



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 1, 2026 – 06:15 PM UTC

PDB ID : 2BNS / pdb_00002bns
Title : Lipidic cubic phase grown reaction centre from Rhodobacter sphaeroides, excited state
Authors : Katona, G.; Snijder, A.; Gourdon, P.; Andreasson, U.; Hansson, O.; Andreasson, L.E.; Neutze, R.
Deposited on : 2005-03-31
Resolution : 2.50 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

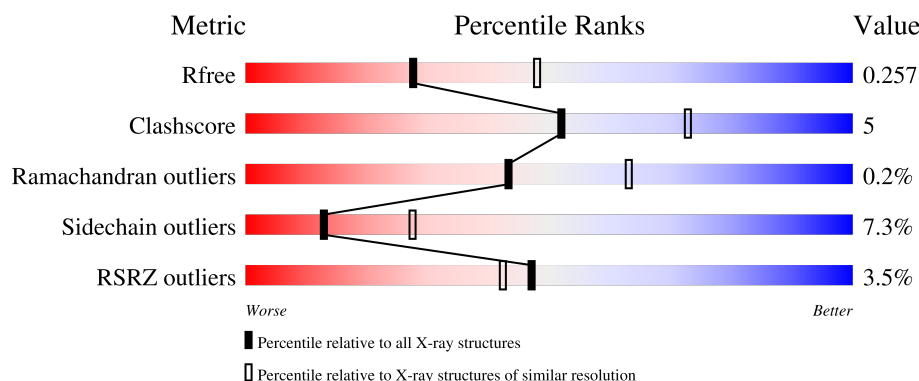
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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	281	 4% 86% 12% .
2	B	307	 3% 87% 9% .
3	C	260	 3% 77% 12% . 9%

2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 6965 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 Reaction center protein L chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	281	Total	C	N	O	S	4	0	0
			2232	1507	355	362	8			

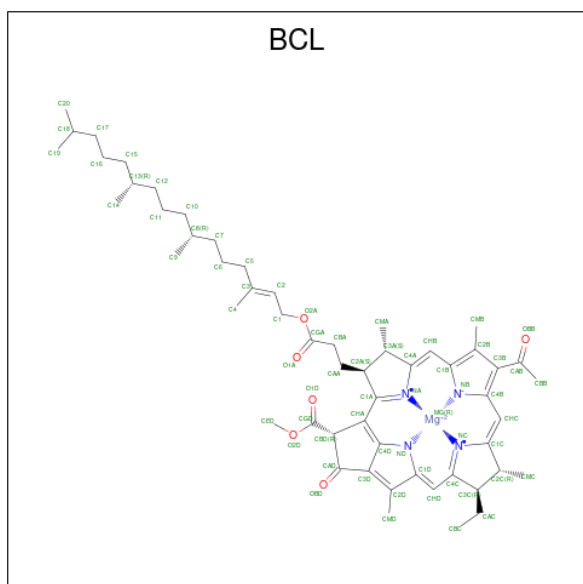
- Molecule 2 is a protein called Reaction center protein M chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	302	Total	C	N	O	S	19	0	1
			2405	1605	394	396	10			

- Molecule 3 is a protein called Reaction center protein H chain.

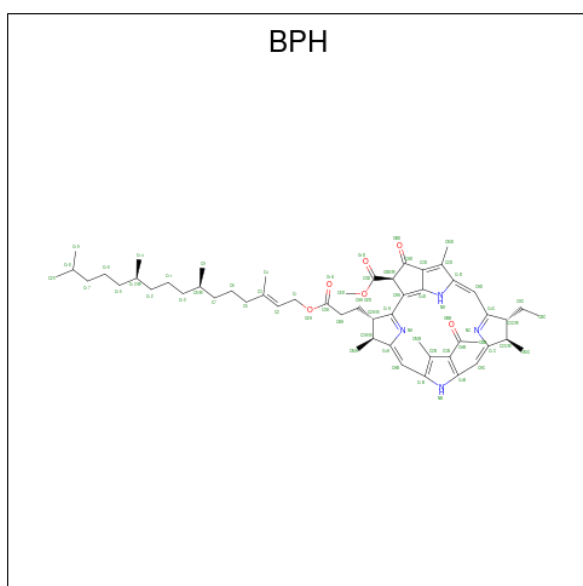
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	237	Total	C	N	O	S	31	0	0
			1803	1154	307	333	9			

- Molecule 4 is BACTERIOCHLOROPHYLL A (CCD ID: BCL) (formula: $C_{55}H_{74}MgN_4O_6$).



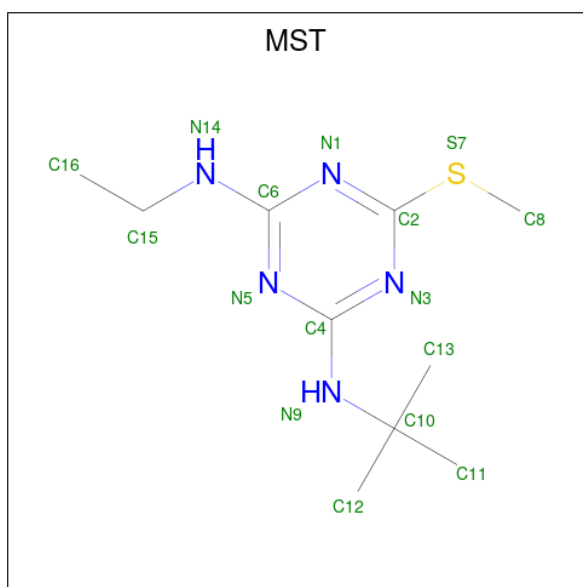
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total 66	C 55	Mg 1	N 4	O 6	0	0
4	A	1	Total 66	C 55	Mg 1	N 4	O 6	0	0
4	B	1	Total 51	C 40	Mg 1	N 4	O 6	0	0
4	B	1	Total 66	C 55	Mg 1	N 4	O 6	0	0

- Molecule 5 is BACTERIOPHEOPHYTIN A (CCD ID: BPH) (formula: $C_{55}H_{76}N_4O_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	N	O	0	0
			65	55	4	6		
5	B	1	Total	C	N	O	0	0
			51	41	4	6		

- Molecule 6 is 2-T-BUTYLAMINO-4-ETHYLAMINO-6-METHYLTHIO-S-TRIAZINE (CCD ID: MST) (formula: $C_{10}H_{19}N_5S$).

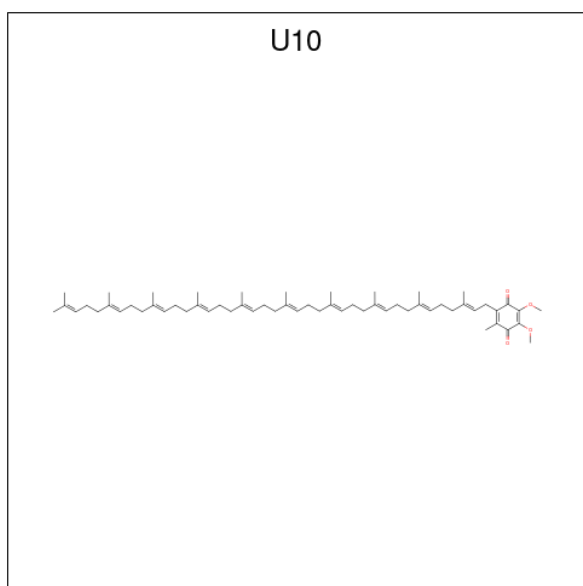


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	N	S	0	0
			16	10	5	1		

- Molecule 7 is FE (II) ION (CCD ID: FE2) (formula: Fe).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	1	Total	Fe	0	0
			1	1		

- Molecule 8 is UBIQUINONE-10 (CCD ID: U10) (formula: C₅₉H₉₀O₄).

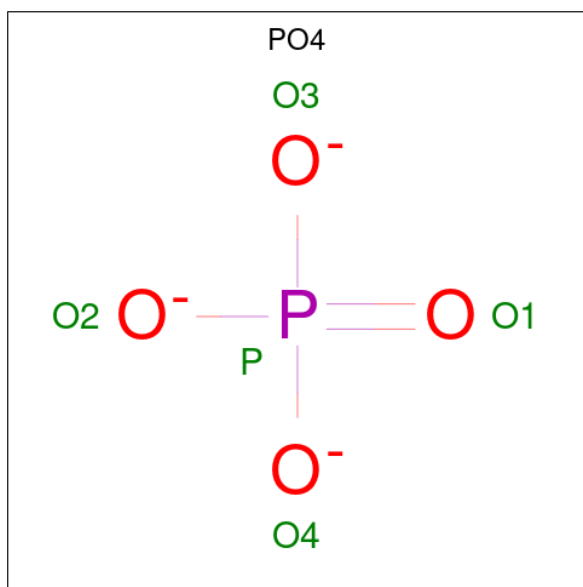


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	B	1	Total	C	O	0	0
			38	34	4		

- Molecule 9 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	B	1	Total	Cl	0	0
			1	1		

- Molecule 10 is PHOSPHATE ION (CCD ID: PO4) (formula: O₄P).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	B	1	Total	O	P	0	0
			5	4	1		
10	B	1	Total	O	P	0	0
			5	4	1		

