Full wwPDB X-ray Structure Validation Report ⓘ

Sep 30, 2025 – 10:20 AM EDT

PDB ID	:	9O15 / pdb_00009o15
Title	:	Crystal Structure of BCL-2 (G101V) mutant in complex with a stapled BAD BH3 peptide BAD SAHB 4.2
Authors	:	Seo, H.-S.; DeAngelo, T.M.; Bird, G.H.; Walensky, L.D.; Dhe-Paganon, S.
Deposited on	:	2025-04-03
Resolution	:	1.99 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:

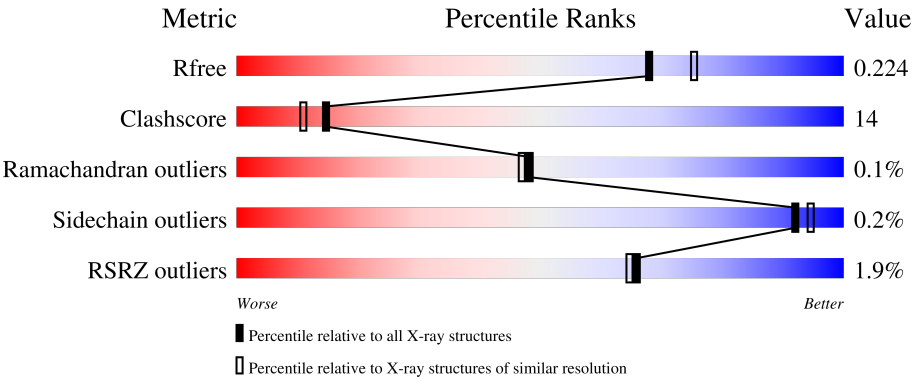
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

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 1.99 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}	164625	9409 (2.00-2.00)
Clashscore	180529	10737 (2.00-2.00)
Ramachandran outliers	177936	10628 (2.00-2.00)
Sidechain outliers	177891	10627 (2.00-2.00)
RSRZ outliers	164620	9409 (2.00-2.00)

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

Mol	Chain	Length	Quality of chain
1	A	166	66% 17% 16%
1	C	166	72% 16% 12%
1	E	166	68% 18% 14%
1	G	166	64% 19% 17%
1	I	166	65% 19% 16%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	K	166	2% 67% 17% 16%
2	B	23	74% 17%
2	D	23	61% 35%
2	F	23	78% 22%
2	H	23	4% 70% 30%
2	J	23	4% 52% 35% 9%
2	L	23	61% 30%
2	M	23	9% 17% 17% 61%
2	N	23	9% 26% 17% 57%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	MK8	M	304	-	-	X	-

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 8844 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 Apoptosis regulator Bcl-2,Bcl-2-like protein 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	139	Total	C	N	O	S	0	0	0
			1162	742	205	209	6			
1	C	146	Total	C	N	O	S	0	0	0
			1210	770	215	218	7			
1	E	143	Total	C	N	O	S	0	0	0
			1193	760	212	215	6			
1	G	137	Total	C	N	O	S	0	0	0
			1154	739	203	206	6			
1	I	140	Total	C	N	O	S	0	0	0
			1171	748	206	211	6			
1	K	140	Total	C	N	O	S	0	0	0
			1174	749	206	213	6			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	101	VAL	GLY	engineered mutation	UNP P10415
C	101	VAL	GLY	engineered mutation	UNP P10415
E	101	VAL	GLY	engineered mutation	UNP P10415
G	101	VAL	GLY	engineered mutation	UNP P10415
I	101	VAL	GLY	engineered mutation	UNP P10415
K	101	VAL	GLY	engineered mutation	UNP P10415

- Molecule 2 is a protein called stapled BAD BH3 peptide BAD SAHB 4.2.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	B	22	Total	C	N	O	0	0	0
			188	120	35	33			
2	D	22	Total	C	N	O	0	0	0
			188	120	35	33			
2	F	23	Total	C	N	O	0	0	0
			198	126	37	35			

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
2	H	23	Total C N O 198 126 37 35	0	0	0
2	J	22	Total C N O 188 120 35 33	0	0	0
2	L	22	Total C N O 188 120 35 33	0	0	0
2	M	9	Total C N O 75 49 16 10	0	0	0
2	N	10	Total C N O 84 54 17 13	0	0	0

- Molecule 3 is water.

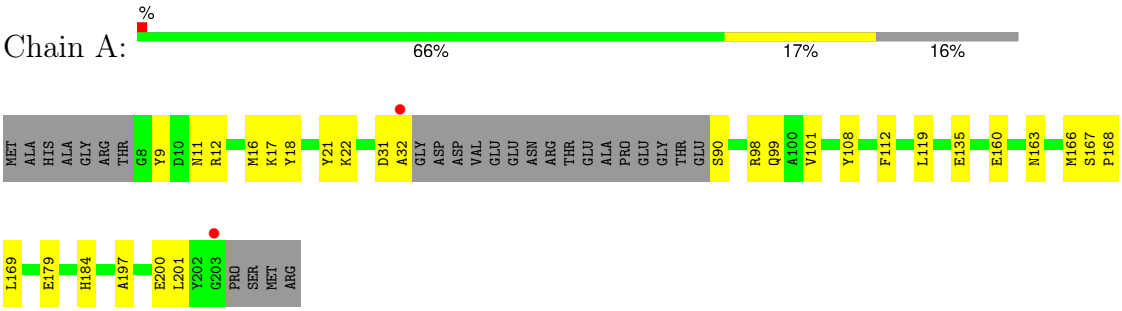
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	80	Total O 80 80	0	0
3	B	5	Total O 5 5	0	0
3	C	81	Total O 81 81	0	0
3	D	9	Total O 9 9	0	0
3	E	62	Total O 62 62	0	0
3	F	15	Total O 15 15	0	0
3	G	59	Total O 59 59	0	0
3	H	6	Total O 6 6	0	0
3	I	73	Total O 73 73	0	0
3	J	5	Total O 5 5	0	0
3	K	70	Total O 70 70	0	0
3	L	5	Total O 5 5	0	0
3	M	1	Total O 1 1	0	0
3	N	2	Total O 2 2	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.

