



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 02:22 PM UTC

PDB ID : 3QIB / pdb_00003qib
Title : Crystal structure of the 2B4 TCR in complex with MCC/I-Ek
Authors : Ely, L.K.; Newell, E.W.; Davis, M.M.; Garcia, K.C.
Deposited on : 2011-01-26
Resolution : 2.70 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 : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

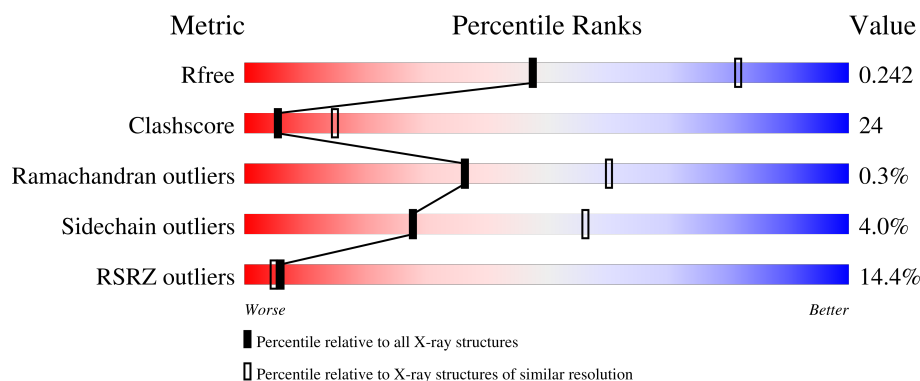
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 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}	180053	3538 (2.70-2.70)
Clashscore	190562	3843 (2.70-2.70)
Ramachandran outliers	187476	3778 (2.70-2.70)
Sidechain outliers	187428	3778 (2.70-2.70)
RSRZ outliers	180081	3538 (2.70-2.70)

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 $\leq 5\%$. 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	193	24% 54% 37% 7%
2	B	202	18% 47% 33% 18%
3	C	207	11% 68% 22% 6%
4	D	270	3% 62% 26% 10%
5	P	13	8% 69% 31%

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
6	NAG	B	201	-	-	X	-
8	PEG	C	208	-	-	X	-

2 Entry composition

There are 10 unique types of molecules in this entry. The entry contains 6465 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 H-2 class II histocompatibility antigen, E-K alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	180	Total	C	N	O	S	0	0	0
			1440	932	237	267	4			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	192	SER	-	expression tag	UNP P04224
A	193	ARG	-	expression tag	UNP P04224

- Molecule 2 is a protein called MHC class II E-beta-k.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	165	Total	C	N	O	S	0	0	0
			1328	844	230	248	6			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-3	GLY	-	expression tag	UNP Q31163
B	-2	SER	-	expression tag	UNP Q31163
B	-1	GLY	-	expression tag	UNP Q31163
B	0	GLY	-	expression tag	UNP Q31163
B	1	GLY	-	expression tag	UNP Q31163
B	2	GLY	-	expression tag	UNP Q31163

- Molecule 3 is a protein called T-cell receptor alpha chain C region.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	194	Total	C	N	O	S	0	0	0
			1472	916	251	297	8			

- Molecule 4 is a protein called 2B4 beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	242	Total	C	N	O	S	0	0	0
			1914	1212	331	362	9			

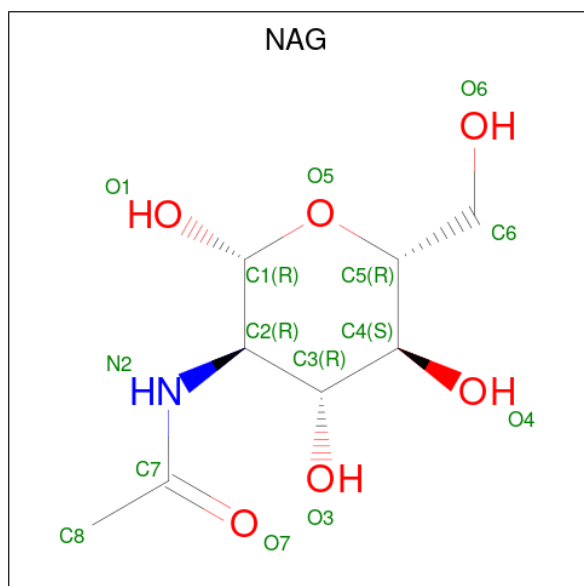
- Molecule 5 is a protein called MCC peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	P	13	Total	C	N	O	0	0	0
			97	63	16	18			

There is a discrepancy between the modelled and reference sequences:

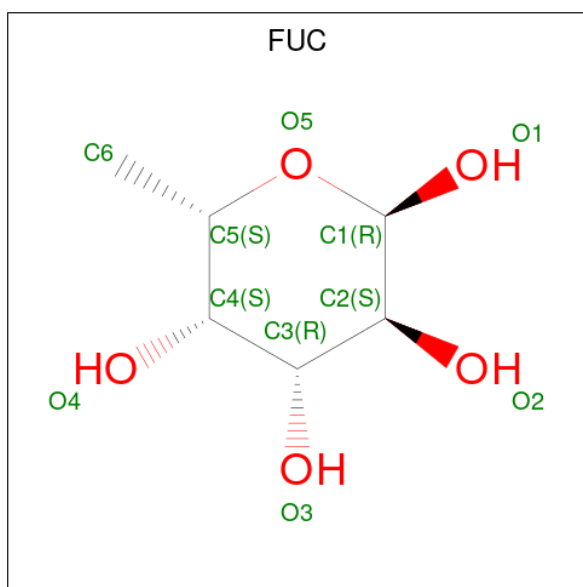
Chain	Residue	Modelled	Actual	Comment	Reference
P	14	GLY	-	expression tag	UNP P00039

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	B	1	Total	C	N	O	0	0
			14	8	1	5		
6	C	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 7 is alpha-L-fucopyranose (CCD ID: FUC) (formula: $C_6H_{12}O_5$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	B	1	Total	C	O	0	0
			10	6	4		
7	C	1	Total	C	O	0	0
			10	6	4		

- Molecule 8 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).



