WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Mar 23, 2024 – 03:44 PM EDT

PDB ID	:	2BB6
Title	:	Structure of Cobalamin-complexed Bovine Transcobalamin in Monoclinic Crystal Form
Authors	:	Wuerges, J.; Garau, G.; Geremia, S.; Fedosov, S.N.; Petersen, T.E.; Randaccio, L.
Deposited on	:	2005-10-17
Resolution	:	2.00 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 (i) 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 (i)) were used in the production of this report:

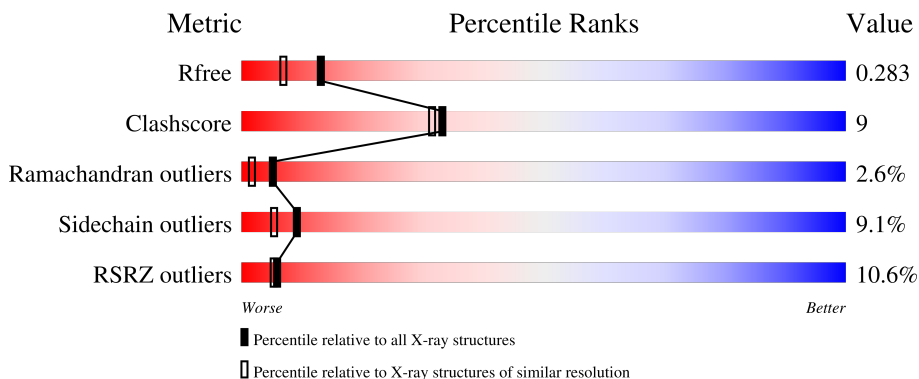|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.1

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 2.00 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	Percentile Ranks	Value
Rfree		0.283
Clashscore		9
Ramachandran outliers		2.6%
Sidechain outliers		9.1%
RSRZ outliers		10.6%

Worse　　　　*Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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 <=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	414	10% / 82% / 14%
1	B	414	10% / 82% / 13%
1	C	414	11% / 82% / 15%
1	D	414	11% / 80% / 16%

2   Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 14148 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.
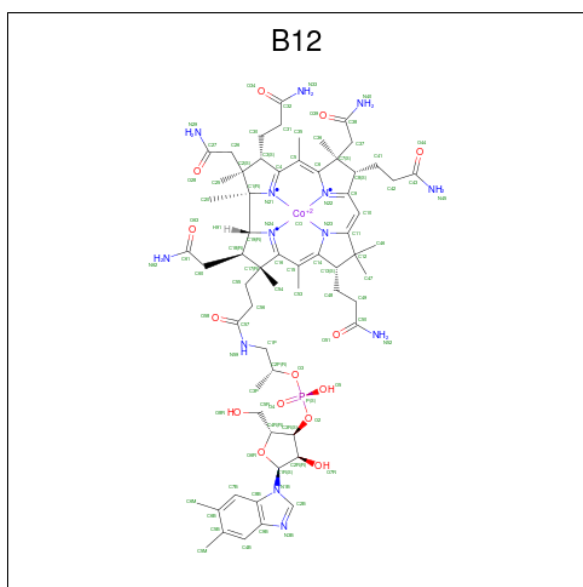
- Molecule 1 is a protein called Transcobalamin II.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	414	Total	C	N	O	S	0	0	0
			3254	2057	587	597	13			
1	B	414	Total	C	N	O	S	0	0	0
			3254	2057	587	597	13			
1	C	414	Total	C	N	O	S	0	0	0
			3254	2057	587	597	13			
1	D	414	Total	C	N	O	S	0	0	0
			3254	2057	587	597	13			

- Molecule 2 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

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

- Molecule 3 is COBALAMIN (three-letter code: B12) (formula: $C_{62}H_{89}CoN_{13}O_{14}P$).

B12

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	Co	N	O	P	0	0
			91	62	1	13	14	1		
3	B	1	Total	C	Co	N	O	P	0	0
			91	62	1	13	14	1		
3	C	1	Total	C	Co	N	O	P	0	0
			91	62	1	13	14	1		
3	D	1	Total	C	Co	N	O	P	0	0
			91	62	1	13	14	1		

- Molecule 4 is water.

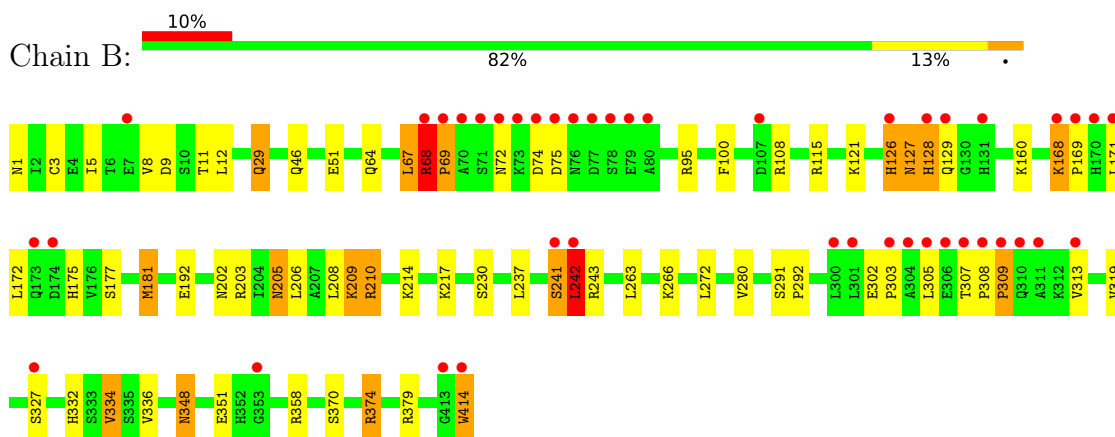| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	181	Total	O	0	0
			181	181		
4	B	204	Total	O	0	0
			204	204		
4	C	198	Total	O	0	0
			198	198		
4	D	181	Total	O	0	0
			181	181		

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.
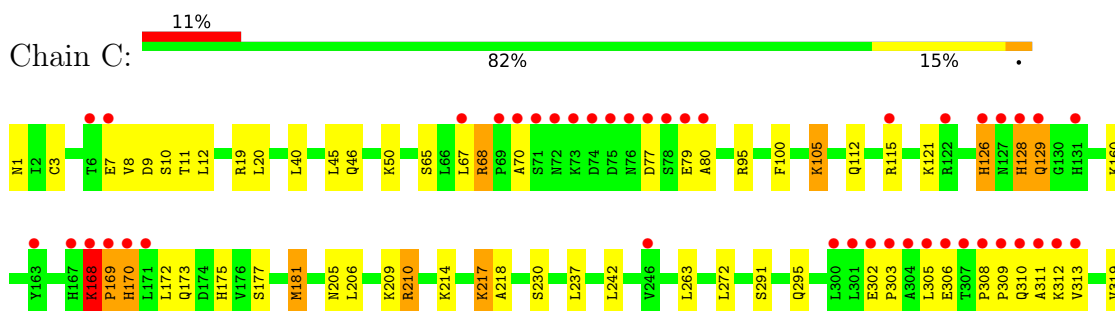
- Molecule 1: Transcobalamin II
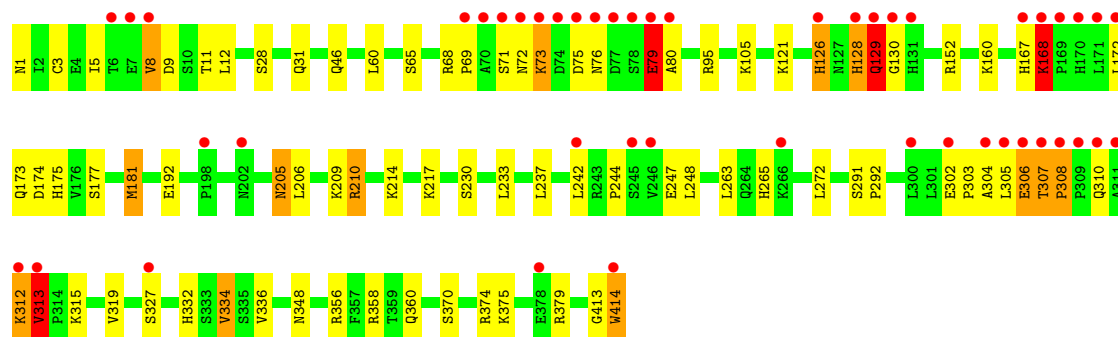
Chain A:

- Molecule 1: Transcobalamin II

Chain B:

- Molecule 1: Transcobalamin II

Chain C:

S327 H332 S333 V334 S335 V336 E351 H352 R358 S370 R374 R379 G413 W414

• Molecule 1: Transcobalamin II

Chain D:

11%

80%

16%

N1 I2 C3 E4 I5 T6 E7 V8 D9 S10 T11 L12 S28 Q31 Q46 L60 S65 R68 P69 A70 S71 N72 K73 D74 D75 N76 D77 S78 E79 A80 R95 K105 K121 H126 N127 H128 Q129 G130 H131 R152 K160 H167 K168 P169 H170 L171 L172

Q173 D174 H175 V176 S177 M181 E192 P198 N202 N205 L206 K209 R210 K214 K217 S230 L233 L237 L242 R243 P244 S245 V246 E247 L248 L263 Q264 H265 K266 L272 S291 P292 L300 L301 E302 P303 A304 L305 E306 T307 P308 P309 Q310 A311

