



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 17, 2023 – 10:59 am GMT

PDB ID : 4AT6  
Title : Fab fragment of antiporphyrin antibody 14H7  
Authors : Golinelli-Pimpaneau, B.; Mahy, J.P.  
Deposited on : 2012-05-04  
Resolution : 2.55 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

<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>.

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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) : 1.13  
EDS : 2.36  
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) : 2.36

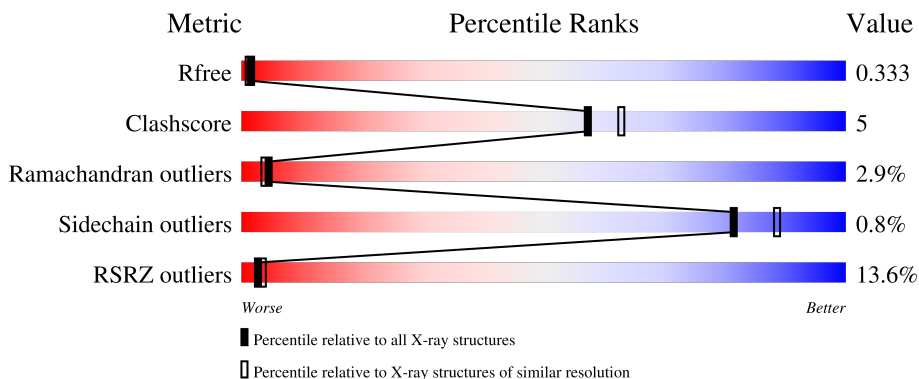
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*





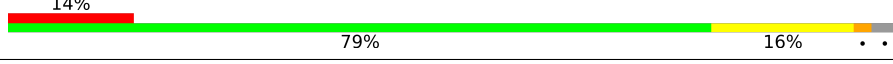
The reported resolution of this entry is 2.55 Å.

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	1284 (2.56-2.52)
Clashscore	141614	1332 (2.56-2.52)
Ramachandran outliers	138981	1315 (2.56-2.52)
Sidechain outliers	138945	1315 (2.56-2.52)
RSRZ outliers	127900	1272 (2.56-2.52)

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  $\geq 3$ , 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  $\leq 5\%$ . 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	217	
1	C	217	
1	E	217	
1	G	217	
1	H	217	

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Mol	Chain	Length	Quality of chain
1	J	217	
1	M	217	
1	O	217	
2	B	212	
2	D	212	
2	F	212	
2	I	212	
2	K	212	
2	L	212	
2	N	212	
2	P	212	

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 25238 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 FAB 14H7 HEAVY CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	212	Total 1551	C 980	N 255	O 309	S 7	0	0	0
1	C	209	Total 1534	C 971	N 252	O 305	S 6	0	0	0
1	E	209	Total 1528	C 965	N 252	O 305	S 6	0	0	0
1	G	205	Total 1489	C 939	N 247	O 297	S 6	0	0	0
1	H	211	Total 1550	C 981	N 255	O 307	S 7	0	0	0
1	J	207	Total 1503	C 951	N 250	O 295	S 7	0	0	0
1	M	203	Total 1483	C 938	N 244	O 295	S 6	0	0	0
1	O	204	Total 1480	C 933	N 244	O 297	S 6	0	0	0

- Molecule 2 is a protein called FAB 14H7 LIGHT CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	212	Total 1596	C 996	N 269	O 325	S 6	0	0	0
2	D	212	Total 1594	C 995	N 269	O 324	S 6	0	0	0
2	F	212	Total 1596	C 996	N 269	O 325	S 6	0	0	0
2	I	212	Total 1596	C 996	N 269	O 325	S 6	0	0	0
2	K	212	Total 1596	C 996	N 269	O 325	S 6	0	0	0
2	L	212	Total 1591	C 993	N 268	O 324	S 6	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	N	212	Total	C	N	O	S	0	0	0
			1596	996	269	325	6			
2	P	212	Total	C	N	O	S	0	0	0
			1596	996	269	325	6			

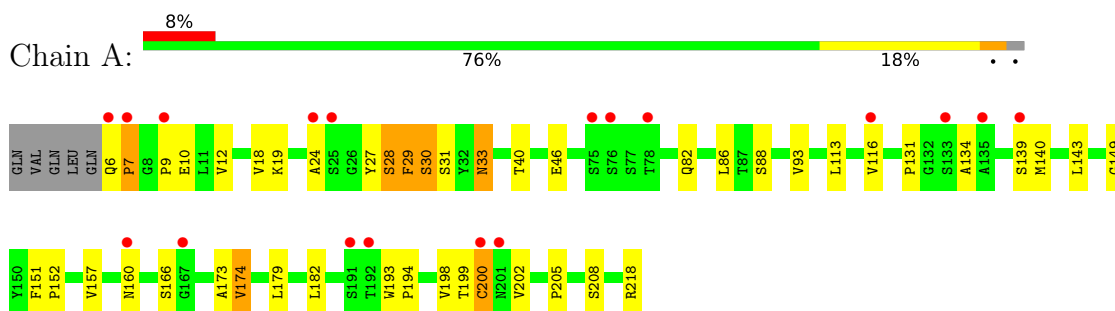
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	19	Total	O	0	0
			19	19		
3	B	31	Total	O	0	0
			31	31		
3	C	25	Total	O	0	0
			25	25		
3	D	26	Total	O	0	0
			26	26		
3	E	24	Total	O	0	0
			24	24		
3	F	23	Total	O	0	0
			23	23		
3	G	16	Total	O	0	0
			16	16		
3	H	15	Total	O	0	0
			15	15		
3	I	23	Total	O	0	0
			23	23		
3	J	22	Total	O	0	0
			22	22		
3	K	27	Total	O	0	0
			27	27		
3	L	21	Total	O	0	0
			21	21		
3	M	12	Total	O	0	0
			12	12		
3	N	24	Total	O	0	0
			24	24		
3	O	16	Total	O	0	0
			16	16		
3	P	35	Total	O	0	0
			35	35		

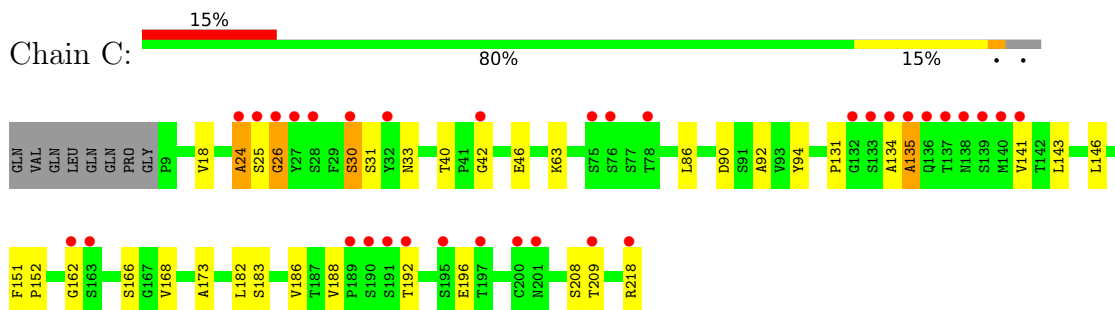
### 3 Residue-property plots [i](#)

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.

