Full wwPDB X-ray Structure Validation Report (i)

Oct 18, 2023 – 02:26 PM EDT

PDB ID	:	2FSH
Title	:	Complex SecA:AMP-PNP from Escherichia coli
Authors	:	Papanikolau, Y.; Petratos, K.; Economou, A.
Deposited on	:	2006-01-23
Resolution	:	2.00 Å(reported)

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

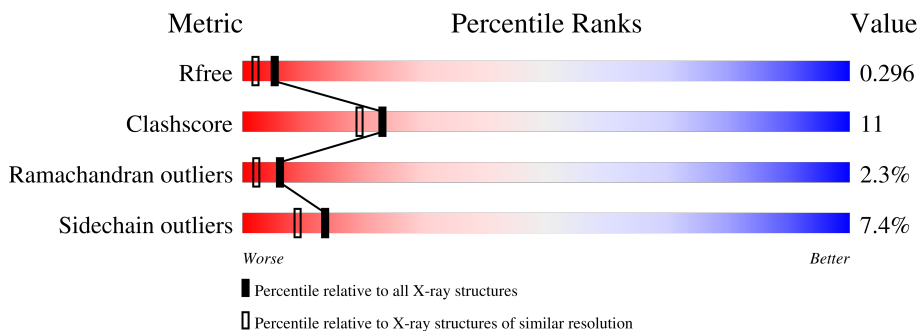|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.00 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	Percentile Ranks	Value
Rfree		0.296
Clashscore		11
Ramachandran outliers		2.3%
Sidechain outliers		7.4%

Worse — *Better*

▮ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)

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%

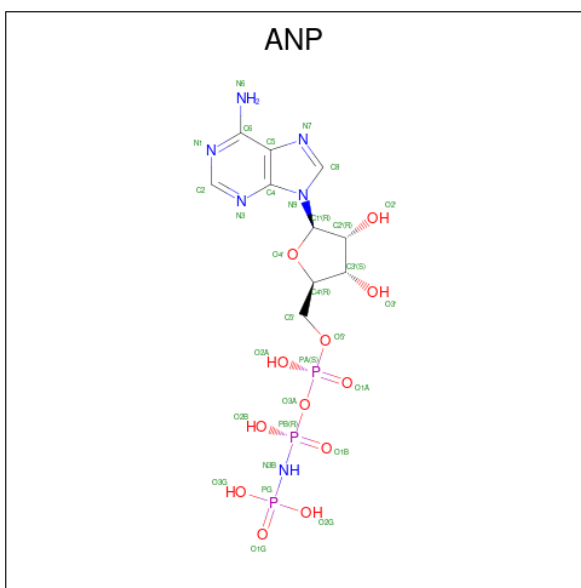| Mol	Chain	Length	Quality of chain
1	A	853	62%　15%　·　·　19%
1	B	853	60%　20%　·　·　15%

2   Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 11728 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 Preprotein translocase secA subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	691	Total	C	N	O	S	0	0	0
			5500	3445	971	1058	26			
1	B	722	Total	C	N	O	S	0	0	0
			5735	3596	1008	1102	29			

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (three-letter code: ANP) (formula: $C_{10}H_{17}N_6O_{12}P_3$).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
2	B	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	189	Total O 189 189	0	0
3	B	242	Total O 242 242	0	0

3 Residue-property plots ⓘ

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. 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. 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: Preprotein translocase secA subunit

Chain A:

- Molecule 1: Preprotein translocase secA subunit

Chain B:

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	75.02Å 90.01Å 163.02Å 90.00° 100.52° 90.00°	Depositor
Resolution (Å)	19.97 – 2.00 19.97 – 2.00	Depositor EDS
% Data completeness (in resolution range)	90.5 (19.97-2.00) 90.5 (19.97-2.00)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.73 (at 2.01Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.204 , 0.255 0.256 , 0.296	Depositor DCC
R_{free} test set	6538 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	41.0	Xtriage
Anisotropy	0.068	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 57.5	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.022 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	11728	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.86% 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: ANP

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	1.19	15/5590 (0.3%)	1.00	15/7542 (0.2%)
1	B	1.29	33/5827 (0.6%)	1.07	17/7861 (0.2%)
All	All	1.25	48/11417 (0.4%)	1.04	32/15403 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3
1	B	0	4
All	All	0	7

All (48) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	698	GLU	C-O	17.67	1.56	1.23
1	A	699	GLU	CD-OE2	14.21	1.41	1.25
1	A	98	CYS	CB-SG	-11.81	1.62	1.82
1	B	23	LYS	CE-NZ	10.56	1.75	1.49
1	A	696	SER	CB-OG	10.43	1.55	1.42
1	A	752	GLU	CG-CD	8.55	1.64	1.51
1	B	210	GLU	CG-CD	7.92	1.63	1.51
1	A	697	LEU	C-N	7.18	1.50	1.34
1	B	448	LYS	CE-NZ	7.17	1.67	1.49
1	B	393	THR	CA-CB	6.96	1.71	1.53
1	B	512	ASP	CB-CG	6.87	1.66	1.51
1	B	503	ALA	CA-CB	-6.85	1.38	1.52
1	A	96	GLU	CD-OE2	6.85	1.33	1.25
1	A	802	GLU	CG-CD	6.80	1.62	1.51

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	98	CYS	CB-SG	-6.77	1.70	1.82
1	B	394	ALA	CA-CB	6.54	1.66	1.52
1	B	186	TYR	CE1-CZ	-6.52	1.30	1.38
1	A	96	GLU	CG-CD	6.49	1.61	1.51
1	B	103	ARG	CG-CD	6.44	1.68	1.51
1	B	809	SER	CB-OG	-6.08	1.34	1.42
1	B	176	TYR	CE1-CZ	-6.06	1.30	1.38
1	A	693	PRO	C-O	6.03	1.35	1.23
1	A	560	GLU	CG-CD	5.98	1.60	1.51
1	B	393	THR	N-CA	5.87	1.58	1.46
1	B	76	LYS	CE-NZ	5.86	1.63	1.49
1	B	197	GLU	CD-OE2	5.74	1.31	1.25
1	B	572	ARG	CB-CG	-5.72	1.37	1.52
1	A	816	GLU	CG-CD	5.71	1.60	1.51
1	B	66	GLU	CD-OE2	5.68	1.31	1.25
1	B	421	LYS	CE-NZ	5.66	1.63	1.49
1	B	49	GLU	CB-CG	-5.60	1.41	1.52
1	B	141	GLU	CG-CD	5.57	1.60	1.51
1	B	385	GLU	CD-OE2	5.57	1.31	1.25
1	B	96	GLU	CG-CD	5.55	1.60	1.51
1	B	661	SER	CB-OG	-5.53	1.35	1.42
1	B	23	LYS	CG-CD	5.49	1.71	1.52
1	B	478	VAL	CB-CG2	-5.48	1.41	1.52
1	B	560	GLU	CG-CD	5.44	1.60	1.51
1	B	41	GLU	CG-CD	5.36	1.59	1.51
1	A	460	GLU	CD-OE1	5.35	1.31	1.25
1	B	210	GLU	CD-OE2	5.35	1.31	1.25
1	B	61	GLU	CD-OE1	5.25	1.31	1.25
1	B	163	ALA	CA-CB	5.25	1.63	1.52
1	B	635	GLU	CD-OE1	5.22	1.31	1.25
1	A	697	LEU	C-O	5.20	1.33	1.23
1	B	205	TYR	CD1-CE1	5.17	1.47	1.39
1	A	176	TYR	CD1-CE1	5.09	1.47	1.39
1	B	808	PHE	CB-CG	-5.02	1.42	1.51

