



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 7, 2023 – 10:05 am GMT

PDB ID : 2JIZ  
Title : The Structure of F1-ATPase inhibited by resveratrol.  
Authors : Gledhill, J.R.; Montgomery, M.G.; Leslie, A.G.W.; Walker, J.E.  
Deposited on : 2007-07-03  
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](mailto: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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

---

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

MolProbity : 4.02b-467  
Mogul : 1.8.4, 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

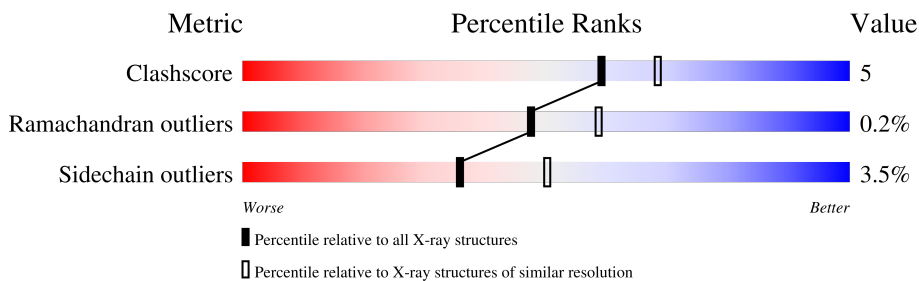
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.30 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))
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (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 of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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  $\leq 5\%$ .

Mol	Chain	Length	Quality of chain
1	A	510	
1	B	510	
1	C	510	
1	H	510	
1	I	510	
1	J	510	
2	D	482	
2	E	482	

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Length	Quality of chain
2	F	482	 89% 7% . .
2	K	482	 88% 9% .
2	L	482	 83% 11% . .
2	M	482	 88% 7% . .
3	G	272	 58% 11% . 29%
3	N	272	 60% 9% . 29%

## 2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 50811 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 ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	487	3715	2341	656	706	12	0	0	0
1	B	479	3658	2305	647	694	12	0	0	0
1	C	495	3768	2374	664	718	12	0	0	0
1	H	487	3715	2341	656	706	12	0	0	0
1	I	479	3658	2305	647	694	12	0	0	0
1	J	495	3768	2374	664	718	12	0	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	GLU	GLN	SEE REMARK 999	UNP P19483
B	1	GLU	GLN	SEE REMARK 999	UNP P19483
C	1	GLU	GLN	SEE REMARK 999	UNP P19483
H	1	GLU	GLN	SEE REMARK 999	UNP P19483
I	1	GLU	GLN	SEE REMARK 999	UNP P19483
J	1	GLU	GLN	SEE REMARK 999	UNP P19483

- Molecule 2 is a protein called ATP SYNTHASE SUBUNIT BETA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	D	467	3539	2243	601	684	11	0	0	0
2	E	466	3530	2238	600	681	11	0	0	0
2	F	466	3530	2238	600	681	11	0	0	0

*Continued on next page...*

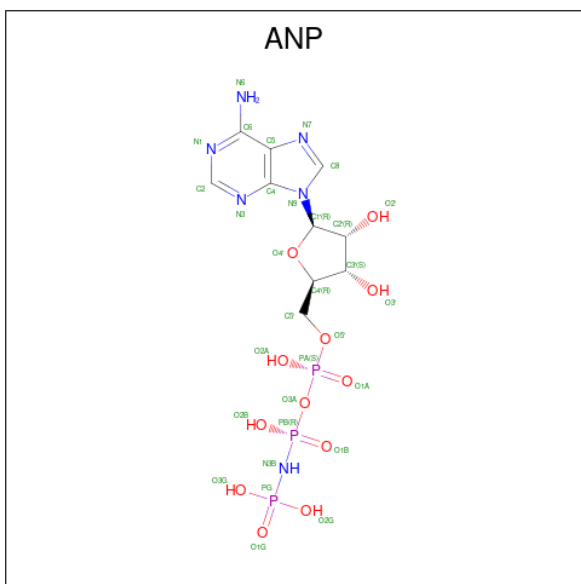
Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	K	467	Total	C	N	O	S	0	0	0
			3539	2243	601	684	11			
2	L	466	Total	C	N	O	S	0	0	0
			3530	2238	600	681	11			
2	M	466	Total	C	N	O	S	0	0	0
			3530	2238	600	681	11			

- Molecule 3 is a protein called ATP SYNTHASE GAMMA CHAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	G	192	Total	C	N	O	S	0	0	0
			1492	942	268	275	7			
3	N	192	Total	C	N	O	S	0	0	0
			1492	942	268	275	7			

- Molecule 4 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
4	A	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	B	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	C	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	F	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

Continued on next page...

*Continued from previous page...*

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	H	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	I	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	J	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
4	M	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

- Molecule 5 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

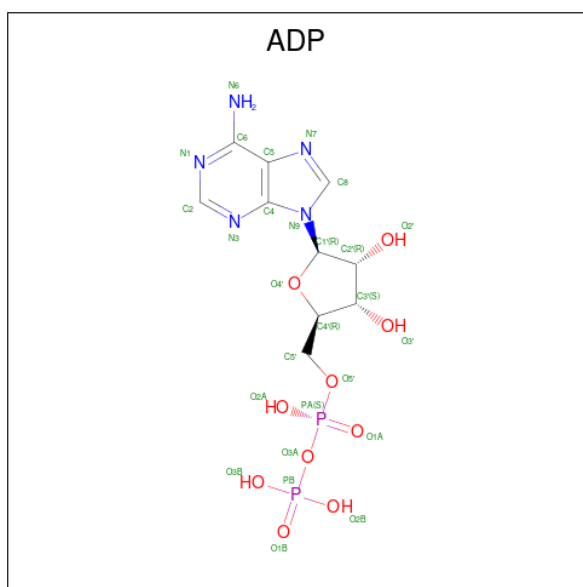
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	Mg	0	0
			1	1		
5	B	1	Total	Mg	0	0
			1	1		
5	C	1	Total	Mg	0	0
			1	1		
5	D	1	Total	Mg	0	0
			1	1		
5	F	1	Total	Mg	0	0
			1	1		
5	H	1	Total	Mg	0	0
			1	1		
5	I	1	Total	Mg	0	0
			1	1		
5	J	1	Total	Mg	0	0
			1	1		
5	K	1	Total	Mg	0	0
			1	1		
5	M	1	Total	Mg	0	0
			1	1		

- Molecule 6 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



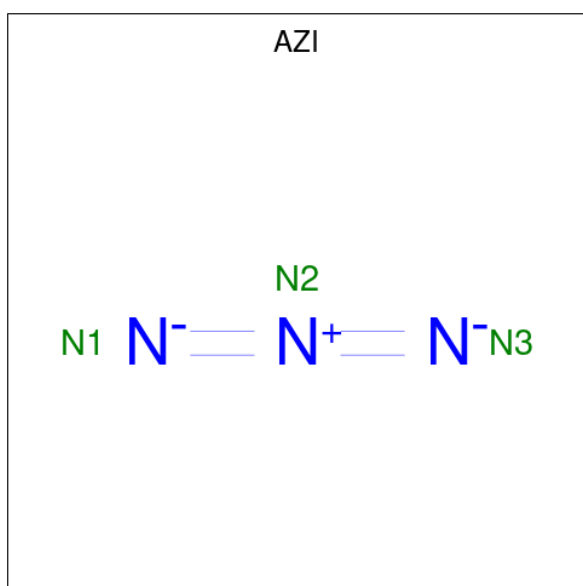
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total C O 6 3 3	0	0
6	A	1	Total C O 6 3 3	0	0
6	B	1	Total C O 6 3 3	0	0
6	B	1	Total C O 6 3 3	0	0
6	C	1	Total C O 6 3 3	0	0
6	D	1	Total C O 6 3 3	0	0
6	H	1	Total C O 6 3 3	0	0
6	H	1	Total C O 6 3 3	0	0
6	I	1	Total C O 6 3 3	0	0
6	J	1	Total C O 6 3 3	0	0
6	K	1	Total C O 6 3 3	0	0
6	K	1	Total C O 6 3 3	0	0

- Molecule 7 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula:  $C_{10}H_{15}N_5O_{10}P_2$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
7	D	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
7	K	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

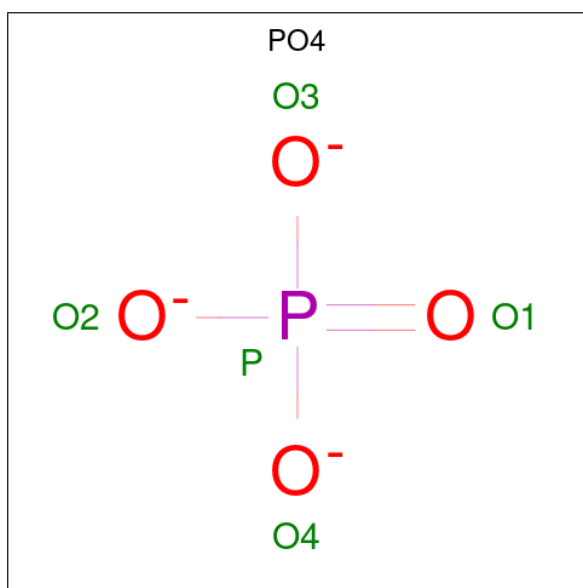
- Molecule 8 is AZIDE ION (three-letter code: AZI) (formula: N<sub>3</sub>).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	D	1	Total	N	0	0
			3	3		
8	K	1	Total	N	0	0
			3	3		

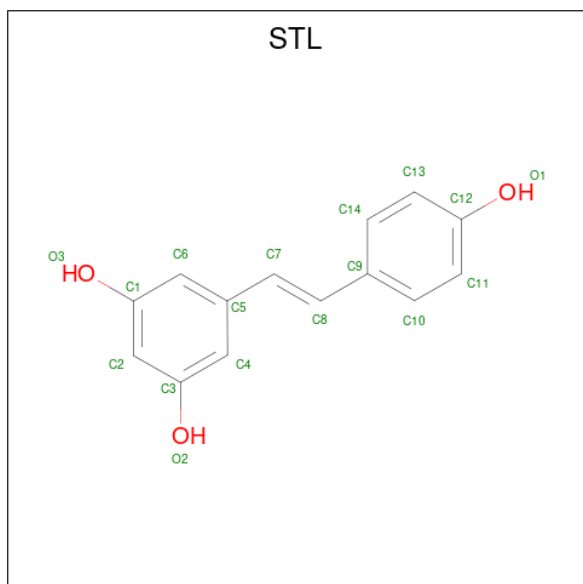


- Molecule 9 is PHOSPHATE ION (three-letter code: PO4) (formula: O<sub>4</sub>P).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	E	1	Total	O	P	0	0
			5	4	1		
9	L	1	Total	O	P	0	0
			5	4	1		

- Molecule 10 is RESVERATROL (three-letter code: STL) (formula: C<sub>14</sub>H<sub>12</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	G	1	Total	C	O	0	1
			34	28	6		

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	N	1	Total	C	O	0	1
			34	28	6		


- Molecule 11 is water.

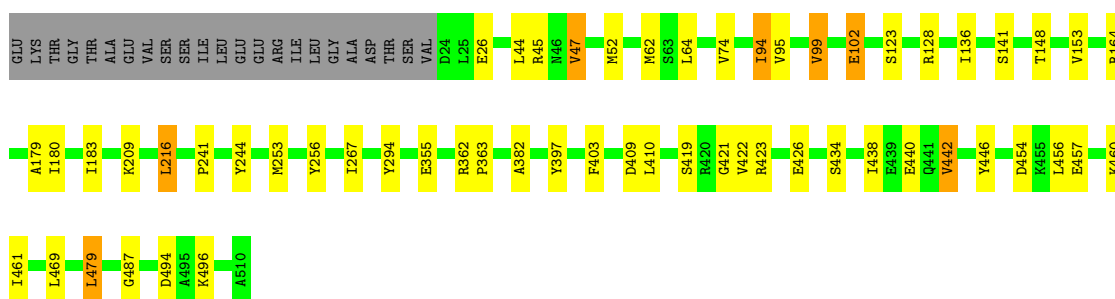
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	A	342	Total	O	0	0
			342	342		
11	B	284	Total	O	0	0
			284	284		
11	C	354	Total	O	0	0
			354	354		
11	D	299	Total	O	0	0
			299	299		
11	E	212	Total	O	0	0
			212	212		
11	F	328	Total	O	0	0
			328	328		
11	G	74	Total	O	0	0
			74	74		
11	H	336	Total	O	0	0
			336	336		
11	I	299	Total	O	0	0
			299	299		
11	J	363	Total	O	0	0
			363	363		
11	K	332	Total	O	0	0
			332	332		
11	L	250	Total	O	0	0
			250	250		
11	M	333	Total	O	0	0
			333	333		
11	N	73	Total	O	0	0
			73	73		

### 3 Residue-property plots [i](#)


These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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.

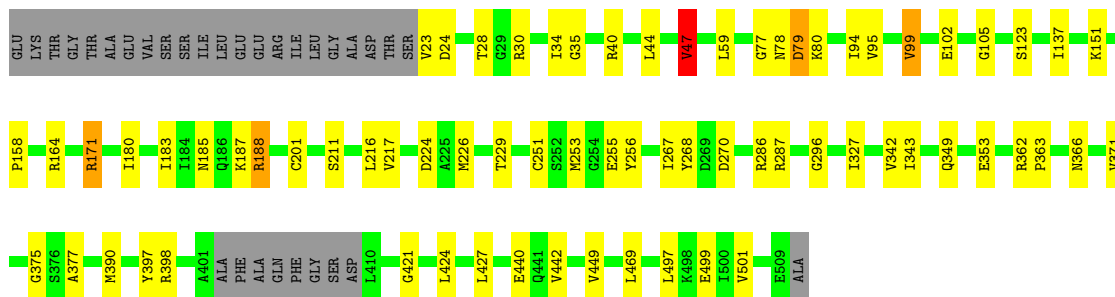
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain A: 




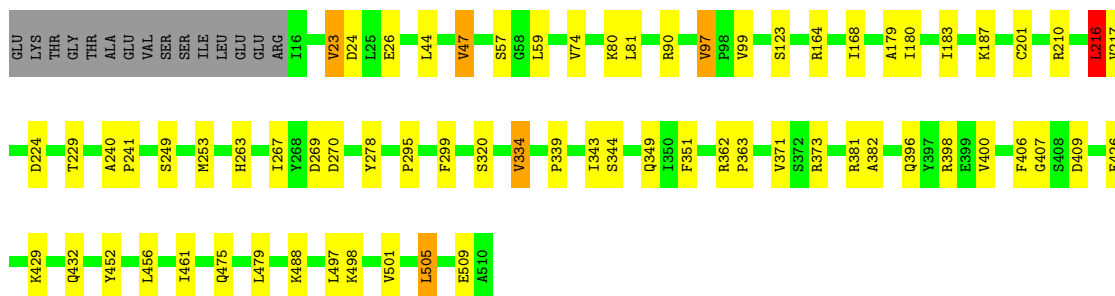
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain B: 




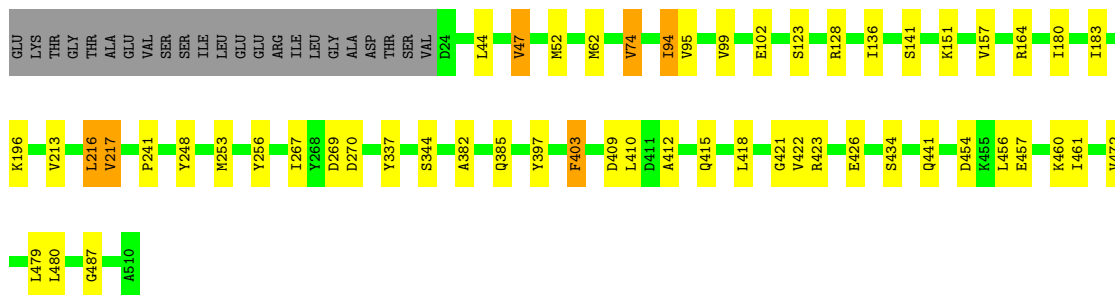
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain C: 




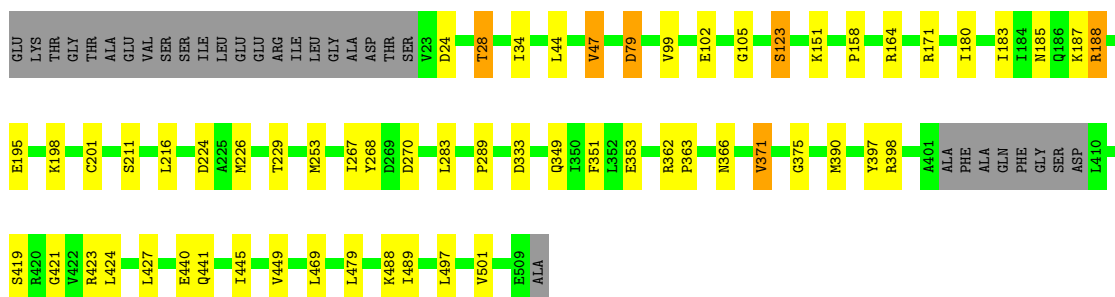
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain H:  85% 10% • 5%




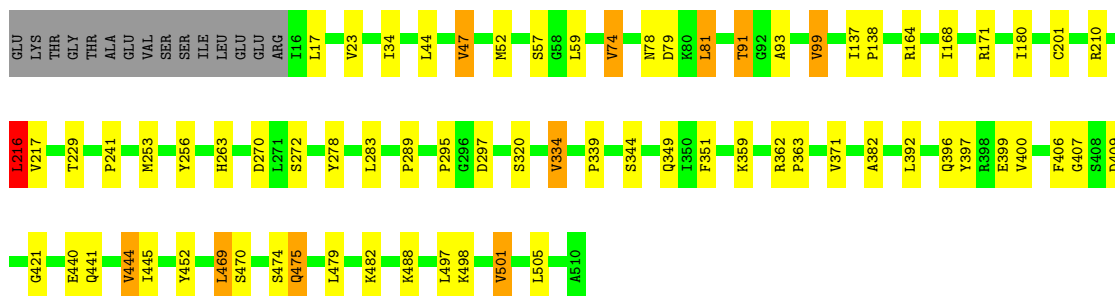
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain I:  82% 11% • 6%



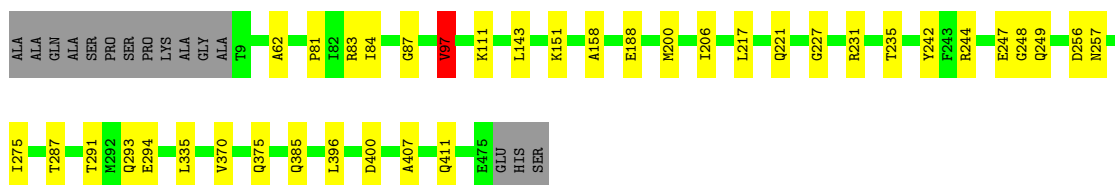
- Molecule 1: ATP SYNTHASE SUBUNIT ALPHA HEART ISOFORM

Chain J:  83% 12% • •




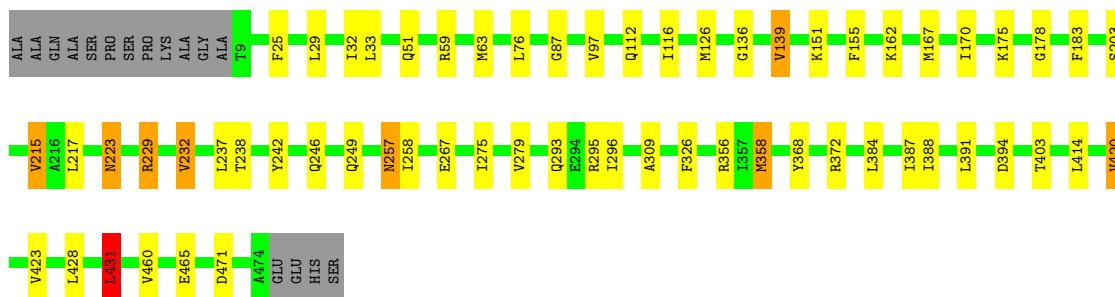
- Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain D:  89% 8% •




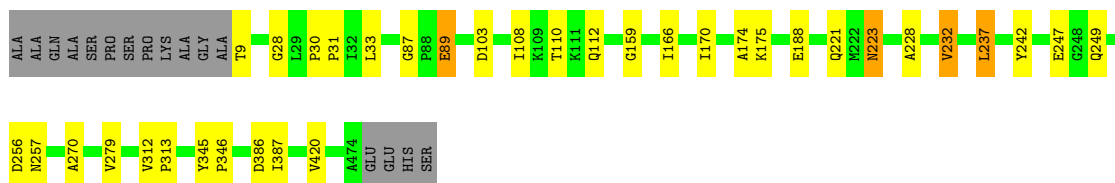
- Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain E:  84% 11% . .




