



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 03:08 PM UTC

PDB ID : 3UN8 / pdb_00003un8
Title : Yeast 20S proteasome in complex with PR-957 (epoxide)
Authors : Huber, E.; Basler, M.; Schwab, R.; Heinemeyer, W.; Kirk, C.; Groettrup, M.; Groll, M.
Deposited on : 2011-11-15
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

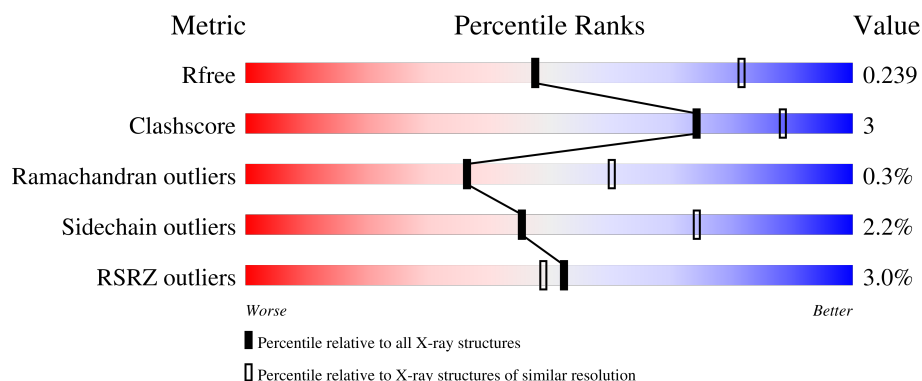
1 Overall quality at a glance

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	3% 90% 10%
1	O	250	4% 91% 9%
2	B	258	5% 84% 10% • 5%
2	P	258	7% 83% 10% • 5%
3	C	254	6% 86% 8% • 5%

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Mol	Chain	Length	Quality of chain
3	Q	254	 6% 86% 8% • 5%
4	D	260	 5% 83% 10% • 7%
4	R	260	 6% 84% 8% • 7%
5	E	234	 6% 91% 7% •
5	S	234	 5% 88% 12%
6	F	288	 2% 76% 8% • 15%
6	T	288	 4% 76% 7% • 15%
7	G	252	 2% 86% 10% •
7	U	252	 2% 88% 8% •
8	H	232	 % 91% • •
8	V	232	 88% 7% •
9	I	205	 % 86% 12% •
9	W	205	 % 85% 13% •
10	J	198	 3% 90% 9% •
10	X	198	 3% 87% 12% •
11	K	212	 % 90% 10%
11	Y	212	 % 92% 8%
12	L	222	 % 95% 5%
12	Z	222	 % 90% 10%
13	M	233	 % 90% 10%
13	a	233	 % 88% 12%
14	N	196	 % 95% 5%
14	b	196	 2% 95% • •

2 Entry composition

There are 16 unique types of molecules in this entry. The entry contains 50914 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 component Y7.

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 component Y13.

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

- Molecule 3 is a protein called Proteasome component PRE6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	241	Total	C	N	O	S	0	0	0
			1890	1181	331	374	4			
3	Q	241	Total	C	N	O	S	0	0	0
			1890	1181	331	374	4			

- Molecule 4 is a protein called Proteasome component PUP2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	242	Total	C	N	O	S	0	0	0
			1861	1162	314	378	7			
4	R	242	Total	C	N	O	S	0	0	0
			1861	1162	314	378	7			

- Molecule 5 is a protein called Proteasome component PRE5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	233	Total	C	N	O	S	0	0	0
			1795	1129	312	350	4			
5	S	233	Total	C	N	O	S	0	0	0
			1795	1129	312	350	4			

- Molecule 6 is a protein called Proteasome component C1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	244	Total	C	N	O	S	0	0	0
			1896	1205	330	357	4			
6	T	244	Total	C	N	O	S	0	0	0
			1896	1205	330	357	4			

- Molecule 7 is a protein called Proteasome component C7-alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	243	Total	C	N	O	S	0	0	0
			1921	1221	322	370	8			
7	U	243	Total	C	N	O	S	0	0	0
			1921	1221	322	370	8			

- Molecule 8 is a protein called Proteasome component PUP1.

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 component PUP3.

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 component C11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	198	Total	C	N	O	S	0	0	0
			1585	1005	269	305	6			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	X	198	Total	C	N	O	S	0	0	0
			1585	1005	269	305	6			

- Molecule 11 is a protein called Proteasome component PRE2.

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 component C5.

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			

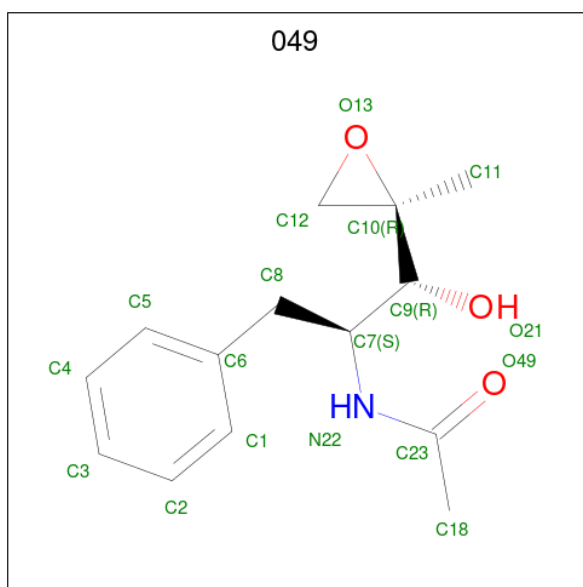
- Molecule 13 is a protein called Proteasome component PRE4.

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 component PRE3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	196	Total	C	N	O	S	0	0	0
			1512	955	250	300	7			
14	b	196	Total	C	N	O	S	0	0	0
			1512	955	250	300	7			

- Molecule 15 is 2-(acetylamino)-4,5-anhydro-1,2-dideoxy-4-methyl-1-phenyl-D-xylitol (CCD ID: 049) (formula: C₁₄H₁₉NO₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
15	K	1	Total	C	N	O	0	0
			18	14	1	3		
15	Y	1	Total	C	N	O	0	0
			18	14	1	3		

- Molecule 16 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
16	A	61	Total	O	0	0
			61	61		
16	B	37	Total	O	0	0
			37	37		
16	C	42	Total	O	0	0
			42	42		
16	D	37	Total	O	0	0
			37	37		
16	E	21	Total	O	0	0
			21	21		
16	F	48	Total	O	0	0
			48	48		
16	G	60	Total	O	0	0
			60	60		
16	H	54	Total	O	0	0
			54	54		
16	I	65	Total	O	0	0
			65	65		
16	J	52	Total	O	0	0
			52	52		

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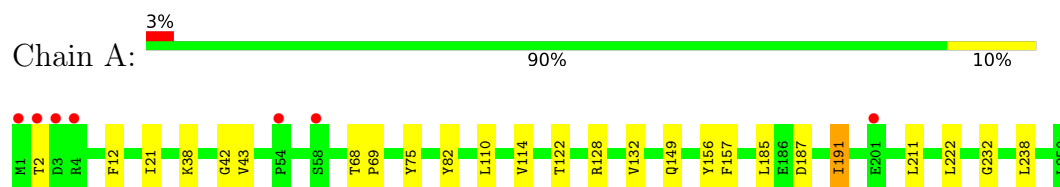
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
16	K	46	Total 46	O 46	0	0
16	L	56	Total 56	O 56	0	0
16	M	73	Total 73	O 73	0	0
16	N	58	Total 58	O 58	0	0
16	O	34	Total 34	O 34	0	0
16	P	29	Total 29	O 29	0	0
16	Q	28	Total 28	O 28	0	0
16	R	29	Total 29	O 29	0	0
16	S	20	Total 20	O 20	0	0
16	T	41	Total 41	O 41	0	0
16	U	61	Total 61	O 61	0	0
16	V	53	Total 53	O 53	0	0
16	W	60	Total 60	O 60	0	0
16	X	45	Total 45	O 45	0	0
16	Y	53	Total 53	O 53	0	0
16	Z	47	Total 47	O 47	0	0
16	a	73	Total 73	O 73	0	0
16	b	57	Total 57	O 57	0	0

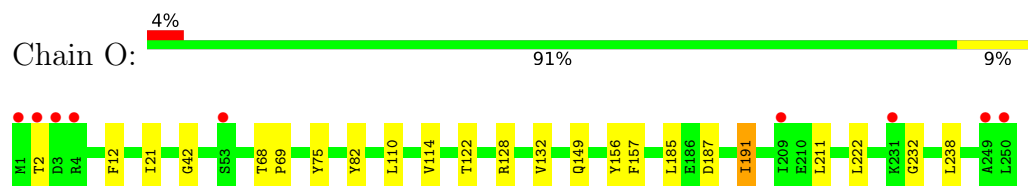
3 Residue-property plots [i](#)

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.

