



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 07:36 AM UTC

PDB ID : 5H2U / pdb_00005h2u
Title : Crystal structure of PTK6 Kinase Domain complexed with Dasatinib
Authors : Thakur, M.K.; Birudukota, S.; Swaminathan, S.; Tyagi, R.; Gosu, R.
Deposited on : 2016-10-18
Resolution : 2.24 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

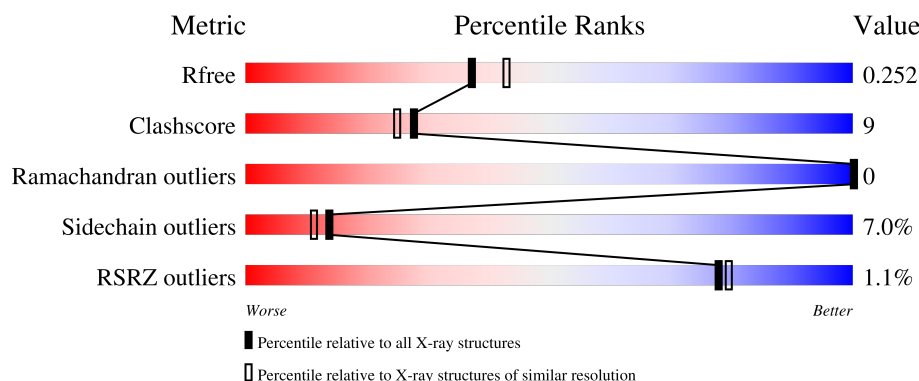
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.24 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	3416 (2.26-2.22)
Clashscore	190562	3556 (2.26-2.22)
Ramachandran outliers	187476	3500 (2.26-2.22)
Sidechain outliers	187428	3501 (2.26-2.22)
RSRZ outliers	180081	3415 (2.26-2.22)

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	267	% 76% 20% .
1	B	267	80% 18% ..
1	C	267	% 77% 21% ..
1	D	267	% 78% 20% ..

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 9541 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 Protein-tyrosine kinase 6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	266	Total	C	N	O	S	0	10	0
			2211	1413	390	390	18			
1	B	264	Total	C	N	O	S	0	12	0
			2202	1406	389	390	17			
1	C	265	Total	C	N	O	S	0	12	0
			2201	1406	387	389	19			
1	D	264	Total	C	N	O	S	0	11	0
			2190	1399	382	391	18			

There are 24 discrepancies between the modelled and reference sequences:

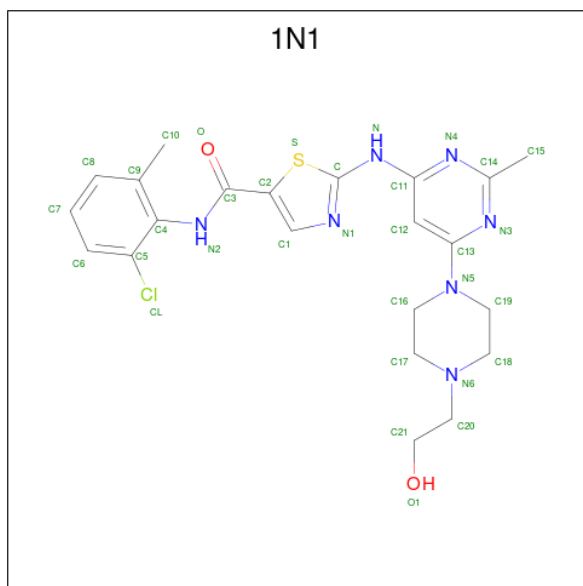
Chain	Residue	Modelled	Actual	Comment	Reference
A	184	CXM	-	expression tag	UNP Q13882
A	433	THR	CYS	engineered mutation	UNP Q13882
A	447	HIS	-	expression tag	UNP Q13882
A	448	HIS	-	expression tag	UNP Q13882
A	449	HIS	-	expression tag	UNP Q13882
A	450	HIS	-	expression tag	UNP Q13882
B	184	CXM	-	expression tag	UNP Q13882
B	433	THR	CYS	engineered mutation	UNP Q13882
B	447	HIS	-	expression tag	UNP Q13882
B	448	HIS	-	expression tag	UNP Q13882
B	449	HIS	-	expression tag	UNP Q13882
B	450	HIS	-	expression tag	UNP Q13882
C	184	CXM	-	expression tag	UNP Q13882
C	433	THR	CYS	engineered mutation	UNP Q13882
C	447	HIS	-	expression tag	UNP Q13882
C	448	HIS	-	expression tag	UNP Q13882
C	449	HIS	-	expression tag	UNP Q13882
C	450	HIS	-	expression tag	UNP Q13882
D	184	CXM	-	expression tag	UNP Q13882
D	433	THR	CYS	engineered mutation	UNP Q13882
D	447	HIS	-	expression tag	UNP Q13882

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Chain	Residue	Modelled	Actual	Comment	Reference
D	448	HIS	-	expression tag	UNP Q13882
D	449	HIS	-	expression tag	UNP Q13882
D	450	HIS	-	expression tag	UNP Q13882

- Molecule 2 is N-(2-CHLORO-6-METHYLPHENYL)-2-({6-[4-(2-HYDROXYETHYL)PIPERAZIN-1-YL]-2-METHYLPYRIMIDIN-4-YL}AMINO)-1,3-THIAZOLE-5-CARBOXAMIDE (CCD ID: 1N1) (formula: C₂₂H₂₆ClN₇O₂S).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total 41	C 29	Cl 2	N 7	O 2	S 1	0	1
2	B	1	Total 41	C 29	Cl 2	N 7	O 2	S 1	0	1
2	C	1	Total 41	C 29	Cl 2	N 7	O 2	S 1	0	1
2	D	1	Total 41	C 29	Cl 2	N 7	O 2	S 1	0	1

- Molecule 3 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



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

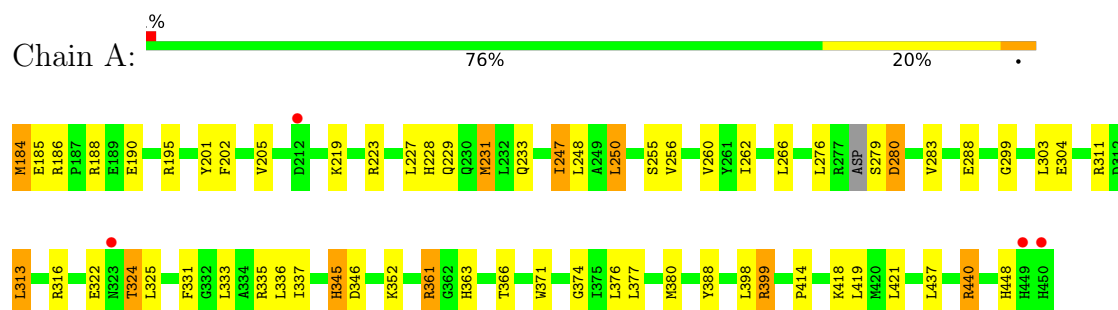
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	138	Total 138	O 138	0	0
4	B	120	Total 120	O 120	0	0
4	C	112	Total 112	O 112	0	0
4	D	131	Total 131	O 131	0	0

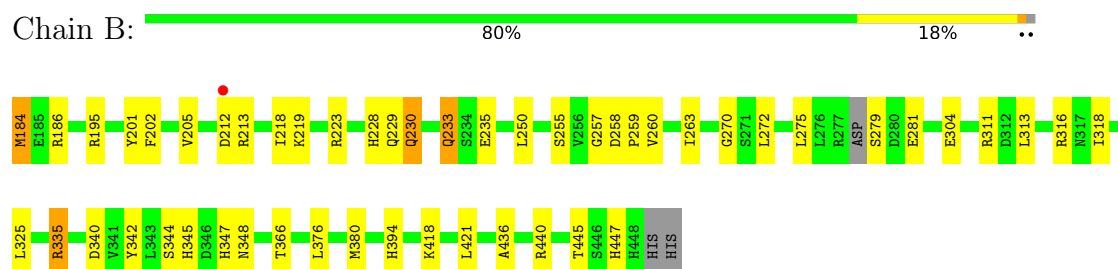
3 Residue-property plots

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

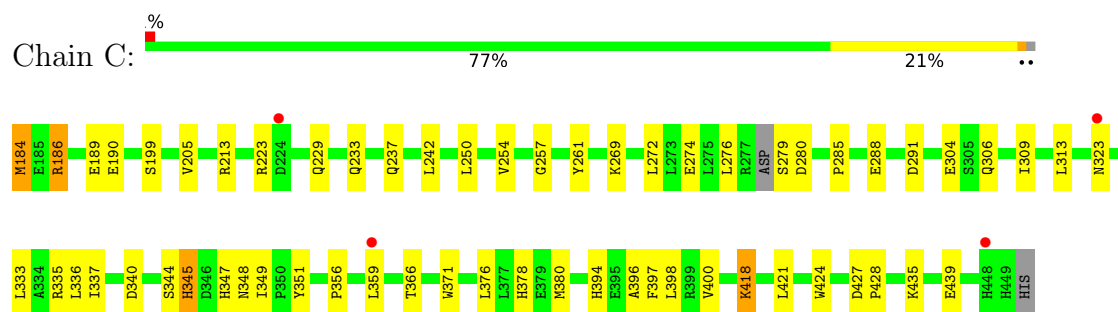
• Molecule 1: Protein-tyrosine kinase 6



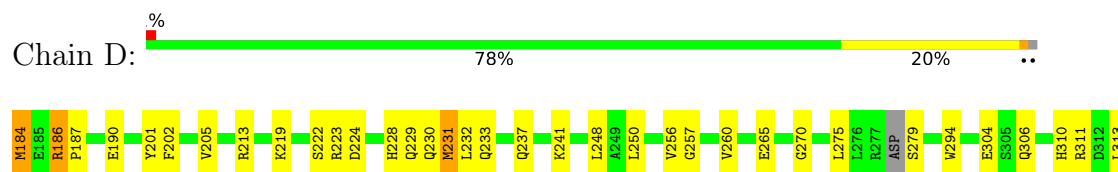
• Molecule 1: Protein-tyrosine kinase 6



• Molecule 1: Protein-tyrosine kinase 6



• Molecule 1: Protein-tyrosine kinase 6





4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	49.88Å 77.02Å 87.41Å 81.36° 75.76° 74.92°	Depositor
Resolution (Å)	84.52 – 2.24 84.37 – 2.24	Depositor EDS
% Data completeness (in resolution range)	94.5 (84.52-2.24) 94.4 (84.37-2.24)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.68 (at 2.24Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.205 , 0.260 (Not available) , 0.252	Depositor DCC
R_{free} test set	2789 reflections (4.79%)	wwPDB-VP
Wilson B-factor (Å ²)	34.8	Xtriage
Anisotropy	0.249	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 31.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	9541	wwPDB-VP
Average B, all atoms (Å ²)	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.20% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, 1N1, CXM

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	0.59	0/2285	0.86	0/3087
1	B	0.58	0/2282	0.86	0/3085
1	C	0.57	0/2280	0.85	0/3081
1	D	0.55	0/2266	0.87	0/3063
All	All	0.57	0/9113	0.86	0/12316

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.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	184	CXM	Mainchain

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	2211	0	2219	44	0
1	B	2202	0	2202	36	0
1	C	2201	0	2200	45	0
1	D	2190	0	2188	37	0
2	A	41	0	14	1	0
2	B	41	0	14	0	0
2	C	41	0	14	0	0
2	D	41	0	14	0	0
3	A	18	0	24	1	0
3	B	18	0	24	5	0
3	C	18	0	24	1	0
3	D	18	0	24	0	0
4	A	138	0	0	4	0
4	B	120	0	0	2	0
4	C	112	0	0	6	0
4	D	131	0	0	3	0
All	All	9541	0	8961	158	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 9.

