Full wwPDB X-ray Structure Validation Report (i)

Sep 3, 2023 – 03:12 AM EDT

PDB ID	:	3QGA
Title	:	3.0 A Model of Iron Containing Urease UreA2B2 from Helicobacter mustelae
Authors	:	Tronrud, D.E.; Robbins, A.; Karplus, P.A.
Deposited on	:	2011-01-24
Resolution	:	3.00 Å(reported)

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

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

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

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

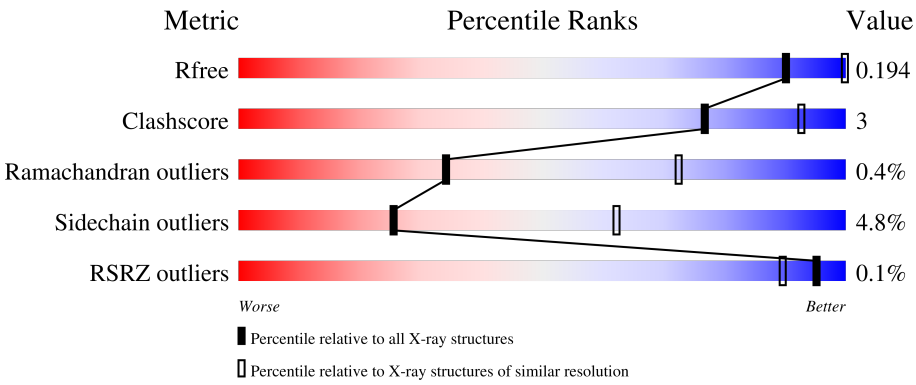
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, 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 3.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	225	92% 8% •
1	D	225	90% 10%
1	G	225	92% 7% •
1	J	225	92% 8%
1	M	225	91% 9%

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Mol	Chain	Length	Quality of chain
1	P	225	91% 9%
2	C	568	89% 10% ••
2	F	568	88% 11% ••
2	I	568	87% 11% ••
2	L	568	87% 11% ••
2	O	568	88% 10% ••
2	R	568	88% 10% ••

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 37026 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 Fusion of urease beta and gamma subunits.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	225	1767	1124	310	326	7	0	0	0
1	D	225	1767	1124	310	326	7	0	0	0
1	G	225	1767	1124	310	326	7	0	0	0
1	J	225	1767	1124	310	326	7	0	0	0
1	M	225	1767	1124	310	326	7	0	0	0
1	P	225	1767	1124	310	326	7	0	0	0

- Molecule 2 is a protein called Urease subunit beta 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	564	4301	2701	740	836	24	0	0	0
2	F	564	4301	2701	740	836	24	0	0	0
2	I	564	4301	2701	740	836	24	0	0	0
2	L	564	4301	2701	740	836	24	0	0	0
2	O	564	4301	2701	740	836	24	0	0	0
2	R	564	4301	2701	740	836	24	0	0	0

- Molecule 3 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Fe		
3	C	2	2	2	0	0
3	F	2	2	2	0	0
3	I	2	2	2	0	0
3	L	2	2	2	0	0
3	O	2	2	2	0	0
3	R	2	2	2	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
4	A	9	9	9	0	0
4	C	92	92	92	0	0
4	D	9	9	9	0	0
4	F	90	90	90	0	0
4	G	10	10	10	0	0
4	I	92	92	92	0	0
4	J	10	10	10	0	0
4	L	92	92	92	0	0
4	M	10	10	10	0	0
4	O	92	92	92	0	0
4	P	9	9	9	0	0
4	R	91	91	91	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: Fusion of urease beta and gamma subunits

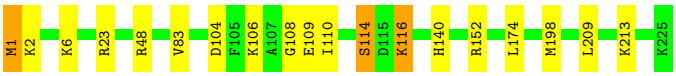
Chain A:

- Molecule 1: Fusion of urease beta and gamma subunits

Chain D:

- Molecule 1: Fusion of urease beta and gamma subunits

Chain G:



- Molecule 1: Fusion of urease beta and gamma subunits

Chain J:

- Molecule 1: Fusion of urease beta and gamma subunits

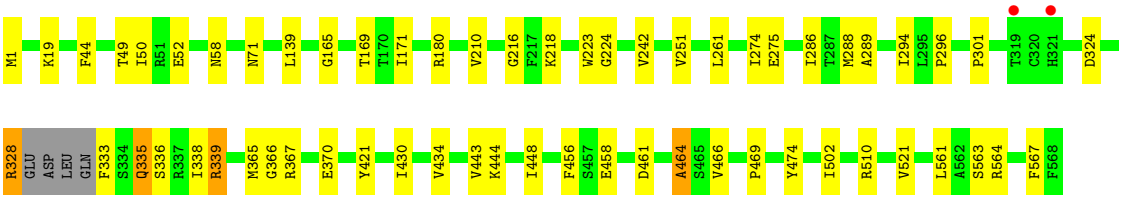
Chain M:

- Molecule 1: Fusion of urease beta and gamma subunits

Chain P:

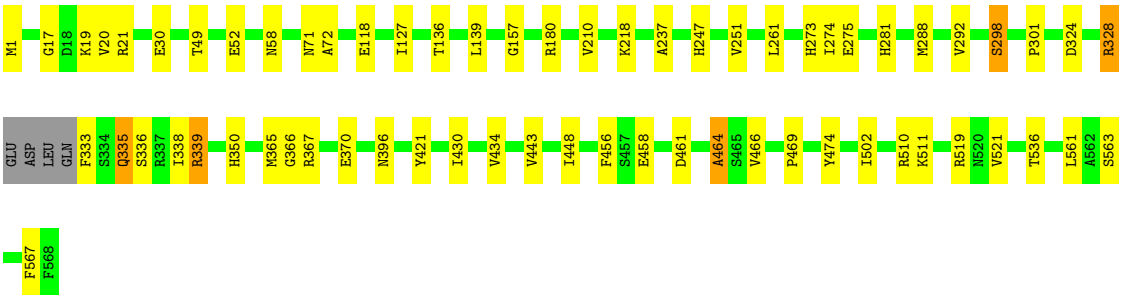
• Molecule 2: Urease subunit beta 2

Chain C:



• Molecule 2: Urease subunit beta 2

Chain F:

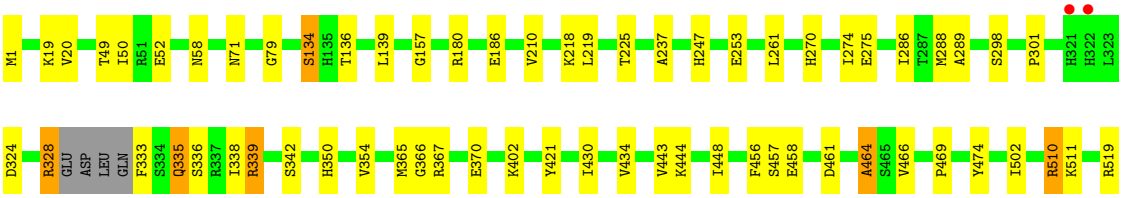


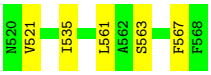
• Molecule 2: Urease subunit beta 2

Chain I:

• Molecule 2: Urease subunit beta 2

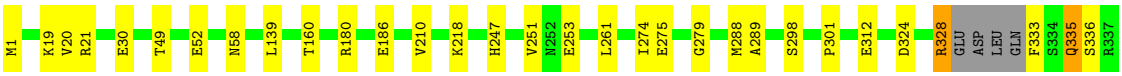
Chain L:

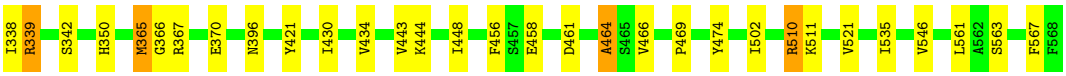




• Molecule 2: Urease subunit beta 2

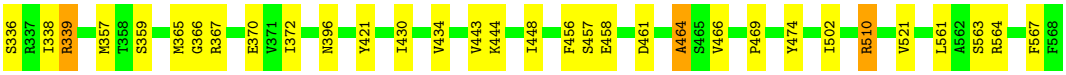
Chain O:





• Molecule 2: Urease subunit beta 2

Chain R:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	166.98Å 223.94Å 395.87Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	67.29 – 3.00 66.93 – 3.00	Depositor EDS
% Data completeness (in resolution range)	(Not available) (67.29-3.00) 98.4 (66.93-3.00)	Depositor EDS
R_{merge}	0.20	Depositor
R_{sym}	0.20	Depositor
$< I/\sigma(I) >$ [1]	1.97 (at 3.01Å)	Xtriage
Refinement program	BUSTER-TNT, BUSTER 2.8.0	Depositor
R, R_{free}	0.170 , 0.189 0.177 , 0.194	Depositor DCC
R_{free} test set	7283 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å^2)	36.5	Xtriage
Anisotropy	0.090	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 36.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	37026	wwPDB-VP
Average B, all atoms (Å^2)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.83% 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: FME, FE, KCX

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	0.43	0/1791	0.64	0/2401
1	D	0.44	0/1791	0.66	0/2401
1	G	0.44	0/1791	0.64	0/2401
1	J	0.42	0/1791	0.64	0/2401
1	M	0.43	0/1791	0.65	0/2401
1	P	0.42	0/1791	0.64	0/2401
2	C	0.46	0/4376	0.71	0/5925
2	F	0.46	0/4376	0.72	0/5925
2	I	0.46	0/4376	0.71	0/5925
2	L	0.46	0/4376	0.72	0/5925
2	O	0.45	0/4376	0.71	0/5925
2	R	0.44	0/4376	0.71	0/5925
All	All	0.45	0/37002	0.70	0/49956

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	1767	0	1802	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	1767	0	1802	11	0
1	G	1767	0	1802	8	0
1	J	1767	0	1802	9	0
1	M	1767	0	1802	11	0
1	P	1767	0	1802	12	0
2	C	4301	0	4216	31	0
2	F	4301	0	4216	33	0
2	I	4301	0	4216	34	0
2	L	4301	0	4216	33	0
2	O	4301	0	4216	32	0
2	R	4301	0	4216	33	0
3	C	2	0	0	0	0
3	F	2	0	0	0	0
3	I	2	0	0	0	0
3	L	2	0	0	0	0
3	O	2	0	0	0	0
3	R	2	0	0	0	0
4	A	9	0	0	0	0
4	C	92	0	0	0	0
4	D	9	0	0	0	0
4	F	90	0	0	1	0
4	G	10	0	0	0	0
4	I	92	0	0	0	0
4	J	10	0	0	0	0
4	L	92	0	0	0	0
4	M	10	0	0	0	0
4	O	92	0	0	0	0
4	P	9	0	0	0	0
4	R	91	0	0	1	0
All	All	37026	0	36108	218	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 3.

