



# Full wwPDB X-ray Structure Validation Report ⓘ

Sep 24, 2025 – 05:39 am BST

PDB ID : 2C39 / pdb\_00002c39  
Title : RNase PH core of the archaeal exosome in complex with ADP  
Authors : Lorentzen, E.; Conti, E.  
Deposited on : 2005-10-05  
Resolution : 3.30 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 : 4-5-2 with Phenix2.0  
Mogul : 1.8.4, CSD as541be (2020)  
Xtriage (Phenix) : 2.0  
EDS : 3.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.46

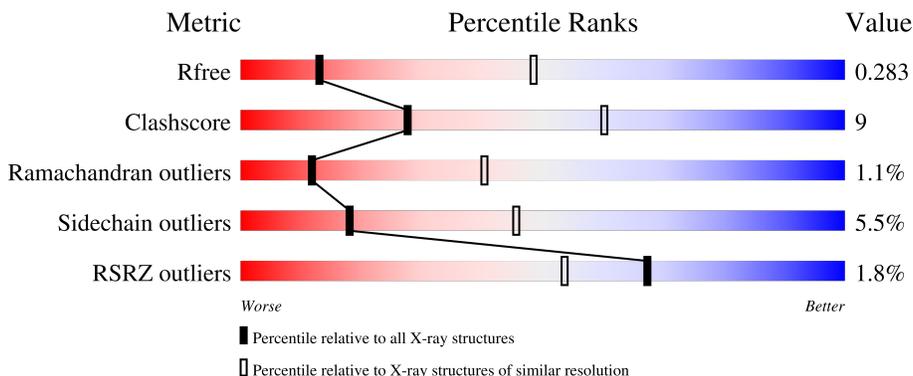
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.30 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))
$R_{free}$	164625	1085 (3.32-3.28)
Clashscore	180529	1128 (3.32-3.28)
Ramachandran outliers	177936	1125 (3.32-3.28)
Sidechain outliers	177891	1124 (3.32-3.28)
RSRZ outliers	164620	1085 (3.32-3.28)

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  $\leq 5\%$ . 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	275	 81% 12% • 5%
1	C	275	 74% 19% • 5%
1	E	275	 75% 18% • 5%
1	G	275	 2% 78% 15% • 5%
1	I	275	 77% 16% • 5%

*Continued on next page...*

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	K	275	<p>2% 74% 19% • 5%</p>
1	M	275	<p>1% 80% 12% • 5%</p>
1	O	275	<p>2% 77% 16% • 5%</p>
1	Q	275	<p>0% 80% 12% • 5%</p>
1	S	275	<p>3% 76% 15% • 6%</p>
1	U	275	<p>5% 76% 15% • 7%</p>
1	W	275	<p>2% 78% 14% • 6%</p>
2	B	248	<p>0% 71% 23% • •</p>
2	D	248	<p>1% 69% 26% •</p>
2	F	248	<p>2% 70% 25% • •</p>
2	H	248	<p>2% 67% 23% • 7%</p>
2	J	248	<p>1% 72% 22% • •</p>
2	L	248	<p>0% 72% 24% •</p>
2	N	248	<p>1% 74% 19% • •</p>
2	P	248	<p>2% 67% 28% 5%</p>
2	R	248	<p>1% 71% 25% •</p>
2	T	248	<p>1% 68% 28% •</p>
2	V	248	<p>4% 71% 22% • •</p>
2	X	248	<p>3% 74% 21% • •</p>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 45814 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 PROBABLE EXOSOME COMPLEX EXONUCLEASE 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	260	Total 1944	C 1239	N 320	O 380	S 5	0	0	0
1	C	260	Total 1947	C 1243	N 321	O 378	S 5	0	0	0
1	E	260	Total 1968	C 1253	N 325	O 385	S 5	0	0	0
1	G	260	Total 1961	C 1250	N 323	O 383	S 5	0	0	0
1	I	260	Total 1954	C 1247	N 323	O 379	S 5	0	0	0
1	K	260	Total 1958	C 1249	N 323	O 381	S 5	0	0	0
1	M	260	Total 1960	C 1249	N 324	O 382	S 5	0	0	0
1	O	260	Total 1951	C 1246	N 323	O 377	S 5	0	0	0
1	Q	260	Total 1953	C 1245	N 322	O 381	S 5	0	0	0
1	S	259	Total 1955	C 1245	N 323	O 382	S 5	0	0	0
1	U	255	Total 1908	C 1219	N 317	O 367	S 5	0	0	0
1	W	259	Total 1950	C 1245	N 322	O 378	S 5	0	0	0

- Molecule 2 is a protein called PROBABLE EXOSOME COMPLEX EXONUCLEASE 1.

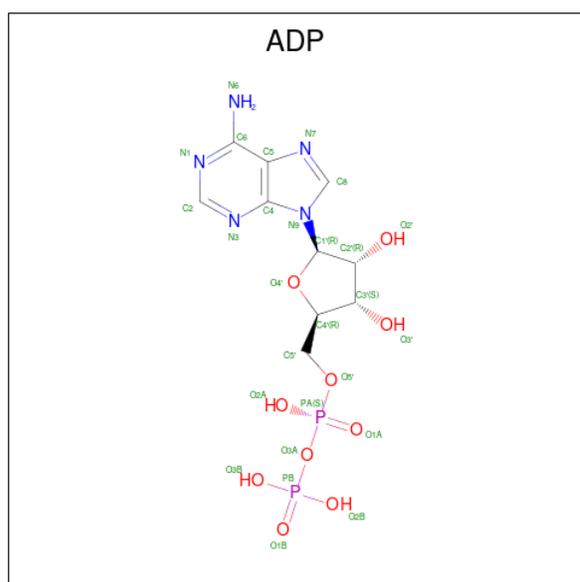
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	241	Total 1812	C 1145	N 317	O 340	S 10	0	0	0
2	D	248	Total 1900	C 1198	N 330	O 360	S 12	0	0	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	241	Total	C	N	O	S	0	0	0
			1838	1161	317	350	10			
2	H	230	Total	C	N	O	S	0	0	0
			1732	1094	302	327	9			
2	J	241	Total	C	N	O	S	0	0	0
			1844	1165	321	348	10			
2	L	247	Total	C	N	O	S	0	0	0
			1890	1194	328	357	11			
2	N	239	Total	C	N	O	S	0	0	0
			1809	1144	313	342	10			
2	P	248	Total	C	N	O	S	0	0	0
			1904	1202	332	358	12			
2	R	248	Total	C	N	O	S	0	0	0
			1880	1188	332	348	12			
2	T	248	Total	C	N	O	S	0	0	0
			1884	1193	328	351	12			
2	V	239	Total	C	N	O	S	0	0	0
			1815	1148	318	339	10			
2	X	239	Total	C	N	O	S	0	0	0
			1821	1148	315	348	10			

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula:  $C_{10}H_{15}N_5O_{10}P_2$ ).



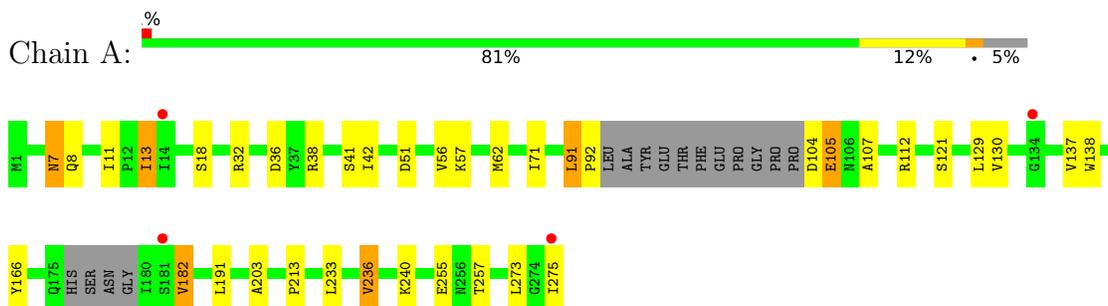
*Continued from previous page...*

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	D	1	Total C N O P 27 10 5 10 2	0	0
3	F	1	Total C O P 17 5 10 2	0	0
3	H	1	Total C N O P 27 10 5 10 2	0	0
3	J	1	Total O P 9 7 2	0	0
3	L	1	Total C N O P 27 10 5 10 2	0	0
3	N	1	Total C N O P 27 10 5 10 2	0	0
3	P	1	Total C N O P 27 10 5 10 2	0	0
3	R	1	Total C N O P 27 10 5 10 2	0	0
3	T	1	Total C N O P 27 10 5 10 2	0	0
3	V	1	Total C O P 17 5 10 2	0	0
3	X	1	Total C O P 17 5 10 2	0	0

### 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 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.

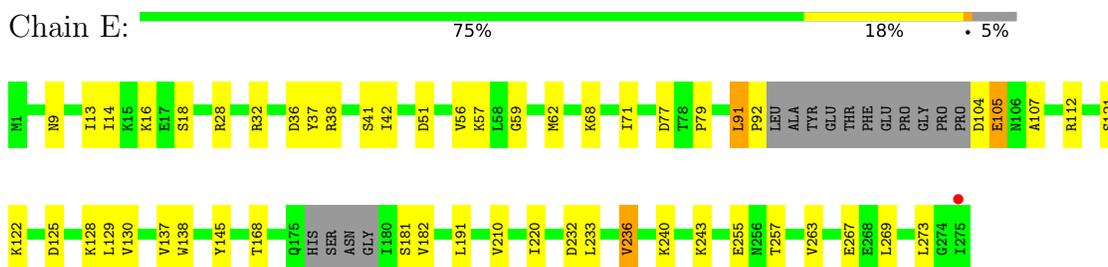
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2



