Full wwPDB X-ray Structure Validation Report (i)

Oct 10, 2021 – 04:26 PM EDT

PDB ID	:	3GOB
Title	:	Crystal Structure of Dicamba Monooxygenase with Non-heme Cobalt and DCSA
Authors	:	Rydel, T.J.; Sturman, E.J.; Moshiri, F.; Brown, G.R.; Qi, Y.
Deposited on	:	2009-03-18
Resolution	:	2.05 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 following versions of software and data (see references (i)) were used in the production of this report:

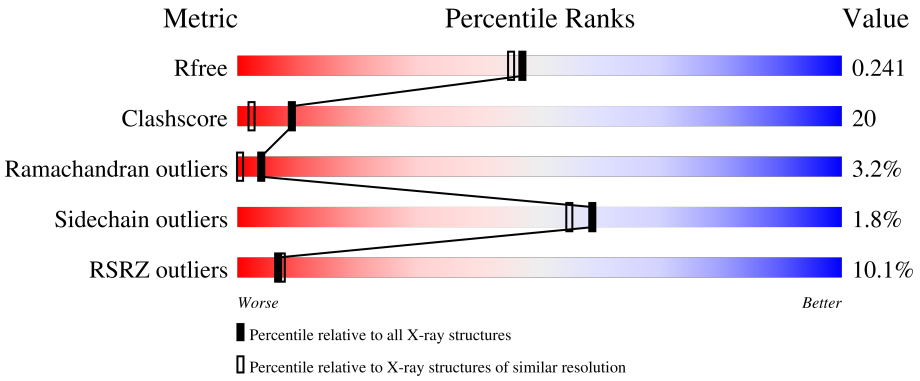
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.05 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}	130704	1692 (2.04-2.04)
Clashscore	141614	1773 (2.04-2.04)
Ramachandran outliers	138981	1752 (2.04-2.04)
Sidechain outliers	138945	1752 (2.04-2.04)
RSRZ outliers	127900	1672 (2.04-2.04)

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	349	9% 67% 27%
1	B	349	9% 67% 29%
1	C	349	12% 64% 30%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	HXX	A	601	-	-	-	X

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 8517 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 DdmC.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	342	Total	C	N	O	S	0	0	0
			2649	1670	475	490	14			
1	B	341	Total	C	N	O	S	0	0	0
			2641	1665	474	489	13			
1	C	342	Total	C	N	O	S	0	0	0
			2649	1670	475	490	14			

There are 33 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	expression tag	UNP Q5S3I3
A	2	ALA	MET	engineered mutation	UNP Q5S3I3
A	341	ARG	-	expression tag	UNP Q5S3I3
A	342	LEU	-	expression tag	UNP Q5S3I3
A	343	GLU	-	expression tag	UNP Q5S3I3
A	344	HIS	-	expression tag	UNP Q5S3I3
A	345	HIS	-	expression tag	UNP Q5S3I3
A	346	HIS	-	expression tag	UNP Q5S3I3
A	347	HIS	-	expression tag	UNP Q5S3I3
A	348	HIS	-	expression tag	UNP Q5S3I3
A	349	HIS	-	expression tag	UNP Q5S3I3
B	1	MET	-	expression tag	UNP Q5S3I3
B	2	ALA	MET	engineered mutation	UNP Q5S3I3
B	341	ARG	-	expression tag	UNP Q5S3I3
B	342	LEU	-	expression tag	UNP Q5S3I3
B	343	GLU	-	expression tag	UNP Q5S3I3
B	344	HIS	-	expression tag	UNP Q5S3I3
B	345	HIS	-	expression tag	UNP Q5S3I3
B	346	HIS	-	expression tag	UNP Q5S3I3
B	347	HIS	-	expression tag	UNP Q5S3I3
B	348	HIS	-	expression tag	UNP Q5S3I3
B	349	HIS	-	expression tag	UNP Q5S3I3
C	1	MET	-	expression tag	UNP Q5S3I3

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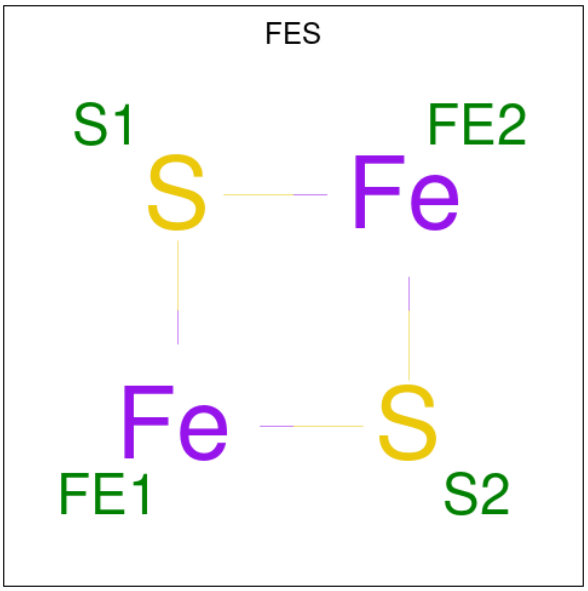
Chain	Residue	Modelled	Actual	Comment	Reference
C	2	ALA	MET	engineered mutation	UNP Q5S3I3
C	341	ARG	-	expression tag	UNP Q5S3I3
C	342	LEU	-	expression tag	UNP Q5S3I3
C	343	GLU	-	expression tag	UNP Q5S3I3
C	344	HIS	-	expression tag	UNP Q5S3I3
C	345	HIS	-	expression tag	UNP Q5S3I3
C	346	HIS	-	expression tag	UNP Q5S3I3
C	347	HIS	-	expression tag	UNP Q5S3I3
C	348	HIS	-	expression tag	UNP Q5S3I3
C	349	HIS	-	expression tag	UNP Q5S3I3

- Molecule 2 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Fe S 4 2 2	0	0
2	B	1	Total Fe S 4 2 2	0	0
2	C	1	Total Fe S 4 2 2	0	0

- Molecule 3 is COBALT (II) ION (three-letter code: CO) (formula: Co).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	2	Total Co 2 2	0	0