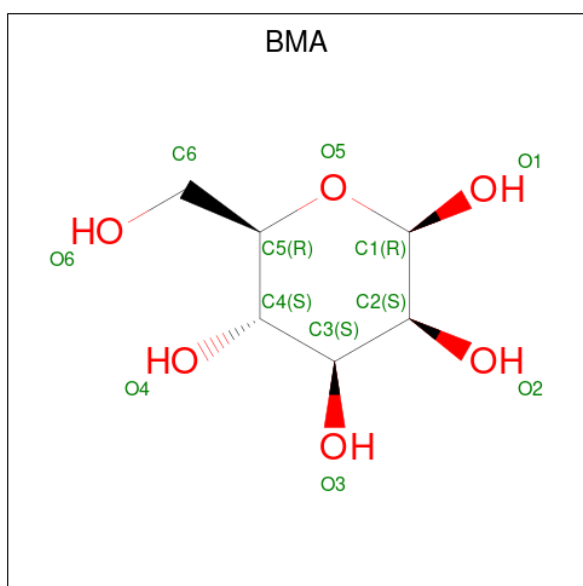
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	B	1	Total	C	O	0	0
			7	4	3		
8	C	1	Total	C	O	0	0
			7	4	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	C	1	Total	C	O	0	0
			7	4	3		
8	C	1	Total	C	O	0	0
			7	4	3		
8	D	1	Total	C	O	0	0
			7	4	3		
8	D	1	Total	C	O	0	0
			7	4	3		
8	D	1	Total	C	O	0	0
			7	4	3		

- Molecule 9 is beta-D-mannopyranose (CCD ID: BMA) (formula: $C_6H_{12}O_6$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	C	1	Total	C	O	0	0
			11	6	5		

- Molecule 10 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
10	A	12	Total	O	0	0
			12	12		
10	B	17	Total	O	0	0
			17	17		
10	C	45	Total	O	0	0
			45	45		

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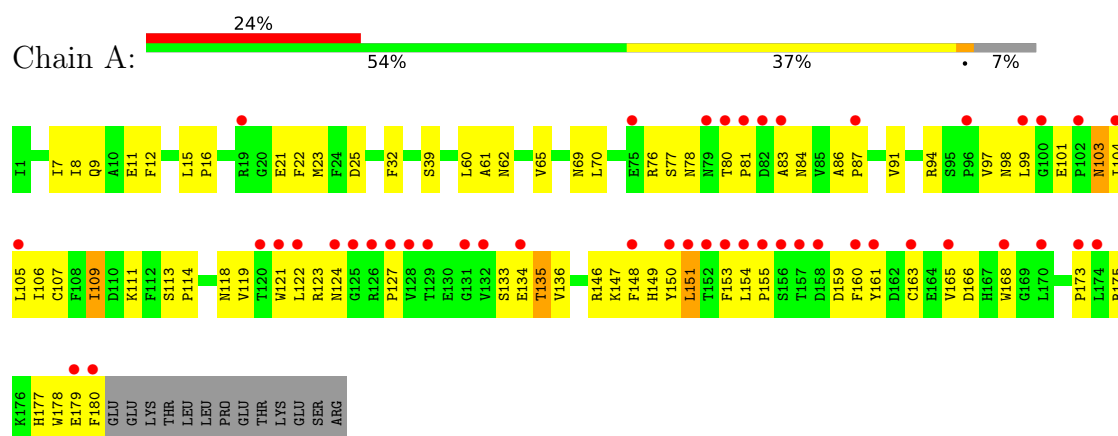
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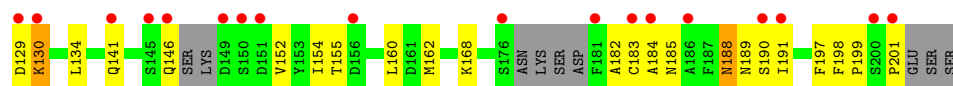
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
10	D	31	Total	O	0	0
			31	31		
10	P	1	Total	O	0	0
			1	1		

3 Residue-property plots

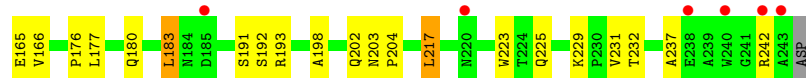
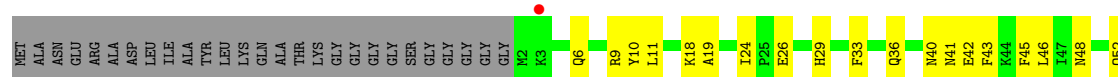
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: H-2 class II histocompatibility antigen, E-K alpha chain





● Molecule 4: 2B4 beta chain



● Molecule 5: MCC peptide



4 Data and refinement statistics

Property	Value	Source
Space group	F 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	146.75Å 167.18Å 259.49Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.97 – 2.70 34.97 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.4 (34.97-2.70) 99.3 (34.97-2.70)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.52 (at 2.68Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.6.2_432)	Depositor
R, R_{free}	0.221 , 0.246 0.218 , 0.242	Depositor DCC
R_{free} test set	2213 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å ²)	47.3	Xtriage
Anisotropy	0.218	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 51.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	6465	wwPDB-VP
Average B, all atoms (Å ²)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.11% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: FUC, PEG, BMA, NAG

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	0.52	0/1483	0.87	3/2021 (0.1%)
2	B	0.59	1/1361 (0.1%)	0.91	2/1855 (0.1%)
3	C	0.68	0/1499	0.95	1/2033 (0.0%)
4	D	0.65	0/1966	0.91	4/2679 (0.1%)
5	P	0.63	0/97	0.78	0/129
All	All	0.62	1/6406 (0.0%)	0.91	10/8717 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	91	VAL	CA-CB	5.11	1.57	1.53

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	54	VAL	CB-CA-C	-7.34	102.49	111.08
1	A	86	ALA	CA-C-N	6.54	126.90	119.83
1	A	86	ALA	C-N-CA	6.54	126.90	119.83
4	D	24	ILE	CA-C-N	6.17	127.55	119.84
4	D	24	ILE	C-N-CA	6.17	127.55	119.84
2	B	33	ASN	CB-CA-C	-5.79	109.35	117.23
1	A	111	LYS	N-CA-C	5.64	118.97	111.30
4	D	101	ASP	N-CA-C	5.61	119.38	112.54
2	B	61	TRP	N-CA-C	5.15	116.97	111.36
3	C	17	GLY	N-CA-C	5.11	118.56	111.10

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	1440	0	1349	95	0
2	B	1328	0	1225	85	0
3	C	1472	0	1377	66	0
4	D	1914	0	1804	75	0
5	P	97	0	104	6	0
6	B	14	0	13	8	0
6	C	14	0	13	0	0
7	B	10	0	10	2	0
7	C	10	0	10	4	0
8	B	7	0	10	0	0
8	C	21	0	30	8	0
8	D	21	0	30	1	0
9	C	11	0	10	0	0
10	A	12	0	0	0	0
10	B	17	0	0	0	0
10	C	45	0	0	2	0
10	D	31	0	0	1	0
10	P	1	0	0	0	0
All	All	6465	0	5985	293	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 24.