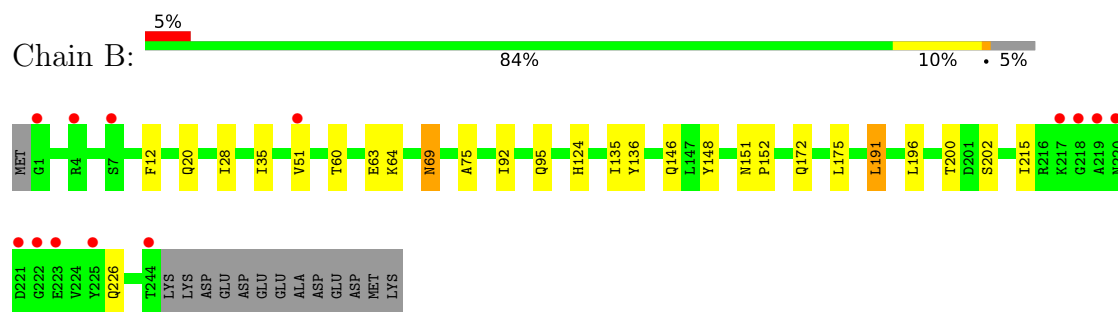
- Molecule 1: Proteasome component Y7



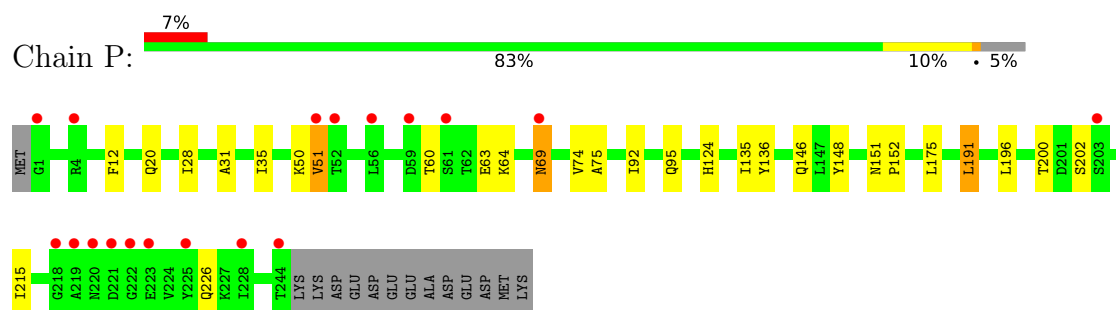
- Molecule 1: Proteasome component Y7



- Molecule 2: Proteasome component Y13

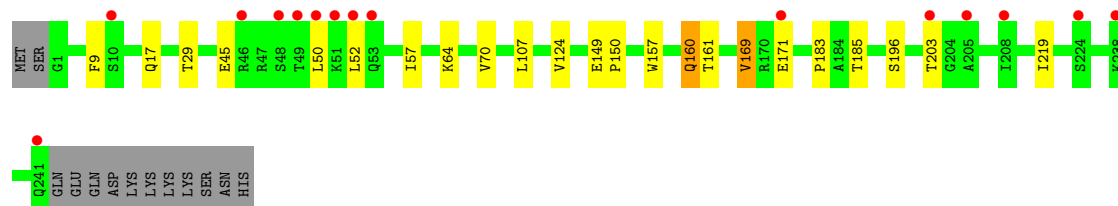


- Molecule 2: Proteasome component Y13



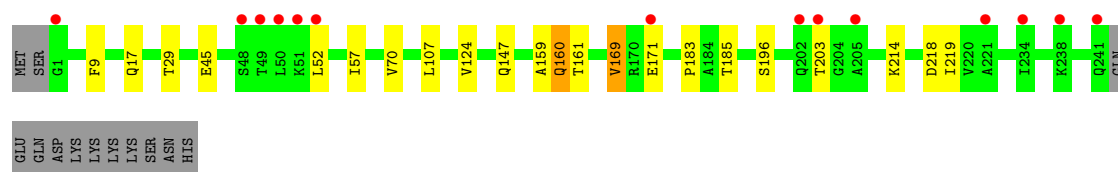
- Molecule 3: Proteasome component PRE6

Chain C: 



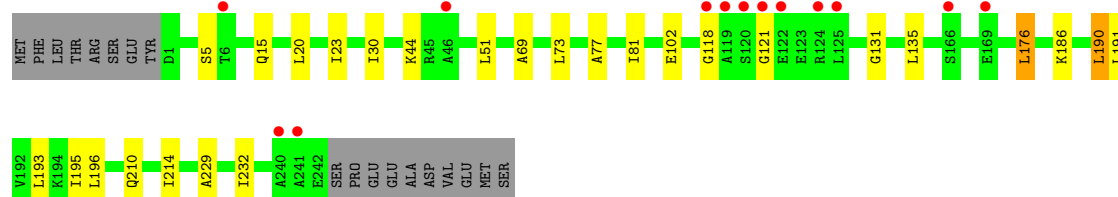
- Molecule 3: Proteasome component PRE6

Chain Q: 



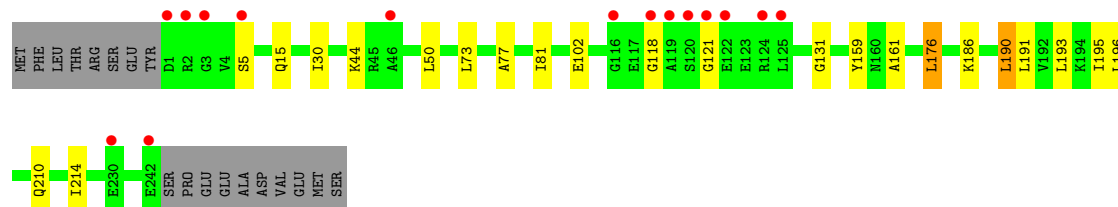
- Molecule 4: Proteasome component PUP2

Chain D: 

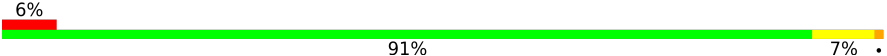


- Molecule 4: Proteasome component PUP2

Chain R: 

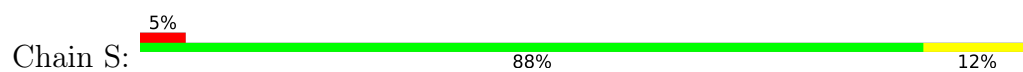


- Molecule 5: Proteasome component PRE5

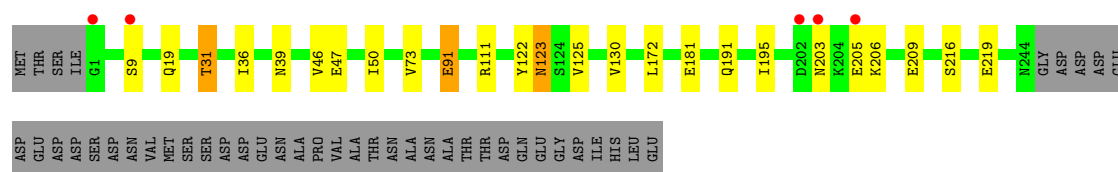
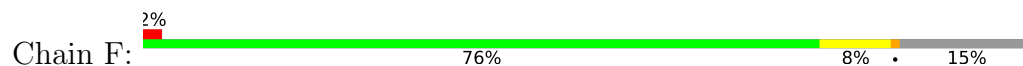
Chain E: 



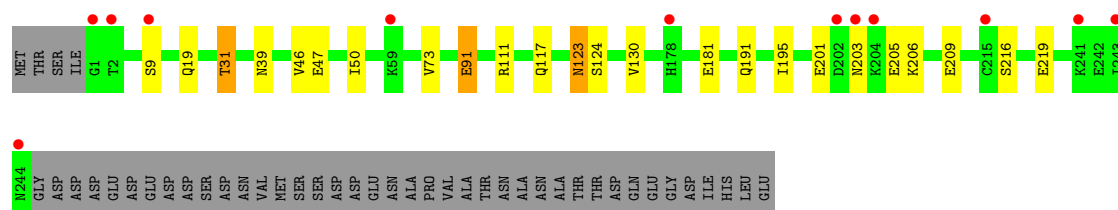
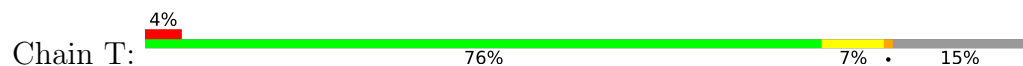
- Molecule 5: Proteasome component PRE5



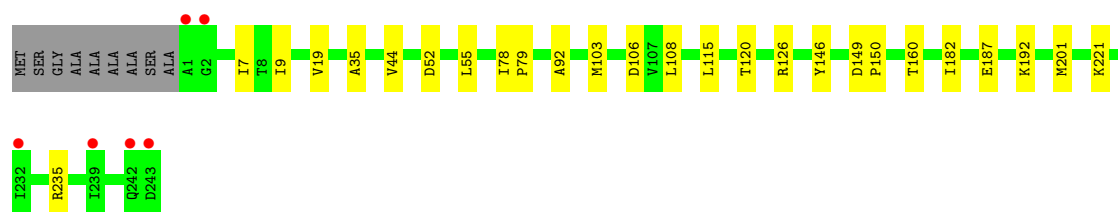
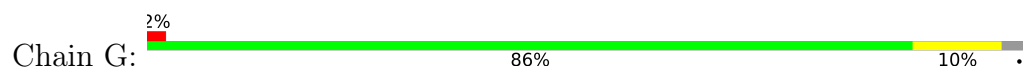
- Molecule 6: Proteasome component C1



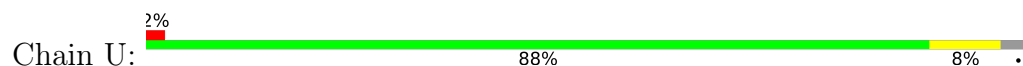
- Molecule 6: Proteasome component C1



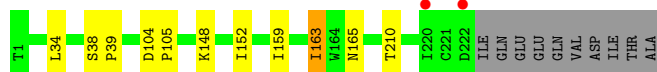
- Molecule 7: Proteasome component C7-alpha



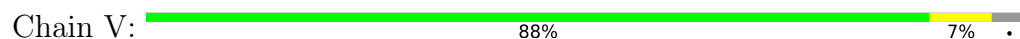
- Molecule 7: Proteasome component C7-alpha



