Full wwPDB X-ray Structure Validation Report (i)

Dec 17, 2023 – 05:22 PM EST

PDB ID	:	1C5Z
Title	:	STRUCTURAL BASIS FOR SELECTIVITY OF A SMALL MOLECULE, S1-BINDING, SUB-MICROMOLAR INHIBITOR OF UROKINASE TYPE PLASMINOGEN ACTIVATOR
Authors	:	Katz, B.A.; Mackman, R.; Luong, C.; Radika, K.; Martelli, A.; Sprengeler, P.A.; Wang, J.; Chan, H.; Wong, L.
Deposited on	:	1999-12-22
Resolution	:	1.85 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

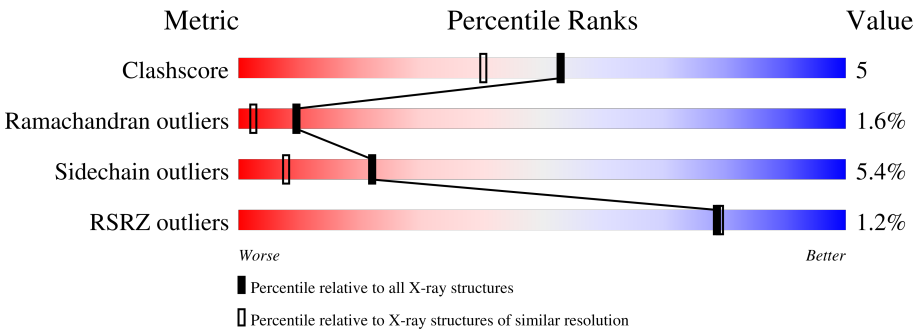
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA,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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.85 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))
Clashscore	141614	2625 (1.86-1.86)
Ramachandran outliers	138981	2592 (1.86-1.86)
Sidechain outliers	138945	2592 (1.86-1.86)
RSRZ outliers	127900	2436 (1.86-1.86)

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	23	9%; 30%, 9%, 61%
2	B	253	74%, 19%, • •

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 criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	FLC	B	1[A]	-	X	-	-
3	FLC	B	2	-	X	-	-
3	FLC	B	3	-	X	-	-

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 5299 atoms, of which 2823 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 PROTEIN (UROKINASE-TYPE PLASMINOGEN ACTIVATOR).

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	9	148	46	76	13	12	1	0	0	0

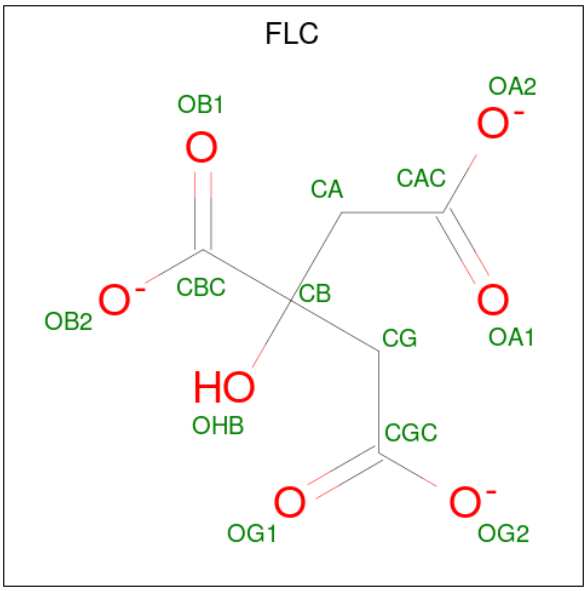
- Molecule 2 is a protein called PROTEIN (UROKINASE-TYPE PLASMINOGEN ACTIVATOR).

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
2	B	245	3927	1248	1955	340	365	19	14	10	0

There is a discrepancy between the modelled and reference sequences:

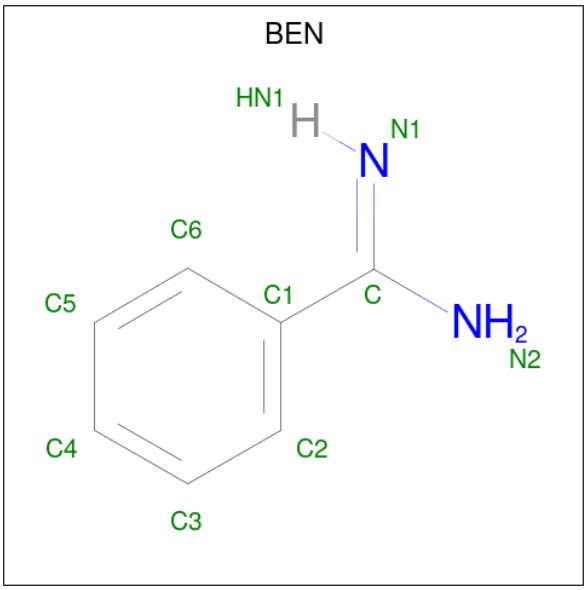
Chain	Residue	Modelled	Actual	Comment	Reference
B	145	ALA	ASN	conflict	UNP P00749

