



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 06:50 PM UTC

PDB ID : 6GB7 / pdb_00006gb7
Title : Structure of H-2Db with scoop loop from tapasin
Authors : Hafstrand, I.; Sandalova, T.; Achour, A.
Deposited on : 2018-04-13
Resolution : 2.15 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:

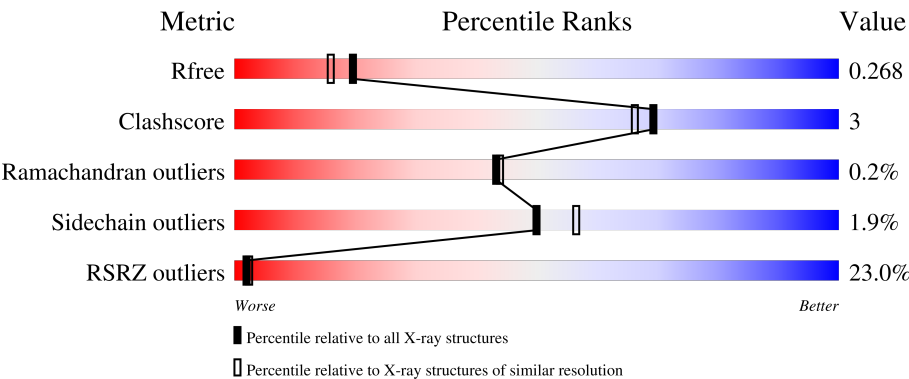
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.15 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	2057 (2.16-2.16)
Clashscore	190562	2159 (2.16-2.16)
Ramachandran outliers	187476	2134 (2.16-2.16)
Sidechain outliers	187428	2133 (2.16-2.16)
RSRZ outliers	180081	2059 (2.16-2.16)

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	338	18% 73%7%20%
1	C	338	14% 73%7%19%
1	E	338	23% 71%8%20%
1	G	338	25% 74%6%20%
2	B	100	13% 96%.

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Mol	Chain	Length	Quality of chain
2	D	100	
2	H	100	
3	F	99	
4	I	7	
4	J	7	
4	K	7	
4	L	7	
5	P	10	
5	R	10	

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
7	GOL	A	404	-	X	-	-

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 13275 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 I histocompatibility antigen, D-B alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	271	Total	C	N	O	S	0	1	0
			2219	1400	391	419	9			
1	C	273	Total	C	N	O	S	0	0	0
			2226	1406	394	417	9			
1	E	270	Total	C	N	O	S	0	1	0
			2207	1391	392	415	9			
1	G	270	Total	C	N	O	S	0	0	0
			2182	1382	382	409	9			

- Molecule 2 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	100	Total	C	N	O	S	0	1	0
			833	531	140	154	8			
2	D	100	Total	C	N	O	S	0	0	0
			821	523	138	153	7			
2	H	100	Total	C	N	O	S	0	2	0
			836	534	140	154	8			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	0	GLY	ALA	cloning artifact	UNP P01887
B	85	ASP	ALA	variant	UNP P01887
D	0	GLY	ALA	cloning artifact	UNP P01887
D	85	ASP	ALA	variant	UNP P01887
H	0	GLY	ALA	cloning artifact	UNP P01887
H	85	ASP	ALA	variant	UNP P01887

- Molecule 3 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	F	99	Total	C	N	O	S	0	0	0
			821	524	138	152	7			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	85	ASP	ALA	variant	UNP P01887

- Molecule 4 is a protein called PHE-ALA-PRO-GLY-ASN-TYR-PRO.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	I	7	Total	C	N	O		0	0	0
			55	37	8	10				
4	J	7	Total	C	N	O		0	0	0
			55	37	8	10				
4	K	7	Total	C	N	O		0	0	0
			55	37	8	10				
4	L	7	Total	C	N	O		0	0	0
			55	37	8	10				

- Molecule 5 is a protein called GLY-GLY-LEU-SER.

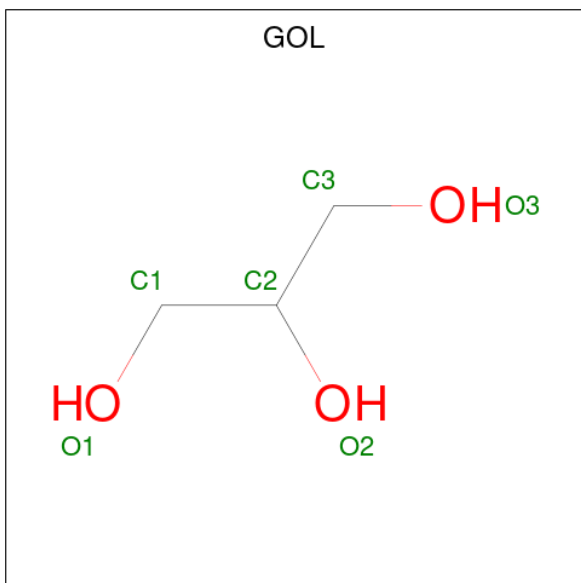
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	P	4	Total	C	N	O		0	0	1
			18	11	4	3				
5	R	5	Total	C	N	O		0	0	0
			32	19	6	7				

- Molecule 6 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	O	S	0	0
			5	4	1		
6	C	1	Total	O	S	0	0
			5	4	1		
6	F	1	Total	O	S	0	0
			5	4	1		
6	G	1	Total	O	S	0	0
			5	4	1		

- Molecule 7 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total C O 6 3 3	0	0
7	A	1	Total C O 6 3 3	0	0
7	A	1	Total C O 6 3 3	0	0
7	A	1	Total C O 6 3 3	0	0
7	B	1	Total C O 6 3 3	0	0
7	B	1	Total C O 6 3 3	0	0
7	B	1	Total C O 6 3 3	0	0
7	C	1	Total C O 6 3 3	0	0
7	D	1	Total C O 6 3 3	0	0
7	G	1	Total C O 6 3 3	0	0
7	G	1	Total C O 6 3 3	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	121	Total O 121 121	0	0
8	B	61	Total O 61 61	0	0
8	C	143	Total O 143 143	0	0
8	D	51	Total O 51 51	0	0
8	E	124	Total O 124 124	0	0
8	F	65	Total O 65 65	0	0
8	G	115	Total O 115 115	0	0
8	H	76	Total O 76 76	0	0
8	I	5	Total O 5 5	0	0