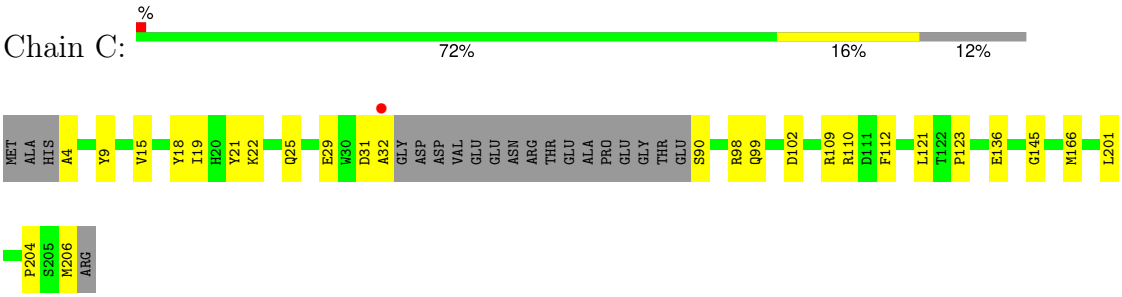
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain A:



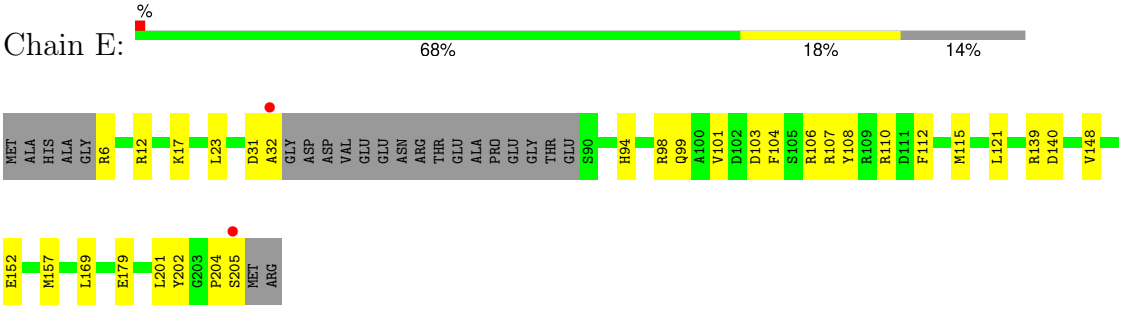
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain C:



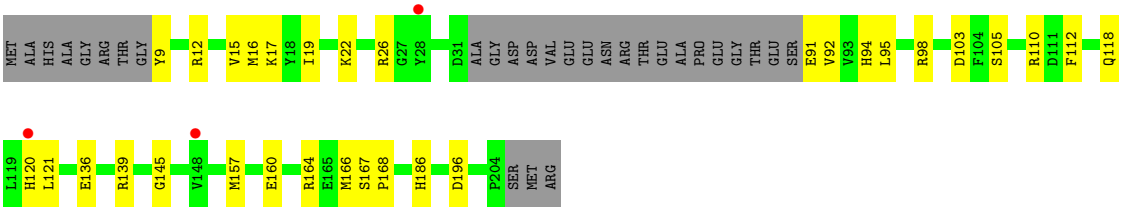
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain E:



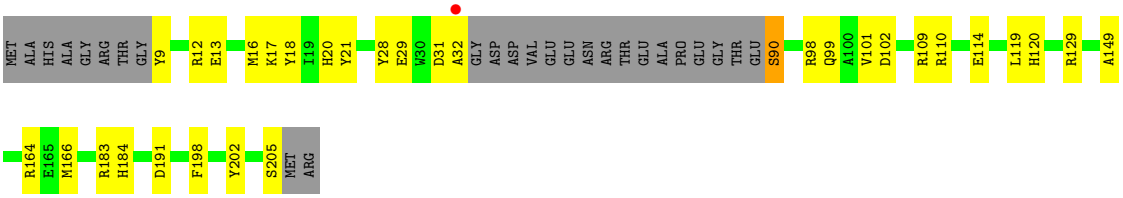
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain G:



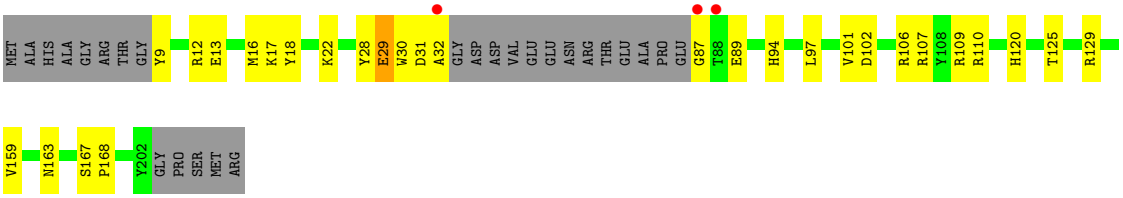
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain I:



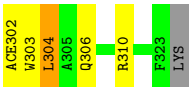
• Molecule 1: Apoptosis regulator Bcl-2,Bcl-2-like protein 1

Chain K:



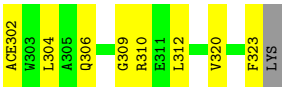
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain B:



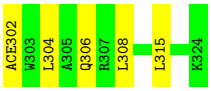
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain D:



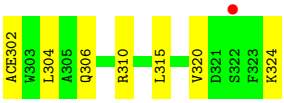
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain F:



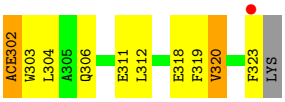
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain H:



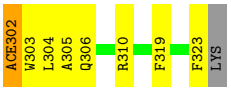
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain J:



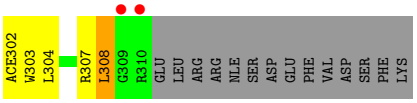
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain L:



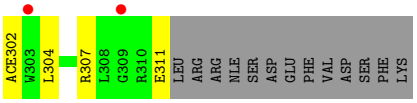
• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain M:



• Molecule 2: stapled BAD BH3 peptide BAD SAHB 4.2

Chain N:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	68.20Å 111.77Å 147.38Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.23 – 1.99 43.23 – 1.99	Depositor EDS
% Data completeness (in resolution range)	98.6 (43.23-1.99) 98.6 (43.23-1.99)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.25 (at 2.00Å)	Xtriage
Refinement program	PHENIX (1.21_5207: ???)	Depositor
R, R_{free}	0.191 , 0.223 0.191 , 0.224	Depositor DCC
R_{free} test set	3878 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	33.0	Xtriage
Anisotropy	0.194	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 47.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.27$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	8844	wwPDB-VP
Average B, all atoms (Å^2)	40.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.99% 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: ACE, MK8, NLE

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	0.34	0/1193	0.54	0/1613
1	C	0.34	0/1242	0.54	0/1679
1	E	0.35	0/1225	0.54	0/1657
1	G	0.31	0/1186	0.53	0/1605
1	I	0.34	0/1203	0.57	0/1628
1	K	0.33	0/1205	0.55	0/1630
2	B	0.59	1/160 (0.6%)	0.75	0/208
2	D	0.49	1/160 (0.6%)	0.50	0/208
2	F	0.59	1/170 (0.6%)	0.67	0/219
2	H	0.46	1/170 (0.6%)	0.45	0/219
2	J	0.54	1/160 (0.6%)	0.81	1/208 (0.5%)
2	L	0.49	1/160 (0.6%)	0.55	0/208
2	M	0.72	1/54 (1.9%)	1.40	1/68 (1.5%)
2	N	0.66	1/63 (1.6%)	0.73	0/80
All	All	0.37	8/8351 (0.1%)	0.57	2/11230 (0.0%)

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	302	ACE	C-N	5.24	1.43	1.33
2	M	302	ACE	C-N	5.08	1.43	1.33
2	B	302	ACE	C-N	5.07	1.43	1.33
2	J	302	ACE	C-N	5.05	1.43	1.33
2	N	302	ACE	C-N	5.05	1.43	1.33
2	H	302	ACE	C-N	5.05	1.43	1.33
2	L	302	ACE	C-N	5.05	1.43	1.33
2	D	302	ACE	C-N	5.03	1.43	1.33

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	M	302	ACE	O-C-N	-10.82	90.53	123.00
2	J	302	ACE	O-C-N	-7.80	99.61	123.00

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	1162	0	1096	30	0
1	C	1210	0	1145	27	0
1	E	1193	0	1128	26	1
1	G	1154	0	1090	33	1
1	I	1171	0	1105	31	0
1	K	1174	0	1106	30	0
2	B	188	0	179	8	0
2	D	188	0	179	10	0
2	F	198	0	192	4	0
2	H	198	0	192	8	0
2	J	188	0	179	17	0
2	L	188	0	179	8	0
2	M	75	0	79	10	0
2	N	84	0	81	3	0
3	A	80	0	0	10	0
3	B	5	0	0	0	0
3	C	81	0	0	10	2
3	D	9	0	0	4	0
3	E	62	0	0	4	2
3	F	15	0	0	1	0
3	G	59	0	0	10	2
3	H	6	0	0	2	0
3	I	73	0	0	11	1
3	J	5	0	0	2	0
3	K	70	0	0	9	3
3	L	5	0	0	0	0
3	M	1	0	0	0	0
3	N	2	0	0	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	8844	0	7930	224	6

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 14.

