Full wwPDB X-ray Structure Validation Report ⓘ

Aug 21, 2023 – 03:15 PM EDT

PDB ID	:	2PP1
Title	:	Crystal structure of L-talarate/galactarate dehydratase from Salmonella typhimurium LT2 liganded with Mg and L-lyxarohydroxamate
Authors	:	Fedorov, A.A.; Fedorov, E.V.; Yew, W.S.; Gerlt, J.A.; Almo, S.C.
Deposited on	:	2007-04-27
Resolution	:	2.20 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

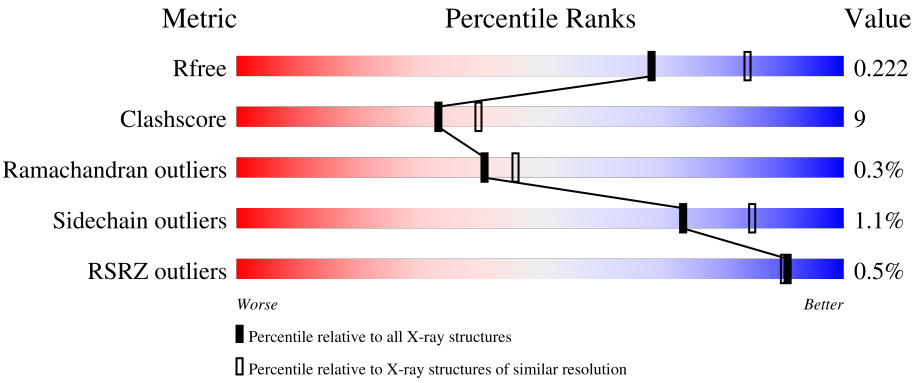
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, 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 2.20 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.



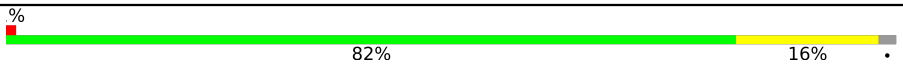
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4898 (2.20-2.20)
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)
RSRZ outliers	127900	4800 (2.20-2.20)

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	398	81% 17%
1	B	398	82% 17%
1	C	398	82% 16%
1	D	398	82% 16%
1	E	398	80% 18%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	F	398	

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 19057 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.

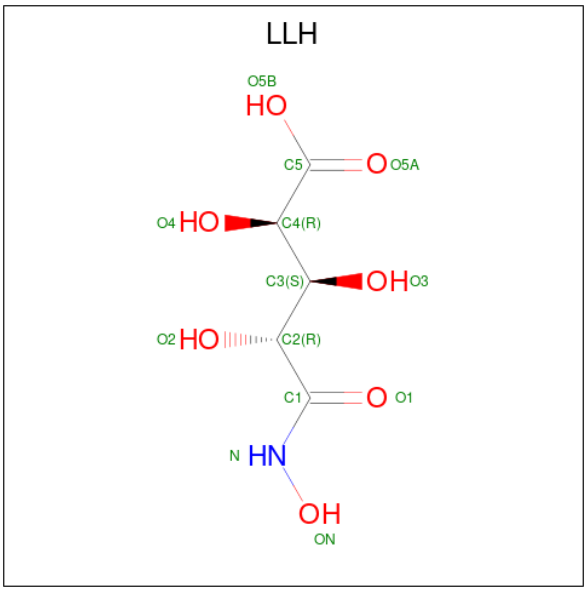
- Molecule 1 is a protein called L-talarate/galactarate dehydratase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	395	Total	C	N	O	S	0	0	0
			3081	1951	548	570	12			
1	B	395	Total	C	N	O	S	0	0	0
			3081	1951	548	570	12			
1	C	391	Total	C	N	O	S	0	0	0
			3056	1937	543	564	12			
1	D	391	Total	C	N	O	S	0	0	0
			3056	1937	543	564	12			
1	E	391	Total	C	N	O	S	0	0	0
			3056	1937	543	564	12			
1	F	391	Total	C	N	O	S	0	0	0
			3056	1937	543	564	12			

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

- Molecule 3 is (2R,3S,4R)-2,3,4-TRIHYDROXY-5-(HYDROXYAMINO)-5-OXOPENTANOIC ACID (three-letter code: LLH) (formula: $C_5H_9NO_7$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O 13 5 1 7	0	0
3	B	1	Total C N O 13 5 1 7	0	0
3	C	1	Total C N O 13 5 1 7	0	0
3	D	1	Total C N O 13 5 1 7	0	0
3	E	1	Total C N O 13 5 1 7	0	0
3	F	1	Total C N O 13 5 1 7	0	0

- Molecule 4 is water.

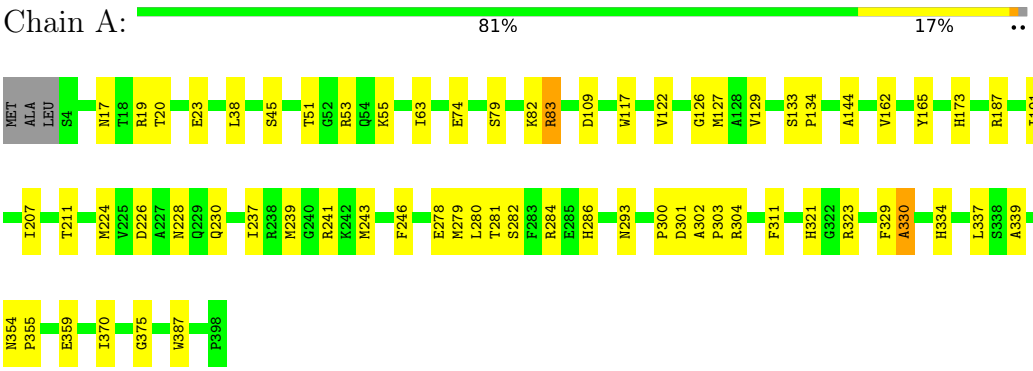
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	143	Total O 143 143	0	0
4	B	137	Total O 137 137	0	0
4	C	71	Total O 71 71	0	0
4	D	65	Total O 65 65	0	0
4	E	90	Total O 90 90	0	0
4	F	85	Total O 85 85	0	0

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.