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	657	ARG	NE-CZ-NH2	11.13	125.87	120.30
1	A	72	ARG	NE-CZ-NH2	8.82	124.71	120.30
1	B	23	LYS	CD-CE-NZ	8.12	130.37	111.70
1	A	805	ARG	NE-CZ-NH2	-7.96	116.32	120.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	72	ARG	NE-CZ-NH1	-7.21	116.70	120.30
1	B	561	ARG	NE-CZ-NH1	7.01	123.80	120.30
1	B	144	ARG	NE-CZ-NH1	-6.90	116.85	120.30
1	B	572	ARG	NE-CZ-NH2	-6.62	116.99	120.30
1	A	577	ARG	NE-CZ-NH1	6.20	123.40	120.30
1	B	382	ARG	NE-CZ-NH1	6.16	123.38	120.30
1	B	801	GLN	N-CA-CB	6.16	121.68	110.60
1	B	749	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	A	699	GLU	OE1-CD-OE2	5.97	130.46	123.30
1	A	82	ARG	NE-CZ-NH2	-5.90	117.35	120.30
1	A	82	ARG	NE-CZ-NH1	5.82	123.21	120.30
1	A	81	MET	CG-SD-CE	5.76	109.41	100.20
1	A	798	ASP	CB-CG-OD1	5.69	123.42	118.30
1	A	709	ARG	NE-CZ-NH2	-5.67	117.47	120.30
1	B	85	ASP	CB-CG-OD1	5.65	123.39	118.30
1	A	418	MET	CG-SD-CE	5.43	108.89	100.20
1	A	577	ARG	NE-CZ-NH2	-5.43	117.59	120.30
1	B	657	ARG	CG-CD-NE	5.43	123.19	111.80
1	B	786	ARG	NE-CZ-NH2	5.43	123.01	120.30
1	A	697	LEU	O-C-N	5.41	131.36	122.70
1	B	189	ASP	CB-CG-OD1	5.36	123.13	118.30
1	B	610	LEU	CA-CB-CG	5.34	127.58	115.30
1	B	657	ARG	NE-CZ-NH1	-5.29	117.65	120.30
1	B	40	ASP	CB-CG-OD2	-5.28	113.55	118.30
1	A	805	ARG	NE-CZ-NH1	5.25	122.93	120.30
1	A	144	ARG	NE-CZ-NH1	-5.16	117.72	120.30
1	B	572	ARG	CG-CD-NE	-5.11	101.06	111.80
1	B	568	ASP	CB-CG-OD1	5.02	122.82	118.30

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	366	GLN	Peptide
1	A	393	THR	Peptide
1	A	800	LYS	Peptide
1	B	229	ALA	Peptide
1	B	393	THR	Peptide
1	B	394	ALA	Peptide
1	B	613	LYS	Peptide

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	5500	0	5481	107	0
1	B	5735	0	5724	152	0
2	A	31	0	13	1	0
2	B	31	0	13	7	0
3	A	189	0	0	18	1
3	B	242	0	0	25	1
All	All	11728	0	11231	256	2

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 11.

All (256) 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:B:23:LYS:CE	1:B:23:LYS:NZ	1.75	1.49
1:B:369:ASN:C	1:B:369:ASN:HD22	1.39	1.24
1:B:757:GLU:HG3	3:B:1056:HOH:O	1.51	1.08
1:A:731:HIS:CE1	1:A:733:GLU:HB3	1.94	1.01
1:B:369:ASN:C	1:B:369:ASN:ND2	2.18	0.96
1:A:799:PRO:O	1:A:800:LYS:HB3	1.67	0.92
1:A:144:ARG:HG2	1:A:148:GLU:OE1	1.67	0.92
1:A:657:ARG:HD3	3:A:1026:HOH:O	1.72	0.90
1:B:520:GLN:HA	3:B:1094:HOH:O	1.74	0.86
1:A:144:ARG:CG	1:A:148:GLU:OE1	2.24	0.85
1:B:693:PRO:O	1:B:696:SER:HB2	1.79	0.82
1:B:747:TYR:OH	1:B:763:GLU:OE2	1.97	0.81
1:B:108:LYS:HB2	2:B:901:ANP:PG	2.21	0.81
1:B:369:ASN:HD22	1:B:370:GLN:N	1.83	0.77
1:B:457:ILE:O	1:B:505:ASN:ND2	2.16	0.77
1:A:577:ARG:HD3	3:A:1054:HOH:O	1.85	0.76
1:B:228:PRO:O	1:B:230:GLU:OE1	2.02	0.76
1:A:799:PRO:O	1:A:800:LYS:CB	2.34	0.75
1:B:629:ASN:HD22	1:B:632:ARG:NH2	1.86	0.73
1:B:108:LYS:HB2	2:B:901:ANP:N3B	2.03	0.73
1:B:637:ARG:NH1	1:B:641:ILE:HD11	2.02	0.73

