Full wwPDB X-ray Structure Validation Report ⓘ

May 25, 2020 – 06:37 am BST

PDB ID	:	1MX0
Title	:	Structure of topoisomerase subunit
Authors	:	Corbett, K.D.; Berger, J.M.
Deposited on	:	2002-10-01
Resolution	:	2.30 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:

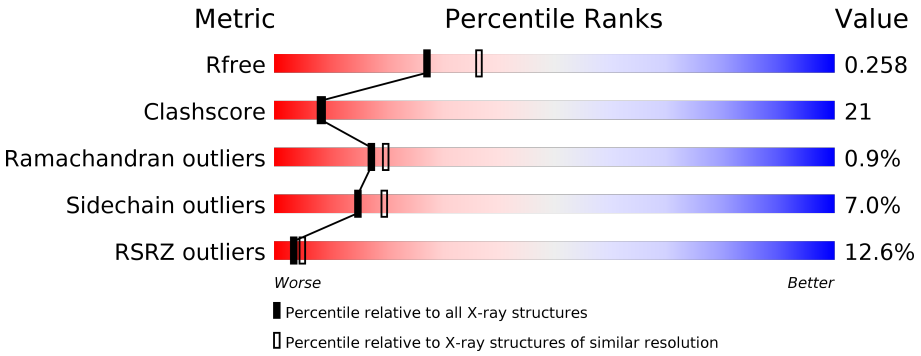
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

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 2.30 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}	130704	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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 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	472	9% 63% 31%
1	B	472	8% 64% 30%
1	C	472	7% 67% 29%
1	D	472	5% 71% 24%
1	E	472	10% 63% 30%
1	F	472	35% 40% 44% 11%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 23057 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 Type II DNA topoisomerase VI subunit B.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	461	Total	C	N	O	S	Se	0	0	0
			3704	2384	620	694	1	5			
1	B	455	Total	C	N	O	S	Se	0	0	0
			3651	2352	608	685	1	5			
1	C	466	Total	C	N	O	S	Se	0	0	0
			3738	2404	626	702	1	5			
1	D	461	Total	C	N	O	S	Se	0	0	0
			3687	2374	615	692	1	5			
1	E	456	Total	C	N	O	S	Se	0	0	0
			3677	2368	614	689	1	5			
1	F	454	Total	C	N	O	S	Se	0	0	0
			3596	2316	598	676	1	5			

There are 54 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	EXPRESSION TAG	UNP O05207
A	0	ALA	-	EXPRESSION TAG	UNP O05207
A	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
A	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
A	303	TYR	ASP	SEE REMARK 999	UNP O05207
A	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
A	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
A	435	ASP	ASN	SEE REMARK 999	UNP O05207
A	445	MSE	MET	MODIFIED RESIDUE	UNP O05207
B	-1	GLY	-	EXPRESSION TAG	UNP O05207
B	0	ALA	-	EXPRESSION TAG	UNP O05207
B	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
B	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
B	303	TYR	ASP	SEE REMARK 999	UNP O05207
B	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
B	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
B	435	ASP	ASN	SEE REMARK 999	UNP O05207

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	445	MSE	MET	MODIFIED RESIDUE	UNP O05207
C	-1	GLY	-	EXPRESSION TAG	UNP O05207
C	0	ALA	-	EXPRESSION TAG	UNP O05207
C	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
C	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
C	303	TYR	ASP	SEE REMARK 999	UNP O05207
C	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
C	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
C	435	ASP	ASN	SEE REMARK 999	UNP O05207
C	445	MSE	MET	MODIFIED RESIDUE	UNP O05207
D	-1	GLY	-	EXPRESSION TAG	UNP O05207
D	0	ALA	-	EXPRESSION TAG	UNP O05207
D	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
D	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
D	303	TYR	ASP	SEE REMARK 999	UNP O05207
D	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
D	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
D	435	ASP	ASN	SEE REMARK 999	UNP O05207
D	445	MSE	MET	MODIFIED RESIDUE	UNP O05207
E	-1	GLY	-	EXPRESSION TAG	UNP O05207
E	0	ALA	-	EXPRESSION TAG	UNP O05207
E	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
E	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
E	303	TYR	ASP	SEE REMARK 999	UNP O05207
E	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
E	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
E	435	ASP	ASN	SEE REMARK 999	UNP O05207
E	445	MSE	MET	MODIFIED RESIDUE	UNP O05207
F	-1	GLY	-	EXPRESSION TAG	UNP O05207
F	0	ALA	-	EXPRESSION TAG	UNP O05207
F	107	MSE	MET	MODIFIED RESIDUE	UNP O05207
F	121	MSE	MET	MODIFIED RESIDUE	UNP O05207
F	303	TYR	ASP	SEE REMARK 999	UNP O05207
F	409	MSE	MET	MODIFIED RESIDUE	UNP O05207
F	412	MSE	MET	MODIFIED RESIDUE	UNP O05207
F	435	ASP	ASN	SEE REMARK 999	UNP O05207
F	445	MSE	MET	MODIFIED RESIDUE	UNP O05207

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

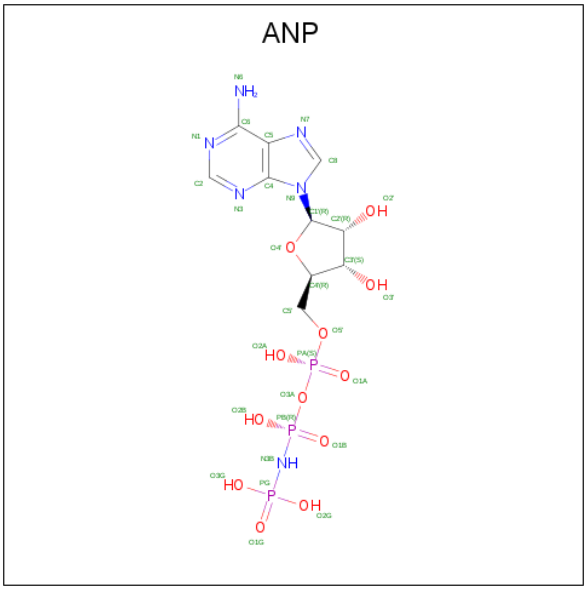
Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	D	1	Total Mg 1 1	0	0
2	E	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	A	1	Total Mg 1 1	0	0
2	F	1	Total Mg 1 1	0	0

- Molecule 3 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
3	A	1	Total C N O P 31 10 6 12 3	0	0
3	B	1	Total C N O P 31 10 6 12 3	0	0
3	C	1	Total C N O P 31 10 6 12 3	0	0
3	D	1	Total C N O P 31 10 6 12 3	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	E	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
3	F	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	D	1	Total	Na	0	0
			1	1		

- Molecule 5 is water.

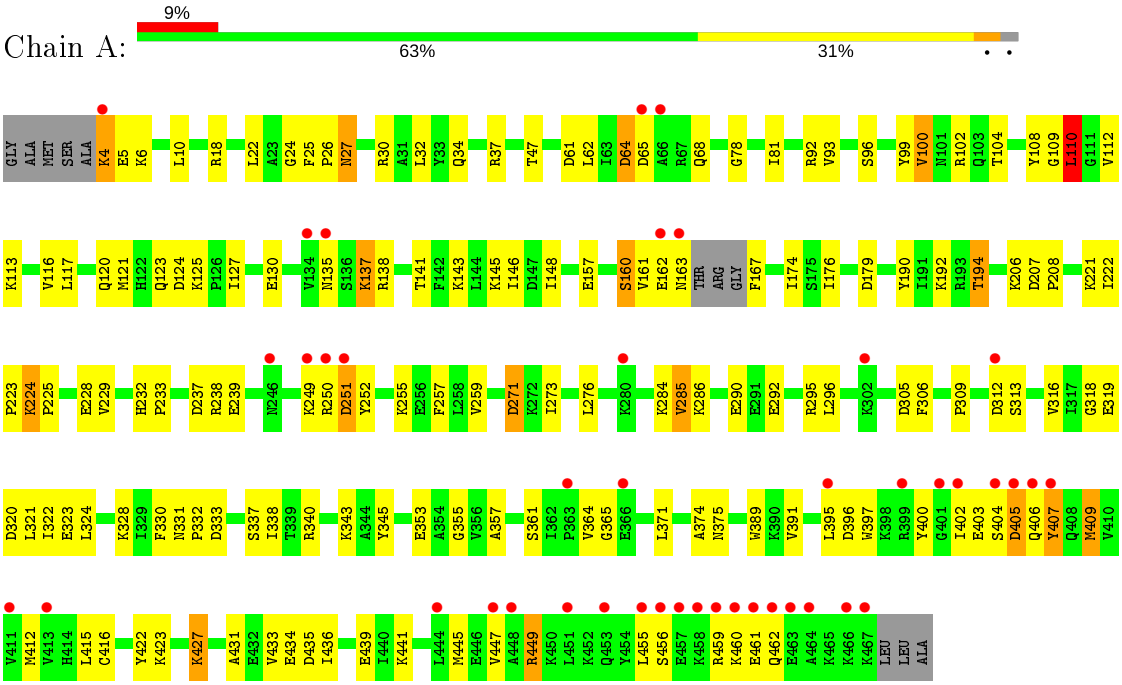
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	160	Total	O	0	0
			160	160		
5	B	145	Total	O	0	0
			145	145		
5	C	140	Total	O	0	0
			140	140		
5	D	160	Total	O	0	0
			160	160		
5	E	125	Total	O	0	0
			125	125		
5	F	81	Total	O	0	0
			81	81		

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.

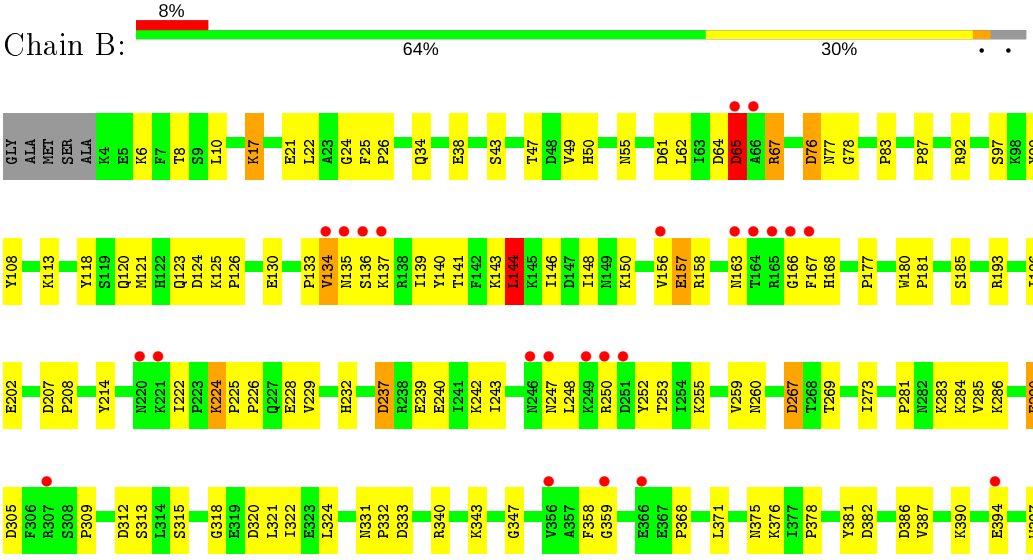
- Molecule 1: Type II DNA topoisomerase VI subunit B

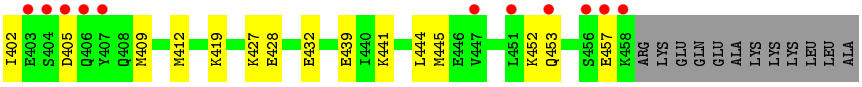
Chain A:



- Molecule 1: Type II DNA topoisomerase VI subunit B

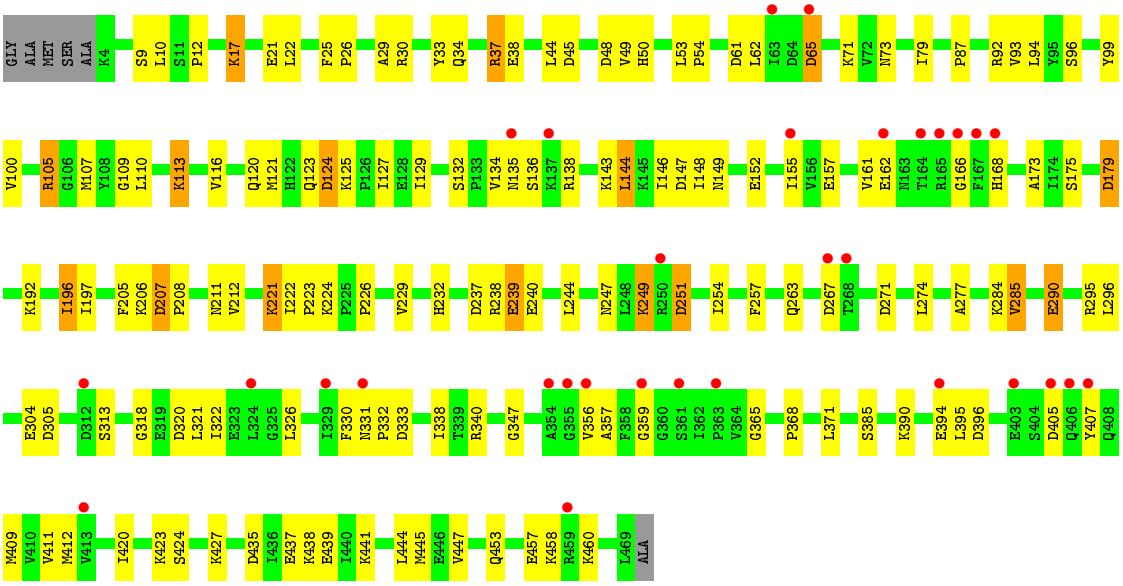
Chain B:





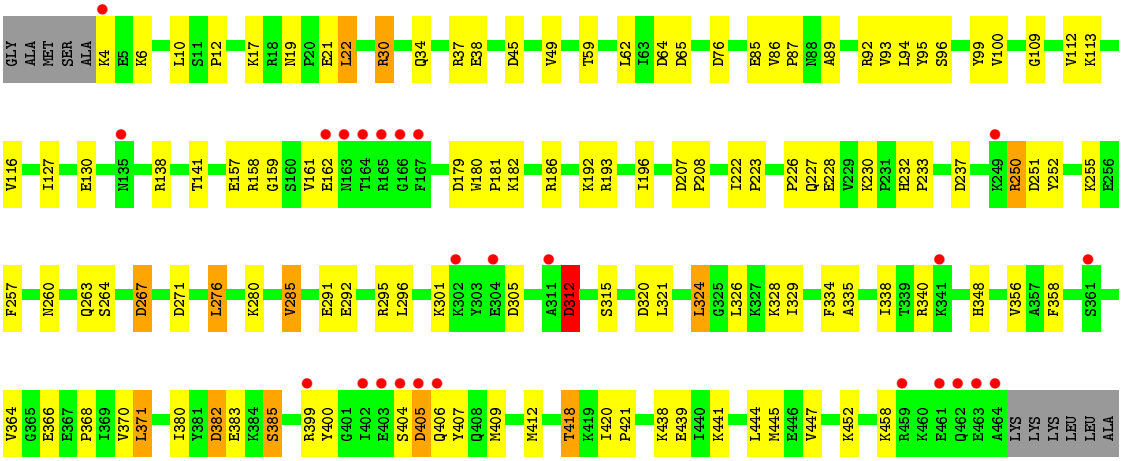
• Molecule 1: Type II DNA topoisomerase VI subunit B

Chain C:



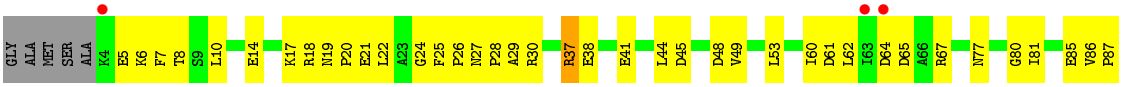
• Molecule 1: Type II DNA topoisomerase VI subunit B

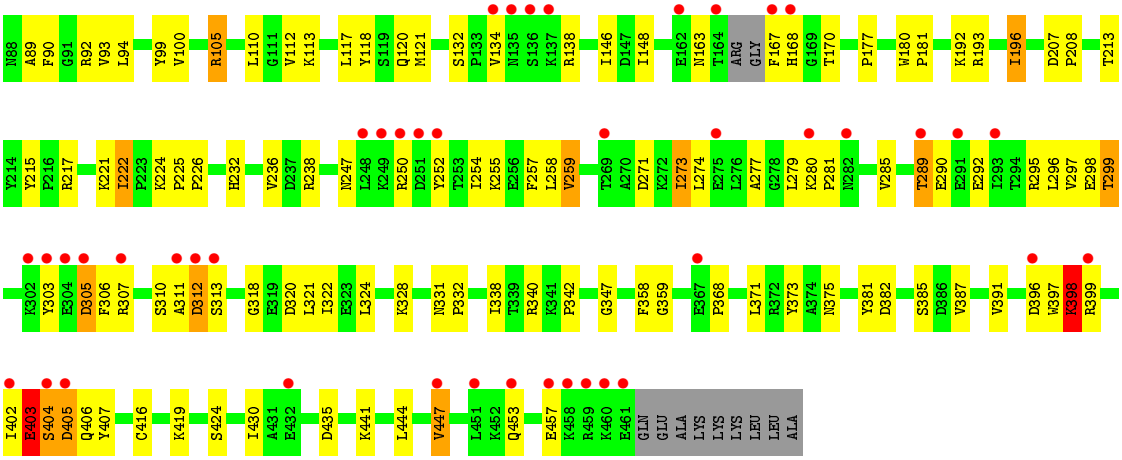
Chain D:



• Molecule 1: Type II DNA topoisomerase VI subunit B

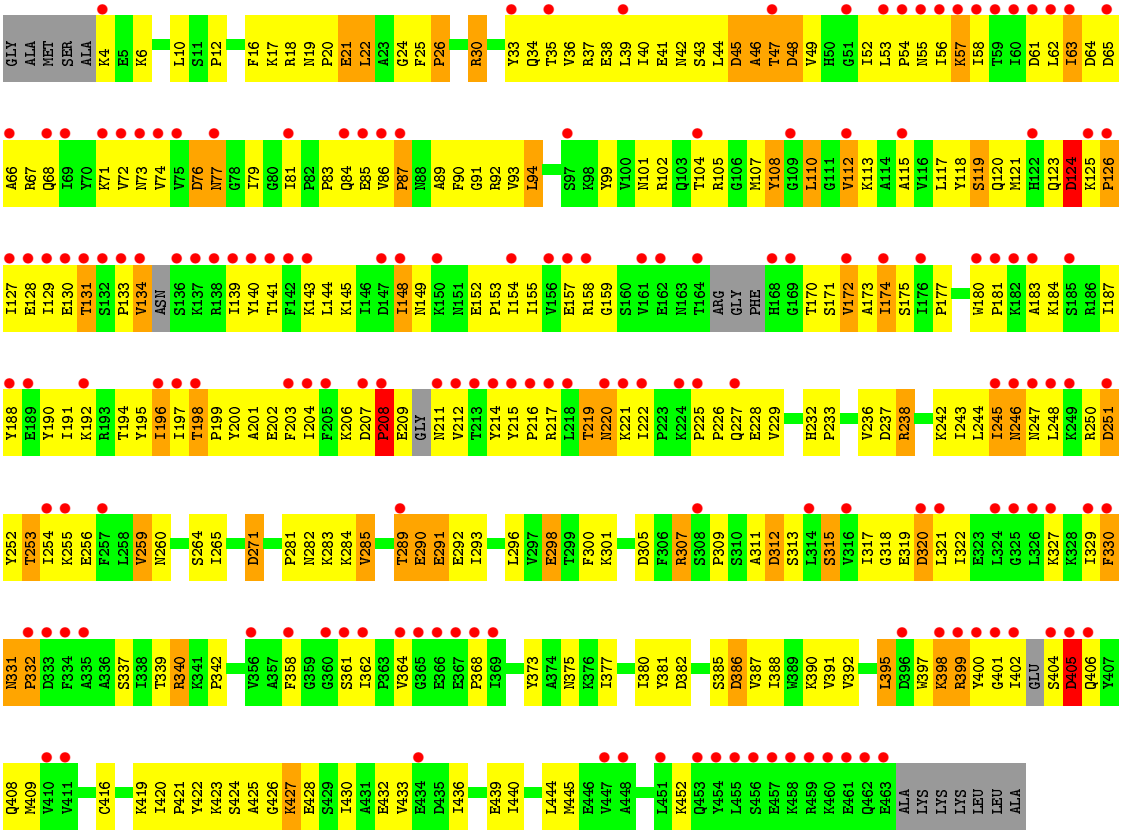
Chain E:





