



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 17, 2026 – 09:02 PM UTC

PDB ID : 9QCK / pdb_00009qck
Title : Yeast 20S proteasome mutant: beta1_G128V (b1-propeptide deleted)
Authors : Huber, E.M.; Heinemeyer, W.; Groll, M.
Deposited on : 2025-03-04
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

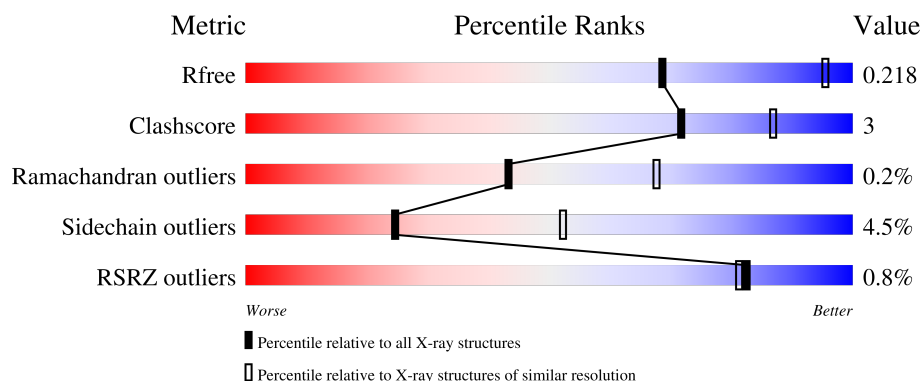
1 Overall quality at a glance

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	250	96%
1	O	250	94% 5%
2	B	258	84% 8% 7%
2	P	258	87% 7% 5%
3	C	254	88% 5% 6%

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Mol	Chain	Length	Quality of chain
3	Q	254	
4	D	260	
4	R	260	
5	E	234	
5	S	234	
6	F	288	
6	T	288	
7	G	252	
7	U	252	
8	H	232	
8	V	232	
9	I	205	
9	W	205	
10	J	198	
10	X	198	
11	K	212	
11	Y	212	
12	L	222	
12	Z	222	
13	M	246	
13	a	246	
14	N	196	
14	b	196	

2 Entry composition

There are 18 unique types of molecules in this entry. The entry contains 49670 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 Proteasome subunit alpha type-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	250	Total	C	N	O	S	0	0	0
			1915	1219	315	377	4			
1	O	250	Total	C	N	O	S	0	0	0
			1915	1219	315	377	4			

- Molecule 2 is a protein called Proteasome subunit alpha type-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	241	Total	C	N	O	S	0	0	0
			1887	1192	317	375	3			
2	P	244	Total	C	N	O	S	0	0	0
			1904	1201	321	379	3			

- Molecule 3 is a protein called Proteasome subunit alpha type-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	240	Total	C	N	O	S	0	0	0
			1881	1176	329	372	4			
3	Q	240	Total	C	N	O	S	0	0	0
			1881	1176	329	372	4			

- Molecule 4 is a protein called Proteasome subunit alpha type-5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	235	Total	C	N	O	S	0	0	0
			1813	1136	304	366	7			
4	R	235	Total	C	N	O	S	0	0	0
			1813	1136	304	366	7			

- Molecule 5 is a protein called Proteasome subunit alpha type-6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	231	Total	C	N	O	S	0	0	0
			1773	1114	307	348	4			
5	S	231	Total	C	N	O	S	0	0	0
			1773	1114	307	348	4			

- Molecule 6 is a protein called Probable proteasome subunit alpha type-7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	243	Total	C	N	O	S	0	0	0
			1892	1203	329	356	4			
6	T	243	Total	C	N	O	S	0	0	0
			1892	1203	329	356	4			

- Molecule 7 is a protein called Proteasome subunit alpha type-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	241	Total	C	N	O	S	0	0	0
			1907	1214	320	365	8			
7	U	241	Total	C	N	O	S	0	0	0
			1907	1214	320	365	8			

- Molecule 8 is a protein called Proteasome subunit beta type-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	222	Total	C	N	O	S	0	0	0
			1684	1061	293	323	7			
8	V	222	Total	C	N	O	S	0	0	0
			1684	1061	293	323	7			

- Molecule 9 is a protein called Proteasome subunit beta type-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	I	204	Total	C	N	O	S	0	0	0
			1581	1010	258	305	8			
9	W	204	Total	C	N	O	S	0	0	0
			1581	1010	258	305	8			

- Molecule 10 is a protein called Proteasome subunit beta type-4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	195	Total	C	N	O	S	0	0	0
			1561	992	264	299	6			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	X	195	Total	C	N	O	S	0	0	0
			1561	992	264	299	6			

- Molecule 11 is a protein called Proteasome subunit beta type-5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	212	Total	C	N	O	S	0	0	0
			1644	1045	280	312	7			
11	Y	212	Total	C	N	O	S	0	0	0
			1644	1045	280	312	7			

- Molecule 12 is a protein called Proteasome subunit beta type-6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	222	Total	C	N	O	S	0	0	0
			1757	1115	303	335	4			
12	Z	222	Total	C	N	O	S	0	0	0
			1757	1115	303	335	4			

- Molecule 13 is a protein called Proteasome subunit beta type-7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	233	Total	C	N	O	S	0	0	0
			1824	1154	312	351	7			
13	a	233	Total	C	N	O	S	0	0	0
			1824	1154	312	351	7			

- Molecule 14 is a protein called Proteasome subunit beta type-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	196	Total	C	N	O	S	0	0	0
			1515	958	250	300	7			
14	b	196	Total	C	N	O	S	0	0	0
			1515	958	250	300	7			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
N	128	VAL	GLY	engineered mutation	UNP P38624
b	128	VAL	GLY	engineered mutation	UNP P38624

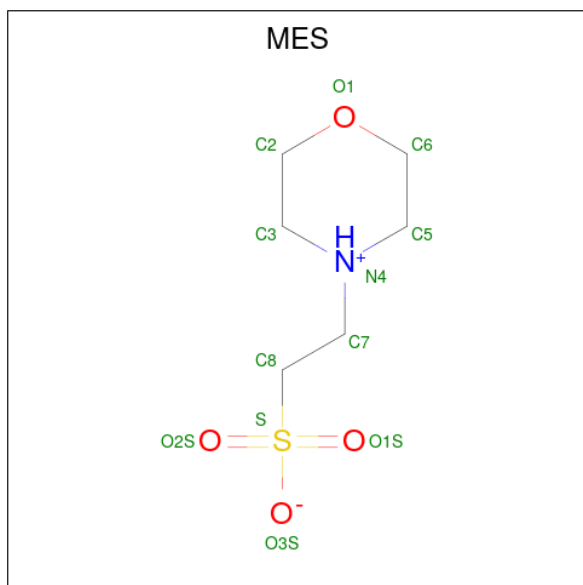
- Molecule 15 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
15	G	1	Total Mg 1 1	0	0
15	I	1	Total Mg 1 1	0	0
15	K	1	Total Mg 1 1	0	0
15	V	1	Total Mg 1 1	0	0
15	Z	1	Total Mg 1 1	0	0

- Molecule 16 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
16	G	1	Total Cl 1 1	0	0
16	U	1	Total Cl 1 1	0	0

- Molecule 17 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (CCD ID: MES) (formula: C₆H₁₃NO₄S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
17	a	1	Total C N O S 12 6 1 4 1	0	0

- Molecule 18 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
18	A	9	Total O 9 9	0	0
18	B	14	Total O 14 14	0	0
18	C	14	Total O 14 14	0	0
18	D	9	Total O 9 9	0	0
18	E	7	Total O 7 7	0	0
18	F	14	Total O 14 14	0	0
18	G	16	Total O 16 16	0	0
18	H	19	Total O 19 19	0	0
18	I	17	Total O 17 17	0	0
18	J	10	Total O 10 10	0	0
18	K	21	Total O 21 21	0	0
18	L	15	Total O 15 15	0	0
18	M	18	Total O 18 18	0	0
18	N	9	Total O 9 9	0	0
18	O	4	Total O 4 4	0	0
18	P	14	Total O 14 14	0	0
18	Q	14	Total O 14 14	0	0
18	R	8	Total O 8 8	0	0
18	S	6	Total O 6 6	0	0
18	T	13	Total O 13 13	0	0
18	U	22	Total O 22 22	0	0
18	V	15	Total O 15 15	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
18	W	12	Total 12	O 12	0	0
18	X	13	Total 13	O 13	0	0
18	Y	11	Total 11	O 11	0	0
18	Z	14	Total 14	O 14	0	0
18	a	17	Total 17	O 17	0	0
18	b	11	Total 11	O 11	0	0

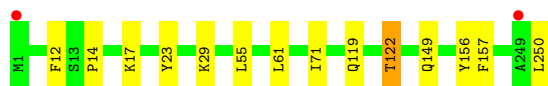
3 Residue-property plots [i](#)

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.