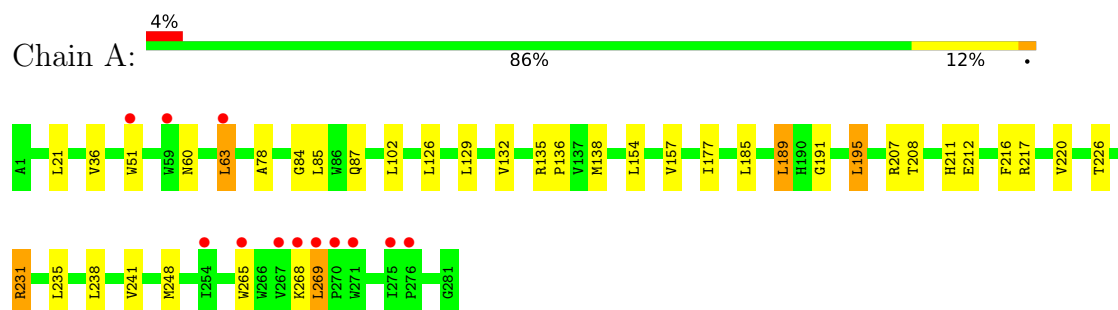
- Molecule 11 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	A	36	Total	O	0	0
			36	36		
11	B	27	Total	O	0	0
			27	27		
11	C	31	Total	O	0	0
			31	31		

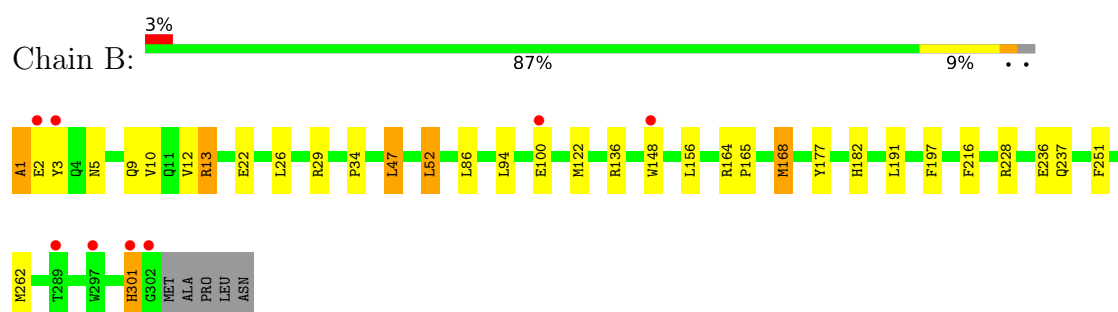
3 Residue-property plots [i](#)

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.

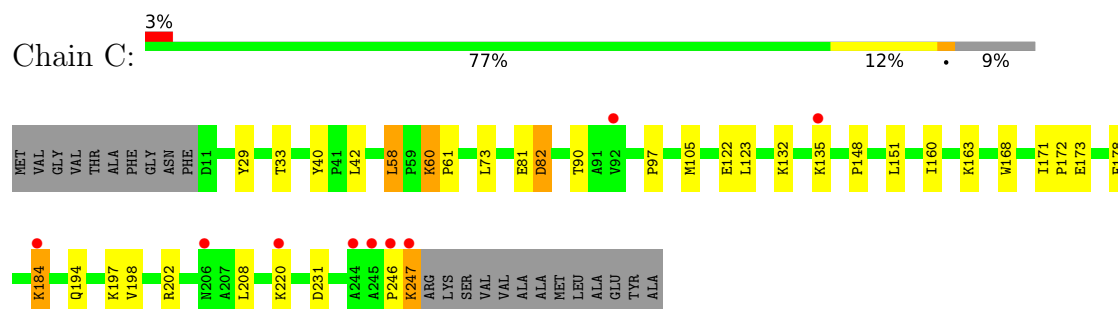
- Molecule 1: Reaction center protein L chain



- Molecule 2: Reaction center protein M chain



- Molecule 3: Reaction center protein H chain



4 Data and refinement statistics

Property	Value	Source
Space group	P 42 21 2	Depositor
Cell constants a, b, c, α , β , γ	100.10Å 100.10Å 237.02Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.13 – 2.50 46.13 – 2.50	Depositor EDS
% Data completeness (in resolution range)	96.9 (46.13-2.50) 96.8 (46.13-2.50)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.78 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.1.24	Depositor
R, R_{free}	0.209 , 0.247 0.232 , 0.257	Depositor DCC
R_{free} test set	2079 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	42.0	Xtriage
Anisotropy	0.053	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 26.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	6965	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 2.76% 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: MST, PO4, BCL, U10, FE2, CL, BPH

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	0.72	1/2320 (0.0%)	0.92	1/3175 (0.0%)
2	B	0.79	3/2497 (0.1%)	0.97	6/3410 (0.2%)
3	C	0.95	4/1851 (0.2%)	1.05	5/2520 (0.2%)
All	All	0.82	8/6668 (0.1%)	0.97	12/9105 (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
2	B	0	2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	135	LYS	CB-CG	20.40	2.13	1.52
2	B	13	ARG	CD-NE	19.57	1.73	1.46
3	C	220	LYS	CG-CD	-14.62	1.08	1.52
3	C	197	LYS	CG-CD	10.64	1.84	1.52
2	B	301	HIS	C-N	-6.59	1.24	1.33
1	A	138	MET	SD-CE	5.25	1.92	1.79
3	C	184	LYS	CB-CG	5.24	1.68	1.52
2	B	52	LEU	CB-CG	5.19	1.63	1.53

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	247	LYS	CA-CB-CG	-24.86	64.39	114.10
2	B	1	ALA	O-C-N	-16.02	97.37	123.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	13	ARG	CG-CD-NE	-12.72	84.02	112.00
1	A	268	LYS	CA-CB-CG	11.08	136.26	114.10
2	B	13	ARG	CD-NE-CZ	-10.62	109.53	124.40
3	C	184	LYS	CA-CB-CG	9.74	133.57	114.10
2	B	1	ALA	CA-C-N	7.09	135.08	121.54
2	B	1	ALA	C-N-CA	7.09	135.08	121.54
2	B	52	LEU	CB-CG-CD2	-6.06	92.53	110.70
3	C	197	LYS	CB-CG-CD	-5.88	97.78	111.30
3	C	60	LYS	CB-CG-CD	5.70	124.40	111.30
3	C	82	ASP	N-CA-CB	5.21	118.09	110.58

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	1	ALA	Mainchain
2	B	13	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	2232	0	2187	20	0
2	B	2405	0	2318	17	0
3	C	1803	0	1805	20	0
4	A	132	0	146	10	0
4	B	117	0	115	9	0
5	A	65	0	76	6	0
5	B	51	0	45	6	0
6	A	16	0	19	4	0
7	B	1	0	0	0	0
8	B	38	0	47	2	0
9	B	1	0	0	0	0
10	B	10	0	0	0	0
11	A	36	0	0	0	0
11	B	27	0	0	0	0
11	C	31	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	6965	0	6758	69	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 5.

All (69) 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)
4:B:1302:BCL:HHC	4:B:1302:BCL:HBB3	1.59	0.84
4:A:1282:BCL:NC	4:B:1303:BCL:HBB3	1.98	0.78
1:A:189:LEU:HD13	5:B:1304:BPH:HMD2	1.76	0.66
4:B:1302:BCL:HHC	4:B:1302:BCL:CBB	2.25	0.66
4:A:1283:BCL:HBB3	5:A:1284:BPH:H141	1.79	0.65
2:B:9:GLN:HE22	3:C:198:VAL:H	1.43	0.64
2:B:236:GLU:HG3	3:C:122:GLU:CD	2.23	0.64
2:B:228:ARG:HA	3:C:194:GLN:HG2	1.85	0.59
5:A:1284:BPH:HMB1	5:A:1284:BPH:HBB3	1.84	0.59
2:B:136:ARG:NE	2:B:136:ARG:HA	2.18	0.58
2:B:228:ARG:HA	3:C:194:GLN:CG	2.33	0.58
1:A:177:ILE:HG12	4:A:1282:BCL:HMB2	1.86	0.57
3:C:148:PRO:HA	3:C:151:LEU:HD12	1.86	0.57
4:A:1282:BCL:C1C	4:B:1303:BCL:HBB3	2.34	0.57
4:B:1303:BCL:CBB	4:B:1303:BCL:HHC	2.35	0.56
4:B:1303:BCL:HHC	4:B:1303:BCL:HBB2	1.87	0.56
5:B:1304:BPH:HMB1	5:B:1304:BPH:HBB3	1.87	0.56
4:A:1282:BCL:H192	8:B:1306:U10:H252	1.87	0.56
2:B:168:MET:HA	2:B:168:MET:HE2	1.88	0.55
3:C:40:TYR:HB3	3:C:58:LEU:HD21	1.90	0.54
6:A:1285:MST:N3	6:A:1285:MST:H121	2.23	0.54
2:B:9:GLN:NE2	3:C:198:VAL:H	2.06	0.53
6:A:1285:MST:H121	6:A:1285:MST:H81	1.91	0.53
1:A:84:GLY:HA2	1:A:87:GLN:HE21	1.73	0.52
3:C:171:ILE:HB	3:C:172:PRO:HD3	1.92	0.51
1:A:78:ALA:H	1:A:87:GLN:HE22	1.58	0.50
8:B:1306:U10:C3M	8:B:1306:U10:H4M2	2.43	0.49
1:A:189:LEU:CD1	5:B:1304:BPH:HMD2	2.41	0.48
1:A:226:THR:HG23	3:C:173:GLU:OE2	2.12	0.48
1:A:208:THR:H	1:A:211:HIS:CD2	2.32	0.48
1:A:216:PHE:CE2	6:A:1285:MST:H132	2.49	0.48
5:B:1304:BPH:HBB3	5:B:1304:BPH:CMB	2.45	0.47
1:A:135:ARG:HB3	1:A:136:PRO:HD3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1282:BCL:OBB	4:A:1282:BCL:HHC	2.15	0.47
5:A:1284:BPH:HBB3	5:A:1284:BPH:CMB	2.44	0.47
3:C:40:TYR:CE2	3:C:42:LEU:HD21	2.50	0.46
2:B:122:MET:HE2	2:B:177:TYR:OH	2.15	0.46
3:C:168:TRP:HB2	3:C:178:PHE:HB2	1.97	0.46
4:A:1283:BCL:HBA1	4:A:1283:BCL:C4A	2.46	0.45
1:A:185:LEU:HD13	5:B:1304:BPH:ND	2.32	0.45
1:A:208:THR:H	1:A:211:HIS:HD2	1.64	0.45
1:A:157:VAL:HG11	4:B:1303:BCL:HBB1	1.98	0.44
5:B:1304:BPH:ND	5:B:1304:BPH:NC	2.65	0.44
1:A:231:ARG:HD2	2:B:5:ASN:O	2.17	0.44
2:B:251:PHE:CD2	2:B:251:PHE:C	2.94	0.44
1:A:265:TRP:O	1:A:269:LEU:HD13	2.18	0.44
1:A:241:VAL:HG21	5:A:1284:BPH:HBC3	2.00	0.44
2:B:237:GLN:HB2	2:B:262:MET:HG2	1.99	0.44
1:A:191:GLY:O	1:A:195:LEU:HB2	2.18	0.43
3:C:90:THR:O	3:C:90:THR:HG22	2.18	0.43
2:B:34:PRO:O	2:B:47:LEU:HB2	2.19	0.43
2:B:197:PHE:CZ	4:B:1303:BCL:HBB2	2.53	0.43
4:A:1282:BCL:H52	5:A:1284:BPH:HBB2	2.01	0.43
1:A:212:GLU:HB3	6:A:1285:MST:H161	2.01	0.43
2:B:236:GLU:HG3	3:C:122:GLU:CG	2.49	0.42
2:B:9:GLN:HE22	3:C:198:VAL:N	2.13	0.42
2:B:168:MET:HA	2:B:168:MET:CE	2.49	0.42
4:A:1282:BCL:H2C	4:B:1303:BCL:H2C	2.02	0.41
2:B:164:ARG:HB3	2:B:165:PRO:HD3	2.01	0.41
3:C:60:LYS:HA	3:C:61:PRO:HD3	1.90	0.41
3:C:246:PRO:O	3:C:247:LYS:C	2.62	0.41
3:C:29:TYR:O	3:C:33:THR:HG23	2.20	0.41
3:C:132:LYS:HD2	3:C:171:ILE:HD11	2.01	0.41
3:C:90:THR:HB	3:C:97:PRO:O	2.21	0.41
1:A:154:LEU:HD11	4:A:1283:BCL:HED3	2.04	0.40
5:A:1284:BPH:NC	5:A:1284:BPH:ND	2.69	0.40
1:A:60:ASN:HB3	1:A:63:LEU:HD23	2.03	0.40
1:A:135:ARG:HD2	1:A:248:MET:O	2.22	0.40
3:C:194:GLN:CD	3:C:194:GLN:H	2.29	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	279/281 (99%)	269 (96%)	10 (4%)	0	100	100
2	B	300/307 (98%)	290 (97%)	8 (3%)	2 (1%)	18	34
3	C	235/260 (90%)	228 (97%)	7 (3%)	0	100	100
All	All	814/848 (96%)	787 (97%)	25 (3%)	2 (0%)	43	63

