



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 06:06 PM GMT

PDB ID : 4KJY
Title : Complex of high-affinity SIRP alpha variant FD6 with CD47
Authors : Ring, A.M.; Ozkan, E.; Ho, C.C.M.; Garcia, K.C.
Deposited on : 2013-05-04
Resolution : 1.93 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
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

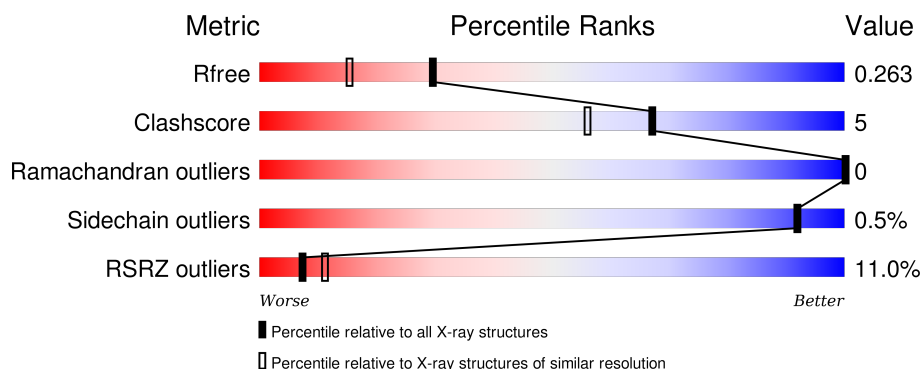
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.93 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}	91344	2910 (1.96-1.92)
Clashscore	102246	3095 (1.96-1.92)
Ramachandran outliers	100387	3062 (1.96-1.92)
Sidechain outliers	100360	3062 (1.96-1.92)
RSRZ outliers	91569	2915 (1.96-1.92)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	125	<div> <div>26%</div> <div> <div></div> <div>82%</div> <div>8%</div> <div>9%</div> </div> </div>
1	C	125	<div> <div>6%</div> <div> <div></div> <div>81%</div> <div>10%</div> <div>9%</div> </div> </div>
2	B	133	<div> <div>5%</div> <div> <div></div> <div>80%</div> <div>6%</div> <div>14%</div> </div> </div>
2	D	133	<div> <div>2%</div> <div> <div></div> <div>79%</div> <div>8%</div> <div>13%</div> </div> </div>

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NAG	A	203	-	-	-	X
4	NAG	C	202	-	-	-	X
4	NAG	C	204	-	-	-	X

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 4018 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 Leukocyte surface antigen CD47.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	114	Total	C	N	O	S	0	0	0
			854	536	138	176	4			
1	C	114	Total	C	N	O	S	0	1	0
			885	561	141	179	4			

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	PCA	GLN	SEE REMARK 999	UNP Q08722
A	15	GLY	CYS	ENGINEERED MUTATION	UNP Q08722
A	118	THR	-	EXPRESSION TAG	UNP Q08722
A	119	ARG	-	EXPRESSION TAG	UNP Q08722
A	120	HIS	-	EXPRESSION TAG	UNP Q08722
A	121	HIS	-	EXPRESSION TAG	UNP Q08722
A	122	HIS	-	EXPRESSION TAG	UNP Q08722
A	123	HIS	-	EXPRESSION TAG	UNP Q08722
A	124	HIS	-	EXPRESSION TAG	UNP Q08722
A	125	HIS	-	EXPRESSION TAG	UNP Q08722
C	1	PCA	GLN	SEE REMARK 999	UNP Q08722
C	15	GLY	CYS	ENGINEERED MUTATION	UNP Q08722
C	118	THR	-	EXPRESSION TAG	UNP Q08722
C	119	ARG	-	EXPRESSION TAG	UNP Q08722
C	120	HIS	-	EXPRESSION TAG	UNP Q08722
C	121	HIS	-	EXPRESSION TAG	UNP Q08722
C	122	HIS	-	EXPRESSION TAG	UNP Q08722
C	123	HIS	-	EXPRESSION TAG	UNP Q08722
C	124	HIS	-	EXPRESSION TAG	UNP Q08722
C	125	HIS	-	EXPRESSION TAG	UNP Q08722

- Molecule 2 is a protein called High-affinity SIRPa variant FD6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	114	Total	C	N	O	S	0	0	0
			876	551	152	170	3			
2	D	116	Total	C	N	O	S	0	2	0
			898	567	156	172	3			