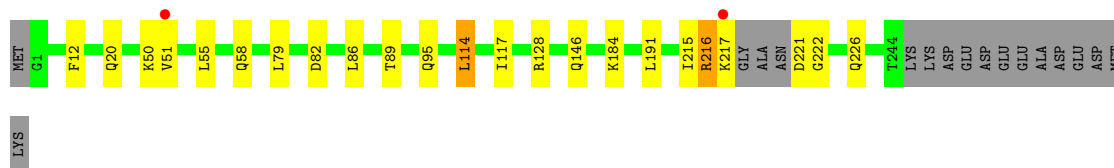
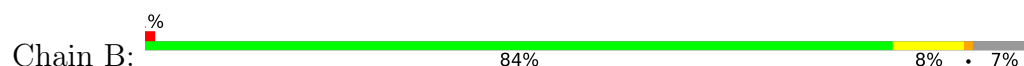
- Molecule 1: Proteasome subunit alpha type-2



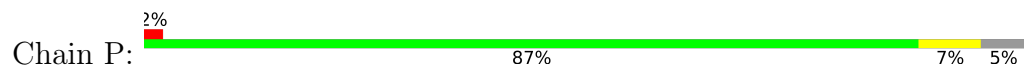
- Molecule 1: Proteasome subunit alpha type-2



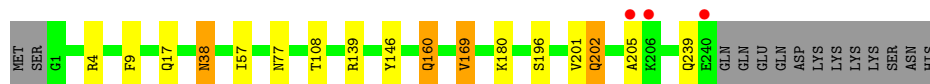
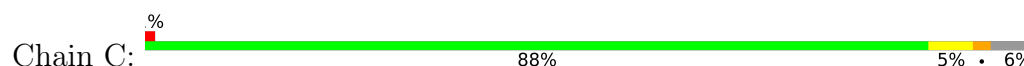
- Molecule 2: Proteasome subunit alpha type-3



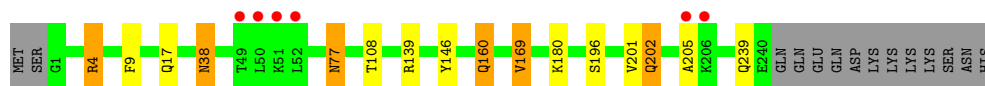
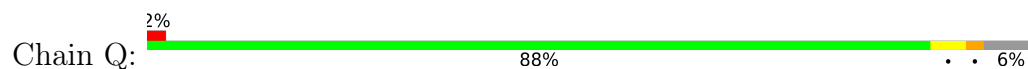
- Molecule 2: Proteasome subunit alpha type-3



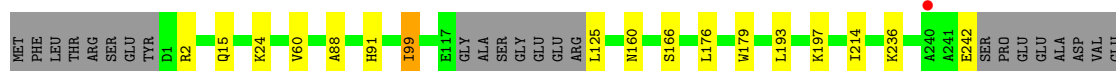
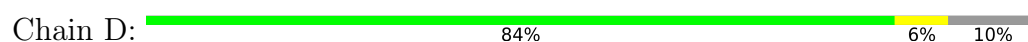
- Molecule 3: Proteasome subunit alpha type-4



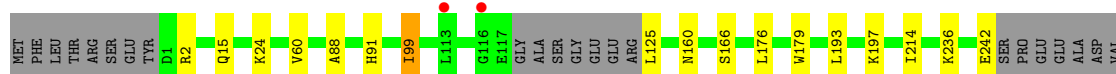
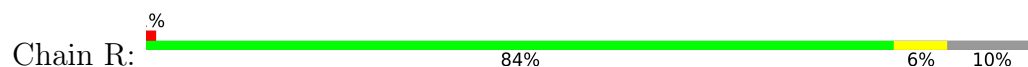
- Molecule 3: Proteasome subunit alpha type-4



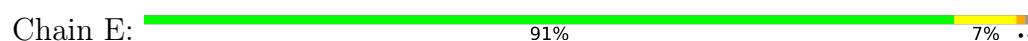
- Molecule 4: Proteasome subunit alpha type-5



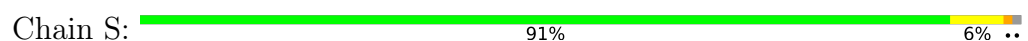
- Molecule 4: Proteasome subunit alpha type-5



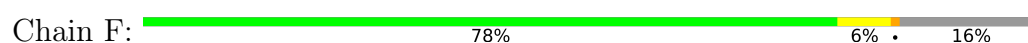
- Molecule 5: Proteasome subunit alpha type-6

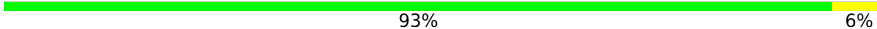


- Molecule 5: Proteasome subunit alpha type-6



- Molecule 6: Probable proteasome subunit alpha type-7

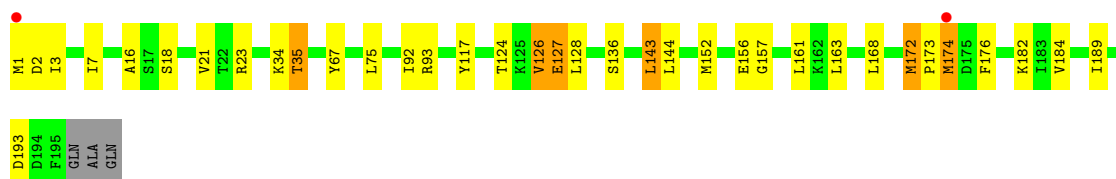


Chain W:  93% 6%



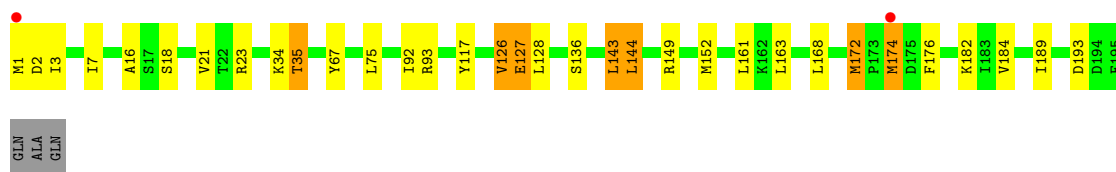
- Molecule 10: Proteasome subunit beta type-4

Chain J:  80% 15%



- Molecule 10: Proteasome subunit beta type-4

Chain X:  82% 13%



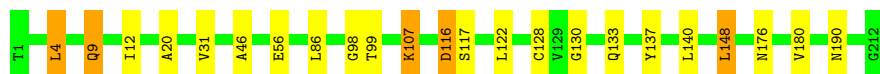
- Molecule 11: Proteasome subunit beta type-5

Chain K:  91% 7%



- Molecule 11: Proteasome subunit beta type-5

Chain Y:  89% 8%



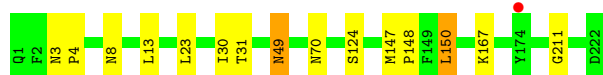
- Molecule 12: Proteasome subunit beta type-6

Chain L:  92% 7%

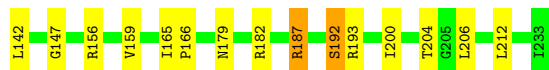
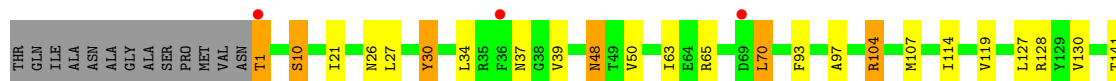
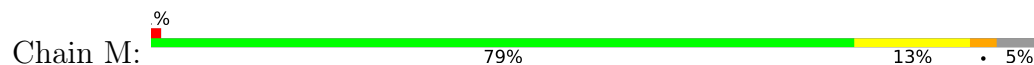


- Molecule 12: Proteasome subunit beta type-6

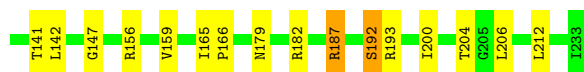
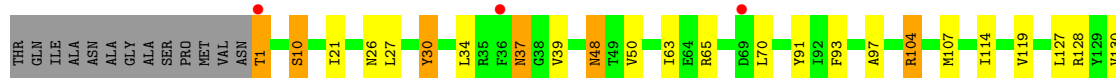
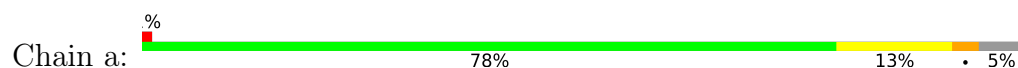
Chain Z:  93% 6%



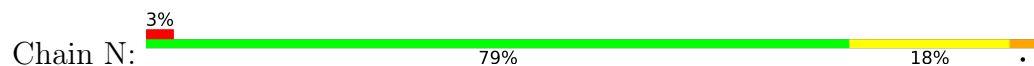
• Molecule 13: Proteasome subunit beta type-7



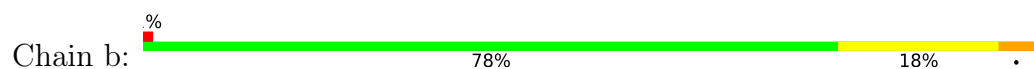
• Molecule 13: Proteasome subunit beta type-7



• Molecule 14: Proteasome subunit beta type-1



• Molecule 14: Proteasome subunit beta type-1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	135.91Å 300.97Å 144.81Å 90.00° 113.54° 90.00°	Depositor
Resolution (Å)	15.00 – 2.70 15.00 – 2.70	Depositor EDS
% Data completeness (in resolution range)	98.1 (15.00-2.70) 98.1 (15.00-2.70)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.83 (at 2.69Å)	Xtriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.178 , 0.213 0.186 , 0.218	Depositor DCC
R_{free} test set	14274 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	51.1	Xtriage
Anisotropy	0.491	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 52.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	49670	wwPDB-VP
Average B, all atoms (Å ²)	63.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CL, MG, MES