All (158) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:272:LEU:HD21	1:C:380:MET:HE2	1.36	1.06
1:C:276:LEU:O	1:C:279:SER:HB3	1.55	1.05
1:A:399:ARG:HG2	1:A:399:ARG:HH11	1.18	1.04
1:C:223:ARG:NH2	1:C:229:GLN:OE1	1.94	1.00
1:A:376:LEU:CD2	1:A:380:MET:HE2	1.93	0.99
1:B:223:ARG:NH2	1:B:229:GLN:OE1	1.96	0.99
1:D:223:ARG:HH22	1:D:229:GLN:HE22	1.14	0.96
1:B:376:LEU:HD21	1:B:380:MET:HE3	1.48	0.94
1:A:288:GLU:OE1	1:A:324:THR:HG21	1.69	0.93
1:C:376:LEU:HD21	1:C:380:MET:HE3	1.51	0.92
1:A:376:LEU:HD23	1:A:380:MET:HE2	1.49	0.91
1:B:272:LEU:HD21	1:B:380:MET:HE2	1.52	0.90
1:B:223:ARG:NH1	1:B:257:GLY:O	2.05	0.90
1:C:348:ASN:HD22	1:C:394[B]:HIS:HE1	1.10	0.89
1:B:348:ASN:HD22	1:B:394[B]:HIS:CE1	1.91	0.89
1:D:223:ARG:NH2	1:D:229:GLN:HE22	1.71	0.88
1:D:223:ARG:NH2	1:D:229:GLN:NE2	2.21	0.88
1:D:222[B]:SER:OG	1:D:224[B]:ASP:OD1	1.90	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:LEU:O	1:A:279:SER:HB2	1.74	0.87
1:C:376:LEU:CD2	1:C:380:MET:HE3	2.06	0.86
1:A:228:HIS:CE1	1:A:231[B]:MET:SD	2.69	0.86
1:C:348:ASN:HD22	1:C:394[B]:HIS:CE1	1.94	0.84
1:A:276:LEU:O	1:A:279:SER:CB	2.26	0.83
1:C:272:LEU:CD2	1:C:380:MET:HE2	2.08	0.82
1:C:348:ASN:ND2	1:C:394[B]:HIS:HE1	1.78	0.81
1:B:348:ASN:HD22	1:B:394[B]:HIS:HE1	1.24	0.81
1:B:213:ARG:HD3	1:D:407:PRO:HB3	1.64	0.80
1:A:311:ARG:HH21	3:A:504:GOL:H11	1.48	0.78
1:D:222[B]:SER:HG	1:D:224[B]:ASP:CG	1.92	0.78
1:B:376:LEU:CD2	1:B:380:MET:HE3	2.14	0.77
1:B:272:LEU:CD2	1:B:380:MET:HE2	2.14	0.76
1:A:228:HIS:HE1	1:A:231[B]:MET:SD	2.11	0.74
1:C:333:LEU:HD12	1:C:336:LEU:HD12	1.69	0.72
1:C:348:ASN:ND2	1:C:394[B]:HIS:CE1	2.56	0.71
1:C:435:LYS:O	1:C:439:GLU:HG2	1.91	0.71
1:C:242:LEU:CD2	1:C:306:GLN:HG2	2.20	0.71
1:A:186:ARG:HD3	1:A:190:GLU:OE1	1.91	0.70
1:A:448:HIS:HD2	4:A:712:HOH:O	1.75	0.70
1:A:223:ARG:NH2	1:A:229:GLN:OE1	2.24	0.70
1:C:184:CXM:HE3	1:C:186:ARG:NE	2.07	0.70
1:A:399:ARG:HG2	1:A:399:ARG:NH1	1.97	0.69
1:C:184:CXM:HE3	1:C:186:ARG:HE	1.57	0.69
1:C:276:LEU:O	1:C:279:SER:CB	2.39	0.68
1:A:324:THR:HG22	4:A:604:HOH:O	1.93	0.67
1:D:223:ARG:HH22	1:D:229:GLN:NE2	1.84	0.67
1:B:348:ASN:ND2	1:B:394[B]:HIS:CE1	2.61	0.66
1:A:247[A]:ILE:HG23	1:A:331:PHE:CE1	2.31	0.65
1:A:324:THR:O	1:A:324:THR:CG2	2.45	0.65
1:A:376:LEU:HD22	1:A:380:MET:HE2	1.79	0.64
1:B:275:LEU:O	1:B:279:SER:HB3	1.99	0.63
1:A:377:LEU:HA	1:A:380:MET:HE3	1.78	0.63
1:B:304:GLU:HG3	1:B:366:THR:HG21	1.81	0.62
1:D:184:CXM:HE1	1:D:186:ARG:HH21	1.63	0.62
1:C:242:LEU:HD23	1:C:306:GLN:HG2	1.81	0.62
1:D:202:PHE:CZ	1:D:219:LYS:HE3	2.34	0.62
1:A:399:ARG:HH11	1:A:399:ARG:CG	2.01	0.61
1:B:445:THR:OG1	1:B:447:HIS:O	2.17	0.61
1:B:311:ARG:HH11	3:B:503:GOL:H32	1.66	0.60
1:D:348:ASN:ND2	1:D:394[B]:HIS:NE2	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:LEU:O	1:A:279:SER:HB3	2.00	0.60
1:D:228[A]:HIS:CE1	1:D:230:GLN:HB3	2.38	0.59
1:C:233:GLN:O	1:C:237:GLN:HG2	2.03	0.59
1:D:233:GLN:O	1:D:237:GLN:HG2	2.04	0.58
1:B:340:ASP:HB3	1:C:347:HIS:HB3	1.86	0.58
1:A:414:PRO:O	1:A:418[B]:LYS:HG2	2.05	0.57
1:B:348:ASN:ND2	1:B:394[B]:HIS:HE1	1.98	0.56
1:B:311:ARG:HH21	3:B:504:GOL:H11	1.72	0.55
1:D:304:GLU:HG3	1:D:366:THR:HG21	1.88	0.55
1:A:324:THR:HG22	1:A:324:THR:O	2.07	0.55
1:D:318:ILE:HD13	1:D:376:LEU:HD11	1.90	0.54
1:A:333:LEU:HD12	1:A:336:LEU:HD12	1.88	0.54
1:A:322:GLU:HG2	4:A:738:HOH:O	2.08	0.54
1:A:374:GLY:HA2	1:A:377:LEU:HD12	1.90	0.53
1:D:187:PRO:HB2	1:D:190:GLU:HG3	1.91	0.52
1:C:376:LEU:HD23	1:C:380:MET:HE3	1.89	0.52
1:C:418:LYS:HD2	4:C:626:HOH:O	2.10	0.52
1:B:202:PHE:CZ	1:B:219:LYS:HE3	2.44	0.51
1:B:186:ARG:HD3	1:D:410:LEU:HD11	1.91	0.51
1:D:333:LEU:HD12	1:D:336:LEU:HD12	1.91	0.51
1:A:201:TYR:HB3	1:A:345:HIS:CG	2.45	0.51
1:C:254:VAL:HB	1:C:261:TYR:HB2	1.91	0.51
1:C:189:GLU:H	1:C:189:GLU:CD	2.18	0.51
1:D:440[B]:ARG:NE	1:D:440[B]:ARG:HA	2.26	0.51
1:C:323:ASN:ND2	4:C:606:HOH:O	2.44	0.50
1:C:344:SER:HA	1:C:348:ASN:OD1	2.12	0.50
1:A:227:LEU:HD23	1:A:231[B]:MET:HE2	1.92	0.50
1:D:228[A]:HIS:HE1	1:D:230:GLN:HB3	1.76	0.50
1:B:316:ARG:NH2	3:B:502:GOL:O3	2.39	0.49
1:D:237:GLN:O	1:D:241:LYS:HG3	2.11	0.49
1:A:419:LEU:HD21	1:A:437:LEU:HD22	1.94	0.49
1:C:304:GLU:HG3	1:C:366:THR:HG21	1.95	0.49
1:D:248:LEU:HD11	1:D:265[B]:GLU:HG2	1.95	0.49
1:C:291[B]:ASP:OD1	4:C:601:HOH:O	2.20	0.48
1:A:361:ARG:HG3	1:A:363:HIS:ND1	2.29	0.48
1:B:344:SER:HA	1:B:348:ASN:OD1	2.13	0.48
1:A:247[A]:ILE:HD11	1:A:303:LEU:HG	1.93	0.48
1:B:335:ARG:HA	3:B:503:GOL:H12	1.95	0.48
1:B:255:SER:HA	1:B:260:VAL:HG22	1.95	0.48
1:D:440[B]:ARG:HA	1:D:440[B]:ARG:HE	1.78	0.47
1:A:276:LEU:C	1:A:279:SER:HB2	2.38	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:309:ILE:O	3:C:504:GOL:H31	2.14	0.47
1:D:201:TYR:HB3	1:D:345:HIS:CG	2.51	0.46
1:D:223:ARG:NH1	1:D:257:GLY:O	2.38	0.46
1:A:304:GLU:HG3	1:A:366:THR:HG21	1.96	0.46
1:A:184:CXM:HB3	4:A:733:HOH:O	2.16	0.46
1:A:188:ARG:NH2	1:A:256:VAL:O	2.46	0.46
1:D:184:CXM:CE	1:D:186:ARG:HH21	2.26	0.46
1:C:186:ARG:NH1	1:C:190:GLU:OE1	2.49	0.46
1:B:233:GLN:NE2	4:B:609:HOH:O	2.49	0.45
1:D:222[B]:SER:CB	1:D:224[B]:ASP:OD1	2.63	0.45
1:C:213:ARG:NH2	4:C:610:HOH:O	2.50	0.45
1:D:186:ARG:HD3	1:D:190:GLU:OE1	2.16	0.45
1:B:311:ARG:NH1	3:B:503:GOL:H32	2.30	0.45
1:D:275:LEU:HD21	1:D:320:VAL:HG21	1.99	0.44
1:A:250:LEU:HD12	1:A:250:LEU:HA	1.85	0.44
1:C:184:CXM:HE3	1:C:186:ARG:CZ	2.47	0.44
1:C:396:ALA:O	1:C:400:VAL:HG23	2.18	0.44
1:A:202:PHE:CZ	1:A:219:LYS:HE3	2.53	0.44
1:A:313:LEU:HD22	1:A:376:LEU:CD1	2.48	0.43
1:B:436:ALA:O	1:B:440:ARG:HG3	2.18	0.43
1:C:378:HIS:HE1	4:C:623:HOH:O	2.00	0.43
1:B:228[A]:HIS:NE2	1:B:230:GLN:HB2	2.33	0.43
1:C:371:TRP:CE3	1:C:424:TRP:HA	2.53	0.43
1:D:294:TRP:HE3	4:D:602:HOH:O	2.00	0.43
1:A:247[A]:ILE:HD11	1:A:299:GLY:O	2.19	0.43
1:A:248:LEU:HD23	2:A:501[A]:1N1:H102	2.01	0.43
1:C:276:LEU:C	1:C:279:SER:HB3	2.34	0.43
1:B:347:HIS:HB3	1:C:340:ASP:HB3	2.00	0.43
1:D:310:HIS:O	1:D:311:ARG:HB2	2.19	0.43
1:C:223:ARG:NH1	1:C:257:GLY:O	2.46	0.42
1:B:316:ARG:NH2	4:B:601:HOH:O	2.34	0.42
1:C:189:GLU:HG3	4:C:683:HOH:O	2.19	0.42
1:B:195[A]:ARG:NE	1:B:195[A]:ARG:HA	2.34	0.42
1:C:186:ARG:HG3	1:C:190:GLU:OE1	2.19	0.42
1:D:241:LYS:HG2	4:D:720:HOH:O	2.18	0.42
1:A:280:ASP:HB3	1:A:283:VAL:H	1.85	0.42
1:D:342:TYR:O	1:D:345:HIS:HD2	2.02	0.42
1:B:258:ASP:OD1	1:B:259:PRO:HA	2.20	0.41
1:A:185:GLU:OE2	1:A:255:SER:OG	2.33	0.41
1:B:235:GLU:OE1	1:B:335:ARG:NH1	2.53	0.41
1:C:356:PRO:HA	1:C:397:PHE:HE1	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:218:ILE:HG12	1:B:263:ILE:HG12	2.02	0.41
1:B:342:TYR:O	1:B:345:HIS:HD2	2.02	0.41
1:B:201:TYR:HB3	1:B:345:HIS:CG	2.55	0.41
1:C:345:HIS:CE1	1:C:349:ILE:CG2	3.03	0.41
1:C:427:ASP:HA	1:C:428:PRO:HD2	1.94	0.41
1:D:231[A]:MET:SD	1:D:335:ARG:NH2	2.93	0.41
1:A:352:LYS:HE2	1:A:388:TYR:HB2	2.03	0.41
1:A:371:TRP:CD1	1:A:371:TRP:C	2.99	0.41
1:D:202:PHE:CE1	1:D:219:LYS:HE3	2.56	0.41
1:D:430:GLN:NE2	4:D:619:HOH:O	2.54	0.41
1:A:440:ARG:HH11	1:A:440:ARG:HG3	1.86	0.40
1:D:232:LEU:HD12	1:D:336:LEU:HD22	2.03	0.40
1:C:285:PRO:HD2	1:C:288[B]:GLU:OE1	2.22	0.40
1:C:351:TYR:HA	1:C:359:LEU:HD11	2.03	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	272/267 (102%)	265 (97%)	7 (3%)	0	100	100
1	B	272/267 (102%)	264 (97%)	8 (3%)	0	100	100
1	C	273/267 (102%)	266 (97%)	7 (3%)	0	100	100
1	D	271/267 (102%)	265 (98%)	6 (2%)	0	100	100
All	All	1088/1068 (102%)	1060 (97%)	28 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	244/236 (103%)	218 (89%)	26 (11%)	6	3
1	B	243/236 (103%)	231 (95%)	12 (5%)	22	23
1	C	242/236 (102%)	229 (95%)	13 (5%)	20	19
1	D	242/236 (102%)	224 (93%)	18 (7%)	13	10
All	All	971/944 (103%)	902 (93%)	69 (7%)	14	11

