



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 12, 2026 – 10:17 AM UTC

PDB ID : 3FTQ / pdb_00003ftq
Title : Crystal structure of Septin 2 in complex with GppNHp and Mg2+
Authors : Sirajuddin, M.; Wittinghofer, A.
Deposited on : 2009-01-13
Resolution : 2.90 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

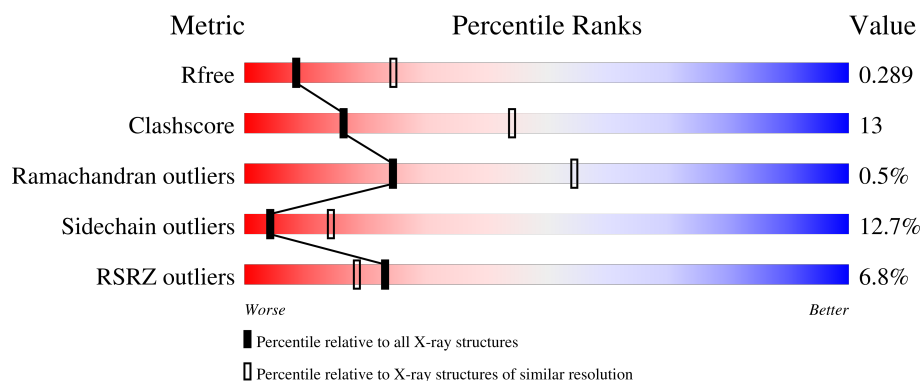
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.90 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	2481 (2.90-2.90)
Clashscore	190562	2690 (2.90-2.90)
Ramachandran outliers	187476	2623 (2.90-2.90)
Sidechain outliers	187428	2625 (2.90-2.90)
RSRZ outliers	180081	2481 (2.90-2.90)

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	274	5% 61% 24% 7% 7%
1	B	274	9% 61% 23% 7% 8%
1	C	274	5% 65% 22% • 9%
1	D	274	5% 54% 27% 8% 11%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 8382 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 Septin-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	254	Total	C	N	O	S	0	0	0
			2070	1316	363	383	8			
1	B	252	Total	C	N	O	S	0	0	0
			2059	1314	358	379	8			
1	C	250	Total	C	N	O	S	0	0	0
			2045	1303	357	377	8			
1	D	243	Total	C	N	O	S	0	0	0
			1973	1261	342	362	8			

- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Mg	0	0
			1	1		
2	B	1	Total	Mg	0	0
			1	1		
2	C	1	Total	Mg	0	0
			1	1		
2	D	1	Total	Mg	0	0
			1	1		

- Molecule 3 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (CCD ID: GNP) (formula: C₁₀H₁₇N₆O₁₃P₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	B	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	C	1	Total	C	N	O	P	0	0
			32	10	6	13	3		
3	D	1	Total	C	N	O	P	0	0
			32	10	6	13	3		

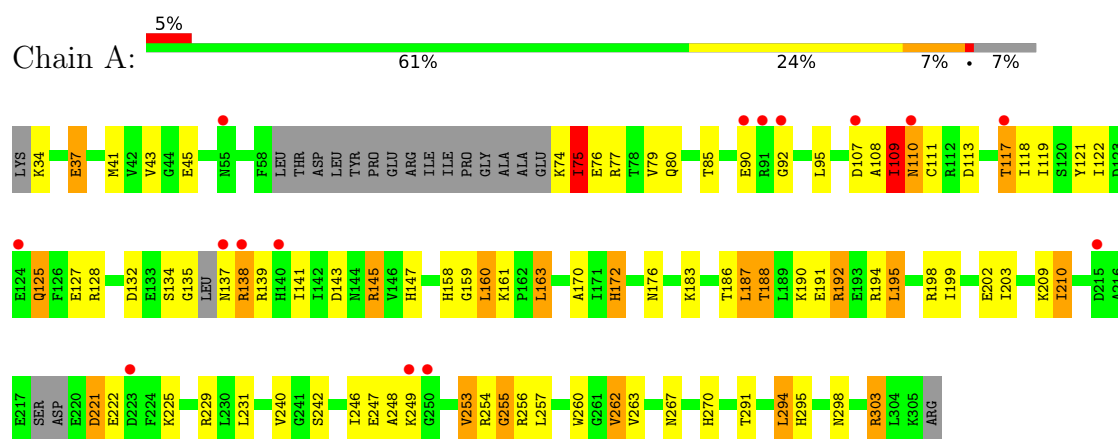
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	33	Total	O	0	0
			33	33		
4	B	31	Total	O	0	0
			31	31		
4	C	23	Total	O	0	0
			23	23		
4	D	16	Total	O	0	0
			16	16		

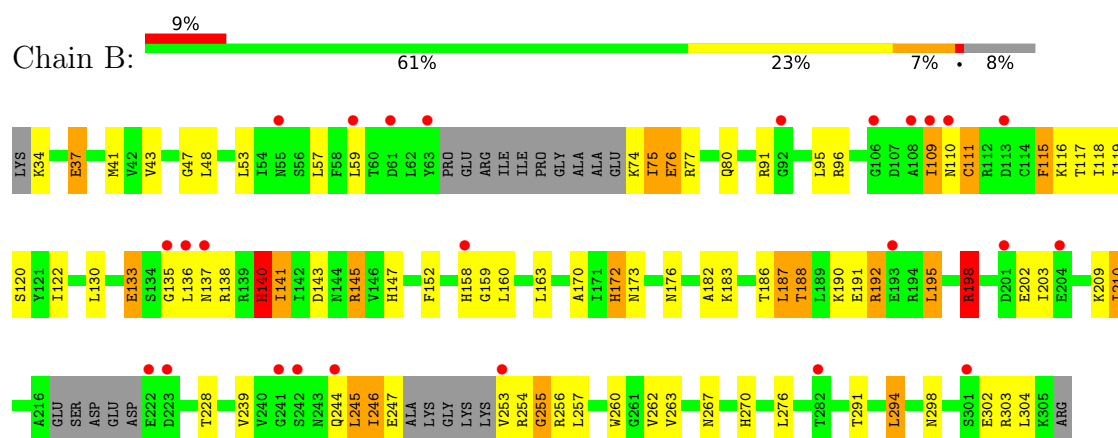
3 Residue-property plots [i](#)

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.