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	2	GLU
2	B	301	HIS

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	220/220 (100%)	202 (92%)	18 (8%)	10	23
2	B	236/240 (98%)	219 (93%)	17 (7%)	13	28
3	C	192/208 (92%)	180 (94%)	12 (6%)	16	34
All	All	648/668 (97%)	601 (93%)	47 (7%)	13	27

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	LEU

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Mol	Chain	Res	Type
1	A	36	VAL
1	A	51	TRP
1	A	63	LEU
1	A	85	LEU
1	A	102	LEU
1	A	126	LEU
1	A	129	LEU
1	A	132	VAL
1	A	189	LEU
1	A	195	LEU
1	A	207	ARG
1	A	217	ARG
1	A	220	VAL
1	A	231	ARG
1	A	235	LEU
1	A	238	LEU
1	A	269	LEU
2	B	3	TYR
2	B	10	VAL
2	B	12	VAL
2	B	22	GLU
2	B	26	LEU
2	B	29	ARG
2	B	47	LEU
2	B	52	LEU
2	B	86	LEU
2	B	94	LEU
2	B	100	GLU
2	B	148	TRP
2	B	156	LEU
2	B	168	MET
2	B	182	HIS
2	B	191	LEU
2	B	216	PHE
3	C	58	LEU
3	C	73	LEU
3	C	81	GLU
3	C	82	ASP
3	C	105	MET
3	C	123	LEU
3	C	160	ILE
3	C	163	LYS

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Mol	Chain	Res	Type
3	C	184	LYS
3	C	202	ARG
3	C	208	LEU
3	C	231	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	87	GLN
1	A	211	HIS
2	B	9	GLN
2	B	195	ASN
2	B	301	HIS
3	C	204	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 2 are monoatomic - leaving 10 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
4	BCL	A	1283	1	69,74,74	2.00	9 (13%)	79,115,115	2.10	23 (29%)
4	BCL	B	1302	2	54,59,74	1.73	11 (20%)	61,97,115	2.19	20 (32%)
6	MST	A	1285	-	16,16,16	2.68	3 (18%)	22,22,22	3.21	8 (36%)
5	BPH	A	1284	-	59,70,70	1.71	8 (13%)	59,101,101	2.51	17 (28%)
5	BPH	B	1304	-	45,56,70	1.97	8 (17%)	41,84,101	3.08	14 (34%)
10	PO4	B	1308	-	4,4,4	1.87	3 (75%)	6,6,6	1.03	0
4	BCL	B	1303	2	69,74,74	1.76	8 (11%)	79,115,115	1.98	18 (22%)
8	U10	B	1306	-	38,38,63	2.67	12 (31%)	48,49,79	1.34	7 (14%)
4	BCL	A	1282	1	69,74,74	1.68	9 (13%)	79,115,115	1.90	19 (24%)
10	PO4	B	1309	-	4,4,4	1.13	0	6,6,6	0.59	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
4	BCL	A	1283	1	-	6/41/137/137	-
4	BCL	B	1302	2	-	4/23/119/137	-
6	MST	A	1285	-	-	6/10/10/10	0/1/1/1
5	BPH	A	1284	-	-	6/37/105/105	0/5/6/6
5	BPH	B	1304	-	-	5/21/89/105	0/5/6/6
4	BCL	B	1303	2	-	9/41/137/137	-
8	U10	B	1306	-	-	4/33/57/87	0/1/1/1
4	BCL	A	1282	1	-	5/41/137/137	-

All (71) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	1283	BCL	MG-NC	-10.33	1.81	2.06
6	A	1285	MST	C2-S7	-9.76	1.67	1.75
4	B	1303	BCL	MG-NC	-8.42	1.86	2.06
4	A	1282	BCL	MG-NA	-6.51	1.90	2.06
8	B	1306	U10	C18-C19	6.29	1.47	1.33
8	B	1306	U10	C8-C9	6.12	1.47	1.33
8	B	1306	U10	C23-C24	6.07	1.47	1.33
8	B	1306	U10	C13-C14	6.02	1.46	1.33
5	A	1284	BPH	OBD-CAD	5.86	1.30	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	1304	BPH	OBD-CAD	5.72	1.29	1.22
5	A	1284	BPH	C3D-C4D	-5.51	1.33	1.41
5	B	1304	BPH	C4D-CHA	5.43	1.47	1.39
8	B	1306	U10	C28-C29	5.28	1.48	1.32
5	B	1304	BPH	O2D-CGD	5.27	1.46	1.33
4	A	1283	BCL	C3D-C4D	-5.19	1.32	1.44
4	A	1282	BCL	O2D-CGD	5.04	1.45	1.33
4	A	1282	BCL	C3D-C4D	-4.98	1.33	1.44
4	A	1283	BCL	O2D-CGD	4.97	1.45	1.33
8	B	1306	U10	O3-C3	-4.95	1.24	1.36
5	B	1304	BPH	C3D-C4D	-4.78	1.34	1.41
8	B	1306	U10	O4-C4	-4.76	1.25	1.36
4	A	1283	BCL	O2A-CGA	4.73	1.47	1.33
4	B	1302	BCL	C3D-C4D	-4.70	1.33	1.44
5	A	1284	BPH	O2D-CGD	4.68	1.44	1.33
4	B	1303	BCL	O2D-CGD	4.57	1.44	1.33
5	A	1284	BPH	C4D-CHA	4.55	1.46	1.39
4	B	1302	BCL	O2A-CGA	4.46	1.46	1.33
4	B	1302	BCL	O2D-CGD	4.38	1.44	1.33
4	B	1303	BCL	O2A-CGA	4.38	1.46	1.33
4	B	1303	BCL	C3D-C4D	-4.29	1.34	1.44
4	B	1302	BCL	MG-NB	-4.23	1.97	2.05
4	B	1302	BCL	MG-NC	-4.12	1.96	2.06
5	B	1304	BPH	O2A-CGA	4.12	1.45	1.33
4	A	1282	BCL	C3C-C4C	-4.10	1.46	1.51
4	A	1283	BCL	MG-ND	-4.09	1.97	2.05
4	A	1282	BCL	O2A-CGA	4.05	1.45	1.33
5	A	1284	BPH	O2A-CGA	3.89	1.44	1.33
5	A	1284	BPH	C3A-C2A	-3.84	1.51	1.54
4	B	1303	BCL	MG-NB	3.81	2.13	2.05
4	A	1283	BCL	C3C-C4C	-3.79	1.46	1.51
4	A	1283	BCL	OBD-CAD	3.66	1.28	1.22
4	B	1303	BCL	C3C-C4C	-3.63	1.47	1.51
5	B	1304	BPH	C3A-C2A	-3.37	1.51	1.54
4	B	1303	BCL	OBD-CAD	3.35	1.28	1.22
4	B	1302	BCL	OBD-CAD	3.27	1.28	1.22
8	B	1306	U10	C6-C1	3.10	1.40	1.35
8	B	1306	U10	C3-C2	-3.02	1.40	1.48
6	A	1285	MST	C10-N9	2.93	1.53	1.48
4	A	1282	BCL	C4D-CHA	2.82	1.48	1.38
8	B	1306	U10	C4-C5	-2.80	1.40	1.48
4	B	1303	BCL	C4D-CHA	2.76	1.47	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1302	BCL	C3C-C4C	-2.76	1.48	1.51
5	B	1304	BPH	C2C-C3C	-2.74	1.52	1.54
4	A	1282	BCL	OBD-CAD	2.67	1.27	1.22
4	A	1282	BCL	MG-ND	2.56	2.10	2.05
4	B	1302	BCL	C4D-CHA	2.45	1.46	1.38
4	A	1282	BCL	C2A-C1A	-2.44	1.46	1.52
4	B	1302	BCL	C2A-C1A	-2.41	1.46	1.52
8	B	1306	U10	C1-C2	-2.37	1.39	1.47
4	B	1302	BCL	C1D-C2D	-2.31	1.40	1.45
4	A	1283	BCL	C2A-C1A	-2.31	1.47	1.52
10	B	1308	PO4	P-O3	-2.27	1.48	1.54
4	A	1283	BCL	C1D-C2D	-2.23	1.40	1.45
5	A	1284	BPH	CHA-CBD	-2.15	1.49	1.51
10	B	1308	PO4	P-O2	-2.14	1.48	1.54
5	B	1304	BPH	CBD-CGD	-2.12	1.49	1.52
4	B	1302	BCL	MG-ND	-2.10	2.01	2.05
8	B	1306	U10	C6-C5	-2.09	1.40	1.46
5	A	1284	BPH	C2C-C3C	-2.03	1.53	1.54
10	B	1308	PO4	P-O4	-2.03	1.48	1.54
6	A	1285	MST	C4-N9	2.00	1.37	1.34