- Molecule 3 is CITRATE ANION (three-letter code: FLC) (formula: $C_6H_5O_7$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total C H O 18 6 5 7	0	1
3	B	1	Total C H O 18 6 5 7	0	0
3	B	1	Total C H O 18 6 5 7	0	0

- Molecule 4 is BENZAMIDINE (three-letter code: BEN) (formula: $C_7H_8N_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C H N 18 7 9 2	0	0

- Molecule 5 is water.

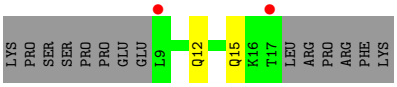
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	H	O		
5	A	6	18	12	6	0	3
			Total	H	O		
5	B	378	1134	756	378	0	42

3 Residue-property plots (i)

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

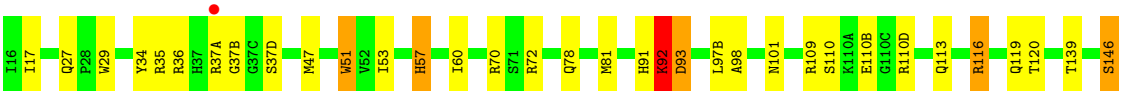
• Molecule 1: PROTEIN (UROKINASE-TYPE PLASMINOGEN ACTIVATOR)

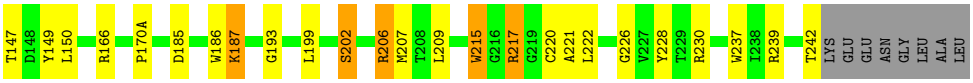
Chain A:



• Molecule 2: PROTEIN (UROKINASE-TYPE PLASMINOGEN ACTIVATOR)

Chain B:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	82.78Å 49.05Å 66.85Å 90.00° 113.68° 90.00°	Depositor
Resolution (Å)	7.50 – 1.85 38.25 – 1.65	Depositor EDS
% Data completeness (in resolution range)	63.7 (7.50-1.85) 52.1 (38.25-1.65)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.38 (at 1.65Å)	Xtriage
Refinement program	X-PLOR 3.1	Depositor
R, R_{free}	0.185 , 0.237 0.187 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å^2)	7.3	Xtriage
Anisotropy	0.767	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.27 , 81.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.041 for 1/2*h+3/2*k,1/2*h-1/2*k,-1/2*h-1/2*k-l 0.032 for 1/2*h-3/2*k,-1/2*h-1/2*k,-1/2*h+1/2*k-l	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	5299	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.67% of the height of the origin peak. No significant pseudotranslation is detected.*

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: BEN, FLC

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	1.21	0/72	1.52	1/93 (1.1%)
2	B	1.38	5/2061 (0.2%)	1.59	46/2792 (1.6%)
All	All	1.37	5/2133 (0.2%)	1.59	47/2885 (1.6%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	146	SER	CA-CB	5.51	1.61	1.52
2	B	51	TRP	CG-CD2	-5.27	1.34	1.43
2	B	186	TRP	CG-CD2	-5.15	1.34	1.43
2	B	37(D)	SER	CA-CB	5.15	1.60	1.52
2	B	215	TRP	CG-CD2	-5.00	1.35	1.43