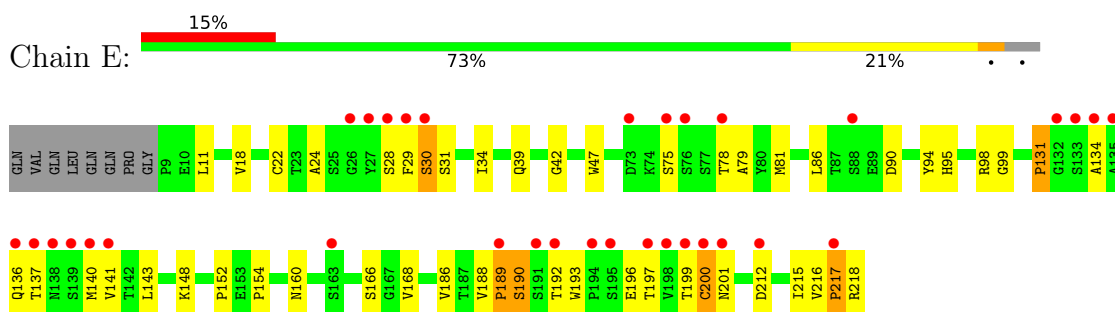
- Molecule 1: FAB 14H7 HEAVY CHAIN



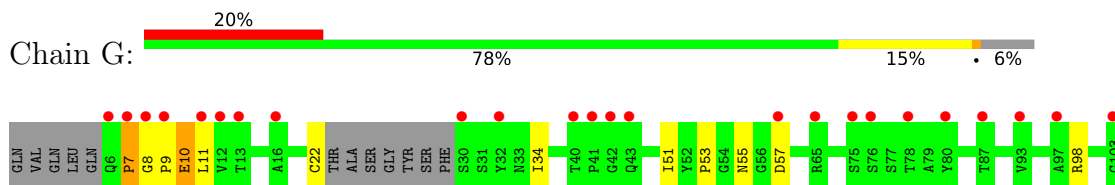
- Molecule 1: FAB 14H7 HEAVY CHAIN

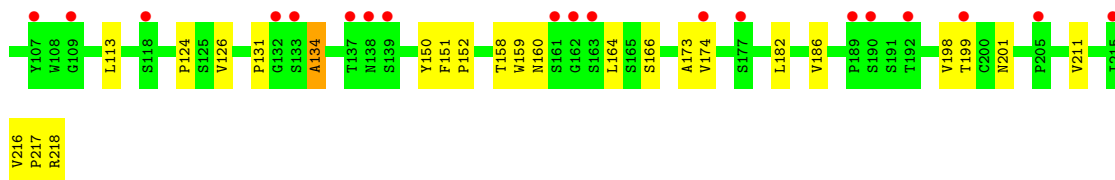


- Molecule 1: FAB 14H7 HEAVY CHAIN

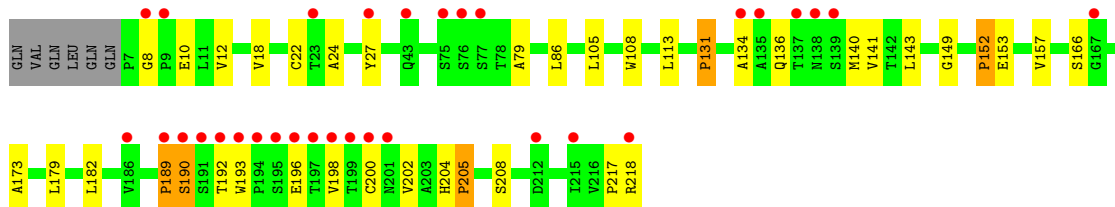
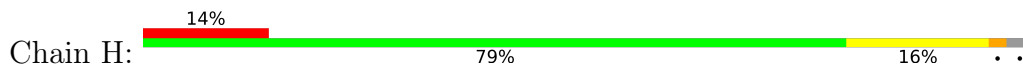


- Molecule 1: FAB 14H7 HEAVY CHAIN

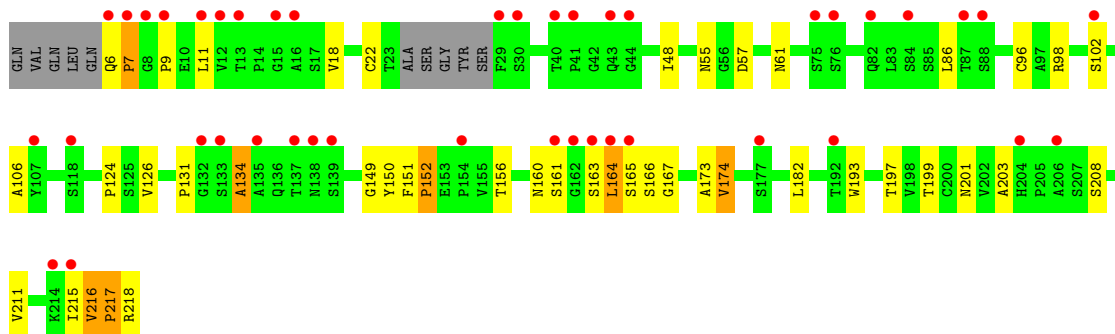
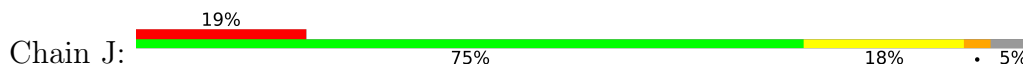




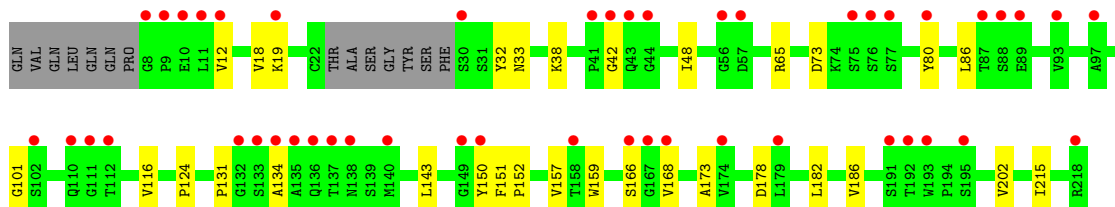
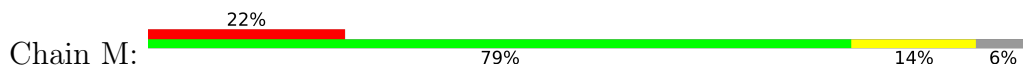
- Molecule 1: FAB 14H7 HEAVY CHAIN



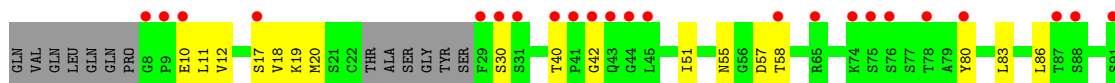
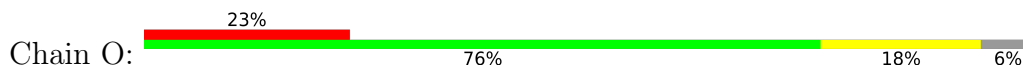
- Molecule 1: FAB 14H7 HEAVY CHAIN

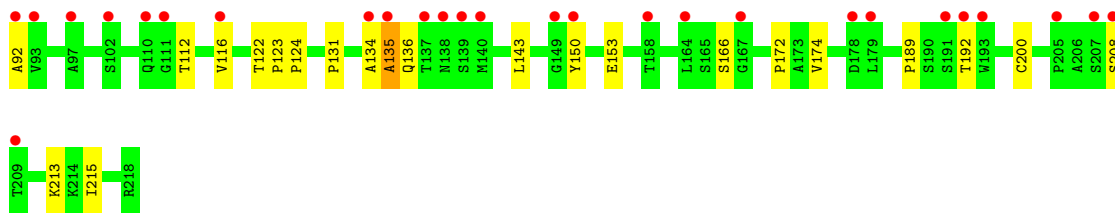


- Molecule 1: FAB 14H7 HEAVY CHAIN

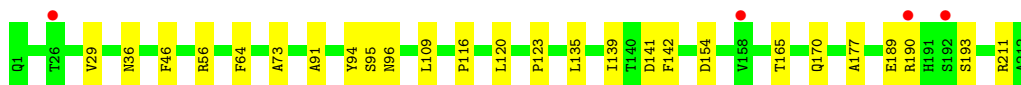
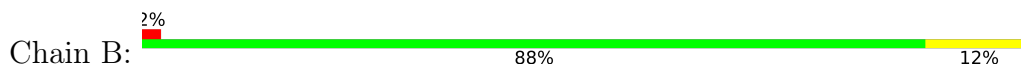


- Molecule 1: FAB 14H7 HEAVY CHAIN

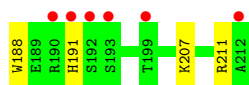
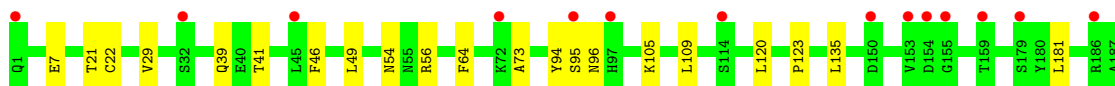
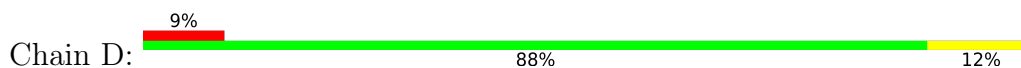