• Molecule 1: Type II DNA topoisomerase VI subunit B

Chain F:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	146.66Å 219.19Å 106.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 2.30 22.40 – 2.30	Depositor EDS
% Data completeness (in resolution range)	98.1 (20.00-2.30) 98.1 (22.40-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.11	Depositor
$< I/\sigma(I) >$ [1]	2.45 (at 2.31Å)	Xtriage
Refinement program	REFMAC 5.0	Depositor
R, R_{free}	0.214 , 0.263 0.216 , 0.258	Depositor DCC
R_{free} test set	12540 reflections (8.36%)	wwPDB-VP
Wilson B-factor (Å^2)	26.4	Xtriage
Anisotropy	0.171	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 40.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	23057	wwPDB-VP
Average B, all atoms (Å^2)	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.24% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NA, MG, 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	0.62	0/3779	0.81	13/5104 (0.3%)
1	B	0.64	0/3727	0.81	13/5038 (0.3%)
1	C	0.60	0/3814	0.79	16/5152 (0.3%)
1	D	0.62	0/3763	0.81	11/5087 (0.2%)
1	E	0.60	0/3752	0.81	14/5067 (0.3%)
1	F	0.48	1/3666 (0.0%)	0.80	16/4955 (0.3%)
All	All	0.59	1/22501 (0.0%)	0.81	83/30403 (0.3%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	108	TYR	CB-CG	-5.04	1.44	1.51

All (83) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	105	ARG	NE-CZ-NH2	-9.59	115.50	120.30
1	C	105	ARG	NE-CZ-NH2	-7.62	116.49	120.30
1	D	271	ASP	CB-CG-OD2	6.95	124.56	118.30
1	D	382	ASP	CB-CG-OD2	6.85	124.46	118.30
1	A	251	ASP	CB-CG-OD2	6.82	124.44	118.30
1	D	320	ASP	CB-CG-OD2	6.75	124.37	118.30
1	B	124	ASP	CB-CG-OD2	6.74	124.37	118.30
1	F	330	PHE	N-CA-C	-6.70	92.92	111.00
1	F	76	ASP	CB-CG-OD2	6.69	124.32	118.30
1	B	267	ASP	CB-CG-OD2	6.65	124.29	118.30
1	F	382	ASP	CB-CG-OD2	6.51	124.16	118.30
1	A	435	ASP	CB-CG-OD2	6.36	124.03	118.30
1	D	267	ASP	CB-CG-OD2	6.31	123.98	118.30
1	A	61	ASP	CB-CG-OD2	6.30	123.97	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	320	ASP	CB-CG-OD2	6.28	123.95	118.30
1	C	207	ASP	CB-CG-OD2	6.23	123.91	118.30
1	E	61	ASP	CB-CG-OD2	6.21	123.89	118.30
1	F	271	ASP	CB-CG-OD2	5.92	123.63	118.30
1	F	386	ASP	CB-CG-OD2	5.90	123.61	118.30
1	D	65	ASP	CB-CG-OD2	5.88	123.59	118.30
1	A	396	ASP	CB-CG-OD2	5.86	123.57	118.30
1	F	305	ASP	CB-CG-OD2	5.82	123.53	118.30
1	E	65	ASP	CB-CG-OD2	5.79	123.51	118.30
1	C	61	ASP	CB-CG-OD2	5.79	123.51	118.30
1	E	405	ASP	CB-CG-OD2	5.77	123.50	118.30
1	C	271	ASP	CB-CG-OD2	5.76	123.48	118.30
1	E	435	ASP	CB-CG-OD2	5.75	123.48	118.30
1	C	105	ARG	NE-CZ-NH1	5.73	123.17	120.30
1	C	435	ASP	CB-CG-OD2	5.71	123.44	118.30
1	A	405	ASP	CB-CG-OD2	5.70	123.42	118.30
1	C	320	ASP	CB-CG-OD2	5.69	123.42	118.30
1	D	64	ASP	CB-CG-OD2	5.66	123.39	118.30
1	E	271	ASP	CB-CG-OD2	5.61	123.35	118.30
1	A	271	ASP	CB-CG-OD2	5.60	123.34	118.30
1	D	405	ASP	CB-CG-OD2	5.54	123.29	118.30
1	C	65	ASP	CB-CG-OD2	5.54	123.28	118.30
1	B	320	ASP	CB-CG-OD2	5.48	123.23	118.30
1	C	124	ASP	CB-CG-OD2	5.47	123.23	118.30
1	B	76	ASP	CB-CG-OD2	5.45	123.20	118.30
1	A	110	LEU	CA-CB-CG	5.39	127.70	115.30
1	E	105	ARG	NE-CZ-NH1	5.38	122.99	120.30
1	F	61	ASP	CB-CG-OD2	5.37	123.13	118.30
1	B	65	ASP	CB-CG-OD2	5.35	123.12	118.30
1	F	45	ASP	CB-CG-OD2	5.35	123.12	118.30
1	B	386	ASP	CB-CG-OD2	5.35	123.11	118.30
1	D	76	ASP	CB-CG-OD2	5.35	123.11	118.30
1	F	48	ASP	CB-CG-OD2	5.34	123.11	118.30
1	B	305	ASP	CB-CG-OD2	5.32	123.09	118.30
1	C	305	ASP	CB-CG-OD2	5.32	123.09	118.30
1	C	237	ASP	CB-CG-OD2	5.30	123.07	118.30
1	C	396	ASP	CB-CG-OD2	5.29	123.06	118.30
1	A	124	ASP	CB-CG-OD2	5.27	123.04	118.30
1	B	237	ASP	CB-CG-OD2	5.27	123.04	118.30
1	F	251	ASP	CB-CG-OD2	5.27	123.04	118.30
1	A	179	ASP	CB-CG-OD2	5.25	123.03	118.30
1	E	305	ASP	CB-CG-OD2	5.25	123.02	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	312	ASP	CB-CG-OD2	5.22	123.00	118.30
1	F	320	ASP	CB-CG-OD2	5.21	122.99	118.30
1	E	64	ASP	CB-CG-OD2	5.21	122.99	118.30
1	E	403	GLU	CB-CA-C	5.21	120.81	110.40
1	C	147	ASP	CB-CG-OD2	5.20	122.98	118.30
1	A	64	ASP	CB-CG-OD2	5.19	122.97	118.30
1	A	305	ASP	CB-CG-OD2	5.18	122.96	118.30
1	B	405	ASP	CB-CG-OD2	5.17	122.96	118.30
1	E	396	ASP	CB-CG-OD2	5.17	122.96	118.30
1	F	108	TYR	CB-CA-C	-5.16	100.09	110.40
1	B	312	ASP	CB-CG-OD2	5.14	122.93	118.30
1	F	108	TYR	N-CA-C	5.13	124.84	111.00
1	C	251	ASP	CB-CG-OD2	5.11	122.90	118.30
1	E	45	ASP	CB-CG-OD2	5.11	122.90	118.30
1	B	144	LEU	CA-CB-CG	5.10	127.03	115.30
1	B	61	ASP	CB-CG-OD2	5.09	122.88	118.30
1	A	65	ASP	CB-CG-OD2	5.09	122.88	118.30
1	C	333	ASP	CB-CG-OD2	5.09	122.88	118.30
1	A	333	ASP	CB-CG-OD2	5.08	122.88	118.30
1	D	251	ASP	CB-CG-OD2	5.08	122.88	118.30
1	C	179	ASP	CB-CG-OD2	5.07	122.87	118.30
1	E	382	ASP	CB-CG-OD2	5.07	122.86	118.30
1	D	305	ASP	CB-CG-OD2	5.07	122.86	118.30
1	F	124	ASP	CB-CG-OD2	5.07	122.86	118.30
1	B	382	ASP	CB-CG-OD2	5.07	122.86	118.30
1	F	405	ASP	CB-CG-OD2	5.01	122.81	118.30
1	F	312	ASP	CB-CG-OD2	5.00	122.80	118.30

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	3704	0	3760	155	0
1	B	3651	0	3704	120	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	3738	0	3792	136	0
1	D	3687	0	3735	98	0
1	E	3677	0	3746	136	0
1	F	3596	0	3605	330	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
3	A	31	0	13	0	0
3	B	31	0	13	1	0
3	C	31	0	13	0	0
3	D	31	0	13	1	0
3	E	31	0	13	1	0
3	F	31	0	13	4	0
4	D	1	0	0	0	0
5	A	160	0	0	22	0
5	B	145	0	0	19	0
5	C	140	0	0	17	0
5	D	160	0	0	22	0
5	E	125	0	0	18	0
5	F	81	0	0	34	0
All	All	23057	0	22420	941	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 21.

All (941) 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:C:107:MSE:SE	1:C:107:MSE:CE	2.16	1.43
1:C:127:ILE:HD11	1:C:144:LEU:CD1	1.56	1.34
1:A:4:LYS:HD2	1:A:4:LYS:O	1.16	1.33
1:C:127:ILE:CD1	1:C:144:LEU:HD11	1.64	1.27
1:E:402:ILE:HG22	1:E:403:GLU:O	1.30	1.25
1:D:358:PHE:O	1:D:358:PHE:CD2	2.02	1.12
1:F:180:TRP:CG	1:F:208:PRO:HG2	1.84	1.12
1:F:203:PHE:HB2	1:F:215:TYR:HB2	1.31	1.10
1:F:53:LEU:HD23	1:F:222:ILE:HD11	1.25	1.10
1:C:238:ARG:HH22	1:C:290:GLU:HG3	1.04	1.07

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4:LYS:HG2	5:B:962:HOH:O	1.53	1.06
1:A:239:GLU:HG3	5:A:1044:HOH:O	1.54	1.06
1:F:119:SER:O	1:F:123:GLN:HG3	1.56	1.05
1:F:117:LEU:HD22	1:F:148:ILE:HD13	1.36	1.04
1:B:441:LYS:HE2	1:B:445:MSE:HE3	1.10	1.04
1:F:53:LEU:CD2	1:F:222:ILE:HD11	1.87	1.04
1:C:322:ILE:HG23	1:C:412:MSE:HE3	1.39	1.03
1:D:250:ARG:HH11	1:D:250:ARG:CG	1.69	1.02
1:C:238:ARG:NH2	1:C:290:GLU:HG3	1.73	1.02
1:E:192:LYS:HG3	5:E:1044:HOH:O	1.58	1.02
1:E:120:GLN:NE2	1:E:146:ILE:H	1.58	1.01
1:F:198:THR:O	1:F:198:THR:HG23	1.56	1.01
1:A:313:SER:HA	5:A:1031:HOH:O	1.59	1.00
1:F:364:VAL:HG22	1:F:408:GLN:OE1	1.63	0.98
1:A:4:LYS:CD	1:A:4:LYS:O	2.11	0.98
1:E:120:GLN:HE22	1:E:146:ILE:N	1.60	0.97
1:A:409:MSE:SE	5:A:1021:HOH:O	2.31	0.96
1:E:37:ARG:CG	1:E:37:ARG:HH11	1.79	0.96
1:A:120:GLN:HE22	1:A:146:ILE:H	1.14	0.96
1:A:403:GLU:HG2	1:A:404:SER:H	1.30	0.95
1:F:143:LYS:HG3	1:F:157:GLU:HB3	1.45	0.95
1:B:120:GLN:NE2	1:B:146:ILE:H	1.66	0.94
1:C:322:ILE:HG23	1:C:412:MSE:CE	1.96	0.94
1:E:312:ASP:HB3	5:E:1047:HOH:O	1.66	0.94
1:B:120:GLN:HE22	1:B:146:ILE:N	1.66	0.93
1:D:358:PHE:O	1:D:358:PHE:CG	2.21	0.93
1:F:180:TRP:CD2	1:F:208:PRO:HG2	2.04	0.93
1:A:37:ARG:HH22	1:A:427:LYS:HB2	1.33	0.92
1:B:121:MSE:HE2	5:B:941:HOH:O	1.70	0.92
1:B:441:LYS:HE2	1:B:445:MSE:CE	1.98	0.92
1:B:441:LYS:CE	1:B:445:MSE:HE3	1.98	0.91
1:F:253:THR:CG2	1:F:256:GLU:HG3	2.01	0.91
1:C:120:GLN:HE22	1:C:146:ILE:H	1.13	0.91
1:C:453:GLN:HE21	1:C:457:GLU:HG3	1.32	0.91
1:F:53:LEU:HD23	1:F:222:ILE:CD1	2.00	0.90
1:C:134:VAL:HG23	5:C:1000:HOH:O	1.72	0.90
1:D:250:ARG:HG2	1:D:250:ARG:HH11	1.35	0.90
1:B:139:ILE:HG13	1:B:163:ASN:HB3	1.53	0.89
1:F:92:ARG:O	1:F:113:LYS:HE2	1.71	0.89
1:F:141:THR:OG1	1:F:159:GLY:HA3	1.72	0.89
1:A:137:LYS:CD	1:A:137:LYS:H	1.83	0.89

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:213:THR:HG22	1:E:215:TYR:CE2	2.08	0.88
1:F:83:PRO:HG3	1:F:140:TYR:CE2	2.07	0.88
1:F:154:ILE:HG12	5:F:978:HOH:O	1.72	0.88
1:A:4:LYS:HD2	1:A:4:LYS:C	1.94	0.88
1:F:55:ASN:H	1:F:77:ASN:HD21	1.22	0.88
1:C:135:ASN:HB2	5:C:969:HOH:O	1.71	0.87
1:E:163:ASN:HD21	1:E:167:PHE:HB3	1.38	0.87
1:A:37:ARG:NH2	1:A:427:LYS:HB2	1.90	0.87
1:C:453:GLN:NE2	1:C:457:GLU:HG3	1.89	0.87
1:F:124:ASP:O	1:F:126:PRO:HD3	1.75	0.86
1:A:163:ASN:HB2	5:A:1024:HOH:O	1.75	0.86
1:B:136:SER:HB2	5:B:1008:HOH:O	1.74	0.86
1:B:340:ARG:HD3	1:B:439:GLU:OE2	1.76	0.86
1:E:213:THR:HG21	1:E:215:TYR:OH	1.75	0.86
1:A:229:VAL:HG11	1:A:313:SER:HB3	1.58	0.86
1:F:207:ASP:OD2	1:F:211:ASN:CB	2.23	0.86
1:F:198:THR:CG2	1:F:198:THR:O	2.22	0.85
1:A:138:ARG:HH21	1:A:160:SER:HB3	1.40	0.85
1:F:330:PHE:C	1:F:332:PRO:HD3	1.97	0.85
1:E:311:ALA:HB2	1:E:342:PRO:CG	2.07	0.85
1:A:397:TRP:CD2	1:A:409:MSE:HE1	2.12	0.84
1:B:130:GLU:HG2	1:B:141:THR:HG22	1.59	0.84
1:C:458:LYS:HD2	5:C:1008:HOH:O	1.76	0.84
1:F:127:ILE:HD12	1:F:174:ILE:HD13	1.58	0.84
1:F:229:VAL:HG11	1:F:313:SER:HB3	1.59	0.84
1:E:213:THR:CG2	1:E:215:TYR:CZ	2.60	0.84
1:D:179:ASP:OD2	1:D:182:LYS:HD2	1.78	0.83
1:F:381:TYR:HB2	1:F:428:GLU:HG3	1.60	0.83
1:C:17:LYS:NZ	1:C:121:MSE:HE3	1.93	0.83
1:F:206:LYS:HG3	1:F:211:ASN:O	1.77	0.83
1:C:277:ALA:O	1:C:295:ARG:HD2	1.76	0.83
1:A:137:LYS:HD2	1:A:137:LYS:H	1.44	0.83
1:A:316:VAL:HG13	1:A:353:GLU:CD	2.00	0.82
1:F:155:ILE:HG22	5:F:1013:HOH:O	1.80	0.82
1:A:123:GLN:NE2	1:A:125:LYS:H	1.77	0.82
1:E:295:ARG:CZ	5:E:1054:HOH:O	2.26	0.82
1:C:424:SER:HB2	5:C:1057:HOH:O	1.80	0.81
1:A:316:VAL:HG13	1:A:353:GLU:OE2	1.80	0.81
1:F:245:ILE:HG22	1:F:246:ASN:N	1.95	0.81
1:B:250:ARG:HH11	1:B:252:TYR:HE1	1.29	0.81
1:E:257:PHE:HB2	1:E:285:VAL:HG21	1.63	0.81