All (218) 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)
2:C:335:GLN:HG3	2:C:339:ARG:HD2	1.56	0.88
2:R:335:GLN:HG3	2:R:339:ARG:HD2	1.56	0.87
2:L:335:GLN:HG3	2:L:339:ARG:HD2	1.57	0.86
2:O:335:GLN:HG3	2:O:339:ARG:HD2	1.58	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:335:GLN:HG3	2:I:339:ARG:HD2	1.58	0.85
2:F:335:GLN:HG3	2:F:339:ARG:HD2	1.58	0.85
2:F:328:ARG:HE	2:F:333:PHE:HD1	1.38	0.70
2:R:328:ARG:HE	2:R:333:PHE:HD1	1.39	0.70
2:I:328:ARG:HE	2:I:333:PHE:HD1	1.38	0.70
2:L:328:ARG:HE	2:L:333:PHE:HD1	1.39	0.69
2:C:328:ARG:HE	2:C:333:PHE:HD1	1.39	0.69
2:O:328:ARG:HE	2:O:333:PHE:HD1	1.39	0.69
2:I:367:ARG:CB	2:I:370:GLU:HG3	2.24	0.67
2:F:367:ARG:CB	2:F:370:GLU:HG3	2.25	0.67
2:O:367:ARG:CB	2:O:370:GLU:HG3	2.25	0.67
2:L:367:ARG:CB	2:L:370:GLU:HG3	2.25	0.66
2:R:367:ARG:CB	2:R:370:GLU:HG3	2.25	0.66
2:C:367:ARG:CB	2:C:370:GLU:HG3	2.26	0.66
2:R:367:ARG:HB3	2:R:370:GLU:HG3	1.79	0.65
2:L:367:ARG:HB3	2:L:370:GLU:HG3	1.79	0.63
2:I:367:ARG:HB3	2:I:370:GLU:HG3	1.81	0.62
2:L:335:GLN:O	2:L:339:ARG:HB2	1.99	0.61
2:C:367:ARG:HB3	2:C:370:GLU:HG3	1.82	0.61
2:R:335:GLN:O	2:R:339:ARG:HB2	2.01	0.61
2:F:335:GLN:O	2:F:339:ARG:HB2	2.00	0.61
2:F:367:ARG:HB3	2:F:370:GLU:HG3	1.81	0.61
2:C:335:GLN:O	2:C:339:ARG:HB2	2.00	0.60
2:O:335:GLN:O	2:O:339:ARG:HB2	2.01	0.60
2:I:335:GLN:O	2:I:339:ARG:HB2	2.01	0.59
2:I:443:VAL:HB	2:I:561:LEU:HB3	1.84	0.59
2:O:367:ARG:HB3	2:O:370:GLU:HG3	1.83	0.59
2:R:30:GLU:HB2	2:R:396:ASN:HB3	1.85	0.58
2:F:443:VAL:HB	2:F:561:LEU:HB3	1.84	0.58
1:D:1:FME:HCN	1:D:2:LYS:HZ2	1.68	0.57
2:R:443:VAL:HB	2:R:561:LEU:HB3	1.87	0.57
2:O:443:VAL:HB	2:O:561:LEU:HB3	1.86	0.56
2:F:461:ASP:HB3	2:F:464:ALA:HB2	1.88	0.56
2:O:466:VAL:HG23	2:O:469:PRO:HD3	1.88	0.56
2:C:443:VAL:HB	2:C:561:LEU:HB3	1.86	0.56
2:L:443:VAL:HB	2:L:561:LEU:HB3	1.86	0.56
2:L:464:ALA:HB1	2:L:469:PRO:HG2	1.88	0.56
2:R:461:ASP:HB3	2:R:464:ALA:HB2	1.88	0.56
2:R:466:VAL:HG23	2:R:469:PRO:HD3	1.88	0.56
1:G:110:ILE:HG12	2:I:20:VAL:HG22	1.88	0.55
1:A:140:HIS:HB2	2:I:251:VAL:HB	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:461:ASP:HB3	2:C:464:ALA:HB2	1.88	0.55
2:F:464:ALA:HB1	2:F:469:PRO:HG2	1.89	0.55
2:O:275:GLU:HG2	2:O:342:SER:HB2	1.87	0.55
2:I:466:VAL:HG23	2:I:469:PRO:HD3	1.89	0.54
1:J:140:HIS:HB2	2:R:251:VAL:HB	1.88	0.54
2:I:537:VAL:HG22	2:I:544:VAL:HG22	1.88	0.54
2:L:466:VAL:HG23	2:L:469:PRO:HD3	1.89	0.54
2:I:461:ASP:HB3	2:I:464:ALA:HB2	1.90	0.54
2:L:461:ASP:HB3	2:L:464:ALA:HB2	1.90	0.54
2:C:464:ALA:HB1	2:C:469:PRO:HG2	1.90	0.54
2:C:466:VAL:HG23	2:C:469:PRO:HD3	1.89	0.54
2:O:461:ASP:HB3	2:O:464:ALA:HB2	1.90	0.53
2:R:464:ALA:HB1	2:R:469:PRO:HG2	1.91	0.53
2:R:328:ARG:HH11	2:R:333:PHE:HE1	1.57	0.53
2:O:444:LYS:HD3	1:P:2:LYS:HB2	1.91	0.53
2:F:466:VAL:HG23	2:F:469:PRO:HD3	1.90	0.53
2:O:367:ARG:HB2	2:O:370:GLU:HG3	1.92	0.52
2:O:464:ALA:HB1	2:O:469:PRO:HG2	1.90	0.52
2:R:274:ILE:HD11	2:R:288:MET:HB2	1.90	0.52
1:P:1:FME:HCN	1:P:2:LYS:HZ2	1.75	0.52
2:C:328:ARG:HH11	2:C:333:PHE:HE1	1.58	0.51
2:I:367:ARG:HB2	2:I:370:GLU:HG3	1.92	0.51
2:F:367:ARG:HB2	2:F:370:GLU:HG3	1.93	0.51
2:I:135:HIS:HB3	2:I:359:SER:HB2	1.91	0.51
1:J:1:FME:HCN	1:J:2:LYS:HZ2	1.76	0.51
2:O:328:ARG:HH11	2:O:333:PHE:HE1	1.58	0.51
2:F:328:ARG:HH11	2:F:333:PHE:HE1	1.59	0.50
2:R:297:SER:HB3	2:R:357:MET:HB2	1.94	0.50
1:G:106:LYS:HB3	1:G:109:GLU:HB2	1.93	0.50
2:L:328:ARG:HH11	2:L:333:PHE:HE1	1.58	0.50
2:O:251:VAL:HB	1:P:140:HIS:HB2	1.94	0.50
2:C:367:ARG:HB2	2:C:370:GLU:HG3	1.94	0.50