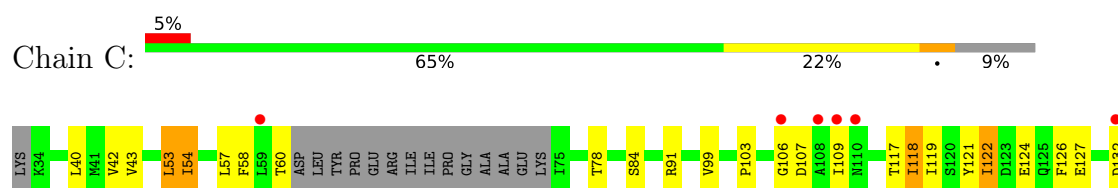
• Molecule 1: Septin-2

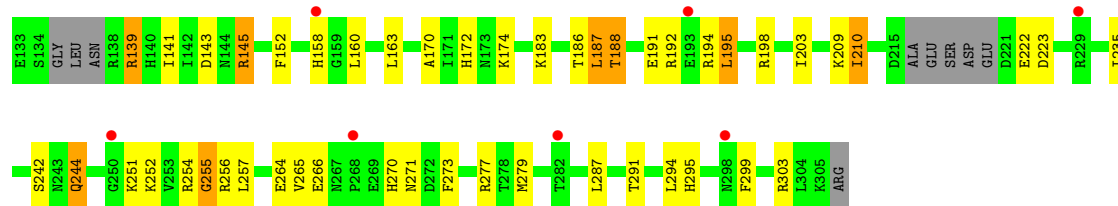


• Molecule 1: Septin-2

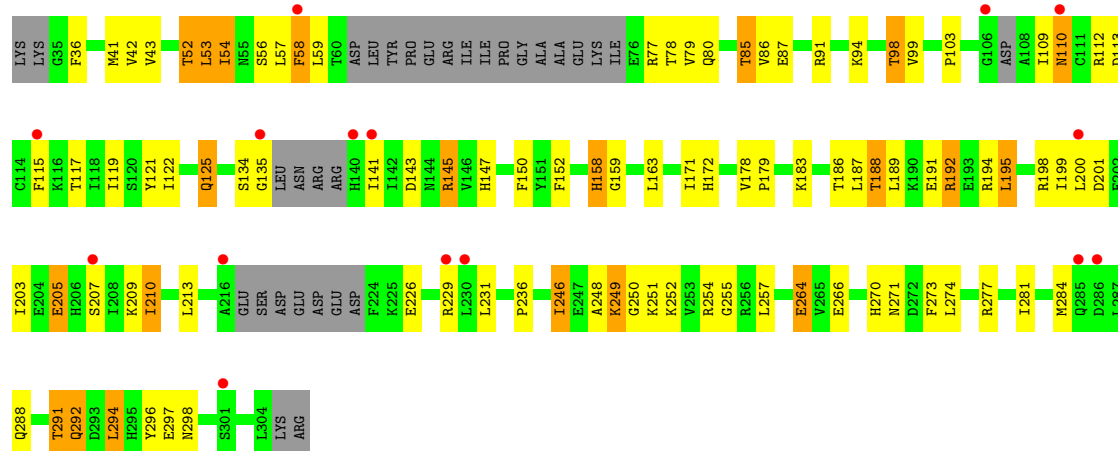


• Molecule 1: Septin-2





● Molecule 1: Septin-2



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	65.98Å 118.44Å 190.82Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.97 – 2.90 19.97 – 2.90	Depositor EDS
% Data completeness (in resolution range)	100.0 (19.97-2.90) 63.7 (19.97-2.90)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	0.06	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.82 (at 2.88Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.247 , 0.290 (Not available) , 0.289	Depositor DCC
R_{free} test set	1689 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	57.1	Xtriage
Anisotropy	0.063	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.42 , 47.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	8382	wwPDB-VP
Average B, all atoms (Å ²)	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.79% 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: GNP, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.54	0/2106	1.11	15/2831 (0.5%)
1	B	0.55	0/2096	1.15	21/2823 (0.7%)
1	C	0.53	0/2081	1.01	9/2799 (0.3%)
1	D	0.52	0/2008	1.01	10/2702 (0.4%)
All	All	0.54	0/8291	1.07	55/11155 (0.5%)

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

There are no bond length outliers.

All (55) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	249	LYS	N-CA-C	17.32	135.14	111.24
1	C	106	GLY	N-CA-C	16.22	137.35	114.64
1	B	140	HIS	N-CA-C	-14.05	87.29	108.79
1	B	110	ASN	N-CA-CB	13.63	132.28	111.56
1	A	76	GLU	N-CA-C	13.33	127.89	110.43
1	B	109	ILE	CB-CA-C	12.86	132.38	111.29
1	D	294	LEU	N-CA-C	11.91	128.00	113.12
1	B	141	ILE	N-CA-C	-11.26	91.91	108.12
1	C	109	ILE	CB-CA-C	11.17	122.24	111.74
1	D	291	THR	CB-CA-C	10.43	127.02	110.96
1	D	292	GLN	N-CA-C	10.34	122.24	110.97
1	B	141	ILE	N-CA-CB	10.07	126.22	111.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	140	HIS	CB-CA-C	9.98	129.18	110.62
1	C	107	ASP	N-CA-CB	9.98	127.05	110.79
1	A	222	GLU	N-CA-C	9.51	125.73	112.04
1	A	159	GLY	N-CA-C	-8.47	93.11	113.18
1	A	109	ILE	N-CA-CB	8.04	124.50	111.23
1	A	249	LYS	CB-CA-C	-7.99	99.79	112.09
1	D	246	ILE	CB-CA-C	7.82	122.43	110.55
1	A	248	ALA	N-CA-C	-7.80	97.54	108.54
1	A	75	ILE	N-CA-C	7.64	125.23	109.34
1	B	109	ILE	N-CA-C	-7.54	93.65	109.34
1	D	159	GLY	N-CA-C	-7.32	95.84	113.18
1	B	246	ILE	N-CA-C	7.27	118.53	107.77
1	B	198	ARG	NH1-CZ-NH2	-7.19	109.96	119.30
1	C	57	LEU	N-CA-C	7.18	122.22	112.68
1	D	251	LYS	N-CA-CB	7.08	122.47	110.71
1	A	247	GLU	N-CA-C	-6.81	99.35	109.15
1	B	294	LEU	N-CA-C	6.80	121.83	112.04
1	B	75	ILE	N-CA-C	6.78	123.45	109.34
1	C	58	PHE	N-CA-C	-6.78	105.54	113.88
1	A	221	ASP	CB-CA-C	-6.75	95.96	109.79
1	D	158	HIS	CB-CA-C	-6.70	97.39	110.11
1	B	57	LEU	N-CA-C	6.66	119.83	111.24
1	D	250	GLY	N-CA-C	6.60	123.75	114.85
1	A	295	HIS	N-CA-C	-6.58	104.89	113.12
1	A	247	GLU	CB-CA-C	6.43	120.44	110.67
1	B	115	PHE	CB-CA-C	-6.32	100.69	110.81
1	C	294	LEU	N-CA-C	6.30	121.49	113.55
1	D	58	PHE	N-CA-C	6.22	121.39	113.55
1	A	253	VAL	CB-CA-C	-6.20	101.38	110.81
1	B	159	GLY	N-CA-C	-6.05	98.83	113.18
1	B	110	ASN	N-CA-C	-5.96	99.23	108.42
1	B	133	GLU	N-CA-C	5.96	117.45	111.07
1	C	107	ASP	N-CA-C	-5.75	97.63	107.23
1	B	115	PHE	N-CA-C	5.71	117.97	111.11
1	B	245	LEU	CB-CA-C	-5.71	98.05	109.35
1	B	245	LEU	N-CA-C	5.68	118.72	109.24
1	C	91	ARG	CB-CA-C	-5.47	110.25	116.54
1	D	291	THR	N-CA-C	-5.39	105.09	110.97
1	A	222	GLU	N-CA-CB	-5.30	101.97	110.19
1	C	295	HIS	N-CA-C	-5.27	105.12	112.45
1	A	294	LEU	N-CA-C	5.05	119.92	113.55
1	B	198	ARG	CB-CA-C	-5.04	102.96	110.88

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	198	ARG	CB-CG-CD	-5.01	99.77	111.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	198	ARG	Sidechain

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2070	0	2079	63	0
1	B	2059	0	2069	51	0
1	C	2045	0	2062	46	0
1	D	1973	0	1988	61	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	32	0	13	0	0
3	B	32	0	13	0	0
3	C	32	0	13	1	0
3	D	32	0	13	3	0
4	A	33	0	0	1	0
4	B	31	0	0	0	0
4	C	23	0	0	1	0
4	D	16	0	0	0	0
All	All	8382	0	8250	214	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 13.

