



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 01:02 AM UTC

PDB ID : 6QZR / pdb_00006qzr
Title : 14-3-3 sigma in complex with FOXO1 pT24 peptide
Authors : Ottmann, C.; Wolter, M.; Lau, R.A.
Deposited on : 2019-03-12
Resolution : 2.30 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

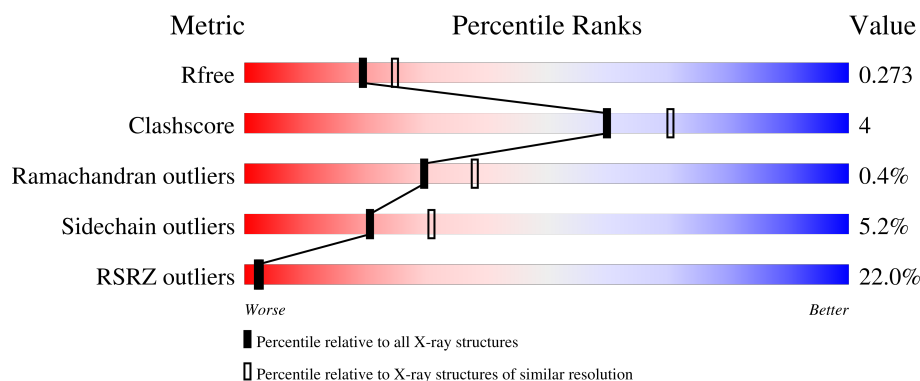
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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}	180053	6319 (2.30-2.30)
Clashscore	190562	6919 (2.30-2.30)
Ramachandran outliers	187476	6854 (2.30-2.30)
Sidechain outliers	187428	6854 (2.30-2.30)
RSRZ outliers	180081	6325 (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 $\leq 5\%$. 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	253	16% 77% 11% 12%
1	B	253	11% 79% 11% 9%
1	C	253	12% 83% 8% 9%
1	D	253	40% 74% 11% • 13%
1	E	253	14% 78% 10% • 9%

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Mol	Chain	Length	Quality of chain
1	F	253	
1	G	253	
1	H	253	
2	J	11	
2	M	11	
2	N	11	
2	O	11	
2	P	11	
2	R	11	
2	T	11	
2	U	11	

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 15184 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 14-3-3 protein sigma.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	223	Total	C	N	O	S	0	0	0
			1692	1060	288	333	11			
1	B	229	Total	C	N	O	S	0	1	0
			1766	1102	299	354	11			
1	C	230	Total	C	N	O	S	0	0	0
			1756	1095	297	353	11			
1	D	219	Total	C	N	O	S	0	0	0
			1589	993	273	315	8			
1	E	229	Total	C	N	O	S	0	0	0
			1768	1107	300	350	11			
1	F	231	Total	C	N	O	S	0	0	0
			1792	1120	305	356	11			
1	H	231	Total	C	N	O	S	0	0	0
			1762	1098	299	355	10			
1	G	226	Total	C	N	O	S	0	0	0
			1708	1062	296	341	9			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	expression tag	UNP P31947
A	-3	ALA	-	expression tag	UNP P31947
A	-2	MET	-	expression tag	UNP P31947
A	-1	GLY	-	expression tag	UNP P31947
A	0	SER	-	expression tag	UNP P31947
B	-4	GLY	-	expression tag	UNP P31947
B	-3	ALA	-	expression tag	UNP P31947
B	-2	MET	-	expression tag	UNP P31947
B	-1	GLY	-	expression tag	UNP P31947
B	0	SER	-	expression tag	UNP P31947
C	-4	GLY	-	expression tag	UNP P31947
C	-3	ALA	-	expression tag	UNP P31947
C	-2	MET	-	expression tag	UNP P31947

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-1	GLY	-	expression tag	UNP P31947
C	0	SER	-	expression tag	UNP P31947
D	-4	GLY	-	expression tag	UNP P31947
D	-3	ALA	-	expression tag	UNP P31947
D	-2	MET	-	expression tag	UNP P31947
D	-1	GLY	-	expression tag	UNP P31947
D	0	SER	-	expression tag	UNP P31947
E	-4	GLY	-	expression tag	UNP P31947
E	-3	ALA	-	expression tag	UNP P31947
E	-2	MET	-	expression tag	UNP P31947
E	-1	GLY	-	expression tag	UNP P31947
E	0	SER	-	expression tag	UNP P31947
F	-4	GLY	-	expression tag	UNP P31947
F	-3	ALA	-	expression tag	UNP P31947
F	-2	MET	-	expression tag	UNP P31947
F	-1	GLY	-	expression tag	UNP P31947
F	0	SER	-	expression tag	UNP P31947
H	-4	GLY	-	expression tag	UNP P31947
H	-3	ALA	-	expression tag	UNP P31947
H	-2	MET	-	expression tag	UNP P31947
H	-1	GLY	-	expression tag	UNP P31947
H	0	SER	-	expression tag	UNP P31947
G	-4	GLY	-	expression tag	UNP P31947
G	-3	ALA	-	expression tag	UNP P31947
G	-2	MET	-	expression tag	UNP P31947
G	-1	GLY	-	expression tag	UNP P31947
G	0	SER	-	expression tag	UNP P31947

- Molecule 2 is a protein called Forkhead box protein O1.

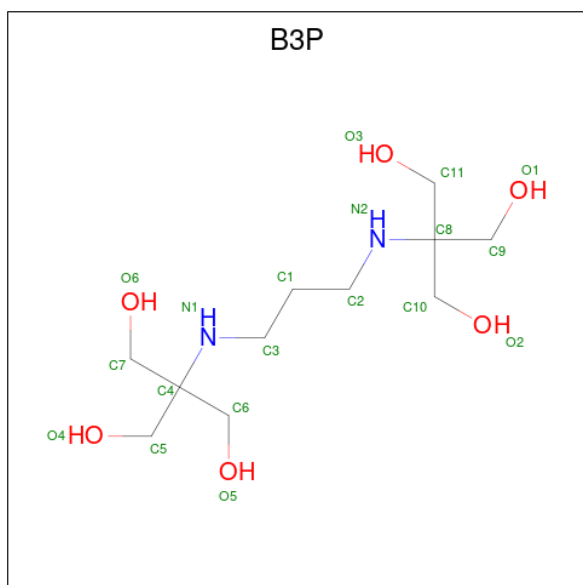
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	R	8	Total 64	C 40	N 9	O 13	P 1	S 1	0	0	0
2	J	8	Total 70	C 43	N 12	O 13	P 1	S 1	0	0	0
2	M	8	Total 70	C 43	N 12	O 13	P 1	S 1	0	0	0
2	N	9	Total 75	C 46	N 13	O 14	P 1	S 1	0	0	0
2	O	8	Total 70	C 43	N 12	O 13	P 1	S 1	0	0	0
2	P	7	Total 59	C 37	N 8	O 12	P 1	S 1	0	0	0

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	T	8	Total	C	N	O	P	S	0	0	0
			70	43	12	13	1	1			
2	U	9	Total	C	N	O	P	S	0	0	0
			75	46	13	14	1	1			

- Molecule 3 is 2-[3-(2-HYDROXY-1,1-DIHYDROXYMETHYL-ETHYLAMINO)-PROPYLAMINO]-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (CCD ID: B3P) (formula: $C_{11}H_{26}N_2O_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			19	11	2	6		
3	B	1	Total	C	N	O	0	0
			19	11	2	6		
3	F	1	Total	C	N	O	0	0
			19	11	2	6		
3	H	1	Total	C	N	O	0	0
			19	11	2	6		

- Molecule 4 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	103	Total	O	0	0
			103	103		
5	B	89	Total	O	0	0
			89	89		
5	C	107	Total	O	0	0
			107	107		
5	D	43	Total	O	0	0
			43	43		
5	E	82	Total	O	0	0
			82	82		

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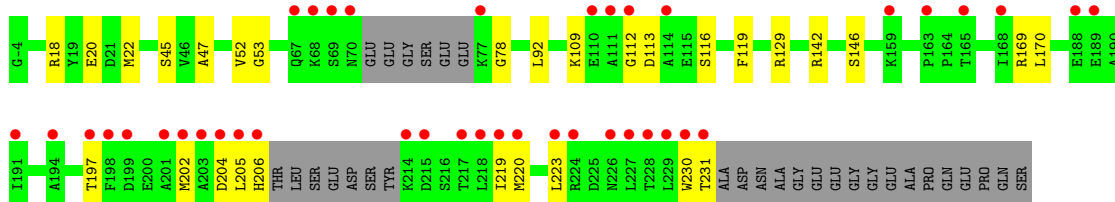
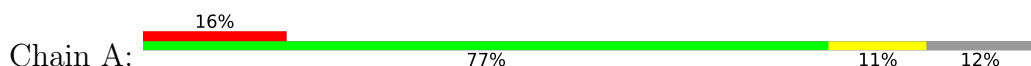
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	F	93	Total 93	O 93	0	0
5	H	82	Total 82	O 82	0	0
5	G	66	Total 66	O 66	0	0
5	R	2	Total 2	O 2	0	0
5	J	3	Total 3	O 3	0	0
5	N	6	Total 6	O 6	0	0
5	P	1	Total 1	O 1	0	0
5	T	1	Total 1	O 1	0	0
5	U	2	Total 2	O 2	0	0

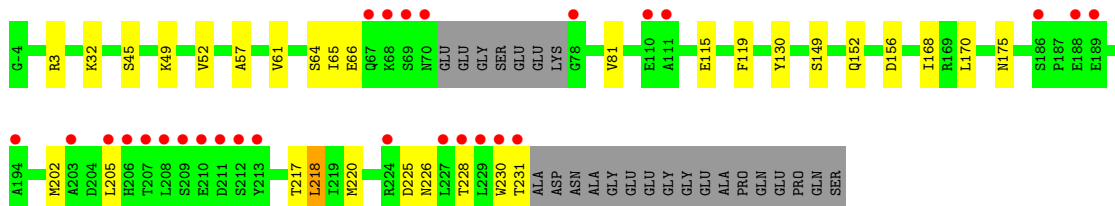
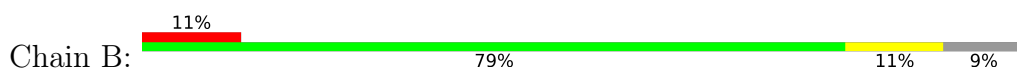
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

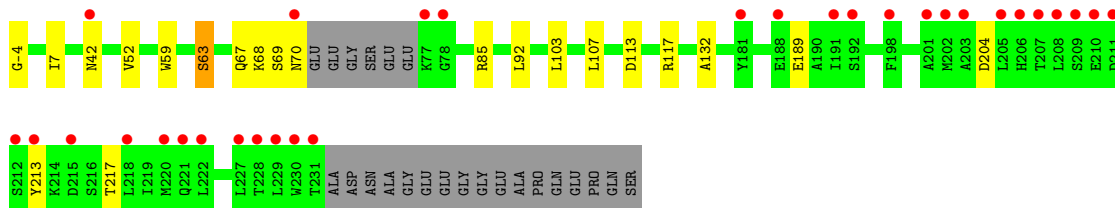
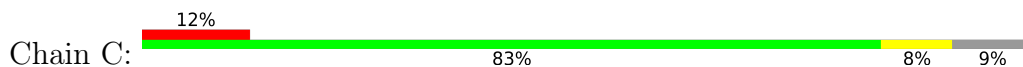
• Molecule 1: 14-3-3 protein sigma