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:618:ILE:O	1:B:619:GLU:HB2	1.88	0.72
1:B:104:THR:HG21	1:B:577:ARG:CZ	2.20	0.72
1:B:108:LYS:HE2	2:B:901:ANP:O1G	1.90	0.71
1:B:396:THR:N	3:B:931:HOH:O	2.22	0.71
1:B:647:GLU:OE2	1:B:800:LYS:HE3	1.91	0.70
1:A:428:TYR:HB3	1:A:433:GLU:HG3	1.72	0.70
1:A:598:PHE:O	1:A:600:SER:N	2.24	0.70
1:A:609:LYS:HB2	3:A:1080:HOH:O	1.90	0.70
1:A:742:GLN:HA	1:A:742:GLN:HE21	1.56	0.70
1:B:395:ASP:CB	3:B:925:HOH:O	2.39	0.69
1:A:594:LEU:HD23	1:A:594:LEU:O	1.92	0.68
1:B:227:GLY:HA3	1:B:372:LEU:HD11	1.73	0.68
1:B:395:ASP:HB2	3:B:925:HOH:O	1.94	0.67
1:B:103:ARG:HD3	1:B:104:THR:O	1.95	0.67
1:B:369:ASN:HB2	3:B:1106:HOH:O	1.94	0.66
1:B:522:GLU:HB2	3:B:1087:HOH:O	1.94	0.66
1:A:395:ASP:CG	1:A:396:THR:N	2.49	0.66
1:B:104:THR:HG21	1:B:577:ARG:NH2	2.11	0.66
1:A:618:ILE:O	1:A:619:GLU:HB2	1.98	0.64
1:B:523:VAL:HG22	3:B:1094:HOH:O	1.96	0.64
1:B:228:PRO:O	1:B:230:GLU:N	2.30	0.64
1:B:600:SER:HB3	1:B:603:VAL:HB	1.80	0.64
1:A:15:ASP:HA	1:A:18:LEU:HB2	1.80	0.62
1:A:394:ALA:HA	3:A:1045:HOH:O	1.99	0.62
1:A:614:PRO:HA	3:A:1005:HOH:O	2.00	0.61
1:B:395:ASP:CA	3:B:925:HOH:O	2.48	0.61
1:A:429:MET:HG2	1:A:612:MET:SD	2.40	0.61
1:A:741:ALA:N	3:A:1046:HOH:O	2.33	0.61
1:B:782:MET:HE3	1:B:810:MET:HE3	1.82	0.61
1:A:29:ASN:OD1	1:A:72:ARG:NH1	2.29	0.60
1:B:223:LEU:HD21	1:B:377:PHE:CZ	2.37	0.59
1:B:651:VAL:CG2	1:B:804:LYS:HG2	2.32	0.59
1:B:629:ASN:ND2	1:B:632:ARG:NH2	2.51	0.59
1:B:459:ILE:O	1:B:463:GLU:HG3	2.02	0.59
1:B:282:ILE:O	1:B:286:LEU:HB2	2.02	0.59
1:B:651:VAL:HG21	1:B:804:LYS:HG2	1.85	0.58
1:A:538:LYS:NZ	1:B:528:ASN:ND2	2.52	0.58
1:B:718:LEU:O	1:B:720:ILE:N	2.37	0.57
1:B:484:HIS:HD2	1:B:487:GLU:OE2	1.86	0.57
1:B:518:SER:CB	1:B:520:GLN:HE21	2.18	0.57
1:B:229:ALA:HB3	1:B:372:LEU:HD21	1.87	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:ARG:HD2	1:A:82:ARG:HG2	1.86	0.56
1:A:538:LYS:NZ	1:B:528:ASN:HD21	2.03	0.56
1:B:613:LYS:HB3	1:B:614:PRO:HD2	1.88	0.56
1:A:486:ASN:HD21	1:B:132:ASN:HD21	1.55	0.55
1:A:392:GLY:O	1:A:394:ALA:N	2.40	0.55
1:B:510:GLY:HA3	1:B:574:ARG:HH12	1.71	0.55
1:A:17:THR:O	1:A:21:MET:HG3	2.08	0.54
1:A:519:TRP:HA	1:A:522:GLU:OE1	2.07	0.54
1:B:104:THR:HG23	1:B:509:ARG:HE	1.72	0.54
1:B:613:LYS:HB3	1:B:614:PRO:CD	2.37	0.54
1:A:31:MET:CE	1:A:66:GLU:HG2	2.38	0.54
1:B:519:TRP:CH2	1:B:538:LYS:HE2	2.43	0.54
1:A:797:LYS:HD2	3:A:1048:HOH:O	2.08	0.54
1:B:137:GLN:CD	3:B:1081:HOH:O	2.47	0.54
1:A:531:ALA:O	1:A:534:ILE:HG13	2.08	0.54
1:A:471:LYS:HE2	3:A:1078:HOH:O	2.07	0.54
1:A:591:GLU:O	1:A:592:ASP:C	2.46	0.54
1:B:395:ASP:HB2	3:B:931:HOH:O	2.07	0.54
1:B:409:THR:HG23	3:B:930:HOH:O	2.08	0.54
2:A:900:ANP:O1A	2:A:900:ANP:O2G	2.25	0.53
1:A:395:ASP:CG	1:A:396:THR:H	2.12	0.53
1:B:293:ASP:N	1:B:293:ASP:OD2	2.40	0.53
1:B:713:ASP:OD2	1:B:820:TYR:OH	2.22	0.53
1:A:722:GLU:HG2	1:A:726:LYS:HZ1	1.74	0.53
1:B:392:GLY:O	1:B:394:ALA:HB3	2.09	0.53
1:A:32:GLU:HB3	1:A:33:PRO:HD3	1.90	0.53
1:A:730:LEU:HD12	1:A:734:THR:OG1	2.09	0.53
1:B:179:ASN:OD1	1:B:180:ASN:ND2	2.42	0.53
1:A:409:THR:HG23	3:A:924:HOH:O	2.08	0.53
1:A:669:VAL:HG22	1:A:670:SER:N	2.24	0.53
1:B:18:LEU:HD23	1:B:21:MET:CE	2.39	0.53
1:B:782:MET:CE	1:B:810:MET:HE3	2.39	0.53
1:B:518:SER:C	1:B:520:GLN:H	2.12	0.52
1:B:792:ARG:HB2	3:B:1142:HOH:O	2.08	0.52
1:A:99:ILE:HB	1:A:409:THR:HB	1.89	0.52
1:B:137:GLN:NE2	3:B:1081:HOH:O	2.42	0.52
1:B:304:ILE:HG21	1:B:781:ALA:HB1	1.91	0.52