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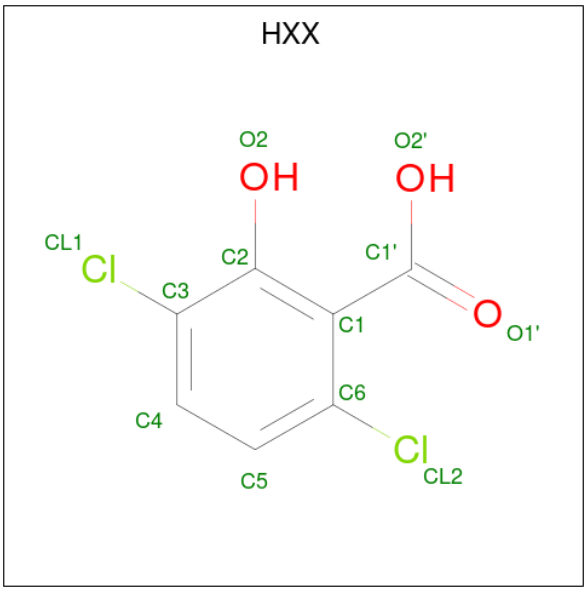
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	2	Total Co 2 2	0	0
3	C	4	Total Co 4 4	0	0

- Molecule 4 is 3,6-dichloro-2-hydroxybenzoic acid (three-letter code: HXX) (formula: $C_7H_4Cl_2O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C Cl O 12 7 2 3	0	0
4	B	1	Total C Cl O 12 7 2 3	0	0
4	C	1	Total C Cl O 12 7 2 3	0	0

- Molecule 5 is water.

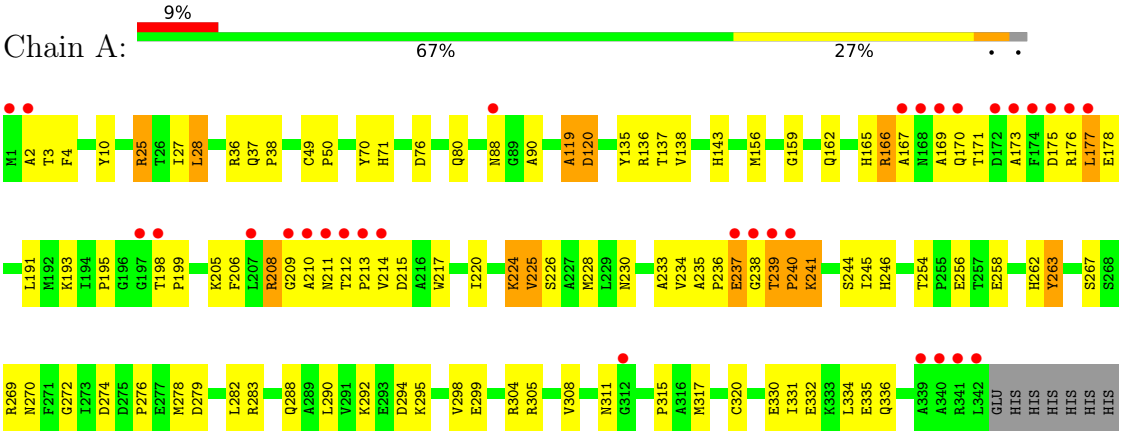
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	189	Total O 189 189	0	0
5	B	173	Total O 173 173	0	0
5	C	160	Total O 160 160	0	0

3 Residue-property plots (i)

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

• Molecule 1: DdmC

Chain A:

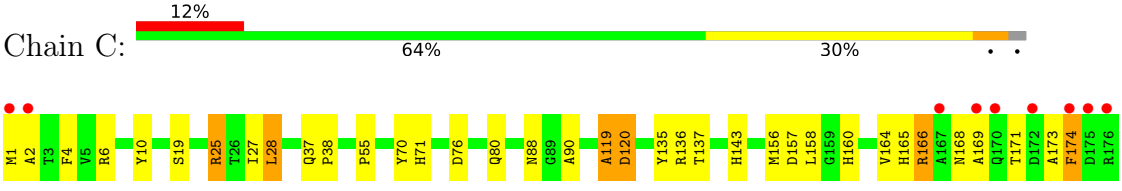


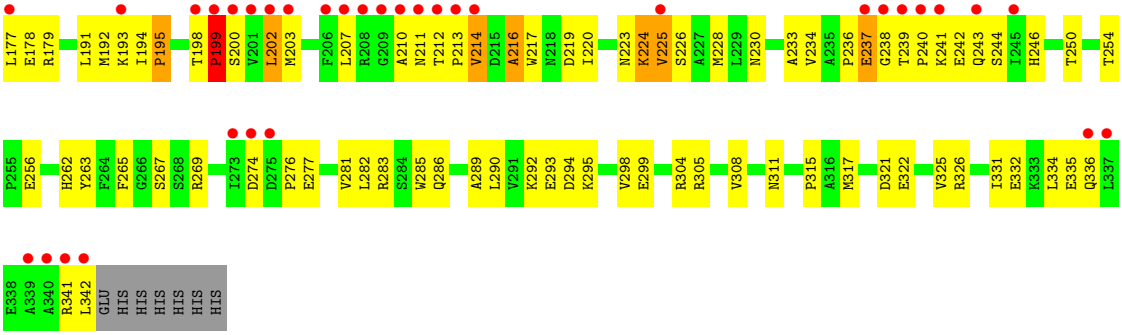
• Molecule 1: DdmC

Chain B:

• Molecule 1: DdmC

Chain C:




L177 E178 R179 L191 M192 K193 I194 P195 T198 P199 S200 V201 L202 M203 F206 L207 R208 G209 A210 N211 T212 P213 V214 D215 A216 W217 N218 D219 I220 N223 K224 V225 S226 A227 M228 L229 N230 A233 V234 A235 P236 E237 G238 T239 P240 K241 E242 Q243 S244 I245 H246 T250 T254
P255 E256 H262 Y263 F264 F265 G266 S267 S268 R269 I273 D274 D275 P276 E277 V281 L282 R283 S284 W285 Q286 A289 L290 V291 K292 E293 D294 K295 V298 E299 R304 R305 V308 N311 P315 A316 M317 D321 E322 V325 R326 I331 E332 K333 L334 E335 Q336 L337
E338 A339 A340 R341 L342 GLU HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 32	Depositor
Cell constants a, b, c, α, β, γ	81.01Å 81.01Å 161.05Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	20.00 – 2.05 42.63 – 2.05	Depositor EDS
% Data completeness (in resolution range)	81.8 (20.00-2.05) 82.2 (42.63-2.05)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.19 (at 2.05Å)	Xtriage
Refinement program	CNX	Depositor
R, R_{free}	0.232 , 0.267 0.211 , 0.241	Depositor DCC
R_{free} test set	6147 reflections (10.13%)	wwPDB-VP
Wilson B-factor (Å^2)	34.6	Xtriage
Anisotropy	0.270	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.39 , 60.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.003 for -h,-k,l 0.039 for h,-h-k,-l 0.023 for -k,-h,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	8517	wwPDB-VP
Average B, all atoms (Å^2)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.11% of the height of the origin peak. No significant pseudotranslation is detected.*

[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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FES, HXX, CO

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	0.30	0/2714	0.63	0/3695
1	B	0.29	0/2706	0.61	1/3685 (0.0%)
1	C	0.28	0/2714	0.62	0/3695
All	All	0.29	0/8134	0.62	1/11075 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	72	GLY	N-CA-C	5.01	125.62	113.10

There are no chirality outliers.