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	1.01	0/1952	1.42	0/2642
1	O	1.01	0/1952	1.43	2/2642 (0.1%)
2	B	1.01	0/1916	1.44	1/2592 (0.0%)
2	P	1.02	0/1934	1.43	0/2618
3	C	1.02	0/1910	1.46	0/2586
3	Q	1.02	0/1910	1.46	0/2586
4	D	1.02	0/1837	1.47	2/2475 (0.1%)
4	R	1.03	0/1837	1.47	2/2475 (0.1%)
5	E	1.02	0/1800	1.43	2/2433 (0.1%)
5	S	1.03	0/1800	1.44	2/2433 (0.1%)
6	F	1.01	0/1932	1.45	4/2609 (0.2%)
6	T	1.00	0/1932	1.46	4/2609 (0.2%)
7	G	1.00	0/1945	1.42	0/2634
7	U	1.00	0/1945	1.42	0/2634
8	H	1.02	0/1715	1.39	1/2326 (0.0%)
8	V	1.02	0/1715	1.39	0/2326
9	I	1.00	0/1611	1.41	1/2174 (0.0%)
9	W	1.00	0/1611	1.41	1/2174 (0.0%)
10	J	0.98	0/1589	1.37	0/2142
10	X	1.00	0/1589	1.38	0/2142
11	K	0.99	0/1681	1.45	0/2274
11	Y	0.99	0/1681	1.44	0/2274
12	L	0.99	0/1795	1.38	0/2420
12	Z	0.99	0/1795	1.37	0/2420
13	M	0.98	0/1855	1.37	0/2514
13	a	0.99	0/1855	1.39	0/2514
14	N	0.98	0/1544	1.41	0/2092
14	b	0.99	0/1544	1.42	1/2092 (0.0%)
All	All	1.01	0/50182	1.42	23/67852 (0.0%)

There are no bond length outliers.

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	216	ARG	CB-CA-C	-6.73	102.53	113.37
9	W	183	GLY	CA-C-O	-5.66	118.54	122.22
9	I	183	GLY	CA-C-O	-5.66	118.54	122.22
6	T	77	LEU	CA-C-N	5.55	124.77	120.33
6	T	77	LEU	C-N-CA	5.55	124.77	120.33
6	F	34	ILE	CA-C-N	5.48	125.38	121.65
6	F	34	ILE	C-N-CA	5.48	125.38	121.65
6	F	77	LEU	CA-C-N	5.43	124.67	120.33
6	F	77	LEU	C-N-CA	5.43	124.67	120.33
5	S	30	GLN	CA-C-N	5.28	125.11	120.10
5	S	30	GLN	C-N-CA	5.28	125.11	120.10
6	T	34	ILE	CA-C-N	5.21	125.19	121.65
6	T	34	ILE	C-N-CA	5.21	125.19	121.65
5	E	30	GLN	CA-C-N	5.17	125.02	120.10
5	E	30	GLN	C-N-CA	5.17	125.02	120.10
8	H	114	HIS	CB-CA-C	5.17	118.23	109.50
14	b	37	VAL	N-CA-C	-5.08	108.33	113.47
4	D	2	ARG	CA-C-N	5.08	124.92	120.10
4	D	2	ARG	C-N-CA	5.08	124.92	120.10
4	R	2	ARG	CA-C-N	5.05	124.90	120.10
4	R	2	ARG	C-N-CA	5.05	124.90	120.10
1	O	71	ILE	CA-C-N	5.04	125.49	121.61
1	O	71	ILE	C-N-CA	5.04	125.49	121.61