All (214) 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:110:ASN:C	1:D:110:ASN:HD22	1.66	1.04
1:A:110:ASN:C	1:A:110:ASN:HD22	1.63	1.04
1:C:54:ILE:HG13	1:C:99:VAL:HG11	1.44	0.98
1:C:172:HIS:HD2	1:C:209:LYS:H	1.11	0.97
1:B:75:ILE:HG22	1:B:75:ILE:O	1.65	0.96
1:A:303:ARG:HG2	1:A:303:ARG:HH11	1.31	0.94
1:A:270:HIS:CE1	1:B:260:TRP:HB3	2.03	0.94
1:A:270:HIS:HE1	1:B:260:TRP:HB3	1.33	0.90
1:C:122:ILE:HD11	1:C:174:LYS:HB3	1.53	0.89
1:A:260:TRP:HB3	1:B:270:HIS:CE1	2.08	0.89
1:A:172:HIS:HD2	1:A:209:LYS:H	1.15	0.88
1:B:172:HIS:HD2	1:B:209:LYS:H	1.20	0.88
1:A:260:TRP:HB3	1:B:270:HIS:HE1	1.38	0.88
1:C:264:GLU:H	1:C:270:HIS:HD2	1.25	0.85
1:A:75:ILE:HG23	1:A:75:ILE:O	1.75	0.83
1:D:194:ARG:O	1:D:198:ARG:HG2	1.80	0.82
1:B:267:ASN:CG	1:B:270:HIS:HD2	1.87	0.82
1:D:172:HIS:CD2	1:D:209:LYS:HB2	2.16	0.81
1:D:172:HIS:HD2	1:D:209:LYS:HB2	1.44	0.81
1:B:158:HIS:O	1:B:198:ARG:HD2	1.82	0.80
1:D:42:VAL:HG21	1:D:54:ILE:HD13	1.62	0.78
1:D:110:ASN:C	1:D:110:ASN:ND2	2.40	0.78
1:A:110:ASN:C	1:A:110:ASN:ND2	2.39	0.78
1:A:267:ASN:CG	1:A:270:HIS:HD2	1.93	0.77
1:C:54:ILE:HG13	1:C:99:VAL:CG1	2.14	0.77
1:B:183:LYS:O	1:B:186:THR:HG23	1.85	0.76
1:B:256:ARG:HB2	1:B:263:VAL:HB	1.68	0.76
1:A:303:ARG:HG2	1:A:303:ARG:NH1	1.95	0.76
1:C:139:ARG:HH11	1:C:139:ARG:CG	1.97	0.75
1:A:256:ARG:HB2	1:A:263:VAL:HB	1.68	0.75
1:D:42:VAL:HG21	1:D:54:ILE:CD1	2.18	0.74
1:D:147:HIS:CD2	1:D:291:THR:HG21	2.22	0.74
1:D:147:HIS:HD2	1:D:291:THR:HG21	1.51	0.74
1:A:125:GLN:HA	1:A:125:GLN:HE21	1.53	0.73
3:C:372:GNP:O2A	4:C:318:HOH:O	2.05	0.73
1:C:122:ILE:HD11	1:C:174:LYS:CB	2.17	0.72
1:A:135:GLY:O	1:A:137:ASN:N	2.23	0.72
1:A:158:HIS:O	1:A:198:ARG:HD3	1.89	0.72
1:B:75:ILE:O	1:B:75:ILE:CG2	2.39	0.69
1:A:221:ASP:O	1:A:225:LYS:HG3	1.93	0.68
1:A:303:ARG:HH11	1:A:303:ARG:CG	2.03	0.68
1:C:203:ILE:HD13	1:C:210:ILE:HD12	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:139:ARG:HH11	1:C:139:ARG:HG2	1.57	0.67
1:D:56:SER:HA	1:D:254:ARG:NH1	2.10	0.67
1:B:188:THR:HG22	1:B:191:GLU:H	1.59	0.67
1:A:194:ARG:O	1:A:198:ARG:HG3	1.94	0.66
1:A:294:LEU:O	1:A:298:ASN:ND2	2.29	0.66
1:D:54:ILE:HG13	1:D:99:VAL:HG11	1.76	0.65
1:D:183:LYS:O	1:D:186:THR:HG23	1.96	0.65
1:B:111:CYS:SG	1:B:115:PHE:CE1	2.89	0.65
1:D:53:LEU:HD22	1:D:152:PHE:HZ	1.60	0.65
1:A:188:THR:HG22	1:A:191:GLU:H	1.61	0.65
1:B:203:ILE:HD13	1:B:210:ILE:HD12	1.79	0.65
1:A:183:LYS:O	1:A:186:THR:HG23	1.96	0.65
1:A:203:ILE:HD13	1:A:210:ILE:HD12	1.79	0.64
1:A:125:GLN:HE21	1:A:125:GLN:CA	2.11	0.64
1:A:172:HIS:CD2	1:A:209:LYS:H	2.07	0.64
1:D:264:GLU:H	1:D:270:HIS:HD2	1.46	0.64
1:C:53:LEU:HD22	1:C:152:PHE:HZ	1.63	0.63
1:C:158:HIS:O	1:C:198:ARG:HD3	1.98	0.63
1:C:194:ARG:O	1:C:198:ARG:HG3	1.98	0.63
1:C:172:HIS:CD2	1:C:209:LYS:H	2.03	0.63
1:D:125:GLN:HE21	1:D:125:GLN:HA	1.62	0.62
1:A:45:GLU:OE1	1:A:161:LYS:NZ	2.33	0.62
1:C:60:THR:HG22	1:C:254:ARG:HH22	1.65	0.62
1:A:147:HIS:HA	1:A:291:THR:HG21	1.81	0.61
1:C:244:GLN:H	1:C:244:GLN:HE21	1.47	0.61
1:B:303:ARG:HG3	1:B:304:LEU:N	2.16	0.61
1:C:139:ARG:HG2	1:C:139:ARG:NH1	2.12	0.61
1:B:147:HIS:HA	1:B:291:THR:HG21	1.81	0.61
1:C:42:VAL:HG21	1:C:54:ILE:HD13	1.83	0.60
1:D:85:THR:HG23	1:D:98:THR:HB	1.82	0.60
1:A:34:LYS:HB3	1:A:92:GLY:O	2.02	0.60
1:B:172:HIS:CD2	1:B:209:LYS:H	2.11	0.60
1:D:56:SER:HA	1:D:254:ARG:HH12	1.66	0.59
1:C:188:THR:HG22	1:C:191:GLU:H	1.67	0.59
1:D:52:THR:HG23	3:D:372:GNP:O1A	2.02	0.59
1:B:244:GLN:O	1:B:255:GLY:HA3	2.03	0.58
1:C:242:SER:OG	1:C:256:ARG:HG3	2.03	0.58
1:D:203:ILE:HD13	1:D:210:ILE:HD12	1.84	0.58
1:C:78:THR:O	1:C:103:PRO:HB3	2.04	0.57
1:D:125:GLN:HE21	1:D:125:GLN:CA	2.17	0.57
1:A:107:ASP:O	1:A:108:ALA:HB3	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:37:GLU:HG3	1:B:143:ASP:HB3	1.88	0.56
1:D:172:HIS:CD2	1:D:209:LYS:H	2.24	0.55
1:A:74:LYS:O	1:A:75:ILE:HG22	2.07	0.55
1:C:42:VAL:HG21	1:C:54:ILE:CD1	2.36	0.55
1:C:244:GLN:H	1:C:244:GLN:NE2	2.03	0.55
1:B:267:ASN:CG	1:B:270:HIS:CD2	2.78	0.55
1:C:183:LYS:O	1:C:186:THR:HG23	2.06	0.55
1:A:37:GLU:HG3	1:A:143:ASP:HB3	1.89	0.54
1:B:173:ASN:HD21	1:B:209:LYS:NZ	2.06	0.54
1:A:125:GLN:HA	1:A:125:GLN:NE2	2.22	0.54
1:A:267:ASN:CB	1:A:270:HIS:HD2	2.20	0.54
1:D:54:ILE:HG13	1:D:99:VAL:CG1	2.36	0.53
1:C:132:ASP:HB3	1:C:141:ILE:HG21	1.91	0.53
1:C:264:GLU:HG3	1:C:270:HIS:CD2	2.44	0.52
1:B:116:LYS:O	1:B:120:SER:HB2	2.09	0.52
1:C:287:LEU:O	1:C:291:THR:OG1	2.26	0.52
1:D:188:THR:HG22	1:D:191:GLU:H	1.74	0.52
1:B:111:CYS:SG	1:B:163:LEU:HD22	2.50	0.52
1:B:76:GLU:HG2	1:B:77:ARG:N	2.25	0.52
1:D:179:PRO:HG2	1:D:236:PRO:HB3	1.92	0.52
1:A:132:ASP:O	1:A:138:ARG:HB2	2.10	0.51
1:C:254:ARG:O	1:C:265:VAL:N	2.43	0.51
1:D:87:GLU:OE2	1:D:94:LYS:HE2	2.11	0.51
1:A:172:HIS:CD2	1:A:209:LYS:HB2	2.46	0.51
1:B:119:ILE:HD11	1:B:170:ALA:HB1	1.92	0.51
1:D:172:HIS:HD2	1:D:209:LYS:H	1.58	0.51
1:D:246:ILE:O	1:D:252:LYS:HA	2.11	0.50
1:A:246:ILE:HD11	1:A:262:VAL:HG23	1.93	0.50