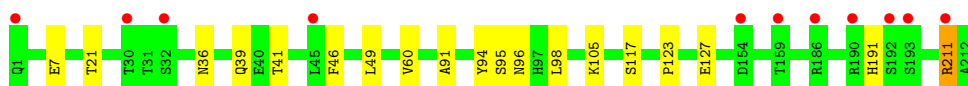
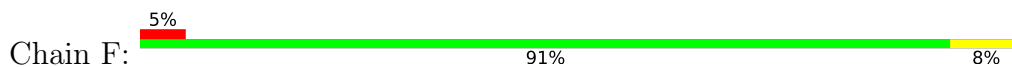
- Molecule 2: FAB 14H7 LIGHT CHAIN



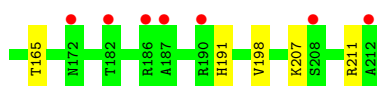
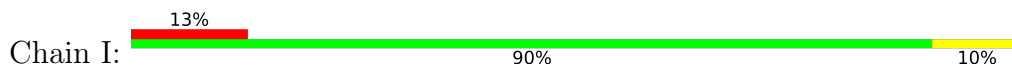
- Molecule 2: FAB 14H7 LIGHT CHAIN



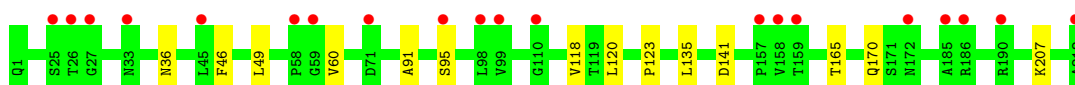
- Molecule 2: FAB 14H7 LIGHT CHAIN



- Molecule 2: FAB 14H7 LIGHT CHAIN

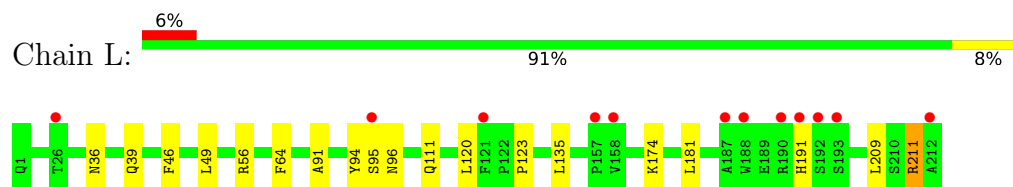


- Molecule 2: FAB 14H7 LIGHT CHAIN

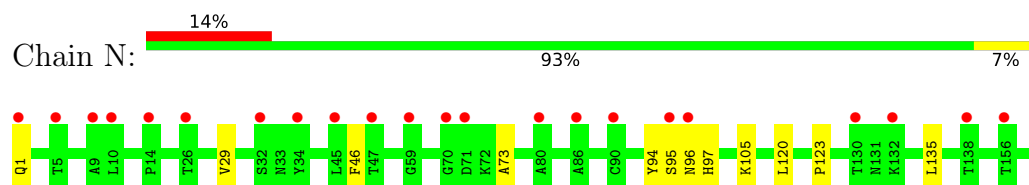




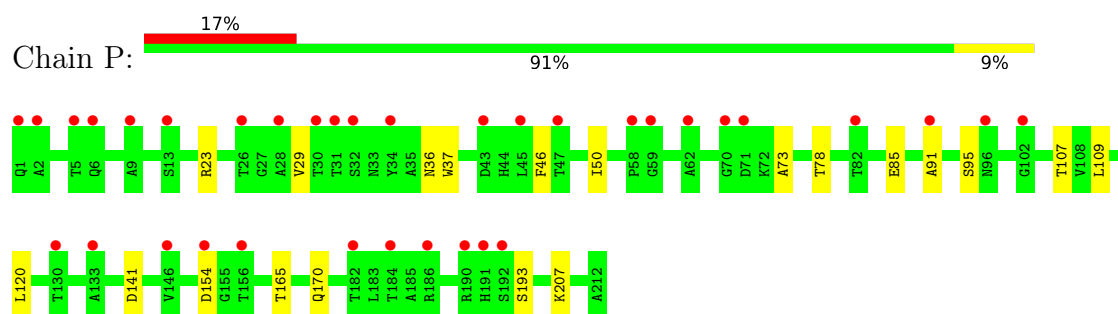
- Molecule 2: FAB 14H7 LIGHT CHAIN



- Molecule 2: FAB 14H7 LIGHT CHAIN



- Molecule 2: FAB 14H7 LIGHT CHAIN



## 4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	56.20Å 228.16Å 146.59Å 90.00° 90.11° 90.00°	Depositor
Resolution (Å)	16.65 – 2.55 16.65 – 2.55	Depositor EDS
% Data completeness (in resolution range)	93.5 (16.65-2.55) 93.0 (16.65-2.55)	Depositor EDS
$R_{merge}$	0.11	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.17 (at 2.55Å)	Xtrriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, $R_{free}$	0.279 , 0.328 0.282 , 0.333	Depositor DCC
$R_{free}$ test set	5009 reflections (4.49%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	36.0	Xtrriage
Anisotropy	0.416	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.46 , 75.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.459 for h,-k,-l	Xtrriage
Reported twinning fraction	0.499 for h,-k,-l	Depositor
Outliers	3 of 111576 reflections (0.003%)	Xtrriage
$F_o, F_c$ correlation	0.90	EDS
Total number of atoms	25238	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	46.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 81.39 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.5837e-07. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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 [i](#)

### 5.1 Standard geometry [i](#)

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	0.24	0/1594	0.50	0/2189
1	C	0.23	0/1576	0.48	1/2163 (0.0%)
1	E	0.23	0/1569	0.50	0/2153
1	G	0.22	0/1529	0.46	0/2100
1	H	0.23	0/1593	0.46	0/2186
1	J	0.24	0/1543	0.49	0/2117
1	M	0.21	0/1522	0.44	0/2090
1	O	0.21	0/1519	0.44	0/2086
2	B	0.23	0/1632	0.42	0/2232
2	D	0.21	0/1630	0.40	0/2229
2	F	0.21	0/1632	0.41	0/2232
2	I	0.21	0/1632	0.41	0/2232
2	K	0.21	0/1632	0.41	0/2232
2	L	0.21	0/1627	0.41	0/2227
2	N	0.21	0/1632	0.40	0/2232
2	P	0.21	0/1632	0.41	0/2232
All	All	0.22	0/25494	0.44	1/34932 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2
1	J	0	2
All	All	0	4

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	26	GLY	N-CA-C	-6.36	97.19	113.10

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	24	ALA	Peptide
1	C	26	GLY	Peptide
1	J	215	ILE	Peptide
1	J	216	VAL	Peptide

## 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	1551	0	1483	25	0
1	C	1534	0	1474	15	0
1	E	1528	0	1470	28	0
1	G	1489	0	1413	21	0
1	H	1550	0	1492	22	0
1	J	1503	0	1427	23	0
1	M	1483	0	1422	14	0
1	O	1480	0	1406	19	0
2	B	1596	0	1545	13	0
2	D	1594	0	1540	18	0
2	F	1596	0	1545	13	0
2	I	1596	0	1545	11	0
2	K	1596	0	1545	7	0
2	L	1591	0	1531	12	0
2	N	1596	0	1545	8	0
2	P	1596	0	1545	11	0
3	A	19	0	0	0	0
3	B	31	0	0	1	0
3	C	25	0	0	0	0
3	D	26	0	0	2	0
3	E	24	0	0	0	0
3	F	23	0	0	0	0
3	G	16	0	0	1	0
3	H	15	0	0	1	0
3	I	23	0	0	1	0
3	J	22	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	K	27	0	0	0	0
3	L	21	0	0	0	0
3	M	12	0	0	0	0
3	N	24	0	0	1	0
3	O	16	0	0	1	0
3	P	35	0	0	1	0
All	All	25238	0	23928	238	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 5.