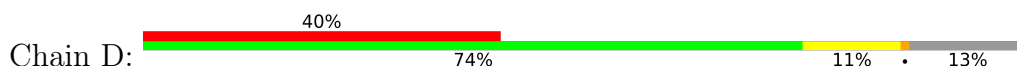
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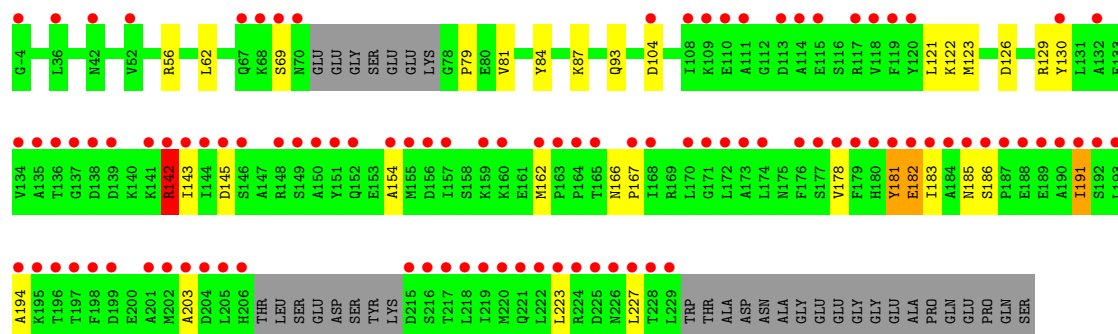


• Molecule 1: 14-3-3 protein sigma

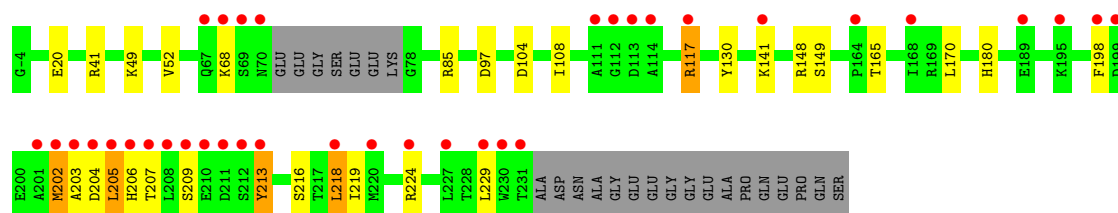
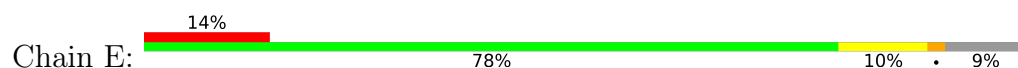


• Molecule 1: 14-3-3 protein sigma

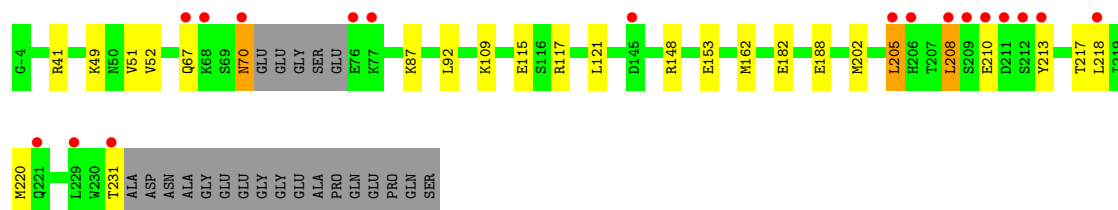
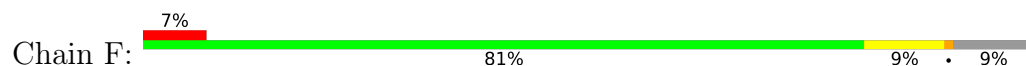




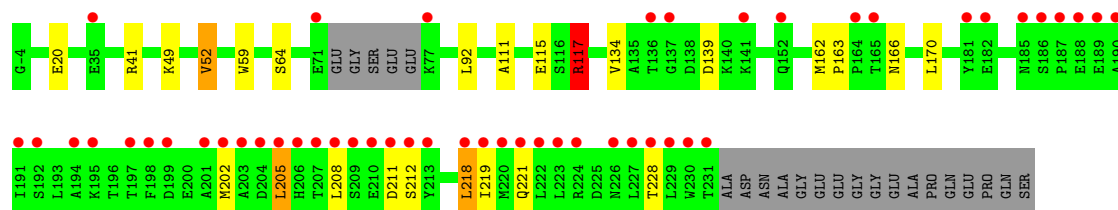
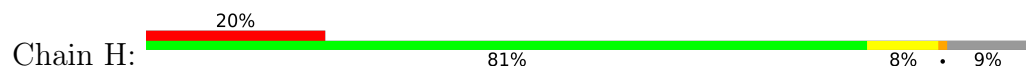
• Molecule 1: 14-3-3 protein sigma



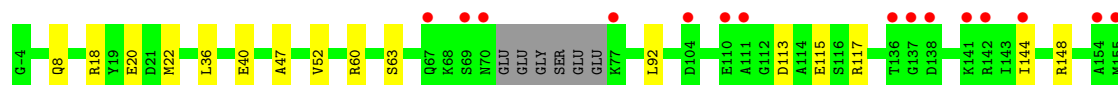
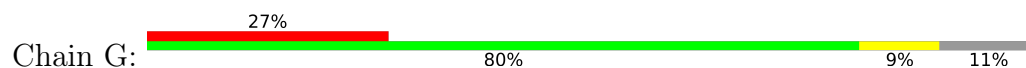
• Molecule 1: 14-3-3 protein sigma

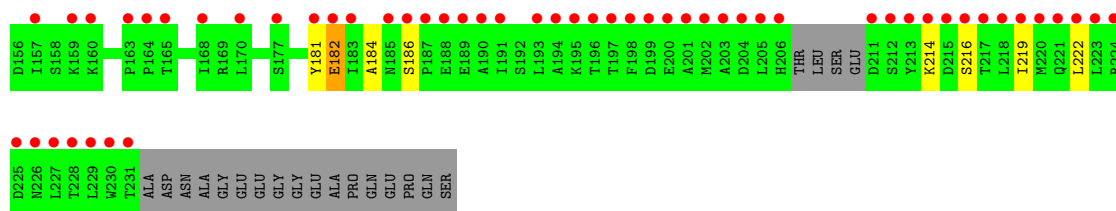


• Molecule 1: 14-3-3 protein sigma

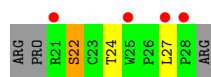


• Molecule 1: 14-3-3 protein sigma

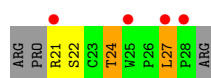
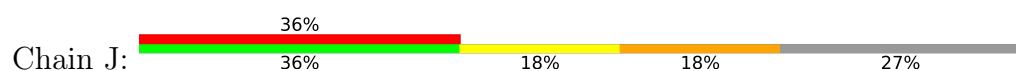




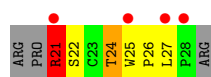
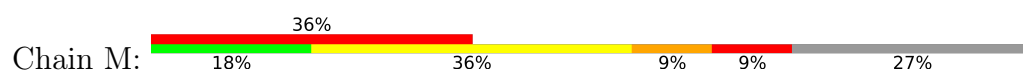
● Molecule 2: Forkhead box protein O1



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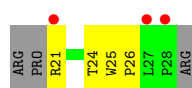
● Molecule 2: Forkhead box protein O1



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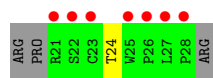
● Molecule 2: Forkhead box protein O1



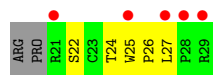
● Molecule 2: Forkhead box protein O1



- Molecule 2: Forkhead box protein O1



- Molecule 2: Forkhead box protein O1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	149.21Å 62.81Å 154.04Å 90.00° 103.24° 90.00°	Depositor
Resolution (Å)	118.81 – 2.30 118.81 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.9 (118.81-2.30) 97.3 (118.81-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.56 (at 2.29Å)	Xtriage
Refinement program	REFMAC 5.8.0230	Depositor
R, R_{free}	0.221 , 0.267 0.230 , 0.273	Depositor DCC
R_{free} test set	6300 reflections (4.37%)	wwPDB-VP
Wilson B-factor (Å ²)	32.0	Xtriage
Anisotropy	0.250	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 38.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.000 for l,-k,h	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	15184	wwPDB-VP
Average B, all atoms (Å ²)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 40.66 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.6479e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: CSO, B3P, GOL, TPO

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	1.03	3/1706 (0.2%)	1.16	2/2299 (0.1%)
1	B	1.01	2/1782 (0.1%)	1.21	1/2402 (0.0%)
1	C	1.09	2/1772 (0.1%)	1.21	3/2390 (0.1%)
1	D	0.98	2/1600 (0.1%)	1.28	3/2163 (0.1%)
1	E	0.97	0/1785	1.18	0/2403
1	F	0.98	1/1809 (0.1%)	1.19	0/2435
1	G	0.92	0/1722	1.20	2/2321 (0.1%)
1	H	1.06	1/1777 (0.1%)	1.20	0/2396
2	J	0.56	0/61	0.87	0/82
2	M	0.76	0/61	0.79	0/82
2	N	0.78	0/66	0.92	0/89
2	O	0.86	0/61	0.85	0/82
2	P	0.73	0/50	0.61	0/68
2	R	0.79	0/55	1.21	0/75
2	T	0.66	0/61	0.81	0/82
2	U	0.74	0/66	0.95	0/89
All	All	1.00	11/14434 (0.1%)	1.19	11/19458 (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	A	0	3
1	C	0	2
1	D	0	1
1	E	0	3
1	F	0	3
1	G	0	2
1	H	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	M	0	1
All	All	0	17

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	162	MET	N-CA	6.81	1.51	1.45
1	A	142	ARG	N-CA	6.07	1.53	1.46
1	F	51	VAL	C-O	-5.81	1.17	1.24
1	B	175	ASN	C-O	-5.62	1.17	1.24
1	A	146	SER	N-CA	5.34	1.52	1.46
1	A	78	GLY	N-CA	5.25	1.51	1.44
1	D	87	LYS	C-O	-5.20	1.18	1.24
1	C	7	ILE	N-CA	5.13	1.52	1.46
1	D	81	VAL	C-O	-5.11	1.18	1.24
1	C	132	ALA	C-O	-5.07	1.18	1.24
1	B	170	LEU	C-O	-5.07	1.18	1.24

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	178	VAL	N-CA-C	-6.42	104.24	110.72
1	C	113	ASP	CA-CB-CG	5.98	118.58	112.60
1	A	53	GLY	CA-C-N	5.53	126.24	119.99
1	A	53	GLY	C-N-CA	5.53	126.24	119.99
1	B	65	ILE	N-CA-C	-5.47	105.20	110.72
1	C	42	ASN	CB-CA-C	5.36	119.96	110.85
1	G	182	GLU	CA-C-N	-5.18	117.66	123.16
1	G	182	GLU	C-N-CA	-5.18	117.66	123.16
1	D	185	ASN	CA-C-N	5.17	128.22	122.74
1	D	185	ASN	C-N-CA	5.17	128.22	122.74
1	C	204	ASP	CA-CB-CG	5.06	117.66	112.60

There are no chirality outliers.

