Full wwPDB X-ray Structure Validation Report (i)

Aug 15, 2023 – 07:18 PM EDT

PDB ID	:	1XAI
Title	:	CRYSTAL STRUCTURE OF STAPHLYOCOCCUS AUREUS 3-DEHYDROQUINATE SYNTHASE (DHQS) IN COMPLEX WITH ZN2+, NAD+ AND CARBAPHOSPHONATE
Authors	:	Nichols, C.E.; Ren, J.; Leslie, K.; Dhaliwal, B.; Lockyer, M.; Charles, I.; Hawkins, A.R.; Stammers, D.K.
Deposited on	:	2004-08-25
Resolution	:	2.30 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:

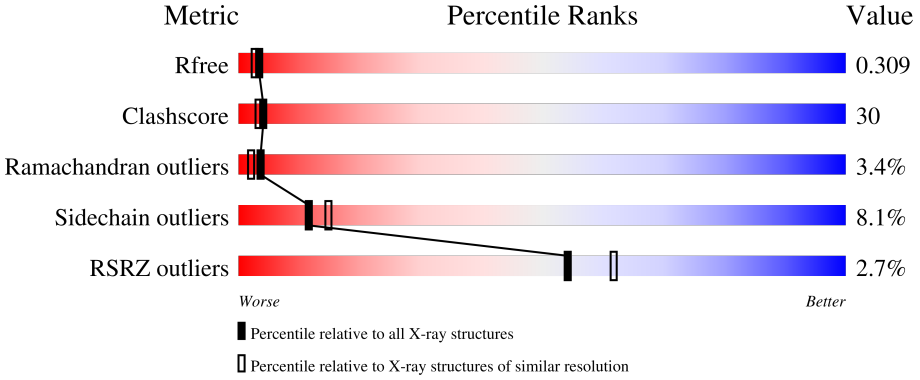
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.30 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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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	354	3% 48% 44% 7% •
1	B	354	3% 49% 43% 7% •

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 5943 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 3-dehydroquinate synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	352	2831	1831	466	526	8	0	0	0
1	B	352	2831	1831	466	526	8	0	0	0

There are 26 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	22	LYS	ASP	see remark 999	UNP Q6GGU4
A	23	TYR	HIS	see remark 999	UNP Q6GGU4
A	25	GLY	SER	see remark 999	UNP Q6GGU4
A	28	LEU	ILE	see remark 999	UNP Q6GGU4
A	29	ASN	ASP	see remark 999	UNP Q6GGU4
A	36	LEU	ILE	see remark 999	UNP Q6GGU4
A	41	TYR	HIS	see remark 999	UNP Q6GGU4
A	48	ASN	ASP	see remark 999	UNP Q6GGU4
A	109	VAL	ILE	see remark 999	UNP Q6GGU4
A	170	LYS	GLU	see remark 999	UNP Q6GGU4
A	226	VAL	ILE	see remark 999	UNP Q6GGU4
A	282	SER	ASN	see remark 999	UNP Q6GGU4
A	326	MET	ILE	see remark 999	UNP Q6GGU4
B	22	LYS	ASP	see remark 999	UNP Q6GGU4
B	23	TYR	HIS	see remark 999	UNP Q6GGU4
B	25	GLY	SER	see remark 999	UNP Q6GGU4
B	28	LEU	ILE	see remark 999	UNP Q6GGU4
B	29	ASN	ASP	see remark 999	UNP Q6GGU4
B	36	LEU	ILE	see remark 999	UNP Q6GGU4
B	41	TYR	HIS	see remark 999	UNP Q6GGU4
B	48	ASN	ASP	see remark 999	UNP Q6GGU4
B	109	VAL	ILE	see remark 999	UNP Q6GGU4
B	170	LYS	GLU	see remark 999	UNP Q6GGU4
B	226	VAL	ILE	see remark 999	UNP Q6GGU4
B	282	SER	ASN	see remark 999	UNP Q6GGU4

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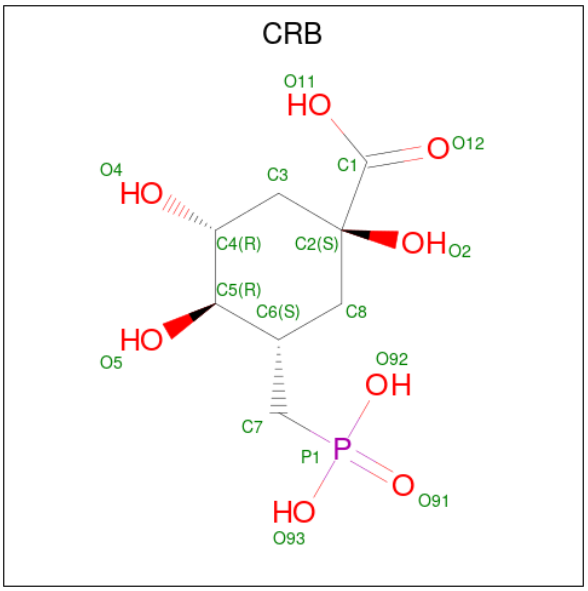
Chain	Residue	Modelled	Actual	Comment	Reference
B	326	MET	ILE	see remark 999	UNP Q6GGU4

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Zn 1 1	0	0
2	B	1	Total Zn 1 1	0	0

- Molecule 3 is [1R-(1ALPHA,3BETA,4ALPHA,5BETA)]-5-(PHOSPHONOMETHYL)-1,3,4-TRIHYDROXYCYCLOHEXANE-1-CARBOXYLIC ACID (three-letter code: CRB) (formula: $C_8H_{15}O_8P$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O P 17 8 8 1	0	0
3	B	1	Total C O P 17 8 8 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	123	Total O 123 123	0	0

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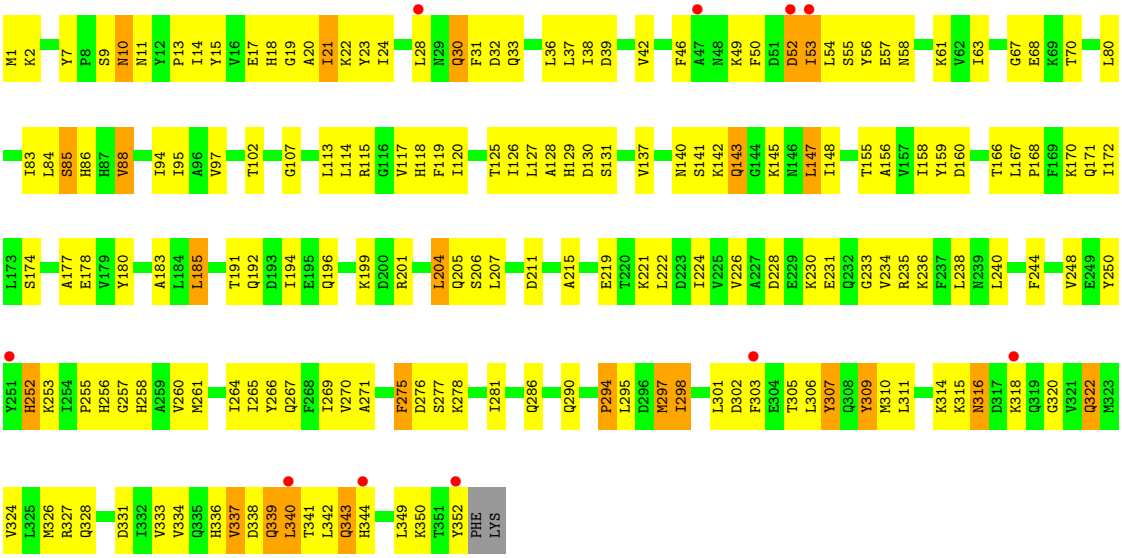
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
4	B	122	122	122	0	0

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.