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:311:ALA:HB2	1:F:342:PRO:CG	2.10	0.81
1:E:295:ARG:O	1:E:299:THR:HG22	1.81	0.81
1:B:239:GLU:O	1:B:243:ILE:HD13	1.80	0.80
1:B:322:ILE:HG23	1:B:412:MSE:HE3	1.64	0.80
1:F:183:ALA:O	1:F:187:ILE:HG13	1.82	0.80
1:B:445:MSE:HE2	5:B:1048:HOH:O	1.80	0.79
1:C:322:ILE:CG2	1:C:412:MSE:HE3	2.11	0.79
1:E:132:SER:O	1:E:168:HIS:HA	1.81	0.79
1:F:206:LYS:HA	1:F:211:ASN:O	1.82	0.79
1:E:311:ALA:HB2	1:E:342:PRO:HG2	1.63	0.79
1:E:37:ARG:HG3	1:E:37:ARG:HH11	1.47	0.79
1:F:327:LYS:HA	1:F:332:PRO:HD2	1.62	0.79
1:C:249:LYS:HA	1:C:249:LYS:HE2	1.63	0.79
1:D:250:ARG:HH11	1:D:250:ARG:HG3	1.44	0.78
1:C:120:GLN:HE22	1:C:146:ILE:N	1.80	0.78
1:A:331:ASN:N	1:A:332:PRO:HD3	1.98	0.78
1:C:127:ILE:CD1	1:C:144:LEU:CD1	2.39	0.78
1:F:253:THR:HG23	1:F:256:GLU:HB2	1.65	0.78
3:F:950:ANP:H2'	5:F:951:HOH:O	1.83	0.78
1:A:130:GLU:HG2	1:A:141:THR:HG22	1.65	0.78
1:F:117:LEU:HD22	1:F:148:ILE:CD1	2.12	0.78
1:F:207:ASP:OD2	1:F:211:ASN:HB3	1.84	0.77
1:E:213:THR:HG22	1:E:215:TYR:CZ	2.19	0.77
1:F:127:ILE:HD12	1:F:174:ILE:CD1	2.15	0.77
1:F:77:ASN:HD22	1:F:77:ASN:H	1.31	0.77
1:C:407:TYR:HB3	5:C:1004:HOH:O	1.84	0.77
1:A:338:ILE:HG22	1:A:447:VAL:CG1	2.15	0.77
1:C:116:VAL:HG22	1:C:127:ILE:HG21	1.65	0.76
1:D:127:ILE:CG2	5:D:1080:HOH:O	2.33	0.76
1:F:55:ASN:H	1:F:77:ASN:ND2	1.82	0.76
1:F:126:PRO:HG3	1:F:145:LYS:HE3	1.65	0.76
1:C:453:GLN:HE21	1:C:457:GLU:CG	1.98	0.76
1:F:196:ILE:HG12	1:F:329:ILE:HD11	1.68	0.76
1:A:397:TRP:CE3	1:A:409:MSE:HE1	2.20	0.76
1:E:213:THR:HG21	1:E:215:TYR:CZ	2.20	0.75
1:F:131:THR:HG22	1:F:170:THR:OG1	1.85	0.75
1:F:311:ALA:HB2	1:F:342:PRO:HG3	1.67	0.75
1:F:53:LEU:CD2	1:F:222:ILE:CD1	2.60	0.75
1:F:39:LEU:HB3	1:F:74:VAL:HG21	1.68	0.75
1:E:60:ILE:HB	1:E:208:PRO:HD3	1.68	0.75
1:D:59:THR:HG23	5:D:1038:HOH:O	1.87	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:207:ASP:OD2	1:F:211:ASN:HB2	1.87	0.74
1:E:221:LYS:HE2	5:E:1045:HOH:O	1.86	0.74
1:F:117:LEU:CD2	1:F:148:ILE:HD13	2.14	0.74
1:F:127:ILE:CD1	1:F:174:ILE:HD13	2.18	0.74
1:A:224:LYS:HD2	5:A:1026:HOH:O	1.88	0.74
1:C:390:LYS:HE2	1:C:437:GLU:OE2	1.88	0.74
1:D:280:LYS:HG3	5:D:1089:HOH:O	1.88	0.74
1:F:58:ILE:HG12	1:F:74:VAL:HG22	1.70	0.74
1:B:381:TYR:HB2	1:B:428:GLU:HG3	1.69	0.73
1:A:338:ILE:HG22	1:A:447:VAL:HG13	1.70	0.73
1:F:422:TYR:CG	1:F:427:LYS:HB3	2.22	0.73
1:D:127:ILE:HG23	5:D:1080:HOH:O	1.87	0.73
1:C:127:ILE:CG1	1:C:144:LEU:HD12	2.19	0.73
1:F:117:LEU:CD2	1:F:148:ILE:CD1	2.66	0.73
1:F:207:ASP:HB2	1:F:208:PRO:HD2	1.70	0.73
1:A:120:GLN:HE22	1:A:146:ILE:N	1.86	0.73
1:D:338:ILE:HG12	1:D:447:VAL:HG13	1.70	0.73
1:E:38:GLU:OE2	5:E:976:HOH:O	2.06	0.73
1:C:127:ILE:CG1	1:C:144:LEU:CD1	2.66	0.73
1:F:422:TYR:CD1	1:F:427:LYS:HB3	2.23	0.73
1:F:253:THR:HG23	1:F:256:GLU:CB	2.19	0.72
1:C:120:GLN:NE2	1:C:146:ILE:H	1.85	0.72
1:B:390:LYS:HE3	1:B:394:GLU:OE2	1.89	0.72
1:C:332:PRO:HA	1:C:359:GLY:O	1.89	0.72
5:C:950:HOH:O	1:D:6:LYS:HD3	1.89	0.72
1:E:37:ARG:HG2	1:E:37:ARG:HH11	1.54	0.72
1:F:245:ILE:HG22	1:F:246:ASN:H	1.54	0.72
1:F:358:PHE:O	1:F:358:PHE:CG	2.41	0.72
1:B:226:PRO:HG3	1:B:315:SER:HB2	1.72	0.72
1:F:37:ARG:HG3	1:F:190:TYR:CE1	2.23	0.72
1:C:441:LYS:HE2	1:C:445:MSE:CE	2.20	0.72
1:E:192:LYS:CE	5:E:1044:HOH:O	2.38	0.72
1:C:207:ASP:HB2	1:C:208:PRO:CD	2.19	0.72
1:F:192:LYS:HG3	5:F:985:HOH:O	1.89	0.72
1:F:66:ALA:C	1:F:68:GLN:H	1.93	0.71
1:C:123:GLN:HE22	1:C:125:LYS:HB2	1.55	0.71
1:F:253:THR:CG2	1:F:256:GLU:CG	2.67	0.71
1:A:192:LYS:HE2	5:A:1033:HOH:O	1.90	0.71
1:B:453:GLN:HE21	1:B:457:GLU:HG3	1.56	0.71
1:C:107:MSE:HE1	1:C:420:ILE:H	1.56	0.71
1:D:368:PRO:HG3	1:D:409:MSE:HE3	1.70	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:54:PRO:HB2	1:F:201:ALA:HB1	1.73	0.71
1:C:229:VAL:HG11	1:C:313:SER:HB3	1.72	0.71
1:F:36:VAL:O	1:F:40:ILE:HD13	1.91	0.71
1:F:264:SER:HA	1:F:307:ARG:HH11	1.55	0.71
1:A:137:LYS:HD2	1:A:137:LYS:N	2.02	0.71
1:C:368:PRO:HG3	1:C:409:MSE:HE3	1.71	0.70
1:F:130:GLU:HB2	1:F:171:SER:HB3	1.71	0.70
1:E:37:ARG:HG3	1:E:37:ARG:NH1	2.06	0.70
1:D:116:VAL:HG22	1:D:127:ILE:HG21	1.74	0.70
1:F:245:ILE:O	1:F:247:ASN:N	2.24	0.70
1:F:398:LYS:O	1:F:400:TYR:N	2.25	0.70
1:C:17:LYS:HZ2	1:C:121:MSE:HE3	1.56	0.70
1:E:167:PHE:HA	5:E:1062:HOH:O	1.90	0.70
1:F:195:TYR:HA	1:F:198:THR:HG22	1.74	0.70
1:F:340:ARG:HD3	1:F:439:GLU:OE2	1.90	0.70
1:B:240:GLU:HA	5:B:1054:HOH:O	1.91	0.70
1:E:163:ASN:ND2	1:E:167:PHE:HB3	2.06	0.69
1:C:127:ILE:HD11	1:C:144:LEU:HD11	0.75	0.69
1:F:86:VAL:N	1:F:87:PRO:CD	2.56	0.69
1:A:27:ASN:ND2	1:A:30:ARG:H	1.89	0.69
1:B:77:ASN:O	1:B:168:HIS:CE1	2.46	0.69
1:F:194:THR:CG2	5:F:975:HOH:O	2.41	0.69
1:F:296:LEU:HD21	1:F:300:PHE:CZ	2.28	0.69
1:F:42:ASN:ND2	5:F:982:HOH:O	2.16	0.69
1:C:407:TYR:CD2	1:C:409:MSE:HE2	2.28	0.69
1:F:110:LEU:N	1:F:110:LEU:HD13	2.08	0.69
1:F:207:ASP:O	1:F:209:GLU:N	2.26	0.69
1:C:330:PHE:HA	5:C:945:HOH:O	1.92	0.68
1:F:141:THR:OG1	1:F:159:GLY:CA	2.41	0.68
1:F:289:THR:HG22	1:F:292:GLU:CD	2.13	0.68
1:F:408:GLN:HB3	5:F:1015:HOH:O	1.92	0.68
1:F:83:PRO:CG	1:F:140:TYR:CE2	2.75	0.68
1:A:4:LYS:CG	5:B:962:HOH:O	2.23	0.68
1:A:252:TYR:O	1:A:285:VAL:HG23	1.93	0.68
1:D:252:TYR:O	1:D:285:VAL:HG23	1.94	0.68
1:F:110:LEU:N	1:F:110:LEU:CD1	2.56	0.68
1:F:24:GLY:C	1:F:26:PRO:HD3	2.14	0.68
1:B:387:VAL:HG11	1:B:432:GLU:HA	1.74	0.68
1:E:192:LYS:HE3	5:E:1044:HOH:O	1.93	0.68
1:E:279:LEU:HD21	1:E:292:GLU:HB3	1.76	0.68
1:D:30:ARG:HD2	5:D:1022:HOH:O	1.93	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:127:ILE:CD1	1:F:174:ILE:CD1	2.72	0.67
1:F:4:LYS:HG3	5:F:1016:HOH:O	1.94	0.67
1:F:54:PRO:HB2	1:F:201:ALA:CB	2.25	0.67
1:D:364:VAL:HG12	1:D:406:GLN:HG2	1.76	0.67
1:D:340:ARG:HD3	1:D:439:GLU:OE2	1.95	0.67
1:B:322:ILE:HG23	1:B:412:MSE:CE	2.25	0.67
1:E:405:ASP:OD1	1:E:406:GLN:N	2.27	0.67
1:F:226:PRO:HG3	1:F:315:SER:HB3	1.74	0.67
1:C:251:ASP:OD1	1:C:284:LYS:HD2	1.95	0.67
1:B:107:MSE:HE2	1:B:108:TYR:CE1	2.30	0.66
1:F:425:ALA:C	1:F:427:LYS:H	1.97	0.66
1:F:203:PHE:HB2	1:F:215:TYR:CB	2.20	0.66
1:F:253:THR:CG2	1:F:256:GLU:HB2	2.25	0.66
1:F:289:THR:HG23	1:F:292:GLU:H	1.59	0.66
1:C:249:LYS:HA	1:C:249:LYS:CE	2.25	0.66
1:F:83:PRO:HG3	1:F:140:TYR:CD2	2.30	0.66
1:F:54:PRO:O	1:F:202:GLU:N	2.26	0.66
1:B:150:LYS:HE3	5:B:996:HOH:O	1.95	0.66
1:C:229:VAL:HG11	1:C:313:SER:CB	2.25	0.66
1:F:358:PHE:O	1:F:358:PHE:CD2	2.49	0.66
1:F:53:LEU:HD21	1:F:222:ILE:HG13	1.78	0.65
1:B:259:VAL:HG23	1:B:260:ASN:OD1	1.96	0.65
1:D:348:HIS:HB3	1:D:418:THR:HG22	1.77	0.65
1:A:125:LYS:HD3	5:A:1023:HOH:O	1.95	0.65
1:F:243:ILE:O	1:F:247:ASN:HB2	1.97	0.65
1:A:92:ARG:O	1:A:113:LYS:HE3	1.97	0.65
1:E:277:ALA:HB2	1:E:299:THR:HG21	1.78	0.65
1:C:121:MSE:CE	1:D:237:ASP:OD2	2.45	0.65
1:C:407:TYR:CE2	1:C:409:MSE:CE	2.80	0.65
1:D:21:GLU:CD	1:D:21:GLU:H	1.99	0.65
1:E:453:GLN:HE21	1:E:457:GLU:HG3	1.60	0.65
1:F:219:THR:CG2	1:F:221:LYS:HB3	2.26	0.65
1:A:123:GLN:HE22	1:A:125:LYS:HB2	1.60	0.65
1:F:86:VAL:H	1:F:87:PRO:CD	2.10	0.65
1:E:391:VAL:HG13	1:E:441:LYS:HG2	1.79	0.65
1:F:391:VAL:HG11	1:F:440:ILE:HG22	1.79	0.64
1:F:39:LEU:CB	1:F:74:VAL:HG21	2.27	0.64
1:B:134:VAL:HG12	1:B:134:VAL:O	1.96	0.64
1:C:453:GLN:NE2	1:C:457:GLU:CG	2.60	0.64
1:F:255:LYS:HE2	5:F:970:HOH:O	1.98	0.64
1:A:330:PHE:O	1:A:361:SER:HB2	1.96	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:223:PRO:O	1:C:224:LYS:C	2.35	0.64
1:F:245:ILE:O	1:F:246:ASN:C	2.35	0.64
1:F:387:VAL:HG12	1:F:430:ILE:HB	1.79	0.64
1:D:280:LYS:CG	5:D:1089:HOH:O	2.44	0.64
1:A:345:TYR:CG	1:A:436:ILE:HD11	2.33	0.64
1:D:89:ALA:O	1:D:113:LYS:HE3	1.98	0.64
1:A:403:GLU:HG2	1:A:404:SER:N	2.07	0.64
1:D:364:VAL:CG1	1:D:406:GLN:HG2	2.28	0.64
1:F:118:TYR:HA	1:F:121:MSE:HE2	1.81	0.64
1:D:250:ARG:HG2	1:D:250:ARG:NH1	2.07	0.63
1:E:192:LYS:HD2	5:E:1050:HOH:O	1.97	0.63
1:D:257:PHE:HB2	1:D:285:VAL:HG21	1.81	0.63
1:D:179:ASP:OD2	1:D:182:LYS:CD	2.45	0.63
1:F:180:TRP:HB3	1:F:181:PRO:HD3	1.79	0.63
1:A:123:GLN:NE2	1:A:125:LYS:HB2	2.14	0.63
1:C:441:LYS:HE2	1:C:445:MSE:HE1	1.81	0.63
1:C:121:MSE:HE3	1:D:237:ASP:OD2	1.98	0.63
3:F:950:ANP:C2'	5:F:951:HOH:O	2.43	0.63
1:E:324:LEU:HD21	1:E:328:LYS:HE3	1.80	0.63
1:E:53:LEU:HD23	1:E:222:ILE:HG13	1.79	0.63
1:F:58:ILE:HA	1:F:73:ASN:O	1.97	0.63
1:A:206:LYS:HE2	5:A:981:HOH:O	1.98	0.63
1:C:17:LYS:HZ3	1:C:121:MSE:HE3	1.64	0.63
1:A:460:LYS:HD2	5:A:998:HOH:O	1.99	0.63
1:B:248:LEU:HD22	1:B:252:TYR:CE2	2.34	0.63
1:D:207:ASP:HB2	1:D:208:PRO:CD	2.28	0.63
1:E:120:GLN:HE22	1:E:146:ILE:H	0.77	0.62
1:F:207:ASP:CG	1:F:211:ASN:HB2	2.20	0.62
1:F:34:GLN:O	1:F:38:GLU:HG2	1.99	0.62
1:F:35:THR:O	1:F:39:LEU:HG	1.98	0.62
1:A:120:GLN:NE2	1:A:146:ILE:H	1.92	0.62
1:D:4:LYS:N	5:D:997:HOH:O	2.31	0.62
1:F:368:PRO:HG3	1:F:409:MSE:HE3	1.81	0.62
1:D:255:LYS:NZ	1:D:267:ASP:OD1	2.32	0.62
1:F:57:LYS:HB3	1:F:204:ILE:HB	1.82	0.62
1:A:167:PHE:N	5:A:1054:HOH:O	2.32	0.62
1:C:240:GLU:HG3	1:D:17:LYS:HE3	1.82	0.62
1:A:222:ILE:HG13	1:A:223:PRO:HD2	1.82	0.62
1:B:387:VAL:CG1	1:B:432:GLU:HA	2.29	0.62
1:C:221:LYS:HD2	1:C:222:ILE:N	2.14	0.62
1:F:408:GLN:CA	5:F:1015:HOH:O	2.47	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:292:GLU:HG2	1:A:295:ARG:HH21	1.64	0.62
1:F:149:ASN:N	5:F:969:HOH:O	2.31	0.62
1:F:197:ILE:C	1:F:199:PRO:HD3	2.20	0.62
1:F:139:ILE:O	1:F:139:ILE:HG22	2.00	0.62
1:F:289:THR:OG1	1:F:291:GLU:HG2	2.00	0.61
1:F:53:LEU:CG	1:F:222:ILE:HD11	2.30	0.61
1:B:139:ILE:CG1	1:B:163:ASN:HB3	2.26	0.61
1:B:240:GLU:CA	5:B:1054:HOH:O	2.48	0.61
1:D:92:ARG:O	1:D:113:LYS:HE2	2.00	0.61
1:C:127:ILE:HG12	1:C:144:LEU:HD12	1.81	0.61
1:C:340:ARG:HD3	1:C:439:GLU:OE2	2.00	0.61
1:E:318:GLY:O	1:E:322:ILE:HG13	1.98	0.61
1:D:292:GLU:HG2	1:D:295:ARG:NH2	2.16	0.61
1:B:232:HIS:O	1:B:347:GLY:HA2	1.99	0.61
1:E:398:LYS:HD2	5:E:1005:HOH:O	1.99	0.61
1:F:33:TYR:O	1:F:33:TYR:CD2	2.54	0.61
1:F:53:LEU:HD23	1:F:222:ILE:CG1	2.30	0.61
1:C:123:GLN:NE2	1:C:125:LYS:HB2	2.16	0.61
1:E:14:GLU:CG	1:E:148:ILE:HG22	2.31	0.61
1:A:26:PRO:HD2	1:A:30:ARG:HG2	1.83	0.61
1:A:403:GLU:CG	1:A:404:SER:H	2.07	0.61
1:F:206:LYS:CG	1:F:211:ASN:O	2.48	0.60
1:F:53:LEU:CD2	1:F:222:ILE:CG1	2.79	0.60
1:F:4:LYS:HE3	5:F:991:HOH:O	2.01	0.60
1:F:227:GLN:HB2	5:F:976:HOH:O	2.01	0.60
1:F:253:THR:HG23	1:F:256:GLU:H	1.65	0.60
1:C:390:LYS:O	1:C:394:GLU:HG3	2.01	0.60
1:E:419:LYS:NZ	1:F:18:ARG:O	2.31	0.60
1:A:343:LYS:HE2	5:A:950:HOH:O	2.00	0.60
1:B:269:THR:O	1:B:273:ILE:HG12	2.01	0.60
1:C:238:ARG:HH22	1:C:290:GLU:CG	1.97	0.60
1:C:50:HIS:CD2	1:C:79:ILE:HD13	2.36	0.60
1:F:339:THR:HG22	1:F:339:THR:O	2.01	0.60
1:A:6:LYS:O	1:B:97:SER:HA	2.01	0.60
1:F:86:VAL:N	1:F:87:PRO:HD2	2.16	0.60
1:F:253:THR:OG1	1:F:282:ASN:HA	2.01	0.60
1:A:400:TYR:OH	1:A:445:MSE:HG2	2.01	0.60
1:A:445:MSE:O	1:A:449:ARG:HD3	2.01	0.60
1:F:245:ILE:O	1:F:248:LEU:N	2.31	0.60
1:F:408:GLN:C	5:F:1015:HOH:O	2.40	0.60
1:E:48:ASP:OD1	1:E:105:ARG:NH2	2.30	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:196:ILE:CG1	1:F:329:ILE:HD11	2.32	0.60
1:F:86:VAL:H	1:F:87:PRO:HD2	1.66	0.60
1:A:316:VAL:CG1	1:A:353:GLU:OE2	2.50	0.60
1:F:253:THR:HG23	1:F:256:GLU:HG3	1.84	0.59
1:B:43:SER:HB3	1:B:76:ASP:HB3	1.84	0.59
1:E:295:ARG:NH1	5:E:1054:HOH:O	2.33	0.59
1:E:8:THR:HG23	1:F:99:TYR:HD2	1.67	0.59
1:A:123:GLN:NE2	1:A:125:LYS:N	2.49	0.59
1:F:37:ARG:HG3	1:F:190:TYR:CZ	2.37	0.59
1:F:433:VAL:HB	1:F:436:ILE:HD12	1.85	0.59
1:B:453:GLN:HE21	1:B:457:GLU:CG	2.16	0.59
1:F:289:THR:HG23	1:F:292:GLU:N	2.18	0.59
1:B:240:GLU:HB3	5:B:1054:HOH:O	2.03	0.59
1:F:400:TYR:OH	1:F:445:MSE:HG2	2.03	0.59
1:A:322:ILE:HG12	1:A:412:MSE:HE2	1.84	0.59
1:D:366:GLU:HG2	5:D:1058:HOH:O	2.02	0.59
1:C:407:TYR:HE2	1:C:409:MSE:HE1	1.68	0.58
1:D:100:VAL:HG13	1:D:228:GLU:CD	2.23	0.58
1:F:228:GLU:HB2	5:F:999:HOH:O	2.02	0.58
1:A:4:LYS:NZ	5:A:992:HOH:O	2.27	0.58
1:F:18:ARG:C	1:F:20:PRO:HD3	2.24	0.58
1:C:207:ASP:HB2	1:C:208:PRO:HD3	1.86	0.57
1:E:5:GLU:N	5:E:1037:HOH:O	2.36	0.57
1:F:30:ARG:HD2	1:F:381:TYR:CE1	2.39	0.57
1:F:311:ALA:HB2	1:F:342:PRO:HG2	1.86	0.57
1:A:207:ASP:HB2	1:A:208:PRO:CD	2.34	0.57
1:C:123:GLN:NE2	1:C:125:LYS:H	2.02	0.57
1:D:399:ARG:CD	5:D:1018:HOH:O	2.53	0.57
1:F:77:ASN:HD22	1:F:77:ASN:N	1.96	0.57
1:D:250:ARG:NH1	1:D:250:ARG:HG3	2.11	0.57
1:D:301:LYS:HG3	5:D:1064:HOH:O	2.03	0.57
1:F:212:VAL:HG11	1:F:214:TYR:HE1	1.68	0.57
1:F:426:GLY:C	1:F:427:LYS:HG3	2.24	0.57
1:C:226:PRO:HA	5:C:1058:HOH:O	2.03	0.57
1:F:214:TYR:HB3	1:F:216:PRO:HD3	1.87	0.57
1:F:238:ARG:HG2	1:F:293:ILE:HG22	1.87	0.57
1:B:375:ASN:O	1:B:376:LYS:HB2	2.04	0.57
1:F:330:PHE:C	1:F:332:PRO:CD	2.71	0.57
1:A:320:ASP:O	1:A:324:LEU:HB2	2.03	0.57