All (293) 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:B:19:ASN:HD21	6:B:201:NAG:C1	1.61	1.11
2:B:19:ASN:HD21	6:B:201:NAG:C2	1.69	1.06
3:C:188:ASN:HD22	3:C:190:SER:H	1.11	0.98
3:C:113:GLN:HG3	7:C:206:FUC:O3	1.66	0.96
4:D:48:ASN:HD22	4:D:56:GLN:HB2	1.29	0.95
2:B:4:ARG:CG	2:B:4:ARG:HH11	1.83	0.91
3:C:113:GLN:CG	7:C:206:FUC:O3	2.22	0.87
1:A:114:PRO:HG3	2:B:6:TRP:CD2	2.08	0.87
2:B:19:ASN:ND2	6:B:201:NAG:C1	2.37	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:105:LEU:HB3	1:A:151:LEU:CD1	2.05	0.86
4:D:100:GLN:HE22	4:D:102:THR:HG22	1.40	0.86
3:C:190:SER:HA	3:C:191:ILE:HG12	1.58	0.85
2:B:129:VAL:HG11	2:B:159:VAL:HG21	1.58	0.84
1:A:16:PRO:HD2	2:B:4:ARG:HH22	1.42	0.84
2:B:57:ASP:OD2	5:P:13:LYS:HE2	1.77	0.83
3:C:188:ASN:ND2	3:C:190:SER:H	1.75	0.83
1:A:168:TRP:CZ3	2:B:4:ARG:HD3	2.14	0.83
4:D:100:GLN:NE2	4:D:102:THR:HG22	1.94	0.82
1:A:105:LEU:HB3	1:A:151:LEU:HD11	1.61	0.82
1:A:105:LEU:HD12	1:A:121:TRP:CZ3	2.15	0.81
3:C:182:ALA:H	3:C:185:ASN:ND2	1.78	0.80
4:D:153:ASP:HB2	4:D:176:PRO:HG2	1.63	0.78
2:B:102:TYR:CZ	2:B:116:VAL:HG11	2.19	0.77
4:D:65:PHE:CE1	4:D:79:ILE:HG12	2.21	0.76
2:B:99:VAL:HA	2:B:118:SER:O	1.84	0.76
3:C:162:MET:HE1	4:D:140:LYS:HD3	1.68	0.76
4:D:134:GLU:OE2	4:D:142:THR:HG22	1.85	0.76
1:A:105:LEU:HD12	1:A:151:LEU:HD11	1.68	0.75
1:A:16:PRO:HD2	2:B:4:ARG:NH2	2.02	0.74
2:B:19:ASN:HD21	6:B:201:NAG:H2	1.50	0.74
1:A:118:ASN:HB2	1:A:166:ASP:HB3	1.70	0.73
2:B:4:ARG:HH11	2:B:4:ARG:HG2	1.51	0.73
3:C:23:ASN:HB3	8:C:209:PEG:H31	1.69	0.73
3:C:182:ALA:O	3:C:185:ASN:ND2	2.21	0.73
4:D:176:PRO:HD3	8:D:246:PEG:H32	1.70	0.73
2:B:19:ASN:ND2	6:B:201:NAG:C2	2.50	0.73
4:D:134:GLU:CD	4:D:142:THR:HG22	2.14	0.72
1:A:121:TRP:CZ2	1:A:151:LEU:HD12	2.26	0.71
1:A:151:LEU:HD13	1:A:151:LEU:H	1.55	0.70
1:A:104:ILE:C	1:A:153:PHE:HE1	1.99	0.70
8:C:208:PEG:H12	4:D:41:ASN:O	1.92	0.70
1:A:103:ASN:HB3	1:A:153:PHE:CZ	2.27	0.70
3:C:97:LYS:HD2	4:D:45:PHE:HB3	1.73	0.70
3:C:130:LYS:HB3	3:C:130:LYS:HZ2	1.56	0.69
1:A:121:TRP:CH2	1:A:151:LEU:HD12	2.28	0.69
1:A:99:LEU:HA	1:A:155:PRO:HB2	1.74	0.68
1:A:107:CYS:HB2	1:A:121:TRP:CH2	2.28	0.68
2:B:4:ARG:HH11	2:B:4:ARG:HG3	1.56	0.68
4:D:198:ALA:O	4:D:202:GLN:HG3	1.93	0.67
2:B:102:TYR:O	2:B:116:VAL:HB	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:100:GLN:CD	4:D:102:THR:HG22	2.19	0.66
1:A:160:PHE:HD2	1:A:177:HIS:HE1	1.44	0.66
1:A:61:ALA:O	1:A:65:VAL:HG23	1.95	0.65
4:D:100:GLN:OE1	4:D:102:THR:HG22	1.97	0.65
2:B:101:VAL:HG13	2:B:116:VAL:O	1.96	0.65
4:D:127:VAL:HG23	4:D:237:ALA:HB3	1.78	0.65
1:A:119:VAL:HG22	1:A:165:VAL:HG22	1.79	0.64
4:D:150:PHE:HE1	4:D:153:ASP:HA	1.62	0.64
3:C:190:SER:HA	3:C:191:ILE:CG1	2.28	0.64
4:D:26:GLU:HB2	4:D:29:HIS:CE1	2.34	0.63
2:B:129:VAL:CG1	2:B:159:VAL:HG21	2.26	0.63
2:B:32:TYR:CD2	2:B:53:LEU:HD21	2.33	0.63
1:A:151:LEU:CD1	1:A:151:LEU:H	2.11	0.63
1:A:105:LEU:HB2	1:A:153:PHE:CD1	2.34	0.63
4:D:116:ASP:OD1	4:D:118:LYS:HG2	1.99	0.62
2:B:4:ARG:HG2	2:B:4:ARG:NH1	2.15	0.62
4:D:117:LEU:HD13	4:D:217:LEU:HD22	1.81	0.62
3:C:188:ASN:HD22	3:C:188:ASN:C	2.09	0.61
3:C:127:SER:HB2	3:C:129:ASP:OD1	2.01	0.61
4:D:183:LEU:N	4:D:183:LEU:HD23	2.15	0.61
2:B:80:ARG:HD2	3:C:65:LYS:HD3	1.82	0.61
4:D:26:GLU:HB2	4:D:29:HIS:ND1	2.16	0.61
3:C:127:SER:CB	3:C:129:ASP:OD1	2.48	0.61