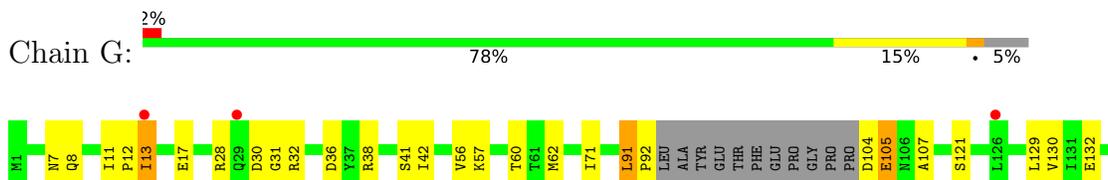
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2



- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

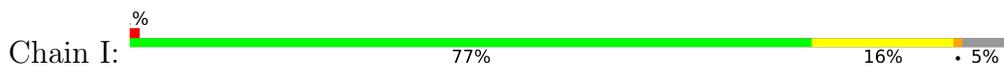


- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

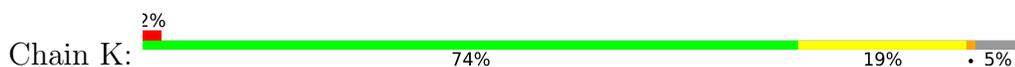




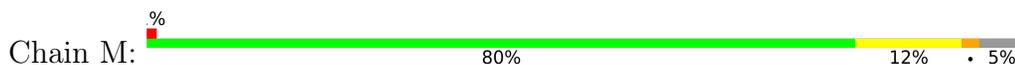
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2



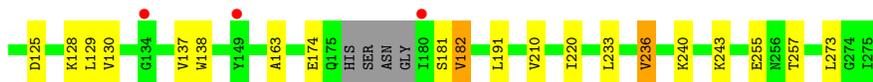
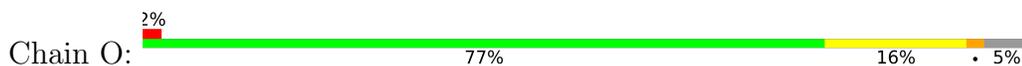
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2



- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

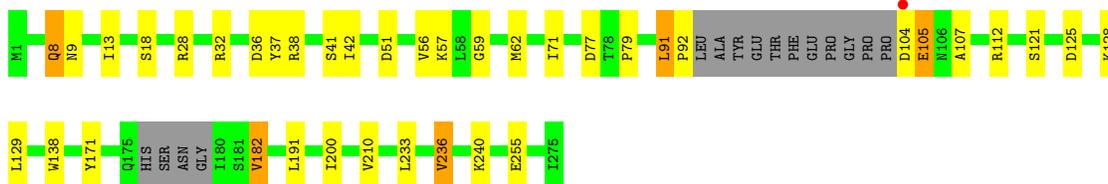


- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2



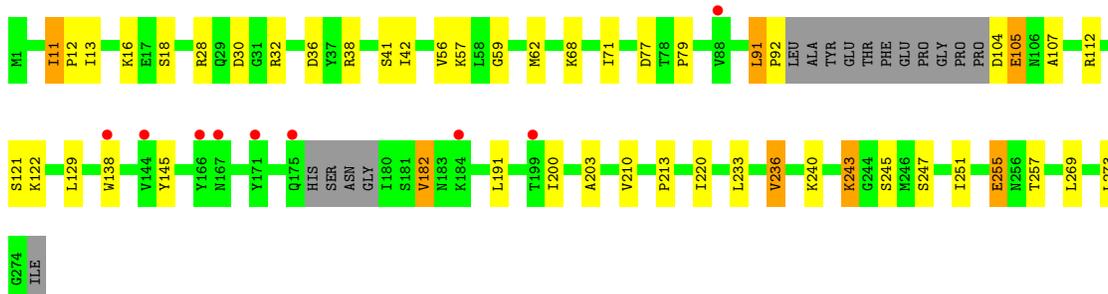
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

Chain Q: 



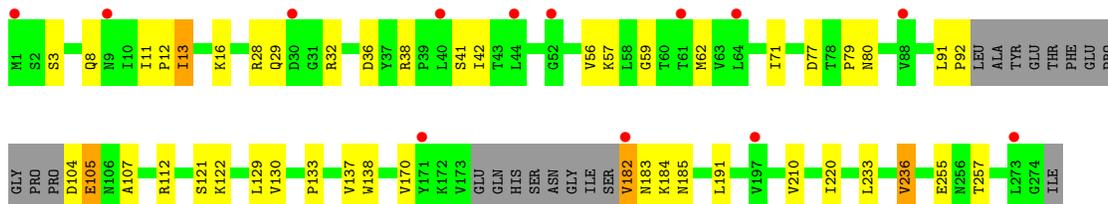
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

Chain S: 



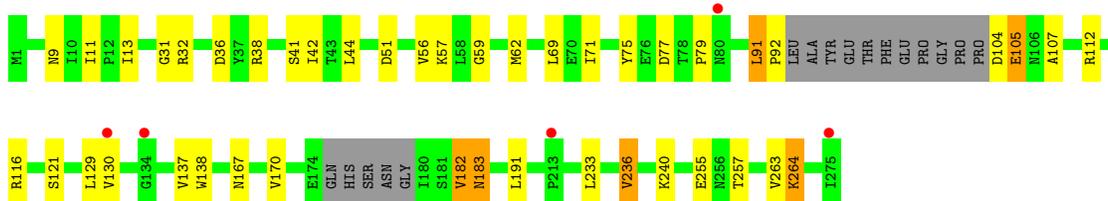
- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

Chain U: 



- Molecule 1: PROBABLE EXOSOME COMPLEX EXONUCLEASE 2

Chain W: 

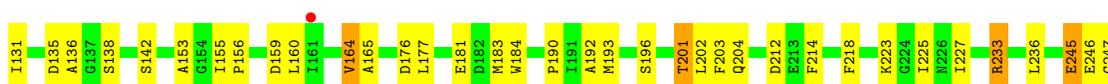
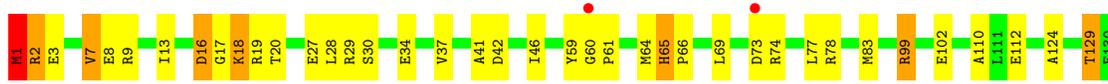


- Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1

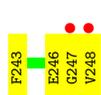
Chain B: 



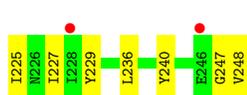
• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



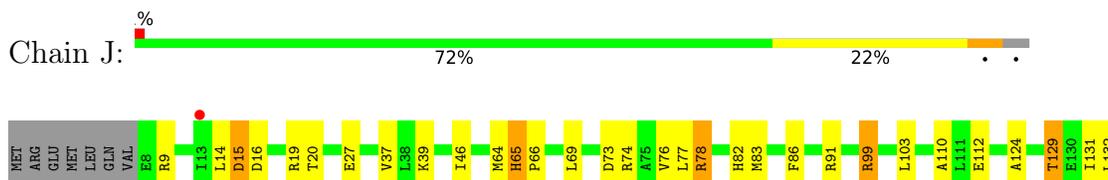
• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



- Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



- Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



- Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1

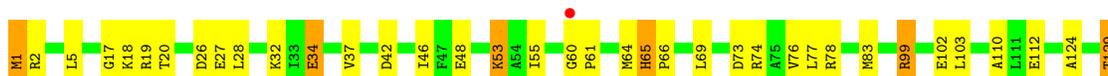


- Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1





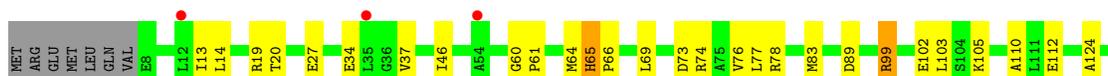
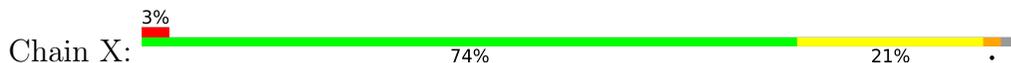
• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



• Molecule 2: PROBABLE EXOSOME COMPLEX EXONUCLEASE 1



## 4 Data and refinement statistics i

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	206.20Å 214.00Å 432.50Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	93.25 – 3.30 93.25 – 3.30	Depositor EDS
% Data completeness (in resolution range)	100.0 (93.25-3.30) 93.5 (93.25-3.30)	Depositor EDS
$R_{merge}$	0.18	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.99 (at 3.33Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, $R_{free}$	0.274 , 0.295 0.265 , 0.283	Depositor DCC
$R_{free}$ test set	4015 reflections (3.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	86.3	Xtrriage
Anisotropy	0.060	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 29.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.42$ , $\langle L^2 \rangle = 0.24$	Xtrriage
Estimated twinning fraction	0.048 for -k,-h,-l	Xtrriage
$F_o, F_c$ correlation	0.89	EDS
Total number of atoms	45814	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	54.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 18.35% 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

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	0.59	0/1969	0.86	2/2678 (0.1%)
1	C	0.66	0/1972	0.87	2/2680 (0.1%)
1	E	0.59	0/1993	0.87	2/2706 (0.1%)
1	G	0.60	0/1986	0.86	2/2697 (0.1%)
1	I	0.57	0/1979	0.85	1/2688 (0.0%)
1	K	0.66	0/1983	0.87	0/2693
1	M	0.59	0/1985	0.84	3/2696 (0.1%)
1	O	0.67	0/1976	0.88	2/2684 (0.1%)
1	Q	0.61	0/1978	0.84	0/2688
1	S	0.60	0/1980	0.84	2/2690 (0.1%)
1	U	0.60	0/1933	0.86	0/2628
1	W	0.59	0/1975	0.85	2/2682 (0.1%)
2	B	0.57	0/1840	0.88	0/2494
2	D	0.64	0/1928	0.94	2/2606 (0.1%)
2	F	0.60	0/1866	0.89	0/2524
2	H	0.59	0/1757	0.88	0/2377
2	J	0.57	0/1872	0.85	0/2530
2	L	0.64	0/1918	0.94	2/2592 (0.1%)
2	N	0.59	0/1837	0.89	0/2487
2	P	0.64	0/1932	0.93	2/2609 (0.1%)
2	R	0.64	0/1908	0.94	5/2578 (0.2%)
2	T	0.62	0/1912	0.90	5/2584 (0.2%)
2	V	0.64	0/1843	0.88	0/2494
2	X	0.60	0/1848	0.89	0/2501
All	All	0.61	0/46170	0.88	34/62586 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	D	0	2
2	L	0	1
2	P	0	1
2	R	0	2
2	T	0	1
All	All	0	7

There are no bond length outliers.

