Full wwPDB X-ray Structure Validation Report ⓘ

Dec 3, 2023 – 12:16 pm GMT

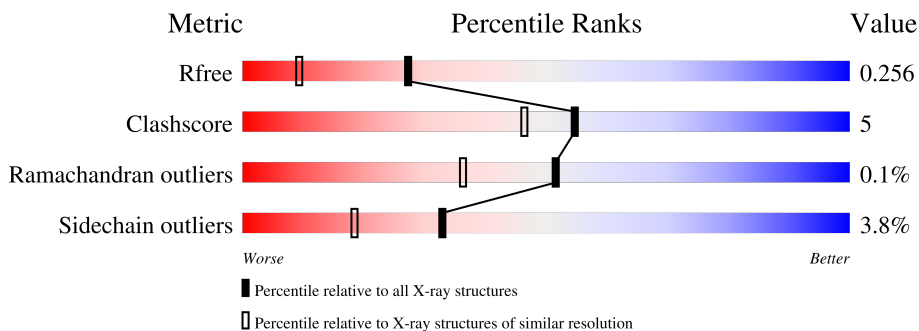|		
PDB ID	:	1HL5
Title	:	The Structure of Holo Type Human Cu, Zn Superoxide Dismutase
Authors	:	Strange, R.W.; Antonyuk, S.; Hough, M.A.; Doucette, P.; Rodriguez, J.; Hart, P.J.; Hayward, L.J.; Valentine, J.S.; Hasnain, S.S.
Deposited on	:	2003-03-13
Resolution	:	1.80 Å(reported)

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 1.80 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.256
Clashscore		5
Ramachandran outliers		0.1%
Sidechain outliers		3.8%

Worse ... *Better*

■ Percentile relative to all X-ray structures

⧠ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	5950 (1.80-1.80)
Clashscore	141614	6793 (1.80-1.80)
Ramachandran outliers	138981	6697 (1.80-1.80)
Sidechain outliers	138945	6696 (1.80-1.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	A	153	90% · · · 10% ·
1	B	153	86% · · · 12% ·
1	C	153	94% · · · 6%
1	D	153	93% · · · 6% ··
1	E	153	90% · · · 8% ··
1	F	153	84% · · · 8% ·· 5%
1	G	153	76% · · · 22% ·

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Mol	Chain	Length	Quality of chain
1	H	153	95% 5%
1	I	153	91% 8%
1	J	153	92% 8%
1	K	153	92% 7%
1	L	153	92% 8%
1	M	153	88% 11%
1	N	153	89% 8%
1	O	153	75% 20% 5%
1	P	153	85% 14%
1	Q	153	80% 16%
1	S	153	82% 18%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 21585 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 SUPEROXIDE DISMUTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	B	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	C	153	Total	C	N	O	S	0	0	0
			1109	679	202	224	4			
1	D	153	Total	C	N	O	S	0	0	0
			1094	672	199	219	4			
1	E	151	Total	C	N	O	S	0	0	0
			1082	669	195	214	4			
1	F	145	Total	C	N	O	S	0	0	1
			1031	634	187	206	4			
1	G	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	H	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	I	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	J	153	Total	C	N	O	S	0	0	0
			1102	675	199	224	4			
1	K	153	Total	C	N	O	S	0	0	0
			1106	678	201	223	4			
1	L	152	Total	C	N	O	S	0	0	0
			1096	672	198	222	4			
1	M	152	Total	C	N	O	S	0	0	1
			1075	660	194	217	4			
1	N	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	O	153	Total	C	N	O	S	0	0	0
			1109	679	203	223	4			
1	P	153	Total	C	N	O	S	0	0	0
			1101	674	201	222	4			

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W O R L D W I D E

wwPDB

PROTEIN DATA BANK

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	153	Total	C	N	O	S	0	0	0
			1110	679	203	224	4			
1	S	153	Total	C	N	O	S	0	0	0
			1108	678	202	224	4			

- Molecule 2 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Cu	0	0
			1	1		
2	B	1	Total	Cu	0	0
			1	1		
2	C	1	Total	Cu	0	0
			1	1		
2	D	1	Total	Cu	0	0
			1	1		
2	E	1	Total	Cu	0	0
			1	1		
2	F	1	Total	Cu	0	0
			1	1		
2	G	1	Total	Cu	0	0
			1	1		
2	H	1	Total	Cu	0	0
			1	1		
2	I	1	Total	Cu	0	0
			1	1		
2	J	1	Total	Cu	0	0
			1	1		
2	K	1	Total	Cu	0	0
			1	1		
2	L	1	Total	Cu	0	0
			1	1		
2	M	1	Total	Cu	0	0
			1	1		
2	N	1	Total	Cu	0	0
			1	1		
2	O	1	Total	Cu	0	0
			1	1		
2	P	1	Total	Cu	0	0
			1	1		
2	Q	1	Total	Cu	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	S	1	Total 1	Cu 1	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	Zn 1	0	0
3	B	1	Total 1	Zn 1	0	0
3	C	1	Total 1	Zn 1	0	0
3	D	1	Total 1	Zn 1	0	0
3	E	1	Total 1	Zn 1	0	0
3	F	1	Total 1	Zn 1	0	0
3	G	1	Total 1	Zn 1	0	0
3	H	1	Total 1	Zn 1	0	0
3	I	1	Total 1	Zn 1	0	0
3	J	1	Total 1	Zn 1	0	0
3	K	1	Total 1	Zn 1	0	0
3	L	1	Total 1	Zn 1	0	0
3	M	1	Total 1	Zn 1	0	0
3	N	1	Total 1	Zn 1	0	0
3	O	1	Total 1	Zn 1	0	0
3	P	1	Total 1	Zn 1	0	0
3	Q	1	Total 1	Zn 1	0	0
3	S	1	Total 1	Zn 1	0	0

• Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	1	Total 1	Ca 1	0	0
4	D	1	Total 1	Ca 1	0	0
4	O	1	Total 1	Ca 1	0	0

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	113	Total 113	O 113	0	0
5	B	152	Total 152	O 152	0	0
5	C	144	Total 144	O 144	0	0
5	D	107	Total 107	O 107	0	0
5	E	114	Total 114	O 114	0	0
5	F	94	Total 94	O 94	0	0
5	G	43	Total 43	O 43	0	0
5	H	118	Total 118	O 118	0	0
5	I	141	Total 141	O 141	0	0
5	J	133	Total 133	O 133	0	0
5	K	148	Total 148	O 148	0	0
5	L	115	Total 115	O 115	0	0
5	M	99	Total 99	O 99	0	0
5	N	90	Total 90	O 90	0	0
5	O	50	Total 50	O 50	0	0
5	P	2	Total 2	O 2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	Q	83	Total O 83 83		0	0
5	S	17	Total O 17 17		0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.
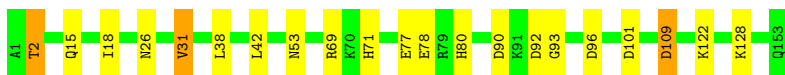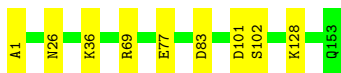
• Molecule 1: SUPEROXIDE DISMUTASE

Chain A:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain B:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain C:

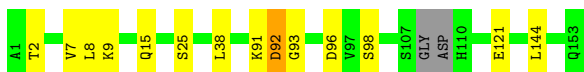• Molecule 1: SUPEROXIDE DISMUTASE

Chain D:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain E:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain F:

ALA THR K3 L8 E21 GLN LYS GLU SER ASN GLY P28 V31 L42 D76 E77 E78 R79 H80 D83 K91 D92 D96 D101 D109 E121 L144 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain G:

76% 22% •

A1 T2 K3 A4 L8 D11 F20 E21 Q22 N26 V29 K30 V31 K36 E40 G41 L42 H46 V47 H48 S59 F64 N65 P66 R69 K70 H71 P74 H80 D83 K91 D96 E100 D101 L106 D109 V118 G130 N131

E132 N139 S142 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain H:

95% 5%

A1 T2 E24 D76 D83 D92 D101 E121 L144 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain I:

91% 8% •

A1 T2 Q22 K23 K30 V31 W32 R69 K91 D96 D101 L106 D109 K122 E132 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain J:

92% 8%

A1 T2 K3 K23 K36 R69 E77 K91 V94 D101 K122 N131 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain K:

92% 7% •

A1 T2 Q22 S25 V31 K91 D92 E100 D101 S107 E121 K122 Q153

- Molecule 1: SUPEROXIDE DISMUTASE

Chain L:

92% 8% •
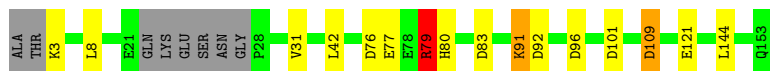
ALA T2 K3 A4 V31 K70 H71 D76 H80 D92 D96 D101 I113 K128 Q153
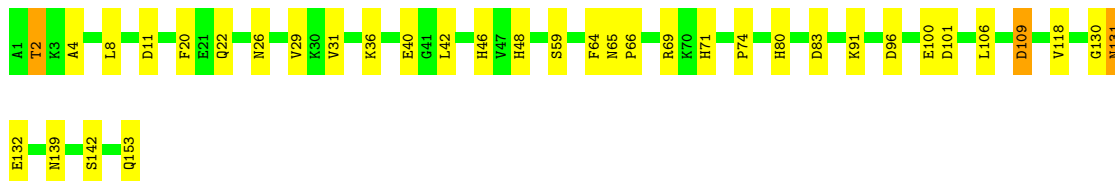
- Molecule 1: SUPEROXIDE DISMUTASE

Chain M:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain N:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain O:
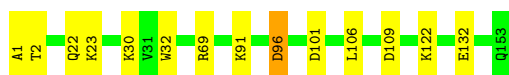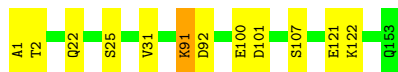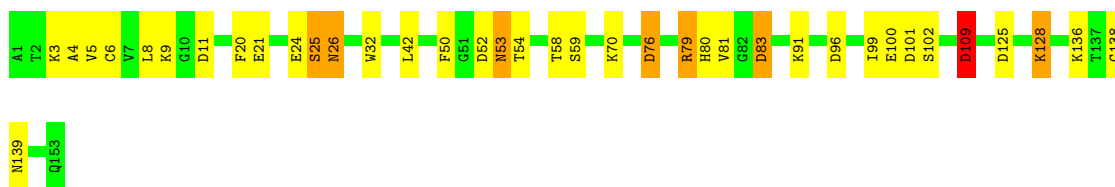

• Molecule 1: SUPEROXIDE DISMUTASE

Chain P:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain Q:

• Molecule 1: SUPEROXIDE DISMUTASE

Chain S:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	76.87Å 172.38Å 112.45Å 90.00° 93.45° 90.00°	Depositor
Resolution (Å)	50.00 – 1.80 22.00 – 1.80	Depositor EDS
% Data completeness (in resolution range)	98.5 (50.00-1.80) 98.5 (22.00-1.80)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.68 (at 1.80Å)	Xtriage
Refinement program	REFMAC 5.0	Depositor
R, R_{free}	0.185 , 0.222 0.232 , 0.256	Depositor DCC
R_{free} test set	13374 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å^2)	25.4	Xtriage
Anisotropy	0.068	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.42 , 58.9	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	21585	wwPDB-VP
Average B, all atoms (Å^2)	19.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.30% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: CU, CA, ZN

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	0.65	0/1128	0.95	5/1520 (0.3%)
1	B	0.75	0/1128	0.99	5/1520 (0.3%)
1	C	0.76	0/1127	0.93	2/1519 (0.1%)
1	D	0.66	0/1112	1.00	4/1501 (0.3%)
1	E	0.63	0/1099	0.89	2/1482 (0.1%)
1	F	0.58	0/1048	1.00	7/1413 (0.5%)
1	G	0.52	0/1128	0.91	5/1520 (0.3%)
1	H	0.66	0/1128	0.91	4/1520 (0.3%)
1	I	0.73	0/1128	0.93	3/1520 (0.2%)
1	J	0.74	0/1120	0.92	1/1512 (0.1%)
1	K	0.74	0/1124	0.96	3/1515 (0.2%)
1	L	0.61	0/1114	0.89	4/1503 (0.3%)
1	M	0.63	0/1092	0.93	4/1471 (0.3%)
1	N	0.59	0/1128	0.94	7/1520 (0.5%)
1	O	0.54	0/1127	0.90	5/1520 (0.3%)
1	P	0.27	0/1118	0.74	6/1506 (0.4%)
1	Q	0.63	0/1128	0.99	7/1520 (0.5%)
1	S	0.37	0/1126	0.80	5/1518 (0.3%)
All	All	0.63	0/20103	0.92	79/27100 (0.3%)

There are no bond length outliers.

All (79) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	79	ARG	NE-CZ-NH2	-11.85	114.37	120.30
1	Q	79	ARG	NE-CZ-NH2	-10.69	114.96	120.30
1	F	79	ARG	NE-CZ-NH2	-9.37	115.62	120.30
1	F	101	ASP	CB-CG-OD2	7.52	125.07	118.30
1	D	31	VAL	CG1-CB-CG2	6.99	122.08	110.90
1	I	96	ASP	CB-CG-OD2	6.98	124.58	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	109	ASP	CB-CG-OD2	6.93	124.54	118.30
1	D	79	ARG	NE-CZ-NH1	6.85	123.73	120.30
1	L	76	ASP	CB-CG-OD2	6.82	124.44	118.30
1	C	101	ASP	CB-CG-OD2	6.77	124.40	118.30
1	N	79	ARG	NE-CZ-NH2	-6.75	116.93	120.30
1	A	96	ASP	CB-CG-OD2	6.68	124.31	118.30
1	B	31	VAL	CG1-CB-CG2	6.67	121.57	110.90
1	I	101	ASP	CB-CG-OD2	6.53	124.18	118.30
1	Q	101	ASP	CB-CG-OD2	6.40	124.06	118.30
1	F	79	ARG	NE-CZ-NH1	6.37	123.49	120.30
1	M	124	ASP	CB-CG-OD1	6.28	123.95	118.30
1	I	109	ASP	CB-CG-OD2	6.27	123.94	118.30
1	Q	79	ARG	NE-CZ-NH1	6.27	123.44	120.30
1	B	109	ASP	CB-CG-OD2	6.23	123.91	118.30
1	M	109	ASP	CB-CG-OD2	6.19	123.87	118.30
1	O	83	ASP	CB-CG-OD2	6.09	123.78	118.30
1	L	92	ASP	CB-CG-OD2	6.08	123.77	118.30
1	G	83	ASP	CB-CG-OD2	6.04	123.73	118.30
1	P	109	ASP	CB-CG-OD2	5.95	123.66	118.30
1	K	31	VAL	CG1-CB-CG2	5.88	120.31	110.90
1	P	96	ASP	CB-CG-OD2	5.88	123.59	118.30
1	F	96	ASP	CB-CG-OD2	5.87	123.58	118.30
1	G	11	ASP	CB-CG-OD2	5.87	123.58	118.30
1	S	109	ASP	CB-CG-OD2	5.79	123.51	118.30
1	L	101	ASP	CB-CG-OD2	5.76	123.49	118.30
1	Q	96	ASP	CB-CG-OD2	5.75	123.48	118.30
1	Q	124	ASP	CB-CG-OD1	5.75	123.47	118.30
1	A	76	ASP	CB-CG-OD2	5.74	123.46	118.30
1	H	101	ASP	CB-CG-OD2	5.71	123.44	118.30
1	G	109	ASP	CB-CG-OD2	5.69	123.42	118.30
1	G	96	ASP	CB-CG-OD2	5.61	123.35	118.30
1	Q	109	ASP	CB-CG-OD2	5.60	123.34	118.30
1	K	31	VAL	CA-CB-CG2	5.59	119.29	110.90
1	B	96	ASP	CB-CG-OD2	5.57	123.31	118.30
1	N	79	ARG	NE-CZ-NH1	5.56	123.08	120.30
1	N	109	ASP	CB-CG-OD2	5.53	123.27	118.30
1	S	76	ASP	CB-CG-OD2	5.50	123.25	118.30
1	S	90	ASP	CB-CG-OD2	5.47	123.22	118.30
1	S	101	ASP	CB-CG-OD2	5.45	123.20	118.30
1	P	83	ASP	CB-CG-OD2	5.43	123.18	118.30
1	P	92	ASP	CB-CG-OD2	5.39	123.15	118.30
1	P	11	ASP	CB-CG-OD2	5.39	123.15	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	N	11	ASP	CB-CG-OD2	5.36	123.12	118.30
1	Q	76	ASP	CB-CG-OD2	5.36	123.12	118.30
1	A	11	ASP	CB-CG-OD2	5.35	123.11	118.30
1	D	124	ASP	CB-CG-OD2	5.35	123.11	118.30
1	S	96	ASP	CB-CG-OD2	5.35	123.11	118.30
1	N	83	ASP	CB-CG-OD2	5.34	123.11	118.30
1	G	101	ASP	CB-CG-OD2	5.32	123.09	118.30
1	K	101	ASP	CB-CG-OD2	5.31	123.08	118.30
1	F	83	ASP	CB-CG-OD2	5.29	123.06	118.30
1	M	11	ASP	CB-CG-OD2	5.28	123.05	118.30
1	E	92	ASP	CB-CG-OD2	5.28	123.05	118.30
1	F	109	ASP	CB-CG-OD2	5.27	123.05	118.30
1	F	76	ASP	CB-CG-OD2	5.26	123.04	118.30
1	J	101	ASP	CB-CG-OD2	5.26	123.03	118.30
1	B	92	ASP	CB-CG-OD2	5.24	123.02	118.30
1	N	92	ASP	CB-CG-OD2	5.23	123.01	118.30
1	H	76	ASP	CB-CG-OD2	5.22	123.00	118.30
1	B	101	ASP	CB-CG-OD2	5.21	122.99	118.30
1	H	92	ASP	CB-CG-OD2	5.20	122.98	118.30
1	A	92	ASP	CB-CG-OD2	5.18	122.96	118.30
1	O	96	ASP	CB-CG-OD2	5.18	122.96	118.30
1	L	96	ASP	CB-CG-OD2	5.17	122.95	118.30
1	E	96	ASP	CB-CG-OD2	5.16	122.95	118.30
1	P	52	ASP	CB-CG-OD2	5.13	122.92	118.30
1	C	83	ASP	CB-CG-OD2	5.12	122.91	118.30
1	M	101	ASP	CB-CG-OD2	5.09	122.88	118.30
1	H	83	ASP	CB-CG-OD2	5.05	122.85	118.30
1	O	109	ASP	CB-CG-OD2	5.05	122.85	118.30
1	O	11	ASP	CB-CG-OD2	5.03	122.83	118.30
1	N	52	ASP	CB-CG-OD2	5.01	122.81	118.30
1	O	76	ASP	CB-CG-OD2	5.01	122.81	118.30