2:I:464:ALA:HB1	2:I:469:PRO:HG2	1.93	0.50
2:F:52:GLU:HG2	2:F:58:ASN:HD21	1.76	0.50
1:D:106:LYS:HB3	1:D:109:GLU:HB2	1.93	0.49
1:D:110:ILE:HG12	2:F:20:VAL:HG22	1.94	0.49
2:I:328:ARG:HH11	2:I:333:PHE:HE1	1.59	0.49
2:L:275:GLU:OE2	2:L:339:ARG:NH2	2.46	0.49
1:J:110:ILE:HG12	2:L:20:VAL:HG22	1.95	0.49
2:F:274:ILE:HD11	2:F:288:MET:HB2	1.94	0.48
1:J:141:VAL:HA	2:R:253:GLU:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:421:TYR:HB3	2:O:430:ILE:HD12	1.95	0.48
2:I:421:TYR:HB3	2:I:430:ILE:HD12	1.96	0.48
1:J:48:ARG:HG3	1:P:23:ARG:CZ	2.43	0.48
2:L:421:TYR:HB3	2:L:430:ILE:HD12	1.96	0.48
2:R:367:ARG:HB2	2:R:370:GLU:HG3	1.96	0.48
2:I:30:GLU:HB2	2:I:396:ASN:HB3	1.96	0.48
1:P:113:ALA:HB2	2:R:17:GLY:C	2.34	0.48
2:R:135:HIS:HB3	2:R:359:SER:HB2	1.96	0.48
2:C:421:TYR:HB3	2:C:430:ILE:HD12	1.96	0.48
2:R:52:GLU:HG2	2:R:58:ASN:HD21	1.78	0.48
2:C:275:GLU:HA	2:C:286:ILE:HD12	1.94	0.48
2:L:367:ARG:HB2	2:L:370:GLU:HG3	1.96	0.48
2:C:301:PRO:HD3	2:C:366:GLY:HA2	1.97	0.47
2:F:421:TYR:HB3	2:F:430:ILE:HD12	1.96	0.47
2:R:275:GLU:HA	2:R:286:ILE:HD12	1.97	0.47
2:L:298:SER:CB	2:L:350:HIS:HE2	2.27	0.47
2:F:301:PRO:HD3	2:F:366:GLY:HA2	1.97	0.47
2:F:251:VAL:HB	1:G:140:HIS:HB2	1.97	0.47
2:O:30:GLU:HB2	2:O:396:ASN:HB3	1.96	0.46
2:L:301:PRO:HD3	2:L:366:GLY:HA2	1.97	0.46
2:R:301:PRO:HD3	2:R:366:GLY:HA2	1.98	0.46
2:I:137:HIS:CD2	2:I:364:ALA:HB3	2.50	0.46
1:J:34:GLU:OE1	1:M:48:ARG:NH2	2.48	0.46
2:O:247:HIS:CE1	2:O:279:GLY:HA3	2.51	0.46
2:F:30:GLU:HB2	2:F:396:ASN:HB3	1.97	0.46
1:G:108:GLY:HA2	2:I:21:ARG:O	2.15	0.46
2:F:273:HIS:CD2	4:F:780:HOH:O	2.68	0.46
2:O:301:PRO:HD3	2:O:366:GLY:HA2	1.98	0.45
2:R:421:TYR:HB3	2:R:430:ILE:HD12	1.98	0.45
2:F:261:LEU:HD21	2:F:288:MET:HG2	1.98	0.45
2:I:275:GLU:HA	2:I:286:ILE:HD12	1.99	0.45
2:I:301:PRO:HD3	2:I:366:GLY:HA2	1.97	0.45
2:L:136:THR:O	2:L:157:GLY:HA3	2.17	0.45
2:C:456:PHE:CE2	2:C:474:TYR:HB3	2.51	0.45
2:C:275:GLU:OE2	2:C:339:ARG:NH2	2.50	0.45
1:J:2:LYS:HB2	2:R:444:LYS:HD3	1.98	0.45
2:L:275:GLU:HA	2:L:286:ILE:HD12	1.97	0.45
1:A:72:PRO:HG2	2:C:564:ARG:HH12	1.82	0.45
1:G:1:FME:HCN	1:G:2:LYS:HZ2	1.82	0.45
2:I:52:GLU:HG2	2:I:58:ASN:HD21	1.81	0.44
1:A:48:ARG:HG3	1:G:23:ARG:CZ	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:434:VAL:HG13	2:O:448:ILE:HD13	1.98	0.44
2:I:216:GLY:HA2	2:I:242:VAL:HB	1.99	0.44
2:L:456:PHE:CE2	2:L:474:TYR:HB3	2.53	0.44
2:R:456:PHE:CE2	2:R:474:TYR:HB3	2.53	0.44
1:A:2:LYS:HB2	2:I:444:LYS:HD3	2.00	0.44
2:L:275:GLU:HG2	2:L:342:SER:HB2	1.98	0.44
2:L:219:LEU:HB3	2:L:225:THR:HG23	2.00	0.44
2:C:216:GLY:HA2	2:C:242:VAL:HB	2.00	0.44
2:C:444:LYS:HD3	1:D:2:LYS:HB2	2.00	0.44
2:I:354:VAL:HG11	2:I:535:ILE:HD11	1.99	0.44
2:L:52:GLU:HG2	2:L:58:ASN:HD21	1.82	0.44
2:R:434:VAL:HG13	2:R:448:ILE:HD13	2.00	0.44
1:J:23:ARG:CZ	1:M:48:ARG:HG3	2.48	0.44
2:L:134:SER:HB2	2:L:270:HIS:HE1	1.83	0.44
2:F:298:SER:CB	2:F:350:HIS:HE2	2.30	0.43
2:C:52:GLU:HG2	2:C:58:ASN:HD21	1.81	0.43
2:C:169:THR:HB	2:C:171:ILE:HD12	2.00	0.43
2:F:237:ALA:O	2:F:519:ARG:HD3	2.18	0.43
2:C:165:GLY:HA3	2:F:118:GLU:OE2	2.18	0.43
2:C:251:VAL:HB	1:D:140:HIS:HB2	2.00	0.43
2:I:275:GLU:OE2	2:I:339:ARG:NH2	2.51	0.43
1:P:72:PRO:HG2	2:R:564:ARG:HH12	1.83	0.43
1:D:28:LEU:HD13	1:G:48:ARG:HD2	2.01	0.43
2:I:456:PHE:CE2	2:I:474:TYR:HB3	2.54	0.43
2:O:52:GLU:HG2	2:O:58:ASN:HD21	1.83	0.43
1:A:1:FME:HCN	1:A:2:LYS:HZ3	1.84	0.43
1:G:114:SER:OG	1:G:116:LYS:HB2	2.19	0.43
2:I:139:LEU:HD11	2:I:167:ASN:HA	2.00	0.43
2:I:298:SER:CB	2:I:350:HIS:HE2	2.32	0.43