All (224) 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:E:179:GLU:OE2	3:E:301:HOH:O	1.56	1.19
1:C:206:MET:SD	3:C:380:HOH:O	2.00	1.17
1:I:90:SER:HG	1:K:87:GLY:N	1.40	1.16
1:C:25:GLN:OE1	3:C:301:HOH:O	1.65	1.11
2:J:320:VAL:HA	2:J:323:PHE:CE1	1.92	1.04
2:M:304:MK8:HEB	2:M:308:MK8:HE	1.39	1.00
1:A:200:GLU:HB2	3:A:302:HOH:O	1.61	1.00
2:M:304:MK8:HEB	2:M:308:MK8:CE	1.92	0.98
2:B:303:TRP:O	2:B:306:GLN:HG2	1.66	0.96
1:G:186:HIS:ND1	3:G:302:HOH:O	1.99	0.95
1:A:179:GLU:OE1	3:A:301:HOH:O	1.86	0.94
1:A:200:GLU:OE2	3:A:302:HOH:O	1.89	0.91
1:A:197:ALA:O	1:A:201:LEU:HD23	1.73	0.86
1:I:164:ARG:HB2	1:I:166:MET:HE2	1.57	0.86
2:J:320:VAL:HA	2:J:323:PHE:CZ	2.11	0.86
1:C:4:ALA:N	3:C:304:HOH:O	2.09	0.83
2:J:311:GLU:OE2	3:J:401:HOH:O	1.96	0.83
1:I:102:ASP:OD2	3:I:302:HOH:O	1.95	0.82
1:C:29:GLU:OE1	3:C:302:HOH:O	1.98	0.81
2:J:303:TRP:HA	2:J:306:GLN:HE21	1.46	0.79
1:I:90:SER:OG	1:K:87:GLY:N	2.15	0.78
1:C:206:MET:HB2	3:C:380:HOH:O	1.83	0.78
1:A:166:MET:HE2	1:A:169:LEU:HD12	1.65	0.77
1:I:205:SER:OG	3:I:301:HOH:O	1.94	0.77
1:C:102:ASP:OD2	3:C:303:HOH:O	2.03	0.75
2:H:320:VAL:HG13	2:H:324:LYS:HE2	1.68	0.75
1:I:90:SER:N	3:I:305:HOH:O	2.19	0.73
1:A:135:GLU:OE2	3:A:304:HOH:O	2.07	0.73
1:E:179:GLU:OE1	3:E:302:HOH:O	2.06	0.73
1:A:166:MET:HE2	1:A:169:LEU:CD1	2.20	0.72
1:E:103:ASP:OD2	1:E:106:ARG:NH2	2.23	0.72
1:K:29:GLU:HA	3:K:315:HOH:O	1.90	0.71
1:I:114:GLU:HG3	3:I:355:HOH:O	1.89	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:91:GLU:N	3:G:305:HOH:O	2.23	0.71
1:A:119:LEU:HD12	1:A:160:GLU:HG3	1.74	0.70
1:E:121:LEU:HD11	1:E:157:MET:HE3	1.74	0.70
1:E:139:ARG:HD2	1:E:140:ASP:OD2	1.91	0.70
1:K:106:ARG:HD3	3:K:348:HOH:O	1.91	0.70
1:G:12:ARG:NH1	1:G:16:MET:HE2	2.07	0.69
1:C:18:TYR:OH	1:C:22:LYS:HE2	1.93	0.69
2:J:318:GLU:OE1	3:J:402:HOH:O	2.11	0.69
1:K:102:ASP:OD2	3:K:303:HOH:O	2.11	0.68
1:K:13:GLU:OE2	3:K:302:HOH:O	2.11	0.68
1:G:22:LYS:NZ	3:G:306:HOH:O	2.25	0.68
1:G:9:TYR:OH	1:G:196:ASP:OD1	2.06	0.68
1:C:206:MET:CB	3:C:380:HOH:O	2.41	0.67
1:C:109:ARG:NH2	1:C:110:ARG:HD3	2.09	0.67
2:B:303:TRP:O	2:B:306:GLN:CG	2.42	0.67
1:I:191:ASP:OD1	3:I:303:HOH:O	2.13	0.66
2:B:303:TRP:HA	2:B:306:GLN:NE2	2.10	0.65
1:I:90:SER:CA	3:I:305:HOH:O	2.44	0.65
2:J:323:PHE:C	2:J:323:PHE:CD2	2.75	0.65
1:K:30:TRP:CE2	1:K:32:ALA:HB3	2.32	0.65
1:G:120:HIS:N	3:G:304:HOH:O	2.19	0.65
1:A:98:ARG:HD2	1:C:99:GLN:OE1	1.97	0.64
1:C:21:TYR:OH	3:C:305:HOH:O	2.13	0.64
1:I:9:TYR:O	3:I:304:HOH:O	2.14	0.64
1:A:163:ASN:HB3	3:G:342:HOH:O	1.98	0.63
1:K:22:LYS:HD3	1:K:159:VAL:HG23	1.81	0.62
1:C:201:LEU:O	1:C:206:MET:HG2	1.99	0.62
1:I:20:HIS:HE1	1:I:29:GLU:OE2	1.82	0.62
2:L:302:ACE:H2	2:L:303:TRP:C	2.24	0.62
1:E:103:ASP:OD1	1:E:202:TYR:OH	2.12	0.61
2:M:304:MK8:CE	2:M:308:MK8:HE	2.23	0.60
1:A:12:ARG:NH1	1:A:16:MET:HE2	2.17	0.60
2:J:303:TRP:HD1	2:J:306:GLN:NE2	2.00	0.60
2:D:310:ARG:NE	3:D:401:HOH:O	2.33	0.60
1:A:31:ASP:O	1:A:32:ALA:HB2	2.02	0.60
1:A:9:TYR:CE1	1:A:90:SER:HB3	2.37	0.59
1:A:108:TYR:HB2	1:A:112:PHE:CE2	2.36	0.59
1:K:163:ASN:ND2	3:K:301:HOH:O	2.01	0.59
1:K:125:THR:HB	1:K:129:ARG:HH21	1.67	0.59
1:A:12:ARG:HD2	3:I:313:HOH:O	2.03	0.59
1:E:12:ARG:NE	2:M:304:MK8:HEA	2.18	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:12:ARG:CZ	1:K:16:MET:HE3	2.33	0.59
1:G:121:LEU:HD11	1:G:157:MET:HE3	1.85	0.58
2:D:310:ARG:CD	3:D:401:HOH:O	2.52	0.58
1:G:26:ARG:HG3	1:G:26:ARG:NH1	2.18	0.57
1:G:145:GLY:HA3	2:H:320:VAL:HG23	1.87	0.57
1:E:12:ARG:HH21	2:M:304:MK8:HE	1.69	0.57
1:G:121:LEU:CD1	1:G:157:MET:HE3	2.35	0.57
2:M:304:MK8:HEB	2:M:308:MK8:CD	2.35	0.57
2:J:302:ACE:O	2:J:306:GLN:HG2	2.04	0.56
1:C:123:PRO:HG2	2:M:303:TRP:CH2	2.41	0.56
1:G:196:ASP:OD2	3:G:303:HOH:O	2.18	0.56
1:G:92:VAL:HG12	3:G:305:HOH:O	2.05	0.56
1:C:145:GLY:HA3	2:D:320:VAL:HG23	1.86	0.56
2:L:302:ACE:H2	2:L:306:GLN:H	1.71	0.56
1:K:13:GLU:HG3	3:K:344:HOH:O	2.05	0.56
1:G:112:PHE:HE2	2:H:315:NLE:HE1	1.71	0.56
1:A:12:ARG:O	1:A:16:MET:HG2	2.06	0.55
1:A:184:HIS:HB3	1:I:110:ARG:HH12	1.70	0.55
2:N:311:GLU:N	3:N:401:HOH:O	2.16	0.55
1:C:98:ARG:HG3	1:C:99:GLN:N	2.21	0.55
2:H:324:LYS:NZ	3:H:401:HOH:O	1.96	0.55
1:G:95:LEU:HD22	1:G:95:LEU:H	1.73	0.53
2:J:323:PHE:C	2:J:323:PHE:HD2	2.15	0.53
1:G:91:GLU:O	1:G:95:LEU:CD2	2.56	0.53
1:E:6:ARG:N	3:E:308:HOH:O	2.41	0.53
1:I:98:ARG:HG3	1:I:99:GLN:N	2.22	0.53
2:M:307:ARG:O	2:M:308:MK8:HB1A	2.08	0.53
1:C:31:ASP:O	1:C:32:ALA:HB2	2.09	0.52
1:C:206:MET:CG	3:C:380:HOH:O	2.45	0.52
2:H:304:MK8:HDA	2:H:304:MK8:C	2.40	0.52
1:A:184:HIS:ND1	1:I:110:ARG:NH1	2.58	0.52
2:D:323:PHE:C	3:D:404:HOH:O	2.53	0.52
2:L:302:ACE:CH3	2:L:306:GLN:H	2.21	0.52
1:K:17:LYS:HD2	1:K:94:HIS:NE2	2.24	0.52
2:L:306:GLN:HG3	2:L:310:ARG:NH1	2.26	0.51
1:A:9:TYR:HE1	1:A:90:SER:HB3	1.74	0.51
3:A:367:HOH:O	1:E:201:LEU:HD11	2.09	0.51
1:E:31:ASP:O	1:E:32:ALA:HB3	2.10	0.51