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	1110	0	1077	6	0
1	B	1110	0	1077	11	1
1	C	1109	0	1072	7	0
1	D	1094	0	1041	7	0
1	E	1082	0	1031	10	0
1	F	1031	0	982	8	0
1	G	1110	0	1077	20	0
1	H	1110	0	1077	1	0
1	I	1110	0	1077	9	0
1	J	1102	0	1049	18	0
1	K	1106	0	1068	7	0
1	L	1096	0	1044	6	0
1	M	1075	0	1009	11	2
1	N	1110	0	1077	13	0
1	O	1109	0	1077	32	0
1	P	1101	0	1059	9	0
1	Q	1110	0	1077	22	0
1	S	1108	0	1070	24	1
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	G	1	0	0	0	0
2	H	1	0	0	0	0
2	I	1	0	0	0	0
2	J	1	0	0	0	0
2	K	1	0	0	0	0
2	L	1	0	0	0	0
2	M	1	0	0	0	0
2	N	1	0	0	0	0
2	O	1	0	0	0	0
2	P	1	0	0	0	0
2	Q	1	0	0	0	0
2	S	1	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	G	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	H	1	0	0	0	0
3	I	1	0	0	0	0
3	J	1	0	0	0	0
3	K	1	0	0	0	0
3	L	1	0	0	0	0
3	M	1	0	0	0	0
3	N	1	0	0	0	0
3	O	1	0	0	0	0
3	P	1	0	0	0	0
3	Q	1	0	0	0	0
3	S	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	O	1	0	0	0	0
5	A	113	0	0	2	0
5	B	152	0	0	4	0
5	C	144	0	0	5	1
5	D	107	0	0	1	0
5	E	114	0	0	0	0
5	F	94	0	0	1	0
5	G	43	0	0	4	0
5	H	118	0	0	0	1
5	I	141	0	0	1	0
5	J	133	0	0	3	0
5	K	148	0	0	2	0
5	L	115	0	0	5	0
5	M	99	0	0	3	0
5	N	90	0	0	6	0
5	O	50	0	0	10	0
5	P	2	0	0	0	0
5	Q	83	0	0	4	0
5	S	17	0	0	3	0
All	All	21585	0	19041	203	3

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 5.