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	D	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula: C₈H₁₅NO₆).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			14	8	1	5		
4	A	1	Total	C	N	O	0	0
			14	8	1	5		
4	A	1	Total	C	N	O	0	0
			14	8	1	5		
4	C	1	Total	C	N	O	0	0
			14	8	1	5		
4	C	1	Total	C	N	O	0	0
			14	8	1	5		
4	C	1	Total	C	N	O	0	0
			14	8	1	5		
4	C	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	62	Total	O	0	0
			62	62		
5	B	108	Total	O	0	0
			108	108		
5	C	73	Total	O	0	0
			73	73		
5	D	135	Total	O	0	0
			135	135		

- Molecule 1: Leukocyte surface antigen CD47



4 Data and refinement statistics

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, α , β , γ	71.34Å 71.34Å 399.18Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	31.29 – 1.93 45.27 – 1.93	Depositor EDS
% Data completeness (in resolution range)	78.0 (31.29-1.93) 78.1 (45.27-1.93)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.00 (at 1.92Å)	Xtriage
Refinement program	PHENIX (phenix.refine: dev_1389)	Depositor
R, R_{free}	0.219 , 0.262 0.218 , 0.263	Depositor DCC
R_{free} test set	1475 reflections (4.02%)	DCC
Wilson B-factor (Å ²)	25.5	Xtriage
Anisotropy	0.072	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 47.1	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Outliers	1 of 36731 reflections (0.003%)	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	4018	wwPDB-VP
Average B, all atoms (Å ²)	47.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.16% 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, 0.375 respectively for untwinned datasets, and 0.333, 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: PCA, NAG, SO4

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.26	0/859	0.43	0/1170
1	C	0.34	0/895	0.48	0/1214
2	B	0.30	0/895	0.49	0/1216
2	D	0.35	0/924	0.50	0/1254
All	All	0.32	0/3573	0.48	0/4854

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	854	0	805	8	0
1	C	885	0	856	12	0
2	B	876	0	860	7	0
2	D	898	0	897	6	0
3	A	5	0	0	0	0
3	C	5	0	0	0	0
3	D	5	0	0	0	0
4	A	42	0	39	0	0
4	C	70	0	65	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	62	0	0	1	0
5	B	108	0	0	3	0
5	C	73	0	0	3	0
5	D	135	0	0	1	0
All	All	4018	0	3522	34	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 5.

All (34) 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:C:12:PHE:HB3	4:C:203:NAG:H82	1.72	0.69
2:B:40:ARG:NH1	5:B:237:HOH:O	2.24	0.69
1:C:5:ASN:ND2	4:C:202:NAG:O7	2.28	0.67
2:B:59:ARG:NH2	2:B:85:ASP:OD2	2.29	0.65
2:D:22:ILE:HD12	2:D:63:ILE:HD11	1.78	0.64
2:D:54:GLN:NE2	5:D:378:HOH:O	2.30	0.63
2:B:68:ARG:NH2	5:B:268:HOH:O	2.25	0.61
1:A:8:LYS:H	1:A:8:LYS:HD3	1.68	0.59
1:C:17:ASP:OD1	1:C:17:ASP:N	2.37	0.57
1:A:72:GLN:HB3	1:A:77:ASP:HB3	1.91	0.52
1:A:39:LYS:HB2	1:A:97:GLU:HB3	1.91	0.52
1:A:62:ASP:N	1:A:62:ASP:OD1	2.40	0.52
1:C:39[B]:LYS:HD2	1:C:41:LYS:HE3	1.94	0.49
1:C:55:ASN:HD22	4:C:204:NAG:H83	1.78	0.48
2:D:64[A]:SER:OG	2:D:73:ASP:OD2	2.26	0.48
1:C:46:ASP:OD2	5:C:348:HOH:O	2.20	0.47
2:B:59:ARG:HH22	2:B:85:ASP:CG	2.19	0.47
2:B:95:ARG:HG3	2:B:103:PHE:HB2	1.98	0.45
1:A:28:MET:HB3	5:A:317:HOH:O	2.16	0.45
2:D:11:LYS:NZ	2:D:107:ALA:HB3	2.31	0.45
1:C:48:TYR:OH	1:C:68:ILE:HG12	2.18	0.44
1:C:55:ASN:ND2	4:C:204:NAG:H83	2.33	0.43
1:A:73:LEU:HA	1:A:73:LEU:HD23	1.90	0.43
2:B:95:ARG:NH1	5:B:295:HOH:O	2.45	0.42
1:C:92:GLY:HA2	4:C:205:NAG:H82	2.01	0.41
2:B:98:SER:HA	2:B:99:PRO:HA	1.86	0.41
1:A:40:TRP:CE2	1:A:80:LEU:HB2	2.55	0.41
1:C:48:TYR:CE2	1:C:67:LYS:HA	2.56	0.41
1:A:28:MET:HE2	1:A:76:GLY:HA2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:57:PHE:HA	2:D:58:PRO:HD2	1.88	0.41
1:C:14:PHE:O	5:C:366:HOH:O	2.22	0.41
1:C:106:GLU:OE2	5:C:364:HOH:O	2.22	0.40
4:C:202:NAG:O7	4:C:202:NAG:C1	2.69	0.40
2:D:98:SER:HA	2:D:99:PRO:HA	1.94	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	112/125 (90%)	107 (96%)	5 (4%)	0	100	100
1	C	113/125 (90%)	108 (96%)	5 (4%)	0	100	100
2	B	112/133 (84%)	111 (99%)	1 (1%)	0	100	100
2	D	116/133 (87%)	116 (100%)	0	0	100	100
All	All	453/516 (88%)	442 (98%)	11 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	92/113 (81%)	91 (99%)	1 (1%)	80	76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	98/113 (87%)	97 (99%)	1 (1%)	82	79
2	B	96/110 (87%)	96 (100%)	0	100	100
2	D	100/110 (91%)	100 (100%)	0	100	100
All	All	386/446 (86%)	384 (100%)	2 (0%)	92	92