There are no planarity outliers.

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	2649	0	2589	118	0
1	B	2641	0	2577	91	0
1	C	2649	0	2589	112	0
2	A	4	0	0	1	0
2	B	4	0	0	1	0
2	C	4	0	0	1	0
3	A	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	2	0	0	0	0
3	C	4	0	0	0	0
4	A	12	0	3	0	0
4	B	12	0	3	0	0
4	C	12	0	3	0	0
5	A	189	0	0	15	0
5	B	173	0	0	11	0
5	C	160	0	0	8	0
All	All	8517	0	7764	318	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 20.

All (318) 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:169:ALA:HB2	1:C:202:LEU:HD12	1.45	0.99
1:A:166:ARG:O	1:A:170:GLN:HB2	1.67	0.93
1:A:272:GLY:HA3	1:A:278:MET:HE1	1.56	0.87
1:A:175:ASP:HB3	1:A:177:LEU:HD11	1.57	0.84
1:C:171:THR:HG22	1:C:173:ALA:H	1.44	0.83
1:C:242:GLU:HG3	1:C:243:GLN:HE21	1.42	0.83
1:A:217:TRP:CH2	1:A:239:THR:HB	2.15	0.81
1:C:286:GLN:HA	1:C:290:LEU:HD23	1.62	0.81
1:A:206:PHE:HB2	1:A:245:ILE:HD13	1.61	0.81
1:A:215:ASP:HB2	1:A:239:THR:HG21	1.62	0.79
1:B:269:ARG:HG3	5:B:766:HOH:O	1.83	0.79
1:C:269:ARG:HD3	1:C:282:LEU:HD11	1.65	0.78
1:B:174:PHE:O	1:B:177:LEU:HG	1.82	0.78
1:A:240:PRO:O	1:A:241:LYS:HB2	1.84	0.78
1:C:194:ILE:HB	1:C:216:ALA:HB3	1.66	0.77
1:C:192:MET:HE3	1:C:194:ILE:HD11	1.68	0.76
1:C:207:LEU:HD11	1:C:234:VAL:HG21	1.70	0.72
1:A:269:ARG:HD3	1:A:282:LEU:HD11	1.70	0.72
1:A:156:MET:HE1	1:A:220:ILE:HD13	1.70	0.71
1:A:217:TRP:HH2	1:A:239:THR:HB	1.52	0.71
1:A:269:ARG:HG3	5:A:840:HOH:O	1.88	0.71
1:C:174:PHE:O	1:C:177:LEU:HG	1.91	0.71
1:B:162:GLN:OE1	1:B:170:GLN:HA	1.91	0.70
1:A:199:PRO:HB3	1:A:234:VAL:HG21	1.74	0.69
1:C:195:PRO:HB3	1:C:214:VAL:HA	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:195:PRO:CB	1:C:214:VAL:HA	2.23	0.68
1:A:208:ARG:HG2	1:A:209:GLY:N	2.09	0.67
1:B:171:THR:HG21	1:B:194:ILE:HG21	1.75	0.67
1:C:269:ARG:HH11	1:C:282:LEU:CD1	2.06	0.67
1:C:158:LEU:HD13	1:C:192:MET:HE2	1.75	0.67
1:B:86:HIS:ND1	5:B:865:HOH:O	2.27	0.67
1:B:193:LYS:HE2	1:B:217:TRP:HE1	1.60	0.66
1:B:171:THR:HG22	1:B:173:ALA:H	1.59	0.66
1:A:88:ASN:HD21	1:A:90:ALA:HB2	1.61	0.66
1:C:193:LYS:HB3	5:C:1089:HOH:O	1.96	0.66
1:A:269:ARG:HD3	1:A:282:LEU:CD1	2.26	0.66
1:C:269:ARG:HH11	1:C:282:LEU:HD12	1.60	0.65
1:A:10:TYR:CE2	1:A:225:VAL:HG11	2.31	0.65
1:B:177:LEU:CD2	1:B:194:ILE:HG12	2.27	0.65
1:A:156:MET:HE2	1:A:228:MET:SD	2.37	0.64
1:B:165:HIS:ND1	1:B:293:GLU:OE2	2.23	0.64
1:B:289:ALA:HA	1:B:293:GLU:OE2	1.98	0.64
1:B:295:LYS:O	1:B:299:GLU:HG3	1.98	0.64
1:A:233:ALA:HB2	1:A:246:HIS:HB3	1.79	0.64
1:A:270:ASN:HB3	5:A:1017:HOH:O	1.96	0.64
1:A:177:LEU:HD12	1:A:177:LEU:N	2.13	0.64
1:C:27:ILE:HD12	1:C:254:THR:HG21	1.80	0.63
1:C:1:MET:SD	1:C:6:ARG:NH1	2.71	0.63
1:C:295:LYS:O	1:C:299:GLU:HG3	1.98	0.63
1:C:237:GLU:C	1:C:239:THR:H	2.01	0.63
1:A:143:HIS:HE1	1:A:256:GLU:OE1	1.82	0.63
1:C:88:ASN:HD21	1:C:90:ALA:HB2	1.63	0.63
1:C:277:GLU:O	1:C:281:VAL:HG23	1.99	0.62
1:B:27:ILE:HD12	1:B:254:THR:HG21	1.80	0.62
1:C:160:HIS:HB2	1:C:164:VAL:HG23	1.82	0.62
1:A:4:PHE:HB3	1:A:28:LEU:HD13	1.81	0.62
1:B:4:PHE:HB3	1:B:28:LEU:HD13	1.82	0.62
1:B:236:PRO:HG2	1:B:239:THR:HG21	1.82	0.62
1:C:233:ALA:HB2	1:C:246:HIS:HB3	1.81	0.61
1:B:88:ASN:HD21	1:B:90:ALA:HB2	1.64	0.61
1:C:202:LEU:HD21	1:C:285:TRP:CE3	2.35	0.61
1:B:292:LYS:O	1:B:296:VAL:HG23	2.00	0.61
1:C:156:MET:HE1	1:C:220:ILE:HD13	1.82	0.61
1:C:119:ALA:O	1:C:120:ASP:HB3	2.00	0.61
1:B:282:LEU:O	1:B:286:GLN:HG3	2.01	0.60
1:C:198:THR:O	1:C:199:PRO:O	2.19	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:289:ALA:HA	1:C:293:GLU:OE2	2.01	0.60
1:C:4:PHE:HB3	1:C:28:LEU:HD13	1.81	0.60
1:A:215:ASP:CB	1:A:239:THR:HG21	2.32	0.60
1:A:330:GLU:HG3	5:A:1135:HOH:O	2.00	0.60
