



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 13, 2017 – 01:57 pm GMT

PDB ID : 4DGI  
Title : Structure of POM1 FAB fragment complexed with human PrPc Fragment  
120-230  
Authors : Baral, P.K.; Wieland, B.; Swayampakula, M.; James, M.N.  
Deposited on : 2012-01-26  
Resolution : 2.40 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Xtriage (Phenix) : 1.9-1692  
EDS : trunk28620  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : recalc28949

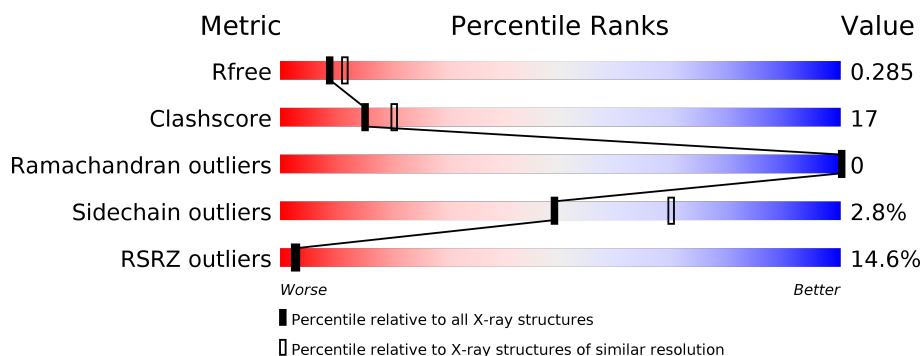
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.40 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))
$R_{free}$	100719	3166 (2.40-2.40)
Clashscore	112137	3674 (2.40-2.40)
Ramachandran outliers	110173	3616 (2.40-2.40)
Sidechain outliers	110143	3617 (2.40-2.40)
RSRZ outliers	101464	3195 (2.40-2.40)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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  $\leq 5\%$ . 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	111	<div> <div>7%</div> <div>54%</div> <div>32%</div> <div>•</div> <div>13%</div> </div>
2	H	218	<div> <div>17%</div> <div>78%</div> <div>20%</div> <div>•</div> </div>
3	L	213	<div> <div>15%</div> <div>72%</div> <div>27%</div> <div>•</div> </div>

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NA	L	300	-	-	-	X

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 4276 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 Major prion protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	97	Total	C	N	O	S	0	0	0
			811	501	141	160	9			

- Molecule 2 is a protein called POM1 Fab Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	218	Total	C	N	O	S	4	0	0
			1642	1037	265	330	10			

- Molecule 3 is a protein called POM1 Fab Light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	L	213	Total	C	N	O	S	0	0	0
			1652	1022	280	345	5			

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	L	1	Total	Na	0	0
			1	1		

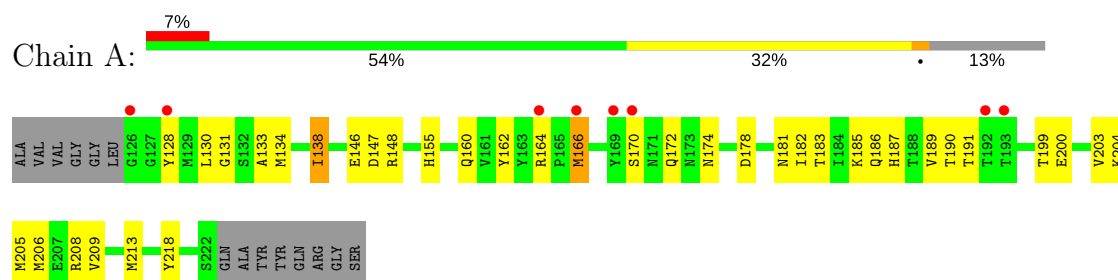
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	21	Total	O	0	0
			21	21		
5	H	99	Total	O	0	0
			99	99		
5	L	50	Total	O	0	0
			50	50		

