



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2018 – 03:29 am GMT

PDB ID : 1CJU
Title : COMPLEX OF GS-ALPHA WITH THE CATALYTIC DOMAINS OF MAMMALIAN ADENYLYL CYCLASE: COMPLEX WITH BETA-L-2',3'-DIDEOXYATP AND MG
Authors : Tesmer, J.J.G.; Sprang, S.R.
Deposited on : 1999-04-16
Resolution : 2.80 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 ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.3 (157068), CSD as539be (2018)
Xtriage (Phenix) : 1.13
EDS : trunk30967
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
Refmac : 5.8.0158
CCP4 : 7.0 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk30967

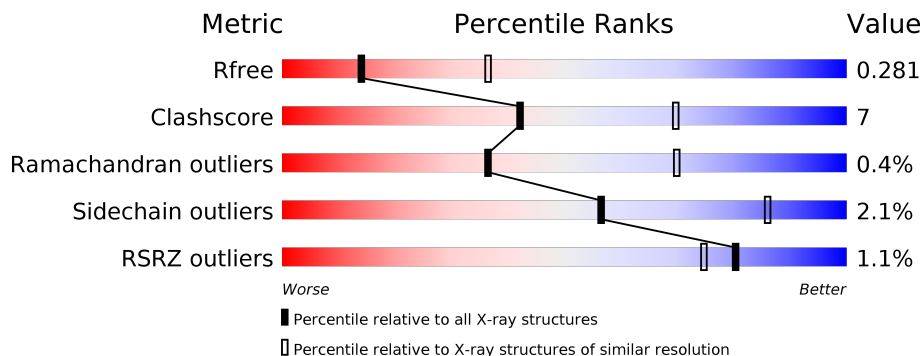
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	111664	2792 (2.80-2.80)
Clashscore	122126	3209 (2.80-2.80)
Ramachandran outliers	120053	3158 (2.80-2.80)
Sidechain outliers	120020	3160 (2.80-2.80)
RSRZ outliers	108989	2726 (2.80-2.80)

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 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	217	
2	B	212	
3	C	402	

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 5793 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 ADENYLATE CYCLASE, TYPE V.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	189	1476	929	259	271	17	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	476	MET	VAL	ENGINEERED	UNP P30803

- Molecule 2 is a protein called ADENYLATE CYCLASE, TYPE II.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	189	1471	939	242	280	10	0	0	0

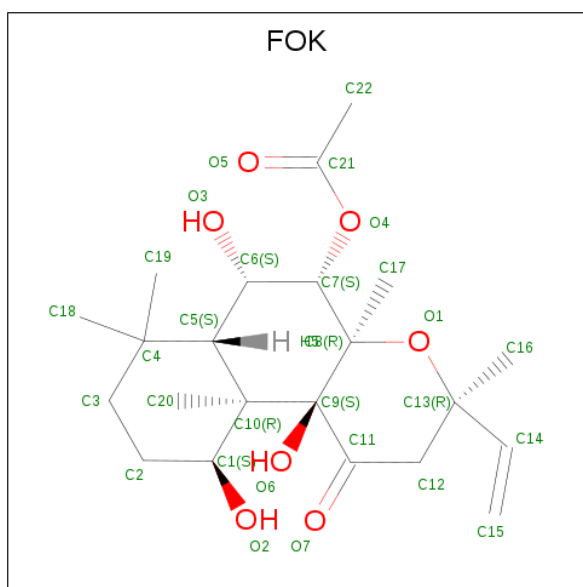
- Molecule 3 is a protein called GUANINE NUCLEOTIDE-BINDING PROTEIN G(S).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	331	2710	1718	472	507	13	0	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