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
2	R	9	ARG	CA-C-N	9.14	129.19	119.78
2	R	9	ARG	C-N-CA	9.14	129.19	119.78
2	D	18	LYS	N-CA-C	8.12	121.01	110.53
2	L	246	GLU	N-CA-C	7.08	117.94	108.38
2	D	246	GLU	N-CA-C	6.85	117.54	107.88
2	L	18	LYS	N-CA-C	6.81	120.59	110.52
2	R	6	GLN	N-CA-C	6.48	120.40	110.36
1	G	132	GLU	CA-C-N	6.35	127.78	119.84
1	G	132	GLU	C-N-CA	6.35	127.78	119.84
2	T	18	LYS	N-CA-C	5.99	118.63	110.55
2	R	4	MET	N-CA-C	-5.75	94.91	111.00
1	M	11	ILE	CA-C-N	5.73	125.73	119.89
1	M	11	ILE	C-N-CA	5.73	125.73	119.89
2	R	18	LYS	N-CA-C	5.71	118.87	110.59
1	E	181	SER	N-CA-C	5.54	115.43	108.45
1	O	11	ILE	CA-C-N	5.52	125.52	119.89
1	O	11	ILE	C-N-CA	5.52	125.52	119.89
2	P	246	GLU	N-CA-C	5.46	116.44	108.14
1	C	11	ILE	CA-C-N	5.44	125.44	119.89
1	C	11	ILE	C-N-CA	5.44	125.44	119.89
2	P	18	LYS	N-CA-C	5.39	117.83	110.55
1	A	11	ILE	CA-C-N	5.37	125.37	119.89
1	A	11	ILE	C-N-CA	5.37	125.37	119.89
1	E	9	ASN	N-CA-C	5.33	117.43	108.96
2	T	178	ASN	N-CA-C	-5.28	103.06	110.35
1	I	29	GLN	N-CA-C	5.10	116.65	111.14
2	T	194	MET	CA-C-N	5.09	124.70	119.05
2	T	194	MET	C-N-CA	5.09	124.70	119.05
1	W	11	ILE	CA-C-N	5.08	125.07	119.89
1	W	11	ILE	C-N-CA	5.08	125.07	119.89
1	M	181	SER	N-CA-C	5.06	117.57	110.14
2	T	246	GLU	N-CA-C	5.04	116.85	109.24

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	S	11	ILE	CA-C-N	5.03	125.02	119.89
1	S	11	ILE	C-N-CA	5.03	125.02	119.89

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	D	1	MET	Peptide
2	D	17	GLY	Peptide
2	L	17	GLY	Peptide
2	P	17	GLY	Peptide
2	R	17	GLY	Peptide
2	R	5	LEU	Peptide
2	T	17	GLY	Peptide

## 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1944	0	1969	21	0
1	C	1947	0	1982	30	0
1	E	1968	0	2013	35	0
1	G	1961	0	2003	34	0
1	I	1954	0	1997	33	0
1	K	1958	0	2001	37	0
1	M	1960	0	2003	20	0
1	O	1951	0	1995	26	0
1	Q	1953	0	1988	23	0
1	S	1955	0	1996	30	0
1	U	1908	0	1950	26	0
1	W	1950	0	1997	26	0
2	B	1812	0	1810	43	0
2	D	1900	0	1920	52	0
2	F	1838	0	1852	49	0
2	H	1732	0	1740	51	0
2	J	1844	0	1870	49	0
2	L	1890	0	1915	52	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	N	1809	0	1817	43	0
2	P	1904	0	1938	51	0
2	R	1880	0	1904	44	0
2	T	1884	0	1913	52	0
2	V	1815	0	1836	42	0
2	X	1821	0	1820	36	0
3	B	27	0	12	4	0
3	D	27	0	12	4	0
3	F	17	0	7	1	0
3	H	27	0	12	2	0
3	J	9	0	0	1	0
3	L	27	0	12	3	0
3	N	27	0	12	3	0
3	P	27	0	12	3	0
3	R	27	0	12	1	0
3	T	27	0	12	3	0
3	V	17	0	7	2	0
3	X	17	0	7	1	0
All	All	45814	0	46346	823	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 9.

All (823) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:99:ARG:NH1	3:R:404:ADP:O2A	1.85	1.09
2:T:1:MET:H2	2:T:2:ARG:HA	1.24	1.00
2:T:1:MET:N	2:T:2:ARG:HA	1.75	1.00
1:E:243:LYS:HG2	2:F:112:GLU:OE1	1.61	0.98
2:D:99:ARG:NH1	3:D:404:ADP:O2A	2.03	0.91
1:G:249:GLN:H	1:G:249:GLN:HE21	1.18	0.90
2:P:99:ARG:NH1	3:P:404:ADP:O2A	2.07	0.87
2:L:78:ARG:HD3	2:L:126:ASP:OD1	1.75	0.86
2:H:227:ILE:HD12	2:H:248:VAL:HG13	1.59	0.83
2:V:99:ARG:NH1	3:V:404:ADP:O2A	2.12	0.81
2:T:99:ARG:NH1	3:T:404:ADP:O2A	2.13	0.81
1:G:249:GLN:HE21	1:G:249:GLN:N	1.77	0.81
2:J:64:MET:HE2	2:J:124:ALA:HB2	1.66	0.78
2:F:99:ARG:NH1	3:F:404:ADP:O2A	2.16	0.77
2:L:64:MET:HE2	2:L:124:ALA:HB2	1.67	0.76

Continued on next page...

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:53:LYS:HG3	2:T:133:GLN:HB2	1.67	0.76
2:D:64:MET:HE2	2:D:124:ALA:HB2	1.67	0.76
2:H:48:GLU:HG2	2:H:53:LYS:HG2	1.67	0.75
2:L:99:ARG:NH1	3:L:404:ADP:O2A	2.19	0.75
2:N:77:LEU:HD12	2:N:112:GLU:HG3	1.69	0.74
2:N:99:ARG:HH12	3:N:404:ADP:PA	2.09	0.74
2:R:78:ARG:HD3	2:R:126:ASP:OD1	1.88	0.74
2:X:64:MET:HE2	2:X:124:ALA:HB2	1.70	0.73
2:R:64:MET:HE2	2:R:124:ALA:HB2	1.70	0.73
2:V:64:MET:HE2	2:V:124:ALA:HB2	1.71	0.73
2:H:64:MET:HE2	2:H:124:ALA:HB2	1.70	0.72
2:P:53:LYS:HG3	2:P:133:GLN:HB2	1.69	0.72
2:B:64:MET:HE2	2:B:124:ALA:HB2	1.70	0.72
2:T:243:PHE:HZ	2:T:246:GLU:HG2	1.54	0.72
2:F:64:MET:HE2	2:F:124:ALA:HB2	1.72	0.72
2:L:77:LEU:HD12	2:L:112:GLU:HG3	1.72	0.72
2:H:99:ARG:NH1	3:H:404:ADP:O2A	2.22	0.72
2:J:99:ARG:HH12	3:J:404:ADP:PB	2.11	0.72
2:T:64:MET:HE2	2:T:124:ALA:HB2	1.72	0.72
2:P:64:MET:HE2	2:P:124:ALA:HB2	1.71	0.71
2:B:175:LEU:HD22	2:B:248:VAL:HG21	1.72	0.71
1:W:51:ASP:OD2	1:W:69:LEU:HB2	1.92	0.70
2:F:77:LEU:HD12	2:F:112:GLU:HG3	1.73	0.70
2:X:223:LYS:HB3	2:X:248:VAL:HG11	1.72	0.70
2:F:129:THR:HG21	2:F:142:SER:OG	1.90	0.70
2:R:77:LEU:HD12	2:R:112:GLU:HG3	1.73	0.70
2:H:78:ARG:HD3	2:H:126:ASP:OD1	1.92	0.70
2:L:48:GLU:HG2	2:L:53:LYS:HG2	1.72	0.70
2:T:66:PRO:HG2	2:T:69:LEU:HD12	1.74	0.69
2:N:99:ARG:NH1	3:N:404:ADP:O2A	2.25	0.69
2:F:48:GLU:OE1	2:F:53:LYS:HE2	1.92	0.69
2:D:77:LEU:HD12	2:D:112:GLU:HG3	1.73	0.69
2:T:77:LEU:HD12	2:T:112:GLU:HG3	1.74	0.69
1:G:243:LYS:HG2	2:H:112:GLU:OE1	1.92	0.69
2:B:66:PRO:HG2	2:B:69:LEU:HD12	1.75	0.69
2:D:65:HIS:CB	2:D:66:PRO:HD3	2.22	0.68
2:X:129:THR:HG21	2:X:142:SER:OG	1.93	0.68
2:J:77:LEU:HD12	2:J:112:GLU:HG3	1.75	0.68
2:B:34:GLU:HB3	2:B:240:TYR:HD1	1.59	0.68
2:T:1:MET:N	2:T:2:ARG:CA	2.56	0.68
1:K:42:ILE:HG12	1:K:56:VAL:HG22	1.76	0.68