All (126) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	1285	MST	C2-N3-C4	10.66	120.79	113.42
5	B	1304	BPH	O2D-CGD-CBD	8.99	120.83	110.95
5	B	1304	BPH	C2D-C1D-ND	8.21	115.37	109.43
5	A	1284	BPH	C4D-ND-C1D	-8.16	99.10	108.87
5	A	1284	BPH	C2D-C1D-ND	8.11	115.29	109.43
5	B	1304	BPH	C4D-ND-C1D	-8.07	99.20	108.87
4	B	1302	BCL	C1C-NC-C4C	-7.71	103.16	106.68
4	B	1303	BCL	C1C-NC-C4C	-7.50	103.26	106.68
4	A	1283	BCL	C1D-ND-C4D	-7.42	101.11	106.31
5	A	1284	BPH	O2D-CGD-CBD	7.35	119.02	110.95
4	B	1302	BCL	C1D-ND-C4D	-6.88	101.48	106.31
4	A	1283	BCL	C1C-NC-C4C	-6.78	103.58	106.68
5	B	1304	BPH	C2B-C1B-NB	6.21	113.92	109.43
4	B	1303	BCL	C1D-ND-C4D	-6.14	102.00	106.31
6	A	1285	MST	N5-C4-N3	-6.04	116.36	126.26
5	A	1284	BPH	C3D-C4D-ND	5.58	114.86	107.71
4	A	1283	BCL	C4A-NA-C1A	-5.58	104.13	106.68
4	A	1282	BCL	C4A-NA-C1A	-5.55	104.14	106.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1282	BCL	C1C-NC-C4C	-5.48	104.18	106.68
5	B	1304	BPH	C3D-C4D-ND	5.18	114.35	107.71
5	A	1284	BPH	C2B-C1B-NB	5.08	113.10	109.43
4	A	1282	BCL	C1D-ND-C4D	-4.61	103.08	106.31
4	B	1302	BCL	C4A-NA-C1A	-4.59	104.58	106.68
6	A	1285	MST	C6-N5-C4	4.39	121.71	113.85
5	B	1304	BPH	C1B-NB-C4B	-4.31	102.54	108.82
4	B	1303	BCL	CHC-C1C-NC	4.29	130.59	124.40
4	A	1283	BCL	C2C-C3C-C4C	4.26	107.72	101.34
4	A	1282	BCL	CMB-C2B-C1B	-4.15	119.11	125.42
5	B	1304	BPH	O1D-CGD-CBD	-4.13	118.46	124.72
4	B	1303	BCL	O2D-CGD-CBD	4.00	118.22	111.23
5	A	1284	BPH	C1B-NB-C4B	-3.98	103.01	108.82
4	A	1283	BCL	C3D-C4D-ND	3.91	116.34	109.99
6	A	1285	MST	C2-N1-C6	3.85	116.08	113.42
4	A	1283	BCL	O2D-CGD-CBD	3.77	117.83	111.23
4	B	1303	BCL	O2D-CGD-O1D	-3.76	116.53	123.85
4	A	1282	BCL	CAC-C3C-C4C	-3.74	104.29	112.58
4	B	1302	BCL	O2D-CGD-CBD	3.67	117.65	111.23
4	B	1302	BCL	C3D-C4D-ND	3.65	115.92	109.99
4	B	1303	BCL	C3D-C4D-ND	3.57	115.79	109.99
4	B	1302	BCL	C1-O2A-CGA	3.54	125.23	116.65
4	A	1283	BCL	CMB-C2B-C1B	-3.42	120.22	125.42
4	B	1302	BCL	CMB-C2B-C1B	-3.39	120.26	125.42
5	B	1304	BPH	CED-O2D-CGD	3.36	123.53	115.92
4	A	1282	BCL	C2A-C3A-C4A	3.33	107.25	101.87
8	B	1306	U10	C25-C24-C26	3.31	120.98	115.23
4	B	1303	BCL	CED-O2D-CGD	3.30	123.39	115.92
6	A	1285	MST	N5-C6-N1	-3.25	120.93	126.26
5	A	1284	BPH	C4D-CHA-CBD	3.24	110.01	108.45
5	A	1284	BPH	O2D-CGD-O1D	-3.23	117.57	123.85
4	B	1303	BCL	C1D-CHD-C4C	-3.14	119.04	126.62
4	B	1303	BCL	C4A-NA-C1A	-3.14	105.25	106.68
4	A	1283	BCL	C2A-C3A-C4A	3.13	106.93	101.87
4	A	1283	BCL	C4D-CHA-C1A	-3.13	117.51	121.24
5	A	1284	BPH	C3B-C4B-NB	3.11	112.58	108.05
4	A	1282	BCL	CED-O2D-CGD	3.04	122.82	115.92
6	A	1285	MST	N14-C6-N5	3.03	122.39	117.16
4	B	1303	BCL	O2A-CGA-CBA	3.03	121.07	111.83
4	B	1302	BCL	C4D-C3D-CAD	3.02	111.39	108.11
4	B	1302	BCL	O2A-CGA-CBA	2.99	120.97	111.83
5	B	1304	BPH	C3B-C4B-NB	2.99	112.40	108.05

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1283	BCL	C4D-C3D-CAD	2.98	111.34	108.11
5	A	1284	BPH	CMA-C3A-C4A	-2.97	108.21	114.61
4	A	1282	BCL	C2C-C3C-C4C	2.94	105.75	101.34
4	A	1282	BCL	CHA-C1A-NA	-2.94	119.73	126.39
5	B	1304	BPH	CMA-C3A-C4A	-2.92	108.31	114.61
4	B	1303	BCL	C3C-C2C-C1C	2.91	106.56	101.87
4	A	1282	BCL	CHD-C1D-ND	-2.90	120.72	124.80
4	A	1283	BCL	CAA-C2A-C3A	-2.89	105.18	113.00
4	A	1282	BCL	CAA-C2A-C3A	-2.86	105.26	113.00
5	A	1284	BPH	C4C-C3C-C2C	-2.85	100.12	102.84
4	B	1303	BCL	CHD-C1D-ND	-2.82	120.84	124.80
4	A	1282	BCL	CMB-C2B-C3B	2.77	134.42	125.67
4	A	1283	BCL	CHA-C1A-NA	-2.73	120.20	126.39
4	A	1282	BCL	C3D-C4D-ND	2.73	114.42	109.99
4	B	1303	BCL	C4D-C3D-CAD	2.72	111.06	108.11
5	A	1284	BPH	O2A-CGA-CBA	2.67	119.98	111.83
4	A	1282	BCL	C4-C3-C5	2.66	119.85	115.23
4	A	1283	BCL	O1D-CGD-CBD	-2.65	119.28	124.52
5	B	1304	BPH	C1-O2A-CGA	2.65	123.07	116.65
4	B	1303	BCL	CMB-C2B-C1B	-2.64	121.40	125.42
4	A	1282	BCL	O2A-CGA-CBA	2.62	119.81	111.83
8	B	1306	U10	C7-C6-C1	-2.61	120.42	124.89
4	B	1303	BCL	C2A-C3A-C4A	2.60	106.07	101.87
8	B	1306	U10	C17-C18-C19	-2.60	121.68	127.62
4	B	1303	BCL	CHA-C1A-NA	-2.58	120.55	126.39
4	A	1283	BCL	CAA-CBA-CGA	2.55	120.44	113.21
4	B	1302	BCL	C2B-C1B-NB	-2.54	107.69	110.33
4	B	1302	BCL	C1D-CHD-C4C	-2.53	120.52	126.62
5	B	1304	BPH	C1A-C2A-C3A	-2.50	100.46	102.84
4	A	1283	BCL	CAC-C3C-C4C	-2.45	107.14	112.58
5	B	1304	BPH	C4-C3-C5	2.43	118.99	116.13
6	A	1285	MST	N9-C4-N5	2.43	124.58	117.70
5	A	1284	BPH	C1-C2-C3	-2.40	122.26	126.20
4	B	1302	BCL	C4D-CHA-C1A	-2.38	118.40	121.24
4	B	1302	BCL	O2A-CGA-O1A	-2.37	117.70	123.63
4	B	1302	BCL	CHA-C1A-NA	-2.36	121.05	126.39
5	A	1284	BPH	C7-C6-C5	-2.36	106.98	113.26
5	A	1284	BPH	C1A-C2A-C3A	-2.33	100.62	102.84
4	A	1282	BCL	C20-C18-C19	2.32	120.90	110.53
4	B	1302	BCL	C2A-C3A-C4A	2.32	105.62	101.87
5	A	1284	BPH	O2A-CGA-O1A	-2.28	117.93	123.63
4	A	1283	BCL	C1D-CHD-C4C	-2.24	121.23	126.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1283	BCL	CHD-C1D-ND	-2.22	121.67	124.80
4	B	1302	BCL	O2D-CGD-O1D	-2.19	119.58	123.85
4	A	1283	BCL	CHB-C4A-NA	2.19	127.56	124.40
8	B	1306	U10	C31-C29-C30	2.19	119.62	114.59
4	B	1302	BCL	CAA-C2A-C3A	-2.17	107.13	113.00
4	B	1303	BCL	CGD-CBD-CAD	-2.16	103.85	110.85
4	A	1283	BCL	O2A-CGA-O1A	-2.16	118.24	123.63
6	A	1285	MST	C8-S7-C2	-2.12	100.66	102.25
4	A	1283	BCL	CMB-C2B-C3B	2.11	132.34	125.67
4	A	1282	BCL	C3B-C4B-NB	-2.10	106.98	109.76
4	B	1303	BCL	C2B-C1B-NB	-2.10	108.15	110.33
4	B	1302	BCL	C2C-C3C-C4C	2.09	104.47	101.34
4	B	1302	BCL	CHC-C4B-NB	2.09	127.18	124.05
4	A	1283	BCL	C20-C18-C19	2.08	119.83	110.53
4	B	1302	BCL	C3A-C2A-C1A	2.08	104.45	101.34
4	A	1282	BCL	C1D-CHD-C4C	-2.07	121.62	126.62
4	A	1283	BCL	C1-O2A-CGA	2.07	121.66	116.65
8	B	1306	U10	C22-C23-C24	-2.07	122.89	127.62
4	A	1283	BCL	O2A-CGA-CBA	2.07	118.13	111.83
8	B	1306	U10	C10-C9-C11	2.06	118.81	115.23
8	B	1306	U10	O5-C5-C6	-2.02	117.88	121.79
5	B	1304	BPH	C4C-C3C-C2C	-2.02	100.92	102.84
4	A	1282	BCL	CMD-C2D-C1D	2.02	128.28	124.73
5	A	1284	BPH	C1-O2A-CGA	2.01	121.51	116.65