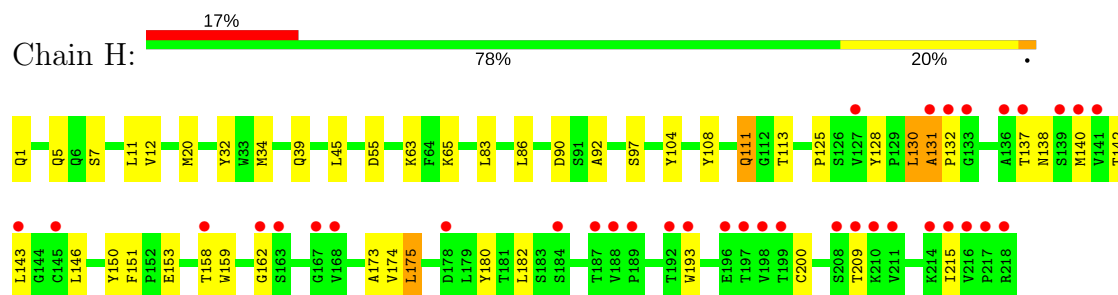
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

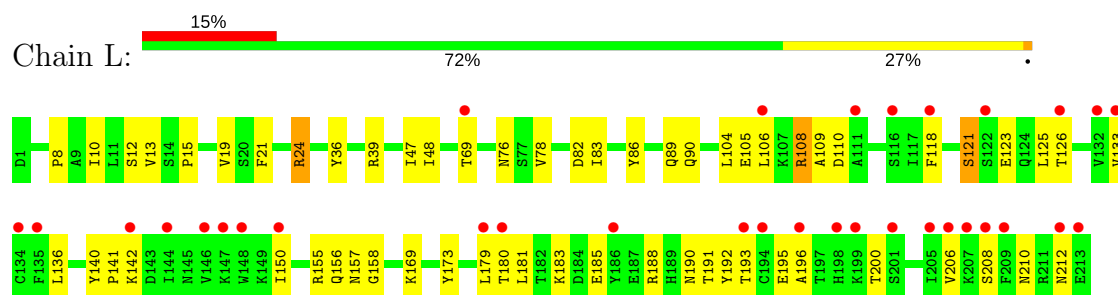
#### • Molecule 1: Major prion protein



#### • Molecule 2: POM1 Fab Heavy chain



#### • Molecule 3: POM1 Fab Light chain



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	83.53Å 105.92Å 76.23Å 90.00° 95.08° 90.00°	Depositor
Resolution (Å)	35.19 – 2.40 37.97 – 2.38	Depositor EDS
% Data completeness (in resolution range)	99.2 (35.19-2.40) 99.0 (37.97-2.38)	Depositor EDS
$R_{merge}$	0.19	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.13 (at 2.39Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.7.1_743)	Depositor
R, $R_{free}$	0.258 , 0.289 0.249 , 0.285	Depositor DCC
$R_{free}$ test set	1285 reflections (5.01%)	DCC
Wilson B-factor (Å <sup>2</sup> )	37.2	Xtriage
Anisotropy	0.323	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 61.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	4276	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.45% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  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: NA

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	0.87	0/829	1.11	2/1118 (0.2%)
2	H	1.00	1/1688 (0.1%)	1.06	7/2306 (0.3%)
3	L	0.76	0/1687	0.97	2/2291 (0.1%)
All	All	0.88	1/4204 (0.0%)	1.04	11/5715 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	104	TYR	CD2-CE2	-5.14	1.31	1.39

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	208	ARG	NE-CZ-NH1	-7.25	116.67	120.30
2	H	65	LYS	CD-CE-NZ	6.86	127.47	111.70
2	H	20	MET	CG-SD-CE	-6.34	90.06	100.20
1	A	147	ASP	CB-CG-OD1	-5.97	112.92	118.30
2	H	83	LEU	CB-CG-CD2	-5.81	101.13	111.00
3	L	39	ARG	NE-CZ-NH2	-5.74	117.43	120.30
2	H	182	LEU	CA-CB-CG	5.59	128.16	115.30
2	H	55	ASP	CB-CG-OD2	5.46	123.21	118.30
3	L	82	ASP	CB-CG-OD1	-5.35	113.49	118.30
2	H	32	TYR	CB-CG-CD2	-5.13	117.92	121.00
2	H	131	ALA	C-N-CD	5.06	139.03	128.40

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	811	0	750	33	1
2	H	1642	0	1578	50	0
3	L	1652	0	1573	52	1
4	L	1	0	0	0	0
5	A	21	0	0	3	1
5	H	99	0	0	10	1
5	L	50	0	0	4	1
All	All	4276	0	3901	134	3

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 17.