1:M:23:ARG:CZ	1:P:48:ARG:HG3	2.48	0.43
2:O:456:PHE:CE2	2:O:474:TYR:HB3	2.54	0.43
2:C:274:ILE:HG12	2:C:289:ALA:HB2	2.01	0.43
2:I:261:LEU:HD21	2:I:288:MET:HG2	2.01	0.43
1:M:108:GLY:HA2	2:O:21:ARG:O	2.18	0.43
2:F:292:VAL:CG1	1:J:205:ILE:HG21	2.49	0.43
2:L:237:ALA:O	2:L:519:ARG:HD3	2.19	0.43
2:L:274:ILE:HG12	2:L:289:ALA:HB2	2.01	0.43
1:D:108:GLY:HA2	2:F:21:ARG:O	2.19	0.42
2:L:434:VAL:HG13	2:L:448:ILE:HD13	2.00	0.42
2:F:298:SER:HB2	2:F:350:HIS:HE2	1.84	0.42
2:F:456:PHE:CE2	2:F:474:TYR:HB3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:169:THR:HG21	2:C:223:TRP:NE1	2.33	0.42
2:L:338:ILE:HG22	2:L:339:ARG:NH1	2.34	0.42
1:M:34:GLU:OE1	1:P:48:ARG:NH2	2.51	0.42
2:L:261:LEU:HD21	2:L:288:MET:HG2	2.01	0.42
1:A:39:ILE:HD13	1:A:99:PRO:HB2	2.01	0.42
2:C:338:ILE:HG22	2:C:339:ARG:NH1	2.34	0.42
1:M:39:ILE:HD13	1:M:99:PRO:HB2	2.01	0.42
1:D:39:ILE:HD13	1:D:99:PRO:HB2	2.02	0.42
2:F:434:VAL:HG13	2:F:448:ILE:HD13	2.02	0.42
2:C:261:LEU:HD21	2:C:288:MET:HG2	2.02	0.42
2:R:338:ILE:HG22	2:R:339:ARG:NH1	2.35	0.42
1:A:23:ARG:CZ	1:D:48:ARG:HG3	2.50	0.42
2:O:535:ILE:HG12	2:O:546:VAL:HG22	2.01	0.42
2:F:72:ALA:HB1	2:F:127:ILE:HD13	2.02	0.41
2:I:338:ILE:HG22	2:I:339:ARG:NH1	2.35	0.41
2:O:186:GLU:HA	2:O:510:ARG:HD2	2.01	0.41
2:F:338:ILE:HG22	2:F:339:ARG:NH1	2.34	0.41
2:R:273:HIS:CD2	4:R:780:HOH:O	2.72	0.41
2:R:275:GLU:OE2	2:R:339:ARG:NH2	2.53	0.41
2:O:301:PRO:HG3	2:O:365:MET:O	2.20	0.41
2:C:44:PHE:HB2	2:C:50:ILE:HD12	2.03	0.41
1:A:34:GLU:OE1	1:D:48:ARG:NH2	2.49	0.41
2:I:434:VAL:HG13	2:I:448:ILE:HD13	2.02	0.41
2:L:253:GLU:HG3	1:M:141:VAL:HA	2.02	0.41
2:F:136:THR:O	2:F:157:GLY:HA3	2.21	0.41
1:P:110:ILE:HG12	2:R:20:VAL:HG22	2.02	0.41
2:L:444:LYS:HD3	1:M:2:LYS:HB2	2.02	0.41
2:O:274:ILE:HG12	2:O:289:ALA:HB2	2.03	0.41
2:O:298:SER:CB	2:O:350:HIS:HE2	2.34	0.41
2:O:338:ILE:HG22	2:O:339:ARG:NH1	2.35	0.41
2:R:150:ASN:O	2:R:372:ILE:HD12	2.21	0.41
2:C:169:THR:HG21	2:C:223:TRP:HE1	1.86	0.41
2:I:136:THR:O	2:I:157:GLY:HA3	2.21	0.41
2:C:294:ILE:O	2:C:296:PRO:HD3	2.21	0.40
2:R:186:GLU:HA	2:R:510:ARG:HD2	2.03	0.40
2:F:275:GLU:OE2	2:F:339:ARG:NH2	2.54	0.40
2:I:186:GLU:HA	2:I:510:ARG:HD2	2.03	0.40
2:L:354:VAL:HG11	2:L:535:ILE:HD11	2.03	0.40
1:P:39:ILE:HD13	1:P:99:PRO:HB2	2.03	0.40
1:D:113:ALA:HB2	2:F:17:GLY:C	2.42	0.40
1:M:1:FME:HCN	1:M:2:LYS:HZ3	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:32:GLN:HE22	1:P:1:FME:HCN	1.86	0.40
2:C:434:VAL:HG13	2:C:448:ILE:HD13	2.03	0.40
2:O:253:GLU:HG3	1:P:141:VAL:HA	2.03	0.40
2:L:79:GLY:HA2	2:L:402:LYS:HE2	2.04	0.40
2:L:186:GLU:HA	2:L:510:ARG:HD2	2.03	0.40
1:M:110:ILE:HG12	2:O:20:VAL:HG22	2.04	0.40
2:O:261:LEU:HD21	2:O:288:MET:HG2	2.03	0.40
2:O:312:GLU:OE2	2:O:367:ARG:NH2	2.55	0.40
2:R:261:LEU:HD21	2:R:288:MET:HG2	2.04	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	223/225 (99%)	219 (98%)	4 (2%)	0	100	100
1	D	223/225 (99%)	219 (98%)	4 (2%)	0	100	100
1	G	223/225 (99%)	218 (98%)	5 (2%)	0	100	100
1	J	223/225 (99%)	218 (98%)	5 (2%)	0	100	100
1	M	223/225 (99%)	218 (98%)	5 (2%)	0	100	100
1	P	223/225 (99%)	218 (98%)	5 (2%)	0	100	100
2	C	559/568 (98%)	525 (94%)	31 (6%)	3 (0%)	29	68
2	F	559/568 (98%)	523 (94%)	33 (6%)	3 (0%)	29	68
2	I	559/568 (98%)	526 (94%)	29 (5%)	4 (1%)	22	60
2	L	559/568 (98%)	520 (93%)	36 (6%)	3 (0%)	29	68
2	O	559/568 (98%)	525 (94%)	32 (6%)	2 (0%)	34	72
2	R	559/568 (98%)	527 (94%)	30 (5%)	2 (0%)	34	72
All	All	4692/4758 (99%)	4456 (95%)	219 (5%)	17 (0%)	34	72