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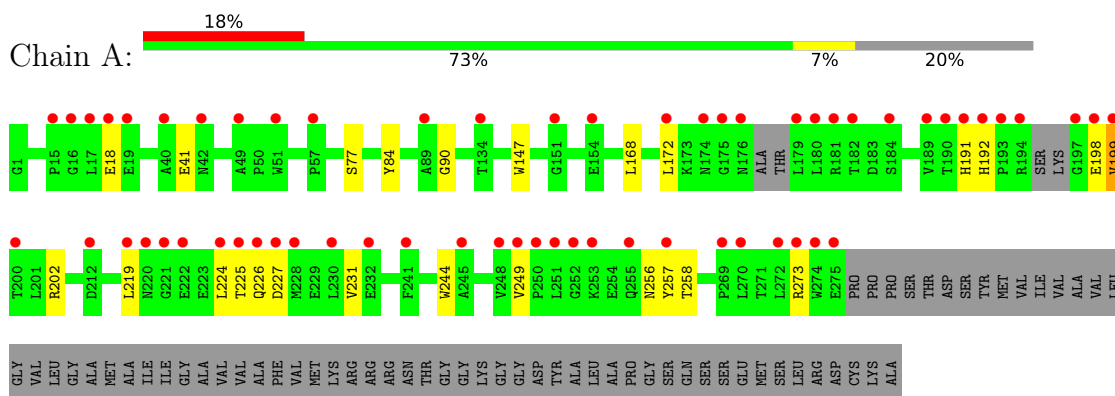
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	J	2	Total	O	0	0
			2	2		
8	K	2	Total	O	0	0
			2	2		
8	L	6	Total	O	0	0
			6	6		
8	P	1	Total	O	0	0
			1	1		
8	R	2	Total	O	0	0
			2	2		

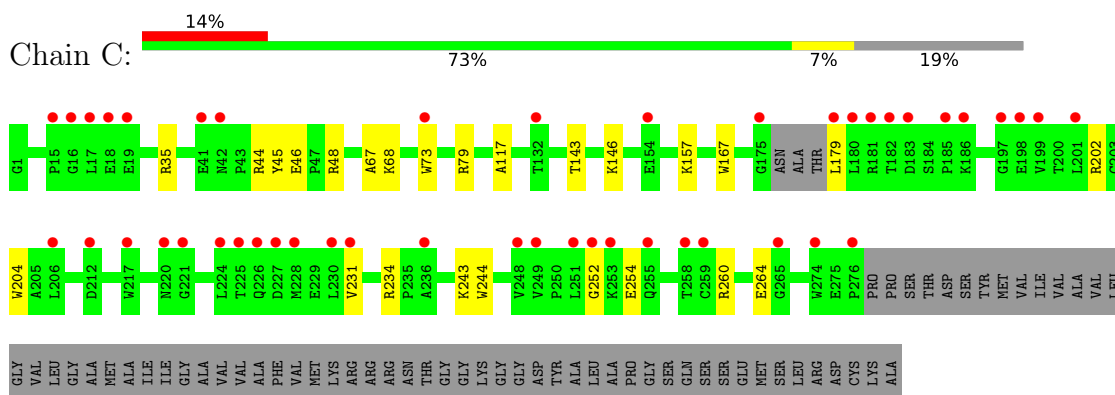
3 Residue-property plots

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.

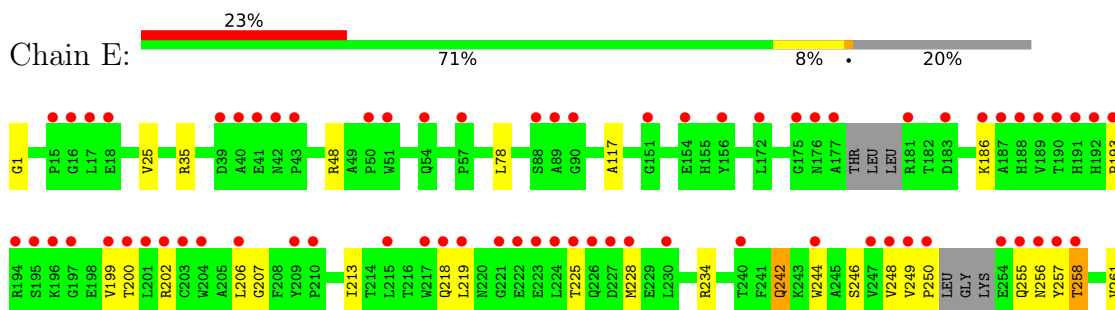
- Molecule 1: H-2 class I histocompatibility antigen, D-B alpha chain