All (134) 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:H:153:GLU:OE1	5:H:361:HOH:O	1.93	0.85
3:L:13:VAL:HG11	3:L:19:VAL:HG11	1.57	0.85
1:A:181:ASN:O	1:A:185:LYS:HG3	1.79	0.83
1:A:130:LEU:HB2	1:A:162:TYR:HE1	1.44	0.82
1:A:130:LEU:HB2	1:A:162:TYR:CE1	2.15	0.81
2:H:137:THR:HG22	2:H:140:MET:O	1.79	0.81
2:H:12:VAL:HG21	2:H:86:LEU:HD12	1.64	0.79
1:A:200:GLU:O	1:A:203:VAL:HG22	1.82	0.78
3:L:155:ARG:HE	3:L:157:ASN:HB3	1.48	0.78
1:A:200:GLU:HA	1:A:203:VAL:HG22	1.66	0.74
3:L:83:ILE:HG23	3:L:104:LEU:O	1.88	0.73
3:L:118:PHE:HB2	3:L:133:VAL:CG1	2.18	0.73
1:A:178:ASP:O	1:A:182:ILE:HG12	1.90	0.72
3:L:142:LYS:HD3	3:L:173:TYR:CG	2.26	0.70
1:A:199:THR:O	1:A:203:VAL:HG13	1.93	0.69
2:H:12:VAL:CG2	2:H:86:LEU:HD12	2.24	0.67
3:L:142:LYS:HD3	3:L:173:TYR:CD1	2.31	0.65
3:L:108:ARG:HH11	3:L:108:ARG:CG	2.11	0.64
2:H:125:PRO:HB3	2:H:150:TYR:HB3	1.80	0.64
1:A:186:GLN:O	1:A:189:VAL:HG12	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:39:GLN:O	2:H:92:ALA:HB1	2.01	0.61
2:H:137:THR:CG2	2:H:140:MET:O	2.48	0.60
2:H:12:VAL:HG11	2:H:86:LEU:CD1	2.32	0.60
3:L:155:ARG:HG3	3:L:156:GLN:N	2.17	0.59
1:A:205:MET:O	1:A:209:VAL:HG12	2.02	0.59
3:L:123:GLU:O	3:L:126:THR:HB	2.02	0.59
2:H:1:GLN:CD	2:H:1:GLN:N	2.55	0.59
2:H:158:THR:HG22	2:H:159:TRP:N	2.17	0.59
3:L:155:ARG:HD2	3:L:156:GLN:H	1.69	0.58
2:H:138:ASN:C	2:H:140:MET:H	2.06	0.58
3:L:8:PRO:HD3	5:L:424:HOH:O	2.03	0.58
2:H:45:LEU:N	5:H:303:HOH:O	2.37	0.58
3:L:118:PHE:HB2	3:L:133:VAL:HG13	1.85	0.57
1:A:130:LEU:CB	1:A:162:TYR:CE1	2.88	0.57
1:A:138:ILE:O	1:A:138:ILE:HG12	2.03	0.57
3:L:155:ARG:NE	3:L:157:ASN:HB3	2.17	0.57
3:L:121:SER:HB3	3:L:123:GLU:HG2	1.86	0.57
3:L:155:ARG:HE	3:L:157:ASN:CB	2.18	0.57
1:A:200:GLU:CA	1:A:203:VAL:HG22	2.36	0.55
2:H:11:LEU:CD2	2:H:151:PHE:HZ	2.19	0.54
1:A:200:GLU:O	1:A:203:VAL:CG2	2.54	0.54
2:H:153:GLU:OE1	2:H:173:ALA:HB3	2.08	0.54
1:A:200:GLU:HA	1:A:203:VAL:CG2	2.36	0.54
1:A:134:MET:HE1	1:A:213:MET:HB3	1.90	0.53