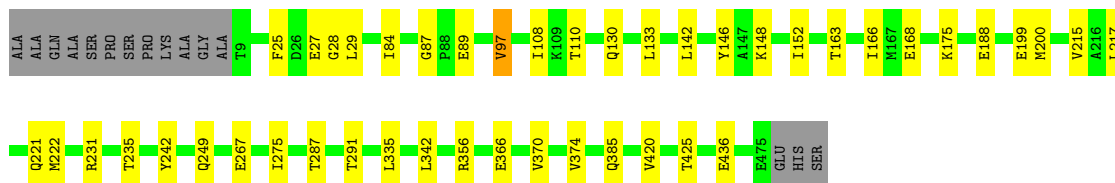
• Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain F:  89% 7% . .




• Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain K:  88% 9% .




• Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain L:  83% 11% . .



• Molecule 2: ATP SYNTHASE SUBUNIT BETA

Chain M:  88% 7% . .



## 4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	106.78Å 277.37Å 137.83Å 90.00° 90.19° 90.00°	Depositor
Resolution (Å)	138.68 – 2.30 66.88 – 2.30	Depositor EDS
% Data completeness (in resolution range)	84.6 (138.68-2.30) 83.8 (66.88-2.30)	Depositor EDS
$R_{merge}$	0.06	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.97 (at 2.29Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, $R_{free}$	0.160 , 0.217 0.164 , (Not available)	Depositor DCC
$R_{free}$ test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	34.8	Xtrriage
Anisotropy	0.031	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.30 , 39.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.46$ , $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	0.387 for h,-k,-l	Xtrriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	50811	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	45.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.01% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ADP, PO4, STL, GOL, MG, ANP, AZI

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	0.47	0/3766	0.60	0/5080
1	B	0.46	0/3706	0.61	1/4998 (0.0%)
1	C	0.49	0/3819	0.62	1/5153 (0.0%)
1	H	0.46	0/3766	0.60	1/5080 (0.0%)
1	I	0.46	0/3706	0.60	1/4998 (0.0%)
1	J	0.50	0/3819	0.63	1/5153 (0.0%)
2	D	0.47	0/3596	0.59	1/4879 (0.0%)
2	E	0.43	0/3587	0.59	3/4867 (0.1%)
2	F	0.47	0/3587	0.61	1/4867 (0.0%)
2	K	0.48	0/3596	0.60	1/4879 (0.0%)
2	L	0.43	0/3587	0.59	2/4867 (0.0%)
2	M	0.47	0/3587	0.63	3/4867 (0.1%)
3	G	0.41	0/1502	0.52	0/2006
3	N	0.39	0/1502	0.51	0/2006
All	All	0.46	0/47126	0.60	16/63700 (0.0%)

There are no bond length outliers.

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	M	237	LEU	CA-CB-CG	8.32	134.44	115.30
2	F	237	LEU	CA-CB-CG	7.94	133.56	115.30
1	I	371	VAL	CB-CA-C	-6.28	99.47	111.40
2	K	97	VAL	CB-CA-C	-6.17	99.68	111.40
1	J	216	LEU	CA-CB-CG	6.02	129.15	115.30
2	E	229	ARG	NE-CZ-NH2	-5.97	117.31	120.30
2	M	97	VAL	CB-CA-C	-5.88	100.22	111.40
1	B	47	VAL	CB-CA-C	-5.63	100.71	111.40
2	E	76	LEU	CA-CB-CG	5.61	128.19	115.30
1	H	216	LEU	CA-CB-CG	5.53	128.02	115.30

*Continued on next page...*



Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	431	LEU	CA-CB-CG	5.52	128.00	115.30
2	D	97	VAL	CB-CA-C	-5.46	101.02	111.40
2	L	139	VAL	CB-CA-C	-5.46	101.02	111.40
2	E	431	LEU	CA-CB-CG	5.40	127.73	115.30
1	C	216	LEU	CA-CB-CG	5.31	127.51	115.30
2	M	139	VAL	CB-CA-C	-5.14	101.63	111.40

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	3715	0	3812	40	0
1	B	3658	0	3767	45	0
1	C	3768	0	3867	35	0
1	H	3715	0	3812	33	0
1	I	3658	0	3767	39	0
1	J	3768	0	3867	42	0
2	D	3539	0	3592	23	0
2	E	3530	0	3587	49	0
2	F	3530	0	3586	21	0
2	K	3539	0	3592	31	0
2	L	3530	0	3587	45	0
2	M	3530	0	3586	30	0
3	G	1492	0	1587	15	0
3	N	1492	0	1587	16	0
4	A	31	0	13	0	0
4	B	31	0	13	0	0
4	C	31	0	13	0	0
4	F	31	0	13	1	0
4	H	31	0	13	0	0
4	I	31	0	13	0	0
4	J	31	0	13	0	0
4	M	31	0	13	1	0
5	A	1	0	0	0	0

Continued on next page...

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	1	0	0	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
5	F	1	0	0	0	0
5	H	1	0	0	0	0
5	I	1	0	0	0	0
5	J	1	0	0	0	0
5	K	1	0	0	0	0
5	M	1	0	0	0	0
6	A	12	0	16	1	0
6	B	12	0	16	1	0
6	C	6	0	8	0	0
6	D	6	0	8	1	0
6	H	12	0	16	3	0
6	I	6	0	8	0	0
6	J	6	0	8	0	0
6	K	12	0	16	2	0
7	D	27	0	12	1	0
7	K	27	0	12	0	0
8	D	3	0	0	1	0
8	K	3	0	0	1	0
9	E	5	0	0	0	0
9	L	5	0	0	0	0
10	G	34	0	20	0	0
10	N	34	0	19	1	0
11	A	342	0	0	1	0
11	B	284	0	0	5	0
11	C	354	0	0	4	0
11	D	299	0	0	3	0
11	E	212	0	0	5	0
11	F	328	0	0	3	0
11	G	74	0	0	4	0
11	H	336	0	0	3	0
11	I	299	0	0	2	0
11	J	363	0	0	2	0
11	K	332	0	0	7	0
11	L	250	0	0	2	0
11	M	333	0	0	3	0
11	N	73	0	0	1	0
All	All	50811	0	47859	443	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 5.

All (443) 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:A:94:ILE:HD11	1:A:128:ARG:HG2	1.42	1.00
1:A:74:VAL:HG13	1:A:241:PRO:HG3	1.43	0.98
2:E:203:SER:HB2	2:E:420:VAL:HG22	1.46	0.95
2:L:223:ASN:HD22	2:L:223:ASN:H	1.14	0.89
2:M:223:ASN:HD22	2:M:223:ASN:H	1.22	0.86
1:A:102:GLU:HG3	1:A:123:SER:HA	1.59	0.83
1:B:377:ALA:HB1	1:J:17:LEU:HD23	1.61	0.83
1:A:52:MET:HG3	1:A:95:VAL:HG22	1.59	0.83
2:E:136:GLY:HA3	2:E:431:LEU:HD13	1.59	0.83
2:F:89:GLU:HG2	2:F:110:THR:HG22	1.62	0.81
1:H:52:MET:HG3	1:H:95:VAL:HG22	1.61	0.81
1:I:102:GLU:HG3	1:I:123:SER:HA	1.63	0.80
1:H:94:ILE:HD11	1:H:128:ARG:HG2	1.64	0.80
2:L:136:GLY:HA3	2:L:431:LEU:HD13	1.62	0.79
2:M:387:ILE:HG13	11:M:2283:HOH:O	1.82	0.77
1:H:74:VAL:HG13	1:H:241:PRO:HG3	1.67	0.77
1:B:78:ASN:HD21	1:B:80:LYS:HD3	1.50	0.76
1:H:44:LEU:O	1:H:47:VAL:HG22	1.86	0.76
2:K:89:GLU:HG2	11:K:2068:HOH:O	1.85	0.76
1:J:52:MET:O	1:J:91:THR:HB	1.85	0.75
3:N:89:MET:HG2	3:N:116:LEU:HD21	1.69	0.74
1:A:44:LEU:O	1:A:47:VAL:HG22	1.86	0.74
2:F:223:ASN:HD22	2:F:223:ASN:H	1.36	0.73
2:E:223:ASN:HD22	2:E:223:ASN:H	1.36	0.73
1:C:44:LEU:O	1:C:47:VAL:HG22	1.89	0.72
1:J:91:THR:HG22	1:J:93:ALA:H	1.52	0.72
1:A:52:MET:CG	1:A:95:VAL:HG22	2.18	0.72
1:B:123:SER:HB3	11:B:2075:HOH:O	1.89	0.72
2:E:170:ILE:HG21	2:E:215:VAL:HG22	1.72	0.72
1:B:80:LYS:HD2	2:E:33:LEU:HD12	1.72	0.71
1:J:99:VAL:HG22	1:J:253:MET:HA	1.72	0.71
1:H:74:VAL:HG13	1:H:241:PRO:CG	2.21	0.70
1:C:396:GLN:O	1:C:400:VAL:HG23	1.92	0.69
1:J:59:LEU:HD11	1:J:78:ASN:O	1.92	0.69
2:K:436:GLU:HG3	11:K:2310:HOH:O	1.92	0.69
1:B:102:GLU:HG3	1:B:123:SER:HA	1.75	0.68
2:E:229:ARG:NH2	2:E:267:GLU:OE1	2.26	0.68
2:L:223:ASN:H	2:L:223:ASN:ND2	1.90	0.68
1:A:94:ILE:CD1	1:A:128:ARG:HG2	2.23	0.68
6:K:1480:GOL:H12	11:K:2246:HOH:O	1.92	0.68

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:44:LEU:O	1:B:47:VAL:HG22	1.92	0.68
1:I:34:ILE:HD11	1:I:79:ASP:HB2	1.74	0.68
3:G:168:VAL:HG23	3:G:169:ILE:HG13	1.76	0.67
1:H:457:GLU:HB2	1:H:460:LYS:HD3	1.75	0.67
1:B:24:ASP:O	1:B:28:THR:HB	1.93	0.67
2:M:223:ASN:HD22	2:M:223:ASN:N	1.93	0.67
1:I:44:LEU:O	1:I:47:VAL:HG22	1.94	0.67
1:B:99:VAL:HG13	1:B:256:TYR:HB2	1.77	0.67
1:H:102:GLU:HG3	1:H:123:SER:HA	1.77	0.66
1:I:180:ILE:CD1	1:I:216:LEU:HD21	2.25	0.66
1:I:441:GLN:O	1:I:445:ILE:HG12	1.95	0.66
2:L:223:ASN:HD22	2:L:223:ASN:N	1.84	0.66
1:C:456:LEU:HD23	1:C:461:ILE:HD13	1.78	0.66
3:N:80:ALA:O	3:N:84:SER:HB2	1.96	0.66
2:D:249:GLN:HA	2:D:249:GLN:OE1	1.95	0.65
1:B:171:ARG:HH12	2:E:356:ARG:HH21	1.44	0.65
1:A:62:MET:CE	1:A:64:LEU:HD21	2.27	0.65
2:L:395:GLU:HG3	11:L:2223:HOH:O	1.97	0.64
1:I:211:SER:HB3	2:L:126:MET:CE	2.27	0.64
1:J:283:LEU:HD21	1:J:289:PRO:HB3	1.80	0.63
1:I:353:GLU:HG3	1:I:366:ASN:HB2	1.80	0.63
2:E:223:ASN:HD22	2:E:223:ASN:N	1.95	0.63
1:B:497:LEU:O	1:B:501:VAL:HG23	1.99	0.63
1:J:23:VAL:O	1:J:23:VAL:CG1	2.47	0.63
2:D:287:THR:O	2:D:291:THR:HG23	1.98	0.62
3:G:33:ARG:HG2	11:G:2012:HOH:O	2.00	0.62
1:A:62:MET:HE2	1:A:64:LEU:HD21	1.82	0.62
1:J:81:LEU:HD12	11:J:2051:HOH:O	1.99	0.62
1:A:74:VAL:CG1	1:A:241:PRO:HG3	2.26	0.62
2:M:89:GLU:HG2	2:M:110:THR:HG22	1.82	0.61
2:F:223:ASN:HD22	2:F:223:ASN:N	1.98	0.61
1:J:441:GLN:O	1:J:445:ILE:HG12	2.00	0.61
1:B:286:ARG:HA	2:E:275:ILE:HD12	1.81	0.61
1:C:23:VAL:O	1:C:23:VAL:CG1	2.48	0.61
2:K:199:GLU:HB3	11:K:2155:HOH:O	2.01	0.61
1:B:353:GLU:HG3	1:B:366:ASN:HB2	1.82	0.61
2:L:180:TYR:H	2:L:249:GLN:NE2	1.98	0.61
2:F:228:ALA:O	2:F:232:VAL:HG22	2.01	0.60
1:J:334:VAL:HG13	1:J:351:PHE:CE1	2.35	0.60
2:L:229:ARG:NH2	2:L:267:GLU:OE1	2.29	0.60
3:G:80:ALA:O	3:G:84:SER:HB2	2.01	0.60