1:E:12:ARG:NH2	2:M:304:MK8:HE	2.26	0.51
1:G:12:ARG:HH11	1:G:16:MET:HE2	1.72	0.51
1:I:120:HIS:O	1:I:120:HIS:ND1	2.44	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:303:TRP:O	2:J:306:GLN:HG3	2.10	0.51
1:G:17:LYS:HD2	1:G:94:HIS:CE1	2.46	0.50
1:G:118:GLN:NE2	3:G:313:HOH:O	2.44	0.50
1:G:26:ARG:HG3	1:G:26:ARG:HH11	1.75	0.50
1:G:164:ARG:HB2	1:G:166:MET:HE2	1.94	0.50
1:K:89:GLU:H	1:K:89:GLU:CD	2.18	0.49
1:C:136:GLU:HB3	2:D:309:GLY:HA3	1.94	0.49
2:F:304:MK8:C	2:F:304:MK8:HDA	2.42	0.49
1:G:98:ARG:HD3	3:G:314:HOH:O	2.12	0.49
2:B:306:GLN:O	2:B:310:ARG:HG3	2.12	0.49
1:K:28:TYR:O	1:K:29:GLU:HB3	2.12	0.49
1:K:13:GLU:HB2	3:K:368:HOH:O	2.13	0.48
1:I:31:ASP:O	1:I:32:ALA:HB2	2.13	0.48
1:K:31:ASP:O	1:K:32:ALA:HB2	2.13	0.48
1:E:121:LEU:CD1	1:E:157:MET:HE3	2.43	0.48
1:E:179:GLU:CG	3:E:301:HOH:O	2.61	0.48
1:G:164:ARG:CB	1:G:166:MET:HE2	2.44	0.48
2:H:324:LYS:CE	3:H:401:HOH:O	2.56	0.47
1:A:12:ARG:HH12	1:A:16:MET:HE2	1.79	0.47
1:G:91:GLU:O	1:G:95:LEU:HD22	2.14	0.47
1:G:136:GLU:OE1	1:G:139:ARG:NH1	2.47	0.47
2:N:307:ARG:NH1	2:N:311:GLU:OE1	2.40	0.47
1:E:104:PHE:CE2	1:E:112:PHE:HZ	2.32	0.47
2:D:306:GLN:O	2:D:310:ARG:HG3	2.15	0.47
1:G:164:ARG:NH1	3:G:304:HOH:O	2.23	0.46
1:I:13:GLU:HG3	1:I:17:LYS:HZ3	1.80	0.46
1:E:115:MET:HE2	2:F:308:MK8:HB1B	1.96	0.46
2:J:319:PHE:O	2:J:323:PHE:CD1	2.68	0.46
1:A:31:ASP:O	1:A:32:ALA:CB	2.63	0.46
1:I:110:ARG:NH2	3:I:311:HOH:O	2.43	0.46
2:D:304:MK8:HDA	2:D:304:MK8:C	2.45	0.46
1:G:112:PHE:CE2	2:H:315:NLE:HE1	2.49	0.46
1:I:12:ARG:NH1	1:I:16:MET:SD	2.88	0.46
2:J:319:PHE:CD2	2:J:323:PHE:CD1	3.04	0.46
1:K:9:TYR:OH	1:K:89:GLU:HB3	2.15	0.46
1:E:110:ARG:HA	1:E:110:ARG:HD2	1.78	0.46
1:K:17:LYS:HD2	1:K:94:HIS:CD2	2.51	0.46
2:B:303:TRP:CD1	2:B:306:GLN:HE22	2.34	0.45
2:F:306:GLN:OE1	3:F:401:HOH:O	2.20	0.45
2:D:310:ARG:HD3	3:D:401:HOH:O	2.15	0.45
1:K:109:ARG:HH12	1:K:110:ARG:HH11	1.63	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:105:SER:HA	1:G:112:PHE:CE1	2.52	0.45
1:I:28:TYR:HB2	3:I:353:HOH:O	2.15	0.45
2:L:304:MK8:HDA	2:L:304:MK8:C	2.46	0.45
1:K:97:LEU:O	1:K:101:VAL:HG23	2.16	0.45
1:C:112:PHE:CE1	2:D:312:LEU:HD21	2.52	0.45
2:J:320:VAL:HG23	2:J:323:PHE:HZ	1.82	0.45
2:L:319:PHE:CE2	2:L:323:PHE:HE1	2.35	0.45
2:B:303:TRP:HA	2:B:306:GLN:CD	2.41	0.45
1:G:121:LEU:HD11	1:G:157:MET:CE	2.46	0.45
1:K:129:ARG:HE	1:K:129:ARG:HB2	1.40	0.44
1:I:13:GLU:HG3	1:I:17:LYS:NZ	2.33	0.44
2:L:302:ACE:H3	2:L:305:ALA:HB3	1.98	0.44
1:G:15:VAL:HG12	1:G:19:ILE:HD12	1.98	0.44
1:I:21:TYR:CZ	1:I:98:ARG:HD3	2.53	0.44
1:A:98:ARG:HG3	1:A:99:GLN:N	2.33	0.44
2:B:304:MK8:C	2:B:304:MK8:HDA	2.47	0.44
1:I:120:HIS:O	1:I:120:HIS:CG	2.70	0.44
1:K:18:TYR:CZ	1:K:101:VAL:HG11	2.53	0.44
3:A:316:HOH:O	1:I:109:ARG:HG2	2.18	0.43
2:B:303:TRP:CA	2:B:306:GLN:NE2	2.81	0.43
2:N:304:MK8:HB1A	2:N:307:ARG:HB3	2.00	0.43
1:G:95:LEU:HD22	1:G:95:LEU:N	2.34	0.43
1:A:11:ASN:ND2	3:A:309:HOH:O	2.49	0.43
2:J:319:PHE:CE2	2:J:323:PHE:CD1	3.07	0.43
1:I:18:TYR:OH	1:I:101:VAL:HG11	2.19	0.43
1:K:120:HIS:O	1:K:120:HIS:CG	2.71	0.43
1:A:17:LYS:HD2	1:C:204:PRO:O	2.19	0.43
1:E:112:PHE:CZ	1:E:152:GLU:HG2	2.54	0.43
1:I:119:LEU:HD11	1:I:129:ARG:HG2	2.00	0.42
1:C:9:TYR:HE1	1:C:90:SER:HB2	1.84	0.42
1:I:198:PHE:CE1	1:I:202:TYR:CD2	3.07	0.42
1:K:13:GLU:CB	3:K:368:HOH:O	2.68	0.42
1:I:149:ALA:HB1	2:J:312:LEU:HD22	2.00	0.42
1:I:183:ARG:HG3	1:I:184:HIS:CD2	2.55	0.42
1:E:12:ARG:HE	2:M:304:MK8:HEA	1.83	0.42
1:E:98:ARG:HG3	1:E:99:GLN:N	2.34	0.42
2:H:306:GLN:O	2:H:310:ARG:HG3	2.18	0.42
1:E:204:PRO:O	1:E:205:SER:HB2	2.19	0.42
1:I:205:SER:C	3:I:324:HOH:O	2.63	0.42
1:C:29:GLU:HB3	3:C:302:HOH:O	2.19	0.41
1:A:169:LEU:HA	1:A:169:LEU:HD23	1.85	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:15:VAL:CG1	1:C:19:ILE:HD12	2.50	0.41
1:K:18:TYR:OH	1:K:101:VAL:HG11	2.20	0.41
1:E:17:LYS:HD2	1:E:94:HIS:NE2	2.36	0.41
1:K:89:GLU:OE1	1:K:89:GLU:N	2.36	0.41
2:L:306:GLN:NE2	2:L:310:ARG:HH12	2.18	0.41
1:A:22:LYS:NZ	3:A:303:HOH:O	1.96	0.41
1:C:121:LEU:O	1:C:166:MET:HE1	2.21	0.41
1:A:21:TYR:CE2	1:A:98:ARG:HB2	2.56	0.41
1:C:9:TYR:CE1	1:C:90:SER:HB2	2.56	0.41
1:C:112:PHE:HE1	2:D:312:LEU:HD21	1.84	0.41
1:G:167:SER:N	1:G:168:PRO:CD	2.83	0.41
2:J:319:PHE:CD2	2:J:323:PHE:CE1	3.08	0.41
1:C:15:VAL:HG12	1:C:19:ILE:HD12	2.02	0.41
1:G:160:GLU:OE1	1:G:164:ARG:NH2	2.50	0.41
1:K:167:SER:N	1:K:168:PRO:CD	2.84	0.41
1:E:169:LEU:HD23	1:E:169:LEU:HA	1.93	0.41
1:G:110:ARG:HA	1:G:110:ARG:HD2	1.87	0.41
1:A:163:ASN:HB3	3:A:360:HOH:O	2.21	0.40
3:A:316:HOH:O	1:I:109:ARG:CG	2.69	0.40
1:A:167:SER:N	1:A:168:PRO:CD	2.85	0.40
1:E:101:VAL:HG22	1:E:148:VAL:HG13	2.03	0.40
1:K:107:ARG:NE	3:K:304:HOH:O	2.25	0.40
1:A:18:TYR:OH	1:A:101:VAL:HG11	2.20	0.40
2:J:303:TRP:HD1	2:J:306:GLN:HE21	1.66	0.40
1:K:12:ARG:O	1:K:16:MET:HG2	2.21	0.40
1:E:23:LEU:HD23	1:E:23:LEU:HA	1.88	0.40
1:E:108:TYR:CG	2:F:315:NLE:HD3	2.56	0.40