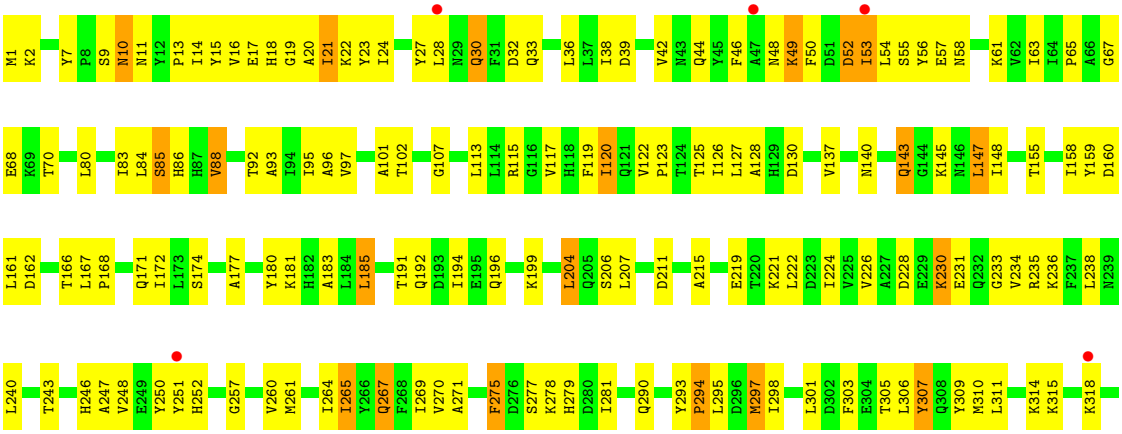
- Molecule 1: 3-dehydroquinate synthase

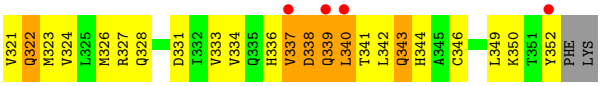
Chain A:



- Molecule 1: 3-dehydroquinate synthase

Chain B:




V321
Q322
M323
V324
L325
M326
R327
Q328
D331
I332
V333
V334
Q335
H336
V337
D338
Q339
L340
T341
L342
Q343
H344
A345
C346
L349
K350
T351
Y352
PHE
LYS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 43	Depositor
Cell constants a, b, c, α, β, γ	54.90Å 54.90Å 229.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.01 – 2.30 24.01 – 2.10	Depositor EDS
% Data completeness (in resolution range)	98.0 (24.01-2.30) 95.5 (24.01-2.10)	Depositor EDS
R_{merge}	0.04	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.55 (at 2.10Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.211 , 0.312 0.211 , 0.309	Depositor DCC
R_{free} test set	3755 reflections (10.01%)	wwPDB-VP
Wilson B-factor (Å^2)	35.6	Xtriage
Anisotropy	0.591	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 89.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.487 for h,-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	5943	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.97% 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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CRB, ZN

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	0.41	0/2897	0.64	0/3923
1	B	0.41	0/2897	0.64	0/3923
All	All	0.41	0/5794	0.64	0/7846

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2831	0	2797	168	0
1	B	2831	0	2797	178	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	17	0	11	0	0
3	B	17	0	11	1	0
4	A	123	0	0	3	0
4	B	122	0	0	6	0
All	All	5943	0	5616	339	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 30.