K312 V313 P314 K315 V319 S327 H332 S333 V334 S335 V336 N348 R356 F357 R358 T359 Q360 S370 R374 K375 E378 R379 G413 W414

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	95.83Å 100.66Å 99.14Å 90.00° 97.16° 90.00°	Depositor
Resolution (Å)	18.00 – 2.00 44.81 – 1.95	Depositor EDS
% Data completeness (in resolution range)	96.8 (18.00-2.00) 96.3 (44.81-1.95)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	0.10	Depositor
$< I/\sigma(I) >$ [1]	1.77 (at 1.95Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.241 , 0.280 0.252 , 0.283	Depositor DCC
R_{free} test set	5265 reflections (4.02%)	wwPDB-VP
Wilson B-factor (Å^2)	25.7	Xtriage
Anisotropy	0.234	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 55.1	EDS
L-test for twinning[2]	$< |L| > = 0.46, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	0.000 for l,-k,h	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	14148	wwPDB-VP
Average B, all atoms (Å^2)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 55.75 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.0232e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ 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: B12, CL

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	0.55	0/3319	0.65	0/4491
1	B	0.54	0/3319	0.65	0/4491
1	C	0.55	0/3319	0.62	0/4491
1	D	0.55	0/3319	0.65	0/4491
All	All	0.55	0/13276	0.64	0/17964

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	3
1	D	0	4
All	All	0	8

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	68	ARG	Peptide
1	B	67	LEU	Mainchain,Peptide
1	B	68	ARG	Peptide
1	D	129	GLN	Peptide
1	D	167	HIS	Peptide
1	D	168	LYS	Peptide

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Mol	Chain	Res	Type	Group
1	D	313	VAL	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3254	0	3317	51	0
1	B	3254	0	3317	50	0
1	C	3254	0	3317	66	1
1	D	3254	0	3317	46	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	91	0	88	11	0
3	B	91	0	88	10	0
3	C	91	0	88	10	0
3	D	91	0	88	7	0
4	A	181	0	0	7	0
4	B	204	0	0	14	0
4	C	198	0	0	14	1
4	D	181	0	0	6	0
All	All	14148	0	13620	232	1