1:B:691:TYR:HB3	1:B:702:ASP:O	2.09	0.52
1:B:282:ILE:HG13	1:B:286:LEU:HD12	1.92	0.52
1:A:657:ARG:CD	3:A:1026:HOH:O	2.44	0.52
1:B:79:PHE:HB3	1:B:81:MET:CE	2.40	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:594:LEU:HG	1:B:597:ILE:HD13	1.91	0.52
1:B:103:ARG:HG3	1:B:103:ARG:HH11	1.75	0.51
1:B:789:ILE:HG22	1:B:789:ILE:O	2.11	0.51
1:A:395:ASP:N	3:A:1045:HOH:O	2.43	0.51
1:A:397:GLU:OE1	1:A:566:ARG:NH2	2.44	0.51
1:A:531:ALA:O	1:A:533:GLN:N	2.44	0.51
1:B:393:THR:O	1:B:395:ASP:N	2.44	0.51
1:B:759:MET:HA	1:B:759:MET:CE	2.41	0.51
1:B:394:ALA:HB3	3:B:909:HOH:O	2.11	0.51
1:B:566:ARG:O	1:B:570:GLN:HG3	2.10	0.51
1:A:31:MET:HE3	1:A:66:GLU:HG2	1.91	0.50
1:A:531:ALA:O	1:A:532:GLU:C	2.49	0.50
1:A:519:TRP:CH2	1:A:538:LYS:HD3	2.46	0.50
1:B:287:VAL:O	1:B:288:LYS:HG2	2.11	0.50
1:B:284:GLU:HA	1:B:287:VAL:HG12	1.93	0.50
1:B:522:GLU:N	3:B:1087:HOH:O	2.44	0.50
1:B:745:GLU:HG2	1:B:746:VAL:N	2.27	0.50
1:A:104:THR:HG21	1:A:577:ARG:NH2	2.26	0.50
1:B:563:GLU:HG2	1:B:634:VAL:HG11	1.93	0.50
1:B:594:LEU:O	1:B:597:ILE:HG12	2.12	0.49
1:B:73:GLU:O	1:B:77:ARG:HG3	2.12	0.49
1:B:101:GLU:CD	1:B:393:THR:HA	2.32	0.49
1:A:519:TRP:CZ2	1:A:538:LYS:HD3	2.47	0.49
1:A:789:ILE:O	1:A:790:HIS:CG	2.65	0.49
1:B:693:PRO:O	1:B:696:SER:CB	2.57	0.49
1:A:594:LEU:C	1:A:596:ARG:H	2.16	0.49
1:B:108:LYS:HB2	2:B:901:ANP:O2G	2.11	0.49
1:B:789:ILE:O	1:B:789:ILE:CG2	2.61	0.49
1:B:657:ARG:HH21	1:B:657:ARG:HG3	1.76	0.49
2:B:901:ANP:O3G	2:B:901:ANP:O3A	2.31	0.49
1:B:198:ARG:HH21	1:B:664:ASN:HD22	1.60	0.48
1:B:518:SER:HB2	1:B:520:GLN:HE21	1.78	0.48
1:B:618:ILE:HG22	1:B:619:GLU:N	2.29	0.48
1:A:13:ARG:NE	1:A:13:ARG:HA	2.28	0.48
1:A:669:VAL:HG22	1:A:671:ASP:H	1.78	0.48
1:B:506:MET:HA	3:B:1015:HOH:O	2.13	0.48
1:B:671:ASP:OD1	1:B:673:SER:OG	2.29	0.48
1:A:531:ALA:HA	1:A:534:ILE:HD11	1.96	0.47
1:A:538:LYS:HZ3	1:B:528:ASN:HD21	1.61	0.47
1:B:198:ARG:HH21	1:B:664:ASN:ND2	2.11	0.47
1:B:635:GLU:HB3	3:B:1031:HOH:O	2.13	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:752:GLU:HB3	3:A:1075:HOH:O	2.15	0.47
1:B:724:LEU:CD2	1:B:730:LEU:HD11	2.44	0.47
1:B:801:GLN:HA	1:B:801:GLN:OE1	2.14	0.47
1:A:229:ALA:HB3	1:A:776:LYS:HZ3	1.79	0.47
1:B:531:ALA:O	1:B:535:GLU:HB3	2.14	0.47
1:A:698:GLU:O	1:A:701:TRP:HB2	2.15	0.47
1:B:13:ARG:N	1:B:15:ASP:OD1	2.47	0.47
1:B:666:LEU:O	1:B:764:LYS:HE3	2.15	0.47
1:B:782:MET:CE	1:B:810:MET:CE	2.93	0.47
1:A:731:HIS:CD2	1:A:734:THR:HG23	2.49	0.47
1:A:457:ILE:HG22	1:A:562:HIS:CE1	2.50	0.47
1:B:308:HIS:CE1	1:B:784:TYR:CZ	3.03	0.46
1:B:647:GLU:OE2	1:B:800:LYS:CE	2.61	0.46
1:A:101:GLU:OE2	1:A:393:THR:HA	2.14	0.46
1:A:211:VAL:HG11	1:A:389:GLY:HA3	1.97	0.46
1:A:229:ALA:O	1:A:231:ASP:N	2.48	0.46
1:A:378:GLN:O	1:A:382:ARG:HG3	2.15	0.46
1:A:392:GLY:C	1:A:394:ALA:N	2.69	0.46
1:A:800:LYS:H	1:A:803:TYR:H	1.64	0.46
1:A:679:ILE:HG13	1:A:823:ILE:HD11	1.97	0.46
1:B:79:PHE:HB3	1:B:81:MET:HE2	1.98	0.46
1:A:618:ILE:O	1:A:619:GLU:CB	2.64	0.46
1:B:506:MET:SD	1:B:574:ARG:NE	2.89	0.46
1:A:571:LEU:O	1:A:574:ARG:HB2	2.16	0.45
1:A:367:ASN:O	1:A:368:GLU:O	2.33	0.45
1:A:731:HIS:NE2	1:A:734:THR:HG23	2.31	0.45
1:B:300:SER:OG	1:B:303:ASN:ND2	2.49	0.45
1:B:518:SER:CB	1:B:520:GLN:NE2	2.79	0.45
1:B:757:GLU:HB2	3:B:1069:HOH:O	2.15	0.45
1:A:531:ALA:O	1:A:534:ILE:CG1	2.65	0.45
1:B:520:GLN:N	3:B:1087:HOH:O	2.50	0.45
1:A:529:PRO:HA	1:A:533:GLN:HE21	1.81	0.45
1:B:103:ARG:CD	3:B:1095:HOH:O	2.65	0.45
1:A:229:ALA:HB3	1:A:776:LYS:NZ	2.31	0.45