4:D:61:THR:HG23	4:D:65:PHE:HB2	1.83	0.61
1:A:104:ILE:C	1:A:153:PHE:CE1	2.79	0.60
2:B:66:GLU:OE2	4:D:102:THR:HG21	2.01	0.60
3:C:122:LEU:HB3	4:D:129:GLU:O	2.02	0.60
1:A:124:ASN:HA	1:A:160:PHE:CE1	2.36	0.60
3:C:98:LEU:HD23	4:D:103:GLN:CD	2.27	0.60
1:A:109:ILE:N	1:A:109:ILE:HD12	2.16	0.60
2:B:100:THR:O	2:B:118:SER:HB3	2.03	0.59
1:A:91:VAL:HG13	1:A:105:LEU:HD11	1.83	0.59
2:B:19:ASN:ND2	6:B:201:NAG:H2	2.15	0.59
1:A:105:LEU:HB3	1:A:151:LEU:HD13	1.82	0.59
1:A:91:VAL:CG1	1:A:105:LEU:HD11	2.33	0.59
3:C:188:ASN:ND2	3:C:190:SER:N	2.49	0.58
8:C:208:PEG:H12	4:D:42:GLU:HA	1.85	0.58
4:D:36:GLN:HG3	4:D:46:LEU:HD11	1.84	0.58
2:B:67:PHE:CE1	2:B:71:LYS:HD3	2.38	0.57
3:C:10:LEU:HD22	3:C:12:LEU:HD13	1.86	0.57
4:D:6:GLN:HB2	4:D:107:PRO:HD2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:61:THR:CG2	4:D:65:PHE:HB2	2.34	0.57
1:A:122:LEU:HD23	1:A:127:PRO:HA	1.86	0.57
1:A:134:GLU:HG2	1:A:147:LYS:HZ1	1.69	0.57
4:D:59:ASP:OD2	4:D:63:LYS:HE3	2.04	0.57
4:D:202:GLN:HA	4:D:242:ARG:O	2.04	0.57
4:D:223:TRP:HB2	4:D:229:LYS:HD2	1.87	0.57
4:D:48:ASN:ND2	4:D:56:GLN:HB2	2.10	0.57
1:A:151:LEU:CD1	1:A:151:LEU:N	2.68	0.57
2:B:76:ASP:OD2	2:B:80:ARG:HD3	2.04	0.57
1:A:133:SER:HB2	1:A:150:TYR:HB2	1.86	0.57
3:C:106:LEU:HD12	3:C:107:SER:N	2.20	0.57
1:A:21:GLU:OE1	1:A:136:VAL:HB	2.04	0.57
1:A:84:ASN:ND2	1:A:168:TRP:HB2	2.20	0.57
1:A:114:PRO:HG3	2:B:6:TRP:CE3	2.39	0.56
2:B:127:ILE:CD1	2:B:177:HIS:HB2	2.35	0.56
4:D:134:GLU:OE1	4:D:142:THR:HG22	2.05	0.56
1:A:109:ILE:HD12	1:A:109:ILE:H	1.69	0.56
2:B:9:GLU:OE2	5:P:13:LYS:NZ	2.38	0.55
1:A:84:ASN:HD22	1:A:168:TRP:HB2	1.71	0.55
3:C:29:ARG:NH2	5:P:7:TYR:O	2.39	0.55
2:B:129:VAL:HG11	2:B:159:VAL:CG2	2.32	0.55
4:D:100:GLN:OE1	4:D:102:THR:CG2	2.55	0.55
4:D:132:GLU:OE1	4:D:132:GLU:HA	2.06	0.55
1:A:168:TRP:CH2	2:B:4:ARG:HD3	2.42	0.55
3:C:78:LEU:H	3:C:78:LEU:CD1	2.20	0.55
1:A:163:CYS:O	1:A:175:ARG:HA	2.07	0.54
3:C:182:ALA:H	3:C:185:ASN:HD21	1.55	0.54
3:C:130:LYS:HB3	3:C:130:LYS:NZ	2.19	0.54
3:C:78:LEU:HD12	3:C:78:LEU:N	2.21	0.54
1:A:160:PHE:HD2	1:A:177:HIS:CE1	2.24	0.54
2:B:18:TYR:CD2	2:B:23:ARG:HG3	2.43	0.54
2:B:97:PRO:HB3	2:B:122:PHE:HB3	1.90	0.54
1:A:83:ALA:O	2:B:34:LEU:HD11	2.08	0.53
3:C:44:ASN:ND2	10:C:214:HOH:O	2.42	0.53
3:C:39:ARG:NH1	3:C:39:ARG:HG2	2.24	0.53
3:C:78:LEU:H	3:C:78:LEU:HD12	1.73	0.53
4:D:18:LYS:HG2	4:D:80:GLN:O	2.08	0.53
8:C:208:PEG:H41	4:D:43:PHE:O	2.09	0.53
4:D:9:ARG:HG2	4:D:10:TYR:CE1	2.44	0.53
1:A:12:PHE:CE2	1:A:21:GLU:HB3	2.43	0.53
3:C:97:LYS:HD2	4:D:45:PHE:CB	2.37	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:84:ASN:ND2	1:A:168:TRP:CB	2.73	0.52
2:B:142:ILE:HD11	2:B:161:LEU:HD13	1.91	0.52
3:C:184:ALA:HA	3:C:198:PHE:CE2	2.44	0.52
3:C:199:PRO:O	3:C:201:PRO:HD3	2.09	0.52
4:D:10:TYR:CE2	4:D:110:ARG:HD2	2.44	0.52
4:D:223:TRP:CG	4:D:229:LYS:HG3	2.45	0.52
1:A:94:ARG:HD3	1:A:104:ILE:HD13	1.91	0.52
1:A:106:ILE:HG12	1:A:150:TYR:CD1	2.45	0.52
4:D:192:SER:C	4:D:193:ARG:HD3	2.35	0.52
8:C:208:PEG:C1	4:D:41:ASN:O	2.57	0.51
1:A:97:VAL:HG21	1:A:178:TRP:HZ2	1.74	0.51
1:A:180:PHE:C	1:A:180:PHE:CD2	2.89	0.51
2:B:180:LEU:HD13	2:B:184:VAL:HG23	1.93	0.51
3:C:197:PHE:CE2	3:C:199:PRO:HG3	2.45	0.51
3:C:10:LEU:CD2	3:C:12:LEU:HD13	2.40	0.51
3:C:190:SER:N	3:C:191:ILE:HA	2.25	0.51