All (69) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	195[A]	ARG
1	A	195[B]	ARG
1	A	205	VAL
1	A	231[A]	MET
1	A	231[B]	MET
1	A	233	GLN
1	A	247[A]	ILE
1	A	247[B]	ILE
1	A	250	LEU
1	A	260	VAL
1	A	262	ILE
1	A	266	LEU
1	A	280	ASP
1	A	313	LEU
1	A	316	ARG
1	A	324	THR
1	A	325	LEU
1	A	335	ARG
1	A	337	ILE
1	A	345	HIS
1	A	346	ASP
1	A	361	ARG
1	A	398	LEU
1	A	399	ARG

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Mol	Chain	Res	Type
1	A	421	LEU
1	A	440	ARG
1	B	205	VAL
1	B	212	ASP
1	B	230	GLN
1	B	233	GLN
1	B	250	LEU
1	B	281	GLU
1	B	313	LEU
1	B	318	ILE
1	B	325	LEU
1	B	335	ARG
1	B	418	LYS
1	B	421	LEU
1	C	186	ARG
1	C	199	SER
1	C	205	VAL
1	C	250	LEU
1	C	269	LYS
1	C	280	ASP
1	C	313	LEU
1	C	335	ARG
1	C	337	ILE
1	C	345	HIS
1	C	398	LEU
1	C	418	LYS
1	C	421	LEU
1	D	186	ARG
1	D	205	VAL
1	D	213	ARG
1	D	231[A]	MET
1	D	231[B]	MET
1	D	250	LEU
1	D	256	VAL
1	D	260	VAL
1	D	279	SER
1	D	306	GLN
1	D	313	LEU
1	D	324	THR
1	D	325	LEU
1	D	330	ASP
1	D	337	ILE

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Mol	Chain	Res	Type
1	D	398	LEU
1	D	415	SER
1	D	421	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	228	HIS
1	A	230	GLN
1	A	233	GLN
1	A	317	ASN
1	A	348	ASN
1	A	448	HIS
1	A	449	HIS
1	B	317	ASN
1	C	317	ASN
1	C	347	HIS
1	C	447	HIS
1	D	229	GLN
1	D	317	ASN
1	D	348	ASN
1	D	385	GLN
1	D	430	GLN
1	D	448	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	CXM	D	184	1	9,10,11	1.03	1 (11%)	9,11,13	1.51	1 (11%)
1	CXM	C	184	1	9,10,11	0.84	0	9,11,13	1.59	2 (22%)
1	CXM	A	184	1	9,10,11	0.89	0	9,11,13	1.34	2 (22%)
1	CXM	B	184	1	9,10,11	0.96	1 (11%)	9,11,13	1.35	2 (22%)

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	CXM	D	184	1	-	4/9/10/12	-
1	CXM	C	184	1	-	4/9/10/12	-
1	CXM	A	184	1	-	3/9/10/12	-
1	CXM	B	184	1	-	2/9/10/12	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	184	CXM	ON1-CN	2.23	1.25	1.21
1	B	184	CXM	ON1-CN	2.12	1.25	1.21

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	184	CXM	ON1-CN-N	-3.51	119.10	124.86
1	C	184	CXM	ON1-CN-N	-3.36	119.35	124.86
1	A	184	CXM	ON1-CN-N	-2.82	120.24	124.86
1	B	184	CXM	ON1-CN-N	-2.69	120.45	124.86
1	C	184	CXM	C-CA-N	2.45	114.23	109.50
1	A	184	CXM	O-C-CA	-2.23	119.02	124.77
1	B	184	CXM	C-CA-N	2.19	113.72	109.50

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	B	184	CXM	C-CA-CB-CG
1	C	184	CXM	C-CA-CB-CG

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Mol	Chain	Res	Type	Atoms
1	D	184	CXM	O-C-CA-CB
1	B	184	CXM	N-CA-CB-CG
1	C	184	CXM	N-CA-CB-CG
1	A	184	CXM	N-CA-CB-CG
1	C	184	CXM	ON1-CN-N-CA
1	D	184	CXM	C-CA-N-CN
1	A	184	CXM	CB-CA-N-CN
1	D	184	CXM	CB-CA-N-CN
1	D	184	CXM	ON1-CN-N-CA
1	C	184	CXM	CB-CG-SD-CE
1	A	184	CXM	C-CA-N-CN

There are no ring outliers.

3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	184	CXM	2	0
1	C	184	CXM	3	0
1	A	184	CXM	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

20 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	GOL	A	504	-	5,5,5	0.29	0	5,5,5	0.68	0
3	GOL	D	503	-	5,5,5	0.23	0	5,5,5	0.86	0
3	GOL	D	502	-	5,5,5	0.31	0	5,5,5	0.47	0
3	GOL	C	504	-	5,5,5	0.40	0	5,5,5	0.46	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	GOL	B	504	-	5,5,5	0.30	0	5,5,5	0.59	0
2	1N1	C	501[A]	-	36,36,36	0.85	1 (2%)	50,50,50	1.83	13 (26%)
3	GOL	C	502	-	5,5,5	0.34	0	5,5,5	0.50	0
2	1N1	C	501[B]	-	36,36,36	0.87	1 (2%)	50,50,50	1.79	11 (22%)
2	1N1	A	501[A]	-	36,36,36	0.83	1 (2%)	50,50,50	1.51	8 (16%)
3	GOL	A	502	-	5,5,5	0.41	0	5,5,5	0.47	0
2	1N1	A	501[B]	-	36,36,36	0.85	1 (2%)	50,50,50	1.54	8 (16%)
3	GOL	B	503	-	5,5,5	0.32	0	5,5,5	0.52	0
3	GOL	C	503	-	5,5,5	0.36	0	5,5,5	0.35	0
2	1N1	D	504[A]	-	36,36,36	0.82	0	50,50,50	1.44	9 (18%)
3	GOL	A	503	-	5,5,5	0.34	0	5,5,5	0.33	0
2	1N1	D	504[B]	-	36,36,36	0.84	0	50,50,50	1.50	10 (20%)
3	GOL	B	502	-	5,5,5	0.36	0	5,5,5	0.47	0
3	GOL	D	501	-	5,5,5	0.28	0	5,5,5	0.66	0
2	1N1	B	501[A]	-	36,36,36	0.81	1 (2%)	50,50,50	1.50	9 (18%)
2	1N1	B	501[B]	-	36,36,36	0.83	1 (2%)	50,50,50	1.52	9 (18%)