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	F	464	ALA
2	O	464	ALA
2	C	365	MET
2	C	464	ALA
2	F	365	MET
2	I	464	ALA
2	L	365	MET
2	L	464	ALA
2	R	365	MET
2	R	464	ALA
2	F	281	HIS
2	I	365	MET
2	I	281	HIS
2	O	365	MET
2	C	224	GLY
2	I	50	ILE
2	L	50	ILE

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	185/185 (100%)	174 (94%)	11 (6%)	19	54
1	D	185/185 (100%)	173 (94%)	12 (6%)	17	50
1	G	185/185 (100%)	175 (95%)	10 (5%)	22	57
1	J	185/185 (100%)	174 (94%)	11 (6%)	19	54
1	M	185/185 (100%)	175 (95%)	10 (5%)	22	57
1	P	185/185 (100%)	175 (95%)	10 (5%)	22	57
2	C	459/466 (98%)	441 (96%)	18 (4%)	32	69
2	F	459/466 (98%)	437 (95%)	22 (5%)	25	62
2	I	459/466 (98%)	439 (96%)	20 (4%)	28	65
2	L	459/466 (98%)	437 (95%)	22 (5%)	25	62

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	O	459/466 (98%)	440 (96%)	19 (4%)	30	67
2	R	459/466 (98%)	439 (96%)	20 (4%)	28	65
All	All	3864/3906 (99%)	3679 (95%)	185 (5%)	25	62

All (185) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	6	LYS
1	A	48	ARG
1	A	51	LYS
1	A	83	VAL
1	A	102	PRO
1	A	104	ASP
1	A	116	LYS
1	A	152	ARG
1	A	174	LEU
1	A	198	MET
1	A	213	LYS
2	C	1	MET
2	C	19	LYS
2	C	49	THR
2	C	71	ASN
2	C	139	LEU
2	C	180	ARG
2	C	210	VAL
2	C	324	ASP
2	C	328	ARG
2	C	335	GLN
2	C	336	SER
2	C	339	ARG
2	C	458	GLU
2	C	502	ILE
2	C	510	ARG
2	C	521	VAL
2	C	563	SER
2	C	567	PHE
1	D	6	LYS
1	D	48	ARG
1	D	51	LYS
1	D	102	PRO
1	D	103	ASP

