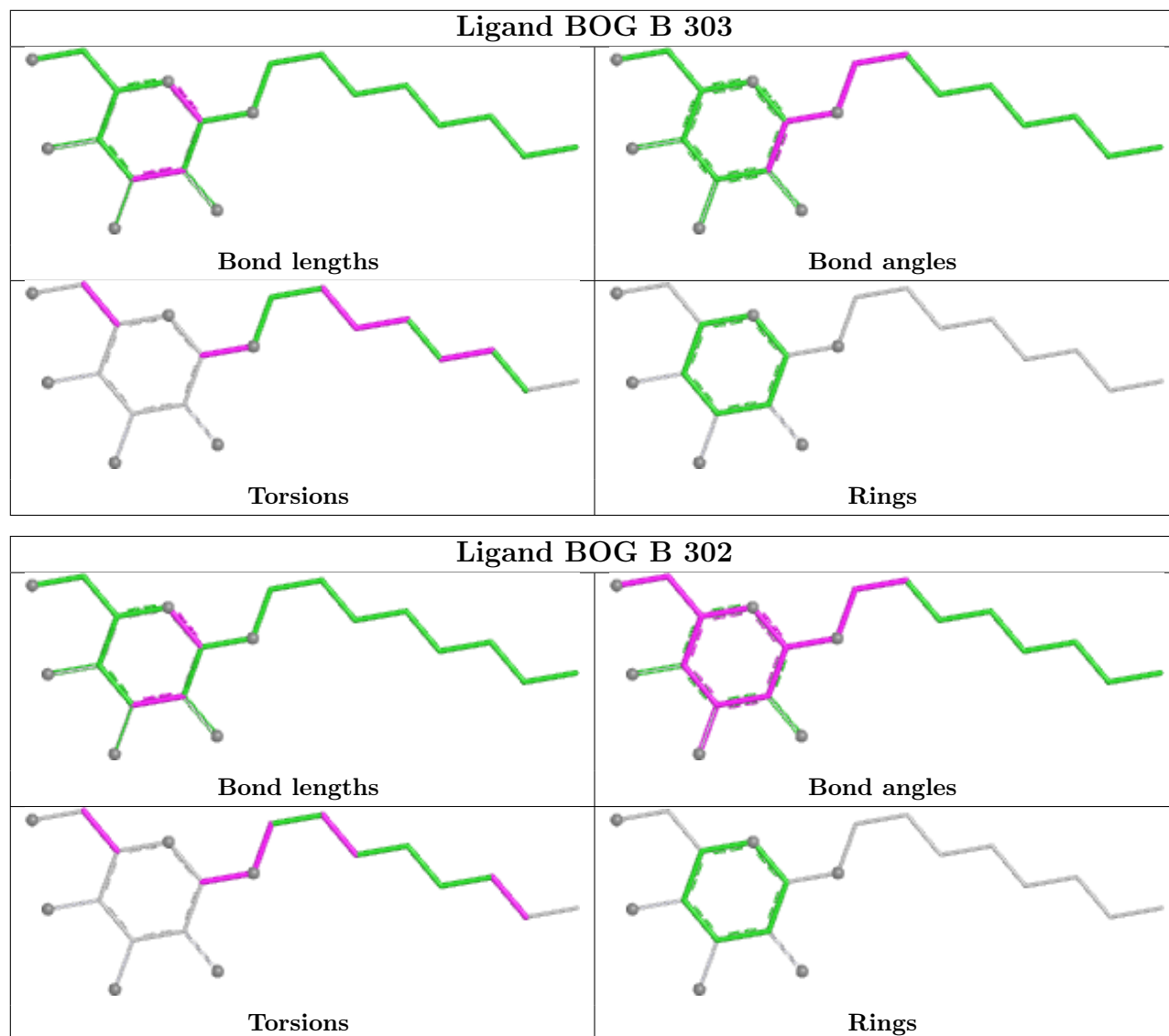
9 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	303	BOG	3	0
2	A	301	PG4	2	0
2	D	301	PG4	1	0
2	E	301	PG4	4	0
2	B	301	PG4	4	0
3	A	302	BOG	1	0
3	B	303	BOG	3	0
2	C	301	PG4	2	0
3	B	302	BOG	11	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	257/268 (95%)	-0.03	5 (1%) 66 63	32, 51, 77, 120	0
1	B	257/268 (95%)	-0.09	9 (3%) 47 44	34, 49, 76, 118	0
1	C	266/268 (99%)	0.51	23 (8%) 16 14	39, 69, 114, 159	0
1	D	257/268 (95%)	0.05	9 (3%) 47 44	32, 54, 84, 139	0
1	E	257/268 (95%)	-0.10	7 (2%) 56 53	33, 53, 77, 128	0
All	All	1294/1340 (96%)	0.07	53 (4%) 41 38	32, 54, 87, 159	0