All (17) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	129	ARG	Sidechain
1	A	169	ARG	Sidechain
1	A	18	ARG	Sidechain
1	C	117	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	C	85	ARG	Sidechain
1	D	142	ARG	Sidechain
1	E	148	ARG	Sidechain
1	E	41	ARG	Sidechain
1	E	85	ARG	Sidechain
1	F	117	ARG	Sidechain
1	F	148	ARG	Sidechain
1	F	41	ARG	Sidechain
1	G	117	ARG	Sidechain
1	G	18	ARG	Sidechain
1	H	117	ARG	Sidechain
1	H	41	ARG	Sidechain
2	M	21	ARG	Sidechain

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	1692	0	1632	10	0
1	B	1766	0	1703	19	0
1	C	1756	0	1680	9	0
1	D	1589	0	1466	15	0
1	E	1768	0	1731	13	0
1	F	1792	0	1752	23	0
1	G	1708	0	1628	9	0
1	H	1762	0	1692	9	0
2	J	70	0	62	1	0
2	M	70	0	62	4	0
2	N	75	0	64	1	0
2	O	70	0	62	1	0
2	P	59	0	50	1	0
2	R	64	0	51	1	0
2	T	70	0	62	0	0
2	U	75	0	64	1	0
3	A	19	0	26	4	0
3	B	19	0	26	2	0
3	F	19	0	26	2	0
3	H	19	0	26	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	12	0	16	1	0
4	D	12	0	16	0	0
4	G	6	0	8	0	0
4	H	12	0	16	1	0
5	A	103	0	0	2	0
5	B	89	0	0	0	0
5	C	107	0	0	2	0
5	D	43	0	0	2	0
5	E	82	0	0	2	0
5	F	93	0	0	0	0
5	G	66	0	0	1	0
5	H	82	0	0	0	0
5	J	3	0	0	0	0
5	N	6	0	0	0	0
5	P	1	0	0	0	0
5	R	2	0	0	0	0
5	T	1	0	0	0	0
5	U	2	0	0	0	0
All	All	15184	0	13921	122	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 4.

All (122) 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:D:166:ASN:HD22	1:D:167:PRO:HD2	1.29	0.97
4:A:303:GOL:H2	5:A:449:HOH:O	1.63	0.96
1:D:182:GLU:O	1:D:183:ILE:HD13	1.68	0.94
1:B:202:MET:HE2	1:B:220:MET:HE1	1.51	0.93
1:E:108:ILE:HG23	1:E:117:ARG:NH2	1.88	0.88
3:A:301:B3P:O2	3:A:301:B3P:H22	1.76	0.83
1:D:166:ASN:ND2	1:D:167:PRO:HD2	1.95	0.82
1:B:202:MET:CE	1:B:220:MET:HE1	2.08	0.82
1:D:166:ASN:HD22	1:D:167:PRO:CD	1.93	0.80
1:B:217:THR:HG21	1:F:213:TYR:OH	1.83	0.78
1:F:205:LEU:HD23	1:F:208:LEU:HD12	1.65	0.78
1:F:182:GLU:OE2	2:R:22:SER:OG	2.08	0.69
1:B:205:LEU:HD23	1:F:217:THR:HB	1.75	0.67
1:D:162:MET:HE2	1:D:166:ASN:OD1	1.96	0.66
1:B:225:ASP:O	1:B:228:THR:HB	1.97	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:49:LYS:HE3	1:B:130:TYR:OH	1.96	0.65
1:F:202:MET:HE2	1:F:220:MET:CE	2.27	0.64
1:G:186:SER:O	1:G:186:SER:OG	2.14	0.64
1:F:210:GLU:HA	1:F:213:TYR:HB2	1.80	0.64
1:B:202:MET:HE2	1:B:202:MET:HA	1.79	0.63
1:C:-4:GLY:N	5:C:304:HOH:O	2.32	0.62
1:F:202:MET:HE2	1:F:220:MET:HE1	1.82	0.62
1:E:206:HIS:CD2	1:E:207:THR:HG23	2.34	0.62
1:F:208:LEU:HD22	1:F:213:TYR:HA	1.83	0.61
1:D:182:GLU:C	1:D:183:ILE:HD13	2.26	0.61
1:E:49:LYS:HE3	1:E:130:TYR:OH	2.01	0.61
1:E:97:ASP:OD2	3:H:301:B3P:H11	2.03	0.59
1:H:205:LEU:HD13	1:H:208:LEU:HD12	1.84	0.59
1:B:202:MET:CE	1:B:220:MET:CE	2.79	0.58
1:E:108:ILE:HG23	1:E:117:ARG:HH22	1.66	0.58
1:G:113:ASP:OD2	1:G:115:GLU:HB3	2.04	0.57
1:B:202:MET:CE	1:F:202:MET:HE1	2.35	0.57
1:E:218:LEU:O	1:E:218:LEU:HD23	2.05	0.57
1:G:92:LEU:C	1:G:92:LEU:HD23	2.31	0.56
1:A:22:MET:HG2	1:A:47:ALA:HB2	1.87	0.55
1:E:202:MET:CE	1:E:205:LEU:HG	2.38	0.54
1:C:67:GLN:C	1:C:69:SER:H	2.17	0.53
1:B:226:ASN:HB3	1:B:230:TRP:CZ2	2.43	0.53
1:A:202:MET:HE3	1:E:198:PHE:CZ	2.44	0.52
1:A:206:HIS:HA	5:E:360:HOH:O	2.08	0.52
1:H:218:LEU:O	1:H:221:GLN:N	2.42	0.52
1:H:139:ASP:CG	3:H:301:B3P:HO2	2.18	0.52
1:B:202:MET:HE1	1:F:202:MET:HE1	1.92	0.51
3:F:301:B3P:H12	3:F:301:B3P:C9	2.41	0.51
2:M:21:ARG:NH1	2:M:21:ARG:HG2	2.26	0.51
1:B:57:ALA:O	1:B:61:VAL:HG23	2.11	0.50
1:E:170:LEU:HB3	1:E:219:ILE:HG21	1.93	0.50
1:E:213:TYR:C	1:E:213:TYR:CD1	2.88	0.50
2:M:24:TPO:O	2:M:27:LEU:HD23	2.13	0.49
3:A:301:B3P:H31	5:A:466:HOH:O	2.11	0.48
1:C:67:GLN:O	1:C:69:SER:N	2.46	0.48
3:A:301:B3P:H12	3:A:301:B3P:H61	1.93	0.48
1:A:220:MET:HA	1:A:223:LEU:HD12	1.96	0.48
2:M:21:ARG:O	2:M:21:ARG:HG3	2.14	0.48
1:F:202:MET:SD	1:F:205:LEU:HD12	2.55	0.47
1:F:213:TYR:O	1:F:213:TYR:HD2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:165:THR:O	1:E:216:SER:OG	2.33	0.47
4:H:302:GOL:O2	4:H:303:GOL:H32	2.15	0.47
3:B:301:B3P:H71	3:B:301:B3P:H21	1.97	0.47
1:D:194:ALA:O	1:D:223:LEU:HD21	2.15	0.47
1:H:111:ALA:O	1:H:117:ARG:HD2	2.16	0.46
1:G:148:ARG:HH22	1:G:184:ALA:HB1	1.81	0.46
1:F:205:LEU:CD2	1:F:208:LEU:HD12	2.40	0.46
1:E:180:HIS:HE1	5:E:371:HOH:O	1.99	0.46
3:B:301:B3P:H11	3:B:301:B3P:H111	1.97	0.46
1:F:205:LEU:O	1:F:208:LEU:HB2	2.16	0.45
3:A:301:B3P:O2	3:A:301:B3P:C2	2.56	0.45
1:C:67:GLN:C	1:C:69:SER:N	2.73	0.45
1:C:213:TYR:CE2	1:C:217:THR:HG21	2.50	0.45
1:F:52:VAL:CG2	1:F:92:LEU:CD1	2.95	0.45
1:F:121:LEU:HD13	1:F:153:GLU:HG2	1.98	0.45
1:H:170:LEU:HB3	1:H:219:ILE:HG21	1.97	0.45
1:D:126:ASP:O	1:D:129:ARG:HB3	2.17	0.45
1:A:230:TRP:O	1:A:231:THR:HG23	2.17	0.45
1:F:52:VAL:HG23	1:F:92:LEU:CD1	2.47	0.45
1:G:219:ILE:HA	1:G:222:LEU:HD12	1.98	0.45
1:C:103:LEU:HA	1:C:107:LEU:HB2	1.99	0.45
1:H:163:PRO:HG2	1:H:166:ASN:HB2	1.99	0.45
5:D:420:HOH:O	2:P:23:CYS:HB2	2.18	0.44
1:C:52:VAL:HG23	1:C:92:LEU:CD1	2.46	0.44
1:D:142:ARG:O	1:D:145:ASP:N	2.51	0.44
1:F:67:GLN:O	1:F:70:ASN:HB2	2.18	0.44
1:B:66:GLU:HA	1:B:81:VAL:HG11	1.99	0.43
1:H:52:VAL:HG22	1:H:92:LEU:CD1	2.47	0.43
1:D:93:GLN:NE2	5:D:403:HOH:O	2.48	0.43
1:D:121:LEU:HB3	1:D:154:ALA:HB2	2.00	0.43
1:G:60:ARG:CZ	5:G:415:HOH:O	2.66	0.43
1:F:213:TYR:C	1:F:213:TYR:CD2	2.97	0.42
1:A:45:SER:HB2	1:A:119:PHE:HZ	1.84	0.42
1:A:22:MET:CG	1:A:47:ALA:HB2	2.48	0.42
1:B:45:SER:HB2	1:B:119:PHE:HZ	1.85	0.42
1:G:181:TYR:HD2	1:G:182:GLU:HG3	1.85	0.42
2:J:24:TPO:O	2:J:27:LEU:HD13	2.20	0.42
1:A:170:LEU:HB3	1:A:219:ILE:HG21	2.02	0.42
1:D:56:ARG:CZ	1:D:130:TYR:CE1	3.03	0.42
1:F:213:TYR:HD2	1:F:213:TYR:C	2.28	0.42
1:B:3:ARG:HB2	1:B:32:LYS:HG3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:-4:GLY:N	5:C:314:HOH:O	2.52	0.41
2:O:25:TRP:HA	2:O:26:PRO:C	2.44	0.41
1:D:191:ILE:HA	1:D:227:LEU:HD21	2.02	0.41
1:B:115:GLU:HG3	1:B:168:ILE:HD13	2.02	0.41
1:B:152:GLN:NE2	1:B:156:ASP:OD1	2.54	0.41
1:E:202:MET:O	1:E:204:ASP:N	2.53	0.41
1:H:59:TRP:CE2	1:H:134:VAL:HG12	2.55	0.41
2:N:24:TPO:O	2:N:27:LEU:HD23	2.20	0.41
1:A:112:GLY:O	1:A:113:ASP:C	2.64	0.41
3:F:301:B3P:H12	3:F:301:B3P:H92	2.01	0.41
3:H:301:B3P:H62	3:H:301:B3P:C2	2.49	0.41
1:B:217:THR:HB	1:F:205:LEU:HD13	2.02	0.41
1:H:218:LEU:O	1:H:219:ILE:C	2.63	0.41
3:H:301:B3P:H62	3:H:301:B3P:H22	2.01	0.41
1:F:115:GLU:HA	1:F:162:MET:HE3	2.02	0.41
1:G:22:MET:HG2	1:G:47:ALA:HB2	2.02	0.41
2:U:25:TRP:HA	2:U:26:PRO:C	2.45	0.41
1:A:109:LYS:HA	1:A:109:LYS:HD3	1.93	0.41
1:B:218:LEU:O	1:B:218:LEU:HD12	2.20	0.41
1:F:213:TYR:HE2	1:F:217:THR:HG21	1.85	0.41
1:D:142:ARG:O	1:D:143:ILE:C	2.64	0.40
1:C:59:TRP:O	1:C:63:SER:HB2	2.21	0.40
2:M:25:TRP:CG	2:M:26:PRO:HA	2.56	0.40
1:D:62:LEU:HD11	1:D:84:TYR:CE2	2.56	0.40
1:G:36:LEU:HB3	1:G:40:GLU:HB2	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	216/253 (85%)	211 (98%)	5 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	225/253 (89%)	221 (98%)	4 (2%)	0	100	100
1	C	225/253 (89%)	219 (97%)	5 (2%)	1 (0%)	30	38
1	D	212/253 (84%)	191 (90%)	18 (8%)	3 (1%)	9	9
1	E	224/253 (88%)	216 (96%)	6 (3%)	2 (1%)	14	17
1	F	226/253 (89%)	220 (97%)	6 (3%)	0	100	100
1	G	219/253 (87%)	206 (94%)	13 (6%)	0	100	100
1	H	226/253 (89%)	209 (92%)	16 (7%)	1 (0%)	30	38
2	J	5/11 (46%)	5 (100%)	0	0	100	100
2	M	5/11 (46%)	5 (100%)	0	0	100	100
2	N	6/11 (54%)	5 (83%)	1 (17%)	0	100	100
2	O	5/11 (46%)	5 (100%)	0	0	100	100
2	P	4/11 (36%)	3 (75%)	1 (25%)	0	100	100
2	R	5/11 (46%)	5 (100%)	0	0	100	100
2	T	5/11 (46%)	5 (100%)	0	0	100	100
2	U	6/11 (54%)	6 (100%)	0	0	100	100
All	All	1814/2112 (86%)	1732 (96%)	75 (4%)	7 (0%)	30	38