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	GOL	A	504	-	-	2/4/4/4	-
3	GOL	D	503	-	-	4/4/4/4	-
3	GOL	D	502	-	-	3/4/4/4	-
3	GOL	C	504	-	-	2/4/4/4	-
3	GOL	B	504	-	-	4/4/4/4	-
2	1N1	C	501[A]	-	-	3/19/29/29	0/4/4/4
3	GOL	C	502	-	-	0/4/4/4	-
2	1N1	C	501[B]	-	-	3/19/29/29	0/4/4/4
2	1N1	A	501[A]	-	-	3/19/29/29	0/4/4/4
3	GOL	A	502	-	-	0/4/4/4	-
2	1N1	A	501[B]	-	-	3/19/29/29	0/4/4/4
3	GOL	B	503	-	-	4/4/4/4	-
3	GOL	C	503	-	-	3/4/4/4	-
2	1N1	D	504[A]	-	-	3/19/29/29	0/4/4/4
3	GOL	A	503	-	-	4/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	1N1	D	504[B]	-	-	3/19/29/29	0/4/4/4
3	GOL	B	502	-	-	0/4/4/4	-
3	GOL	D	501	-	-	2/4/4/4	-
2	1N1	B	501[A]	-	-	2/19/29/29	0/4/4/4
2	1N1	B	501[B]	-	-	2/19/29/29	0/4/4/4

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501[A]	1N1	C3-C2	-2.40	1.43	1.48
2	A	501[B]	1N1	C3-C2	-2.40	1.43	1.48
2	C	501[A]	1N1	C3-C2	-2.25	1.43	1.48
2	C	501[B]	1N1	C3-C2	-2.25	1.43	1.48
2	B	501[A]	1N1	C3-C2	-2.20	1.43	1.48
2	B	501[B]	1N1	C3-C2	-2.20	1.43	1.48

All (77) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501[A]	1N1	C11-N-C	-4.72	120.80	126.67
2	B	501[B]	1N1	C11-N-C	-4.72	120.80	126.67
2	C	501[A]	1N1	C12-C13-N5	-4.37	117.08	122.35
2	C	501[B]	1N1	C12-C13-N5	-4.37	117.08	122.35
2	C	501[A]	1N1	C11-N-C	-4.35	121.26	126.67
2	C	501[B]	1N1	C11-N-C	-4.35	121.26	126.67
2	D	504[A]	1N1	C11-N-C	-3.99	121.70	126.67
2	D	504[B]	1N1	C11-N-C	-3.99	121.70	126.67
2	C	501[A]	1N1	N3-C13-N5	3.98	121.59	116.56
2	C	501[B]	1N1	N3-C13-N5	3.98	121.59	116.56
2	A	501[A]	1N1	C19-N5-C16	3.81	120.14	111.57
2	A	501[B]	1N1	C19-N5-C16	3.81	120.14	111.57
2	C	501[A]	1N1	C18-N6-C17	3.80	117.02	108.84
2	C	501[B]	1N1	C18-N6-C17	3.80	117.02	108.84
2	C	501[A]	1N1	N-C11-N4	3.77	122.46	113.33
2	C	501[B]	1N1	N-C11-N4	3.77	122.46	113.33
2	A	501[A]	1N1	C11-N-C	-3.65	122.13	126.67
2	A	501[B]	1N1	C11-N-C	-3.65	122.13	126.67
2	A	501[A]	1N1	C18-N6-C17	3.43	116.22	108.84
2	A	501[B]	1N1	C18-N6-C17	3.43	116.22	108.84
2	C	501[A]	1N1	C11-C12-C13	2.95	119.00	116.64
2	C	501[B]	1N1	C11-C12-C13	2.95	119.00	116.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	501[A]	1N1	C19-N5-C16	2.91	118.11	111.57
2	C	501[B]	1N1	C19-N5-C16	2.91	118.11	111.57
2	A	501[A]	1N1	N-C11-N4	2.90	120.34	113.33
2	A	501[B]	1N1	N-C11-N4	2.90	120.34	113.33
2	C	501[A]	1N1	C17-C16-N5	-2.88	104.73	110.78
2	C	501[B]	1N1	C17-C16-N5	-2.88	104.73	110.78
2	D	504[A]	1N1	C18-N6-C17	2.86	115.00	108.84
2	D	504[B]	1N1	C18-N6-C17	2.86	115.00	108.84
2	B	501[A]	1N1	N-C11-N4	2.81	120.14	113.33
2	B	501[B]	1N1	N-C11-N4	2.81	120.14	113.33
2	C	501[A]	1N1	C5-C4-N2	-2.81	117.80	121.12
2	C	501[A]	1N1	N-C-N1	2.72	124.27	120.13
2	C	501[B]	1N1	N-C-N1	2.72	124.27	120.13
2	D	504[A]	1N1	C17-C16-N5	-2.66	105.19	110.78
2	D	504[B]	1N1	C17-C16-N5	-2.66	105.19	110.78
2	B	501[A]	1N1	C18-N6-C17	2.65	114.55	108.84
2	B	501[B]	1N1	C18-N6-C17	2.65	114.55	108.84
2	D	504[A]	1N1	N-C11-N4	2.64	119.72	113.33
2	D	504[B]	1N1	N-C11-N4	2.64	119.72	113.33
2	A	501[A]	1N1	C18-C19-N5	-2.55	105.43	110.78
2	A	501[B]	1N1	C18-C19-N5	-2.55	105.43	110.78
2	B	501[A]	1N1	C17-C16-N5	-2.50	105.52	110.78
2	B	501[B]	1N1	C17-C16-N5	-2.50	105.52	110.78
2	B	501[A]	1N1	C19-N5-C16	2.35	116.86	111.57
2	B	501[B]	1N1	C19-N5-C16	2.35	116.86	111.57
2	B	501[A]	1N1	C19-C18-N6	-2.32	105.96	110.65
2	B	501[B]	1N1	C19-C18-N6	-2.32	105.96	110.65
2	D	504[B]	1N1	C5-C4-N2	-2.27	118.43	121.12
2	B	501[A]	1N1	C19-N5-C13	-2.27	114.36	120.41
2	B	501[B]	1N1	C19-N5-C13	-2.27	114.36	120.41
2	C	501[A]	1N1	C9-C4-N2	2.26	122.35	118.99
2	A	501[A]	1N1	C2-C3-N2	-2.22	110.31	116.07
2	A	501[B]	1N1	C2-C3-N2	-2.22	110.31	116.07
2	D	504[A]	1N1	N-C-N1	2.22	123.52	120.13
2	D	504[B]	1N1	N-C-N1	2.22	123.52	120.13
2	D	504[A]	1N1	C19-N5-C13	-2.20	114.56	120.41
2	D	504[B]	1N1	C19-N5-C13	-2.20	114.56	120.41
2	C	501[A]	1N1	C2-C3-N2	-2.19	110.40	116.07
2	C	501[B]	1N1	C2-C3-N2	-2.19	110.40	116.07
2	B	501[A]	1N1	C11-C12-C13	2.19	118.39	116.64
2	B	501[B]	1N1	C11-C12-C13	2.19	118.39	116.64
2	A	501[A]	1N1	C19-C18-N6	-2.12	106.36	110.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501[B]	1N1	C19-C18-N6	-2.12	106.36	110.65
2	B	501[A]	1N1	C2-C3-N2	-2.12	110.58	116.07
2	B	501[B]	1N1	C2-C3-N2	-2.12	110.58	116.07
2	D	504[A]	1N1	C2-C3-N2	-2.10	110.64	116.07
2	D	504[B]	1N1	C2-C3-N2	-2.10	110.64	116.07
2	C	501[A]	1N1	C12-C11-N	-2.09	116.92	122.53
2	C	501[B]	1N1	C12-C11-N	-2.09	116.92	122.53
2	A	501[A]	1N1	C17-C16-N5	-2.07	106.42	110.78
2	A	501[B]	1N1	C17-C16-N5	-2.07	106.42	110.78
2	D	504[A]	1N1	C11-C12-C13	2.07	118.30	116.64
2	D	504[B]	1N1	C11-C12-C13	2.07	118.30	116.64
2	D	504[A]	1N1	C19-N5-C16	2.06	116.19	111.57
2	D	504[B]	1N1	C19-N5-C16	2.06	116.19	111.57

There are no chirality outliers.

All (50) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	503	GOL	O1-C1-C2-C3
3	B	504	GOL	O1-C1-C2-C3
3	D	501	GOL	C1-C2-C3-O3
3	B	504	GOL	O1-C1-C2-O2
3	D	503	GOL	O2-C2-C3-O3
2	A	501[A]	1N1	N6-C20-C21-O1
2	A	501[B]	1N1	N6-C20-C21-O1
3	A	503	GOL	O1-C1-C2-C3
3	A	503	GOL	C1-C2-C3-O3
3	A	504	GOL	O1-C1-C2-C3
3	B	503	GOL	C1-C2-C3-O3
3	B	504	GOL	C1-C2-C3-O3
3	C	503	GOL	C1-C2-C3-O3
3	C	504	GOL	O1-C1-C2-C3
3	D	503	GOL	O1-C1-C2-C3
3	D	503	GOL	C1-C2-C3-O3
2	D	504[A]	1N1	N6-C20-C21-O1
2	D	504[B]	1N1	N6-C20-C21-O1
3	A	503	GOL	O1-C1-C2-O2
3	B	503	GOL	O1-C1-C2-O2
2	A	501[A]	1N1	C21-C20-N6-C17
2	A	501[B]	1N1	C21-C20-N6-C17
2	C	501[A]	1N1	C21-C20-N6-C17
2	C	501[B]	1N1	C21-C20-N6-C17

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Mol	Chain	Res	Type	Atoms
2	D	504[A]	1N1	C21-C20-N6-C18
2	D	504[B]	1N1	C21-C20-N6-C18
2	B	501[A]	1N1	C21-C20-N6-C17
2	B	501[B]	1N1	C21-C20-N6-C17
3	B	504	GOL	O2-C2-C3-O3
3	C	503	GOL	O2-C2-C3-O3
3	A	503	GOL	O2-C2-C3-O3
3	B	503	GOL	O2-C2-C3-O3
2	D	504[A]	1N1	C21-C20-N6-C17
2	D	504[B]	1N1	C21-C20-N6-C17
3	C	503	GOL	O1-C1-C2-O2
3	D	501	GOL	O2-C2-C3-O3
3	D	502	GOL	O1-C1-C2-O2
3	D	502	GOL	O2-C2-C3-O3
2	B	501[A]	1N1	C21-C20-N6-C18
2	B	501[B]	1N1	C21-C20-N6-C18
2	C	501[A]	1N1	C21-C20-N6-C18
2	C	501[B]	1N1	C21-C20-N6-C18
3	C	504	GOL	O1-C1-C2-O2
2	A	501[A]	1N1	C21-C20-N6-C18
2	A	501[B]	1N1	C21-C20-N6-C18
3	D	502	GOL	C1-C2-C3-O3
3	A	504	GOL	O1-C1-C2-O2
3	D	503	GOL	O1-C1-C2-O2
2	C	501[A]	1N1	N6-C20-C21-O1
2	C	501[B]	1N1	N6-C20-C21-O1