All (238) 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:J:160:ASN:ND2	1:J:197:THR:O	2.23	0.70
1:J:18:VAL:HG13	1:J:86:LEU:HD11	1.74	0.69
1:C:135:ALA:HB3	2:D:207:LYS:HD2	1.74	0.69
1:E:160:ASN:N	1:E:199:THR:O	2.18	0.68
1:H:192:THR:O	1:H:196:GLU:N	2.27	0.68
1:E:143:LEU:HD13	1:E:215:ILE:HG13	1.76	0.68
1:E:28:SER:O	1:E:30:SER:N	2.26	0.67
1:G:160:ASN:HA	1:G:199:THR:HB	1.77	0.67
1:C:192:THR:O	1:C:196:GLU:N	2.27	0.66
1:E:201:ASN:ND2	1:E:212:ASP:OD1	2.29	0.65
1:M:19:LYS:HE3	1:M:80:TYR:HB3	1.79	0.65
2:D:191:HIS:O	2:D:211:ARG:NH1	2.30	0.64
1:C:173:ALA:HB2	1:C:182:LEU:HD23	1.80	0.64
1:A:10:GLU:HG2	1:A:113:LEU:HB3	1.79	0.64
1:G:173:ALA:HB2	1:G:182:LEU:HD23	1.79	0.63
1:C:218:ARG:NH1	2:D:123:PRO:O	2.28	0.63
1:M:134:ALA:HB1	2:N:120:LEU:HB3	1.80	0.63
1:C:46:GLU:OE2	1:C:63:LYS:NZ	2.32	0.62
2:F:191:HIS:O	2:F:211:ARG:NH1	2.30	0.62
1:O:134:ALA:HB1	2:P:120:LEU:HB3	1.80	0.62
1:M:33:ASN:ND2	1:M:101:GLY:O	2.32	0.62
1:H:134:ALA:HB1	2:L:120:LEU:HB3	1.82	0.61
1:M:173:ALA:HB2	1:M:182:LEU:HD23	1.82	0.61
1:J:96:CYS:SG	3:J:2005:HOH:O	2.55	0.61
1:G:55:ASN:ND2	1:G:57:ASP:OD2	2.34	0.60
1:G:218:ARG:NH1	3:G:2016:HOH:O	2.34	0.60
2:L:36:ASN:HB2	2:L:91:ALA:HB3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:126:VAL:HB	1:G:211:VAL:HG11	1.83	0.60
1:G:160:ASN:HB2	1:G:164:LEU:HB2	1.83	0.60
1:H:218:ARG:NH2	2:L:123:PRO:O	2.34	0.60
1:J:55:ASN:ND2	1:J:57:ASP:OD2	2.34	0.60
1:O:19:LYS:HE3	1:O:80:TYR:HB3	1.84	0.59
2:F:36:ASN:HB2	2:F:91:ALA:HB3	1.84	0.59
1:O:124:PRO:HB3	1:O:150:TYR:HB3	1.85	0.59
1:M:18:VAL:HG22	1:M:86:LEU:HD11	1.84	0.59
1:G:22:CYS:O	1:G:98:ARG:NH2	2.35	0.59
2:K:36:ASN:HB2	2:K:91:ALA:HB3	1.85	0.58
1:C:40:THR:HG22	1:C:92:ALA:HB2	1.84	0.58
2:K:141:ASP:OD1	2:K:170:GLN:NE2	2.36	0.58
1:M:38:LYS:HB2	1:M:48:ILE:HD11	1.85	0.58
1:E:143:LEU:HD22	1:E:215:ILE:HG21	1.85	0.57
1:E:11:LEU:HD22	1:E:152:PRO:HG3	1.86	0.57
1:A:173:ALA:HB2	1:A:182:LEU:HD23	1.86	0.57
1:J:165:SER:OG	1:J:166:SER:N	2.37	0.57
2:B:154:ASP:HA	2:B:193:SER:HB2	1.85	0.57
2:D:7:GLU:OE2	2:D:21:THR:OG1	2.21	0.56
1:H:140:MET:HA	1:H:189:PRO:O	2.04	0.56
2:L:191:HIS:O	2:L:211:ARG:NH1	2.39	0.56
1:A:174:VAL:HG13	2:B:165:THR:HG22	1.87	0.56
1:E:196:GLU:HG3	1:E:197:THR:H	1.70	0.56
2:I:118:VAL:HG11	3:I:2014:HOH:O	2.05	0.56
1:M:159:TRP:HZ3	1:M:215:ILE:HD11	1.71	0.55
1:O:150:TYR:OH	1:O:153:GLU:OE1	2.21	0.55
2:I:191:HIS:O	2:I:211:ARG:NH1	2.35	0.55
2:B:29:VAL:HG11	2:B:73:ALA:HB2	1.88	0.54
2:B:123:PRO:HD3	2:B:135:LEU:HG	1.89	0.54
1:O:55:ASN:ND2	1:O:57:ASP:OD2	2.39	0.54
2:P:154:ASP:HA	2:P:193:SER:HB2	1.89	0.54
1:O:189:PRO:O	1:O:192:THR:OG1	2.26	0.54
1:G:158:THR:OG1	1:G:201:ASN:OD1	2.21	0.54
2:L:56:ARG:NH1	2:L:64:PHE:O	2.37	0.54
1:O:174:VAL:HG13	2:P:165:THR:HG22	1.90	0.54
1:G:10:GLU:HG2	1:G:113:LEU:HB3	1.90	0.53
1:J:160:ASN:N	1:J:199:THR:O	2.36	0.53
1:A:157:VAL:HG22	1:A:202:VAL:HG22	1.89	0.53
1:G:164:LEU:HG	1:G:186:VAL:HG21	1.90	0.53
1:E:22:CYS:HB3	1:E:79:ALA:HB3	1.90	0.53
1:O:12:VAL:HG23	1:O:116:VAL:HG22	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:174:VAL:HG13	2:K:165:THR:HG22	1.89	0.53
2:D:22:CYS:HB3	2:D:73:ALA:HB3	1.89	0.53
1:J:6:GLN:N	3:J:2001:HOH:O	2.40	0.53
1:J:134:ALA:HB1	2:K:120:LEU:HB3	1.91	0.52
2:F:7:GLU:OE2	2:F:21:THR:OG1	2.26	0.52
1:M:168:VAL:HG22	1:M:186:VAL:HG23	1.90	0.52
1:E:34:ILE:HG12	1:E:98:ARG:HB3	1.92	0.52
1:E:39:GLN:OE1	1:E:95:HIS:NE2	2.37	0.52
1:J:22:CYS:O	1:J:98:ARG:NH2	2.40	0.52
1:E:141:VAL:HG11	1:E:193:TRP:CE3	2.45	0.52
1:H:12:VAL:HG21	1:H:18:VAL:HG11	1.92	0.52
1:H:157:VAL:HG22	1:H:202:VAL:HG22	1.92	0.51
2:N:197:GLN:HG2	2:N:206:GLU:HG3	1.92	0.51
1:G:9:PRO:O	1:G:11:LEU:N	2.44	0.51
1:J:173:ALA:HB2	1:J:182:LEU:HD23	1.93	0.51
2:D:188:TRP:O	2:D:211:ARG:NH1	2.43	0.51
1:A:160:ASN:N	1:A:199:THR:O	2.22	0.51
1:C:141:VAL:N	1:C:188:VAL:O	2.44	0.50
1:E:30:SER:OG	1:E:31:SER:N	2.44	0.50
2:B:190:ARG:NH2	3:B:2025:HOH:O	2.40	0.50
1:O:20:MET:HG2	1:O:112:THR:HG21	1.94	0.49
1:A:143:LEU:HD12	1:A:198:VAL:HG11	1.94	0.49
1:C:134:ALA:HB1	2:D:120:LEU:HB3	1.94	0.49
2:P:36:ASN:HB2	2:P:91:ALA:HB3	1.94	0.49
1:C:30:SER:OG	1:C:31:SER:N	2.44	0.49
1:O:51:ILE:HD12	1:O:58:THR:HG22	1.93	0.49
1:G:134:ALA:HB1	2:I:120:LEU:HB3	1.93	0.49
1:G:174:VAL:HG13	2:I:165:THR:HG22	1.93	0.49
1:M:143:LEU:HB3	1:M:215:ILE:HD13	1.94	0.49
1:G:124:PRO:HB3	1:G:150:TYR:HB3	1.94	0.49
2:L:94:TYR:O	2:L:96:ASN:N	2.45	0.49
1:H:8:GLY:N	3:H:2001:HOH:O	2.45	0.49
2:N:135:LEU:HD12	3:N:2013:HOH:O	2.12	0.49
2:D:29:VAL:HG11	2:D:73:ALA:HB2	1.95	0.49
1:E:141:VAL:N	1:E:188:VAL:O	2.41	0.48
1:E:218:ARG:NH2	2:F:123:PRO:O	2.47	0.48
2:P:37:TRP:HB2	2:P:50:ILE:HB	1.95	0.48
1:E:18:VAL:HG13	1:E:86:LEU:HD11	1.95	0.48
2:F:39:GLN:HB2	2:F:49:LEU:HD11	1.94	0.48
1:O:135:ALA:HB3	2:P:207:LYS:HD2	1.95	0.48
2:B:56:ARG:NH1	2:B:64:PHE:O	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:SER:OG	1:A:29:PHE:N	2.47	0.48
1:H:204:HIS:HA	1:H:205:PRO:HD2	1.69	0.48
1:E:30:SER:OG	1:E:99:GLY:O	2.32	0.48
1:E:148:LYS:NZ	2:F:127:GLU:OE2	2.44	0.48
1:O:143:LEU:HD13	1:O:215:ILE:HG21	1.95	0.48
2:I:29:VAL:HG11	2:I:73:ALA:HB2	1.96	0.47
1:A:6:GLN:HA	1:A:7:PRO:HA	1.55	0.47
1:G:173:ALA:HA	1:G:182:LEU:HB3	1.96	0.47
1:H:193:TRP:CH2	1:H:217:PRO:HB3	2.49	0.47
1:A:199:THR:HA	1:A:200:CYS:CB	2.45	0.47
1:A:6:GLN:O	1:A:18:VAL:HA	2.14	0.47
1:E:215:ILE:O	1:E:217:PRO:HA	2.14	0.47
1:A:88:SER:HA	1:A:116:VAL:HB	1.96	0.47
1:M:32:TYR:HD2	1:M:33:ASN:HD22	1.62	0.47
1:E:193:TRP:CZ2	1:E:217:PRO:HB3	2.49	0.47
2:I:37:TRP:HB2	2:I:50:ILE:HB	1.97	0.47
1:M:124:PRO:HB3	1:M:150:TYR:HB3	1.96	0.47
1:A:18:VAL:HG22	1:A:86:LEU:HD11	1.97	0.47
2:K:118:VAL:O	2:K:207:LYS:NZ	2.44	0.47