1:B:156:MET:HE2	1:B:220:ILE:HD13	1.84	0.60
1:A:27:ILE:HD12	1:A:254:THR:HG21	1.83	0.60
1:C:157:ASP:HB2	5:C:884:HOH:O	2.02	0.60
1:A:138:VAL:HG23	5:A:1152:HOH:O	2.01	0.59
1:C:290:LEU:HD22	1:C:290:LEU:H	1.66	0.59
1:A:37:GLN:HB3	1:A:38:PRO:HD2	1.84	0.59
1:C:217:TRP:CH2	1:C:241:LYS:HA	2.37	0.59
1:A:119:ALA:O	1:A:120:ASP:HB3	2.02	0.59
1:C:160:HIS:HB2	1:C:164:VAL:CG2	2.33	0.58
1:A:76:ASP:OD2	1:A:80:GLN:HB3	2.03	0.58
1:B:193:LYS:HG2	1:B:217:TRP:CD1	2.39	0.58
1:A:295:LYS:O	1:A:299:GLU:HG3	2.03	0.58
1:A:156:MET:CE	1:A:228:MET:SD	2.91	0.58
1:A:212:THR:HG23	1:A:213:PRO:HD2	1.86	0.57
1:A:2:ALA:O	1:A:3:THR:OG1	2.22	0.57
1:C:331:ILE:O	1:C:335:GLU:HG3	2.04	0.57
1:B:269:ARG:HH11	1:B:282:LEU:HD12	1.70	0.56
1:A:162:GLN:O	1:A:166:ARG:HA	2.06	0.56
5:A:820:HOH:O	1:B:320:CYS:HB3	2.05	0.56
1:C:198:THR:O	1:C:198:THR:HG23	2.06	0.56
1:C:212:THR:HG23	1:C:213:PRO:HD2	1.86	0.56
1:C:37:GLN:HB3	1:C:38:PRO:HD2	1.88	0.56
1:B:37:GLN:HB3	1:B:38:PRO:HD2	1.88	0.55
1:B:225:VAL:HG12	1:B:226:SER:N	2.22	0.55
1:C:332:GLU:O	1:C:336:GLN:HG3	2.07	0.55
1:A:176:ARG:HA	5:A:771:HOH:O	2.05	0.55
1:B:143:HIS:HE1	1:B:256:GLU:OE1	1.89	0.55
1:C:283:ARG:HG2	5:C:1068:HOH:O	2.06	0.55
1:C:308:VAL:O	1:C:311:ASN:O	2.25	0.55
1:C:171:THR:HG22	1:C:173:ALA:N	2.19	0.55
1:C:202:LEU:HD11	1:C:285:TRP:CZ3	2.42	0.55
1:A:237:GLU:HG3	1:A:238:GLY:N	2.22	0.54
1:C:274:ASP:O	1:C:276:PRO:HD3	2.07	0.54
1:C:136:ARG:HG2	1:C:269:ARG:NH2	2.22	0.54
1:C:290:LEU:HD22	1:C:290:LEU:N	2.23	0.54
1:A:175:ASP:HB3	1:A:177:LEU:CD1	2.32	0.54
1:A:240:PRO:O	1:A:241:LYS:CB	2.56	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:10:TYR:CE2	1:C:225:VAL:HG11	2.42	0.54
1:A:137:THR:HA	1:A:267:SER:O	2.07	0.53
1:C:76:ASP:OD2	1:C:80:GLN:HB3	2.08	0.53
1:A:288:GLN:NE2	1:A:292:LYS:HB2	2.23	0.53
1:A:159:GLY:HA3	5:A:1121:HOH:O	2.09	0.53
1:A:245:ILE:HA	5:A:1017:HOH:O	2.09	0.53
1:B:55:PRO:HB3	1:C:304:ARG:CZ	2.39	0.53
1:B:156:MET:HE3	1:B:228:MET:SD	2.48	0.53
1:A:269:ARG:CD	1:A:278:MET:HE3	2.39	0.53
1:B:190:ALA:HB2	1:B:323:ALA:CB	2.38	0.53
1:B:76:ASP:OD2	1:B:80:GLN:HB3	2.09	0.53
1:C:203:MET:HG2	1:C:207:LEU:HD12	1.90	0.52
1:A:2:ALA:O	1:A:258:GLU:OE1	2.26	0.52
1:A:214:VAL:HG12	1:A:236:PRO:HA	1.91	0.52
1:C:203:MET:CE	1:C:234:VAL:HB	2.38	0.52
1:A:304:ARG:CZ	1:C:55:PRO:HB3	2.39	0.52
1:A:320:CYS:SG	5:A:1121:HOH:O	2.58	0.52
1:B:193:LYS:HE2	1:B:217:TRP:NE1	2.23	0.52
1:C:156:MET:HE2	1:C:228:MET:SD	2.49	0.52
1:A:331:ILE:O	1:A:335:GLU:HG3	2.10	0.52
1:B:71:HIS:HB2	2:B:501:FES:S1	2.50	0.52
1:B:237:GLU:HA	5:B:1118:HOH:O	2.09	0.52
1:A:240:PRO:HG2	1:A:241:LYS:H	1.74	0.52
1:A:10:TYR:CZ	1:A:225:VAL:HG11	2.45	0.52
1:B:286:GLN:O	1:B:290:LEU:HB2	2.09	0.52
1:C:326:ARG:NE	5:C:1044:HOH:O	2.42	0.52
1:A:156:MET:HE3	1:A:228:MET:HG2	1.92	0.52
1:A:269:ARG:HH11	1:A:282:LEU:HD12	1.75	0.52
1:A:274:ASP:O	1:A:276:PRO:HD3	2.10	0.51
1:C:305:ARG:HA	1:C:308:VAL:HG22	1.92	0.51
1:B:217:TRP:CE2	1:B:241:LYS:HB3	2.45	0.51
1:C:225:VAL:HG12	1:C:226:SER:N	2.25	0.51
1:B:341:ARG:HG2	1:B:342:LEU:HD22	1.93	0.51
1:B:158:LEU:HB2	1:B:192:MET:SD	2.51	0.51
1:C:242:GLU:C	1:C:244:SER:H	2.13	0.51
1:B:331:ILE:O	1:B:335:GLU:HG3	2.11	0.50
1:C:282:LEU:O	1:C:286:GLN:HG3	2.10	0.50
1:A:233:ALA:CB	1:A:246:HIS:HB3	2.41	0.50
1:C:137:THR:HA	1:C:267:SER:O	2.10	0.50
1:B:305:ARG:HA	1:B:308:VAL:HG22	1.94	0.50
1:C:19:SER:HB2	5:C:1022:HOH:O	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:269:ARG:CD	1:C:282:LEU:HD11	2.41	0.50
1:A:235:ALA:O	1:A:239:THR:HG22	2.12	0.50
1:B:2:ALA:HB1	1:B:258:GLU:OE1	2.12	0.50
1:B:173:ALA:HB2	1:B:176:ARG:HH21	1.77	0.50
1:C:240:PRO:C	1:C:242:GLU:N	2.65	0.50
1:B:332:GLU:O	1:B:336:GLN:HG3	2.12	0.49
1:B:202:LEU:HD22	1:B:285:TRP:CE3	2.48	0.49