1:A:681:GLU:HG2	1:A:740:LEU:HD21	1.99	0.45
1:B:309:HIS:O	1:B:312:ALA:HB3	2.16	0.45
1:B:369:ASN:ND2	1:B:370:GLN:N	2.57	0.45
1:B:771:LEU:C	1:B:771:LEU:HD23	2.37	0.45
1:A:642:ARG:NH1	3:A:945:HOH:O	2.48	0.44
1:B:104:THR:CG2	1:B:577:ARG:CZ	2.93	0.44
1:B:496:TYR:CD2	1:B:497:PRO:HD2	2.52	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:224:ILE:HG23	1:B:371:THR:HG23	2.00	0.44
1:B:303:ASN:HA	3:B:1125:HOH:O	2.18	0.44
1:B:519:TRP:C	3:B:1087:HOH:O	2.56	0.44
1:A:692:ILE:O	1:A:692:ILE:HG22	2.17	0.44
1:B:796:GLN:OE1	1:B:797:LYS:N	2.50	0.44
1:A:101:GLU:OE2	1:A:395:ASP:HB2	2.18	0.44
1:A:460:GLU:CD	1:A:460:GLU:H	2.21	0.43
1:B:720:ILE:HG13	1:B:723:TRP:CD1	2.53	0.43
1:A:230:GLU:HB3	1:A:367:ASN:HB3	2.01	0.43
1:A:742:GLN:O	1:A:746:VAL:HG23	2.18	0.43
1:B:395:ASP:HA	3:B:925:HOH:O	2.16	0.43
1:B:679:ILE:HG13	1:B:823:ILE:HD11	2.00	0.43
1:A:731:HIS:HB3	3:A:1051:HOH:O	2.18	0.43
1:B:703:ILE:HA	1:B:706:LEU:HB3	2.00	0.43
1:B:108:LYS:HB2	2:B:901:ANP:HNB1	1.78	0.43
1:B:103:ARG:HG3	1:B:103:ARG:NH1	2.33	0.43
1:B:512:ASP:OD1	1:B:577:ARG:HD3	2.19	0.42
1:A:392:GLY:O	1:A:394:ALA:CA	2.67	0.42
1:B:707:GLN:CG	1:B:708:GLU:N	2.82	0.42
1:B:782:MET:HE1	1:B:810:MET:CE	2.49	0.42
1:A:594:LEU:HD21	1:A:597:ILE:HD11	2.01	0.42
1:B:180:ASN:ND2	1:B:180:ASN:H	2.17	0.42
1:B:369:ASN:ND2	1:B:369:ASN:O	2.45	0.42
1:B:692:ILE:HG21	1:B:732:GLU:HG3	2.01	0.42
1:A:457:ILE:HA	1:A:505:ASN:OD1	2.20	0.42
1:A:24:VAL:HG13	1:A:65:PRO:HG3	2.02	0.42
1:A:786:ARG:O	1:A:789:ILE:HG22	2.19	0.42
1:B:99:ILE:HB	1:B:409:THR:HG22	2.00	0.42
1:B:282:ILE:CG1	1:B:286:LEU:HD12	2.50	0.42
1:A:89:LEU:O	1:A:93:VAL:HG23	2.20	0.42
1:B:486:ASN:O	1:B:490:ILE:HG13	2.20	0.42
1:B:504:THR:O	1:B:505:ASN:C	2.58	0.42
1:B:637:ARG:O	1:B:641:ILE:HD12	2.19	0.42
1:A:167:ARG:HG2	1:A:199:VAL:HA	2.01	0.42
1:A:692:ILE:O	1:A:693:PRO:C	2.57	0.42
1:B:800:LYS:O	1:B:801:GLN:HB2	2.20	0.42
1:A:512:ASP:OD2	3:A:1054:HOH:O	2.22	0.41
1:A:746:VAL:O	1:A:749:ARG:HG2	2.20	0.41
1:B:740:LEU:O	1:B:744:ILE:HG13	2.20	0.41
1:B:561:ARG:HB2	1:B:594:LEU:HD22	2.02	0.41
1:A:395:ASP:O	1:A:396:THR:OG1	2.35	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:789:ILE:HA	3:B:1142:HOH:O	2.20	0.41
1:A:103:ARG:NH1	1:A:573:GLY:O	2.53	0.41
1:A:719:PRO:HB2	1:A:722:GLU:HB2	2.01	0.41
1:A:751:GLU:HA	1:A:759:MET:HG3	2.03	0.41
1:B:79:PHE:HB3	1:B:81:MET:HE3	2.03	0.41
1:B:798:ASP:CG	1:B:800:LYS:O	2.59	0.41
1:A:32:GLU:OE1	1:A:82:ARG:NH1	2.53	0.41
1:A:144:ARG:HG3	1:A:148:GLU:OE1	2.17	0.41
1:A:574:ARG:HG3	3:A:1032:HOH:O	2.21	0.41
1:B:108:LYS:CB	2:B:901:ANP:HNB1	2.33	0.41
1:B:483:PHE:HB3	1:B:486:ASN:ND2	2.35	0.41
1:B:509:ARG:HB2	1:B:509:ARG:CZ	2.50	0.41
1:A:511:THR:HG22	1:A:512:ASP:O	2.21	0.41
1:A:538:LYS:HZ3	1:B:528:ASN:ND2	2.18	0.41
1:B:613:LYS:CB	1:B:614:PRO:CD	2.99	0.41
1:B:18:LEU:HD23	1:B:21:MET:HE3	2.04	0.40
1:A:418:MET:HE3	1:A:420:ARG:H	1.86	0.40
1:A:835:GLU:HG2	1:A:836:GLU:N	2.37	0.40
1:A:435:ILE:O	1:A:439:ILE:HG12	2.21	0.40
1:A:523:VAL:O	1:A:524:ALA:C	2.60	0.40
1:A:722:GLU:HB3	1:A:726:LYS:HZ2	1.86	0.40
3:A:1047:HOH:O	1:B:477:ASN:ND2	2.54	0.40
1:B:17:THR:HG22	1:B:21:MET:CE	2.51	0.40
1:B:747:TYR:HH	1:B:763:GLU:CD	2.08	0.40
1:B:782:MET:HE1	1:B:810:MET:HE1	2.03	0.40
1:A:741:ALA:HB2	3:A:1046:HOH:O	2.21	0.40
1:A:742:GLN:HE21	1:A:742:GLN:CA	2.30	0.40
1:B:114:LEU:HB2	1:B:115:PRO:CD	2.51	0.40
1:B:306:LEU:O	1:B:309:HIS:HB2	2.22	0.40
1:B:763:GLU:O	1:B:767:MET:HG3	2.21	0.40