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	1915	0	1929	4	0
1	O	1915	0	1929	7	0
2	B	1887	0	1889	11	0
2	P	1904	0	1904	11	0
3	C	1881	0	1895	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	Q	1881	0	1895	13	0
4	D	1813	0	1797	7	0
4	R	1813	0	1797	7	0
5	E	1773	0	1775	12	0
5	S	1773	0	1775	12	0
6	F	1892	0	1883	7	0
6	T	1892	0	1883	7	0
7	G	1907	0	1901	11	0
7	U	1907	0	1901	13	0
8	H	1684	0	1688	4	0
8	V	1684	0	1688	5	0
9	I	1581	0	1574	9	0
9	W	1581	0	1574	10	0
10	J	1561	0	1569	27	0
10	X	1561	0	1569	25	0
11	K	1644	0	1595	14	0
11	Y	1644	0	1595	16	0
12	L	1757	0	1711	12	0
12	Z	1757	0	1711	10	0
13	M	1824	0	1832	27	0
13	a	1824	0	1832	26	0
14	N	1515	0	1487	30	0
14	b	1515	0	1487	24	0
15	G	1	0	0	0	0
15	I	1	0	0	0	0
15	K	1	0	0	0	0
15	V	1	0	0	0	0
15	Z	1	0	0	0	0
16	G	1	0	0	0	0
16	U	1	0	0	0	0
17	a	12	0	13	0	0
18	A	9	0	0	0	0
18	B	14	0	0	0	0
18	C	14	0	0	0	0
18	D	9	0	0	0	0
18	E	7	0	0	0	0
18	F	14	0	0	0	0
18	G	16	0	0	0	0
18	H	19	0	0	0	0
18	I	17	0	0	0	0
18	J	10	0	0	0	0
18	K	21	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	L	15	0	0	0	0
18	M	18	0	0	1	0
18	N	9	0	0	0	0
18	O	4	0	0	0	0
18	P	14	0	0	0	0
18	Q	14	0	0	0	0
18	R	8	0	0	0	0
18	S	6	0	0	0	0
18	T	13	0	0	0	0
18	U	22	0	0	0	0
18	V	15	0	0	0	0
18	W	12	0	0	0	0
18	X	13	0	0	0	0
18	Y	11	0	0	0	0
18	Z	14	0	0	0	0
18	a	17	0	0	0	0
18	b	11	0	0	0	0
All	All	49670	0	49078	326	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 (326) 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)
13:a:119:VAL:HG23	13:a:200:ILE:HG22	1.42	1.02
13:M:119:VAL:HG23	13:M:200:ILE:HG22	1.44	0.99
3:Q:160:GLN:HA	3:Q:160:GLN:HE21	1.37	0.89
3:C:160:GLN:HE21	3:C:160:GLN:HA	1.37	0.89
10:X:3:ILE:HD12	10:X:176:PHE:CD2	2.18	0.78
13:a:93:PHE:CZ	13:a:128:ARG:HG2	2.21	0.76
10:J:2:ASP:OD2	10:J:174:MET:SD	2.44	0.76
13:M:93:PHE:CZ	13:M:128:ARG:HG2	2.22	0.75
14:N:155:ILE:HG21	14:N:175:MET:HE3	1.68	0.74
10:J:168:LEU:O	10:J:172:MET:HB2	1.89	0.72
3:Q:9:PHE:H	4:R:15:GLN:HE22	1.38	0.71
14:b:155:ILE:HG21	14:b:175:MET:HE3	1.70	0.71
10:J:18:SER:HB2	10:J:176:PHE:HB2	1.72	0.71
5:S:92:ASN:HD21	12:Z:70:ASN:HD21	1.40	0.69
5:E:92:ASN:HD21	12:L:70:ASN:HD21	1.41	0.69
13:M:119:VAL:HG23	13:M:200:ILE:CG2	2.22	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:X:168:LEU:O	10:X:172:MET:HB2	1.92	0.68
3:C:9:PHE:H	4:D:15:GLN:HE22	1.39	0.68
13:a:119:VAL:HG23	13:a:200:ILE:CG2	2.21	0.68
14:N:155:ILE:CG2	14:N:175:MET:HE3	2.25	0.66
14:b:155:ILE:CG2	14:b:175:MET:HE3	2.26	0.66
3:Q:139:ARG:HH21	11:Y:107:LYS:NZ	1.94	0.65
7:G:23:PHE:O	7:G:26:THR:HB	1.97	0.65
13:a:97:ALA:HA	13:a:130:VAL:HG21	1.79	0.65
10:X:3:ILE:CD1	10:X:176:PHE:CD2	2.79	0.65
7:U:23:PHE:O	7:U:26:THR:HB	1.97	0.65
1:O:12:PHE:H	2:P:20:GLN:HE22	1.46	0.64
2:B:95:GLN:HE22	9:I:71:ASN:HD22	1.45	0.63
13:a:119:VAL:CG2	13:a:200:ILE:HG22	2.26	0.63
5:S:12:PHE:H	6:T:19:GLN:HE22	1.47	0.63
5:E:12:PHE:H	6:F:19:GLN:HE22	1.47	0.62
13:M:97:ALA:HA	13:M:130:VAL:HG21	1.81	0.62
14:N:126:ILE:HD12	14:N:137:TYR:CG	2.35	0.61
2:B:12:PHE:H	3:C:17:GLN:HE22	1.48	0.61
13:M:179:ASN:HD22	13:M:182:ARG:HH11	1.48	0.61
10:X:18:SER:HB2	10:X:176:PHE:HB2	1.82	0.61
6:T:123:ASN:C	6:T:123:ASN:HD22	2.09	0.61
14:b:138:CYS:HB3	14:b:141:ASN:HB2	1.83	0.61
14:N:138:CYS:HB3	14:N:141:ASN:HB2	1.84	0.60
3:C:139:ARG:HH21	11:K:107:LYS:NZ	2.00	0.60
6:F:123:ASN:C	6:F:123:ASN:HD22	2.10	0.60
14:b:174:ARG:HG2	14:b:174:ARG:HH11	1.67	0.59
3:Q:38:ASN:C	3:Q:38:ASN:HD22	2.11	0.59
12:Z:4:PRO:HB2	13:a:104:ARG:HH11	1.68	0.59
3:C:38:ASN:C	3:C:38:ASN:HD22	2.11	0.58
2:P:95:GLN:HE22	9:W:71:ASN:HD22	1.49	0.58
14:N:89:ASN:HB2	14:N:93:LEU:HD12	1.86	0.58
14:N:174:ARG:HH11	14:N:174:ARG:HG2	1.67	0.58
1:A:12:PHE:H	2:B:20:GLN:HE22	1.51	0.58
13:a:30:TYR:HB2	13:a:34:LEU:HB2	1.86	0.57
13:M:119:VAL:CG2	13:M:200:ILE:HG22	2.27	0.57
5:E:92:ASN:HD21	12:L:70:ASN:ND2	2.03	0.57
10:X:21:VAL:HG11	11:Y:122:LEU:HD11	1.86	0.57
14:b:89:ASN:HB2	14:b:93:LEU:HD12	1.86	0.57
14:N:36:ARG:HG3	14:N:42:TRP:CE2	2.39	0.57
14:N:36:ARG:HG3	14:N:42:TRP:CZ2	2.40	0.57
13:M:30:TYR:HB2	13:M:34:LEU:HB2	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:35:THR:HG21	14:N:45:ARG:HE	1.70	0.57
10:X:3:ILE:HD12	10:X:176:PHE:CG	2.40	0.57
11:K:20:ALA:HB2	11:K:31:VAL:HG21	1.87	0.56
11:K:4:LEU:HD22	11:K:4:LEU:C	2.30	0.56
14:b:36:ARG:HG3	14:b:42:TRP:CE2	2.41	0.56
14:b:156:LYS:NZ	14:b:192:GLU:OE1	2.37	0.56
14:b:35:THR:HG21	14:b:45:ARG:HE	1.70	0.56
10:J:16:ALA:HB2	10:J:161:LEU:HD21	1.88	0.56
11:Y:20:ALA:HB2	11:Y:31:VAL:HG21	1.87	0.56
5:E:92:ASN:ND2	12:L:70:ASN:HD21	2.03	0.56
11:Y:4:LEU:C	11:Y:4:LEU:HD22	2.30	0.56
6:F:123:ASN:HD22	6:F:124:SER:N	2.05	0.55
5:S:92:ASN:HD21	12:Z:70:ASN:ND2	2.04	0.55
14:N:134:ILE:HD12	14:N:137:TYR:CD2	2.41	0.55
6:T:123:ASN:HD22	6:T:124:SER:N	2.05	0.54
10:X:16:ALA:HB2	10:X:161:LEU:HD21	1.89	0.54
11:Y:46:ALA:HB3	11:Y:98:GLY:O	2.08	0.54
4:R:160:ASN:HB3	4:R:179:TRP:CE2	2.43	0.54
14:b:36:ARG:HG3	14:b:42:TRP:CZ2	2.42	0.54
14:N:14:LEU:HD13	14:N:100:ALA:CB	2.37	0.54
1:O:122:THR:HG22	2:P:128:ARG:HH21	1.72	0.54
13:a:63:ILE:HD13	13:a:114:ILE:HD11	1.90	0.54
14:N:55:ILE:HD11	14:N:93:LEU:HD13	1.91	0.53
9:W:10:ILE:HG21	9:W:141:ALA:HB3	1.91	0.53
13:M:187:ARG:NH1	8:V:135:MET:SD	2.82	0.53
9:I:10:ILE:HG21	9:I:141:ALA:HB3	1.91	0.53
10:X:2:ASP:OD2	10:X:174:MET:SD	2.67	0.53
9:I:9:GLY:HA3	9:I:41:LYS:HE2	1.90	0.53
10:J:35:THR:HG21	10:J:182:LYS:HD2	1.91	0.53
13:M:63:ILE:HD13	13:M:114:ILE:HD11	1.91	0.53
7:G:83:ASN:C	7:G:83:ASN:HD22	2.17	0.52
4:D:160:ASN:HB3	4:D:179:TRP:CE2	2.44	0.52
12:L:4:PRO:HB2	13:M:104:ARG:HH11	1.73	0.52
9:W:9:GLY:HA3	9:W:41:LYS:HE2	1.91	0.52
10:J:152:MET:CE	10:J:157:GLY:HA2	2.40	0.52
10:X:149:ARG:HB2	10:X:152:MET:HG3	1.91	0.52
12:Z:49:ASN:HD21	12:Z:211:GLY:HA2	1.75	0.52
10:X:35:THR:HG21	10:X:182:LYS:HD2	1.91	0.52
12:L:49:ASN:HD21	12:L:211:GLY:HA2	1.75	0.52
13:M:159:VAL:HG23	13:M:159:VAL:O	2.10	0.52