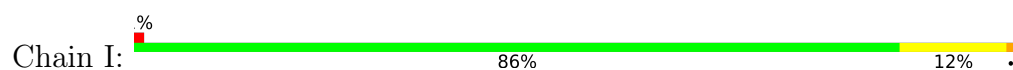
- Molecule 8: Proteasome component PUP1



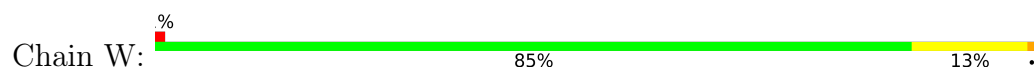
• Molecule 8: Proteasome component PUP1



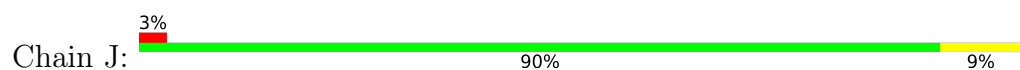
• Molecule 9: Proteasome component PUP3



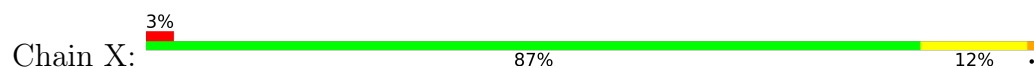
• Molecule 9: Proteasome component PUP3



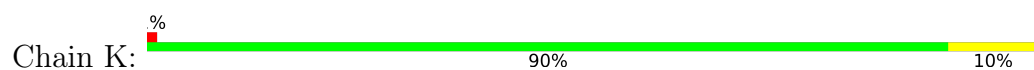
• Molecule 10: Proteasome component C11



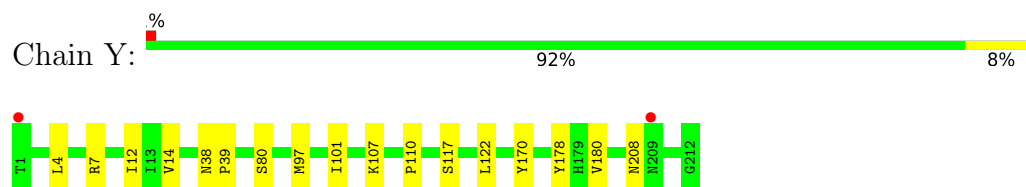
• Molecule 10: Proteasome component C11



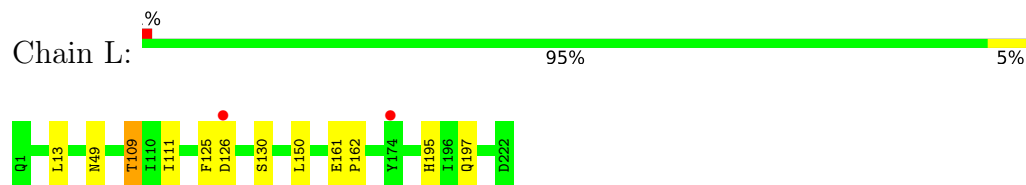
• Molecule 11: Proteasome component PRE2



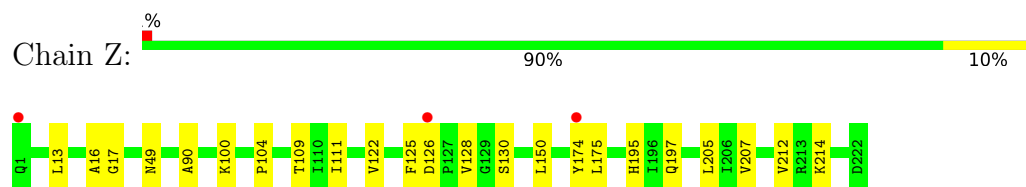
- Molecule 11: Proteasome component PRE2



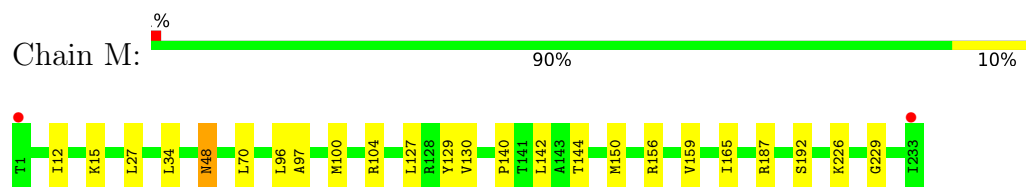
- Molecule 12: Proteasome component C5



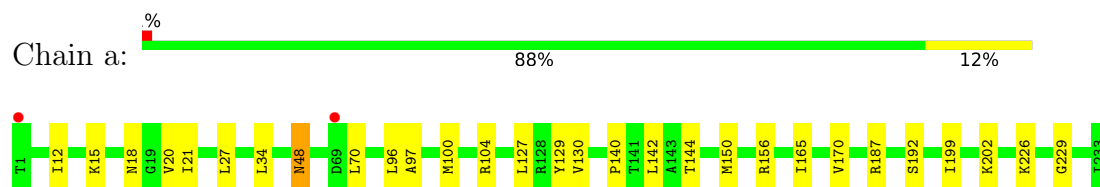
- Molecule 12: Proteasome component C5



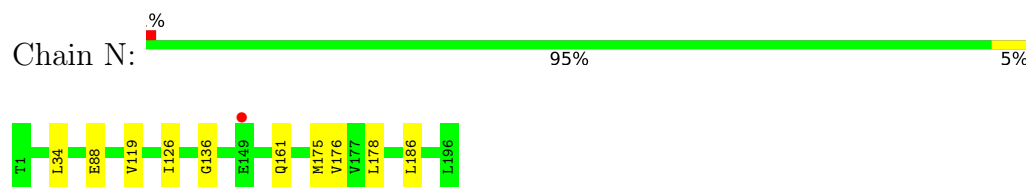
- Molecule 13: Proteasome component PRE4



- Molecule 13: Proteasome component PRE4



- Molecule 14: Proteasome component PRE3



- Molecule 14: Proteasome component PRE3





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	135.42Å 300.42Å 143.93Å 90.00° 112.83° 90.00°	Depositor
Resolution (Å)	15.00 – 2.70 15.00 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.2 (15.00-2.70) 98.8 (15.00-2.70)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.93 (at 2.72Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.217 , 0.240 0.217 , 0.239	Depositor DCC
R_{free} test set	14346 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	45.4	Xtriage
Anisotropy	0.809	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 50.6	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	0.93	EDS
Total number of atoms	50914	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 2.18% 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:
049

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	0.48	0/1952	0.75	0/2642
1	O	0.48	0/1952	0.75	0/2642
2	B	0.46	0/1934	0.73	0/2618
2	P	0.46	0/1934	0.73	0/2618
3	C	0.47	0/1919	0.75	0/2598
3	Q	0.47	0/1919	0.75	0/2598
4	D	0.53	0/1886	0.72	0/2541
4	R	0.53	0/1886	0.72	0/2541
5	E	0.47	0/1823	0.72	0/2463
5	S	0.47	0/1823	0.72	2/2463 (0.1%)
6	F	0.58	0/1936	0.75	0/2614
6	T	0.58	0/1936	0.76	0/2614
7	G	0.48	0/1959	0.74	0/2652
7	U	0.48	0/1959	0.75	0/2652
8	H	0.61	0/1715	0.74	0/2326
8	V	0.61	0/1715	0.73	0/2326
9	I	0.45	0/1611	0.73	0/2174
9	W	0.45	0/1611	0.73	0/2174
10	J	0.49	0/1613	0.74	0/2173
10	X	0.49	0/1613	0.74	0/2173
11	K	0.58	0/1681	0.74	0/2274
11	Y	0.58	0/1681	0.74	0/2274
12	L	0.50	0/1795	0.72	0/2420
12	Z	0.50	0/1795	0.72	0/2420
13	M	0.47	0/1855	0.73	0/2514
13	a	0.47	0/1855	0.73	0/2514
14	N	0.52	0/1541	0.74	0/2087
14	b	0.52	0/1541	0.74	0/2087
All	All	0.51	0/50440	0.74	2/68192 (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	S	147	GLN	CA-C-N	5.07	125.35	119.47
5	S	147	GLN	C-N-CA	5.07	125.35	119.47