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	69	SER
1	E	203	ALA
1	E	213	TYR
1	D	181	TYR
1	C	68	LYS
1	D	203	ALA
1	H	228	THR

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	168/208 (81%)	161 (96%)	7 (4%)	26	40
1	B	180/208 (86%)	175 (97%)	5 (3%)	38	56
1	C	177/208 (85%)	174 (98%)	3 (2%)	53	72
1	D	144/208 (69%)	135 (94%)	9 (6%)	16	23
1	E	182/208 (88%)	169 (93%)	13 (7%)	13	19
1	F	185/208 (89%)	176 (95%)	9 (5%)	22	34
1	G	169/208 (81%)	162 (96%)	7 (4%)	27	41
1	H	178/208 (86%)	167 (94%)	11 (6%)	16	24
2	J	7/10 (70%)	4 (57%)	3 (43%)	0	0
2	M	7/10 (70%)	5 (71%)	2 (29%)	0	0
2	N	7/10 (70%)	6 (86%)	1 (14%)	3	3
2	O	7/10 (70%)	6 (86%)	1 (14%)	3	3
2	P	6/10 (60%)	6 (100%)	0	100	100
2	R	6/10 (60%)	4 (67%)	2 (33%)	0	0
2	T	7/10 (70%)	7 (100%)	0	100	100
2	U	7/10 (70%)	5 (71%)	2 (29%)	0	0
All	All	1437/1744 (82%)	1362 (95%)	75 (5%)	21	31

All (75) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	20	GLU
1	A	52	VAL
1	A	92	LEU
1	A	116	SER
1	A	197	THR
1	A	204	ASP
1	A	205	LEU
1	B	52	VAL
1	B	64	SER
1	B	149	SER
1	B	218	LEU
1	B	231	THR
1	C	63	SER
1	C	70	ASN
1	C	189	GLU
1	D	79	PRO

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Mol	Chain	Res	Type
1	D	104	ASP
1	D	122	LYS
1	D	123	MET
1	D	142	ARG
1	D	181	TYR
1	D	182	GLU
1	D	186	SER
1	D	191	ILE
1	E	20	GLU
1	E	52	VAL
1	E	68	LYS
1	E	104	ASP
1	E	117	ARG
1	E	141	LYS
1	E	149	SER
1	E	202	MET
1	E	205	LEU
1	E	209	SER
1	E	218	LEU
1	E	224	ARG
1	E	229	LEU
1	F	49	LYS
1	F	70	ASN
1	F	87	LYS
1	F	109	LYS
1	F	188	GLU
1	F	205	LEU
1	F	208	LEU
1	F	218	LEU
1	F	231	THR
1	H	20	GLU
1	H	49	LYS
1	H	52	VAL
1	H	64	SER
1	H	115	GLU
1	H	117	ARG
1	H	202	MET
1	H	205	LEU
1	H	211	ASP
1	H	212	SER
1	H	218	LEU
1	G	8	GLN

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Mol	Chain	Res	Type
1	G	20	GLU
1	G	52	VAL
1	G	63	SER
1	G	144	ILE
1	G	214	LYS
1	G	216	SER
2	R	22	SER
2	R	27	LEU
2	J	21	ARG
2	J	22	SER
2	J	27	LEU
2	M	21	ARG
2	M	22	SER
2	N	22	SER
2	O	21	ARG
2	U	22	SER
2	U	27	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	106	HIS
1	B	206	HIS
1	C	185	ASN
1	D	93	GLN
1	D	106	HIS
1	D	166	ASN
1	E	180	HIS
1	F	180	HIS
1	H	106	HIS
1	G	152	GLN
1	G	206	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

16 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
1	CSO	G	38	1	3,6,7	0.82	0	1,6,8	0.37	0
1	CSO	C	38	1	3,6,7	0.59	0	1,6,8	0.68	0
2	TPO	R	24	2	8,10,11	0.91	1 (12%)	10,14,16	1.79	3 (30%)
1	CSO	F	38	1	3,6,7	0.90	0	1,6,8	0.15	0
1	CSO	B	38	1	3,6,7	0.72	0	1,6,8	0.49	0
2	TPO	P	24	2	8,10,11	1.07	0	10,14,16	2.30	6 (60%)
1	CSO	A	38	1	3,6,7	0.96	0	1,6,8	0.22	0
2	TPO	M	24	2	8,10,11	0.94	0	10,14,16	1.80	3 (30%)
2	TPO	O	24	2	8,10,11	1.00	1 (12%)	10,14,16	1.74	3 (30%)
2	TPO	T	24	2	8,10,11	1.09	1 (12%)	10,14,16	1.37	2 (20%)
2	TPO	U	24	2	8,10,11	1.24	1 (12%)	10,14,16	2.23	4 (40%)
1	CSO	D	38	1	3,6,7	0.70	0	1,6,8	0.33	0
1	CSO	H	38	1	3,6,7	0.68	0	1,6,8	1.05	0
2	TPO	J	24	2	8,10,11	0.78	0	10,14,16	1.51	3 (30%)
2	TPO	N	24	2	8,10,11	0.63	0	10,14,16	1.74	2 (20%)
1	CSO	E	38	1	3,6,7	0.55	0	1,6,8	1.28	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
1	CSO	G	38	1	-	0/1/5/7	-
1	CSO	C	38	1	-	0/1/5/7	-
2	TPO	R	24	2	-	4/9/11/13	-
1	CSO	F	38	1	-	0/1/5/7	-
1	CSO	B	38	1	-	0/1/5/7	-
2	TPO	P	24	2	-	3/9/11/13	-
1	CSO	A	38	1	-	0/1/5/7	-
2	TPO	M	24	2	-	3/9/11/13	-
2	TPO	O	24	2	-	1/9/11/13	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	TPO	T	24	2	-	1/9/11/13	-
2	TPO	U	24	2	-	2/9/11/13	-
1	CSO	D	38	1	-	0/1/5/7	-
1	CSO	H	38	1	-	0/1/5/7	-
2	TPO	J	24	2	-	2/9/11/13	-
2	TPO	N	24	2	-	2/9/11/13	-
1	CSO	E	38	1	-	0/1/5/7	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	U	24	TPO	P-OG1	2.89	1.64	1.59
2	R	24	TPO	P-OG1	2.36	1.63	1.59
2	O	24	TPO	P-OG1	2.28	1.63	1.59
2	T	24	TPO	P-OG1	2.25	1.63	1.59

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	U	24	TPO	CG2-CB-CA	-4.27	104.95	113.26
2	N	24	TPO	CG2-CB-CA	-3.75	105.96	113.26
2	P	24	TPO	O2P-P-O1P	3.19	123.25	110.83
2	R	24	TPO	CG2-CB-CA	-3.09	107.24	113.26
2	P	24	TPO	OG1-P-O1P	-3.03	98.52	109.33
2	O	24	TPO	CG2-CB-CA	-2.96	107.49	113.26
2	U	24	TPO	P-OG1-CB	-2.89	115.47	123.33
2	M	24	TPO	CG2-CB-CA	-2.81	107.78	113.26
2	N	24	TPO	P-OG1-CB	-2.76	115.84	123.33
2	P	24	TPO	CG2-CB-CA	-2.74	107.92	113.26
2	P	24	TPO	O3P-P-O2P	-2.66	97.81	107.80
2	P	24	TPO	P-OG1-CB	-2.61	116.24	123.33
2	R	24	TPO	OG1-P-O1P	-2.60	100.06	109.33
2	M	24	TPO	P-OG1-CB	-2.58	116.31	123.33
2	U	24	TPO	O2P-P-O1P	2.58	120.89	110.83
2	M	24	TPO	O3P-P-O2P	2.53	117.30	107.80
2	J	24	TPO	CG2-CB-CA	-2.51	108.37	113.26
2	U	24	TPO	OG1-P-O1P	-2.51	100.40	109.33
2	R	24	TPO	P-OG1-CB	-2.48	116.58	123.33
2	P	24	TPO	O-C-CA	-2.36	118.71	124.77
2	T	24	TPO	O3P-P-O2P	2.20	116.05	107.80
2	T	24	TPO	CG2-CB-CA	-2.18	109.01	113.26

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	J	24	TPO	O3P-P-OG1	2.16	114.28	105.85
2	O	24	TPO	O3P-P-OG1	2.12	114.09	105.85
2	J	24	TPO	O-C-CA	-2.11	119.34	124.77
2	O	24	TPO	O-C-CA	-2.05	119.49	124.77