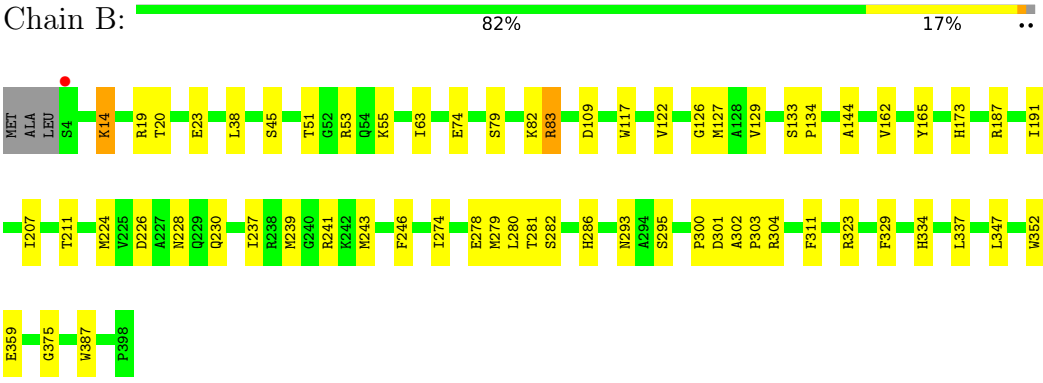
• Molecule 1: L-talarate/galactarate dehydratase

Chain A:



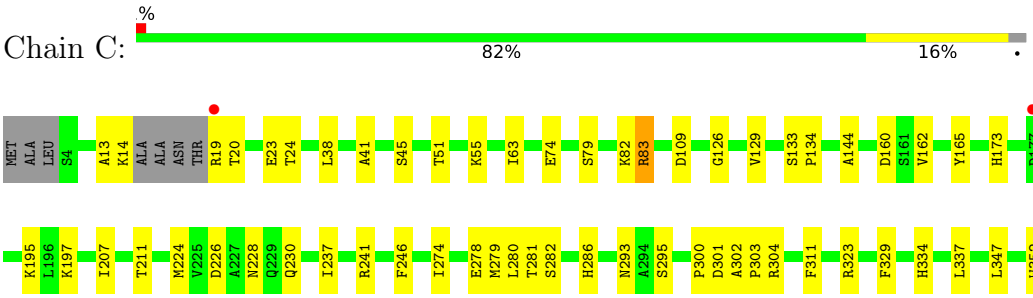
• Molecule 1: L-talarate/galactarate dehydratase

Chain B:



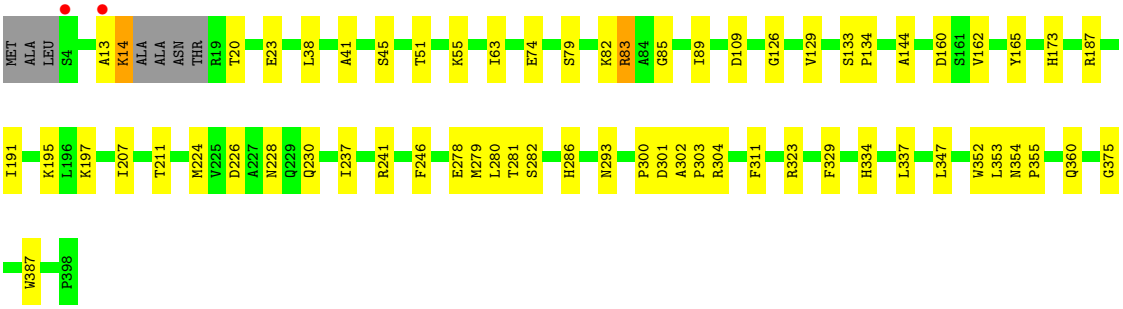
• Molecule 1: L-talarate/galactarate dehydratase

Chain C:



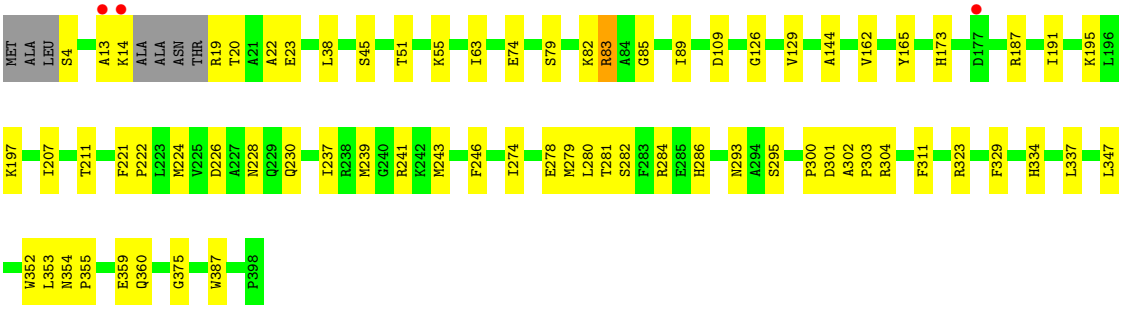
• Molecule 1: L-talarate/galactarate dehydratase

Chain D:



• Molecule 1: L-talarate/galactarate dehydratase

Chain E:



• Molecule 1: L-talarate/galactarate dehydratase

Chain F:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	123.19Å 173.83Å 173.79Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.87 – 2.20 38.95 – 2.19	Depositor EDS
% Data completeness (in resolution range)	86.8 (24.87-2.20) 86.2 (38.95-2.19)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.91 (at 2.20Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.223 , 0.237 0.209 , 0.222	Depositor DCC
R_{free} test set	9480 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å^2)	29.4	Xtriage
Anisotropy	0.528	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 18.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.487 for -h,l,k	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	19057	wwPDB-VP
Average B, all atoms (Å^2)	36.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.58% 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: LLH, MG

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	0.38	0/3149	0.62	0/4266
1	B	0.37	0/3149	0.61	0/4266
1	C	0.35	0/3123	0.60	0/4228
1	D	0.34	0/3123	0.60	0/4228
1	E	0.36	0/3123	0.60	0/4228
1	F	0.36	0/3123	0.60	0/4228
All	All	0.36	0/18790	0.61	0/25444