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	12	0
1	O	1915	0	1929	11	0
2	B	1904	0	1904	17	0
2	P	1904	0	1904	16	0
3	C	1890	0	1903	14	0
3	Q	1890	0	1903	11	0
4	D	1861	0	1839	13	0
4	R	1861	0	1839	12	0
5	E	1795	0	1800	10	0
5	S	1795	0	1800	14	0
6	F	1896	0	1889	14	0
6	T	1896	0	1889	14	0
7	G	1921	0	1913	12	0
7	U	1921	0	1913	10	0
8	H	1684	0	1688	7	0
8	V	1684	0	1688	11	0
9	I	1581	0	1574	17	0
9	W	1581	0	1574	19	0
10	J	1585	0	1590	12	0
10	X	1585	0	1590	16	0
11	K	1644	0	1594	17	0
11	Y	1644	0	1594	12	0
12	L	1757	0	1711	6	0
12	Z	1757	0	1711	11	0
13	M	1824	0	1832	13	0
13	a	1824	0	1832	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	N	1512	0	1481	4	0
14	b	1512	0	1481	4	0
15	K	18	0	17	4	0
15	Y	18	0	17	4	0
16	A	61	0	0	0	0
16	B	37	0	0	0	0
16	C	42	0	0	0	0
16	D	37	0	0	0	0
16	E	21	0	0	0	0
16	F	48	0	0	0	0
16	G	60	0	0	0	0
16	H	54	0	0	0	0
16	I	65	0	0	0	0
16	J	52	0	0	0	0
16	K	46	0	0	0	0
16	L	56	0	0	0	0
16	M	73	0	0	0	0
16	N	58	0	0	0	0
16	O	34	0	0	0	0
16	P	29	0	0	0	0
16	Q	28	0	0	0	0
16	R	29	0	0	0	0
16	S	20	0	0	0	0
16	T	41	0	0	0	0
16	U	61	0	0	0	0
16	V	53	0	0	0	0
16	W	60	0	0	0	0
16	X	45	0	0	0	0
16	Y	53	0	0	1	0
16	Z	47	0	0	0	0
16	a	73	0	0	0	0
16	b	57	0	0	0	0
All	All	50914	0	49328	304	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 (304) 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)
11:Y:170:TYR:HB3	15:Y:213:049:H12A	1.53	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:1:THR:CB	15:K:213:049:C9	2.51	0.87
12:L:109:THR:HG23	12:L:125:PHE:HB2	1.66	0.78
3:Q:160:GLN:HA	3:Q:160:GLN:HE21	1.50	0.76
3:C:160:GLN:HE21	3:C:160:GLN:HA	1.53	0.73
3:C:9:PHE:H	4:D:15:GLN:HE22	1.38	0.69
2:B:12:PHE:H	3:C:17:GLN:HE22	1.42	0.68
2:P:200:THR:HG22	2:P:202:SER:H	1.59	0.66
12:Z:109:THR:HG23	12:Z:125:PHE:HB2	1.77	0.65
6:T:91:GLU:HG2	6:T:111:ARG:HB3	1.79	0.65
3:Q:9:PHE:H	4:R:15:GLN:HE22	1.43	0.65
12:Z:13:LEU:HD11	12:Z:150:LEU:HD21	1.79	0.65
11:Y:170:TYR:CB	15:Y:213:049:H12A	2.26	0.65
1:A:12:PHE:H	2:B:20:GLN:HE22	1.44	0.63
12:L:13:LEU:HD11	12:L:150:LEU:HD21	1.80	0.63
1:O:12:PHE:H	2:P:20:GLN:HE22	1.44	0.63
7:G:92:ALA:HA	7:G:103:MET:HE2	1.80	0.62
2:B:151:ASN:HB2	2:B:152:PRO:HD2	1.81	0.61
5:E:12:PHE:H	6:F:19:GLN:HE22	1.47	0.60
4:D:44:LYS:HE3	4:D:210:GLN:HB2	1.83	0.60
10:X:172:MET:HE3	10:X:174:MET:HB2	1.82	0.60
2:P:151:ASN:HB2	2:P:152:PRO:HD2	1.83	0.60
12:Z:195:HIS:HD2	12:Z:197:GLN:H	1.49	0.59
8:H:165:ASN:HD22	13:a:156:ARG:HH11	1.49	0.59
10:J:150:PRO:HG3	11:Y:208:ASN:HD21	1.68	0.59
5:S:12:PHE:H	6:T:19:GLN:HE22	1.49	0.59
7:U:92:ALA:HA	7:U:103:MET:HE2	1.84	0.59
2:B:200:THR:HG22	2:B:202:SER:H	1.68	0.59
8:H:104:ASP:HB2	8:H:105:PRO:HD2	1.85	0.59
10:J:172:MET:HE3	10:J:174:MET:HB2	1.84	0.59
13:M:156:ARG:HH11	8:V:165:ASN:HD22	1.51	0.58
4:R:44:LYS:HE3	4:R:210:GLN:HB2	1.85	0.58
13:M:48:ASN:H	13:M:48:ASN:HD22	1.50	0.58
13:a:48:ASN:H	13:a:48:ASN:HD22	1.50	0.58
9:W:9:GLY:HA3	9:W:41:LYS:HE2	1.86	0.58
2:P:12:PHE:H	3:Q:17:GLN:HE22	1.51	0.58
2:B:95:GLN:HE22	9:I:71:ASN:HD22	1.52	0.58
1:O:21:ILE:HD11	1:O:122:THR:HG21	1.86	0.58
9:I:9:GLY:HA3	9:I:41:LYS:HE2	1.86	0.57
13:M:27:LEU:HB2	13:M:192:SER:HB2	1.86	0.57
6:F:91:GLU:HG2	6:F:111:ARG:HB3	1.84	0.57
11:K:38:ASN:HB2	11:K:39:PRO:HD2	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:45:MET:HB3	15:K:213:049:H3	1.86	0.57
1:O:211:LEU:HD22	1:O:238:LEU:HD12	1.86	0.57
10:J:174:MET:HE3	10:X:174:MET:HE3	1.88	0.56
7:U:187:GLU:HG2	7:U:192:LYS:HB2	1.87	0.56
11:Y:38:ASN:HB2	11:Y:39:PRO:HD2	1.87	0.56
2:B:215:ILE:HG12	2:B:226:GLN:HG2	1.88	0.56
4:D:30:ILE:HD12	4:D:196:LEU:HG	1.87	0.56
6:F:31:THR:HG23	6:F:47:GLU:HB3	1.87	0.56
11:K:208:ASN:HD21	10:X:150:PRO:HG3	1.71	0.56
3:Q:169:VAL:HG23	3:Q:196:SER:HB2	1.88	0.56
6:T:191:GLN:O	6:T:195:ILE:HG12	2.06	0.55
1:A:21:ILE:HD11	1:A:122:THR:HG21	1.88	0.55
1:A:211:LEU:HD22	1:A:238:LEU:HD12	1.87	0.55
2:B:124:HIS:HB3	3:C:124:VAL:HG12	1.89	0.55
4:R:5:SER:HB2	5:S:125:ARG:HD3	1.89	0.55
10:X:104:ILE:HB	10:X:117:TYR:HB2	1.89	0.55
2:P:215:ILE:HG12	2:P:226:GLN:HG2	1.89	0.55
9:I:94:LEU:HD11	9:I:106:PRO:HG2	1.88	0.55
11:K:83:LEU:HD23	11:K:101:ILE:HD11	1.89	0.55
7:G:78:ILE:N	7:G:79:PRO:HD2	2.22	0.54
4:R:30:ILE:HD12	4:R:196:LEU:HG	1.89	0.54
14:b:175:MET:HB2	14:b:186:LEU:HB2	1.88	0.54
14:N:161:GLN:HE21	14:b:136:GLY:HA2	1.73	0.54
6:F:191:GLN:O	6:F:195:ILE:HG12	2.07	0.54
3:C:169:VAL:HG23	3:C:196:SER:HB2	1.89	0.54
13:M:27:LEU:HD21	13:M:34:LEU:HD22	1.90	0.54
2:B:146:GLN:HG2	3:C:57:ILE:HG21	1.90	0.54
11:K:1:THR:HB	15:K:213:049:C9	2.35	0.54
2:P:124:HIS:HB3	3:Q:124:VAL:HG12	1.90	0.53
2:P:95:GLN:HE22	9:W:71:ASN:HD22	1.55	0.53
7:U:78:ILE:N	7:U:79:PRO:HD2	2.23	0.53
5:E:80:ALA:HB2	5:E:129:VAL:HG21	1.91	0.53
6:F:91:GLU:HG3	6:F:111:ARG:HH11	1.73	0.53
15:Y:213:049:H11A	16:Y:1202:HOH:O	2.09	0.53
13:a:27:LEU:HB2	13:a:192:SER:HB2	1.90	0.53
13:a:27:LEU:HD21	13:a:34:LEU:HD22	1.90	0.53
5:S:80:ALA:HB2	5:S:129:VAL:HG21	1.90	0.53
7:G:187:GLU:HG2	7:G:192:LYS:HB2	1.91	0.52
9:W:94:LEU:HD11	9:W:106:PRO:HG2	1.90	0.52
2:B:63:GLU:HG3	2:B:64:LYS:HG3	1.92	0.52
13:M:129:TYR:HE1	13:M:144:THR:HG22	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S:87:LEU:HD11	5:S:107:ALA:HB1	1.91	0.52
10:J:104:ILE:HB	10:J:117:TYR:HB2	1.91	0.52
13:a:150:MET:HE1	13:a:187:ARG:HG3	1.92	0.52
9:W:28:LEU:HB3	9:W:36:SER:HB3	1.91	0.52
13:a:129:TYR:HE1	13:a:144:THR:HG22	1.75	0.52
14:N:175:MET:HB2	14:N:186:LEU:HB2	1.92	0.51
2:B:136:TYR:HB2	2:B:148:TYR:HB2	1.93	0.51
9:I:20:VAL:HG23	9:I:189:ILE:HB	1.93	0.51
6:T:31:THR:HG21	6:T:47:GLU:O	2.11	0.51
13:M:150:MET:HE1	13:M:187:ARG:HG3	1.93	0.51
6:F:216:SER:HB3	6:F:219:GLU:HB2	1.93	0.50
4:D:5:SER:HB2	5:E:125:ARG:HD3	1.92	0.50
13:a:15:LYS:HG3	13:a:165:ILE:HD12	1.93	0.50
6:T:91:GLU:HG3	6:T:111:ARG:HH11	1.77	0.50
5:E:87:LEU:HD11	5:E:107:ALA:HB1	1.94	0.50
11:K:14:VAL:HB	11:K:178:TYR:HB2	1.93	0.50
9:W:106:PRO:HD2	9:W:123:PHE:HB2	1.92	0.50
14:b:83:LYS:HG3	14:b:119:VAL:HG22	1.94	0.50
3:C:161:THR:HG21	3:C:169:VAL:HG13	1.94	0.50
8:H:148:LYS:O	8:H:152:ILE:HG12	2.11	0.50
8:V:104:ASP:HB2	8:V:105:PRO:HD2	1.93	0.50
8:V:148:LYS:O	8:V:152:ILE:HG12	2.12	0.50
13:M:15:LYS:HG3	13:M:165:ILE:HD12	1.94	0.50
2:P:75:ALA:HB3	2:P:135:ILE:HB	1.93	0.50
4:D:73:LEU:HD12	4:D:131:GLY:HA3	1.94	0.49
10:J:21:VAL:HG11	11:K:122:LEU:HD11	1.94	0.49
14:N:136:GLY:HA2	14:b:161:GLN:HE21	1.77	0.49
4:R:73:LEU:HD12	4:R:131:GLY:HA3	1.94	0.49
7:U:19:VAL:HG21	7:U:120:THR:HG23	1.94	0.49
9:W:52:ILE:HB	9:W:59:VAL:HG13	1.95	0.49
13:a:48:ASN:HD22	13:a:48:ASN:N	2.10	0.49
11:K:107:LYS:H	11:K:107:LYS:HD2	1.77	0.49
12:L:195:HIS:HD2	12:L:197:GLN:H	1.61	0.49
4:R:77:ALA:O	4:R:81:ILE:HG12	2.13	0.49
11:Y:14:VAL:HB	11:Y:178:TYR:HB2	1.95	0.49
2:P:146:GLN:HG2	3:Q:57:ILE:HG21	1.95	0.49
6:T:31:THR:HG23	6:T:47:GLU:HB3	1.93	0.49
2:B:75:ALA:HB3	2:B:135:ILE:HB	1.94	0.48
6:F:123:ASN:C	6:F:123:ASN:HD22	2.21	0.48
8:H:38:SER:HB2	8:H:39:PRO:HD2	1.95	0.48
2:P:63:GLU:HG3	2:P:64:LYS:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:Y:107:LYS:H	11:Y:107:LYS:HD2	1.78	0.48
2:B:35:ILE:HD12	2:B:196:LEU:HG	1.94	0.48
6:T:216:SER:HB3	6:T:219:GLU:HB2	1.96	0.48
8:V:38:SER:HB2	8:V:39:PRO:HD2	1.95	0.48
9:I:10:ILE:HG21	9:I:141:ALA:HB3	1.95	0.48
4:R:191:LEU:O	4:R:195:ILE:HD12	2.14	0.48
9:I:106:PRO:HD2	9:I:123:PHE:HB2	1.94	0.48
1:O:222:LEU:HD13	1:O:232:GLY:HA2	1.95	0.48
8:V:210:THR:HG21	9:W:167:SER:HB3	1.93	0.48
10:X:4:ILE:HG22	10:X:103:LEU:HD12	1.96	0.48
12:Z:126:ASP:HB2	12:Z:130:SER:HB3	1.95	0.48
9:W:20:VAL:HG23	9:W:189:ILE:HB	1.95	0.48
2:P:136:TYR:HB2	2:P:148:TYR:HB2	1.95	0.47
4:D:191:LEU:O	4:D:195:ILE:HD12	2.15	0.47
9:I:37:ASN:C	9:I:37:ASN:HD22	2.23	0.47
3:Q:161:THR:HG21	3:Q:169:VAL:HG13	1.96	0.47
10:X:39:SER:HB2	10:X:40:PRO:HD2	1.97	0.47
5:S:185:PRO:O	5:S:189:ILE:HG12	2.15	0.47
7:U:103:MET:HE3	7:U:108:LEU:HB2	1.97	0.47
1:A:222:LEU:HD13	1:A:232:GLY:HA2	1.97	0.47
10:J:149:ARG:HB2	10:J:152:MET:HG3	1.96	0.47
9:W:120:ILE:HD12	9:W:136:ILE:HG12	1.97	0.47
13:a:21:ILE:HG12	13:a:199:ILE:HG12	1.96	0.47
6:F:31:THR:HG21	6:F:47:GLU:O	2.15	0.46
11:K:7:ARG:HD2	11:K:110:PRO:O	2.15	0.46
13:a:140:PRO:HB3	13:a:165:ILE:HD11	1.96	0.46
13:M:48:ASN:HD22	13:M:48:ASN:N	2.10	0.46
4:D:69:ALA:HB3	4:D:135:LEU:HB2	1.97	0.46
1:O:110:LEU:O	1:O:114:VAL:HG23	2.16	0.46
9:W:36:SER:HB2	10:X:126:VAL:HG21	1.98	0.46
11:K:38:ASN:HB2	11:K:39:PRO:CD	2.46	0.46
10:X:21:VAL:HG11	11:Y:122:LEU:HD11	1.98	0.46
12:Z:111:ILE:HG12	12:Z:125:PHE:HE1	1.81	0.46
1:A:42:GLY:HA3	1:A:185:LEU:HD13	1.98	0.46
9:I:36:SER:HB2	10:J:126:VAL:HG21	1.98	0.46
5:S:143:LEU:HD21	5:S:158:THR:HG22	1.97	0.46
15:Y:213:049:H1	15:Y:213:049:HN22	1.81	0.46
12:Z:17:GLY:HA2	12:Z:174:TYR:HE1	1.81	0.46
1:A:128:ARG:HH21	7:G:120:THR:HG22	1.81	0.46
3:C:160:GLN:HE21	3:C:160:GLN:CA	2.26	0.46
10:J:3:ILE:HB	10:J:18:SER:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:27:LEU:HD11	13:M:34:LEU:HB3	1.98	0.46
3:Q:214:LYS:HB2	3:Q:218:ASP:HB3	1.97	0.46
8:V:78:SER:O	8:V:82:MET:HG3	2.16	0.46
9:W:10:ILE:HG21	9:W:141:ALA:HB3	1.98	0.46
2:P:35:ILE:HD12	2:P:196:LEU:HG	1.97	0.45
7:U:35:ALA:HB3	7:U:160:THR:HG22	1.99	0.45
8:H:210:THR:HG21	9:I:167:SER:HB3	1.97	0.45
6:T:9:SER:HB2	7:U:126:ARG:HB3	1.98	0.45
5:E:185:PRO:O	5:E:189:ILE:HG12	2.16	0.45
1:O:42:GLY:HA3	1:O:185:LEU:HD13	1.98	0.45
4:R:176:LEU:HD22	5:S:55:LEU:HD13	1.99	0.45
11:Y:7:ARG:HD2	11:Y:110:PRO:O	2.16	0.45
11:Y:38:ASN:HB2	11:Y:39:PRO:CD	2.47	0.45
1:A:38:LYS:HG3	1:A:43:VAL:HG22	1.99	0.45
1:A:187:ASP:O	1:A:191:ILE:HD12	2.17	0.45
3:C:149:GLU:HB2	3:C:150:PRO:HD2	1.99	0.45
9:I:120:ILE:HD12	9:I:136:ILE:HG12	1.98	0.45
6:T:50:ILE:HD11	6:T:209:GLU:HB2	1.98	0.45
4:D:176:LEU:HD22	5:E:55:LEU:HD13	1.99	0.45
10:J:4:ILE:HG22	10:J:103:LEU:HD12	1.99	0.45
3:C:29:THR:HB	3:C:45:GLU:HG3	1.98	0.44
5:E:174:THR:HG22	5:E:177:THR:HB	1.99	0.44
8:V:62:ASN:HB3	8:V:82:MET:HE1	1.99	0.44
8:H:104:ASP:HB2	8:H:105:PRO:CD	2.45	0.44
12:L:111:ILE:HG12	12:L:125:PHE:HE1	1.81	0.44
12:L:126:ASP:HB2	12:L:130:SER:HB3	1.99	0.44
13:a:127:LEU:HG	13:a:142:LEU:HD12	1.99	0.44
2:B:172:GLN:HG2	3:C:50:LEU:HD12	1.98	0.44
7:G:19:VAL:HG21	7:G:120:THR:HG23	1.99	0.44
11:K:97:MET:HG2	11:K:117:SER:HB3	2.00	0.44
4:R:161:ALA:HB3	5:S:55:LEU:HD23	1.99	0.44
2:B:151:ASN:HB2	2:B:152:PRO:CD	2.44	0.44
1:A:110:LEU:O	1:A:114:VAL:HG23	2.18	0.44
10:J:92:ILE:HG13	10:J:122:LEU:HA	2.00	0.44
13:M:127:LEU:HG	13:M:142:LEU:HD12	1.99	0.44
11:Y:12:ILE:HB	11:Y:180:VAL:HB	2.00	0.44
10:X:149:ARG:HB2	10:X:152:MET:HG3	1.98	0.44
13:a:96:LEU:O	13:a:100:MET:HG2	2.18	0.44
11:K:158:LYS:HD3	11:K:196:LEU:HD11	2.00	0.44
1:O:149:GLN:O	1:O:156:TYR:HA	2.17	0.44
7:G:103:MET:HE3	7:G:108:LEU:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:189:ILE:HA	9:I:194:VAL:HG22	2.00	0.43
1:O:68:THR:HB	1:O:69:PRO:HD2	2.00	0.43
2:B:69:ASN:HD22	2:B:69:ASN:HA	1.69	0.43
9:I:28:LEU:HB3	9:I:36:SER:HB3	2.00	0.43
1:A:149:GLN:O	1:A:156:TYR:HA	2.18	0.43
5:E:205:LEU:HA	5:E:209:ASN:HD22	1.83	0.43
9:W:20:VAL:HG13	9:W:118:PRO:HB3	2.00	0.43
6:F:205:GLU:HG3	6:F:206:LYS:HG3	2.00	0.43
9:I:12:VAL:HG23	9:I:137:VAL:HG12	2.00	0.43
10:X:184:VAL:HG22	10:X:189:ILE:HG12	1.99	0.43
6:F:9:SER:HB2	7:G:126:ARG:HB3	1.99	0.43
6:F:122:TYR:HB2	6:F:125:VAL:HG22	2.00	0.43
11:K:1:THR:H1	15:K:213:049:H11A	1.84	0.43
4:D:77:ALA:O	4:D:81:ILE:HG12	2.19	0.43
3:Q:70:VAL:HG13	3:Q:219:ILE:HD13	2.00	0.43
9:I:23:ALA:HB1	9:I:170:LEU:HD22	2.01	0.43
8:V:215:GLU:HG3	9:W:197:ARG:HG2	1.99	0.43
13:M:140:PRO:HB3	13:M:165:ILE:HD11	2.00	0.43
1:O:128:ARG:HH21	7:U:120:THR:HG22	1.84	0.43
7:U:7:ILE:HG13	7:U:9:ILE:HG12	2.01	0.42
6:F:46:VAL:HB	6:F:73:VAL:HG21	2.01	0.42
11:K:12:ILE:HB	11:K:180:VAL:HB	2.00	0.42
2:P:69:ASN:HD22	2:P:69:ASN:HA	1.67	0.42
13:a:97:ALA:HA	13:a:130:VAL:HG21	2.00	0.42
1:A:68:THR:HB	1:A:69:PRO:HD2	2.00	0.42
12:L:161:GLU:HA	12:L:162:PRO:HD3	1.94	0.42
5:S:174:THR:HG22	5:S:177:THR:HB	2.00	0.42
10:X:3:ILE:HB	10:X:18:SER:HB3	2.01	0.42
12:Z:207:VAL:HG22	12:Z:212:VAL:HG22	2.00	0.42
5:E:231:LYS:H	5:E:231:LYS:HD2	1.84	0.42
6:F:50:ILE:HD11	6:F:209:GLU:HB2	2.01	0.42
9:W:37:ASN:HD22	9:W:38:LYS:HG3	1.85	0.42
12:Z:100:LYS:O	12:Z:104:PRO:HA	2.20	0.42
5:S:205:LEU:HA	5:S:209:ASN:HD22	1.84	0.42
9:W:12:VAL:HG23	9:W:137:VAL:HG12	2.01	0.42
11:Y:97:MET:HG2	11:Y:117:SER:HB3	2.02	0.42
13:M:96:LEU:O	13:M:100:MET:HG2	2.19	0.42
3:C:70:VAL:HG13	3:C:219:ILE:HD13	2.00	0.42
13:M:97:ALA:HA	13:M:130:VAL:HG21	2.02	0.42
9:W:141:ALA:HB2	9:W:177:ASP:HB2	2.02	0.42
9:W:189:ILE:HA	9:W:194:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:V:50:ALA:HB2	9:W:128:CYS:HB2	2.02	0.42
6:T:123:ASN:HD22	6:T:124:SER:N	2.18	0.42
10:X:15:LEU:HD12	10:X:43:LEU:HD23	2.01	0.42
1:O:187:ASP:O	1:O:191:ILE:HD12	2.20	0.41
5:S:131:LEU:HB2	5:S:146:PHE:HB3	2.02	0.41
13:a:27:LEU:HD11	13:a:34:LEU:HB3	2.01	0.41
11:K:80:SER:HA	11:K:101:ILE:HD13	2.02	0.41
5:S:134:ILE:HD12	5:S:215:VAL:HG12	2.02	0.41
6:T:46:VAL:HB	6:T:73:VAL:HG21	2.02	0.41
10:X:92:ILE:HG13	10:X:122:LEU:HA	2.02	0.41
12:Z:90:ALA:HA	12:Z:125:PHE:HZ	1.85	0.41
13:a:18:ASN:HD22	13:a:202:LYS:HE2	1.85	0.41
7:G:7:ILE:HG13	7:G:9:ILE:HG12	2.02	0.41
10:J:15:LEU:HD12	10:J:43:LEU:HD23	2.01	0.41
8:V:104:ASP:HB2	8:V:105:PRO:CD	2.50	0.41
9:W:8:GLY:HA3	9:W:179:LEU:HB3	2.02	0.41
4:D:20:LEU:HA	4:D:23:ILE:HD12	2.03	0.41
7:G:52:ASP:HB3	7:G:55:LEU:HG	2.03	0.41
13:a:15:LYS:HB3	13:a:20:VAL:HG12	2.02	0.41
6:F:36:ILE:HG13	6:F:172:LEU:HD11	2.02	0.41
9:I:20:VAL:HG13	9:I:118:PRO:HB3	2.02	0.41
1:O:75:TYR:HB3	1:O:82:TYR:CD1	2.55	0.41
8:V:4:VAL:HG22	8:V:159:ILE:HD11	2.03	0.41
12:Z:16:ALA:HB2	12:Z:122:VAL:HG23	2.02	0.41
7:G:35:ALA:HB3	7:G:160:THR:HG22	2.02	0.41
9:I:14:MET:HB3	9:I:162:LEU:HD11	2.03	0.41
2:P:50:LYS:HG2	2:P:51:VAL:HG23	2.02	0.41
11:Y:80:SER:HA	11:Y:101:ILE:HD13	2.03	0.41
1:A:75:TYR:HB3	1:A:82:TYR:CD1	2.55	0.41
8:H:159:ILE:O	8:H:163:ILE:HD12	2.21	0.41
10:J:96:ARG:HA	10:J:97:PRO:HD3	1.89	0.41
11:K:208:ASN:ND2	10:X:150:PRO:HG3	2.36	0.41
2:P:31:ALA:HA	2:P:50:LYS:HD2	2.03	0.41
4:R:159:TYR:CE2	5:S:56:SER:HB3	2.56	0.41
7:U:70:ILE:HD11	7:U:103:MET:O	2.20	0.41
3:C:157:TRP:CE2	4:D:51:LEU:HD23	2.55	0.41
5:E:143:LEU:HD21	5:E:158:THR:HG22	2.02	0.41
3:Q:29:THR:HB	3:Q:45:GLU:HG3	2.03	0.41
4:R:186:LYS:O	4:R:190:LEU:HD22	2.21	0.41
10:X:12:SER:HB3	10:X:185:ASP:HB3	2.03	0.41
4:D:186:LYS:O	4:D:190:LEU:HD22	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:175:LEU:HD23	2:B:191:LEU:HD22	2.03	0.40
3:Q:159:ALA:HB3	4:R:50:LEU:HD22	2.02	0.40
5:S:76:LEU:HD12	5:S:128:GLY:HA3	2.03	0.40
10:X:172:MET:HA	10:X:173:PRO:HD3	1.86	0.40
2:B:196:LEU:O	2:B:200:THR:OG1	2.38	0.40
7:G:106:ASP:HB3	7:G:146:TYR:CZ	2.57	0.40
2:P:175:LEU:HD23	2:P:191:LEU:HD22	2.03	0.40
9:I:19:CYS:HA	9:I:111:ILE:HD11	2.04	0.40
14:N:34:LEU:HD13	14:N:176:VAL:HG23	2.03	0.40
6:T:117:GLN:HE21	6:T:117:GLN:HB3	1.78	0.40
6:T:205:GLU:HG3	6:T:206:LYS:HG3	2.02	0.40
3:C:64:LYS:HE3	3:C:219:ILE:HD12	2.04	0.40
4:D:229:ALA:HA	4:D:232:ILE:HD12	2.04	0.40
7:G:149:ASP:HB2	7:G:150:PRO:HD2	2.02	0.40
6:T:123:ASN:HD22	6:T:123:ASN:C	2.29	0.40
12:Z:205:LEU:HG	12:Z:214:LYS:HG2	2.04	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	248/250 (99%)	242 (98%)	5 (2%)	1 (0%)	30	54
1	O	248/250 (99%)	240 (97%)	7 (3%)	1 (0%)	30	54
2	B	242/258 (94%)	236 (98%)	5 (2%)	1 (0%)	30	54
2	P	242/258 (94%)	234 (97%)	7 (3%)	1 (0%)	30	54
3	C	239/254 (94%)	233 (98%)	3 (1%)	3 (1%)	9	25
3	Q	239/254 (94%)	232 (97%)	4 (2%)	3 (1%)	9	25
4	D	240/260 (92%)	235 (98%)	3 (1%)	2 (1%)	16	37

