W O R L D W I D E

wwPDB

P R O T E I N   D A T A   B A N K

Full wwPDB X-ray Structure Validation Report (i)

Feb 1, 2016 – 04:57 PM GMT

PDB ID	:	4GR5
Title	:	Crystal structure of SlgN1deltaAsub in complex with AMPcPP
Authors	:	Herbst, D.A.; Zocher, G.; Stehle, T.
Deposited on	:	2012-08-24
Resolution	:	1.92 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	:	1.7 (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 1.92 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.
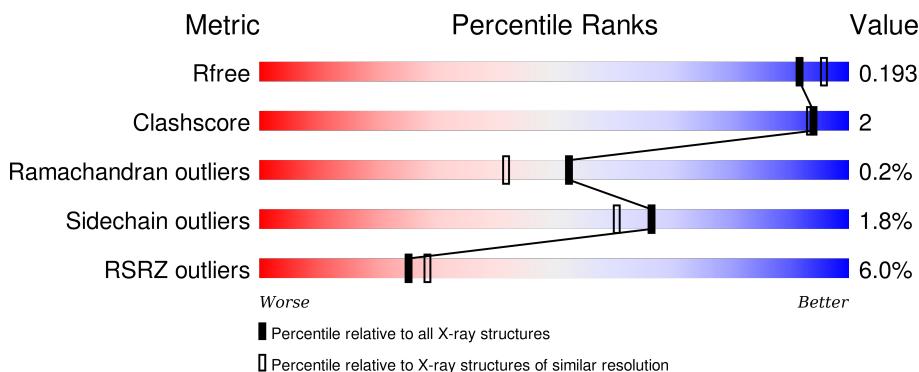
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	91344	5832 (1.94-1.90)
Clashscore	102246	6540 (1.94-1.90)
Ramachandran outliers	100387	6464 (1.94-1.90)
Sidechain outliers	100360	6465 (1.94-1.90)
RSRZ outliers	91569	5846 (1.94-1.90)

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 <=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	570	3% / 74% 5% 21%
1	B	570	4% / 75% • 20%
1	C	570	8% / 75% 5% 20%
1	D	570	5% / 75% • 21%
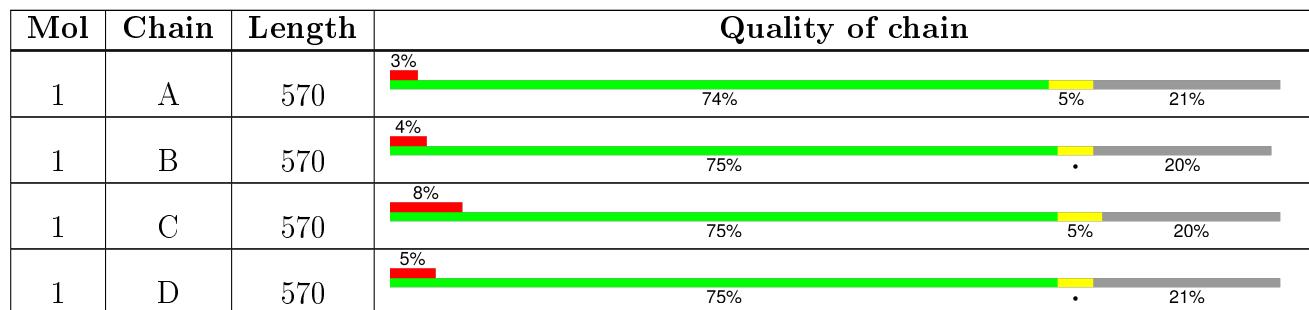
The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

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	TLA	A	602	-	-	-	X
3	TLA	B	602	-	-	-	X
3	TLA	B	603	-	-	-	X
3	TLA	C	602	-	-	-	X
3	TLA	D	602	-	-	-	X
3	TLA	D	603	-	-	-	X