1:A:166:MET:SD	1:A:166:MET:N	2.80	0.52
2:H:132:PRO:HD2	2:H:193:TRP:CH2	2.44	0.52
2:H:5:GLN:CG	5:H:377:HOH:O	2.57	0.52
3:L:169:LYS:NZ	3:L:169:LYS:HB2	2.26	0.51
1:A:130:LEU:CG	1:A:162:TYR:CE1	2.94	0.51
3:L:195:GLU:O	3:L:195:GLU:HG2	2.12	0.50
3:L:136:LEU:HD21	3:L:196:ALA:HB2	1.94	0.50
3:L:180:THR:O	3:L:181:LEU:HD12	2.12	0.50
1:A:130:LEU:HG	1:A:162:TYR:CE1	2.47	0.49
2:H:130:LEU:HD11	2:H:146:LEU:HB2	1.95	0.49
3:L:110:ASP:HB3	3:L:200:THR:HG22	1.94	0.49
1:A:200:GLU:C	1:A:203:VAL:HG22	2.33	0.49
2:H:97:SER:HA	2:H:108:TYR:O	2.14	0.48
3:L:24:ARG:NH1	5:L:438:HOH:O	2.46	0.48
3:L:13:VAL:CG1	3:L:19:VAL:HG11	2.36	0.48
1:A:148:ARG:HD3	5:A:321:HOH:O	2.13	0.48
3:L:121:SER:OG	3:L:123:GLU:OE2	2.24	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:15:PRO:HA	3:L:78:VAL:HG13	1.95	0.48
2:H:111:GLN:CG	5:H:342:HOH:O	2.61	0.48
2:H:111:GLN:HG3	5:H:342:HOH:O	2.14	0.48
3:L:89:GLN:HG2	3:L:90:GLN:N	2.29	0.48
2:H:1:GLN:H1	2:H:1:GLN:CD	2.17	0.47
3:L:108:ARG:HH11	3:L:108:ARG:HG2	1.79	0.47
2:H:175:LEU:HD13	2:H:175:LEU:HA	1.66	0.47
3:L:158:GLY:O	3:L:179:LEU:HD12	2.14	0.47
2:H:63:LYS:HD2	5:H:392:HOH:O	2.13	0.47
1:A:187:HIS:O	1:A:191:THR:HG23	2.14	0.47
2:H:5:GLN:NE2	5:H:377:HOH:O	2.36	0.47
3:L:108:ARG:HG3	3:L:109:ALA:N	2.29	0.47
1:A:170:SER:HB3	1:A:174:ASN:ND2	2.30	0.47
3:L:83:ILE:HG13	3:L:106:LEU:HG	1.96	0.47
2:H:138:ASN:O	2:H:140:MET:N	2.48	0.46
2:H:158:THR:CG2	2:H:162:GLY:HA2	2.45	0.46
2:H:143:LEU:HD11	2:H:193:TRP:CE2	2.50	0.46
3:L:140:TYR:CG	3:L:141:PRO:HA	2.51	0.46
3:L:193:THR:OG1	3:L:208:SER:HB3	2.16	0.46
3:L:190:ASN:HD21	3:L:212:ASN:ND2	2.14	0.46
2:H:137:THR:HG23	2:H:138:ASN:N	2.31	0.46
3:L:125:LEU:O	3:L:183:LYS:HD2	2.16	0.46
2:H:131:ALA:HB2	2:H:215:ILE:CG2	2.45	0.46
2:H:63:LYS:CD	5:H:392:HOH:O	2.63	0.46
1:A:182:ILE:HG13	1:A:183:THR:N	2.32	0.45
3:L:191:THR:HG22	3:L:210:ASN:OD1	2.16	0.45
1:A:186:GLN:O	1:A:190:THR:HG23	2.16	0.45
2:H:131:ALA:HB2	2:H:215:ILE:HG22	1.97	0.45