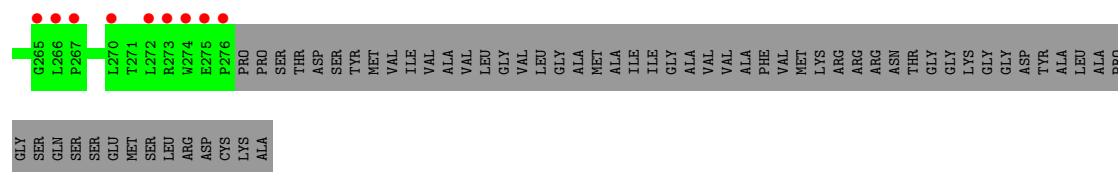


- Molecule 1: H-2 class I histocompatibility antigen, D-B alpha chain

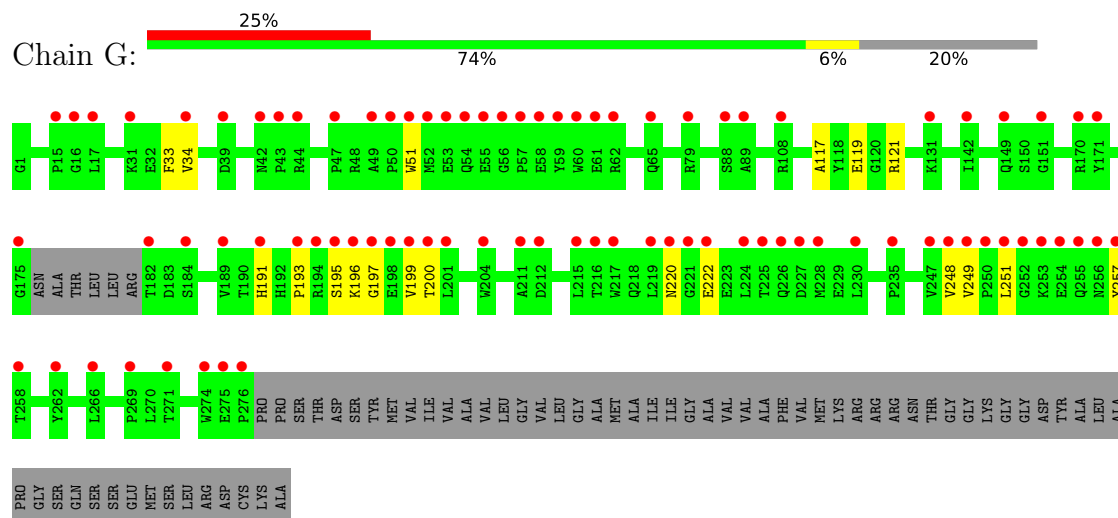


- Molecule 1: H-2 class I histocompatibility antigen, D-B alpha chain

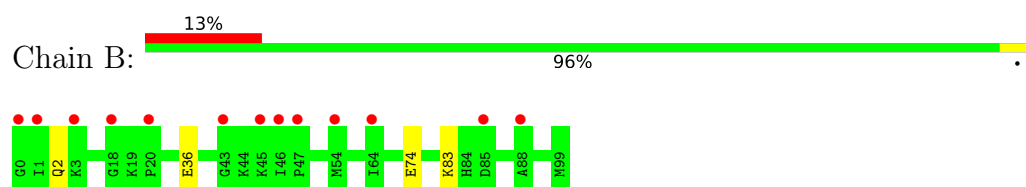




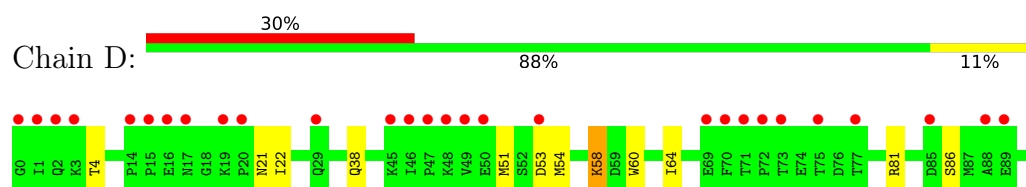
- Molecule 1: H-2 class I histocompatibility antigen, D-B alpha chain



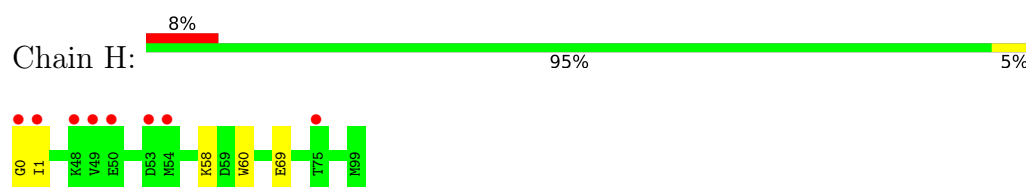
- Molecule 2: Beta-2-microglobulin



- Molecule 2: Beta-2-microglobulin

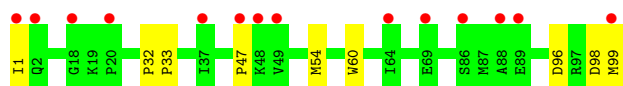


- Molecule 2: Beta-2-microglobulin

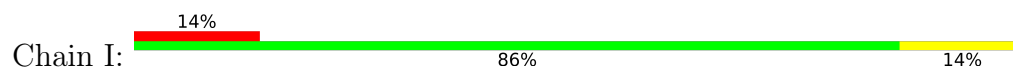


- Molecule 3: Beta-2-microglobulin

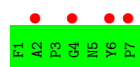




- Molecule 4: PHE-ALA-PRO-GLY-ASN-TYR-PRO



- Molecule 4: PHE-ALA-PRO-GLY-ASN-TYR-PRO



- Molecule 4: PHE-ALA-PRO-GLY-ASN-TYR-PRO



There are no outlier residues recorded for this chain.

- Molecule 4: PHE-ALA-PRO-GLY-ASN-TYR-PRO

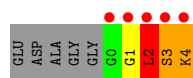
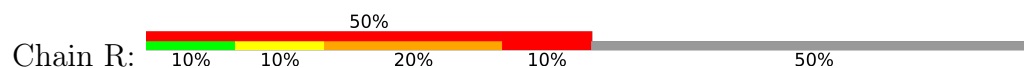


There are no outlier residues recorded for this chain.

- Molecule 5: GLY-GLY-LEU-SER



- Molecule 5: GLY-GLY-LEU-SER



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	92.70Å 123.86Å 100.11Å 90.00° 103.66° 90.00°	Depositor
Resolution (Å)	52.24 – 2.15 52.24 – 2.15	Depositor EDS
% Data completeness (in resolution range)	98.2 (52.24-2.15) 98.3 (52.24-2.15)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.25 (at 2.16Å)	Xtriage
Refinement program	PHENIX (1.11.1_2575: ???)	Depositor
R, R_{free}	0.239 , 0.266 0.243 , 0.268	Depositor DCC
R_{free} test set	5821 reflections (4.88%)	wwPDB-VP
Wilson B-factor (Å ²)	30.3	Xtriage
Anisotropy	0.037	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 50.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	13275	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 32.75 % 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 8.9273e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: GOL, SO4

