wwPDB X-ray Structure Validation Summary Report (i)

Oct 19, 2023 – 07:56 AM EDT

PDB ID	:	2NVL
Title	:	Crystal structure of archaeal peroxiredoxin, thioredoxin peroxidase from Aeropyrum pernix K1 (sulfonic acid form)
Authors	:	Nakamura, T.; Yamamoto, T.; Abe, M.; Matsumura, H.; Hagihara, Y.; Goto, T.; Yamaguchi, T.; Inoue, T.
Deposited on	:	2006-11-13
Resolution	:	2.36 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

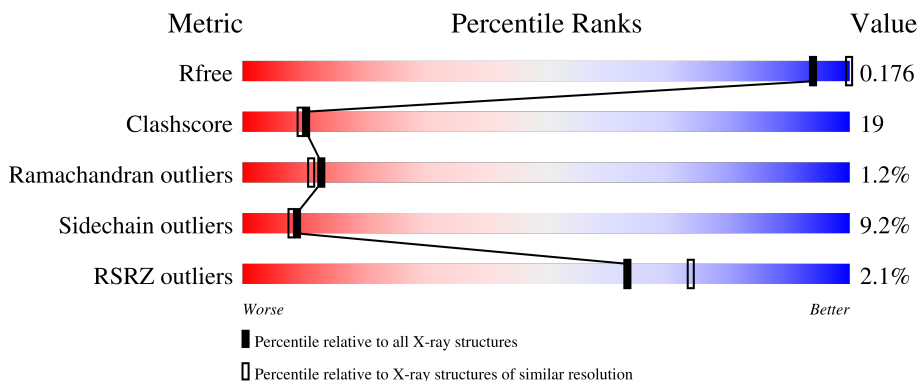|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.36 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		0.176
Clashscore		19
Ramachandran outliers		1.2%
Sidechain outliers		9.2%
RSRZ outliers		2.1%

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	1164 (2.36-2.36)
Clashscore	141614	1232 (2.36-2.36)
Ramachandran outliers	138981	1211 (2.36-2.36)
Sidechain outliers	138945	1212 (2.36-2.36)
RSRZ outliers	127900	1150 (2.36-2.36)

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% 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% / 63% / 25% / 8% · ·
1	B	250	% / 68% / 21% / 6% · ·
1	C	250	2% / 63% / 26% / 7% ·
1	D	250	2% / 62% / 28% / 6% · ·
1	E	250	2% / 62% / 29% / 6% ·

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Mol	Chain	Length	Quality of chain
1	F	250	2% 62% 29% · · ·
1	G	250	62% 30% · · ·
1	H	250	2% 70% 19% 7% · ·
1	I	250	4% 61% 28% 6% · ·
1	J	250	2% 69% 20% 7% · ·

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 20328 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 Probable peroxiredoxin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	B	240	Total	C	N	O	S	0	0	0
			1953	1254	343	350	6			
1	C	240	Total	C	N	O	S	0	0	0
			1950	1252	341	351	6			
1	D	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	E	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	F	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	G	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	H	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	I	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			
1	J	242	Total	C	N	O	S	0	0	0
			1965	1261	345	353	6			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	207	SER	CYS	engineered mutation	UNP Q9Y9L0
B	207	SER	CYS	engineered mutation	UNP Q9Y9L0
C	207	SER	CYS	engineered mutation	UNP Q9Y9L0
D	207	SER	CYS	engineered mutation	UNP Q9Y9L0
E	207	SER	CYS	engineered mutation	UNP Q9Y9L0
F	207	SER	CYS	engineered mutation	UNP Q9Y9L0
G	207	SER	CYS	engineered mutation	UNP Q9Y9L0
H	207	SER	CYS	engineered mutation	UNP Q9Y9L0
I	207	SER	CYS	engineered mutation	UNP Q9Y9L0

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Chain	Residue	Modelled	Actual	Comment	Reference
J	207	SER	CYS	engineered mutation	UNP Q9Y9L0

• Molecule 2 is water.