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:64:MET:HE2	2:N:124:ALA:HB2	1.74	0.68
2:B:77:LEU:HD12	2:B:112:GLU:HG3	1.77	0.67
2:N:12:LEU:HD21	2:N:184:TRP:HB2	1.75	0.67
2:J:243:PHE:HZ	2:J:246:GLU:HG2	1.60	0.67
2:V:77:LEU:HD12	2:V:112:GLU:HG3	1.75	0.67
2:X:66:PRO:HG2	2:X:69:LEU:HD12	1.77	0.67
2:L:65:HIS:CB	2:L:66:PRO:HD3	2.23	0.67
1:I:112:ARG:NH2	2:J:99:ARG:HB2	2.10	0.67
2:V:65:HIS:CB	2:V:66:PRO:HD3	2.24	0.67
2:N:66:PRO:HG2	2:N:69:LEU:HD12	1.77	0.67
2:H:34:GLU:HB3	2:H:240:TYR:HD1	1.58	0.66
1:M:42:ILE:HG12	1:M:56:VAL:HG22	1.76	0.66
2:N:129:THR:HG21	2:N:142:SER:OG	1.95	0.66
1:G:42:ILE:HG12	1:G:56:VAL:HG22	1.78	0.66
2:P:65:HIS:CB	2:P:66:PRO:HD3	2.25	0.66
1:U:41:SER:HB2	1:U:57:LYS:HB2	1.78	0.66
2:B:136:ALA:HA	3:B:404:ADP:O3'	1.95	0.66
1:E:243:LYS:CE	2:F:108:ARG:HH21	2.08	0.66
2:L:66:PRO:HG2	2:L:69:LEU:HD12	1.76	0.66
2:F:65:HIS:CB	2:F:66:PRO:HD3	2.25	0.66
2:H:227:ILE:HD13	2:H:248:VAL:HG22	1.78	0.66
2:V:168:LYS:HD2	2:V:213:GLU:OE1	1.96	0.66
1:K:112:ARG:NH2	2:L:99:ARG:HB2	2.10	0.65
2:P:77:LEU:HD12	2:P:112:GLU:HG3	1.78	0.65
2:B:99:ARG:HH12	3:B:404:ADP:PA	2.20	0.65
2:R:66:PRO:HG2	2:R:69:LEU:HD12	1.79	0.65
2:X:77:LEU:HD12	2:X:112:GLU:HG3	1.79	0.65
2:B:78:ARG:HD3	2:B:126:ASP:OD1	1.96	0.65
2:H:66:PRO:HG2	2:H:69:LEU:HD12	1.79	0.65
2:N:65:HIS:CB	2:N:66:PRO:HD3	2.27	0.65
2:J:65:HIS:CB	2:J:66:PRO:HD3	2.26	0.65
1:Q:42:ILE:HG12	1:Q:56:VAL:HG22	1.79	0.65
1:Q:51:ASP:OD1	1:Q:171:TYR:HE1	1.79	0.65
2:H:65:HIS:CB	2:H:66:PRO:HD3	2.26	0.65
2:H:129:THR:HG21	2:H:142:SER:OG	1.97	0.64
2:B:65:HIS:CB	2:B:66:PRO:HD3	2.26	0.64
2:X:65:HIS:CB	2:X:66:PRO:HD3	2.27	0.64
2:J:66:PRO:HG2	2:J:69:LEU:HD12	1.79	0.64
2:H:77:LEU:HD12	2:H:112:GLU:HG3	1.78	0.64
2:B:164:VAL:HG22	2:B:225:ILE:HG13	1.80	0.64
2:L:19:ARG:HD2	2:L:181:GLU:OE2	1.98	0.64

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:164:VAL:HG22	2:R:225:ILE:HG13	1.80	0.64
2:T:65:HIS:CB	2:T:66:PRO:HD3	2.28	0.64
2:P:66:PRO:HG2	2:P:69:LEU:HD12	1.79	0.63
2:V:78:ARG:HD3	2:V:126:ASP:OD1	1.99	0.63
2:V:129:THR:HG21	2:V:142:SER:OG	1.97	0.63
2:F:164:VAL:HG22	2:F:225:ILE:HG13	1.80	0.63
2:V:66:PRO:HG2	2:V:69:LEU:HD12	1.79	0.63
3:P:404:ADP:O2A	3:P:404:ADP:O2B	2.16	0.63
2:T:1:MET:HG3	2:T:1:MET:O	1.98	0.63
2:F:66:PRO:HG2	2:F:69:LEU:HD12	1.81	0.63
1:S:240:LYS:HB2	2:T:203:PHE:HB3	1.81	0.63
2:D:66:PRO:HG2	2:D:69:LEU:HD12	1.81	0.63
2:H:164:VAL:HG22	2:H:225:ILE:HG13	1.80	0.62
1:G:91:LEU:HD22	2:L:80:ARG:HH12	1.65	0.62
2:R:65:HIS:CB	2:R:66:PRO:HD3	2.29	0.62
2:B:129:THR:HG21	2:B:142:SER:OG	2.00	0.62
1:W:42:ILE:HG12	1:W:56:VAL:HG22	1.82	0.62
2:R:227:ILE:HD12	2:R:248:VAL:HG13	1.82	0.62
2:F:48:GLU:HG2	2:F:53:LYS:HG2	1.81	0.61
2:N:175:LEU:CD2	2:N:248:VAL:HG21	2.30	0.61
1:S:41:SER:HB2	1:S:57:LYS:HB2	1.81	0.61
2:J:164:VAL:HG22	2:J:225:ILE:HG13	1.82	0.61
2:L:129:THR:HG21	2:L:142:SER:OG	2.00	0.61
2:T:129:THR:HG21	2:T:142:SER:OG	2.01	0.61
2:T:164:VAL:HG22	2:T:225:ILE:HG13	1.82	0.61
2:X:34:GLU:HB3	2:X:240:TYR:HD1	1.65	0.61
2:X:73:ASP:OD2	2:X:74:ARG:HG3	2.00	0.61
1:O:41:SER:HB2	1:O:57:LYS:HB2	1.83	0.61
1:K:41:SER:HB2	1:K:57:LYS:HB2	1.83	0.61
1:M:41:SER:HB2	1:M:57:LYS:HB2	1.82	0.61
2:J:129:THR:HG21	2:J:142:SER:OG	2.01	0.61
2:B:9:ARG:NH2	2:B:184:TRP:O	2.34	0.60
2:B:138:SER:OG	3:B:404:ADP:O2B	2.18	0.60
1:S:42:ILE:HG12	1:S:56:VAL:HG22	1.82	0.60
2:V:179:GLU:O	2:V:183:MET:HB2	2.01	0.60
2:D:83:MET:HE2	2:D:99:ARG:HH21	1.66	0.60
1:A:42:ILE:HG12	1:A:56:VAL:HG22	1.83	0.60
1:C:41:SER:HB2	1:C:57:LYS:HB2	1.83	0.60
2:P:1:MET:HG3	2:P:3:GLU:H	1.67	0.60
1:W:116:ARG:HD3	2:X:206:ASN:HB3	1.83	0.60
1:Q:71:ILE:HD12	1:Q:182:VAL:HG22	1.83	0.60

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:71:ILE:HD12	1:E:182:VAL:HG22	1.83	0.60
1:K:6:SER:C	1:K:8:GLN:H	2.10	0.60
2:P:164:VAL:HG22	2:P:225:ILE:HG13	1.84	0.60
1:K:51:ASP:OD2	1:K:69:LEU:HB2	2.02	0.60
1:U:42:ILE:HG12	1:U:56:VAL:HG22	1.84	0.60
2:N:177:LEU:HD12	2:N:188:ASP:OD1	2.01	0.60
2:T:55:ILE:HG22	2:T:130:GLU:HB2	1.82	0.60
2:H:83:MET:HE2	2:H:99:ARG:HH21	1.67	0.59
2:L:83:MET:HE2	2:L:99:ARG:HH21	1.66	0.59
1:Q:41:SER:HB2	1:Q:57:LYS:HB2	1.82	0.59
1:G:148:ASP:OD1	2:L:40:ASN:HB2	2.02	0.59
1:U:112:ARG:NH2	2:V:99:ARG:HB2	2.17	0.59
1:I:42:ILE:HG12	1:I:56:VAL:HG22	1.84	0.59
2:V:164:VAL:HG22	2:V:225:ILE:HG13	1.84	0.59
1:M:71:ILE:HD12	1:M:182:VAL:HG22	1.85	0.59
1:W:41:SER:HB2	1:W:57:LYS:HB2	1.84	0.59
2:X:164:VAL:HG22	2:X:225:ILE:HG13	1.83	0.59
2:J:82:HIS:HE1	1:K:145:TYR:OH	1.86	0.59
1:O:42:ILE:HG12	1:O:56:VAL:HG22	1.85	0.59
1:C:42:ILE:HG12	1:C:56:VAL:HG22	1.85	0.59
1:I:14:ILE:HG22	2:V:116:LEU:HD22	1.85	0.59
2:L:164:VAL:HG22	2:L:225:ILE:HG13	1.85	0.59
2:N:130:GLU:HG3	1:Q:91:LEU:HD13	1.84	0.59
1:S:71:ILE:HD12	1:S:182:VAL:HG22	1.84	0.59
1:I:248:LEU:HD23	2:J:218:PHE:CZ	2.38	0.58
1:E:41:SER:HB2	1:E:57:LYS:HB2	1.86	0.58
2:N:164:VAL:HG22	2:N:225:ILE:HG13	1.83	0.58
1:G:41:SER:HB2	1:G:57:LYS:HB2	1.84	0.58
2:L:73:ASP:OD2	2:L:74:ARG:HG3	2.04	0.58
2:N:110:ALA:HB1	2:N:201:THR:CG2	2.34	0.58
2:L:234:GLU:HG3	2:L:241:VAL:CG2	2.33	0.58
2:B:180:THR:HA	2:B:183:MET:HE2	1.86	0.58
1:C:71:ILE:HD12	1:C:182:VAL:HG22	1.86	0.57
2:D:129:THR:HG21	2:D:142:SER:OG	2.03	0.57
2:H:48:GLU:HG2	2:H:53:LYS:CG	2.35	0.57
2:P:110:ALA:HB1	2:P:201:THR:CG2	2.34	0.57
2:R:129:THR:HG21	2:R:142:SER:OG	2.04	0.57
2:T:26:ASP:O	2:T:248:VAL:HB	2.03	0.57
2:F:73:ASP:OD2	2:F:74:ARG:HG3	2.05	0.57
1:G:71:ILE:HD12	1:G:182:VAL:HG22	1.87	0.57
2:D:110:ALA:HB1	2:D:201:THR:CG2	2.35	0.57