1:D:294:LEU:HD12	1:D:294:LEU:O	2.12	0.50
1:A:267:ASN:ND2	1:A:270:HIS:HD2	2.10	0.49
1:C:251:LYS:HG2	1:C:252:LYS:H	1.76	0.49
1:A:158:HIS:CD2	1:A:202:GLU:OE2	2.65	0.49
1:B:190:LYS:H	1:B:190:LYS:HD2	1.77	0.49
1:C:251:LYS:HG2	1:C:252:LYS:N	2.27	0.49
1:B:143:ASP:OD2	1:B:145:ARG:HD3	2.12	0.49
1:B:187:LEU:HD21	1:B:195:LEU:HD12	1.93	0.49
1:D:125:GLN:HA	1:D:125:GLN:NE2	2.28	0.49
1:C:256:ARG:NH2	1:D:191:GLU:OE2	2.46	0.49
1:D:248:ALA:O	1:D:249:LYS:HG3	2.13	0.48
1:A:113:ASP:O	1:A:117:THR:HG22	2.13	0.48
1:B:158:HIS:HE1	1:B:160:LEU:O	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:270:HIS:HD1	1:B:260:TRP:HE3	1.61	0.48
1:B:267:ASN:ND2	1:B:270:HIS:HD2	2.09	0.48
1:D:54:ILE:HD12	1:D:54:ILE:HA	1.65	0.48
1:A:267:ASN:CG	1:A:270:HIS:CD2	2.84	0.48
1:A:77:ARG:NH2	1:A:107:ASP:O	2.46	0.48
1:A:242:SER:OG	1:A:255:GLY:O	2.23	0.48
1:D:271:ASN:ND2	1:D:273:PHE:HB2	2.29	0.48
1:C:186:THR:HG22	1:D:186:THR:HB	1.95	0.48
1:D:57:LEU:HA	1:D:273:PHE:HZ	1.78	0.48
1:B:133:GLU:HA	1:B:138:ARG:HG2	1.96	0.47
1:D:294:LEU:O	1:D:298:ASN:HB2	2.14	0.47
1:D:121:TYR:O	1:D:125:GLN:HG2	2.15	0.47
1:A:125:GLN:NE2	1:A:128:ARG:HD3	2.30	0.47
1:B:135:GLY:HA3	1:B:136:LEU:HA	1.56	0.47
1:B:143:ASP:CG	1:B:145:ARG:HH21	2.22	0.47
1:D:78:THR:O	1:D:103:PRO:HB3	2.14	0.47
1:B:41:MET:HE1	1:B:122:ILE:HD11	1.96	0.47
1:D:119:ILE:HG12	1:D:171:ILE:HG22	1.97	0.47
1:A:160:LEU:HD11	1:A:199:ILE:HG23	1.97	0.47
1:B:267:ASN:ND2	1:B:270:HIS:CD2	2.82	0.47
1:C:271:ASN:HD21	1:C:273:PHE:HB2	1.80	0.47
1:A:187:LEU:HD21	1:A:195:LEU:HD12	1.96	0.46
1:A:267:ASN:HB3	1:A:270:HIS:CD2	2.50	0.46
1:D:41:MET:HE1	1:D:122:ILE:HD11	1.97	0.46
1:B:192:ARG:NH2	1:B:270:HIS:O	2.39	0.46
1:A:119:ILE:HD11	1:A:170:ALA:HB1	1.96	0.46
1:A:191:GLU:OE2	1:B:256:ARG:NH2	2.48	0.46
1:D:77:ARG:HD2	3:D:372:GNP:O3G	2.16	0.46
1:D:143:ASP:OD2	1:D:145:ARG:HD3	2.15	0.46
1:D:150:PHE:HD1	1:D:178:VAL:HB	1.81	0.45
1:D:226:GLU:HG2	1:D:229:ARG:HH12	1.81	0.45
1:A:41:MET:HE1	1:A:122:ILE:HD11	1.98	0.45
1:A:190:LYS:HD2	1:A:190:LYS:H	1.81	0.44
1:B:143:ASP:OD1	1:B:145:ARG:NH2	2.50	0.44
1:C:264:GLU:H	1:C:270:HIS:CD2	2.17	0.44
1:B:160:LEU:HD23	1:B:202:GLU:HB2	1.98	0.44
1:A:192:ARG:NH2	1:A:270:HIS:O	2.37	0.44
1:A:267:ASN:ND2	1:A:270:HIS:CD2	2.85	0.44
1:B:47:GLY:HA2	1:B:77:ARG:HH12	1.82	0.44
1:B:245:LEU:HA	1:B:254:ARG:HA	2.00	0.44
1:A:121:TYR:O	1:A:125:GLN:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:54:ILE:HD12	1:C:54:ILE:HA	1.68	0.44
1:C:118:ILE:O	1:C:122:ILE:HG23	2.17	0.43
1:B:34:LYS:HB2	1:B:140:HIS:CE1	2.53	0.43
1:C:222:GLU:HG3	1:C:223:ASP:H	1.84	0.43
1:D:266:GLU:HG2	1:D:274:LEU:HD21	2.00	0.43
1:B:294:LEU:O	1:B:298:ASN:ND2	2.52	0.43
1:D:201:ASP:O	1:D:205:GLU:HB2	2.18	0.43
1:C:187:LEU:HD21	1:C:195:LEU:HD12	1.99	0.43
1:B:176:ASN:ND2	1:B:291:THR:HG23	2.34	0.43
1:A:267:ASN:HB3	1:A:270:HIS:HD2	1.84	0.42
1:B:53:LEU:HD22	1:B:152:PHE:HZ	1.84	0.42
1:D:195:LEU:HD22	1:D:199:ILE:HG13	2.00	0.42
1:D:213:LEU:HD21	1:D:231:LEU:HD23	2.01	0.42
1:A:143:ASP:OD2	1:A:145:ARG:HD3	2.18	0.42
1:A:176:ASN:ND2	1:A:291:THR:HG23	2.33	0.42
1:C:139:ARG:HH11	1:C:139:ARG:HG3	1.80	0.42
1:D:147:HIS:HD2	1:D:291:THR:CG2	2.25	0.42
1:A:240:VAL:HG11	1:A:263:VAL:HG11	2.01	0.42
1:C:143:ASP:OD2	1:C:145:ARG:HD3	2.18	0.42
1:C:191:GLU:OE2	3:D:372:GNP:O2'	2.28	0.42
1:A:108:ALA:O	1:A:109:ILE:HG12	2.19	0.42
1:D:113:ASP:O	1:D:117:THR:HG22	2.19	0.42
1:D:264:GLU:HG3	1:D:270:HIS:CD2	2.55	0.42
1:D:58:PHE:CE2	1:D:86:VAL:HG23	2.54	0.42
1:D:125:GLN:CA	1:D:125:GLN:NE2	2.83	0.42
1:D:192:ARG:NH2	1:D:270:HIS:O	2.33	0.42
1:D:284:MET:O	1:D:288:GLN:HB2	2.20	0.42
1:A:111:CYS:HB2	1:A:163:LEU:HD12	2.02	0.42
1:B:137:ASN:HD22	1:B:137:ASN:HA	1.66	0.42
1:B:138:ARG:NE	1:B:141:ILE:HD11	2.35	0.42
1:C:119:ILE:HD11	1:C:170:ALA:HB1	2.02	0.42
1:C:254:ARG:HA	1:C:255:GLY:HA3	1.78	0.42
1:A:127:GLU:OE1	1:A:303:ARG:HD2	2.21	0.41
1:B:239:VAL:HG11	1:B:276:LEU:HD22	2.01	0.41
1:D:134:SER:HA	1:D:135:GLY:HA2	1.60	0.41
1:C:121:TYR:O	1:C:124:GLU:HB3	2.20	0.41
1:C:126:PHE:HB3	1:C:299:PHE:CD2	2.55	0.41
1:C:264:GLU:CG	1:C:270:HIS:CD2	3.02	0.41
1:A:160:LEU:CD1	1:A:199:ILE:HG23	2.50	0.41
1:D:277:ARG:O	1:D:281:ILE:HG12	2.20	0.41
1:D:292:GLN:HA	1:D:296:TYR:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:138:ARG:O	1:A:141:ILE:HG13	2.20	0.41
1:C:172:HIS:CD2	1:C:209:LYS:HB2	2.56	0.41
1:D:36:PHE:CZ	1:D:288:GLN:NE2	2.77	0.41
1:D:115:PHE:CD2	1:D:115:PHE:C	2.99	0.41
1:B:48:LEU:O	1:B:182:ALA:HB1	2.21	0.40
1:A:77:ARG:HG3	4:A:310:HOH:O	2.21	0.40
1:B:80:GLN:HE21	1:B:80:GLN:HB2	1.53	0.40
1:D:172:HIS:CD2	1:D:209:LYS:HD3	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	246/274 (90%)	240 (98%)	5 (2%)	1 (0%)	30	59
1	B	244/274 (89%)	238 (98%)	4 (2%)	2 (1%)	16	44
1	C	242/274 (88%)	238 (98%)	3 (1%)	1 (0%)	30	59
1	D	233/274 (85%)	225 (97%)	7 (3%)	1 (0%)	30	59
All	All	965/1096 (88%)	941 (98%)	19 (2%)	5 (0%)	24	54