1:D:17:LYS:HD3	1:D:17:LYS:C	2.25	0.57
1:F:217:ARG:NH2	1:F:220:ASN:HD21	2.02	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:134:VAL:CG1	1:B:134:VAL:O	2.53	0.56
1:F:133:PRO:O	1:F:134:VAL:HG13	2.05	0.56
1:F:158:ARG:HG3	5:F:1013:HOH:O	2.05	0.56
1:A:250:ARG:HB2	1:A:252:TYR:CE1	2.40	0.56
1:C:423:LYS:HZ1	1:D:382:ASP:CG	2.08	0.56
1:D:192:LYS:HD2	5:D:1056:HOH:O	2.04	0.56
1:C:322:ILE:CG2	1:C:412:MSE:CE	2.76	0.56
1:C:365:GLY:O	1:C:407:TYR:HB2	2.05	0.56
1:D:383:GLU:HB2	5:D:983:HOH:O	2.05	0.56
1:E:86:VAL:HB	1:E:87:PRO:HD3	1.88	0.56
1:D:276:LEU:HD22	5:D:991:HOH:O	2.05	0.56
1:F:89:ALA:O	1:F:113:LYS:HE3	2.06	0.56
1:F:198:THR:N	1:F:199:PRO:HD3	2.20	0.56
1:F:386:ASP:OD1	1:F:388:ILE:N	2.31	0.56
1:B:126:PRO:HD2	5:B:1047:HOH:O	2.05	0.56
1:F:126:PRO:HB3	1:F:144:LEU:O	2.05	0.56
1:B:120:GLN:HE22	1:B:146:ILE:H	0.81	0.56
1:A:337:SER:HA	1:A:355:GLY:HA2	1.88	0.56
1:F:194:THR:O	1:F:198:THR:HB	2.06	0.56
1:F:242:LYS:NZ	1:F:290:GLU:OE2	2.33	0.56
1:F:33:TYR:OH	1:F:380:ILE:HG12	2.05	0.56
1:F:66:ALA:C	1:F:68:GLN:N	2.58	0.56
1:F:236:VAL:CG1	1:F:300:PHE:HD2	2.19	0.55
1:F:375:ASN:OD1	1:F:416:CYS:HA	2.05	0.55
1:F:49:VAL:O	1:F:49:VAL:HG12	2.07	0.55
1:B:242:LYS:NZ	1:B:290:GLU:OE2	2.38	0.55
1:F:327:LYS:HA	1:F:332:PRO:CD	2.32	0.55
1:B:250:ARG:NH1	1:B:252:TYR:CE1	2.73	0.55
1:C:249:LYS:HE2	1:C:249:LYS:CA	2.18	0.55
1:E:24:GLY:C	1:E:26:PRO:HD3	2.27	0.55
1:E:30:ARG:NH1	5:E:1016:HOH:O	2.34	0.55
1:F:81:ILE:HD13	1:F:90:PHE:HE2	1.72	0.55
1:C:385:SER:HB3	1:D:385:SER:OG	2.06	0.55
1:F:215:TYR:N	1:F:216:PRO:HD3	2.22	0.55
1:F:77:ASN:ND2	1:F:77:ASN:H	2.03	0.55
1:A:143:LYS:HB2	1:A:157:GLU:HB2	1.88	0.55
1:F:330:PHE:O	1:F:332:PRO:CD	2.54	0.55
1:B:102:ARG:HA	5:B:1034:HOH:O	2.06	0.55
1:C:407:TYR:HD2	1:C:409:MSE:HE2	1.71	0.55
1:D:193:ARG:HD2	5:D:1081:HOH:O	2.06	0.55
1:F:264:SER:HA	1:F:307:ARG:NH1	2.20	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:202:GLU:OE2	1:B:214:TYR:OH	2.24	0.55
1:C:127:ILE:HD12	1:C:129:ILE:HD11	1.89	0.55
1:C:441:LYS:HE2	1:C:445:MSE:HE3	1.88	0.55
1:D:19:ASN:HB3	1:D:22:LEU:HD22	1.87	0.55
1:F:19:ASN:HB2	1:F:22:LEU:HD22	1.88	0.55
1:F:215:TYR:N	1:F:216:PRO:CD	2.70	0.55
1:A:117:LEU:O	1:A:121:MSE:HG3	2.06	0.55
1:B:180:TRP:HB3	1:B:181:PRO:HD3	1.88	0.55
1:C:93:VAL:HG12	1:C:94:LEU:HG	1.89	0.55
1:E:295:ARG:HG3	1:F:67:ARG:HH22	1.72	0.55
1:F:253:THR:CG2	1:F:256:GLU:CB	2.84	0.55
1:F:330:PHE:CD2	1:F:330:PHE:N	2.74	0.55
1:B:150:LYS:NZ	5:B:996:HOH:O	2.34	0.54
1:A:332:PRO:HG2	1:A:357:ALA:HB1	1.88	0.54
1:E:121:MSE:O	1:F:237:ASP:HB2	2.07	0.54
1:A:328:LYS:HG3	5:A:1059:HOH:O	2.07	0.54
1:B:83:PRO:HG3	1:B:140:TYR:CE2	2.42	0.54
1:B:25:PHE:N	1:B:26:PRO:HD3	2.22	0.54
1:C:99:TYR:CE2	1:D:10:LEU:HG	2.42	0.54
1:A:395:LEU:HD11	1:A:445:MSE:HE3	1.90	0.54
1:F:130:GLU:O	1:F:170:THR:HA	2.07	0.54
1:D:158:ARG:HG2	1:D:159:GLY:N	2.21	0.54
1:A:99:TYR:HD2	1:B:8:THR:HG23	1.72	0.54
1:C:221:LYS:HD2	1:C:221:LYS:C	2.27	0.54
1:C:407:TYR:HE2	1:C:409:MSE:CE	2.18	0.54
1:E:14:GLU:HG2	1:E:148:ILE:HG22	1.89	0.54
1:F:110:LEU:HD13	1:F:110:LEU:H	1.72	0.54
1:B:250:ARG:NH1	1:B:252:TYR:OH	2.41	0.54
1:C:143:LYS:HB2	1:C:157:GLU:HB2	1.90	0.54
1:D:404:SER:C	1:D:406:GLN:H	2.11	0.54
1:A:167:PHE:HB3	5:A:1036:HOH:O	2.06	0.54
1:A:284:LYS:HD3	1:A:286:LYS:HE2	1.89	0.54
1:E:30:ARG:HG3	5:E:1016:HOH:O	2.08	0.54
1:E:402:ILE:CG2	1:E:403:GLU:O	2.27	0.54
1:F:54:PRO:HD2	1:F:200:TYR:O	2.08	0.53
1:D:334:PHE:HA	5:D:1057:HOH:O	2.08	0.53
1:E:250:ARG:HD3	1:E:252:TYR:HE1	1.72	0.53
1:B:150:LYS:CE	5:B:996:HOH:O	2.53	0.53
1:B:358:PHE:CG	1:B:358:PHE:O	2.61	0.53
1:F:362:ILE:CB	5:F:1015:HOH:O	2.56	0.53
1:E:14:GLU:HG3	1:E:148:ILE:HG22	1.91	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:190:TYR:O	1:A:194:THR:HG22	2.08	0.53
1:E:397:TRP:C	1:E:399:ARG:H	2.11	0.53
1:F:255:LYS:O	1:F:259:VAL:HG13	2.08	0.53
1:F:318:GLY:O	1:F:322:ILE:HG13	2.09	0.53
1:A:161:VAL:CG1	1:A:162:GLU:N	2.71	0.53
1:D:255:LYS:CE	1:D:267:ASP:OD1	2.56	0.53
1:A:135:ASN:CG	5:A:978:HOH:O	2.47	0.53
1:A:340:ARG:HD3	1:A:439:GLU:OE2	2.09	0.53
1:B:441:LYS:CE	1:B:445:MSE:CE	2.73	0.53
1:F:127:ILE:HD11	1:F:172:VAL:HG12	1.90	0.53
1:A:331:ASN:H	1:A:332:PRO:HD3	1.73	0.53
1:C:21:GLU:CD	1:C:21:GLU:H	2.12	0.53
1:E:93:VAL:HG12	1:E:94:LEU:HG	1.91	0.53
1:B:331:ASN:N	1:B:332:PRO:HD3	2.24	0.53
1:F:42:ASN:HB3	3:F:950:ANP:N7	2.24	0.53
1:A:257:PHE:HB2	1:A:285:VAL:HG21	1.91	0.52
1:D:326:LEU:HD21	1:D:412:MSE:HG2	1.90	0.52
1:E:89:ALA:O	1:E:113:LYS:HE2	2.09	0.52
1:F:245:ILE:CG2	1:F:246:ASN:N	2.68	0.52
1:F:401:GLY:O	1:F:402:ILE:C	2.47	0.52
1:F:42:ASN:O	5:F:1029:HOH:O	2.19	0.52
1:A:331:ASN:N	1:A:332:PRO:CD	2.71	0.52
1:C:161:VAL:HG12	1:C:162:GLU:N	2.24	0.52
1:F:253:THR:HG23	1:F:256:GLU:CG	2.37	0.52
1:F:301:LYS:HD3	5:F:1001:HOH:O	2.08	0.52
1:B:207:ASP:HB2	1:B:208:PRO:CD	2.39	0.52
1:C:322:ILE:HG23	1:C:412:MSE:HE1	1.85	0.52
1:C:71:LYS:NZ	5:C:979:HOH:O	2.40	0.52
1:E:180:TRP:HB3	1:E:181:PRO:HD3	1.92	0.52
1:D:112:VAL:HG12	3:D:930:ANP:O2A	2.10	0.52
1:E:311:ALA:CB	1:E:342:PRO:CG	2.82	0.52
1:A:10:LEU:HG	1:B:99:TYR:CE2	2.45	0.52
1:A:4:LYS:CD	1:A:4:LYS:C	2.67	0.52
1:C:45:ASP:O	1:C:49:VAL:HB	2.10	0.52
1:E:10:LEU:HG	1:F:99:TYR:CE2	2.44	0.52
1:F:194:THR:HG21	5:F:975:HOH:O	2.09	0.52
1:D:34:GLN:O	1:D:38:GLU:HG2	2.10	0.52
1:A:273:ILE:HD11	1:A:306:PHE:CE1	2.44	0.52
1:A:47:THR:HG22	1:A:78:GLY:HA2	1.92	0.52
1:F:141:THR:HG1	1:F:159:GLY:HA3	1.70	0.52
1:F:192:LYS:HE2	5:F:1011:HOH:O	2.10	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:229:VAL:HG11	1:F:313:SER:CB	2.37	0.52
1:F:253:THR:OG1	1:F:281:PRO:O	2.27	0.52
1:A:436:ILE:N	1:A:436:ILE:HD12	2.24	0.52
1:B:64:ASP:OD2	1:B:67:ARG:HD2	2.10	0.52
1:C:92:ARG:O	1:C:113:LYS:HD2	2.10	0.52
1:C:453:GLN:NE2	1:C:457:GLU:OE2	2.43	0.51
1:F:330:PHE:O	1:F:332:PRO:HD3	2.10	0.51
1:A:24:GLY:C	1:A:26:PRO:HD3	2.30	0.51
1:B:34:GLN:O	1:B:38:GLU:HG2	2.10	0.51
1:E:311:ALA:CB	1:E:342:PRO:HG3	2.40	0.51
1:E:77:ASN:O	1:E:168:HIS:CE1	2.63	0.51
1:F:327:LYS:HA	1:F:332:PRO:HG2	1.92	0.51
1:E:324:LEU:CD2	1:E:328:LYS:HE3	2.41	0.51
1:B:248:LEU:HD22	1:B:252:TYR:CD2	2.46	0.51
1:A:232:HIS:CG	1:A:233:PRO:HD2	2.46	0.51
1:B:358:PHE:CD2	1:B:358:PHE:O	2.64	0.51
1:C:407:TYR:CE2	1:C:409:MSE:HE2	2.43	0.51
1:D:400:TYR:O	1:D:452:LYS:HG3	2.10	0.51
1:F:404:SER:C	1:F:406:GLN:H	2.14	0.51
1:C:132:SER:O	1:C:168:HIS:HA	2.10	0.51
1:F:194:THR:HG23	5:F:975:HOH:O	2.06	0.51
1:F:395:LEU:HD22	1:F:444:LEU:HD13	1.92	0.51
1:F:219:THR:HG23	1:F:221:LYS:H	1.76	0.51
1:B:427:LYS:NZ	5:B:998:HOH:O	2.44	0.51
1:E:258:LEU:HD11	1:E:274:LEU:HD21	1.92	0.51
1:E:303:TYR:CE2	1:E:305:ASP:HB2	2.46	0.51
1:D:127:ILE:HG22	5:D:1080:HOH:O	2.06	0.50
1:E:192:LYS:HE2	5:E:996:HOH:O	2.09	0.50
1:A:5:GLU:OE2	1:B:50:HIS:NE2	2.45	0.50
1:D:130:GLU:HG2	1:D:141:THR:HG22	1.92	0.50
1:A:422:TYR:CD2	1:A:427:LYS:HD2	2.47	0.50
1:C:232:HIS:O	1:C:347:GLY:HA2	2.11	0.50
1:D:263:GLN:O	1:D:264:SER:HB2	2.10	0.50
1:F:21:GLU:H	1:F:21:GLU:CD	2.15	0.50
1:A:93:VAL:HG13	1:A:110:LEU:HD23	1.94	0.50
1:A:312:ASP:OD1	1:A:312:ASP:C	2.50	0.50
1:E:254:ILE:O	1:E:258:LEU:HG	2.12	0.50
1:A:375:ASN:OD1	1:A:416:CYS:HA	2.11	0.50
1:F:148:ILE:C	5:F:969:HOH:O	2.49	0.50
1:F:253:THR:HG22	1:F:256:GLU:OE1	2.11	0.50
1:F:25:PHE:N	1:F:26:PRO:HD3	2.27	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:391:VAL:HG13	1:A:441:LYS:HG2	1.93	0.50
1:A:407:TYR:CD2	1:A:407:TYR:N	2.80	0.50
1:C:331:ASN:N	1:C:332:PRO:HD3	2.27	0.50
1:E:250:ARG:HD3	1:E:252:TYR:CE1	2.47	0.50
1:F:253:THR:HG21	1:F:256:GLU:HG3	1.89	0.50
1:F:233:PRO:HG3	1:F:265:ILE:HD11	1.94	0.50
1:A:409:MSE:HB2	5:A:1021:HOH:O	2.10	0.49
1:A:6:LYS:NZ	1:B:228:GLU:OE1	2.42	0.49
1:D:96:SER:HB2	1:D:109:GLY:CA	2.42	0.49
1:E:398:LYS:HG2	1:E:402:ILE:O	2.12	0.49
1:A:123:GLN:HE22	1:A:125:LYS:CB	2.25	0.49
1:A:232:HIS:ND1	1:A:233:PRO:HD2	2.27	0.49
1:F:180:TRP:CD1	1:F:208:PRO:HG2	2.44	0.49
1:F:232:HIS:CD2	1:F:309:PRO:HG3	2.47	0.49
1:F:4:LYS:CG	5:F:1016:HOH:O	2.55	0.49
1:A:365:GLY:O	1:A:406:GLN:HA	2.12	0.49
1:A:402:ILE:HD12	1:A:455:LEU:HD11	1.94	0.49
1:A:127:ILE:HG13	1:A:174:ILE:HG12	1.93	0.49
1:D:193:ARG:CD	5:D:1081:HOH:O	2.59	0.49
1:B:207:ASP:HB2	1:B:208:PRO:HD2	1.95	0.49
1:E:398:LYS:HG3	1:E:404:SER:HB2	1.94	0.49
1:F:57:LYS:HA	1:F:204:ILE:O	2.13	0.49
1:A:403:GLU:CG	1:A:404:SER:N	2.73	0.49
1:B:92:ARG:O	1:B:113:LYS:HE3	2.13	0.49
1:E:193:ARG:O	1:E:196:ILE:HG13	2.13	0.49
1:F:53:LEU:CD2	1:F:222:ILE:HG13	2.42	0.49
1:B:196:ILE:HG23	1:B:197:ILE:HG23	1.94	0.49
1:C:427:LYS:NZ	5:C:955:HOH:O	2.24	0.49
1:F:188:TYR:HD1	5:F:985:HOH:O	1.95	0.49
1:D:255:LYS:HE2	1:D:267:ASP:OD1	2.13	0.49
1:B:453:GLN:NE2	1:B:457:GLU:HG3	2.25	0.49
1:F:381:TYR:HB2	1:F:428:GLU:CG	2.37	0.49
1:A:459:ARG:O	1:A:462:GLN:N	2.46	0.49
1:B:167:PHE:HA	5:B:1050:HOH:O	2.12	0.49
1:B:284:LYS:HD3	1:B:286:LYS:HE2	1.94	0.49
1:C:207:ASP:HB2	1:C:208:PRO:HD2	1.95	0.49
1:F:423:LYS:NZ	1:F:432:GLU:OE2	2.37	0.49
1:D:370:VAL:O	1:D:371:LEU:HD12	2.13	0.48
1:E:92:ARG:O	1:E:113:LYS:HD3	2.13	0.48
1:E:207:ASP:OD1	1:E:207:ASP:C	2.51	0.48
1:F:52:ILE:O	1:F:54:PRO:HD3	2.13	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:461:GLU:OE1	1:A:461:GLU:HA	2.13	0.48
1:E:289:THR:HG23	1:E:292:GLU:HG3	1.94	0.48
1:E:402:ILE:N	1:E:402:ILE:HD12	2.28	0.48
1:F:128:GLU:HB2	1:F:173:ALA:HB3	1.94	0.48
1:C:205:PHE:O	1:C:212:VAL:HA	2.13	0.48
1:D:441:LYS:HZ1	1:D:445:MSE:HE1	1.79	0.48
1:C:65:ASP:C	1:C:65:ASP:OD1	2.52	0.48
1:D:383:GLU:HG3	5:D:1035:HOH:O	2.14	0.48
1:D:441:LYS:NZ	1:D:445:MSE:HE1	2.29	0.48
1:A:26:PRO:CD	1:A:30:ARG:HG2	2.42	0.48
1:C:254:ILE:HA	1:C:285:VAL:HG13	1.95	0.48
1:F:196:ILE:HG12	1:F:329:ILE:CD1	2.40	0.48
1:F:255:LYS:NZ	1:F:271:ASP:OD1	2.45	0.48
1:A:148:ILE:HD13	1:A:148:ILE:N	2.29	0.48
1:B:87:PRO:HA	1:B:144:LEU:HD21	1.96	0.48
1:F:400:TYR:O	1:F:452:LYS:HG3	2.13	0.48
1:C:331:ASN:CG	1:C:331:ASN:O	2.52	0.48
1:F:214:TYR:C	1:F:216:PRO:HD3	2.33	0.48
1:F:283:LYS:HG2	1:F:284:LYS:N	2.27	0.48
1:C:196:ILE:HG22	1:C:197:ILE:HG23	1.95	0.48
1:D:399:ARG:NE	5:D:1018:HOH:O	2.47	0.48
1:A:402:ILE:HG22	5:A:977:HOH:O	2.13	0.48
1:B:397:TRP:C	1:B:399:ARG:H	2.17	0.48
1:E:444:LEU:O	1:E:447:VAL:HG23	2.14	0.48
1:F:236:VAL:CG1	1:F:300:PHE:CD2	2.97	0.48
1:A:207:ASP:HB2	1:A:208:PRO:HD3	1.94	0.48
1:B:123:GLN:OE1	1:B:125:LYS:HB2	2.14	0.48
1:C:136:SER:HA	5:C:1044:HOH:O	2.13	0.48
1:E:21:GLU:CD	1:E:21:GLU:H	2.17	0.48
1:E:21:GLU:OE2	1:F:419:LYS:NZ	2.44	0.48
1:F:33:TYR:CG	1:F:33:TYR:O	2.67	0.48
1:A:229:VAL:HG11	1:A:313:SER:CB	2.38	0.47
1:C:340:ARG:CD	1:C:439:GLU:OE2	2.61	0.47
1:C:34:GLN:O	1:C:38:GLU:HG2	2.14	0.47
1:A:338:ILE:CG2	1:A:447:VAL:HG13	2.40	0.47
1:A:96:SER:HB2	1:A:109:GLY:CA	2.44	0.47
1:B:193:ARG:O	1:B:196:ILE:HG22	2.13	0.47
1:C:124:ASP:HB2	5:C:983:HOH:O	2.14	0.47
1:E:49:VAL:O	1:E:49:VAL:HG12	2.13	0.47
1:F:317:ILE:O	1:F:321:LEU:HD12	2.14	0.47
1:A:255:LYS:NZ	1:A:271:ASP:OD1	2.32	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:316:VAL:HG12	1:A:318:GLY:N	2.29	0.47
1:C:44:LEU:HB3	1:C:105:ARG:CZ	2.43	0.47
1:E:30:ARG:HD3	1:E:381:TYR:CE1	2.48	0.47
1:F:219:THR:CG2	1:F:221:LYS:H	2.27	0.47
1:F:33:TYR:CD2	1:F:381:TYR:HE2	2.31	0.47
1:A:161:VAL:HG12	1:A:162:GLU:N	2.29	0.47
1:B:65:ASP:OD2	1:B:65:ASP:N	2.46	0.47
1:C:453:GLN:HE21	1:C:457:GLU:CD	2.17	0.47
1:F:373:TYR:HA	1:F:377:ILE:O	2.14	0.47
1:F:53:LEU:HD21	1:F:222:ILE:CG1	2.43	0.47
1:A:190:TYR:O	1:A:194:THR:CG2	2.63	0.47
1:E:37:ARG:NH1	1:E:41:GLU:OE1	2.47	0.47
1:A:99:TYR:CE2	1:B:10:LEU:HG	2.49	0.47
1:F:131:THR:HG22	1:F:170:THR:HG1	1.76	0.47
1:F:311:ALA:CB	1:F:342:PRO:HG3	2.43	0.47
1:F:4:LYS:HE2	5:F:1016:HOH:O	2.14	0.47
1:B:17:LYS:HG2	1:B:148:ILE:HD13	1.97	0.47
1:B:390:LYS:HG3	1:B:394:GLU:OE2	2.15	0.47
1:B:400:TYR:O	1:B:452:LYS:HA	2.15	0.47
1:F:117:LEU:HD23	1:F:148:ILE:HD11	1.97	0.47
1:A:102:ARG:HD3	1:A:104:THR:CG2	2.44	0.47
1:A:123:GLN:NE2	1:A:125:LYS:CB	2.78	0.47
1:A:26:PRO:HD2	1:A:30:ARG:CG	2.43	0.47
1:B:333:ASP:H	1:B:359:GLY:HA3	1.79	0.47
1:C:254:ILE:HG22	1:C:274:LEU:HD21	1.97	0.47
1:F:149:ASN:CA	5:F:969:HOH:O	2.62	0.47
1:F:232:HIS:CG	1:F:233:PRO:HD2	2.49	0.47
1:F:253:THR:HG22	1:F:256:GLU:CG	2.43	0.47
1:F:444:LEU:HD23	1:F:444:LEU:HA	1.64	0.47
1:A:423:LYS:HG2	1:A:431:ALA:HB2	1.95	0.47
1:B:47:THR:HG22	1:B:78:GLY:HA2	1.97	0.47
1:E:221:LYS:CE	5:E:1045:HOH:O	2.55	0.47
1:E:358:PHE:CD2	1:E:359:GLY:N	2.83	0.47
1:F:43:SER:O	1:F:46:ALA:N	2.48	0.47
1:E:7:PHE:CD2	1:F:85:GLU:OE1	2.68	0.46
1:F:405:ASP:OD1	1:F:405:ASP:N	2.40	0.46
1:A:100:VAL:HG13	1:A:228:GLU:HG3	1.96	0.46
1:D:180:TRP:HB3	1:D:181:PRO:HD3	1.96	0.46
1:F:20:PRO:HD2	1:F:21:GLU:OE2	2.14	0.46