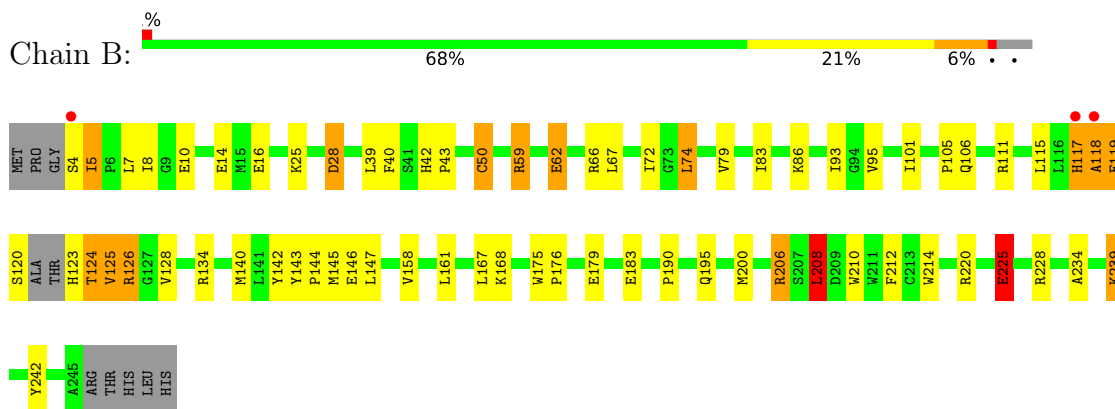| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	83	Total 83	O 83	0	0
2	B	64	Total 64	O 64	0	0
2	C	58	Total 58	O 58	0	0
2	D	44	Total 44	O 44	0	0
2	E	66	Total 66	O 66	0	0
2	F	75	Total 75	O 75	0	0
2	G	82	Total 82	O 82	0	0
2	H	82	Total 82	O 82	0	0
2	I	75	Total 75	O 75	0	0
2	J	76	Total 76	O 76	0	0

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 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.
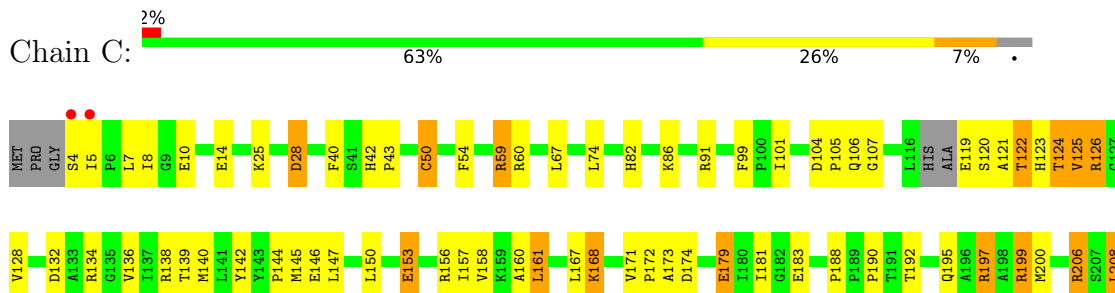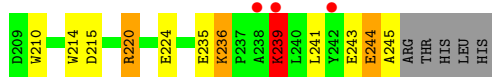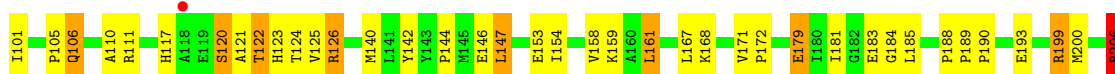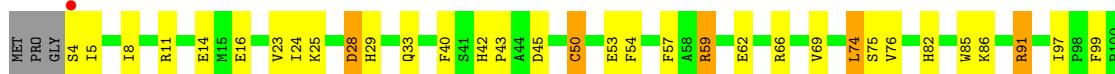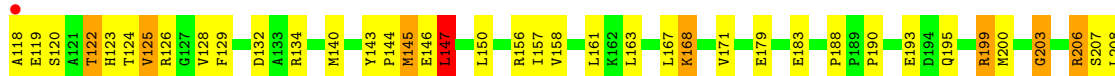
• Molecule 1: Probable peroxiredoxin
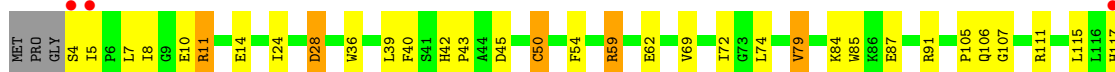