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	0.16	0/2283	0.33	0/3100
1	C	0.16	0/2292	0.34	0/3112
1	E	0.16	0/2275	0.35	0/3090
1	G	0.16	0/2248	0.31	0/3058
2	B	0.15	0/859	0.33	0/1163
2	D	0.18	0/847	0.35	0/1149
2	H	0.17	0/865	0.36	0/1171
3	F	0.17	0/847	0.37	0/1148
4	I	0.27	0/58	0.32	0/78
4	J	0.22	0/58	0.35	0/78
4	K	0.25	0/58	0.33	0/78
4	L	0.23	0/58	0.33	0/78
5	P	0.77	0/17	0.83	0/21
5	R	0.70	0/31	1.72	2/37 (5.4%)
All	All	0.17	0/12796	0.35	2/17361 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	R	2	LEU	CA-C-N	5.52	131.63	121.70
5	R	2	LEU	C-N-CA	5.52	131.63	121.70

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	2219	0	2058	17	0
1	C	2226	0	2075	18	0
1	E	2207	0	2047	22	0
1	G	2182	0	2024	12	0
2	B	833	0	807	2	0
2	D	821	0	788	8	0
2	H	836	0	811	2	0
3	F	821	0	796	6	0
4	I	55	0	48	1	0
4	J	55	0	48	0	0
4	K	55	0	48	0	0
4	L	55	0	48	0	0
5	P	18	0	20	6	0
5	R	32	0	37	7	0
6	A	5	0	0	0	0
6	C	5	0	0	0	0
6	F	5	0	0	0	0
6	G	5	0	0	0	0
7	A	24	0	32	2	0
7	B	18	0	24	0	0
7	C	6	0	8	0	0
7	D	6	0	8	0	0
7	G	12	0	16	0	0
8	A	121	0	0	0	0
8	B	61	0	0	1	0
8	C	143	0	0	5	0
8	D	51	0	0	0	0
8	E	124	0	0	2	0
8	F	65	0	0	0	0
8	G	115	0	0	1	0
8	H	76	0	0	0	0
8	I	5	0	0	0	0
8	J	2	0	0	0	0
8	K	2	0	0	0	0
8	L	6	0	0	0	0
8	P	1	0	0	0	0
8	R	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	13275	0	11743	84	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 3.

All (84) 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)
5:R:2:LEU:N	5:R:3:SER:O	2.06	0.87
1:G:191:HIS:CD2	1:G:199:VAL:HG21	2.26	0.71
1:C:143:THR:HG23	5:R:2:LEU:C	2.17	0.69
2:D:38:GLN:OE1	2:D:81:ARG:NH2	2.25	0.69
7:A:403:GOL:O3	7:A:403:GOL:O1	2.11	0.68
1:E:1:GLY:N	8:E:403:HOH:O	2.29	0.65
3:F:96:ASP:O	3:F:99:MET:N	2.28	0.59
3:F:32:PRO:HB2	3:F:33:PRO:HD2	1.88	0.55
1:C:44:ARG:NH2	8:C:508:HOH:O	2.40	0.55
1:G:51:TRP:N	8:G:503:HOH:O	2.38	0.55
1:A:191:HIS:CD2	1:A:199:VAL:HG21	2.42	0.54
1:C:35:ARG:NH2	2:D:54:MET:O	2.28	0.54
1:G:193:PRO:HA	1:G:199:VAL:HG23	1.90	0.53
1:C:243:LYS:NZ	8:C:511:HOH:O	2.41	0.53
1:C:146:LYS:CB	5:R:3:SER:HB2	2.38	0.53
5:R:2:LEU:N	5:R:3:SER:C	2.66	0.53
1:E:25:VAL:HG22	1:E:35:ARG:HG3	1.91	0.52
1:C:179:LEU:N	8:C:513:HOH:O	2.43	0.52
1:E:35:ARG:NH2	3:F:54:MET:O	2.31	0.52
1:E:200:THR:HG22	1:E:248:VAL:HG12	1.92	0.52
5:R:1:GLY:HA3	5:R:4:LYS:HA	1.91	0.51
1:C:143:THR:OG1	5:R:2:LEU:O	2.27	0.51
1:E:186:LYS:NZ	1:E:207:GLY:O	2.43	0.51
1:C:73:TRP:CH2	5:R:2:LEU:CD1	2.94	0.50
1:G:200:THR:HG22	1:G:248:VAL:HG12	1.94	0.50
1:G:119:GLU:HB3	2:H:0:GLY:HA2	1.93	0.49
1:C:260:ARG:N	8:C:502:HOH:O	2.45	0.49
1:E:228:MET:HA	1:E:246:SER:O	2.12	0.49
2:D:58:LYS:H	2:D:58:LYS:HD2	1.77	0.48
1:C:202:ARG:HD3	1:C:244:TRP:CE3	2.49	0.48
1:A:202:ARG:HD2	1:A:244:TRP:CD2	2.48	0.48
1:A:249:VAL:HG23	1:A:257:TYR:CE1	2.49	0.48
1:A:41:GLU:H	1:A:41:GLU:CD	2.22	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:192:HIS:C	1:A:199:VAL:HG23	2.40	0.47
2:D:21:ASN:OD1	2:D:22:ILE:N	2.42	0.47
1:E:206:LEU:HD23	1:E:242:GLN:HB3	1.96	0.47
1:E:202:ARG:HH22	3:F:98:ASP:HB3	1.80	0.46
1:A:231:VAL:HG13	1:A:244:TRP:CZ2	2.51	0.46
1:A:147:TRP:HZ2	5:P:2:LEU:HD23	1.81	0.46
1:E:218:GLN:HG3	1:E:258:THR:HG23	1.98	0.46
1:C:48:ARG:NH2	2:D:53:ASP:OD2	2.43	0.45
1:E:202:ARG:HD2	1:E:244:TRP:CE3	2.52	0.45
1:C:117:ALA:HB2	2:D:60:TRP:CE2	2.51	0.45
1:C:45:TYR:CE2	1:C:67:ALA:HB2	2.51	0.45
1:E:35:ARG:NH1	8:E:411:HOH:O	2.50	0.45
1:C:252:GLY:N	1:C:254:GLU:OE1	2.50	0.45
1:A:225:THR:O	1:A:227:ASP:N	2.50	0.45
2:D:51:MET:HG3	2:D:64:ILE:HD11	1.99	0.45
1:E:249:VAL:HG13	1:E:250:PRO:HD2	1.99	0.44
1:A:258:THR:HG22	1:A:273:ARG:CG	2.48	0.44
1:E:186:LYS:HD2	1:E:186:LYS:N	2.33	0.44
5:P:1:GLY:C	5:P:3:SER:CA	2.91	0.44
1:E:193:PRO:HA	1:E:199:VAL:HG23	2.00	0.44
2:B:36:GLU:HB2	2:B:83:LYS:HB2	2.00	0.43
1:E:35:ARG:HD2	1:E:48:ARG:HH11	1.83	0.43
1:E:234:ARG:HH12	3:F:99:MET:HB3	1.84	0.43
1:G:249:VAL:HG22	1:G:257:TYR:CZ	2.54	0.42
1:E:117:ALA:HB2	3:F:60:TRP:CE2	2.54	0.42
1:A:258:THR:HG22	1:A:273:ARG:HG3	2.01	0.42
1:A:84:TYR:HE2	5:P:2:LEU:O	2.03	0.42
1:A:90:GLY:H	7:A:403:GOL:H2	1.85	0.42
1:C:231:VAL:HG13	1:C:244:TRP:CZ2	2.55	0.42
1:G:117:ALA:HB2	2:H:60:TRP:CE2	2.54	0.42
1:G:197:GLY:C	1:G:251:LEU:CD1	2.93	0.42
1:A:147:TRP:CZ2	5:P:2:LEU:HD23	2.55	0.42
1:E:255:GLN:C	1:E:257:TYR:H	2.28	0.41
1:G:199:VAL:HG22	1:G:200:THR:N	2.35	0.41
2:D:4:THR:HA	2:D:86:SER:OG	2.20	0.41
1:C:202:ARG:HG2	1:C:204:TRP:NE1	2.36	0.41
1:G:195:SER:OG	1:G:196:LYS:N	2.53	0.41
1:E:213:ILE:HD11	1:E:261:VAL:CG1	2.51	0.41
2:B:74:GLU:OE2	8:B:201:HOH:O	2.21	0.41
1:E:202:ARG:HG2	1:E:246:SER:CB	2.50	0.41
1:A:219:LEU:CD1	1:A:256:ASN:HB3	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:225:THR:HG23	1:E:225:THR:O	2.21	0.41
1:G:191:HIS:NE2	1:G:199:VAL:HG21	2.35	0.41
1:A:168:LEU:O	1:A:172:LEU:HG	2.21	0.41
1:A:191:HIS:NE2	1:A:199:VAL:HG21	2.36	0.41
5:P:2:LEU:N	5:P:3:SER:CA	2.83	0.41
1:A:77:SER:HB3	5:P:2:LEU:HD12	2.03	0.40
1:C:44:ARG:NE	8:C:522:HOH:O	2.54	0.40
1:G:33:PHE:CD2	1:G:34:VAL:HG13	2.56	0.40
1:C:167:TRP:CG	4:I:1:PHE:HB2	2.56	0.40
1:E:219:LEU:HD22	1:E:257:TYR:CE2	2.56	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	266/338 (79%)	259 (97%)	6 (2%)	1 (0%)	30	26
1	C	269/338 (80%)	263 (98%)	6 (2%)	0	100	100
1	E	265/338 (78%)	257 (97%)	8 (3%)	0	100	100
1	G	266/338 (79%)	256 (96%)	10 (4%)	0	100	100
2	B	99/100 (99%)	96 (97%)	3 (3%)	0	100	100
2	D	98/100 (98%)	96 (98%)	2 (2%)	0	100	100
2	H	100/100 (100%)	96 (96%)	4 (4%)	0	100	100
3	F	97/99 (98%)	95 (98%)	1 (1%)	1 (1%)	12	8
4	I	5/7 (71%)	5 (100%)	0	0	100	100
4	J	5/7 (71%)	5 (100%)	0	0	100	100
4	K	5/7 (71%)	5 (100%)	0	0	100	100
4	L	5/7 (71%)	5 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	P	2/10 (20%)	0	2 (100%)	0	100	100
5	R	3/10 (30%)	1 (33%)	1 (33%)	1 (33%)	0	0
All	All	1485/1799 (82%)	1439 (97%)	43 (3%)	3 (0%)	43	44