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 (232) 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:10:SER:CB	1:D:129:GLN:HA	1.63	1.29
1:C:10:SER:HB2	1:D:129:GLN:CA	1.66	1.24
1:B:100:PHE:HD2	4:B:1092:HOH:O	0.93	1.20
1:B:100:PHE:CD2	4:B:1092:HOH:O	1.67	1.13
4:C:993:HOH:O	1:D:129:GLN:HB2	1.52	1.06
1:B:68:ARG:HG3	1:B:108:ARG:HH12	1.24	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:306:GLU:HG3	1:B:115:ARG:HH22	1.17	1.02
1:C:168:LYS:HB3	1:C:169:PRO:CD	1.91	0.99
1:C:414:TRP:HZ2	3:C:0:B12:H521	1.04	0.95
1:A:168:LYS:HB3	1:A:169:PRO:HD2	1.49	0.92
1:C:168:LYS:HB3	1:C:169:PRO:HD2	1.51	0.92
3:C:0:B12:H362	3:C:0:B12:H351	1.55	0.88
1:B:5:ILE:HG13	4:B:1038:HOH:O	1.76	0.85
4:A:1069:HOH:O	1:C:217:LYS:HB2	1.77	0.85
1:A:306:GLU:HG3	1:B:115:ARG:NH2	1.90	0.84
3:D:0:B12:H362	3:D:0:B12:H351	1.59	0.84
1:A:266:LYS:HG2	1:A:269:GLN:NE2	1.92	0.84
1:A:125:GLY:O	1:A:127:ASN:N	2.11	0.83
3:A:0:B12:H362	3:A:0:B12:H351	1.59	0.82
1:B:280:VAL:HG12	4:B:1038:HOH:O	1.78	0.82
1:C:100:PHE:HB2	4:C:908:HOH:O	1.78	0.82
1:C:9:ASP:HB2	4:C:1034:HOH:O	1.78	0.81
1:C:168:LYS:CB	1:C:169:PRO:HD2	2.10	0.81
1:A:125:GLY:C	1:A:127:ASN:H	1.86	0.80
3:B:0:B12:H362	3:B:0:B12:H351	1.66	0.78
1:A:241:SER:O	1:A:242:LEU:HB2	1.83	0.77
1:A:332:HIS:HD2	1:A:334:VAL:HG12	1.49	0.76
1:D:332:HIS:HD2	1:D:334:VAL:HG12	1.50	0.76
1:A:170:HIS:HB3	1:A:214:LYS:NZ	2.02	0.74
1:B:68:ARG:HG3	1:B:108:ARG:NH1	2.00	0.74
1:C:332:HIS:HD2	1:C:334:VAL:HG12	1.53	0.74
1:B:332:HIS:HD2	1:B:334:VAL:HG12	1.53	0.73
3:C:0:B12:H531	3:C:0:B12:H552	1.70	0.73
1:C:302:GLU:HG2	1:C:303:PRO:HD2	1.70	0.72
1:C:100:PHE:CD2	4:C:908:HOH:O	2.42	0.72
1:B:208:LEU:HD13	1:B:242:LEU:HD11	1.71	0.71
1:C:100:PHE:HD2	4:C:908:HOH:O	1.72	0.71
1:C:312:LYS:HG3	1:C:313:VAL:H	1.55	0.70
1:A:302:GLU:HG2	1:A:303:PRO:HD2	1.72	0.70
1:B:414:TRP:HZ2	3:B:0:B12:H521	1.37	0.70
1:D:302:GLU:HG2	1:D:303:PRO:HD2	1.72	0.70
1:B:351:GLU:HG3	4:B:911:HOH:O	1.93	0.69
1:A:208:LEU:HD13	1:A:242:LEU:HD11	1.73	0.69
1:D:128:HIS:O	1:D:130:GLY:N	2.26	0.69
1:A:170:HIS:HB3	1:A:214:LYS:HZ2	1.57	0.68
1:B:100:PHE:CB	4:B:1092:HOH:O	2.39	0.68
1:B:302:GLU:HG2	1:B:303:PRO:HD2	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:360:GLN:HB3	4:D:1054:HOH:O	1.93	0.67
1:B:280:VAL:CG1	4:B:1038:HOH:O	2.39	0.67
1:D:414:TRP:HZ2	3:D:0:B12:H521	1.44	0.65
1:B:100:PHE:HB2	4:B:1092:HOH:O	1.94	0.65
1:D:265:HIS:HD2	4:D:1047:HOH:O	1.80	0.65
1:A:266:LYS:HG2	1:A:269:GLN:HE22	1.60	0.65
1:B:209:LYS:HD3	1:B:243:ARG:HD2	1.79	0.64
1:C:217:LYS:HE3	4:C:1068:HOH:O	1.98	0.64
1:B:241:SER:O	1:B:242:LEU:HB2	1.96	0.64
1:A:68:ARG:HB3	1:A:69:PRO:CD	2.26	0.64
1:D:332:HIS:CD2	1:D:334:VAL:HG12	2.32	0.64
1:C:126:HIS:H	1:C:128:HIS:CE1	2.16	0.63
1:C:10:SER:HB2	1:D:129:GLN:HA	0.76	0.63
1:B:67:LEU:O	1:B:69:PRO:HD2	1.99	0.63
1:A:332:HIS:CD2	1:A:334:VAL:HG12	2.33	0.62
1:B:210:ARG:HD3	1:B:214:LYS:HE2	1.82	0.61
3:B:0:B12:H552	3:B:0:B12:H531	1.83	0.61
1:C:100:PHE:N	4:C:908:HOH:O	2.32	0.61
1:C:332:HIS:CD2	1:C:334:VAL:HG12	2.33	0.61
1:B:168:LYS:HB3	1:B:169:PRO:HD2	1.83	0.61
1:C:210:ARG:HD3	1:C:214:LYS:HE2	1.83	0.61
3:A:0:B12:H531	3:A:0:B12:H552	1.83	0.60
1:B:319:VAL:HG12	1:B:334:VAL:HG22	1.84	0.60
3:C:0:B12:H353	3:C:0:B12:H302	1.83	0.60
1:D:121:LYS:HG3	1:D:160:LYS:HG3	1.85	0.59
1:A:326:ILE:HD13	4:A:1049:HOH:O	2.03	0.59
1:C:100:PHE:CB	4:C:908:HOH:O	2.40	0.58
1:B:332:HIS:CD2	1:B:334:VAL:HG12	2.36	0.58
1:A:210:ARG:HD3	1:A:214:LYS:HE2	1.86	0.58
1:D:9:ASP:OD2	1:D:11:THR:OG1	2.18	0.58
1:A:242:LEU:HD13	4:A:1045:HOH:O	2.03	0.58
1:B:121:LYS:HG3	1:B:160:LYS:HG3	1.86	0.58
1:A:319:VAL:HG12	1:A:334:VAL:HG22	1.86	0.58
1:D:306:GLU:O	1:D:307:THR:HB	2.03	0.58
1:D:319:VAL:HG12	1:D:334:VAL:HG22	1.85	0.57
1:C:312:LYS:NZ	1:C:312:LYS:HA	2.18	0.57
1:D:414:TRP:HZ2	3:D:0:B12:N52	2.02	0.57
1:A:121:LYS:HG3	1:A:160:LYS:HG3	1.87	0.57
1:C:45:LEU:HD22	4:D:1032:HOH:O	2.03	0.57
1:C:121:LYS:HG3	1:C:160:LYS:HG3	1.87	0.57
1:C:319:VAL:HG12	1:C:334:VAL:HG22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:9:ASP:OD2	1:C:11:THR:OG1	2.22	0.57
1:A:201:ARG:HG2	4:A:1055:HOH:O	2.06	0.56
1:D:68:ARG:HB2	4:D:1082:HOH:O	2.05	0.56
1:B:126:HIS:O	1:B:127:ASN:HB2	2.04	0.56
1:D:210:ARG:HD3	1:D:214:LYS:HE2	1.88	0.55
1:B:307:THR:C	1:B:309:PRO:HD3	2.27	0.55
1:A:125:GLY:C	1:A:127:ASN:N	2.59	0.54
1:D:302:GLU:CG	1:D:303:PRO:HD2	2.37	0.54
1:A:9:ASP:OD2	1:A:11:THR:OG1	2.24	0.54
1:B:160:LYS:NZ	4:B:1066:HOH:O	2.40	0.54
1:C:302:GLU:CG	1:C:303:PRO:HD2	2.37	0.54
1:B:9:ASP:OD2	1:B:11:THR:OG1	2.24	0.53
3:A:0:B12:H353	3:A:0:B12:H302	1.90	0.53
1:D:128:HIS:C	1:D:130:GLY:H	2.12	0.53
1:A:168:LYS:HB3	1:A:169:PRO:CD	2.31	0.53
1:A:302:GLU:CG	1:A:303:PRO:HD2	2.37	0.53
1:C:20:LEU:HD12	1:C:40:LEU:HD21	1.91	0.52
1:D:168:LYS:HE2	1:D:210:ARG:HH22	1.73	0.52
1:C:351:GLU:OE1	1:C:351:GLU:HA	2.09	0.52
1:B:1:ASN:ND2	1:B:3:CYS:HB2	2.25	0.52
1:B:307:THR:O	1:B:309:PRO:HD3	2.10	0.52
1:D:315:LYS:HG2	4:D:1006:HOH:O	2.11	0.51
1:B:175:HIS:HE1	3:B:0:B12:C5	2.23	0.51
3:B:0:B12:H482	3:B:0:B12:H533	1.91	0.51
1:A:310:GLN:HB2	1:A:312:LYS:HB2	1.93	0.51
1:C:126:HIS:N	1:C:128:HIS:CE1	2.78	0.51
1:D:79:GLU:CG	1:D:79:GLU:O	2.59	0.51
1:A:1:ASN:ND2	1:A:3:CYS:HB2	2.27	0.50
1:D:358:ARG:HB2	1:D:370:SER:HB3	1.94	0.50
1:A:68:ARG:HB3	1:A:69:PRO:HD3	1.94	0.50
1:A:358:ARG:HB2	1:A:370:SER:HB3	1.94	0.50
1:C:9:ASP:HB3	1:C:12:LEU:HD12	1.92	0.50
1:C:358:ARG:NH1	4:C:1055:HOH:O	2.44	0.50
1:B:334:VAL:HG11	1:B:348:ASN:HD21	1.77	0.50
1:A:175:HIS:HE1	3:A:0:B12:C5	2.25	0.49
1:A:9:ASP:HB3	1:A:12:LEU:HD12	1.94	0.49
1:C:352:HIS:CD2	4:C:992:HOH:O	2.65	0.49
1:D:28:SER:OG	1:D:31:GLN:HG3	2.13	0.49
1:B:302:GLU:CG	1:B:303:PRO:HD2	2.40	0.49
1:C:20:LEU:HD12	1:C:40:LEU:CD2	2.43	0.49
1:D:304:ALA:HB1	1:D:306:GLU:OE1	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:244:PRO:HB3	1:D:248:LEU:HD23	1.93	0.49
1:B:374:ARG:NH2	4:B:1046:HOH:O	2.01	0.49
1:B:51:GLU:HG2	4:B:1022:HOH:O	2.13	0.48
3:A:0:B12:H491	3:A:0:B12:H471	1.94	0.48
3:D:0:B12:H533	3:D:0:B12:H482	1.94	0.48
1:C:358:ARG:HG3	4:C:1055:HOH:O	2.12	0.48
3:B:0:B12:H471	3:B:0:B12:H491	1.96	0.48
1:B:9:ASP:HB3	1:B:12:LEU:HD12	1.96	0.48
1:B:358:ARG:HB2	1:B:370:SER:HB3	1.97	0.47
1:C:168:LYS:O	1:C:170:HIS:N	2.47	0.47
1:B:1:ASN:HD21	1:B:3:CYS:HB2	1.78	0.47
1:A:68:ARG:HG3	1:A:108:ARG:HH12	1.78	0.47
1:C:112:GLN:HA	1:C:115:ARG:HG2	1.95	0.47
3:C:0:B12:H351	3:C:0:B12:C36	2.31	0.47
1:A:265:HIS:CD2	4:B:1066:HOH:O	2.68	0.47
3:A:0:B12:H531	3:A:0:B12:H543	1.97	0.47
1:C:68:ARG:HD3	1:C:70:ALA:HB3	1.97	0.47
1:C:177:SER:O	1:C:181:MET:HG3	2.14	0.47
1:C:358:ARG:HB2	1:C:370:SER:HB3	1.97	0.47
1:D:214:LYS:NZ	4:D:1068:HOH:O	2.48	0.47
1:A:201:ARG:HA	4:A:1064:HOH:O	2.14	0.47
1:B:126:HIS:CD2	1:B:128:HIS:H	2.34	0.46
1:C:67:LEU:HD13	1:C:105:LYS:HD2	1.96	0.46
1:A:170:HIS:HB3	1:A:214:LYS:HZ1	1.78	0.46
1:C:168:LYS:C	1:C:170:HIS:H	2.18	0.46
1:A:334:VAL:HG23	1:A:336:VAL:HG13	1.96	0.46
1:C:168:LYS:C	1:C:170:HIS:N	2.69	0.46
1:D:1:ASN:ND2	1:D:3:CYS:HB2	2.31	0.46
1:A:1:ASN:HD21	1:A:3:CYS:HB2	1.79	0.46
1:C:311:ALA:O	1:C:312:LYS:HB2	2.15	0.46
1:D:175:HIS:HE1	3:D:0:B12:C5	2.29	0.46
1:C:1:ASN:ND2	1:C:3:CYS:HB2	2.31	0.45
1:C:414:TRP:HZ2	3:C:0:B12:N52	1.89	0.45
1:C:19:ARG:HG2	4:C:1059:HOH:O	2.16	0.45
1:D:312:LYS:O	1:D:313:VAL:HG13	2.16	0.45
1:C:175:HIS:HE1	3:C:0:B12:C5	2.29	0.45
1:C:50:LYS:HE2	4:C:987:HOH:O	2.15	0.45
1:C:68:ARG:HG2	1:C:70:ALA:HB3	1.99	0.45
1:C:126:HIS:H	1:C:128:HIS:HE1	1.65	0.45
1:B:74:ASP:OD1	1:B:74:ASP:N	2.49	0.44
1:A:334:VAL:HG11	1:A:348:ASN:HD21	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:177:SER:O	1:D:181:MET:HG3	2.17	0.44
1:C:168:LYS:CB	1:C:169:PRO:CD	2.67	0.44
1:A:29:GLN:HE21	1:A:29:GLN:HB3	1.58	0.44
1:A:68:ARG:H	1:A:108:ARG:HH22	1.66	0.44
1:A:308:PRO:HA	1:A:309:PRO:HD3	1.87	0.44
1:A:175:HIS:CE1	3:A:0:B12:C6	3.01	0.44
1:B:192:GLU:OE1	1:B:205:ASN:ND2	2.51	0.44
1:A:374:ARG:NH2	4:A:966:HOH:O	2.26	0.43
3:A:0:B12:H362	3:A:0:B12:C35	2.40	0.43
3:C:0:B12:H482	3:C:0:B12:H533	1.99	0.43
1:B:29:GLN:HE21	1:B:29:GLN:HB3	1.63	0.43
1:B:95:ARG:O	1:B:292:PRO:HG3	2.18	0.43
1:D:307:THR:HA	1:D:308:PRO:HD2	1.76	0.43
1:B:334:VAL:HG23	1:B:336:VAL:HG13	1.99	0.43
1:D:126:HIS:HB2	1:D:128:HIS:CE1	2.54	0.43
1:A:356:ARG:HG2	1:A:372:LEU:HA	1.99	0.43
1:C:20:LEU:CD1	1:C:40:LEU:CD2	2.97	0.43
1:B:203:ARG:HD2	4:B:1075:HOH:O	2.18	0.42
1:C:10:SER:CB	1:D:129:GLN:CA	2.53	0.42
3:A:0:B12:H482	3:A:0:B12:H533	2.00	0.42
3:B:0:B12:H262	3:B:0:B12:H91	1.84	0.42
3:C:0:B12:H362	3:C:0:B12:C35	2.39	0.42
1:D:334:VAL:HG23	1:D:336:VAL:HG13	2.00	0.42
1:A:78:SER:O	1:A:79:GLU:HB3	2.19	0.42
1:A:95:ARG:HA	1:A:95:ARG:HD2	1.88	0.42
1:D:192:GLU:OE1	1:D:205:ASN:ND2	2.52	0.42
1:D:95:ARG:O	1:D:292:PRO:HG3	2.19	0.42
1:D:128:HIS:C	1:D:130:GLY:N	2.73	0.42
3:B:0:B12:H491	3:B:0:B12:C47	2.50	0.42
1:B:128:HIS:CG	1:B:129:GLN:N	2.88	0.42
1:B:305:LEU:HB2	4:B:1098:HOH:O	2.20	0.42
1:D:1:ASN:HD21	1:D:3:CYS:HB2	1.84	0.42
3:D:0:B12:H552	3:D:0:B12:H531	2.02	0.42
1:B:177:SER:O	1:B:181:MET:HG3	2.19	0.42
1:B:175:HIS:CE1	3:B:0:B12:C6	3.03	0.42
3:B:0:B12:H353	3:B:0:B12:H302	2.01	0.42
1:C:413:GLY:O	1:C:414:TRP:HB3	2.20	0.42
1:C:10:SER:HB2	1:D:129:GLN:C	2.33	0.41
1:C:327:SER:HB3	4:C:985:HOH:O	2.19	0.41
1:A:19:ARG:HG2	4:A:1054:HOH:O	2.21	0.41
1:C:217:LYS:HE2	1:C:218:ALA:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:0:B12:H362	3:D:0:B12:C35	2.39	0.41
1:C:1:ASN:HD21	1:C:3:CYS:HB2	1.84	0.41
1:C:334:VAL:HG23	1:C:336:VAL:HG13	2.02	0.41
1:D:233:LEU:HD23	1:D:233:LEU:HA	1.95	0.41
1:A:168:LYS:CB	1:A:169:PRO:HD2	2.36	0.41
1:C:20:LEU:CD1	1:C:40:LEU:HD21	2.50	0.41
1:B:319:VAL:CG1	1:B:334:VAL:HG22	2.49	0.41
1:A:177:SER:O	1:A:181:MET:HG3	2.20	0.41
3:A:0:B12:C61	3:A:0:B12:H252	2.51	0.41
1:D:95:ARG:HA	1:D:95:ARG:HD2	1.89	0.41
1:D:413:GLY:O	1:D:414:TRP:HB3	2.21	0.41
1:A:319:VAL:CG1	1:A:334:VAL:HG22	2.50	0.41
1:D:5:ILE:HG22	1:D:8:VAL:HG22	2.02	0.41
1:A:95:ARG:O	1:A:292:PRO:HG3	2.21	0.40
1:C:95:ARG:HA	1:C:95:ARG:HD2	1.89	0.40
1:C:168:LYS:HB3	1:C:169:PRO:HD3	1.93	0.40
1:C:319:VAL:CG1	1:C:334:VAL:HG22	2.51	0.40
1:D:68:ARG:NH2	1:D:80:ALA:O	2.54	0.40
1:C:68:ARG:NH2	1:C:80:ALA:O	2.54	0.40
3:A:0:B12:H262	3:A:0:B12:H91	2.00	0.40
1:C:175:HIS:CE1	3:C:0:B12:C6	3.05	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:295:GLN:NE2	4:C:1094:HOH:O[2_655]	2.10	0.10