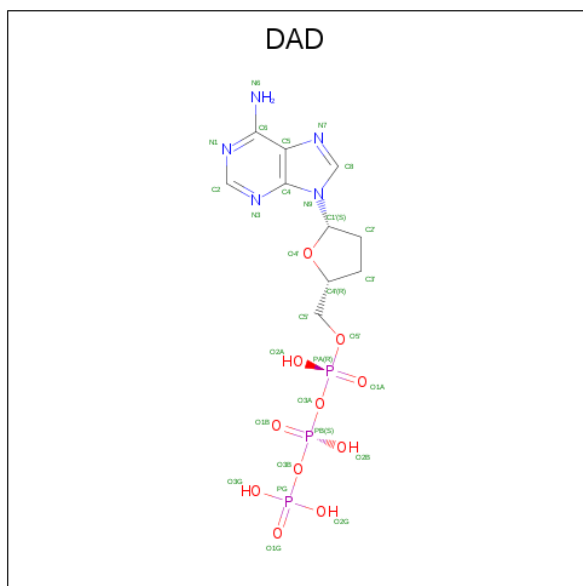
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	2	Total	Mg	0	0
			2	2		
4	C	1	Total	Mg	0	0
			1	1		

- Molecule 5 is FORSKOLIN (three-letter code: FOK) (formula: C₂₂H₃₄O₇).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	O			
			29	22	7	0	0	

- Molecule 6 is 2',3'-DIDEOXYADENOSINE-5'-TRIPHOSPHATE (three-letter code: DAD) (formula: $C_{10}H_{16}N_5O_{11}P_3$).

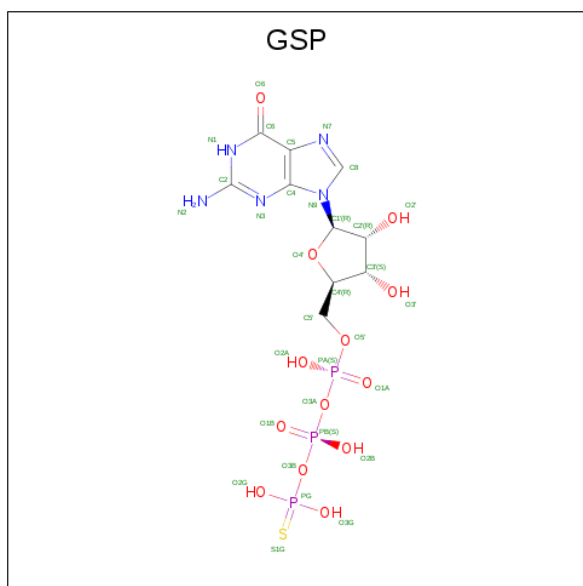


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	N	O	P	
			29	10	5	11	3	0

- Molecule 7 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total Cl 1 1	0	0

- Molecule 8 is 5'-GUANOSINE-DIPHOSPHATE-MONOTHIOPHOSPHATE (three-letter code: GSP) (formula: C₁₀H₁₆N₅O₁₃P₃S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	N	O	P			S
8	C	1	32	10	5	13	3	1	0	0

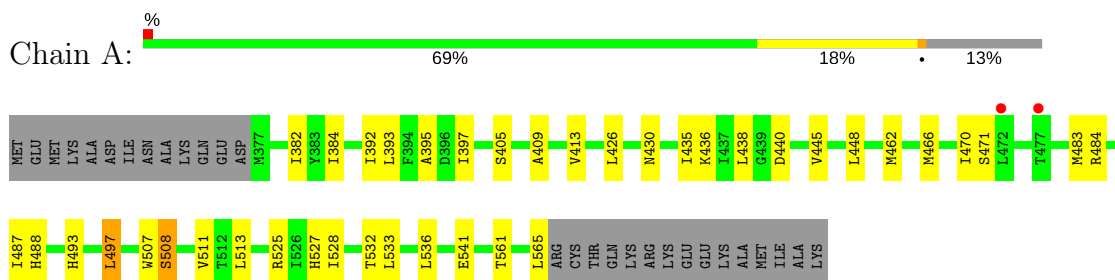
- Molecule 9 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	7	Total O 7 7	0	0
9	B	13	Total O 13 13	0	0
9	C	22	Total O 22 22	0	0