• Molecule 1: Probable peroxiredoxin

• Molecule 1: Probable peroxiredoxin

D209 W210 W214 D215 R220 E224 E235 K236 P237 A238 K239 L240 L241 Y242 E243 E244 A245 ARG THR HIS LEU HIS

• Molecule 1: Probable peroxiredoxin

Chain D:

MET PRO GLY S4 I5 I8 R11 E14 M15 E16 V23 I24 K25 D28 H29 Q33 F40 H42 P43 A44 D45 C50 E53 F54 F57 A58 R59 E62 R66 V69 L74 S75 V76 H82 W85 K86 R91 I97 P98 F99 P100

I101 P105 Q106 R111 A110 H117 A118 E119 S120 A121 T122 H123 T124 V125 R126 M140 I141 Y142 Y143 P144 M145 E146 L147 E153 I154 V158 K159 A160 L161 L167 K168 V171 P172 E179 I180 I181 G182 E183 G184 L185 P188 P189 P190 E193 R199 M200 R206

S207 L208 D209 W210 W211 F212 C213 W214 P217 R220 D221 E224 E225 A226 R227 R228 A238 K239 L240 L241 Y242 E243 E244 A245 ARG THR HIS LEU HIS

• Molecule 1: Probable peroxiredoxin

Chain E:

MET PRO GLY S4 I5 P6 L7 I8 G9 E10 R11 E14 I24 D28 W36 L39 F40 S41 H42 P43 A44 D45 C50 F54 R59 E62 V69 I72 G73 L74 V79 K84 W85 K86 E87 R91 P105 Q106 G107 R111 L115 L116 H117

A118 E119 S120 A121 T122 H123 T124 V125 R126 G127 V128 F129 D132 A133 R134 M140 Y143 P144 M145 E146 L47 L150 R156 I157 V158 L161 K162 L163 L167 K168 V171 E179 E183 P188 P189 P190 E193 D194 Q195 R199 M200 G203 R206 S207 L208

F212 C213 R220 D221 D222 V223 E224 E225 A226 R227 R228 Y229 L230 R231 A238 K239 L240 L241 Y242 E243 E244 A245 ARG THR HIS LEU HIS

• Molecule 1: Probable peroxiredoxin

Chain F:

MET PRO GLY S4 I5 P6 L7 I8 G9 E10 R11 E14 D20 K25 D28 W36 F40 S41 H42 P43 C50 F54 R59 R60 Y61 E62 R66 L67 L74 S75 V76 D77 H82 K86 R96 F99 P100 I101 P105 Q106 R112 L116

H117 A118 E119 T122 H123 T124 V125 R126 F129 D132 A133 R134 T139 M140 Y143 P144 M145 E146 L147 E153 R156 I157 V158 K159 A160 L161 K162 L163 L167 E179 L185 P188 P189 P190 E193 D194 Q195 A196 R197 A198 R199 M200 E201 S202 R206 S207 L208

F212 C213 W214 D215 T216 P217 R220 E224 E225 A226 R227 R228 R231 A238 K239 Y242 E243 E244 A245 ARG THR HIS LEU HIS
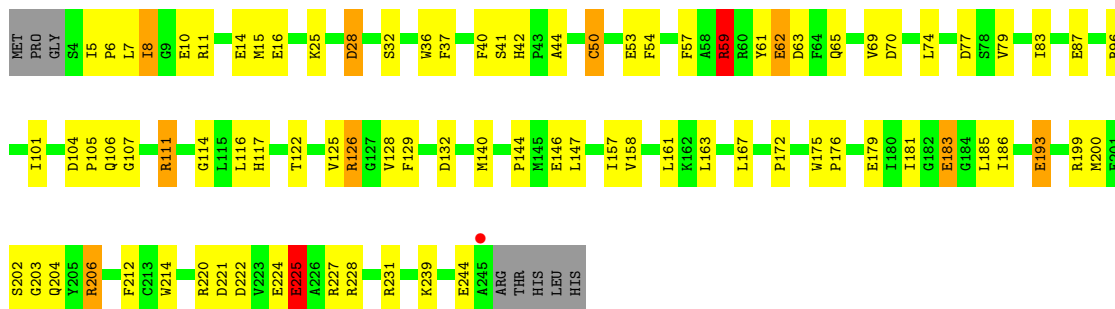
• Molecule 1: Probable peroxiredoxin