2:B:30:TYR:HB2	2:B:38:LEU:HB3	1.93	0.51
8:C:208:PEG:H32	4:D:43:PHE:HB2	1.90	0.51
1:A:32:PHE:CD1	1:A:32:PHE:C	2.88	0.51
1:A:84:ASN:HD22	1:A:168:TRP:CB	2.23	0.51
2:B:131:TRP:CZ3	2:B:173:CYS:HB3	2.46	0.51
2:B:74:GLU:HA	2:B:77:THR:OG1	2.11	0.51
1:A:179:GLU:O	1:A:180:PHE:C	2.54	0.50
2:B:63:SER:O	2:B:65:PRO:HD3	2.11	0.50
1:A:168:TRP:CE3	2:B:4:ARG:HD3	2.47	0.50
1:A:121:TRP:CH2	1:A:151:LEU:CD1	2.94	0.50
2:B:96:GLU:OE1	2:B:180:LEU:HD21	2.11	0.50
2:B:20:GLY:HA3	7:B:203:FUC:O4	2.11	0.50
3:C:39:ARG:HG2	3:C:39:ARG:HH11	1.76	0.50
2:B:102:TYR:CE1	2:B:116:VAL:HG11	2.46	0.49
1:A:151:LEU:HD22	1:A:151:LEU:O	2.11	0.49
3:C:134:LEU:HD21	4:D:142:THR:HG21	1.93	0.49
4:D:11:LEU:O	4:D:111:LEU:HD12	2.12	0.49
2:B:40:PHE:HB2	2:B:47:PHE:CE2	2.48	0.49
2:B:31:PHE:N	2:B:31:PHE:CD1	2.80	0.49
3:C:99:THR:HG23	8:C:208:PEG:O4	2.13	0.49
2:B:127:ILE:HD11	2:B:175:VAL:CG1	2.42	0.49
1:A:7:ILE:HD13	2:B:86:PHE:CD2	2.48	0.49
2:B:142:ILE:CD1	2:B:161:LEU:HD13	2.42	0.49
4:D:19:ALA:O	4:D:78:GLU:HA	2.13	0.49
2:B:161:LEU:HD12	2:B:162:GLU:H	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:188:ASN:ND2	3:C:190:SER:HB2	2.27	0.49
4:D:9:ARG:HG2	4:D:10:TYR:CD1	2.47	0.49
1:A:11:GLU:HA	1:A:21:GLU:O	2.14	0.48
1:A:87:PRO:HB3	1:A:109:ILE:CG2	2.43	0.48
1:A:39:SER:HB2	1:A:60:LEU:HD11	1.95	0.48
3:C:134:LEU:CD2	4:D:142:THR:HG21	2.44	0.48
2:B:145:THR:HG23	2:B:158:LEU:HB2	1.95	0.48
1:A:103:ASN:HB3	1:A:153:PHE:CE2	2.49	0.48
2:B:161:LEU:HD11	2:B:163:THR:HG23	1.95	0.48
2:B:20:GLY:HA2	2:B:83:TYR:CZ	2.49	0.48
3:C:182:ALA:N	3:C:185:ASN:ND2	2.55	0.48
2:B:4:ARG:CG	2:B:4:ARG:NH1	2.53	0.47
3:C:127:SER:OG	3:C:129:ASP:OD1	2.28	0.47
4:D:48:ASN:HD22	4:D:56:GLN:CB	2.15	0.47
1:A:135:THR:HB	1:A:148:PHE:O	2.15	0.47
1:A:154:LEU:HD22	1:A:155:PRO:HD2	1.95	0.47
3:C:188:ASN:HD21	3:C:190:SER:HB2	1.80	0.47
4:D:52:GLN:NE2	4:D:71:SER:HB3	2.30	0.47
4:D:177:LEU:HD12	4:D:177:LEU:C	2.40	0.47
1:A:97:VAL:HG21	1:A:178:TRP:CZ2	2.50	0.47
3:C:113:GLN:HG2	7:C:206:FUC:O3	2.13	0.47
4:D:48:ASN:ND2	4:D:56:GLN:OE1	2.47	0.47
4:D:231:VAL:O	4:D:232:THR:C	2.56	0.47
1:A:105:LEU:CD1	1:A:151:LEU:HD11	2.42	0.47
1:A:69:ASN:HB3	5:P:13:LYS:HD2	1.96	0.47
2:B:102:TYR:CE1	2:B:116:VAL:HG21	2.50	0.47
2:B:102:TYR:CE2	2:B:116:VAL:HG11	2.49	0.47
4:D:52:GLN:HA	4:D:69:CYS:O	2.14	0.47
1:A:114:PRO:HG3	2:B:6:TRP:CE2	2.50	0.46
2:B:117:CYS:HB2	2:B:131:TRP:CZ2	2.50	0.46
2:B:131:TRP:CE3	2:B:173:CYS:HB3	2.50	0.46
2:B:145:THR:CG2	2:B:158:LEU:HB2	2.45	0.46
4:D:117:LEU:HD13	4:D:217:LEU:CD2	2.44	0.46
2:B:177:HIS:CD2	2:B:178:PRO:HD2	2.51	0.46
4:D:127:VAL:HG23	4:D:237:ALA:CB	2.43	0.46
1:A:7:ILE:CD1	2:B:86:PHE:HD2	2.28	0.46
2:B:19:ASN:CG	6:B:201:NAG:C1	2.88	0.46
2:B:99:VAL:HG21	2:B:175:VAL:HG21	1.98	0.46
1:A:119:VAL:HG11	1:A:149:HIS:CD2	2.51	0.45
2:B:127:ILE:HD12	2:B:176:GLU:O	2.16	0.45
2:B:161:LEU:HD12	2:B:162:GLU:N	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:52:GLN:CD	4:D:71:SER:HB3	2.42	0.45
4:D:116:ASP:CG	4:D:118:LYS:HG2	2.41	0.45
3:C:197:PHE:HE2	3:C:199:PRO:HG3	1.81	0.45
4:D:116:ASP:OD1	4:D:118:LYS:CG	2.64	0.45
1:A:91:VAL:HG13	1:A:105:LEU:CD1	2.46	0.45
3:C:155:THR:HG21	4:D:191:SER:OG	2.16	0.45
3:C:78:LEU:CD1	3:C:78:LEU:N	2.80	0.45
4:D:160:TRP:CZ3	4:D:165:GLU:HB2	2.52	0.45
1:A:154:LEU:HD13	1:A:154:LEU:C	2.41	0.45