All (203) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:96:ASP:HB3	5:I:2092:HOH:O	1.27	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:ASP:HB3	5:A:2072:HOH:O	1.42	1.16
1:O:125:ASP:O	1:O:128:LYS:HE2	1.47	1.14
1:J:153:GLN:O	1:S:92:ASP:OD1	1.68	1.10
1:B:53:ASN:OD1	5:B:2071:HOH:O	1.76	1.04
1:J:3:LYS:NZ	1:S:92:ASP:OD2	1.97	0.97
1:N:91:LYS:HG3	5:N:2051:HOH:O	1.68	0.93
1:B:69:ARG:NH1	1:B:78:GLU:OE1	2.06	0.88
1:L:70:LYS:HE2	5:L:2056:HOH:O	1.74	0.87
1:B:69:ARG:NH2	1:B:77:GLU:OE2	2.07	0.86
1:O:3:LYS:HG2	1:O:21:GLU:HG2	1.57	0.84
5:J:2132:HOH:O	1:S:91:LYS:HG3	1.76	0.83
1:M:53:ASN:HB2	5:M:2036:HOH:O	1.78	0.82
1:D:79:ARG:HD3	1:D:80:HIS:O	1.80	0.81
1:K:91:LYS:HD2	1:K:92:ASP:OD1	1.81	0.81
1:G:46:HIS:HB2	5:G:2010:HOH:O	1.81	0.80
1:C:102:SER:HB3	5:C:2035:HOH:O	1.81	0.80
1:F:3:LYS:C	5:F:2001:HOH:O	2.20	0.80
1:O:79:ARG:NH2	1:O:101:ASP:OD1	2.17	0.77
1:D:79:ARG:CD	1:D:80:HIS:O	2.32	0.77
1:J:3:LYS:CD	1:S:92:ASP:OD2	2.33	0.76
1:J:1:ALA:N	1:J:23:LYS:HA	2.01	0.76
1:J:153:GLN:C	1:S:92:ASP:OD1	2.25	0.75
1:O:128:LYS:CG	5:O:2044:HOH:O	2.35	0.75
1:O:24:GLU:O	1:O:26:ASN:N	2.18	0.74
1:F:79:ARG:HD3	1:F:80:HIS:O	1.88	0.74
1:O:128:LYS:HG2	5:O:2044:HOH:O	1.87	0.74
1:B:69:ARG:HH22	1:B:77:GLU:CD	1.90	0.73
1:O:109:ASP:HB2	5:O:2038:HOH:O	1.89	0.72
1:N:133:GLU:OE2	5:N:2076:HOH:O	2.08	0.71
1:N:136:LYS:HE3	5:N:2076:HOH:O	1.91	0.71
1:O:128:LYS:HB3	5:O:2044:HOH:O	1.89	0.70
1:F:91:LYS:HE2	1:F:92:ASP:OD2	1.92	0.70
1:D:91:LYS:HE2	1:D:92:ASP:OD1	1.91	0.70
1:J:36:LYS:HG3	1:J:94:VAL:HG22	1.73	0.70
1:G:130:GLY:O	1:G:131:ASN:O	2.10	0.70
1:I:1:ALA:HB3	1:I:22:GLN:O	1.92	0.69
1:M:24:GLU:N	1:M:24:GLU:C	2.47	0.69
1:P:132:GLU:N	1:P:132:GLU:C	2.46	0.69
1:M:91:LYS:HD2	5:M:2057:HOH:O	1.94	0.67
1:O:79:ARG:HD3	1:O:80:HIS:O	1.94	0.66
1:O:128:LYS:CB	5:O:2044:HOH:O	2.44	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:94:VAL:HG23	5:Q:2049:HOH:O	1.95	0.66
1:Q:2:THR:HG21	1:Q:106:LEU:HB2	1.78	0.65
1:J:153:GLN:OXT	1:S:91:LYS:HG3	1.96	0.65
1:O:80:HIS:CE1	5:O:2030:HOH:O	2.50	0.64
1:B:53:ASN:HB2	5:B:2075:HOH:O	1.98	0.63
1:I:30:LYS:HG2	1:I:32:TRP:CE3	2.35	0.62
1:K:91:LYS:HD2	1:K:92:ASP:CG	2.19	0.62
1:J:153:GLN:OXT	1:S:91:LYS:HE3	1.99	0.62
1:Q:90:ASP:HB2	1:Q:92:ASP:HB2	1.82	0.61
1:O:54:THR:HG22	1:Q:17:ILE:HD13	1.83	0.60
1:K:91:LYS:CD	1:K:92:ASP:OD1	2.50	0.60
1:Q:38:LEU:O	1:Q:93:GLY:HA2	2.02	0.59
1:N:79:ARG:HD2	1:N:80:HIS:O	2.03	0.59
1:Q:2:THR:HG22	1:Q:106:LEU:HD12	1.85	0.59
1:M:15:GLN:CD	5:M:2003:HOH:O	2.40	0.58
1:J:3:LYS:HD3	1:S:92:ASP:OD2	2.03	0.58
1:Q:79:ARG:CD	1:Q:80:HIS:O	2.52	0.58
1:J:69:ARG:NH1	1:J:77:GLU:OE2	2.37	0.58
1:M:91:LYS:HD2	1:M:91:LYS:H	1.68	0.58
1:K:1:ALA:HB3	1:K:22:GLN:O	2.04	0.58
1:N:79:ARG:CD	1:N:80:HIS:O	2.52	0.58
1:F:91:LYS:HE2	1:F:92:ASP:CG	2.23	0.57
1:C:36:LYS:HE3	5:C:2015:HOH:O	2.04	0.57
1:S:4:ALA:HB3	1:S:20:PHE:HB2	1.84	0.57
1:D:79:ARG:HD2	1:D:80:HIS:O	2.04	0.56
1:O:80:HIS:HB2	1:O:83:ASP:CG	2.26	0.56
1:J:3:LYS:CE	1:S:92:ASP:OD2	2.53	0.56
1:F:121:GLU:HA	1:F:144:LEU:HD11	1.87	0.56
1:G:131:ASN:HD21	1:G:139:ASN:HD21	1.54	0.56
1:E:7:VAL:CG1	1:E:9:LYS:HE2	2.36	0.55
1:Q:79:ARG:HD3	1:Q:80:HIS:O	2.05	0.55
1:O:79:ARG:HH22	1:O:101:ASP:CG	2.09	0.55
1:S:121:GLU:HA	1:S:144:LEU:HD11	1.88	0.55
1:J:153:GLN:OXT	1:S:91:LYS:CD	2.56	0.54
1:J:153:GLN:OXT	1:S:91:LYS:CE	2.56	0.54
1:C:1:ALA:C	5:C:2001:HOH:O	2.45	0.54
1:E:7:VAL:HG12	1:E:9:LYS:HE2	1.89	0.53
1:O:50:PHE:CZ	1:Q:153:GLN:HB2	2.44	0.53
1:O:53:ASN:CG	5:O:2021:HOH:O	2.47	0.53
1:A:23:LYS:HG3	5:A:2015:HOH:O	2.09	0.53
1:P:4:ALA:HB3	1:P:20:PHE:HB2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:71:HIS:HB2	1:G:80:HIS:CE1	2.44	0.53
1:G:118:VAL:HB	5:G:2010:HOH:O	2.08	0.52
1:S:122:LYS:HE2	5:S:2017:HOH:O	2.09	0.52
1:A:96:ASP:O	1:J:131:ASN:HB3	2.10	0.52
1:E:91:LYS:HD2	1:E:92:ASP:N	2.24	0.51
1:O:52:ASP:O	1:O:59:SER:HB2	2.10	0.51
1:S:71:HIS:HB2	1:S:80:HIS:CE1	2.46	0.51
1:O:25:SER:O	1:O:26:ASN:HB3	2.11	0.51
1:O:21:GLU:HG3	1:O:32:TRP:HH2	1.77	0.50
1:O:99:ILE:HG22	1:O:100:GLU:N	2.25	0.50
1:S:51:GLY:HA2	1:S:116:THR:OG1	2.12	0.50
1:Q:2:THR:CG2	1:Q:106:LEU:HD12	2.41	0.50
1:O:9:LYS:HD2	5:Q:2035:HOH:O	2.11	0.50
1:Q:52:ASP:OD1	1:Q:54:THR:HG23	2.12	0.49
1:G:65:ASN:HD21	1:G:69:ARG:N	2.10	0.49
1:K:100:GLU:OE1	5:K:2100:HOH:O	2.19	0.49
1:C:26:ASN:ND2	5:C:2034:HOH:O	2.45	0.49