Chain G:

• Molecule 1: Probable peroxiredoxin

Chain H:

• Molecule 1: Probable peroxiredoxin
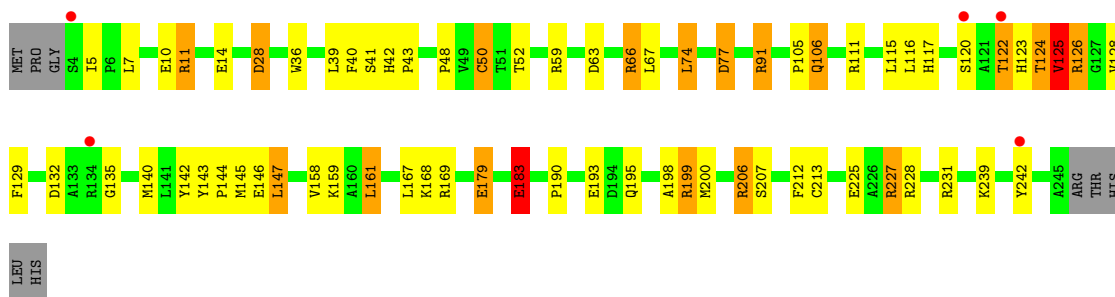
Chain I:

• Molecule 1: Probable peroxiredoxin

Chain J:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	76.32Å 102.96Å 104.30Å 105.65° 105.26° 92.69°	Depositor
Resolution (Å)	50.00 – 2.36 50.13 – 2.36	Depositor EDS
% Data completeness (in resolution range)	96.5 (50.00-2.36) 91.7 (50.13-2.36)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	2.57 (at 2.37Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.166 , 0.219 0.167 , 0.176	Depositor DCC
R_{free} test set	11689 reflections (10.01%)	wwPDB-VP
Wilson B-factor (Å^2)	30.5	Xtriage
Anisotropy	0.438	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 52.8	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	0.96	EDS
Total number of atoms	20328	wwPDB-VP
Average B, all atoms (Å^2)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.43% 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: OCS

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	1.19	3/2009 (0.1%)	1.04	8/2730 (0.3%)
1	B	1.20	6/1996 (0.3%)	1.02	5/2710 (0.2%)
1	C	1.17	4/1992 (0.2%)	1.00	7/2705 (0.3%)
1	D	1.13	5/2009 (0.2%)	1.02	8/2730 (0.3%)
1	E	1.18	5/2009 (0.2%)	1.02	7/2730 (0.3%)
1	F	1.22	3/2009 (0.1%)	1.11	17/2730 (0.6%)
1	G	1.28	10/2009 (0.5%)	1.09	11/2730 (0.4%)
1	H	1.17	3/2009 (0.1%)	1.06	7/2730 (0.3%)
1	I	1.16	5/2009 (0.2%)	1.04	12/2730 (0.4%)
1	J	1.17	5/2009 (0.2%)	1.02	6/2730 (0.2%)
All	All	1.19	49/20060 (0.2%)	1.04	88/27255 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

The worst 5 of 49 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	179	GLU	CD-OE1	9.85	1.36	1.25
1	E	183	GLU	CD-OE2	9.63	1.36	1.25
1	G	225	GLU	CG-CD	7.96	1.63	1.51
1	B	225	GLU	CG-CD	7.62	1.63	1.51
1	G	62	GLU	CG-CD	7.53	1.63	1.51

The worst 5 of 88 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	59	ARG	NE-CZ-NH1	11.61	126.10	120.30
1	J	231	ARG	NE-CZ-NH2	-10.91	114.84	120.30
1	G	126	ARG	NE-CZ-NH2	-10.85	114.87	120.30
1	G	231	ARG	NE-CZ-NH2	-9.71	115.45	120.30
1	F	227	ARG	NE-CZ-NH1	-9.39	115.60	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	120	SER	Peptide

5.2 Too-close contacts (i)

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	1965	0	1948	93	0
1	B	1953	0	1935	73	0
1	C	1950	0	1935	74	0
1	D	1965	0	1948	99	0
1	E	1965	0	1948	97	0
1	F	1965	0	1948	94	0
1	G	1965	0	1948	70	0
1	H	1965	0	1948	60	0
1	I	1965	0	1948	87	0
1	J	1965	0	1947	84	0
2	A	83	0	0	5	0
2	B	64	0	0	6	0
2	C	58	0	0	6	0
2	D	44	0	0	3	0
2	E	66	0	0	5	0
2	F	75	0	0	5	0
2	G	82	0	0	4	0
2	H	82	0	0	6	0
2	I	75	0	0	3	0
2	J	76	0	0	3	0
All	All	20328	0	19453	727	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 19.