3:L:193:THR:CG2	3:L:206:VAL:HG13	2.45	0.45
3:L:157:ASN:ND2	5:L:425:HOH:O	2.50	0.45
2:H:12:VAL:HG11	2:H:86:LEU:HD12	1.99	0.44
3:L:108:ARG:CG	3:L:108:ARG:NH1	2.76	0.44
1:A:133:ALA:HA	1:A:160:GLN:HB3	1.99	0.44
2:H:138:ASN:C	2:H:140:MET:N	2.70	0.44
2:H:11:LEU:HD21	2:H:151:PHE:HZ	1.81	0.44
1:A:128:TYR:CE1	1:A:164:ARG:HG3	2.52	0.44
2:H:159:TRP:CZ3	2:H:200:CYS:HB3	2.53	0.44
2:H:11:LEU:HD23	2:H:151:PHE:HZ	1.82	0.44
1:A:206:MET:HA	1:A:209:VAL:HG12	1.99	0.43
3:L:36:TYR:O	3:L:86:TYR:HA	2.18	0.43
3:L:155:ARG:CG	3:L:156:GLN:N	2.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:8:PRO:CD	5:L:424:HOH:O	2.65	0.43
1:A:130:LEU:HD23	1:A:131:GLY:O	2.19	0.43
2:H:12:VAL:HG21	2:H:86:LEU:CD1	2.41	0.43
3:L:47:ILE:C	3:L:48:ILE:HG12	2.39	0.43
2:H:11:LEU:HD21	2:H:151:PHE:CZ	2.54	0.42
1:A:155:HIS:CE1	5:A:313:HOH:O	2.72	0.42
3:L:150:ILE:HG23	3:L:150:ILE:O	2.18	0.42
2:H:5:GLN:HG2	5:H:377:HOH:O	2.20	0.42
3:L:185:GLU:HA	3:L:188:ARG:HD3	2.01	0.42
2:H:173:ALA:HB3	5:H:361:HOH:O	2.19	0.42
2:H:174:VAL:O	2:H:180:TYR:HA	2.20	0.42
2:H:11:LEU:CD2	2:H:151:PHE:CZ	3.01	0.42
2:H:130:LEU:HD11	2:H:146:LEU:CB	2.50	0.41
1:A:185:LYS:HA	5:A:315:HOH:O	2.20	0.41
3:L:136:LEU:N	3:L:136:LEU:HD12	2.34	0.41
3:L:150:ILE:HD13	3:L:192:TYR:CE2	2.55	0.41
2:H:158:THR:CG2	2:H:159:TRP:N	2.82	0.41
3:L:169:LYS:NZ	3:L:169:LYS:CB	2.83	0.41
2:H:86:LEU:HA	2:H:90:ASP:OD2	2.19	0.41
1:A:128:TYR:CD1	1:A:164:ARG:HG3	2.56	0.41
3:L:125:LEU:HD23	3:L:125:LEU:HA	1.87	0.41
2:H:125:PRO:CB	2:H:150:TYR:HB3	2.48	0.41
3:L:105:GLU:HG2	3:L:106:LEU:N	2.35	0.41
3:L:179:LEU:HG	3:L:181:LEU:HD13	2.03	0.41
2:H:7:SER:O	2:H:113:THR:HA	2.20	0.41
2:H:128:TYR:O	2:H:130:LEU:HD13	2.20	0.41
1:A:172:GLN:HB2	1:A:218:TYR:CE2	2.55	0.41
1:A:146:GLU:CD	1:A:204:LYS:HZ1	2.24	0.41
2:H:12:VAL:CG1	2:H:86:LEU:HD12	2.51	0.41
3:L:169:LYS:HB2	3:L:169:LYS:HZ2	1.86	0.40
3:L:24:ARG:HA	3:L:69:THR:O	2.22	0.40
2:H:142:THR:HG22	3:L:118:PHE:HZ	1.86	0.40