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	R	24	TPO	O-C-CA-CB
2	P	24	TPO	O-C-CA-CB
2	R	24	TPO	CB-OG1-P-O2P
2	N	24	TPO	CB-OG1-P-O2P
2	R	24	TPO	CB-OG1-P-O1P
2	R	24	TPO	CB-OG1-P-O3P
2	J	24	TPO	CB-OG1-P-O3P
2	M	24	TPO	CB-OG1-P-O2P
2	M	24	TPO	CB-OG1-P-O3P
2	J	24	TPO	O-C-CA-CB
2	M	24	TPO	O-C-CA-CB
2	N	24	TPO	O-C-CA-CB
2	O	24	TPO	O-C-CA-CB
2	T	24	TPO	O-C-CA-CB
2	U	24	TPO	O-C-CA-CB
2	P	24	TPO	CB-OG1-P-O1P
2	U	24	TPO	CB-OG1-P-O1P
2	P	24	TPO	N-CA-CB-CG2

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	M	24	TPO	1	0
2	J	24	TPO	1	0
2	N	24	TPO	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

11 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$
4	GOL	H	303	-	5,5,5	0.76	0	5,5,5	0.67	0
3	B3P	F	301	-	18,18,18	3.09	6 (33%)	23,23,23	1.82	7 (30%)
3	B3P	A	301	-	18,18,18	2.15	7 (38%)	23,23,23	2.02	5 (21%)
4	GOL	A	303	-	5,5,5	0.64	0	5,5,5	0.92	0
4	GOL	H	302	-	5,5,5	0.44	0	5,5,5	0.50	0
4	GOL	G	301	-	5,5,5	0.91	0	5,5,5	1.23	1 (20%)
4	GOL	D	302	-	5,5,5	0.70	0	5,5,5	0.59	0
3	B3P	H	301	-	18,18,18	2.49	8 (44%)	23,23,23	1.74	9 (39%)
4	GOL	D	301	-	5,5,5	0.35	0	5,5,5	0.58	0
4	GOL	A	302	-	5,5,5	0.72	0	5,5,5	0.69	0
3	B3P	B	301	-	18,18,18	2.10	5 (27%)	23,23,23	1.20	2 (8%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	H	303	-	-	4/4/4/4	-
3	B3P	F	301	-	-	8/28/28/28	-
3	B3P	A	301	-	-	9/28/28/28	-
4	GOL	A	303	-	-	0/4/4/4	-
4	GOL	H	302	-	-	2/4/4/4	-
4	GOL	G	301	-	-	2/4/4/4	-
4	GOL	D	302	-	-	4/4/4/4	-
3	B3P	H	301	-	-	10/28/28/28	-
4	GOL	D	301	-	-	2/4/4/4	-
4	GOL	A	302	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	B3P	B	301	-	-	6/28/28/28	-

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	301	B3P	C3-N1	8.15	1.56	1.46
3	H	301	B3P	C3-N1	6.94	1.55	1.46
3	A	301	B3P	C3-N1	6.02	1.54	1.46
3	F	301	B3P	C6-C4	5.73	1.60	1.53
3	B	301	B3P	C3-N1	4.71	1.52	1.46
3	F	301	B3P	C5-C4	4.47	1.58	1.53
3	F	301	B3P	C7-C4	4.36	1.58	1.53
3	F	301	B3P	C9-C8	4.33	1.58	1.53
3	B	301	B3P	C7-C4	4.10	1.58	1.53
3	H	301	B3P	C2-N2	3.76	1.51	1.46
3	H	301	B3P	C7-C4	3.44	1.57	1.53
3	B	301	B3P	C6-C4	3.34	1.57	1.53
3	B	301	B3P	C9-C8	3.32	1.57	1.53
3	A	301	B3P	C2-N2	3.06	1.50	1.46
3	H	301	B3P	C1-C3	2.99	1.63	1.51
3	H	301	B3P	C11-C8	2.86	1.56	1.53
3	A	301	B3P	C10-C8	2.71	1.56	1.53
3	B	301	B3P	C10-C8	2.43	1.56	1.53
3	A	301	B3P	C9-C8	2.43	1.56	1.53
3	H	301	B3P	C1-C2	2.42	1.61	1.51
3	H	301	B3P	C4-N1	2.32	1.56	1.49
3	A	301	B3P	C6-C4	2.28	1.56	1.53
3	A	301	B3P	C7-C4	2.11	1.55	1.53
3	F	301	B3P	C1-C3	2.08	1.59	1.51
3	H	301	B3P	C5-C4	2.04	1.55	1.53
3	A	301	B3P	C11-C8	2.03	1.55	1.53

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	301	B3P	O3-C11-C8	-4.58	102.36	111.68
3	H	301	B3P	C1-C3-N1	4.15	121.01	110.98
3	A	301	B3P	C1-C3-N1	3.99	120.64	110.98
3	F	301	B3P	O5-C6-C4	3.76	119.33	111.68
3	A	301	B3P	C2-N2-C8	-3.70	110.75	116.17
3	A	301	B3P	O1-C9-C8	-3.45	104.67	111.68
3	A	301	B3P	C1-C2-N2	3.01	118.27	110.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	301	B3P	C1-C2-N2	2.70	117.52	110.98
3	H	301	B3P	C3-N1-C4	-2.68	112.24	116.17
3	F	301	B3P	O3-C11-C8	-2.67	106.25	111.68
3	H	301	B3P	C6-C4-C5	-2.47	104.60	110.02
3	F	301	B3P	C6-C4-C5	-2.41	104.74	110.02
3	F	301	B3P	C2-N2-C8	2.39	119.67	116.17
3	F	301	B3P	O2-C10-C8	-2.39	106.83	111.68
3	F	301	B3P	C1-C3-N1	2.22	116.34	110.98
4	G	301	GOL	O3-C3-C2	2.17	120.17	110.38
3	H	301	B3P	C2-N2-C8	-2.17	112.99	116.17
3	H	301	B3P	C6-C4-N1	2.12	115.34	109.02
3	H	301	B3P	O6-C7-C4	-2.11	107.38	111.68
3	H	301	B3P	C3-C1-C2	2.11	121.66	114.15
3	H	301	B3P	O3-C11-C8	2.11	115.96	111.68
3	B	301	B3P	C1-C2-N2	2.06	115.96	110.98
3	H	301	B3P	C10-C8-C9	-2.04	105.54	110.02
3	B	301	B3P	C5-C4-N1	-2.01	103.02	109.02

There are no chirality outliers.

All (49) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	301	B3P	C1-C3-N1-C4
3	A	301	B3P	C5-C4-N1-C3
3	A	301	B3P	C6-C4-N1-C3
3	A	301	B3P	C7-C4-N1-C3
3	A	301	B3P	O3-C11-C8-C9
3	B	301	B3P	C1-C2-N2-C8
3	B	301	B3P	C9-C8-N2-C2
3	B	301	B3P	C10-C8-N2-C2
3	B	301	B3P	C11-C8-N2-C2
3	F	301	B3P	C1-C2-N2-C8
3	F	301	B3P	N1-C4-C6-O5
3	F	301	B3P	C5-C4-C6-O5
3	F	301	B3P	C7-C4-C6-O5
3	H	301	B3P	C1-C2-N2-C8
3	H	301	B3P	C1-C3-N1-C4
3	H	301	B3P	C5-C4-N1-C3
3	H	301	B3P	C6-C4-N1-C3
3	H	301	B3P	C7-C4-N1-C3
3	H	301	B3P	C9-C8-N2-C2
3	H	301	B3P	C10-C8-N2-C2

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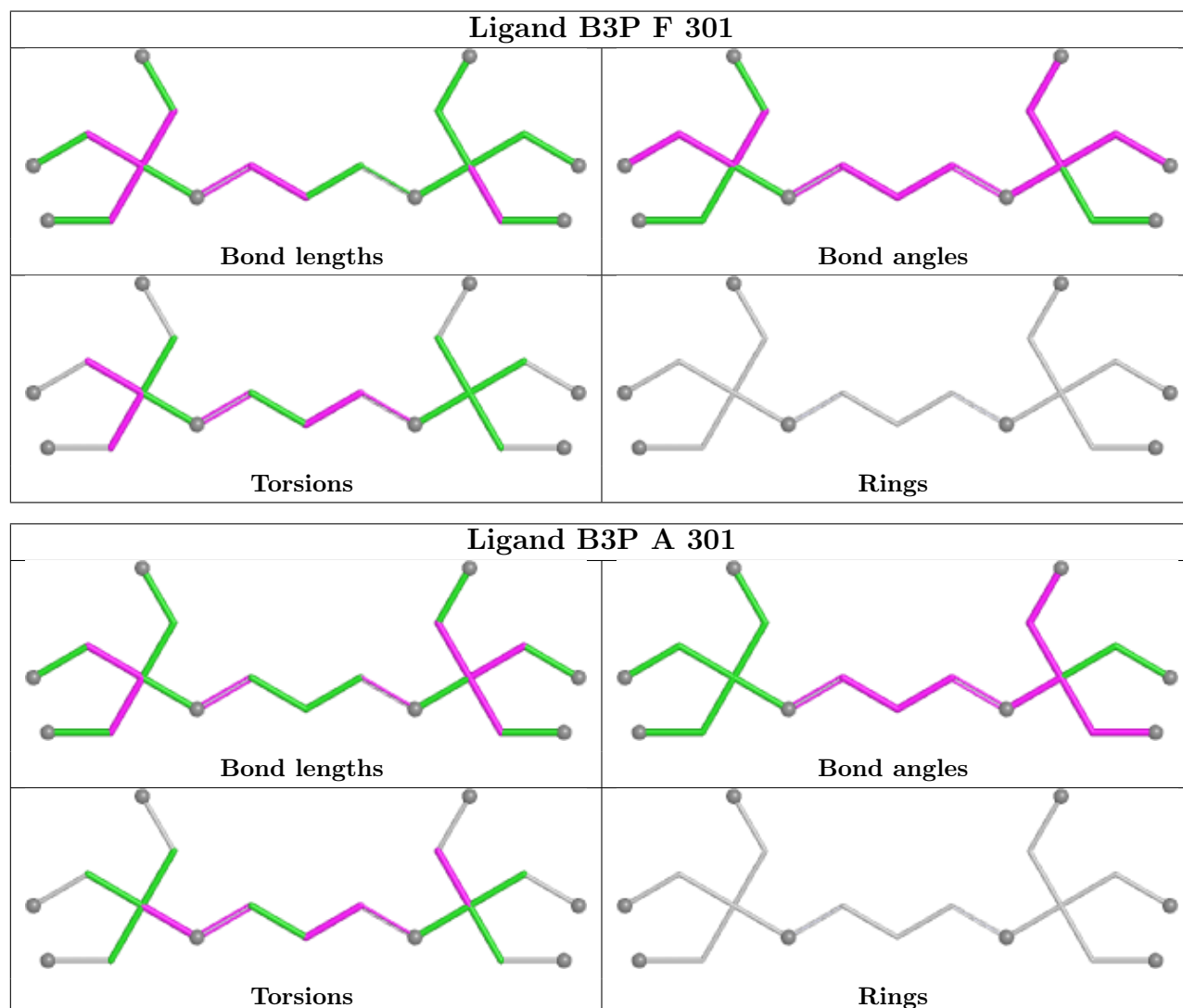
Mol	Chain	Res	Type	Atoms
3	H	301	B3P	C11-C8-N2-C2
4	D	301	GOL	C1-C2-C3-O3
4	D	301	GOL	O2-C2-C3-O3
4	D	302	GOL	O1-C1-C2-C3
4	D	302	GOL	C1-C2-C3-O3
4	D	302	GOL	O2-C2-C3-O3
4	H	302	GOL	C1-C2-C3-O3
4	H	303	GOL	C1-C2-C3-O3
4	H	303	GOL	O2-C2-C3-O3
4	G	301	GOL	C1-C2-C3-O3
3	A	301	B3P	C3-C1-C2-N2
3	H	301	B3P	C3-C1-C2-N2
3	F	301	B3P	C3-C1-C2-N2
3	F	301	B3P	C6-C4-C7-O6
3	H	301	B3P	C2-C1-C3-N1
3	B	301	B3P	C1-C3-N1-C4
4	H	303	GOL	O1-C1-C2-C3
4	H	303	GOL	O1-C1-C2-O2
3	B	301	B3P	C2-C1-C3-N1
4	D	302	GOL	O1-C1-C2-O2
4	G	301	GOL	O2-C2-C3-O3
3	A	301	B3P	O3-C11-C8-C10
3	A	301	B3P	C1-C2-N2-C8
3	F	301	B3P	C1-C3-N1-C4
4	H	302	GOL	O2-C2-C3-O3
4	A	302	GOL	C1-C2-C3-O3
4	A	302	GOL	O2-C2-C3-O3
3	A	301	B3P	O3-C11-C8-N2
3	F	301	B3P	N1-C4-C7-O6