1:A:193:LYS:HD3	1:A:217:TRP:HE1	1.77	0.49
1:C:191:LEU:HA	1:C:219:ASP:OD1	2.12	0.49
1:A:308:VAL:O	1:A:311:ASN:O	2.31	0.49
1:C:192:MET:N	1:C:219:ASP:OD1	2.38	0.49
1:C:269:ARG:NH1	1:C:282:LEU:HD12	2.25	0.49
1:A:235:ALA:HB2	1:A:244:SER:CB	2.43	0.49
1:C:71:HIS:HB2	2:C:501:FES:S1	2.53	0.49
1:A:208:ARG:HG2	1:A:209:GLY:H	1.77	0.48
1:A:263:TYR:CD1	1:A:290:LEU:HD13	2.48	0.48
1:B:177:LEU:HD22	1:B:194:ILE:HG12	1.95	0.48
1:A:162:GLN:HG3	1:A:170:GLN:HG3	1.94	0.48
1:A:167:ALA:HA	1:A:170:GLN:HB2	1.95	0.48
1:C:158:LEU:HG	1:C:179:ARG:CZ	2.43	0.48
1:B:194:ILE:HB	1:B:216:ALA:HB3	1.94	0.48
1:B:308:VAL:O	1:B:311:ASN:O	2.30	0.48
1:C:315:PRO:HB2	1:C:317:MET:CE	2.44	0.48
1:B:126:ASP:HA	5:B:762:HOH:O	2.13	0.48
1:A:225:VAL:HG12	1:A:226:SER:N	2.28	0.48
1:A:237:GLU:CG	1:A:238:GLY:H	2.26	0.48
1:A:269:ARG:NE	1:A:278:MET:HE3	2.28	0.48
1:B:190:ALA:HB2	1:B:323:ALA:HB2	1.96	0.48
1:C:198:THR:O	1:C:198:THR:CG2	2.61	0.48
1:C:289:ALA:O	1:C:293:GLU:HB2	2.13	0.47
1:A:305:ARG:HA	1:A:308:VAL:HG22	1.95	0.47
1:A:332:GLU:O	1:A:336:GLN:HG3	2.14	0.47
1:C:199:PRO:HG3	1:C:203:MET:SD	2.55	0.47
1:A:25:ARG:HD2	1:A:262:HIS:CE1	2.50	0.47
1:A:88:ASN:ND2	1:A:90:ALA:HB2	2.28	0.47
1:A:165:HIS:HB2	1:A:169:ALA:HB3	1.96	0.47
1:A:294:ASP:O	1:A:298:VAL:HG22	2.14	0.47
1:B:162:GLN:HG3	1:B:174:PHE:CD1	2.50	0.47
1:B:174:PHE:CE1	1:B:177:LEU:HD11	2.50	0.47
1:C:10:TYR:CZ	1:C:225:VAL:HG11	2.50	0.47
1:B:277:GLU:O	1:B:281:VAL:HG23	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:289:ALA:O	1:B:293:GLU:HB2	2.14	0.47
1:B:341:ARG:HD3	5:B:1069:HOH:O	2.14	0.47
1:C:88:ASN:ND2	1:C:90:ALA:HB2	2.29	0.47
1:A:195:PRO:HA	1:A:215:ASP:OD2	2.15	0.46
1:A:237:GLU:O	1:A:239:THR:N	2.38	0.46
1:C:237:GLU:O	1:C:239:THR:N	2.48	0.46
1:C:178:GLU:O	1:C:192:MET:HG3	2.16	0.46
1:A:135:TYR:HA	1:A:269:ARG:O	2.16	0.46
1:C:25:ARG:HD2	1:C:262:HIS:CE1	2.51	0.46
1:C:214:VAL:O	1:C:214:VAL:HG13	2.16	0.46
1:B:294:ASP:O	1:B:298:VAL:HG22	2.16	0.45
1:C:294:ASP:O	1:C:298:VAL:HG22	2.16	0.45
1:A:234:VAL:O	1:A:244:SER:HB2	2.16	0.45
1:C:242:GLU:C	1:C:244:SER:N	2.69	0.45
1:A:71:HIS:HB2	2:A:501:FES:S1	2.56	0.45
1:A:237:GLU:O	1:A:239:THR:HG23	2.16	0.45
1:B:196:GLY:N	1:B:215:ASP:OD2	2.49	0.45
1:B:291:VAL:O	1:B:291:VAL:HG12	2.17	0.45
1:C:220:ILE:HA	1:C:230:ASN:HA	1.98	0.45
1:C:237:GLU:C	1:C:239:THR:N	2.68	0.45
1:A:315:PRO:HB2	1:A:317:MET:CE	2.46	0.45
1:B:10:TYR:CZ	1:B:225:VAL:HG11	2.51	0.45
1:B:88:ASN:ND2	1:B:90:ALA:HB2	2.31	0.45
1:C:240:PRO:C	1:C:242:GLU:H	2.18	0.45
1:C:1:MET:SD	1:C:6:ARG:HD2	2.57	0.45
1:C:143:HIS:HE1	1:C:256:GLU:OE1	2.00	0.45
1:A:171:THR:HG22	1:A:173:ALA:H	1.82	0.45
1:A:212:THR:CG2	1:A:213:PRO:HD2	2.46	0.45
1:A:224:LYS:O	1:A:225:VAL:HB	2.17	0.45
1:B:36:ARG:NH1	5:B:1213:HOH:O	2.49	0.45
1:B:305:ARG:O	1:B:308:VAL:HG22	2.17	0.45
1:A:305:ARG:O	1:A:308:VAL:HG22	2.16	0.44
1:B:163:TYR:O	1:B:166:ARG:HB2	2.17	0.44
1:C:213:PRO:O	1:C:214:VAL:HB	2.17	0.44
1:A:171:THR:CG2	1:A:173:ALA:HB3	2.47	0.44
1:C:210:ALA:O	1:C:211:ASN:ND2	2.49	0.44
1:B:10:TYR:CE2	1:B:225:VAL:HG11	2.52	0.44
1:B:276:PRO:O	1:B:279:ASP:HB2	2.17	0.44
1:A:215:ASP:H	1:A:239:THR:HG21	1.82	0.44
1:A:119:ALA:O	1:A:120:ASP:CB	2.65	0.44
1:B:289:ALA:HA	1:B:293:GLU:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:208:ARG:HG2	1:B:208:ARG:HH11	1.83	0.44
1:B:217:TRP:CZ2	1:B:241:LYS:HB3	2.52	0.44
1:C:156:MET:HE1	1:C:220:ILE:CD1	2.47	0.44
1:C:212:THR:HG22	1:C:214:VAL:HG12	2.00	0.44
1:C:223:ASN:ND2	5:C:736:HOH:O	2.46	0.44
1:C:342:LEU:C	1:C:342:LEU:HD23	2.38	0.44
1:A:237:GLU:CG	1:A:238:GLY:N	2.80	0.43
1:B:212:THR:HG22	1:B:213:PRO:HD2	1.99	0.43
1:C:217:TRP:CZ2	1:C:241:LYS:HA	2.52	0.43