All (53) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	218	ILE	5.7
1	C	218	ILE	5.2
1	C	264	LEU	5.1
1	C	257	LEU	4.8
1	C	265	TYR	4.6
1	C	220	THR	4.2
1	A	17	ILE	3.8
1	C	223	ILE	3.7
1	C	261	ALA	3.7
1	E	256	LYS	3.7
1	C	222	THR	3.6
1	C	260	ALA	3.5
1	B	254	LYS	3.5
1	E	221	VAL	3.5
1	B	256	LYS	3.4
1	C	221	VAL	3.4
1	E	222	THR	3.4
1	C	19	LEU	3.3
1	A	256	LYS	3.3
1	C	22	THR	3.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	101	ILE	3.1
1	C	258	ASN	3.0
1	D	216	PRO	3.0
1	D	220	THR	2.9
1	C	0	ARG	2.8
1	C	27	TYR	2.8
1	E	218	ILE	2.8
1	D	0	ARG	2.7
1	B	226	ALA	2.7
1	E	220	THR	2.7
1	C	263	ASN	2.7
1	A	221	VAL	2.7
1	C	101	ILE	2.7
1	D	256	LYS	2.7
1	B	223	ILE	2.5
1	B	225	GLY	2.5
1	B	222	THR	2.5
1	C	219	SER	2.5
1	B	102	LYS	2.5
1	E	170	SER	2.4
1	C	216	PRO	2.4
1	A	0	ARG	2.3
1	D	219	SER	2.3
1	B	0	ARG	2.3
1	C	1	ALA	2.3
1	D	3	LYS	2.2
1	C	259	ALA	2.2
1	B	219	SER	2.2
1	D	134	LYS	2.2
1	C	217	THR	2.2
1	C	211	VAL	2.1
1	D	1	ALA	2.1
1	E	212	SER	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 ⓘ