1:F:395:LEU:O	1:F:397:TRP:CD1	2.69	0.46
1:A:324:LEU:HD23	5:A:1059:HOH:O	2.16	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:309:PRO:HG2	1:A:343:LYS:O	2.15	0.46
1:B:83:PRO:HG3	1:B:140:TYR:CZ	2.51	0.46
1:C:33:TYR:O	1:C:37:ARG:HB2	2.16	0.46
1:D:207:ASP:HB2	1:D:208:PRO:HD3	1.97	0.46
1:F:18:ARG:O	1:F:20:PRO:HD3	2.15	0.46
1:F:327:LYS:HA	1:F:332:PRO:CG	2.45	0.46
1:C:10:LEU:HG	1:D:99:TYR:CE2	2.50	0.46
1:D:324:LEU:CD2	1:D:328:LYS:HG3	2.45	0.46
1:B:237:ASP:OD1	1:B:240:GLU:HG3	2.16	0.46
1:C:144:LEU:C	1:C:144:LEU:HD12	2.36	0.46
1:F:206:LYS:CA	1:F:211:ASN:O	2.59	0.46
1:F:225:PRO:HA	1:F:226:PRO:HD3	1.79	0.46
1:F:330:PHE:O	1:F:332:PRO:HD2	2.15	0.46
1:F:253:THR:HA	1:F:283:LYS:O	2.16	0.46
1:A:112:VAL:O	1:A:116:VAL:HG23	2.15	0.46
1:D:371:LEU:HB2	1:D:412:MSE:HB3	1.97	0.46
1:B:427:LYS:NZ	3:B:910:ANP:O3G	2.26	0.46
1:C:71:LYS:HE3	1:C:173:ALA:HB1	1.97	0.46
1:D:186:ARG:HG2	1:D:380:ILE:HG21	1.98	0.46
1:E:311:ALA:HB2	1:E:342:PRO:HG3	1.91	0.46
1:F:212:VAL:CG1	1:F:214:TYR:HE1	2.28	0.46
1:F:112:VAL:HG22	3:F:950:ANP:O2A	2.16	0.46
1:B:250:ARG:NH1	1:B:252:TYR:HE1	2.04	0.46
1:C:161:VAL:CG1	1:C:162:GLU:N	2.78	0.46
1:D:86:VAL:N	1:D:87:PRO:CD	2.79	0.46
1:B:143:LYS:HB2	1:B:157:GLU:H	1.81	0.45
1:E:81:ILE:HD12	1:E:90:PHE:HE2	1.81	0.45
1:F:102:ARG:HB2	1:F:228:GLU:HA	1.98	0.45
1:F:254:ILE:CD1	1:F:285:VAL:HA	2.46	0.45
1:F:81:ILE:HD13	1:F:90:PHE:CE2	2.50	0.45
1:A:422:TYR:CE2	1:A:427:LYS:HD2	2.51	0.45
1:E:27:ASN:HB2	1:E:28:PRO:CD	2.46	0.45
1:E:22:LEU:CD2	1:F:424:SER:HA	2.46	0.45
1:F:58:ILE:CG2	1:F:74:VAL:HG22	2.46	0.45
1:C:257:PHE:CG	1:C:285:VAL:HG11	2.51	0.45
1:C:71:LYS:CE	1:C:173:ALA:HB1	2.46	0.45
1:D:230:LYS:HE2	1:D:260:ASN:O	2.16	0.45
1:E:295:ARG:O	1:E:299:THR:CG2	2.57	0.45
1:C:249:LYS:CE	1:C:249:LYS:CA	2.88	0.45
1:F:198:THR:CG2	1:F:203:PHE:HE1	2.30	0.45
1:C:127:ILE:O	1:C:127:ILE:HG13	2.16	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:45:ASP:O	1:D:49:VAL:HB	2.16	0.45
1:E:289:THR:O	1:E:292:GLU:N	2.49	0.45
1:F:45:ASP:OD2	1:F:104:THR:HB	2.16	0.45
1:B:130:GLU:CG	1:B:141:THR:HG22	2.38	0.45
1:F:180:TRP:CZ2	1:F:184:LYS:HG3	2.50	0.45
1:F:254:ILE:HD13	1:F:285:VAL:HA	1.97	0.45
1:A:433:VAL:CG1	1:A:436:ILE:HD13	2.47	0.45
1:F:296:LEU:CD2	1:F:300:PHE:CZ	2.99	0.45
1:E:295:ARG:HG3	1:F:67:ARG:NH2	2.32	0.45
1:A:251:ASP:OD2	1:A:284:LYS:HD3	2.16	0.45
1:A:345:TYR:CD2	1:A:436:ILE:HD11	2.52	0.45
1:B:17:LYS:O	1:B:17:LYS:HD2	2.16	0.45
1:B:255:LYS:NZ	1:B:267:ASP:OD1	2.49	0.45
5:D:1032:HOH:O	1:E:221:LYS:HE3	2.17	0.45
1:E:232:HIS:O	1:E:347:GLY:HA2	2.17	0.45
1:B:255:LYS:CE	1:B:267:ASP:OD1	2.65	0.45
1:E:44:LEU:HB3	1:E:105:ARG:CZ	2.46	0.45
1:E:196:ILE:HD11	1:E:373:TYR:OH	2.17	0.45
1:F:37:ARG:HG2	1:F:41:GLU:OE2	2.16	0.45
1:A:102:ARG:HB2	1:A:228:GLU:HA	1.99	0.45
1:E:331:ASN:N	1:E:332:PRO:HD3	2.32	0.45
1:F:148:ILE:O	1:F:148:ILE:HG22	2.17	0.45
1:F:155:ILE:HG12	5:F:980:HOH:O	2.16	0.45
1:F:207:ASP:HB2	1:F:208:PRO:CD	2.43	0.45
1:B:248:LEU:HD22	1:B:252:TYR:HE2	1.79	0.44
1:C:87:PRO:HB3	1:C:155:ILE:HD11	1.99	0.44
1:E:280:LYS:HA	1:E:281:PRO:HD3	1.79	0.44
1:E:375:ASN:OD1	1:E:416:CYS:HA	2.17	0.44
1:F:105:ARG:HB3	1:F:377:ILE:HD11	1.98	0.44
1:F:392:VAL:HG22	1:F:444:LEU:HD11	1.98	0.44
1:A:102:ARG:HD3	1:A:104:THR:HG23	1.99	0.44
1:F:83:PRO:HD3	1:F:133:PRO:HG3	1.99	0.44
1:F:6:LYS:HE2	5:F:1026:HOH:O	2.17	0.44
1:A:137:LYS:CE	1:A:137:LYS:H	2.29	0.44
1:B:441:LYS:NZ	1:B:445:MSE:HE1	2.31	0.44
1:C:326:LEU:HD13	1:C:357:ALA:HB2	2.00	0.44
1:E:118:TYR:CE2	1:E:177:PRO:HD2	2.53	0.44
1:E:213:THR:CG2	1:E:215:TYR:OH	2.53	0.44
1:F:253:THR:H	1:F:256:GLU:HB2	1.83	0.44
1:A:96:SER:HB3	1:A:99:TYR:CE2	2.53	0.44
1:E:14:GLU:O	1:E:18:ARG:HG3	2.18	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:30:ARG:CG	5:E:1016:HOH:O	2.64	0.44
1:E:453:GLN:NE2	1:E:457:GLU:HG3	2.31	0.44
1:F:58:ILE:HG23	1:F:74:VAL:HG22	1.98	0.44
1:A:221:LYS:HD3	5:A:1047:HOH:O	2.17	0.44
1:A:319:GLU:O	1:A:323:GLU:HG3	2.18	0.44
1:D:100:VAL:CG1	1:D:228:GLU:CD	2.86	0.44
1:E:27:ASN:HB2	1:E:28:PRO:HD2	2.00	0.44
1:E:385:SER:HB3	1:F:385:SER:HB3	1.99	0.44
1:E:402:ILE:CG2	1:E:403:GLU:N	2.80	0.44
1:B:118:TYR:CE2	1:B:177:PRO:HD2	2.52	0.44
1:E:25:PHE:N	1:E:26:PRO:HD3	2.33	0.44
1:F:93:VAL:HG12	1:F:94:LEU:HG	1.99	0.44
1:A:108:TYR:CE2	1:A:427:LYS:HD3	2.53	0.44
1:A:18:ARG:O	1:B:419:LYS:HE3	2.17	0.44
1:D:161:VAL:CG1	1:D:162:GLU:N	2.81	0.44
1:C:121:MSE:HE2	1:D:237:ASP:OD2	2.18	0.44
1:C:423:LYS:NZ	1:D:382:ASP:OD1	2.50	0.44
1:F:35:THR:HG23	1:F:115:ALA:HB1	1.98	0.44
1:F:291:GLU:HG2	1:F:291:GLU:H	1.40	0.44
1:E:255:LYS:O	1:E:259:VAL:HG12	2.18	0.44
1:F:289:THR:HG22	1:F:292:GLU:CG	2.47	0.44
1:A:10:LEU:HD12	1:B:99:TYR:CZ	2.52	0.44
1:D:196:ILE:CD1	1:D:329:ILE:HD11	2.48	0.44
1:E:27:ASN:ND2	1:E:30:ARG:H	2.16	0.44
1:F:118:TYR:CE2	1:F:177:PRO:HD2	2.53	0.44
1:F:87:PRO:O	1:F:91:GLY:N	2.49	0.44
1:B:200:TYR:OH	1:B:376:LYS:NZ	2.51	0.43
1:C:144:LEU:O	1:C:144:LEU:HD12	2.17	0.43
1:C:207:ASP:CB	1:C:208:PRO:CD	2.88	0.43
1:F:12:PRO:O	1:F:16:PHE:HD2	2.01	0.43
1:A:207:ASP:CB	1:A:208:PRO:CD	2.94	0.43
1:B:255:LYS:O	1:B:259:VAL:HG13	2.19	0.43
1:C:254:ILE:CG2	1:C:274:LEU:HD21	2.48	0.43
1:A:96:SER:HB2	1:A:109:GLY:HA2	2.00	0.43
1:A:306:PHE:HB2	5:A:932:HOH:O	2.18	0.43
1:C:338:ILE:HG22	1:C:447:VAL:HG13	2.00	0.43
1:D:207:ASP:CB	1:D:208:PRO:CD	2.94	0.43
1:F:127:ILE:CD1	1:F:174:ILE:HD11	2.48	0.43
1:F:53:LEU:HD11	1:F:220:ASN:OD1	2.18	0.43
1:C:48:ASP:OD1	1:C:105:ARG:NH2	2.49	0.43
1:F:56:ILE:HD12	1:F:203:PHE:HE2	1.83	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:93:VAL:O	1:F:94:LEU:HB2	2.18	0.43
1:F:127:ILE:HD12	1:F:174:ILE:HD11	1.97	0.43
1:F:207:ASP:OD1	1:F:211:ASN:HB2	2.18	0.43
1:F:386:ASP:OD1	1:F:387:VAL:N	2.51	0.43
1:C:148:ILE:HG13	1:C:149:ASN:N	2.34	0.43
1:C:318:GLY:O	1:C:322:ILE:HG13	2.18	0.43
1:E:60:ILE:HG22	1:E:208:PRO:HG3	2.00	0.43
1:F:180:TRP:CD2	1:F:208:PRO:CG	2.91	0.43
1:F:250:ARG:CB	5:F:1023:HOH:O	2.66	0.43
1:A:323:GLU:OE2	5:A:948:HOH:O	2.21	0.43
1:B:21:GLU:HG3	1:B:26:PRO:HA	2.00	0.43
1:C:29:ALA:HB2	1:C:179:ASP:HB3	2.01	0.43
1:D:157:GLU:HG3	5:D:1002:HOH:O	2.17	0.43
1:B:49:VAL:O	1:B:49:VAL:HG12	2.19	0.43
1:C:96:SER:HB2	1:C:109:GLY:CA	2.48	0.43
1:D:93:VAL:O	1:D:94:LEU:HB2	2.19	0.43
1:F:319:GLU:HA	1:F:337:SER:OG	2.19	0.43
1:A:25:PHE:N	1:A:26:PRO:HD3	2.33	0.43
1:B:157:GLU:HG2	5:B:1038:HOH:O	2.17	0.43
1:C:123:GLN:NE2	1:C:175:SER:HB2	2.34	0.43
1:D:116:VAL:CG2	1:D:127:ILE:HD13	2.49	0.43
1:F:37:ARG:HD2	5:F:983:HOH:O	2.18	0.43
1:B:253:THR:HB	1:B:281:PRO:O	2.18	0.42
1:B:6:LYS:CE	5:B:1051:HOH:O	2.66	0.42
1:D:227:GLN:NE2	5:D:965:HOH:O	2.52	0.42
1:F:19:ASN:CB	1:F:22:LEU:HD22	2.48	0.42
1:A:34:GLN:NE2	1:A:37:ARG:NH1	2.67	0.42
1:E:387:VAL:HG12	1:E:430:ILE:HB	2.01	0.42
1:F:289:THR:CG2	1:F:292:GLU:CG	2.96	0.42
1:A:224:LYS:HA	1:A:225:PRO:HD3	1.95	0.42
1:B:224:LYS:HA	1:B:225:PRO:HD3	1.88	0.42
1:B:253:THR:HA	1:B:283:LYS:O	2.18	0.42
1:B:397:TRP:C	1:B:399:ARG:N	2.73	0.42
1:B:397:TRP:HB3	1:B:402:ILE:HD12	2.00	0.42
1:F:129:ILE:HD12	1:F:144:LEU:HD12	2.01	0.42
1:F:284:LYS:O	1:F:285:VAL:C	2.57	0.42
1:F:331:ASN:HA	1:F:331:ASN:HD22	1.52	0.42
1:F:388:ILE:O	1:F:392:VAL:HG23	2.20	0.42
1:E:311:ALA:CB	1:E:342:PRO:HG2	2.43	0.42
1:F:253:THR:HG1	1:F:282:ASN:HA	1.83	0.42
1:F:398:LYS:O	1:F:399:ARG:C	2.56	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:304:GLU:OE2	1:E:307:ARG:NH2	2.53	0.42
1:F:127:ILE:CG1	1:F:174:ILE:HD13	2.50	0.42
1:F:34:GLN:NE2	1:F:38:GLU:OE1	2.49	0.42
1:A:32:LEU:HA	1:A:176:ILE:HD11	2.01	0.42
1:A:27:ASN:HD21	1:A:30:ARG:H	1.62	0.42
1:B:229:VAL:HG11	1:B:313:SER:HB3	2.01	0.42
1:B:368:PRO:HB3	1:B:409:MSE:HE3	2.00	0.42
1:F:57:LYS:HD3	1:F:204:ILE:HD12	2.00	0.42
1:A:146:ILE:HG22	1:A:148:ILE:HD13	2.02	0.42
1:A:64:ASP:O	1:A:68:GLN:N	2.52	0.42
1:C:247:ASN:HD22	1:C:247:ASN:N	2.16	0.42
1:E:273:ILE:HD11	1:E:306:PHE:CZ	2.55	0.42
1:E:402:ILE:HG22	1:E:403:GLU:N	2.33	0.42
1:E:67:ARG:HG2	1:F:298:GLU:OE1	2.20	0.42
1:F:214:TYR:C	1:F:216:PRO:CD	2.87	0.42
1:F:33:TYR:OH	1:F:380:ILE:CG1	2.66	0.42
1:A:117:LEU:CD2	1:A:148:ILE:HD12	2.50	0.42
1:C:120:GLN:NE2	1:C:146:ILE:N	2.56	0.42
1:E:117:LEU:C	1:E:121:MSE:HE3	2.40	0.42
1:F:398:LYS:C	1:F:400:TYR:N	2.73	0.42
1:C:206:LYS:HA	1:C:211:ASN:O	2.19	0.42
1:C:356:VAL:HG13	1:C:356:VAL:O	2.19	0.42
1:C:53:LEU:HA	1:C:54:PRO:HD3	1.86	0.42
1:F:92:ARG:O	1:F:113:LYS:CE	2.55	0.42
1:B:343:LYS:HE2	5:B:1020:HOH:O	2.19	0.42
1:C:332:PRO:HD2	5:C:1026:HOH:O	2.20	0.42
1:C:438:LYS:HE2	5:C:959:HOH:O	2.19	0.42
1:E:193:ARG:HD2	1:E:193:ARG:HH11	1.71	0.42
1:E:27:ASN:HD22	1:E:29:ALA:H	1.68	0.42
1:A:423:LYS:HG2	1:A:431:ALA:CA	2.50	0.41
1:E:37:ARG:HG3	1:E:41:GLU:OE2	2.20	0.41
1:F:233:PRO:HG3	1:F:265:ILE:CD1	2.50	0.41
1:F:307:ARG:NH2	5:F:1031:HOH:O	2.52	0.41
1:F:63:ILE:HD11	1:F:71:LYS:HD2	2.02	0.41
1:A:100:VAL:HG13	1:A:228:GLU:CG	2.50	0.41
1:B:24:GLY:C	1:B:26:PRO:HD3	2.40	0.41
1:B:318:GLY:O	1:B:322:ILE:HG13	2.20	0.41
1:F:117:LEU:HD23	1:F:148:ILE:CD1	2.45	0.41
1:F:320:ASP:OD1	1:F:321:LEU:HG	2.20	0.41
1:F:48:ASP:C	1:F:48:ASP:OD1	2.58	0.41
1:B:133:PRO:O	1:B:135:ASN:N	2.53	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:19:ASN:N	1:E:20:PRO:HD3	2.36	0.41
1:D:96:SER:HB2	1:D:109:GLY:HA2	2.02	0.41
1:E:99:TYR:CE2	1:F:10:LEU:HG	2.55	0.41
1:C:25:PHE:N	1:C:26:PRO:CD	2.83	0.41
1:E:277:ALA:CB	1:E:299:THR:HG21	2.48	0.41
1:A:374:ALA:HA	1:A:415:LEU:O	2.20	0.41
1:B:441:LYS:NZ	1:B:445:MSE:CE	2.83	0.41
1:E:22:LEU:HD22	1:F:424:SER:HA	2.01	0.41
1:F:30:ARG:NH2	1:F:34:GLN:OE1	2.52	0.41
1:A:222:ILE:HA	1:A:223:PRO:HD3	1.93	0.41
1:B:167:PHE:CA	5:B:1050:HOH:O	2.67	0.41
1:D:312:ASP:OD1	1:D:312:ASP:N	2.51	0.41
1:F:107:MSE:HE2	1:F:108:TYR:CE1	2.56	0.41
1:F:152:GLU:HA	1:F:153:PRO:HD3	1.86	0.41
1:F:44:LEU:O	1:F:45:ASP:C	2.59	0.41
1:A:237:ASP:OD2	1:B:17:LYS:NZ	2.53	0.41
1:A:276:LEU:HD23	1:A:276:LEU:HA	1.94	0.41
1:A:238:ARG:NH1	1:A:290:GLU:O	2.53	0.41
1:C:330:PHE:CA	5:C:945:HOH:O	2.62	0.41
1:F:212:VAL:CG1	1:F:214:TYR:CE1	3.04	0.41
1:F:72:VAL:O	1:F:173:ALA:HA	2.21	0.41
1:A:145:LYS:NZ	1:B:290:GLU:HG3	2.36	0.41
1:A:389:TRP:CE3	5:A:1058:HOH:O	2.74	0.41
1:B:222:ILE:HG23	1:B:222:ILE:O	2.21	0.41
1:B:232:HIS:CD2	1:B:309:PRO:HG3	2.56	0.41
1:F:4:LYS:N	5:F:974:HOH:O	2.53	0.41
1:F:55:ASN:HA	1:F:202:GLU:HB3	2.02	0.41
1:A:237:ASP:OD2	1:B:121:MSE:HE3	2.21	0.41
1:A:273:ILE:HD11	1:A:306:PHE:HE1	1.85	0.41
1:E:224:LYS:HA	1:E:225:PRO:HD3	1.87	0.41
1:E:112:VAL:HG12	3:E:940:ANP:O2A	2.21	0.41
1:F:187:ILE:O	1:F:191:ILE:HG12	2.21	0.41
1:F:420:ILE:HA	1:F:421:PRO:HD3	1.92	0.41
1:B:64:ASP:CG	1:B:67:ARG:CG	2.89	0.41
1:C:9:SER:HB3	1:D:95:TYR:CD1	2.56	0.41
1:D:196:ILE:HD11	1:D:329:ILE:HD11	2.03	0.41
1:D:232:HIS:CG	1:D:233:PRO:HD2	2.56	0.41
1:F:34:GLN:O	1:F:38:GLU:CG	2.67	0.41
1:F:424:SER:O	1:F:427:LYS:HA	2.20	0.41
1:F:64:ASP:CG	1:F:67:ARG:HB2	2.41	0.41
1:B:196:ILE:HA	1:B:196:ILE:HD12	1.83	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:12:PRO:HG3	1:D:12:PRO:HG3	2.03	0.40
1:F:236:VAL:HG13	1:F:236:VAL:O	2.21	0.40
1:D:335:ALA:HA	1:D:356:VAL:O	2.22	0.40
1:D:407:TYR:CD1	1:D:409:MSE:HE2	2.56	0.40
1:D:420:ILE:HA	1:D:421:PRO:HD3	1.88	0.40
1:E:134:VAL:HB	5:E:1049:HOH:O	2.21	0.40
1:C:192:LYS:HE3	5:C:970:HOH:O	2.20	0.40
1:D:226:PRO:HG3	1:D:315:SER:HB2	2.02	0.40
1:E:48:ASP:CG	1:E:105:ARG:HH22	2.23	0.40
1:E:225:PRO:HA	1:E:226:PRO:HD3	1.92	0.40
1:F:180:TRP:CB	1:F:208:PRO:HG2	2.48	0.40
1:F:256:GLU:O	1:F:260:ASN:HB2	2.21	0.40
1:F:381:TYR:N	1:F:428:GLU:OE1	2.46	0.40
1:F:43:SER:O	1:F:44:LEU:C	2.59	0.40
1:A:284:LYS:CD	1:A:286:LYS:HE2	2.50	0.40
1:C:239:GLU:CG	5:C:936:HOH:O	2.68	0.40
1:C:411:VAL:HG13	1:C:444:LEU:HD21	2.03	0.40
1:D:438:LYS:HE3	1:D:438:LYS:HB2	1.84	0.40
1:F:53:LEU:HG	1:F:222:ILE:HD11	2.02	0.40
1:D:222:ILE:HG13	1:D:223:PRO:HD2	2.03	0.40
1:E:207:ASP:HB2	1:E:208:PRO:HD2	2.03	0.40
1:E:236:VAL:O	1:E:297:VAL:HG13	2.21	0.40
1:E:238:ARG:HG2	1:E:297:VAL:HG21	2.03	0.40
1:E:358:PHE:C	1:E:358:PHE:CD2	2.95	0.40
1:E:368:PRO:HD3	1:E:407:TYR:CE2	2.56	0.40
1:E:80:GLY:HA2	1:E:170:THR:OG1	2.22	0.40
1:F:117:LEU:CD2	1:F:148:ILE:HD11	2.50	0.40
1:F:296:LEU:CD2	1:F:300:PHE:CE2	3.04	0.40
1:F:47:THR:HG21	1:F:54:PRO:HA	2.04	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	457/472 (97%)	440 (96%)	17 (4%)	0	100	100
1	B	453/472 (96%)	426 (94%)	24 (5%)	3 (1%)	22	26
1	C	464/472 (98%)	448 (97%)	15 (3%)	1 (0%)	47	58
1	D	459/472 (97%)	440 (96%)	19 (4%)	0	100	100
1	E	452/472 (96%)	427 (94%)	22 (5%)	3 (1%)	22	26
1	F	444/472 (94%)	379 (85%)	48 (11%)	17 (4%)	3	1
All	All	2729/2832 (96%)	2560 (94%)	145 (5%)	24 (1%)	17	20