1:P:51:GLY:HA2	1:P:116:THR:OG1	2.12	0.49
1:P:76:ASP:O	1:P:79:ARG:HG2	2.13	0.49
1:E:9:LYS:NZ	1:E:15:GLN:HB2	2.28	0.48
1:N:121:GLU:HA	1:N:144:LEU:HD11	1.95	0.48
1:L:4:ALA:HB2	1:L:113:ILE:HD11	1.94	0.48
1:Q:36:LYS:HB3	5:Q:2016:HOH:O	2.14	0.48
1:O:70:LYS:HA	1:O:70:LYS:HD3	1.66	0.48
1:M:91:LYS:H	1:M:91:LYS:CD	2.27	0.48
1:B:90:ASP:OD1	1:B:90:ASP:C	2.53	0.48
1:J:153:GLN:OXT	1:S:91:LYS:CG	2.61	0.48
1:M:91:LYS:HD3	1:M:92:ASP:N	2.29	0.47
1:N:92:ASP:HB3	5:N:2053:HOH:O	2.14	0.47
1:Q:24:GLU:HB3	1:Q:25:SER:H	1.56	0.47
1:E:91:LYS:HD2	1:E:91:LYS:C	2.35	0.47
1:M:91:LYS:CD	1:M:91:LYS:N	2.78	0.47
1:Q:109:ASP:OD2	1:Q:109:ASP:O	2.33	0.47
1:A:132:GLU:HG2	1:E:98:SER:HB2	1.97	0.47
1:J:3:LYS:HE3	5:J:2023:HOH:O	2.15	0.47
1:G:64:PHE:CZ	1:G:66:PRO:HG3	2.50	0.47
1:G:65:ASN:HD21	1:G:69:ARG:H	1.63	0.47
1:D:30:LYS:HD2	5:D:2020:HOH:O	2.14	0.46
1:F:91:LYS:HE2	1:F:92:ASP:OD1	2.16	0.46
1:S:125:ASP:HA	5:S:2010:HOH:O	2.15	0.46
1:G:153:GLN:HG3	1:N:50:PHE:CZ	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:79:ARG:HD3	1:N:83:ASP:HB2	1.97	0.46
1:B:128:LYS:NZ	5:B:2131:HOH:O	2.35	0.46
1:J:1:ALA:H1	1:J:23:LYS:HA	1.77	0.46
1:O:5:VAL:HG22	1:O:6:CYS:N	2.31	0.46
1:O:80:HIS:HE1	5:O:2030:HOH:O	1.93	0.46
1:S:132:GLU:HG2	5:S:2013:HOH:O	2.16	0.46
1:D:131:ASN:HB3	1:I:96:ASP:O	2.16	0.46
1:G:40:GLU:OE2	1:G:91:LYS:HG2	2.15	0.46
1:G:48:HIS:CD2	5:G:2010:HOH:O	2.68	0.46
1:E:8:LEU:O	1:E:9:LYS:HD3	2.15	0.46
1:G:74:PRO:HD2	5:G:2023:HOH:O	2.16	0.46
1:K:107:SER:OG	5:K:2106:HOH:O	2.21	0.46
1:F:79:ARG:CD	1:F:80:HIS:O	2.63	0.46
1:O:79:ARG:CD	1:O:80:HIS:O	2.62	0.46
1:A:121:GLU:HA	1:A:144:LEU:HD11	1.99	0.45
1:O:26:ASN:N	1:O:26:ASN:OD1	2.49	0.45
1:O:99:ILE:CG2	1:O:100:GLU:N	2.79	0.45
1:Q:8:LEU:HD22	1:Q:8:LEU:N	2.32	0.45
1:G:131:ASN:ND2	1:G:139:ASN:HD21	2.15	0.45
1:O:128:LYS:NZ	5:O:2043:HOH:O	2.50	0.45
1:I:1:ALA:CB	1:I:23:LYS:HA	2.47	0.45
1:O:4:ALA:HB3	1:O:20:PHE:HB2	1.99	0.45
1:Q:91:LYS:O	1:Q:91:LYS:HG3	2.16	0.45
1:Q:79:ARG:HD2	1:Q:80:HIS:O	2.17	0.44
1:S:126:LEU:HB2	1:S:128:LYS:HE3	1.99	0.44
1:N:92:ASP:OD2	5:N:2053:HOH:O	2.21	0.44
1:G:4:ALA:HB3	1:G:20:PHE:HB2	2.00	0.43
5:J:2132:HOH:O	1:S:91:LYS:CG	2.52	0.43
1:B:2:THR:CG2	5:B:2032:HOH:O	2.65	0.43
1:E:8:LEU:HD12	1:E:8:LEU:N	2.33	0.43
1:N:79:ARG:HD3	1:N:80:HIS:O	2.17	0.43
1:S:64:PHE:CE1	1:S:66:PRO:HD3	2.53	0.43
1:D:121:GLU:HA	1:D:144:LEU:HD11	1.99	0.43
1:H:121:GLU:HA	1:H:144:LEU:HD11	2.00	0.43
1:G:2:THR:HG21	1:G:106:LEU:HB2	2.00	0.43
1:O:81:VAL:HG23	5:O:2025:HOH:O	2.18	0.43
1:Q:94:VAL:CG2	5:Q:2049:HOH:O	2.61	0.43
1:A:24:GLU:HA	1:A:24:GLU:OE1	2.18	0.43
1:J:3:LYS:NZ	1:S:92:ASP:CG	2.70	0.43
1:C:69:ARG:NH1	1:C:77:GLU:OE2	2.52	0.43
1:I:2:THR:HG21	1:I:106:LEU:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:122:LYS:NZ	5:N:2022:HOH:O	2.48	0.43
1:E:121:GLU:HA	1:E:144:LEU:HD11	2.01	0.42
1:G:2:THR:CG2	1:G:106:LEU:HB2	2.49	0.42
1:M:121:GLU:HA	1:M:144:LEU:HD11	2.00	0.42
1:G:22:GLN:HB2	1:G:29:VAL:HG22	2.01	0.42
1:N:65:ASN:CG	1:N:80:HIS:CD2	2.92	0.42
1:Q:92:ASP:HB3	1:Q:94:VAL:H	1.85	0.42
1:E:38:LEU:O	1:E:93:GLY:HA2	2.19	0.42
1:G:36:LYS:HE3	5:L:2006:HOH:O	2.20	0.42
1:M:8:LEU:HD12	1:M:8:LEU:N	2.35	0.42
1:G:8:LEU:HD22	1:G:8:LEU:N	2.35	0.42
1:L:70:LYS:CD	5:L:2056:HOH:O	2.67	0.42
1:O:138:GLY:O	1:O:139:ASN:HB2	2.20	0.42
1:B:38:LEU:O	1:B:93:GLY:HA2	2.20	0.42
1:M:52:ASP:O	1:M:59:SER:HB2	2.20	0.41
1:O:21:GLU:HG3	1:O:32:TRP:CH2	2.54	0.41
1:P:2:THR:HG23	1:P:22:GLN:HB3	2.02	0.41
1:I:2:THR:CG2	1:I:106:LEU:HB2	2.50	0.41
1:L:70:LYS:HD3	5:L:2056:HOH:O	2.18	0.41
1:S:22:GLN:HB2	1:S:29:VAL:HG22	2.03	0.41
1:B:18:ILE:CG2	1:B:31:VAL:HG23	2.50	0.41
1:C:77:GLU:HA	1:C:77:GLU:OE1	2.21	0.41
1:Q:5:VAL:HG22	1:Q:6:CYS:N	2.36	0.41
1:L:71:HIS:HB2	1:L:80:HIS:CE1	2.55	0.41
1:P:109:ASP:OD2	1:P:109:ASP:N	2.54	0.41
1:L:128:LYS:HE3	5:L:2091:HOH:O	2.20	0.41
1:B:71:HIS:HB2	1:B:80:HIS:CE1	2.55	0.40
1:F:77:GLU:OE1	1:F:77:GLU:C	2.59	0.40
1:P:3:LYS:HG2	1:P:21:GLU:HG3	2.03	0.40
1:P:121:GLU:HA	1:P:144:LEU:HD11	2.03	0.40
1:C:128:LYS:HE3	5:C:2081:HOH:O	2.21	0.40
1:P:121:GLU:HB2	1:P:142:SER:OG	2.21	0.40
1:I:2:THR:HG23	1:I:106:LEU:HD12	2.03	0.40
1:K:121:GLU:HG2	1:K:122:LYS:HG3	2.04	0.40
1:N:67:LEU:N	1:N:67:LEU:HD23	2.36	0.40
1:Q:109:ASP:OD2	1:Q:109:ASP:C	2.59	0.40
1:G:64:PHE:CE1	1:G:66:PRO:HG3	2.56	0.40
1:Q:109:ASP:OD2	1:Q:110:HIS:HD2	2.04	0.40

