



Full wwPDB X-ray Structure Validation Report

Feb 28, 2014 – 06:21 PM GMT

PDB ID : 4KBK
Title : CK1d in complex with (3S)-3-{4-[3-(4-fluorophenyl)-1-methyl-1H-pyrazol-4-yl]pyridin-2-yl}morpholineinhibitor
Authors : Liu, S.
Deposited on : 2013-04-23
Resolution : 2.10 Å(reported)

This is a full wwPDB 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/ValidationPDFNotes.html>

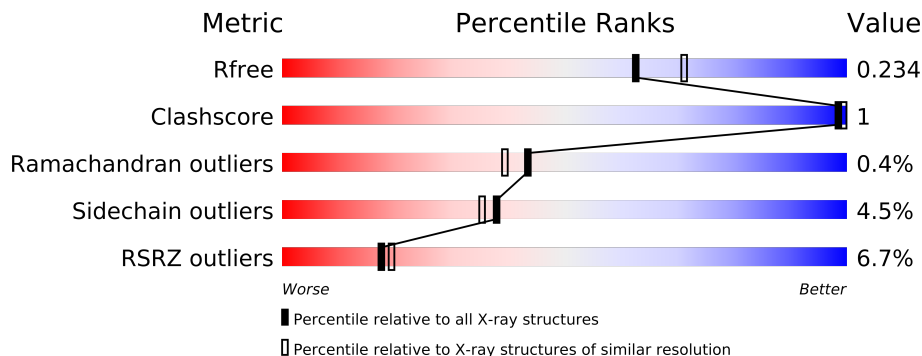
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.15 2013
Xtriage (Phenix) : dev-1323
EDS : stable22639
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.10 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}	66092	3012 (2.10-2.10)
Clashscore	79885	3649 (2.10-2.10)
Ramachandran outliers	78287	3610 (2.10-2.10)
Sidechain outliers	78261	3611 (2.10-2.10)
RSRZ outliers	66119	3013 (2.10-2.10)

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. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	A	331	
1	B	331	
1	C	331	
1	D	331	

The following table lists non-polymeric compounds that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Geometry	Electron density
3	SO4	A	404	-	X
3	SO4	A	405	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 10114 atoms, of which 76 are hydrogens and 0 are deuterium.

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 Casein kinase I isoform delta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	283	Total	C	N	O	S	0	0	0
			2308	1479	404	411	14			
1	B	289	Total	C	N	O	S	0	0	0
			2361	1516	414	417	14			
1	C	280	Total	C	N	O	S	0	0	0
			2288	1471	397	406	14			
1	D	281	Total	C	N	O	S	0	1	0
			2313	1484	406	409	14			

There are 64 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-13	MET	-	EXPRESSION TAG	UNP P48730
A	-12	HIS	-	EXPRESSION TAG	UNP P48730
A	-11	HIS	-	EXPRESSION TAG	UNP P48730
A	-10	HIS	-	EXPRESSION TAG	UNP P48730
A	-9	HIS	-	EXPRESSION TAG	UNP P48730
A	-8	HIS	-	EXPRESSION TAG	UNP P48730
A	-7	HIS	-	EXPRESSION TAG	UNP P48730
A	-6	SER	-	EXPRESSION TAG	UNP P48730
A	-5	SER	-	EXPRESSION TAG	UNP P48730
A	-4	GLY	-	EXPRESSION TAG	UNP P48730
A	-3	LEU	-	EXPRESSION TAG	UNP P48730
A	-2	VAL	-	EXPRESSION TAG	UNP P48730
A	-1	PRO	-	EXPRESSION TAG	UNP P48730
A	0	ARG	-	EXPRESSION TAG	UNP P48730
A	1	GLY	-	EXPRESSION TAG	UNP P48730
A	2	SER	-	EXPRESSION TAG	UNP P48730
B	-13	MET	-	EXPRESSION TAG	UNP P48730
B	-12	HIS	-	EXPRESSION TAG	UNP P48730
B	-11	HIS	-	EXPRESSION TAG	UNP P48730
B	-10	HIS	-	EXPRESSION TAG	UNP P48730
B	-9	HIS	-	EXPRESSION TAG	UNP P48730