All (339) 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:A:301:LEU:HB2	1:A:350:LYS:HE3	1.39	1.03
1:B:301:LEU:HB2	1:B:350:LYS:HE3	1.40	1.00
1:A:270:VAL:HG13	1:A:341:THR:HG21	1.48	0.95
1:A:113:LEU:HD23	1:A:117:VAL:HG11	1.50	0.94
1:B:113:LEU:HD23	1:B:117:VAL:HG11	1.50	0.93
1:A:222:LEU:HD21	4:A:676:HOH:O	1.69	0.93
1:B:270:VAL:HG13	1:B:341:THR:HG21	1.54	0.89
1:B:185:LEU:HD11	1:B:240:LEU:HD22	1.56	0.87
1:B:143:GLN:HE21	1:B:143:GLN:HA	1.39	0.87
1:A:53:ILE:H	1:A:53:ILE:HD12	1.41	0.85
1:A:143:GLN:HA	1:A:143:GLN:HE21	1.40	0.85
1:A:185:LEU:HD11	1:A:240:LEU:HD22	1.58	0.84
1:B:46:PHE:HB3	1:B:49:LYS:HB2	1.60	0.83
1:A:177:ALA:HA	1:A:261:MET:HE3	1.61	0.82
1:A:39:ASP:HB2	1:A:102:THR:HG21	1.63	0.80
1:A:185:LEU:CD1	1:A:240:LEU:HD22	2.11	0.79
1:A:46:PHE:HB3	1:A:49:LYS:HB2	1.64	0.78
1:B:61:LYS:HE3	1:B:63:ILE:HD11	1.66	0.78
1:B:27:TYR:O	1:B:30:GLN:HB2	1.84	0.78
1:B:172:ILE:CG2	1:B:204:LEU:HD22	2.14	0.77
1:B:185:LEU:CD1	1:B:240:LEU:HD22	2.14	0.77
1:A:61:LYS:HE3	1:A:63:ILE:HD11	1.69	0.75
1:B:143:GLN:HE21	1:B:143:GLN:CA	2.00	0.74
1:B:39:ASP:HB2	1:B:102:THR:HG21	1.68	0.74
1:B:172:ILE:HG22	1:B:204:LEU:HD22	1.72	0.72
1:B:2:LYS:HD2	1:B:15:TYR:HE1	1.55	0.72
1:A:24:ILE:HD13	1:A:158:ILE:HD13	1.72	0.72
1:A:143:GLN:HE21	1:A:143:GLN:CA	2.02	0.72
1:A:307:TYR:CE1	1:A:339:GLN:HB3	2.23	0.72
1:B:21:ILE:HD13	1:B:21:ILE:O	1.90	0.71
1:B:46:PHE:HB3	1:B:49:LYS:CB	2.21	0.71
1:A:22:LYS:HE3	1:A:23:TYR:CE1	2.27	0.70
1:A:46:PHE:HB3	1:A:49:LYS:CB	2.22	0.70
1:A:21:ILE:HD13	1:A:21:ILE:O	1.91	0.69
1:B:307:TYR:CE1	1:B:339:GLN:HB3	2.28	0.69
1:A:248:VAL:O	1:A:252:HIS:HB2	1.92	0.69
1:B:39:ASP:HB3	1:B:42:VAL:HG23	1.74	0.69
1:B:247:ALA:O	1:B:251:TYR:HB3	1.90	0.69
1:A:18:HIS:NE2	1:A:211:ASP:OD1	2.22	0.68
1:B:22:LYS:HE3	1:B:23:TYR:CE1	2.29	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:ILE:HD13	1:B:158:ILE:HD13	1.76	0.68
1:A:343:GLN:HE21	1:A:343:GLN:HA	1.60	0.67
1:A:294:PRO:O	1:A:295:LEU:HB2	1.96	0.66
1:A:39:ASP:HB3	1:A:42:VAL:HG23	1.77	0.66
1:B:33:GLN:HE22	1:B:88:VAL:HA	1.61	0.66
1:A:125:THR:HG23	1:A:128:ALA:H	1.61	0.65
1:B:39:ASP:HB3	1:B:42:VAL:CG2	2.27	0.65
1:B:231:GLU:HA	1:B:235:ARG:HB3	1.80	0.64
1:B:294:PRO:O	1:B:295:LEU:HB2	1.97	0.64
1:B:307:TYR:HE2	1:B:311:LEU:HD11	1.63	0.64
1:A:95:ILE:N	1:A:95:ILE:HD12	2.13	0.63
1:B:7:TYR:CE2	1:B:226:VAL:HA	2.33	0.63
1:B:343:GLN:HE21	1:B:343:GLN:HA	1.63	0.63
1:B:125:THR:HG23	1:B:128:ALA:H	1.61	0.63
1:A:269:ILE:HD12	1:A:349:LEU:HB2	1.81	0.63
1:B:215:ALA:O	1:B:219:GLU:HG3	1.99	0.62
1:B:306:LEU:O	1:B:310:MET:HG3	2.00	0.62
1:B:303:PHE:HD1	1:B:343:GLN:NE2	1.97	0.62
1:A:50:PHE:O	1:A:54:LEU:HB2	1.99	0.61
1:A:39:ASP:HB3	1:A:42:VAL:CG2	2.30	0.61
1:B:67:GLY:O	1:B:70:THR:HG22	2.02	0.60
1:A:306:LEU:O	1:A:310:MET:HG3	2.01	0.60
1:A:231:GLU:HA	1:A:235:ARG:HB3	1.82	0.60
1:A:233:GLY:O	1:A:236:LYS:HG3	2.02	0.60
1:A:7:TYR:CE2	1:A:226:VAL:HA	2.37	0.59
1:B:143:GLN:HA	1:B:143:GLN:NE2	2.14	0.59
1:B:50:PHE:O	1:B:54:LEU:HB2	2.02	0.59
1:A:307:TYR:HE2	1:A:311:LEU:HD11	1.66	0.59
1:A:140:ASN:OD1	1:A:145:LYS:HA	2.03	0.59
1:B:107:GLY:HA3	1:B:137:VAL:HG11	1.84	0.59
1:B:46:PHE:HD2	1:B:49:LYS:HG3	1.68	0.58
1:A:67:GLY:O	1:A:70:THR:HG22	2.02	0.58
1:A:340:LEU:HD13	1:A:341:THR:N	2.19	0.58
1:B:278:LYS:HA	4:B:662:HOH:O	2.03	0.57
1:B:32:ASP:O	1:B:33:GLN:HG3	2.05	0.57
1:A:33:GLN:HE22	1:A:88:VAL:HA	1.70	0.56
1:A:54:LEU:O	1:A:54:LEU:HD23	2.06	0.56
1:B:125:THR:HG21	4:B:610:HOH:O	2.05	0.56
1:B:13:PRO:C	1:B:14:ILE:HG13	2.25	0.56
1:B:251:TYR:CD2	1:B:306:LEU:HD21	2.40	0.56
1:B:95:ILE:HD12	1:B:95:ILE:N	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:140:ASN:OD1	1:B:145:LYS:HA	2.06	0.56
1:B:58:ASN:N	1:B:58:ASN:HD22	2.03	0.55
1:B:143:GLN:CA	1:B:143:GLN:NE2	2.70	0.55
1:B:53:ILE:H	1:B:53:ILE:CD1	2.20	0.55
1:A:107:GLY:HA3	1:A:137:VAL:HG11	1.88	0.55
1:A:143:GLN:HA	1:A:143:GLN:NE2	2.16	0.55
1:A:177:ALA:HA	1:A:261:MET:CE	2.34	0.55
1:A:315:LYS:HE3	1:A:324:VAL:HG23	1.88	0.55
1:B:53:ILE:HD13	1:B:54:LEU:N	2.22	0.55
1:A:336:HIS:ND1	1:A:337:VAL:N	2.54	0.54
1:B:248:VAL:O	1:B:252:HIS:HB2	2.08	0.54
1:A:84:LEU:C	1:A:86:HIS:H	2.11	0.54
1:A:172:ILE:HG22	1:A:204:LEU:HD22	1.89	0.54
1:B:171:GLN:HE21	1:B:171:GLN:HA	1.73	0.54
1:B:224:ILE:HG13	1:B:238:LEU:HD21	1.89	0.54
1:B:54:LEU:HD23	1:B:54:LEU:O	2.07	0.54
1:B:2:LYS:HD2	1:B:15:TYR:CE1	2.40	0.54
1:B:340:LEU:HD13	1:B:341:THR:N	2.22	0.54
1:A:215:ALA:O	1:A:219:GLU:HG3	2.08	0.54
1:B:252:HIS:CE1	1:B:301:LEU:HD23	2.43	0.54
1:A:85:SER:HA	1:B:143:GLN:OE1	2.08	0.53
1:A:2:LYS:HD2	1:A:15:TYR:HE1	1.73	0.53
1:B:84:LEU:C	1:B:86:HIS:H	2.11	0.53
1:B:336:HIS:ND1	1:B:337:VAL:N	2.56	0.53
1:B:233:GLY:O	1:B:236:LYS:HG3	2.08	0.53
1:A:54:LEU:HD11	1:A:61:LYS:HB2	1.90	0.53
1:A:80:LEU:HD13	1:B:148:ILE:HG12	1.89	0.53
1:A:303:PHE:HD1	1:A:343:GLN:NE2	2.07	0.53
1:A:328:GLN:O	1:A:331:ASP:N	2.41	0.53
1:B:340:LEU:HD22	1:B:344:HIS:CD2	2.43	0.53
1:A:125:THR:HG21	4:A:601:HOH:O	2.07	0.53
1:B:46:PHE:CD2	1:B:49:LYS:HG3	2.43	0.53
1:A:7:TYR:HB2	1:A:11:ASN:OD1	2.08	0.52