3:C:6:SER:HB2	3:C:7:PRO:HA	1.97	0.45
3:C:89:LEU:HD22	3:C:90:ARG:O	2.17	0.45
1:A:105:LEU:HD12	1:A:121:TRP:CH2	2.51	0.45
2:B:48:ARG:HA	2:B:48:ARG:HD3	1.83	0.45
1:A:104:ILE:HD12	1:A:104:ILE:N	2.32	0.45
2:B:55:ARG:N	2:B:56:PRO:CD	2.80	0.44
1:A:76:ARG:HD3	2:B:56:PRO:HG2	1.98	0.44
1:A:9:GLN:OE1	5:P:7:TYR:HB2	2.17	0.44
4:D:80:GLN:OE1	4:D:80:GLN:HA	2.16	0.44
1:A:103:ASN:ND2	1:A:104:ILE:H	2.14	0.44
1:A:123:ARG:HG3	1:A:161:TYR:CE2	2.52	0.44
1:A:23:MET:HE1	1:A:25:ASP:HB3	1.99	0.44
1:A:124:ASN:HA	1:A:160:PHE:CZ	2.53	0.44
4:D:93:ALA:HA	4:D:104:TYR:O	2.18	0.44
1:A:98:ASN:O	1:A:155:PRO:HG2	2.17	0.44
4:D:193:ARG:HD3	4:D:193:ARG:N	2.33	0.44
5:P:10:GLN:HE21	5:P:11:ALA:H	1.65	0.44
1:A:160:PHE:CD2	1:A:177:HIS:HE1	2.29	0.44
3:C:189:ASN:C	3:C:191:ILE:HA	2.43	0.44
4:D:61:THR:HG23	4:D:65:PHE:CB	2.46	0.44
1:A:121:TRP:CZ3	1:A:151:LEU:CD1	3.02	0.43
1:A:113:SER:HB3	2:B:34:LEU:CD2	2.48	0.43
2:B:22:GLN:HG2	7:B:203:FUC:H63	2.00	0.43
1:A:101:GLU:O	1:A:155:PRO:CD	2.66	0.43
2:B:35:GLU:OE2	2:B:51:THR:HG21	2.18	0.43
3:C:75:ASP:O	3:C:75:ASP:CG	2.62	0.43
1:A:135:THR:HG22	1:A:136:VAL:O	2.19	0.43
1:A:9:GLN:HB3	2:B:13:SER:HB2	2.00	0.43
2:B:123:TYR:CG	2:B:124:PRO:HA	2.54	0.43
3:C:14:GLU:CD	3:C:78:LEU:HD11	2.44	0.43
3:C:39:ARG:HB3	4:D:9:ARG:HH22	1.83	0.43
1:A:150:TYR:OH	2:B:151:GLY:HA3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:129:VAL:CB	2:B:159:VAL:HG21	2.49	0.43
3:C:47:TYR:CD2	3:C:47:TYR:C	2.97	0.43
3:C:168:LYS:NZ	7:C:206:FUC:H62	2.34	0.43
1:A:23:MET:HE2	1:A:23:MET:HB2	1.86	0.42
1:A:105:LEU:O	1:A:151:LEU:HD13	2.19	0.42
2:B:4:ARG:NH1	2:B:5:PRO:O	2.52	0.42
3:C:160:LEU:HD23	10:C:218:HOH:O	2.18	0.42
3:C:182:ALA:O	3:C:183:CYS:C	2.60	0.42
1:A:70:LEU:HD11	2:B:7:PHE:HB3	2.01	0.42
1:A:105:LEU:CB	1:A:151:LEU:HD11	2.42	0.42
2:B:32:TYR:O	2:B:33:ASN:HB2	2.19	0.42
4:D:40:ASN:O	4:D:41:ASN:HB2	2.18	0.42
3:C:124:ASP:HB3	3:C:127:SER:O	2.20	0.42
1:A:22:PHE:HE2	1:A:62:ASN:HD22	1.68	0.42
1:A:124:ASN:OD1	1:A:159:ASP:HA	2.20	0.42
2:B:96:GLU:CG	2:B:180:LEU:HD21	2.50	0.41
3:C:39:ARG:HH11	3:C:39:ARG:CG	2.33	0.41
3:C:130:LYS:NZ	3:C:130:LYS:CB	2.81	0.41
3:C:87:ALA:HA	3:C:99:THR:O	2.21	0.41
8:C:208:PEG:C1	4:D:43:PHE:HD2	2.33	0.41
3:C:96:ASN:O	4:D:33:PHE:HE1	2.03	0.41
1:A:77:SER:O	1:A:78:ASN:HB3	2.20	0.41
1:A:87:PRO:HB3	1:A:109:ILE:HG23	2.03	0.41
1:A:103:ASN:HD22	1:A:104:ILE:H	1.69	0.41
1:A:107:CYS:HB3	1:A:149:HIS:HB2	2.03	0.41
2:B:19:ASN:OD1	6:B:201:NAG:C1	2.69	0.41
2:B:127:ILE:HD12	2:B:177:HIS:HB2	2.02	0.41
2:B:161:LEU:CD1	2:B:163:THR:HG23	2.50	0.41
2:B:177:HIS:CG	2:B:178:PRO:HD2	2.56	0.41
3:C:122:LEU:N	3:C:122:LEU:HD12	2.36	0.41
3:C:146:GLN:NE2	3:C:154:ILE:O	2.53	0.41
3:C:188:ASN:ND2	3:C:188:ASN:C	2.79	0.41
4:D:118:LYS:CD	4:D:225:GLN:NE2	2.84	0.41
1:A:80:THR:HA	1:A:81:PRO:HD3	1.76	0.40
4:D:203:ASN:HA	4:D:204:PRO:HD3	1.86	0.40
4:D:75:CYS:HB3	10:D:252:HOH:O	2.20	0.40
1:A:15:LEU:HD23	1:A:15:LEU:HA	1.94	0.40
3:C:120:TYR:HB3	4:D:131:SER:OG	2.20	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	178/193 (92%)	169 (95%)	8 (4%)	1 (1%)	21	44
2	B	157/202 (78%)	148 (94%)	8 (5%)	1 (1%)	21	44
3	C	188/207 (91%)	181 (96%)	7 (4%)	0	100	100
4	D	240/270 (89%)	232 (97%)	8 (3%)	0	100	100
5	P	11/13 (85%)	11 (100%)	0	0	100	100
All	All	774/885 (88%)	741 (96%)	31 (4%)	2 (0%)	36	60