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	F	47	PRO
1	A	226	GLN
5	R	3	SER

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	226/280 (81%)	222 (98%)	4 (2%)	51	58
1	C	226/280 (81%)	220 (97%)	6 (3%)	39	41
1	E	225/280 (80%)	221 (98%)	4 (2%)	51	58
1	G	221/280 (79%)	218 (99%)	3 (1%)	59	66
2	B	95/94 (101%)	94 (99%)	1 (1%)	65	72
2	D	93/94 (99%)	92 (99%)	1 (1%)	65	72
2	H	95/94 (101%)	92 (97%)	3 (3%)	34	36
3	F	94/94 (100%)	93 (99%)	1 (1%)	65	72
4	I	5/5 (100%)	5 (100%)	0	100	100
4	J	5/5 (100%)	5 (100%)	0	100	100
4	K	5/5 (100%)	5 (100%)	0	100	100
4	L	5/5 (100%)	5 (100%)	0	100	100
5	P	1/5 (20%)	1 (100%)	0	100	100
5	R	3/5 (60%)	1 (33%)	2 (67%)	0	0
All	All	1299/1526 (85%)	1274 (98%)	25 (2%)	50	56

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	18	GLU
1	A	198	GLU
1	A	199	VAL
1	A	224	LEU
2	B	2	GLN
1	C	46	GLU
1	C	68	LYS
1	C	79	ARG
1	C	157	LYS
1	C	234	ARG
1	C	264	GLU
2	D	58	LYS
1	E	78	LEU
1	E	242	GLN
1	E	256	ASN
1	E	258	THR
3	F	1	ILE
1	G	121	ARG
1	G	220	ASN
1	G	222	GLU
2	H	1	ILE
2	H	58	LYS
2	H	69	GLU
5	R	2	LEU
5	R	4	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	42	ASN
1	A	176	ASN
2	B	2	GLN
2	B	6	GLN
2	D	13	HIS
1	G	218	GLN
2	H	6	GLN
2	H	13	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