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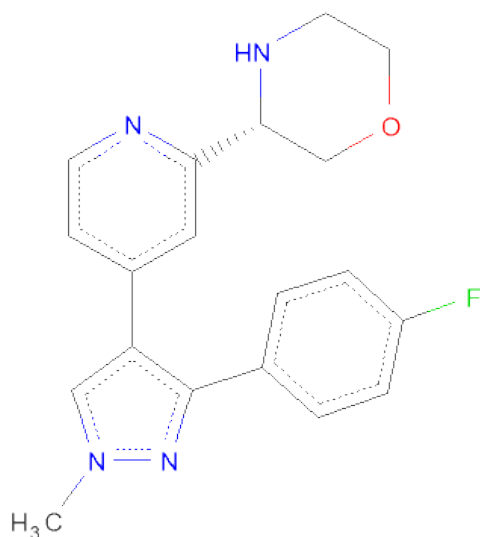
Chain	Residue	Modelled	Actual	Comment	Reference
B	-8	HIS	-	EXPRESSION TAG	UNP P48730
B	-7	HIS	-	EXPRESSION TAG	UNP P48730
B	-6	SER	-	EXPRESSION TAG	UNP P48730
B	-5	SER	-	EXPRESSION TAG	UNP P48730
B	-4	GLY	-	EXPRESSION TAG	UNP P48730
B	-3	LEU	-	EXPRESSION TAG	UNP P48730
B	-2	VAL	-	EXPRESSION TAG	UNP P48730
B	-1	PRO	-	EXPRESSION TAG	UNP P48730
B	0	ARG	-	EXPRESSION TAG	UNP P48730
B	1	GLY	-	EXPRESSION TAG	UNP P48730
B	2	SER	-	EXPRESSION TAG	UNP P48730
C	-13	MET	-	EXPRESSION TAG	UNP P48730
C	-12	HIS	-	EXPRESSION TAG	UNP P48730
C	-11	HIS	-	EXPRESSION TAG	UNP P48730
C	-10	HIS	-	EXPRESSION TAG	UNP P48730
C	-9	HIS	-	EXPRESSION TAG	UNP P48730
C	-8	HIS	-	EXPRESSION TAG	UNP P48730
C	-7	HIS	-	EXPRESSION TAG	UNP P48730
C	-6	SER	-	EXPRESSION TAG	UNP P48730
C	-5	SER	-	EXPRESSION TAG	UNP P48730
C	-4	GLY	-	EXPRESSION TAG	UNP P48730
C	-3	LEU	-	EXPRESSION TAG	UNP P48730
C	-2	VAL	-	EXPRESSION TAG	UNP P48730
C	-1	PRO	-	EXPRESSION TAG	UNP P48730
C	0	ARG	-	EXPRESSION TAG	UNP P48730
C	1	GLY	-	EXPRESSION TAG	UNP P48730
C	2	SER	-	EXPRESSION TAG	UNP P48730
D	-13	MET	-	EXPRESSION TAG	UNP P48730
D	-12	HIS	-	EXPRESSION TAG	UNP P48730
D	-11	HIS	-	EXPRESSION TAG	UNP P48730
D	-10	HIS	-	EXPRESSION TAG	UNP P48730
D	-9	HIS	-	EXPRESSION TAG	UNP P48730
D	-8	HIS	-	EXPRESSION TAG	UNP P48730
D	-7	HIS	-	EXPRESSION TAG	UNP P48730
D	-6	SER	-	EXPRESSION TAG	UNP P48730
D	-5	SER	-	EXPRESSION TAG	UNP P48730
D	-4	GLY	-	EXPRESSION TAG	UNP P48730
D	-3	LEU	-	EXPRESSION TAG	UNP P48730
D	-2	VAL	-	EXPRESSION TAG	UNP P48730
D	-1	PRO	-	EXPRESSION TAG	UNP P48730
D	0	ARG	-	EXPRESSION TAG	UNP P48730
D	1	GLY	-	EXPRESSION TAG	UNP P48730