There are no chirality outliers.

All (45) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	1304	BPH	C4C-C3C-CAC-CBC
5	B	1304	BPH	C2C-C3C-CAC-CBC
6	A	1285	MST	C11-C10-N9-C4
6	A	1285	MST	C12-C10-N9-C4
6	A	1285	MST	N1-C6-N14-C15
6	A	1285	MST	N5-C6-N14-C15
4	B	1303	BCL	C3-C5-C6-C7
4	A	1283	BCL	CBD-CGD-O2D-CED
4	B	1303	BCL	C12-C13-C15-C16
8	B	1306	U10	C27-C28-C29-C30
4	B	1303	BCL	C15-C16-C17-C18
4	A	1283	BCL	O1D-CGD-O2D-CED
4	A	1282	BCL	C16-C17-C18-C20

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Mol	Chain	Res	Type	Atoms
8	B	1306	U10	C27-C28-C29-C31
4	B	1303	BCL	C16-C17-C18-C19
4	B	1303	BCL	C16-C17-C18-C20
4	A	1282	BCL	C2A-CAA-CBA-CGA
4	A	1282	BCL	C15-C16-C17-C18
5	A	1284	BPH	C8-C10-C11-C12
6	A	1285	MST	C13-C10-N9-C4
4	B	1303	BCL	C6-C7-C8-C10
4	B	1303	BCL	C6-C7-C8-C9
5	A	1284	BPH	O2A-C1-C2-C3
6	A	1285	MST	C16-C15-N14-C6
8	B	1306	U10	C5-C6-C7-C8
4	B	1303	BCL	C14-C13-C15-C16
5	B	1304	BPH	C2-C3-C5-C6
5	A	1284	BPH	C4-C3-C5-C6
4	A	1283	BCL	CHA-CBD-CGD-O1D
4	A	1283	BCL	CHA-CBD-CGD-O2D
4	B	1302	BCL	C4B-C3B-CAB-OBB
4	A	1282	BCL	C12-C13-C15-C16
5	B	1304	BPH	C4-C3-C5-C6
5	A	1284	BPH	C2-C3-C5-C6
4	B	1302	BCL	C2B-C3B-CAB-OBB
8	B	1306	U10	C5-C4-O4-C4M
5	A	1284	BPH	CHA-CBD-CGD-O1D
4	A	1283	BCL	C16-C17-C18-C19
4	B	1303	BCL	CAA-CBA-CGA-O2A
4	B	1302	BCL	C2A-CAA-CBA-CGA
4	B	1302	BCL	C4B-C3B-CAB-CBB
4	A	1282	BCL	C14-C13-C15-C16
4	A	1283	BCL	C13-C15-C16-C17
5	A	1284	BPH	CAD-CBD-CGD-O2D
5	B	1304	BPH	CAD-CBD-CGD-O2D

There are no ring outliers.

8 monomers are involved in 31 short contacts:

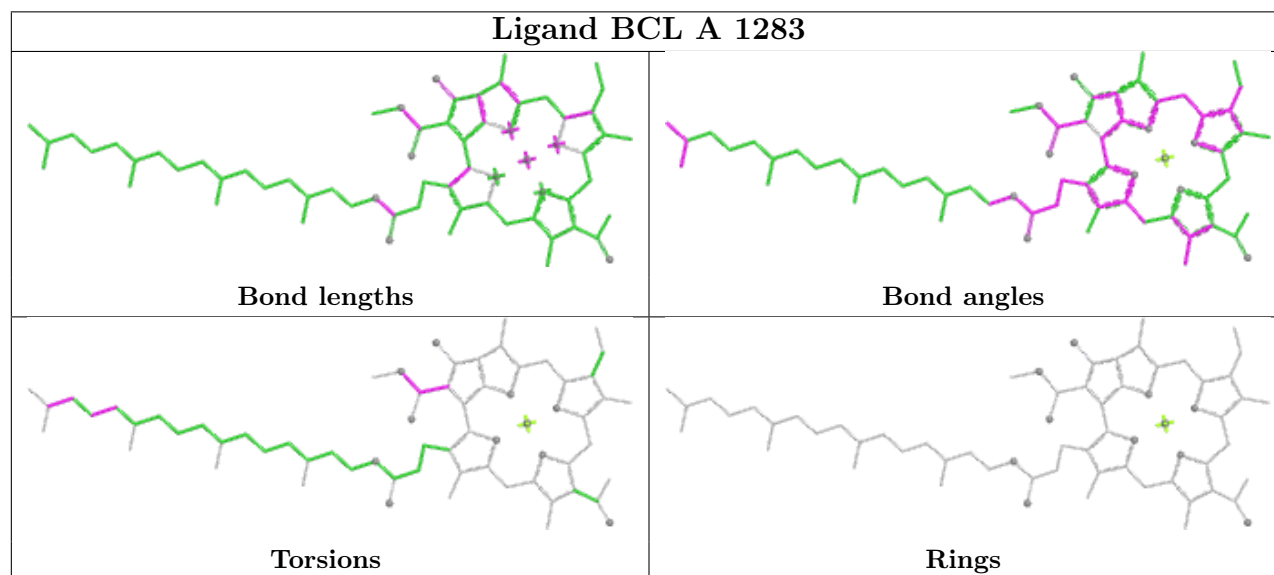
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1283	BCL	3	0
4	B	1302	BCL	2	0
6	A	1285	MST	4	0
5	A	1284	BPH	6	0
5	B	1304	BPH	6	0