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	109	ILE
1	A	255	GLY
1	C	255	GLY
1	B	255	GLY
1	D	255	GLY

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	230/248 (93%)	198 (86%)	32 (14%)	3	11
1	B	230/248 (93%)	203 (88%)	27 (12%)	5	17
1	C	229/248 (92%)	204 (89%)	25 (11%)	6	20
1	D	220/248 (89%)	189 (86%)	31 (14%)	3	11
All	All	909/992 (92%)	794 (87%)	115 (13%)	4	14

All (115) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	37	GLU
1	A	43	VAL
1	A	75	ILE
1	A	79	VAL
1	A	80	GLN
1	A	85	THR
1	A	90	GLU
1	A	95	LEU
1	A	109	ILE
1	A	110	ASN
1	A	117	THR
1	A	118	ILE
1	A	125	GLN
1	A	134	SER
1	A	138	ARG
1	A	139	ARG
1	A	145	ARG
1	A	160	LEU
1	A	163	LEU
1	A	172	HIS
1	A	187	LEU
1	A	188	THR
1	A	192	ARG
1	A	195	LEU

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Mol	Chain	Res	Type
1	A	210	ILE
1	A	229	ARG
1	A	231	LEU
1	A	253	VAL
1	A	254	ARG
1	A	257	LEU
1	A	262	VAL
1	A	303	ARG
1	B	37	GLU
1	B	43	VAL
1	B	59	LEU
1	B	74	LYS
1	B	76	GLU
1	B	91	ARG
1	B	95	LEU
1	B	96	ARG
1	B	111	CYS
1	B	117	THR
1	B	118	ILE
1	B	130	LEU
1	B	140	HIS
1	B	145	ARG
1	B	172	HIS
1	B	187	LEU
1	B	188	THR
1	B	192	ARG
1	B	195	LEU
1	B	210	ILE
1	B	228	THR
1	B	246	ILE
1	B	247	GLU
1	B	253	VAL
1	B	257	LEU
1	B	262	VAL
1	B	302	GLU
1	C	40	LEU
1	C	43	VAL
1	C	53	LEU
1	C	54	ILE
1	C	84	SER
1	C	117	THR
1	C	118	ILE

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Mol	Chain	Res	Type
1	C	122	ILE
1	C	127	GLU
1	C	139	ARG
1	C	145	ARG
1	C	160	LEU
1	C	163	LEU
1	C	187	LEU
1	C	188	THR
1	C	192	ARG
1	C	195	LEU
1	C	210	ILE
1	C	235	ILE
1	C	244	GLN
1	C	257	LEU
1	C	266	GLU
1	C	277	ARG
1	C	279	MET
1	C	303	ARG
1	D	43	VAL
1	D	52	THR
1	D	53	LEU
1	D	54	ILE
1	D	59	LEU
1	D	79	VAL
1	D	80	GLN
1	D	85	THR
1	D	91	ARG
1	D	98	THR
1	D	109	ILE
1	D	110	ASN
1	D	112	ARG
1	D	125	GLN
1	D	141	ILE
1	D	145	ARG
1	D	158	HIS
1	D	163	LEU
1	D	187	LEU
1	D	188	THR
1	D	189	LEU
1	D	192	ARG
1	D	195	LEU
1	D	200	LEU

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Mol	Chain	Res	Type
1	D	205	GLU
1	D	207	SER
1	D	210	ILE
1	D	249	LYS
1	D	257	LEU
1	D	264	GLU
1	D	297	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	110	ASN
1	A	125	GLN
1	A	131	HIS
1	A	172	HIS
1	A	270	HIS
1	A	298	ASN
1	B	55	ASN
1	B	80	GLN
1	B	137	ASN
1	B	144	ASN
1	B	158	HIS
1	B	172	HIS
1	B	173	ASN
1	B	270	HIS
1	C	172	HIS
1	C	244	GLN
1	C	270	HIS
1	C	271	ASN
1	C	292	GLN
1	D	80	GLN
1	D	110	ASN
1	D	125	GLN
1	D	172	HIS
1	D	244	GLN
1	D	270	HIS
1	D	271	ASN
1	D	298	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 4 are monoatomic - leaving 4 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	GNP	D	372	2	34,34,34	1.55	6 (17%)	47,54,54	1.14	5 (10%)
3	GNP	C	372	2	34,34,34	1.52	5 (14%)	47,54,54	1.14	4 (8%)
3	GNP	B	372	2	34,34,34	1.55	4 (11%)	47,54,54	1.14	3 (6%)
3	GNP	A	372	2	34,34,34	1.53	5 (14%)	47,54,54	1.12	4 (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
3	GNP	D	372	2	-	4/18/38/38	0/3/3/3
3	GNP	C	372	2	-	2/18/38/38	0/3/3/3
3	GNP	B	372	2	-	10/18/38/38	0/3/3/3
3	GNP	A	372	2	-	5/18/38/38	0/3/3/3

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	372	GNP	PA-O3A	-4.73	1.54	1.59
3	A	372	GNP	PA-O3A	-4.63	1.54	1.59
3	D	372	GNP	PA-O3A	-4.33	1.54	1.59
3	C	372	GNP	PA-O3A	-4.24	1.54	1.59
3	D	372	GNP	PB-O3A	-3.92	1.54	1.59
3	C	372	GNP	PB-O3A	-3.91	1.54	1.59
3	C	372	GNP	PG-O1G	3.57	1.51	1.46
3	B	372	GNP	PB-O3A	-3.49	1.54	1.59
3	A	372	GNP	PG-O1G	3.49	1.51	1.46
3	B	372	GNP	PG-O1G	3.48	1.51	1.46
3	A	372	GNP	PB-O3A	-3.39	1.54	1.59
3	D	372	GNP	PG-O1G	3.15	1.51	1.46
3	C	372	GNP	PB-O2B	-3.15	1.48	1.56
3	A	372	GNP	PB-O2B	-3.09	1.48	1.56
3	B	372	GNP	PB-O2B	-3.06	1.48	1.56
3	D	372	GNP	PB-O2B	-3.06	1.48	1.56
3	D	372	GNP	PG-O3G	-2.23	1.50	1.56
3	C	372	GNP	PG-O2G	-2.20	1.50	1.56
3	A	372	GNP	PB-O1B	2.17	1.49	1.46
3	D	372	GNP	PG-O2G	-2.03	1.51	1.56

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	372	GNP	O3G-PG-O1G	-3.75	104.05	113.45
3	D	372	GNP	O3G-PG-O1G	-3.69	104.20	113.45
3	A	372	GNP	O3G-PG-O1G	-3.52	104.61	113.45
3	B	372	GNP	O2G-PG-O3G	3.46	116.89	107.59
3	C	372	GNP	O2B-PB-O1B	3.37	117.10	109.87
3	D	372	GNP	O2B-PB-O1B	3.30	116.94	109.87
3	C	372	GNP	O3G-PG-O1G	-3.20	105.42	113.45
3	C	372	GNP	O2G-PG-O3G	3.09	115.89	107.59
3	A	372	GNP	O2B-PB-O1B	2.80	115.88	109.87
3	A	372	GNP	O1G-PG-N3B	-2.68	107.82	111.77
3	B	372	GNP	O2B-PB-O1B	2.68	115.61	109.87
3	D	372	GNP	O2G-PG-O3G	2.38	114.00	107.59
3	A	372	GNP	O2G-PG-O3G	2.31	113.80	107.59
3	D	372	GNP	O2A-PA-O3A	2.27	113.40	107.27
3	D	372	GNP	O1G-PG-N3B	-2.22	108.50	111.77
3	C	372	GNP	O2A-PA-O3A	2.21	113.24	107.27

There are no chirality outliers.