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	R	240/260 (92%)	234 (98%)	4 (2%)	2 (1%)	16	37
5	E	231/234 (99%)	227 (98%)	4 (2%)	0	100	100
5	S	231/234 (99%)	226 (98%)	5 (2%)	0	100	100
6	F	242/288 (84%)	235 (97%)	7 (3%)	0	100	100
6	T	242/288 (84%)	235 (97%)	7 (3%)	0	100	100
7	G	241/252 (96%)	233 (97%)	8 (3%)	0	100	100
7	U	241/252 (96%)	235 (98%)	6 (2%)	0	100	100
8	H	220/232 (95%)	213 (97%)	7 (3%)	0	100	100
8	V	220/232 (95%)	214 (97%)	6 (3%)	0	100	100
9	I	202/205 (98%)	197 (98%)	5 (2%)	0	100	100
9	W	202/205 (98%)	194 (96%)	8 (4%)	0	100	100
10	J	196/198 (99%)	186 (95%)	9 (5%)	1 (0%)	24	48
10	X	196/198 (99%)	188 (96%)	7 (4%)	1 (0%)	24	48
11	K	210/212 (99%)	207 (99%)	3 (1%)	0	100	100
11	Y	210/212 (99%)	205 (98%)	5 (2%)	0	100	100
12	L	220/222 (99%)	214 (97%)	6 (3%)	0	100	100
12	Z	220/222 (99%)	215 (98%)	5 (2%)	0	100	100
13	M	231/233 (99%)	221 (96%)	9 (4%)	1 (0%)	30	54
13	a	231/233 (99%)	221 (96%)	9 (4%)	1 (0%)	30	54
14	N	194/196 (99%)	189 (97%)	5 (3%)	0	100	100
14	b	194/196 (99%)	189 (97%)	5 (3%)	0	100	100
All	All	6312/6588 (96%)	6130 (97%)	164 (3%)	18 (0%)	36	60