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 14641 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 Non-ribosomal peptide synthetase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	451	Total 3327	C 2102	N 596	O 617	S 12	0	0	0
1	B	455	Total 3375	C 2129	N 607	O 627	S 12	0	2	0
1	C	457	Total 3366	C 2128	N 602	O 624	S 12	0	1	0
1	D	449	Total 3327	C 2103	N 594	O 618	S 12	0	1	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	EXPRESSION TAG	UNP D1GLU5
A	-1	SER	-	EXPRESSION TAG	UNP D1GLU5
A	0	HIS	-	EXPRESSION TAG	UNP D1GLU5
B	-2	GLY	-	EXPRESSION TAG	UNP D1GLU5
B	-1	SER	-	EXPRESSION TAG	UNP D1GLU5
B	0	HIS	-	EXPRESSION TAG	UNP D1GLU5
C	-2	GLY	-	EXPRESSION TAG	UNP D1GLU5
C	-1	SER	-	EXPRESSION TAG	UNP D1GLU5
C	0	HIS	-	EXPRESSION TAG	UNP D1GLU5
D	-2	GLY	-	EXPRESSION TAG	UNP D1GLU5
D	-1	SER	-	EXPRESSION TAG	UNP D1GLU5
D	0	HIS	-	EXPRESSION TAG	UNP D1GLU5

- Molecule 2 is DIPHOSPHOMETHYLPHOSPHONIC ACID ADENOSYL ESTER (three-letter code: APC) (formula: $C_{11}H_{18}N_5O_{12}P_3$).
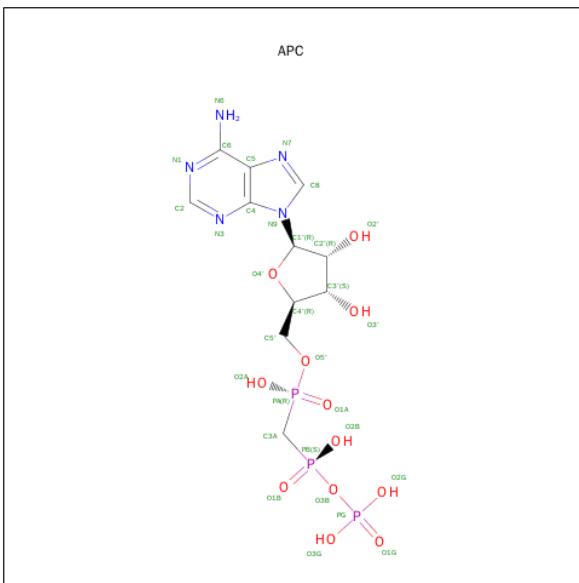
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	B	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	C	1	Total	C	N	O	P	0	0
			31	11	5	12	3		
2	D	1	Total	C	N	O	P	0	0
			31	11	5	12	3		

- Molecule 3 is L(+)-TARTARIC ACID (three-letter code: TLA) (formula: $C_4H_6O_6$).
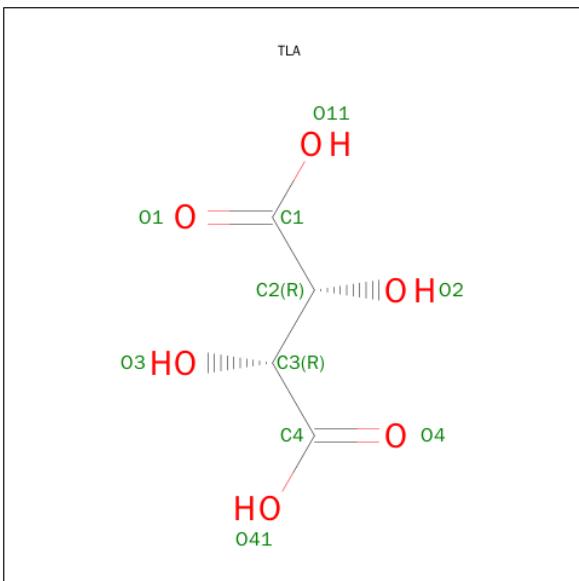
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 10	C 4	O 6	0	0
3	B	1	Total 10	C 4	O 6	0	0
3	B	1	Total 10	C 4	O 6	0	0
3	C	1	Total 10	C 4	O 6	0	0
3	D	1	Total 10	C 4	O 6	0	0
3	D	1	Total 10	C 4	O 6	0	0

- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Cl 1	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	313	Total 313	O 313	0	0
5	B	246	Total 246	O 246	0	0
5	C	211	Total 211	O 211	0	0
5	D	291	Total 291	O 291	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: Non-ribosomal peptide synthetase
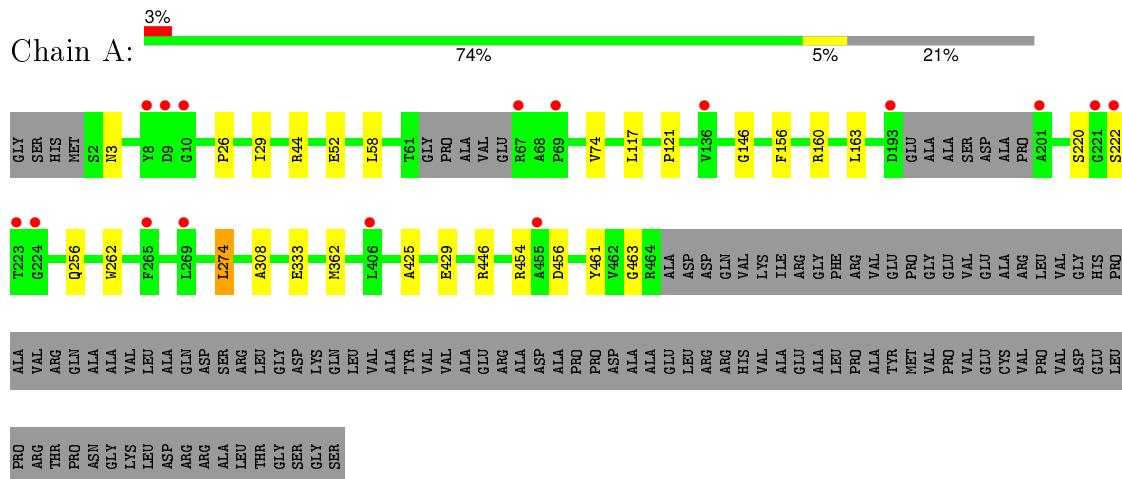
- Molecule 1: Non-ribosomal peptide synthetase