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

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	3081	0	3064	58	0
1	B	3081	0	3064	53	0
1	C	3056	0	3040	51	0
1	D	3056	0	3040	52	0
1	E	3056	0	3040	58	0
1	F	3056	0	3040	60	0
2	A	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	1	0	0	0	0
3	A	13	0	8	0	0
3	B	13	0	8	0	0
3	C	13	0	8	0	0
3	D	13	0	8	0	0
3	E	13	0	8	0	0
3	F	13	0	8	0	0
4	A	143	0	0	4	0
4	B	137	0	0	0	0
4	C	71	0	0	2	0
4	D	65	0	0	0	0
4	E	90	0	0	3	1
4	F	85	0	0	6	0
All	All	19057	0	18336	315	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 (315) 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:B:302:ALA:H	1:B:334:HIS:HE1	1.24	0.86
1:D:302:ALA:H	1:D:334:HIS:HE1	1.24	0.85
1:F:302:ALA:H	1:F:334:HIS:HE1	1.26	0.84
1:A:302:ALA:H	1:A:334:HIS:HE1	1.24	0.84
1:C:14:LYS:HA	1:C:14:LYS:HE2	1.59	0.83
1:C:302:ALA:H	1:C:334:HIS:HE1	1.24	0.82
1:E:302:ALA:H	1:E:334:HIS:HE1	1.25	0.82
1:E:19:ARG:HG3	1:E:19:ARG:HH11	1.45	0.80
1:B:207:ILE:O	1:B:211:THR:HG23	1.84	0.77
1:A:284:ARG:CZ	4:A:936:HOH:O	2.34	0.76
1:A:207:ILE:O	1:A:211:THR:HG23	1.85	0.76
1:D:207:ILE:O	1:D:211:THR:HG23	1.86	0.75
1:A:19:ARG:HG3	1:A:19:ARG:HH11	1.50	0.75
1:C:207:ILE:O	1:C:211:THR:HG23	1.87	0.74
1:F:207:ILE:O	1:F:211:THR:HG23	1.87	0.74
1:F:293:ASN:HD22	1:F:323:ARG:HH21	1.37	0.73
1:C:278:GLU:OE1	4:C:874:HOH:O	2.05	0.73
1:E:293:ASN:HD22	1:E:323:ARG:HH21	1.35	0.73
1:F:45:SER:H	1:F:173:HIS:HD2	1.36	0.73
1:F:19:ARG:HG3	1:F:19:ARG:HH11	1.52	0.73

