W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

Full wwPDB X-ray Structure Validation Report ⓘ

Aug 2, 2023 – 04:08 AM EDT

PDB ID	:	1BLN
Title	:	ANTI-P-GLYCOPROTEIN FAB MRK-16
Authors	:	Vasudevan, S.; Tsuruo, T.; Rose, D.R.
Deposited on	:	1998-07-16
Resolution	:	2.80 Å(reported)

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

|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.34
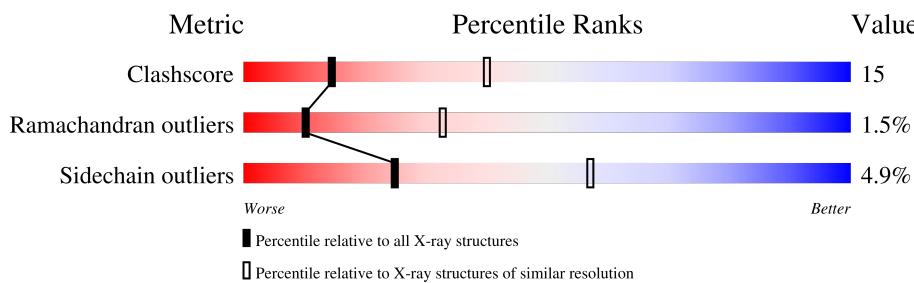
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 Å.
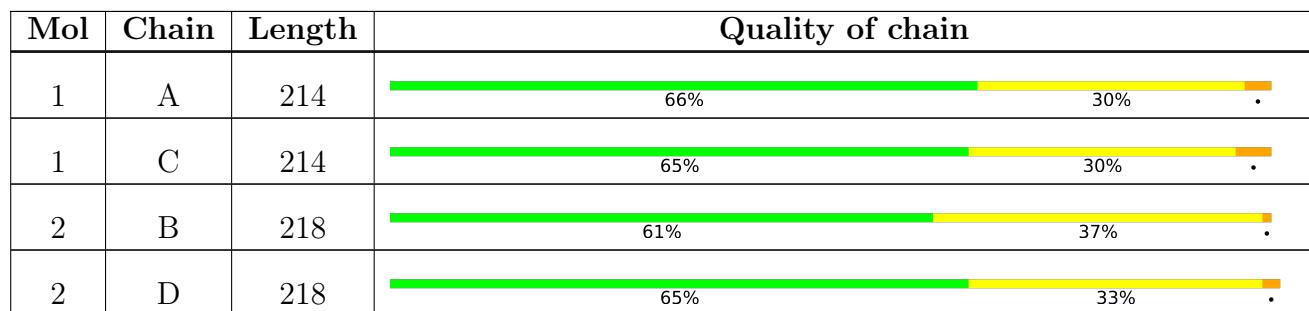
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.

Metric	Percentile Ranks	Value
Clashscore		15
Ramachandran outliers		1.5%
Sidechain outliers		4.9%

Worse   *Better*

■ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)

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%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	214	66% 30% •
1	C	214	65% 30% •
2	B	218	61% 37% •
2	D	218	65% 33% •

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 6606 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 PROTEIN (MONOCLONAL ANTIBODY MRK-16 (LIGHT CHAIN)).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	214	Total	C	N	O	S	0	0	0
			1656	1033	281	335	7			
1	C	214	Total	C	N	O	S	0	0	0
			1656	1033	281	335	7			

- Molecule 2 is a protein called PROTEIN (MONOCLONAL ANTIBODY MRK-16 (HEAVY CHAIN)).
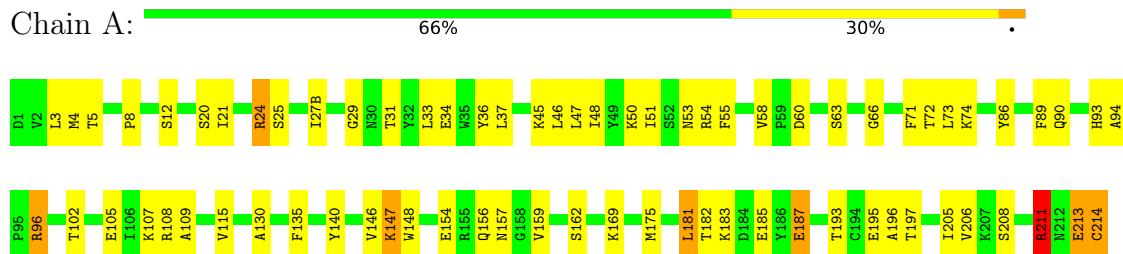
| Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	218	Total	C	N	O	S	0	0	0
			1647	1045	270	325	7			
2	D	218	Total	C	N	O	S	0	0	0
			1647	1045	270	325	7			