1:A:32:ASP:O	1:A:33:GLN:HG3	2.09	0.52
1:A:1:MET:N	1:A:17:GLU:HG2	2.24	0.52
1:A:206:SER:O	1:A:207:LEU:HB2	2.09	0.52
1:B:206:SER:O	1:B:207:LEU:HB2	2.08	0.52
1:B:303:PHE:CD1	1:B:343:GLN:NE2	2.77	0.52
1:A:46:PHE:HB3	1:A:49:LYS:HG3	1.91	0.52
1:A:143:GLN:OE1	1:B:85:SER:HA	2.09	0.52
1:B:180:TYR:O	1:B:183:ALA:HB3	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:177:ALA:HA	1:B:261:MET:HE3	1.92	0.51
1:B:261:MET:HG3	1:B:293:TYR:CE1	2.45	0.51
1:A:58:ASN:N	1:A:58:ASN:HD22	2.06	0.51
1:A:88:VAL:HG23	1:A:114:LEU:HD11	1.92	0.51
1:B:328:GLN:O	1:B:331:ASP:N	2.43	0.51
1:B:57:GLU:C	1:B:58:ASN:HD22	2.13	0.51
1:B:127:LEU:O	1:B:130:ASP:HB3	2.11	0.51
1:A:255:PRO:HB2	1:A:258:HIS:ND1	2.26	0.51
1:A:143:GLN:CA	1:A:143:GLN:NE2	2.73	0.51
1:B:147:LEU:C	1:B:148:ILE:HD12	2.31	0.51
1:B:54:LEU:HD11	1:B:61:LYS:HB2	1.93	0.51
1:B:172:ILE:HD12	1:B:207:LEU:HD21	1.92	0.51
1:B:303:PHE:CE2	1:B:307:TYR:HB2	2.45	0.51
1:A:46:PHE:CD2	1:A:49:LYS:HG3	2.46	0.51
1:A:172:ILE:CG2	1:A:204:LEU:HD22	2.41	0.51
1:A:224:ILE:HG13	1:A:238:LEU:HD21	1.93	0.51
1:B:171:GLN:HA	1:B:171:GLN:NE2	2.26	0.51
1:B:36:LEU:HD21	1:B:38:ILE:HB	1.92	0.50
1:B:126:ILE:HG13	1:B:167:LEU:CD1	2.41	0.50
1:A:309:TYR:CD1	1:A:309:TYR:C	2.85	0.50
1:A:171:GLN:HA	1:A:171:GLN:NE2	2.26	0.50
1:B:1:MET:N	1:B:17:GLU:HG2	2.26	0.50
1:B:307:TYR:CE2	1:B:311:LEU:HD11	2.46	0.49
1:B:18:HIS:NE2	1:B:211:ASP:OD1	2.37	0.49
1:A:39:ASP:CB	1:A:102:THR:HG21	2.39	0.49
1:A:174:SER:O	1:A:257:GLY:HA3	2.12	0.49
1:B:54:LEU:C	1:B:56:TYR:H	2.14	0.49
1:B:53:ILE:CD1	1:B:53:ILE:N	2.75	0.49
1:B:174:SER:O	1:B:257:GLY:HA3	2.12	0.49
1:A:95:ILE:N	1:A:95:ILE:CD1	2.76	0.49
1:B:130:ASP:O	1:B:221:LYS:NZ	2.44	0.49
1:B:148:ILE:HD12	1:B:148:ILE:N	2.28	0.49
1:A:340:LEU:HD22	1:A:344:HIS:CD2	2.47	0.49
1:A:276:ASP:OD1	1:A:278:LYS:HG3	2.13	0.49
1:B:32:ASP:C	1:B:33:GLN:HG3	2.33	0.49
1:B:101:ALA:HB3	4:B:660:HOH:O	2.13	0.49
1:A:270:VAL:HG22	1:A:341:THR:HG22	1.95	0.48
1:A:303:PHE:CE2	1:A:307:TYR:HB2	2.47	0.48
1:A:322:GLN:HE21	1:A:322:GLN:HB3	1.47	0.48
1:A:46:PHE:HD2	1:A:49:LYS:HG3	1.77	0.48
1:A:148:ILE:HG12	1:B:80:LEU:HD13	1.93	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:115:ARG:NH1	1:B:314:LYS:HE3	2.28	0.48
1:A:180:TYR:O	1:A:183:ALA:HB3	2.13	0.48
1:B:277:SER:OG	1:B:327:ARG:HA	2.14	0.48
1:A:307:TYR:CE2	1:A:311:LEU:HD11	2.46	0.48
1:A:275:PHE:CD1	1:A:275:PHE:N	2.81	0.47
1:B:19:GLY:O	1:B:22:LYS:HG2	2.14	0.47
1:A:250:TYR:O	1:A:253:LYS:HD3	2.14	0.47
1:B:44:GLN:NE2	4:B:707:HOH:O	2.47	0.47
1:B:172:ILE:HG22	1:B:204:LEU:CD2	2.43	0.47
1:B:260:VAL:O	1:B:264:ILE:HG12	2.14	0.47
1:B:250:TYR:CD2	1:B:309:TYR:HE2	2.32	0.47
1:B:297:MET:SD	1:B:297:MET:N	2.88	0.47
1:A:171:GLN:HA	1:A:171:GLN:HE21	1.80	0.47
1:A:13:PRO:C	1:A:14:ILE:HG13	2.32	0.47
1:A:127:LEU:O	1:A:130:ASP:HB3	2.14	0.47
1:B:39:ASP:CB	1:B:102:THR:HG21	2.43	0.47
1:B:251:TYR:HD2	1:B:306:LEU:HD21	1.79	0.47
1:A:221:LYS:HE3	1:A:238:LEU:HD13	1.96	0.47
1:A:303:PHE:CZ	1:A:342:LEU:HB2	2.49	0.47
1:B:54:LEU:O	1:B:56:TYR:N	2.46	0.47
1:A:46:PHE:HB3	1:A:49:LYS:CG	2.44	0.47
1:A:54:LEU:C	1:A:56:TYR:H	2.17	0.47
1:B:172:ILE:HG21	1:B:204:LEU:HD22	1.93	0.47
1:B:224:ILE:HG22	1:B:235:ARG:HA	1.96	0.47
1:B:318:LYS:O	1:B:318:LYS:HG3	2.14	0.47
1:A:277:SER:OG	1:A:327:ARG:HA	2.15	0.47
1:B:191:THR:O	1:B:194:ILE:HG22	2.14	0.47
1:A:113:LEU:HD23	1:A:117:VAL:CG1	2.35	0.46
1:B:50:PHE:CE2	1:B:97:VAL:HG11	2.49	0.46
1:A:53:ILE:HD12	1:A:53:ILE:N	2.14	0.46
1:A:21:ILE:HD11	1:A:50:PHE:CE1	2.50	0.46
1:B:123:PRO:HB3	1:B:128:ALA:HB1	1.97	0.46
1:A:148:ILE:HD12	1:A:148:ILE:N	2.30	0.46
1:A:32:ASP:C	1:A:33:GLN:HG3	2.36	0.46
1:A:224:ILE:HG22	1:A:235:ARG:HA	1.98	0.46
1:A:265:ILE:O	1:A:269:ILE:HG13	2.16	0.46
1:A:9:SER:O	1:A:10:ASN:C	2.54	0.46
1:A:36:LEU:HD21	1:A:38:ILE:HB	1.97	0.46
1:A:127:LEU:HD11	1:A:256:HIS:HB3	1.98	0.46
1:A:228:ASP:HB2	1:A:234:VAL:HG12	1.98	0.46
1:A:276:ASP:OD1	1:A:276:ASP:O	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:297:MET:SD	1:A:297:MET:N	2.88	0.46
1:B:126:ILE:HD12	1:B:172:ILE:HA	1.99	0.46
1:B:309:TYR:CD1	1:B:309:TYR:C	2.90	0.46
1:A:52:ASP:OD2	1:A:52:ASP:N	2.48	0.45
1:A:94:ILE:C	1:A:95:ILE:HD12	2.37	0.45
1:A:201:ARG:HH21	1:A:205:GLN:HE22	1.63	0.45
1:A:266:TYR:HB2	1:A:349:LEU:HD22	1.99	0.45
1:A:340:LEU:CD1	1:A:341:THR:N	2.80	0.45
1:B:275:PHE:CD1	1:B:275:PHE:N	2.83	0.45
1:A:57:GLU:C	1:A:58:ASN:HD22	2.19	0.45
1:B:113:LEU:O	1:B:117:VAL:HG13	2.17	0.45
1:B:236:LYS:O	1:B:324:VAL:HG21	2.16	0.45
1:B:270:VAL:HG22	1:B:341:THR:HG22	1.99	0.45
1:B:322:GLN:HE21	1:B:322:GLN:HB3	1.52	0.45
1:A:95:ILE:HG22	1:A:97:VAL:HG23	1.99	0.45
1:B:243:THR:HG21	1:B:323:MET:HG2	1.98	0.45
1:B:269:ILE:HD12	1:B:349:LEU:HB2	1.99	0.45
1:A:147:LEU:C	1:A:148:ILE:HD12	2.38	0.45
1:B:252:HIS:HE1	1:B:301:LEU:HA	1.81	0.45
1:B:46:PHE:HB3	1:B:49:LYS:HG3	1.99	0.45
1:B:267:GLN:HE21	1:B:267:GLN:HB3	1.58	0.45
1:A:37:LEU:HD13	1:A:94:ILE:HG23	1.99	0.44
1:A:125:THR:HG22	1:A:128:ALA:HB2	1.98	0.44
1:B:252:HIS:HE1	1:B:301:LEU:HD23	1.81	0.44