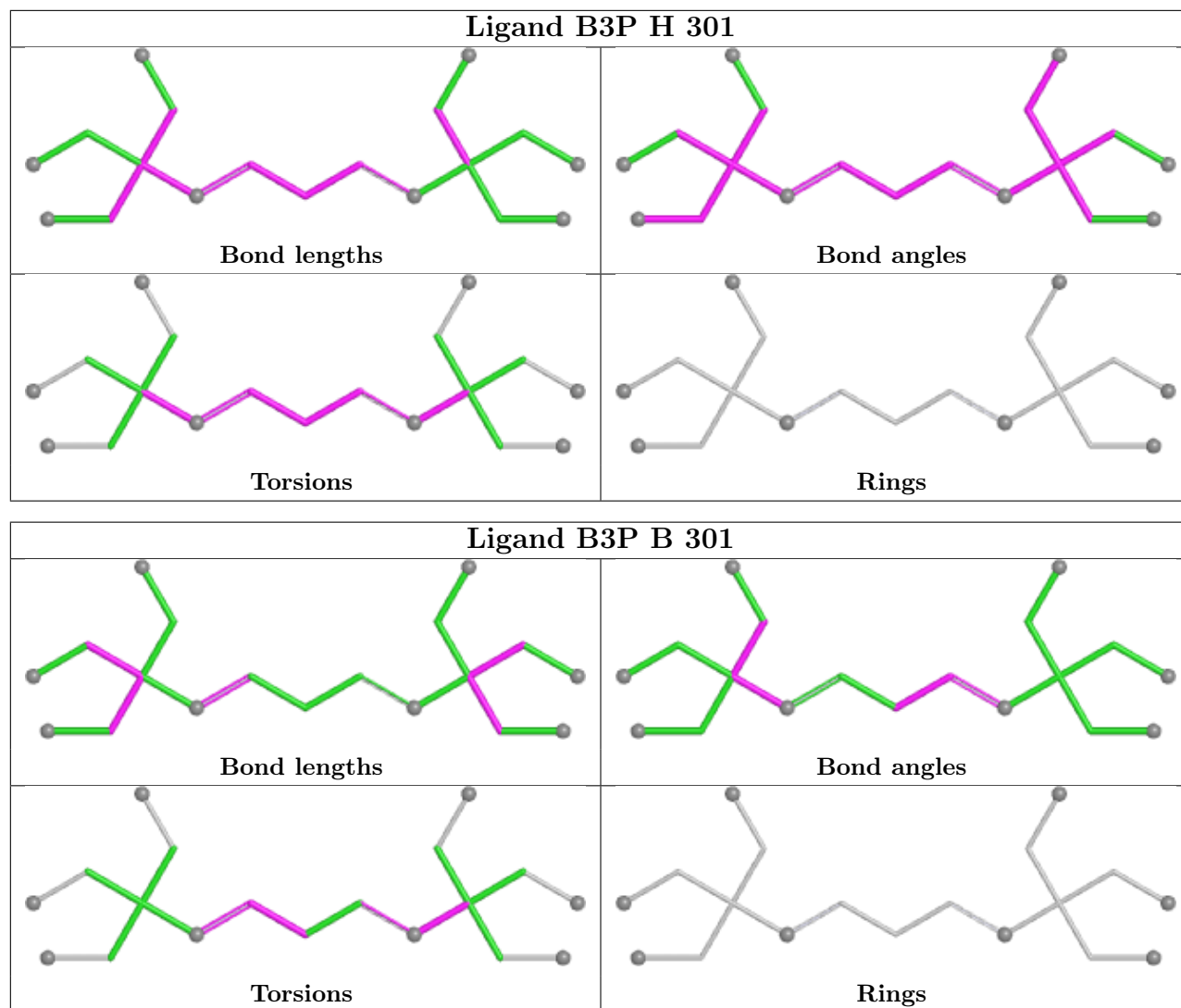
There are no ring outliers.

7 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	H	303	GOL	1	0
3	F	301	B3P	2	0
3	A	301	B3P	4	0
4	A	303	GOL	1	0
4	H	302	GOL	1	0
3	H	301	B3P	4	0
3	B	301	B3P	2	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	222/253 (87%)	0.84	40 (18%) 3 4	18, 32, 68, 76	0
1	B	228/253 (90%)	0.80	27 (11%) 9 10	15, 34, 71, 93	1 (0%)
1	C	229/253 (90%)	0.76	31 (13%) 7 8	18, 30, 77, 127	0
1	D	218/253 (86%)	2.10	101 (46%) 0 0	24, 48, 110, 128	0
1	E	228/253 (90%)	0.89	36 (15%) 5 5	21, 35, 79, 114	0
1	F	230/253 (90%)	0.64	18 (7%) 19 21	19, 31, 65, 101	0
1	G	225/253 (88%)	1.44	69 (30%) 1 1	21, 43, 91, 116	0
1	H	230/253 (90%)	1.12	50 (21%) 2 2	19, 37, 76, 99	0
2	J	7/11 (63%)	2.02	4 (57%) 0 0	40, 45, 63, 73	0
2	M	7/11 (63%)	2.45	4 (57%) 0 0	38, 51, 73, 75	0
2	N	8/11 (72%)	2.64	6 (75%) 0 0	44, 51, 78, 87	0
2	O	7/11 (63%)	2.27	3 (42%) 0 0	37, 45, 67, 72	0
2	P	6/11 (54%)	4.57	6 (100%) 0 0	71, 90, 94, 96	0
2	R	7/11 (63%)	2.09	4 (57%) 0 0	36, 44, 54, 57	0
2	T	7/11 (63%)	3.78	7 (100%) 0 0	56, 62, 83, 92	0
2	U	8/11 (72%)	3.19	5 (62%) 0 0	47, 58, 86, 88	0
All	All	1867/2112 (88%)	1.12	411 (22%) 2 2	15, 36, 86, 128	1 (0%)

All (411) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	231	THR	8.4
1	D	226	ASN	7.5
1	D	198	PHE	7.2
1	H	208	LEU	6.9
2	T	28	PRO	6.9

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Mol	Chain	Res	Type	RSRZ
2	P	27	LEU	6.8
1	F	211	ASP	6.7
1	D	185	ASN	6.7
1	C	211	ASP	6.6
1	D	217	THR	6.6
1	G	215	ASP	6.5
2	U	28	PRO	6.3
1	D	220	MET	6.1
1	G	230	TRP	6.1
1	B	209	SER	6.1
1	D	215	ASP	6.1
1	F	77	LYS	6.0
1	E	205	LEU	6.0
1	E	70	ASN	6.0
1	D	181	TYR	5.9
1	A	206	HIS	5.9
1	D	199	ASP	5.8
1	D	187	PRO	5.8
1	H	203	ALA	5.7
1	G	206	HIS	5.7
1	D	227	LEU	5.7
1	H	230	TRP	5.6
1	H	209	SER	5.6
1	F	213	TYR	5.6
1	D	203	ALA	5.6
2	U	29	ARG	5.5
1	E	213	TYR	5.5
1	D	194	ALA	5.5
1	C	205	LEU	5.4
1	G	211	ASP	5.4
1	G	213	TYR	5.4
1	C	70	ASN	5.4
1	G	205	LEU	5.3
1	C	209	SER	5.2
2	P	28	PRO	5.2
1	E	231	THR	5.2
1	D	206	HIS	5.2
1	D	216	SER	5.2
1	G	191	ILE	5.2
1	D	223	LEU	5.1
1	E	211	ASP	5.1
1	A	215	ASP	5.1

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Mol	Chain	Res	Type	RSRZ
1	C	213	TYR	5.1
2	T	27	LEU	5.0
2	P	22	SER	5.0
1	D	191	ILE	5.0
1	G	188	GLU	5.0
1	D	218	LEU	5.0
1	C	206	HIS	4.9
1	D	229	LEU	4.9
1	D	145	ASP	4.9
1	F	212	SER	4.8
1	D	204	ASP	4.8
1	F	210	GLU	4.8
1	H	205	LEU	4.8
1	A	203	ALA	4.8
1	B	207	THR	4.8
1	E	208	LEU	4.8
1	H	210	GLU	4.8
2	J	28	PRO	4.7
1	A	77	LYS	4.7
2	P	25	TRP	4.7
1	G	231	THR	4.7
1	A	218	LEU	4.6
1	C	208	LEU	4.6
1	D	193	LEU	4.6
1	D	219	ILE	4.6
2	M	28	PRO	4.6
1	D	205	LEU	4.6
1	G	194	ALA	4.5
1	D	164	PRO	4.5
1	G	181	TYR	4.4
1	G	203	ALA	4.4
1	C	207	THR	4.4
2	O	28	PRO	4.4
1	H	212	SER	4.4
1	H	211	ASP	4.4
1	F	231	THR	4.4
1	H	207	THR	4.4
1	G	164	PRO	4.4
2	T	25	TRP	4.4
1	H	206	HIS	4.4
1	D	138	ASP	4.4
1	G	198	PHE	4.4