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Chain	Residue	Modelled	Actual	Comment	Reference
D	2	SER	-	EXPRESSION TAG	UNP P48730

- Molecule 2 is (3S)-3-{4-[3-(4-FLUOROPHENYL)-1-METHYL-1H-PYRAZOL-4-YL]PYRIDIN-2-YL}MORPHOLINE (three-letter code: 1QG) (formula: C₁₉H₁₉FN₄O).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	F	H	N	O	19	0
			44	19	1	19	4	1		
2	B	1	Total	C	F	H	N	O	19	0
			44	19	1	19	4	1		
2	C	1	Total	C	F	H	N	O	19	0
			44	19	1	19	4	1		
2	D	1	Total	C	F	H	N	O	19	0
			44	19	1	19	4	1		

- 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	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	A	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		
3	B	1	Total	O	S	0	0
			5	4	1		
3	C	1	Total	O	S	0	0
			5	4	1		
3	C	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		
3	D	1	Total	O	S	0	0
			5	4	1		
3	D	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is water.

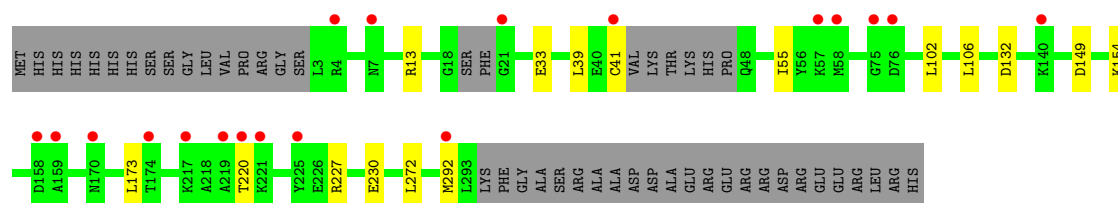
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	150	Total 150	O 150	0	0
4	B	126	Total 126	O 126	0	0
4	C	165	Total 165	O 165	0	0
4	D	162	Total 162	O 162	0	0

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

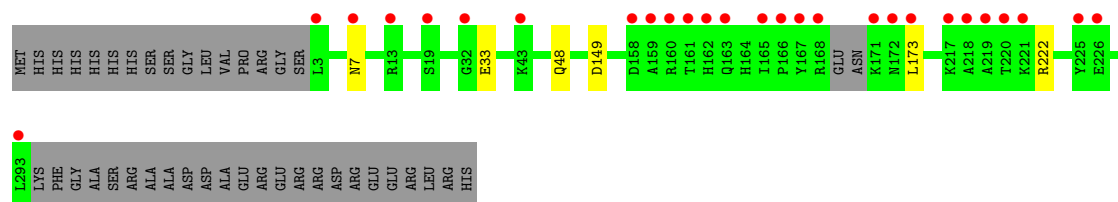
- Molecule 1: Casein kinase I isoform delta

Chain A: 



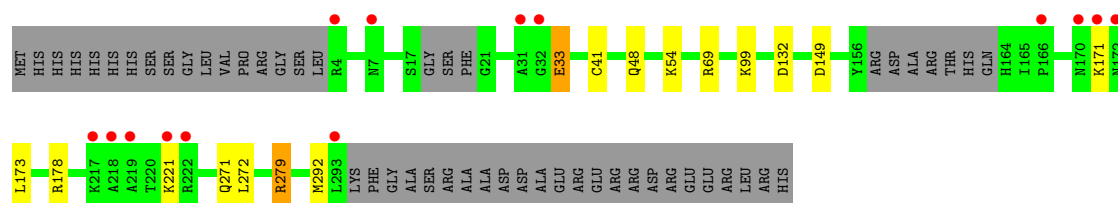
- Molecule 1: Casein kinase I isoform delta