1:A:31:PHE:HE1	1:A:118:HIS:CD2	2.35	0.44
1:A:170:LYS:O	1:A:258:HIS:HE1	2.01	0.44
1:B:281:ILE:HG21	1:B:352:TYR:CZ	2.53	0.44
1:B:9:SER:O	1:B:10:ASN:C	2.56	0.44
1:B:127:LEU:HD21	4:B:714:HOH:O	2.18	0.44
1:B:321:VAL:HG12	1:B:322:GLN:N	2.32	0.44
1:A:322:GLN:NE2	1:A:334:VAL:HG12	2.32	0.44
1:A:126:ILE:HD12	1:A:172:ILE:HA	2.00	0.44
1:B:168:PRO:O	1:B:172:ILE:HG12	2.17	0.44
1:B:84:LEU:O	1:B:86:HIS:N	2.50	0.44
1:B:120:ILE:CD1	1:B:155:THR:HB	2.48	0.44
1:A:84:LEU:O	1:A:86:HIS:N	2.51	0.44
1:A:177:ALA:HB1	1:A:261:MET:HE2	1.99	0.44
1:A:281:ILE:HG21	1:A:352:TYR:CZ	2.52	0.44
1:B:147:LEU:HD12	1:B:147:LEU:HA	1.86	0.44
1:B:16:VAL:HG12	1:B:161:LEU:HD11	1.99	0.43
1:A:303:PHE:CD1	1:A:343:GLN:HA	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:52:ASP:OD2	1:B:52:ASP:N	2.50	0.43
1:A:172:ILE:HD12	1:A:207:LEU:HD21	2.01	0.43
1:B:192:GLN:O	1:B:196:GLN:HB2	2.18	0.43
1:A:20:ALA:HB3	1:A:160:ASP:HA	2.00	0.43
1:B:20:ALA:HB3	1:B:160:ASP:HA	2.01	0.43
1:B:224:ILE:H	1:B:224:ILE:HG12	1.67	0.43
1:A:115:ARG:HH12	1:B:314:LYS:HE3	1.84	0.43
1:A:168:PRO:O	1:A:172:ILE:HG12	2.17	0.43
1:A:222:LEU:HD23	1:A:222:LEU:C	2.39	0.43
1:A:260:VAL:O	1:A:264:ILE:HG12	2.19	0.43
1:A:314:LYS:HE3	1:B:115:ARG:NH1	2.33	0.43
1:B:228:ASP:HB2	1:B:234:VAL:HG12	2.00	0.43
1:A:31:PHE:CE1	1:A:118:HIS:CD2	3.07	0.43
1:A:145:LYS:HE3	4:A:630:HOH:O	2.19	0.43
1:B:346:CYS:O	1:B:350:LYS:HD3	2.19	0.43
1:A:125:THR:HG22	1:A:128:ALA:CB	2.48	0.43
1:A:199:LYS:O	1:A:290:GLN:NE2	2.52	0.43
1:B:65:PRO:HD2	1:B:70:THR:OG1	2.18	0.43
1:B:125:THR:HG22	1:B:128:ALA:HB2	2.01	0.43
1:B:343:GLN:HE21	1:B:343:GLN:CA	2.28	0.43
1:A:13:PRO:HG2	1:A:156:ALA:HB1	2.00	0.43
1:A:141:SER:OG	1:A:142:LYS:N	2.52	0.43
1:B:18:HIS:ND1	1:B:162:ASP:OD1	2.52	0.43
1:B:307:TYR:O	1:B:310:MET:HB2	2.18	0.43
1:B:322:GLN:NE2	1:B:334:VAL:HG12	2.34	0.43
1:B:340:LEU:CD1	1:B:341:THR:N	2.82	0.43
1:A:303:PHE:CE1	1:A:343:GLN:HA	2.54	0.42
1:A:337:VAL:HG12	1:A:337:VAL:O	2.17	0.42
1:B:230:LYS:N	1:B:230:LYS:HD2	2.32	0.42
1:A:250:TYR:CD2	1:A:309:TYR:HE2	2.38	0.42
1:B:113:LEU:CD2	1:B:117:VAL:HG11	2.36	0.42
1:B:199:LYS:O	1:B:290:GLN:NE2	2.51	0.42
1:A:39:ASP:CB	1:A:42:VAL:HG23	2.48	0.42
1:B:84:LEU:C	1:B:86:HIS:N	2.73	0.42
1:B:92:THR:HG22	1:B:93:ALA:N	2.34	0.42
1:B:271:ALA:HB1	1:B:326:MET:O	2.18	0.42
1:B:277:SER:HB2	1:B:279:HIS:NE2	2.33	0.42
1:A:191:THR:O	1:A:194:ILE:HG22	2.18	0.42
1:B:36:LEU:CD2	1:B:38:ILE:HB	2.50	0.42
1:B:39:ASP:CB	1:B:42:VAL:HG23	2.44	0.42
1:B:46:PHE:HB3	1:B:49:LYS:CG	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:315:LYS:HE3	1:B:324:VAL:HG23	2.01	0.42
1:A:50:PHE:O	1:A:54:LEU:CB	2.67	0.42
1:B:36:LEU:O	1:B:36:LEU:HD23	2.19	0.42
1:A:36:LEU:HD23	1:A:36:LEU:O	2.20	0.42
1:A:343:GLN:HE21	1:A:343:GLN:CA	2.24	0.42
1:B:185:LEU:CD1	1:B:240:LEU:CD2	2.91	0.42
1:B:275:PHE:CD2	1:B:327:ARG:HG3	2.54	0.42
1:A:224:ILE:H	1:A:224:ILE:HG12	1.64	0.42
1:A:236:LYS:O	1:A:324:VAL:HG21	2.20	0.42
1:A:129:HIS:HE1	1:A:178:GLU:HB2	1.85	0.42
1:B:22:LYS:HG3	1:B:23:TYR:N	2.35	0.42
1:B:307:TYR:C	1:B:307:TYR:CD2	2.93	0.42
1:A:147:LEU:HD12	1:A:147:LEU:HA	1.85	0.42
1:A:222:LEU:O	1:A:226:VAL:HG23	2.20	0.42
1:B:96:ALA:O	1:B:122:VAL:HB	2.19	0.42
1:B:340:LEU:HD13	1:B:340:LEU:C	2.41	0.41
1:A:84:LEU:C	1:A:86:HIS:N	2.74	0.41
1:B:22:LYS:HE3	1:B:23:TYR:CZ	2.55	0.41
1:B:119:PHE:O	1:B:155:THR:N	2.52	0.41
1:B:222:LEU:C	1:B:222:LEU:HD23	2.40	0.41
1:B:303:PHE:CZ	1:B:342:LEU:HB2	2.55	0.41
1:B:7:TYR:HB2	1:B:11:ASN:OD1	2.21	0.41
1:B:145:LYS:HD3	1:B:246:HIS:CD2	2.55	0.41
1:B:181:LYS:NZ	4:B:647:HOH:O	2.49	0.41
1:B:350:LYS:C	1:B:352:TYR:N	2.73	0.41
1:A:286:GLN:HE21	1:A:286:GLN:HB2	1.62	0.41
1:A:50:PHE:CE2	1:A:97:VAL:HG11	2.55	0.41
1:A:126:ILE:HG13	1:A:167:LEU:CD1	2.51	0.41
1:A:228:ASP:CB	1:A:234:VAL:HG12	2.51	0.41
1:A:271:ALA:HB1	1:A:326:MET:O	2.20	0.41
1:A:316:ASN:HB3	1:A:320:GLY:O	2.21	0.41
1:A:340:LEU:HD13	1:A:340:LEU:C	2.41	0.41
1:B:95:ILE:N	1:B:95:ILE:CD1	2.84	0.41
1:B:125:THR:HG22	1:B:128:ALA:CB	2.51	0.41
1:B:196:GLN:O	1:B:199:LYS:HG2	2.21	0.41
1:A:19:GLY:O	1:A:22:LYS:HG2	2.21	0.41
1:A:119:PHE:O	1:A:155:THR:N	2.50	0.41
1:A:192:GLN:O	1:A:196:GLN:HB2	2.21	0.41
1:A:350:LYS:C	1:A:352:TYR:N	2.74	0.41
1:A:318:LYS:O	1:A:318:LYS:HG3	2.21	0.40
1:B:48:ASN:O	1:B:49:LYS:C	2.59	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:265:ILE:O	1:B:269:ILE:HG13	2.22	0.40
1:A:297:MET:CE	1:A:298:ILE:HG12	2.52	0.40
1:A:302:ASP:O	1:A:306:LEU:HG	2.21	0.40
1:B:48:ASN:O	1:B:50:PHE:N	2.54	0.40
1:B:246:HIS:HE1	3:B:501:CRB:O91	2.04	0.40
1:A:244:PHE:O	1:A:248:VAL:HG23	2.21	0.40
1:A:126:ILE:HG13	1:A:167:LEU:HD13	2.03	0.40
1:A:128:ALA:HA	1:A:131:SER:OG	2.21	0.40
1:A:113:LEU:O	1:A:117:VAL:HG13	2.21	0.40
1:A:307:TYR:C	1:A:307:TYR:CD2	2.95	0.40
1:B:50:PHE:O	1:B:54:LEU:CB	2.69	0.40
1:B:53:ILE:H	1:B:53:ILE:HD13	1.85	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	350/354 (99%)	292 (83%)	46 (13%)	12 (3%)	3 2
1	B	350/354 (99%)	287 (82%)	51 (15%)	12 (3%)	3 2
All	All	700/708 (99%)	579 (83%)	97 (14%)	24 (3%)	3 2