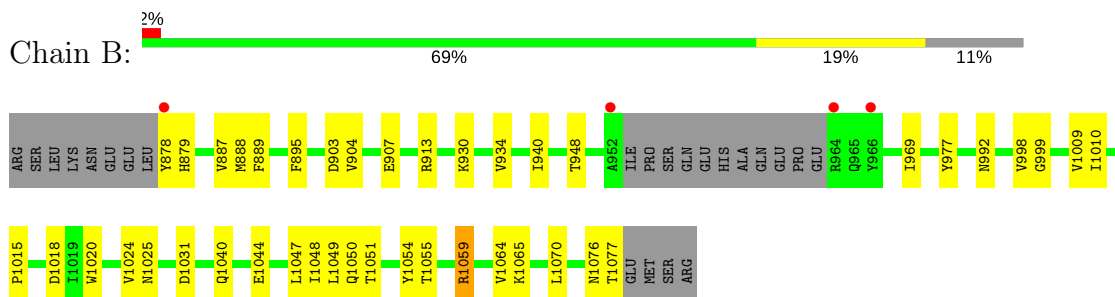
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

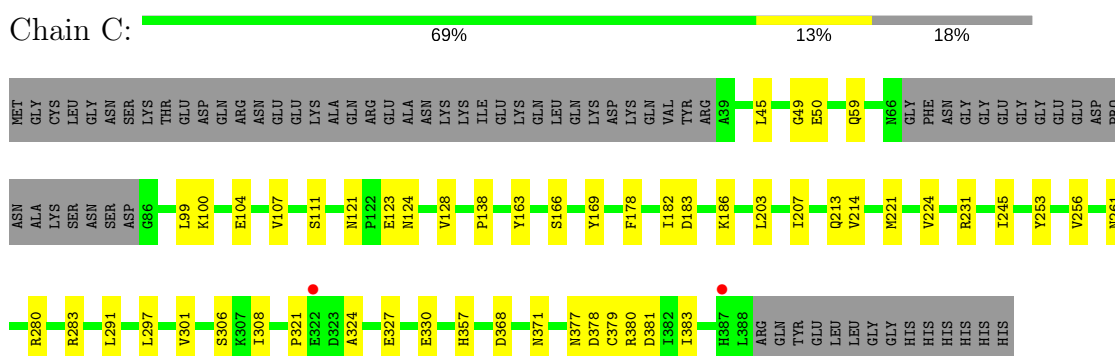
- Molecule 1: ADENYLATE CYCLASE, TYPE V



- Molecule 2: ADENYLATE CYCLASE, TYPE II



- Molecule 3: GUANINE NUCLEOTIDE-BINDING PROTEIN G(S)



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	118.30Å 134.20Å 71.40Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 2.80 37.83 – 2.81	Depositor EDS
% Data completeness (in resolution range)	77.7 (15.00-2.80) 77.7 (37.83-2.81)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.14	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.01 (at 2.81Å)	Xtrriage
Refinement program	CNS 0.5	Depositor
R, R_{free}	0.222 , 0.284 0.225 , 0.281	Depositor DCC
R_{free} test set	2191 reflections (9.90%)	wwPDB-VP
Wilson B-factor (Å ²)	40.6	Xtrriage
Anisotropy	1.329	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 48.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	5793	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.77% 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, 0.333 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: DAD, GSP, MG, FOK, CL

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	0.37	0/1504	0.59	0/2027
2	B	0.44	0/1497	0.62	0/2021
3	C	0.41	0/2767	0.60	0/3744
All	All	0.41	0/5768	0.60	0/7792

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	1476	0	1450	25	0
2	B	1471	0	1468	31	0
3	C	2710	0	2657	28	0
4	A	2	0	0	0	0
4	C	1	0	0	0	0
5	A	29	0	34	6	0
6	A	29	0	12	2	0
7	C	1	0	0	0	0
8	C	32	0	12	1	0
9	A	7	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	B	13	0	0	0	0
9	C	22	0	0	1	0
All	All	5793	0	5633	85	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 7.