All (2) 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)
3:A:972:HOH:O	3:A:999:HOH:O[1_455]	2.05	0.15
3:B:1057:HOH:O	3:B:1069:HOH:O[1_655]	2.16	0.04

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	687/853 (80%)	640 (93%)	32 (5%)	15 (2%)	6	2
1	B	716/853 (84%)	661 (92%)	38 (5%)	17 (2%)	6	2
All	All	1403/1706 (82%)	1301 (93%)	70 (5%)	32 (2%)	6	2

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	230	GLU
1	A	368	GLU
1	A	394	ALA
1	A	532	GLU
1	A	599	ALA
1	A	835	GLU
1	B	229	ALA
1	B	289	GLU
1	B	293	ASP
1	B	394	ALA
1	B	395	ASP
1	B	509	ARG
1	B	612	MET
1	B	796	GLN
1	B	801	GLN
1	A	510	GLY
1	A	790	HIS
1	B	367	ASN
1	B	507	ALA
1	A	393	THR
1	A	592	ASP
1	A	730	LEU
1	B	288	LYS
1	B	292	MET
1	B	614	PRO

Continued on next page...

WORLDWIDE PDB
PROTEIN DATA BANK

Continued from previous page...

Mol	Chain	Res	Type
1	B	619	GLU
1	B	719	PRO
1	A	614	PRO
1	A	619	GLU
1	A	800	LYS
1	B	793	GLY
1	A	603	VAL

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	586/728 (80%)	549 (94%)	37 (6%)	18	13
1	B	612/728 (84%)	560 (92%)	52 (8%)	10	6
All	All	1198/1456 (82%)	1109 (93%)	89 (7%)	13	9

All (89) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	14	ASN
1	A	16	ARG
1	A	19	ARG
1	A	22	ARG
1	A	37	LYS
1	A	56	LYS
1	A	72	ARG
1	A	76	LYS
1	A	226	SER
1	A	369	ASN
1	A	393	THR
1	A	409	THR
1	A	416	ARG
1	A	418	MET
1	A	460	GLU
1	A	461	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	506	MET
1	A	509	ARG
1	A	512	ASP
1	A	530	THR
1	A	535	GLU
1	A	563	GLU
1	A	592	ASP
1	A	661	SER
1	A	674	GLU
1	A	698	GLU
1	A	722	GLU
1	A	725	ASP
1	A	727	GLU
1	A	731	HIS
1	A	735	LEU
1	A	742	GLN
1	A	759	MET
1	A	797	LYS
1	A	800	LYS
1	A	816	GLU
1	A	817	SER
1	B	13	ARG
1	B	37	LYS
1	B	38	LEU
1	B	103	ARG
1	B	196	GLU
1	B	232	SER
1	B	284	GLU
1	B	285	LEU
1	B	286	LEU
1	B	288	LYS
1	B	292	MET
1	B	293	ASP
1	B	306	LEU
1	B	367	ASN
1	B	368	GLU
1	B	369	ASN
1	B	393	THR
1	B	431	GLU
1	B	506	MET
1	B	509	ARG
1	B	511	THR

Continued from previous page...

Mol	Chain	Res	Type
1	B	512	ASP
1	B	518	SER
1	B	523	VAL
1	B	526	LEU
1	B	528	ASN
1	B	595	MET
1	B	607	MET
1	B	612	MET
1	B	618	ILE
1	B	642	ARG
1	B	657	ARG
1	B	673	SER
1	B	685	LYS
1	B	708	GLU
1	B	718	LEU
1	B	720	ILE
1	B	723	TRP
1	B	725	ASP
1	B	727	GLU
1	B	742	GLN
1	B	743	SER
1	B	744	ILE
1	B	745	GLU
1	B	749	ARG
1	B	754	VAL
1	B	759	MET
1	B	779	LEU
1	B	785	LEU
1	B	794	TYR
1	B	797	LYS
1	B	831	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	484	HIS
1	A	486	ASN
1	A	533	GLN
1	A	629	ASN
1	A	638	ASN
1	A	662	GLN
1	A	707	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	731	HIS
1	A	742	GLN
1	B	180	ASN
1	B	303	ASN
1	B	369	ASN
1	B	484	HIS
1	B	520	GLN
1	B	528	ASN
1	B	578	GLN
1	B	629	ASN
1	B	638	ASN
1	B	644	GLN
1	B	664	ASN
1	B	742	GLN
1	B	761	HIS
1	B	787	GLN

5.3.3 RNA ⓘ

There are no RNA molecules 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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 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	ANP	B	901	-	29,33,33	4.09	14 (48%)	31,52,52	3.08	14 (45%)
2	ANP	A	900	-	29,33,33	2.45	6 (20%)	31,52,52	2.14	14 (45%)

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	ANP	B	901	-	-	4/14/38/38	0/3/3/3
2	ANP	A	900	-	-	8/14/38/38	0/3/3/3

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	901	ANP	PG-O1G	14.77	1.69	1.46
2	B	901	ANP	PG-N3B	10.58	1.91	1.63
2	A	900	ANP	PG-N3B	6.77	1.81	1.63
2	A	900	ANP	PB-N3B	5.92	1.78	1.63
2	A	900	ANP	O4'-C1'	5.33	1.48	1.41
2	A	900	ANP	PG-O1G	5.24	1.54	1.46
2	B	901	ANP	PB-O3A	4.66	1.64	1.59
2	B	901	ANP	O4'-C1'	4.43	1.47	1.41
2	B	901	ANP	PA-O5'	4.16	1.76	1.59
2	B	901	ANP	PG-O2G	4.10	1.67	1.56
2	B	901	ANP	PB-O2B	-4.09	1.45	1.56
2	B	901	ANP	C5'-C4'	3.43	1.62	1.51
2	A	900	ANP	C5-C4	3.02	1.48	1.40
2	B	901	ANP	PB-O1B	2.97	1.50	1.46
2	B	901	ANP	C2-N3	2.60	1.36	1.32
2	A	900	ANP	C2-N3	2.54	1.36	1.32
2	B	901	ANP	O4'-C4'	2.49	1.50	1.45
2	B	901	ANP	C6-C5	2.40	1.52	1.43
2	B	901	ANP	PB-N3B	2.40	1.69	1.63
2	B	901	ANP	C5-C4	2.02	1.46	1.40

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	901	ANP	O1G-PG-N3B	6.82	121.81	111.77
2	B	901	ANP	O3A-PB-N3B	-6.72	87.95	106.59