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	19	ASN
1	A	173	PRO

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	153/176 (87%)	147 (96%)	6 (4%)	28	57
2	B	143/183 (78%)	141 (99%)	2 (1%)	59	82
3	C	162/182 (89%)	150 (93%)	12 (7%)	13	32
4	D	207/230 (90%)	200 (97%)	7 (3%)	32	62
5	P	9/9 (100%)	9 (100%)	0	100	100
All	All	674/780 (86%)	647 (96%)	27 (4%)	28	56

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	ILE
1	A	103	ASN
1	A	109	ILE
1	A	135	THR
1	A	146	ARG
1	A	151	LEU
2	B	4	ARG
2	B	121	ASP
3	C	10	LEU
3	C	12	LEU
3	C	39	ARG
3	C	45	LEU
3	C	73	ILE
3	C	78	LEU
3	C	89	LEU
3	C	98	LEU
3	C	130	LYS
3	C	141	GLN
3	C	152	VAL
3	C	188	ASN
4	D	80	GLN
4	D	102	THR
4	D	135	ILE
4	D	166	VAL
4	D	180	GLN
4	D	183	LEU
4	D	217	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	79	ASN
1	A	103	ASN
1	A	149	HIS
2	B	19	ASN
3	C	44	ASN
3	C	185	ASN
3	C	188	ASN
4	D	15	GLN
4	D	48	ASN
4	D	225	GLN

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Mol	Chain	Res	Type
5	P	10	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

12 ligands 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	$\# Z > 2$
7	FUC	C	206	-	10,10,11	1.16	0	14,14,16	2.56	5 (35%)
9	BMA	C	207	-	11,11,12	0.96	1 (9%)	15,15,17	2.47	5 (33%)
8	PEG	D	246	-	6,6,6	0.34	0	5,5,5	1.40	1 (20%)
8	PEG	C	209	-	6,6,6	0.39	0	5,5,5	0.62	0
8	PEG	C	210	-	6,6,6	0.33	0	5,5,5	0.70	0
8	PEG	B	199	-	6,6,6	0.45	0	5,5,5	0.93	0
6	NAG	B	201	-	14,14,15	0.84	0	17,19,21	2.98	5 (29%)
7	FUC	B	203	-	10,10,11	1.04	1 (10%)	14,14,16	2.09	3 (21%)
8	PEG	D	245	-	6,6,6	0.42	0	5,5,5	0.76	0
8	PEG	C	208	-	6,6,6	0.48	0	5,5,5	0.51	0
6	NAG	C	205	-	14,14,15	0.79	0	17,19,21	3.51	5 (29%)
8	PEG	D	247	-	6,6,6	0.57	0	5,5,5	0.29	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
7	FUC	C	206	-	-	-	0/1/1/1
9	BMA	C	207	-	-	1/2/19/22	0/1/1/1
8	PEG	D	246	-	-	0/4/4/4	-
8	PEG	C	209	-	-	0/4/4/4	-
8	PEG	C	210	-	-	1/4/4/4	-
8	PEG	B	199	-	-	0/4/4/4	-
6	NAG	B	201	-	-	2/6/23/26	0/1/1/1
7	FUC	B	203	-	-	-	0/1/1/1
8	PEG	D	245	-	-	4/4/4/4	-
8	PEG	C	208	-	-	4/4/4/4	-
6	NAG	C	205	-	-	2/6/23/26	0/1/1/1
8	PEG	D	247	-	-	3/4/4/4	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	C	207	BMA	O5-C1	-2.50	1.39	1.43
7	B	203	FUC	O5-C1	-2.43	1.39	1.43

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	205	NAG	C1-O5-C5	-9.08	100.02	112.19
6	C	205	NAG	O5-C5-C6	7.32	121.92	107.66
7	C	206	FUC	C1-O5-C5	6.70	128.78	112.97
6	B	201	NAG	C3-C4-C5	6.10	121.29	110.23
6	C	205	NAG	O5-C1-C2	-5.84	102.26	111.29
7	B	203	FUC	C1-O5-C5	5.83	126.72	112.97
6	B	201	NAG	O5-C1-C2	-5.79	102.34	111.29
9	C	207	BMA	O5-C5-C6	5.49	118.34	107.66
6	B	201	NAG	O5-C5-C6	5.10	117.58	107.66
6	B	201	NAG	C1-O5-C5	-4.93	105.57	112.19
6	C	205	NAG	O4-C4-C5	-4.68	97.80	109.32
9	C	207	BMA	C1-C2-C3	4.37	116.01	109.64
9	C	207	BMA	C1-O5-C5	-4.14	106.64	112.19
7	B	203	FUC	O5-C5-C4	3.78	116.35	109.55
7	C	206	FUC	C1-C2-C3	-3.42	104.66	109.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	201	NAG	O3-C3-C2	3.29	116.24	109.40
7	C	206	FUC	O4-C4-C5	2.93	116.20	109.74
7	C	206	FUC	C6-C5-C4	2.91	118.40	113.08
6	C	205	NAG	O3-C3-C4	2.78	116.93	110.38
9	C	207	BMA	O5-C5-C4	-2.74	104.17	110.83
7	B	203	FUC	C1-C2-C3	-2.43	106.11	109.64
9	C	207	BMA	O3-C3-C4	2.42	116.08	110.38
8	D	246	PEG	C3-O2-C2	-2.39	102.82	113.26
7	C	206	FUC	C3-C4-C5	-2.22	106.44	109.81

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	C	205	NAG	O5-C5-C6-O6
6	C	205	NAG	C4-C5-C6-O6
6	B	201	NAG	O5-C5-C6-O6
8	D	245	PEG	O2-C3-C4-O4
8	D	247	PEG	O1-C1-C2-O2
8	D	245	PEG	O1-C1-C2-O2
6	B	201	NAG	C4-C5-C6-O6
8	D	247	PEG	C1-C2-O2-C3
8	C	208	PEG	C4-C3-O2-C2
8	C	208	PEG	C1-C2-O2-C3
8	C	208	PEG	O1-C1-C2-O2
8	C	208	PEG	O2-C3-C4-O4
8	D	245	PEG	C1-C2-O2-C3
8	C	210	PEG	O1-C1-C2-O2
8	D	247	PEG	O2-C3-C4-O4
9	C	207	BMA	O5-C5-C6-O6
8	D	245	PEG	C4-C3-O2-C2

There are no ring outliers.