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	109	ARG	NE-CZ-NH2	-10.17	115.22	120.30
2	B	237	TRP	CD1-NE1-CE2	9.89	117.90	109.00
2	B	29	TRP	CD1-NE1-CE2	9.51	117.56	109.00
2	B	215	TRP	CD1-NE1-CE2	9.18	117.26	109.00
2	B	186	TRP	CD1-NE1-CE2	8.80	116.92	109.00
2	B	51	TRP	CD1-NE1-CE2	8.67	116.80	109.00
2	B	215	TRP	NE1-CE2-CZ2	8.59	139.85	130.40
2	B	51	TRP	NE1-CE2-CZ2	8.57	139.82	130.40
2	B	29	TRP	NE1-CE2-CZ2	7.73	138.90	130.40
2	B	237	TRP	CG-CD1-NE1	-7.48	102.62	110.10
2	B	116	ARG	NE-CZ-NH2	-7.39	116.60	120.30
2	B	186	TRP	NE1-CE2-CZ2	7.35	138.49	130.40
2	B	215	TRP	CG-CD1-NE1	-7.07	103.03	110.10
2	B	237	TRP	NE1-CE2-CZ2	6.90	137.99	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	36	ARG	NE-CZ-NH2	-6.79	116.91	120.30
2	B	149	TYR	CB-CG-CD2	-6.75	116.95	121.00
2	B	199	LEU	N-CA-C	-6.75	92.78	111.00
2	B	186	TRP	CG-CD1-NE1	-6.55	103.55	110.10
2	B	29	TRP	CG-CD1-NE1	-6.50	103.60	110.10
2	B	72	ARG	NE-CZ-NH2	-6.47	117.06	120.30
2	B	29	TRP	NE1-CE2-CD2	-6.46	100.84	107.30
2	B	215	TRP	NE1-CE2-CD2	-6.42	100.88	107.30
2	B	51	TRP	NE1-CE2-CD2	-6.39	100.91	107.30
2	B	35	ARG	NE-CZ-NH2	-6.36	117.12	120.30
2	B	237	TRP	NE1-CE2-CD2	-6.34	100.96	107.30
2	B	51	TRP	CG-CD1-NE1	-6.32	103.78	110.10
2	B	150	LEU	CB-CA-C	-6.27	98.29	110.20
2	B	92	LYS	N-CA-C	-6.16	94.38	111.00
2	B	166[A]	ARG	NE-CZ-NH2	-6.12	117.24	120.30
2	B	166[B]	ARG	NE-CZ-NH2	-6.12	117.24	120.30
2	B	217	ARG	NE-CZ-NH2	-5.99	117.31	120.30
2	B	70	ARG	NE-CZ-NH2	-5.99	117.31	120.30
2	B	186	TRP	NE1-CE2-CD2	-5.97	101.33	107.30
2	B	110(D)	ARG	NE-CZ-NH2	-5.88	117.36	120.30
2	B	207	MET	N-CA-C	-5.82	95.28	111.00
2	B	230	ARG	NE-CZ-NH2	-5.77	117.42	120.30
2	B	226	GLY	N-CA-C	-5.61	99.08	113.10
2	B	37(A)	ARG	N-CA-C	-5.54	96.04	111.00
2	B	37(A)	ARG	NE-CZ-NH2	-5.47	117.56	120.30
2	B	150	LEU	N-CA-CB	5.32	121.05	110.40
2	B	215	TRP	CG-CD2-CE3	-5.29	129.14	133.90
2	B	51	TRP	CG-CD2-CE3	-5.28	129.15	133.90
2	B	206	ARG	NE-CZ-NH2	-5.22	117.69	120.30
2	B	34	TYR	CB-CG-CD2	-5.21	117.87	121.00
2	B	239	ARG	NE-CZ-NH2	-5.20	117.70	120.30
2	B	185	ASP	N-CA-C	-5.18	97.01	111.00
1	A	12	GLN	N-CA-C	-5.03	97.41	111.00

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	72	76	75	0	0
2	B	1972	1955	1924	22	2
3	B	39	15	15	2	0
4	B	9	9	7	0	0
5	A	6	12	0	0	0
5	B	378	756	0	3	7
All	All	2476	2823	2021	22	7

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 (22) 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)
2:B:187:LYS:HE2	5:B:584[C]:HOH:O	1.73	0.89
2:B:17[A]:ILE:HD11	2:B:220:CYS:HB3	1.69	0.73
2:B:187:LYS:CE	5:B:584[C]:HOH:O	2.35	0.69
2:B:17[A]:ILE:HD11	2:B:220:CYS:CB	2.26	0.65
2:B:98:ALA:HB2	2:B:215:TRP:CZ2	2.41	0.56
2:B:81[A]:MET:HE1	2:B:113:GLN:H	1.71	0.55
2:B:17[A]:ILE:CD1	2:B:220:CYS:HB3	2.36	0.54
2:B:27:GLN:HG3	2:B:139[A]:THR:HG21	1.90	0.53
2:B:51:TRP:CD1	2:B:242:THR:HG23	2.44	0.52
2:B:217:ARG:HG3	5:B:432:HOH:O	2.14	0.48
2:B:92:LYS:H	2:B:92:LYS:HD2	1.79	0.48
2:B:47[B]:MET:SD	2:B:53:ILE:HB	2.54	0.47
2:B:91:HIS:CD2	2:B:101:ASN:HB3	2.50	0.46
2:B:202:SER:HA	2:B:206:ARG:O	2.16	0.46
2:B:228:TYR:CD1	2:B:228:TYR:N	2.86	0.43
2:B:81[A]:MET:CE	2:B:113:GLN:H	2.32	0.43
2:B:193:GLY:H	3:B:3:FLC:CAC	2.32	0.43
2:B:92:LYS:O	2:B:93:ASP:CB	2.67	0.42
2:B:57:HIS:CD2	3:B:3:FLC:HOB	2.38	0.41
2:B:17[A]:ILE:HD11	2:B:220:CYS:HB2	2.02	0.40
2:B:222:LEU:HD23	2:B:222:LEU:HA	1.94	0.40
2:B:119:GLN:HG3	2:B:120:THR:N	2.37	0.40