1:J:151:PHE:HA	1:J:152:PRO:HA	1.74	0.47
2:B:141:ASP:OD1	2:B:170:GLN:NE2	2.38	0.46
1:A:93:VAL:HG22	1:A:113:LEU:HD12	1.97	0.46
1:A:134:ALA:HB1	2:B:120:LEU:HB3	1.98	0.46
1:H:173:ALA:HB2	1:H:182:LEU:HD23	1.96	0.46
1:A:19:LYS:HB2	1:A:82:GLN:HG3	1.97	0.46
1:A:193:TRP:CG	1:A:194:PRO:HA	2.51	0.46
2:D:22:CYS:N	2:D:73:ALA:O	2.49	0.46
2:N:123:PRO:HD3	2:N:135:LEU:HG	1.98	0.46
1:H:105:LEU:O	1:H:108:TRP:NE1	2.45	0.46
1:A:199:THR:HA	1:A:200:CYS:HB3	1.97	0.46
1:E:24:ALA:HB3	1:E:98:ARG:HH21	1.81	0.46
1:E:189:PRO:HB2	1:E:190:SER:H	1.55	0.46
1:J:48:ILE:O	1:J:61:ASN:N	2.43	0.45
2:P:29:VAL:HG11	2:P:73:ALA:HB2	1.98	0.45
1:E:168:VAL:HG22	1:E:186:VAL:HG23	1.97	0.45
2:P:23:ARG:NH2	3:P:2006:HOH:O	2.47	0.45
2:K:49:LEU:HA	2:K:60:VAL:HG21	1.99	0.45
1:C:146:LEU:HD12	1:C:183:SER:HB3	1.98	0.45
2:D:56:ARG:NH1	2:D:64:PHE:O	2.45	0.45
1:E:131:PRO:HB3	1:E:136:GLN:HE22	1.82	0.45
1:J:6:GLN:HA	1:J:7:PRO:HD3	1.71	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:12:VAL:HG23	1:M:116:VAL:HG22	1.99	0.45
1:A:30:SER:OG	1:A:31:SER:N	2.49	0.45
2:D:105:LYS:NZ	3:D:2013:HOH:O	2.50	0.45
2:L:39:GLN:HB2	2:L:49:LEU:HD11	1.98	0.45
2:K:123:PRO:HD3	2:K:135:LEU:HG	1.98	0.44
1:J:124:PRO:HB3	1:J:150:TYR:HB3	2.00	0.44
2:B:139:ILE:O	2:B:177:ALA:N	2.41	0.44
1:J:161:SER:H	1:J:201:ASN:HD21	1.64	0.44
1:O:122:THR:HA	1:O:123:PRO:HD3	1.88	0.44
1:A:139:SER:OG	1:A:140:MET:N	2.50	0.44
2:D:39:GLN:HB2	2:D:49:LEU:HD11	2.00	0.44
2:I:12:THR:OG1	2:I:13:SER:N	2.50	0.44
2:F:49:LEU:HA	2:F:60:VAL:HG21	1.99	0.44
1:J:160:ASN:HD22	1:J:164:LEU:HD13	1.83	0.44
1:G:151:PHE:HA	1:G:152:PRO:HA	1.79	0.44
1:J:193:TRP:CZ2	1:J:217:PRO:HD3	2.52	0.44
2:B:36:ASN:HB2	2:B:91:ALA:HB3	1.99	0.44
1:G:34:ILE:HB	1:G:51:ILE:HG23	2.00	0.44
1:J:9:PRO:O	1:J:11:LEU:N	2.51	0.44
2:D:135:LEU:HD13	2:D:181:LEU:HD23	1.99	0.44
1:H:149:GLY:HA2	1:H:179:LEU:HB3	1.98	0.44
2:P:141:ASP:OD1	2:P:170:GLN:NE2	2.37	0.44
1:H:152:PRO:HB2	1:H:153:GLU:H	1.66	0.43
1:E:90:ASP:O	1:E:94:TYR:OH	2.27	0.43
1:H:143:LEU:HD12	1:H:198:VAL:HG11	1.98	0.43
2:D:54:ASN:ND2	3:D:2005:HOH:O	2.49	0.43
1:C:168:VAL:HG22	1:C:186:VAL:HG23	2.00	0.43
1:C:18:VAL:HG22	1:C:86:LEU:HD11	2.00	0.43
1:A:7:PRO:HB2	1:A:9:PRO:HD2	1.99	0.43
1:A:149:GLY:HA2	1:A:179:LEU:HB3	2.01	0.43
1:G:198:VAL:O	1:G:199:THR:OG1	2.34	0.43
2:L:123:PRO:HD3	2:L:135:LEU:HD23	2.00	0.43
2:F:96:ASN:OD1	2:F:96:ASN:N	2.51	0.43
1:E:47:TRP:CG	2:F:98:LEU:HB3	2.53	0.43
1:H:10:GLU:HG2	1:H:113:LEU:HD23	2.01	0.43
2:B:94:TYR:O	2:B:96:ASN:N	2.51	0.43
2:F:94:TYR:O	2:F:96:ASN:N	2.52	0.43
1:H:18:VAL:HG22	1:H:86:LEU:HD11	2.01	0.43
1:O:18:VAL:HG13	1:O:86:LEU:HD11	2.00	0.43
1:O:172:PRO:HG2	2:P:165:THR:HB	2.01	0.43
1:E:199:THR:HA	1:E:200:CYS:CB	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:192:THR:O	1:E:196:GLU:N	2.52	0.42
1:J:156:THR:OG1	1:J:203:ALA:HB3	2.20	0.42
2:I:123:PRO:HD3	2:I:135:LEU:HG	2.02	0.42
2:I:118:VAL:O	2:I:207:LYS:NZ	2.49	0.42
2:L:135:LEU:HD12	2:L:181:LEU:HD23	2.01	0.42
1:O:20:MET:HE1	1:O:83:LEU:HD12	2.00	0.42
1:M:151:PHE:HA	1:M:152:PRO:HA	1.88	0.42
2:D:123:PRO:HD3	2:D:135:LEU:HG	2.01	0.42
1:H:131:PRO:HB3	1:H:136:GLN:NE2	2.34	0.42
1:J:9:PRO:HB2	3:J:2002:HOH:O	2.18	0.42
1:G:51:ILE:O	1:G:53:PRO:HD3	2.19	0.42
1:G:159:TRP:HB3	1:G:164:LEU:HD23	2.01	0.42
1:H:22:CYS:HB3	1:H:79:ALA:HB3	2.02	0.42
1:C:90:ASP:O	1:C:94:TYR:OH	2.26	0.42
2:F:105:LYS:HB2	2:F:105:LYS:HE3	1.81	0.42
2:N:29:VAL:HG11	2:N:73:ALA:HB2	2.01	0.42
1:A:218:ARG:NH2	2:B:123:PRO:O	2.53	0.41
1:C:151:PHE:HA	1:C:152:PRO:HA	1.80	0.41
1:A:151:PHE:HA	1:A:152:PRO:HA	1.84	0.41
2:F:91:ALA:HB1	2:F:98:LEU:HD11	2.02	0.41
1:H:10:GLU:HG2	1:H:113:LEU:HB3	2.01	0.41
1:H:134:ALA:HB2	2:L:209:LEU:HB3	2.03	0.41
1:H:141:VAL:HG11	1:H:193:TRP:CE3	2.56	0.41
2:I:147:VAL:HG13	2:I:198:VAL:HG13	2.02	0.41
2:L:96:ASN:N	2:L:96:ASN:OD1	2.53	0.41
2:D:207:LYS:HA	2:D:207:LYS:HD3	1.81	0.41
2:B:116:PRO:HB3	2:B:142:PHE:HB3	2.01	0.41
1:J:126:VAL:HB	1:J:211:VAL:HG11	2.02	0.41
1:O:40:THR:HG22	1:O:92:ALA:HB2	2.03	0.41
2:P:85:GLU:HG3	2:P:107:THR:HA	2.03	0.41
1:J:160:ASN:HB3	1:J:163:SER:CB	2.51	0.41
2:L:111:GLN:HE22	2:L:174:LYS:HG2	1.85	0.41
2:N:94:TYR:O	2:N:96:ASN:N	2.54	0.41
1:O:17:SER:N	3:O:2001:HOH:O	2.51	0.41
1:M:157:VAL:HG22	1:M:202:VAL:HG22	2.03	0.41
2:N:105:LYS:HB2	2:N:105:LYS:HE3	1.86	0.41
2:D:94:TYR:O	2:D:96:ASN:N	2.54	0.40
1:E:137:THR:OG1	2:F:117:SER:HB2	2.21	0.40
1:H:189:PRO:HB2	1:H:190:SER:H	1.66	0.40
1:A:33:ASN:C	1:A:33:ASN:HD22	2.25	0.40
1:C:141:VAL:HG12	1:C:143:LEU:HG	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1:GLN:HG2	2:I:97:HIS:NE2	2.36	0.40
2:D:105:LYS:HE3	2:D:105:LYS:HB2	1.85	0.40
1:O:200:CYS:HB3	1:O:213:LYS:HB2	2.03	0.40
1:A:18:VAL:HG13	1:A:86:LEU:HD11	2.04	0.40
1:G:7:PRO:HB2	1:G:8:GLY:H	1.60	0.40
2:N:1:GLN:HG2	2:N:97:HIS:NE2	2.37	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	210/217 (97%)	173 (82%)	26 (12%)	11 (5%)	2 0
1	C	207/217 (95%)	169 (82%)	28 (14%)	10 (5%)	2 1
1	E	207/217 (95%)	174 (84%)	18 (9%)	15 (7%)	1 0
1	G	201/217 (93%)	167 (83%)	27 (13%)	7 (4%)	3 2
1	H	209/217 (96%)	174 (83%)	27 (13%)	8 (4%)	3 2
1	J	203/217 (94%)	164 (81%)	29 (14%)	10 (5%)	2 1
1	M	199/217 (92%)	173 (87%)	23 (12%)	3 (2%)	10 14
1	O	200/217 (92%)	166 (83%)	26 (13%)	8 (4%)	3 1
2	B	210/212 (99%)	194 (92%)	12 (6%)	4 (2%)	8 9
2	D	210/212 (99%)	198 (94%)	9 (4%)	3 (1%)	11 15
2	F	210/212 (99%)	196 (93%)	11 (5%)	3 (1%)	11 15
2	I	210/212 (99%)	194 (92%)	13 (6%)	3 (1%)	11 15
2	K	210/212 (99%)	194 (92%)	14 (7%)	2 (1%)	15 22
2	L	210/212 (99%)	192 (91%)	15 (7%)	3 (1%)	11 15
2	N	210/212 (99%)	194 (92%)	13 (6%)	3 (1%)	11 15