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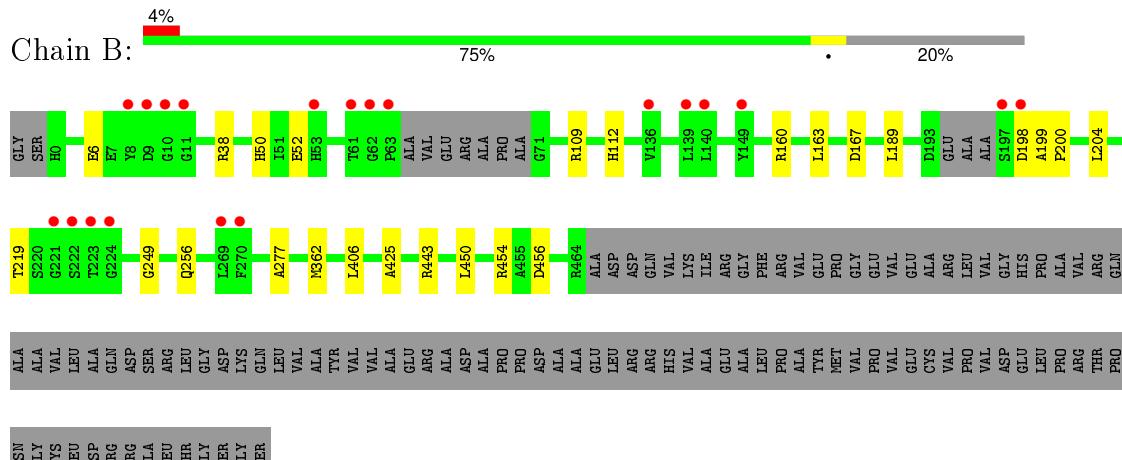
• Molecule 1: Non-ribosomal peptide synthetase
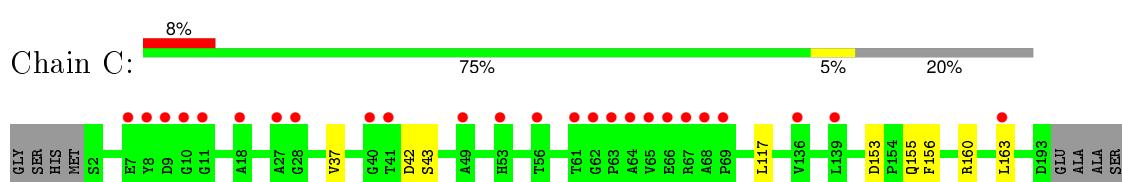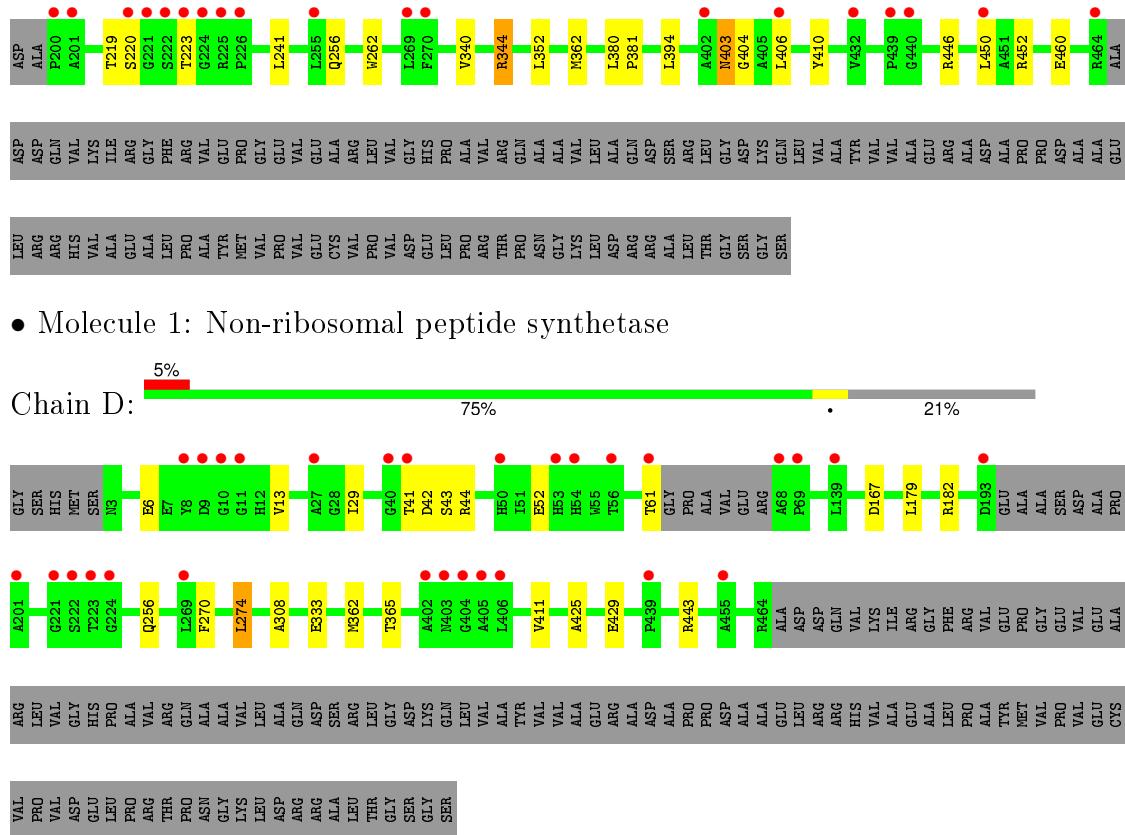
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	87.90Å 147.79Å 109.92Å 90.00° 113.06° 90.00°	Depositor
Resolution (Å)	29.83 – 1.92 29.83 – 1.92	Depositor EDS
% Data completeness (in resolution range)	99.7 (29.83-1.92) 99.7 (29.83-1.92)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	2.29 (at 1.92Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.1_1168)	Depositor
R, R_{free}	0.158 , 0.186 0.168 , 0.193	Depositor DCC
R_{free} test set	5872 reflections (3.09%)	DCC
Wilson B-factor (Å^2)	35.9	Xtriage
Anisotropy	0.261	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 41.0	EDS
Estimated twinning fraction	0.046 for h,-k,-h-l	Xtriage
L-test for twinning[2]	$<|L|> = 0.46$, $<L^2> = 0.29$	Xtriage
Outliers	0 of 195711 reflections	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	14641	wwPDB-VP
Average B, all atoms (Å^2)	41.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.64% 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, 0.375 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: APC, TLA, 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	0/3407	0.52	0/4643
1	B	0.35	0/3456	0.52	0/4709
1	C	0.34	0/3449	0.51	0/4704
1	D	0.33	0/3410	0.50	0/4646
All	All	0.35	0/13722	0.51	0/18702