All (7) 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)
5:B:496:HOH:H2	5:B:616:HOH:H2[4_556]	1.09	0.51
5:B:416:HOH:H1	5:B:539:HOH:H2[4_556]	1.23	0.37
2:B:170(A):PRO:HG2	5:B:295:HOH:H2[3_445]	1.28	0.32
5:B:457:HOH:O	5:B:458:HOH:H1[4_556]	1.44	0.16
5:B:441:HOH:O	5:B:621:HOH:H1[4_546]	1.49	0.11
5:B:416:HOH:H1	5:B:539:HOH:O[4_556]	1.52	0.08
2:B:221:ALA:O	5:B:468:HOH:H1[4_546]	1.54	0.06

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	7/23 (30%)	7 (100%)	0	0	100	100
2	B	253/253 (100%)	231 (91%)	18 (7%)	4 (2%)	9	2
All	All	260/276 (94%)	238 (92%)	18 (7%)	4 (2%)	9	2

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	93	ASP
2	B	97(B)	LEU
2	B	37(B)	GLY
2	B	60	ILE

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	8/22 (36%)	7 (88%)	1 (12%)	4 0
2	B	223/219 (102%)	211 (95%)	12 (5%)	22 8
All	All	231/241 (96%)	218 (94%)	13 (6%)	22 7

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	15	GLN
2	B	57	HIS
2	B	78	GLN
2	B	92	LYS
2	B	110	SER
2	B	110(B)[A]	GLU
2	B	110(B)[B]	GLU
2	B	116	ARG
2	B	146	SER
2	B	147	THR
2	B	187	LYS
2	B	202	SER
2	B	209	LEU

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

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

4 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	FLC	B	2	-	12,12,12	3.34	8 (66%)	17,17,17	1.69	5 (29%)
3	FLC	B	3	-	12,12,12	3.45	6 (50%)	17,17,17	2.97	10 (58%)
3	FLC	B	1[A]	-	12,12,12	3.19	7 (58%)	17,17,17	1.84	5 (29%)
4	BEN	B	251	-	9,9,9	1.32	1 (11%)	7,11,11	1.09	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
3	FLC	B	2	-	-	5/16/16/16	-
3	FLC	B	3	-	-	12/16/16/16	-
3	FLC	B	1[A]	-	-	9/16/16/16	-
4	BEN	B	251	-	-	4/4/4/4	0/1/1/1

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2	FLC	CA-CB	8.08	1.63	1.53
3	B	1[A]	FLC	CG-CB	7.98	1.63	1.53
3	B	3	FLC	CA-CB	7.58	1.63	1.53
3	B	3	FLC	CG-CB	7.25	1.62	1.53
3	B	1[A]	FLC	CA-CB	5.52	1.60	1.53
3	B	2	FLC	CB-CBC	4.93	1.58	1.53
3	B	2	FLC	CG-CB	3.77	1.58	1.53
4	B	251	BEN	C1-C	-3.38	1.41	1.47
3	B	3	FLC	CB-CBC	3.00	1.56	1.53
3	B	3	FLC	OA2-CAC	-2.71	1.21	1.30
3	B	2	FLC	CG-CGC	2.70	1.59	1.50
3	B	3	FLC	OG2-CGC	-2.68	1.21	1.30
3	B	2	FLC	CA-CAC	2.65	1.58	1.50
3	B	1[A]	FLC	OA2-CAC	-2.47	1.22	1.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1[A]	FLC	OG2-CGC	-2.39	1.22	1.30
3	B	2	FLC	OA2-CAC	-2.36	1.22	1.30
3	B	1[A]	FLC	OB2-CBC	-2.32	1.21	1.30
3	B	2	FLC	OG2-CGC	-2.28	1.23	1.30
3	B	1[A]	FLC	CA-CAC	2.22	1.57	1.50
3	B	3	FLC	OB2-CBC	-2.19	1.22	1.30
3	B	1[A]	FLC	CG-CGC	2.14	1.57	1.50
3	B	2	FLC	OB2-CBC	-2.02	1.22	1.30