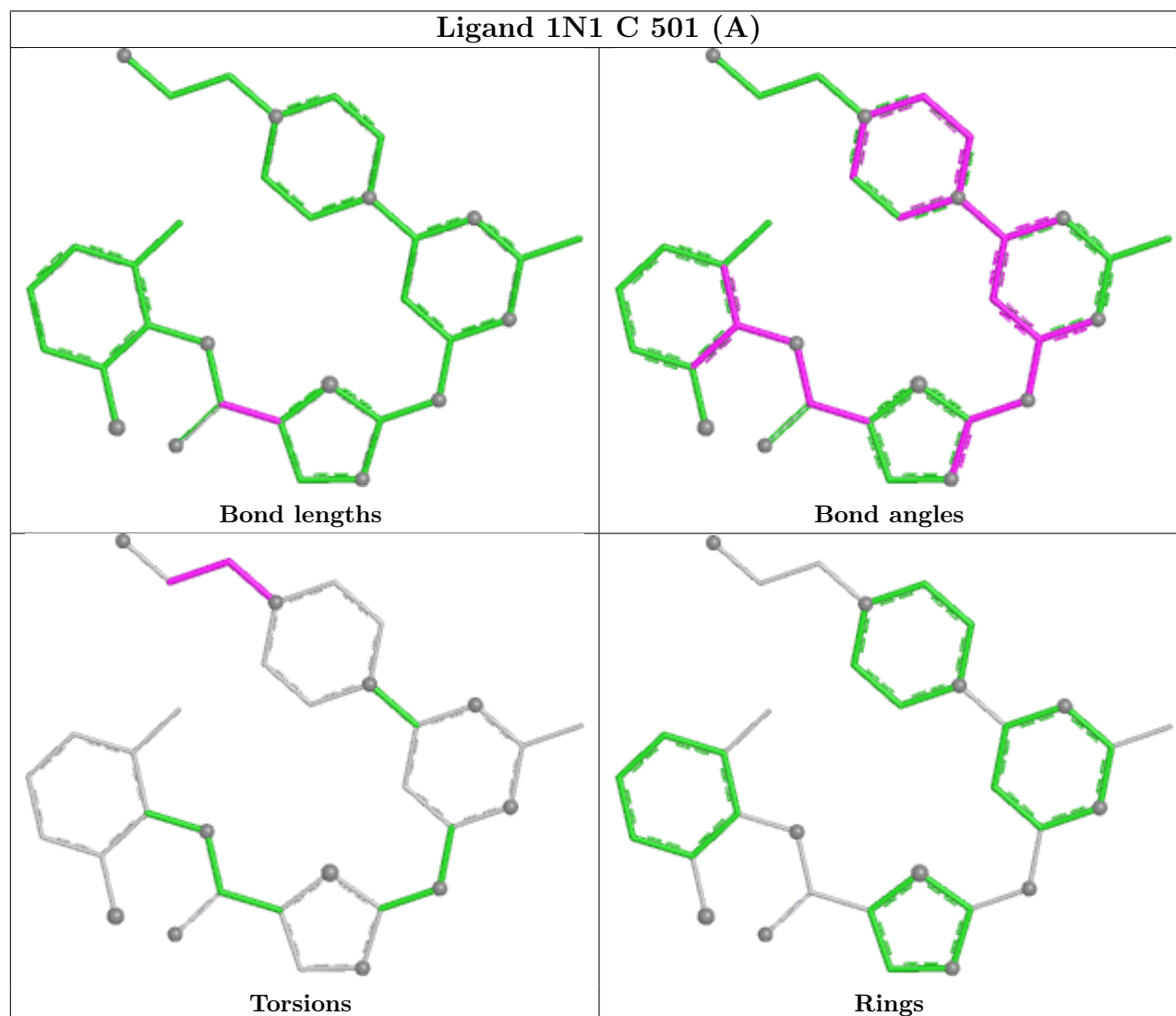
There are no ring outliers.

6 monomers are involved in 8 short contacts:

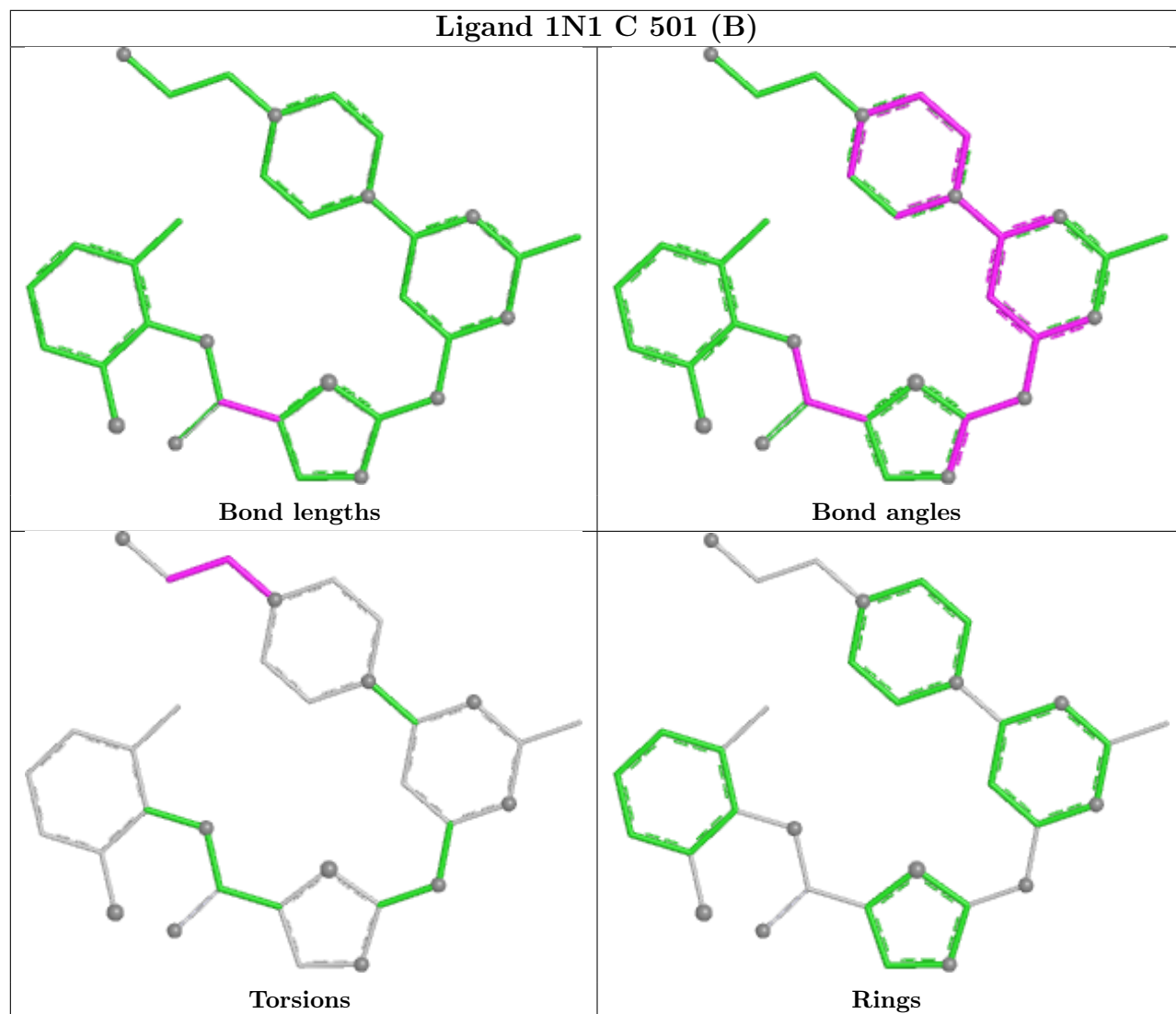
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	504	GOL	1	0
3	C	504	GOL	1	0
3	B	504	GOL	1	0
2	A	501[A]	1N1	1	0
3	B	503	GOL	3	0
3	B	502	GOL	1	0

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

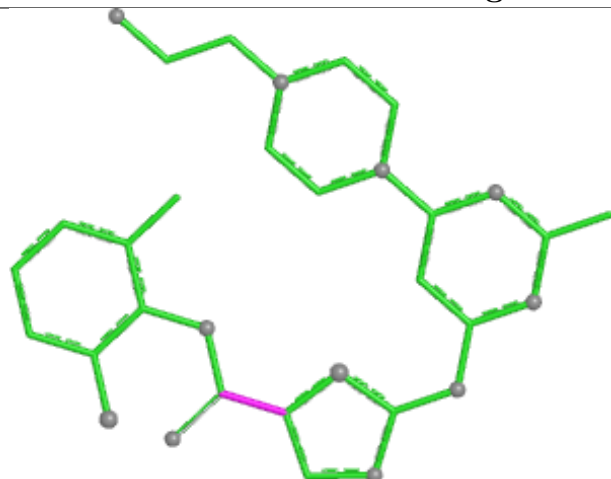
within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question 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.



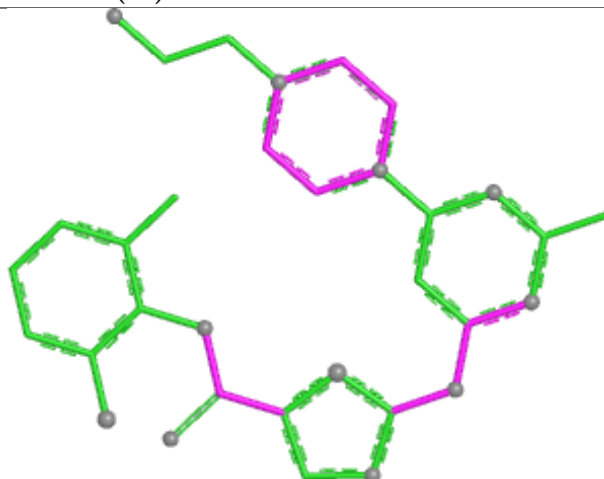
Ligand 1N1 C 501 (B)



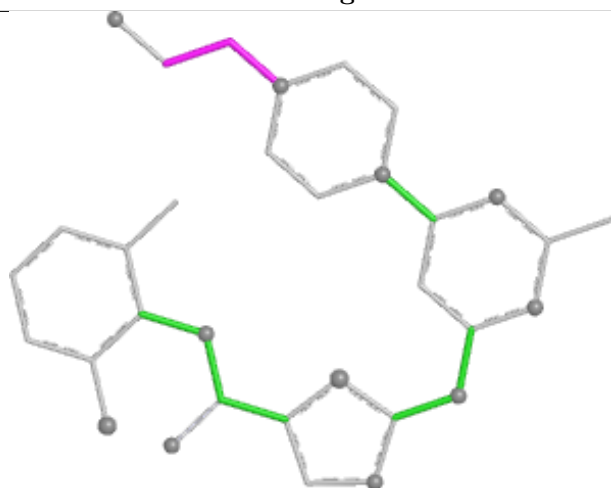
Ligand 1N1 A 501 (A)