15 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	GOL	A	405	-	5,5,5	0.41	0	5,5,5	0.23	0
7	GOL	G	403	-	5,5,5	0.41	0	5,5,5	0.21	0
7	GOL	G	402	-	5,5,5	0.41	0	5,5,5	0.32	0
6	SO4	G	401	-	4,4,4	0.23	0	6,6,6	0.10	0
6	SO4	A	401	-	4,4,4	0.25	0	6,6,6	0.09	0
7	GOL	D	101	-	5,5,5	0.40	0	5,5,5	0.23	0
7	GOL	A	403	-	5,5,5	0.42	0	5,5,5	0.32	0
7	GOL	B	103	-	5,5,5	0.37	0	5,5,5	0.33	0
7	GOL	A	402	-	5,5,5	0.31	0	5,5,5	0.57	0
7	GOL	A	404	-	5,5,5	1.16	1 (20%)	5,5,5	2.93	3 (60%)
7	GOL	B	102	-	5,5,5	0.39	0	5,5,5	0.17	0
6	SO4	C	401	-	4,4,4	0.24	0	6,6,6	0.06	0
7	GOL	C	402	-	5,5,5	0.36	0	5,5,5	0.29	0
6	SO4	F	101	-	4,4,4	0.24	0	6,6,6	0.10	0
7	GOL	B	101	-	5,5,5	0.36	0	5,5,5	0.23	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	GOL	A	405	-	-	4/4/4/4	-
7	GOL	G	403	-	-	2/4/4/4	-
7	GOL	G	402	-	-	1/4/4/4	-
7	GOL	D	101	-	-	3/4/4/4	-
7	GOL	A	403	-	-	2/4/4/4	-
7	GOL	A	402	-	-	4/4/4/4	-
7	GOL	A	404	-	-	2/4/4/4	-
7	GOL	B	102	-	-	2/4/4/4	-
7	GOL	B	103	-	-	0/4/4/4	-
7	GOL	C	402	-	-	2/4/4/4	-
7	GOL	B	101	-	-	0/4/4/4	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	404	GOL	O2-C2	-2.03	1.37	1.43

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A	404	GOL	C3-C2-C1	4.84	129.53	111.80
7	A	404	GOL	O2-C2-C1	-3.12	96.27	109.18
7	A	404	GOL	O1-C1-C2	-2.68	98.30	110.38

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	402	GOL	C1-C2-C3-O3
7	A	404	GOL	O1-C1-C2-C3
7	A	405	GOL	O1-C1-C2-C3
7	A	405	GOL	C1-C2-C3-O3
7	B	102	GOL	C1-C2-C3-O3
7	D	101	GOL	O1-C1-C2-C3
7	G	403	GOL	O1-C1-C2-C3
7	G	403	GOL	O1-C1-C2-O2
7	A	402	GOL	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
7	A	403	GOL	C1-C2-C3-O3
7	C	402	GOL	O1-C1-C2-C3
7	A	402	GOL	O1-C1-C2-O2
7	A	402	GOL	O2-C2-C3-O3
7	A	405	GOL	O1-C1-C2-O2
7	B	102	GOL	O2-C2-C3-O3
7	D	101	GOL	O1-C1-C2-O2
7	A	404	GOL	O1-C1-C2-O2
7	A	405	GOL	O2-C2-C3-O3
7	D	101	GOL	O2-C2-C3-O3
7	G	402	GOL	O2-C2-C3-O3
7	A	403	GOL	O2-C2-C3-O3
7	C	402	GOL	O1-C1-C2-O2

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	403	GOL	2	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	271/338 (80%)	1.39	61 (22%) 2 2	17, 39, 96, 128	1 (0%)
1	C	273/338 (80%)	1.21	46 (16%) 4 5	18, 39, 85, 106	0
1	E	270/338 (79%)	1.58	79 (29%) 1 1	17, 42, 102, 133	1 (0%)
1	G	270/338 (79%)	1.59	85 (31%) 1 1	19, 44, 104, 131	0
2	B	100/100 (100%)	1.10	13 (13%) 7 8	16, 36, 56, 72	1 (1%)
2	D	100/100 (100%)	1.61	30 (30%) 1 1	22, 41, 67, 79	0
2	H	100/100 (100%)	0.82	8 (8%) 18 20	19, 31, 50, 62	2 (2%)
3	F	99/99 (100%)	1.16	14 (14%) 6 7	22, 37, 54, 81	0
4	I	7/7 (100%)	1.24	1 (14%) 6 7	26, 31, 42, 43	0
4	J	7/7 (100%)	2.51	4 (57%) 0 0	42, 46, 57, 65	0
4	K	7/7 (100%)	0.84	0 100 100	29, 30, 40, 44	0
4	L	7/7 (100%)	1.10	0 100 100	30, 34, 39, 49	0
5	P	4/10 (40%)	5.48	4 (100%) 0 0	76, 78, 80, 80	0
5	R	5/10 (50%)	6.78	5 (100%) 0 0	88, 93, 102, 104	0
All	All	1520/1799 (84%)	1.40	350 (23%) 2 2	16, 40, 93, 133	5 (0%)

All (350) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	177	ALA	8.7
3	F	1	ILE	8.6
1	C	179	LEU	8.3
1	A	197	GLY	8.1
5	R	2	LEU	8.0
5	R	3	SER	7.8
1	A	179	LEU	7.6
2	D	1	ILE	7.3

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Mol	Chain	Res	Type	RSRZ
1	A	180	LEU	7.2
5	P	3	SER	7.1
2	D	0	GLY	7.0
1	G	175	GLY	6.6
5	R	1	GLY	6.5
5	R	4	LYS	6.3
1	C	180	LEU	6.1
1	E	196	LYS	6.1
1	A	224	LEU	6.1
1	G	254	GLU	6.0
1	A	17	LEU	6.0
1	E	250	PRO	6.0
1	E	224	LEU	5.8
5	P	2	LEU	5.7
1	C	182	THR	5.6
1	E	225	THR	5.6
1	C	16	GLY	5.5
1	E	16	GLY	5.5
5	R	0	GLY	5.4
1	G	193	PRO	5.2
4	J	7	PRO	5.2
1	A	176	ASN	5.2
1	E	193	PRO	5.2
1	G	49	ALA	5.1
1	C	224	LEU	5.1
1	E	276	PRO	5.0
1	E	197	GLY	5.0
1	C	230	LEU	5.0
1	A	16	GLY	5.0
1	C	197	GLY	5.0
2	B	1	ILE	5.0
1	E	201	LEU	4.9
1	C	17	LEU	4.9
1	G	274	TRP	4.7
1	A	191	HIS	4.7
1	G	16	GLY	4.6
2	D	73	THR	4.6
5	P	0	GLY	4.6
1	E	222	GLU	4.6
1	G	54	GLN	4.5
1	E	248	VAL	4.5
1	C	15	PRO	4.5