Chain B: 



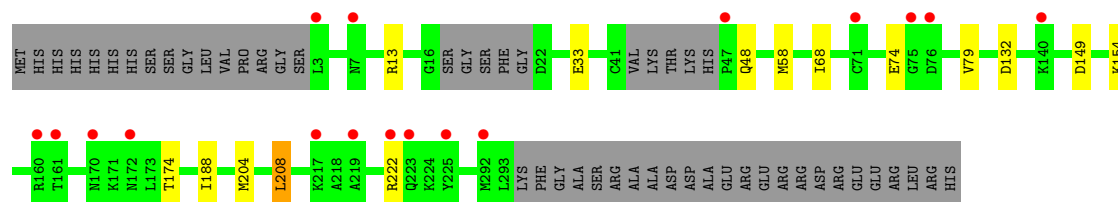
- Molecule 1: Casein kinase I isoform delta

Chain C: 



- Molecule 1: Casein kinase I isoform delta

Chain D: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	49.10Å 84.76Å 89.45Å 108.06° 105.85° 93.09°	Depositor
Resolution (Å)	17.21 – 2.10 17.17 – 2.10	Depositor EDS
% Data completeness (in resolution range)	95.4 (17.21-2.10) 95.4 (17.17-2.10)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.69 (at 2.11Å)	Xtriage
Refinement program	BUSTER 2.11.5	Depositor
R, R_{free}	0.191 , 0.225 0.197 , 0.234	Depositor DCC
R_{free} test set	3673 reflections (5.34%)	DCC
Wilson B-factor (Å ²)	28.1	Xtriage
Anisotropy	0.268	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.40 , 52.2	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 72486 reflections	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	10114	wwPDB-VP
Average B, all atoms (Å ²)	39.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.82% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 1QG, 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	0.48	0/2358	0.64	0/3166
1	B	0.50	0/2415	0.63	0/3244
1	C	0.52	0/2339	0.66	1/3141 (0.0%)
1	D	0.50	0/2367	0.65	0/3178
All	All	0.50	0/9479	0.64	1/12729 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	33	GLU	CB-CG-CD	5.06	127.87	114.20

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2308	0	0	2	0
1	B	2361	0	0	0	0
1	C	2288	0	0	2	0
1	D	2313	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	A	25	19	0	0	0
2	B	25	19	0	0	0
2	C	25	19	0	0	0
2	D	25	19	0	0	0
3	A	20	0	0	0	0
3	B	15	0	0	0	0
3	C	15	0	0	1	0
3	D	15	0	0	0	0
4	A	150	0	0	0	0
4	B	126	0	0	0	0
4	C	165	0	0	1	0
4	D	162	0	0	0	0
All	All	10038	76	0	5	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 1.

All (5) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:279:ARG:CZ	4:C:507:HOH:O	2.44	0.65
1:A:102:LEU:O	1:A:106:LEU:CD2	2.50	0.60
1:C:178:ARG:CD	3:C:404:SO4:O3	2.55	0.54
1:A:106:LEU:CD2	1:A:106:LEU:N	2.81	0.44
1:D:204:MET:CE	1:D:208:LEU:CD1	2.96	0.44

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	277/331 (84%)	272 (98%)	4 (1%)	1 (0%)	43 39
1	B	285/331 (86%)	279 (98%)	5 (2%)	1 (0%)	43 39
1	C	274/331 (83%)	268 (98%)	5 (2%)	1 (0%)	43 39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	276/331 (83%)	269 (98%)	6 (2%)	1 (0%)	43	39
All	All	1112/1324 (84%)	1088 (98%)	20 (2%)	4 (0%)	43	39

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	149	ASP
1	A	149	ASP
1	B	149	ASP
1	C	149	ASP