1:A:175:ASP:CG	1:A:176:ARG:H	2.21	0.43
1:B:36:ARG:NE	5:B:769:HOH:O	2.38	0.43
1:B:179:ARG:HA	1:B:191:LEU:O	2.17	0.43
1:B:118:LEU:O	1:B:119:ALA:C	2.57	0.43
1:B:212:THR:CG2	1:B:213:PRO:HD2	2.47	0.43
1:B:224:LYS:O	1:B:225:VAL:HB	2.18	0.43
1:A:191:LEU:HB3	5:A:1099:HOH:O	2.17	0.43
1:A:237:GLU:C	1:A:239:THR:H	2.18	0.43
1:C:211:ASN:HD22	1:C:211:ASN:HA	1.62	0.43
1:C:250:THR:O	1:C:265:PHE:HA	2.18	0.43
1:C:286:GLN:HA	1:C:290:LEU:CD2	2.40	0.43
1:A:167:ALA:O	1:A:170:GLN:N	2.52	0.43
1:A:220:ILE:HA	1:A:230:ASN:HA	2.01	0.43
1:A:167:ALA:HA	1:A:170:GLN:CB	2.49	0.43
1:A:213:PRO:O	1:A:236:PRO:HA	2.19	0.43
1:B:49:CYS:HA	1:B:50:PRO:HD3	1.86	0.43
1:B:220:ILE:HA	1:B:230:ASN:HA	2.01	0.43
1:C:135:TYR:HA	1:C:269:ARG:O	2.19	0.43
1:A:49:CYS:HA	1:A:50:PRO:HD3	1.85	0.43
1:A:214:VAL:HG12	1:A:236:PRO:CA	2.49	0.43
1:A:269:ARG:NE	1:A:278:MET:CE	2.82	0.43
1:B:326:ARG:NE	5:B:890:HOH:O	2.51	0.43
1:B:223:ASN:ND2	5:B:721:HOH:O	2.51	0.42
1:C:292:LYS:HD2	5:C:1205:HOH:O	2.19	0.42
1:A:176:ARG:N	1:A:177:LEU:HD12	2.34	0.42
1:B:27:ILE:HD12	1:B:254:THR:CG2	2.48	0.42
1:A:235:ALA:HB2	1:A:244:SER:HB3	2.02	0.42
1:A:263:TYR:HD1	1:A:290:LEU:HD13	1.83	0.42
1:B:36:ARG:NH2	5:B:769:HOH:O	2.50	0.42
1:C:224:LYS:O	1:C:225:VAL:HB	2.19	0.42
1:B:214:VAL:HG21	1:B:234:VAL:HG22	2.02	0.42
1:A:166:ARG:NE	5:A:1085:HOH:O	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:THR:HG22	1:A:173:ALA:N	2.35	0.42
1:B:25:ARG:HD2	1:B:262:HIS:CE1	2.55	0.42
1:B:322:GLU:OE2	1:B:326:ARG:CZ	2.68	0.42
1:C:341:ARG:HD3	5:C:1144:HOH:O	2.19	0.42
1:A:225:VAL:HB	5:A:925:HOH:O	2.19	0.42
1:C:1:MET:HE3	1:C:6:ARG:HD2	2.00	0.42
1:A:272:GLY:HA3	1:A:278:MET:CE	2.39	0.42
1:C:233:ALA:CB	1:C:246:HIS:HB3	2.47	0.42
1:B:36:ARG:NH1	1:B:36:ARG:HB2	2.35	0.42
1:A:156:MET:HE3	1:A:228:MET:SD	2.60	0.42
1:A:205:LYS:O	1:A:205:LYS:HG3	2.19	0.42
1:A:276:PRO:O	1:A:279:ASP:HB2	2.20	0.42
1:A:330:GLU:CG	5:A:1135:HOH:O	2.65	0.42
1:A:28:LEU:HD23	1:A:28:LEU:N	2.34	0.41
1:B:151:LEU:HD23	1:B:151:LEU:HA	1.87	0.41
1:B:236:PRO:O	1:B:239:THR:HG23	2.20	0.41
1:B:282:LEU:HD13	5:B:766:HOH:O	2.20	0.41
1:C:321:ASP:O	1:C:325:VAL:HG23	2.20	0.41
1:A:36:ARG:NH1	5:A:832:HOH:O	2.53	0.41
1:B:112:TRP:CD2	1:B:119:ALA:HA	2.56	0.41
1:B:166:ARG:HB2	1:B:166:ARG:HE	1.70	0.41
1:C:207:LEU:HG	1:C:234:VAL:HG11	2.02	0.41
1:A:224:LYS:HE3	1:A:334:LEU:HD22	2.03	0.41
1:B:342:LEU:H	1:B:342:LEU:HD23	1.83	0.41
1:B:342:LEU:HD23	1:B:342:LEU:N	2.35	0.41
1:A:237:GLU:HG3	1:A:238:GLY:H	1.81	0.41
1:A:283:ARG:HG2	1:A:283:ARG:HH11	1.86	0.41
1:A:304:ARG:NH2	1:C:55:PRO:HB3	2.36	0.41
1:A:136:ARG:NH2	1:A:279:ASP:OD1	2.50	0.41
1:A:166:ARG:O	1:A:170:GLN:CB	2.55	0.41
1:A:198:THR:O	1:A:198:THR:HG22	2.21	0.41
1:B:137:THR:HA	1:B:267:SER:O	2.21	0.41
1:C:305:ARG:O	1:C:308:VAL:HG22	2.19	0.41
1:A:283:ARG:NH2	5:A:806:HOH:O	2.54	0.41
1:C:28:LEU:N	1:C:28:LEU:HD23	2.36	0.41
1:A:171:THR:C	1:A:173:ALA:N	2.72	0.40
1:C:165:HIS:O	1:C:166:ARG:C	2.58	0.40
1:C:224:LYS:HE3	1:C:334:LEU:HD22	2.03	0.40
1:C:242:GLU:HG3	1:C:243:GLN:NE2	2.22	0.40
1:C:285:TRP:CZ3	1:C:289:ALA:HB2	2.57	0.40
1:B:315:PRO:HB2	1:B:317:MET:CE	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:156:MET:HE3	1:C:228:MET:HG2	2.02	0.40
1:B:329:ARG:O	1:B:333:LYS:HG3	2.21	0.40
1:C:194:ILE:HB	1:C:216:ALA:CB	2.46	0.40
1:C:304:ARG:HH11	1:C:304:ARG:HG3	1.86	0.40
1:C:322:GLU:OE2	1:C:326:ARG:CZ	2.70	0.40
1:B:239:THR:HA	1:B:240:PRO:HD3	1.92	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	340/349 (97%)	308 (91%)	19 (6%)	13 (4%)	3 0
1	B	339/349 (97%)	314 (93%)	21 (6%)	4 (1%)	13 5
1	C	340/349 (97%)	298 (88%)	26 (8%)	16 (5%)	2 0
All	All	1019/1047 (97%)	920 (90%)	66 (6%)	33 (3%)	4 0