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	P	210/212 (99%)	194 (92%)	13 (6%)	3 (1%)	11	15
All	All	3316/3432 (97%)	2916 (88%)	304 (9%)	96 (3%)	4	4

All (96) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	27	TYR
1	A	28	SER
1	A	131	PRO
1	A	200	CYS
1	C	25	SER
1	E	29	PHE
1	E	78	THR
1	E	131	PRO
1	E	189	PRO
1	E	200	CYS
1	E	216	VAL
1	E	217	PRO
1	G	217	PRO
1	H	131	PRO
1	H	189	PRO
1	H	190	SER
1	J	134	ALA
1	J	217	PRO
1	A	29	PHE
2	B	95	SER
1	C	24	ALA
1	C	131	PRO
1	C	208	SER
2	D	95	SER
2	D	109	LEU
2	F	95	SER
2	I	95	SER
1	J	7	PRO
2	K	95	SER
2	L	95	SER
1	M	131	PRO
2	N	95	SER
1	O	10	GLU
1	O	135	ALA
1	A	24	ALA
1	A	30	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	166	SER
1	A	208	SER
1	C	42	GLY
1	C	135	ALA
1	C	166	SER
1	C	209	THR
2	D	46	PHE
1	E	30	SER
1	E	75	SER
1	E	134	ALA
1	E	166	SER
2	F	46	PHE
1	G	7	PRO
1	G	10	GLU
1	H	166	SER
2	I	46	PHE
1	J	102	SER
1	J	106	ALA
1	J	167	GLY
1	J	208	SER
2	K	46	PHE
2	L	46	PHE
1	M	166	SER
2	N	46	PHE
2	N	211	ARG
1	O	11	LEU
1	O	42	GLY
1	O	166	SER
2	P	46	PHE
2	P	95	SER
2	B	46	PHE
1	C	30	SER
1	E	42	GLY
1	G	134	ALA
1	G	166	SER
1	H	208	SER
1	J	131	PRO
1	O	30	SER
1	O	131	PRO
1	O	208	SER
1	E	190	SER
2	F	211	ARG

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Mol	Chain	Res	Type
1	G	131	PRO
1	G	216	VAL
1	H	24	ALA
1	H	205	PRO
2	I	109	LEU
1	M	42	GLY
1	A	205	PRO
2	B	109	LEU
2	B	211	ARG
1	C	162	GLY
1	E	140	MET
2	L	211	ARG
2	P	109	LEU
1	E	154	PRO
1	J	149	GLY
1	A	7	PRO
1	H	152	PRO
1	J	152	PRO

### 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	172/184 (94%)	167 (97%)	5 (3%)	42	57
1	C	170/184 (92%)	169 (99%)	1 (1%)	86	92
1	E	170/184 (92%)	169 (99%)	1 (1%)	86	92
1	G	163/184 (89%)	163 (100%)	0	100	100
1	H	172/184 (94%)	170 (99%)	2 (1%)	71	81
1	J	162/184 (88%)	158 (98%)	4 (2%)	47	62
1	M	164/184 (89%)	161 (98%)	3 (2%)	59	74
1	O	163/184 (89%)	162 (99%)	1 (1%)	86	92
2	B	179/179 (100%)	178 (99%)	1 (1%)	86	92
2	D	178/179 (99%)	177 (99%)	1 (1%)	86	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	F	179/179 (100%)	178 (99%)	1 (1%)	86	92
2	I	179/179 (100%)	179 (100%)	0	100	100
2	K	179/179 (100%)	179 (100%)	0	100	100
2	L	177/179 (99%)	177 (100%)	0	100	100
2	N	179/179 (100%)	179 (100%)	0	100	100
2	P	179/179 (100%)	178 (99%)	1 (1%)	86	92
All	All	2765/2904 (95%)	2744 (99%)	21 (1%)	81	88

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	VAL
1	A	33	ASN
1	A	40	THR
1	A	46	GLU
1	A	174	VAL
2	B	189	GLU
1	C	33	ASN
2	D	41	THR
1	E	81	MET
2	F	41	THR
1	H	27	TYR
1	H	200	CYS
1	J	164	LEU
1	J	174	VAL
1	J	216	VAL
1	J	218	ARG
1	M	65	ARG
1	M	73	ASP
1	M	178	ASP
1	O	136	GLN
2	P	78	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	J	201	ASN
2	L	97	HIS
2	P	1	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](#)

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](#)