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	30	GLN
1	B	10	ASN
1	A	10	ASN
1	A	85	SER
1	A	338	ASP
1	A	339	GLN

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Mol	Chain	Res	Type
1	B	85	SER
1	A	68	GLU
1	A	294	PRO
1	A	340	LEU
1	B	28	LEU
1	B	294	PRO
1	B	338	ASP
1	B	339	GLN
1	B	340	LEU
1	A	28	LEU
1	B	49	LYS
1	B	55	SER
1	B	68	GLU
1	A	55	SER
1	B	337	VAL
1	A	88	VAL
1	B	88	VAL
1	A	337	VAL

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	304/306 (99%)	279 (92%)	25 (8%)	11 14
1	B	304/306 (99%)	280 (92%)	24 (8%)	12 15
All	All	608/612 (99%)	559 (92%)	49 (8%)	11 15

All (49) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	ILE
1	A	30	GLN
1	A	52	ASP
1	A	53	ILE
1	A	83	ILE

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Mol	Chain	Res	Type
1	A	120	ILE
1	A	143	GLN
1	A	147	LEU
1	A	159	TYR
1	A	166	THR
1	A	185	LEU
1	A	204	LEU
1	A	230	LYS
1	A	252	HIS
1	A	267	GLN
1	A	275	PHE
1	A	297	MET
1	A	298	ILE
1	A	305	THR
1	A	307	TYR
1	A	309	TYR
1	A	316	ASN
1	A	322	GLN
1	A	333	VAL
1	A	343	GLN
1	B	21	ILE
1	B	30	GLN
1	B	52	ASP
1	B	53	ILE
1	B	83	ILE
1	B	120	ILE
1	B	143	GLN
1	B	147	LEU
1	B	159	TYR
1	B	166	THR
1	B	185	LEU
1	B	204	LEU
1	B	230	LYS
1	B	265	ILE
1	B	267	GLN
1	B	275	PHE
1	B	297	MET
1	B	298	ILE
1	B	305	THR
1	B	307	TYR
1	B	322	GLN
1	B	333	VAL

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Mol	Chain	Res	Type
1	B	338	ASP
1	B	343	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	30	GLN
1	A	33	GLN
1	A	58	ASN
1	A	77	GLN
1	A	118	HIS
1	A	143	GLN
1	A	171	GLN
1	A	186	ASN
1	A	205	GLN
1	A	246	HIS
1	A	286	GLN
1	A	290	GLN
1	A	322	GLN
1	A	343	GLN
1	A	344	HIS
1	B	33	GLN
1	B	58	ASN
1	B	77	GLN
1	B	143	GLN
1	B	171	GLN
1	B	205	GLN
1	B	246	HIS
1	B	252	HIS
1	B	286	GLN
1	B	290	GLN
1	B	322	GLN
1	B	335	GLN
1	B	343	GLN
1	B	344	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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 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	CRB	A	500	2	16,17,17	1.89	3 (18%)	22,27,27	1.39	4 (18%)
3	CRB	B	501	2	16,17,17	2.10	3 (18%)	22,27,27	1.51	3 (13%)

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	CRB	A	500	2	-	2/11/29/29	0/1/1/1
3	CRB	B	501	2	-	3/11/29/29	0/1/1/1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	501	CRB	P1-C7	5.11	1.84	1.78
3	A	500	CRB	C4-C5	4.12	1.58	1.52
3	B	501	CRB	C8-C6	-3.71	1.46	1.53
3	A	500	CRB	P1-C7	3.68	1.82	1.78
3	B	501	CRB	C4-C5	3.63	1.57	1.52
3	A	500	CRB	C8-C6	-3.56	1.46	1.53

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	501	CRB	C8-C2-C3	3.44	112.92	110.72
3	A	500	CRB	C8-C2-C1	-3.17	102.99	109.96
3	B	501	CRB	C8-C2-C1	-2.99	103.39	109.96
3	A	500	CRB	O93-P1-O92	2.15	114.36	108.08
3	A	500	CRB	C3-C2-C1	2.10	114.56	109.96
3	A	500	CRB	O92-P1-C7	-2.08	101.65	106.74
3	B	501	CRB	O93-P1-O92	2.06	114.11	108.08