All (21) torsion outliers are listed below:

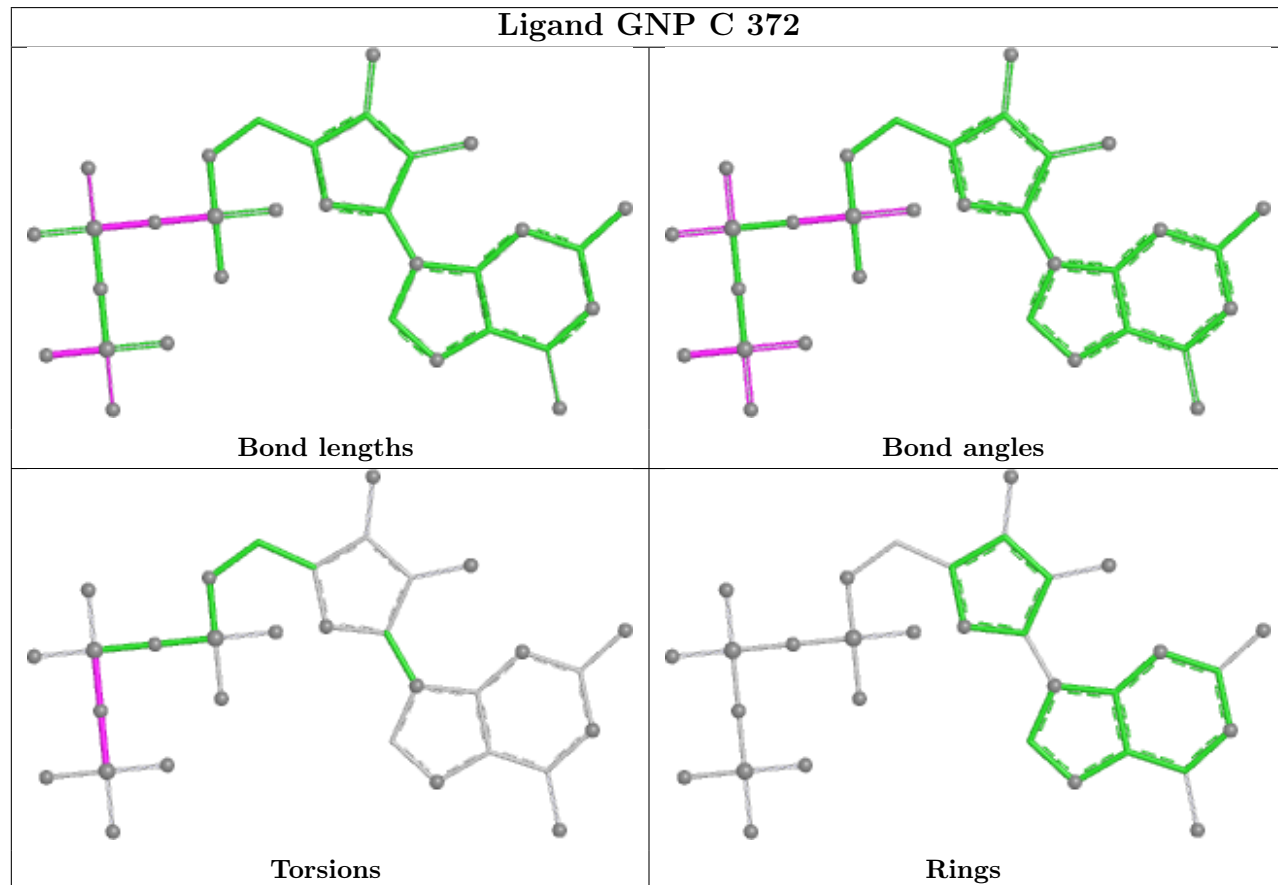
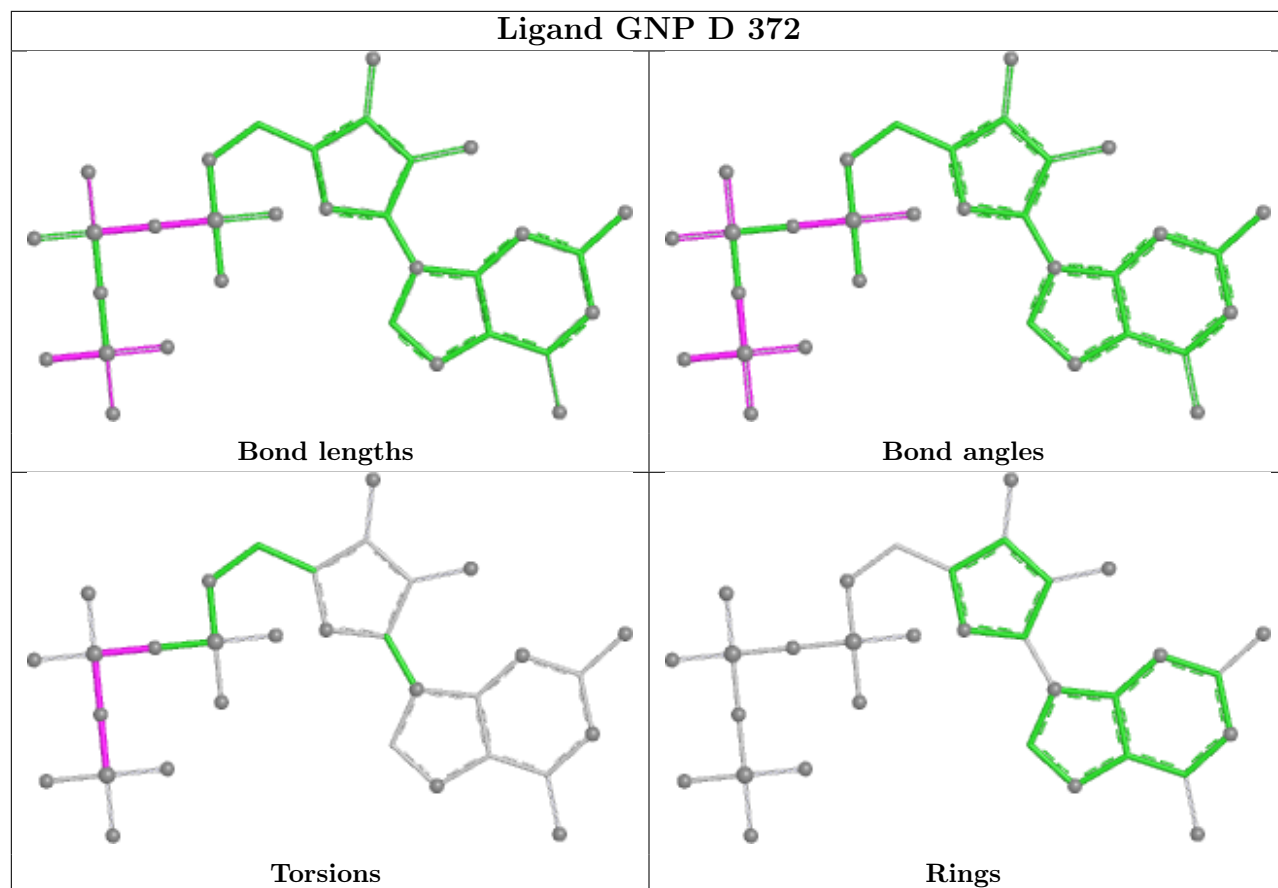
Mol	Chain	Res	Type	Atoms
3	A	372	GNP	PB-N3B-PG-O1G
3	A	372	GNP	PG-N3B-PB-O1B
3	B	372	GNP	PB-N3B-PG-O1G
3	B	372	GNP	PG-N3B-PB-O1B
3	B	372	GNP	PG-N3B-PB-O3A
3	C	372	GNP	PB-N3B-PG-O1G
3	C	372	GNP	PG-N3B-PB-O1B
3	D	372	GNP	PB-N3B-PG-O1G
3	D	372	GNP	PG-N3B-PB-O1B
3	D	372	GNP	PA-O3A-PB-O2B
3	B	372	GNP	C3'-C4'-C5'-O5'
3	B	372	GNP	O4'-C4'-C5'-O5'
3	A	372	GNP	PG-N3B-PB-O3A
3	B	372	GNP	C5'-O5'-PA-O3A
3	B	372	GNP	C5'-O5'-PA-O1A
3	B	372	GNP	C5'-O5'-PA-O2A
3	A	372	GNP	PA-O3A-PB-O2B
3	B	372	GNP	PA-O3A-PB-O2B
3	A	372	GNP	PA-O3A-PB-O1B
3	B	372	GNP	PA-O3A-PB-O1B
3	D	372	GNP	PA-O3A-PB-O1B

There are no ring outliers.