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	412/414 (100%)	388 (94%)	10 (2%)	14 (3%)	3	1
1	B	412/414 (100%)	382 (93%)	21 (5%)	9 (2%)	6	2
1	C	412/414 (100%)	384 (93%)	19 (5%)	9 (2%)	6	2
1	D	412/414 (100%)	388 (94%)	13 (3%)	11 (3%)	5	1
All	All	1648/1656 (100%)	1542 (94%)	63 (4%)	43 (3%)	5	2

All (43) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	68	ARG
1	A	69	PRO
1	A	72	ASN
1	A	126	HIS
1	A	242	LEU
1	B	69	PRO
1	B	126	HIS
1	B	127	ASN
1	B	242	LEU
1	C	168	LYS
1	C	169	PRO
1	C	170	HIS
1	D	73	LYS
1	D	76	ASN
1	D	129	GLN
1	A	74	ASP
1	A	79	GLU
1	A	307	THR
1	C	128	HIS
1	C	129	GLN
1	D	69	PRO
1	D	71	SER
1	D	72	ASN
1	D	308	PRO
1	A	168	LYS
1	A	78	SER
1	A	128	HIS
1	B	128	HIS
1	C	310	GLN
1	D	79	GLU
1	D	128	HIS
1	D	168	LYS
1	D	307	THR

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Mol	Chain	Res	Type
1	A	75	ASP
1	A	169	PRO
1	B	75	ASP
1	C	79	GLU
1	C	309	PRO
1	B	168	LYS
1	B	309	PRO
1	B	308	PRO
1	C	308	PRO
1	A	309	PRO

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	358/358 (100%)	329 (92%)	29 (8%)	11	7
1	B	358/358 (100%)	328 (92%)	30 (8%)	11	7
1	C	358/358 (100%)	327 (91%)	31 (9%)	10	6
1	D	358/358 (100%)	317 (88%)	41 (12%)	5	3
All	All	1432/1432 (100%)	1301 (91%)	131 (9%)	9	5

All (131) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	VAL
1	A	29	GLN
1	A	46	GLN
1	A	68	ARG
1	A	168	LYS
1	A	170	HIS
1	A	171	LEU
1	A	172	LEU
1	A	181	MET
1	A	205	ASN
1	A	206	LEU

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Mol	Chain	Res	Type
1	A	209	LYS
1	A	210	ARG
1	A	217	LYS
1	A	230	SER
1	A	237	LEU
1	A	242	LEU
1	A	263	LEU
1	A	272	LEU
1	A	291	SER
1	A	305	LEU
1	A	306	GLU
1	A	312	LYS
1	A	327	SER
1	A	334	VAL
1	A	348	ASN
1	A	374	ARG
1	A	379	ARG
1	A	414	TRP
1	B	8	VAL
1	B	29	GLN
1	B	46	GLN
1	B	64	GLN
1	B	68	ARG
1	B	72	ASN
1	B	171	LEU
1	B	172	LEU
1	B	181	MET
1	B	202	ASN
1	B	205	ASN
1	B	206	LEU
1	B	209	LYS
1	B	210	ARG
1	B	217	LYS
1	B	230	SER
1	B	237	LEU
1	B	241	SER
1	B	242	LEU
1	B	263	LEU
1	B	266	LYS
1	B	272	LEU
1	B	291	SER
1	B	313	VAL

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Mol	Chain	Res	Type
1	B	327	SER
1	B	334	VAL
1	B	348	ASN
1	B	374	ARG
1	B	379	ARG
1	B	414	TRP
1	C	7	GLU
1	C	8	VAL
1	C	46	GLN
1	C	65	SER
1	C	68	ARG
1	C	77	ASP
1	C	105	LYS
1	C	126	HIS
1	C	129	GLN
1	C	168	LYS
1	C	172	LEU
1	C	173	GLN
1	C	181	MET
1	C	205	ASN
1	C	206	LEU
1	C	209	LYS
1	C	210	ARG
1	C	217	LYS
1	C	230	SER
1	C	237	LEU
1	C	242	LEU
1	C	263	LEU
1	C	272	LEU
1	C	291	SER
1	C	305	LEU
1	C	306	GLU
1	C	327	SER
1	C	334	VAL
1	C	374	ARG
1	C	379	ARG
1	C	414	TRP
1	D	8	VAL
1	D	12	LEU
1	D	46	GLN
1	D	60	LEU
1	D	65	SER

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Mol	Chain	Res	Type
1	D	73	LYS
1	D	75	ASP
1	D	79	GLU
1	D	105	LYS
1	D	126	HIS
1	D	152	ARG
1	D	168	LYS
1	D	172	LEU
1	D	173	GLN
1	D	174	ASP
1	D	181	MET
1	D	205	ASN
1	D	206	LEU
1	D	209	LYS
1	D	210	ARG
1	D	217	LYS
1	D	230	SER
1	D	237	LEU
1	D	242	LEU
1	D	247	GLU
1	D	263	LEU
1	D	272	LEU
1	D	291	SER
1	D	305	LEU
1	D	306	GLU
1	D	310	GLN
1	D	312	LYS
1	D	313	VAL
1	D	327	SER
1	D	334	VAL
1	D	348	ASN
1	D	356	ARG
1	D	374	ARG
1	D	375	LYS
1	D	379	ARG
1	D	414	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1	ASN
1	A	63	GLN

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Mol	Chain	Res	Type
1	A	205	ASN
1	A	269	GLN
1	A	348	ASN
1	A	360	GLN
1	B	1	ASN
1	B	63	GLN
1	B	348	ASN
1	B	360	GLN
1	C	1	ASN
1	C	63	GLN
1	C	128	HIS
1	C	129	GLN
1	C	173	GLN
1	C	205	ASN
1	C	348	ASN
1	C	360	GLN
1	D	1	ASN
1	D	63	GLN
1	D	128	HIS
1	D	205	ASN
1	D	348	ASN
1	D	360	GLN

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 monosaccharides 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	B12	B	0	1	90,101,101	0.97	4 (4%)	137,166,166	1.03	7 (5%)
3	B12	D	0	1	90,101,101	1.04	3 (3%)	137,166,166	1.11	12 (8%)
3	B12	A	0	1	90,101,101	0.97	2 (2%)	137,166,166	0.94	9 (6%)
3	B12	C	0	1	90,101,101	0.94	5 (5%)	137,166,166	1.02	9 (6%)

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	B12	B	0	1	-	1/52/223/223	0/3/11/11
3	B12	D	0	1	-	3/52/223/223	0/3/11/11
3	B12	A	0	1	-	1/52/223/223	0/3/11/11
3	B12	C	0	1	-	1/52/223/223	0/3/11/11

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	0	B12	C14-N23	4.87	1.41	1.35
3	A	0	B12	C14-N23	4.61	1.41	1.35
3	B	0	B12	C14-N23	3.79	1.39	1.35
3	D	0	B12	C4B-C9B	-3.36	1.36	1.41
3	C	0	B12	C14-N23	3.03	1.39	1.35
3	B	0	B12	C4B-C9B	-2.98	1.37	1.41
3	A	0	B12	C4B-C9B	-2.97	1.37	1.41
3	C	0	B12	C11-N23	-2.67	1.32	1.37
3	C	0	B12	C2B-N3B	-2.50	1.30	1.34
3	C	0	B12	C4B-C9B	-2.47	1.38	1.41
3	B	0	B12	C2B-N3B	-2.44	1.30	1.34
3	D	0	B12	C2B-N3B	-2.42	1.30	1.34
3	B	0	B12	C11-N23	-2.25	1.32	1.37
3	C	0	B12	P-O5	-2.08	1.45	1.55