The worst 5 of 727 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:J:66:ARG:HH11	1:J:66:ARG:HG3	1.05	1.16
1:D:105:PRO:O	1:D:106:GLN:HB3	1.43	1.15
1:G:105:PRO:O	1:G:106:GLN:HB2	1.48	1.13
1:G:14:GLU:HG3	1:G:25:LYS:HZ1	1.00	1.10
1:B:126:ARG:HH11	1:B:145:MET:HA	1.11	1.08

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	239/250 (96%)	221 (92%)	16 (7%)	2 (1%)	19	20
1	B	235/250 (94%)	223 (95%)	9 (4%)	3 (1%)	12	10
1	C	235/250 (94%)	224 (95%)	8 (3%)	3 (1%)	12	10
1	D	239/250 (96%)	226 (95%)	10 (4%)	3 (1%)	12	10
1	E	239/250 (96%)	220 (92%)	15 (6%)	4 (2%)	9	7
1	F	239/250 (96%)	228 (95%)	10 (4%)	1 (0%)	34	38
1	G	239/250 (96%)	227 (95%)	10 (4%)	2 (1%)	19	20
1	H	239/250 (96%)	226 (95%)	8 (3%)	5 (2%)	7	4
1	I	239/250 (96%)	226 (95%)	10 (4%)	3 (1%)	12	10
1	J	239/250 (96%)	223 (93%)	14 (6%)	2 (1%)	19	20
All	All	2382/2500 (95%)	2244 (94%)	110 (5%)	28 (1%)	13	11

5 of 28 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	121	ALA
1	B	118	ALA
1	C	121	ALA
1	E	239	LYS
1	G	239	LYS

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	208/215 (97%)	188 (90%)	20 (10%)	8	7
1	B	207/215 (96%)	189 (91%)	18 (9%)	10	9
1	C	207/215 (96%)	186 (90%)	21 (10%)	7	6
1	D	208/215 (97%)	188 (90%)	20 (10%)	8	7
1	E	208/215 (97%)	192 (92%)	16 (8%)	13	12
1	F	208/215 (97%)	190 (91%)	18 (9%)	10	9
1	G	208/215 (97%)	192 (92%)	16 (8%)	13	12
1	H	208/215 (97%)	187 (90%)	21 (10%)	7	6
1	I	208/215 (97%)	187 (90%)	21 (10%)	7	6
1	J	208/215 (97%)	188 (90%)	20 (10%)	8	7
All	All	2078/2150 (97%)	1887 (91%)	191 (9%)	9	8

5 of 191 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	59	ARG
1	H	167	LEU
1	G	125	VAL
1	H	59	ARG
1	I	28	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 18 such sidechains are listed below:

Mol	Chain	Res	Type
1	I	117	HIS
1	J	204	GLN
1	J	117	HIS
1	G	117	HIS
1	I	106	GLN

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

10 non-standard protein/DNA/RNA residues 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	$\#|Z| > 2$
1	OCS	C	50	1	7,8,9	2.14	2 (28%)	6,11,13	2.96	3 (50%)
1	OCS	I	50	1	7,8,9	2.17	2 (28%)	6,11,13	1.74	3 (50%)
1	OCS	J	50	1	7,8,9	2.23	2 (28%)	6,11,13	2.42	3 (50%)
1	OCS	H	50	1	7,8,9	1.55	2 (28%)	6,11,13	2.06	4 (66%)
1	OCS	B	50	1	7,8,9	2.14	2 (28%)	6,11,13	2.78	2 (33%)
1	OCS	D	50	1	7,8,9	2.23	3 (42%)	6,11,13	2.03	2 (33%)
1	OCS	F	50	1	7,8,9	2.19	2 (28%)	6,11,13	2.23	1 (16%)
1	OCS	A	50	1	7,8,9	2.21	3 (42%)	6,11,13	0.96	0
1	OCS	G	50	1	7,8,9	2.13	2 (28%)	6,11,13	1.92	2 (33%)
1	OCS	E	50	1	7,8,9	2.20	2 (28%)	6,11,13	2.32	4 (66%)