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	3327	0	3245	13	0
1	B	3375	0	3282	12	0
1	C	3366	0	3276	16	0
1	D	3327	0	3250	8	0
2	A	31	0	14	0	0
2	B	31	0	14	0	0
2	C	31	0	14	0	0
2	D	31	0	14	0	0
3	A	10	0	4	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	20	0	8	0	0
3	C	10	0	4	1	0
3	D	20	0	8	0	0
4	A	1	0	0	0	0
5	A	313	0	0	0	0
5	B	246	0	0	2	0
5	C	211	0	0	2	0
5	D	291	0	0	0	0
All	All	14641	0	13133	49	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 2.

All (49) 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:D:42:ASP:OD1	1:D:43:SER:N	2.30	0.64
1:C:452:ARG:NH2	1:C:460:GLU:OE1	2.32	0.63
1:A:308:ALA:HB3	1:A:333:GLU:HG3	1.82	0.61
1:B:38:ARG:HD3	1:B:50:HIS:NE2	2.16	0.59
1:A:52:GLU:HG3	1:A:425:ALA:HB2	1.84	0.58
1:C:344:ARG:NH1	5:C:906:HOH:O	2.31	0.58
1:D:308:ALA:HB3	1:D:333:GLU:HG3	1.86	0.58
1:B:406:LEU:HD11	1:B:450:LEU:HB3	1.87	0.57
1:C:42:ASP:OD1	1:C:43:SER:N	2.37	0.57
1:C:406:LEU:HB3	1:C:450:LEU:HD11	1.87	0.56
1:D:44:ARG:NH2	1:D:429:GLU:OE2	2.36	0.56
1:B:52:GLU:HG3	1:B:425:ALA:HB2	1.89	0.55
1:A:121:PRO:HA	1:A:146:GLY:O	2.08	0.53
1:C:160:ARG:NH1	1:C:219:THR:O	2.42	0.51
1:A:26:PRO:HG2	1:A:29:ILE:HD12	1.92	0.51
1:C:156:PHE:CZ	1:C:220:SER:HA	2.46	0.51
1:D:13:VAL:HG12	1:D:41:THR:HA	1.93	0.49
1:A:117:LEU:HD22	1:C:117:LEU:HD22	1.96	0.48
1:D:52:GLU:HG2	1:D:425:ALA:HB2	1.95	0.47
1:D:270:PHE:HB3	1:D:274:LEU:HD22	1.95	0.47
1:A:3:ASN:ND2	1:A:446:ARG:HD2	2.30	0.47
1:C:410:TYR:CE2	1:C:446:ARG:HB3	2.50	0.47
1:A:461:TYR:CE2	1:A:463:GLY:HA2	2.51	0.46
1:B:109:ARG:NH1	5:B:901:HOH:O	2.48	0.46
1:C:406:LEU:HD13	1:C:450:LEU:HD21	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:454:ARG:HG3	1:A:456:ASP:OD1	2.16	0.44
1:A:44:ARG:NH2	1:A:429:GLU:OE1	2.47	0.44
1:C:403:ASN:N	1:C:403:ASN:OD1	2.31	0.43
1:A:74:VAL:HG13	1:A:274:LEU:HD11	1.99	0.43
1:B:112:HIS:CE1	1:B:200:PRO:HG2	2.54	0.43
1:A:163:LEU:HA	1:A:163:LEU:HD12	1.90	0.43
1:B:406:LEU:HD21	1:B:450:LEU:HD13	2.00	0.42
1:C:340:VAL:HG13	1:C:352:LEU:HD13	2.01	0.42
1:B:199:ALA:HA	1:B:200:PRO:HD3	1.95	0.42
1:B:454:ARG:HB3	1:B:456:ASP:OD1	2.20	0.42
1:B:160:ARG:NH2	1:B:219:THR:O	2.53	0.42
1:B:249:GLY:O	1:B:277:ALA:HB2	2.20	0.42
1:B:443:ARG:NH1	5:B:940:HOH:O	2.34	0.41
1:D:365:THR:HG21	1:D:411:VAL:HB	2.02	0.41
3:C:602:TLA:O41	5:C:836:HOH:O	2.22	0.41
1:C:380:LEU:HA	1:C:381:PRO:HD3	1.96	0.41
1:C:163:LEU:HA	1:C:163:LEU:HD12	1.82	0.41
1:A:156:PHE:CZ	1:A:220:SER:HA	2.56	0.41
1:A:160:ARG:NH2	1:A:222:SER:O	2.54	0.41
1:D:179:LEU:O	1:D:182:ARG:HG3	2.21	0.41
1:C:153:ASP:CG	1:C:155:GLN:HG2	2.42	0.40
1:C:394:LEU:HD12	1:C:410:TYR:CD1	2.57	0.40
1:C:404:GLY:HA2	1:C:452:ARG:HE	1.87	0.40
1:B:163:LEU:HA	1:B:163:LEU:HD12	1.83	0.40