3 Residue-property plots ⓘ
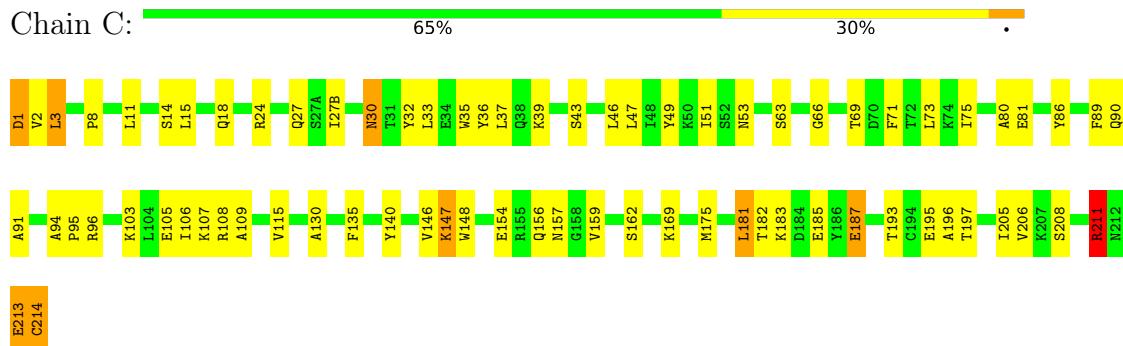
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded 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. 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.

Note EDS was not executed.
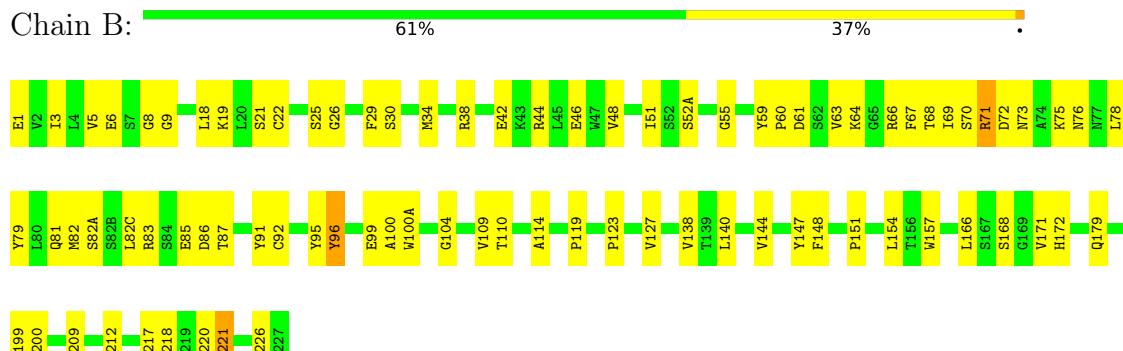
• Molecule 1: PROTEIN (MONOCLONAL ANTIBODY MRK-16 (LIGHT CHAIN))
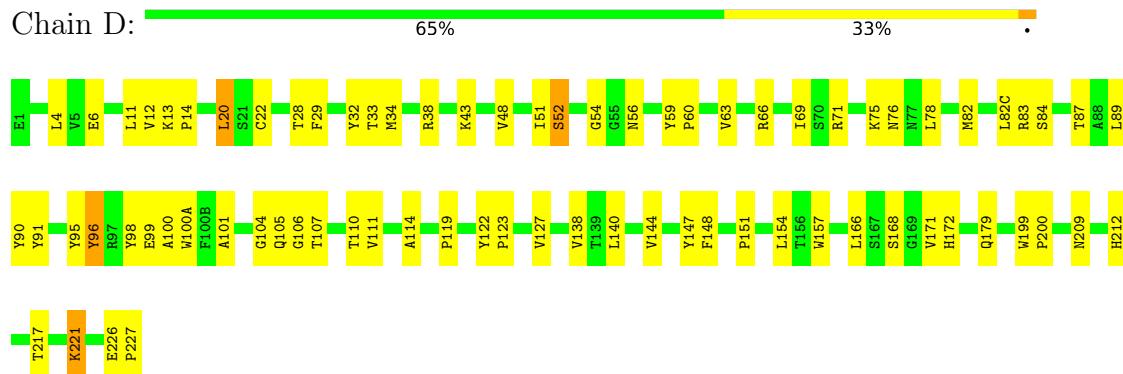
Chain A:

• Molecule 1: PROTEIN (MONOCLONAL ANTIBODY MRK-16 (LIGHT CHAIN))

Chain C:

• Molecule 2: PROTEIN (MONOCLONAL ANTIBODY MRK-16 (HEAVY CHAIN))

Chain B:

• Molecule 2: PROTEIN (MONOCLONAL ANTIBODY MRK-16 (HEAVY CHAIN))

Chain D:

65%   33%

4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	54.49Å 67.77Å 117.19Å 90.00° 97.61° 90.00°	Depositor
Resolution (Å)	8.00 – 2.80	Depositor
% Data completeness (in resolution range)	80.0 (8.00-2.80)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.11	Depositor
Refinement program	X-PLOR 3.8	Depositor
R, R_{free}	0.209 , 0.287	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	6606	wwPDB-VP
Average B, all atoms (Å^2)	13.0	wwPDB-VP

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	0.35	0/1691	0.64	0/2290
1	C	0.35	0/1691	0.63	0/2290
2	B	0.34	0/1690	0.61	0/2308
2	D	0.35	0/1690	0.64	0/2308
All	All	0.35	0/6762	0.63	0/9196

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1656	0	1597	49	0
1	C	1656	0	1597	52	0
2	B	1647	0	1609	56	0
2	D	1647	0	1609	49	0
All	All	6606	0	6412	200	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 15.