All (3) 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)
1:A:164:ARG:NH1	3:L:76:ASN:OD1[3_455]	2.05	0.15
5:L:425:HOH:O	5:L:443:HOH:O[2_555]	2.13	0.07
5:A:317:HOH:O	5:H:390:HOH:O[2_554]	2.13	0.07

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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	95/111 (86%)	92 (97%)	3 (3%)	0	100	100
2	H	216/218 (99%)	208 (96%)	8 (4%)	0	100	100
3	L	211/213 (99%)	205 (97%)	6 (3%)	0	100	100
All	All	522/542 (96%)	505 (97%)	17 (3%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains

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	91/100 (91%)	89 (98%)	2 (2%)	57	76
2	H	187/187 (100%)	182 (97%)	5 (3%)	50	71
3	L	191/191 (100%)	185 (97%)	6 (3%)	45	66
All	All	469/478 (98%)	456 (97%)	13 (3%)	49	70

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	138	ILE
1	A	166	MET
2	H	34	MET
2	H	111	GLN
2	H	130	LEU

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Mol	Chain	Res	Type
2	H	175	LEU
2	H	209	THR
3	L	10	ILE
3	L	12	SER
3	L	21	PHE
3	L	24	ARG
3	L	108	ARG
3	L	121	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
3	L	190	ASN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 5.6 Ligand geometry ⓘ

Of 1 ligands modelled in this entry, 1 is 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

### 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	97/111 (87%)	0.62	8 (8%) 12 11	26, 64, 99, 106	0
2	H	217/218 (99%)	0.75	36 (16%) 2 2	22, 44, 105, 127	0
3	L	213/213 (100%)	0.79	33 (15%) 2 2	26, 77, 113, 124	0
All	All	527/542 (97%)	0.74	77 (14%) 3 2	22, 67, 110, 127	0

All (77) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	H	141	VAL	7.4
1	A	170	SER	7.4
2	H	136	ALA	6.9
2	H	133	GLY	6.8
3	L	196	ALA	5.9
2	H	214	LYS	5.6
2	H	216	VAL	5.6
3	L	209	PHE	5.5
3	L	213	GLU	5.4
3	L	205	ILE	5.2
2	H	196	GLU	4.9
3	L	144	ILE	4.9
2	H	217	PRO	4.8
2	H	184	SER	4.8
1	A	192	THR	4.7
1	A	193	THR	4.7
2	H	188	VAL	4.4
2	H	208	SER	4.3
2	H	199	THR	4.3
3	L	180	THR	4.1
2	H	197	THR	4.1
2	H	215	ILE	4.0
3	L	148	TRP	4.0

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Mol	Chain	Res	Type	RSRZ
2	H	137	THR	3.9
3	L	179	LEU	3.8
1	A	128	TYR	3.8
2	H	139	SER	3.6
2	H	218	ARG	3.5
3	L	206	VAL	3.5
3	L	212	ASN	3.4
3	L	186	TYR	3.4
2	H	127	VAL	3.4
3	L	193	THR	3.4
3	L	201	SER	3.1
3	L	142	LYS	3.1
2	H	143	LEU	3.1
3	L	133	VAL	3.0
2	H	192	THR	3.0
3	L	126	THR	3.0
3	L	122	SER	2.9
3	L	147	LYS	2.9
2	H	211	VAL	2.9
1	A	166	MET	2.9
2	H	209	THR	2.9
3	L	106	LEU	2.8
2	H	145	CYS	2.7
2	H	189	PRO	2.7
2	H	162	GLY	2.7
3	L	194	CYS	2.7
3	L	111	ALA	2.7
1	A	169	TYR	2.7
2	H	168	VAL	2.7
3	L	207	LYS	2.7
3	L	146	VAL	2.6
3	L	116	SER	2.5
1	A	126	GLY	2.5
2	H	167	GLY	2.5
3	L	198	HIS	2.5
2	H	193	TRP	2.5
2	H	198	VAL	2.4
3	L	199	LYS	2.4
3	L	118	PHE	2.4
3	L	134	CYS	2.4
3	L	132	VAL	2.4
2	H	132	PRO	2.3

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Mol	Chain	Res	Type	RSRZ
2	H	210	LYS	2.3
3	L	150	ILE	2.3
3	L	135	PHE	2.3
1	A	164	ARG	2.2
2	H	163	SER	2.2
2	H	140	MET	2.2
2	H	178	ASP	2.2
2	H	158	THR	2.1
2	H	187	THR	2.1
3	L	69	THR	2.1
3	L	208	SER	2.1
2	H	131	ALA	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates [i](#)

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
4	NA	L	300	1/1	0.98	0.43	1.17	24,24,24,24	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.