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:207:ILE:O	1:E:211:THR:HG23	1.88	0.73
1:B:19:ARG:HG3	1:B:19:ARG:HH11	1.54	0.72
1:D:293:ASN:HD22	1:D:323:ARG:HH21	1.36	0.72
1:D:45:SER:H	1:D:173:HIS:HD2	1.37	0.72
1:B:293:ASN:HD22	1:B:323:ARG:HH21	1.36	0.71
1:C:45:SER:H	1:C:173:HIS:HD2	1.37	0.71
1:C:41:ALA:HB2	1:E:4:SER:N	2.06	0.70
1:B:45:SER:H	1:B:173:HIS:HD2	1.38	0.70
1:A:293:ASN:HD22	1:A:323:ARG:HH21	1.38	0.69
1:C:293:ASN:HD22	1:C:323:ARG:HH21	1.37	0.69
1:E:45:SER:H	1:E:173:HIS:HD2	1.36	0.69
1:A:45:SER:H	1:A:173:HIS:HD2	1.39	0.68
1:A:45:SER:H	1:A:173:HIS:CD2	2.13	0.67
1:E:278:GLU:OE1	4:E:895:HOH:O	2.12	0.67
1:E:45:SER:H	1:E:173:HIS:CD2	2.13	0.67
1:B:197:LYS:NZ	1:B:228:ASN:HD21	1.93	0.66
1:F:211:THR:HG22	1:F:246:PHE:CZ	2.30	0.66
1:F:165:TYR:CE1	1:F:195:LYS:HE3	2.31	0.66
1:A:197:LYS:NZ	1:A:228:ASN:HD21	1.94	0.66
1:E:302:ALA:H	1:E:334:HIS:CE1	2.12	0.66
1:D:45:SER:H	1:D:173:HIS:CD2	2.13	0.66
1:F:45:SER:H	1:F:173:HIS:CD2	2.12	0.66
1:E:165:TYR:CE1	1:E:195:LYS:HE3	2.30	0.66
1:A:321:HIS:HD2	4:A:841:HOH:O	1.79	0.66
1:B:45:SER:H	1:B:173:HIS:CD2	2.12	0.66
1:B:211:THR:HG22	1:B:246:PHE:CZ	2.31	0.66
1:D:14:LYS:HA	1:D:14:LYS:HE3	1.77	0.66
1:B:302:ALA:H	1:B:334:HIS:CE1	2.11	0.66
1:C:45:SER:H	1:C:173:HIS:CD2	2.13	0.66
1:E:19:ARG:HG3	1:E:19:ARG:NH1	2.10	0.66
1:C:211:THR:HG22	1:C:246:PHE:CZ	2.32	0.65
1:E:211:THR:HG22	1:E:246:PHE:CZ	2.30	0.65
1:A:302:ALA:HB3	1:A:303:PRO:HD3	1.78	0.65
1:A:211:THR:HG22	1:A:246:PHE:CZ	2.31	0.65
1:A:302:ALA:H	1:A:334:HIS:CE1	2.11	0.65
1:F:278:GLU:OE1	4:F:891:HOH:O	2.14	0.65
1:D:211:THR:HG22	1:D:246:PHE:CZ	2.32	0.64
1:E:211:THR:HG22	1:E:246:PHE:HZ	1.62	0.64
1:F:302:ALA:H	1:F:334:HIS:CE1	2.13	0.64
1:F:302:ALA:HB3	1:F:303:PRO:HD3	1.80	0.64
1:D:165:TYR:CE1	1:D:195:LYS:HE3	2.33	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:302:ALA:H	1:C:334:HIS:CE1	2.11	0.64
1:D:302:ALA:HB3	1:D:303:PRO:HD3	1.80	0.64
1:C:165:TYR:CE1	1:C:195:LYS:HE3	2.33	0.63
1:D:302:ALA:H	1:D:334:HIS:CE1	2.11	0.63
1:F:211:THR:HG22	1:F:246:PHE:HZ	1.63	0.63
1:C:302:ALA:HB3	1:C:303:PRO:HD3	1.81	0.63
1:B:329:PHE:O	1:B:334:HIS:HD2	1.82	0.63
1:C:197:LYS:NZ	1:C:228:ASN:HD21	1.96	0.63
1:E:197:LYS:NZ	1:E:228:ASN:HD21	1.97	0.62
1:B:302:ALA:HB3	1:B:303:PRO:HD3	1.80	0.62
1:E:302:ALA:HB3	1:E:303:PRO:HD3	1.81	0.62
1:C:329:PHE:O	1:C:334:HIS:HD2	1.82	0.62
1:A:329:PHE:O	1:A:334:HIS:HD2	1.82	0.62
1:B:211:THR:HG22	1:B:246:PHE:HZ	1.64	0.62
1:C:211:THR:HG22	1:C:246:PHE:HZ	1.64	0.62
1:D:211:THR:HG22	1:D:246:PHE:HZ	1.64	0.62
1:D:197:LYS:NZ	1:D:228:ASN:HD21	1.97	0.62
1:A:165:TYR:CE1	1:A:195:LYS:HE3	2.35	0.62
1:E:55:LYS:HE2	1:E:55:LYS:HA	1.82	0.61
1:A:211:THR:HG22	1:A:246:PHE:HZ	1.64	0.61
1:B:165:TYR:CE1	1:B:195:LYS:HE3	2.34	0.61
1:D:329:PHE:O	1:D:334:HIS:HD2	1.83	0.61
1:F:197:LYS:NZ	1:F:228:ASN:HD21	1.98	0.61
1:F:329:PHE:O	1:F:334:HIS:HD2	1.83	0.61
1:C:55:LYS:HE2	1:C:55:LYS:HA	1.83	0.61
1:A:53:ARG:HD2	1:B:117:TRP:NE1	2.16	0.60
1:E:329:PHE:O	1:E:334:HIS:HD2	1.83	0.60
1:F:55:LYS:HA	1:F:55:LYS:HE2	1.83	0.60
1:E:195:LYS:HD3	1:E:226:ASP:HB2	1.84	0.60
1:A:117:TRP:NE1	1:B:53:ARG:HD2	2.17	0.60
1:D:55:LYS:HE2	1:D:55:LYS:HA	1.83	0.59
1:A:55:LYS:HA	1:A:55:LYS:HE2	1.83	0.59
1:A:127:MET:HB3	1:B:127:MET:HB3	1.84	0.58
1:B:55:LYS:HE2	1:B:55:LYS:HA	1.84	0.58
1:F:19:ARG:HG3	1:F:19:ARG:NH1	2.18	0.58
1:C:195:LYS:HD3	1:C:226:ASP:HB2	1.86	0.58
1:F:195:LYS:HD3	1:F:226:ASP:HB2	1.85	0.57
1:A:19:ARG:HG3	1:A:19:ARG:NH1	2.19	0.57
1:F:82:LYS:O	1:F:83:ARG:HB2	2.05	0.57
1:A:197:LYS:HZ2	1:A:228:ASN:HD21	1.52	0.57
1:B:195:LYS:HD3	1:B:226:ASP:HB2	1.87	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:195:LYS:HD3	1:D:226:ASP:HB2	1.87	0.57
1:C:197:LYS:HZ2	1:C:228:ASN:HD21	1.52	0.56
1:E:293:ASN:HD22	1:E:323:ARG:NH2	2.03	0.56
1:F:284:ARG:HG2	4:F:872:HOH:O	2.06	0.56
1:A:122:VAL:HG11	1:B:127:MET:HE2	1.88	0.55
1:A:195:LYS:HD3	1:A:226:ASP:HB2	1.89	0.55
1:C:82:LYS:O	1:C:83:ARG:HB2	2.07	0.55
1:D:41:ALA:HB2	1:F:4:SER:CB	2.36	0.55
1:B:82:LYS:O	1:B:83:ARG:HB2	2.07	0.55
1:D:82:LYS:O	1:D:83:ARG:HB2	2.06	0.55
1:A:127:MET:HE2	1:B:122:VAL:HG11	1.89	0.55
1:B:19:ARG:HG3	1:B:19:ARG:NH1	2.21	0.54
1:E:82:LYS:O	1:E:83:ARG:HB2	2.06	0.54
1:B:293:ASN:HD22	1:B:323:ARG:NH2	2.05	0.54
1:F:293:ASN:HD22	1:F:323:ARG:NH2	2.05	0.54
1:D:360:GLN:HG3	1:F:13:ALA:HB1	1.89	0.54
1:E:284:ARG:HG2	4:E:878:HOH:O	2.06	0.54