All (85) 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:1040:GLN:HE22	2:B:1059:ARG:HH11	1.15	0.89
2:B:1040:GLN:HE22	2:B:1059:ARG:NH1	1.73	0.86
1:A:382:ILE:HD11	1:A:384:ILE:HD12	1.58	0.84
5:A:101:FOK:H201	5:A:101:FOK:H173	1.61	0.81
1:A:462:MET:HG3	1:A:466:MET:HE3	1.59	0.81
1:A:525:ARG:HH22	1:A:565:LEU:HD23	1.48	0.78
1:A:487:ILE:HB	1:A:528:ILE:HG22	1.75	0.69
2:B:904:VAL:HG11	3:C:207:ILE:HG21	1.79	0.65
3:C:124:ASN:O	3:C:128:VAL:HG23	1.98	0.64
6:A:102:DAD:H8	2:B:1025:ASN:ND2	2.13	0.64
3:C:121:ASN:HB3	3:C:123:GLU:OE1	2.01	0.61
3:C:256:VAL:HG11	3:C:261:ASN:C	2.22	0.60
5:A:101:FOK:H202	5:A:101:FOK:H193	1.83	0.59
3:C:207:ILE:HG12	3:C:224:VAL:HG12	1.84	0.59
1:A:488:HIS:CE1	1:A:513:LEU:HD23	2.39	0.58
3:C:321:PRO:HG2	3:C:324:ALA:HB2	1.86	0.57
1:A:426:LEU:HB2	1:A:462:MET:HE1	1.87	0.56
3:C:100:LYS:O	3:C:104:GLU:HG2	2.06	0.55
3:C:203:LEU:HD12	8:C:405:GSP:S1G	2.46	0.54
2:B:1040:GLN:NE2	2:B:1059:ARG:HH11	1.96	0.53
2:B:969:ILE:HD12	2:B:1048:ILE:HG21	1.89	0.53
2:B:1009:VAL:HG12	2:B:1010:ILE:N	2.24	0.52
1:A:507:TRP:O	1:A:508:SER:HB3	2.10	0.51
1:A:430:ASN:HD22	1:A:462:MET:HA	1.75	0.51
5:A:101:FOK:H152	2:B:895:PHE:CE2	2.45	0.51
1:A:527:HIS:NE2	1:A:561:THR:HB	2.26	0.51
1:A:397:ILE:CG1	1:A:440:ASP:HB2	2.40	0.51
1:A:497:LEU:HD22	1:A:507:TRP:CZ2	2.46	0.51
2:B:878:TYR:HD1	2:B:879:HIS:H	1.58	0.51
2:B:1044:GLU:H	2:B:1044:GLU:CD	2.15	0.51
3:C:183:ASP:HA	3:C:186:LYS:HE3	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:101:FOK:H163	5:A:101:FOK:H171	1.92	0.50
3:C:99:LEU:HD21	3:C:182:ILE:HG12	1.93	0.50
3:C:291:LEU:HD13	9:C:417:HOH:O	2.11	0.50
3:C:166:SER:HA	3:C:169:TYR:CE2	2.48	0.49
2:B:1009:VAL:HG12	2:B:1010:ILE:H	1.76	0.49
3:C:45:LEU:HD23	3:C:245:ILE:CG2	2.43	0.49
1:A:533:LEU:HD12	1:A:536:LEU:HD12	1.95	0.48
1:A:438:LEU:HD13	2:B:940:ILE:HG23	1.94	0.48
3:C:99:LEU:HD13	3:C:178:PHE:HB3	1.96	0.48
5:A:101:FOK:H152	2:B:895:PHE:HE2	1.78	0.48
1:A:430:ASN:ND2	1:A:462:MET:HA	2.29	0.48
3:C:49:GLY:O	3:C:50:GLU:HB2	2.15	0.47
2:B:977:TYR:OH	2:B:1077:THR:HA	2.14	0.47