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 [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, 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	212/217 (97%)	0.66	18 (8%) 10 12	20, 38, 71, 84	0
1	C	209/217 (96%)	1.01	33 (15%) 2 2	26, 44, 84, 107	0
1	E	209/217 (96%)	0.88	33 (15%) 2 2	22, 39, 83, 116	0
1	G	205/217 (94%)	1.27	43 (20%) 1 0	28, 52, 84, 109	0
1	H	211/217 (97%)	0.88	31 (14%) 2 3	23, 45, 81, 93	0
1	J	207/217 (95%)	1.32	42 (20%) 1 1	32, 52, 89, 102	0
1	M	203/217 (93%)	1.28	47 (23%) 0 0	27, 51, 82, 105	0
1	O	204/217 (94%)	1.41	50 (24%) 0 0	30, 56, 85, 103	0
2	B	212/212 (100%)	0.23	4 (1%) 66 73	20, 31, 58, 76	0
2	D	212/212 (100%)	0.58	20 (9%) 8 10	24, 38, 70, 89	0
2	F	212/212 (100%)	0.31	11 (5%) 27 32	20, 31, 64, 86	0
2	I	212/212 (100%)	0.85	27 (12%) 3 4	28, 48, 72, 92	0
2	K	212/212 (100%)	0.74	20 (9%) 8 10	34, 48, 72, 90	0
2	L	212/212 (100%)	0.44	12 (5%) 23 28	21, 39, 67, 80	0
2	N	212/212 (100%)	0.87	29 (13%) 3 3	29, 50, 71, 80	0
2	P	212/212 (100%)	1.01	35 (16%) 1 1	31, 50, 72, 82	0
All	All	3356/3432 (97%)	0.85	455 (13%) 3 3	20, 45, 78, 116	0