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:105:GLY:HA2	1:I:226:MET:O	2.01	0.60
2:E:358:MET:HE3	2:E:368:TYR:CD1	2.37	0.60
3:N:168:VAL:HG23	3:N:169:ILE:HG13	1.84	0.59
1:J:44:LEU:O	1:J:47:VAL:HG22	2.02	0.59
2:L:388:ILE:HD12	2:L:393:MET:HG3	1.85	0.59
2:K:87:GLY:HA2	2:K:242:TYR:CE2	2.37	0.59
2:E:63:MET:HE3	2:E:97:VAL:HG21	1.85	0.58
1:J:23:VAL:O	1:J:23:VAL:HG12	2.04	0.58
2:D:370:VAL:HG23	11:D:2244:HOH:O	2.03	0.58
1:C:81:LEU:HD12	11:C:2048:HOH:O	2.03	0.58
3:N:136:PRO:HD3	3:N:221:THR:HG21	1.86	0.57
2:L:136:GLY:HA3	2:L:431:LEU:CD1	2.33	0.57
2:L:293:GLN:HA	2:L:293:GLN:HE21	1.67	0.57
1:H:183:ILE:HD11	1:H:267:ILE:HD13	1.85	0.57
1:J:440:GLU:O	1:J:444:VAL:HG13	2.03	0.57
1:B:296:GLY:HA2	6:B:1513:GOL:H11	1.86	0.57
1:C:334:VAL:HG13	1:C:351:PHE:CE1	2.39	0.57
2:D:97:VAL:HG22	11:D:2066:HOH:O	2.04	0.57
1:I:497:LEU:O	1:I:501:VAL:HG23	2.05	0.57
2:E:358:MET:CE	2:E:368:TYR:CD1	2.88	0.57
3:G:252:ARG:NH2	11:G:2055:HOH:O	2.36	0.57
1:B:180:ILE:CD1	1:B:216:LEU:HD21	2.34	0.57
2:F:170:ILE:O	2:F:174:ALA:HB3	2.05	0.57
1:A:99:VAL:HG13	1:A:256:TYR:HB2	1.85	0.56
1:A:99:VAL:HG22	1:A:253:MET:HA	1.86	0.56
1:A:479:LEU:HG	1:A:496:LYS:HG2	1.87	0.56
1:B:105:GLY:HA2	1:B:226:MET:O	2.04	0.56
2:E:358:MET:HE3	2:E:368:TYR:HD1	1.70	0.56
2:M:221:GLN:HE21	2:M:221:GLN:HA	1.70	0.56
2:E:151:LYS:HE3	2:E:296:ILE:HB	1.86	0.56
2:E:112:GLN:HG2	11:E:2117:HOH:O	2.04	0.56
1:H:99:VAL:HG22	1:H:253:MET:HA	1.88	0.56
1:I:187:LYS:CE	1:I:224:ASP:HB3	2.36	0.56
1:I:180:ILE:HD12	1:I:216:LEU:HD21	1.85	0.56
2:M:159:GLY:HA2	4:M:1475:ANP:HNB1	1.70	0.56
2:E:178:GLY:O	2:E:249:GLN:NE2	2.39	0.56
3:G:115:ILE:HG22	3:G:116:LEU:HD13	1.88	0.56
2:E:223:ASN:H	2:E:223:ASN:ND2	2.04	0.55
3:G:136:PRO:HD3	3:G:221:THR:HG21	1.87	0.55
1:H:456:LEU:HD23	1:H:461:ILE:HD13	1.88	0.55
2:M:63:MET:HE1	2:M:231:ARG:HB2	1.88	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:63:MET:CE	2:L:97:VAL:HG21	2.37	0.55
2:L:181:SER:HB2	2:L:215:VAL:HG13	1.88	0.55
1:C:497:LEU:O	1:C:501:VAL:HG13	2.06	0.55
1:C:263:HIS:HD2	1:C:320:SER:OG	1.89	0.55
2:K:249:GLN:OE1	2:K:249:GLN:HA	2.05	0.55
1:H:403:PHE:CD2	3:N:22:SER:HB2	2.42	0.54
2:E:257:ASN:HB2	2:E:309:ALA:O	2.07	0.54
1:J:392:LEU:HD11	2:K:425:THR:HG22	1.88	0.54
1:A:74:VAL:HG13	1:A:241:PRO:CG	2.28	0.54
2:D:231:ARG:HH22	6:D:1479:GOL:H11	1.72	0.54
1:B:34:ILE:HD11	1:B:79:ASP:HB2	1.90	0.54
1:A:496:LYS:NZ	11:A:2323:HOH:O	2.40	0.54
1:H:422:VAL:O	1:H:426:GLU:HG2	2.08	0.54
1:J:263:HIS:HD2	1:J:320:SER:OG	1.91	0.54
2:K:25:PHE:HB2	2:K:29:LEU:HD12	1.90	0.54
1:A:183:ILE:HD11	1:A:267:ILE:HD13	1.89	0.53
1:H:62:MET:CE	11:H:2333:HOH:O	2.56	0.53
2:E:237:LEU:HD21	2:E:295:ARG:HB2	1.90	0.53
2:M:89:GLU:HG2	2:M:110:THR:CG2	2.38	0.53
2:M:139:VAL:HG13	2:M:414:LEU:HD22	1.91	0.53
3:G:17:GLN:HG3	11:G:2046:HOH:O	2.07	0.53
1:A:179:ALA:HB1	1:A:267:ILE:HG12	1.90	0.53
1:I:187:LYS:HE3	1:I:224:ASP:HB3	1.91	0.53
1:A:102:GLU:HG3	1:A:123:SER:CA	2.37	0.53
2:E:257:ASN:C	2:E:257:ASN:HD22	2.11	0.53
1:H:180:ILE:HD11	1:H:216:LEU:HD21	1.91	0.53
1:B:187:LYS:HE2	1:B:224:ASP:HB3	1.91	0.53
1:C:180:ILE:HD11	1:C:216:LEU:HD21	1.90	0.53
2:E:258:ILE:HG23	11:E:2121:HOH:O	2.09	0.52
1:A:148:THR:HG21	1:A:153:VAL:HG11	1.90	0.52
1:A:62:MET:HE1	1:A:244:TYR:HE2	1.74	0.52
1:B:183:ILE:HD11	1:B:267:ILE:CD1	2.40	0.52
2:D:188:GLU:O	2:D:221:GLN:HB3	2.09	0.52
1:C:59:LEU:HD11	11:C:2048:HOH:O	2.08	0.52
2:E:242:TYR:CD1	2:E:246:GLN:HG3	2.44	0.52
1:C:168:ILE:HD11	1:C:339:PRO:HB3	1.91	0.52
1:J:52:MET:HB3	1:J:91:THR:HG21	1.92	0.52
2:L:151:LYS:HE3	2:L:296:ILE:HB	1.91	0.52
1:H:472:VAL:HG23	1:H:480:LEU:HD11	1.91	0.51
1:I:353:GLU:CD	1:I:366:ASN:HD22	2.13	0.51
1:A:423:ARG:HD3	1:A:454:ASP:HA	1.91	0.51

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:457:GLU:HB3	1:A:460:LYS:HD3	1.92	0.51
1:B:99:VAL:HG22	1:B:253:MET:HA	1.92	0.51
2:E:183:PHE:HB3	2:E:217:LEU:CD2	2.40	0.51
1:A:419:SER:O	1:A:423:ARG:HD2	2.10	0.51
2:E:460:VAL:HG13	2:E:465:GLU:HB2	1.92	0.51
2:F:386:ASP:HB2	11:F:2279:HOH:O	2.10	0.51
1:H:412:ALA:HA	1:H:415:GLN:HE21	1.76	0.51
1:J:475:GLN:HG2	11:J:2335:HOH:O	2.09	0.51
2:K:287:THR:O	2:K:291:THR:HG23	2.11	0.51
1:C:187:LYS:HE2	1:C:224:ASP:HB3	1.93	0.50
2:L:13:ILE:HD12	2:L:73:GLN:HB3	1.92	0.50
2:F:270:ALA:CB	11:F:2185:HOH:O	2.58	0.50
1:H:248:TYR:CD2	6:H:1513:GOL:H31	2.46	0.50
1:B:180:ILE:HD12	1:B:216:LEU:HD21	1.93	0.50
2:F:87:GLY:HA2	2:F:242:TYR:CE2	2.46	0.50
1:I:102:GLU:HG3	1:I:123:SER:CA	2.40	0.50
3:G:251:ASN:O	3:G:255:GLN:HG3	2.12	0.50
2:L:163:THR:HG21	2:L:199:GLU:OE1	2.11	0.50
2:D:84:ILE:HD13	2:D:235:THR:HG23	1.94	0.50
1:J:349:GLN:HE22	1:J:371:VAL:HG22	1.77	0.50
1:H:213:VAL:O	1:H:217:VAL:HG13	2.12	0.49
1:C:80:LYS:HD3	2:F:33:LEU:HD12	1.94	0.49
2:E:246:GLN:NE2	11:E:2117:HOH:O	2.44	0.49
2:F:223:ASN:H	2:F:223:ASN:ND2	2.06	0.49
1:J:452:TYR:OH	1:J:498:LYS:HG3	2.12	0.49
1:B:40:ARG:HD2	11:B:2008:HOH:O	2.11	0.49
2:E:32:ILE:HG22	2:E:33:LEU:HG	1.93	0.49
3:G:77:LEU:HD13	3:G:232:MET:HE2	1.95	0.49
2:M:223:ASN:H	2:M:223:ASN:ND2	1.99	0.49
1:A:422:VAL:O	1:A:426:GLU:HG2	2.13	0.49
1:I:185:ASN:OD1	1:I:188:ARG:NH1	2.45	0.49
1:B:390:MET:HB2	1:B:449:VAL:HG11	1.95	0.49
2:E:372:ARG:NH2	11:E:2191:HOH:O	2.45	0.49
1:H:151:LYS:HA	1:H:441:GLN:OE1	2.13	0.49
2:M:228:ALA:O	2:M:232:VAL:HG22	2.12	0.49
1:I:183:ILE:HD11	1:I:267:ILE:HD12	1.95	0.48
2:L:63:MET:HE1	2:L:228:ALA:HA	1.95	0.48
3:N:13:ILE:HA	3:N:16:ILE:HD12	1.95	0.48
1:B:171:ARG:HH12	2:E:356:ARG:NH2	2.10	0.48
1:I:99:VAL:HG22	1:I:253:MET:HA	1.94	0.48
2:L:25:PHE:HB2	2:L:29:LEU:HD23	1.94	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:201:CYS:O	1:C:229:THR:HA	2.12	0.48
2:E:384:LEU:O	2:E:388:ILE:HG12	2.13	0.48
1:H:62:MET:HE1	11:H:2333:HOH:O	2.12	0.48
1:A:62:MET:HE3	1:A:64:LEU:HD21	1.95	0.48
2:K:200:MET:SD	2:K:215:VAL:HG11	2.54	0.48
1:B:78:ASN:ND2	1:B:80:LYS:HD3	2.24	0.48
1:C:299:PHE:HB3	11:D:2176:HOH:O	2.14	0.48
2:E:387:ILE:HG23	2:E:391:LEU:HD12	1.96	0.48
1:I:24:ASP:O	1:I:28:THR:HB	2.13	0.48
1:J:396:GLN:O	1:J:400:VAL:HG23	2.13	0.48
1:C:382:ALA:HB2	1:C:488:LYS:HA	1.95	0.48
2:D:87:GLY:HA2	2:D:242:TYR:CE2	2.48	0.48
2:D:407:ALA:O	2:D:411:GLN:HG3	2.13	0.48
2:L:180:TYR:H	2:L:249:GLN:HE22	1.62	0.48
2:M:170:ILE:O	2:M:174:ALA:HB3	2.13	0.48
1:B:327:ILE:HD11	1:B:342:VAL:HG21	1.93	0.48
2:E:97:VAL:HB	2:E:232:VAL:HG13	1.94	0.48
1:H:99:VAL:HG13	1:H:256:TYR:HB2	1.96	0.48
1:A:438:ILE:O	1:A:442:VAL:HG13	2.13	0.48
2:E:183:PHE:HB3	2:E:217:LEU:HD22	1.96	0.47
1:B:286:ARG:HA	2:E:275:ILE:CD1	2.43	0.47
2:D:244:ARG:O	2:D:248:GLY:HA2	2.14	0.47
1:I:390:MET:HG3	1:I:424:LEU:HD13	1.97	0.47
2:M:221:GLN:HA	2:M:221:GLN:NE2	2.30	0.47
2:E:155:PHE:HZ	2:E:326:PHE:CZ	2.33	0.47
1:C:362:ARG:HA	1:C:363:PRO:C	2.35	0.47
2:E:257:ASN:C	2:E:257:ASN:ND2	2.68	0.47
1:I:397:TYR:CD1	1:I:421:GLY:HA3	2.49	0.47
1:J:349:GLN:NE2	1:J:371:VAL:HG22	2.29	0.47
1:J:399:GLU:CG	2:K:342:LEU:HD22	2.44	0.47
2:K:175:LYS:HE2	11:K:2158:HOH:O	2.15	0.47
1:C:398:ARG:HG2	11:C:2276:HOH:O	2.13	0.47
1:I:398:ARG:HD3	11:I:2249:HOH:O	2.15	0.47
1:J:344:SER:HA	8:K:1478:AZI:N3	2.29	0.47
2:M:32:ILE:HG22	2:M:33:LEU:HG	1.97	0.47
11:B:2113:HOH:O	2:F:313:PRO:HB3	2.14	0.47
3:G:137:THR:HG22	3:G:138:PHE:N	2.30	0.47
2:M:63:MET:CE	2:M:97:VAL:HG11	2.44	0.47
1:A:52:MET:HG2	1:A:95:VAL:CG2	2.45	0.47
2:E:25:PHE:HB2	2:E:29:LEU:HD23	1.96	0.46
1:I:34:ILE:HD11	1:I:79:ASP:CB	2.43	0.46

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:183:ILE:HD11	1:I:267:ILE:CD1	2.45	0.46
1:J:278:TYR:CE2	1:J:295:PRO:HG2	2.50	0.46
2:K:146:TYR:HB3	2:K:152:ILE:HD11	1.98	0.46
2:L:256:ASP:OD1	2:L:257:ASN:HB3	2.16	0.46
1:C:99:VAL:HG22	1:C:253:MET:HA	1.98	0.46
2:L:183:PHE:HB3	2:L:217:LEU:CD2	2.46	0.46
1:C:426:GLU:HA	1:C:429:LYS:HD2	1.98	0.46
1:J:497:LEU:O	1:J:501:VAL:HG13	2.15	0.46
2:K:84:ILE:HD13	2:K:235:THR:HG23	1.96	0.46
2:D:188:GLU:H	2:D:221:GLN:NE2	2.14	0.46
2:F:175:LYS:HG3	11:F:2124:HOH:O	2.15	0.46
1:I:201:CYS:O	1:I:229:THR:HA	2.15	0.46
2:D:275:ILE:HG23	3:G:269:ALA:HB2	1.98	0.46
1:I:268:TYR:O	1:I:270:ASP:HA	2.16	0.46
2:L:267:GLU:O	2:L:271:LEU:HG	2.16	0.46
1:A:94:ILE:HD13	1:A:95:VAL:N	2.31	0.46
1:I:333:ASP:OD2	3:N:252:ARG:HD3	2.16	0.46
2:K:436:GLU:HB2	11:K:2309:HOH:O	2.15	0.46
3:N:136:PRO:O	3:N:218:LYS:NZ	2.49	0.46
1:C:183:ILE:HD11	1:C:267:ILE:HD13	1.97	0.46
1:C:343:ILE:HG22	2:D:158:ALA:HB1	1.98	0.46
1:A:397:TYR:CG	1:A:421:GLY:HA3	2.51	0.46
1:B:397:TYR:CD1	1:B:421:GLY:HA3	2.51	0.46
1:C:240:ALA:HB3	1:C:241:PRO:HD3	1.97	0.46
2:M:97:VAL:HG13	2:M:232:VAL:HG13	1.98	0.46
2:M:434:LEU:O	2:M:438:ILE:HG12	2.16	0.46
1:B:390:MET:HG3	1:B:424:LEU:HD13	1.97	0.45
1:C:23:VAL:HG13	11:C:2006:HOH:O	2.15	0.45
2:D:200:MET:HE3	2:D:206:ILE:CD1	2.46	0.45
2:K:133:LEU:HB2	2:K:148:LYS:HG2	1.98	0.45
1:A:52:MET:CG	1:A:95:VAL:CG2	2.92	0.45
1:J:297:ASP:HB3	2:K:267:GLU:HB3	1.98	0.45
3:G:202:ARG:HG2	11:G:2038:HOH:O	2.16	0.45
1:J:201:CYS:O	1:J:229:THR:HA	2.16	0.45
1:J:362:ARG:HA	1:J:363:PRO:C	2.37	0.45
1:A:397:TYR:CD1	1:A:421:GLY:HA3	2.52	0.45
2:K:130:GLN:HE22	2:K:356:ARG:HD2	1.81	0.45
1:I:187:LYS:HE2	1:I:224:ASP:HB3	1.98	0.45
2:K:108:ILE:HG22	2:K:110:THR:HG23	1.99	0.45
2:L:358:MET:HE3	2:L:368:TYR:CD1	2.51	0.45
2:M:63:MET:CE	2:M:231:ARG:HB2	2.46	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:180:ILE:HD11	1:J:216:LEU:HD21	1.98	0.45
1:C:452:TYR:OH	1:C:498:LYS:HG3	2.16	0.45
1:H:94:ILE:HD11	1:H:128:ARG:CG	2.39	0.45
1:I:351:PHE:CE2	1:I:353:GLU:HG2	2.52	0.45
1:J:400:VAL:HG21	11:K:2316:HOH:O	2.15	0.45
2:K:275:ILE:HG23	3:N:269:ALA:HB2	1.99	0.45
2:L:257:ASN:HB2	2:L:309:ALA:O	2.16	0.45
1:A:456:LEU:HD23	1:A:461:ILE:HD13	1.99	0.44
1:J:270:ASP:OD1	1:J:272:SER:HB2	2.17	0.44
3:N:113:ARG:HG3	3:N:114:SER:N	2.32	0.44
1:A:440:GLU:HB3	1:A:469:LEU:HD11	1.99	0.44
1:B:151:LYS:NZ	1:B:427:LEU:O	2.47	0.44
1:B:183:ILE:HD11	1:B:267:ILE:HD13	1.99	0.44
1:C:47:VAL:HG13	1:C:90:ARG:HG2	1.99	0.44
1:J:397:TYR:CD1	1:J:421:GLY:HA3	2.52	0.44
2:L:388:ILE:HD11	2:L:396:LEU:HD11	1.98	0.44
2:F:108:ILE:HG22	2:F:110:THR:HG23	1.98	0.44
1:I:349:GLN:NE2	11:I:2242:HOH:O	2.45	0.44
1:J:137:ILE:N	1:J:138:PRO:CD	2.81	0.44
1:J:399:GLU:HG3	2:K:342:LEU:HD22	1.98	0.44
2:L:183:PHE:HB3	2:L:217:LEU:HD23	1.98	0.44
2:L:256:ASP:HA	2:L:257:ASN:HA	1.68	0.44
10:N:1273[B]:STL:H2	11:N:2072:HOH:O	2.16	0.44
1:B:287:ARG:HD2	11:B:2177:HOH:O	2.18	0.44
2:K:188:GLU:H	2:K:221:GLN:NE2	2.16	0.44
2:K:27:GLU:HB2	2:K:28:GLY:H	1.66	0.44
2:L:223:ASN:ND2	2:L:223:ASN:N	2.56	0.44
2:L:374:VAL:HG13	2:L:410:ILE:HG21	1.99	0.44
2:M:97:VAL:HG22	11:M:2162:HOH:O	2.18	0.44
1:C:179:ALA:HB1	1:C:267:ILE:HG12	2.00	0.44
2:E:358:MET:CE	2:E:368:TYR:HD1	2.27	0.43
1:J:382:ALA:HB2	1:J:488:LYS:HA	1.99	0.43
2:L:97:VAL:HB	2:L:232:VAL:HG13	2.00	0.43
2:L:175:LYS:HE3	2:L:419:GLN:OE1	2.18	0.43
2:M:400:ASP:O	2:M:404:VAL:HG23	2.18	0.43
3:N:105:ILE:O	3:N:105:ILE:HG23	2.17	0.43
2:E:32:ILE:O	2:E:33:LEU:HB2	2.18	0.43
2:K:168:GLU:OE1	2:K:420:VAL:HG22	2.19	0.43
3:N:108:VAL:HA	3:N:128:PHE:HB2	2.00	0.43
1:B:158:PRO:O	1:B:375:GLY:HA3	2.18	0.43
2:E:358:MET:HE1	2:E:368:TYR:CD1	2.53	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:M:87:GLY:HA2	2:M:242:TYR:CE2	2.52	0.43
1:C:349:GLN:NE2	1:C:371:VAL:HG22	2.34	0.43
2:E:116:ILE:HA	2:E:238:THR:OG1	2.18	0.43
3:G:209:LEU:O	3:G:213:ILE:HG12	2.19	0.43
1:H:102:GLU:HG3	1:H:123:SER:CA	2.47	0.43
1:I:390:MET:HB2	1:I:449:VAL:HG11	2.00	0.43
1:I:440:GLU:HB3	1:I:469:LEU:HD11	1.99	0.43
1:C:269:ASP:HA	1:C:270:ASP:HA	1.78	0.43
1:C:344:SER:HA	8:D:1478:AZI:N3	2.33	0.43
1:H:418:LEU:O	1:H:422:VAL:HG13	2.18	0.43
2:K:188:GLU:O	2:K:221:GLN:HB3	2.18	0.43
1:A:26:GLU:HA	1:A:45:ARG:HB2	2.00	0.43
2:K:231:ARG:HH22	6:K:1479:GOL:H11	1.84	0.43
2:M:63:MET:HE1	2:M:97:VAL:HG11	2.00	0.43
1:B:137:ILE:HG13	2:F:103:ASP:HA	2.01	0.43
1:B:440:GLU:HB3	1:B:469:LEU:HD11	1.99	0.43
1:C:373:ARG:HA	7:D:1476:ADP:O3'	2.18	0.43
1:H:248:TYR:CE2	6:H:1513:GOL:H31	2.53	0.43
1:I:158:PRO:O	1:I:375:GLY:HA3	2.19	0.43
1:H:123:SER:HB3	11:H:2087:HOH:O	2.19	0.43
2:L:155:PHE:HZ	2:L:326:PHE:CZ	2.37	0.43
1:B:268:TYR:O	1:B:270:ASP:HA	2.19	0.42
2:D:143:LEU:HD22	2:D:375:GLN:HG3	2.01	0.42
2:D:247:GLU:O	2:D:249:GLN:NE2	2.52	0.42
1:J:34:ILE:HD11	1:J:79:ASP:HB2	1.99	0.42
2:L:242:TYR:CD1	2:L:246:GLN:HG3	2.54	0.42
1:B:201:CYS:O	1:B:229:THR:HA	2.19	0.42
1:C:278:TYR:CE2	1:C:295:PRO:HG2	2.54	0.42
2:K:200:MET:CE	2:K:217:LEU:HD11	2.49	0.42
2:M:345:TYR:HA	2:M:346:PRO:C	2.39	0.42
3:N:242:MET:HE3	3:N:242:MET:HB2	1.93	0.42
2:E:155:PHE:HZ	2:E:326:PHE:HZ	1.66	0.42
2:E:167:MET:HB3	2:E:420:VAL:HG21	2.01	0.42
1:I:151:LYS:NZ	1:I:427:LEU:O	2.49	0.42
1:I:195:GLU:HA	1:I:198:LYS:HG3	2.01	0.42
2:F:30:PRO:HA	2:F:31:PRO:HD2	1.93	0.42
1:H:196:LYS:HE3	1:H:196:LYS:HB3	1.84	0.42
1:H:397:TYR:CG	1:H:421:GLY:HA3	2.54	0.42
2:L:226:PRO:HG2	2:L:271:LEU:HD11	2.00	0.42
1:B:251:CYS:O	1:B:255:GLU:HG3	2.19	0.42
1:B:398:ARG:HD3	11:B:2229:HOH:O	2.19	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:200:MET:HE1	2:D:217:LEU:HD21	2.01	0.42
2:E:51:GLN:HB2	2:E:59:ARG:HB3	2.01	0.42
2:F:159:GLY:HA2	4:F:1475:ANP:HNB1	1.85	0.42
1:J:99:VAL:HG13	1:J:256:TYR:HB2	2.02	0.42
3:N:39:LYS:HB2	3:N:40:PRO:HD3	2.01	0.42
2:E:139:VAL:HG13	2:E:414:LEU:HD22	2.01	0.42
1:H:337:TYR:OH	6:H:1514:GOL:H12	2.20	0.42
1:B:102:GLU:HG3	1:B:123:SER:CA	2.47	0.42
2:K:163:THR:O	2:K:166:ILE:HG22	2.19	0.42
2:L:94:ILE:HD11	2:L:197:TYR:CD1	2.55	0.42
3:N:17:GLN:HE22	3:N:21:LYS:HD2	1.84	0.42
2:F:221:GLN:HE21	2:F:221:GLN:HA	1.85	0.42
2:L:63:MET:HE1	2:L:97:VAL:HG21	2.01	0.42
1:A:180:ILE:HD11	1:A:216:LEU:HD21	2.01	0.42
3:G:136:PRO:O	3:G:218:LYS:NZ	2.52	0.42
1:H:382:ALA:N	1:H:487:GLY:O	2.52	0.42
1:J:334:VAL:HG13	1:J:351:PHE:CD1	2.55	0.42
2:M:84:ILE:HD13	2:M:235:THR:HG23	2.01	0.42
2:M:249:GLN:HB3	11:M:2136:HOH:O	2.20	0.42
2:L:360:PRO:HD3	2:L:368:TYR:CD1	2.54	0.41
3:G:113:ARG:HG3	3:G:114:SER:N	2.35	0.41
1:J:359:LYS:O	2:M:376:LYS:HE2	2.20	0.41
1:A:294:TYR:O	6:A:1514:GOL:O1	2.34	0.41
1:B:362:ARG:HA	1:B:363:PRO:C	2.39	0.41
2:D:396:LEU:HD22	2:D:400:ASP:HB3	2.00	0.41
2:K:366:GLU:O	2:K:370:VAL:HG23	2.20	0.41
2:L:31:PRO:O	2:L:34:ASN:HB2	2.20	0.41
1:B:59:LEU:HD21	1:B:77:GLY:HA3	2.03	0.41
1:C:505:LEU:HD22	1:C:509:GLU:HG3	2.02	0.41
2:E:423:VAL:HG22	11:E:2198:HOH:O	2.21	0.41
2:L:358:MET:CE	2:L:368:TYR:CD1	3.03	0.41
1:B:343:ILE:HG12	1:B:349:GLN:HG2	2.03	0.41
2:D:151:LYS:NZ	2:D:293:GLN:O	2.52	0.41
2:M:181:SER:HB2	2:M:215:VAL:HG22	2.03	0.41
1:A:362:ARG:HA	1:A:363:PRO:C	2.41	0.41
2:L:255:ILE:HB	2:L:308:GLN:HG2	2.03	0.41
1:I:211:SER:HA	2:L:126:MET:HE2	2.03	0.41
1:J:168:ILE:HD11	1:J:339:PRO:HB3	2.03	0.41
1:A:209:LYS:HB2	2:D:294:GLU:OE1	2.21	0.41
1:B:211:SER:HB3	2:E:126:MET:CE	2.51	0.41
2:D:256:ASP:HA	2:D:257:ASN:HA	1.88	0.41