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	246/288 (85%)	233 (95%)	13 (5%)	32	28
1	B	253/288 (88%)	248 (98%)	5 (2%)	68	72
1	C	246/288 (85%)	232 (94%)	14 (6%)	29	24
1	D	248/288 (86%)	235 (95%)	13 (5%)	32	29
All	All	993/1152 (86%)	948 (96%)	45 (4%)	38	35

All (45) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	ARG
1	A	33	GLU
1	A	39	LEU
1	A	41	CYS
1	A	55	ILE
1	A	132	ASP
1	A	154	LYS
1	A	173	LEU
1	A	220	THR
1	A	227	ARG
1	A	230	GLU

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Mol	Chain	Res	Type
1	A	272	LEU
1	A	292	MET
1	B	7	ASN
1	B	33	GLU
1	B	48	GLN
1	B	173	LEU
1	B	222	ARG
1	C	33	GLU
1	C	41	CYS
1	C	48	GLN
1	C	54	LYS
1	C	69	ARG
1	C	99	LYS
1	C	132	ASP
1	C	171	LYS
1	C	173	LEU
1	C	221	LYS
1	C	271	GLN
1	C	272	LEU
1	C	279	ARG
1	C	292	MET
1	D	13	ARG
1	D	33	GLU
1	D	48	GLN
1	D	58	MET
1	D	68	ILE
1	D	74	GLU
1	D	79	VAL
1	D	132	ASP
1	D	154	LYS
1	D	174	THR
1	D	188	ILE
1	D	208	LEU
1	D	222	ARG

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 chains 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 carbohydrates in this entry.

5.6 Ligand geometry ⓘ

17 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	$\# Z > 2$
2	1QG	A	401	-	28,28,28	1.39	5 (17%)	39,39,39	0.94	3 (7%)
3	SO4	A	402	-	4,4,4	0.41	0	6,6,6	0.21	0
3	SO4	A	403	-	4,4,4	0.41	0	6,6,6	0.28	0
3	SO4	A	404	-	4,4,4	0.22	0	6,6,6	0.21	0
3	SO4	A	405	-	4,4,4	0.05	0	6,6,6	0.06	0
2	1QG	B	401	-	28,28,28	1.42	6 (21%)	39,39,39	1.00	3 (7%)
3	SO4	B	402	-	4,4,4	0.19	0	6,6,6	0.30	0
3	SO4	B	403	-	4,4,4	0.52	0	6,6,6	0.26	0
3	SO4	B	404	-	4,4,4	0.97	0	6,6,6	0.20	0
2	1QG	C	401	-	28,28,28	1.41	5 (17%)	39,39,39	1.04	3 (7%)
3	SO4	C	402	-	4,4,4	0.12	0	6,6,6	0.28	0
3	SO4	C	403	-	4,4,4	1.11	0	6,6,6	0.42	0
3	SO4	C	404	-	4,4,4	0.78	0	6,6,6	0.24	0
2	1QG	D	401	-	28,28,28	1.41	5 (17%)	39,39,39	0.94	2 (5%)
3	SO4	D	402	-	4,4,4	0.56	0	6,6,6	0.36	0
3	SO4	D	403	-	4,4,4	0.26	0	6,6,6	0.34	0
3	SO4	D	404	-	4,4,4	0.22	0	6,6,6	0.09	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
2	1QG	A	401	-	-	0/12/20/20	0/4/4/4
3	SO4	A	402	-	-	0/0/0/0	0/0/0/0
3	SO4	A	403	-	-	0/0/0/0	0/0/0/0
3	SO4	A	404	-	-	0/0/0/0	0/0/0/0
3	SO4	A	405	-	-	0/0/0/0	0/0/0/0
2	1QG	B	401	-	-	0/12/20/20	0/4/4/4
3	SO4	B	402	-	-	0/0/0/0	0/0/0/0
3	SO4	B	403	-	-	0/0/0/0	0/0/0/0
3	SO4	B	404	-	-	0/0/0/0	0/0/0/0
2	1QG	C	401	-	-	0/12/20/20	0/4/4/4
3	SO4	C	402	-	-	0/0/0/0	0/0/0/0
3	SO4	C	403	-	-	0/0/0/0	0/0/0/0
3	SO4	C	404	-	-	0/0/0/0	0/0/0/0
2	1QG	D	401	-	-	0/12/20/20	0/4/4/4
3	SO4	D	402	-	-	0/0/0/0	0/0/0/0
3	SO4	D	403	-	-	0/0/0/0	0/0/0/0
3	SO4	D	404	-	-	0/0/0/0	0/0/0/0