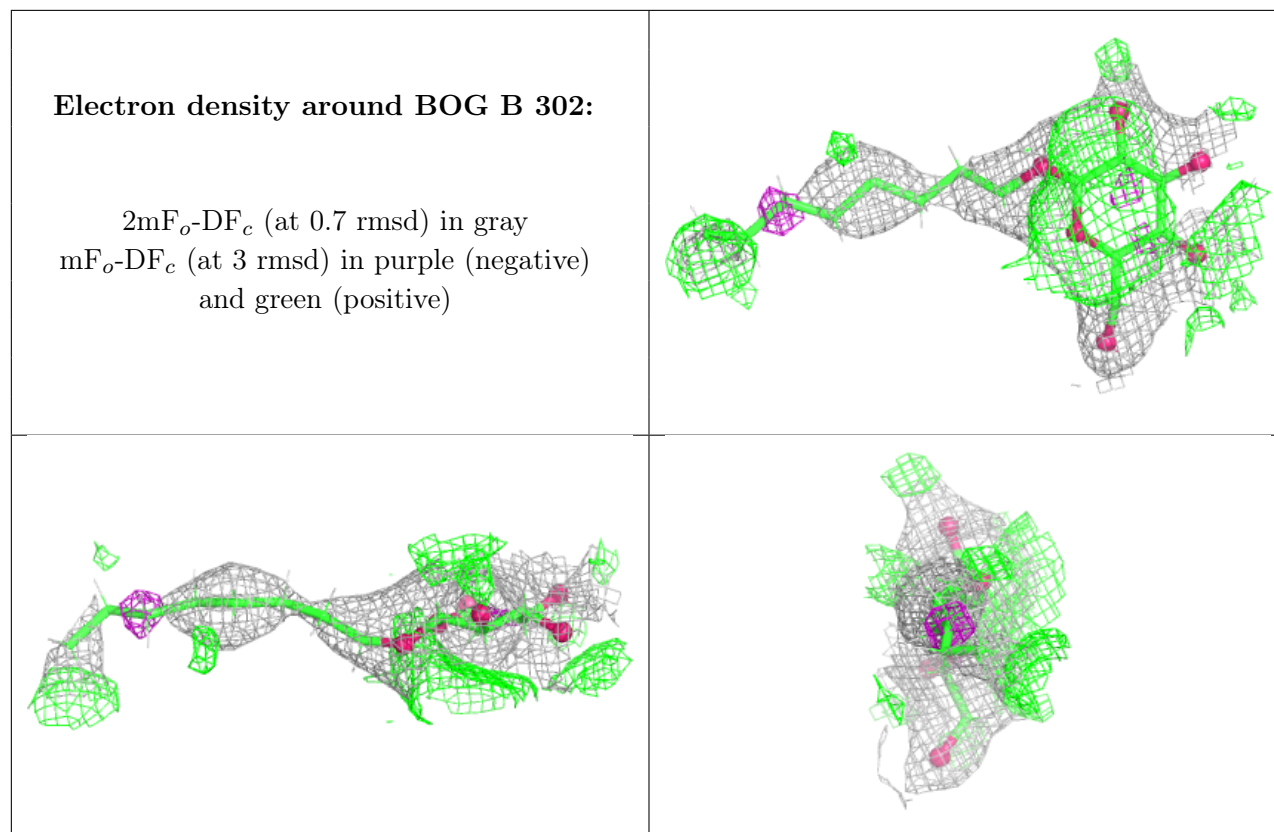
There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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.

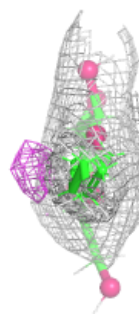
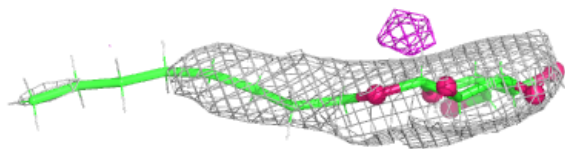
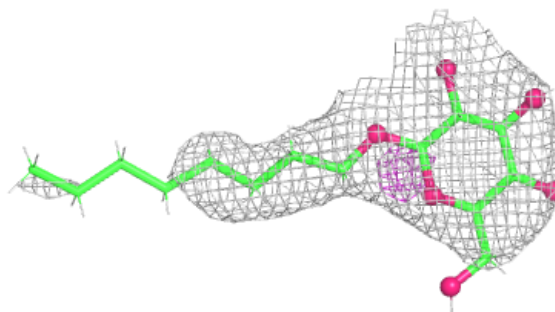
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	BOG	B	302	20/20	0.72	0.20	55,92,114,120	0
3	BOG	D	302	20/20	0.77	0.14	87,110,131,133	0
3	BOG	B	303	20/20	0.80	0.13	76,108,144,149	0
3	BOG	A	302	20/20	0.80	0.14	90,111,133,137	0
3	BOG	A	303	20/20	0.83	0.16	65,81,105,112	0
2	PG4	E	301	13/13	0.83	0.17	59,86,105,105	0
2	PG4	C	301	13/13	0.86	0.15	66,92,119,123	0
2	PG4	D	301	13/13	0.86	0.14	55,72,103,107	0
2	PG4	B	301	13/13	0.89	0.14	52,74,112,112	0
2	PG4	A	301	13/13	0.91	0.14	47,73,113,116	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.