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:387:ILE:HG23	2:L:391:LEU:HD12	2.02	0.41
2:M:349:ASP:HA	2:M:350:PRO:HD3	1.94	0.41
3:N:88:GLN:HE21	3:N:88:GLN:HB2	1.64	0.41
2:E:87:GLY:HA2	2:E:242:TYR:CE2	2.56	0.41
2:E:223:ASN:N	2:E:223:ASN:ND2	2.64	0.41
1:J:74:VAL:HG13	1:J:241:PRO:CG	2.51	0.41
1:J:440:GLU:HB3	1:J:469:LEU:HD11	2.02	0.41
2:L:395:GLU:CG	11:L:2223:HOH:O	2.60	0.41
1:B:94:ILE:O	1:B:95:VAL:C	2.60	0.41
1:B:185:ASN:O	1:B:188:ARG:HG2	2.21	0.41
1:I:283:LEU:HD21	1:I:289:PRO:HB3	2.03	0.41
2:K:142:LEU:HD21	2:K:374:VAL:HG21	2.02	0.41
2:F:188:GLU:H	2:F:221:GLN:NE2	2.19	0.40
1:I:488:LYS:HG2	1:I:489:ILE:N	2.36	0.40
1:C:23:VAL:O	1:C:23:VAL:HG12	2.20	0.40
2:D:62:ALA:O	2:D:227:GLY:HA3	2.22	0.40
2:D:81:PRO:O	2:D:83:ARG:HG3	2.21	0.40
2:F:312:VAL:HA	2:F:313:PRO:HD2	1.89	0.40
2:M:188:GLU:H	2:M:221:GLN:NE2	2.19	0.40
1:A:382:ALA:N	1:A:487:GLY:O	2.54	0.40
1:C:97:VAL:HG11	1:C:249:SER:HB3	2.02	0.40
2:F:256:ASP:HA	2:F:257:ASN:HA	1.85	0.40
1:H:423:ARG:HD3	1:H:454:ASP:HA	2.03	0.40
1:I:419:SER:O	1:I:423:ARG:HD2	2.21	0.40
2:K:188:GLU:O	2:K:222:MET:HG2	2.21	0.40
1:A:446:TYR:OH	1:A:494:ASP:OD2	2.36	0.40
2:F:345:TYR:HA	2:F:346:PRO:C	2.41	0.40
1:H:269:ASP:HA	1:H:270:ASP:HA	1.85	0.40
1:I:362:ARG:HA	1:I:363:PRO:C	2.41	0.40
2:E:460:VAL:HG13	2:E:465:GLU:CB	2.51	0.40
1:H:136:ILE:CD1	2:L:219:TYR:HD1	2.35	0.40
2:K:200:MET:HE3	2:K:217:LEU:HD11	2.04	0.40
2:L:345:TYR:HA	2:L:346:PRO:C	2.42	0.40
2:M:374:VAL:HG13	2:M:410:ILE:HG21	2.04	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	485/510 (95%)	474 (98%)	11 (2%)	0	100	100
1	B	475/510 (93%)	466 (98%)	8 (2%)	1 (0%)	47	58
1	C	493/510 (97%)	480 (97%)	11 (2%)	2 (0%)	34	42
1	H	485/510 (95%)	475 (98%)	9 (2%)	1 (0%)	47	58
1	I	475/510 (93%)	464 (98%)	11 (2%)	0	100	100
1	J	493/510 (97%)	482 (98%)	9 (2%)	2 (0%)	34	42
2	D	465/482 (96%)	448 (96%)	16 (3%)	1 (0%)	47	58
2	E	464/482 (96%)	445 (96%)	18 (4%)	1 (0%)	47	58
2	F	464/482 (96%)	449 (97%)	14 (3%)	1 (0%)	47	58
2	K	465/482 (96%)	447 (96%)	17 (4%)	1 (0%)	47	58
2	L	464/482 (96%)	448 (97%)	15 (3%)	1 (0%)	47	58
2	M	464/482 (96%)	452 (97%)	11 (2%)	1 (0%)	47	58
3	G	180/272 (66%)	176 (98%)	4 (2%)	0	100	100
3	N	180/272 (66%)	176 (98%)	4 (2%)	0	100	100
All	All	6052/6496 (93%)	5882 (97%)	158 (3%)	12 (0%)	47	58

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	409	ASP
1	C	407	GLY
2	D	385	GLN
1	J	407	GLY
1	J	409	ASP
2	K	385	GLN
2	M	28	GLY
2	E	279	VAL
1	H	385	GLN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	L	279	VAL
2	F	28	GLY
1	B	35	GLY

### 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	393/413 (95%)	378 (96%)	15 (4%)	33	47
1	B	389/413 (94%)	377 (97%)	12 (3%)	40	55
1	C	399/413 (97%)	380 (95%)	19 (5%)	25	36
1	H	393/413 (95%)	380 (97%)	13 (3%)	38	53
1	I	389/413 (94%)	380 (98%)	9 (2%)	50	67
1	J	399/413 (97%)	377 (94%)	22 (6%)	21	30
2	D	377/386 (98%)	374 (99%)	3 (1%)	81	91
2	E	376/386 (97%)	361 (96%)	15 (4%)	31	44
2	F	376/386 (97%)	364 (97%)	12 (3%)	39	54
2	K	377/386 (98%)	375 (100%)	2 (0%)	88	95
2	L	376/386 (97%)	360 (96%)	16 (4%)	29	40
2	M	376/386 (97%)	366 (97%)	10 (3%)	44	61
3	G	162/230 (70%)	145 (90%)	17 (10%)	7	8
3	N	162/230 (70%)	154 (95%)	8 (5%)	25	35
All	All	4944/5254 (94%)	4771 (96%)	173 (4%)	36	50

All (173) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	47	VAL
1	A	94	ILE
1	A	99	VAL
1	A	102	GLU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	136	ILE
1	A	141	SER
1	A	164	ARG
1	A	216	LEU
1	A	355	GLU
1	A	403	PHE
1	A	409	ASP
1	A	410	LEU
1	A	434	SER
1	A	442	VAL
1	A	479	LEU
1	B	23	VAL
1	B	30	ARG
1	B	47	VAL
1	B	79	ASP
1	B	99	VAL
1	B	164	ARG
1	B	171	ARG
1	B	188	ARG
1	B	217	VAL
1	B	371	VAL
1	B	442	VAL
1	B	499	GLU
1	C	23	VAL
1	C	24	ASP
1	C	26	GLU
1	C	47	VAL
1	C	57	SER
1	C	74	VAL
1	C	97	VAL
1	C	123	SER
1	C	164	ARG
1	C	210	ARG
1	C	216	LEU
1	C	217	VAL
1	C	334	VAL
1	C	381	ARG
1	C	406	PHE
1	C	432	GLN
1	C	475	GLN
1	C	479	LEU
1	C	505	LEU

*Continued on next page...*



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	D	97	VAL
2	D	111	LYS
2	D	335	LEU
2	E	139	VAL
2	E	162	LYS
2	E	175	LYS
2	E	215	VAL
2	E	223	ASN
2	E	232	VAL
2	E	257	ASN
2	E	293	GLN
2	E	358	MET
2	E	394	ASP
2	E	403	THR
2	E	420	VAL
2	E	428	LEU
2	E	431	LEU
2	E	471	ASP
2	F	9	THR
2	F	89	GLU
2	F	112	GLN
2	F	166	ILE
2	F	223	ASN
2	F	232	VAL
2	F	237	LEU
2	F	247	GLU
2	F	249	GLN
2	F	279	VAL
2	F	387	ILE
2	F	420	VAL
3	G	2	THR
3	G	35	GLU
3	G	67	LEU
3	G	84	SER
3	G	88	GLN
3	G	89	MET
3	G	113	ARG
3	G	116	LEU
3	G	131	VAL
3	G	146	LEU
3	G	202	ARG
3	G	212	ILE

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	G	217	LEU
3	G	218	LYS
3	G	226	SER
3	G	232	MET
3	G	262	LEU
1	H	47	VAL
1	H	74	VAL
1	H	94	ILE
1	H	141	SER
1	H	157	VAL
1	H	164	ARG
1	H	217	VAL
1	H	344	SER
1	H	403	PHE
1	H	409	ASP
1	H	410	LEU
1	H	434	SER
1	H	479	LEU
1	I	28	THR
1	I	47	VAL
1	I	79	ASP
1	I	123	SER
1	I	164	ARG
1	I	171	ARG
1	I	188	ARG
1	I	371	VAL
1	I	479	LEU
1	J	47	VAL
1	J	57	SER
1	J	74	VAL
1	J	81	LEU
1	J	91	THR
1	J	99	VAL
1	J	164	ARG
1	J	171	ARG
1	J	210	ARG
1	J	216	LEU
1	J	217	VAL
1	J	334	VAL
1	J	406	PHE
1	J	444	VAL
1	J	469	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	J	470	SER
1	J	474	SER
1	J	475	GLN
1	J	479	LEU
1	J	482	LYS
1	J	501	VAL
1	J	505	LEU
2	K	97	VAL
2	K	335	LEU
2	L	139	VAL
2	L	175	LYS
2	L	215	VAL
2	L	223	ASN
2	L	232	VAL
2	L	246	GLN
2	L	257	ASN
2	L	293	GLN
2	L	352	ASP
2	L	358	MET
2	L	386	ASP
2	L	394	ASP
2	L	420	VAL
2	L	428	LEU
2	L	431	LEU
2	L	454	GLU
2	M	9	THR
2	M	97	VAL
2	M	112	GLN
2	M	139	VAL
2	M	166	ILE
2	M	223	ASN
2	M	232	VAL
2	M	237	LEU
2	M	247	GLU
2	M	249	GLN
3	N	88	GLN
3	N	89	MET
3	N	113	ARG
3	N	131	VAL
3	N	212	ILE
3	N	218	LYS
3	N	254	ARG

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
3	N	262	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (53) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	415	GLN
1	B	466	ASN
1	B	503	ASN
1	C	48	GLN
1	C	263	HIS
1	C	416	GLN
2	D	130	GLN
2	D	194	ASN
2	D	221	GLN
2	E	223	ASN
2	E	257	ASN
2	E	293	GLN
2	E	308	GLN
2	E	367	HIS
2	E	379	GLN
2	E	455	GLN
2	F	130	GLN
2	F	194	ASN
2	F	198	HIS
2	F	221	GLN
2	F	223	ASN
2	F	419	GLN
2	F	443	GLN
3	G	88	GLN
3	G	211	ASN
1	H	415	GLN
1	H	432	GLN
1	I	48	GLN
1	I	349	GLN
1	I	466	ASN
1	I	503	ASN
1	J	263	HIS
1	J	416	GLN
1	J	432	GLN
2	K	130	GLN
2	K	194	ASN
2	K	221	GLN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	L	194	ASN
2	L	223	ASN
2	L	249	GLN
2	L	257	ASN
2	L	293	GLN
2	L	308	GLN
2	M	130	GLN
2	M	194	ASN
2	M	198	HIS
2	M	221	GLN
2	M	223	ASN
2	M	419	GLN
2	M	443	GLN
3	N	17	GLN
3	N	88	GLN
3	N	211	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 40 ligands modelled in this entry, 10 are monoatomic - leaving 30 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
4	ANP	F	1475	5	29,33,33	1.93	8 (27%)	31,52,52	1.90	7 (22%)
4	ANP	A	1511	5	29,33,33	1.85	6 (20%)	31,52,52	1.82	6 (19%)
4	ANP	H	1511	5	29,33,33	1.89	8 (27%)	31,52,52	2.00	6 (19%)
4	ANP	M	1475	5	29,33,33	1.96	9 (31%)	31,52,52	1.97	7 (22%)
6	GOL	B	1512	-	5,5,5	0.36	0	5,5,5	0.32	0
8	AZI	K	1478	-	0,2,2	-	-	0,1,1	-	-
6	GOL	J	1513	-	5,5,5	0.41	0	5,5,5	0.48	0
10	STL	N	1273[A]	-	18,18,18	0.46	0	24,24,24	0.79	1 (4%)
9	PO4	E	1475	-	4,4,4	0.91	0	6,6,6	0.41	0
6	GOL	H	1514	-	5,5,5	0.35	0	5,5,5	0.77	0
6	GOL	B	1513	-	5,5,5	0.34	0	5,5,5	1.11	0
4	ANP	B	1510	5	29,33,33	1.81	7 (24%)	31,52,52	1.71	6 (19%)
8	AZI	D	1478	-	0,2,2	-	-	0,1,1	-	-
6	GOL	H	1513	-	5,5,5	0.32	0	5,5,5	0.58	0
10	STL	G	1273[A]	-	18,18,18	0.50	0	24,24,24	0.76	1 (4%)
10	STL	N	1273[B]	-	18,18,18	0.43	0	24,24,24	0.64	0
6	GOL	A	1513	-	5,5,5	0.33	0	5,5,5	0.51	0
6	GOL	K	1479	-	5,5,5	0.35	0	5,5,5	0.31	0
6	GOL	K	1480	-	5,5,5	0.42	0	5,5,5	0.25	0
7	ADP	K	1476	5	24,29,29	0.96	1 (4%)	29,45,45	1.24	2 (6%)
6	GOL	D	1479	-	5,5,5	0.41	0	5,5,5	0.25	0
10	STL	G	1273[B]	-	18,18,18	0.50	0	24,24,24	0.72	0
4	ANP	J	1511	5	29,33,33	1.76	7 (24%)	31,52,52	2.30	7 (22%)
4	ANP	I	1510	5	29,33,33	1.81	9 (31%)	31,52,52	2.06	5 (16%)
6	GOL	I	1512	-	5,5,5	0.31	0	5,5,5	0.30	0
4	ANP	C	1511	5	29,33,33	1.94	9 (31%)	31,52,52	1.98	6 (19%)
6	GOL	C	1513	-	5,5,5	0.42	0	5,5,5	0.56	0
9	PO4	L	1475	-	4,4,4	0.84	0	6,6,6	0.48	0
6	GOL	A	1514	-	5,5,5	0.38	0	5,5,5	0.78	0
7	ADP	D	1476	5	24,29,29	0.96	1 (4%)	29,45,45	1.16	2 (6%)