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	0	B12	C7B-C8B-C9B	4.10	124.60	120.54
3	D	0	B12	C20-C1-C2	3.71	119.48	113.28
3	B	0	B12	C25-C2-C26	-3.52	102.59	109.71
3	C	0	B12	C20-C1-C2	3.34	118.86	113.28
3	C	0	B12	C25-C2-C26	-3.05	103.54	109.71
3	B	0	B12	C4B-C9B-C8B	-2.90	118.13	121.10
3	D	0	B12	C47-C12-C46	-2.87	104.50	109.35
3	A	0	B12	C25-C2-C26	-2.79	104.07	109.71
3	A	0	B12	C7-C8-C9	2.77	104.45	100.90
3	D	0	B12	C18-C60-C61	2.75	120.84	113.97
3	D	0	B12	C1-C19-N24	2.65	109.22	106.24
3	D	0	B12	C19-C1-N21	2.64	104.87	102.16
3	C	0	B12	C19-C1-N21	2.56	104.78	102.16
3	C	0	B12	C2P-C1P-N59	2.56	116.70	112.93
3	C	0	B12	C4B-C9B-C8B	-2.55	118.49	121.10
3	A	0	B12	C26-C2-C1	2.52	113.94	110.01
3	D	0	B12	C26-C2-C1	2.51	113.92	110.01
3	A	0	B12	C1-C19-N24	2.47	109.01	106.24
3	D	0	B12	C25-C2-C26	-2.42	104.82	109.71
3	C	0	B12	C47-C12-C46	-2.39	105.31	109.35
3	C	0	B12	C60-C18-C19	2.38	120.84	114.62
3	A	0	B12	C7B-C8B-C9B	2.35	122.86	120.54
3	D	0	B12	C18-C17-C16	2.33	103.50	100.67
3	D	0	B12	C55-C17-C18	-2.29	106.72	111.15
3	D	0	B12	C4B-C9B-C8B	-2.28	118.77	121.10
3	A	0	B12	C2P-C1P-N59	2.27	116.28	112.93
3	C	0	B12	C7B-C8B-C9B	2.22	122.74	120.54
3	A	0	B12	C5R-C4R-C3R	-2.22	107.78	114.85
3	B	0	B12	C60-C18-C19	2.21	120.40	114.62
3	A	0	B12	C4B-C9B-C8B	-2.09	118.97	121.10
3	D	0	B12	C2P-C1P-N59	2.08	116.01	112.93
3	B	0	B12	C20-C1-C2	2.08	116.75	113.28
3	B	0	B12	C36-C7-C8	2.05	115.86	112.08
3	B	0	B12	C36-C7-C37	-2.04	107.44	110.80
3	A	0	B12	C30-C3-C4	2.03	114.36	109.63
3	D	0	B12	C30-C3-C4	2.03	114.34	109.63
3	C	0	B12	C20-C1-N21	-2.02	106.95	110.27

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	0	B12	C13-C48-C49-C50

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Mol	Chain	Res	Type	Atoms
3	D	0	B12	C3R-C4R-C5R-O8R
3	D	0	B12	O6R-C4R-C5R-O8R
3	B	0	B12	C13-C48-C49-C50
3	D	0	B12	C13-C48-C49-C50
3	C	0	B12	C13-C48-C49-C50

There are no ring outliers.
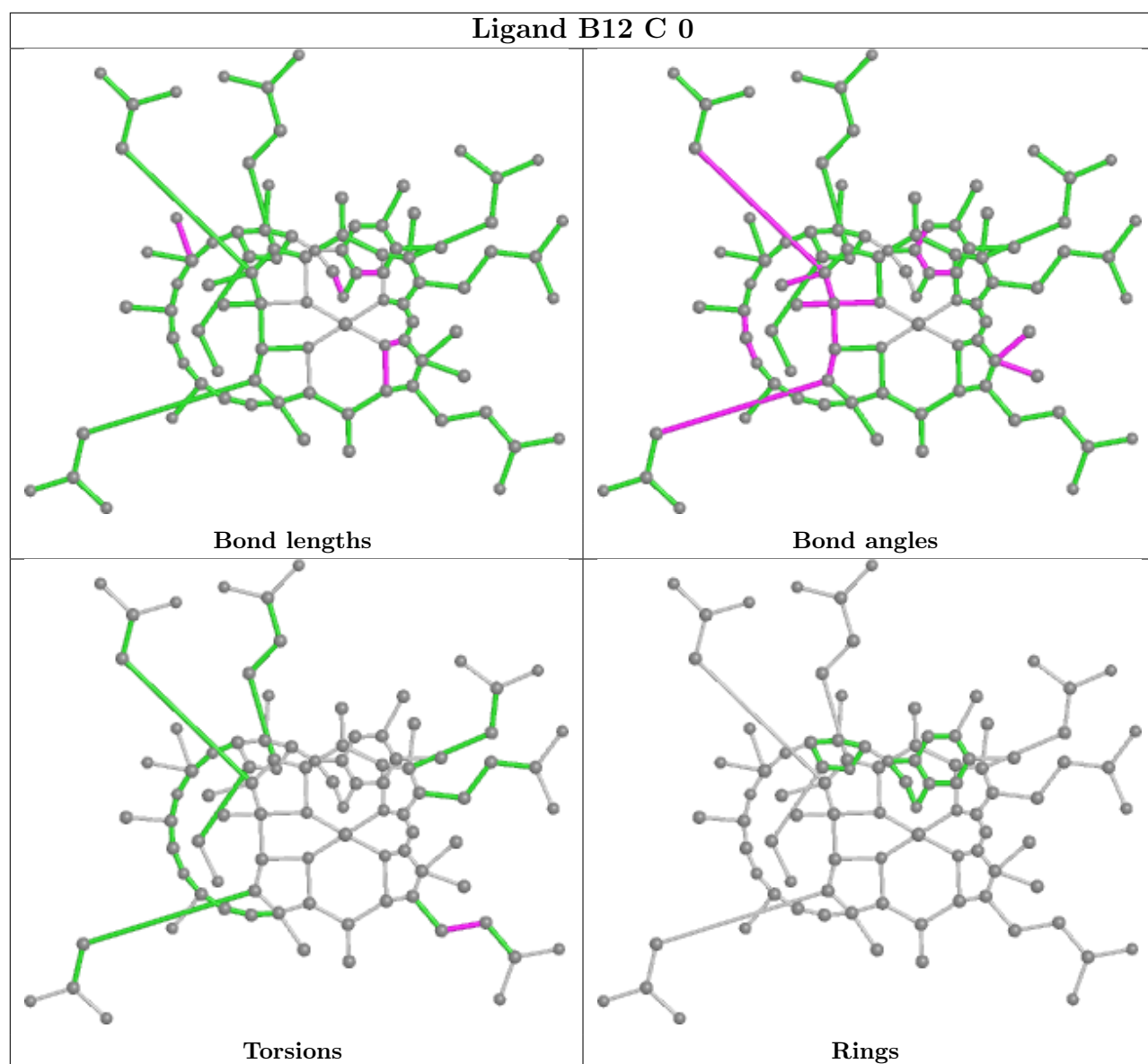
4 monomers are involved in 38 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	0	B12	10	0
3	D	0	B12	7	0
3	A	0	B12	11	0
3	C	0	B12	10	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 then 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 B12 B 0