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	3	FLC	CA-CB-CBC	4.81	120.45	110.11
3	B	3	FLC	OHB-CB-CA	-4.71	98.39	109.40
3	B	1[A]	FLC	OB1-CBC-CB	-4.51	115.86	122.25
3	B	3	FLC	CB-CA-CAC	4.40	124.47	113.81
3	B	3	FLC	OHB-CB-CBC	-4.02	103.22	108.86
3	B	3	FLC	OHB-CB-CG	-3.98	100.09	109.40
3	B	3	FLC	CG-CB-CA	3.64	118.65	109.16
3	B	3	FLC	OB2-CBC-CB	3.53	119.19	113.05
3	B	3	FLC	OB1-CBC-CB	-3.30	117.57	122.25
3	B	1[A]	FLC	OB2-CBC-CB	3.21	118.63	113.05
3	B	2	FLC	OHB-CB-CA	-3.05	102.26	109.40
3	B	2	FLC	OHB-CB-CG	-2.85	102.72	109.40
3	B	3	FLC	OA1-CAC-CA	-2.76	114.88	122.94
3	B	2	FLC	CG-CB-CA	2.62	115.98	109.16
3	B	1[A]	FLC	CB-CG-CGC	2.42	119.67	113.81
3	B	1[A]	FLC	CB-CA-CAC	2.15	119.03	113.81
3	B	2	FLC	CA-CB-CBC	2.11	114.64	110.11
3	B	1[A]	FLC	OA1-CAC-CA	-2.08	116.87	122.94
3	B	2	FLC	OB2-CBC-CB	2.03	116.58	113.05
3	B	3	FLC	OA2-CAC-CA	2.03	120.88	114.35

There are no chirality outliers.

All (30) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	1[A]	FLC	CG-CB-CBC-OB1
3	B	1[A]	FLC	CG-CB-CBC-OB2
3	B	1[A]	FLC	OHB-CB-CBC-OB1
3	B	1[A]	FLC	OHB-CB-CBC-OB2
3	B	2	FLC	CAC-CA-CB-CBC

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Mol	Chain	Res	Type	Atoms
3	B	2	FLC	CAC-CA-CB-CG
3	B	3	FLC	CAC-CA-CB-CG
3	B	3	FLC	CAC-CA-CB-OHB
3	B	3	FLC	OHB-CB-CBC-OB2
3	B	3	FLC	CA-CB-CG-CGC
3	B	3	FLC	CBC-CB-CG-CGC
3	B	3	FLC	OHB-CB-CG-CGC
3	B	2	FLC	CAC-CA-CB-OHB
3	B	3	FLC	CAC-CA-CB-CBC
3	B	1[A]	FLC	CA-CB-CG-CGC
3	B	1[A]	FLC	CA-CB-CBC-OB1
3	B	1[A]	FLC	CA-CB-CBC-OB2
3	B	2	FLC	CG-CB-CBC-OB2
3	B	1[A]	FLC	CBC-CB-CG-CGC
3	B	1[A]	FLC	OHB-CB-CG-CGC
3	B	2	FLC	CG-CB-CBC-OB1
3	B	3	FLC	CA-CB-CBC-OB1
3	B	3	FLC	OHB-CB-CBC-OB1
4	B	251	BEN	N2-C-C1-C2
4	B	251	BEN	N2-C-C1-C6
3	B	3	FLC	CB-CA-CAC-OA1
3	B	3	FLC	CB-CA-CAC-OA2
3	B	3	FLC	CA-CB-CBC-OB2
4	B	251	BEN	N1-C-C1-C2
4	B	251	BEN	N1-C-C1-C6

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	3	FLC	2	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 (i)

6.1 Protein, DNA and RNA chains (i)

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	9/23 (39%)	1.00	2 (22%)	0	0	14, 24, 41, 44	2 (22%)
2	B	245/253 (96%)	-0.44	1 (0%)	92	92	3, 15, 31, 50	20 (8%)
All	All	254/276 (92%)	-0.39	3 (1%)	79	79	3, 15, 34, 50	22 (8%)

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	37(A)	ARG	19.5
1	A	9	LEU	6.2
1	A	17	THR	4.1

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	FLC	B	2	13/13	0.78	0.23	56,61,73,73	0
3	FLC	B	1[A]	13/13	0.79	0.14	39,43,45,46	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	FLC	B	3	13/13	0.83	0.23	56,63,67,73	6
4	BEN	B	251	9/9	0.93	0.08	6,12,23,23	0

6.5 Other polymers (i)

There are no such residues in this entry.