All (3) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:54:THR:O	1:S:132:GLU:OE2[1_456]	1.86	0.34
1:B:122:LYS:NZ	1:M:40:GLU:OE2[2_546]	1.92	0.28
5:C:2120:HOH:O	5:H:2064:HOH:O[1_554]	2.06	0.14

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	151/153 (99%)	150 (99%)	1 (1%)	0	100	100
1	B	151/153 (99%)	150 (99%)	1 (1%)	0	100	100
1	C	151/153 (99%)	150 (99%)	1 (1%)	0	100	100
1	D	151/153 (99%)	149 (99%)	2 (1%)	0	100	100
1	E	147/153 (96%)	146 (99%)	1 (1%)	0	100	100
1	F	141/153 (92%)	140 (99%)	1 (1%)	0	100	100
1	G	151/153 (99%)	146 (97%)	4 (3%)	1 (1%)	22	10
1	H	151/153 (99%)	149 (99%)	2 (1%)	0	100	100
1	I	151/153 (99%)	148 (98%)	3 (2%)	0	100	100
1	J	151/153 (99%)	150 (99%)	1 (1%)	0	100	100
1	K	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
1	L	150/153 (98%)	149 (99%)	1 (1%)	0	100	100
1	M	149/153 (97%)	148 (99%)	1 (1%)	0	100	100
1	N	151/153 (99%)	151 (100%)	0	0	100	100
1	O	151/153 (99%)	146 (97%)	3 (2%)	2 (1%)	12	3
1	P	150/153 (98%)	147 (98%)	3 (2%)	0	100	100
1	Q	151/153 (99%)	146 (97%)	4 (3%)	1 (1%)	22	10
1	S	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
All	All	2700/2754 (98%)	2656 (98%)	40 (2%)	4 (0%)	51	36