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:14:ILE:HG21	2:N:118:GLU:OE1	2.04	0.57
2:F:83:MET:HE2	2:F:99:ARG:HH21	1.69	0.57
2:N:129:THR:HG21	2:N:142:SER:HG	1.67	0.57
2:N:78:ARG:HD3	2:N:126:ASP:OD1	2.04	0.57
2:V:19:ARG:HD2	2:V:181:GLU:OE2	2.04	0.57
2:L:110:ALA:HB1	2:L:201:THR:CG2	2.34	0.57
2:H:89:ASP:OD2	2:H:89:ASP:N	2.27	0.56
2:T:19:ARG:HD2	2:T:181:GLU:OE2	2.04	0.56
1:A:71:ILE:HD12	1:A:182:VAL:HG22	1.87	0.56
1:E:42:ILE:HG12	1:E:56:VAL:HG22	1.86	0.56
2:R:73:ASP:OD2	2:R:74:ARG:HG3	2.06	0.56
2:R:110:ALA:HB1	2:R:201:THR:CG2	2.35	0.56
2:T:110:ALA:HB1	2:T:201:THR:CG2	2.35	0.56
1:W:71:ILE:HD12	1:W:182:VAL:HG22	1.88	0.56
2:X:110:ALA:HB1	2:X:201:THR:CG2	2.36	0.56
2:P:19:ARG:HD2	2:P:181:GLU:OE2	2.05	0.56
1:A:32:ARG:HB2	1:A:36:ASP:HB2	1.87	0.56
1:I:31:GLY:HA2	2:V:233:ARG:NH1	2.20	0.56
2:P:83:MET:HE2	2:P:99:ARG:HH21	1.70	0.56
2:T:83:MET:HE2	2:T:99:ARG:HH21	1.69	0.56
2:D:164:VAL:HG22	2:D:225:ILE:HG13	1.87	0.56
1:K:57:LYS:HG2	1:K:62:MET:HG2	1.88	0.56
2:L:32:LYS:HB3	2:L:48:GLU:HB2	1.88	0.56
2:P:129:THR:HG21	2:P:142:SER:OG	2.06	0.56
1:S:255:GLU:OE2	2:T:215:ARG:NH2	2.39	0.56
2:F:110:ALA:HB1	2:F:201:THR:CG2	2.36	0.56
1:G:249:GLN:H	1:G:249:GLN:NE2	1.96	0.56
1:K:32:ARG:HB2	1:K:36:ASP:HB2	1.88	0.56
2:L:168:LYS:HE2	2:L:186:GLU:HB2	1.88	0.56
2:P:203:PHE:HE1	2:P:218:PHE:CE1	2.24	0.56
2:X:83:MET:HE2	2:X:99:ARG:HH21	1.71	0.56
1:O:57:LYS:HG2	1:O:62:MET:HG2	1.87	0.55
2:D:19:ARG:HD2	2:D:181:GLU:OE2	2.06	0.55
2:F:233:ARG:CZ	1:W:31:GLY:HA2	2.35	0.55
2:T:55:ILE:CG2	2:T:130:GLU:HB2	2.35	0.55
1:C:32:ARG:HB2	1:C:36:ASP:HB2	1.87	0.55
2:F:243:PHE:CZ	2:F:246:GLU:HG2	2.42	0.55
2:J:133:GLN:NE2	1:K:48:LYS:HB2	2.22	0.55
1:I:41:SER:HB2	1:I:57:LYS:HB2	1.88	0.55
2:N:83:MET:HE2	2:N:99:ARG:HH21	1.70	0.55
2:H:73:ASP:OD2	2:H:74:ARG:HG3	2.07	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:227:ILE:CD1	2:H:248:VAL:HG13	2.35	0.55
1:I:71:ILE:HD12	1:I:182:VAL:HG22	1.89	0.55
2:R:83:MET:HE2	2:R:99:ARG:HH21	1.71	0.55
2:T:28:LEU:HG	2:T:248:VAL:HG21	1.89	0.55
2:H:135:ASP:O	2:H:136:ALA:HB3	2.07	0.55
2:V:83:MET:HE2	2:V:99:ARG:HH21	1.72	0.55
2:P:73:ASP:OD2	2:P:74:ARG:HG3	2.07	0.55
2:F:129:THR:HG21	2:F:142:SER:HG	1.70	0.54
2:H:88:THR:HG21	3:H:404:ADP:C2	2.43	0.54
2:J:86:PHE:HA	1:K:68:LYS:HD3	1.87	0.54
1:I:32:ARG:HB2	1:I:36:ASP:HB2	1.89	0.54
1:O:71:ILE:HD12	1:O:182:VAL:HG22	1.90	0.54
2:T:73:ASP:OD2	2:T:74:ARG:HG3	2.08	0.54
1:E:243:LYS:CE	2:F:108:ARG:NH2	2.70	0.54
1:K:71:ILE:HD12	1:K:182:VAL:HG22	1.89	0.54
1:U:32:ARG:HB2	1:U:36:ASP:HB2	1.89	0.54
1:C:183:ASN:C	1:C:183:ASN:ND2	2.65	0.54
1:E:51:ASP:O	1:E:168:THR:HA	2.07	0.54
2:H:110:ALA:HB1	2:H:201:THR:CG2	2.37	0.54
1:E:121:SER:O	1:E:122:LYS:HB3	2.07	0.54
2:N:19:ARG:HD2	2:N:181:GLU:OE2	2.07	0.54
1:O:240:LYS:HB2	2:P:203:PHE:HB3	1.90	0.54
1:C:240:LYS:HB2	2:D:203:PHE:HB3	1.89	0.53
2:H:80:ARG:NH1	2:H:130:GLU:OE2	2.42	0.53
1:U:71:ILE:HD12	1:U:182:VAL:HG22	1.90	0.53
2:V:73:ASP:OD2	2:V:74:ARG:HG3	2.08	0.53
2:J:83:MET:HE2	2:J:99:ARG:HH21	1.74	0.53
2:T:243:PHE:CZ	2:T:246:GLU:HG2	2.41	0.53
2:H:227:ILE:CD1	2:H:248:VAL:HG22	2.38	0.53
1:O:32:ARG:HB2	1:O:36:ASP:HB2	1.91	0.53
2:T:34:GLU:HG3	2:T:46:ILE:HB	1.90	0.53
1:U:57:LYS:HG2	1:U:62:MET:HG2	1.91	0.53
2:P:48:GLU:HG2	2:P:53:LYS:HB3	1.91	0.53
2:B:110:ALA:HB1	2:B:201:THR:CG2	2.39	0.53
2:D:223:LYS:HB3	2:D:248:VAL:CG1	2.39	0.53
1:G:32:ARG:HB2	1:G:36:ASP:HB2	1.91	0.53
1:I:57:LYS:HG2	1:I:62:MET:HG2	1.91	0.53
1:E:32:ARG:HB2	1:E:36:ASP:HB2	1.90	0.53
2:P:159:ASP:OD2	2:P:196:SER:HB2	2.08	0.53
2:B:51:ASN:HB2	2:B:135:ASP:OD2	2.09	0.53
2:D:99:ARG:HH12	3:D:404:ADP:PA	2.29	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:233:ARG:NH1	2:D:233:ARG:HG3	2.24	0.53
2:R:212:ASP:OD1	2:R:212:ASP:N	2.39	0.53
2:X:223:LYS:HB3	2:X:248:VAL:CG1	2.38	0.53
1:E:243:LYS:HE3	2:F:108:ARG:HH21	1.73	0.52
1:M:32:ARG:HB2	1:M:36:ASP:HB2	1.90	0.52
1:G:91:LEU:H	1:G:92:PRO:CD	2.23	0.52
1:Q:57:LYS:HG2	1:Q:62:MET:HG2	1.90	0.52
2:T:42:ASP:O	2:T:153:ALA:HA	2.09	0.52
2:J:91:ARG:HB2	1:K:68:LYS:HG2	1.91	0.52
2:X:223:LYS:CB	2:X:248:VAL:HG11	2.38	0.52
1:E:125:ASP:HB3	1:E:128:LYS:HD2	1.91	0.52
2:H:131:ILE:HG12	2:H:138:SER:HB2	1.91	0.52
2:P:193:MET:HG3	2:P:225:ILE:HD13	1.92	0.52
2:F:78:ARG:HD3	2:F:126:ASP:OD1	2.10	0.52
2:H:192:ALA:HB3	2:H:202:LEU:HB3	1.92	0.52
1:W:32:ARG:HB2	1:W:36:ASP:HB2	1.91	0.52
2:H:129:THR:HG21	2:H:142:SER:HG	1.73	0.52
2:L:23:ARG:HH21	2:L:178:ASN:HD21	1.56	0.52
1:S:269:LEU:O	1:S:273:LEU:HG	2.10	0.52
1:C:112:ARG:NH1	2:D:102:GLU:OE1	2.42	0.52
2:D:73:ASP:OD2	2:D:74:ARG:HG3	2.10	0.52
2:L:193:MET:HG3	2:L:225:ILE:HD13	1.92	0.52
2:H:82:HIS:HE1	1:I:145:TYR:OH	1.92	0.52
1:E:112:ARG:NH2	2:F:99:ARG:HB2	2.25	0.52
2:L:131:ILE:HD11	2:L:142:SER:HB2	1.92	0.52
1:S:57:LYS:HG2	1:S:62:MET:HG2	1.92	0.51
1:W:183:ASN:C	1:W:183:ASN:ND2	2.66	0.51
2:B:193:MET:HG3	2:B:225:ILE:HD13	1.92	0.51
1:Q:32:ARG:HB2	1:Q:36:ASP:HB2	1.91	0.51
1:C:51:ASP:OD2	1:C:69:LEU:HB2	2.10	0.51
1:G:91:LEU:H	1:G:92:PRO:HD3	1.75	0.51
2:R:19:ARG:HD2	2:R:181:GLU:OE2	2.09	0.51
2:R:34:GLU:HB3	2:R:240:TYR:HD1	1.75	0.51
1:W:91:LEU:H	1:W:92:PRO:CD	2.23	0.51
1:A:57:LYS:HG2	1:A:62:MET:HG2	1.93	0.51
2:L:83:MET:HE2	2:L:99:ARG:NH2	2.25	0.51
1:S:32:ARG:HB2	1:S:36:ASP:HB2	1.91	0.51
2:X:131:ILE:HG12	2:X:138:SER:HB2	1.93	0.51
2:J:133:GLN:OE1	1:K:48:LYS:HG2	2.10	0.51
1:S:91:LEU:H	1:S:92:PRO:CD	2.24	0.51
2:D:28:LEU:O	2:D:245:GLU:HB2	2.11	0.51