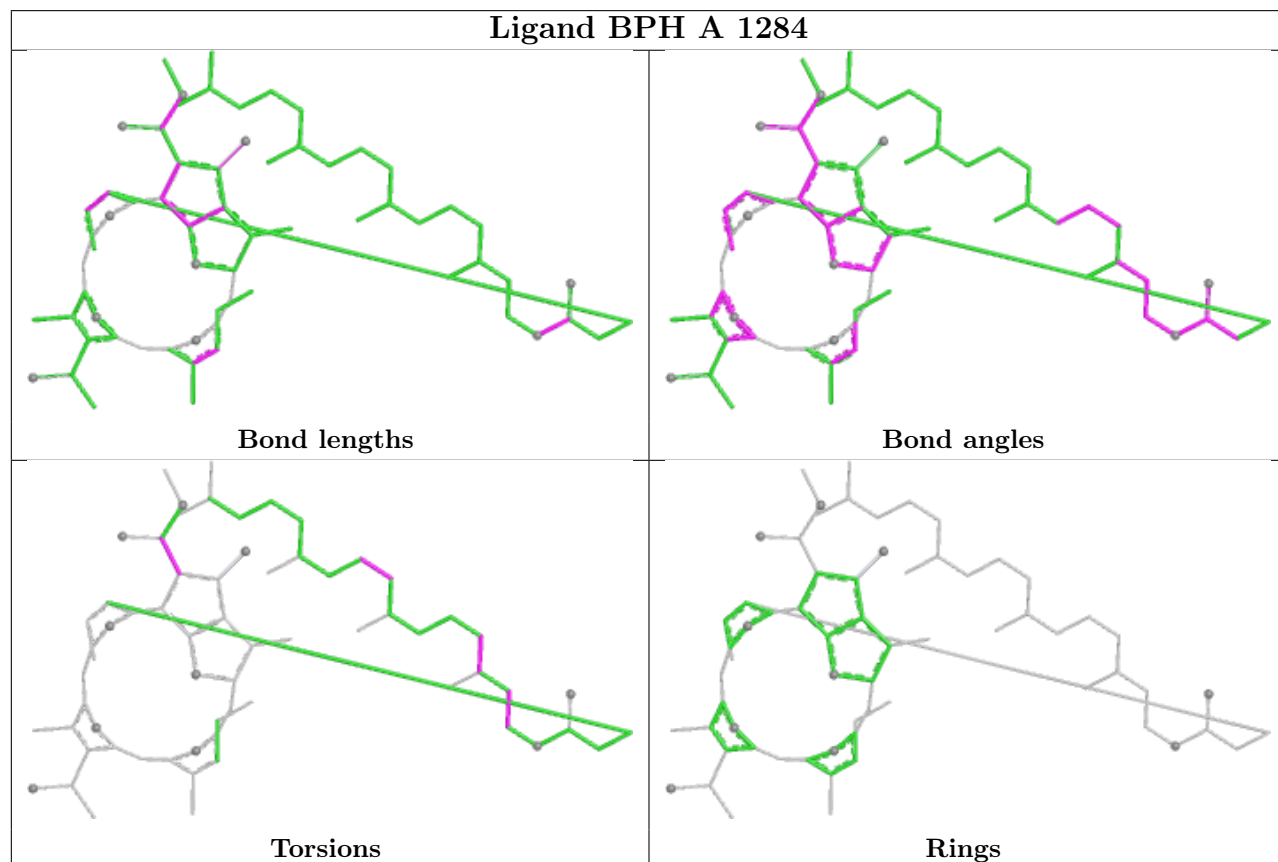
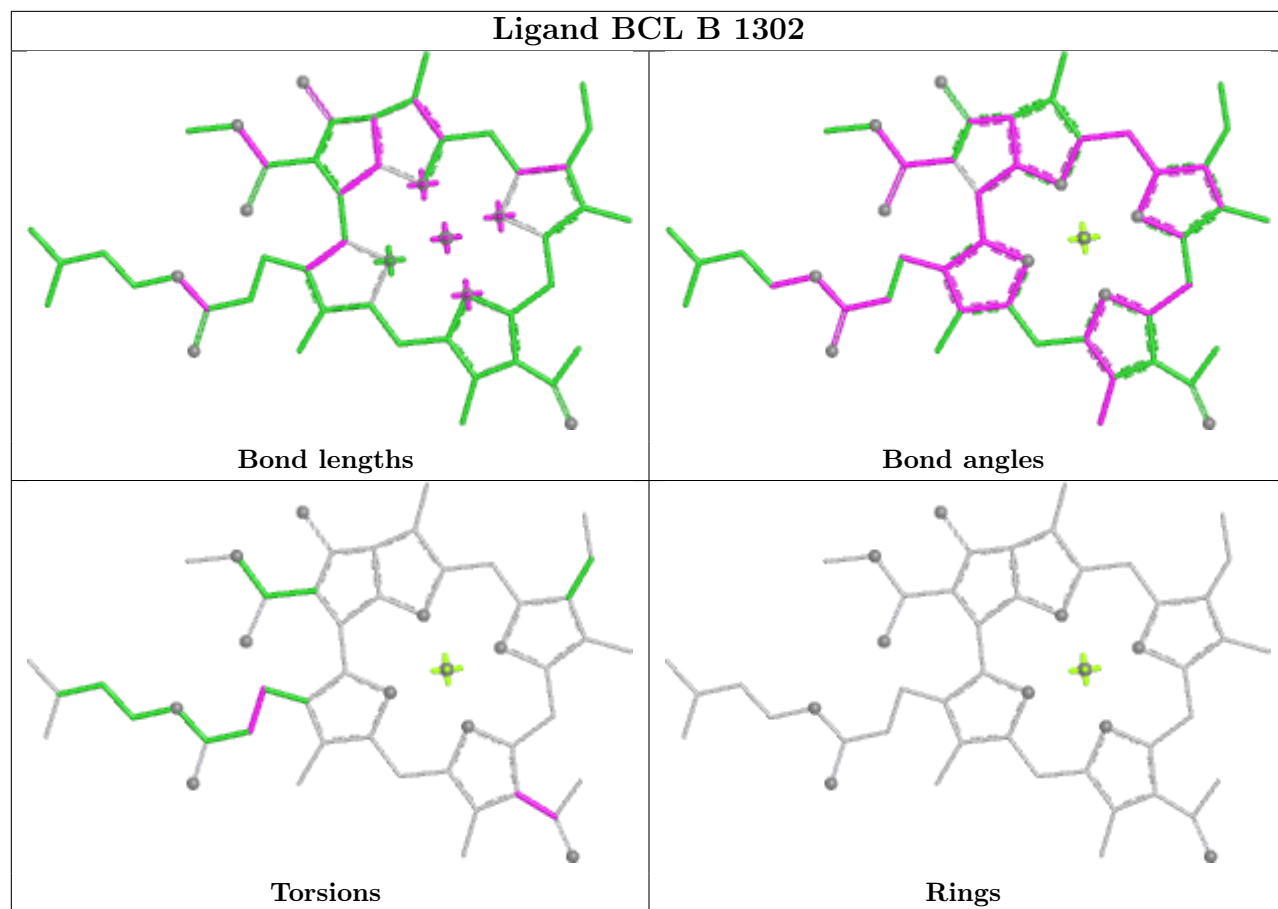
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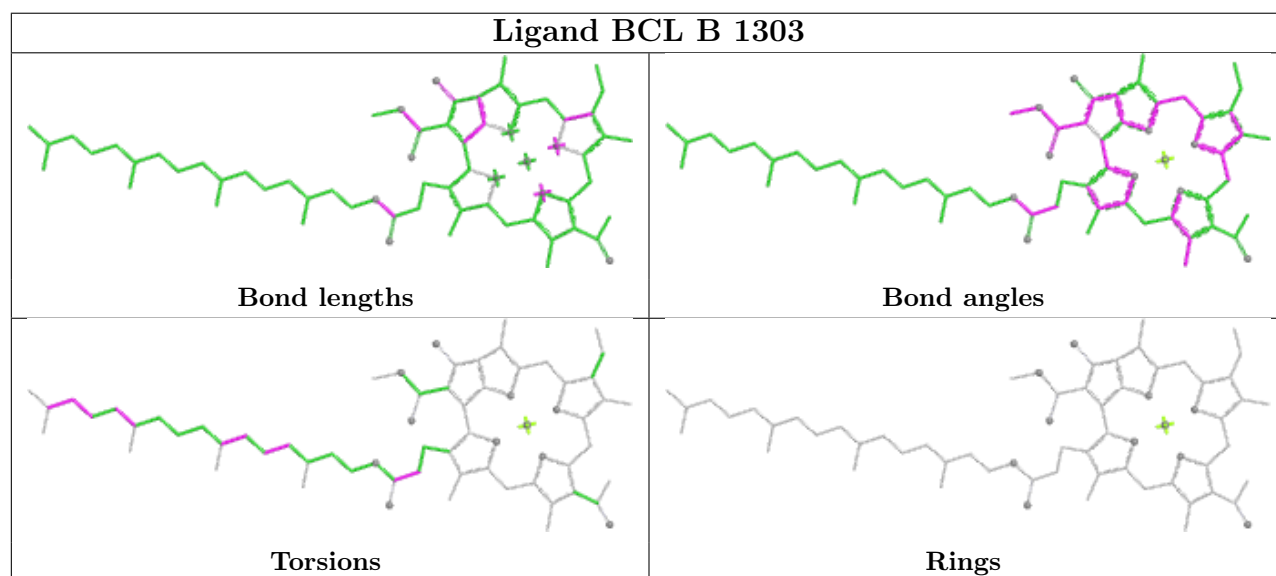
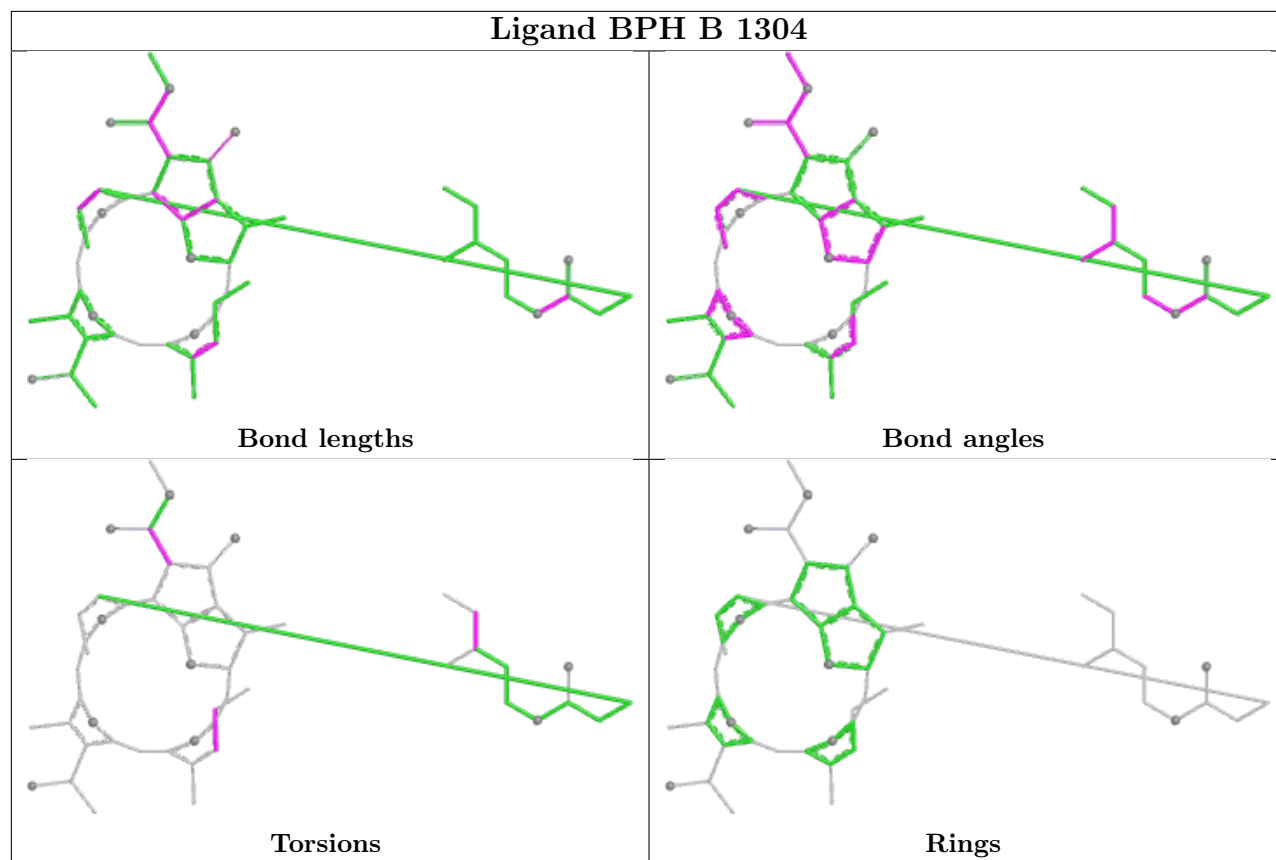
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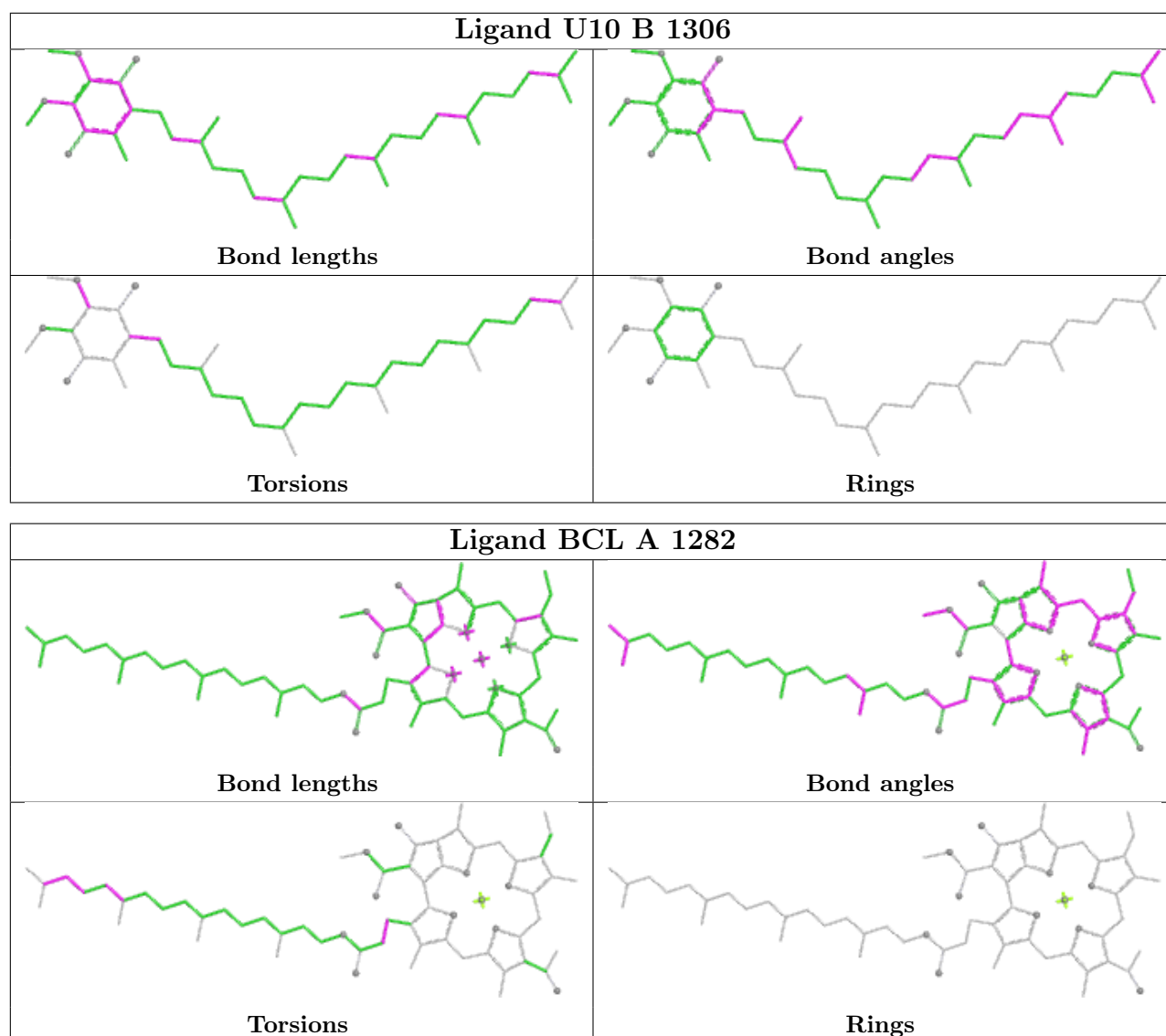
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	1303	BCL	7	0
8	B	1306	U10	2	0
4	A	1282	BCL	7	0