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Mol	Chain	Res	Type	RSRZ
2	D	2	GLN	4.4
5	P	1	GLY	4.4
1	G	60	TRP	4.4
1	G	58	GLU	4.4
1	A	225	THR	4.4
1	E	15	PRO	4.3
1	G	59	TYR	4.3
1	G	276	PRO	4.3
2	B	47	PRO	4.3
1	A	228	MET	4.3
1	C	225	THR	4.3
1	A	274	TRP	4.3
1	G	227	ASP	4.3
1	A	175	GLY	4.3
1	C	175	GLY	4.2
1	A	249	VAL	4.2
1	A	174	ASN	4.1
1	E	176	ASN	4.1
1	G	56	GLY	4.1
1	E	266	LEU	4.0
1	C	181	ARG	4.0
1	G	221	GLY	4.0
3	F	18	GLY	4.0
1	E	274	TRP	4.0
1	A	181	ARG	4.0
1	G	224	LEU	4.0
3	F	49	VAL	4.0
1	G	196	LYS	4.0
3	F	99	MET	4.0
1	E	247	VAL	3.9
1	A	250	PRO	3.9
2	D	48	LYS	3.9
1	A	193	PRO	3.9
3	F	48	LYS	3.9
2	B	54[A]	MET	3.9
2	H	50	GLU	3.9
1	E	199	VAL	3.8
1	G	251	LEU	3.8
1	E	226	GLN	3.8
3	F	88	ALA	3.8
1	G	197	GLY	3.8
1	E	191	HIS	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	182	THR	3.7
1	E	206	LEU	3.7
1	E	181	ARG	3.7
2	H	0	GLY	3.7
1	A	251	LEU	3.7
1	G	198	GLU	3.7
1	E	215	LEU	3.7
1	E	254	GLU	3.7
1	G	61	GLU	3.7
1	G	65	GLN	3.6
1	G	17	LEU	3.6
1	C	227	ASP	3.6
2	H	54[A]	MET	3.6
1	G	219	LEU	3.6
1	G	199	VAL	3.6
1	C	220	ASN	3.6
1	C	251	LEU	3.5
1	E	175	GLY	3.5
1	G	249	VAL	3.5
2	D	71	THR	3.5
1	A	15	PRO	3.4
2	B	18	GLY	3.4
2	H	48	LYS	3.4
1	E	194	ARG	3.4
1	G	194	ARG	3.4
1	A	189	VAL	3.4
1	E	50	PRO	3.4
1	E	195	SER	3.4
1	A	253	LYS	3.4
1	A	200	THR	3.4
1	C	198	GLU	3.4
1	A	199	VAL	3.3
1	E	267	PRO	3.3
2	H	1	ILE	3.3
1	A	227	ASP	3.3
1	G	182	THR	3.3
4	J	2	ALA	3.2
1	G	42	ASN	3.2
2	D	17	ASN	3.2
1	G	253	LYS	3.2
2	D	45	LYS	3.2
1	G	250	PRO	3.2

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Mol	Chain	Res	Type	RSRZ
2	D	15	PRO	3.2
1	A	198	GLU	3.2
1	E	192	HIS	3.2
1	E	221	GLY	3.2
2	B	88	ALA	3.2
1	G	201	LEU	3.2
1	G	50	PRO	3.2
1	A	248	VAL	3.1
1	A	219	LEU	3.1
1	G	51	TRP	3.1
1	A	275	GLU	3.1
1	E	258	THR	3.1
1	A	226	GLN	3.1
2	D	47	PRO	3.1
2	D	72	PRO	3.1
1	E	187	ALA	3.1
3	F	89	GLU	3.0
1	A	220	ASN	3.0
1	G	200	THR	3.0
1	A	212	ASP	3.0
1	G	248	VAL	3.0
1	G	204	TRP	3.0
1	E	189	VAL	3.0
1	G	230	LEU	3.0
1	E	41	GLU	3.0
1	G	220	ASN	3.0
1	G	258	THR	3.0
1	E	217	TRP	3.0
1	C	221	GLY	2.9
4	J	6	TYR	2.9
1	E	249	VAL	2.9
1	G	191	HIS	2.9
1	C	276	PRO	2.9
1	A	194	ARG	2.9
1	A	232[A]	GLU	2.9
1	E	257	TYR	2.9
1	G	256	ASN	2.9
1	G	266	LEU	2.9
1	C	231	VAL	2.9
1	E	227	ASP	2.9
1	E	88	SER	2.9
1	G	34	VAL	2.8