10:J:3:ILE:HD12	10:J:176:PHE:CG	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:b:55:ILE:HD11	14:b:93:LEU:HD13	1.92	0.52
11:K:176:ASN:HD21	11:K:190:ASN:HD22	1.58	0.52
7:G:61:SER:OG	7:G:215:GLU:OE2	2.23	0.51
3:Q:139:ARG:HH21	11:Y:107:LYS:HZ1	1.56	0.51
8:V:52:THR:O	8:V:56:THR:HB	2.09	0.51
11:Y:130:GLY:O	11:Y:133:GLN:HG2	2.10	0.51
13:a:179:ASN:HD22	13:a:182:ARG:HH11	1.57	0.51
11:K:46:ALA:HB3	11:K:98:GLY:O	2.09	0.51
5:S:92:ASN:ND2	12:Z:70:ASN:HD21	2.05	0.51
10:J:152:MET:HE2	10:J:157:GLY:N	2.26	0.51
8:H:52:THR:O	8:H:56:THR:HB	2.10	0.51
11:K:130:GLY:O	11:K:133:GLN:HG2	2.10	0.51
10:J:21:VAL:HG11	11:K:122:LEU:HD11	1.92	0.51
11:K:9:GLN:NE2	11:K:148:LEU:O	2.44	0.50
10:X:126:VAL:CG1	10:X:128:LEU:HG	2.41	0.50
7:G:78:ILE:N	7:G:79:PRO:CD	2.74	0.50
7:U:78:ILE:N	7:U:79:PRO:CD	2.75	0.50
2:B:95:GLN:NE2	9:I:71:ASN:HD22	2.09	0.50
14:N:156:LYS:NZ	14:N:192:GLU:OE1	2.38	0.50
13:a:159:VAL:HG23	13:a:159:VAL:O	2.11	0.50
14:N:134:ILE:CD1	14:N:137:TYR:CD2	2.94	0.50
14:N:134:ILE:CD1	14:N:137:TYR:HD2	2.24	0.50
7:U:83:ASN:C	7:U:83:ASN:HD22	2.20	0.50
14:b:126:ILE:HD12	14:b:137:TYR:CG	2.46	0.50
10:J:126:VAL:CG1	10:J:128:LEU:HG	2.42	0.49
12:Z:147:MET:N	12:Z:148:PRO:HD2	2.27	0.49
1:A:122:THR:HG22	2:B:128:ARG:HH21	1.77	0.49
11:Y:9:GLN:NE2	11:Y:148:LEU:O	2.46	0.49
14:N:175:MET:HB2	14:N:186:LEU:HB2	1.94	0.49
8:H:135:MET:SD	13:a:187:ARG:NH1	2.86	0.48
11:K:86:LEU:C	11:K:86:LEU:HD13	2.38	0.48
13:M:27:LEU:HB2	13:M:192:SER:HB3	1.95	0.48
5:S:87:LEU:HD21	5:S:107:ALA:HB1	1.95	0.48
14:N:126:ILE:HD12	14:N:137:TYR:CD1	2.49	0.48
10:X:126:VAL:HG12	10:X:128:LEU:HG	1.96	0.48
14:b:175:MET:HB2	14:b:186:LEU:HB2	1.95	0.48
5:E:9:THR:HG21	5:E:119:THR:HA	1.95	0.48
12:Z:3:ASN:HD22	12:Z:4:PRO:HD2	1.79	0.48
13:M:50:VAL:CG2	13:M:200:ILE:HD11	2.44	0.48
14:N:83:LYS:HD3	14:N:119:VAL:CG2	2.44	0.48
12:L:13:LEU:HD11	12:L:150:LEU:HD21	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:147:MET:N	12:L:148:PRO:HD2	2.28	0.48
13:a:1:THR:N	13:a:107:MET:O	2.45	0.48
14:b:39:ASP:OD2	14:b:39:ASP:N	2.45	0.48
5:S:9:THR:HG21	5:S:119:THR:HA	1.95	0.48
6:T:172:LEU:CD1	6:T:195:ILE:HD13	2.43	0.48
11:Y:86:LEU:C	11:Y:86:LEU:HD13	2.39	0.48
5:E:65:CYS:SG	5:E:71:LEU:CD1	3.02	0.47
11:Y:176:ASN:HD21	11:Y:190:ASN:HD22	1.62	0.47
1:A:119:GLN:O	1:A:122:THR:HB	2.14	0.47
2:B:86:LEU:HB3	2:B:114:LEU:HD21	1.96	0.47
6:F:172:LEU:CD1	6:F:195:ILE:HD13	2.43	0.47
14:N:83:LYS:HG3	14:N:119:VAL:HG22	1.95	0.47
14:N:194:GLU:OE2	13:a:193:ARG:NH1	2.47	0.47
2:P:86:LEU:HB3	2:P:114:LEU:HD21	1.96	0.47
2:P:95:GLN:NE2	9:W:71:ASN:HD22	2.10	0.47
13:a:27:LEU:HB2	13:a:192:SER:HB3	1.96	0.47
7:G:34:LEU:C	7:G:34:LEU:HD23	2.40	0.47
10:J:3:ILE:HD12	10:J:176:PHE:CD2	2.49	0.47
10:J:126:VAL:HG12	10:J:128:LEU:HG	1.96	0.47
12:L:3:ASN:HD22	12:L:4:PRO:HD2	1.78	0.47
14:N:14:LEU:HD13	14:N:100:ALA:HB2	1.97	0.47
14:b:83:LYS:HD3	14:b:119:VAL:CG2	2.45	0.47
3:C:160:GLN:HE21	3:C:160:GLN:CA	2.15	0.47
7:G:73:VAL:HG12	7:G:133:THR:HB	1.95	0.47
10:J:67:TYR:CE1	10:J:75:LEU:HD13	2.50	0.47
7:U:73:VAL:HG12	7:U:133:THR:HB	1.96	0.47
10:X:7:ILE:HD12	10:X:161:LEU:HD13	1.96	0.47
13:M:127:LEU:HG	13:M:142:LEU:HD12	1.96	0.46
10:J:7:ILE:HD12	10:J:161:LEU:HD13	1.96	0.46
12:Z:13:LEU:HD11	12:Z:150:LEU:HD21	1.96	0.46
13:a:50:VAL:CG2	13:a:200:ILE:HD11	2.45	0.46
14:b:83:LYS:HG3	14:b:119:VAL:HG22	1.97	0.46
7:G:83:ASN:C	7:G:83:ASN:ND2	2.73	0.46
1:O:119:GLN:O	1:O:122:THR:HB	2.14	0.46
10:J:3:ILE:HB	10:J:18:SER:HB3	1.97	0.46
3:Q:201:VAL:HG13	3:Q:202:GLN:N	2.30	0.46
5:E:87:LEU:HD21	5:E:107:ALA:HB1	1.96	0.46
8:H:165:ASN:HD22	13:a:156:ARG:HH11	1.63	0.46
10:X:143:LEU:HD22	10:X:163:LEU:HD23	1.98	0.46
3:Q:160:GLN:HE21	3:Q:160:GLN:CA	2.14	0.46
7:U:78:ILE:HG22	7:U:79:PRO:HD3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:X:3:ILE:CD1	10:X:176:PHE:CE2	2.98	0.46
14:N:134:ILE:HD13	14:N:137:TYR:HD2	1.80	0.46
7:U:83:ASN:C	7:U:83:ASN:ND2	2.74	0.46
10:X:1:MET:HA	10:X:34:LYS:CE	2.46	0.46
7:U:68:ARG:HE	7:U:68:ARG:HB2	1.58	0.46
10:X:3:ILE:HB	10:X:18:SER:HB3	1.97	0.46
7:U:34:LEU:C	7:U:34:LEU:HD23	2.41	0.46
13:a:127:LEU:HG	13:a:142:LEU:HD12	1.97	0.45
14:b:14:LEU:O	14:b:175:MET:HA	2.16	0.45
3:C:201:VAL:HG13	3:C:202:GLN:N	2.30	0.45
13:M:50:VAL:HG23	13:M:200:ILE:HD11	1.99	0.45
13:M:193:ARG:NH1	14:b:194:GLU:OE2	2.49	0.45
14:N:14:LEU:O	14:N:175:MET:HA	2.16	0.45
7:G:78:ILE:HG22	7:G:79:PRO:HD3	1.97	0.45
10:X:67:TYR:CE1	10:X:75:LEU:HD13	2.51	0.45
1:O:23:TYR:CD1	7:U:12:PRO:HA	2.52	0.45
10:J:152:MET:HE1	10:J:157:GLY:HA2	1.98	0.45
13:M:156:ARG:HH11	8:V:165:ASN:HD22	1.64	0.45
9:I:141:ALA:HB2	9:I:177:ASP:HB2	1.99	0.45
12:Z:8:ASN:HA	12:Z:30:ILE:O	2.17	0.45
6:F:41:GLY:HA3	6:F:215:CYS:O	2.17	0.45
8:H:104:ASP:HB2	8:H:105:PRO:HD2	1.99	0.45
13:a:48:ASN:H	13:a:48:ASN:HD22	1.65	0.45
13:a:93:PHE:CE1	13:a:128:ARG:HG2	2.52	0.45
4:R:91:HIS:HB3	4:R:99:ILE:CG2	2.48	0.44
14:N:1:THR:OG1	14:N:33:LYS:NZ	2.50	0.44
5:S:65:CYS:SG	5:S:71:LEU:CD1	3.05	0.44
13:a:141:THR:HG23	13:a:159:VAL:HG23	1.99	0.44
10:J:1:MET:HA	10:J:34:LYS:CE	2.46	0.44
10:J:184:VAL:HG22	10:J:189:ILE:HG12	2.00	0.44
9:W:58:ASP:OD2	10:X:93:ARG:NH2	2.51	0.44
13:M:141:THR:HG23	13:M:159:VAL:HG23	1.99	0.44
1:O:149:GLN:O	1:O:156:TYR:HA	2.18	0.44
12:L:8:ASN:HA	12:L:30:ILE:O	2.18	0.44
6:T:41:GLY:HA3	6:T:215:CYS:O	2.17	0.44
8:V:104:ASP:HB2	8:V:105:PRO:HD2	2.00	0.44
12:L:60:ASP:OD1	13:M:104:ARG:NH2	2.51	0.44
13:M:26:ASN:HA	13:M:39:VAL:O	2.18	0.44
13:M:93:PHE:CE1	13:M:128:ARG:HG2	2.53	0.44
4:R:91:HIS:CD2	4:R:99:ILE:HG22	2.53	0.44
7:U:68:ARG:O	7:U:223:LYS:HA	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:201:VAL:O	3:C:202:GLN:CB	2.66	0.44
9:I:37:ASN:HD22	9:I:38:LYS:HG3	1.83	0.44
10:X:92:ILE:HD12	10:X:92:ILE:HA	1.88	0.44
2:B:215:ILE:HG12	2:B:226:GLN:HG2	2.00	0.43
5:E:77:ALA:N	5:E:78:PRO:CD	2.81	0.43
10:J:143:LEU:HD22	10:J:163:LEU:HD23	1.99	0.43