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	LYS
1	C	17	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

2 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	PCA	A	1	1	7,8,9	1.44	1 (14%)	9,10,12	2.60	4 (44%)
1	PCA	C	1	1	7,8,9	1.50	1 (14%)	9,10,12	2.15	5 (55%)

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	PCA	A	1	1	-	0/0/11/13	0/1/1/1
1	PCA	C	1	1	-	0/0/11/13	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1	PCA	CD-N	3.66	1.45	1.33
1	C	1	PCA	CD-N	3.81	1.46	1.33

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1	PCA	CB-CA-C	-5.64	105.05	112.76
1	C	1	PCA	CA-N-CD	-3.15	103.26	113.81
1	A	1	PCA	CA-N-CD	-3.07	103.51	113.81
1	C	1	PCA	CB-CA-C	-3.06	108.58	112.76
1	C	1	PCA	OE-CD-CG	-2.25	121.78	126.81
1	A	1	PCA	OE-CD-CG	-2.05	122.24	126.81
1	C	1	PCA	CG-CD-N	2.05	115.42	108.04
1	C	1	PCA	CB-CA-N	2.85	111.53	103.20
1	A	1	PCA	CB-CA-N	2.87	111.58	103.20

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

11 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	$\# Z > 2$
3	SO4	A	201	-	4,4,4	0.20	0	6,6,6	0.08	0
4	NAG	A	202	1	14,14,15	0.49	0	15,19,21	0.27	0
4	NAG	A	203	1	14,14,15	0.42	0	15,19,21	0.44	0
4	NAG	A	204	1	14,14,15	0.17	0	15,19,21	0.52	0
4	NAG	C	201	1	14,14,15	0.34	0	15,19,21	0.40	0
4	NAG	C	202	1	14,14,15	1.76	1 (7%)	15,19,21	2.07	4 (26%)
4	NAG	C	203	1	14,14,15	0.94	2 (14%)	15,19,21	0.66	1 (6%)
4	NAG	C	204	1	14,14,15	0.63	1 (7%)	15,19,21	0.44	0
4	NAG	C	205	1	14,14,15	0.44	0	15,19,21	0.41	0
3	SO4	C	206	-	4,4,4	0.19	0	6,6,6	0.14	0
3	SO4	D	201	-	4,4,4	0.17	0	6,6,6	0.11	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	SO4	A	201	-	-	0/0/0/0	0/0/0/0
4	NAG	A	202	1	-	0/6/23/26	0/1/1/1
4	NAG	A	203	1	-	0/6/23/26	0/1/1/1
4	NAG	A	204	1	-	0/6/23/26	0/1/1/1
4	NAG	C	201	1	-	0/6/23/26	0/1/1/1
4	NAG	C	202	1	-	0/6/23/26	0/1/1/1
4	NAG	C	203	1	-	0/6/23/26	0/1/1/1
4	NAG	C	204	1	-	0/6/23/26	0/1/1/1
4	NAG	C	205	1	-	0/6/23/26	0/1/1/1
3	SO4	C	206	-	-	0/0/0/0	0/0/0/0
3	SO4	D	201	-	-	0/0/0/0	0/0/0/0