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	281/281 (100%)	0.35	12 (4%) 40 35	19, 27, 54, 58	1 (0%)
2	B	301/307 (98%)	0.28	8 (2%) 56 51	14, 26, 45, 65	4 (1%)
3	C	237/260 (91%)	0.49	9 (3%) 44 39	13, 33, 42, 59	8 (3%)
All	All	819/848 (96%)	0.36	29 (3%) 47 42	13, 29, 46, 65	13 (1%)

All (29) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	301	HIS	5.8
3	C	246	PRO	4.2
1	A	270	PRO	4.1
1	A	267	VAL	4.0
1	A	59	TRP	4.0
1	A	265	TRP	4.0
2	B	3	TYR	4.0
3	C	247	LYS	3.9
2	B	2	GLU	3.9
3	C	245	ALA	3.9
1	A	271	TRP	3.8
3	C	184	LYS	3.7
1	A	269	LEU	3.7
1	A	268	LYS	3.2
1	A	51	TRP	3.2
3	C	244	ALA	3.1
2	B	148	TRP	3.0
1	A	254	ILE	2.8
1	A	63	LEU	2.8
3	C	206	ASN	2.8
2	B	302	GLY	2.5
2	B	297	TRP	2.4
3	C	92	VAL	2.4

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Mol	Chain	Res	Type	RSRZ
3	C	220	LYS	2.4
2	B	100	GLU	2.2
3	C	135	LYS	2.2
1	A	276	PRO	2.1
1	A	275	ILE	2.0
2	B	289	THR	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](#)

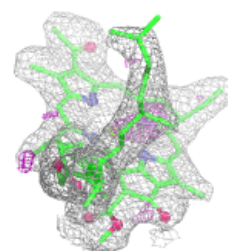
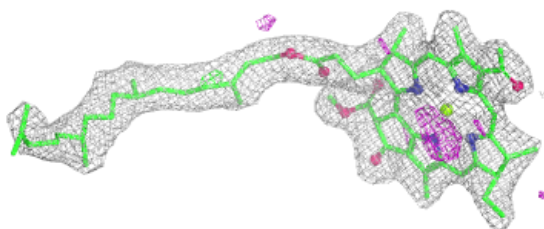
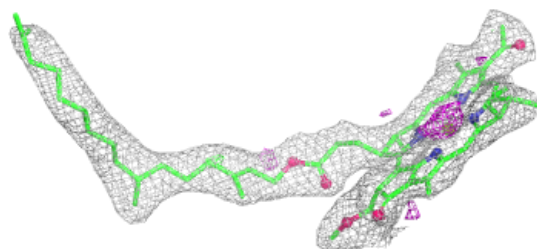
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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
6	MST	A	1285	16/16	0.83	0.22	50,56,60,62	0
4	BCL	A	1282	66/66	0.88	0.15	35,42,50,58	0
4	BCL	B	1303	66/66	0.90	0.15	39,44,56,60	0
8	U10	B	1306	38/63	0.90	0.19	40,46,65,66	0
4	BCL	B	1302	51/66	0.91	0.14	36,41,53,56	0
5	BPH	B	1304	51/65	0.91	0.14	37,43,60,61	0
4	BCL	A	1283	66/66	0.92	0.15	38,41,55,57	0
5	BPH	A	1284	65/65	0.94	0.13	32,37,48,49	0
10	PO4	B	1309	5/5	0.94	0.13	58,58,59,60	0
10	PO4	B	1308	5/5	0.96	0.15	39,44,45,47	0
7	FE2	B	1305	1/1	0.99	0.04	31,31,31,31	0
9	CL	B	1307	1/1	0.99	0.40	49,49,49,49	0