2:B:878:TYR:CD1	2:B:879:HIS:N	2.83	0.47
3:C:368:ASP:HB3	3:C:371:ASN:HB3	1.97	0.47
2:B:904:VAL:HG11	3:C:207:ILE:CG2	2.43	0.47
2:B:1018:ASP:HB3	2:B:1020:TRP:CH2	2.49	0.46
6:A:102:DAD:O1G	2:B:1065:LYS:NZ	2.46	0.46
2:B:1049:LEU:O	2:B:1054:TYR:HB2	2.16	0.46
1:A:470:ILE:HD13	1:A:483:MET:HB2	1.97	0.45
2:B:934:VAL:HA	2:B:948:THR:HG22	1.97	0.45
3:C:163:TYR:O	3:C:166:SER:HB3	2.16	0.45
2:B:1055:THR:HG22	2:B:1076:ASN:HD22	1.81	0.45
1:A:541:GLU:HB3	1:A:565:LEU:HD12	1.99	0.44
2:B:1009:VAL:HG11	2:B:1015:PRO:HA	1.99	0.44
3:C:253:TYR:CZ	3:C:308:ILE:HG12	2.52	0.44
2:B:888:MET:HG2	2:B:889:PHE:N	2.32	0.44
2:B:913:ARG:HG3	2:B:913:ARG:HH11	1.83	0.44
3:C:280:ARG:HA	3:C:283:ARG:HE	1.83	0.44
5:A:101:FOK:H201	5:A:101:FOK:C17	2.40	0.43
3:C:214:VAL:HG11	3:C:380:ARG:HD3	2.00	0.43
3:C:107:VAL:CG1	3:C:128:VAL:HG13	2.47	0.43
2:B:1050:GLN:HA	2:B:1054:TYR:O	2.19	0.43
1:A:435:ILE:HG22	1:A:436:LYS:HG3	1.99	0.43
2:B:887:VAL:HG21	2:B:1024:VAL:HG22	2.00	0.43
1:A:508:SER:OG	1:A:511:VAL:HG23	2.18	0.43
3:C:377:ASN:HD22	3:C:377:ASN:HA	1.65	0.43
1:A:532:THR:O	1:A:536:LEU:HG	2.18	0.42
3:C:378:ASP:O	3:C:381:ASP:HB3	2.19	0.42
3:C:327:GLU:HB2	3:C:330:GLU:HB2	2.02	0.42
3:C:379:CYS:O	3:C:383:ILE:HG13	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:59:GLN:OE1	3:C:59:GLN:HA	2.19	0.42
2:B:998:VAL:HG12	2:B:999:GLY:N	2.35	0.42
2:B:930:LYS:HE2	2:B:930:LYS:HB3	1.91	0.42
1:A:409:ALA:O	1:A:413:VAL:HG23	2.20	0.41
1:A:448:LEU:HA	1:A:448:LEU:HD12	1.82	0.41
1:A:392:ILE:HG23	1:A:445:VAL:HG12	2.02	0.41
2:B:1047:LEU:O	2:B:1051:THR:HG23	2.21	0.41
2:B:1064:VAL:HG21	2:B:1070:LEU:HD12	2.03	0.41
1:A:466:MET:O	1:A:470:ILE:HG13	2.20	0.41
1:A:395:ALA:HA	1:A:484:ARG:O	2.21	0.41
1:A:393:LEU:C	1:A:393:LEU:HD23	2.42	0.41
9:A:21:HOH:O	2:B:907:GLU:HB3	2.21	0.40
3:C:297:LEU:O	3:C:301:VAL:HG23	2.21	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	187/217 (86%)	181 (97%)	5 (3%)	1 (0%)	31	65
2	B	185/212 (87%)	178 (96%)	7 (4%)	0	100	100
3	C	327/402 (81%)	309 (94%)	16 (5%)	2 (1%)	27	60
All	All	699/831 (84%)	668 (96%)	28 (4%)	3 (0%)	36	70