All (33) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	119	ALA
1	A	166	ARG
1	A	225	VAL
1	B	196	GLY
1	B	225	VAL
1	C	119	ALA
1	C	199	PRO
1	C	214	VAL
1	C	225	VAL
1	C	237	GLU
1	A	210	ALA

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Mol	Chain	Res	Type
1	A	240	PRO
1	A	241	LYS
1	C	236	PRO
1	A	224	LYS
1	A	237	GLU
1	B	224	LYS
1	B	237	GLU
1	C	2	ALA
1	C	195	PRO
1	C	200	SER
1	C	216	ALA
1	C	224	LYS
1	A	120	ASP
1	A	211	ASN
1	C	120	ASP
1	C	166	ARG
1	C	202	LEU
1	A	178	GLU
1	A	208	ARG
1	C	168	ASN
1	A	239	THR
1	C	238	GLY

5.3.2 Protein sidechains (i)

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	277/284 (98%)	272 (98%)	5 (2%)	59	55
1	B	276/284 (97%)	272 (99%)	4 (1%)	67	65
1	C	277/284 (98%)	271 (98%)	6 (2%)	52	46
All	All	830/852 (97%)	815 (98%)	15 (2%)	59	55

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	25	ARG
1	A	28	LEU
1	A	70	TYR
1	A	177	LEU
1	A	263	TYR
1	B	25	ARG
1	B	28	LEU
1	B	70	TYR
1	B	263	TYR
1	C	25	ARG
1	C	28	LEU
1	C	70	TYR
1	C	174	PHE
1	C	199	PRO
1	C	263	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	88	ASN
1	A	143	HIS
1	A	170	GLN
1	A	211	ASN
1	A	223	ASN
1	B	143	HIS
1	B	168	ASN
1	B	211	ASN
1	B	223	ASN
1	C	143	HIS
1	C	168	ASN
1	C	170	GLN
1	C	211	ASN
1	C	223	ASN
1	C	243	GLN

5.3.3 RNA

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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 14 ligands modelled in this entry, 8 are monoatomic - leaving 6 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	$\#\|Z\| > 2$
2	FES	A	501	1	0,4,4	-	-	-		
4	HXX	A	601	-	10,12,12	4.48	8 (80%)	12,17,17	1.53	3 (25%)
2	FES	C	501	1	0,4,4	-	-	-		
4	HXX	B	601	-	10,12,12	4.27	8 (80%)	12,17,17	1.51	4 (33%)
4	HXX	C	601	-	10,12,12	4.34	8 (80%)	12,17,17	1.56	4 (33%)
2	FES	B	501	1	0,4,4	-	-	-		

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	HXX	A	601	-	-	0/0/4/4	0/1/1/1
2	FES	A	501	1	-	-	0/1/1/1
2	FES	C	501	1	-	-	0/1/1/1
4	HXX	B	601	-	-	0/0/4/4	0/1/1/1
4	HXX	C	601	-	-	0/0/4/4	0/1/1/1
2	FES	B	501	1	-	-	0/1/1/1

All (24) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	601	HXX	C1-C6	9.14	1.49	1.40
4	C	601	HXX	C1-C6	8.95	1.48	1.40
4	B	601	HXX	C1-C6	8.27	1.48	1.40
4	B	601	HXX	C1-C2	6.57	1.48	1.40
4	A	601	HXX	C1-C2	6.48	1.48	1.40
4	C	601	HXX	C1-C2	6.47	1.48	1.40
4	B	601	HXX	C2-C3	5.47	1.48	1.39
4	A	601	HXX	C2-C3	5.30	1.47	1.39
4	C	601	HXX	C2-C3	4.99	1.47	1.39
4	A	601	HXX	C1-C1'	4.13	1.51	1.47
4	C	601	HXX	C1-C1'	3.55	1.50	1.47
4	B	601	HXX	C1-C1'	3.09	1.50	1.47
4	B	601	HXX	O2-C2	2.98	1.43	1.37
4	A	601	HXX	C4-C3	2.95	1.45	1.38
4	B	601	HXX	C4-C3	2.94	1.45	1.38
4	C	601	HXX	C4-C3	2.90	1.44	1.38
4	A	601	HXX	O2-C2	2.82	1.43	1.37
4	C	601	HXX	O2-C2	2.65	1.43	1.37
4	B	601	HXX	C5-C6	2.57	1.44	1.38
4	A	601	HXX	C5-C6	2.54	1.44	1.38
4	C	601	HXX	C5-C4	2.43	1.43	1.38
4	C	601	HXX	C5-C6	2.41	1.43	1.38
4	A	601	HXX	C5-C4	2.38	1.43	1.38
4	B	601	HXX	C5-C4	2.33	1.43	1.38