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	208	PRO
1	F	245	ILE
1	F	246	ASN
1	F	332	PRO
1	F	399	ARG
1	C	166	GLY
1	E	290	GLU
1	F	26	PRO
1	F	63	ILE
1	F	148	ILE
1	F	340	ARG
1	B	166	GLY
1	E	247	ASN
1	F	65	ASP
1	B	134	VAL
1	F	94	LEU
1	F	126	PRO
1	F	398	LYS
1	E	398	LYS
1	F	46	ALA
1	F	87	PRO
1	F	101	ASN
1	B	156	VAL
1	F	125	LYS

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	407/412 (99%)	382 (94%)	25 (6%)	18 25
1	B	402/412 (98%)	380 (94%)	22 (6%)	21 30
1	C	410/412 (100%)	383 (93%)	27 (7%)	16 22
1	D	404/412 (98%)	384 (95%)	20 (5%)	24 34
1	E	407/412 (99%)	378 (93%)	29 (7%)	14 19
1	F	389/412 (94%)	343 (88%)	46 (12%)	5 5
All	All	2419/2472 (98%)	2250 (93%)	169 (7%)	15 19

All (169) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	LYS
1	A	22	LEU
1	A	27	ASN
1	A	62	LEU
1	A	81	ILE
1	A	100	VAL
1	A	110	LEU
1	A	137	LYS
1	A	160	SER
1	A	194	THR
1	A	224	LYS
1	A	249	LYS
1	A	259	VAL
1	A	285	VAL
1	A	296	LEU
1	A	321	LEU
1	A	364	VAL
1	A	371	LEU
1	A	405	ASP
1	A	407	TYR
1	A	409	MSE
1	A	427	LYS
1	A	434	GLU
1	A	449	ARG
1	A	456	SER
1	B	17	LYS
1	B	22	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	55	ASN
1	B	62	LEU
1	B	65	ASP
1	B	67	ARG
1	B	137	LYS
1	B	144	LEU
1	B	157	GLU
1	B	158	ARG
1	B	185	SER
1	B	224	LYS
1	B	247	ASN
1	B	285	VAL
1	B	290	GLU
1	B	296	LEU
1	B	304	GLU
1	B	321	LEU
1	B	324	LEU
1	B	371	LEU
1	B	378	PRO
1	B	444	LEU
1	C	17	LYS
1	C	22	LEU
1	C	30	ARG
1	C	37	ARG
1	C	62	LEU
1	C	73	ASN
1	C	100	VAL
1	C	110	LEU
1	C	113	LYS
1	C	138	ARG
1	C	144	LEU
1	C	152	GLU
1	C	196	ILE
1	C	221	LYS
1	C	239	GLU
1	C	244	LEU
1	C	249	LYS
1	C	263	GLN
1	C	267	ASP
1	C	285	VAL
1	C	290	GLU
1	C	296	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	321	LEU
1	C	371	LEU
1	C	395	LEU
1	C	405	ASP
1	C	460	LYS
1	D	22	LEU
1	D	30	ARG
1	D	37	ARG
1	D	62	LEU
1	D	85	GLU
1	D	138	ARG
1	D	250	ARG
1	D	276	LEU
1	D	285	VAL
1	D	291	GLU
1	D	296	LEU
1	D	312	ASP
1	D	321	LEU
1	D	324	LEU
1	D	371	LEU
1	D	385	SER
1	D	405	ASP
1	D	418	THR
1	D	444	LEU
1	D	458	LYS
1	E	6	LYS
1	E	17	LYS
1	E	37	ARG
1	E	62	LEU
1	E	85	GLU
1	E	100	VAL
1	E	110	LEU
1	E	138	ARG
1	E	196	ILE
1	E	217	ARG
1	E	222	ILE
1	E	259	VAL
1	E	273	ILE
1	E	289	THR
1	E	296	LEU
1	E	298	GLU
1	E	299	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	310	SER
1	E	312	ASP
1	E	313	SER
1	E	321	LEU
1	E	338	ILE
1	E	340	ARG
1	E	371	LEU
1	E	398	LYS
1	E	403	GLU
1	E	404	SER
1	E	424	SER
1	E	447	VAL
1	F	17	LYS
1	F	21	GLU
1	F	22	LEU
1	F	30	ARG
1	F	47	THR
1	F	57	LYS
1	F	62	LEU
1	F	76	ASP
1	F	77	ASN
1	F	79	ILE
1	F	84	GLN
1	F	110	LEU
1	F	112	VAL
1	F	119	SER
1	F	120	GLN
1	F	124	ASP
1	F	131	THR
1	F	134	VAL
1	F	172	VAL
1	F	174	ILE
1	F	175	SER
1	F	196	ILE
1	F	198	THR
1	F	208	PRO
1	F	219	THR
1	F	220	ASN
1	F	238	ARG
1	F	244	LEU
1	F	251	ASP
1	F	252	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	F	253	THR
1	F	259	VAL
1	F	285	VAL
1	F	289	THR
1	F	290	GLU
1	F	291	GLU
1	F	298	GLU
1	F	307	ARG
1	F	312	ASP
1	F	315	SER
1	F	331	ASN
1	F	361	SER
1	F	390	LYS
1	F	395	LEU
1	F	405	ASP
1	F	427	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	27	ASN
1	A	101	ASN
1	A	120	GLN
1	A	123	GLN
1	A	247	ASN
1	A	408	GLN
1	B	120	GLN
1	B	408	GLN
1	B	453	GLN
1	C	101	ASN
1	C	120	GLN
1	C	123	GLN
1	C	247	ASN
1	C	348	HIS
1	C	408	GLN
1	C	453	GLN
1	D	247	ASN
1	E	27	ASN
1	E	88	ASN
1	E	101	ASN
1	E	120	GLN
1	E	247	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	408	GLN
1	E	453	GLN
1	F	27	ASN
1	F	73	ASN
1	F	77	ASN
1	F	120	GLN
1	F	220	ASN
1	F	227	GLN
1	F	331	ASN
1	F	453	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 carbohydrates in this entry.

5.6 Ligand geometry

Of 13 ligands modelled in this entry, 7 are monoatomic - leaving 6 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	$\#\|Z\| > 2$
3	ANP	D	930	2	29,33,33	1.92	8 (27%)	31,52,52	1.37	4 (12%)
3	ANP	F	950	2	29,33,33	1.85	8 (27%)	31,52,52	1.71	6 (19%)
3	ANP	E	940	2	29,33,33	1.85	10 (34%)	31,52,52	1.31	4 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	ANP	B	910	2	29,33,33	1.87	7 (24%)	31,52,52	1.48	4 (12%)
3	ANP	A	900	2	29,33,33	1.75	6 (20%)	31,52,52	1.30	4 (12%)
3	ANP	C	920	2	29,33,33	1.98	6 (20%)	31,52,52	1.33	3 (9%)

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	ANP	D	930	2	-	4/14/38/38	0/3/3/3
3	ANP	F	950	2	-	4/14/38/38	0/3/3/3
3	ANP	E	940	2	-	3/14/38/38	0/3/3/3
3	ANP	B	910	2	-	4/14/38/38	0/3/3/3
3	ANP	A	900	2	-	4/14/38/38	0/3/3/3
3	ANP	C	920	2	-	4/14/38/38	0/3/3/3

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	920	ANP	PB-O3A	-7.71	1.49	1.59
3	F	950	ANP	PB-O3A	-6.24	1.51	1.59
3	D	930	ANP	PB-O3A	-6.16	1.51	1.59
3	B	910	ANP	PB-O3A	-5.82	1.51	1.59
3	A	900	ANP	PB-O3A	-5.29	1.52	1.59
3	E	940	ANP	PB-O3A	-5.13	1.52	1.59
3	B	910	ANP	PG-O2G	-3.46	1.47	1.56
3	D	930	ANP	PG-O2G	-3.24	1.48	1.56
3	E	940	ANP	PG-O1G	3.19	1.51	1.46
3	B	910	ANP	PB-O2B	-3.13	1.48	1.56
3	A	900	ANP	PG-O2G	-3.12	1.48	1.56
3	E	940	ANP	PG-O3G	-3.06	1.48	1.56
3	A	900	ANP	PB-O2B	-2.99	1.48	1.56
3	D	930	ANP	PG-O1G	2.91	1.50	1.46
3	C	920	ANP	PB-O2B	-2.86	1.49	1.56
3	E	940	ANP	PG-O2G	-2.83	1.49	1.56
3	D	930	ANP	PB-O1B	2.81	1.50	1.46
3	E	940	ANP	PB-O2B	-2.71	1.49	1.56
3	B	910	ANP	PG-O3G	-2.66	1.49	1.56
3	A	900	ANP	PG-O3G	-2.62	1.49	1.56

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	920	ANP	PG-O2G	-2.59	1.49	1.56
3	F	950	ANP	C5-C4	2.59	1.47	1.40
3	E	940	ANP	C4-N3	-2.52	1.32	1.35
3	B	910	ANP	PB-O1B	2.46	1.50	1.46
3	F	950	ANP	PG-O3G	-2.45	1.50	1.56
3	B	910	ANP	PG-O1G	2.43	1.50	1.46
3	F	950	ANP	PG-O2G	-2.42	1.50	1.56
3	D	930	ANP	PB-O2B	-2.39	1.50	1.56
3	D	930	ANP	PA-O5'	-2.33	1.49	1.59
3	E	940	ANP	PB-O1B	2.33	1.49	1.46
3	A	900	ANP	C5-C4	2.30	1.47	1.40
3	F	950	ANP	PA-O5'	-2.28	1.50	1.59
3	E	940	ANP	C5-C4	2.24	1.46	1.40
3	D	930	ANP	C4-N3	-2.21	1.32	1.35
3	B	910	ANP	C5-N7	-2.21	1.31	1.39
3	A	900	ANP	PG-O1G	2.20	1.49	1.46
3	F	950	ANP	PG-O1G	2.15	1.49	1.46
3	C	920	ANP	PG-O3G	-2.11	1.51	1.56
3	F	950	ANP	PB-O2B	-2.09	1.51	1.56
3	C	920	ANP	C5-C4	2.08	1.46	1.40
3	D	930	ANP	C5-C4	2.08	1.46	1.40
3	F	950	ANP	PB-O1B	2.07	1.49	1.46
3	C	920	ANP	PB-O1B	2.04	1.49	1.46
3	E	940	ANP	C5-N7	-2.03	1.32	1.39
3	E	940	ANP	PA-O5'	-2.02	1.51	1.59

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	F	950	ANP	C3'-C2'-C1'	4.61	107.93	100.98
3	F	950	ANP	O1G-PG-N3B	-4.49	105.16	111.77
3	B	910	ANP	C4-C5-N7	-3.82	105.42	109.40
3	C	920	ANP	N3-C2-N1	-3.39	123.37	128.68
3	D	930	ANP	C4-C5-N7	-3.34	105.92	109.40
3	C	920	ANP	O1G-PG-N3B	-3.27	106.96	111.77
3	A	900	ANP	N3-C2-N1	-3.18	123.71	128.68
3	D	930	ANP	N3-C2-N1	-3.13	123.78	128.68
3	B	910	ANP	C3'-C2'-C1'	2.97	105.45	100.98
3	B	910	ANP	N3-C2-N1	-2.96	124.06	128.68
3	A	900	ANP	PA-O3A-PB	-2.85	122.59	132.62
3	E	940	ANP	C4-C5-N7	-2.80	106.48	109.40
3	F	950	ANP	N3-C2-N1	-2.77	124.35	128.68

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	940	ANP	N3-C2-N1	-2.70	124.46	128.68
3	E	940	ANP	C3'-C2'-C1'	2.57	104.84	100.98
3	D	930	ANP	O1G-PG-N3B	-2.48	108.12	111.77
3	F	950	ANP	C4-C5-N7	-2.38	106.92	109.40
3	C	920	ANP	C4-C5-N7	-2.35	106.95	109.40
3	F	950	ANP	O4'-C1'-C2'	-2.30	103.56	106.93
3	A	900	ANP	C2-N1-C6	2.28	122.66	118.75
3	F	950	ANP	PA-O3A-PB	-2.25	124.70	132.62
3	B	910	ANP	N6-C6-N1	2.16	123.06	118.57
3	E	940	ANP	O2B-PB-O3A	2.11	111.68	104.64
3	A	900	ANP	O2B-PB-O3A	2.06	111.52	104.64
3	D	930	ANP	C3'-C2'-C1'	2.06	104.07	100.98

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	D	930	ANP	PB-N3B-PG-O1G
3	D	930	ANP	PG-N3B-PB-O1B
3	D	930	ANP	PA-O3A-PB-O1B
3	D	930	ANP	PA-O3A-PB-O2B
3	F	950	ANP	PB-N3B-PG-O1G
3	F	950	ANP	PG-N3B-PB-O1B
3	F	950	ANP	PA-O3A-PB-O1B
3	F	950	ANP	PA-O3A-PB-O2B
3	E	940	ANP	PB-N3B-PG-O1G
3	E	940	ANP	PG-N3B-PB-O1B
3	E	940	ANP	PA-O3A-PB-O1B
3	B	910	ANP	PB-N3B-PG-O1G
3	B	910	ANP	PG-N3B-PB-O1B
3	B	910	ANP	PA-O3A-PB-O1B
3	B	910	ANP	PA-O3A-PB-O2B
3	A	900	ANP	PB-N3B-PG-O1G
3	A	900	ANP	PG-N3B-PB-O1B
3	A	900	ANP	PA-O3A-PB-O1B
3	C	920	ANP	PB-N3B-PG-O1G
3	C	920	ANP	PG-N3B-PB-O1B
3	C	920	ANP	PA-O3A-PB-O1B
3	A	900	ANP	PA-O3A-PB-O2B
3	C	920	ANP	PA-O3A-PB-O2B

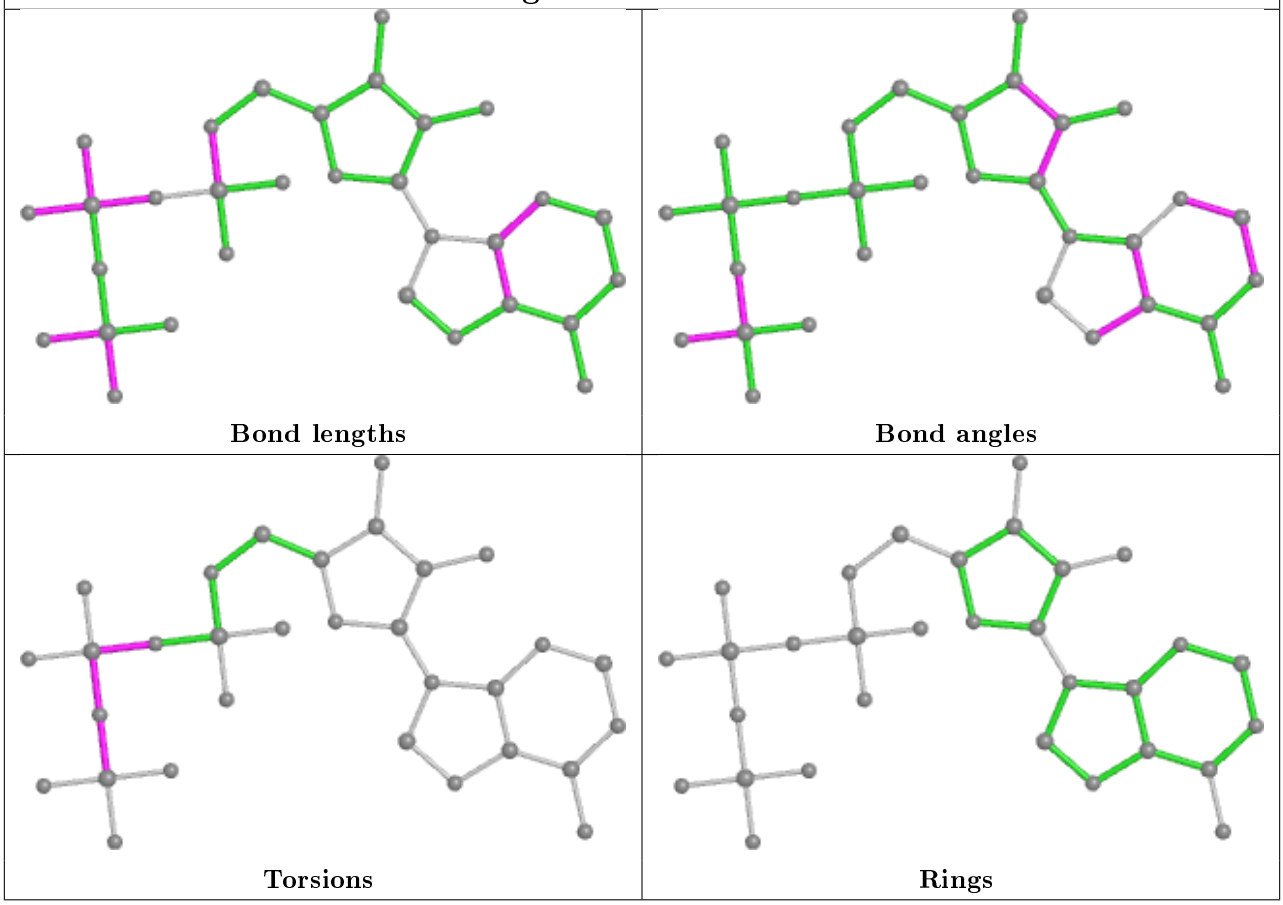
There are no ring outliers.

4 monomers are involved in 7 short contacts:

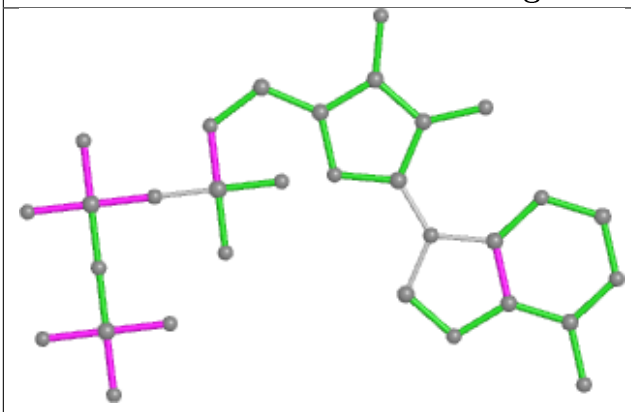
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	930	ANP	1	0
3	F	950	ANP	4	0
3	E	940	ANP	1	0
3	B	910	ANP	1	0

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.