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
4	ANP	F	1475	5	-	2/14/38/38	0/3/3/3
4	ANP	A	1511	5	-	3/14/38/38	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	ANP	H	1511	5	-	2/14/38/38	0/3/3/3
4	ANP	M	1475	5	-	3/14/38/38	0/3/3/3
6	GOL	B	1512	-	-	0/4/4/4	-
6	GOL	J	1513	-	-	2/4/4/4	-
10	STL	N	1273[A]	-	-	0/5/5/5	0/2/2/2
6	GOL	H	1514	-	-	4/4/4/4	-
6	GOL	B	1513	-	-	3/4/4/4	-
4	ANP	B	1510	5	-	3/14/38/38	0/3/3/3
6	GOL	H	1513	-	-	2/4/4/4	-
10	STL	G	1273[A]	-	-	2/5/5/5	0/2/2/2
10	STL	N	1273[B]	-	-	0/5/5/5	0/2/2/2
6	GOL	A	1513	-	-	2/4/4/4	-
6	GOL	K	1479	-	-	4/4/4/4	-
6	GOL	K	1480	-	-	4/4/4/4	-
7	ADP	K	1476	5	-	2/12/32/32	0/3/3/3
6	GOL	D	1479	-	-	4/4/4/4	-
10	STL	G	1273[B]	-	-	4/5/5/5	0/2/2/2
4	ANP	J	1511	5	-	2/14/38/38	0/3/3/3
4	ANP	I	1510	5	-	2/14/38/38	0/3/3/3
6	GOL	I	1512	-	-	0/4/4/4	-
4	ANP	C	1511	5	-	2/14/38/38	0/3/3/3
6	GOL	C	1513	-	-	2/4/4/4	-
6	GOL	A	1514	-	-	4/4/4/4	-
7	ADP	D	1476	5	-	3/12/32/32	0/3/3/3

All (65) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1510	ANP	PB-N3B	5.03	1.76	1.63
4	B	1510	ANP	PG-N3B	4.78	1.75	1.63
4	H	1511	ANP	PB-N3B	4.68	1.75	1.63
4	I	1510	ANP	PG-N3B	4.65	1.75	1.63
4	C	1511	ANP	PG-N3B	4.64	1.75	1.63
4	F	1475	ANP	PG-N3B	4.64	1.75	1.63
4	A	1511	ANP	PB-N3B	4.62	1.75	1.63
4	H	1511	ANP	PG-N3B	4.51	1.75	1.63
4	C	1511	ANP	PB-N3B	4.49	1.75	1.63
4	I	1510	ANP	PB-N3B	4.36	1.74	1.63

Continued on next page...

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	1511	ANP	PG-N3B	4.32	1.74	1.63
4	F	1475	ANP	PB-N3B	4.31	1.74	1.63
4	M	1475	ANP	PG-N3B	4.30	1.74	1.63
4	M	1475	ANP	PB-N3B	4.24	1.74	1.63
4	J	1511	ANP	PB-N3B	4.03	1.73	1.63
4	F	1475	ANP	PB-O1B	4.01	1.52	1.46
4	J	1511	ANP	PG-N3B	4.01	1.73	1.63
4	C	1511	ANP	PB-O1B	3.97	1.52	1.46
4	M	1475	ANP	PB-O1B	3.76	1.52	1.46
4	M	1475	ANP	PG-O1G	3.56	1.51	1.46
4	H	1511	ANP	PG-O2G	-3.43	1.47	1.56
4	J	1511	ANP	PB-O1B	3.36	1.51	1.46
4	A	1511	ANP	PG-O1G	3.24	1.51	1.46
4	H	1511	ANP	PG-O1G	3.23	1.51	1.46
4	H	1511	ANP	PB-O1B	3.03	1.51	1.46
4	C	1511	ANP	PG-O1G	2.99	1.50	1.46
4	F	1475	ANP	PG-O1G	2.97	1.50	1.46
4	J	1511	ANP	PG-O1G	2.94	1.50	1.46
4	I	1510	ANP	PB-O1B	2.90	1.50	1.46
4	A	1511	ANP	PB-O1B	2.87	1.50	1.46
4	B	1510	ANP	PB-O1B	2.84	1.50	1.46
4	M	1475	ANP	PG-O2G	-2.77	1.49	1.56
4	J	1511	ANP	C5-C4	2.76	1.48	1.40
4	A	1511	ANP	C5-C4	2.68	1.48	1.40
4	I	1510	ANP	PB-O3A	2.65	1.62	1.59
4	B	1510	ANP	C5-C4	2.65	1.47	1.40
4	C	1511	ANP	PB-O2B	-2.61	1.49	1.56
4	I	1510	ANP	C5-C4	2.56	1.47	1.40
4	M	1475	ANP	PB-O2B	-2.56	1.49	1.56
4	F	1475	ANP	PG-O3G	-2.56	1.49	1.56
4	M	1475	ANP	C5-C4	2.53	1.47	1.40
7	K	1476	ADP	C5-C4	2.51	1.47	1.40
4	F	1475	ANP	PG-O2G	-2.50	1.50	1.56
4	M	1475	ANP	PG-O3G	-2.50	1.50	1.56
4	I	1510	ANP	PG-O1G	2.49	1.50	1.46
7	D	1476	ADP	C5-C4	2.49	1.47	1.40
4	C	1511	ANP	PG-O2G	-2.49	1.50	1.56
4	C	1511	ANP	C5-C4	2.48	1.47	1.40
4	A	1511	ANP	PB-O3A	2.41	1.62	1.59
4	B	1510	ANP	PG-O2G	-2.39	1.50	1.56
4	F	1475	ANP	C5-C4	2.39	1.47	1.40
4	C	1511	ANP	O4'-C1'	2.38	1.44	1.41

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	J	1511	ANP	PB-O2B	-2.35	1.50	1.56
4	F	1475	ANP	PB-O3A	2.32	1.62	1.59
4	H	1511	ANP	O4'-C1'	2.29	1.44	1.41
4	H	1511	ANP	C5-C4	2.27	1.46	1.40
4	J	1511	ANP	PG-O2G	-2.23	1.50	1.56
4	B	1510	ANP	PB-O2B	-2.22	1.50	1.56
4	M	1475	ANP	PB-O3A	2.19	1.61	1.59
4	B	1510	ANP	PG-O1G	2.13	1.49	1.46
4	C	1511	ANP	PB-O3A	2.12	1.61	1.59
4	I	1510	ANP	PB-O2B	-2.07	1.51	1.56
4	I	1510	ANP	C2-N3	2.04	1.35	1.32
4	H	1511	ANP	PG-O3G	-2.02	1.51	1.56
4	I	1510	ANP	PG-O2G	-2.02	1.51	1.56

All (56) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	J	1511	ANP	O1G-PG-N3B	-9.63	97.59	111.77
4	I	1510	ANP	O1G-PG-N3B	-8.31	99.53	111.77
4	C	1511	ANP	O1G-PG-N3B	-7.67	100.47	111.77
4	M	1475	ANP	O1G-PG-N3B	-7.38	100.90	111.77
4	F	1475	ANP	O1G-PG-N3B	-6.65	101.98	111.77
4	H	1511	ANP	O1G-PG-N3B	-6.16	102.69	111.77
4	A	1511	ANP	O1G-PG-N3B	-6.11	102.77	111.77
4	B	1510	ANP	O1G-PG-N3B	-5.19	104.13	111.77
4	H	1511	ANP	O2B-PB-O1B	4.76	119.91	109.92
4	H	1511	ANP	O1B-PB-N3B	-4.01	105.87	111.77
4	C	1511	ANP	O2B-PB-O1B	3.77	117.83	109.92
4	C	1511	ANP	N3-C2-N1	-3.51	123.19	128.68
4	H	1511	ANP	N3-C2-N1	-3.47	123.25	128.68
4	B	1510	ANP	O2B-PB-O1B	3.44	117.12	109.92
4	F	1475	ANP	O2B-PB-O1B	3.42	117.09	109.92
4	B	1510	ANP	N3-C2-N1	-3.40	123.36	128.68
4	J	1511	ANP	O2B-PB-O1B	3.39	117.03	109.92
4	I	1510	ANP	N3-C2-N1	-3.38	123.39	128.68
4	F	1475	ANP	N3-C2-N1	-3.37	123.41	128.68
4	M	1475	ANP	N3-C2-N1	-3.34	123.46	128.68
4	A	1511	ANP	O2B-PB-O1B	3.30	116.84	109.92
4	I	1510	ANP	C3'-C2'-C1'	3.19	105.79	100.98
4	A	1511	ANP	N3-C2-N1	-3.18	123.70	128.68
7	K	1476	ADP	N3-C2-N1	-3.15	123.75	128.68
4	J	1511	ANP	N3-C2-N1	-3.14	123.77	128.68

*Continued on next page...*

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1511	ANP	C4-C5-N7	-3.12	106.14	109.40
4	A	1511	ANP	PB-O3A-PA	-3.04	121.92	132.62
4	M	1475	ANP	O2B-PB-O1B	3.02	116.25	109.92
4	F	1475	ANP	O1B-PB-N3B	-2.93	107.45	111.77
7	D	1476	ADP	N3-C2-N1	-2.91	124.14	128.68
4	C	1511	ANP	C4-C5-N7	-2.78	106.50	109.40
4	H	1511	ANP	C4-C5-N7	-2.76	106.53	109.40
4	B	1510	ANP	C3'-C2'-C1'	2.74	105.11	100.98
4	J	1511	ANP	PB-O3A-PA	-2.73	123.02	132.62
4	F	1475	ANP	O2G-PG-O3G	2.72	114.88	107.64
4	M	1475	ANP	C4-C5-N7	-2.68	106.61	109.40
4	I	1510	ANP	C4-C5-N7	-2.56	106.73	109.40
4	A	1511	ANP	O1B-PB-N3B	-2.53	108.05	111.77
4	H	1511	ANP	PB-O3A-PA	-2.53	123.72	132.62
4	J	1511	ANP	O1B-PB-N3B	-2.50	108.09	111.77
4	J	1511	ANP	C4-C5-N7	-2.50	106.80	109.40
7	K	1476	ADP	C4-C5-N7	-2.48	106.81	109.40
4	B	1510	ANP	C4-C5-N7	-2.46	106.84	109.40
4	I	1510	ANP	PB-O3A-PA	-2.46	123.97	132.62
4	M	1475	ANP	O1B-PB-N3B	-2.39	108.25	111.77
4	M	1475	ANP	C3'-C2'-C1'	2.38	104.56	100.98
4	C	1511	ANP	PB-O3A-PA	-2.29	124.54	132.62
4	F	1475	ANP	PB-O3A-PA	-2.16	125.00	132.62
4	B	1510	ANP	PB-O3A-PA	-2.12	125.14	132.62
4	M	1475	ANP	O2B-PB-O3A	2.10	111.66	104.64
4	J	1511	ANP	O4'-C1'-C2'	-2.08	103.88	106.93
4	F	1475	ANP	C2-N1-C6	2.08	122.32	118.75
10	G	1273[A]	STL	C5-C7-C8	-2.07	117.69	125.87
4	C	1511	ANP	C2-N1-C6	2.07	122.29	118.75
7	D	1476	ADP	C4-C5-N7	-2.05	107.26	109.40
10	N	1273[A]	STL	C14-C9-C10	2.00	120.61	117.64

There are no chirality outliers.

All (61) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	1511	ANP	PG-N3B-PB-O1B
4	B	1510	ANP	PG-N3B-PB-O1B
4	C	1511	ANP	PB-N3B-PG-O1G
4	C	1511	ANP	PG-N3B-PB-O1B
4	F	1475	ANP	PG-N3B-PB-O1B
4	F	1475	ANP	PG-N3B-PB-O3A

Continued on next page...

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
4	H	1511	ANP	PB-N3B-PG-O1G
4	H	1511	ANP	PG-N3B-PB-O1B
4	I	1510	ANP	PB-N3B-PG-O1G
4	I	1510	ANP	PG-N3B-PB-O1B
4	J	1511	ANP	PB-N3B-PG-O1G
4	J	1511	ANP	PG-N3B-PB-O1B
4	M	1475	ANP	PG-N3B-PB-O1B
4	M	1475	ANP	PA-O3A-PB-O1B
4	M	1475	ANP	PA-O3A-PB-O2B
6	A	1513	GOL	O1-C1-C2-C3
6	A	1514	GOL	O1-C1-C2-C3
6	B	1513	GOL	O1-C1-C2-O2
6	B	1513	GOL	O1-C1-C2-C3
6	D	1479	GOL	O1-C1-C2-C3
6	D	1479	GOL	C1-C2-C3-O3
6	H	1513	GOL	O1-C1-C2-C3
6	K	1479	GOL	O1-C1-C2-C3
6	K	1479	GOL	C1-C2-C3-O3
6	K	1480	GOL	C1-C2-C3-O3
7	D	1476	ADP	PA-O3A-PB-O3B
7	K	1476	ADP	PA-O3A-PB-O3B
6	A	1513	GOL	O1-C1-C2-O2
6	A	1514	GOL	O1-C1-C2-O2
6	K	1479	GOL	O2-C2-C3-O3
10	G	1273[B]	STL	C6-C5-C7-C8
10	G	1273[B]	STL	C4-C5-C7-C8
6	A	1514	GOL	C1-C2-C3-O3
6	C	1513	GOL	C1-C2-C3-O3
6	H	1514	GOL	O1-C1-C2-C3
6	H	1514	GOL	C1-C2-C3-O3
6	J	1513	GOL	C1-C2-C3-O3
6	K	1480	GOL	O1-C1-C2-C3
6	D	1479	GOL	O1-C1-C2-O2
6	H	1513	GOL	O1-C1-C2-O2
6	H	1514	GOL	O1-C1-C2-O2
6	K	1479	GOL	O1-C1-C2-O2
6	K	1480	GOL	O2-C2-C3-O3
10	G	1273[A]	STL	C7-C8-C9-C14
6	D	1479	GOL	O2-C2-C3-O3
6	K	1480	GOL	O1-C1-C2-O2
10	G	1273[A]	STL	C7-C8-C9-C10
6	A	1514	GOL	O2-C2-C3-O3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
6	B	1513	GOL	O2-C2-C3-O3
10	G	1273[B]	STL	C7-C8-C9-C14
6	J	1513	GOL	O2-C2-C3-O3
4	A	1511	ANP	PG-N3B-PB-O3A
10	G	1273[B]	STL	C7-C8-C9-C10
7	D	1476	ADP	PA-O3A-PB-O1B
7	D	1476	ADP	PA-O3A-PB-O2B
7	K	1476	ADP	PA-O3A-PB-O2B
6	C	1513	GOL	O2-C2-C3-O3
4	A	1511	ANP	PB-N3B-PG-O1G
4	B	1510	ANP	PB-N3B-PG-O1G
4	B	1510	ANP	PG-N3B-PB-O3A
6	H	1514	GOL	O2-C2-C3-O3

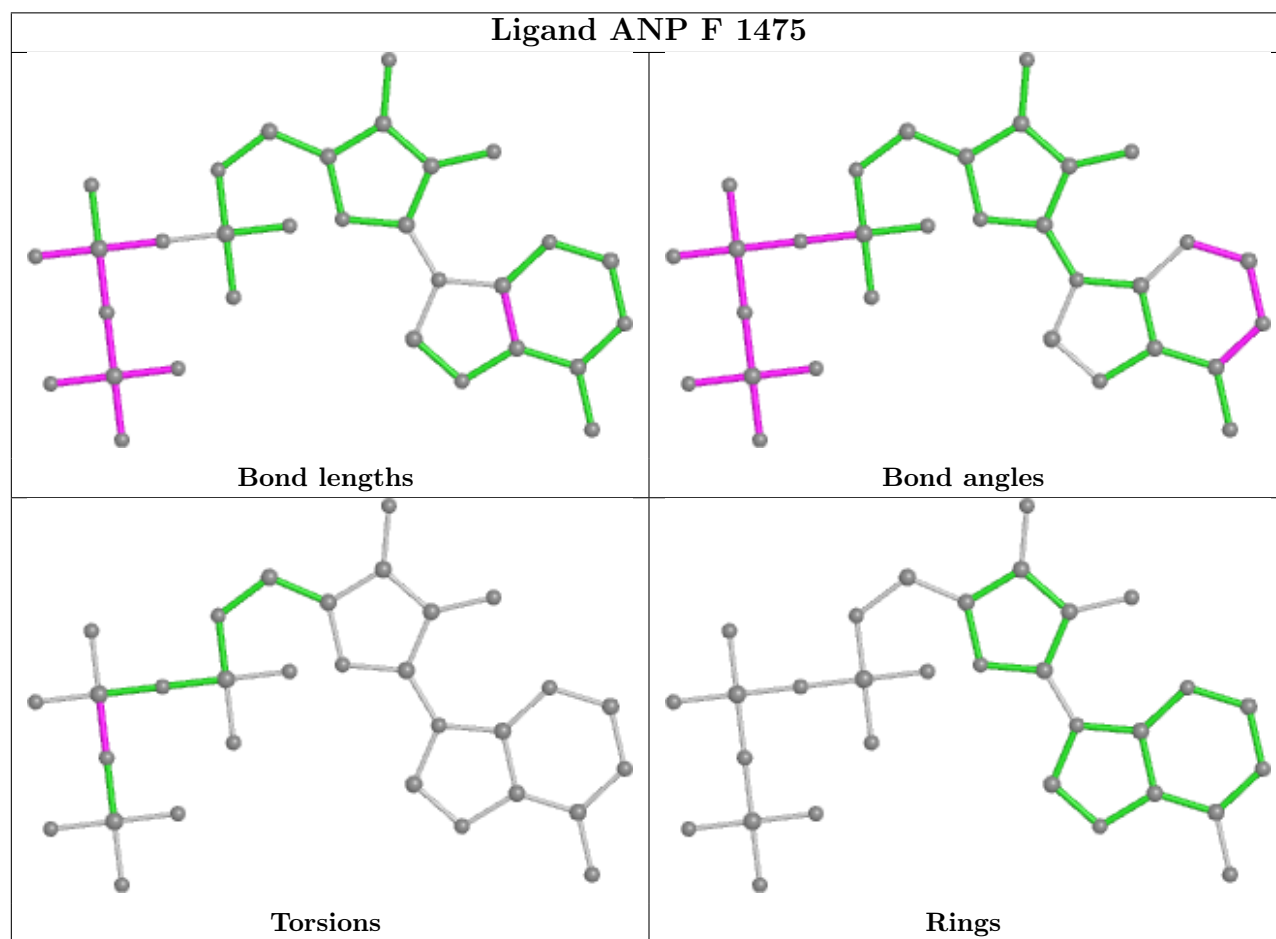
There are no ring outliers.