All (21) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	401	1QG	C5-C4	-3.15	1.45	1.48
2	C	401	1QG	C3-C11	-3.08	1.44	1.49
2	B	401	1QG	C3-C11	-3.01	1.44	1.49
2	B	401	1QG	C5-C4	-2.97	1.45	1.48
2	C	401	1QG	C5-C4	-2.96	1.45	1.48
2	A	401	1QG	C3-C11	-2.96	1.44	1.49
2	A	401	1QG	C5-C4	-2.95	1.45	1.48
2	D	401	1QG	C17-C16	2.93	1.55	1.52
2	D	401	1QG	C3-C11	-2.86	1.44	1.49
2	B	401	1QG	C17-C16	2.84	1.55	1.52
2	C	401	1QG	C17-C16	2.68	1.54	1.52
2	A	401	1QG	C17-C16	2.66	1.54	1.52
2	C	401	1QG	C2-N1	2.47	1.39	1.35
2	B	401	1QG	C2-N1	2.46	1.39	1.35
2	A	401	1QG	C2-N1	2.44	1.39	1.35
2	D	401	1QG	C2-N1	2.41	1.39	1.35
2	A	401	1QG	C4-N2	2.29	1.37	1.35
2	D	401	1QG	C4-N2	2.27	1.37	1.35
2	B	401	1QG	C4-N2	2.21	1.37	1.35
2	C	401	1QG	C4-N2	2.19	1.37	1.35
2	B	401	1QG	C3-C4	2.01	1.43	1.40

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	401	1QG	C3-C2-N1	-2.56	105.81	109.63
2	D	401	1QG	C3-C2-N1	-2.50	105.91	109.63
2	B	401	1QG	C3-C2-N1	-2.50	105.91	109.63
2	A	401	1QG	C3-C2-N1	-2.50	105.91	109.63
2	C	401	1QG	C2-C3-C4	2.25	106.08	103.91
2	D	401	1QG	C2-C3-C4	2.15	105.98	103.91
2	A	401	1QG	C2-C3-C4	2.14	105.97	103.91
2	C	401	1QG	C11-C15-C14	-2.12	118.05	119.83
2	B	401	1QG	C11-C15-C14	-2.11	118.06	119.83
2	B	401	1QG	C2-C3-C4	2.08	105.91	103.91
2	A	401	1QG	C11-C15-C14	-2.05	118.11	119.83

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

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	283/331 (85%)	0.10	19 (6%) 17 19	18, 36, 69, 85	0
1	B	289/331 (87%)	0.25	27 (9%) 9 9	18, 33, 75, 99	0
1	C	280/331 (84%)	0.04	14 (5%) 28 30	17, 32, 75, 87	0
1	D	281/331 (84%)	0.11	17 (6%) 21 24	18, 35, 69, 83	0
All	All	1133/1324 (85%)	0.12	77 (6%) 17 19	17, 34, 73, 99	0