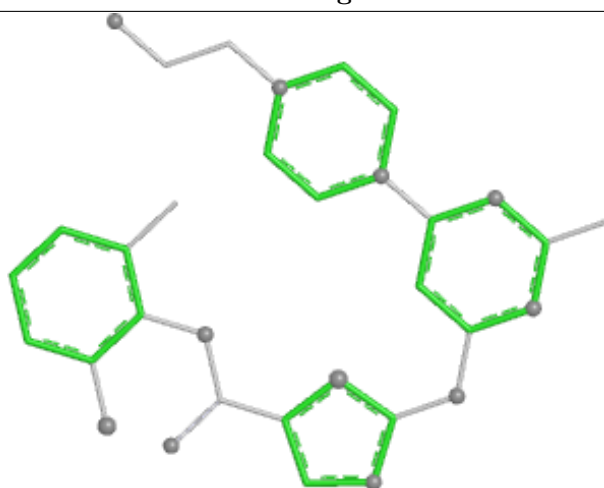
Bond lengths



Bond angles

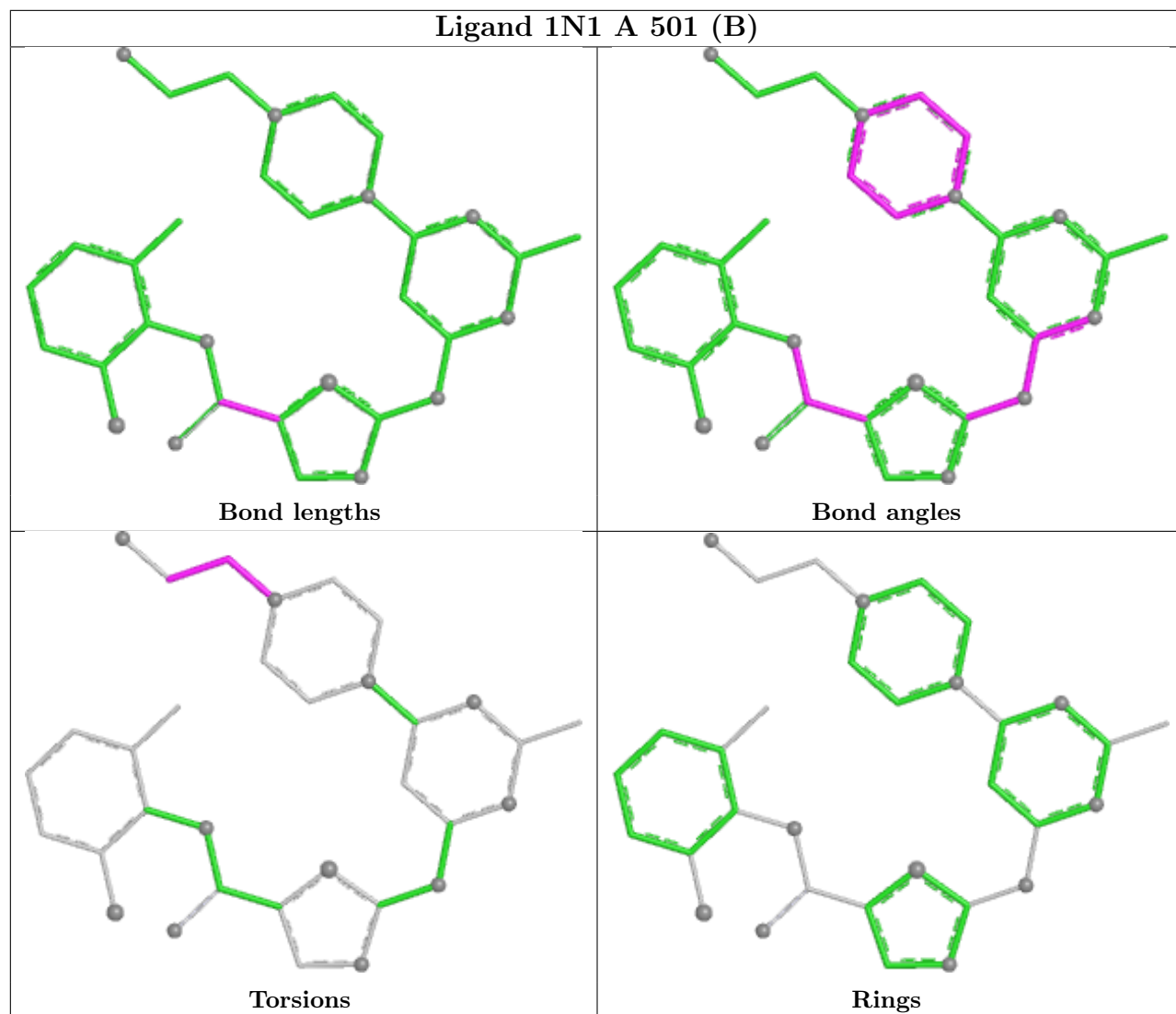


Torsions

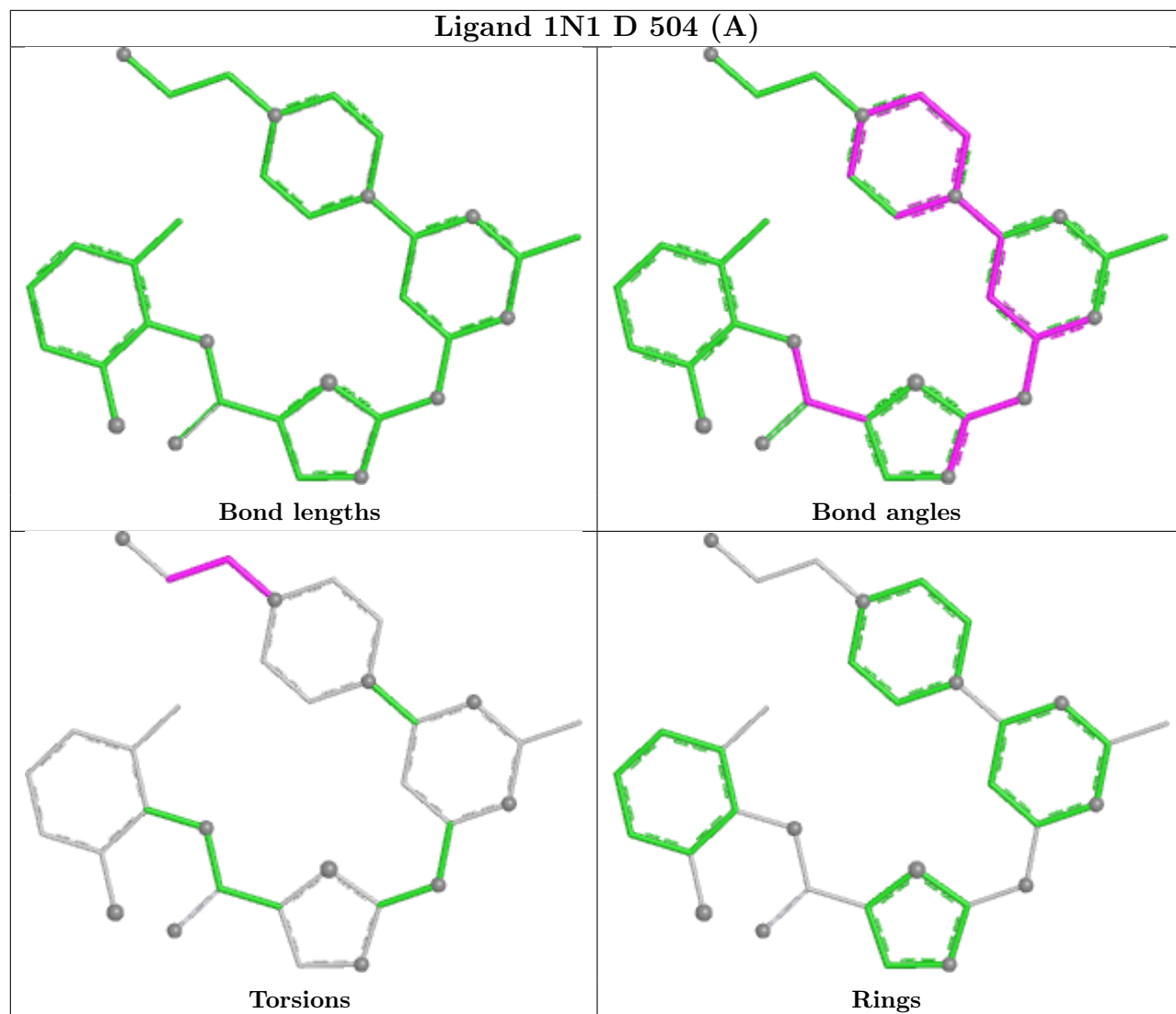


Rings

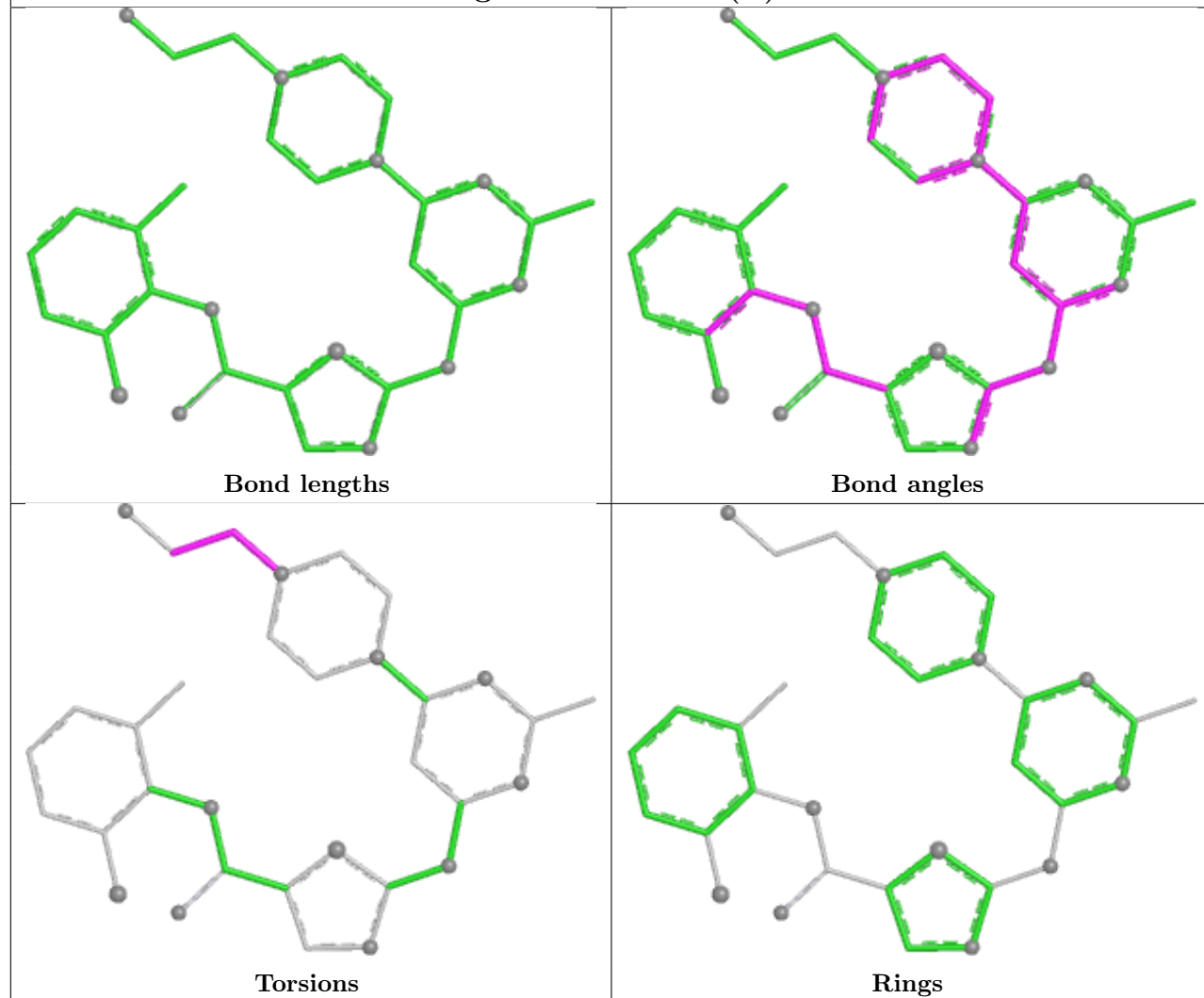
Ligand 1N1 A 501 (B)