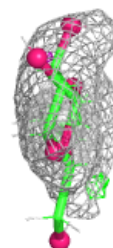
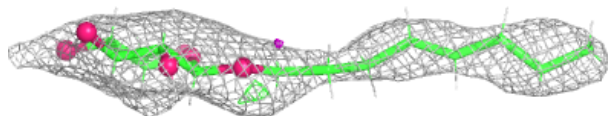
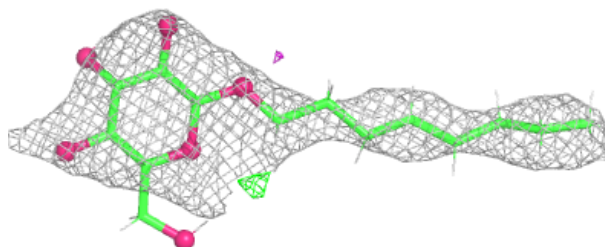


Electron density around BOG D 302:

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

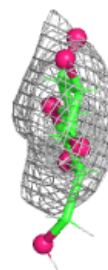
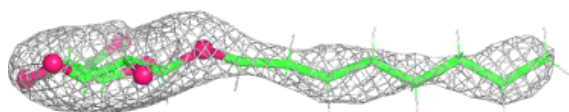
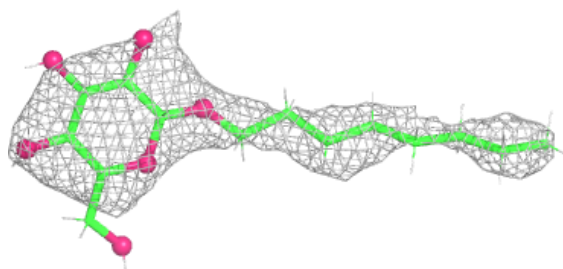
**Electron density around BOG B 303:**

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

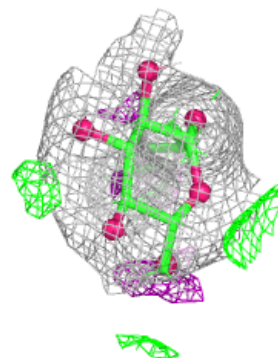
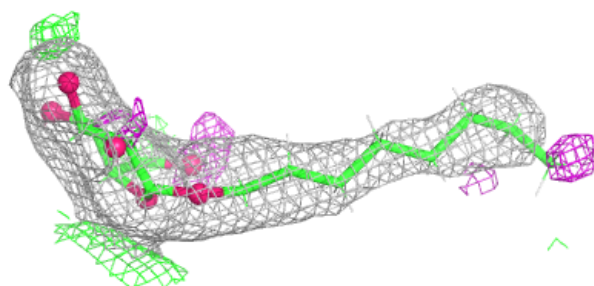
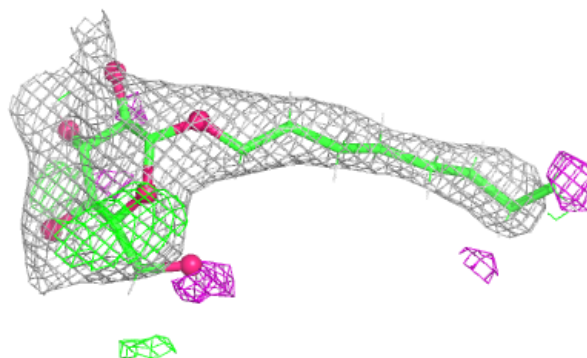


Electron density around BOG A 302:

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

**Electron density around BOG A 303:**

$2mF_o-DF_c$ (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.