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	900	ANP	PB-O3A-PA	-4.94	115.22	132.62
2	B	901	ANP	O2G-PG-O3G	4.77	120.35	107.64
2	B	901	ANP	O5'-C5'-C4'	4.71	125.21	108.99
2	B	901	ANP	O4'-C1'-C2'	-4.67	100.11	106.93
2	A	900	ANP	N3-C2-N1	-4.09	122.28	128.68
2	B	901	ANP	O4'-C4'-C3'	-4.06	97.08	105.11
2	B	901	ANP	O4'-C4'-C5'	3.70	121.54	109.37
2	B	901	ANP	O3'-C3'-C2'	-3.59	100.22	111.82
2	B	901	ANP	O2B-PB-O1B	3.58	117.43	109.92
2	B	901	ANP	O1B-PB-N3B	-3.54	106.56	111.77
2	B	901	ANP	N3-C2-N1	-3.41	123.35	128.68
2	A	900	ANP	O2B-PB-O3A	3.33	115.75	104.64
2	A	900	ANP	O4'-C1'-C2'	-3.29	102.12	106.93
2	B	901	ANP	C2'-C3'-C4'	3.23	108.91	102.64
2	B	901	ANP	N6-C6-N1	2.86	124.51	118.57
2	A	900	ANP	O2G-PG-O3G	2.82	115.16	107.64
2	A	900	ANP	O1G-PG-N3B	-2.80	107.65	111.77
2	B	901	ANP	C5-C6-N6	-2.78	116.13	120.35
2	A	900	ANP	O2B-PB-O1B	-2.75	104.15	109.92
2	A	900	ANP	N6-C6-N1	2.48	123.72	118.57
2	A	900	ANP	O2G-PG-O1G	-2.40	107.41	113.45
2	A	900	ANP	C5-C6-N6	-2.40	116.70	120.35
2	A	900	ANP	O4'-C4'-C5'	2.24	116.73	109.37
2	A	900	ANP	O3A-PB-N3B	-2.17	100.56	106.59
2	A	900	ANP	C1'-N9-C4	2.17	130.45	126.64
2	A	900	ANP	O1B-PB-N3B	2.15	114.94	111.77

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	900	ANP	PB-N3B-PG-O1G
2	A	900	ANP	PA-O3A-PB-O1B
2	A	900	ANP	C5'-O5'-PA-O1A
2	A	900	ANP	C5'-O5'-PA-O2A
2	A	900	ANP	C5'-O5'-PA-O3A
2	B	901	ANP	PB-N3B-PG-O1G
2	B	901	ANP	PG-N3B-PB-O1B
2	B	901	ANP	O4'-C4'-C5'-O5'
2	A	900	ANP	O4'-C4'-C5'-O5'
2	A	900	ANP	C3'-C4'-C5'-O5'
2	B	901	ANP	C3'-C4'-C5'-O5'

Continued on next page...

Continued from previous page...

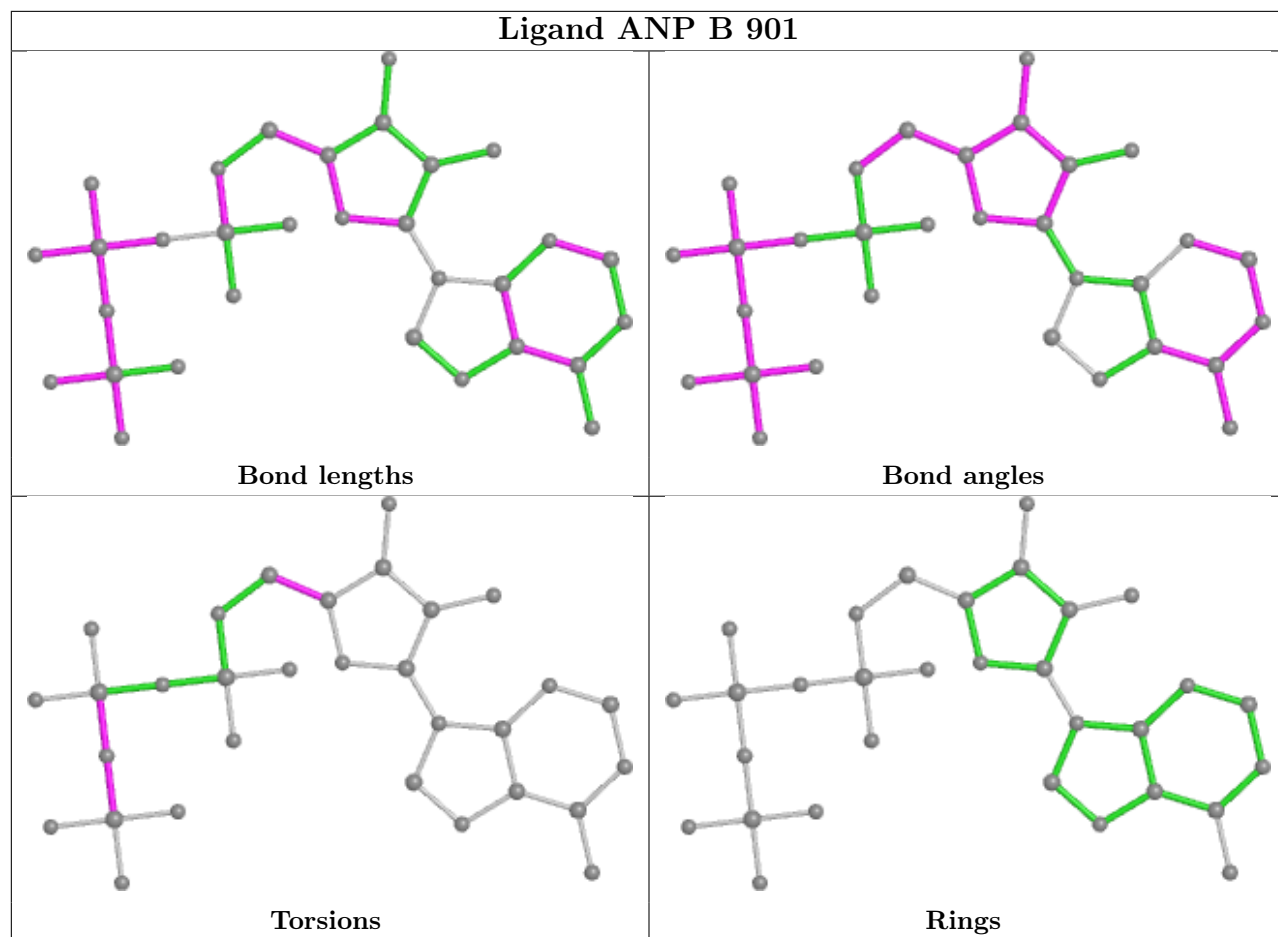| Mol	Chain	Res	Type	Atoms
2	A	900	ANP	PG-N3B-PB-O3A

There are no ring outliers.