Bond lengths

Bond angles

Torsions

Rings

Ligand B12 D 0

Bond lengths

Bond angles

Torsions

Rings

Full wwPDB X-ray Structure Validation Report

Ligand B12 A 0

Bond lengths

Bond angles

Torsions

Rings

Ligand B12 C 0

Bond lengths

Bond angles

Torsions

Rings
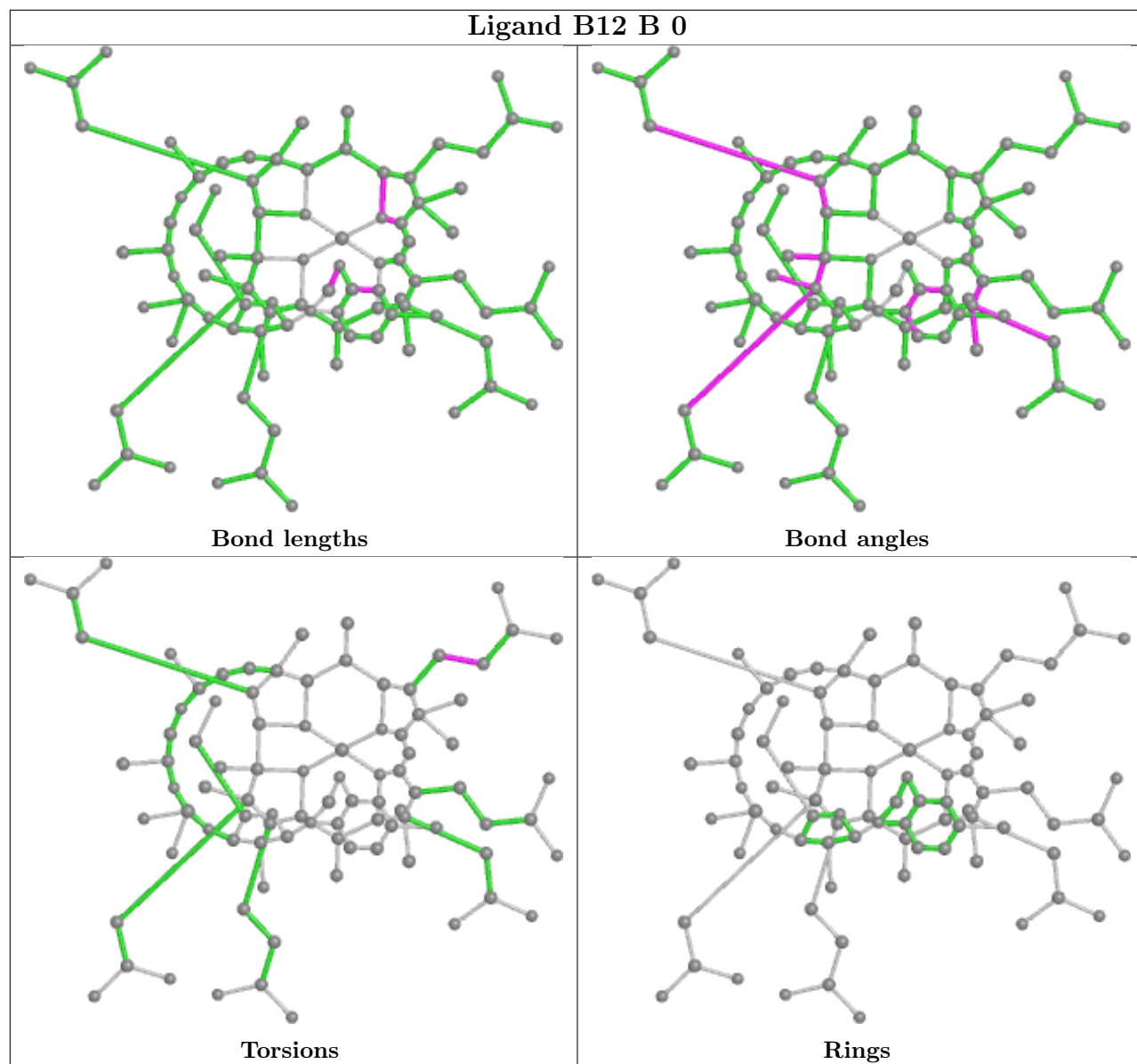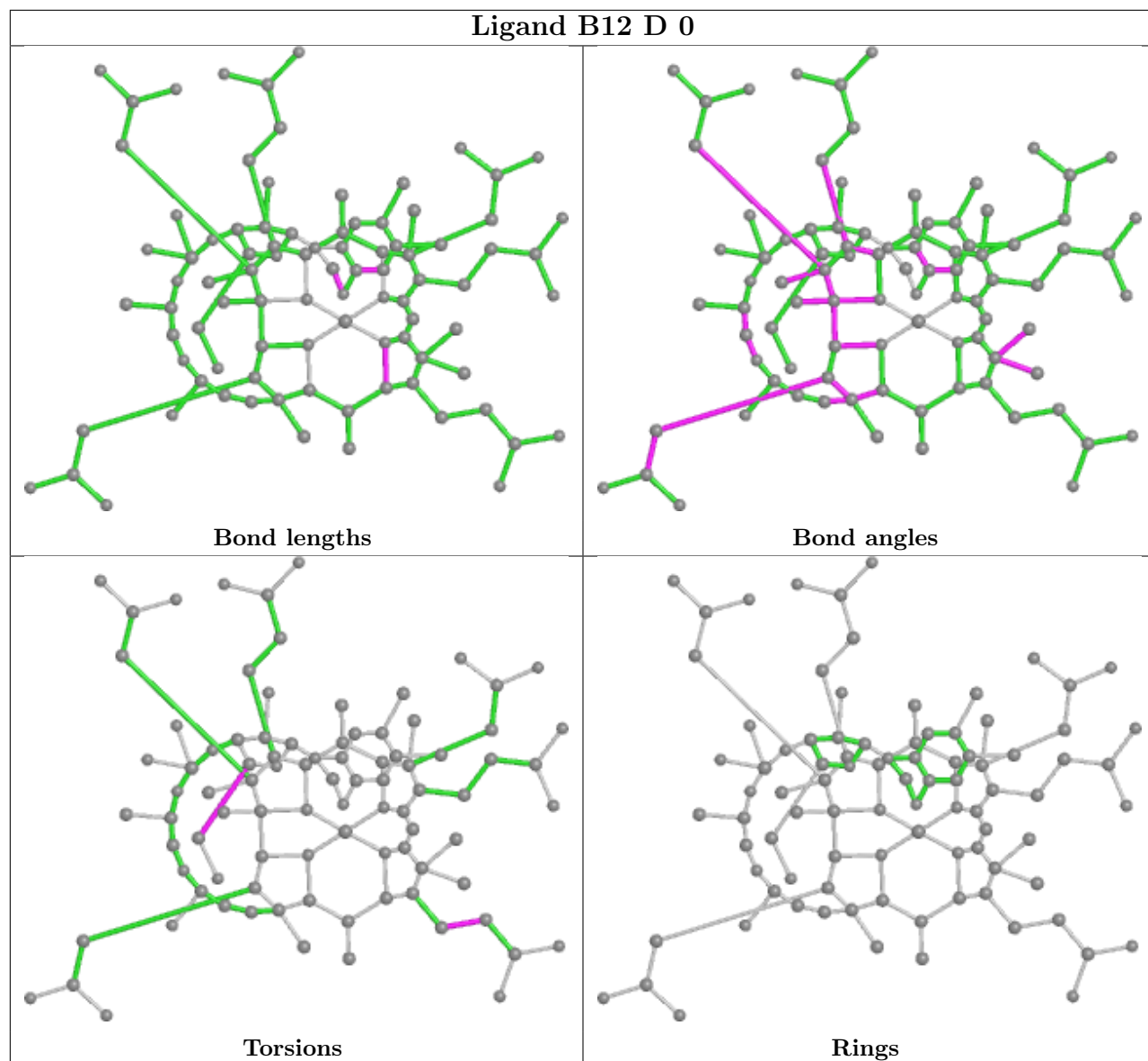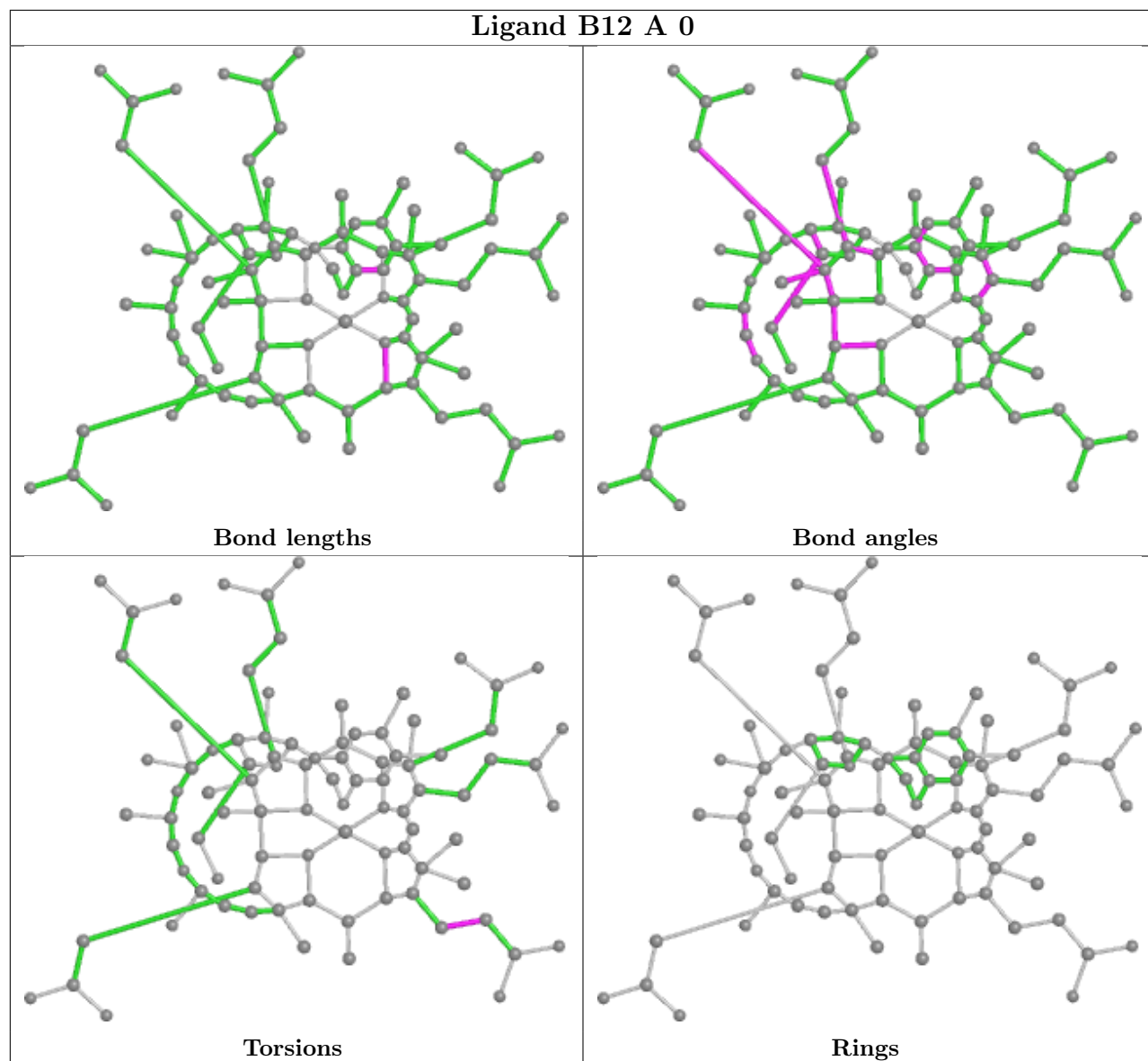
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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(Å²)	Q<0.9
1	A	414/414 (100%)	0.59	41 (9%)	7	6	8, 30, 77, 151	0
1	B	414/414 (100%)	0.63	43 (10%)	6	5	8, 31, 77, 157	0
1	C	414/414 (100%)	0.70	45 (10%)	5	5	9, 33, 86, 221	0
1	D	414/414 (100%)	0.64	47 (11%)	5	4	11, 31, 79, 151	0
All	All	1656/1656 (100%)	0.64	176 (10%)	6	5	8, 31, 79, 221	0