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	131	ASN
1	O	25	SER
1	O	26	ASN
1	Q	2	THR

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	118/118 (100%)	112 (95%)	6 (5%)	24	10
1	B	118/118 (100%)	113 (96%)	5 (4%)	30	15
1	C	117/118 (99%)	117 (100%)	0	100	100
1	D	111/118 (94%)	108 (97%)	3 (3%)	44	31
1	E	108/118 (92%)	106 (98%)	2 (2%)	57	46
1	F	107/118 (91%)	101 (94%)	6 (6%)	21	8
1	G	118/118 (100%)	109 (92%)	9 (8%)	13	4
1	H	118/118 (100%)	116 (98%)	2 (2%)	60	51
1	I	118/118 (100%)	115 (98%)	3 (2%)	47	34
1	J	114/118 (97%)	112 (98%)	2 (2%)	59	48
1	K	116/118 (98%)	113 (97%)	3 (3%)	46	32
1	L	114/118 (97%)	112 (98%)	2 (2%)	59	48
1	M	108/118 (92%)	105 (97%)	3 (3%)	43	30
1	N	118/118 (100%)	114 (97%)	4 (3%)	37	22
1	O	118/118 (100%)	107 (91%)	11 (9%)	9	2
1	P	115/118 (98%)	110 (96%)	5 (4%)	29	14
1	Q	118/118 (100%)	109 (92%)	9 (8%)	13	4
1	S	117/118 (99%)	114 (97%)	3 (3%)	46	32
All	All	2071/2124 (98%)	1993 (96%)	78 (4%)	33	18

All (78) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	THR
1	A	8	LEU
1	A	25	SER
1	A	26	ASN
1	A	42	LEU
1	A	59	SER
1	B	2	THR
1	B	15	GLN
1	B	26	ASN
1	B	42	LEU
1	B	109	ASP
1	D	42	LEU
1	D	79	ARG
1	D	91	LYS
1	E	2	THR
1	E	25	SER
1	F	8	LEU
1	F	31	VAL
1	F	42	LEU
1	F	79	ARG
1	F	91	LYS
1	F	109	ASP
1	G	2	THR
1	G	26	ASN
1	G	31	VAL
1	G	42	LEU
1	G	59	SER
1	G	100	GLU
1	G	109	ASP
1	G	132	GLU
1	G	142	SER
1	H	2	THR
1	H	24	GLU
1	I	69	ARG
1	I	91	LYS
1	I	132	GLU
1	J	91	LYS
1	J	122	LYS
1	K	2	THR
1	K	25	SER
1	K	91	LYS
1	L	2	THR

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Mol	Chain	Res	Type
1	L	31	VAL
1	M	31	VAL
1	M	69	ARG
1	M	91	LYS
1	N	69	ARG
1	N	75	LYS
1	N	79	ARG
1	N	91	LYS
1	O	8	LEU
1	O	42	LEU
1	O	53	ASN
1	O	58	THR
1	O	76	ASP
1	O	79	ARG
1	O	91	LYS
1	O	102	SER
1	O	109	ASP
1	O	128	LYS
1	O	136	LYS
1	P	2	THR
1	P	8	LEU
1	P	26	ASN
1	P	42	LEU
1	P	109	ASP
1	Q	2	THR
1	Q	24	GLU
1	Q	31	VAL
1	Q	34	SER
1	Q	69	ARG
1	Q	77	GLU
1	Q	79	ARG
1	Q	90	ASP
1	Q	92	ASP
1	S	2	THR
1	S	24	GLU
1	S	142	SER

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

Mol	Chain	Res	Type
1	B	26	ASN
1	G	15	GLN

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Mol	Chain	Res	Type
1	G	65	ASN
1	G	139	ASN
1	H	15	GLN
1	J	15	GLN
1	J	53	ASN
1	M	53	ASN
1	O	15	GLN
1	Q	53	ASN
1	Q	110	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 39 ligands modelled in this entry, 39 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

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 ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.