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	501	CRB	O11-C1-C2-C3
3	B	501	CRB	O11-C1-C2-C8
3	B	501	CRB	O12-C1-C2-C8
3	A	500	CRB	O11-C1-C2-C3
3	A	500	CRB	O12-C1-C2-C3

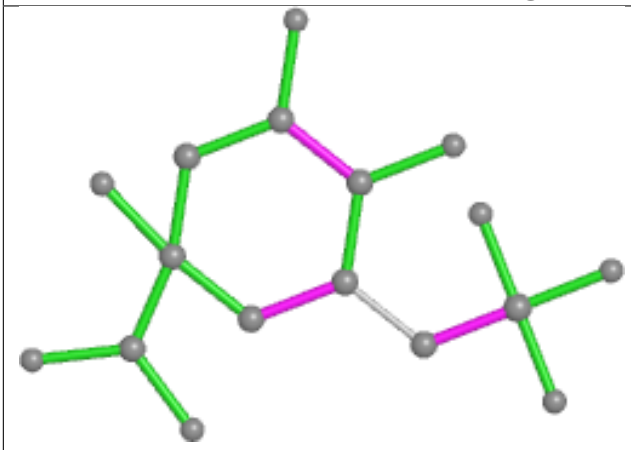
There are no ring outliers.

1 monomer is involved in 1 short contact:

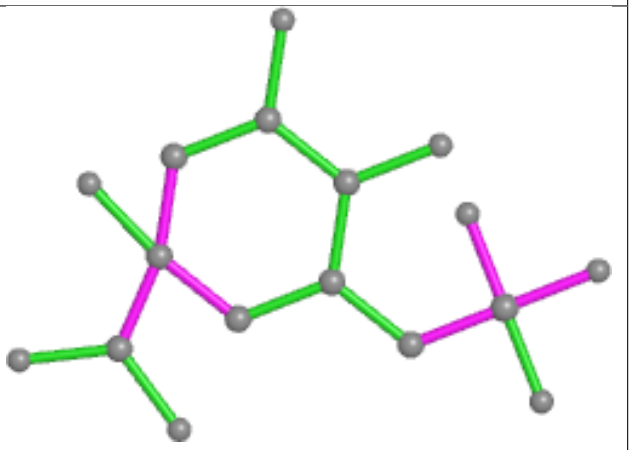
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	501	CRB	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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.