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	D	118	GLY
1	A	2	THR
3	C	52	LEU
3	C	203	THR
1	O	2	THR
3	Q	52	LEU
3	Q	203	THR
4	R	118	GLY
2	B	51	VAL

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Mol	Chain	Res	Type
2	P	51	VAL
10	J	9	VAL
3	C	183	PRO
3	Q	183	PRO
10	X	9	VAL
13	M	229	GLY
13	a	229	GLY
4	D	121	GLY
4	R	121	GLY

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	209/209 (100%)	206 (99%)	3 (1%)	59	82
1	O	209/209 (100%)	206 (99%)	3 (1%)	59	82
2	B	203/216 (94%)	198 (98%)	5 (2%)	42	71
2	P	203/216 (94%)	197 (97%)	6 (3%)	36	66
3	C	213/226 (94%)	208 (98%)	5 (2%)	44	73
3	Q	213/226 (94%)	207 (97%)	6 (3%)	38	68
4	D	198/215 (92%)	193 (98%)	5 (2%)	42	71
4	R	198/215 (92%)	193 (98%)	5 (2%)	42	71
5	E	192/193 (100%)	187 (97%)	5 (3%)	40	70
5	S	192/193 (100%)	186 (97%)	6 (3%)	35	65
6	F	201/239 (84%)	194 (96%)	7 (4%)	32	61
6	T	201/239 (84%)	193 (96%)	8 (4%)	28	56
7	G	207/210 (99%)	201 (97%)	6 (3%)	37	67
7	U	207/210 (99%)	202 (98%)	5 (2%)	43	72
8	H	181/190 (95%)	179 (99%)	2 (1%)	65	85
8	V	181/190 (95%)	179 (99%)	2 (1%)	65	85
9	I	172/173 (99%)	169 (98%)	3 (2%)	53	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	W	172/173 (99%)	169 (98%)	3 (2%)	53	79
10	J	175/175 (100%)	173 (99%)	2 (1%)	65	85
10	X	175/175 (100%)	173 (99%)	2 (1%)	65	85
11	K	169/169 (100%)	167 (99%)	2 (1%)	63	84
11	Y	169/169 (100%)	168 (99%)	1 (1%)	78	91
12	L	185/185 (100%)	183 (99%)	2 (1%)	65	85
12	Z	185/185 (100%)	182 (98%)	3 (2%)	55	80
13	M	199/199 (100%)	193 (97%)	6 (3%)	36	66
13	a	199/199 (100%)	193 (97%)	6 (3%)	36	66
14	N	162/162 (100%)	158 (98%)	4 (2%)	42	71
14	b	162/162 (100%)	158 (98%)	4 (2%)	42	71
All	All	5332/5522 (97%)	5215 (98%)	117 (2%)	45	74

All (117) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	132	VAL
1	A	157	PHE
1	A	191	ILE
2	B	28	ILE
2	B	60	THR
2	B	69	ASN
2	B	92	ILE
2	B	191	LEU
3	C	107	LEU
3	C	160	GLN
3	C	169	VAL
3	C	171	GLU
3	C	185	THR
4	D	102	GLU
4	D	176	LEU
4	D	190	LEU
4	D	193	LEU
4	D	214	ILE
5	E	9	THR
5	E	29	LYS
5	E	174	THR
5	E	188	LEU