All (6) 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)
3:C:372:HOH:O	3:K:362:HOH:O[1_655]	1.89	0.31
3:I:315:HOH:O	3:K:363:HOH:O[3_455]	1.96	0.24
3:C:372:HOH:O	3:K:343:HOH:O[1_655]	2.03	0.17
1:E:107:ARG:NH2	1:G:103:ASP:OD2[4_445]	2.11	0.09
3:E:311:HOH:O	3:G:335:HOH:O[4_545]	2.18	0.02
3:E:361:HOH:O	3:G:350:HOH:O[4_445]	2.19	0.01

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	135/166 (81%)	133 (98%)	2 (2%)	0	100	100
1	C	142/166 (86%)	140 (99%)	2 (1%)	0	100	100
1	E	139/166 (84%)	138 (99%)	1 (1%)	0	100	100
1	G	133/166 (80%)	132 (99%)	1 (1%)	0	100	100
1	I	136/166 (82%)	134 (98%)	2 (2%)	0	100	100
1	K	136/166 (82%)	134 (98%)	1 (1%)	1 (1%)	19	14
2	B	17/23 (74%)	17 (100%)	0	0	100	100
2	D	17/23 (74%)	17 (100%)	0	0	100	100
2	F	18/23 (78%)	18 (100%)	0	0	100	100
2	H	18/23 (78%)	18 (100%)	0	0	100	100
2	J	17/23 (74%)	16 (94%)	1 (6%)	0	100	100
2	L	17/23 (74%)	17 (100%)	0	0	100	100
2	M	5/23 (22%)	5 (100%)	0	0	100	100
2	N	6/23 (26%)	6 (100%)	0	0	100	100
All	All	936/1180 (79%)	925 (99%)	10 (1%)	1 (0%)	48	47