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	C	601	HXX	C1-C6-CL2	2.94	123.50	119.74
4	B	601	HXX	C2-C3-CL1	2.94	122.48	118.78
4	A	601	HXX	C1-C6-CL2	2.86	123.40	119.74
4	A	601	HXX	C2-C3-CL1	2.86	122.38	118.78
4	C	601	HXX	C2-C3-CL1	2.85	122.36	118.78
4	B	601	HXX	C1-C6-CL2	2.64	123.11	119.74
4	A	601	HXX	C4-C3-C2	-2.33	119.62	121.90
4	C	601	HXX	C4-C3-C2	-2.32	119.63	121.90
4	B	601	HXX	C4-C3-C2	-2.31	119.64	121.90
4	C	601	HXX	C5-C6-C1	-2.11	120.11	122.35
4	B	601	HXX	C5-C6-C1	-2.06	120.15	122.35

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	FES	1	0
2	C	501	FES	1	0
2	B	501	FES	1	0

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, 95^{th} 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	342/349 (97%)	0.52	31 (9%) 9 9	25, 39, 80, 90	0
1	B	341/349 (97%)	0.39	30 (8%) 10 10	26, 40, 74, 86	0
1	C	342/349 (97%)	0.81	43 (12%) 3 3	26, 43, 85, 90	0
All	All	1025/1047 (97%)	0.58	104 (10%) 7 7	25, 41, 81, 90	0

All (104) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	210	ALA	13.7
1	A	342	LEU	10.8
1	A	239	THR	10.1
1	A	211	ASN	10.1
1	C	209	GLY	10.0
1	C	342	LEU	9.7
1	C	213	PRO	9.6
1	C	1	MET	8.7
1	A	1	MET	8.4
1	C	176	ARG	8.4
1	C	212	THR	8.0
1	C	210	ALA	8.0
1	C	174	PHE	7.6
1	C	214	VAL	7.3
1	A	174	PHE	7.3
1	A	212	THR	6.3
1	A	177	LEU	6.2
1	A	173	ALA	6.0
1	A	169	ALA	6.0
1	C	340	ALA	5.9
1	B	291	VAL	5.9
1	A	209	GLY	5.7
1	A	172	ASP	5.6

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Mol	Chain	Res	Type	RSRZ
1	C	208	ARG	5.6
1	A	341	ARG	5.5
1	A	238	GLY	5.4
1	C	169	ALA	5.4
1	C	274	ASP	4.6
1	A	170	GLN	4.4
1	C	341	ARG	4.3
1	B	177	LEU	4.2
1	C	237	GLU	4.2
1	C	211	ASN	4.2
1	B	195	PRO	4.1
1	C	167	ALA	4.1
1	C	198	THR	4.1
1	B	281	VAL	4.0
1	C	238	GLY	4.0
1	C	337	LEU	4.0
1	A	339	ALA	3.9
1	C	175	ASP	3.9
1	B	342	LEU	3.8
1	C	2	ALA	3.7
1	A	175	ASP	3.7
1	C	203	MET	3.7
1	C	206	PHE	3.7
1	B	174	PHE	3.6
1	B	2	ALA	3.6
1	A	197	GLY	3.6
1	C	240	PRO	3.6
1	A	168	ASN	3.5
1	B	242	GLU	3.5
1	B	211	ASN	3.3
1	A	176	ARG	3.3
1	B	237	GLU	3.1
1	A	214	VAL	3.1
1	C	170	GLN	3.1
1	B	209	GLY	3.1
1	C	207	LEU	2.9
1	B	182	ILE	2.9
1	B	210	ALA	2.9
1	B	180	GLU	2.9
1	B	341	ARG	2.9
1	B	225	VAL	2.8
1	C	243	GLN	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	277	GLU	2.8
1	B	200	SER	2.8
1	A	167	ALA	2.7
1	B	213	PRO	2.7
1	B	192	MET	2.7
1	A	237	GLU	2.7
1	B	175	ASP	2.7
1	C	239	THR	2.7
1	C	202	LEU	2.7
1	C	225	VAL	2.6
1	C	193	LYS	2.6
1	C	245	ILE	2.5
1	A	2	ALA	2.5
1	C	177	LEU	2.5
1	A	312	GLY	2.5
1	B	245	ILE	2.5
1	C	273	ILE	2.5
1	C	336	GLN	2.4
1	B	167	ALA	2.4
1	C	339	ALA	2.4
1	C	172	ASP	2.4
1	A	207	LEU	2.3
1	C	275	ASP	2.3
1	C	241	LYS	2.3
1	C	201	VAL	2.3
1	B	204	ALA	2.3
1	C	199	PRO	2.3
1	C	200	SER	2.2
1	A	240	PRO	2.2
1	B	89	GLY	2.2
1	A	213	PRO	2.1
1	A	340	ALA	2.1
1	B	270	ASN	2.1
1	A	198	THR	2.1
1	A	88	ASN	2.1
1	B	193	LYS	2.1
1	B	158	LEU	2.0
1	B	234	VAL	2.0
1	B	179	ARG	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 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, 95^{th} 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
4	HXX	A	601	12/12	0.17	0.71	87,89,89,89	0
4	HXX	C	601	12/12	0.68	0.35	73,75,76,77	0
4	HXX	B	601	12/12	0.73	0.36	47,52,53,54	0
3	CO	B	602	1/1	0.84	0.14	64,64,64,64	0
3	CO	C	603	1/1	0.90	0.16	70,70,70,70	0
3	CO	C	604	1/1	0.93	0.07	76,76,76,76	0
3	CO	A	602	1/1	0.94	0.18	55,55,55,55	0
3	CO	C	502	1/1	0.95	0.19	54,54,54,54	0
3	CO	C	602	1/1	0.96	0.14	59,59,59,59	0
3	CO	A	502	1/1	0.98	0.13	36,36,36,36	0
2	FES	C	501	4/4	0.99	0.14	28,28,29,29	0
2	FES	A	501	4/4	0.99	0.13	28,29,30,31	0
2	FES	B	501	4/4	0.99	0.09	33,35,35,37	0
3	CO	B	502	1/1	0.99	0.14	41,41,41,41	0

6.5 Other polymers (i)

There are no such residues in this entry.