All (200) 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:A:66:GLY:HA2	1:A:71:PHE:HA	1.49	0.90
2:B:9:GLY:HA2	2:B:109:VAL:HG12	1.53	0.89
2:D:82:MET:HB3	2:D:82(C):LEU:HD21	1.61	0.81
2:D:96:TYR:HB2	2:D:101:ALA:HB2	1.63	0.81
1:A:45:LYS:HZ1	1:A:55:PHE:HD2	1.26	0.80
1:C:94:ALA:HB3	1:C:95:PRO:HD3	1.64	0.77
1:C:2:VAL:HG22	1:C:27:GLN:HB2	1.67	0.77
1:A:147:LYS:HA	1:A:147:LYS:HE2	1.66	0.76
1:C:147:LYS:HE2	1:C:147:LYS:HA	1.67	0.75
1:C:211:ARG:HG2	1:C:211:ARG:HH11	1.54	0.73
1:C:66:GLY:HA3	1:C:71:PHE:HA	1.71	0.72
1:C:37:LEU:HB2	1:C:47:LEU:HD11	1.71	0.72
1:A:211:ARG:HG2	1:A:211:ARG:HH11	1.54	0.71
2:D:20:LEU:HG	2:D:107:THR:HG21	1.72	0.71
2:B:59:TYR:CE1	2:B:69:ILE:HG22	2.26	0.71
1:C:103:LYS:HG3	1:C:105:GLU:OE2	1.92	0.68
1:C:80:ALA:HA	1:C:106:ILE:HG13	1.75	0.67
2:B:68:THR:HB	2:B:81:GLN:HB2	1.76	0.67
2:D:95:TYR:HA	2:D:100(A):TRP:O	1.94	0.67
1:A:54:ARG:NH1	1:A:60:ASP:HA	2.10	0.67
1:A:195:GLU:HG2	1:A:206:VAL:HG12	1.79	0.65
1:C:195:GLU:HG2	1:C:206:VAL:HG12	1.78	0.65
1:C:30:ASN:HB2	1:C:32:TYR:CE2	2.32	0.65
2:B:71:ARG:HD3	2:B:73:ASN:OD1	1.96	0.64
2:B:96:TYR:HB3	2:B:99:GLU:HB3	1.79	0.64
2:B:83:ARG:HB2	2:B:85:GLU:HG2	1.80	0.63
2:B:34:MET:HB3	2:B:78:LEU:HD22	1.80	0.63
2:D:52:SER:OG	2:D:56:ASN:HB2	2.01	0.60
1:C:8:PRO:HG3	1:C:11:LEU:HD13	1.83	0.59
2:D:29:PHE:CD2	2:D:76:ASN:HA	2.37	0.58
2:D:95:TYR:CD1	2:D:100(A):TRP:HA	2.39	0.58
2:D:66:ARG:NH2	2:D:83:ARG:HG3	2.18	0.58
2:B:9:GLY:CA	2:B:109:VAL:HG12	2.32	0.58
1:A:4:MET:SD	1:A:25:SER:HB3	2.44	0.57
2:B:22:CYS:HB3	2:B:78:LEU:HB3	1.85	0.57
2:D:22:CYS:HB3	2:D:78:LEU:HB3	1.86	0.57
1:C:91:ALA:HA	1:C:96:ARG:HD2	1.87	0.56
2:D:51:ILE:HD11	2:D:54:GLY:HA2	1.85	0.56
2:B:6:GLU:OE2	2:B:91:TYR:HA	2.06	0.56
2:D:11:LEU:HD12	2:D:110:THR:O	2.06	0.56
2:B:38:ARG:HG2	2:B:48:VAL:CG2	2.36	0.55
2:D:87:THR:HG23	2:D:110:THR:HA	1.88	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:75:LYS:HZ2	2:D:75:LYS:HB2	1.71	0.55
1:A:31:THR:HG21	1:A:51:ILE:HD11	1.88	0.55
1:A:94:ALA:O	1:A:96:ARG:HD2	2.06	0.55
1:C:148:TRP:CD1	1:C:159:VAL:HG11	2.42	0.55
1:A:27(B):ILE:HG22	1:A:93:HIS:CE1	2.42	0.55
1:A:148:TRP:CD1	1:A:159:VAL:HG11	2.42	0.54
1:A:21:ILE:O	1:A:72:THR:HA	2.06	0.54
2:B:95:TYR:HA	2:B:100(A):TRP:O	2.08	0.53
2:B:119:PRO:HB3	2:B:147:TYR:HB3	1.90	0.53
1:A:130:ALA:O	1:A:181:LEU:HD23	2.08	0.53
2:D:6:GLU:OE1	2:D:105:GLN:HG2	2.09	0.53
1:C:89:PHE:CZ	1:C:96:ARG:HB3	2.44	0.53
2:B:75:LYS:HB2	2:B:75:LYS:HZ2	1.73	0.53
1:C:15:LEU:HG	1:C:106:ILE:HG23	1.91	0.53
2:D:43:LYS:N	2:D:43:LYS:HD2	2.24	0.52
1:A:213:GLU:O	1:A:214:CYS:HB2	2.08	0.52
2:B:59:TYR:HE1	2:B:69:ILE:HG22	1.71	0.52
1:A:12:SER:HA	1:A:105:GLU:O	2.10	0.52
2:D:13:LYS:HG2	2:D:14:PRO:HD2	1.92	0.51
1:A:8:PRO:O	1:A:102:THR:HG23	2.09	0.51
2:B:75:LYS:HB2	2:B:75:LYS:NZ	2.25	0.51
1:C:39:LYS:NZ	1:C:81:GLU:O	2.42	0.51
2:D:119:PRO:HB3	2:D:147:TYR:HB3	1.92	0.51