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:64:MET:HE1	2:H:76:VAL:HB	1.92	0.51
1:E:263:VAL:O	1:E:267:GLU:HG3	2.11	0.51
2:P:42:ASP:O	2:P:153:ALA:HA	2.11	0.51
2:P:190:PRO:HG2	2:P:204:GLN:HB2	1.92	0.51
1:S:145:TYR:OH	2:V:82:HIS:HE1	1.92	0.51
2:X:135:ASP:O	2:X:136:ALA:HB3	2.11	0.51
2:B:19:ARG:HD2	2:B:181:GLU:OE2	2.11	0.51
1:E:91:LEU:H	1:E:92:PRO:CD	2.23	0.51
2:F:131:ILE:HG12	2:F:138:SER:HB2	1.94	0.50
2:T:136:ALA:N	3:T:404:ADP:O3'	2.36	0.50
1:Q:240:LYS:HB2	2:R:203:PHE:HB3	1.93	0.50
2:B:73:ASP:OD2	2:B:74:ARG:HG3	2.10	0.50
1:G:30:ASP:OD1	1:G:31:GLY:N	2.44	0.50
2:J:64:MET:HE1	2:J:76:VAL:HB	1.94	0.50
2:L:135:ASP:OD1	2:L:179:GLU:HB2	2.11	0.50
2:P:16:ASP:C	2:P:18:LYS:H	2.19	0.50
1:A:91:LEU:H	1:A:92:PRO:HD3	1.76	0.50
2:F:19:ARG:HD2	2:F:181:GLU:OE2	2.11	0.50
1:K:91:LEU:H	1:K:92:PRO:CD	2.25	0.50
2:R:168:LYS:HG3	2:R:173:ILE:HG13	1.92	0.50
1:C:91:LEU:H	1:C:92:PRO:HD3	1.76	0.50
2:T:27:GLU:HG2	2:T:247:GLY:HA2	1.94	0.50
2:T:227:ILE:HD12	2:T:248:VAL:HG13	1.94	0.50
1:C:91:LEU:H	1:C:92:PRO:CD	2.24	0.50
2:D:83:MET:HE2	2:D:99:ARG:NH2	2.26	0.50
2:J:110:ALA:HB1	2:J:201:THR:CG2	2.42	0.50
2:L:131:ILE:HG12	2:L:138:SER:HB2	1.92	0.50
2:P:131:ILE:HG12	2:P:138:SER:HB2	1.92	0.50
1:E:91:LEU:H	1:E:92:PRO:HD3	1.76	0.50
2:V:110:ALA:HB1	2:V:201:THR:CG2	2.41	0.50
2:V:131:ILE:HD11	2:V:142:SER:HB2	1.93	0.50
2:X:129:THR:HG21	2:X:142:SER:HG	1.76	0.50
1:A:41:SER:HB2	1:A:57:LYS:HB2	1.92	0.49
2:R:2:ARG:HG2	2:R:3:GLU:H	1.77	0.49
1:C:57:LYS:HG2	1:C:62:MET:HG2	1.93	0.49
1:E:243:LYS:HE2	2:F:108:ARG:HH21	1.74	0.49
2:T:213:GLU:O	2:T:214:PHE:C	2.54	0.49
1:E:57:LYS:HG2	1:E:62:MET:HG2	1.94	0.49
2:H:19:ARG:HD2	2:H:181:GLU:OE2	2.12	0.49
2:J:73:ASP:OD2	2:J:74:ARG:HG3	2.12	0.49
1:O:91:LEU:H	1:O:92:PRO:CD	2.25	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:112:ARG:NH2	2:D:99:ARG:HB2	2.27	0.49
1:E:28:ARG:CZ	1:E:210:VAL:HG13	2.43	0.49
1:E:243:LYS:HE3	2:F:108:ARG:NH2	2.27	0.49
1:G:91:LEU:HD22	2:L:80:ARG:NH1	2.27	0.49
2:L:223:LYS:HB3	2:L:248:VAL:CG1	2.43	0.49
1:Q:91:LEU:H	1:Q:92:PRO:HD3	1.76	0.49
1:E:91:LEU:N	1:E:92:PRO:CD	2.76	0.49
2:P:192:ALA:HB3	2:P:202:LEU:HB3	1.95	0.49
2:J:27:GLU:HG2	2:J:247:GLY:HA2	1.95	0.49
2:P:1:MET:HG2	2:P:4:MET:HG3	1.95	0.49
1:C:68:LYS:HG2	2:F:91:ARG:HB2	1.94	0.49
2:D:131:ILE:HD11	2:D:142:SER:HB2	1.94	0.49
2:T:131:ILE:HG12	2:T:138:SER:HB2	1.94	0.49
2:V:27:GLU:HG2	2:V:247:GLY:HA2	1.95	0.49
1:A:91:LEU:H	1:A:92:PRO:CD	2.26	0.49
1:M:91:LEU:H	1:M:92:PRO:CD	2.25	0.49
2:P:15:ASP:C	2:P:16:ASP:O	2.55	0.49
1:Q:129:LEU:HB3	1:Q:138:TRP:HB2	1.95	0.49
1:A:104:ASP:HB3	1:A:107:ALA:HB3	1.95	0.49
2:D:131:ILE:HG12	2:D:138:SER:HB2	1.95	0.49
1:W:91:LEU:H	1:W:92:PRO:HD3	1.77	0.49
2:B:131:ILE:HG12	2:B:138:SER:HB2	1.95	0.49
1:E:38:ARG:HD2	1:E:59:GLY:HA3	1.95	0.49
1:E:104:ASP:CG	1:E:105:GLU:N	2.71	0.49
1:I:240:LYS:HB2	2:J:203:PHE:HB3	1.95	0.49
1:O:121:SER:HB3	1:O:236:VAL:HG11	1.94	0.49
2:P:183:MET:HE3	2:P:183:MET:HA	1.95	0.49
2:B:169:ALA:O	2:B:171:GLY:N	2.42	0.48
2:F:168:LYS:HE2	2:F:186:GLU:HB2	1.93	0.48
1:M:91:LEU:H	1:M:92:PRO:HD3	1.78	0.48
1:U:104:ASP:CG	1:U:105:GLU:N	2.71	0.48
1:W:57:LYS:HG2	1:W:62:MET:HG2	1.94	0.48
1:C:27:ILE:HD11	2:T:233:ARG:HH12	1.78	0.48
2:D:233:ARG:NH2	1:G:31:GLY:HA2	2.28	0.48
2:N:118:GLU:CD	2:N:118:GLU:H	2.20	0.48
1:G:91:LEU:N	1:G:92:PRO:CD	2.76	0.48
2:H:27:GLU:HG2	2:H:247:GLY:HA2	1.96	0.48
1:K:112:ARG:NH1	2:L:102:GLU:OE1	2.46	0.48
2:N:190:PRO:HG2	2:N:204:GLN:HB2	1.94	0.48
1:S:121:SER:HB3	1:S:236:VAL:HG11	1.95	0.48