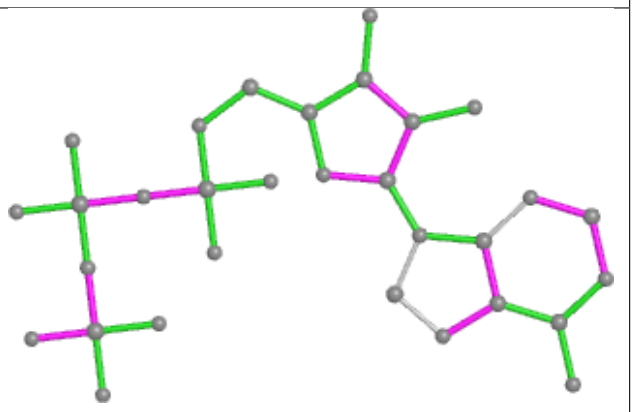
Ligand ANP D 930



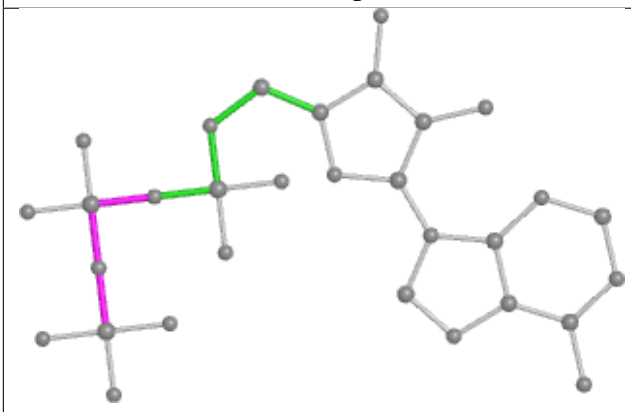
Ligand ANP F 950



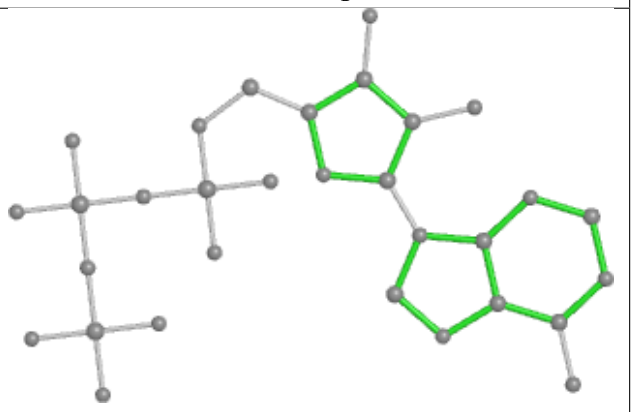
Bond lengths



Bond angles

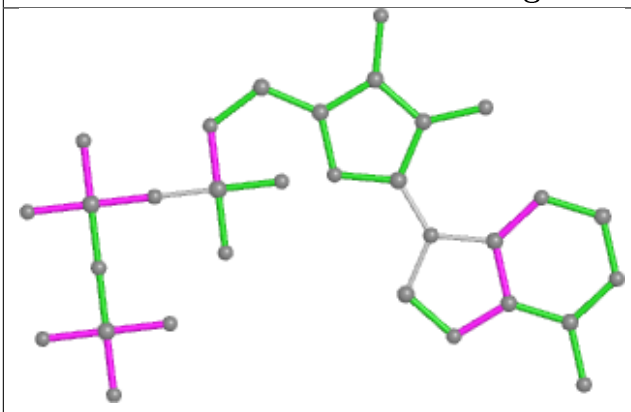


Torsions

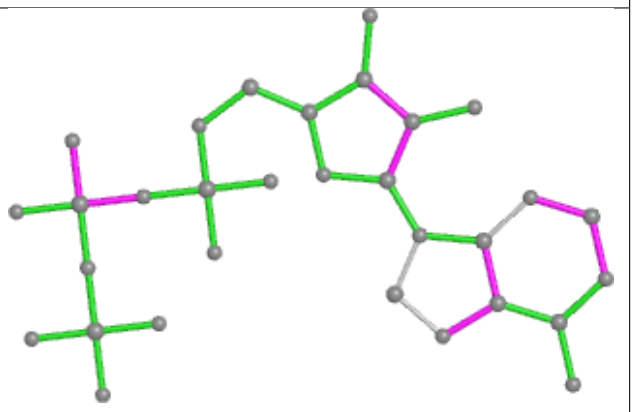


Rings

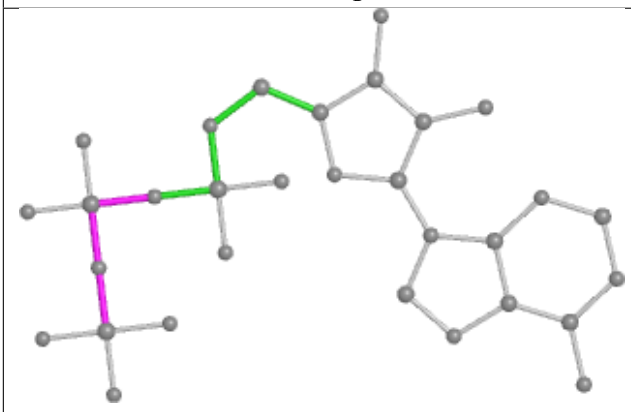
Ligand ANP E 940



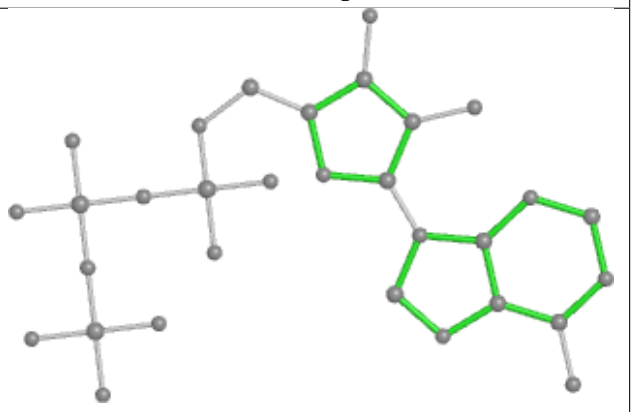
Bond lengths



Bond angles

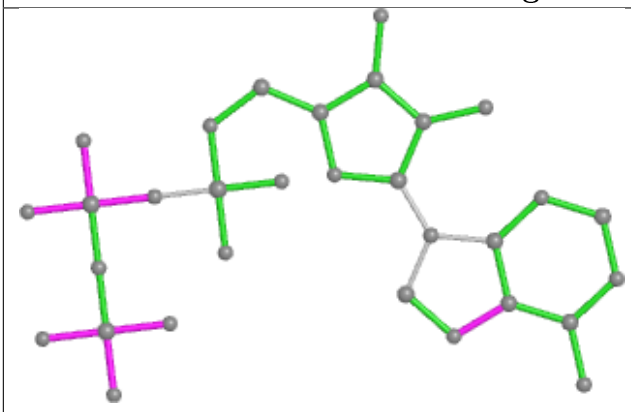


Torsions

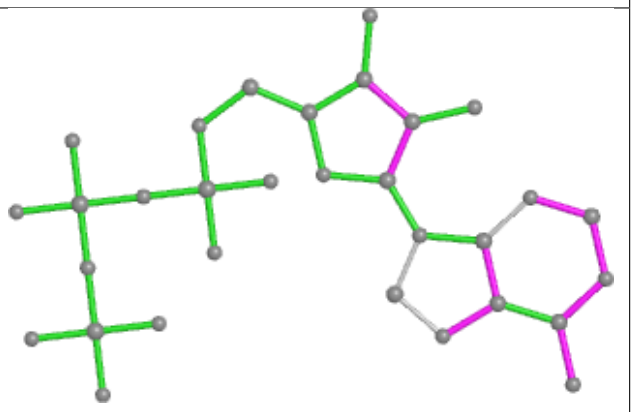


Rings

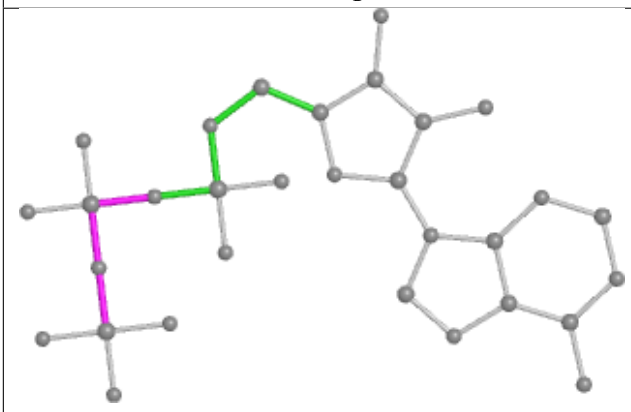
Ligand ANP B 910



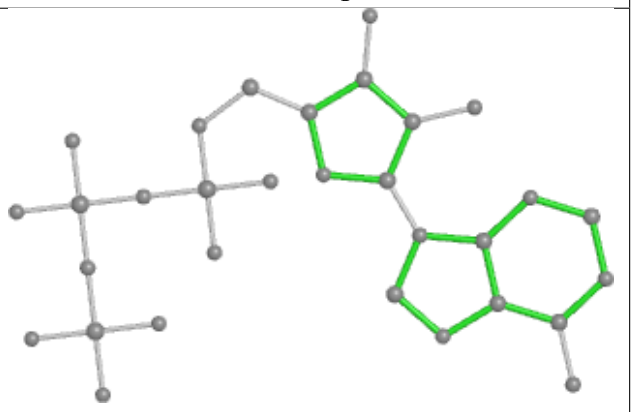
Bond lengths



Bond angles

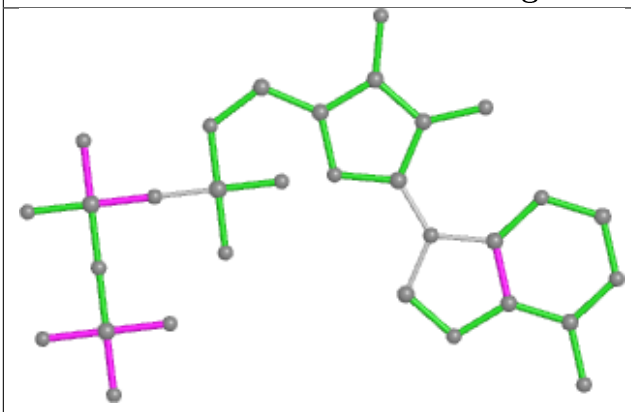


Torsions

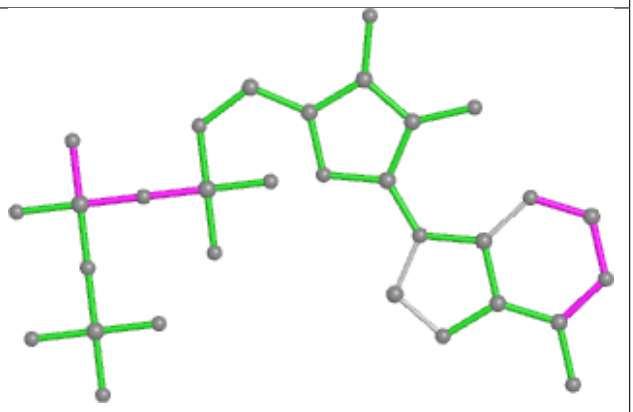


Rings

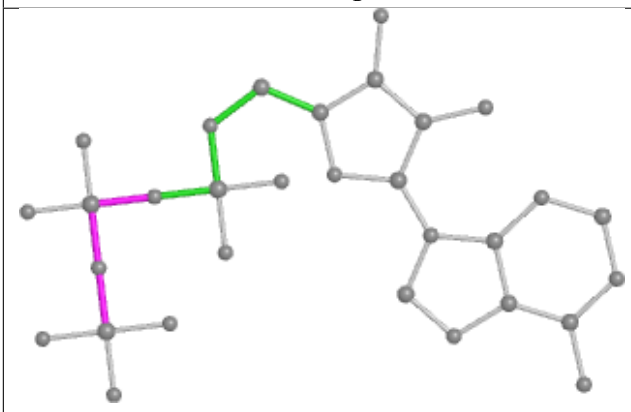
Ligand ANP A 900



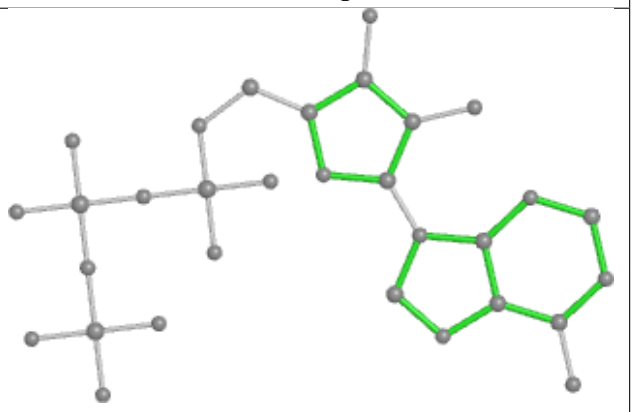
Bond lengths



Bond angles

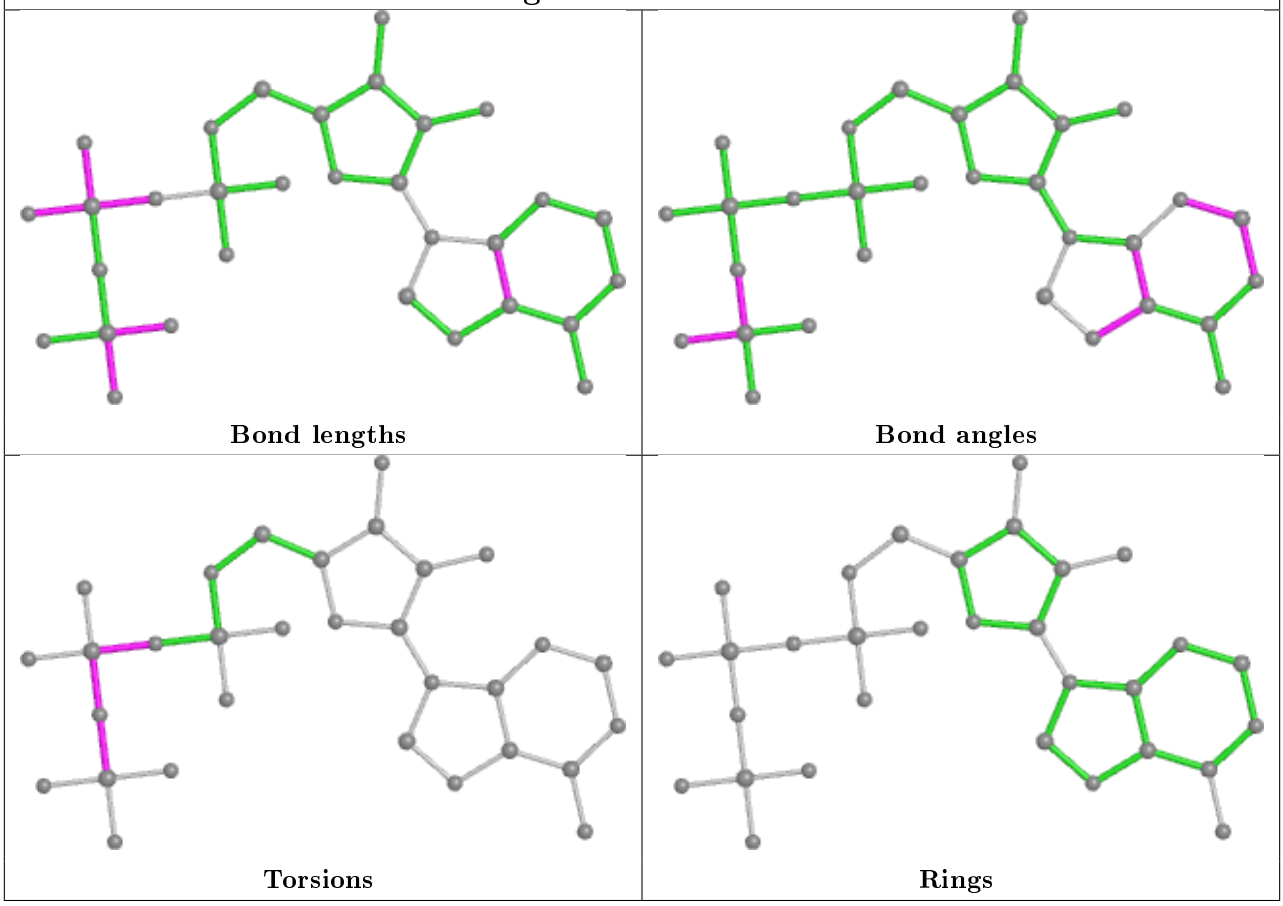


Torsions



Rings

Ligand ANP C 920



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

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	456/472 (96%)	0.56	43 (9%) 8 11	4, 16, 48, 94	0
1	B	450/472 (95%)	0.45	36 (8%) 12 16	4, 16, 40, 56	0
1	C	461/472 (97%)	0.52	31 (6%) 17 23	7, 18, 39, 52	0
1	D	456/472 (96%)	0.39	25 (5%) 25 31	4, 15, 37, 71	0
1	E	451/472 (95%)	0.60	46 (10%) 6 9	4, 18, 50, 72	0
1	F	449/472 (95%)	1.78	163 (36%) 0 0	18, 46, 72, 98	0
All	All	2723/2832 (96%)	0.71	344 (12%) 3 5	4, 19, 59, 98	0