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Mol	Chain	Res	Type	RSRZ
1	G	79	ARG	2.8
1	A	221	GLY	2.8
1	A	51	TRP	2.8
1	C	259	CYS	2.8
2	D	14	PRO	2.8
1	E	218	GLN	2.8
2	B	85	ASP	2.8
1	E	219	LEU	2.8
1	C	249	VAL	2.8
1	E	203	CYS	2.8
3	F	47	PRO	2.8
1	G	195	SER	2.8
1	C	228	MET	2.8
1	A	18	GLU	2.8
1	E	40	ALA	2.8
1	C	253	LYS	2.8
1	E	42	ASN	2.7
1	G	171	TYR	2.7
1	E	273	ARG	2.7
1	G	47	PRO	2.7
1	C	199	VAL	2.7
1	G	255	GLN	2.7
1	E	154	GLU	2.7
1	G	39	ASP	2.7
1	G	212	ASP	2.7
1	E	43	PRO	2.7
1	E	275	GLU	2.7
1	E	183	ASP	2.7
1	E	51	TRP	2.7
1	G	252	GLY	2.7
1	G	89	ALA	2.7
1	E	209	TYR	2.7
1	G	189	VAL	2.7
1	G	225	THR	2.6
1	E	57	PRO	2.6
1	A	184	SER	2.6
2	B	46	ILE	2.6
2	D	49	VAL	2.6
1	G	44	ARG	2.6
1	G	151	GLY	2.6
1	C	226	GLN	2.6
2	D	89	GLU	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	40	ALA	2.6
1	E	272	LEU	2.6
1	E	186	LYS	2.6
1	G	247	VAL	2.6
1	E	89	ALA	2.6
1	E	204	TRP	2.6
1	G	88	SER	2.6
1	G	142	ILE	2.6
1	A	222	GLU	2.6
2	D	50	GLU	2.6
1	E	151	GLY	2.6
1	G	215	LEU	2.6
1	A	241	PHE	2.5
2	D	93	VAL	2.5
1	E	265	GLY	2.5
1	C	236	ALA	2.5
1	A	154	GLU	2.5
1	A	192	HIS	2.5
1	A	89	ALA	2.5
1	G	269	PRO	2.5
1	A	230	LEU	2.5
1	G	31	LYS	2.5
2	D	3	LYS	2.5
1	G	257	TYR	2.5
1	A	269	PRO	2.5
1	G	15	PRO	2.5
1	G	57	PRO	2.5
1	G	235	PRO	2.5
1	A	172	LEU	2.5
1	E	256	ASN	2.5
1	G	275	GLU	2.4
2	D	53	ASP	2.4
2	D	85	ASP	2.4
1	E	200	THR	2.4
3	F	86	SER	2.4
1	G	228	MET	2.4
1	A	270	LEU	2.4
1	E	230	LEU	2.4
1	A	151	GLY	2.4
1	G	55	GLU	2.4
3	F	2	GLN	2.4
1	C	217	TRP	2.4

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Mol	Chain	Res	Type	RSRZ
1	G	43	PRO	2.4
2	B	45	LYS	2.4
2	B	43	GLY	2.4
1	C	19	GLU	2.4
2	D	77	THR	2.4
3	F	69	GLU	2.4
1	A	190	THR	2.4
1	C	132	THR	2.4
1	E	188	HIS	2.4
1	E	240	THR	2.4
1	C	18	GLU	2.3
1	E	18	GLU	2.3
2	B	0	GLY	2.3
1	E	54	GLN	2.3
1	C	252	GLY	2.3
1	G	170	ARG	2.3
1	E	228	MET	2.3
1	A	255	GLN	2.3
2	D	29	GLN	2.3
1	A	252	GLY	2.3
1	A	257	TYR	2.3
1	C	73	TRP	2.3
2	D	69	GLU	2.3
1	C	255	GLN	2.3
2	H	53	ASP	2.3
1	C	206	LEU	2.3
1	C	274	TRP	2.3
1	G	53	GLU	2.2
2	D	70	PHE	2.2
3	F	64	ILE	2.2
2	B	20	PRO	2.2
2	D	75	THR	2.2
4	I	7	PRO	2.2
2	D	19	LYS	2.2
1	E	39	ASP	2.2
2	D	98	ASP	2.2
2	D	88	ALA	2.2
1	C	41	GLU	2.2
1	E	156	TYR	2.2
1	G	222	GLU	2.2
1	E	255	GLN	2.2
1	E	202	ARG	2.2

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Mol	Chain	Res	Type	RSRZ
2	H	49	VAL	2.2
1	G	262	TYR	2.2
1	A	273	ARG	2.2
1	C	42	ASN	2.2
1	A	19	GLU	2.2
1	A	245	ALA	2.2
1	G	226	GLN	2.2
1	E	17	LEU	2.2
1	G	62	ARG	2.2
1	G	131	LYS	2.2
2	B	3	LYS	2.2
1	G	216	THR	2.1
1	C	265	GLY	2.1
4	J	4	GLY	2.1
1	A	272	LEU	2.1
1	E	270	LEU	2.1
1	C	154	GLU	2.1
2	D	16	GLU	2.1
1	C	185	PRO	2.1
1	G	108	ARG	2.1
1	C	186	LYS	2.1
1	A	49	ALA	2.1
1	E	223	GLU	2.1
1	A	42	ASN	2.1
1	C	183	ASP	2.1
1	E	90	GLY	2.1
2	B	64	ILE	2.1
2	D	46	ILE	2.1
1	E	244	TRP	2.1
1	G	217	TRP	2.1
1	G	211	ALA	2.1
1	C	201	LEU	2.0
1	A	134	THR	2.0
1	C	258	THR	2.0
1	E	190	THR	2.0
1	G	271	THR	2.0
3	F	37	ILE	2.0
1	C	248	VAL	2.0
1	G	52	MET	2.0
1	G	184	SER	2.0
1	E	172	LEU	2.0
1	G	149	GLN	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	212	ASP	2.0
1	A	57	PRO	2.0
1	E	210	PRO	2.0
2	D	20	PRO	2.0
2	H	75	THR	2.0
3	F	20	PRO	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 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($\text{\AA}^2$)	Q<0.9
7	GOL	A	404	6/6	0.55	0.27	53,53,54,56	0
7	GOL	A	403	6/6	0.70	0.24	66,66,67,67	0
7	GOL	D	101	6/6	0.71	0.22	57,57,57,58	0
7	GOL	B	103	6/6	0.72	0.18	57,57,58,58	0
7	GOL	B	101	6/6	0.73	0.21	55,57,57,58	0
6	SO4	F	101	5/5	0.74	0.13	91,91,92,92	0
7	GOL	C	402	6/6	0.76	0.28	58,58,61,62	0
7	GOL	B	102	6/6	0.79	0.19	57,57,58,58	0
7	GOL	G	402	6/6	0.81	0.20	50,50,50,50	0
7	GOL	A	402	6/6	0.82	0.18	56,56,57,58	0
6	SO4	A	401	5/5	0.85	0.18	76,76,76,76	0
7	GOL	A	405	6/6	0.86	0.16	42,43,44,46	0
7	GOL	G	403	6/6	0.87	0.16	50,50,50,51	0
6	SO4	C	401	5/5	0.88	0.10	68,68,69,69	0
6	SO4	G	401	5/5	0.94	0.15	54,54,55,55	0

6.5 Other polymers [i](#)

There are no such residues in this entry.