All (176) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	72	ASN	13.9
1	B	305	LEU	13.5
1	D	73	LYS	13.1
1	C	71	SER	11.4
1	C	305	LEU	11.4
1	C	309	PRO	10.6
1	D	70	ALA	9.7
1	D	305	LEU	9.6
1	C	75	ASP	9.4
1	A	169	PRO	9.3
1	D	313	VAL	8.9
1	C	307	THR	8.8
1	D	309	PRO	8.6
1	C	78	SER	8.3
1	C	304	ALA	8.2
1	D	75	ASP	8.2
1	D	76	ASN	8.0
1	A	305	LEU	8.0
1	D	307	THR	8.0
1	A	78	SER	7.9
1	B	309	PRO	7.8

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Mol	Chain	Res	Type	RSRZ
1	C	72	ASN	7.8
1	C	169	PRO	7.7
1	C	76	ASN	7.7
1	B	71	SER	7.7
1	B	75	ASP	7.6
1	A	72	ASN	7.5
1	A	414	TRP	7.5
1	C	70	ALA	7.4
1	B	311	ALA	7.3
1	A	73	LYS	7.2
1	C	303	PRO	7.1
1	C	308	PRO	7.1
1	B	169	PRO	7.1
1	A	168	LYS	7.1
1	A	74	ASP	7.1
1	A	71	SER	6.9
1	B	76	ASN	6.7
1	C	310	GLN	6.6
1	B	72	ASN	6.5
1	D	311	ALA	6.5
1	C	73	LYS	6.5
1	B	414	TRP	6.4
1	B	304	ALA	6.4
1	B	78	SER	6.3
1	D	169	PRO	6.3
1	D	74	ASP	6.2
1	D	310	GLN	6.2
1	D	71	SER	6.2
1	D	69	PRO	6.1
1	A	309	PRO	6.1
1	B	310	GLN	6.1
1	C	77	ASP	6.1
1	B	73	LYS	6.0
1	C	74	ASP	5.9
1	A	311	ALA	5.9
1	D	129	GLN	5.9
1	C	167	HIS	5.7
1	D	308	PRO	5.7
1	A	413	GLY	5.6
1	B	77	ASP	5.5
1	C	168	LYS	5.4
1	C	311	ALA	5.3

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Mol	Chain	Res	Type	RSRZ
1	C	80	ALA	5.3
1	D	168	LYS	5.2
1	A	171	LEU	5.1
1	C	126	HIS	5.0
1	D	414	TRP	5.0
1	A	128	HIS	5.0
1	B	307	THR	5.0
1	D	7	GLU	4.9
1	B	308	PRO	4.7
1	C	171	LEU	4.7
1	A	310	GLN	4.6
1	A	327	SER	4.5
1	B	79	GLU	4.5
1	B	327	SER	4.5
1	D	126	HIS	4.5
1	B	168	LYS	4.4
1	A	170	HIS	4.4
1	A	76	ASN	4.3
1	C	129	GLN	4.3
1	D	77	ASP	4.3
1	B	68	ARG	4.3
1	A	307	THR	4.3
1	C	128	HIS	4.2
1	D	131	HIS	4.2
1	B	313	VAL	4.2
1	A	313	VAL	4.2
1	A	173	GLN	4.1
1	A	80	ALA	4.1
1	A	79	GLU	4.1
1	B	128	HIS	4.1
1	B	174	ASP	4.0
1	B	70	ALA	4.0
1	C	300	LEU	3.9
1	B	129	GLN	3.9
1	C	7	GLU	3.9
1	D	80	ALA	3.9
1	B	173	GLN	3.9
1	C	306	GLU	3.8
1	A	69	PRO	3.8
1	D	128	HIS	3.8
1	D	312	LYS	3.7
1	A	167	HIS	3.7