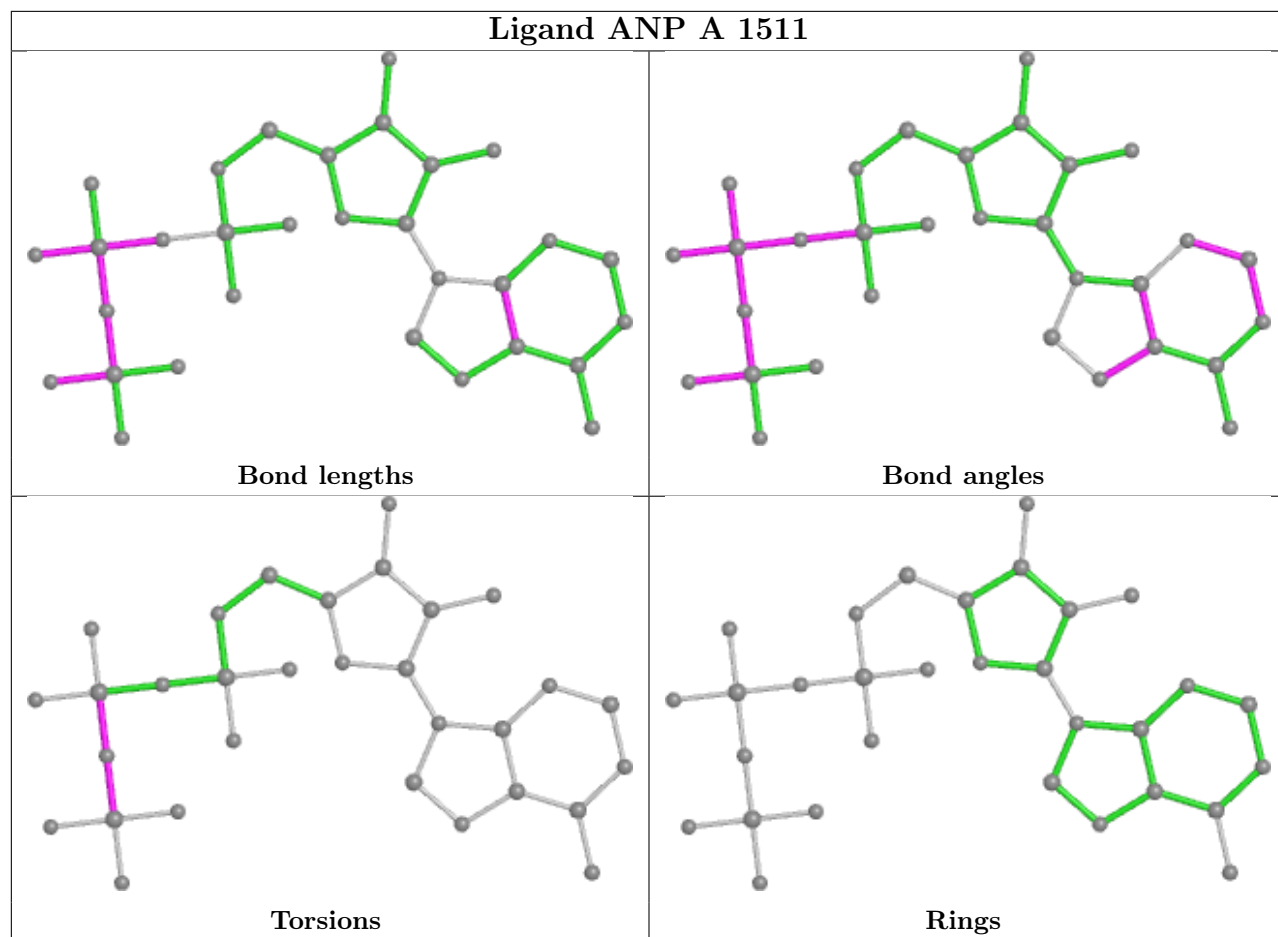
13 monomers are involved in 14 short contacts:

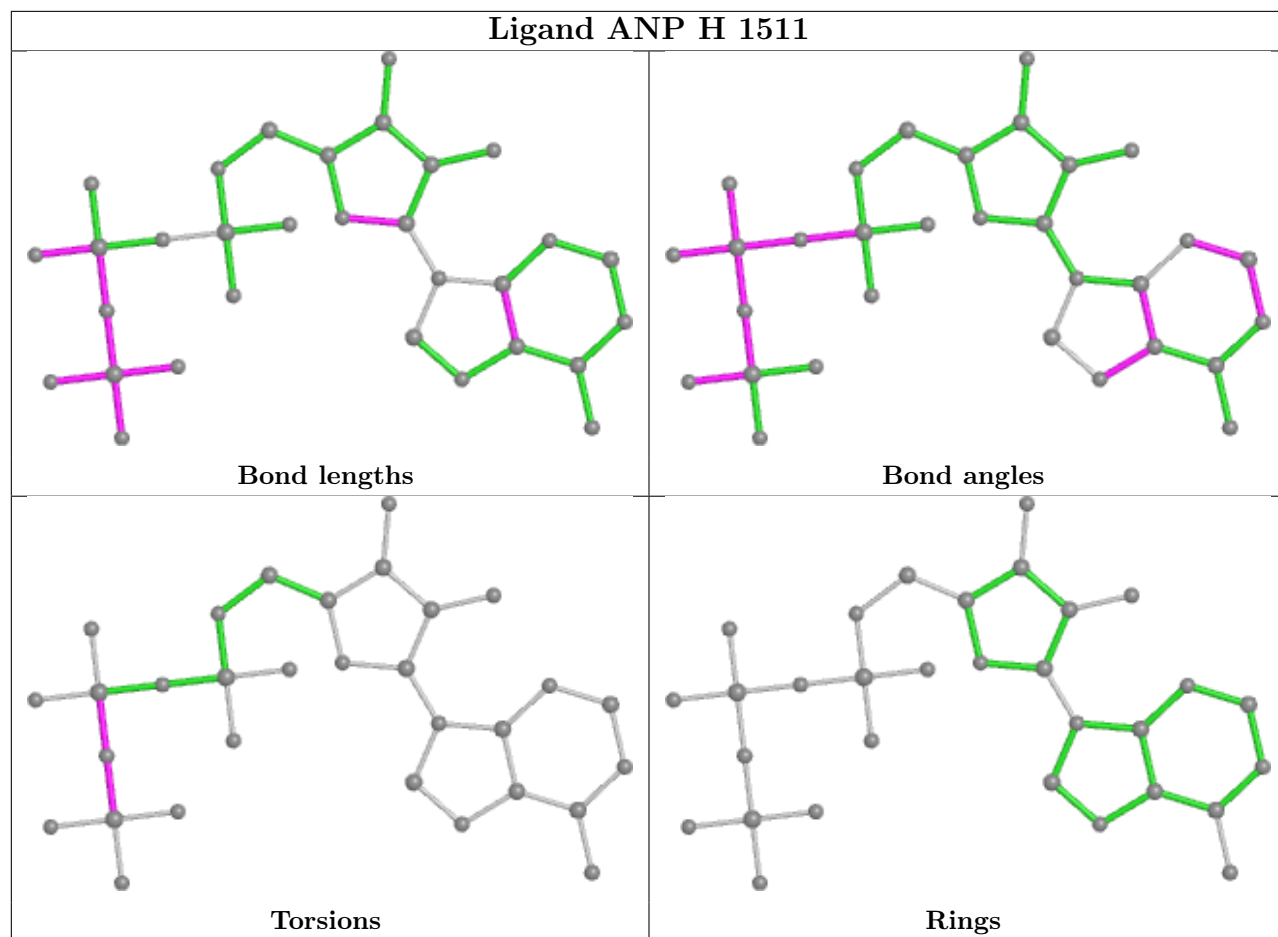
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	F	1475	ANP	1	0
4	M	1475	ANP	1	0
8	K	1478	AZI	1	0
6	H	1514	GOL	1	0
6	B	1513	GOL	1	0
8	D	1478	AZI	1	0
6	H	1513	GOL	2	0
10	N	1273[B]	STL	1	0
6	K	1479	GOL	1	0
6	K	1480	GOL	1	0
6	D	1479	GOL	1	0
6	A	1514	GOL	1	0
7	D	1476	ADP	1	0

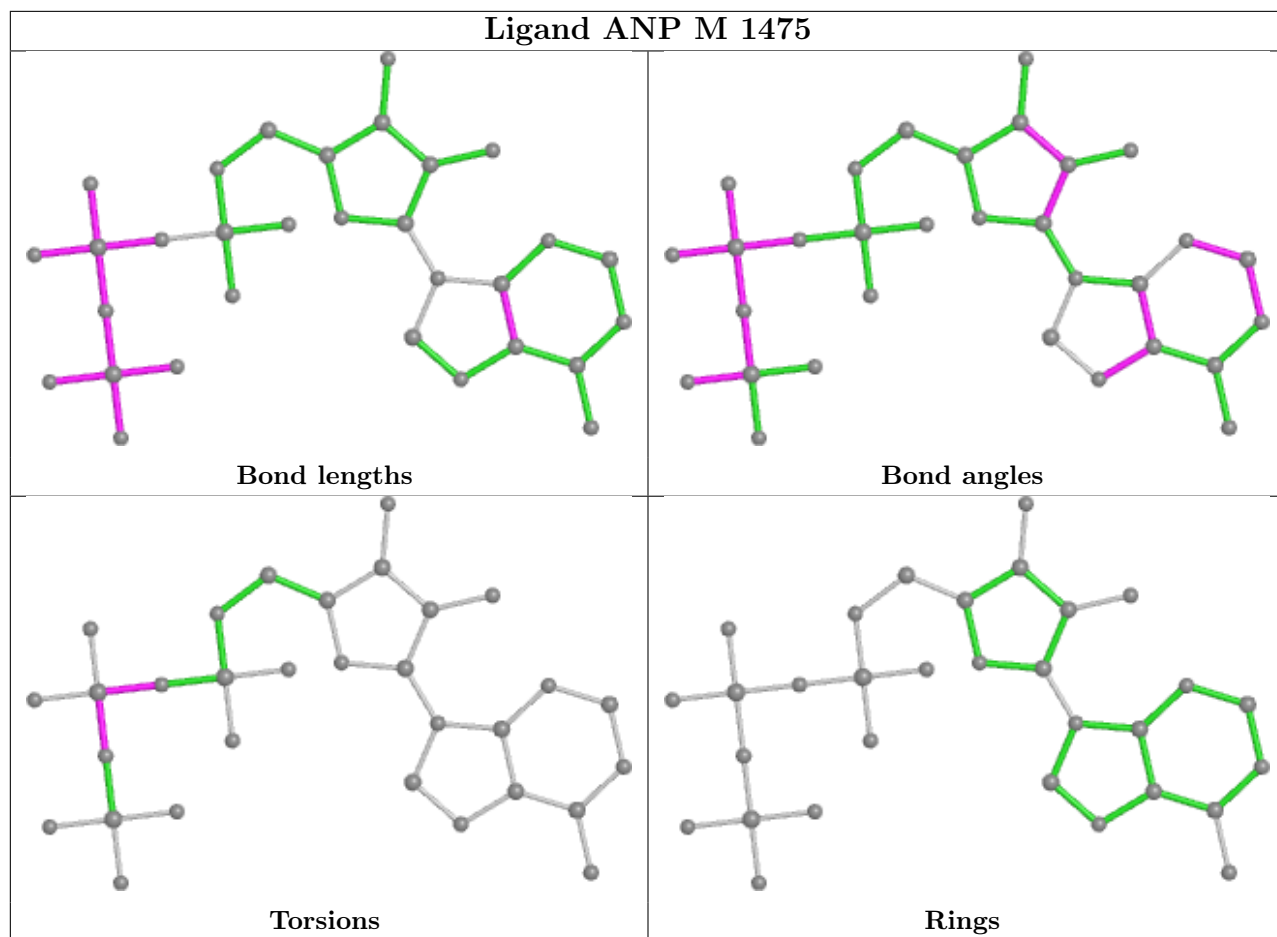
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 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.

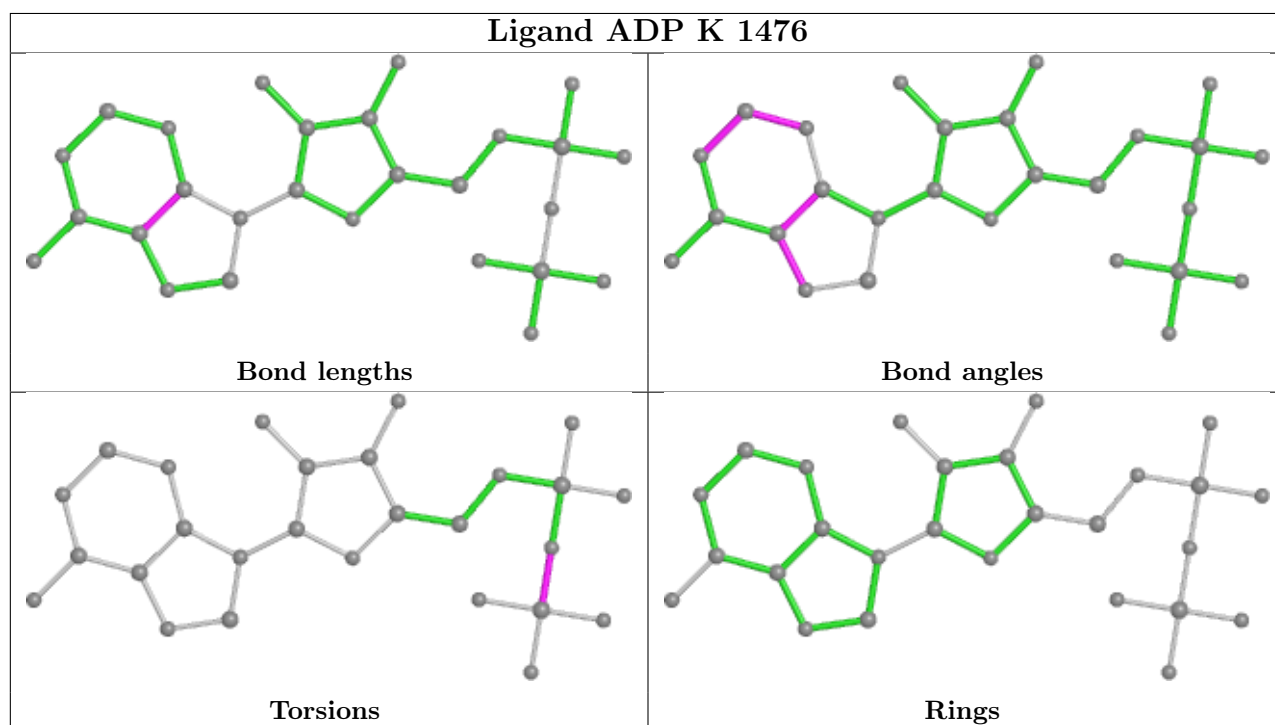
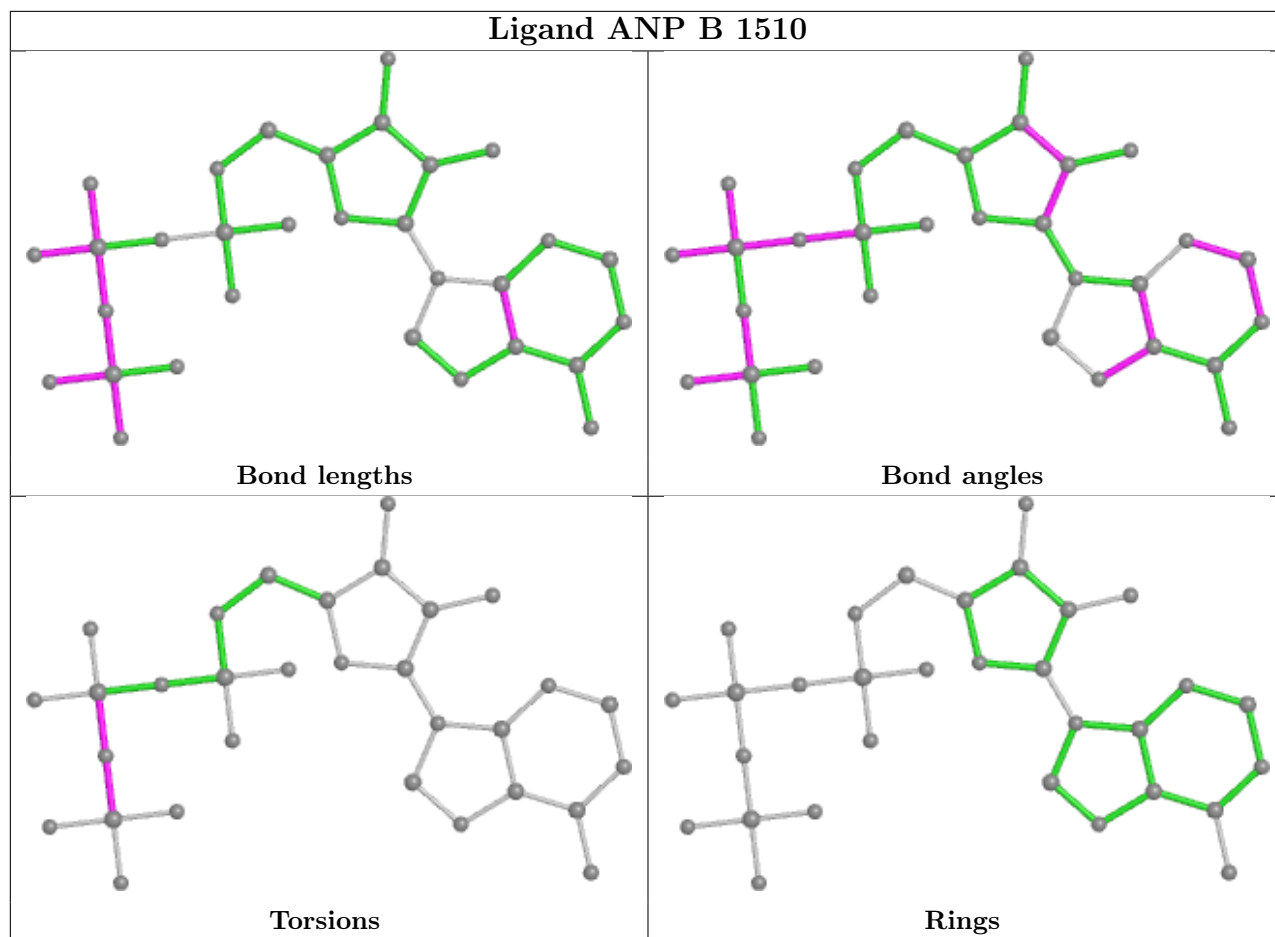