1:B:14:LYS:HA	1:B:14:LYS:HZ3	1.73	0.53
1:B:197:LYS:HZ2	1:B:228:ASN:HD21	1.56	0.53
1:D:197:LYS:HZ2	1:D:228:ASN:HD21	1.57	0.53
1:D:301:ASP:OD1	1:D:303:PRO:HD2	2.09	0.52
1:B:301:ASP:OD1	1:B:303:PRO:HD2	2.09	0.52
1:C:301:ASP:OD1	1:C:303:PRO:HD2	2.08	0.52
1:A:82:LYS:O	1:A:83:ARG:HB2	2.09	0.52
1:D:293:ASN:HD22	1:D:323:ARG:NH2	2.05	0.52
1:F:68:ARG:CZ	4:F:828:HOH:O	2.58	0.52
1:A:301:ASP:OD1	1:A:303:PRO:HD2	2.09	0.52
1:C:293:ASN:HD22	1:C:323:ARG:NH2	2.07	0.51
1:E:79:SER:HA	1:E:303:PRO:HB3	1.92	0.51
1:A:79:SER:HA	1:A:303:PRO:HB3	1.93	0.51
1:B:79:SER:HA	1:B:303:PRO:HB3	1.91	0.51
1:E:301:ASP:OD1	1:E:303:PRO:HD2	2.11	0.51
1:F:45:SER:HB2	1:F:173:HIS:HB3	1.93	0.51
1:D:79:SER:HA	1:D:303:PRO:HB3	1.92	0.51
1:D:41:ALA:HB2	1:F:4:SER:HB2	1.93	0.50
1:A:280:LEU:HB2	1:A:286:HIS:CE1	2.47	0.50
1:E:45:SER:HB2	1:E:173:HIS:HB3	1.94	0.50
1:E:280:LEU:HB2	1:E:286:HIS:CE1	2.46	0.50
1:F:301:ASP:OD1	1:F:303:PRO:HD2	2.11	0.50
1:F:144:ALA:HB3	1:F:375:GLY:HA2	1.94	0.50
1:B:38:LEU:HD21	1:B:352:TRP:O	2.12	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:79:SER:HA	1:C:303:PRO:HB3	1.93	0.49
1:E:286:HIS:HE1	4:E:807:HOH:O	1.94	0.49
1:F:79:SER:HA	1:F:303:PRO:HB3	1.93	0.49
1:C:45:SER:HB2	1:C:173:HIS:HB3	1.94	0.49
1:D:41:ALA:HB2	1:F:4:SER:OG	2.12	0.49
1:E:144:ALA:HB3	1:E:375:GLY:HA2	1.93	0.49
1:B:45:SER:HB2	1:B:173:HIS:HB3	1.94	0.49
1:F:280:LEU:HB2	1:F:286:HIS:CE1	2.47	0.49
1:C:19:ARG:HD3	1:C:24:THR:HG21	1.94	0.49
1:E:20:THR:OG1	1:E:23:GLU:HG2	2.13	0.49
1:C:20:THR:OG1	1:C:23:GLU:HG2	2.13	0.49
1:A:144:ALA:HB3	1:A:375:GLY:HA2	1.94	0.48
1:C:311:PHE:CD2	1:C:337:LEU:HD13	2.48	0.48
1:F:197:LYS:HZ2	1:F:228:ASN:HD21	1.61	0.48
1:A:45:SER:HB2	1:A:173:HIS:HB3	1.95	0.48
1:A:284:ARG:NH2	4:A:936:HOH:O	2.45	0.48
1:B:14:LYS:HA	1:B:14:LYS:NZ	2.28	0.48
1:C:280:LEU:HB2	1:C:286:HIS:CE1	2.47	0.48
1:D:311:PHE:CD2	1:D:337:LEU:HD13	2.48	0.48
1:A:63:ILE:N	1:A:63:ILE:HD12	2.29	0.48
1:A:237:ILE:O	1:A:241:ARG:HG2	2.13	0.48
1:B:280:LEU:HB2	1:B:286:HIS:CE1	2.49	0.48
1:D:38:LEU:HD21	1:D:352:TRP:O	2.14	0.48
1:D:45:SER:HB2	1:D:173:HIS:HB3	1.95	0.48
1:D:278:GLU:HG3	1:D:279:MET:N	2.28	0.48
1:A:38:LEU:HD21	1:A:352:TRP:O	2.14	0.48
1:C:278:GLU:HG3	1:C:279:MET:N	2.29	0.48
1:E:311:PHE:CD2	1:E:337:LEU:HD13	2.49	0.48
1:B:63:ILE:HD12	1:B:63:ILE:N	2.29	0.48
1:A:293:ASN:HD22	1:A:323:ARG:NH2	2.07	0.48
1:D:13:ALA:HB1	1:F:360:GLN:HG3	1.95	0.48
1:F:20:THR:OG1	1:F:23:GLU:HG2	2.14	0.48
1:B:237:ILE:O	1:B:241:ARG:HG2	2.14	0.48
1:D:280:LEU:HB2	1:D:286:HIS:CE1	2.48	0.48
1:F:354:ASN:HB2	1:F:355:PRO:HD3	1.96	0.48
1:C:237:ILE:O	1:C:241:ARG:HG2	2.14	0.47
1:C:144:ALA:HB3	1:C:375:GLY:HA2	1.96	0.47
1:D:20:THR:OG1	1:D:23:GLU:HG2	2.13	0.47
1:D:144:ALA:HB3	1:D:375:GLY:HA2	1.95	0.47
1:F:68:ARG:NE	4:F:828:HOH:O	2.46	0.47
1:F:278:GLU:HG3	1:F:279:MET:N	2.29	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:144:ALA:HB3	1:B:375:GLY:HA2	1.95	0.47
1:C:38:LEU:HD21	1:C:352:TRP:O	2.15	0.47
1:C:360:GLN:HG3	1:E:13:ALA:HB1	1.97	0.47
1:F:311:PHE:CD2	1:F:337:LEU:HD13	2.50	0.47
1:F:150:PRO:HB3	4:F:837:HOH:O	2.14	0.47
1:B:281:THR:O	1:B:282:SER:HB3	2.14	0.47
1:D:237:ILE:O	1:D:241:ARG:HG2	2.15	0.47
1:A:278:GLU:HG3	1:A:279:MET:N	2.30	0.46
1:B:311:PHE:CD2	1:B:337:LEU:HD13	2.50	0.46
1:F:286:HIS:HE1	4:F:810:HOH:O	1.98	0.46
1:E:38:LEU:CD2	1:E:353:LEU:HD23	2.45	0.46
1:B:354:ASN:HB2	1:B:355:PRO:HD3	1.97	0.46
1:D:293:ASN:ND2	1:D:323:ARG:HH21	2.09	0.46
1:F:38:LEU:CD2	1:F:353:LEU:HD23	2.46	0.46
1:C:38:LEU:CD2	1:C:353:LEU:HD23	2.46	0.46
1:E:278:GLU:HG3	1:E:279:MET:N	2.29	0.46
1:E:354:ASN:HB2	1:E:355:PRO:HD3	1.97	0.46
1:F:187:ARG:HA	1:F:191:ILE:HG22	1.98	0.46
1:F:237:ILE:O	1:F:241:ARG:HG2	2.16	0.46
1:A:311:PHE:CD2	1:A:337:LEU:HD13	2.51	0.46
1:A:354:ASN:HB2	1:A:355:PRO:HD3	1.97	0.46
1:B:278:GLU:HG3	1:B:279:MET:N	2.31	0.45
1:D:38:LEU:CD2	1:D:353:LEU:HD23	2.46	0.45
1:F:38:LEU:HD21	1:F:352:TRP:O	2.16	0.45
1:C:13:ALA:HB1	1:E:360:GLN:HG3	1.98	0.45
1:B:20:THR:OG1	1:B:23:GLU:HG2	2.16	0.45
1:E:38:LEU:HD21	1:E:352:TRP:O	2.16	0.45
1:D:160:ASP:CB	1:F:22:ALA:HB2	2.47	0.45
1:E:187:ARG:HA	1:E:191:ILE:HG22	1.98	0.45
1:A:301:ASP:HB3	1:A:304:ARG:HB2	1.99	0.45
1:C:301:ASP:HB3	1:C:304:ARG:HB2	1.99	0.45
1:E:281:THR:O	1:E:282:SER:HB3	2.16	0.45
1:B:301:ASP:HB3	1:B:304:ARG:HB2	1.98	0.45
1:E:237:ILE:O	1:E:241:ARG:HG2	2.16	0.45
1:A:187:ARG:HA	1:A:191:ILE:HG22	1.99	0.44