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	203	NAG	O5-C1	-2.49	1.39	1.43
4	C	204	NAG	O5-C1	-2.03	1.40	1.43
4	C	203	NAG	C1-C2	2.38	1.55	1.52
4	C	202	NAG	O5-C1	6.37	1.54	1.43

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	202	NAG	C4-C3-C2	-2.27	107.70	111.23
4	C	203	NAG	C1-O5-C5	2.13	114.95	112.25
4	C	202	NAG	O6-C6-C5	2.14	118.41	111.33
4	C	202	NAG	C2-N2-C7	2.99	126.88	123.04
4	C	202	NAG	C1-O5-C5	6.24	120.16	112.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	202	NAG	2	0
4	C	203	NAG	1	0
4	C	204	NAG	2	0
4	C	205	NAG	1	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	113/125 (90%)	1.49	33 (29%) 1 0	23, 62, 123, 142	0
1	C	113/125 (90%)	0.34	8 (7%) 19 27	21, 36, 84, 124	0
2	B	114/133 (85%)	0.34	7 (6%) 25 32	24, 40, 83, 101	0
2	D	116/133 (87%)	-0.15	2 (1%) 73 79	20, 32, 51, 65	0
All	All	456/516 (88%)	0.50	50 (10%) 7 11	20, 39, 104, 142	0

All (50) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	113	TYR	9.2
1	A	88	VAL	7.7
1	A	111	LEU	7.5
1	A	13	THR	7.1
1	A	19	VAL	6.4
1	A	14	PHE	6.2
1	A	112	LYS	6.2
1	A	20	VAL	5.7
1	A	10	VAL	5.6
1	A	82	MET	5.4
1	A	109	ILE	5.3
1	C	17	ASP	5.2
1	A	17	ASP	4.6
1	A	12	PHE	4.6
1	A	16	ASN	4.5
2	B	113	VAL	4.4
1	A	83	ASP	4.3
1	C	13	THR	4.3
1	A	11	GLU	4.3
1	A	42	PHE	4.1
1	A	61	THR	4.0

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Mol	Chain	Res	Type	RSRZ
1	A	64	SER	3.9
1	A	18	THR	3.6
1	C	113	TYR	3.6
1	A	110	GLU	3.5
1	A	114	ARG	3.5
1	A	7	THR	3.4
1	A	15	GLY	3.3
1	C	88	VAL	3.3
2	B	114	ARG	3.3
1	A	66	ALA	3.2
1	C	18	THR	3.1
2	D	55	GLY	3.1
1	A	9	SER	2.9
2	B	81	ILE	2.8
1	A	63	PHE	2.8
1	C	14	PHE	2.8
2	B	107	ALA	2.7
1	C	12	PHE	2.6
2	B	1	GLU	2.6
1	A	8	LYS	2.6
1	A	87	ALA	2.5
2	D	56	PRO	2.5
2	B	2	GLU	2.4
1	A	92	GLY	2.3
1	A	89	SER	2.2
1	A	65	SER	2.2
2	B	110	GLU	2.1
1	C	16	ASN	2.1
1	A	86	ASP	2.1

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
1	PCA	C	1	8/9	0.96	0.09	-	20,27,29,34	0
1	PCA	A	1	8/9	0.96	0.09	-	19,22,29,32	0

6.3 Carbohydrates [i](#)

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
4	NAG	C	202	14/15	0.61	0.32	11.77	57,65,81,87	0
4	NAG	C	204	14/15	0.76	0.22	2.56	55,71,75,76	0
4	NAG	A	203	14/15	0.67	0.31	2.45	80,91,93,97	0
4	NAG	C	203	14/15	0.55	0.32	1.98	70,93,100,100	0
4	NAG	C	201	14/15	0.77	0.16	-	51,67,69,73	0
3	SO4	C	206	5/5	0.89	0.16	-	50,58,59,62	5
3	SO4	A	201	5/5	0.95	0.10	-	60,64,65,66	5
4	NAG	A	204	14/15	0.80	0.33	-	81,98,106,108	0
4	NAG	A	202	14/15	0.85	0.12	-	52,63,75,76	0
3	SO4	D	201	5/5	0.96	0.14	-	32,36,39,43	5
4	NAG	C	205	14/15	0.84	0.21	-	67,82,85,86	0

6.5 Other polymers [i](#)

There are no such residues in this entry.