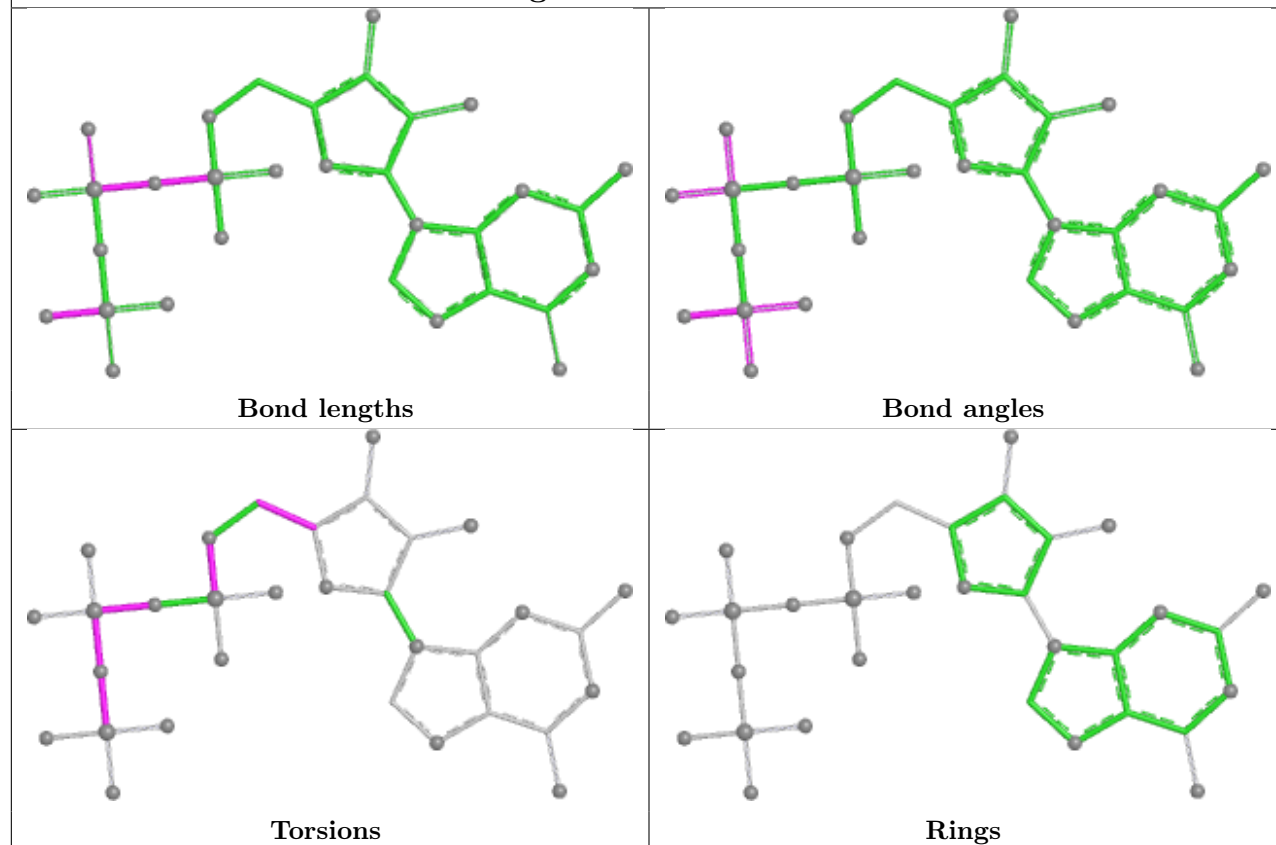
2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	372	GNP	3	0
3	C	372	GNP	1	0

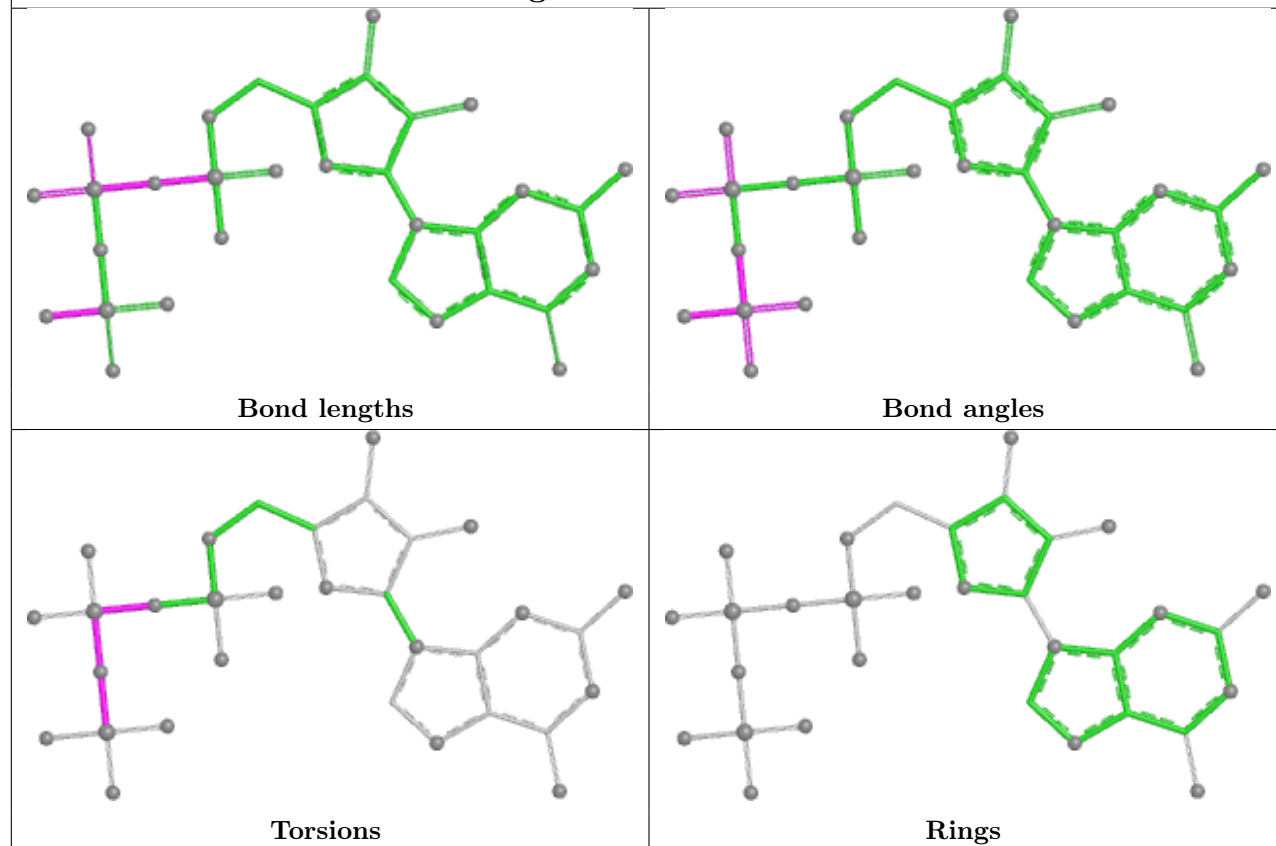
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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



Ligand GNP B 372



Ligand GNP A 372



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	254/274 (92%)	0.45	15 (5%) 28 22	15, 29, 46, 60	0
1	B	252/274 (91%)	0.44	25 (9%) 13 11	13, 28, 46, 58	0
1	C	250/274 (91%)	0.31	13 (5%) 33 26	15, 30, 51, 60	0
1	D	243/274 (88%)	0.45	15 (6%) 26 21	13, 32, 51, 57	0
All	All	999/1096 (91%)	0.41	68 (6%) 23 18	13, 30, 49, 60	0

All (68) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	106	GLY	5.0
1	A	110	ASN	4.2
1	A	137	ASN	3.9
1	B	113	ASP	3.9
1	B	253	VAL	3.9
1	D	110	ASN	3.9
1	B	136	LEU	3.7
1	B	92	GLY	3.6
1	A	107	ASP	3.5
1	A	250	GLY	3.5
1	B	110	ASN	3.5
1	C	108	ALA	3.2
1	A	124	GLU	3.2
1	B	301	SER	3.2
1	A	138	ARG	3.1
1	B	158	HIS	3.0
1	C	109	ILE	3.0
1	B	61	ASP	2.9
1	B	223	ASP	2.8
1	D	140	HIS	2.8
1	D	106	GLY	2.8