6 monomers are involved in 23 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	C	206	FUC	4	0
8	D	246	PEG	1	0
8	C	209	PEG	1	0
6	B	201	NAG	8	0
7	B	203	FUC	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	C	208	PEG	7	0

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	180/193 (93%)	1.28	46 (25%) 1 1	33, 66, 106, 116	0
2	B	165/202 (81%)	0.85	37 (22%) 2 2	25, 59, 106, 118	0
3	C	194/207 (93%)	0.25	22 (11%) 10 8	18, 38, 83, 105	0
4	D	242/270 (89%)	0.22	8 (3%) 49 45	26, 47, 74, 93	0
5	P	13/13 (100%)	0.23	1 (7%) 19 17	28, 35, 64, 64	0
All	All	794/885 (89%)	0.60	114 (14%) 6 5	18, 51, 99, 118	0

All (114) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	149	ASP	5.9
2	B	164	VAL	5.5
3	C	201	PRO	5.3
1	A	99	LEU	5.1
2	B	134	ASN	4.7
2	B	103	PRO	4.6
1	A	180	PHE	4.5
1	A	179	GLU	4.5
2	B	161	LEU	4.3
3	C	128	SER	4.3
2	B	186	VAL	4.2
1	A	168	TRP	4.1
2	B	138	GLU	4.0
2	B	172	THR	4.0
1	A	150	TYR	4.0
2	B	116	VAL	4.0
1	A	125	GLY	3.9
3	C	145	SER	3.9
2	B	136	LYS	3.9
1	A	152	THR	3.8

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Mol	Chain	Res	Type	RSRZ
2	B	143	VAL	3.8
3	C	183	CYS	3.8
1	A	102	PRO	3.8
1	A	121	TRP	3.7
1	A	165	VAL	3.7
1	A	153	PHE	3.7
1	A	173	PRO	3.7
3	C	191	ILE	3.7
1	A	154	LEU	3.6
1	A	124	ASN	3.5
2	B	101	VAL	3.5
2	B	114	LEU	3.5
2	B	173	CYS	3.5
2	B	115	LEU	3.5
3	C	181	PHE	3.4
4	D	243	ALA	3.4
1	A	132	VAL	3.4
1	A	174	LEU	3.3
2	B	162	GLU	3.3
1	A	134	GLU	3.3
2	B	139	LYS	3.2
2	B	131	TRP	3.2
1	A	82	ASP	3.1
1	A	160	PHE	3.1
2	B	102	TYR	3.1
1	A	157	THR	3.1
1	A	104	ILE	3.1
1	A	81	PRO	3.1
2	B	5	PRO	3.1
5	P	2	ALA	3.1
3	C	190	SER	3.1
1	A	126	ARG	3.1
1	A	127	PRO	3.0
1	A	83	ALA	3.0
1	A	120	THR	3.0
4	D	242	ARG	2.9
1	A	129	THR	2.9
3	C	146	GLN	2.8
3	C	150	SER	2.8
2	B	140	THR	2.8
1	A	131	GLY	2.8
2	B	174	GLN	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	170	LEU	2.8
2	B	130	ARG	2.8
1	A	122	LEU	2.7
2	B	141	GLY	2.7
2	B	163	THR	2.7
4	D	185	ASP	2.7
3	C	130	LYS	2.7
1	A	96	PRO	2.7
1	A	158	ASP	2.7
1	A	161	TYR	2.6
1	A	163	CYS	2.6
2	B	135	GLY	2.6
3	C	113	GLN	2.6
3	C	151	ASP	2.5
1	A	19	ARG	2.5
1	A	100	GLY	2.5
1	A	105	LEU	2.5
3	C	184	ALA	2.5
1	A	80	THR	2.4
1	A	155	PRO	2.4
1	A	128	VAL	2.4
1	A	156	SER	2.4
1	A	75	GLU	2.4
3	C	2	GLN	2.4
3	C	129	ASP	2.4
4	D	132	GLU	2.3
2	B	6	TRP	2.3
1	A	148	PHE	2.3
1	A	151	LEU	2.3
3	C	141	GLN	2.3
2	B	160	MET	2.3
2	B	176	GLU	2.3
3	C	176	SER	2.3
2	B	119	VAL	2.2
2	B	100	THR	2.2
2	B	3	SER	2.2
3	C	200	SER	2.2
2	B	99	VAL	2.2
4	D	240	TRP	2.2
4	D	238	GLU	2.2
3	C	156	ASP	2.2
2	B	142	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
2	B	33	ASN	2.2
4	D	220	ASN	2.2
1	A	79	ASN	2.1
2	B	120	SER	2.1
2	B	181	THR	2.1
4	D	3	LYS	2.1
2	B	32	TYR	2.1
3	C	126	LYS	2.1
1	A	87	PRO	2.1
3	C	186	ALA	2.1

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 oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
9	BMA	C	207	11/12	0.59	0.22	62,75,82,83	0
8	PEG	C	210	7/7	0.75	0.21	61,64,70,72	0
7	FUC	B	203	10/11	0.83	0.15	42,46,52,53	0
8	PEG	B	199	7/7	0.85	0.19	56,58,64,70	0
7	FUC	C	206	10/11	0.86	0.15	44,52,56,60	0
8	PEG	D	246	7/7	0.86	0.16	45,54,59,63	0
8	PEG	C	209	7/7	0.86	0.22	46,48,60,63	0
6	NAG	C	205	14/15	0.91	0.12	48,58,63,67	0
8	PEG	C	208	7/7	0.91	0.28	32,37,42,46	0
6	NAG	B	201	14/15	0.92	0.13	37,43,52,53	0
8	PEG	D	245	7/7	0.92	0.11	34,43,44,47	0
8	PEG	D	247	7/7	0.95	0.10	30,41,42,45	0

6.5 Other polymers [i](#)

There are no such residues in this entry.