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Mol	Chain	Res	Type	RSRZ
1	H	227	LEU	4.3
1	D	192	SER	4.3
1	C	203	ALA	4.3
1	D	188	GLU	4.3
1	E	206	HIS	4.3
1	D	137	GLY	4.3
1	B	211	ASP	4.3
1	H	71	GLU	4.2
1	F	229	LEU	4.2
1	B	231	THR	4.2
1	G	111	ALA	4.2
1	C	229	LEU	4.2
1	A	70	ASN	4.1
1	G	185	ASN	4.1
1	A	111	ALA	4.1
1	H	191	ILE	4.1
1	C	210	GLU	4.1
1	A	214	LYS	4.1
1	D	201	ALA	4.1
1	E	207	THR	4.0
1	H	77	LYS	4.0
1	D	221	GLN	4.0
1	D	173	ALA	4.0
1	D	222	LEU	4.0
1	G	228	THR	4.0
1	D	190	ALA	4.0
1	E	212	SER	4.0
1	G	212	SER	4.0
2	N	28	PRO	3.9
1	G	202	MET	3.9
1	E	111	ALA	3.9
1	F	70	ASN	3.9
1	B	212	SER	3.9
1	D	186	SER	3.9
1	D	150	ALA	3.9
1	D	70	ASN	3.9
1	D	172	LEU	3.9
1	D	159	LYS	3.9
1	D	141	LYS	3.9
1	H	198	PHE	3.8
1	D	202	MET	3.8
1	B	229	LEU	3.8

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Mol	Chain	Res	Type	RSRZ
1	D	174	LEU	3.8
1	G	201	ALA	3.8
1	G	222	LEU	3.8
2	U	27	LEU	3.8
1	G	136	THR	3.8
1	A	204	ASP	3.8
1	D	-4	GLY	3.8
1	G	227	LEU	3.8
1	G	217	THR	3.7
1	G	77	LYS	3.7
1	D	155	MET	3.7
1	D	183	ILE	3.7
1	D	176	PHE	3.7
1	G	110	GLU	3.7
1	D	136	THR	3.7
1	E	224	ARG	3.7
1	D	177	SER	3.7
1	A	229	LEU	3.7
1	D	224	ARG	3.7
2	T	21	ARG	3.7
1	H	195	LYS	3.7
1	D	110	GLU	3.6
1	B	206	HIS	3.6
1	D	118	VAL	3.6
1	C	77	LYS	3.6
1	B	208	LEU	3.6
1	F	209	SER	3.6
1	H	219	ILE	3.6
1	A	205	LEU	3.6
1	D	168	ILE	3.5
1	D	163	PRO	3.5
2	N	29	ARG	3.5
1	G	138	ASP	3.5
1	G	193	LEU	3.5
1	H	192	SER	3.4
1	G	216	SER	3.4
1	H	222	LEU	3.4
1	H	223	LEU	3.4
1	D	195	LYS	3.4
1	E	203	ALA	3.4
1	B	210	GLU	3.4
1	D	111	ALA	3.4

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Mol	Chain	Res	Type	RSRZ
1	D	180	HIS	3.4
1	D	225	ASP	3.4
1	E	229	LEU	3.4
1	G	214	LYS	3.4
1	H	194	ALA	3.4
2	R	21	ARG	3.4
1	B	205	LEU	3.3
1	H	136	THR	3.3
1	G	229	LEU	3.3
2	N	27	LEU	3.3
1	G	165	THR	3.3
1	E	117	ARG	3.3
1	A	231	THR	3.3
1	D	197	THR	3.3
1	D	178	VAL	3.3
1	D	42	ASN	3.3
1	D	170	LEU	3.3
1	E	141	LYS	3.3
1	D	228	THR	3.3
1	E	69	SER	3.3
1	H	213	TYR	3.3
1	G	142	ARG	3.2
1	E	218	LEU	3.2
1	F	76	GLU	3.2
2	P	23	CYS	3.2
1	D	151	TYR	3.2
1	D	184	ALA	3.2
1	G	141	LYS	3.2
1	D	144	ILE	3.2
1	D	69	SER	3.2
2	R	28	PRO	3.2
1	F	221	GLN	3.2
1	C	201	ALA	3.2
1	D	104	ASP	3.2
1	D	149	SER	3.1
1	D	119	PHE	3.1
1	E	199	ASP	3.1
1	D	160	LYS	3.1
1	G	170	LEU	3.1
1	D	108	ILE	3.1
1	D	115	GLU	3.1
1	H	228	THR	3.1

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Mol	Chain	Res	Type	RSRZ
1	H	220	MET	3.1
2	U	25	TRP	3.0
1	H	201	ALA	3.0
1	G	190	ALA	3.0
1	C	218	LEU	3.0
1	G	220	MET	3.0
1	D	196	THR	3.0
1	A	199	ASP	3.0
1	D	154	ALA	3.0
1	H	187	PRO	3.0
1	C	188	GLU	3.0
1	H	186	SER	3.0
1	H	226	ASN	3.0
1	C	202	MET	3.0
1	E	201	ALA	3.0
1	D	52	VAL	3.0
1	H	229	LEU	3.0
1	H	221	GLN	3.0
1	G	221	GLN	3.0
2	O	21	ARG	3.0
1	H	141	LYS	2.9
2	N	21	ARG	2.9
1	D	189	GLU	2.9
1	A	230	TRP	2.9
2	R	25	TRP	2.9
1	G	70	ASN	2.9
1	E	68	LYS	2.9
2	M	25	TRP	2.9
1	D	152	GLN	2.9
1	D	139	ASP	2.9
1	A	168	ILE	2.9
1	G	187	PRO	2.8
1	H	218	LEU	2.8
1	G	159	LYS	2.8
1	H	204	ASP	2.8
1	D	148	ARG	2.8
1	H	35	GLU	2.8
1	C	231	THR	2.8
1	D	165	THR	2.8
1	G	137	GLY	2.8
1	A	227	LEU	2.8
1	F	208	LEU	2.8

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Mol	Chain	Res	Type	RSRZ
1	E	220	MET	2.8
1	G	224	ARG	2.8
1	D	120	TYR	2.8
2	M	27	LEU	2.8
1	B	68	LYS	2.8
1	E	195	LYS	2.8
1	D	142	ARG	2.8
1	E	230	TRP	2.7
2	N	25	TRP	2.7
1	E	202	MET	2.7
2	U	21	ARG	2.7
1	E	112	GLY	2.7
1	B	188	GLU	2.7
1	C	230	TRP	2.7
1	G	195	LYS	2.7
2	O	27	LEU	2.7
1	C	212	SER	2.7
1	G	163	PRO	2.7
1	E	227	LEU	2.7
1	H	199	ASP	2.7
1	E	209	SER	2.7
1	G	69	SER	2.7
1	E	210	GLU	2.6
1	H	189	GLU	2.6
2	J	25	TRP	2.6
1	C	215	ASP	2.6
1	C	228	THR	2.6
1	H	202	MET	2.6
1	D	134	VAL	2.6
1	D	146	SER	2.6
1	D	130	TYR	2.6
1	G	223	LEU	2.5
1	A	69	SER	2.5
1	A	219	ILE	2.5
1	C	191	ILE	2.5
1	H	181	TYR	2.5
1	B	189	GLU	2.5
2	M	21	ARG	2.5
1	B	194	ALA	2.5
1	D	156	ASP	2.5
1	G	225	ASP	2.5
2	P	26	PRO	2.5

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Mol	Chain	Res	Type	RSRZ
1	G	157	ILE	2.5
1	G	219	ILE	2.5
1	B	67	GLN	2.5
1	H	224	ARG	2.5
1	G	226	ASN	2.5
1	D	171	GLY	2.5
1	A	188	GLU	2.4
1	A	228	THR	2.4
1	G	189	GLU	2.4
1	B	213	TYR	2.4
2	J	27	LEU	2.4
1	D	162	MET	2.4
1	B	203	ALA	2.4
1	B	224	ARG	2.4
1	D	182	GLU	2.4
1	D	157	ILE	2.4
1	D	132	ALA	2.4
1	A	198	PHE	2.4
1	D	109	LYS	2.4
1	D	179	PHE	2.4
1	G	160	LYS	2.4
1	G	218	LEU	2.4
1	C	181	TYR	2.4
1	A	201	ALA	2.4
1	C	78	GLY	2.4
1	G	196	THR	2.4
1	G	186	SER	2.4
1	A	220	MET	2.4
1	E	198	PHE	2.4
1	C	222	LEU	2.4
1	C	227	LEU	2.4
1	G	204	ASP	2.3
1	H	164	PRO	2.3
1	B	186	SER	2.3
1	E	168	ILE	2.3
1	F	218	LEU	2.3
1	B	110	GLU	2.3
1	A	194	ALA	2.3
1	H	190	ALA	2.3
1	A	202	MET	2.3
1	B	228	THR	2.3
1	D	117	ARG	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	113	ASP	2.3
1	A	114	ALA	2.3
1	H	165	THR	2.3
1	E	67	GLN	2.3
1	G	144	ILE	2.3
1	E	113	ASP	2.3
1	G	199	ASP	2.3
1	D	135	ALA	2.3
1	G	154	ALA	2.3
1	A	67	GLN	2.3
1	A	68	LYS	2.3
1	A	110	GLU	2.2
1	B	230	TRP	2.2
1	C	221	GLN	2.2
2	T	22	SER	2.2
2	T	26	PRO	2.2
1	E	189	GLU	2.2
1	H	188	GLU	2.2
1	D	67	GLN	2.2
1	F	67	GLN	2.2
1	H	152	GLN	2.2
1	B	111	ALA	2.2
1	H	197	THR	2.2
1	G	177	SER	2.2
1	D	36	LEU	2.2
1	F	205	LEU	2.2
2	R	27	LEU	2.2
2	J	21	ARG	2.2
1	A	112	GLY	2.2
1	F	206	HIS	2.2
1	H	182	GLU	2.2
1	D	114	ALA	2.2
1	G	197	THR	2.2
1	A	226	ASN	2.2
1	A	159	LYS	2.2
1	F	68	LYS	2.2
1	G	182	GLU	2.2
2	N	22	SER	2.2
1	A	223	LEU	2.1
1	B	227	LEU	2.1
1	G	183	ILE	2.1
1	G	200	GLU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	78	GLY	2.1
1	H	137	GLY	2.1
1	A	217	THR	2.1
1	C	42	ASN	2.1
1	F	145	ASP	2.1
1	A	165	THR	2.1
1	B	69	SER	2.1
1	C	220	MET	2.1
1	G	155	MET	2.1
1	G	67	GLN	2.1
1	D	68	LYS	2.1
1	D	143	ILE	2.1
1	G	104	ASP	2.1
1	G	168	ILE	2.1
1	A	163	PRO	2.1
1	A	197	THR	2.0
1	C	192	SER	2.0
1	E	114	ALA	2.0
2	T	23	CYS	2.0
1	B	70	ASN	2.0
1	E	204	ASP	2.0
1	H	185	ASN	2.0
1	E	164	PRO	2.0
1	A	224	ARG	2.0
1	C	198	PHE	2.0
1	A	189	GLU	2.0
1	A	191	ILE	2.0
1	D	167	PRO	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
1	CSO	D	38	7/8	0.79	0.20	42,47,52,57	0
1	CSO	G	38	7/8	0.85	0.17	37,40,56,58	0
1	CSO	E	38	7/8	0.86	0.14	35,39,42,52	0
1	CSO	A	38	7/8	0.86	0.15	33,39,52,52	0
1	CSO	H	38	7/8	0.88	0.12	33,34,48,52	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
1	CSO	B	38	7/8	0.89	0.14	34,36,45,49	0
2	TPO	P	24	11/12	0.90	0.13	43,61,74,86	0
1	CSO	C	38	7/8	0.92	0.10	27,29,40,46	0
1	CSO	F	38	7/8	0.93	0.10	31,34,41,53	0
2	TPO	T	24	11/12	0.95	0.11	35,35,49,49	0
2	TPO	U	24	11/12	0.95	0.10	28,31,39,41	0
2	TPO	O	24	11/12	0.96	0.08	23,26,31,32	0
2	TPO	M	24	11/12	0.97	0.07	25,28,32,34	0
2	TPO	N	24	11/12	0.97	0.08	21,28,32,33	0
2	TPO	J	24	11/12	0.97	0.09	25,29,34,34	0
2	TPO	R	24	11/12	0.98	0.06	21,25,30,31	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