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Mol	Chain	Res	Type	RSRZ
1	D	327	SER	3.7
1	A	241	SER	3.6
1	D	78	SER	3.6
1	C	6	THR	3.5
1	D	167	HIS	3.5
1	B	7	GLU	3.5
1	C	414	TRP	3.4
1	B	170	HIS	3.3
1	D	171	LEU	3.3
1	C	313	VAL	3.3
1	A	77	ASP	3.2
1	D	266	LYS	3.2
1	A	127	ASN	3.2
1	D	79	GLU	3.2
1	A	68	ARG	3.2
1	C	327	SER	3.1
1	B	303	PRO	3.0
1	D	246	VAL	3.0
1	B	131	HIS	3.0
1	C	79	GLU	3.0
1	A	174	ASP	2.9
1	C	170	HIS	2.9
1	D	378	GLU	2.8
1	A	70	ALA	2.8
1	D	304	ALA	2.8
1	B	126	HIS	2.8
1	C	115	ARG	2.8
1	D	130	GLY	2.8
1	A	131	HIS	2.7
1	C	69	PRO	2.7
1	B	306	GLU	2.7
1	B	171	LEU	2.7
1	D	242	LEU	2.6
1	B	242	LEU	2.6
1	B	107	ASP	2.6
1	A	266	LYS	2.6
1	D	6	THR	2.5
1	C	127	ASN	2.5
1	D	306	GLU	2.5
1	B	300	LEU	2.5
1	B	74	ASP	2.5
1	D	170	HIS	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	241	SER	2.4
1	C	163	TYR	2.4
1	C	246	VAL	2.4
1	C	312	LYS	2.4
1	A	7	GLU	2.3
1	D	245	SER	2.3
1	A	75	ASP	2.3
1	C	301	LEU	2.3
1	B	80	ALA	2.3
1	D	300	LEU	2.2
1	C	131	HIS	2.2
1	A	243	ARG	2.2
1	C	67	LEU	2.2
1	B	413	GLY	2.2
1	C	122	ARG	2.2
1	D	202	ASN	2.2
1	A	306	GLU	2.2
1	D	198	PRO	2.2
1	D	8	VAL	2.2
1	A	129	GLN	2.1
1	D	302	GLU	2.1
1	A	378	GLU	2.1
1	B	301	LEU	2.1
1	B	353	GLY	2.1
1	B	69	PRO	2.1
1	D	172	LEU	2.1
1	C	302	GLU	2.1
1	A	246	VAL	2.1
1	A	12	LEU	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides 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($Å^2$)	Q<0.9
3	B12	A	0	91/91	0.96	0.12	7,13,21,38	0
3	B12	B	0	91/91	0.96	0.11	7,14,27,44	0
3	B12	D	0	91/91	0.96	0.12	9,15,28,42	0
3	B12	C	0	91/91	0.97	0.11	7,15,31,44	0
2	CL	A	901	1/1	0.99	0.21	23,23,23,23	0
2	CL	B	902	1/1	0.99	0.15	24,24,24,24	0
2	CL	C	904	1/1	0.99	0.10	23,23,23,23	0
2	CL	D	903	1/1	0.99	0.16	24,24,24,24	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.
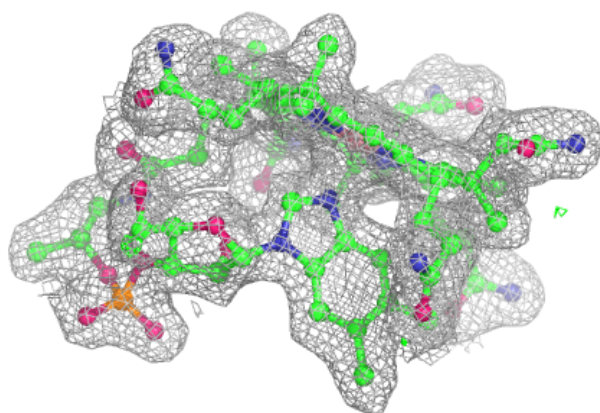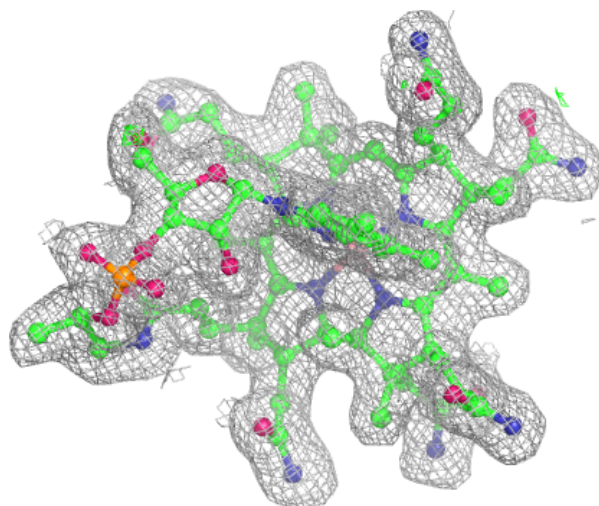
Electron density around B12 A 0:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
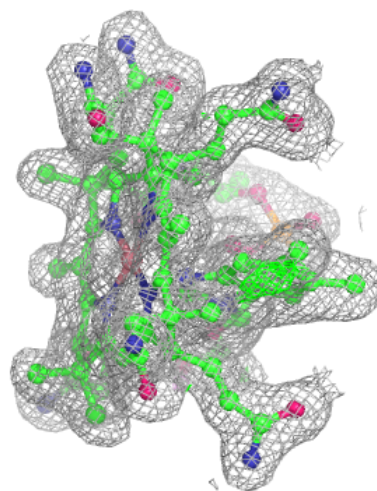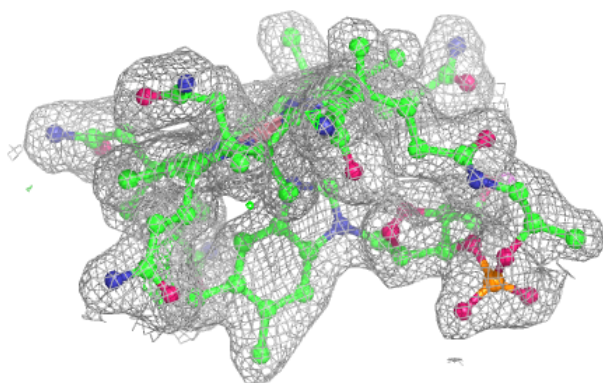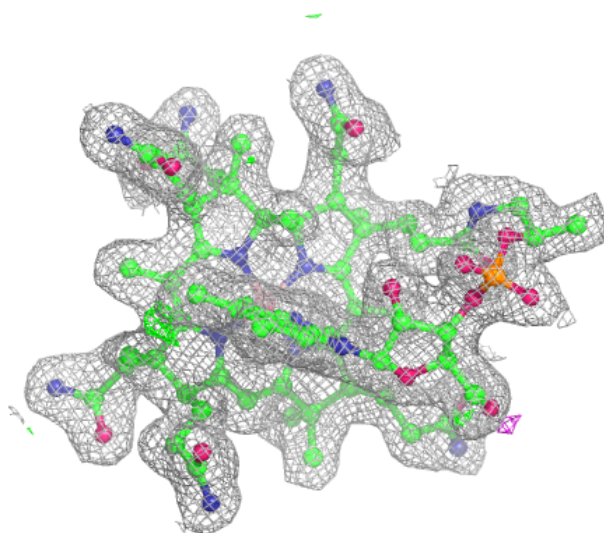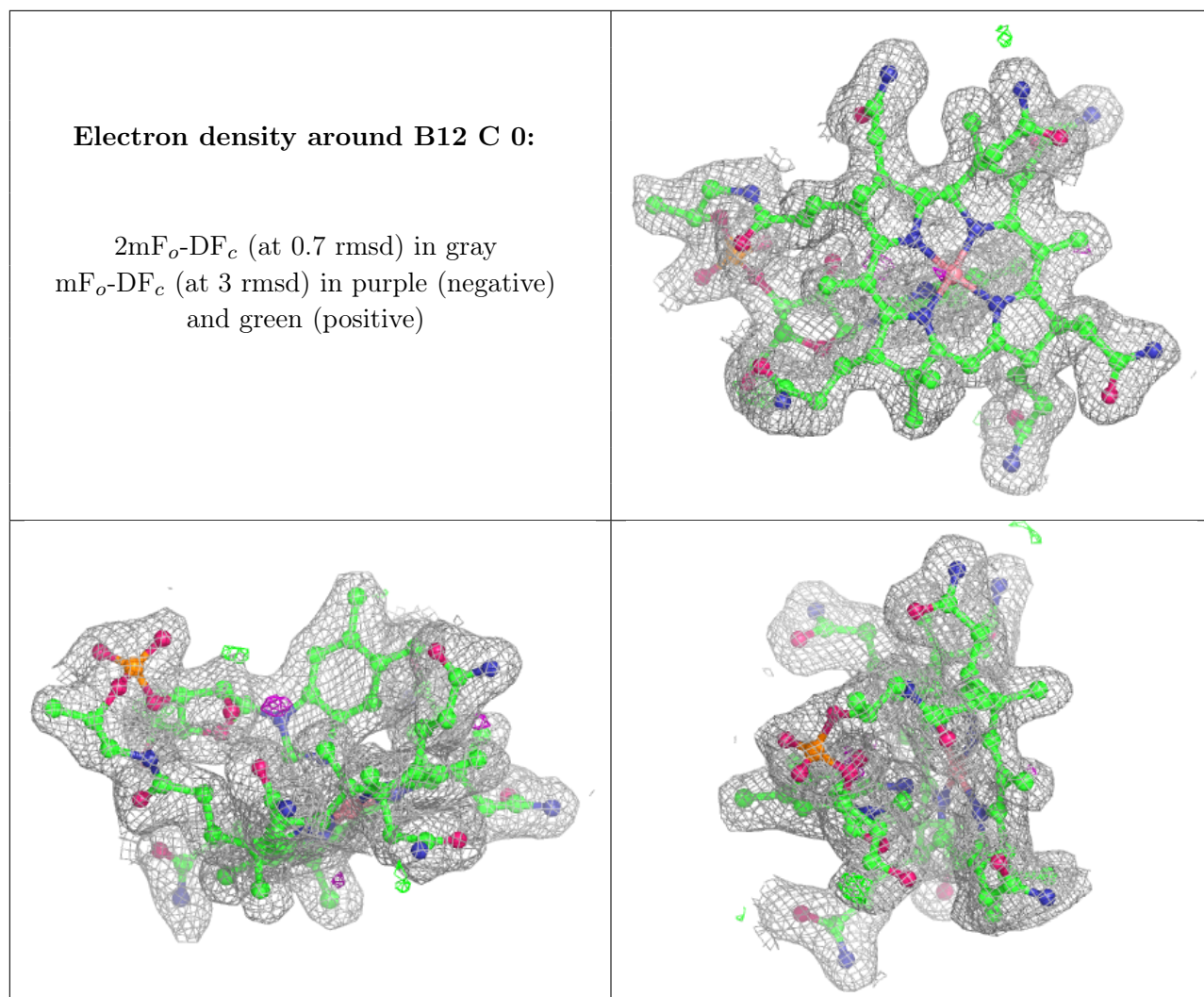and green (positive)
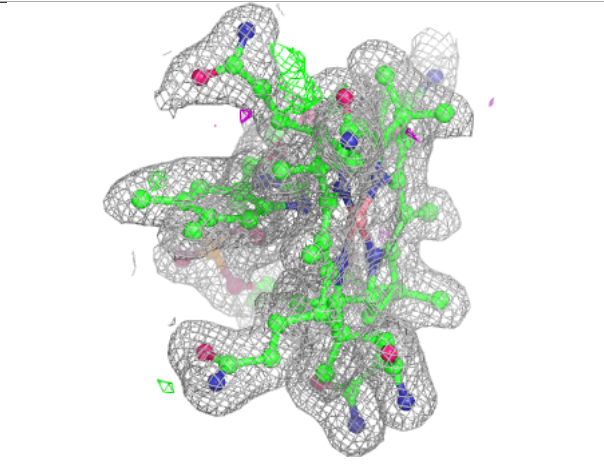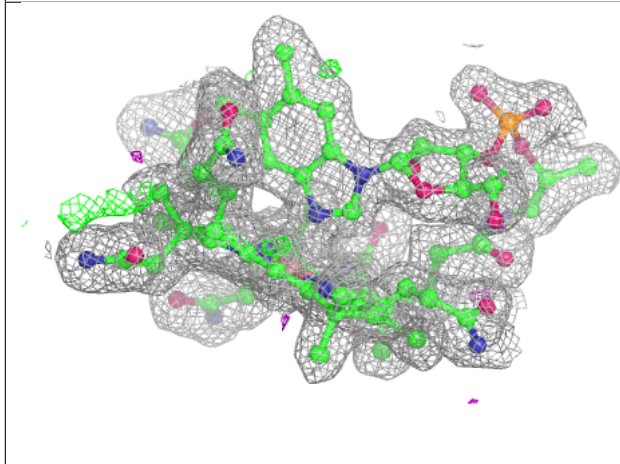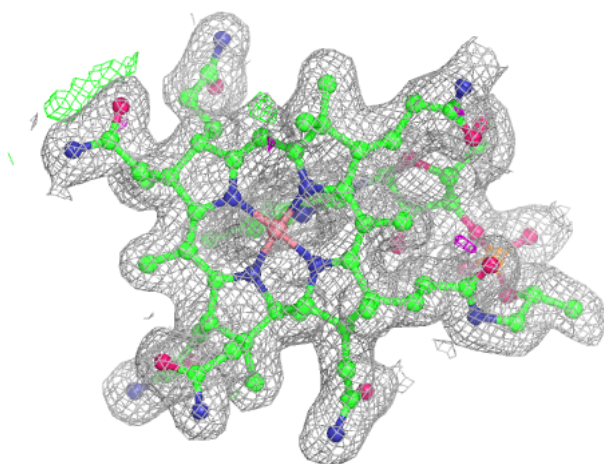
Electron density around B12 B 0:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
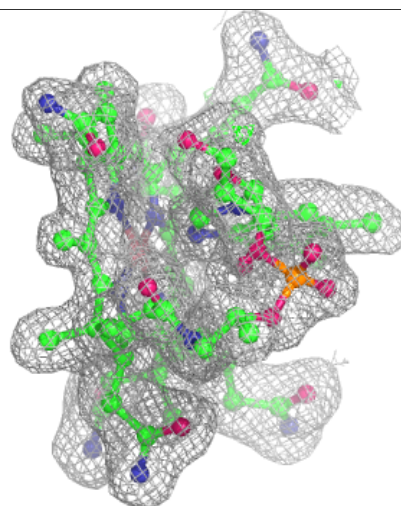
Electron density around B12 D 0:

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

Electron density around B12 C 0:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.