All (77) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	160	ARG	6.6
1	B	161	THR	5.6
1	C	170	ASN	5.5
1	B	221	LYS	5.2
1	A	174	THR	5.1
1	B	217	LYS	5.0
1	A	217	LYS	4.8
1	B	159	ALA	4.4
1	B	162	HIS	4.3
1	B	218	ALA	4.2
1	D	217	LYS	4.1
1	B	19	SER	4.1
1	C	31	ALA	4.0
1	B	158	ASP	4.0
1	D	170	ASN	4.0
1	C	7	ASN	3.9
1	B	3	LEU	3.9
1	B	166	PRO	3.9
1	D	3	LEU	3.8
1	B	7	ASN	3.7
1	B	172	ASN	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	7	ASN	3.5
1	A	76	ASP	3.4
1	C	222	ARG	3.3
1	B	165	ILE	3.3
1	B	168	ARG	3.3
1	C	172	ASN	3.3
1	B	32	GLY	3.1
1	C	293	LEU	3.1
1	A	140	LYS	3.0
1	C	4	ARG	3.0
1	B	163	GLN	2.9
1	C	218	ALA	2.9
1	D	140	LYS	2.9
1	B	219	ALA	2.9
1	A	75	GLY	2.9
1	B	225	TYR	2.8
1	C	166	PRO	2.7
1	B	226	GLU	2.7
1	A	58	MET	2.7
1	D	75	GLY	2.7
1	B	173	LEU	2.7
1	A	158	ASP	2.7
1	D	76	ASP	2.6
1	D	292	MET	2.5
1	D	160	ARG	2.5
1	D	225	TYR	2.5
1	A	219	ALA	2.5
1	B	220	THR	2.5
1	B	167	TYR	2.5
1	A	170	ASN	2.4
1	C	217	LYS	2.4
1	C	221	LYS	2.4
1	D	223	GLN	2.4
1	D	219	ALA	2.3
1	D	172	ASN	2.3
1	D	7	ASN	2.3
1	A	292	MET	2.3
1	B	13	ARG	2.3
1	C	32	GLY	2.3
1	C	171	LYS	2.3
1	D	222	ARG	2.3
1	B	293	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	219	ALA	2.2
1	A	220	THR	2.2
1	A	225	TYR	2.2
1	B	43	LYS	2.2
1	A	41	CYS	2.1
1	A	159	ALA	2.1
1	A	57	LYS	2.1
1	D	47	PRO	2.1
1	A	4	ARG	2.1
1	D	71	CYS	2.1
1	A	21	GLY	2.1
1	B	171	LYS	2.1
1	D	161	THR	2.0
1	A	221	LYS	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 ⓘ

There are no carbohydrates in this entry.

6.4 Ligands ⓘ

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	RSR	LLDF	B-factors(Å ²)	Q<0.9
3	SO4	A	405	5/5	0.24	3.51	89,90,90,90	0
3	SO4	A	404	5/5	0.20	3.01	63,66,66,68	0
3	SO4	D	404	5/5	0.17	1.48	81,83,84,84	0
2	1QG	D	401	25/25	0.16	1.04	35,46,50,53	19
3	SO4	C	402	5/5	0.24	0.45	61,63,65,68	0
2	1QG	A	401	25/25	0.14	0.28	36,45,50,54	19
2	1QG	C	401	25/25	0.13	0.19	27,36,49,50	19

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Mol	Type	Chain	Res	Atoms	RSR	LLDF	B-factors(\AA^2)	Q<0.9
3	SO4	C	403	5/5	0.12	0.11	42,44,47,49	0
3	SO4	B	402	5/5	0.18	-0.01	72,72,73,75	0
2	1QG	B	401	25/25	0.12	-0.17	28,37,54,55	19
3	SO4	B	404	5/5	0.10	-0.37	44,44,45,49	0
3	SO4	A	403	5/5	0.12	-0.54	52,54,57,57	0
3	SO4	D	403	5/5	0.10	-0.93	55,59,60,62	0
3	SO4	C	404	5/5	0.07	-1.07	40,42,42,45	0
3	SO4	D	402	5/5	0.07	-1.75	40,40,41,44	0
3	SO4	B	403	5/5	0.06	-2.06	42,43,45,46	0
3	SO4	A	402	5/5	0.05	-2.72	40,41,45,46	0

6.5 Other polymers ⓘ

There are no such residues in this entry.