1:D:63:ILE:N	1:D:63:ILE:HD12	2.31	0.44
1:A:281:THR:O	1:A:282:SER:HB3	2.17	0.44
1:F:293:ASN:ND2	1:F:323:ARG:HH21	2.09	0.44
1:C:160:ASP:CB	1:E:22:ALA:HB2	2.48	0.44
1:D:38:LEU:HD12	1:D:387:TRP:CZ3	2.52	0.44
1:E:301:ASP:HB3	1:E:304:ARG:HB2	1.99	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:293:ASN:ND2	1:E:323:ARG:HH21	2.09	0.44
1:A:20:THR:OG1	1:A:23:GLU:HG2	2.16	0.44
1:B:359:GLU:OE1	1:B:359:GLU:N	2.51	0.44
1:B:187:ARG:HA	1:B:191:ILE:HG22	2.00	0.44
1:C:133:SER:HB2	1:C:134:PRO:HD3	1.99	0.44
1:C:162:VAL:CG2	1:C:347:LEU:HB2	2.47	0.44
1:A:38:LEU:CD2	1:A:353:LEU:HD23	2.48	0.44
1:F:51:THR:OG1	1:F:230:GLN:NE2	2.51	0.44
1:F:63:ILE:N	1:F:63:ILE:HD12	2.33	0.44
1:C:187:ARG:HA	1:C:191:ILE:HG22	1.99	0.44
1:D:301:ASP:HB3	1:D:304:ARG:HB2	2.00	0.44
1:F:301:ASP:HB3	1:F:304:ARG:HB2	2.00	0.43
1:A:162:VAL:CG2	1:A:347:LEU:HB2	2.47	0.43
1:A:300:PRO:HB2	1:A:311:PHE:CE1	2.53	0.43
1:B:38:LEU:CD2	1:B:353:LEU:HD23	2.47	0.43
1:D:133:SER:HB2	1:D:134:PRO:HD3	2.00	0.43
1:D:187:ARG:HA	1:D:191:ILE:HG22	1.99	0.43
1:D:354:ASN:HB2	1:D:355:PRO:HD3	1.99	0.43
1:F:281:THR:O	1:F:282:SER:HB3	2.18	0.43
1:D:162:VAL:CG2	1:D:347:LEU:HB2	2.47	0.43
1:B:239:MET:O	1:B:243:MET:HG3	2.18	0.43
1:C:38:LEU:HD22	1:C:353:LEU:HD23	2.01	0.43
1:E:38:LEU:HD12	1:E:387:TRP:CZ3	2.53	0.43
1:A:126:GLY:O	1:A:129:VAL:HG22	2.17	0.43
1:B:162:VAL:CG2	1:B:347:LEU:HB2	2.48	0.43
1:C:63:ILE:N	1:C:63:ILE:HD12	2.32	0.43
1:C:354:ASN:HB2	1:C:355:PRO:HD3	1.99	0.43
1:E:162:VAL:CG2	1:E:347:LEU:HB2	2.48	0.43
1:F:38:LEU:HD12	1:F:387:TRP:CZ3	2.54	0.43
1:F:162:VAL:CG2	1:F:347:LEU:HB2	2.48	0.43
1:C:281:THR:O	1:C:282:SER:HB3	2.19	0.43
1:E:63:ILE:HD12	1:E:63:ILE:N	2.33	0.43
1:B:38:LEU:HD12	1:B:387:TRP:CZ3	2.54	0.43
1:C:38:LEU:HD12	1:C:387:TRP:CZ3	2.53	0.43
1:B:51:THR:OG1	1:B:230:GLN:NE2	2.52	0.42
1:D:38:LEU:HD22	1:D:353:LEU:HD23	2.00	0.42
1:D:300:PRO:HB2	1:D:311:PHE:CE1	2.54	0.42
1:E:274:ILE:O	1:E:295:SER:HB2	2.19	0.42
1:B:126:GLY:O	1:B:129:VAL:HG22	2.19	0.42
1:B:300:PRO:HB2	1:B:311:PHE:CE1	2.55	0.42
1:C:300:PRO:HB2	1:C:311:PHE:CE1	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:293:ASN:ND2	1:E:323:ARG:NH2	2.67	0.42
1:E:300:PRO:HB2	1:E:311:PHE:CE1	2.54	0.42
1:D:51:THR:OG1	1:D:230:GLN:NE2	2.52	0.42
1:D:41:ALA:CB	1:F:4:SER:OG	2.67	0.42
1:D:281:THR:O	1:D:282:SER:HB3	2.19	0.42
1:F:274:ILE:O	1:F:295:SER:HB2	2.20	0.42
1:A:38:LEU:HD12	1:A:387:TRP:CZ3	2.54	0.42
1:A:239:MET:O	1:A:243:MET:HG3	2.20	0.42
1:A:293:ASN:ND2	1:A:323:ARG:HH21	2.11	0.42
1:B:293:ASN:ND2	1:B:323:ARG:HH21	2.10	0.42
1:C:51:THR:OG1	1:C:230:GLN:NE2	2.53	0.42
1:C:286:HIS:HE1	4:C:817:HOH:O	2.03	0.42
1:D:126:GLY:O	1:D:129:VAL:HG22	2.19	0.42
1:E:14:LYS:HA	1:E:14:LYS:HD3	1.93	0.42
1:A:197:LYS:HG2	4:A:807:HOH:O	2.20	0.42
1:C:293:ASN:ND2	1:C:323:ARG:HH21	2.10	0.42
1:F:165:TYR:HE1	1:F:195:LYS:HE3	1.83	0.42
1:A:359:GLU:OE1	1:A:359:GLU:N	2.50	0.42
1:B:38:LEU:HD22	1:B:353:LEU:HD23	2.02	0.41
1:C:126:GLY:O	1:C:129:VAL:HG22	2.19	0.41
1:E:165:TYR:HE1	1:E:195:LYS:HE3	1.81	0.41
1:E:221:PHE:HA	1:E:222:PRO:HD3	1.94	0.41
1:A:51:THR:OG1	1:A:230:GLN:NE2	2.53	0.41
1:D:293:ASN:ND2	1:D:323:ARG:NH2	2.68	0.41
1:E:51:THR:OG1	1:E:230:GLN:NE2	2.53	0.41
1:A:133:SER:HB2	1:A:134:PRO:HD3	2.02	0.41
1:B:133:SER:HB2	1:B:134:PRO:HD3	2.02	0.41
1:F:359:GLU:OE1	1:F:359:GLU:N	2.52	0.41
1:E:359:GLU:OE1	1:E:359:GLU:N	2.53	0.41
1:F:293:ASN:ND2	1:F:323:ARG:NH2	2.67	0.41
1:F:300:PRO:HB2	1:F:311:PHE:CE1	2.55	0.41
1:E:38:LEU:HD22	1:E:353:LEU:HD23	2.03	0.41
1:A:284:ARG:HG2	1:A:284:ARG:HH11	1.86	0.41
1:A:17:ASN:OD1	1:A:19:ARG:HB2	2.22	0.40
1:D:85:GLY:O	1:D:89:ILE:HG13	2.21	0.40
1:F:38:LEU:HD22	1:F:353:LEU:HD23	2.02	0.40
1:A:38:LEU:HD22	1:A:353:LEU:HD23	2.02	0.40
1:A:339:ALA:CB	1:A:370:ILE:HD11	2.52	0.40
1:C:274:ILE:O	1:C:295:SER:HB2	2.20	0.40
1:C:293:ASN:ND2	1:C:323:ARG:NH2	2.68	0.40
1:E:85:GLY:O	1:E:89:ILE:HG13	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:197:LYS:HZ3	1:E:228:ASN:HD21	1.69	0.40
1:F:329:PHE:CG	1:F:330:ALA:N	2.89	0.40
1:A:329:PHE:CG	1:A:330:ALA:N	2.88	0.40
1:B:274:ILE:O	1:B:295:SER:HB2	2.22	0.40
1:D:160:ASP:HB3	1:F:22:ALA:HB2	2.04	0.40
1:E:126:GLY:O	1:E:129:VAL:HG22	2.21	0.40
1:E:239:MET:O	1:E:243:MET:HG3	2.22	0.40
1:E:354:ASN:N	1:E:355:PRO:CD	2.85	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)
4:E:871:HOH:O	4:E:887:HOH:O[3_455]	2.18	0.02