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	445/570 (78%)	439 (99%)	5 (1%)	1 (0%)	52 42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	451/570 (79%)	443 (98%)	7 (2%)	1 (0%)	52	42
1	C	454/570 (80%)	445 (98%)	8 (2%)	1 (0%)	52	42
1	D	444/570 (78%)	438 (99%)	5 (1%)	1 (0%)	52	42
All	All	1794/2280 (79%)	1765 (98%)	25 (1%)	4 (0%)	52	42

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	362	MET
1	A	362	MET
1	C	362	MET
1	D	362	MET

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	330/425 (78%)	326 (99%)	4 (1%)	78	75
1	B	334/425 (79%)	328 (98%)	6 (2%)	66	60
1	C	332/425 (78%)	325 (98%)	7 (2%)	61	54
1	D	331/425 (78%)	324 (98%)	7 (2%)	61	54
All	All	1327/1700 (78%)	1303 (98%)	24 (2%)	66	60

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	58	LEU
1	A	256	GLN
1	A	262	TRP
1	A	274	LEU
1	B	6	GLU
1	B	167	ASP
1	B	189	LEU

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Mol	Chain	Res	Type
1	B	198	ASP
1	B	204	LEU
1	B	256	GLN
1	C	37	VAL
1	C	223	THR
1	C	241	LEU
1	C	256	GLN
1	C	262	TRP
1	C	344	ARG
1	C	403	ASN
1	D	6	GLU
1	D	29	ILE
1	D	61	THR
1	D	167	ASP
1	D	256	GLN
1	D	274	LEU
1	D	443	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	50	HIS

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 11 ligands modelled in this entry, 1 is monoatomic - leaving 10 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	#$|Z| > 2$
2	APC	A	601	-	25,33,33	1.62	4 (16%)	30,52,52	1.86	7 (23%)
3	TLA	A	602	-	3,9,9	0.33	0	6,12,12	1.18	1 (16%)
2	APC	B	601	-	25,33,33	1.54	4 (16%)	30,52,52	1.82	6 (20%)
3	TLA	B	602	-	3,9,9	0.45	0	6,12,12	1.03	0
3	TLA	B	603	-	3,9,9	0.47	0	6,12,12	1.02	0
2	APC	C	601	-	25,33,33	1.49	3 (12%)	30,52,52	1.96	8 (26%)
3	TLA	C	602	-	3,9,9	0.27	0	6,12,12	1.10	1 (16%)
2	APC	D	601	-	25,33,33	1.47	3 (12%)	30,52,52	1.87	5 (16%)
3	TLA	D	602	-	3,9,9	0.29	0	6,12,12	1.27	1 (16%)
3	TLA	D	603	-	3,9,9	0.37	0	6,12,12	0.87	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	APC	A	601	-	-	0/15/38/38	0/3/3/3
3	TLA	A	602	-	-	0/4/12/12	0/0/0/0
2	APC	B	601	-	-	0/15/38/38	0/3/3/3
3	TLA	B	602	-	-	0/4/12/12	0/0/0/0
3	TLA	B	603	-	-	0/4/12/12	0/0/0/0
2	APC	C	601	-	-	0/15/38/38	0/3/3/3
3	TLA	C	602	-	-	0/4/12/12	0/0/0/0
2	APC	D	601	-	-	0/15/38/38	0/3/3/3
3	TLA	D	602	-	-	0/4/12/12	0/0/0/0
3	TLA	D	603	-	-	0/4/12/12	0/0/0/0