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Mol	Chain	Res	Type
5	E	231	LYS
6	F	31	THR
6	F	39	ASN
6	F	91	GLU
6	F	123	ASN
6	F	130	VAL
6	F	181	GLU
6	F	203	ASN
7	G	44	VAL
7	G	115	LEU
7	G	182	ILE
7	G	201	MET
7	G	221	LYS
7	G	235	ARG
8	H	34	LEU
8	H	163	ILE
9	I	28	LEU
9	I	37	ASN
9	I	81	ILE
10	J	92	ILE
10	J	174	MET
11	K	4	LEU
11	K	65	LEU
12	L	49	ASN
12	L	109	THR
13	M	12	ILE
13	M	48	ASN
13	M	70	LEU
13	M	104	ARG
13	M	159	VAL
13	M	226	LYS
14	N	88	GLU
14	N	119	VAL
14	N	126	ILE
14	N	178	LEU
1	O	132	VAL
1	O	157	PHE
1	O	191	ILE
2	P	28	ILE
2	P	60	THR
2	P	69	ASN
2	P	74	VAL

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Mol	Chain	Res	Type
2	P	92	ILE
2	P	191	LEU
3	Q	107	LEU
3	Q	147	GLN
3	Q	160	GLN
3	Q	169	VAL
3	Q	171	GLU
3	Q	185	THR
4	R	102	GLU
4	R	176	LEU
4	R	190	LEU
4	R	193	LEU
4	R	214	ILE
5	S	8	ASP
5	S	9	THR
5	S	29	LYS
5	S	174	THR
5	S	188	LEU
5	S	231	LYS
6	T	31	THR
6	T	39	ASN
6	T	91	GLU
6	T	123	ASN
6	T	130	VAL
6	T	181	GLU
6	T	201	GLU
6	T	203	ASN
7	U	115	LEU
7	U	182	ILE
7	U	201	MET
7	U	221	LYS
7	U	235	ARG
8	V	34	LEU
8	V	163	ILE
9	W	28	LEU
9	W	37	ASN
9	W	81	ILE
10	X	92	ILE
10	X	174	MET
11	Y	4	LEU
12	Z	49	ASN
12	Z	128	VAL

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Mol	Chain	Res	Type
12	Z	175	LEU
13	a	12	ILE
13	a	48	ASN
13	a	70	LEU
13	a	104	ARG
13	a	170	VAL
13	a	226	LYS
14	b	88	GLU
14	b	119	VAL
14	b	126	ILE
14	b	178	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (180) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	143	ASN
1	A	149	GLN
2	B	20	GLN
2	B	69	ASN
2	B	88	ASN
2	B	93	HIS
2	B	95	GLN
2	B	119	GLN
2	B	123	GLN
2	B	176	GLN
2	B	220	ASN
3	C	17	GLN
3	C	77	ASN
3	C	115	GLN
3	C	116	GLN
3	C	120	GLN
3	C	147	GLN
3	C	160	GLN
3	C	241	GLN
4	D	15	GLN
4	D	106	GLN
4	D	146	GLN
4	D	160	ASN
4	D	198	GLN
4	D	210	GLN
4	D	217	GLN
4	D	225	ASN

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Mol	Chain	Res	Type
5	E	30	GLN
5	E	59	GLN
5	E	68	HIS
5	E	99	ASN
5	E	109	HIS
5	E	116	GLN
5	E	118	ASN
5	E	120	GLN
5	E	147	GLN
5	E	165	GLN
5	E	184	ASN
5	E	198	GLN
5	E	209	ASN
6	F	19	GLN
6	F	29	ASN
6	F	39	ASN
6	F	86	ASN
6	F	123	ASN
6	F	143	HIS
6	F	224	HIS
7	G	6	HIS
7	G	30	ASN
7	G	114	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	165	ASN
8	H	172	ASN
8	H	189	ASN
9	I	37	ASN
9	I	63	ASN
9	I	88	GLN
10	J	37	GLN
10	J	55	GLN
10	J	63	ASN
10	J	118	GLN
10	J	198	GLN
11	K	9	GLN
11	K	85	ASN

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Mol	Chain	Res	Type
11	K	176	ASN
11	K	190	ASN
11	K	208	ASN
12	L	3	ASN
12	L	36	ASN
12	L	49	ASN
12	L	70	ASN
12	L	80	ASN
12	L	152	ASN
12	L	155	ASN
12	L	158	ASN
12	L	165	ASN
12	L	197	GLN
13	M	2	GLN
13	M	18	ASN
13	M	48	ASN
13	M	102	GLN
13	M	108	ASN
13	M	171	GLN
13	M	179	ASN
13	M	213	GLN
14	N	60	GLN
14	N	141	ASN
14	N	161	GLN
1	O	143	ASN
2	P	20	GLN
2	P	69	ASN
2	P	93	HIS
2	P	95	GLN
2	P	119	GLN
2	P	123	GLN
2	P	146	GLN
2	P	176	GLN
2	P	220	ASN
3	Q	17	GLN
3	Q	77	ASN
3	Q	116	GLN
3	Q	120	GLN
3	Q	147	GLN
3	Q	160	GLN
3	Q	241	GLN
4	R	15	GLN

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Mol	Chain	Res	Type
4	R	91	HIS
4	R	106	GLN
4	R	146	GLN
4	R	160	ASN
4	R	198	GLN
4	R	217	GLN
4	R	225	ASN
5	S	68	HIS
5	S	90	GLN
5	S	99	ASN
5	S	109	HIS
5	S	116	GLN
5	S	118	ASN
5	S	120	GLN
5	S	147	GLN
5	S	165	GLN
5	S	184	ASN
5	S	209	ASN
6	T	19	GLN
6	T	39	ASN
6	T	86	ASN
6	T	117	GLN
6	T	123	ASN
6	T	143	HIS
6	T	203	ASN
6	T	224	HIS
7	U	6	HIS
7	U	30	ASN
7	U	114	ASN
7	U	117	GLN
7	U	121	GLN
7	U	166	GLN
7	U	175	ASN
8	V	30	ASN
8	V	165	ASN
8	V	172	ASN
8	V	189	ASN
9	W	37	ASN
9	W	44	HIS
9	W	63	ASN
9	W	88	GLN
9	W	168	GLN

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Mol	Chain	Res	Type
10	X	55	GLN
10	X	63	ASN
10	X	118	GLN
11	Y	85	ASN
11	Y	190	ASN
11	Y	208	ASN
12	Z	3	ASN
12	Z	36	ASN
12	Z	49	ASN
12	Z	55	ASN
12	Z	70	ASN
12	Z	79	HIS
12	Z	80	ASN
12	Z	153	GLN
12	Z	158	ASN
12	Z	165	ASN
12	Z	197	GLN
13	a	2	GLN
13	a	18	ASN
13	a	48	ASN
13	a	102	GLN
13	a	108	ASN
13	a	171	GLN
13	a	213	GLN
14	b	69	GLN
14	b	141	ASN
14	b	161	GLN

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

2 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$
15	049	K	213	11	18,19,19	3.29	6 (33%)	24,27,27	4.17	10 (41%)
15	049	Y	213	11	18,19,19	3.11	6 (33%)	24,27,27	4.35	10 (41%)

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
15	049	K	213	11	-	5/18/22/22	0/2/2/2
15	049	Y	213	11	-	9/18/22/22	0/2/2/2

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	Y	213	049	C8-C7	-9.42	1.35	1.53
15	K	213	049	C8-C7	-9.38	1.35	1.53
15	K	213	049	C9-C7	-5.71	1.46	1.54
15	K	213	049	C12-C10	5.21	1.59	1.46
15	Y	213	049	C12-C10	5.20	1.59	1.46
15	Y	213	049	C8-C6	-4.43	1.40	1.51
15	K	213	049	C8-C6	-4.12	1.41	1.51
15	Y	213	049	O13-C10	-3.21	1.40	1.45
15	K	213	049	O13-C10	-3.15	1.40	1.45
15	Y	213	049	C9-C7	-2.76	1.50	1.54
15	Y	213	049	C1-C6	2.38	1.43	1.38
15	K	213	049	C1-C6	2.34	1.43	1.38

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	Y	213	049	C8-C7-C9	13.13	132.80	111.69
15	K	213	049	C8-C7-C9	12.51	131.81	111.69
15	Y	213	049	C10-C9-C7	-10.20	92.36	115.71
15	Y	213	049	C12-O13-C10	8.85	69.31	60.53
15	K	213	049	C12-O13-C10	8.69	69.15	60.53
15	K	213	049	C10-C9-C7	-8.02	97.35	115.71
15	K	213	049	C6-C8-C7	7.98	126.94	113.40
15	Y	213	049	C6-C8-C7	7.32	125.82	113.40
15	K	213	049	O21-C9-C7	-3.57	100.84	109.54
15	K	213	049	O13-C12-C10	-3.54	55.26	59.83
15	Y	213	049	O13-C12-C10	-3.50	55.31	59.83
15	K	213	049	O13-C10-C9	3.18	119.53	113.46
15	K	213	049	C11-C10-C12	-2.63	114.35	119.50
15	Y	213	049	O49-C23-C18	-2.51	117.58	122.05
15	Y	213	049	O13-C10-C12	-2.49	55.38	59.64
15	K	213	049	O13-C10-C12	-2.36	55.59	59.64
15	K	213	049	O49-C23-C18	-2.23	118.08	122.05
15	Y	213	049	O13-C10-C9	2.07	117.42	113.46
15	Y	213	049	C11-C10-C12	-2.03	115.53	119.50
15	Y	213	049	C9-C7-N22	-2.01	107.24	110.90

There are no chirality outliers.

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
15	K	213	049	C8-C7-C9-C10
15	K	213	049	C8-C7-C9-O21
15	Y	213	049	C8-C7-C9-O21
15	Y	213	049	N22-C7-C9-C10
15	Y	213	049	N22-C7-C9-O21
15	Y	213	049	O49-C23-N22-C7
15	Y	213	049	C18-C23-N22-C7
15	K	213	049	C1-C6-C8-C7
15	Y	213	049	C1-C6-C8-C7
15	Y	213	049	C5-C6-C8-C7
15	K	213	049	C5-C6-C8-C7
15	Y	213	049	C8-C7-C9-C10
15	K	213	049	C12-C10-C9-C7
15	Y	213	049	C12-C10-C9-C7

There are no ring outliers.