1:A:45:LYS:HD3	1:A:46:LEU:O	2.11	0.51
1:C:213:GLU:O	1:C:214:CYS:HB2	2.09	0.50
1:A:183:LYS:O	1:A:187:GLU:HB2	2.11	0.50
1:A:107:LYS:HA	1:A:140:TYR:OH	2.12	0.50
2:B:87:THR:HG23	2:B:110:THR:HA	1.93	0.50
1:A:50:LYS:NZ	2:B:99:GLU:HA	2.27	0.50
2:B:72:ASP:CG	2:B:75:LYS:HZ2	2.15	0.50
1:C:37:LEU:HD13	1:C:86:TYR:CZ	2.47	0.50
1:C:15:LEU:HG	1:C:106:ILE:CG2	2.40	0.50
2:B:38:ARG:HD2	2:B:46:GLU:OE1	2.12	0.50
1:C:130:ALA:O	1:C:181:LEU:HD23	2.11	0.50
2:D:90:TYR:O	2:D:106:GLY:HA2	2.12	0.49
1:C:89:PHE:CE1	1:C:96:ARG:HB3	2.47	0.49
1:C:3:LEU:HD23	1:C:3:LEU:H	1.77	0.49
2:B:95:TYR:HE2	2:B:100(A):TRP:CE2	2.31	0.49
1:C:183:LYS:O	1:C:187:GLU:HB2	2.12	0.49
2:B:157:TRP:HB2	2:B:166:LEU:HB2	1.95	0.49
1:A:33:LEU:HG	1:A:71:PHE:CD2	2.48	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:199:TRP:HB3	2:B:200:PRO:HD3	1.94	0.48
1:C:108:ARG:NH1	1:C:109:ALA:O	2.47	0.48
1:A:89:PHE:HE1	1:A:96:ARG:HB3	1.77	0.48
1:A:146:VAL:HA	1:A:195:GLU:O	2.14	0.48
1:A:108:ARG:NH1	1:A:109:ALA:O	2.46	0.48
1:C:107:LYS:HA	1:C:140:TYR:OH	2.13	0.48
2:D:12:VAL:O	2:D:111:VAL:HA	2.14	0.48
1:C:193:THR:HA	1:C:208:SER:HB3	1.96	0.48
2:B:3:ILE:HB	2:B:25:SER:OG	2.14	0.48
2:B:51:ILE:HD13	2:B:71:ARG:HG2	1.94	0.48
1:C:147:LYS:NZ	1:C:157:ASN:OD1	2.46	0.48
1:A:147:LYS:NZ	1:A:157:ASN:OD1	2.45	0.48
1:C:182:THR:OG1	1:C:185:GLU:HB2	2.13	0.48
2:B:61:ASP:OD1	2:B:64:LYS:NZ	2.44	0.48
1:C:35:TRP:CE2	1:C:73:LEU:HB2	2.48	0.47
2:B:144:VAL:O	2:B:144:VAL:HG23	2.15	0.47
2:D:157:TRP:HB2	2:D:166:LEU:HB2	1.96	0.47
1:A:193:THR:HA	1:A:208:SER:HB3	1.95	0.47
2:D:96:TYR:HB3	2:D:99:GLU:HB2	1.97	0.47
1:A:182:THR:OG1	1:A:185:GLU:HB2	2.15	0.47
1:A:12:SER:O	1:A:107:LYS:NZ	2.45	0.47
2:B:138:VAL:HG11	2:B:199:TRP:CE3	2.50	0.47
1:C:46:LEU:HD21	2:D:100:ALA:HB3	1.95	0.47
2:D:48:VAL:O	2:D:60:PRO:HD2	2.15	0.47
2:B:171:VAL:HG12	2:B:172:HIS:N	2.30	0.47
1:C:36:TYR:CZ	1:C:46:LEU:HD13	2.50	0.47
2:D:199:TRP:HB3	2:D:200:PRO:HD3	1.96	0.47
2:D:69:ILE:HD11	2:D:78:LEU:HD11	1.98	0.46
1:A:196:ALA:HB3	1:A:205:ILE:HB	1.96	0.46
2:B:38:ARG:HG2	2:B:48:VAL:HG23	1.97	0.46
1:A:115:VAL:HA	1:A:135:PHE:O	2.15	0.46
2:D:51:ILE:HD13	2:D:71:ARG:HG2	1.97	0.46
1:C:146:VAL:HA	1:C:195:GLU:O	2.15	0.46
2:B:38:ARG:HG3	2:B:46:GLU:HB2	1.98	0.46
2:B:60:PRO:HG2	2:B:63:VAL:HG22	1.96	0.46
2:D:171:VAL:HG12	2:D:172:HIS:N	2.31	0.46
2:B:85:GLU:HG3	2:B:86:ASP:N	2.30	0.46
2:B:8:GLY:O	2:B:18:LEU:HD11	2.15	0.46
2:B:48:VAL:O	2:B:60:PRO:HD2	2.16	0.46
1:C:1:ASP:HB3	1:C:95:PRO:HG2	1.98	0.45
1:C:115:VAL:HA	1:C:135:PHE:O	2.16	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:123:PRO:HG3	2:D:221:LYS:CG	2.46	0.45
1:C:14:SER:HA	1:C:107:LYS:HB2	1.98	0.45
1:C:49:TYR:CB	2:D:100:ALA:HB2	2.46	0.45
2:D:138:VAL:HG11	2:D:199:TRP:CE3	2.52	0.45
1:C:196:ALA:HB3	1:C:205:ILE:HB	1.98	0.45
2:D:114:ALA:HB3	2:D:148:PHE:CE2	2.52	0.45
2:D:144:VAL:HG23	2:D:144:VAL:O	2.17	0.45
2:B:66:ARG:HB3	2:B:82(A):SER:O	2.17	0.44