10:X:75:LEU:HD12	10:X:75:LEU:HA	1.89	0.43
11:K:128:CYS:HB2	11:K:137:TYR:CE2	2.53	0.43
1:A:149:GLN:O	1:A:156:TYR:HA	2.19	0.43
5:S:77:ALA:N	5:S:78:PRO:CD	2.81	0.43
14:N:83:LYS:CG	14:N:119:VAL:HG22	2.48	0.43
4:R:91:HIS:HB3	4:R:99:ILE:HG21	2.00	0.43
9:W:37:ASN:HD22	9:W:38:LYS:HG3	1.83	0.43
10:J:152:MET:HE2	10:J:157:GLY:CA	2.49	0.43
3:Q:169:VAL:HG23	3:Q:196:SER:HB2	2.01	0.43
10:X:184:VAL:HG22	10:X:189:ILE:HG12	2.00	0.43
5:S:98:PHE:O	13:a:91:TYR:HA	2.18	0.43
18:M:302:HOH:O	14:N:116:GLY:HA3	2.19	0.43
10:X:117:TYR:CE1	10:X:127:GLU:HG3	2.54	0.43
4:D:88:ALA:HA	4:D:99:ILE:HG21	2.00	0.43
11:K:4:LEU:C	11:K:4:LEU:CD2	2.92	0.43
11:K:209:ASN:O	9:W:38:LYS:NZ	2.52	0.43
2:P:12:PHE:H	3:Q:17:GLN:HE22	1.67	0.43
3:Q:201:VAL:O	3:Q:202:GLN:CB	2.67	0.43
4:R:88:ALA:HA	4:R:99:ILE:HG21	2.00	0.43
11:Y:4:LEU:C	11:Y:4:LEU:CD2	2.92	0.43
13:a:50:VAL:HG23	13:a:200:ILE:HD11	2.01	0.43
14:b:37:VAL:HA	14:b:60:GLN:HG3	2.01	0.43
4:D:91:HIS:HB3	4:D:99:ILE:CG2	2.49	0.42
13:a:37:ASN:HB2	14:b:135:TYR:CD1	2.53	0.42
14:b:4:MET:HB3	14:b:126:ILE:HG23	2.00	0.42
9:W:141:ALA:HB2	9:W:177:ASP:HB2	2.00	0.42
2:P:6:ASP:OD2	3:Q:4:ARG:HG3	2.18	0.42
11:Y:116:ASP:OD2	11:Y:116:ASP:C	2.62	0.42
13:M:165:ILE:HB	13:M:166:PRO:HD3	2.02	0.42
13:a:10:SER:HB3	13:a:147:GLY:H	1.85	0.42
3:C:169:VAL:HG23	3:C:196:SER:HB2	2.01	0.42
2:B:89:THR:HG21	2:B:117:ILE:HD13	2.02	0.42
9:I:58:ASP:OD2	10:J:93:ARG:NH2	2.52	0.42
11:Y:4:LEU:HD22	11:Y:4:LEU:O	2.20	0.42
10:J:152:MET:CE	10:J:156:GLU:C	2.93	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:4:MET:HB3	14:N:126:ILE:HG23	2.00	0.41
7:U:61:SER:OG	7:U:215:GLU:OE2	2.26	0.41
3:C:108:THR:HG21	3:C:146:TYR:HB3	2.02	0.41
9:I:56:ALA:HB3	10:J:124:THR:HG23	2.02	0.41
12:L:13:LEU:CD1	12:L:150:LEU:HD21	2.50	0.41
3:Q:108:THR:HG21	3:Q:146:TYR:HB3	2.02	0.41
5:S:71:LEU:C	5:S:71:LEU:CD2	2.93	0.41
14:b:190:PRO:HA	14:b:193:TYR:CE2	2.55	0.41
4:D:91:HIS:HB3	4:D:99:ILE:HG21	2.02	0.41
5:E:80:ALA:HB2	5:E:129:VAL:HG21	2.02	0.41
14:N:83:LYS:HD3	14:N:119:VAL:HG21	2.02	0.41
5:S:71:LEU:C	5:S:71:LEU:HD22	2.45	0.41
13:a:26:ASN:HA	13:a:39:VAL:O	2.19	0.41
14:N:139:ASP:OD1	14:N:139:ASP:N	2.47	0.41
1:O:55:LEU:HB3	7:U:159:ALA:O	2.20	0.41
7:G:72:MET:HE3	7:G:74:VAL:CG2	2.51	0.41
11:K:116:ASP:C	11:K:116:ASP:OD2	2.63	0.41
7:G:43:VAL:HG11	7:G:194:VAL:HA	2.02	0.41
5:S:62:ILE:HG21	5:S:213:ALA:HB2	2.03	0.41
6:T:105:ILE:N	6:T:106:PRO:CD	2.83	0.41
5:E:62:ILE:HG21	5:E:213:ALA:HB2	2.03	0.41
5:E:71:LEU:C	5:E:71:LEU:HD22	2.46	0.41
7:G:68:ARG:O	7:G:223:LYS:HA	2.21	0.41
10:J:117:TYR:CE1	10:J:127:GLU:HG3	2.55	0.41
10:X:7:ILE:CD1	10:X:161:LEU:HD13	2.50	0.41
2:P:89:THR:HG21	2:P:117:ILE:HD13	2.02	0.41
3:Q:77:ASN:HD22	3:Q:77:ASN:N	2.19	0.41
2:B:146:GLN:HG2	3:C:57:ILE:HG21	2.02	0.41
5:E:71:LEU:C	5:E:71:LEU:CD2	2.94	0.41
6:F:105:ILE:N	6:F:106:PRO:CD	2.83	0.41
10:J:7:ILE:CD1	10:J:161:LEU:HD13	2.51	0.41
13:M:1:THR:N	13:M:107:MET:O	2.48	0.41
14:N:35:THR:HG21	14:N:45:ARG:NE	2.34	0.41
2:P:215:ILE:HG12	2:P:226:GLN:HG2	2.02	0.41
11:Y:12:ILE:HB	11:Y:180:VAL:HB	2.03	0.41
11:Y:56:GLU:OE2	11:Y:99:THR:OG1	2.37	0.41
12:Z:13:LEU:CD1	12:Z:150:LEU:HD21	2.51	0.41
13:a:165:ILE:HB	13:a:166:PRO:HD3	2.03	0.41
4:D:24:LYS:O	4:D:166:SER:HA	2.21	0.41
6:F:210:LEU:HD21	6:F:212:ILE:HD11	2.03	0.41
9:I:20:VAL:HG13	9:I:118:PRO:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:95:GLN:HE21	9:W:68:TYR:HA	1.85	0.41
6:T:210:LEU:HD21	6:T:212:ILE:HD11	2.03	0.41
8:V:126:SER:O	8:V:127:LEU:HD12	2.21	0.41
14:b:83:LYS:CG	14:b:119:VAL:HG22	2.49	0.41
4:D:91:HIS:CD2	4:D:99:ILE:HG22	2.56	0.40
13:M:10:SER:HB3	13:M:147:GLY:H	1.85	0.40
13:M:48:ASN:H	13:M:48:ASN:HD22	1.68	0.40
11:Y:128:CYS:HB2	11:Y:137:TYR:CE2	2.56	0.40
12:L:5:TYR:CD1	12:L:106:TYR:HB2	2.57	0.40
13:M:30:TYR:CB	13:M:34:LEU:HB2	2.50	0.40
1:O:14:PRO:HA	2:P:23:TYR:CD1	2.57	0.40
4:R:24:LYS:O	4:R:166:SER:HA	2.21	0.40
14:b:59:VAL:HG22	14:b:81:VAL:HG12	2.03	0.40
14:b:83:LYS:HD3	14:b:119:VAL:HG21	2.02	0.40
2:B:82:ASP:CG	2:B:128:ARG:HH22	2.30	0.40
2:B:216:ARG:HH11	2:B:216:ARG:HG2	1.87	0.40
9:W:20:VAL:HG13	9:W:118:PRO:HB3	2.02	0.40
10:X:144:LEU:HD12	10:X:144:LEU:HA	1.89	0.40
11:K:4:LEU:HD22	11:K:4:LEU:O	2.20	0.40
13:M:70:LEU:HD23	13:M:70:LEU:HA	1.94	0.40
7:U:43:VAL:HG11	7:U:194:VAL:HA	2.02	0.40
10:J:92:ILE:HD12	10:J:92:ILE:HA	1.88	0.40
10:J:172:MET:HA	10:J:173:PRO:HD3	1.96	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	248/250 (99%)	241 (97%)	7 (3%)	0	100	100
1	O	248/250 (99%)	241 (97%)	7 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	237/258 (92%)	228 (96%)	7 (3%)	2 (1%)	16	37
2	P	242/258 (94%)	233 (96%)	8 (3%)	1 (0%)	30	54
3	C	238/254 (94%)	230 (97%)	5 (2%)	3 (1%)	9	25
3	Q	238/254 (94%)	230 (97%)	5 (2%)	3 (1%)	9	25
4	D	231/260 (89%)	228 (99%)	3 (1%)	0	100	100
4	R	231/260 (89%)	229 (99%)	2 (1%)	0	100	100
5	E	229/234 (98%)	221 (96%)	8 (4%)	0	100	100
5	S	229/234 (98%)	221 (96%)	8 (4%)	0	100	100
6	F	241/288 (84%)	234 (97%)	7 (3%)	0	100	100
6	T	241/288 (84%)	234 (97%)	7 (3%)	0	100	100
7	G	239/252 (95%)	232 (97%)	7 (3%)	0	100	100
7	U	239/252 (95%)	234 (98%)	5 (2%)	0	100	100
8	H	220/232 (95%)	214 (97%)	6 (3%)	0	100	100
8	V	220/232 (95%)	214 (97%)	6 (3%)	0	100	100
9	I	202/205 (98%)	196 (97%)	6 (3%)	0	100	100
9	W	202/205 (98%)	196 (97%)	6 (3%)	0	100	100
10	J	193/198 (98%)	190 (98%)	3 (2%)	0	100	100
10	X	193/198 (98%)	190 (98%)	3 (2%)	0	100	100
11	K	210/212 (99%)	208 (99%)	2 (1%)	0	100	100
11	Y	210/212 (99%)	208 (99%)	2 (1%)	0	100	100
12	L	220/222 (99%)	214 (97%)	6 (3%)	0	100	100
12	Z	220/222 (99%)	214 (97%)	6 (3%)	0	100	100
13	M	231/246 (94%)	224 (97%)	7 (3%)	0	100	100
13	a	231/246 (94%)	224 (97%)	7 (3%)	0	100	100
14	N	194/196 (99%)	187 (96%)	7 (4%)	0	100	100
14	b	194/196 (99%)	187 (96%)	6 (3%)	1 (0%)	24	48
All	All	6271/6614 (95%)	6102 (97%)	159 (2%)	10 (0%)	43	68