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	K	29	GLU

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	121/142 (85%)	121 (100%)	0	100 100
1	C	126/142 (89%)	126 (100%)	0	100 100
1	E	125/142 (88%)	125 (100%)	0	100 100
1	G	121/142 (85%)	121 (100%)	0	100 100
1	I	123/142 (87%)	122 (99%)	1 (1%)	79 84
1	K	123/142 (87%)	123 (100%)	0	100 100
2	B	16/17 (94%)	16 (100%)	0	100 100
2	D	16/17 (94%)	16 (100%)	0	100 100
2	F	17/17 (100%)	17 (100%)	0	100 100
2	H	17/17 (100%)	17 (100%)	0	100 100
2	J	16/17 (94%)	15 (94%)	1 (6%)	15 12
2	L	16/17 (94%)	16 (100%)	0	100 100
2	M	4/17 (24%)	4 (100%)	0	100 100
2	N	5/17 (29%)	5 (100%)	0	100 100
All	All	846/988 (86%)	844 (100%)	2 (0%)	92 94

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	I	90	SER
2	J	320	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	172	ASN
2	B	306	GLN
1	C	190	GLN
1	E	99	GLN
1	E	190	GLN
1	G	25	GLN
1	I	20	HIS
1	I	25	GLN
2	J	306	GLN
2	L	306	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

22 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	$\#\|Z\| > 2$
2	MK8	H	304	2	5,8,9	0.73	0	6,10,12	0.92	0
2	MK8	M	304	2	5,8,9	0.73	0	6,10,12	0.98	0
2	MK8	N	308	2	5,8,9	0.72	0	6,10,12	0.84	0
2	MK8	J	308	2	5,8,9	0.80	0	6,10,12	0.84	0
2	MK8	B	308	2	5,8,9	0.71	0	6,10,12	0.79	0
2	MK8	D	304	2	5,8,9	0.76	0	6,10,12	1.07	0
2	NLE	J	315	2	6,7,8	0.56	0	2,7,9	0.13	0
2	NLE	B	315	2	6,7,8	0.33	0	2,7,9	0.17	0
2	NLE	L	315	2	6,7,8	0.41	0	2,7,9	0.02	0
2	MK8	B	304	2	5,8,9	0.77	0	6,10,12	1.36	1 (16%)
2	MK8	N	304	2	5,8,9	0.78	0	6,10,12	1.06	0
2	MK8	H	308	2	5,8,9	0.68	0	6,10,12	0.90	0
2	NLE	F	315	2	6,7,8	0.61	0	2,7,9	0.15	0
2	NLE	H	315	2	6,7,8	0.63	0	2,7,9	0.14	0
2	MK8	D	308	2	5,8,9	0.64	0	6,10,12	0.83	0
2	MK8	F	308	2	5,8,9	0.61	0	6,10,12	0.66	0
2	MK8	M	308	2	5,8,9	0.73	0	6,10,12	1.34	1 (16%)
2	NLE	D	315	2	6,7,8	0.57	0	2,7,9	0.23	0
2	MK8	J	304	2	5,8,9	0.70	0	6,10,12	1.35	1 (16%)
2	MK8	L	304	2	5,8,9	0.62	0	6,10,12	0.96	0
2	MK8	L	308	2	5,8,9	0.87	0	6,10,12	0.77	0
2	MK8	F	304	2	5,8,9	0.68	0	6,10,12	1.09	0

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
2	MK8	H	304	2	-	1/6/8/11	-
2	MK8	M	304	2	-	1/6/8/11	-
2	MK8	N	308	2	-	0/6/8/11	-
2	MK8	J	308	2	-	0/6/8/11	-
2	MK8	B	308	2	-	0/6/8/11	-
2	MK8	D	304	2	-	1/6/8/11	-
2	NLE	J	315	2	-	0/5/6/8	-
2	NLE	B	315	2	-	0/5/6/8	-
2	NLE	L	315	2	-	1/5/6/8	-
2	MK8	B	304	2	-	1/6/8/11	-
2	MK8	N	304	2	-	1/6/8/11	-
2	MK8	H	308	2	-	0/6/8/11	-
2	NLE	F	315	2	-	1/5/6/8	-
2	NLE	H	315	2	-	1/5/6/8	-
2	MK8	D	308	2	-	0/6/8/11	-
2	MK8	F	308	2	-	0/6/8/11	-
2	MK8	M	308	2	-	0/6/8/11	-
2	NLE	D	315	2	-	1/5/6/8	-
2	MK8	J	304	2	-	1/6/8/11	-
2	MK8	L	304	2	-	1/6/8/11	-
2	MK8	L	308	2	-	0/6/8/11	-
2	MK8	F	304	2	-	1/6/8/11	-