2 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	K	213	049	4	0
15	Y	213	049	4	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	250/250 (100%)	0.03	7 (2%) 55 51	34, 48, 77, 99	0
1	O	250/250 (100%)	0.16	9 (3%) 46 42	38, 54, 87, 111	0
2	B	244/258 (94%)	0.27	13 (5%) 32 28	34, 52, 81, 112	0
2	P	244/258 (94%)	0.38	18 (7%) 20 18	38, 54, 87, 116	0
3	C	241/254 (94%)	0.39	15 (6%) 26 23	36, 56, 105, 147	0
3	Q	241/254 (94%)	0.50	14 (5%) 29 25	40, 63, 119, 160	0
4	D	242/260 (93%)	0.28	13 (5%) 31 27	41, 55, 83, 110	0
4	R	242/260 (93%)	0.42	15 (6%) 26 23	42, 60, 94, 115	0
5	E	233/234 (99%)	0.29	13 (5%) 30 26	41, 58, 86, 101	0
5	S	233/234 (99%)	0.42	11 (4%) 36 33	45, 62, 91, 104	0
6	F	244/288 (84%)	0.15	5 (2%) 65 62	38, 55, 89, 113	0
6	T	244/288 (84%)	0.24	12 (4%) 35 31	37, 57, 92, 119	0
7	G	243/252 (96%)	-0.03	6 (2%) 58 55	35, 50, 79, 120	0
7	U	243/252 (96%)	0.03	4 (1%) 70 68	38, 50, 75, 115	0
8	H	222/232 (95%)	0.07	2 (0%) 81 80	38, 48, 68, 100	0
8	V	222/232 (95%)	0.08	1 (0%) 87 86	37, 49, 68, 101	0
9	I	204/205 (99%)	-0.17	3 (1%) 72 70	34, 45, 66, 75	0
9	W	204/205 (99%)	-0.08	2 (0%) 79 78	36, 47, 68, 83	0
10	J	198/198 (100%)	-0.01	6 (3%) 52 49	35, 47, 66, 116	0
10	X	198/198 (100%)	0.00	6 (3%) 52 49	39, 49, 65, 111	0
11	K	212/212 (100%)	-0.15	2 (0%) 81 80	33, 43, 63, 70	0
11	Y	212/212 (100%)	-0.07	2 (0%) 81 80	35, 46, 66, 75	0
12	L	222/222 (100%)	-0.08	2 (0%) 81 80	34, 46, 73, 85	0
12	Z	222/222 (100%)	-0.09	3 (1%) 73 72	35, 47, 72, 87	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å ²)	Q<0.9
13	M	233/233 (100%)	-0.13	2 (0%)	81	80	33, 47, 69, 85	0
13	a	233/233 (100%)	-0.15	2 (0%)	81	80	32, 46, 64, 77	0
14	N	196/196 (100%)	-0.17	1 (0%)	87	86	33, 43, 64, 79	0
14	b	196/196 (100%)	-0.14	3 (1%)	72	70	34, 45, 64, 75	0
All	All	6368/6588 (96%)	0.10	192 (3%)	52	49	32, 50, 85, 160	0

All (192) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	D	118	GLY	9.0
4	D	119	ALA	8.3
4	R	118	GLY	8.2
4	R	119	ALA	7.7
1	O	2	THR	6.5
6	F	202	ASP	6.2
3	Q	50	LEU	6.2
4	R	121	GLY	6.1
5	S	1	PHE	6.1
1	A	2	THR	6.0
2	B	218	GLY	5.7
2	P	219	ALA	5.6
4	D	124	ARG	5.5
5	E	1	PHE	5.4
7	U	243	ASP	5.3
4	R	125	LEU	5.3
3	C	50	LEU	5.3
4	R	120	SER	5.1
4	R	124	ARG	4.9
3	C	49	THR	4.8
4	D	241	ALA	4.7
7	U	1	ALA	4.6
4	D	125	LEU	4.6
7	G	1	ALA	4.4
5	S	2	ARG	4.4
1	O	1	MET	4.3
10	X	198	GLN	4.3
5	S	207	VAL	4.2
3	Q	238	LYS	4.2
13	a	1	THR	4.2
12	Z	174	TYR	4.1
2	P	218	GLY	4.1

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Mol	Chain	Res	Type	RSRZ
3	C	48	SER	4.1
4	D	120	SER	4.1
2	P	51	VAL	4.1
12	L	174	TYR	4.1
5	E	207	VAL	4.0
1	O	4	ARG	3.8
10	J	197	ALA	3.8
2	B	51	VAL	3.8
13	M	1	THR	3.8
2	B	1	GLY	3.8
1	A	201	GLU	3.7
3	Q	203	THR	3.7
10	J	198	GLN	3.7
8	V	222	ASP	3.6
10	X	197	ALA	3.6
2	B	219	ALA	3.6
5	E	202	ASP	3.5
1	A	1	MET	3.5
2	P	220	ASN	3.5
6	F	1	GLY	3.5
2	P	225	TYR	3.4
2	B	244	THR	3.4
2	P	1	GLY	3.4
8	H	222	ASP	3.4
12	Z	126	ASP	3.4
3	C	203	THR	3.4
3	C	205	ALA	3.3
2	B	220	ASN	3.3
5	S	209	ASN	3.3
5	S	3	ASN	3.2
4	R	1	ASP	3.2
3	Q	52	LEU	3.2
5	E	3	ASN	3.1
3	C	241	GLN	3.1
10	X	1	MET	3.1
6	T	203	ASN	3.1
6	T	204	LYS	3.1
3	Q	205	ALA	3.1
6	T	244	ASN	3.0
5	E	53	ASP	3.0
4	D	121	GLY	3.0
6	F	9	SER	3.0

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Mol	Chain	Res	Type	RSRZ
13	a	69	ASP	3.0
2	B	217	LYS	3.0
9	W	1	SER	3.0
1	A	4	ARG	3.0
6	T	243	ILE	3.0
4	R	46	ALA	3.0
3	C	238	LYS	2.9
9	W	130	ASP	2.9
2	P	223	GLU	2.9
5	E	124	GLY	2.9
2	P	244	THR	2.9
10	J	1	MET	2.9
10	X	196	GLN	2.9
1	A	3	ASP	2.9
5	S	53	ASP	2.9
2	B	221	ASP	2.8
9	I	131	GLU	2.8
3	C	53	GLN	2.8
1	O	231	LYS	2.8
1	A	54	PRO	2.8
9	I	1	SER	2.8
1	O	250	LEU	2.7
1	O	249	ALA	2.7
3	C	51	LYS	2.7
9	I	127	GLY	2.7
6	T	9	SER	2.7
5	E	209	ASN	2.7
2	P	59	ASP	2.6
7	U	124	TYR	2.6
6	T	1	GLY	2.6
3	Q	241	GLN	2.6
5	S	56	SER	2.6
5	S	202	ASP	2.6
5	E	30	GLN	2.5
3	C	224	SER	2.5
2	P	4	ARG	2.5
2	P	52	THR	2.5
3	Q	49	THR	2.5
4	D	6	THR	2.4
5	E	2	ARG	2.4
3	Q	48	SER	2.4
2	B	222	GLY	2.4

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Mol	Chain	Res	Type	RSRZ
7	G	2	GLY	2.4
11	Y	1	THR	2.4
3	C	171	GLU	2.4
3	Q	171	GLU	2.4
4	D	240	ALA	2.4
7	G	232	ILE	2.4
2	P	69	ASN	2.4
6	T	202	ASP	2.4
10	X	24	GLY	2.4
5	E	175	LEU	2.3
5	S	181	ILE	2.3
6	T	178	HIS	2.3
6	F	203	ASN	2.3
11	Y	209	ASN	2.3
4	D	122	GLU	2.3
2	P	56	LEU	2.3
1	O	209	ILE	2.3
12	Z	1	GLN	2.3
3	C	208	ILE	2.3
5	S	28	ILE	2.3
2	B	225	TYR	2.3
6	T	241	LYS	2.3
2	P	203	SER	2.3
3	C	52	LEU	2.3
4	R	230	GLU	2.3
1	O	53	SER	2.3
2	P	61	SER	2.3
7	G	243	ASP	2.3
14	b	68	SER	2.3
10	J	196	GLN	2.3
2	P	222	GLY	2.3
13	M	233	ILE	2.2
10	J	174	MET	2.2
4	R	116	GLY	2.2
3	Q	234	ILE	2.2
6	F	205	GLU	2.2
3	Q	202	GLN	2.2
2	B	7	SER	2.2
5	E	55	LEU	2.2
6	T	215	CYS	2.2
1	A	58	SER	2.2
4	R	5	SER	2.2

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Mol	Chain	Res	Type	RSRZ
7	G	239	ILE	2.2
5	S	227	GLU	2.2
10	J	155	GLU	2.2
5	E	173	ARG	2.2
4	D	166	SER	2.2
4	R	242	GLU	2.1
3	Q	51	LYS	2.1
6	T	59	LYS	2.1
5	E	181	ILE	2.1
4	D	46	ALA	2.1
2	B	223	GLU	2.1
7	G	242	GLN	2.1
7	U	242	GLN	2.1
10	X	174	MET	2.1
3	C	10	SER	2.1
4	D	169	GLU	2.1
6	T	2	THR	2.1
14	b	195	GLN	2.1
4	R	3	GLY	2.1
3	C	46	ARG	2.1
3	Q	221	ALA	2.1
14	N	149	GLU	2.1
2	P	228	ILE	2.1
2	P	221	ASP	2.0
14	b	149	GLU	2.0
3	Q	1	GLY	2.0
8	H	220	ILE	2.0
1	O	3	ASP	2.0
4	R	122	GLU	2.0
12	L	126	ASP	2.0
11	K	1	THR	2.0
11	K	189	GLY	2.0
2	B	4	ARG	2.0
4	R	2	ARG	2.0

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

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	049	K	213	18/18	0.69	0.20	35,40,41,42	0
15	049	Y	213	18/18	0.78	0.18	38,42,43,44	0

6.5 Other polymers [i](#)

There are no such residues in this entry.