2:D:159:ASP:OD2	2:D:196:SER:HB2	2.13	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:234:GLU:HG3	2:N:241:VAL:HG21	1.94	0.48
1:O:91:LEU:H	1:O:92:PRO:HD3	1.78	0.48
2:V:131:ILE:HG12	2:V:138:SER:HB2	1.96	0.48
1:W:91:LEU:N	1:W:92:PRO:CD	2.76	0.48
2:X:192:ALA:HB3	2:X:202:LEU:HB3	1.96	0.48
2:D:193:MET:HG3	2:D:225:ILE:HD13	1.94	0.48
2:N:131:ILE:HG12	2:N:138:SER:HB2	1.94	0.48
1:A:7:ASN:H	1:A:7:ASN:ND2	2.11	0.48
2:B:175:LEU:HD22	2:B:248:VAL:CG2	2.43	0.48
1:O:163:ALA:HA	1:O:273:LEU:HD21	1.95	0.48
1:Q:104:ASP:CG	1:Q:105:GLU:N	2.71	0.48
2:T:190:PRO:HG2	2:T:204:GLN:HB2	1.96	0.48
2:X:103:LEU:HD21	2:X:139:ARG:CZ	2.43	0.48
2:J:193:MET:HG3	2:J:225:ILE:HD13	1.95	0.48
2:R:27:GLU:HG2	2:R:247:GLY:HA2	1.95	0.48
2:T:192:ALA:HB3	2:T:202:LEU:HB3	1.96	0.48
2:F:131:ILE:HD11	2:F:142:SER:HB2	1.96	0.48
1:M:91:LEU:N	1:M:92:PRO:CD	2.77	0.48
2:N:64:MET:HE1	2:N:76:VAL:HB	1.95	0.48
2:N:73:ASP:OD2	2:N:74:ARG:HG3	2.14	0.48
1:Q:125:ASP:CG	1:Q:128:LYS:HG3	2.39	0.48
1:S:68:LYS:HG2	2:V:91:ARG:HB2	1.94	0.48
1:U:91:LEU:H	1:U:92:PRO:HD3	1.78	0.48
1:A:166:TYR:HB3	1:A:273:LEU:HD22	1.96	0.48
2:D:233:ARG:HG3	2:D:233:ARG:HH11	1.79	0.48
2:N:12:LEU:HD22	2:N:181:GLU:HA	1.95	0.48
1:Q:91:LEU:H	1:Q:92:PRO:CD	2.26	0.48
2:B:83:MET:HE2	2:B:99:ARG:HH21	1.79	0.47
2:N:202:LEU:HD23	2:N:203:PHE:N	2.29	0.47
1:Q:112:ARG:NH2	2:R:99:ARG:HB2	2.29	0.47
1:S:251:ILE:HD12	2:T:200:VAL:HG21	1.96	0.47
2:V:37:VAL:HG11	2:V:46:ILE:HG13	1.96	0.47
2:J:14:LEU:O	2:J:16:ASP:N	2.44	0.47
2:N:234:GLU:HG3	2:N:241:VAL:CG2	2.44	0.47
1:W:121:SER:HB3	1:W:236:VAL:HG11	1.96	0.47
1:I:104:ASP:HB3	1:I:107:ALA:HB3	1.96	0.47
2:R:2:ARG:HG2	2:R:3:GLU:N	2.29	0.47
1:U:104:ASP:HB3	1:U:107:ALA:HB3	1.97	0.47
1:U:121:SER:O	1:U:122:LYS:HB2	2.14	0.47
2:B:27:GLU:HG2	2:B:247:GLY:HA2	1.97	0.47
1:E:129:LEU:HB3	1:E:138:TRP:HB2	1.96	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:64:MET:HE1	2:F:76:VAL:HB	1.96	0.47
2:N:131:ILE:HD11	2:N:142:SER:HB2	1.95	0.47
2:P:135:ASP:O	2:P:136:ALA:HB3	2.14	0.47
1:S:129:LEU:HB3	1:S:138:TRP:HB2	1.96	0.47
2:T:28:LEU:O	2:T:245:GLU:HB3	2.15	0.47
2:T:83:MET:HE2	2:T:99:ARG:NH2	2.30	0.47
2:V:83:MET:HB2	2:V:92:LYS:HD3	1.97	0.47
2:V:99:ARG:HH12	3:V:404:ADP:PA	2.37	0.47
2:H:83:MET:HE2	2:H:99:ARG:NH2	2.29	0.47
1:I:104:ASP:CG	1:I:105:GLU:N	2.71	0.47
1:A:121:SER:HB3	1:A:236:VAL:HG11	1.95	0.47
2:D:13:ILE:HD13	2:D:19:ARG:HG2	1.95	0.47
2:H:86:PHE:HA	1:I:68:LYS:HD3	1.97	0.47
1:A:91:LEU:N	1:A:92:PRO:CD	2.77	0.47
1:C:38:ARG:HD2	1:C:59:GLY:HA3	1.97	0.47
2:F:27:GLU:HG2	2:F:247:GLY:HA2	1.95	0.47
1:I:38:ARG:HD2	1:I:59:GLY:HA3	1.97	0.47
2:J:190:PRO:HG2	2:J:204:GLN:HB2	1.96	0.47
2:P:1:MET:HE2	2:P:2:ARG:HG3	1.95	0.47
1:S:91:LEU:H	1:S:92:PRO:HD3	1.79	0.47
2:V:32:LYS:HB3	2:V:48:GLU:HB2	1.97	0.47
2:F:26:ASP:HB2	2:F:248:VAL:HG12	1.95	0.47
2:H:131:ILE:HD11	2:H:142:SER:HB2	1.97	0.47
2:H:193:MET:HG3	2:H:225:ILE:HD13	1.97	0.47
1:I:121:SER:HB3	1:I:236:VAL:HG11	1.96	0.47
1:M:104:ASP:HB3	1:M:107:ALA:HB3	1.97	0.47
1:I:28:ARG:CZ	1:I:210:VAL:HG13	2.45	0.47
2:T:64:MET:HE1	2:T:76:VAL:HB	1.97	0.47
2:F:83:MET:HE2	2:F:99:ARG:NH2	2.30	0.46
2:L:179:GLU:HG3	3:L:404:ADP:O2'	2.15	0.46
2:P:41:ALA:HA	2:P:59:TYR:CE2	2.50	0.46
2:J:83:MET:HE2	2:J:99:ARG:NH2	2.30	0.46
2:N:27:GLU:HG2	2:N:247:GLY:HA2	1.98	0.46
1:O:77:ASP:O	1:O:79:PRO:HD3	2.15	0.46
1:Q:91:LEU:N	1:Q:92:PRO:CD	2.78	0.46
1:U:91:LEU:H	1:U:92:PRO:CD	2.28	0.46
2:B:34:GLU:HB3	2:B:240:TYR:CD1	2.46	0.46
1:G:104:ASP:CG	1:G:105:GLU:N	2.73	0.46
2:J:19:ARG:HD2	2:J:181:GLU:OE2	2.15	0.46
2:N:83:MET:HE2	2:N:99:ARG:NH2	2.31	0.46
1:S:91:LEU:N	1:S:92:PRO:CD	2.78	0.46