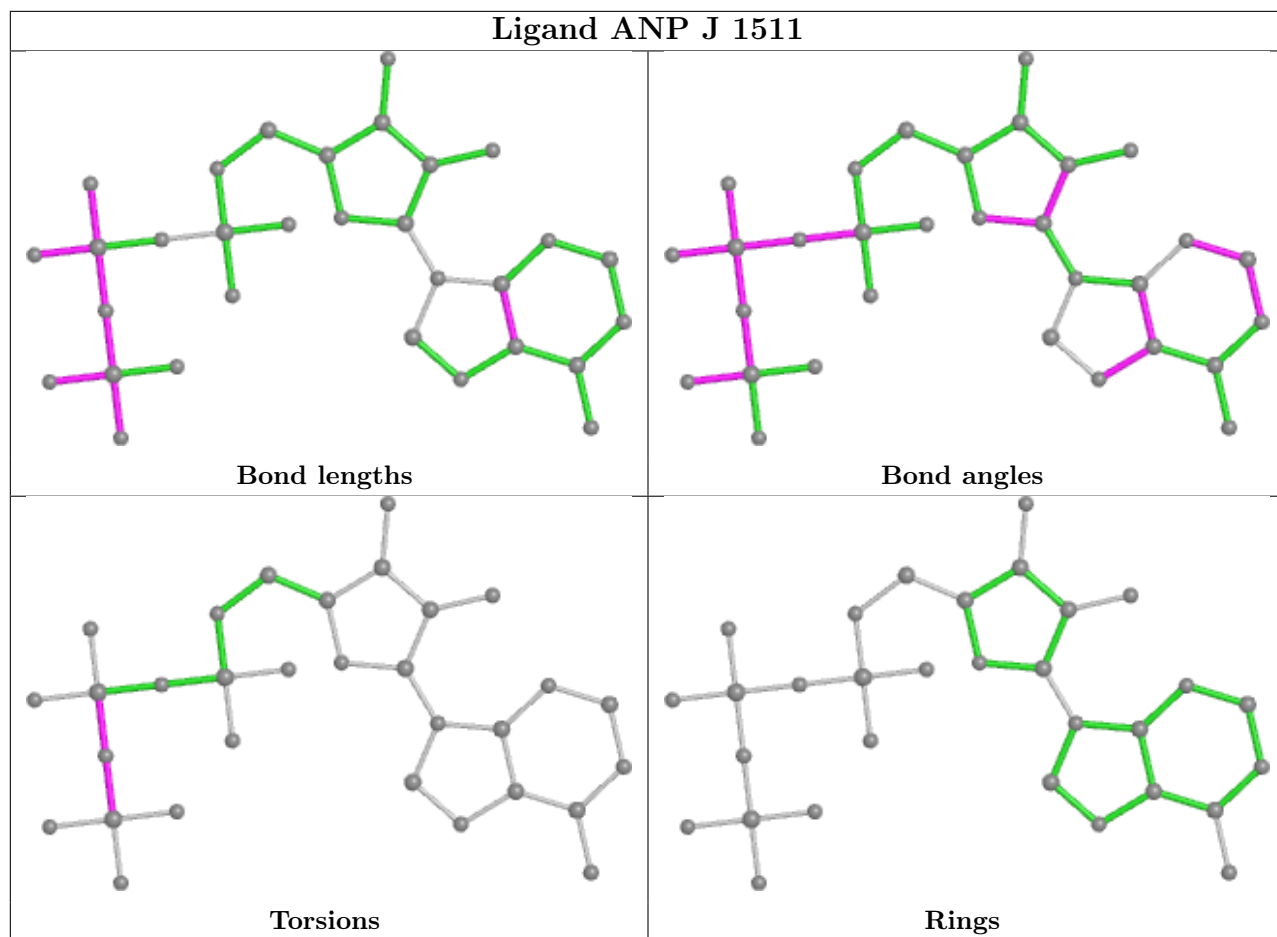


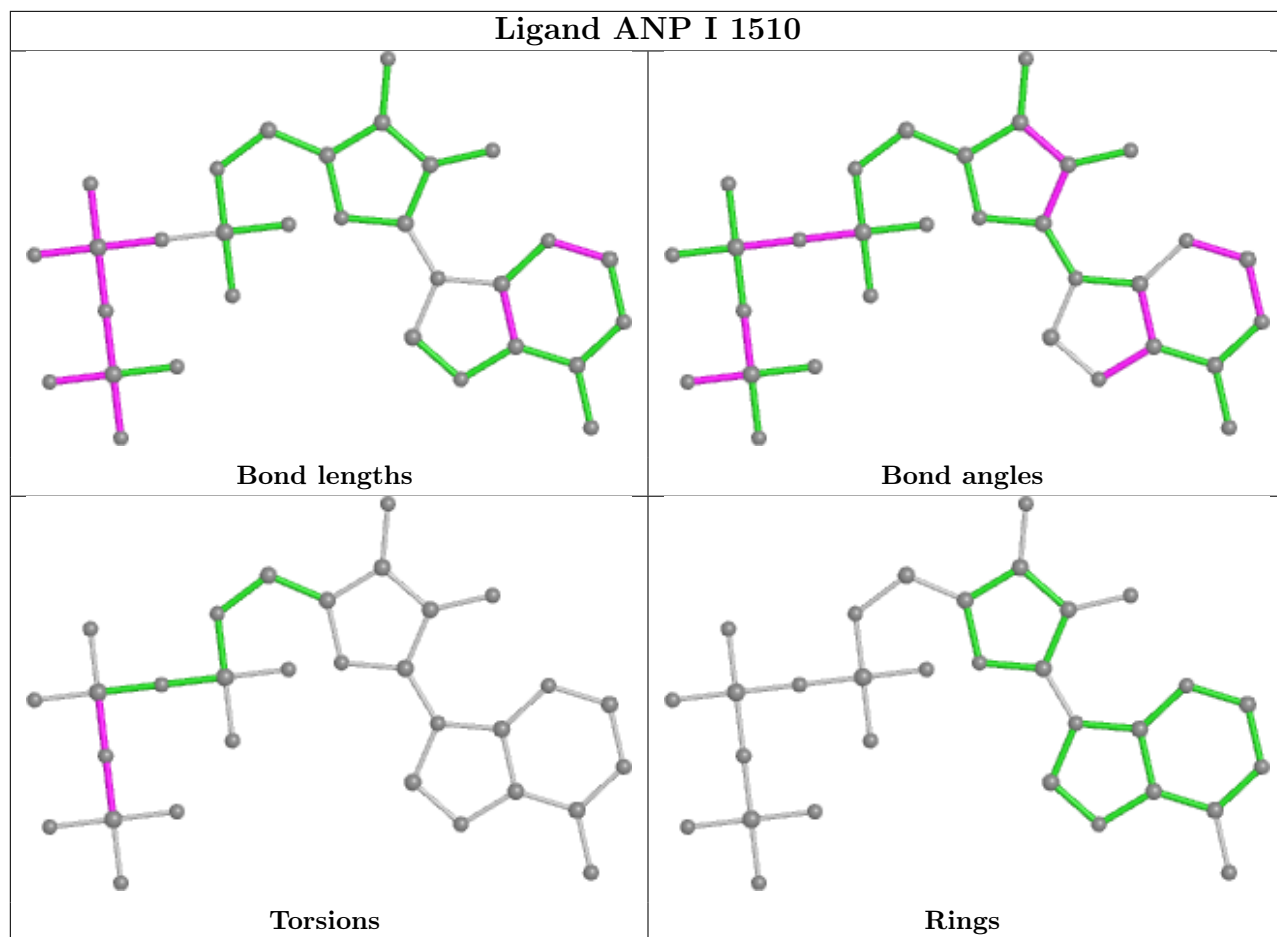


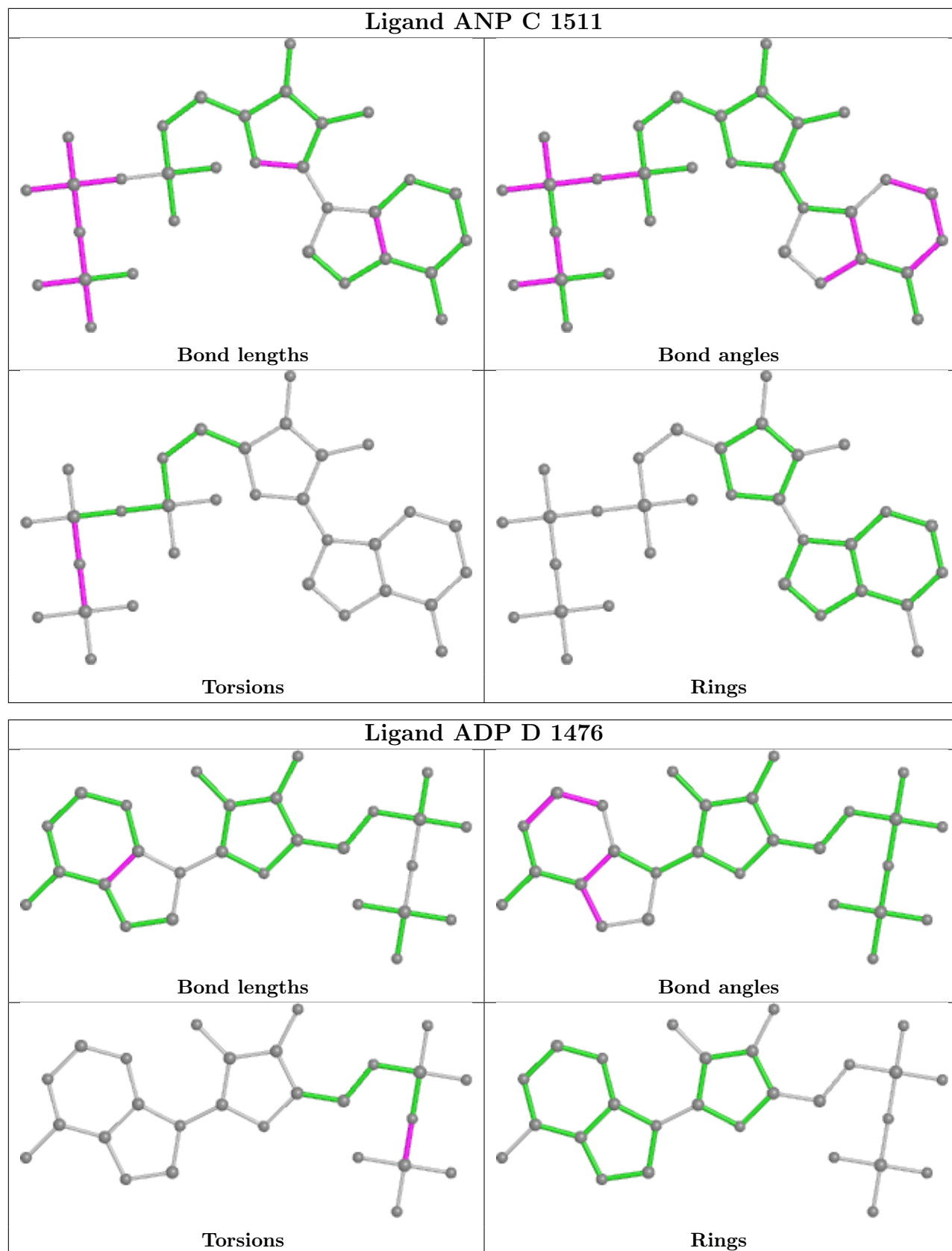












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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

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

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

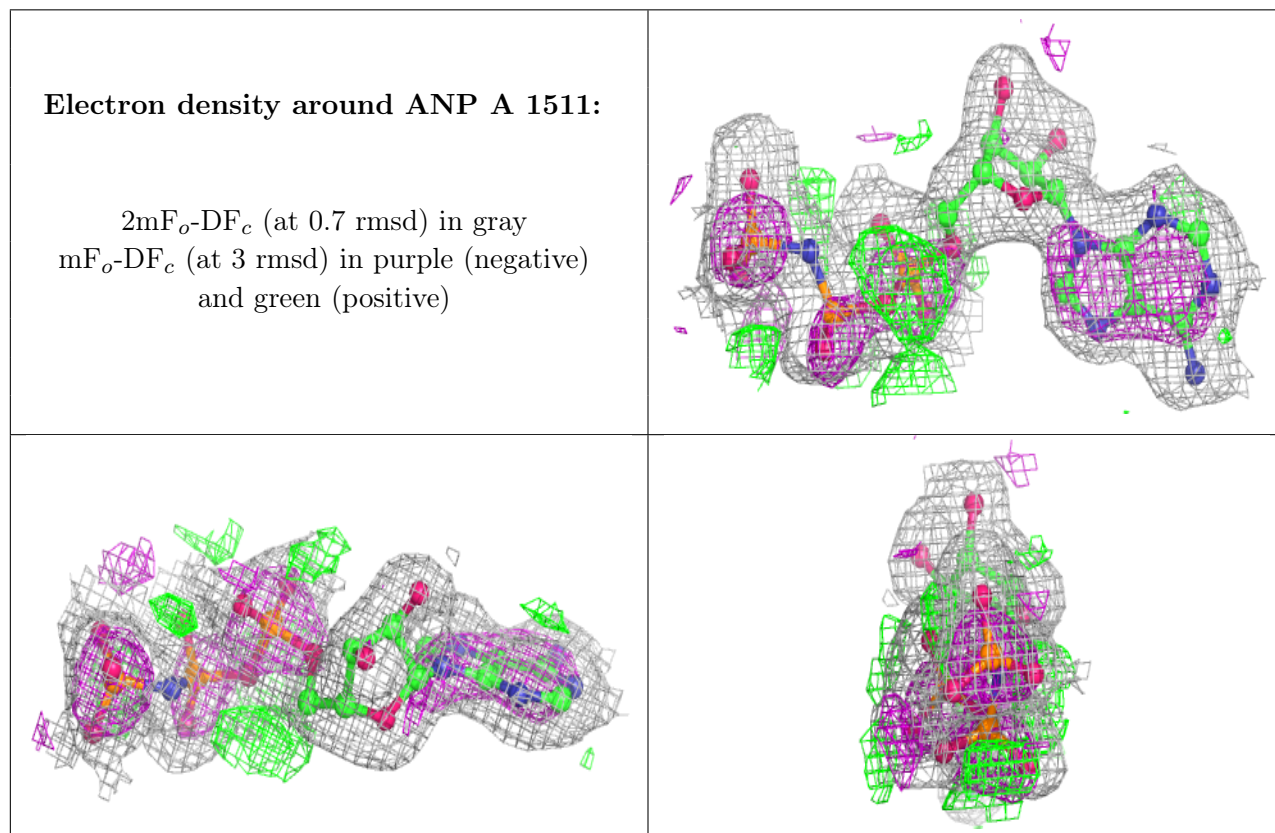
### 6.3 Carbohydrates [i](#)

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

### 6.4 Ligands [i](#)

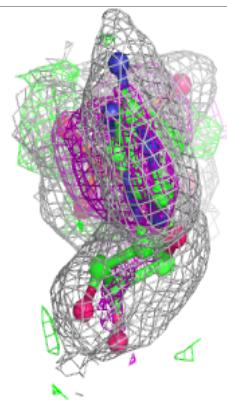
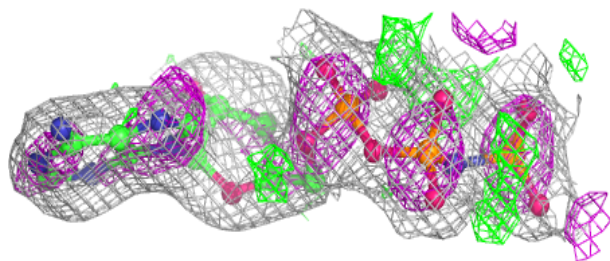
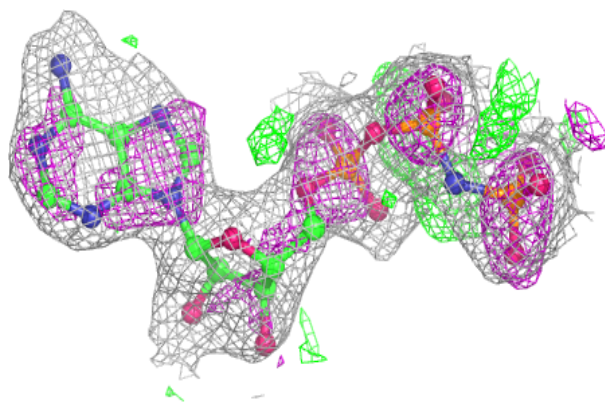
Unable to reproduce the depositors R factor - this section is therefore empty.