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	393/398 (99%)	383 (98%)	8 (2%)	2 (0%)	29	31
1	B	393/398 (99%)	383 (98%)	9 (2%)	1 (0%)	41	46
1	C	387/398 (97%)	377 (97%)	9 (2%)	1 (0%)	41	46
1	D	387/398 (97%)	377 (97%)	9 (2%)	1 (0%)	41	46
1	E	387/398 (97%)	376 (97%)	10 (3%)	1 (0%)	41	46
1	F	387/398 (97%)	377 (97%)	9 (2%)	1 (0%)	41	46
All	All	2334/2388 (98%)	2273 (97%)	54 (2%)	7 (0%)	41	46

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	83	ARG
1	B	83	ARG
1	C	83	ARG
1	D	83	ARG
1	E	83	ARG
1	F	83	ARG
1	A	330	ALA

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	318/320 (99%)	315 (99%)	3 (1%)	78 88
1	B	318/320 (99%)	314 (99%)	4 (1%)	69 81
1	C	316/320 (99%)	313 (99%)	3 (1%)	78 88
1	D	316/320 (99%)	312 (99%)	4 (1%)	69 81
1	E	316/320 (99%)	313 (99%)	3 (1%)	78 88
1	F	316/320 (99%)	313 (99%)	3 (1%)	78 88
All	All	1900/1920 (99%)	1880 (99%)	20 (1%)	73 85

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	74	GLU
1	A	109	ASP
1	A	224	MET
1	B	14	LYS
1	B	74	GLU
1	B	109	ASP
1	B	224	MET
1	C	74	GLU
1	C	109	ASP
1	C	224	MET
1	D	14	LYS
1	D	74	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	109	ASP
1	D	224	MET
1	E	74	GLU
1	E	109	ASP
1	E	224	MET
1	F	74	GLU
1	F	109	ASP
1	F	224	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	106	ASN
1	A	173	HIS
1	A	228	ASN
1	A	230	GLN
1	A	263	HIS
1	A	286	HIS
1	A	293	ASN
1	A	321	HIS
1	A	334	HIS
1	A	358	ASN
1	B	106	ASN
1	B	173	HIS
1	B	228	ASN
1	B	230	GLN
1	B	263	HIS
1	B	286	HIS
1	B	293	ASN
1	B	334	HIS
1	B	358	ASN
1	C	106	ASN
1	C	173	HIS
1	C	228	ASN
1	C	230	GLN
1	C	263	HIS
1	C	286	HIS
1	C	293	ASN
1	C	321	HIS
1	C	334	HIS
1	C	358	ASN
1	D	106	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	173	HIS
1	D	228	ASN
1	D	230	GLN
1	D	263	HIS
1	D	286	HIS
1	D	293	ASN
1	D	334	HIS
1	D	358	ASN
1	E	106	ASN
1	E	173	HIS
1	E	228	ASN
1	E	230	GLN
1	E	263	HIS
1	E	286	HIS
1	E	293	ASN
1	E	334	HIS
1	E	358	ASN
1	F	106	ASN
1	F	173	HIS
1	F	228	ASN
1	F	230	GLN
1	F	263	HIS
1	F	286	HIS
1	F	293	ASN
1	F	334	HIS
1	F	358	ASN