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	APC	PB-O2B	-2.00	1.51	1.56
2	A	601	APC	O4'-C1'	2.13	1.43	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	APC	C5-C4	2.79	1.46	1.40
2	D	601	APC	C5-C4	2.95	1.47	1.40
2	A	601	APC	C5-C4	3.02	1.47	1.40
2	C	601	APC	C5-C4	3.08	1.47	1.40
2	D	601	APC	PB-O3B	3.42	1.62	1.58
2	C	601	APC	PB-O3B	3.60	1.62	1.58
2	A	601	APC	PA-O5'	3.94	1.61	1.57
2	D	601	APC	PA-O5'	3.98	1.61	1.57
2	C	601	APC	PA-O5'	4.00	1.61	1.57
2	B	601	APC	PA-O5'	4.02	1.61	1.57
2	B	601	APC	PB-O3B	4.18	1.63	1.58
2	A	601	APC	PB-O3B	4.61	1.63	1.58

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	601	APC	N3-C2-N1	-7.57	123.10	128.89
2	D	601	APC	N3-C2-N1	-7.21	123.37	128.89
2	A	601	APC	N3-C2-N1	-7.10	123.46	128.89
2	B	601	APC	N3-C2-N1	-6.96	123.56	128.89
2	B	601	APC	C2'-C1'-N9	-3.10	109.55	114.29
2	D	601	APC	C4-C5-N7	-3.05	106.67	109.48
2	A	601	APC	C2'-C1'-N9	-2.82	109.98	114.29
2	A	601	APC	C4-C5-N7	-2.79	106.92	109.48
2	C	601	APC	C1'-N9-C4	-2.68	122.89	126.94
2	C	601	APC	C4-C5-N7	-2.62	107.07	109.48
2	C	601	APC	C2'-C1'-N9	-2.60	110.31	114.29
2	B	601	APC	C4-C5-N7	-2.58	107.10	109.48
3	A	602	TLA	C1-C2-C3	-2.45	108.32	113.35
2	D	601	APC	O5'-PA-O1A	-2.40	107.59	113.98
2	B	601	APC	O5'-PA-O1A	-2.40	107.61	113.98
2	A	601	APC	O5'-PA-O1A	-2.39	107.63	113.98
2	A	601	APC	C1'-N9-C4	-2.32	123.45	126.94
2	C	601	APC	PG-O3B-PB	-2.18	125.36	132.67
3	C	602	TLA	C4-C3-C2	-2.09	109.06	113.35
3	D	602	TLA	C1-C2-C3	-2.03	109.18	113.35
2	D	601	APC	O3G-PG-O2G	2.03	115.11	107.38
2	C	601	APC	C2-N1-C6	2.13	122.57	118.77
2	A	601	APC	O1B-PB-C3A	2.14	114.41	109.02
2	C	601	APC	O2B-PB-O1B	2.37	117.56	110.12
2	B	601	APC	O2B-PB-O1B	2.38	117.61	110.12
2	A	601	APC	O2A-PA-O1A	2.43	117.78	110.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	601	APC	O2A-PA-O1A	2.51	118.00	110.12
2	C	601	APC	O2A-PA-O1A	2.94	119.36	110.12
2	D	601	APC	O2A-PA-O1A	2.94	119.38	110.12

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	602	TLA	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 (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(Å²)	Q<0.9
1	A	451/570 (79%)	-0.13	16 (3%)	48	52	22, 33, 62, 104	0
1	B	455/570 (79%)	-0.08	20 (4%)	38	42	22, 36, 67, 112	0
1	C	457/570 (80%)	0.16	44 (9%)	10	12	24, 39, 83, 109	0
1	D	449/570 (78%)	0.10	29 (6%)	22	25	25, 38, 82, 109	0
All	All	1812/2280 (79%)	0.01	109 (6%)	25	28	22, 36, 77, 112	0

All (109) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	63	PRO	6.8
1	D	10	GLY	6.7
1	C	223	THR	6.2
1	C	221	GLY	5.6
1	C	439	PRO	5.5
1	D	223	THR	5.4
1	B	62	GLY	5.4
1	B	9	ASP	5.3
1	D	439	PRO	5.2
1	C	9	ASP	5.1
1	B	223	THR	5.1
1	C	8	TYR	5.0
1	A	223	THR	5.0
1	D	53	HIS	4.9
1	C	11	GLY	4.9
1	A	9	ASP	4.9
1	C	40	GLY	4.8
1	C	64	ALA	4.7
1	C	200	PRO	4.5
1	C	222	SER	4.3
1	D	61	THR	4.3