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Mol	Chain	Res	Type	RSRZ
1	D	200	LEU	2.8
1	D	301	SER	2.8
1	A	117	THR	2.8
1	D	135	GLY	2.8
1	B	241	GLY	2.7
1	B	109	ILE	2.7
1	B	55	ASN	2.7
1	C	59	LEU	2.7
1	C	298	ASN	2.7
1	D	286	ASP	2.7
1	B	59	LEU	2.7
1	D	115	PHE	2.6
1	A	140	HIS	2.6
1	B	222	GLU	2.6
1	A	215	ASP	2.6
1	B	108	ALA	2.6
1	D	285	GLN	2.6
1	B	106	GLY	2.6
1	A	55	ASN	2.6
1	A	249	LYS	2.5
1	B	282	THR	2.5
1	C	229	ARG	2.5
1	A	91	ARG	2.5
1	A	90	GLU	2.4
1	B	63	TYR	2.4
1	D	229	ARG	2.4
1	B	242	SER	2.4
1	A	92	GLY	2.3
1	C	250	GLY	2.3
1	B	201	ASP	2.2
1	D	207	SER	2.2
1	C	193	GLU	2.2
1	C	132	ASP	2.2
1	C	158	HIS	2.2
1	B	193	GLU	2.1
1	B	244	GLN	2.1
1	C	268	PRO	2.1
1	B	137	ASN	2.1
1	B	135	GLY	2.1
1	A	223	ASP	2.1
1	C	282	THR	2.1
1	D	141	ILE	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	204	GLU	2.1
1	D	230	LEU	2.0
1	C	110	ASN	2.0
1	D	58	PHE	2.0
1	D	216	ALA	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

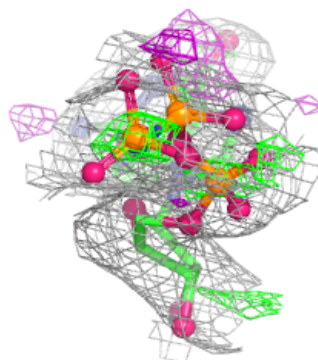
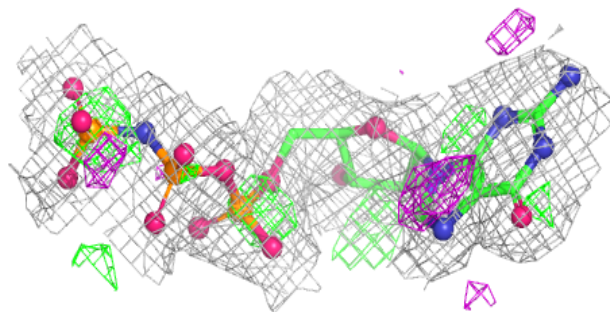
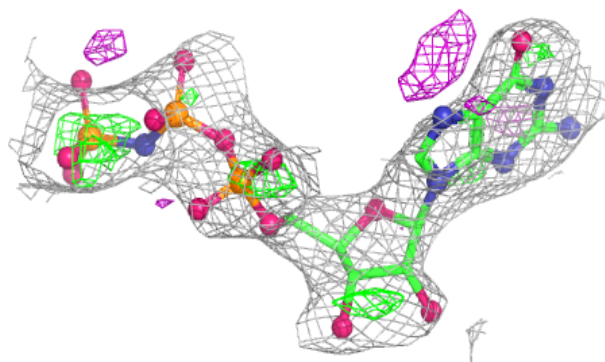
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	MG	B	371	1/1	0.94	0.15	29,29,29,29	0
3	GNP	B	372	32/32	0.95	0.15	28,32,36,37	0
3	GNP	A	372	32/32	0.96	0.15	27,28,29,29	0
3	GNP	C	372	32/32	0.96	0.14	37,38,40,40	0
3	GNP	D	372	32/32	0.97	0.12	29,32,33,34	0
2	MG	C	371	1/1	0.98	0.08	42,42,42,42	0
2	MG	A	371	1/1	0.99	0.09	28,28,28,28	0
2	MG	D	371	1/1	1.00	0.07	36,36,36,36	0

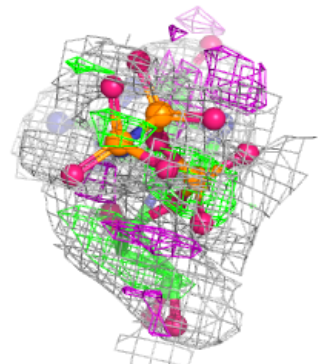
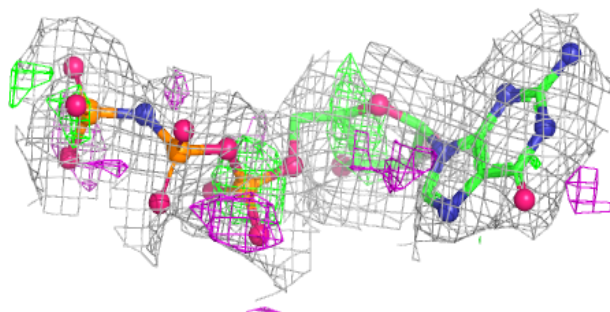
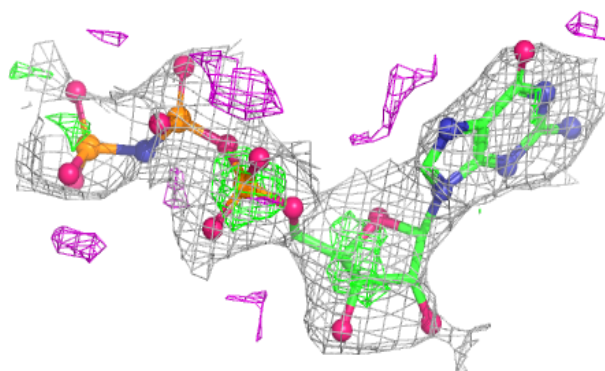
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around GNP B 372:

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

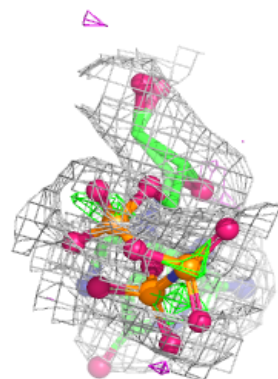
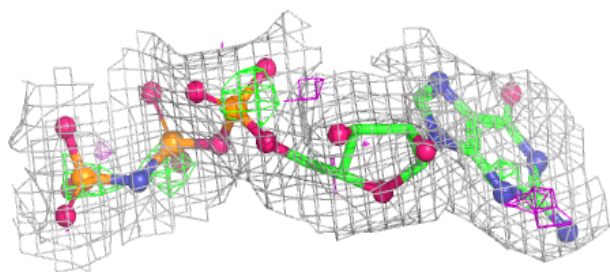
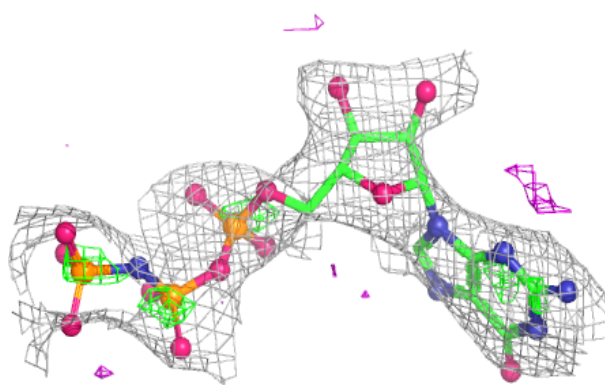
**Electron density around GNP A 372:**

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

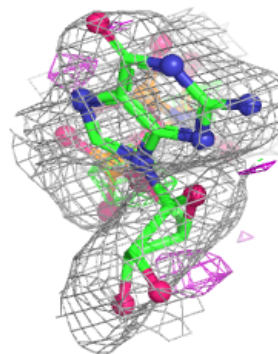
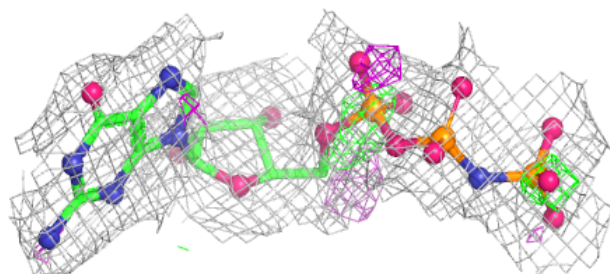
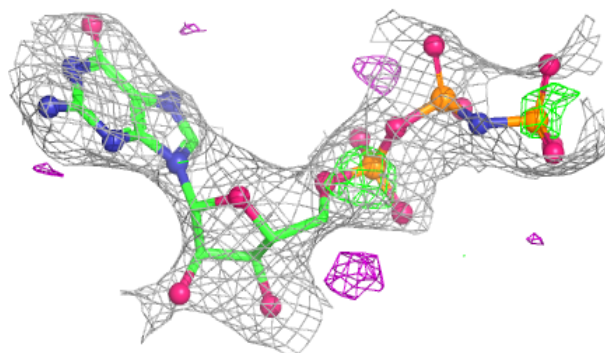


Electron density around GNP C 372:

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

**Electron density around GNP D 372:**

$2mF_o-DF_c$ (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.