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	508	SER
3	C	138	PRO
3	C	231	ARG

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	158/182 (87%)	154 (98%)	4 (2%)	50	82
2	B	162/184 (88%)	158 (98%)	4 (2%)	50	82
3	C	298/357 (84%)	293 (98%)	5 (2%)	63	89
All	All	618/723 (86%)	605 (98%)	13 (2%)	56	86

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

Mol	Chain	Res	Type
1	A	405	SER
1	A	471	SER
1	A	493	HIS
1	A	497	LEU
2	B	903	ASP
2	B	992	ASN
2	B	1031	ASP
2	B	1059	ARG
3	C	111	SER
3	C	213	GLN
3	C	221	MET
3	C	306	SER
3	C	357	HIS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	385	GLN
1	A	430	ASN
1	A	537	ASN
2	B	1025	ASN
2	B	1040	GLN
2	B	1050	GLN
2	B	1076	ASN
3	C	93	GLN

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Mol	Chain	Res	Type
3	C	97	ASN
3	C	149	HIS
3	C	227	GLN
3	C	371	ASN
3	C	377	ASN

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 7 ligands modelled in this entry, 4 are monoatomic - leaving 3 for Mogul analysis.

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	$\# Z > 2$
5	FOK	A	101	-	28,31,31	0.93	0	32,54,54	0.88	1 (3%)
6	DAD	A	102	4	26,31,31	1.43	1 (3%)	24,48,48	1.90	4 (16%)
8	GSP	C	405	4	26,34,34	1.11	2 (7%)	27,54,54	2.31	6 (22%)

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
5	FOK	A	101	-	-	0/7/80/80	0/3/3/3
6	DAD	A	102	4	-	0/18/31/31	0/3/3/3
8	GSP	C	405	4	-	0/17/38/38	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	102	DAD	PG-O3B	-6.20	1.50	1.60
8	C	405	GSP	C8-N7	-2.08	1.30	1.34
8	C	405	GSP	C6-N1	3.41	1.39	1.33

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	C	405	GSP	C5-C6-N1	-8.16	111.86	123.47
8	C	405	GSP	C2-N3-C4	-3.01	111.64	115.16
8	C	405	GSP	N3-C2-N1	-2.42	123.86	127.41
8	C	405	GSP	C6-C5-C4	-2.38	118.51	120.85
5	A	101	FOK	C20-C10-C1	-2.34	104.20	107.69
8	C	405	GSP	PA-O3A-PB	-2.19	125.28	132.63
6	A	102	DAD	O4'-C1'-N9	2.22	111.53	107.78
6	A	102	DAD	O2G-PG-O1G	2.31	119.61	110.60
6	A	102	DAD	O4'-C1'-C2'	3.75	110.73	106.67
8	C	405	GSP	C6-N1-C2	6.20	124.98	116.06
6	A	102	DAD	C2'-C1'-N9	6.90	125.47	112.48

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	101	FOK	6	0
6	A	102	DAD	2	0
8	C	405	GSP	1	0

5.7 Other polymers [i](#)

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 [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	189/217 (87%)	-0.11	2 (1%) 80 75	25, 54, 71, 88	0
2	B	189/212 (89%)	-0.25	4 (2%) 63 54	16, 34, 62, 93	0
3	C	331/402 (82%)	-0.30	2 (0%) 89 86	20, 39, 66, 96	0
All	All	709/831 (85%)	-0.24	8 (1%) 80 75	16, 41, 69, 96	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	964	ARG	3.6
2	B	952	ALA	3.5
3	C	322	GLU	2.7
1	A	472	LEU	2.7
3	C	387	HIS	2.7
2	B	878	TYR	2.4
2	B	966	TYR	2.3
1	A	477	THR	2.1

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 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. 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
4	MG	A	581	1/1	0.93	0.26	53,53,53,53	0
7	CL	C	404	1/1	0.97	0.18	35,35,35,35	0
4	MG	A	582	1/1	0.97	0.15	19,19,19,19	0
5	FOK	A	101	29/29	0.97	0.17	20,24,27,29	0
8	GSP	C	405	32/32	0.98	0.14	16,21,29,31	0
6	DAD	A	102	29/29	0.98	0.17	36,40,46,46	0
4	MG	C	403	1/1	0.99	0.07	2,2,2,2	0

6.5 Other polymers [i](#)

There are no such residues in this entry.