All (344) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	136	SER	9.5
1	F	401	GLY	9.1
1	A	464	ALA	8.9
1	C	164	THR	8.6
1	F	405	ASP	7.9
1	D	164	THR	7.8
1	D	403	GLU	7.6
1	F	62	LEU	6.9
1	F	461	GLU	6.9
1	F	156	VAL	6.8
1	F	56	ILE	6.8
1	A	467	LYS	6.7
1	C	165	ARG	6.6
1	F	333	ASP	6.6
1	F	75	VAL	6.6
1	D	463	GLU	6.3
1	F	320	ASP	6.3
1	B	404	SER	6.3
1	F	157	GLU	6.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	161	VAL	6.1
1	A	462	GLN	6.1
1	F	364	VAL	6.1
1	F	217	ARG	6.1
1	F	462	GLN	6.0
1	F	463	GLU	5.9
1	A	135	ASN	5.8
1	F	362	ILE	5.8
1	B	457	GLU	5.7
1	E	311	ALA	5.7
1	F	203	PHE	5.7
1	B	135	ASN	5.6
1	F	162	GLU	5.6
1	F	321	LEU	5.5
1	A	405	ASP	5.5
1	C	166	GLY	5.4
1	F	139	ILE	5.4
1	A	463	GLU	5.3
1	E	402	ILE	5.3
1	F	246	ASN	5.3
1	B	164	THR	5.3
1	F	132	SER	5.2
1	A	312	ASP	5.2
1	F	213	THR	5.2
1	E	304	GLU	5.2
1	B	167	PHE	5.1
1	E	4	LYS	5.1
1	F	453	GLN	5.1
1	F	129	ILE	5.1
1	A	460	LYS	5.1
1	F	208	PRO	5.0
1	B	137	LYS	5.0
1	E	167	PHE	4.9
1	F	212	VAL	4.9
1	A	406	GLN	4.9
1	F	400	TYR	4.8
1	C	167	PHE	4.8
1	E	250	ARG	4.7
1	F	361	SER	4.6
1	D	461	GLU	4.6
1	B	403	GLU	4.6
1	F	360	GLY	4.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	127	ILE	4.6
1	F	185	SER	4.6
1	E	399	ARG	4.6
1	B	251	ASP	4.5
1	F	356	VAL	4.5
1	C	65	ASP	4.5
1	F	365	GLY	4.5
1	E	282	ASN	4.5
1	C	403	GLU	4.4
1	F	358	PHE	4.4
1	F	53	LEU	4.4
1	A	366	GLU	4.4
1	F	137	LYS	4.4
1	A	459	ARG	4.3
1	D	166	GLY	4.3
1	F	222	ILE	4.3
1	A	134	VAL	4.3
1	F	61	ASP	4.2
1	F	154	ILE	4.2
1	F	174	ILE	4.2
1	C	168	HIS	4.1
1	D	405	ASP	4.1
1	F	399	ARG	4.1
1	F	72	VAL	4.1
1	F	138	ARG	4.0
1	C	406	GLN	4.0
1	F	183	ALA	4.0
1	E	251	ASP	4.0
1	F	168	HIS	3.9
1	C	135	ASN	3.9
1	E	458	LYS	3.9
1	B	165	ARG	3.9
1	F	221	LYS	3.9
1	F	224	LYS	3.9
1	F	74	VAL	3.9
1	F	65	ASP	3.9
1	D	399	ARG	3.8
1	F	402	ILE	3.8
1	F	211	ASN	3.8
1	F	214	TYR	3.8
1	F	180	TRP	3.8
1	D	311	ALA	3.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	407	TYR	3.8
1	F	125	LYS	3.8
1	A	402	ILE	3.8
1	F	411	VAL	3.8
1	A	401	GLY	3.7
1	A	458	LYS	3.7
1	E	404	SER	3.7
1	F	396	ASP	3.7
1	F	216	PRO	3.7
1	E	249	LYS	3.7
1	F	150	LYS	3.7
1	F	455	LEU	3.6
1	B	166	GLY	3.6
1	F	87	PRO	3.6
1	F	81	ILE	3.6
1	E	396	ASP	3.6
1	F	324	LEU	3.6
1	F	54	PRO	3.6
1	F	164	THR	3.6
1	E	459	ARG	3.6
1	A	457	GLU	3.6
1	F	134	VAL	3.6
1	B	136	SER	3.6
1	D	162	GLU	3.6
1	F	366	GLU	3.6
1	F	406	GLN	3.6
1	F	77	ASN	3.6
1	F	368	PRO	3.5
1	D	459	ARG	3.5
1	F	459	ARG	3.5
1	F	456	SER	3.5
1	D	402	ILE	3.5
1	A	404	SER	3.5
1	A	4	LYS	3.5
1	F	325	GLY	3.5
1	E	134	VAL	3.4
1	F	130	GLU	3.4
1	F	63	ILE	3.4
1	F	225	PRO	3.4
1	E	137	LYS	3.4
1	F	460	LYS	3.4
1	F	148	ILE	3.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	406	GLN	3.4
1	F	133	PRO	3.4
1	E	312	ASP	3.4
1	E	457	GLU	3.4
1	E	164	THR	3.4
1	F	131	THR	3.4
1	F	182	LYS	3.4
1	B	65	ASP	3.3
1	F	85	GLU	3.3
1	E	135	ASN	3.3
1	F	66	ALA	3.3
1	E	405	ASP	3.3
1	B	453	GLN	3.3
1	F	60	ILE	3.3
1	F	58	ILE	3.3
1	F	204	ILE	3.3
1	C	331	ASN	3.3
1	F	189	GLU	3.3
1	F	39	LEU	3.3
1	C	329	ILE	3.3
1	A	163	ASN	3.3
1	F	335	ALA	3.3
1	C	407	TYR	3.3
1	F	176	ILE	3.3
1	F	33	TYR	3.2
1	F	329	ILE	3.2
1	F	257	PHE	3.2
1	C	267	ASP	3.2
1	D	464	ALA	3.2
1	A	395	LEU	3.2
1	A	162	GLU	3.2
1	E	367	GLU	3.2
1	F	188	TYR	3.1
1	A	251	ASP	3.1
1	E	303	TYR	3.1
1	B	447	VAL	3.1
1	C	250	ARG	3.1
1	B	456	SER	3.1
1	B	66	ALA	3.1
1	F	326	LEU	3.0
1	F	141	THR	3.0
1	A	249	LYS	3.0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	F	104	THR	3.0
1	F	249	LYS	3.0
1	F	334	PHE	3.0
1	A	411	VAL	3.0
1	B	221	LYS	3.0
1	B	249	LYS	3.0
1	D	462	GLN	3.0
1	F	57	LYS	3.0
1	E	252	TYR	3.0
1	A	448	ALA	3.0
1	E	136	SER	3.0
1	F	205	PHE	2.9
1	E	461	GLU	2.9
1	B	458	LYS	2.9
1	A	461	GLU	2.9
1	F	51	GLY	2.9
1	F	314	LEU	2.9
1	B	163	ASN	2.9
1	F	454	TYR	2.9
1	D	304	GLU	2.9
1	B	134	VAL	2.9
1	F	109	GLY	2.9
1	E	302	LYS	2.9
1	F	457	GLU	2.9
1	F	410	VAL	2.8
1	A	451	LEU	2.8
1	F	218	LEU	2.8
1	D	302	LYS	2.8
1	F	327	LYS	2.8
1	E	162	GLU	2.8
1	E	305	ASP	2.8
1	F	367	GLU	2.8
1	F	55	ASN	2.8
1	A	453	GLN	2.7
1	F	4	LYS	2.7
1	F	247	ASN	2.7
1	A	302	LYS	2.7
1	E	451	LEU	2.7
1	F	35	THR	2.7
1	E	63	ILE	2.7
1	F	447	VAL	2.7
1	A	444	LEU	2.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	451	LEU	2.7
1	F	248	LEU	2.7
1	E	453	GLN	2.7
1	E	460	LYS	2.7
1	A	250	ARG	2.6
1	B	247	ASN	2.6
1	A	66	ALA	2.6
1	C	394	GLU	2.6
1	C	155	ILE	2.6
1	B	250	ARG	2.6
1	F	197	ILE	2.6
1	B	359	GLY	2.6
1	A	466	LYS	2.6
1	B	246	ASN	2.6
1	F	245	ILE	2.6
1	B	366	GLU	2.6
1	C	363	PRO	2.6
1	F	142	PHE	2.5
1	B	406	GLN	2.5
1	F	398	LYS	2.5
1	E	293	ILE	2.5
1	F	289	THR	2.5
1	F	332	PRO	2.5
1	C	268	THR	2.5
1	C	361	SER	2.5
1	D	341	LYS	2.5
1	D	165	ARG	2.5
1	A	447	VAL	2.5
1	D	167	PHE	2.5
1	F	181	PRO	2.5
1	A	399	ARG	2.4
1	A	455	LEU	2.4
1	C	324	LEU	2.4
1	F	143	LYS	2.4
1	A	363	PRO	2.4
1	F	158	ARG	2.4
1	F	220	ASN	2.4
1	F	172	VAL	2.4
1	F	227	GLN	2.4
1	C	312	ASP	2.4
1	C	405	ASP	2.4
1	F	84	GLN	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	162	GLU	2.4
1	C	413	VAL	2.4
1	F	215	TYR	2.4
1	F	404	SER	2.4
1	B	307	ARG	2.4
1	F	251	ASP	2.4
1	B	407	TYR	2.4
1	C	459	ARG	2.4
1	F	308	SER	2.4
1	E	64	ASP	2.3
1	C	359	GLY	2.3
1	E	291	GLU	2.3
1	F	254	ILE	2.3
1	E	269	THR	2.3
1	B	398	LYS	2.3
1	F	369	ILE	2.3
1	A	413	VAL	2.3
1	B	156	VAL	2.3
1	F	86	VAL	2.3
1	C	354	ALA	2.3
1	E	248	LEU	2.3
1	F	47	THR	2.3
1	F	73	ASN	2.3
1	F	97	SER	2.3
1	E	275	GLU	2.3
1	A	65	ASP	2.3
1	F	126	PRO	2.3
1	E	307	ARG	2.2
1	A	280	LYS	2.2
1	D	163	ASN	2.2
1	D	4	LYS	2.2
1	E	280	LYS	2.2
1	E	168	HIS	2.2
1	C	137	LYS	2.2
1	C	355	GLY	2.2
1	C	63	ILE	2.2
1	D	361	SER	2.2
1	B	405	ASP	2.2
1	E	447	VAL	2.2
1	F	112	VAL	2.2
1	A	246	ASN	2.1
1	D	135	ASN	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	249	LYS	2.1
1	F	140	TYR	2.1
1	F	128	GLU	2.1
1	F	255	LYS	2.1
1	F	169	GLY	2.1
1	F	196	ILE	2.1
1	A	456	SER	2.1
1	F	192	LYS	2.1
1	D	404	SER	2.1
1	F	448	ALA	2.1
1	B	220	ASN	2.1
1	B	394	GLU	2.1
1	F	330	PHE	2.1
1	F	69	ILE	2.1
1	F	68	GLN	2.1
1	F	207	ASP	2.1
1	F	434	GLU	2.1
1	F	71	LYS	2.1
1	F	122	HIS	2.1
1	F	451	LEU	2.1
1	F	147	ASP	2.1
1	F	458	LYS	2.1
1	E	432	GLU	2.0
1	E	289	THR	2.0
1	F	59	THR	2.0
1	B	356	VAL	2.0
1	C	356	VAL	2.0
1	F	316	VAL	2.0
1	E	313	SER	2.0
1	F	198	THR	2.0
1	F	115	ALA	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)

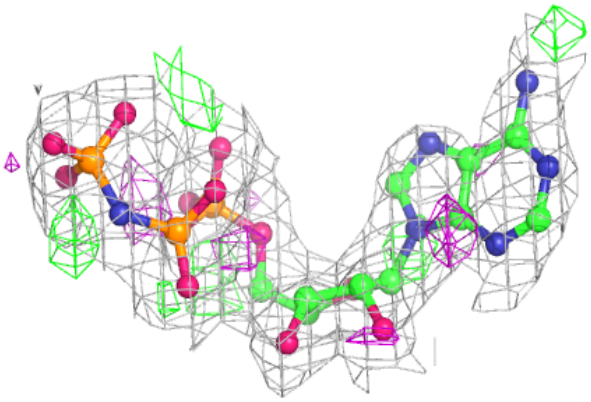
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

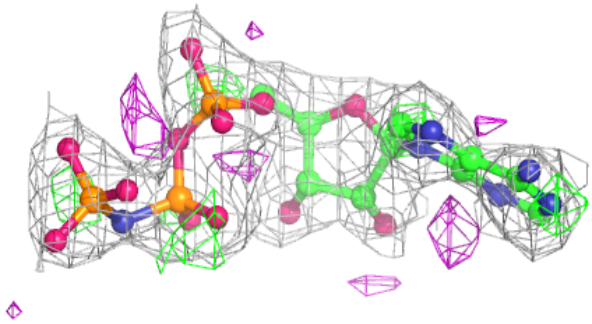
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MG	E	501	1/1	0.69	0.20	51,51,51,51	0
2	MG	F	501	1/1	0.81	0.12	80,80,80,80	0
2	MG	B	501	1/1	0.82	0.14	42,42,42,42	0
3	ANP	F	950	31/31	0.83	0.23	59,76,78,78	0
4	NA	D	901	1/1	0.87	0.22	78,78,78,78	0
2	MG	C	501	1/1	0.87	0.13	49,49,49,49	0
2	MG	D	501	1/1	0.87	0.11	45,45,45,45	0
2	MG	A	501	1/1	0.91	0.12	43,43,43,43	0
3	ANP	C	920	31/31	0.92	0.21	42,48,52,52	0
3	ANP	D	930	31/31	0.94	0.19	41,45,48,48	0
3	ANP	E	940	31/31	0.95	0.19	43,47,49,49	0
3	ANP	B	910	31/31	0.95	0.20	38,43,46,47	0
3	ANP	A	900	31/31	0.95	0.19	40,45,47,47	0

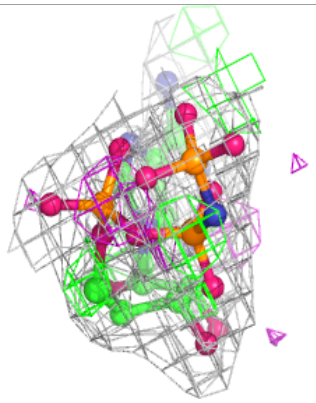
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around ANP F 950:

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

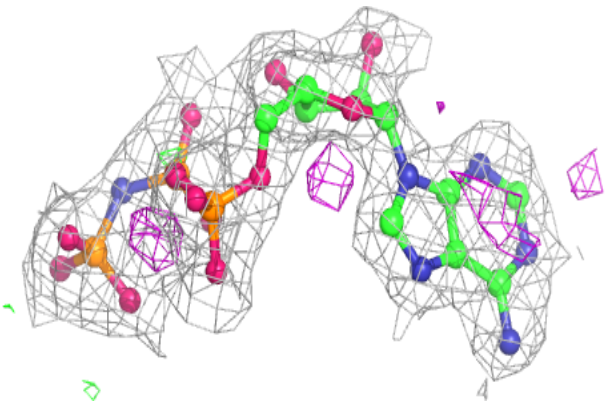


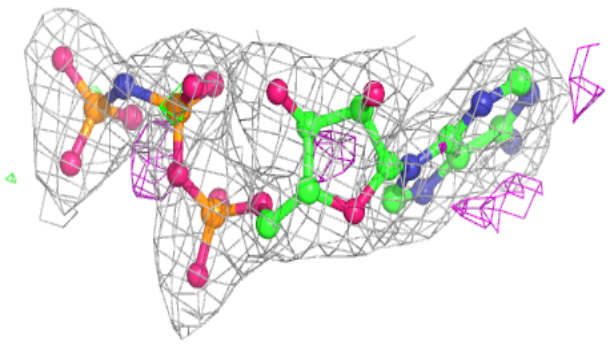


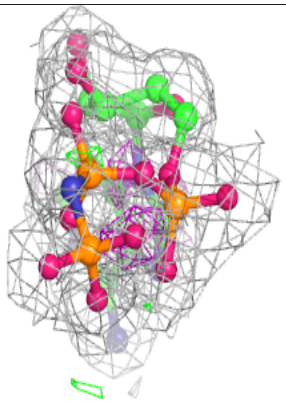


Electron density around ANP C 920:

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

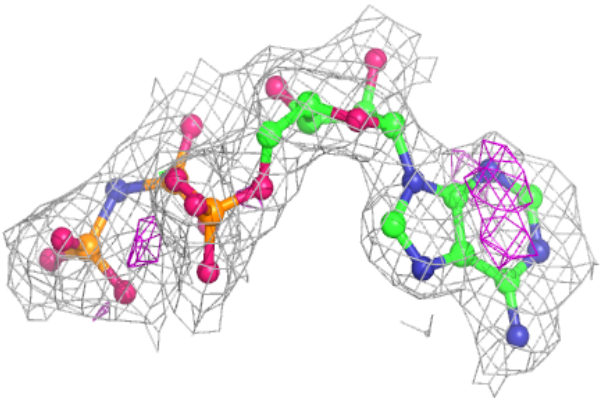


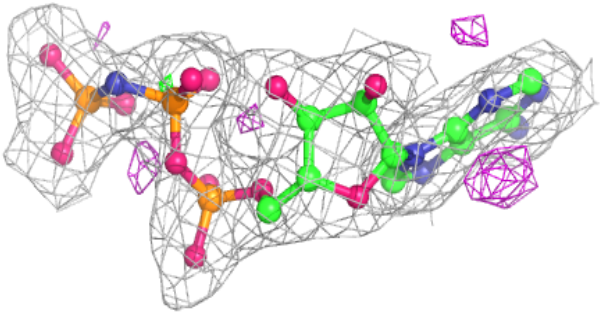


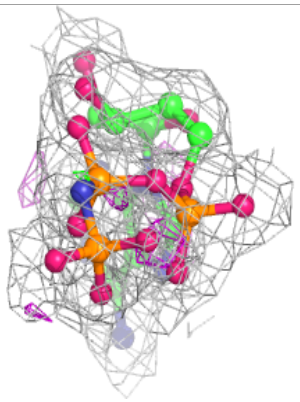


Electron density around ANP D 930:

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

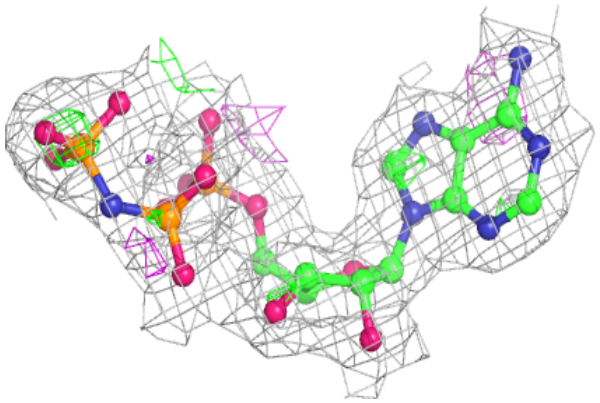


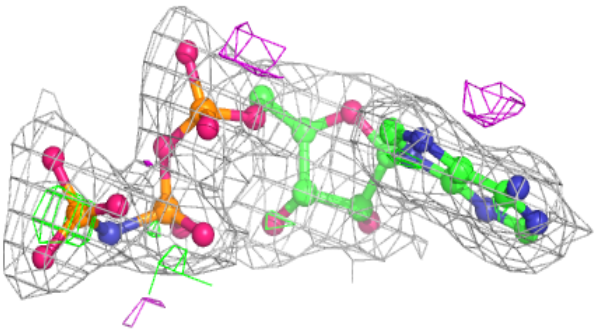


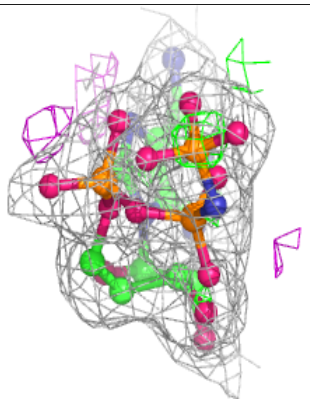


Electron density around ANP E 940:

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

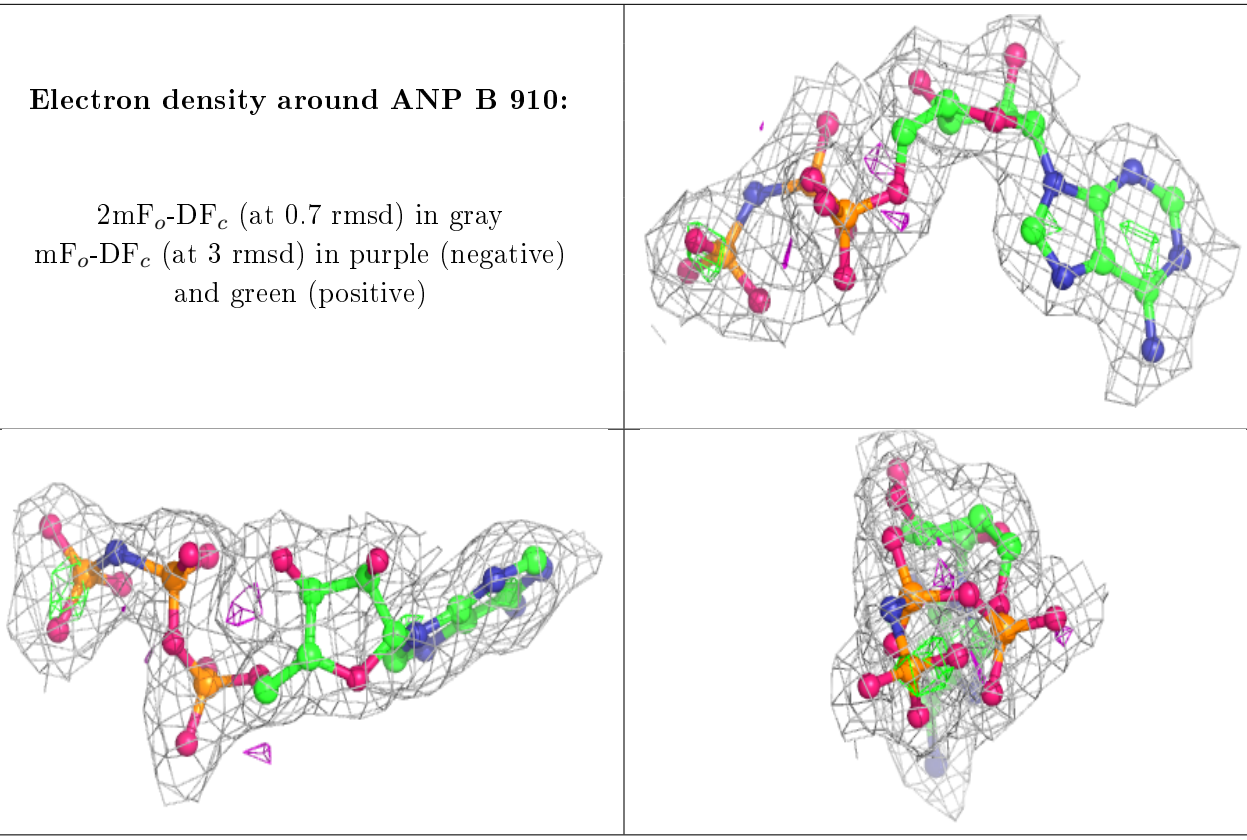






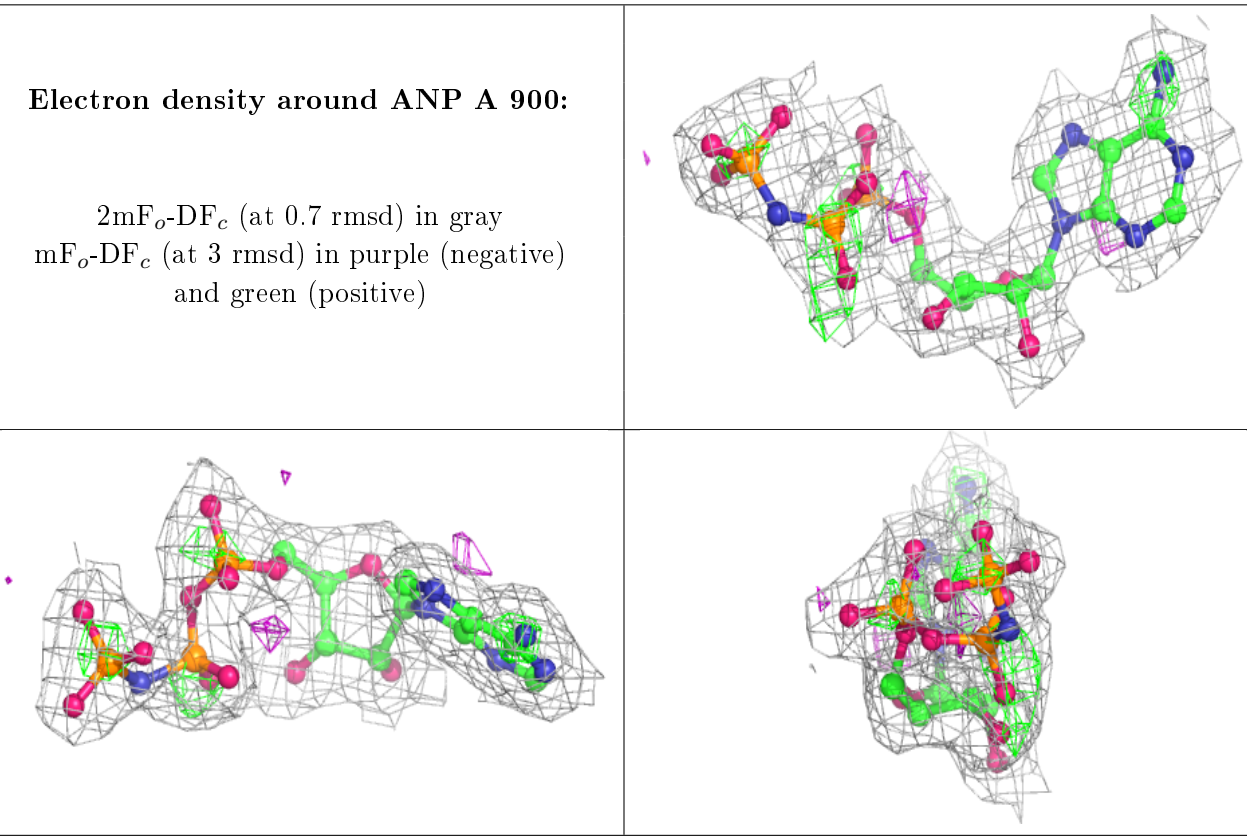
Electron density around ANP B 910:

$2mF_o$-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 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)



6.5 Other polymers (i)

There are no such residues in this entry.