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.

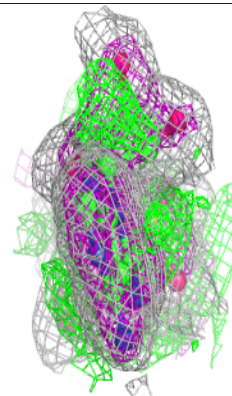
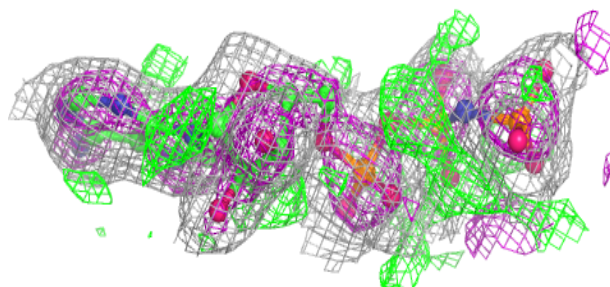
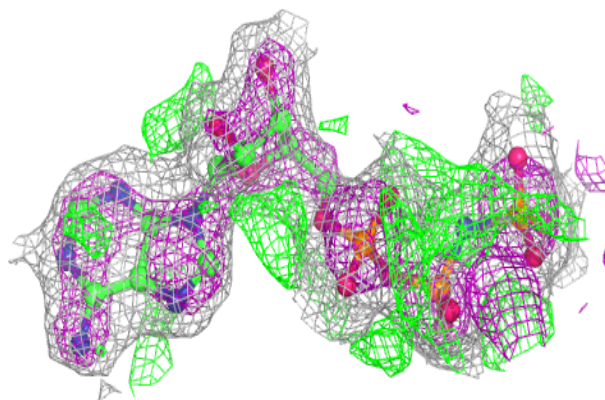


**Electron density around ANP B 1510:**

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

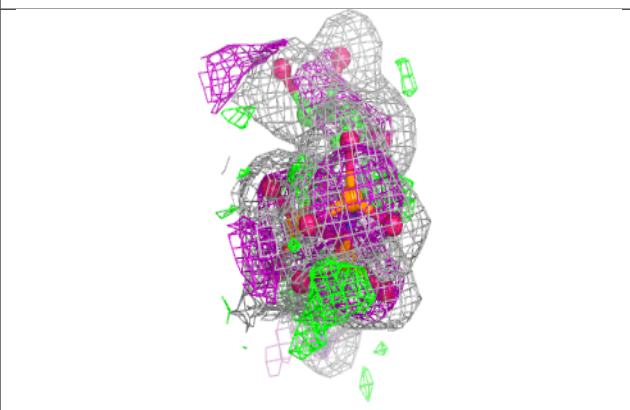
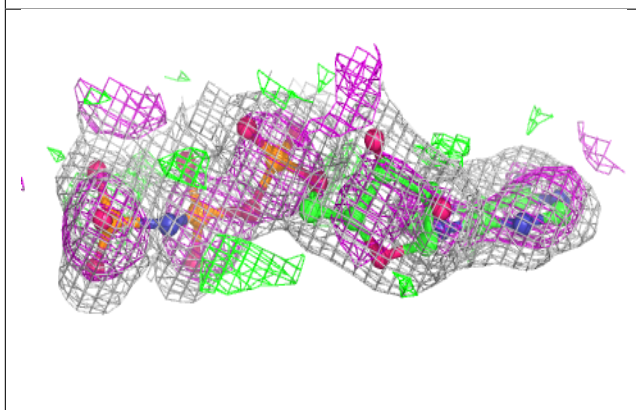
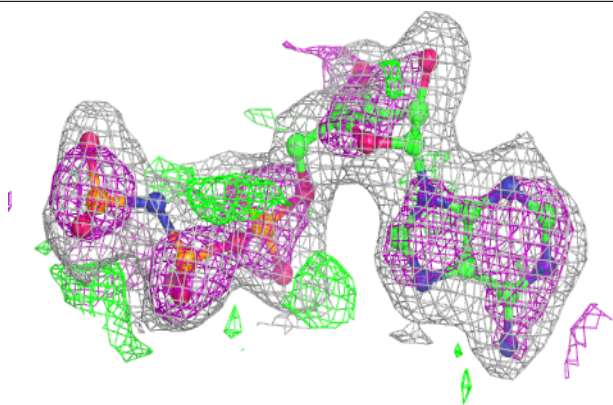
**Electron density around ANP C 1511:**

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

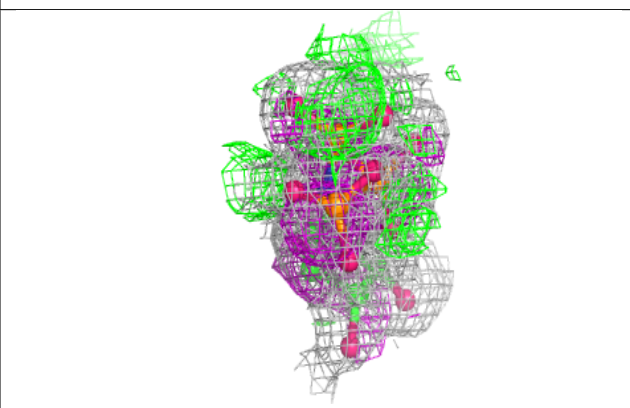
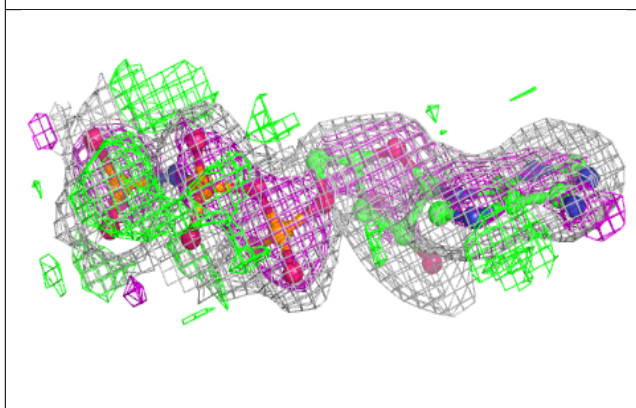
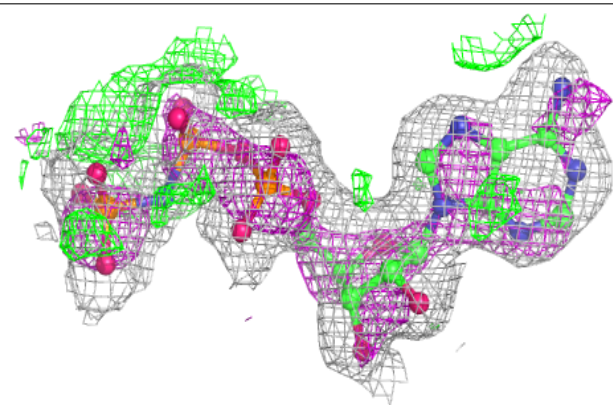


**Electron density around ANP F 1475:**

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

**Electron density around ANP H 1511:**

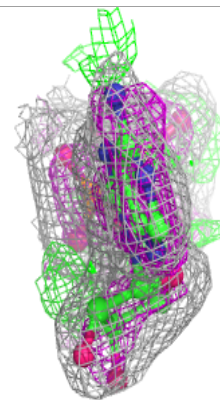
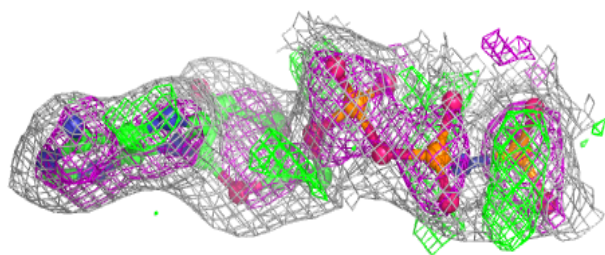
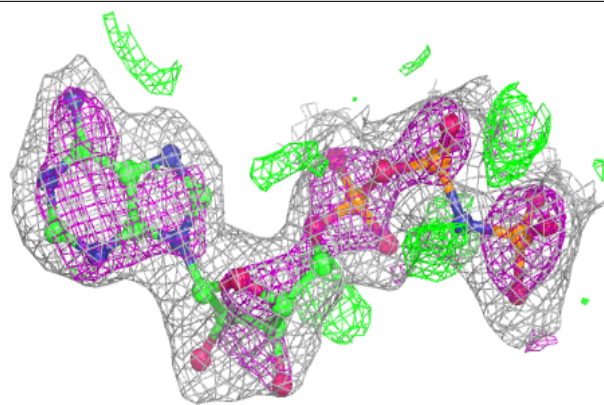
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



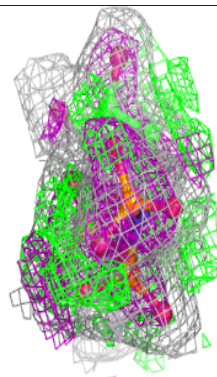
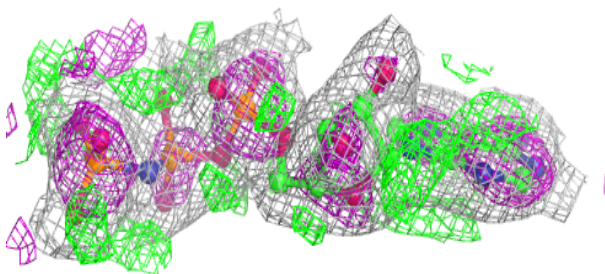
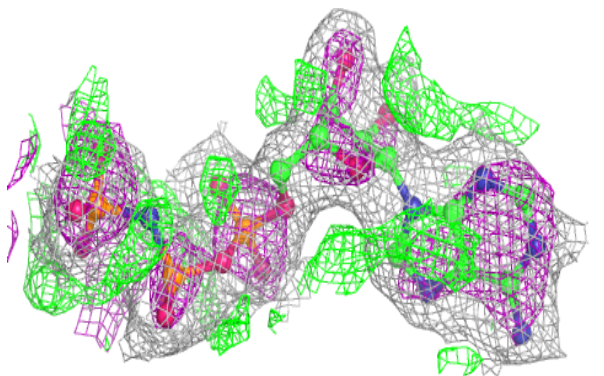


**Electron density around ANP I 1510:**

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

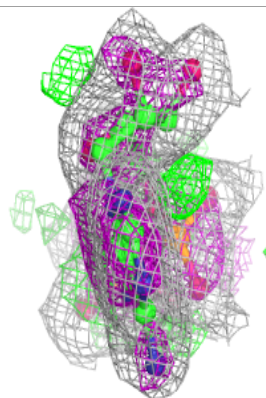
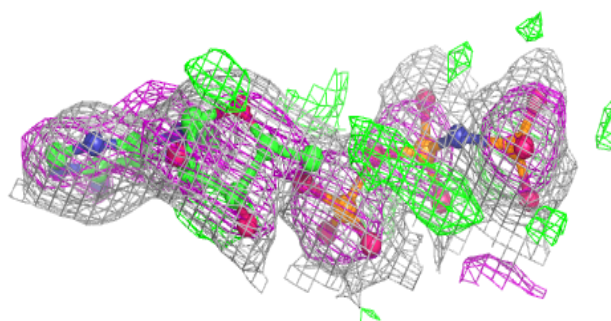
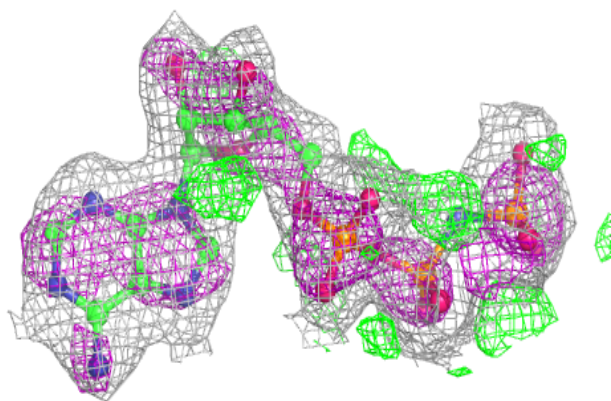
**Electron density around ANP J 1511:**

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

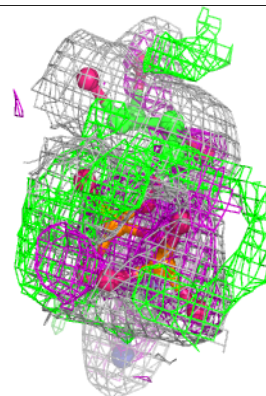
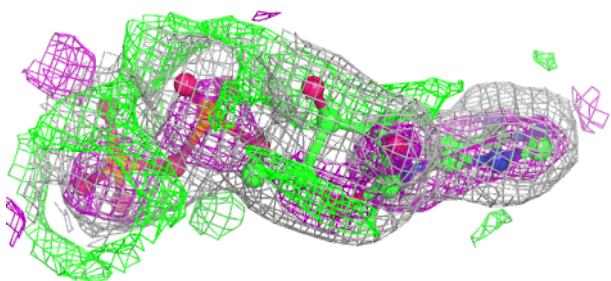
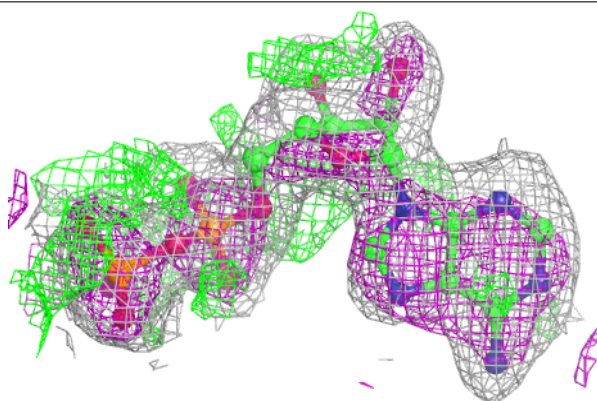


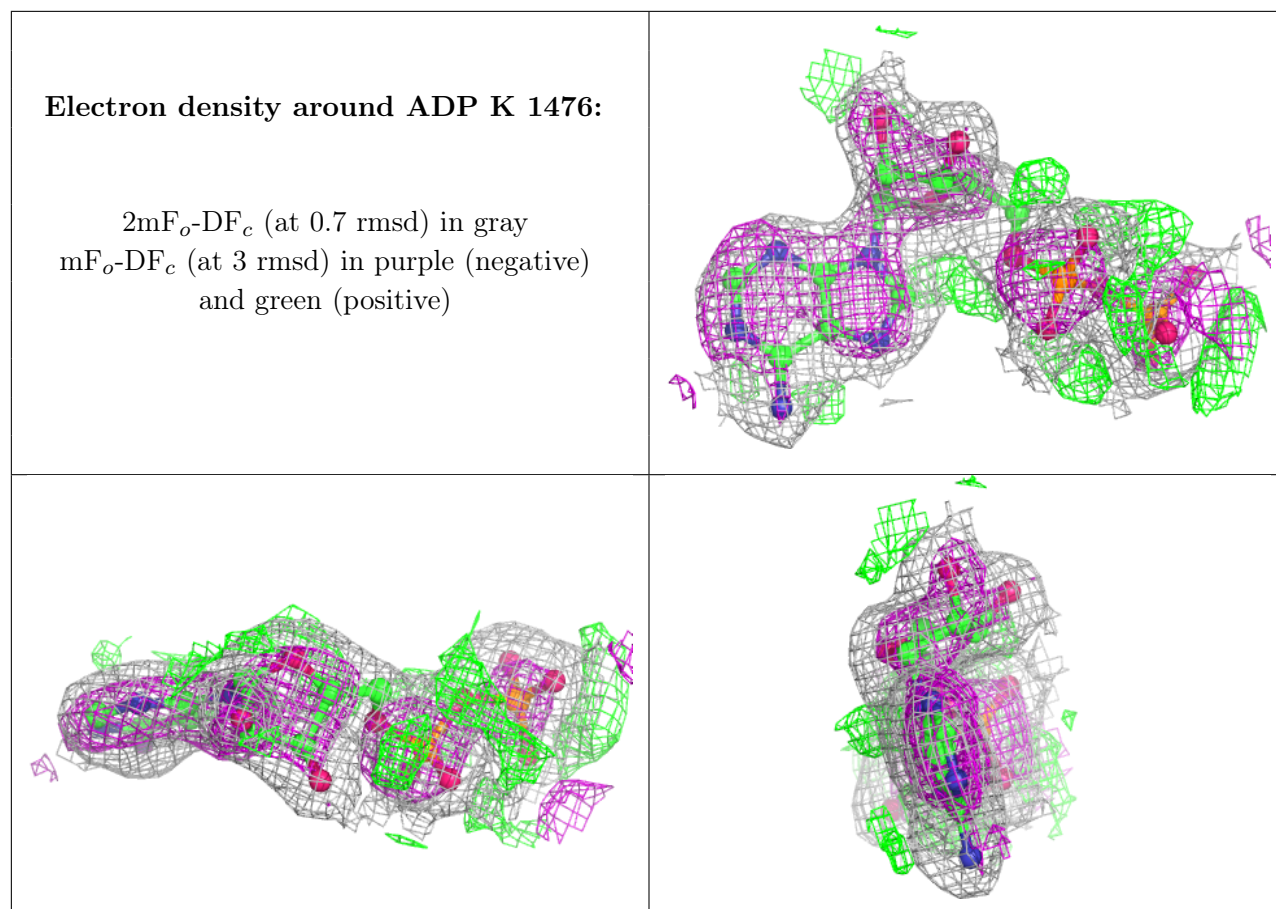
**Electron density around ANP M 1475:**

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

**Electron density around ADP D 1476:**

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





## 6.5 Other polymers [i](#)

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