1:A:45:LYS:NZ	1:A:55:PHE:HD2	2.07	0.44
1:A:211:ARG:HG2	1:A:211:ARG:NH1	2.27	0.44
2:B:30:SER:O	2:B:52(A):SER:HB3	2.17	0.44
1:C:32:TYR:O	1:C:90:GLN:HA	2.16	0.44
2:B:1:GLU:N	2:B:1:GLU:CD	2.71	0.44
2:B:123:PRO:HG3	2:B:221:LYS:CG	2.47	0.44
1:C:18:GLN:HG3	1:C:75:ILE:O	2.18	0.44
2:B:6:GLU:HG3	2:B:92:CYS:SG	2.58	0.44
2:B:114:ALA:HB3	2:B:148:PHE:CE2	2.53	0.44
1:A:48:ILE:HA	1:A:53:ASN:O	2.18	0.44
2:D:84:SER:HA	2:D:111:VAL:HB	2.00	0.44
1:A:12:SER:HA	1:A:105:GLU:HB2	2.00	0.44
1:C:211:ARG:HG2	1:C:211:ARG:NH1	2.26	0.43
1:A:47:LEU:HA	1:A:58:VAL:HG21	1.99	0.43
2:B:19:LYS:HE3	2:B:79:TYR:CD1	2.53	0.43
1:A:37:LEU:HD13	1:A:86:TYR:CZ	2.54	0.43
1:C:162:SER:O	1:C:175:MET:HA	2.19	0.43
1:A:46:LEU:HD21	2:B:100:ALA:CB	2.49	0.43
1:A:96:ARG:HD2	1:A:96:ARG:H	1.83	0.43
1:C:211:ARG:HH11	1:C:211:ARG:CG	2.28	0.43
1:A:147:LYS:NZ	1:A:156:GLN:O	2.52	0.42
1:A:162:SER:O	1:A:175:MET:HA	2.19	0.42
1:C:169:LYS:HZ2	1:C:169:LYS:HB2	1.84	0.42
2:D:212:HIS:HB3	2:D:217:THR:HB	2.01	0.42
2:B:42:GLU:O	2:B:44:ARG:NH1	2.52	0.42
1:C:147:LYS:NZ	1:C:156:GLN:O	2.52	0.42
2:D:140:LEU:HD11	2:D:199:TRP:CG	2.53	0.42
2:B:212:HIS:HB3	2:B:217:THR:HB	2.00	0.42
1:C:43:SER:HB3	2:D:91:TYR:CE1	2.55	0.42
2:D:4:LEU:HB2	2:D:104:GLY:HA2	2.01	0.42
2:D:59:TYR:HB3	2:D:63:VAL:HG23	2.01	0.42
2:B:6:GLU:OE1	2:B:104:GLY:HA3	2.19	0.42
1:A:169:LYS:HB2	1:A:169:LYS:NZ	2.35	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:70:SER:O	2:B:78:LEU:HD12	2.20	0.42
2:B:140:LEU:HD11	2:B:199:TRP:CG	2.54	0.42
2:D:29:PHE:HE1	2:D:34:MET:HG3	1.85	0.42
2:D:33:THR:HG23	2:D:51:ILE:O	2.20	0.42
1:C:49:TYR:HB2	2:D:100:ALA:HB2	2.02	0.41
1:A:5:THR:OG1	1:A:24:ARG:HG2	2.20	0.41
1:A:36:TYR:O	1:A:86:TYR:HA	2.20	0.41
1:A:63:SER:OG	1:A:74:LYS:HD3	2.20	0.41
2:D:199:TRP:CZ2	2:D:227:PRO:HG3	2.55	0.41
2:B:67:PHE:HA	2:B:81:GLN:O	2.20	0.41
1:C:2:VAL:HG13	1:C:27:GLN:H	1.86	0.41
2:D:154:LEU:HA	2:D:209:ASN:O	2.21	0.41
1:A:20:SER:HA	1:A:73:LEU:O	2.21	0.41
2:B:154:LEU:HA	2:B:209:ASN:O	2.21	0.41
1:C:169:LYS:HB2	1:C:169:LYS:NZ	2.35	0.41
2:D:38:ARG:HA	2:D:89:LEU:O	2.21	0.41
1:A:148:TRP:HD1	1:A:159:VAL:HG11	1.85	0.41
2:B:218:LYS:HZ3	2:B:220:ASP:CG	2.24	0.41
1:C:148:TRP:HD1	1:C:159:VAL:HG11	1.85	0.41
2:D:6:GLU:CD	2:D:106:GLY:H	2.24	0.41
2:B:6:GLU:HA	2:B:21:SER:O	2.20	0.41
1:C:27(B):ILE:HD11	1:C:71:PHE:CE1	2.55	0.41
1:C:53:ASN:ND2	1:C:53:ASN:H	2.18	0.41
2:B:29:PHE:CD2	2:B:76:ASN:HA	2.56	0.41
2:D:6:GLU:OE2	2:D:91:TYR:HA	2.21	0.41
1:C:33:LEU:HD22	1:C:33:LEU:HA	1.91	0.40
1:A:21:ILE:O	1:A:72:THR:HG23	2.21	0.40
2:D:122:TYR:HA	2:D:123:PRO:HD3	1.84	0.40
1:A:96:ARG:HD2	1:A:96:ARG:N	2.36	0.40
2:B:1:GLU:O	2:B:26:GLY:HA3	2.21	0.40
2:B:82:MET:HE2	2:B:82(C):LEU:HD21	2.03	0.40
2:D:28:THR:O	2:D:32:TYR:HD2	2.05	0.40
1:A:90:GLN:OE1	1:A:93:HIS:N	2.55	0.40
2:B:29:PHE:CE1	2:B:34:MET:HG3	2.56	0.40
2:D:83:ARG:O	2:D:111:VAL:HG21	2.21	0.40