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 8 ligands modelled in this entry, 2 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	$\#\|Z\| > 2$
3	LLH	E	805	-	12,12,12	1.24	1 (8%)	14,16,16	1.34	2 (14%)
3	LLH	F	806	-	12,12,12	1.01	0	14,16,16	1.20	2 (14%)
3	LLH	B	802	2	12,12,12	0.88	0	14,16,16	1.11	2 (14%)
3	LLH	A	801	2	12,12,12	0.85	0	14,16,16	1.12	2 (14%)
3	LLH	C	803	-	12,12,12	1.17	1 (8%)	14,16,16	1.17	2 (14%)
3	LLH	D	804	-	12,12,12	1.38	3 (25%)	14,16,16	1.23	2 (14%)

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	LLH	E	805	-	-	4/18/18/18	-
3	LLH	F	806	-	-	4/18/18/18	-
3	LLH	B	802	2	-	3/18/18/18	-
3	LLH	A	801	2	-	2/18/18/18	-
3	LLH	C	803	-	-	4/18/18/18	-
3	LLH	D	804	-	-	4/18/18/18	-

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	804	LLH	C1-N	2.52	1.37	1.33
3	E	805	LLH	C2-C1	2.35	1.57	1.52
3	D	804	LLH	C4-C5	2.21	1.55	1.52
3	C	803	LLH	C1-N	2.20	1.36	1.33
3	D	804	LLH	C2-C1	2.06	1.57	1.52

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	805	LLH	C3-C2-C1	2.75	116.61	109.91
3	E	805	LLH	O2-C2-C3	-2.58	104.99	110.45
3	A	801	LLH	O2-C2-C3	-2.46	105.23	110.45
3	F	806	LLH	O2-C2-C3	-2.44	105.28	110.45
3	B	802	LLH	C3-C2-C1	2.38	115.70	109.91
3	C	803	LLH	C3-C2-C1	2.38	115.69	109.91
3	D	804	LLH	C3-C2-C1	2.37	115.67	109.91
3	B	802	LLH	O2-C2-C3	-2.24	105.70	110.45
3	C	803	LLH	O2-C2-C3	-2.24	105.70	110.45
3	A	801	LLH	C3-C2-C1	2.19	115.24	109.91
3	F	806	LLH	C3-C2-C1	2.11	115.04	109.91
3	D	804	LLH	O2-C2-C3	-2.04	106.12	110.45

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	801	LLH	O1-C1-C2-O2
3	A	801	LLH	N-C1-C2-O2
3	B	802	LLH	O1-C1-C2-O2
3	B	802	LLH	N-C1-C2-O2
3	C	803	LLH	C2-C1-N-ON
3	C	803	LLH	O1-C1-N-ON
3	D	804	LLH	C2-C1-N-ON
3	D	804	LLH	O1-C1-N-ON
3	E	805	LLH	O1-C1-C2-O2
3	E	805	LLH	N-C1-C2-O2
3	F	806	LLH	C2-C1-N-ON
3	F	806	LLH	O1-C1-N-ON
3	C	803	LLH	O1-C1-C2-O2
3	C	803	LLH	N-C1-C2-O2
3	D	804	LLH	O1-C1-C2-O2
3	D	804	LLH	N-C1-C2-O2
3	F	806	LLH	O1-C1-C2-O2
3	F	806	LLH	N-C1-C2-O2
3	E	805	LLH	O1-C1-C2-C3
3	E	805	LLH	N-C1-C2-C3
3	B	802	LLH	O1-C1-C2-C3

There are no ring outliers.

No monomer is involved in short contacts.

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	395/398 (99%)	-0.30	0 100 100	21, 30, 43, 57	0
1	B	395/398 (99%)	-0.32	1 (0%) 94 93	22, 30, 43, 58	0
1	C	391/398 (98%)	-0.23	2 (0%) 91 90	23, 37, 56, 68	0
1	D	391/398 (98%)	-0.29	2 (0%) 91 90	26, 38, 56, 68	0
1	E	391/398 (98%)	-0.24	3 (0%) 86 85	23, 35, 55, 71	0
1	F	391/398 (98%)	-0.30	3 (0%) 86 85	23, 36, 55, 72	0
All	All	2354/2388 (98%)	-0.28	11 (0%) 91 90	21, 34, 55, 72	0

All (11) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	14	LYS	4.5
1	F	13	ALA	4.2
1	E	13	ALA	3.5
1	E	14	LYS	3.1
1	B	4	SER	2.5
1	C	177	ASP	2.4
1	D	13	ALA	2.4
1	E	177	ASP	2.2
1	F	398	PRO	2.1
1	C	19	ARG	2.1
1	D	4	SER	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 (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
3	LLH	C	803	13/13	0.86	0.15	38,40,49,49	0
3	LLH	E	805	13/13	0.91	0.13	38,39,46,46	0
3	LLH	D	804	13/13	0.92	0.12	38,41,48,49	0
2	MG	A	399	1/1	0.92	0.10	40,40,40,40	0
2	MG	B	444	1/1	0.93	0.09	39,39,39,39	0
3	LLH	B	802	13/13	0.94	0.13	30,33,36,38	0
3	LLH	A	801	13/13	0.94	0.13	29,32,35,36	0
3	LLH	F	806	13/13	0.94	0.13	37,39,49,51	0

6.5 Other polymers (i)

There are no such residues in this entry.