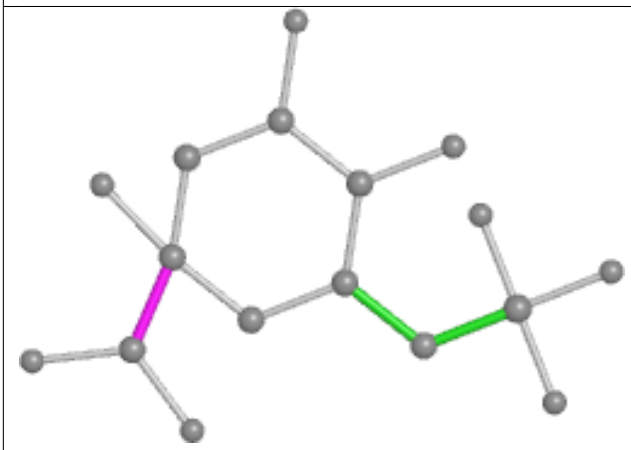
Ligand CRB A 500



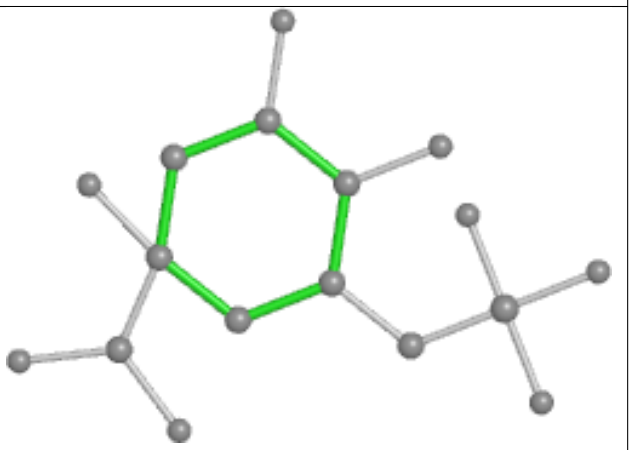
Bond lengths



Bond angles

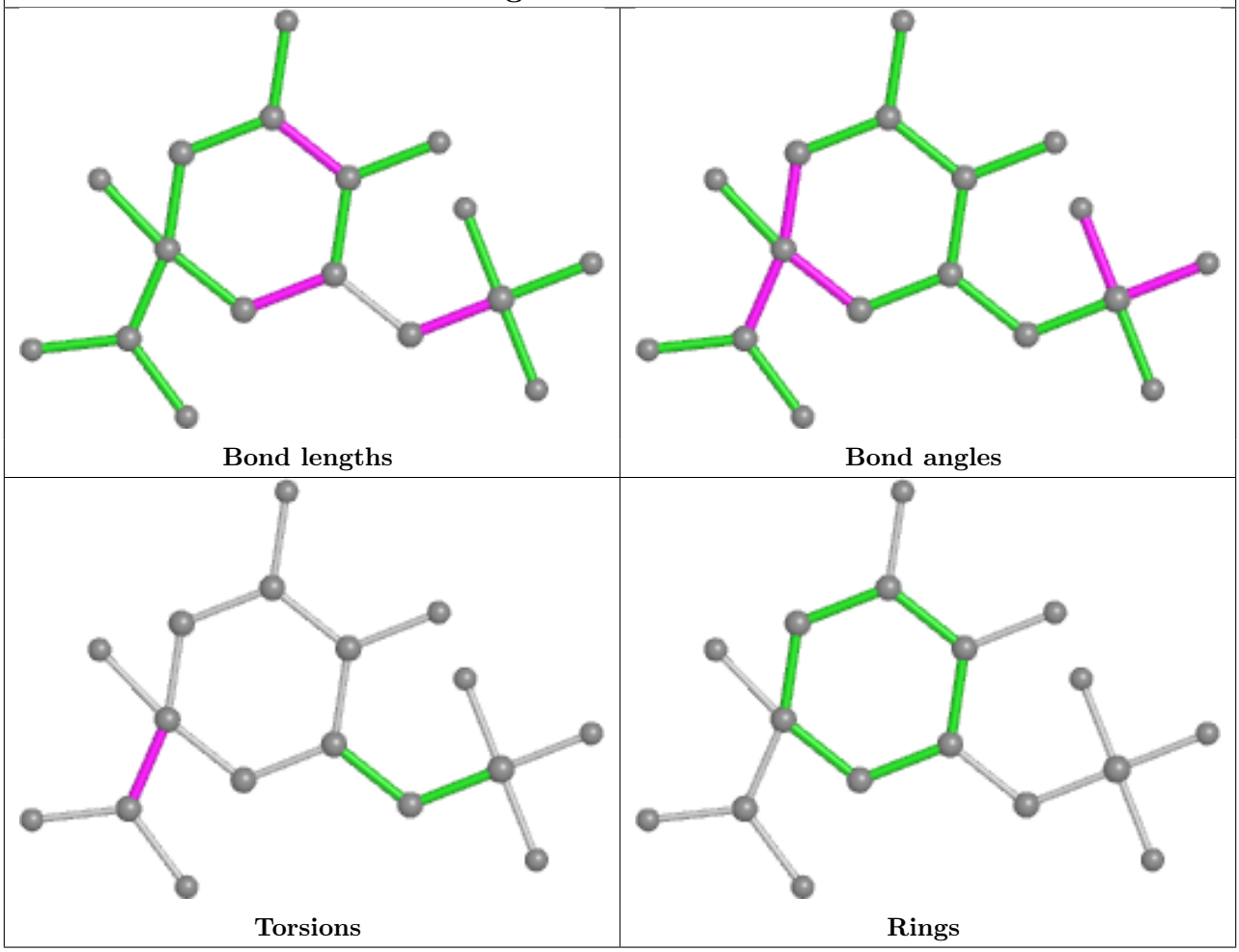


Torsions



Rings

Ligand CRB B 501



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	352/354 (99%)	-0.24	10 (2%)	53	60	22, 55, 109, 132	0
1	B	352/354 (99%)	-0.24	9 (2%)	56	63	23, 54, 108, 131	0
All	All	704/708 (99%)	-0.24	19 (2%)	54	62	22, 54, 109, 132	0

All (19) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	318	LYS	4.4
1	A	53	ILE	4.1
1	B	53	ILE	3.9
1	A	251	TYR	3.8
1	B	47	ALA	3.7
1	A	340	LEU	3.6
1	B	251	TYR	3.4
1	B	352	TYR	3.3
1	B	28	LEU	3.2
1	B	340	LEU	3.2
1	B	318	LYS	3.0
1	A	47	ALA	2.9
1	A	344	HIS	2.4
1	A	352	TYR	2.4
1	B	337	VAL	2.4
1	A	52	ASP	2.2
1	A	303	PHE	2.1
1	B	339	GLN	2.1
1	A	28	LEU	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)

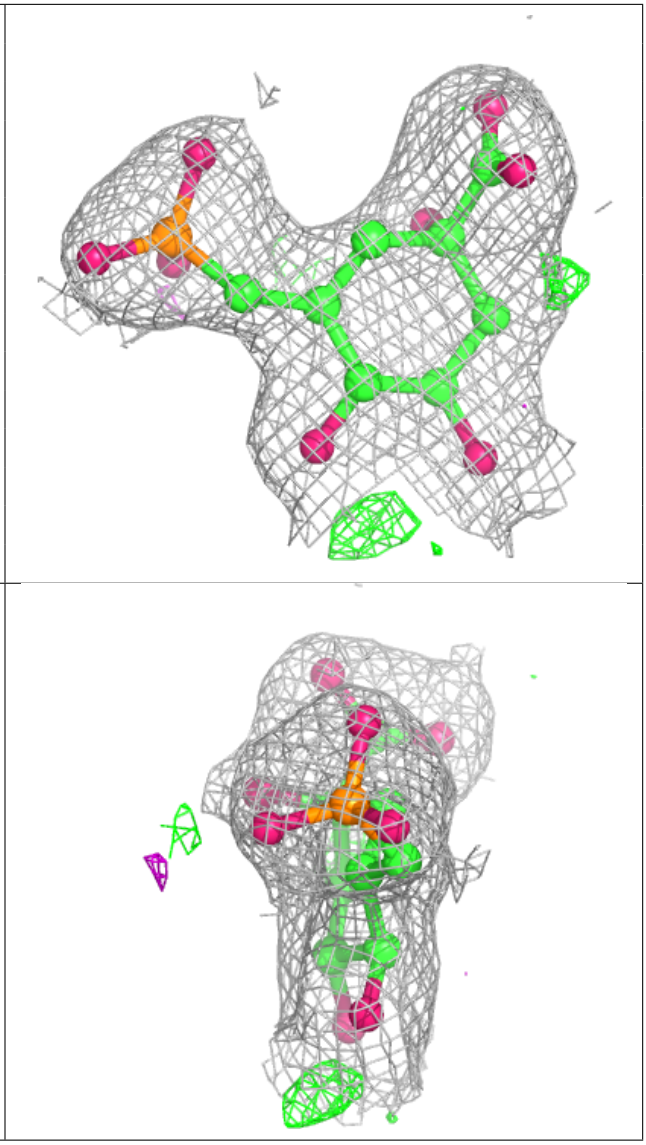
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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	CRB	A	500	17/17	0.96	0.10	28,46,56,61	0
3	CRB	B	501	17/17	0.97	0.08	27,42,54,54	0
2	ZN	A	600	1/1	0.99	0.14	37,37,37,37	0
2	ZN	B	601	1/1	1.00	0.12	34,34,34,34	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.

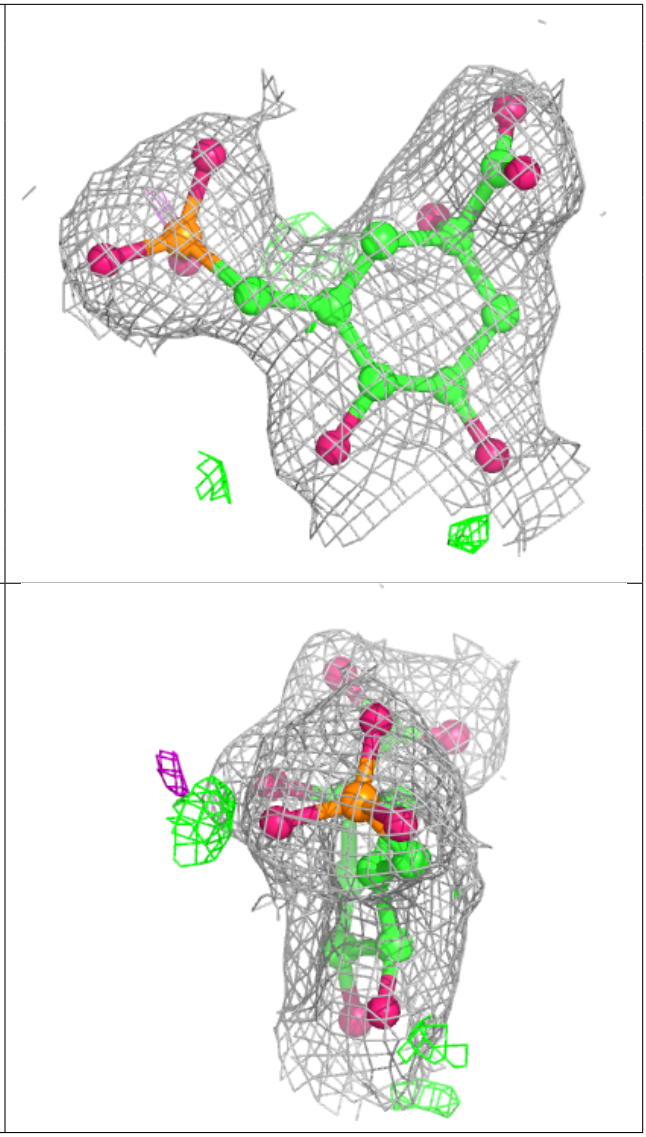
Electron density around CRB A 500:

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



Electron density around CRB B 501:

$2mF_o$-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.