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Mol	Chain	Res	Type
1	D	104	ASP
1	D	116	LYS
1	D	152	ARG
1	D	174	LEU
1	D	198	MET
1	D	209	LEU
1	D	213	LYS
2	F	1	MET
2	F	19	LYS
2	F	49	THR
2	F	71	ASN
2	F	139	LEU
2	F	180	ARG
2	F	210	VAL
2	F	247	HIS
2	F	298	SER
2	F	324	ASP
2	F	328	ARG
2	F	335	GLN
2	F	336	SER
2	F	339	ARG
2	F	458	GLU
2	F	502	ILE
2	F	510	ARG
2	F	511	LYS
2	F	521	VAL
2	F	536	THR
2	F	563	SER
2	F	567	PHE
1	G	6	LYS
1	G	83	VAL
1	G	104	ASP
1	G	114	SER
1	G	116	LYS
1	G	152	ARG
1	G	174	LEU
1	G	198	MET
1	G	209	LEU
1	G	213	LYS
2	I	1	MET
2	I	19	LYS
2	I	49	THR

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Mol	Chain	Res	Type
2	I	71	ASN
2	I	139	LEU
2	I	180	ARG
2	I	210	VAL
2	I	324	ASP
2	I	328	ARG
2	I	335	GLN
2	I	336	SER
2	I	339	ARG
2	I	458	GLU
2	I	502	ILE
2	I	510	ARG
2	I	511	LYS
2	I	521	VAL
2	I	552	THR
2	I	563	SER
2	I	567	PHE
1	J	6	LYS
1	J	48	ARG
1	J	51	LYS
1	J	83	VAL
1	J	104	ASP
1	J	116	LYS
1	J	152	ARG
1	J	174	LEU
1	J	198	MET
1	J	209	LEU
1	J	213	LYS
2	L	1	MET
2	L	19	LYS
2	L	49	THR
2	L	71	ASN
2	L	134	SER
2	L	139	LEU
2	L	180	ARG
2	L	210	VAL
2	L	247	HIS
2	L	324	ASP
2	L	328	ARG
2	L	335	GLN
2	L	336	SER
2	L	339	ARG

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Mol	Chain	Res	Type
2	L	457	SER
2	L	458	GLU
2	L	502	ILE
2	L	510	ARG
2	L	511	LYS
2	L	521	VAL
2	L	563	SER
2	L	567	PHE
1	M	6	LYS
1	M	51	LYS
1	M	83	VAL
1	M	104	ASP
1	M	114	SER
1	M	116	LYS
1	M	152	ARG
1	M	174	LEU
1	M	198	MET
1	M	213	LYS
2	O	1	MET
2	O	19	LYS
2	O	49	THR
2	O	139	LEU
2	O	160	THR
2	O	180	ARG
2	O	210	VAL
2	O	324	ASP
2	O	328	ARG
2	O	335	GLN
2	O	336	SER
2	O	339	ARG
2	O	458	GLU
2	O	502	ILE
2	O	510	ARG
2	O	511	LYS
2	O	521	VAL
2	O	563	SER
2	O	567	PHE
1	P	6	LYS
1	P	51	LYS
1	P	83	VAL
1	P	104	ASP
1	P	116	LYS

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Mol	Chain	Res	Type
1	P	152	ARG
1	P	174	LEU
1	P	198	MET
1	P	209	LEU
1	P	213	LYS
2	R	1	MET
2	R	19	LYS
2	R	49	THR
2	R	71	ASN
2	R	134	SER
2	R	139	LEU
2	R	180	ARG
2	R	210	VAL
2	R	324	ASP
2	R	328	ARG
2	R	335	GLN
2	R	336	SER
2	R	339	ARG
2	R	457	SER
2	R	458	GLU
2	R	502	ILE
2	R	510	ARG
2	R	521	VAL
2	R	563	SER
2	R	567	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	76	ASN
2	C	143	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

12 non-standard protein/DNA/RNA residues are modelled in this entry.

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	$\#\|Z\| > 2$
1	FME	M	1	1	8,9,10	0.55	0	7,9,11	1.09	1 (14%)
1	FME	D	1	1	8,9,10	0.53	0	7,9,11	1.00	0
1	FME	G	1	1	8,9,10	0.50	0	7,9,11	1.10	1 (14%)
2	KCX	I	218	3,2	9,11,12	0.96	1 (11%)	5,12,14	1.82	1 (20%)
2	KCX	R	218	3,2	9,11,12	1.16	1 (11%)	5,12,14	1.72	1 (20%)
2	KCX	L	218	3,2	9,11,12	1.09	1 (11%)	5,12,14	1.81	1 (20%)
1	FME	J	1	1	8,9,10	0.57	0	7,9,11	1.02	0
2	KCX	O	218	3,2	9,11,12	1.06	1 (11%)	5,12,14	1.94	1 (20%)
2	KCX	C	218	3,2	9,11,12	0.99	1 (11%)	5,12,14	1.84	1 (20%)
2	KCX	F	218	3,2	9,11,12	1.04	1 (11%)	5,12,14	1.82	1 (20%)
1	FME	A	1	1	8,9,10	0.56	0	7,9,11	1.05	1 (14%)
1	FME	P	1	1	8,9,10	0.60	0	7,9,11	1.05	1 (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
1	FME	M	1	1	-	2/7/9/11	-
1	FME	D	1	1	-	2/7/9/11	-
1	FME	G	1	1	-	2/7/9/11	-
2	KCX	I	218	3,2	-	0/9/10/12	-
2	KCX	R	218	3,2	-	0/9/10/12	-
2	KCX	L	218	3,2	-	0/9/10/12	-
1	FME	J	1	1	-	2/7/9/11	-
2	KCX	O	218	3,2	-	0/9/10/12	-
2	KCX	C	218	3,2	-	0/9/10/12	-
2	KCX	F	218	3,2	-	0/9/10/12	-
1	FME	A	1	1	-	2/7/9/11	-
1	FME	P	1	1	-	2/7/9/11	-