All (455) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	J	163	SER	14.0
1	G	162	GLY	12.0
1	O	9	PRO	11.0
1	M	9	PRO	10.7
1	H	200	CYS	10.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	75	SER	9.9
1	J	161	SER	9.3
1	M	77	SER	9.2
1	H	9	PRO	8.6
1	G	6	GLN	8.4
1	G	8	GLY	8.4
1	E	135	ALA	7.8
1	A	76	SER	7.6
1	C	27	TYR	7.4
2	I	159	THR	7.4
1	C	133	SER	7.1
1	A	9	PRO	6.9
1	C	75	SER	6.9
2	D	192	SER	6.8
1	G	7	PRO	6.7
1	C	138	ASN	6.6
1	J	7	PRO	6.5
1	H	76	SER	6.5
2	I	26	THR	6.5
1	G	13	THR	6.5
1	M	88	SER	6.4
1	J	41	PRO	6.4
1	O	137	THR	6.3
1	E	191	SER	6.3
2	I	27	GLY	6.2
1	J	40	THR	6.2
1	M	75	SER	6.1
2	N	26	THR	6.0
1	M	76	SER	6.0
1	M	135	ALA	5.9
1	O	138	ASN	5.9
1	C	139	SER	5.8
2	I	190	ARG	5.7
1	H	75	SER	5.7
1	C	135	ALA	5.6
1	C	26	GLY	5.6
1	E	137	THR	5.5
1	G	132	GLY	5.5
1	O	135	ALA	5.5
1	E	136	GLN	5.4
1	C	191	SER	5.4
1	H	189	PRO	5.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	O	192	THR	5.4
2	K	110	GLY	5.3
1	J	132	GLY	5.1
1	E	140	MET	5.1
1	M	192	THR	5.0
1	A	192	THR	5.0
1	G	41	PRO	5.0
2	D	190	ARG	5.0
1	M	149	GLY	4.9
1	C	76	SER	4.9
2	F	192	SER	4.9
2	P	45	LEU	4.9
1	E	138	ASN	4.9
2	P	156	THR	4.8
1	M	44	GLY	4.8
1	J	88	SER	4.8
1	C	195	SER	4.8
1	J	15	GLY	4.8
1	E	134	ALA	4.8
1	J	9	PRO	4.8
1	G	78	THR	4.7
1	A	167	GLY	4.7
1	E	133	SER	4.7
1	O	40	THR	4.7
2	D	193	SER	4.6
1	G	76	SER	4.6
2	K	159	THR	4.6
2	I	172	ASN	4.6
1	E	75	SER	4.5
1	J	13	THR	4.5
1	G	9	PRO	4.5
1	C	137	THR	4.4
1	M	57	ASP	4.4
1	C	134	ALA	4.4
1	O	88	SER	4.3
1	G	40	THR	4.3
1	M	43	GLN	4.3
2	I	186	ARG	4.3
1	M	136	GLN	4.3
1	H	23	THR	4.3
1	E	76	SER	4.2
1	H	190	SER	4.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
2	L	157	PRO	4.2
1	G	133	SER	4.2
2	P	192	SER	4.2
1	O	191	SER	4.1
1	C	132	GLY	4.1
1	M	138	ASN	4.1
1	O	17	SER	4.1
2	P	30	THR	4.1
1	M	8	GLY	4.1
2	N	95	SER	4.1
2	K	190	ARG	4.1
1	C	218	ARG	4.1
1	E	199	THR	4.0
1	O	76	SER	4.0
1	H	195	SER	4.0
1	J	165	SER	4.0
1	H	192	THR	4.0
1	J	6	GLN	4.0
1	C	163	SER	4.0
1	J	75	SER	3.9
1	O	30	SER	3.9
1	O	167	GLY	3.9
2	F	193	SER	3.9
1	J	164	LEU	3.9
1	H	135	ALA	3.9
1	O	134	ALA	3.9
1	M	167	GLY	3.9
2	N	202	GLY	3.9
2	K	172	ASN	3.9
2	I	95	SER	3.9
1	J	8	GLY	3.8
1	E	201	ASN	3.8
1	M	87	THR	3.8
1	A	7	PRO	3.8
1	A	133	SER	3.8
1	J	76	SER	3.8
2	N	192	SER	3.8
1	O	44	GLY	3.8
1	J	87	THR	3.8
1	J	29	PHE	3.7
1	C	190	SER	3.7
1	G	11	LEU	3.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	J	206	ALA	3.7
1	M	140	MET	3.7
1	O	140	MET	3.7
1	J	133	SER	3.7
1	M	158	THR	3.7
2	N	70	GLY	3.6
2	F	186	ARG	3.6
1	E	198	VAL	3.6
2	N	190	ARG	3.6
1	G	205	PRO	3.6
1	O	41	PRO	3.6
1	J	12	VAL	3.6
2	I	160	GLN	3.6
1	G	93	VAL	3.6
1	M	133	SER	3.5
1	G	192	THR	3.5
1	A	200	CYS	3.5
2	P	70	GLY	3.5
2	P	9	ALA	3.5
2	N	59	GLY	3.5
2	P	31	THR	3.5
1	O	179	LEU	3.4
2	F	190	ARG	3.4
2	K	98	LEU	3.4
2	N	32	SER	3.4
2	I	212	ALA	3.4
2	I	70	GLY	3.4
1	C	136	GLN	3.4
1	C	141	VAL	3.4
2	L	192	SER	3.4
2	I	58	PRO	3.3
1	E	29	PHE	3.3
1	M	102	SER	3.3
1	O	78	THR	3.3
1	A	116	VAL	3.3
2	D	32	SER	3.3
1	C	42	GLY	3.3
1	H	167	GLY	3.3
2	L	190	ARG	3.3
2	L	158	VAL	3.3
1	O	102	SER	3.3
1	G	12	VAL	3.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	103	GLY	3.2
2	I	82	THR	3.2
1	O	42	GLY	3.2
2	I	98	LEU	3.2
1	M	10	GLU	3.2
1	G	138	ASN	3.2
1	E	28	SER	3.2
1	C	192	THR	3.2
2	N	130	THR	3.2
2	P	26	THR	3.2
1	O	10	GLU	3.2
1	C	189	PRO	3.2
1	C	201	ASN	3.1
1	H	218	ARG	3.1
1	H	201	ASN	3.1
1	G	65	ARG	3.1
2	F	1	GLN	3.1
1	E	195	SER	3.1
1	G	161	SER	3.1
2	P	96	ASN	3.1
2	P	154	ASP	3.1
2	D	159	THR	3.1
2	P	130	THR	3.1
2	P	182	THR	3.1
1	H	138	ASN	3.1
1	J	139	SER	3.1
2	P	28	ALA	3.1
2	P	133	ALA	3.1
2	K	71	ASP	3.1
2	P	146	VAL	3.1
1	M	111	GLY	3.0
2	L	191	HIS	3.0
1	O	116	VAL	3.0
2	I	71	ASP	3.0
1	M	137	THR	3.0
1	E	200	CYS	3.0
1	O	111	GLY	3.0
1	G	80	TYR	3.0
1	J	84	SER	3.0
1	C	197	THR	3.0
1	H	134	ALA	3.0
1	J	43	GLN	3.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	215	ILE	3.0
1	O	208	SER	3.0
1	M	80	TYR	3.0
2	P	62	ALA	3.0
1	O	205	PRO	3.0
2	K	186	ARG	3.0
1	A	191	SER	2.9
2	L	187	ALA	2.9
1	O	93	VAL	2.9
2	D	95	SER	2.9
1	G	199	THR	2.9
2	N	10	LEU	2.9
1	E	212	ASP	2.9
2	N	96	ASN	2.9
2	P	71	ASP	2.9
1	C	30	SER	2.9
2	K	212	ALA	2.9
2	F	211	ARG	2.9
1	A	135	ALA	2.9
1	H	137	THR	2.9
2	L	212	ALA	2.9
1	O	150	TYR	2.9
1	M	168	VAL	2.8
1	O	178	ASP	2.8
2	B	158	VAL	2.8
1	G	42	GLY	2.8
1	G	75	SER	2.8
1	O	139	SER	2.8
2	I	158	VAL	2.8
1	O	193	TRP	2.8
2	B	190	ARG	2.8
2	K	27	GLY	2.8
1	O	91	SER	2.8
1	M	42	GLY	2.8
2	N	14	PRO	2.8
1	J	11	LEU	2.8
2	B	192	SER	2.8
2	P	186	ARG	2.8
1	E	197	THR	2.8
1	E	139	SER	2.8
1	J	30	SER	2.8
2	L	95	SER	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	139	SER	2.7
2	D	1	GLN	2.7
2	N	9	ALA	2.7
1	G	16	ALA	2.7
2	I	94	TYR	2.7
2	N	45	LEU	2.7
1	A	6	GLN	2.7
1	J	215	ILE	2.7
1	M	41	PRO	2.7
1	E	141	VAL	2.7
1	M	179	LEU	2.7
1	C	140	MET	2.7
2	P	5	THR	2.6
2	P	47	THR	2.6
1	C	32	TYR	2.6
1	H	27	TYR	2.6
2	P	34	TYR	2.6
1	E	30	SER	2.6
2	K	25	SER	2.6
2	F	30	THR	2.6
1	C	162	GLY	2.6
1	J	82	GLN	2.6
2	N	1	GLN	2.6
1	M	97	ALA	2.6
2	D	97	HIS	2.6
1	M	150	TYR	2.6
1	O	45	LEU	2.6
1	M	56	GLY	2.6
2	D	191	HIS	2.6
1	A	78	THR	2.6
1	M	193	TRP	2.6
1	O	43	GLN	2.6
1	O	75	SER	2.6
1	H	196	GLU	2.6
1	J	16	ALA	2.5
1	H	194	PRO	2.5
1	G	43	GLN	2.5
1	E	163	SER	2.5
1	E	192	THR	2.5
2	N	86	ALA	2.5
1	G	190	SER	2.5
1	G	87	THR	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
2	P	59	GLY	2.5
2	I	208	SER	2.5
1	C	78	THR	2.5
1	E	189	PRO	2.5
1	O	92	ALA	2.5
2	P	184	THR	2.5
1	H	198	VAL	2.5
1	M	93	VAL	2.5
1	A	160	ASN	2.5
2	N	193	SER	2.5
2	B	26	THR	2.5
1	H	215	ILE	2.5
1	M	134	ALA	2.5
1	O	58	THR	2.5
2	D	199	THR	2.5
1	A	139	SER	2.5
2	K	95	SER	2.5
1	A	201	ASN	2.5
1	G	97	ALA	2.5
1	O	87	THR	2.5
1	M	218	ARG	2.4
2	N	186	ARG	2.4
2	D	153	VAL	2.4
2	F	32	SER	2.4
2	P	13	SER	2.4
2	I	52	GLY	2.4
1	C	28	SER	2.4
1	M	174	VAL	2.4
2	P	58	PRO	2.4
1	H	197	THR	2.4
2	P	82	THR	2.4
2	L	188	TRP	2.4
1	E	194	PRO	2.4
1	O	158	THR	2.4
1	E	73	ASP	2.4
2	D	179	SER	2.4
1	M	110	GLN	2.4
1	J	138	ASN	2.4
1	G	137	THR	2.4
1	G	118	SER	2.4
2	D	154	ASP	2.4
2	P	191	HIS	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
2	F	154	ASP	2.4
2	N	71	ASP	2.4
2	P	2	ALA	2.4
1	E	88	SER	2.4
1	M	11	LEU	2.4
2	D	150	ASP	2.3
2	I	187	ALA	2.3
2	P	91	ALA	2.3
1	E	78	THR	2.3
1	H	139	SER	2.3
1	J	137	THR	2.3
1	J	177	SER	2.3
1	M	195	SER	2.3
1	O	74	LYS	2.3
1	J	162	GLY	2.3
2	K	157	PRO	2.3
1	G	107	TYR	2.3
1	A	25	SER	2.3
1	G	57	ASP	2.3
1	H	193	TRP	2.3
1	J	154	PRO	2.3
2	N	90	CYS	2.3
1	J	107	TYR	2.3
1	O	207	SER	2.3
2	K	185	ALA	2.3
2	I	182	THR	2.3
2	K	26	THR	2.3
2	N	34	TYR	2.3
1	O	8	GLY	2.3
2	P	1	GLN	2.3
1	H	191	SER	2.3
1	J	44	GLY	2.3
1	O	209	THR	2.3
1	O	80	TYR	2.3
2	I	146	VAL	2.3
2	L	193	SER	2.3
2	L	121	PHE	2.3
2	N	138	THR	2.3
1	O	65	ARG	2.2
2	N	132	LYS	2.2
1	M	132	GLY	2.2
1	M	112	THR	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
2	P	190	ARG	2.2
1	G	189	PRO	2.2
2	N	162	MET	2.2
2	P	32	SER	2.2
2	N	47	THR	2.2
2	N	156	THR	2.2
1	E	132	GLY	2.2
1	G	163	SER	2.2
1	H	77	SER	2.2
1	J	102	SER	2.2
1	E	26	GLY	2.2
1	C	25	SER	2.2
1	M	30	SER	2.2
1	J	135	ALA	2.2
2	F	159	THR	2.2
2	D	72	LYS	2.2
2	P	102	GLY	2.2
1	M	12	VAL	2.2
1	M	19	LYS	2.2
2	F	45	LEU	2.2
2	K	99	VAL	2.2
1	C	209	THR	2.2
1	H	8	GLY	2.2
1	C	200	CYS	2.2
1	M	191	SER	2.2
1	G	32	TYR	2.1
1	G	174	VAL	2.1
2	I	35	ALA	2.1
1	H	199	THR	2.1
2	P	43	ASP	2.1
1	C	24	ALA	2.1
2	I	60	VAL	2.1
2	D	186	ARG	2.1
2	K	33	ASN	2.1
2	K	58	PRO	2.1
2	D	45	LEU	2.1
1	J	118	SER	2.1
1	M	166	SER	2.1
2	I	32	SER	2.1
1	O	164	LEU	2.1
1	J	204	HIS	2.1
1	O	31	SER	2.1

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Mol	Chain	Res	Type	RSRZ
2	I	67	SER	2.1
2	K	158	VAL	2.1
1	J	214	LYS	2.1
2	K	45	LEU	2.1
1	O	97	ALA	2.1
1	G	30	SER	2.1
1	H	43	GLN	2.1
2	D	155	GLY	2.1
1	E	217	PRO	2.0
2	D	212	ALA	2.0
2	N	80	ALA	2.0
2	N	167	PRO	2.0
2	L	26	THR	2.0
2	D	114	SER	2.0
1	H	212	ASP	2.0
1	A	24	ALA	2.0
1	H	186	VAL	2.0
1	J	192	THR	2.0
1	G	177	SER	2.0
1	E	27	TYR	2.0
2	I	110	GLY	2.0
2	I	130	THR	2.0
2	N	5	THR	2.0
1	G	109	GLY	2.0
1	O	149	GLY	2.0
2	K	59	GLY	2.0
1	O	29	PHE	2.0
1	M	89	GLU	2.0
1	O	110	GLN	2.0
2	P	6	GLN	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands

There are no ligands in this entry.

## 6.5 Other polymers

There are no such residues in this entry.