There are no symmetry-related clashes.

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	210/214 (98%)	189 (90%)	18 (9%)	3 (1%)	11	34
1	C	210/214 (98%)	192 (91%)	14 (7%)	4 (2%)	8	26
2	B	216/218 (99%)	199 (92%)	14 (6%)	3 (1%)	11	34
2	D	216/218 (99%)	195 (90%)	18 (8%)	3 (1%)	11	34
All	All	852/864 (99%)	775 (91%)	64 (8%)	13 (2%)	10	33

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	168	SER
2	D	168	SER
1	A	29	GLY
1	A	154	GLU
1	A	211	ARG
1	C	30	ASN
1	C	154	GLU
1	C	211	ARG
2	B	151	PRO
2	D	151	PRO
2	D	52	SER
2	B	55	GLY
1	C	51	ILE

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	190/190 (100%)	179 (94%)	11 (6%)	20	50
1	C	190/190 (100%)	178 (94%)	12 (6%)	18	46
2	B	185/185 (100%)	178 (96%)	7 (4%)	33	67
2	D	185/185 (100%)	178 (96%)	7 (4%)	33	67
All	All	750/750 (100%)	713 (95%)	37 (5%)	25	57

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	LEU
1	A	24	ARG
1	A	34	GLU
1	A	96	ARG
1	A	147	LYS
1	A	181	LEU
1	A	187	GLU
1	A	197	THR
1	A	211	ARG
1	A	213	GLU
1	A	214	CYS
2	B	5	VAL
2	B	71	ARG
2	B	96	TYR
2	B	127	VAL
2	B	179	GLN
2	B	221	LYS
2	B	226	GLU
1	C	1	ASP
1	C	3	LEU
1	C	24	ARG
1	C	63	SER
1	C	69	THR
1	C	147	LYS
1	C	181	LEU
1	C	187	GLU
1	C	197	THR
1	C	211	ARG
1	C	213	GLU
1	C	214	CYS
2	D	20	LEU
2	D	96	TYR
2	D	98	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	D	127	VAL
2	D	179	GLN
2	D	221	LYS
2	D	226	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	53	ASN
1	A	93	HIS
1	C	38	GLN
1	C	53	ASN
2	D	39	GLN
2	D	77	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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	1
1	C	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	197:THR	C	203:SER	N	7.71
1	C	197:THR	C	203:SER	N	7.71

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates ⓘ

EDS was not executed - this section is therefore empty.

6.4 Ligands ⓘ

EDS was not executed - this section is therefore empty.

6.5 Other polymers ⓘ

EDS was not executed - this section is therefore empty.