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Mol	Chain	Res	Type	RSRZ
1	C	10	GLY	4.3
1	D	40	GLY	4.1
1	C	62	GLY	4.1
1	C	224	GLY	4.0
1	B	197	SER	3.9
1	D	11	GLY	3.9
1	D	8	TYR	3.9
1	B	10	GLY	3.9
1	D	9	ASP	3.7
1	A	221	GLY	3.6
1	A	201	ALA	3.5
1	D	68	ALA	3.5
1	C	69	PRO	3.4
1	A	455	ALA	3.4
1	D	224	GLY	3.4
1	C	27	ALA	3.3
1	C	269	LEU	3.3
1	C	406	LEU	3.3
1	B	221	GLY	3.2
1	B	8	TYR	3.2
1	C	63	PRO	3.2
1	C	402	ALA	3.2
1	A	193	ASP	3.1
1	C	440	GLY	3.1
1	B	269	LEU	3.1
1	D	406	LEU	3.1
1	B	270	PHE	3.1
1	B	61	THR	3.1
1	C	41	THR	3.0
1	B	139	LEU	3.0
1	C	61	THR	2.9
1	C	139	LEU	2.9
1	C	49	ALA	2.9
1	D	455	ALA	2.9
1	C	66	GLU	2.9
1	D	54	HIS	2.9
1	A	224	GLY	2.9
1	C	68	ALA	2.8
1	C	201	ALA	2.8
1	B	222	SER	2.8
1	C	53	HIS	2.8
1	D	403	ASN	2.8

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Mol	Chain	Res	Type	RSRZ
1	D	404	GLY	2.8
1	C	28	GLY	2.8
1	D	193	ASP	2.8
1	D	41	THR	2.7
1	B	136	VAL	2.7
1	C	464	ARG	2.7
1	D	27	ALA	2.6
1	B	11	GLY	2.6
1	C	7	GLU	2.6
1	D	201	ALA	2.5
1	D	405	ALA	2.5
1	C	67	ARG	2.5
1	D	402	ALA	2.5
1	C	56	THR	2.5
1	C	225	ARG	2.4
1	D	139	LEU	2.4
1	D	269	LEU	2.4
1	A	265	PHE	2.4
1	D	221	GLY	2.4
1	C	65	VAL	2.4
1	D	222	SER	2.4
1	A	69	PRO	2.3
1	A	10	GLY	2.3
1	A	136	VAL	2.3
1	C	220	SER	2.3
1	A	269	LEU	2.3
1	C	163	LEU	2.3
1	C	18	ALA	2.3
1	D	56	THR	2.3
1	B	140	LEU	2.3
1	C	255	LEU	2.3
1	B	224	GLY	2.3
1	A	222	SER	2.2
1	C	136	VAL	2.2
1	A	67	ARG	2.2
1	C	270	PHE	2.2
1	A	406	LEU	2.2
1	D	50	HIS	2.1
1	A	8	TYR	2.1
1	B	53	HIS	2.1
1	C	432	VAL	2.1
1	C	226	PRO	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	69	PRO	2.1
1	B	149	TYR	2.1
1	B	198	ASP	2.1
1	C	450	LEU	2.0

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. 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
3	TLA	D	603	10/10	0.88	0.25	5.74	30,45,50,51	10
3	TLA	A	602	10/10	0.83	0.18	5.05	22,36,38,41	10
3	TLA	B	603	10/10	0.85	0.21	4.01	19,38,43,44	10
3	TLA	B	602	10/10	0.78	0.26	3.93	53,81,86,87	0
3	TLA	C	602	10/10	0.88	0.21	2.56	32,42,52,56	10
3	TLA	D	602	10/10	0.58	0.23	2.10	45,54,58,62	10
2	APC	C	601	31/31	0.95	0.10	0.06	38,44,67,88	0
4	CL	A	603	1/1	0.98	0.07	-0.28	51,51,51,51	0
2	APC	A	601	31/31	0.98	0.07	-0.79	25,28,40,46	0
2	APC	B	601	31/31	0.97	0.06	-0.83	27,34,47,53	0
2	APC	D	601	31/31	0.98	0.06	-1.07	26,34,43,49	0

6.5 Other polymers (i)

There are no such residues in this entry.