2 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	901	ANP	7	0
2	A	900	ANP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ANP B 901

Bond lengths

Bond angles

Torsions

Rings

Ligand ANP A 900

Bond lengths

Bond angles

Torsions

Rings

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 ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

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

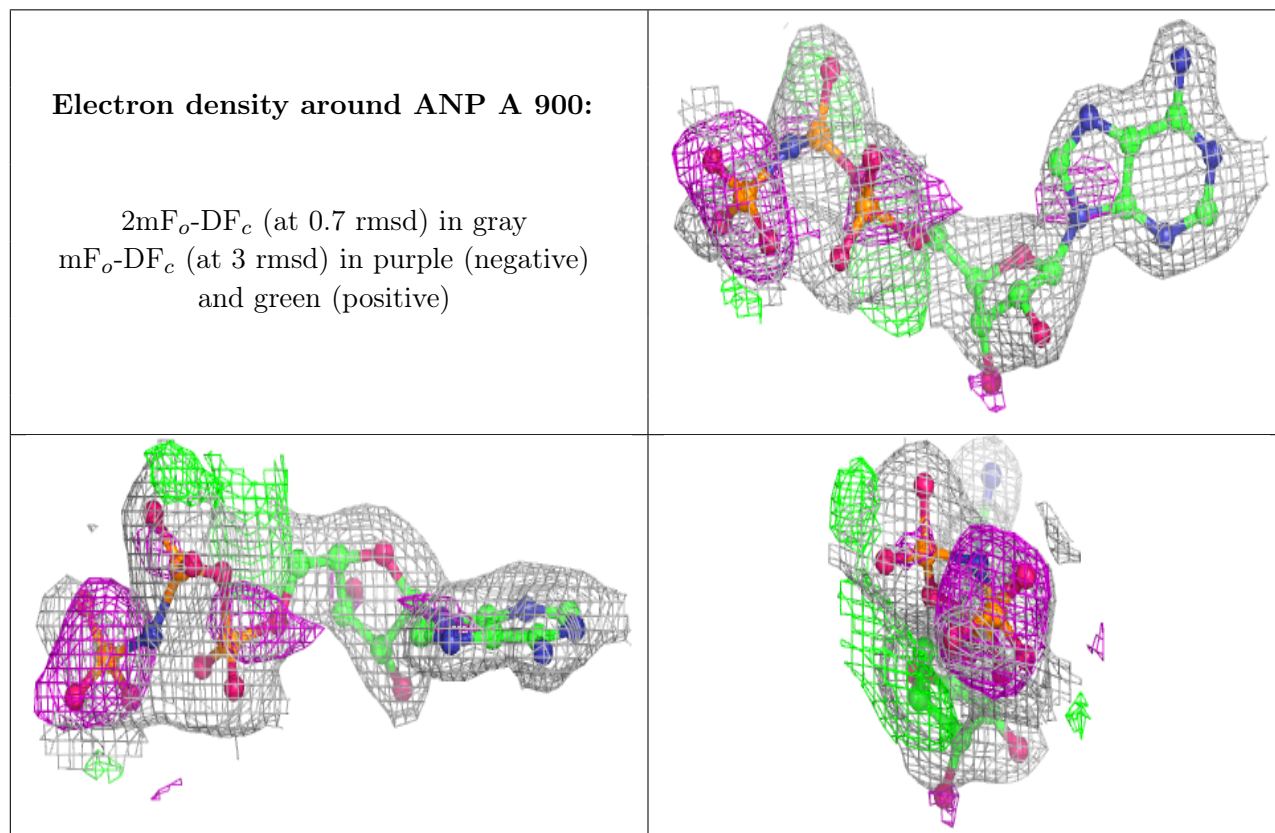Unable to reproduce the depositors R factor - this section is therefore empty.
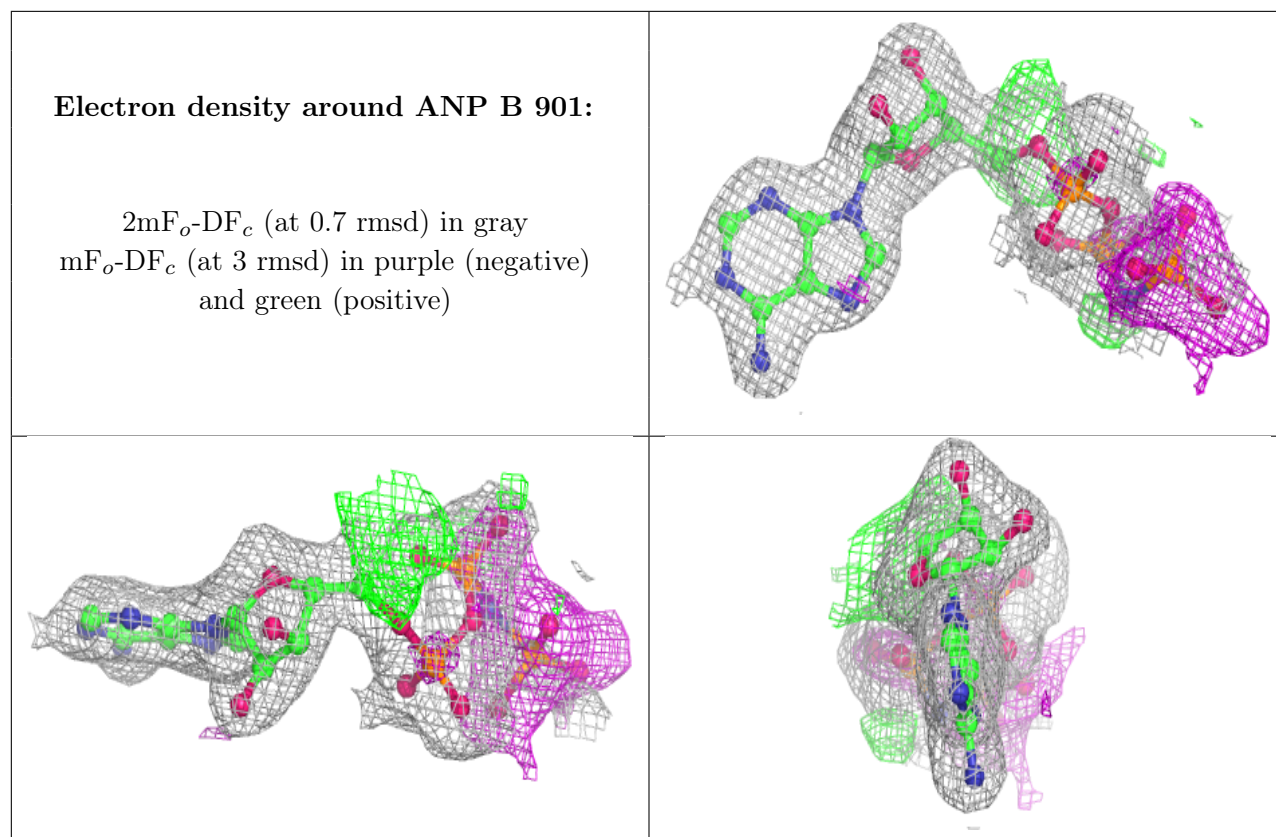
6.3 Carbohydrates ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around ANP A 900:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around ANP B 901:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

6.5　Other polymers ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.