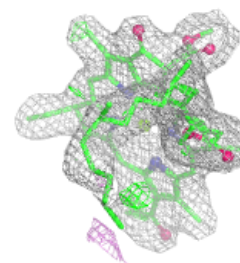
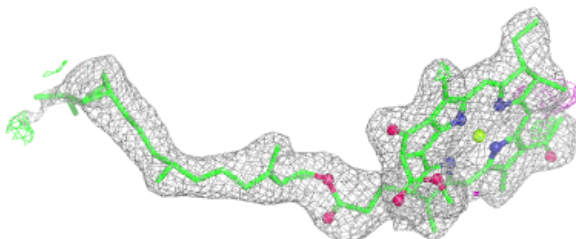
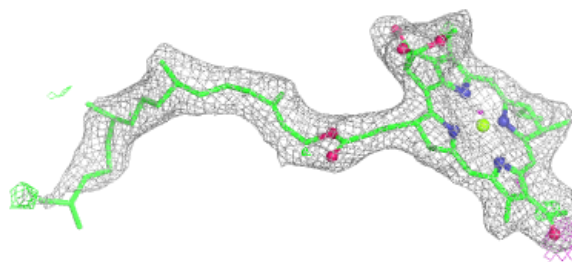
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around BCL A 1282:

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

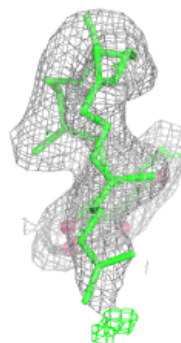
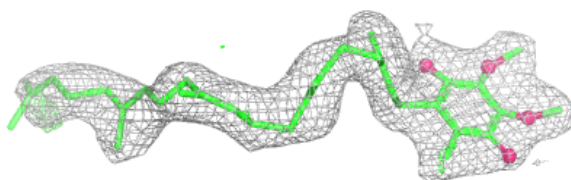
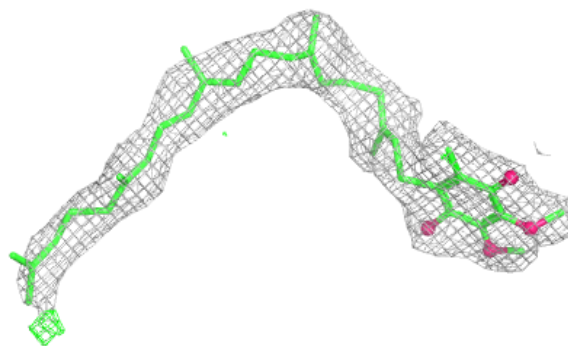
**Electron density around BCL B 1303:**

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



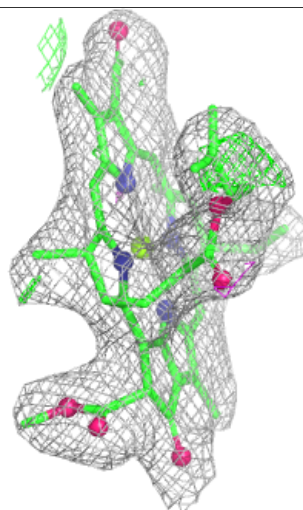
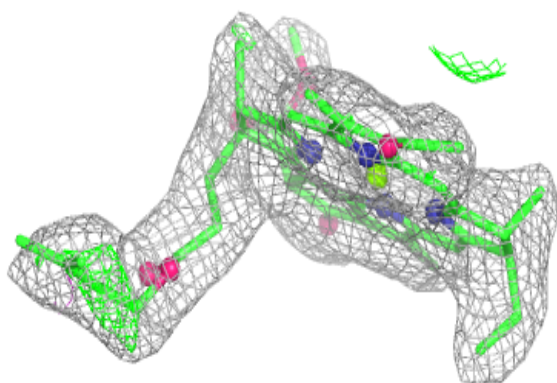
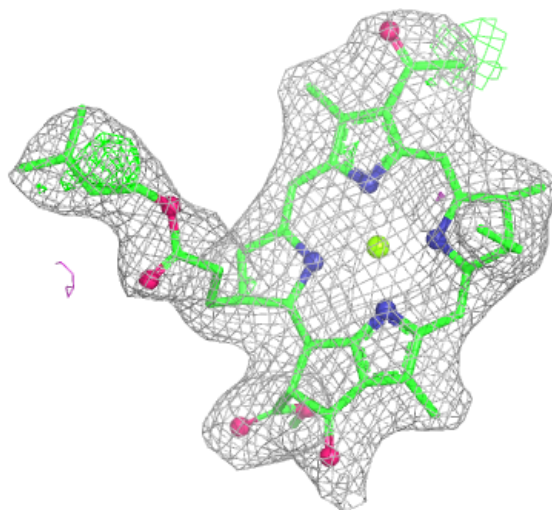
Electron density around U10 B 1306:

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



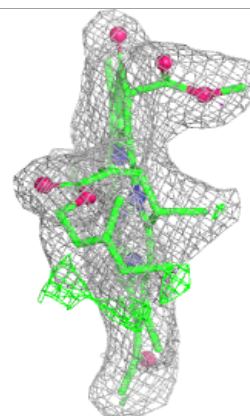
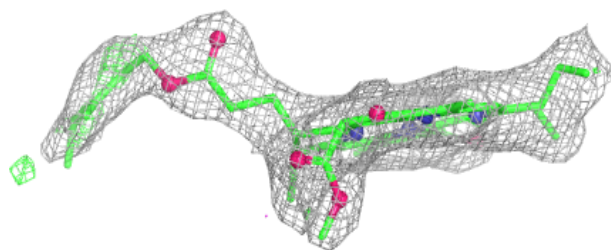
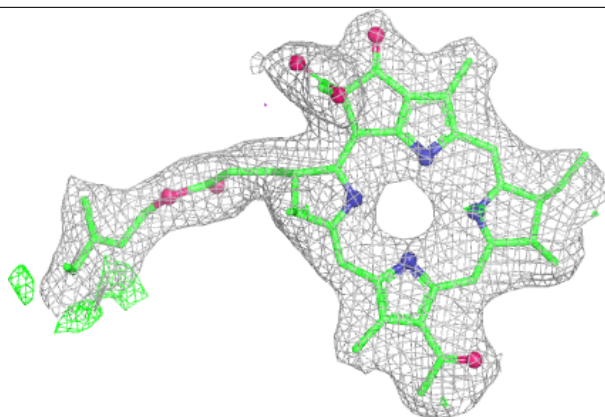
Electron density around BCL B 1302:

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

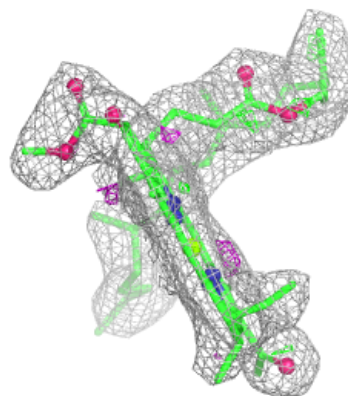
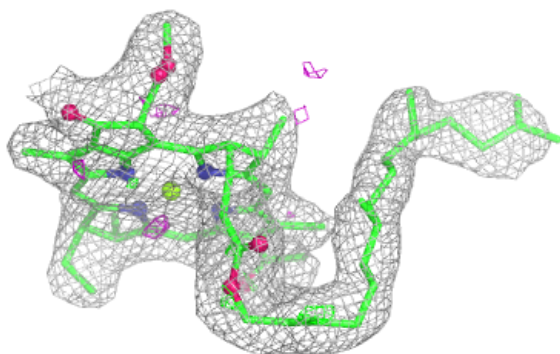
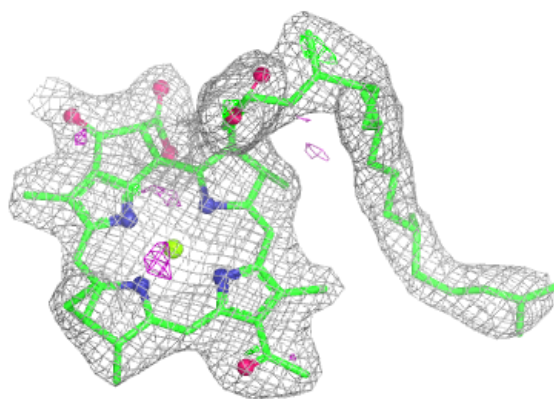


Electron density around BPH B 1304:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

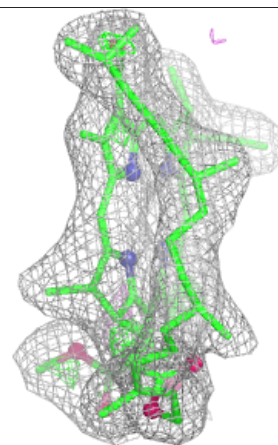
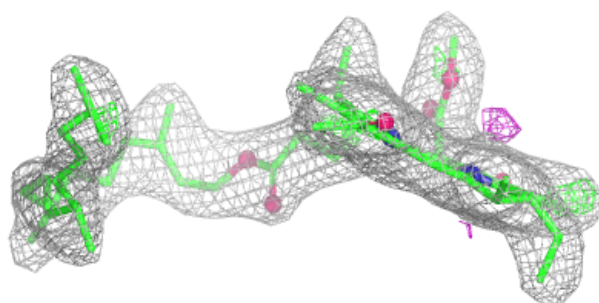
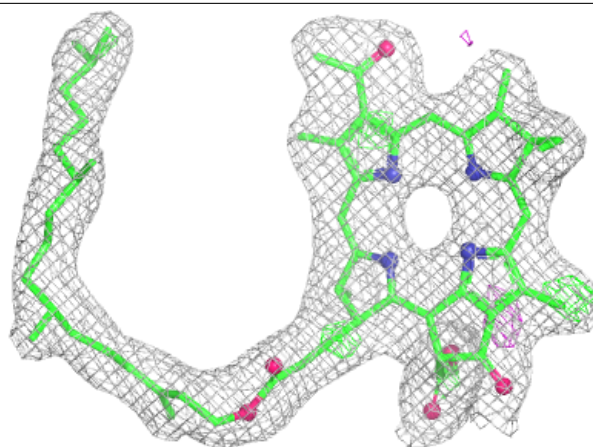
**Electron density around BCL A 1283:**

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



Electron density around BPH A 1284:

$2mF_o-DF_c$ (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.