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	R	218	KCX	OQ1-CX	2.88	1.27	1.21
2	L	218	KCX	OQ1-CX	2.78	1.26	1.21
2	O	218	KCX	OQ1-CX	2.70	1.26	1.21
2	F	218	KCX	OQ1-CX	2.53	1.26	1.21
2	C	218	KCX	OQ1-CX	2.30	1.26	1.21
2	I	218	KCX	OQ1-CX	2.25	1.25	1.21

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	O	218	KCX	OQ1-CX-NZ	-4.01	118.74	124.96
2	C	218	KCX	OQ1-CX-NZ	-3.82	119.04	124.96
2	I	218	KCX	OQ1-CX-NZ	-3.77	119.12	124.96
2	F	218	KCX	OQ1-CX-NZ	-3.65	119.30	124.96
2	L	218	KCX	OQ1-CX-NZ	-3.61	119.35	124.96
2	R	218	KCX	OQ1-CX-NZ	-3.27	119.89	124.96
1	G	1	FME	O-C-CA	-2.21	118.97	124.78
1	P	1	FME	O-C-CA	-2.16	119.12	124.78
1	M	1	FME	O-C-CA	-2.13	119.20	124.78
1	A	1	FME	O-C-CA	-2.12	119.22	124.78

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1	FME	O1-CN-N-CA
1	D	1	FME	O1-CN-N-CA
1	G	1	FME	O1-CN-N-CA
1	J	1	FME	O1-CN-N-CA
1	M	1	FME	O1-CN-N-CA
1	P	1	FME	O1-CN-N-CA
1	J	1	FME	C-CA-CB-CG
1	A	1	FME	C-CA-CB-CG
1	D	1	FME	C-CA-CB-CG
1	G	1	FME	C-CA-CB-CG
1	M	1	FME	C-CA-CB-CG
1	P	1	FME	C-CA-CB-CG

There are no ring outliers.

6 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	M	1	FME	1	0
1	D	1	FME	1	0
1	G	1	FME	1	0
1	J	1	FME	1	0
1	A	1	FME	1	0
1	P	1	FME	2	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 12 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	224/225 (99%)	-0.62	0	100	100	20, 30, 51, 65	0
1	D	224/225 (99%)	-0.60	0	100	100	22, 31, 52, 69	0
1	G	224/225 (99%)	-0.60	0	100	100	21, 31, 54, 66	0
1	J	224/225 (99%)	-0.57	0	100	100	25, 36, 57, 74	0
1	M	224/225 (99%)	-0.67	0	100	100	19, 32, 55, 73	0
1	P	224/225 (99%)	-0.68	0	100	100	25, 36, 56, 71	0
2	C	563/568 (99%)	-0.86	2 (0%)	92	79	14, 24, 57, 107	0
2	F	563/568 (99%)	-0.93	0	100	100	15, 25, 57, 105	0
2	I	563/568 (99%)	-0.89	0	100	100	13, 24, 57, 104	0
2	L	563/568 (99%)	-0.85	2 (0%)	92	79	16, 26, 59, 109	0
2	O	563/568 (99%)	-0.89	0	100	100	15, 26, 61, 111	0
2	R	563/568 (99%)	-0.84	0	100	100	18, 29, 62, 112	0
All	All	4722/4758 (99%)	-0.80	4 (0%)	95	89	13, 28, 57, 112	0

All (4) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	L	321	HIS	2.7
2	C	321	HIS	2.6
2	L	322	HIS	2.4
2	C	319	THR	2.2

6.2 Non-standard residues in protein, DNA, RNA chains (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
1	FME	P	1	10/11	0.92	0.20	47,50,54,55	0
1	FME	M	1	10/11	0.93	0.18	49,51,55,56	0
1	FME	A	1	10/11	0.95	0.16	42,44,48,50	0
1	FME	J	1	10/11	0.95	0.15	50,53,57,57	0
1	FME	D	1	10/11	0.96	0.14	45,48,52,52	0
2	KCX	C	218	12/13	0.98	0.11	19,20,23,24	0
1	FME	G	1	10/11	0.98	0.12	40,42,47,48	0
2	KCX	I	218	12/13	0.98	0.12	18,19,25,27	0
2	KCX	F	218	12/13	0.99	0.10	19,21,24,26	0
2	KCX	O	218	12/13	0.99	0.09	23,27,29,30	0
2	KCX	L	218	12/13	0.99	0.09	18,20,22,23	0
2	KCX	R	218	12/13	0.99	0.09	20,23,28,29	0

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	FE	R	774	1/1	0.96	0.11	36,36,36,36	0
3	FE	L	774	1/1	0.97	0.09	24,24,24,24	0
3	FE	I	775	1/1	0.97	0.08	29,29,29,29	0
3	FE	R	775	1/1	0.97	0.08	31,31,31,31	0
3	FE	F	774	1/1	0.98	0.09	26,26,26,26	0
3	FE	O	774	1/1	0.98	0.07	31,31,31,31	0
3	FE	C	774	1/1	0.99	0.09	23,23,23,23	0
3	FE	L	775	1/1	0.99	0.09	31,31,31,31	0
3	FE	F	775	1/1	0.99	0.07	25,25,25,25	0
3	FE	I	774	1/1	0.99	0.09	25,25,25,25	0
3	FE	C	775	1/1	0.99	0.08	34,34,34,34	0
3	FE	O	775	1/1	1.00	0.09	28,28,28,28	0

6.5 Other polymers (i)

There are no such residues in this entry.