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	51	VAL
3	C	202	GLN

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Mol	Chain	Res	Type
2	P	51	VAL
3	Q	202	GLN
3	C	205	ALA
3	Q	205	ALA
14	b	137	TYR
2	B	222	GLY
3	C	239	GLN
3	Q	239	GLN

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	209/209 (100%)	203 (97%)	6 (3%)	37	67
1	O	209/209 (100%)	203 (97%)	6 (3%)	37	67
2	B	202/216 (94%)	193 (96%)	9 (4%)	24	52
2	P	203/216 (94%)	196 (97%)	7 (3%)	32	62
3	C	212/226 (94%)	206 (97%)	6 (3%)	38	68
3	Q	212/226 (94%)	206 (97%)	6 (3%)	38	68
4	D	194/215 (90%)	185 (95%)	9 (5%)	24	51
4	R	194/215 (90%)	185 (95%)	9 (5%)	24	51
5	E	190/193 (98%)	185 (97%)	5 (3%)	40	70
5	S	190/193 (98%)	185 (97%)	5 (3%)	40	70
6	F	201/239 (84%)	193 (96%)	8 (4%)	28	56
6	T	201/239 (84%)	193 (96%)	8 (4%)	28	56
7	G	206/210 (98%)	197 (96%)	9 (4%)	25	53
7	U	206/210 (98%)	197 (96%)	9 (4%)	25	53
8	H	181/190 (95%)	171 (94%)	10 (6%)	19	45
8	V	181/190 (95%)	171 (94%)	10 (6%)	19	45
9	I	172/173 (99%)	170 (99%)	2 (1%)	63	84

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	W	172/173 (99%)	170 (99%)	2 (1%)	63	84
10	J	173/175 (99%)	163 (94%)	10 (6%)	18	42
10	X	173/175 (99%)	163 (94%)	10 (6%)	18	42
11	K	169/169 (100%)	162 (96%)	7 (4%)	27	56
11	Y	169/169 (100%)	162 (96%)	7 (4%)	27	56
12	L	185/185 (100%)	179 (97%)	6 (3%)	34	64
12	Z	185/185 (100%)	179 (97%)	6 (3%)	34	64
13	M	199/208 (96%)	185 (93%)	14 (7%)	14	34
13	a	199/208 (96%)	185 (93%)	14 (7%)	14	34
14	N	163/163 (100%)	145 (89%)	18 (11%)	6	15
14	b	163/163 (100%)	144 (88%)	19 (12%)	5	13
All	All	5313/5542 (96%)	5076 (96%)	237 (4%)	24	52

All (237) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	17	LYS
1	A	29	LYS
1	A	61	LEU
1	A	122	THR
1	A	157	PHE
1	A	250	LEU
2	B	50	LYS
2	B	55	LEU
2	B	58	GLN
2	B	79	LEU
2	B	114	LEU
2	B	184	LYS
2	B	191	LEU
2	B	217	LYS
2	B	221	ASP
3	C	4	ARG
3	C	38	ASN
3	C	77	ASN
3	C	160	GLN
3	C	169	VAL
3	C	180	LYS
4	D	60	VAL

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Mol	Chain	Res	Type
4	D	99	ILE
4	D	125	LEU
4	D	176	LEU
4	D	193	LEU
4	D	197	LYS
4	D	214	ILE
4	D	236	LYS
4	D	242	GLU
5	E	9	THR
5	E	29	LYS
5	E	54	GLU
5	E	71	LEU
5	E	188	LEU
6	F	68	ARG
6	F	94	SER
6	F	123	ASN
6	F	172	LEU
6	F	181	GLU
6	F	203	ASN
6	F	206	LYS
6	F	221	ASN
7	G	13	GLU
7	G	26	THR
7	G	66	ILE
7	G	83	ASN
7	G	115	LEU
7	G	125	MET
7	G	166	GLN
7	G	181	LYS
7	G	235	ARG
8	H	13	VAL
8	H	34	LEU
8	H	38	SER
8	H	55	VAL
8	H	56	THR
8	H	68	LEU
8	H	113	ILE
8	H	127	LEU
8	H	153	LYS
8	H	196	ARG
9	I	37	ASN
9	I	171	LEU

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Mol	Chain	Res	Type
10	J	23	ARG
10	J	35	THR
10	J	126	VAL
10	J	127	GLU
10	J	136	SER
10	J	143	LEU
10	J	144	LEU
10	J	172	MET
10	J	174	MET
10	J	193	ASP
11	K	4	LEU
11	K	9	GLN
11	K	107	LYS
11	K	116	ASP
11	K	117	SER
11	K	140	LEU
11	K	148	LEU
12	L	23	LEU
12	L	31	THR
12	L	49	ASN
12	L	124	SER
12	L	150	LEU
12	L	167	LYS
13	M	1	THR
13	M	10	SER
13	M	21	ILE
13	M	30	TYR
13	M	37	ASN
13	M	48	ASN
13	M	65	ARG
13	M	70	LEU
13	M	104	ARG
13	M	187	ARG
13	M	192	SER
13	M	204	THR
13	M	206	LEU
13	M	212	LEU
14	N	3	ILE
14	N	9	LYS
14	N	13	ILE
14	N	119	VAL
14	N	126	ILE

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Mol	Chain	Res	Type
14	N	128	VAL
14	N	131	SER
14	N	139	ASP
14	N	141	ASN
14	N	143	ARG
14	N	149	GLU
14	N	160	SER
14	N	165	TRP
14	N	176	VAL
14	N	177	VAL
14	N	178	LEU
14	N	183	VAL
14	N	192	GLU
1	O	17	LYS
1	O	29	LYS
1	O	61	LEU
1	O	122	THR
1	O	157	PHE
1	O	250	LEU
2	P	50	LYS
2	P	55	LEU
2	P	58	GLN
2	P	79	LEU
2	P	114	LEU
2	P	184	LYS
2	P	191	LEU
3	Q	4	ARG
3	Q	38	ASN
3	Q	77	ASN
3	Q	160	GLN
3	Q	169	VAL
3	Q	180	LYS
4	R	60	VAL
4	R	99	ILE
4	R	125	LEU
4	R	176	LEU
4	R	193	LEU
4	R	197	LYS
4	R	214	ILE
4	R	236	LYS
4	R	242	GLU
5	S	9	THR

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Mol	Chain	Res	Type
5	S	29	LYS
5	S	54	GLU
5	S	71	LEU
5	S	188	LEU
6	T	68	ARG
6	T	94	SER
6	T	123	ASN
6	T	172	LEU
6	T	181	GLU
6	T	203	ASN
6	T	206	LYS
6	T	221	ASN
7	U	13	GLU
7	U	26	THR
7	U	68	ARG
7	U	83	ASN
7	U	115	LEU
7	U	125	MET
7	U	166	GLN
7	U	181	LYS
7	U	235	ARG
8	V	13	VAL
8	V	34	LEU
8	V	38	SER
8	V	55	VAL
8	V	56	THR
8	V	68	LEU
8	V	113	ILE
8	V	127	LEU
8	V	153	LYS
8	V	196	ARG
9	W	37	ASN
9	W	171	LEU
10	X	23	ARG
10	X	35	THR
10	X	126	VAL
10	X	127	GLU
10	X	136	SER
10	X	143	LEU
10	X	144	LEU
10	X	172	MET
10	X	174	MET

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Mol	Chain	Res	Type
10	X	193	ASP
11	Y	4	LEU
11	Y	9	GLN
11	Y	107	LYS
11	Y	116	ASP
11	Y	117	SER
11	Y	140	LEU
11	Y	148	LEU
12	Z	23	LEU
12	Z	31	THR
12	Z	49	ASN
12	Z	124	SER
12	Z	150	LEU
12	Z	167	LYS
13	a	1	THR
13	a	10	SER
13	a	21	ILE
13	a	30	TYR
13	a	37	ASN
13	a	48	ASN
13	a	65	ARG
13	a	70	LEU
13	a	104	ARG
13	a	187	ARG
13	a	192	SER
13	a	204	THR
13	a	206	LEU
13	a	212	LEU
14	b	3	ILE
14	b	9	LYS
14	b	13	ILE
14	b	14	LEU
14	b	39	ASP
14	b	77	THR
14	b	119	VAL
14	b	126	ILE
14	b	139	ASP
14	b	141	ASN
14	b	143	ARG
14	b	149	GLU
14	b	160	SER
14	b	165	TRP

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Mol	Chain	Res	Type
14	b	176	VAL
14	b	177	VAL
14	b	178	LEU
14	b	183	VAL
14	b	192	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (178) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	149	GLN
2	B	20	GLN
2	B	93	HIS
2	B	95	GLN
2	B	119	GLN
2	B	123	GLN
2	B	155	ASN
2	B	176	GLN
2	B	232	GLN
3	C	17	GLN
3	C	38	ASN
3	C	77	ASN
3	C	116	GLN
3	C	120	GLN
3	C	147	GLN
3	C	160	GLN
4	D	15	GLN
4	D	91	HIS
4	D	100	ASN
4	D	106	GLN
4	D	160	ASN
4	D	198	GLN
4	D	225	ASN
5	E	68	HIS
5	E	99	ASN
5	E	116	GLN
5	E	120	GLN
5	E	147	GLN
5	E	184	ASN
6	F	19	GLN
6	F	86	ASN
6	F	117	GLN
6	F	123	ASN