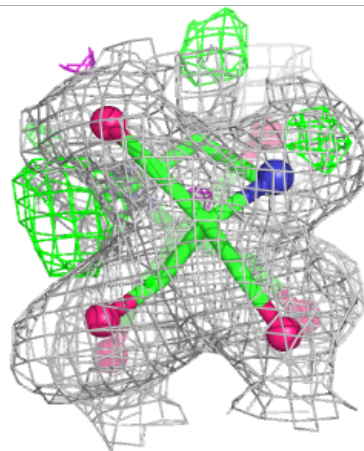
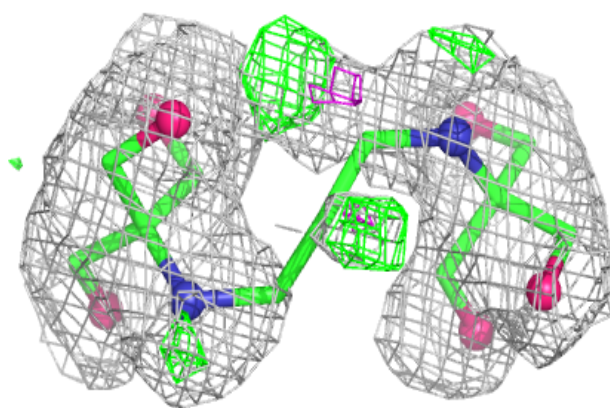
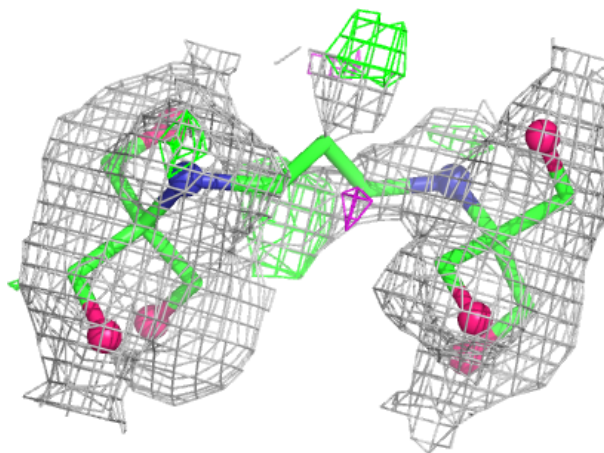
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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
4	GOL	D	302	6/6	0.75	0.16	36,48,50,50	0
4	GOL	H	302	6/6	0.78	0.18	48,54,57,58	0
4	GOL	H	303	6/6	0.79	0.17	39,45,48,48	0
4	GOL	G	301	6/6	0.79	0.18	45,57,63,63	0
4	GOL	D	301	6/6	0.80	0.19	52,56,66,66	0
4	GOL	A	302	6/6	0.81	0.15	35,48,50,56	0
3	B3P	H	301	19/19	0.81	0.15	32,39,53,54	0
3	B3P	B	301	19/19	0.82	0.16	40,52,59,61	0
3	B3P	F	301	19/19	0.84	0.15	31,42,55,56	0
4	GOL	A	303	6/6	0.85	0.15	36,43,47,48	0
3	B3P	A	301	19/19	0.88	0.12	27,35,49,50	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.

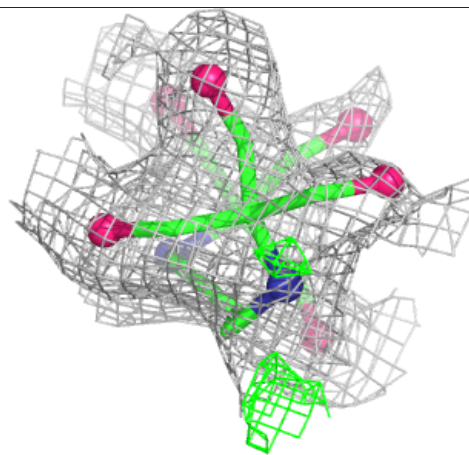
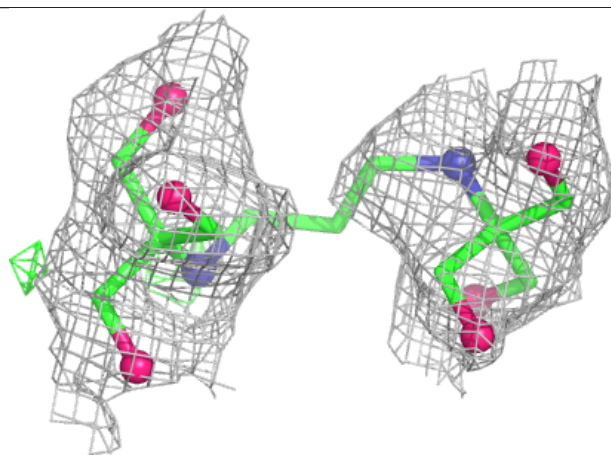
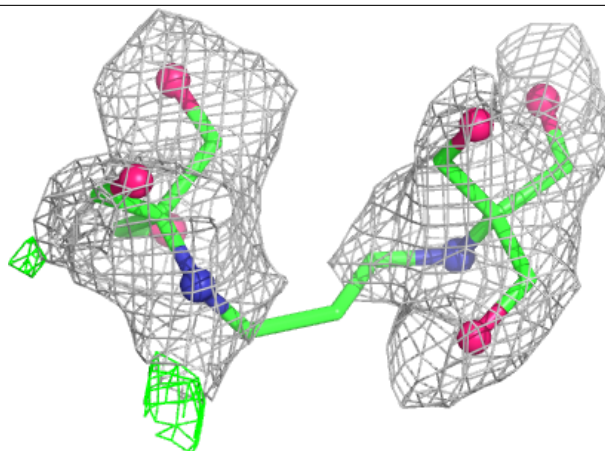
Electron density around B3P H 301:

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



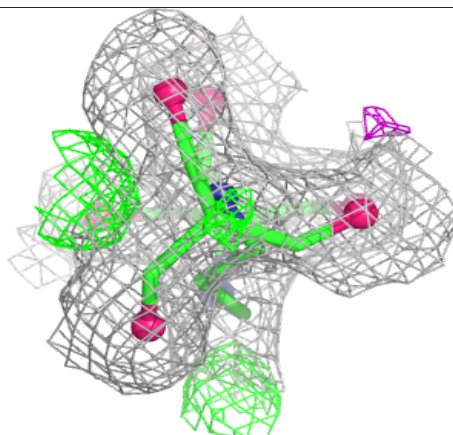
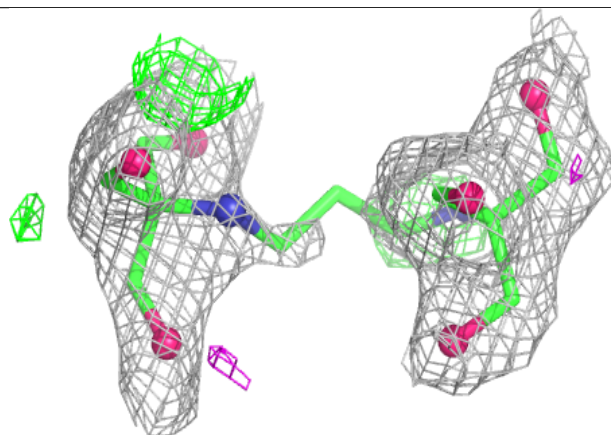
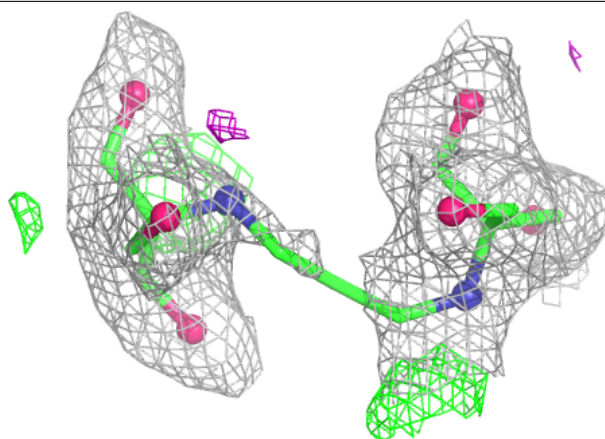
Electron density around B3P B 301:

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

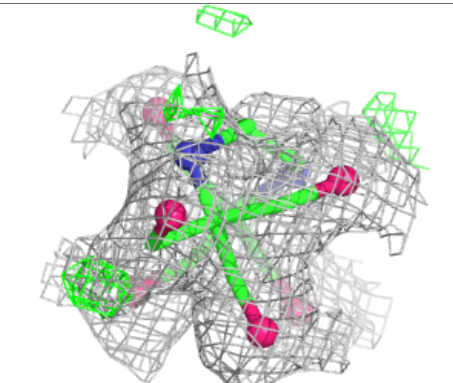
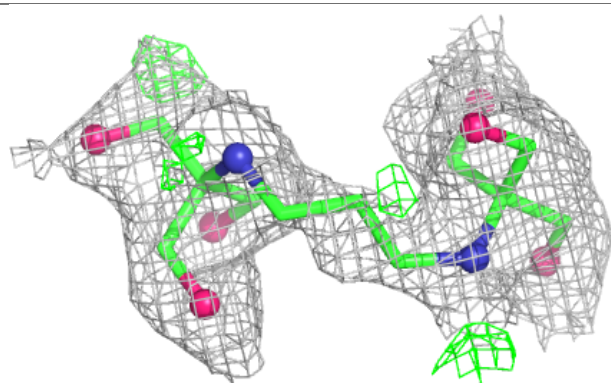
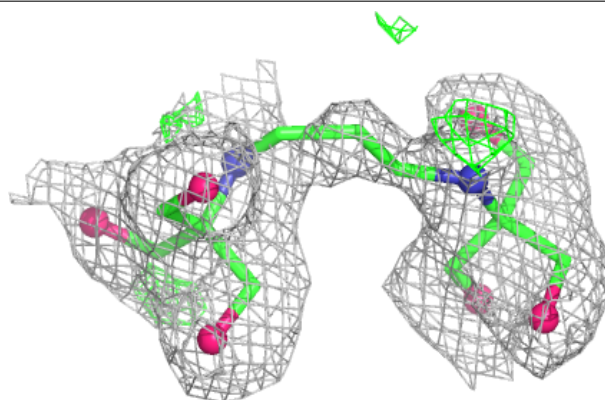


Electron density around B3P F 301:

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

**Electron density around B3P A 301:**

$2mF_o-DF_c$ (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.