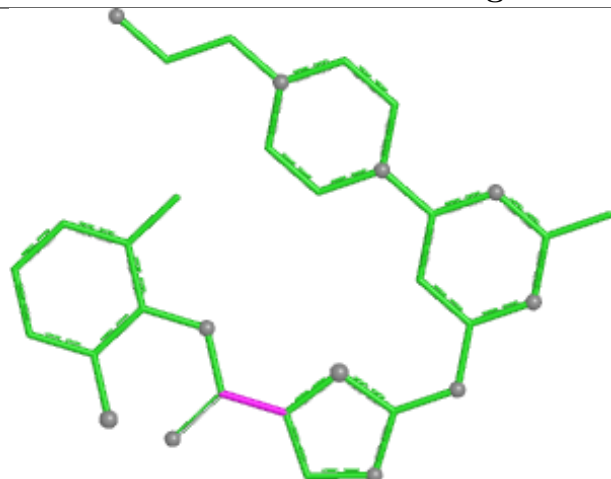
Ligand 1N1 D 504 (A)



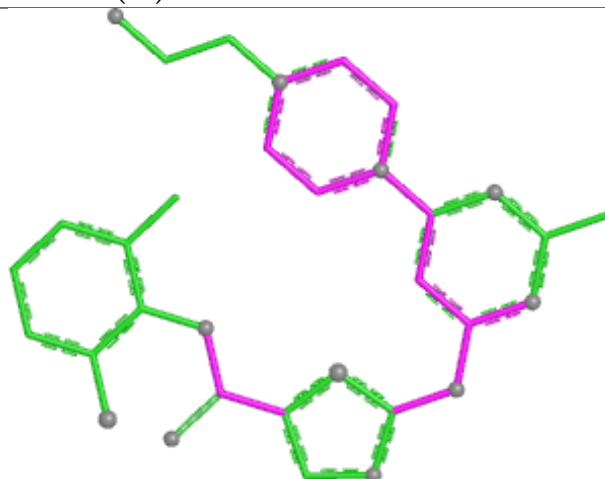
Ligand 1N1 D 504 (B)



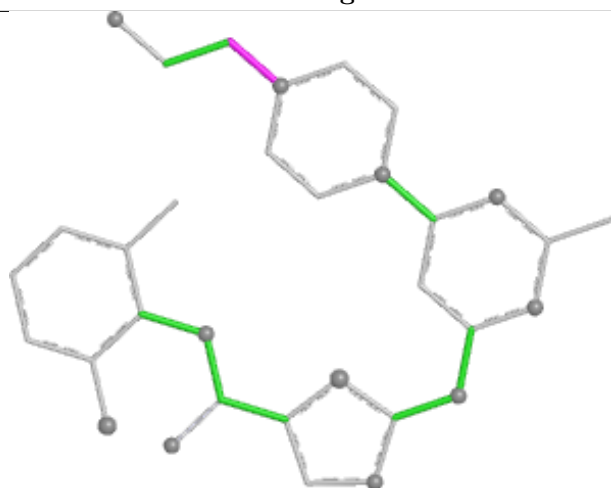
Ligand 1N1 B 501 (A)



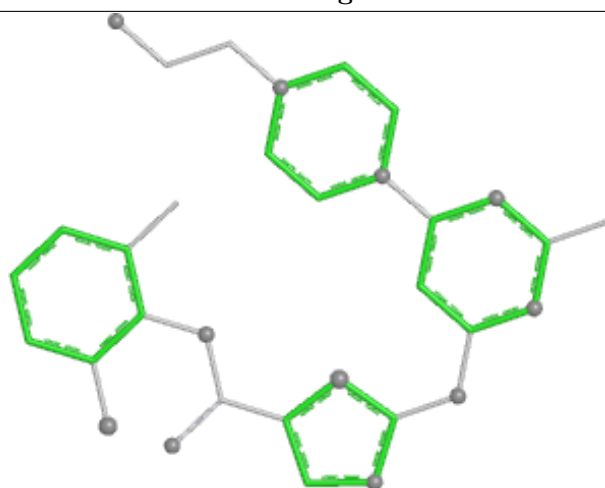
Bond lengths



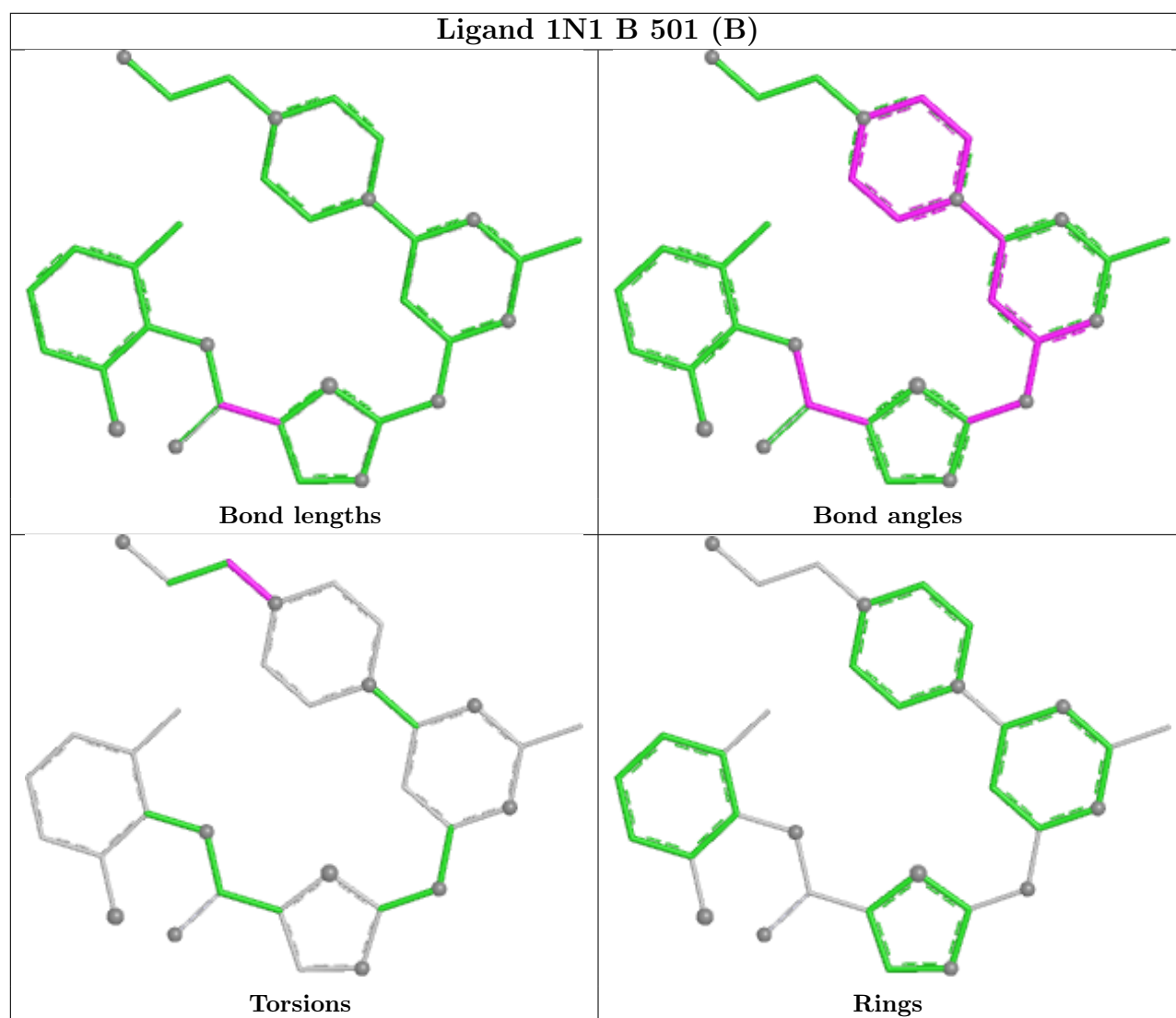
Bond angles



Torsions



Rings



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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	265/267 (99%)	0.15	4 (1%) 72 73	16, 31, 42, 55	10 (3%)
1	B	263/267 (98%)	0.12	1 (0%) 88 90	18, 31, 41, 50	12 (4%)
1	C	264/267 (98%)	0.24	4 (1%) 72 73	18, 33, 44, 54	12 (4%)
1	D	263/267 (98%)	0.25	3 (1%) 78 79	17, 33, 44, 52	11 (4%)
All	All	1055/1068 (98%)	0.19	12 (1%) 78 79	16, 32, 43, 55	45 (4%)

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	449	HIS	2.8
1	D	444	PHE	2.8
1	A	212	ASP	2.5
1	C	224	ASP	2.5
1	C	448	HIS	2.4
1	D	446	SER	2.4
1	C	359	LEU	2.4
1	D	359	LEU	2.3
1	B	212	ASP	2.3
1	C	323	ASN	2.2
1	A	450	HIS	2.2
1	A	323	ASN	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($\text{\AA}^2$)	Q<0.9
1	CXM	C	184	11/12	0.86	0.14	42,43,44,46	0
1	CXM	A	184	11/12	0.89	0.12	38,39,40,41	0
1	CXM	D	184	11/12	0.89	0.11	41,42,46,46	0
1	CXM	B	184	11/12	0.94	0.09	36,37,43,43	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