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	M	308	MK8	CB1-CA-CB	-2.56	106.76	110.97
2	B	304	MK8	CB1-CA-CB	-2.36	107.09	110.97
2	J	304	MK8	CG-CB-CA	2.27	118.76	115.41

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	M	304	MK8	CA-CB-CG-CD
2	N	304	MK8	CA-CB-CG-CD
2	B	304	MK8	CA-CB-CG-CD
2	D	304	MK8	CA-CB-CG-CD
2	F	304	MK8	CA-CB-CG-CD

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	H	304	MK8	CA-CB-CG-CD
2	J	304	MK8	CA-CB-CG-CD
2	L	304	MK8	CA-CB-CG-CD
2	D	315	NLE	CE-CD-CG-CB
2	F	315	NLE	CE-CD-CG-CB
2	L	315	NLE	CE-CD-CG-CB
2	H	315	NLE	CE-CD-CG-CB

There are no ring outliers.

11 monomers are involved in 19 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	H	304	MK8	1	0
2	M	304	MK8	8	0
2	D	304	MK8	1	0
2	B	304	MK8	1	0
2	N	304	MK8	1	0
2	F	315	NLE	1	0
2	H	315	NLE	2	0
2	F	308	MK8	1	0
2	M	308	MK8	5	0
2	L	304	MK8	1	0
2	F	304	MK8	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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

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	139/166 (83%)	-0.07	2 (1%) 73 72	23, 33, 52, 67	0
1	C	146/166 (87%)	0.01	1 (0%) 84 83	24, 35, 52, 73	0
1	E	143/166 (86%)	-0.05	2 (1%) 73 72	23, 33, 57, 71	0
1	G	137/166 (82%)	0.16	3 (2%) 62 60	23, 37, 60, 84	0
1	I	140/166 (84%)	0.20	1 (0%) 84 83	25, 38, 59, 71	0
1	K	140/166 (84%)	0.20	3 (2%) 63 62	26, 38, 63, 77	0
2	B	18/23 (78%)	0.26	0 100 100	30, 40, 58, 59	0
2	D	18/23 (78%)	-0.05	0 100 100	33, 41, 54, 57	0
2	F	19/23 (82%)	-0.33	0 100 100	26, 35, 44, 48	0
2	H	19/23 (82%)	0.32	1 (5%) 33 31	30, 42, 64, 72	0
2	J	18/23 (78%)	0.46	1 (5%) 31 29	32, 45, 64, 70	0
2	L	18/23 (78%)	0.42	0 100 100	36, 47, 65, 66	0
2	M	6/23 (26%)	2.10	2 (33%) 1 1	63, 81, 90, 97	0
2	N	7/23 (30%)	1.66	2 (28%) 1 1	70, 76, 78, 84	0
All	All	968/1180 (82%)	0.11	18 (1%) 66 65	23, 37, 61, 97	0

All (18) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	J	323	PHE	6.2
1	K	87	GLY	3.5
1	G	120	HIS	3.0
2	M	310	ARG	2.9
2	N	309	GLY	2.9
2	N	303	TRP	2.9
1	C	32	ALA	2.9
2	M	309	GLY	2.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	I	32	ALA	2.7
1	K	88	THR	2.7
1	E	205	SER	2.6
1	G	28	TYR	2.4
1	A	32	ALA	2.4
1	E	32	ALA	2.4
1	K	32	ALA	2.4
1	G	148	VAL	2.3
1	A	203	GLY	2.2
2	H	322	SER	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, 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
2	MK8	N	304	9/10	0.84	0.14	71,71,72,73	0
2	MK8	M	308	9/10	0.85	0.18	88,92,96,100	0
2	MK8	M	304	9/10	0.88	0.15	71,76,81,85	0
2	MK8	N	308	9/10	0.92	0.12	72,73,76,77	0
2	MK8	J	304	9/10	0.93	0.08	30,32,36,37	0
2	MK8	L	308	9/10	0.93	0.10	30,35,44,48	0
2	MK8	H	308	9/10	0.94	0.09	31,34,35,36	0
2	MK8	B	308	9/10	0.94	0.08	27,29,36,40	0
2	NLE	L	315	8/9	0.94	0.09	34,35,40,41	0
2	MK8	L	304	9/10	0.95	0.10	33,37,41,42	0
2	NLE	B	315	8/9	0.95	0.09	25,28,35,38	0
2	NLE	D	315	8/9	0.95	0.08	25,30,34,42	0
2	NLE	J	315	8/9	0.95	0.08	37,39,44,47	0
2	MK8	J	308	9/10	0.95	0.08	31,32,35,38	0
2	MK8	B	304	9/10	0.96	0.07	24,28,31,33	0
2	MK8	F	304	9/10	0.96	0.09	25,28,32,32	0
2	MK8	D	308	9/10	0.96	0.07	26,31,35,37	0
2	MK8	H	304	9/10	0.96	0.07	29,33,37,40	0
2	NLE	F	315	8/9	0.97	0.06	29,31,32,33	0
2	NLE	H	315	8/9	0.97	0.06	26,33,34,46	0
2	MK8	F	308	9/10	0.97	0.07	22,25,31,35	0
2	MK8	D	304	9/10	0.97	0.06	25,31,34,34	0

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.