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
1	OCS	C	50	1	-	0/4/7/9	-
1	OCS	I	50	1	-	0/4/7/9	-
1	OCS	J	50	1	-	0/4/7/9	-
1	OCS	H	50	1	-	0/4/7/9	-
1	OCS	B	50	1	-	0/4/7/9	-
1	OCS	D	50	1	-	0/4/7/9	-
1	OCS	F	50	1	-	0/4/7/9	-
1	OCS	A	50	1	-	0/4/7/9	-
1	OCS	G	50	1	-	0/4/7/9	-
1	OCS	E	50	1	-	0/4/7/9	-

The worst 5 of 22 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	J	50	OCS	O-C	5.25	1.40	1.19
1	D	50	OCS	O-C	4.74	1.38	1.19
1	A	50	OCS	O-C	4.69	1.38	1.19
1	I	50	OCS	O-C	4.69	1.38	1.19
1	C	50	OCS	O-C	4.54	1.38	1.19

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	50	OCS	OD1-SG-CB	5.91	113.97	106.94
1	C	50	OCS	OD3-SG-CB	5.83	113.87	106.94
1	F	50	OCS	OD2-SG-CB	5.13	113.92	105.74
1	J	50	OCS	OD2-SG-CB	3.99	112.09	105.74
1	D	50	OCS	OD2-SG-CB	3.83	111.84	105.74

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

9 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	C	50	OCS	2	0
1	J	50	OCS	1	0
1	H	50	OCS	1	0
1	B	50	OCS	2	0
1	D	50	OCS	1	0
1	F	50	OCS	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	50	OCS	1	0
1	G	50	OCS	1	0
1	E	50	OCS	2	0

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	241/250 (96%)	-0.30	7 (2%)	51	62	19, 30, 60, 79	0
1	B	239/250 (95%)	-0.34	3 (1%)	77	84	21, 31, 59, 79	0
1	C	239/250 (95%)	-0.38	5 (2%)	63	74	22, 33, 61, 74	0
1	D	241/250 (96%)	-0.22	4 (1%)	70	78	25, 38, 63, 79	0
1	E	241/250 (96%)	-0.19	4 (1%)	70	78	19, 33, 62, 78	0
1	F	241/250 (96%)	-0.31	6 (2%)	57	67	20, 29, 57, 72	0
1	G	241/250 (96%)	-0.36	1 (0%)	92	96	18, 28, 54, 73	0
1	H	241/250 (96%)	-0.33	5 (2%)	63	74	19, 28, 59, 78	0
1	I	241/250 (96%)	-0.25	10 (4%)	37	49	20, 31, 63, 83	0
1	J	241/250 (96%)	-0.22	5 (2%)	63	74	22, 32, 59, 76	0
All	All	2406/2500 (96%)	-0.29	50 (2%)	63	74	18, 32, 61, 83	0

The worst 5 of 50 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	118	ALA	7.1
1	I	118	ALA	5.1
1	E	4	SER	5.0
1	H	245	ALA	4.1
1	I	4	SER	4.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	OCS	F	50	9/10	0.97	0.13	25,27,33,34	0
1	OCS	B	50	9/10	0.98	0.10	23,24,33,33	0
1	OCS	C	50	9/10	0.98	0.09	26,27,33,33	0
1	OCS	D	50	9/10	0.98	0.08	28,30,36,41	0
1	OCS	E	50	9/10	0.98	0.11	27,28,38,38	0
1	OCS	A	50	9/10	0.98	0.10	26,28,35,35	0
1	OCS	G	50	9/10	0.98	0.10	23,25,29,31	0
1	OCS	H	50	9/10	0.98	0.10	20,21,31,31	0
1	OCS	I	50	9/10	0.98	0.10	25,26,33,34	0
1	OCS	J	50	9/10	0.98	0.12	27,29,35,35	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.