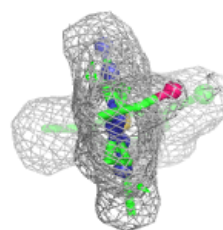
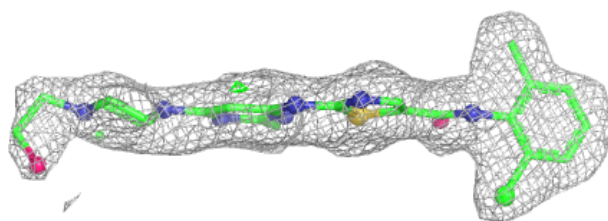
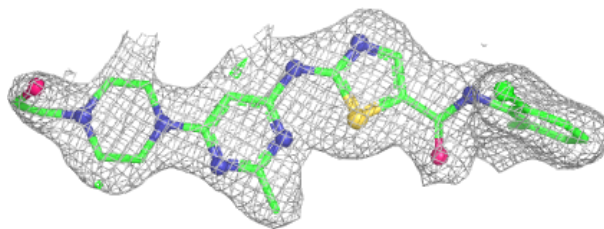
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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
3	GOL	A	503	6/6	0.81	0.14	51,52,53,53	0
3	GOL	B	503	6/6	0.85	0.10	44,46,46,46	0
3	GOL	C	503	6/6	0.85	0.12	49,50,51,52	0
3	GOL	A	504	6/6	0.87	0.10	35,38,38,40	0
3	GOL	C	504	6/6	0.89	0.10	42,43,44,46	0
3	GOL	D	502	6/6	0.89	0.12	47,48,49,49	0
2	1N1	D	504[A]	33/33	0.91	0.10	32,37,47,48	8
2	1N1	D	504[B]	33/33	0.91	0.10	32,37,47,48	8
2	1N1	B	501[A]	33/33	0.92	0.09	29,33,41,44	8
2	1N1	B	501[B]	33/33	0.92	0.09	30,33,41,44	8
3	GOL	A	502	6/6	0.92	0.10	36,38,39,40	0
2	1N1	C	501[A]	33/33	0.93	0.09	31,36,46,48	8
2	1N1	C	501[B]	33/33	0.93	0.09	30,36,46,48	8
3	GOL	D	501	6/6	0.93	0.10	39,40,40,40	0
3	GOL	C	502	6/6	0.93	0.09	36,38,38,40	0
3	GOL	B	504	6/6	0.94	0.10	35,37,39,41	0
2	1N1	A	501[A]	33/33	0.94	0.08	27,30,39,42	8
2	1N1	A	501[B]	33/33	0.94	0.08	27,30,39,42	8
3	GOL	D	503	6/6	0.94	0.10	32,34,38,39	0
3	GOL	B	502	6/6	0.96	0.07	28,30,32,32	0

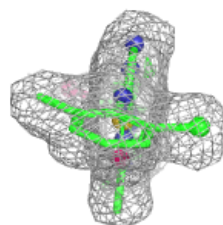
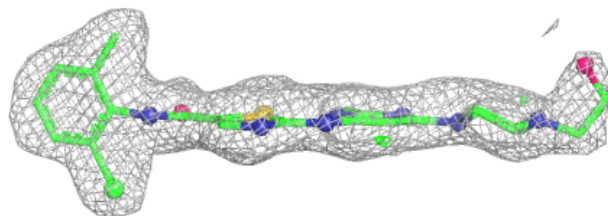
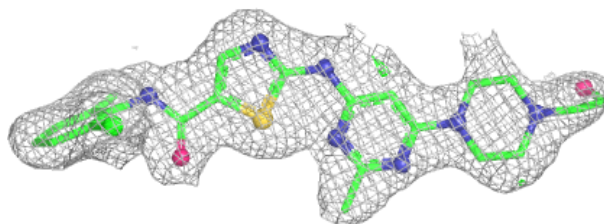
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around 1N1 D 504 (A):

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

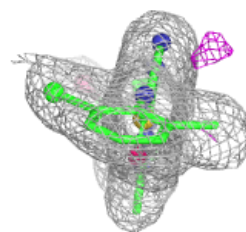
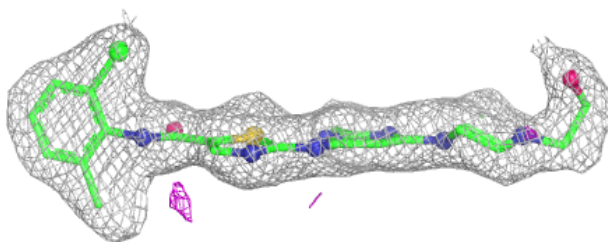
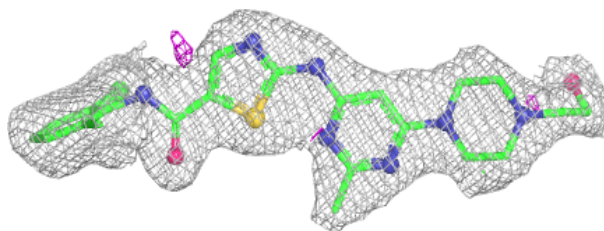
**Electron density around 1N1 D 504 (B):**

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and green (positive)

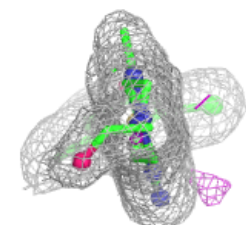
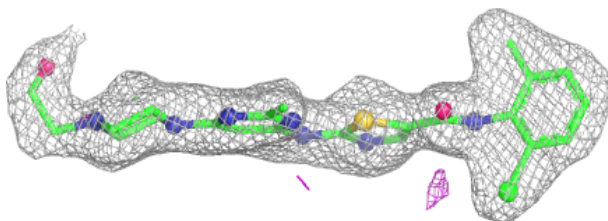
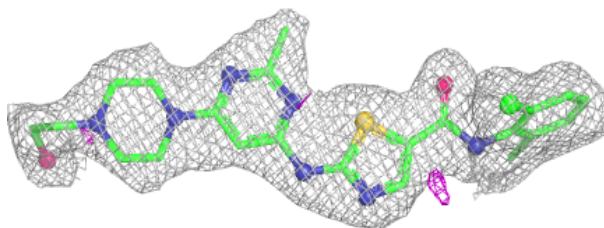


Electron density around 1N1 B 501 (A):

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

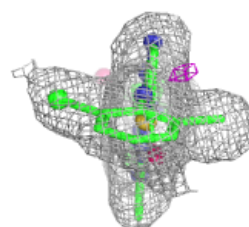
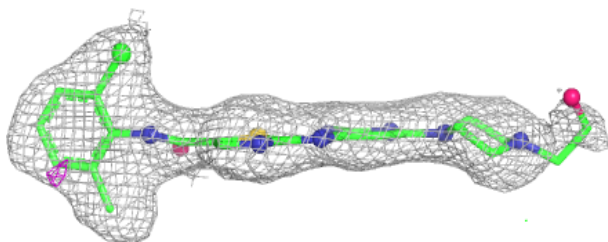
**Electron density around 1N1 B 501 (B):**

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and green (positive)

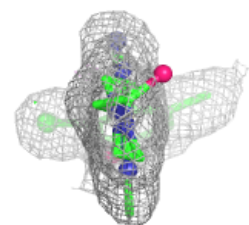
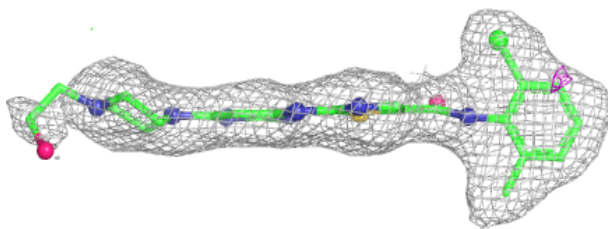
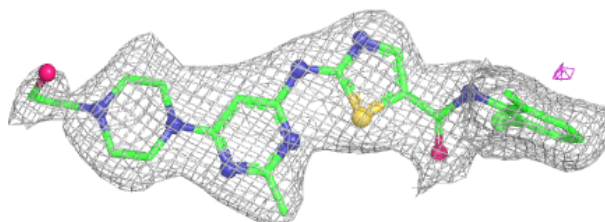


Electron density around 1N1 C 501 (A):

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and green (positive)

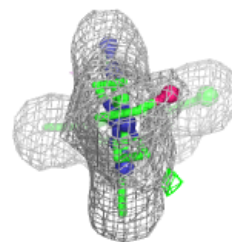
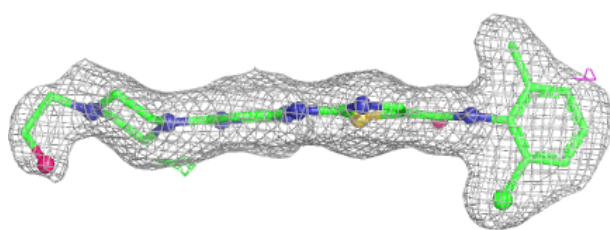
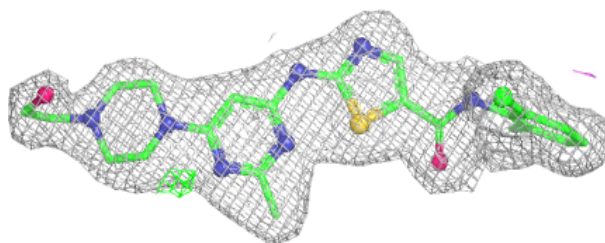
**Electron density around 1N1 C 501 (B):**

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and green (positive)

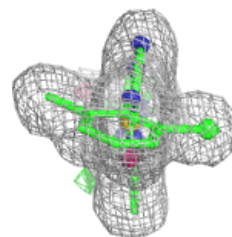
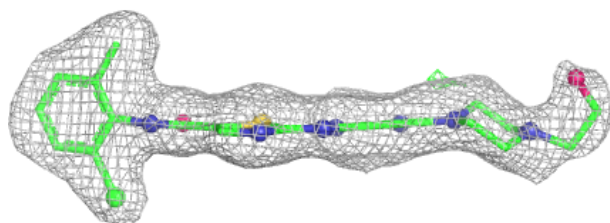
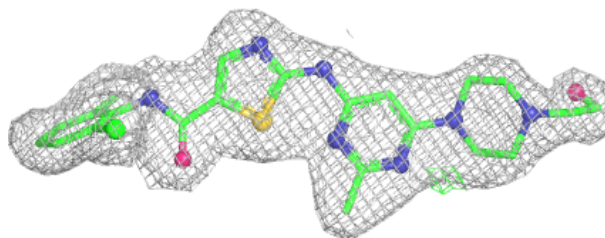


Electron density around 1N1 A 501 (A):

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

**Electron density around 1N1 A 501 (B):**

$2mF_o-DF_c$ (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.