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Mol	Chain	Res	Type
6	F	178	HIS
6	F	191	GLN
6	F	203	ASN
6	F	240	GLN
7	G	6	HIS
7	G	30	ASN
7	G	83	ASN
7	G	117	GLN
7	G	121	GLN
7	G	166	GLN
7	G	167	GLN
7	G	175	ASN
8	H	30	ASN
8	H	57	GLN
8	H	66	HIS
8	H	86	HIS
8	H	165	ASN
8	H	172	ASN
8	H	189	ASN
8	H	200	GLN
9	I	31	GLN
9	I	37	ASN
9	I	63	ASN
9	I	88	GLN
9	I	203	GLN
10	J	55	GLN
10	J	63	ASN
10	J	147	HIS
10	J	191	GLN
11	K	9	GLN
11	K	85	ASN
11	K	133	GLN
11	K	176	ASN
11	K	190	ASN
11	K	208	ASN
12	L	3	ASN
12	L	49	ASN
12	L	70	ASN
12	L	76	HIS
12	L	80	ASN
12	L	158	ASN
12	L	159	GLN

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Mol	Chain	Res	Type
12	L	165	ASN
12	L	197	GLN
13	M	2	GLN
13	M	26	ASN
13	M	48	ASN
13	M	108	ASN
13	M	179	ASN
13	M	211	ASN
13	M	213	GLN
14	N	28	ASN
14	N	69	GLN
14	N	141	ASN
1	O	143	ASN
2	P	20	GLN
2	P	95	GLN
2	P	119	GLN
2	P	123	GLN
2	P	176	GLN
2	P	232	GLN
3	Q	17	GLN
3	Q	38	ASN
3	Q	77	ASN
3	Q	116	GLN
3	Q	120	GLN
3	Q	147	GLN
3	Q	160	GLN
3	Q	233	GLN
4	R	15	GLN
4	R	91	HIS
4	R	100	ASN
4	R	106	GLN
4	R	146	GLN
4	R	160	ASN
4	R	198	GLN
4	R	225	ASN
5	S	68	HIS
5	S	99	ASN
5	S	116	GLN
5	S	120	GLN
5	S	147	GLN
5	S	184	ASN
6	T	19	GLN

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Mol	Chain	Res	Type
6	T	86	ASN
6	T	117	GLN
6	T	123	ASN
6	T	191	GLN
6	T	203	ASN
6	T	240	GLN
7	U	30	ASN
7	U	83	ASN
7	U	117	GLN
7	U	121	GLN
7	U	166	GLN
7	U	167	GLN
7	U	175	ASN
8	V	30	ASN
8	V	57	GLN
8	V	66	HIS
8	V	165	ASN
8	V	172	ASN
8	V	189	ASN
8	V	200	GLN
9	W	37	ASN
9	W	44	HIS
9	W	63	ASN
9	W	88	GLN
9	W	203	GLN
10	X	37	GLN
10	X	55	GLN
10	X	63	ASN
10	X	78	GLN
10	X	146	HIS
10	X	147	HIS
10	X	191	GLN
11	Y	9	GLN
11	Y	62	GLN
11	Y	85	ASN
11	Y	133	GLN
11	Y	143	ASN
11	Y	176	ASN
11	Y	208	ASN
12	Z	3	ASN
12	Z	49	ASN
12	Z	70	ASN

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Mol	Chain	Res	Type
12	Z	76	HIS
12	Z	80	ASN
12	Z	94	GLN
12	Z	158	ASN
12	Z	165	ASN
12	Z	197	GLN
13	a	2	GLN
13	a	26	ASN
13	a	37	ASN
13	a	48	ASN
13	a	108	ASN
13	a	179	ASN
13	a	211	ASN
13	a	213	GLN
14	b	28	ASN
14	b	38	HIS
14	b	69	GLN
14	b	141	ASN
14	b	145	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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 7 are monoatomic - leaving 1 for Mogul analysis.

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	$\# Z > 2$
17	MES	a	301	-	12,12,12	0.69	0	15,16,16	0.35	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
17	MES	a	301	-	-	3/6/14/14	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
17	a	301	MES	C7-C8-S-O2S
17	a	301	MES	C7-C8-S-O3S
17	a	301	MES	C7-C8-S-O1S

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	250/250 (100%)	-0.41	2 (0%) 82 81	42, 54, 88, 139	0
1	O	250/250 (100%)	-0.35	2 (0%) 82 81	46, 62, 103, 144	0
2	B	241/258 (93%)	-0.28	2 (0%) 82 81	44, 61, 98, 152	0
2	P	244/258 (94%)	-0.17	5 (2%) 65 62	48, 65, 108, 148	0
3	C	240/254 (94%)	-0.28	3 (1%) 75 73	45, 66, 121, 151	0
3	Q	240/254 (94%)	-0.13	6 (2%) 58 55	50, 73, 139, 159	0
4	D	235/260 (90%)	-0.30	1 (0%) 88 87	46, 67, 95, 132	0
4	R	235/260 (90%)	-0.26	2 (0%) 81 80	46, 67, 97, 133	0
5	E	231/234 (98%)	-0.34	0 100 100	49, 66, 94, 127	0
5	S	231/234 (98%)	-0.32	1 (0%) 88 87	47, 69, 97, 125	0
6	F	243/288 (84%)	-0.40	1 (0%) 88 87	42, 60, 100, 124	0
6	T	243/288 (84%)	-0.37	2 (0%) 82 81	43, 62, 102, 124	0
7	G	241/252 (95%)	-0.44	0 100 100	42, 55, 82, 114	0
7	U	241/252 (95%)	-0.39	1 (0%) 88 87	44, 58, 92, 110	0
8	H	222/232 (95%)	-0.42	1 (0%) 87 86	41, 53, 76, 104	0
8	V	222/232 (95%)	-0.40	0 100 100	46, 56, 83, 124	0
9	I	204/205 (99%)	-0.55	0 100 100	40, 51, 73, 106	0
9	W	204/205 (99%)	-0.58	0 100 100	43, 54, 79, 106	0
10	J	195/198 (98%)	-0.49	2 (1%) 79 78	42, 56, 76, 110	0
10	X	195/198 (98%)	-0.51	2 (1%) 79 78	44, 58, 78, 122	0
11	K	212/212 (100%)	-0.51	0 100 100	42, 55, 72, 92	0
11	Y	212/212 (100%)	-0.47	0 100 100	43, 54, 73, 89	0
12	L	222/222 (100%)	-0.42	1 (0%) 87 86	43, 56, 89, 115	0
12	Z	222/222 (100%)	-0.37	1 (0%) 87 86	41, 53, 83, 127	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
13	M	233/246 (94%)	-0.43	3 (1%) 75 73	41, 56, 75, 92	0
13	a	233/246 (94%)	-0.51	3 (1%) 75 73	38, 54, 74, 96	0
14	N	196/196 (100%)	-0.26	6 (3%) 51 48	41, 55, 100, 124	0
14	b	196/196 (100%)	-0.33	2 (1%) 79 78	42, 56, 100, 117	0
All	All	6333/6614 (95%)	-0.38	49 (0%) 82 81	38, 59, 97, 159	0

All (49) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	Q	205	ALA	5.2
14	N	137	TYR	5.1
3	Q	50	LEU	4.7
2	P	219	ALA	3.8
10	J	1	MET	3.8
10	X	1	MET	3.7
12	Z	174	TYR	3.6
1	A	2	THR	3.6
3	C	205	ALA	3.5
13	a	36	PHE	3.4
14	N	135	TYR	3.3
2	P	51	VAL	3.3
1	A	1	MET	3.2
10	J	174	MET	3.2
6	F	243	ILE	3.1
2	B	51	VAL	3.0
2	P	1	GLY	2.9
3	Q	51	LYS	2.8
4	D	240	ALA	2.7
3	Q	206	LYS	2.7
13	M	36	PHE	2.7
1	O	1	MET	2.6
12	L	174	TYR	2.6
13	M	1	THR	2.5
13	a	1	THR	2.5
14	N	165	TRP	2.4
13	a	69	ASP	2.4
4	R	113	LEU	2.3
3	Q	49	THR	2.3
1	O	249	ALA	2.3
2	P	52	THR	2.3
10	X	174	MET	2.2

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Mol	Chain	Res	Type	RSRZ
14	b	165	TRP	2.2
14	b	135	TYR	2.2
7	U	242	GLN	2.2
13	M	69	ASP	2.2
6	T	2	THR	2.2
3	C	206	LYS	2.2
8	H	114	HIS	2.2
2	P	93	HIS	2.1
14	N	116	GLY	2.1
6	T	59	LYS	2.1
4	R	116	GLY	2.1
5	S	122	TYR	2.1
3	C	240	GLU	2.1
2	B	217	LYS	2.0
3	Q	52	LEU	2.0
14	N	196	LEU	2.0
14	N	140	LYS	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
15	MG	I	301	1/1	0.73	0.23	109,109,109,109	0
15	MG	Z	301	1/1	0.83	0.26	137,137,137,137	0
16	CL	U	301	1/1	0.87	0.08	80,80,80,80	0
17	MES	a	301	12/12	0.88	0.14	97,108,110,111	0
15	MG	K	301	1/1	0.94	0.15	92,92,92,92	0
16	CL	G	302	1/1	0.96	0.05	57,57,57,57	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
15	MG	V	301	1/1	0.96	0.09	91,91,91,91	0
15	MG	G	301	1/1	0.96	0.08	75,75,75,75	0

6.5 Other polymers [i](#)

There are no such residues in this entry.