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:91:LEU:N	1:K:92:PRO:CD	2.79	0.46
2:L:234:GLU:HG3	2:L:241:VAL:HG21	1.98	0.46
2:P:227:ILE:HD12	2:P:248:VAL:HG22	1.97	0.46
1:Q:38:ARG:HD2	1:Q:59:GLY:HA3	1.97	0.46
1:C:91:LEU:N	1:C:92:PRO:CD	2.78	0.46
1:G:91:LEU:CD2	2:L:80:ARG:HH12	2.28	0.46
2:J:192:ALA:HB3	2:J:202:LEU:HB3	1.96	0.46
2:J:196:SER:HB3	1:O:27:ILE:HG21	1.96	0.46
2:P:23:ARG:HH21	2:P:178:ASN:ND2	2.14	0.46
2:V:193:MET:HG3	2:V:225:ILE:HD13	1.97	0.46
1:W:129:LEU:HB3	1:W:138:TRP:HB2	1.97	0.46
1:M:104:ASP:CG	1:M:105:GLU:N	2.73	0.46
2:X:193:MET:HG3	2:X:225:ILE:HD13	1.98	0.46
2:P:27:GLU:HG2	2:P:247:GLY:HA2	1.98	0.46
2:R:131:ILE:HD11	2:R:142:SER:HB2	1.98	0.46
1:U:38:ARG:HD2	1:U:59:GLY:HA3	1.98	0.46
2:D:202:LEU:HD23	2:D:203:PHE:N	2.31	0.46
1:E:104:ASP:HB3	1:E:107:ALA:HB3	1.98	0.46
2:H:28:LEU:HG	2:H:248:VAL:HG21	1.98	0.46
1:K:91:LEU:H	1:K:92:PRO:HD3	1.80	0.46
2:R:64:MET:HE1	2:R:76:VAL:HB	1.98	0.46
2:R:192:ALA:HB3	2:R:202:LEU:HB3	1.97	0.46
1:E:32:ARG:CZ	1:E:38:ARG:HG3	2.46	0.46
2:H:202:LEU:HD23	2:H:203:PHE:N	2.31	0.46
2:J:160:LEU:HD11	2:J:236:LEU:HD22	1.98	0.46
2:L:64:MET:HE1	2:L:76:VAL:HB	1.98	0.46
2:R:190:PRO:HG2	2:R:204:GLN:HB2	1.97	0.46
1:C:28:ARG:CZ	1:C:210:VAL:HG13	2.46	0.46
2:F:192:ALA:HB3	2:F:202:LEU:HB3	1.98	0.45
1:G:57:LYS:HG2	1:G:62:MET:HG2	1.98	0.45
1:M:57:LYS:HG2	1:M:62:MET:HG2	1.97	0.45
2:D:65:HIS:CB	2:D:66:PRO:CD	2.94	0.45
1:O:91:LEU:N	1:O:92:PRO:CD	2.79	0.45
2:P:60:GLY:O	2:P:61:PRO:C	2.60	0.45
2:X:27:GLU:HG2	2:X:247:GLY:HA2	1.97	0.45
1:W:240:LYS:HB2	2:X:203:PHE:HB3	1.98	0.45
2:P:37:VAL:HG11	2:P:46:ILE:HG13	1.98	0.45
1:W:77:ASP:O	1:W:79:PRO:HD3	2.16	0.45
1:C:269:LEU:O	1:C:273:LEU:HG	2.17	0.45
1:I:125:ASP:OD2	1:I:128:LYS:HE3	2.16	0.45
1:K:243:LYS:HD3	2:L:74:ARG:HH12	1.81	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:83:MET:HE2	2:R:99:ARG:NH2	2.31	0.45
2:V:42:ASP:CG	2:V:60:GLY:H	2.24	0.45
2:V:168:LYS:HE3	2:V:171:GLY:HA2	1.97	0.45
2:D:1:MET:C	2:D:3:GLU:N	2.73	0.45
2:J:233:ARG:NH1	1:O:31:GLY:HA2	2.31	0.45
1:K:3:SER:HB3	2:L:78:ARG:HG3	1.97	0.45
1:Q:8:GLN:O	1:Q:8:GLN:HG2	2.16	0.45
2:V:48:GLU:OE1	2:V:53:LYS:HE2	2.17	0.45
2:V:160:LEU:HD11	2:V:236:LEU:HD22	1.99	0.45
1:W:38:ARG:HD2	1:W:59:GLY:HA3	1.99	0.45
1:A:129:LEU:HB3	1:A:138:TRP:HB2	1.99	0.45
1:C:75:TYR:N	1:C:75:TYR:CD1	2.85	0.45
2:D:183:MET:HE3	2:D:184:TRP:CZ2	2.51	0.45
1:I:91:LEU:H	1:I:92:PRO:HD3	1.82	0.45
2:L:23:ARG:HH12	2:L:176:ASP:HB3	1.82	0.45
1:Q:121:SER:HB3	1:Q:236:VAL:HG11	1.97	0.45
2:B:192:ALA:HB3	2:B:202:LEU:HB3	1.99	0.45
1:I:75:TYR:CE2	1:I:83:ASN:OD1	2.70	0.45
2:J:131:ILE:HG12	2:J:138:SER:HB2	1.97	0.45
1:K:77:ASP:O	1:K:79:PRO:HD3	2.16	0.45
1:A:32:ARG:CZ	1:A:38:ARG:HG3	2.47	0.45
2:D:192:ALA:HB3	2:D:202:LEU:HB3	1.99	0.45
3:D:404:ADP:H5'2	3:D:404:ADP:O3B	2.16	0.45
2:F:210:THR:HG23	2:F:213:GLU:OE1	2.16	0.45
1:I:91:LEU:H	1:I:92:PRO:CD	2.30	0.45
2:P:83:MET:HE2	2:P:99:ARG:NH2	2.31	0.45
2:R:131:ILE:HG12	2:R:138:SER:HB2	1.99	0.45
2:R:195:PRO:HG2	2:R:229:TYR:CD1	2.52	0.45
2:X:61:PRO:HD3	2:X:155:ILE:HD11	1.99	0.45
2:B:131:ILE:HD11	2:B:142:SER:HB2	1.99	0.45
1:E:14:ILE:HG22	2:N:116:LEU:HD22	1.99	0.45
2:J:131:ILE:HD11	2:J:142:SER:HB2	1.99	0.45
2:X:19:ARG:HD2	2:X:181:GLU:OE2	2.16	0.45
1:C:129:LEU:HB3	1:C:138:TRP:HB2	1.99	0.44
2:J:37:VAL:HG11	2:J:46:ILE:HG13	1.99	0.44
2:R:212:ASP:C	2:R:214:PHE:N	2.75	0.44
2:T:32:LYS:HB3	2:T:48:GLU:HB2	1.98	0.44
1:G:104:ASP:HB3	1:G:107:ALA:HB3	1.99	0.44
2:H:91:ARG:HB2	1:I:68:LYS:HG2	1.99	0.44
1:I:130:VAL:HA	1:I:137:VAL:HG12	1.98	0.44
1:O:6:SER:C	1:O:8:GLN:H	2.25	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:V:190:PRO:HG2	2:V:204:GLN:HB2	1.99	0.44
2:B:91:ARG:HB2	1:E:68:LYS:HG2	2.00	0.44
1:E:121:SER:HB3	1:E:236:VAL:HG11	1.98	0.44
2:J:86:PHE:HB2	1:K:50:ALA:HB2	1.98	0.44
1:K:130:VAL:HA	1:K:137:VAL:HG12	1.99	0.44
2:L:27:GLU:HG2	2:L:247:GLY:HA2	2.00	0.44
1:O:130:VAL:HA	1:O:137:VAL:HG12	1.99	0.44
2:T:37:VAL:HG11	2:T:46:ILE:HG13	1.99	0.44
1:U:91:LEU:N	1:U:92:PRO:CD	2.79	0.44
1:W:104:ASP:HB3	1:W:107:ALA:HB3	1.99	0.44
2:B:99:ARG:NH1	3:B:404:ADP:O2A	2.50	0.44
2:L:41:ALA:HA	2:L:59:TYR:CE2	2.53	0.44
1:M:130:VAL:HA	1:M:137:VAL:HG12	1.99	0.44
2:R:62:LYS:NZ	2:R:126:ASP:OD2	2.48	0.44
1:S:16:LYS:HG3	1:S:220:ILE:HB	2.00	0.44
2:B:190:PRO:HG2	2:B:204:GLN:HB2	1.99	0.44
2:H:48:GLU:CG	2:H:53:LYS:HG2	2.41	0.44
2:J:39:LYS:HA	2:J:39:LYS:HD2	1.85	0.44
1:O:32:ARG:CZ	1:O:38:ARG:HG3	2.47	0.44
1:S:28:ARG:CZ	1:S:210:VAL:HG13	2.48	0.44
1:W:32:ARG:CZ	1:W:38:ARG:HG3	2.48	0.44
1:W:264:LYS:H	1:W:264:LYS:HG3	1.66	0.44
2:X:182:ASP:CG	3:X:404:ADP:H5'1	2.43	0.44
2:F:159:ASP:OD2	2:F:196:SER:HB2	2.17	0.44
2:L:192:ALA:HB3	2:L:202:LEU:HB3	1.99	0.44
1:S:104:ASP:CG	1:S:105:GLU:N	2.75	0.44
2:X:131:ILE:HD11	2:X:142:SER:HB2	2.00	0.44
2:D:160:LEU:HD11	2:D:236:LEU:HD22	2.00	0.44
1:K:28:ARG:CZ	1:K:210:VAL:HG13	2.48	0.44
1:O:112:ARG:NH2	2:P:99:ARG:HB2	2.33	0.44
2:P:1:MET:HG3	2:P:3:GLU:N	2.30	0.44
1:G:232:ASP:OD1	1:G:232:ASP:C	2.60	0.44
1:G:240:LYS:HB2	2:H:203:PHE:HB3	2.00	0.44
1:S:38:ARG:HD2	1:S:59:GLY:HA3	1.99	0.44
1:U:129:LEU:HB3	1:U:138:TRP:HB2	2.00	0.44
1:A:240:LYS:HB2	2:B:203:PHE:HB3	2.00	0.44
2:H:227:ILE:HD12	2:H:248:VAL:CG1	2.41	0.44
2:P:169:ALA:HB2	2:P:174:ILE:HD13	2.00	0.44
1:E:130:VAL:HA	1:E:137:VAL:HG12	2.00	0.43
2:F:135:ASP:O	2:F:136:ALA:HB3	2.18	0.43
2:X:83:MET:HE2	2:X:99:ARG:NH2	2.31	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:3:SER:HB3	2:J:78:ARG:CG	2.47	0.43
1:K:27:ILE:HG21	2:R:196:SER:HB3	2.00	0.43
2:L:165:ALA:HA	2:L:190:PRO:HA	1.99	0.43
2:N:13:ILE:CD1	2:N:172:VAL:HB	2.48	0.43
2:T:165:ALA:HA	2:T:190:PRO:HA	2.00	0.43
2:V:64:MET:HE1	2:V:76:VAL:HB	2.00	0.43
2:B:41:ALA:HA	2:B:59:TYR:CE2	2.54	0.43
2:B:64:MET:HE1	2:B:76:VAL:HB	2.01	0.43
1:C:121:SER:HB3	1:C:236:VAL:HG11	2.00	0.43
2:D:214:PHE:O	2:D:218:PHE:HB2	2.18	0.43
1:G:203:ALA:HB2	1:G:213:PRO:HG3	1.99	0.43
1:M:121:SER:HB3	1:M:236:VAL:HG11	2.01	0.43
2:P:160:LEU:HD11	2:P:236:LEU:HD22	2.00	0.43
1:U:13:ILE:H	1:U:13:ILE:HG13	1.61	0.43
2:V:12:LEU:HD22	2:V:181:GLU:HG3	2.00	0.43
1:A:112:ARG:NH1	2:B:102:GLU:OE1	2.51	0.43
2:F:41:ALA:HA	2:F:59:TYR:CE2	2.54	0.43
1:I:91:LEU:N	1:I:92:PRO:CD	2.81	0.43
2:J:103:LEU:HD21	2:J:139:ARG:CZ	2.48	0.43
1:O:38:ARG:HD2	1:O:59:GLY:HA3	2.00	0.43
1:S:112:ARG:NH1	2:T:102:GLU:OE1	2.52	0.43
1:U:80:ASN:OD1	1:U:133:PRO:HB3	2.18	0.43
1:A:104:ASP:CG	1:A:105:GLU:N	2.76	0.43
1:K:38:ARG:HD2	1:K:59:GLY:HA3	2.00	0.43
2:L:190:PRO:HG2	2:L:204:GLN:HB2	2.00	0.43
1:Q:77:ASP:O	1:Q:79:PRO:HD3	2.18	0.43
1:Q:104:ASP:HB3	1:Q:107:ALA:HB3	2.00	0.43
1:S:11:ILE:HA	1:S:12:PRO:HD3	1.93	0.43
2:X:190:PRO:HG2	2:X:204:GLN:HB2	1.99	0.43
1:A:130:VAL:HA	1:A:137:VAL:HG12	2.00	0.43
2:B:202:LEU:HD23	2:B:203:PHE:N	2.33	0.43
2:D:190:PRO:HG2	2:D:204:GLN:HB2	1.99	0.43
1:G:121:SER:HB3	1:G:236:VAL:HG11	1.99	0.43
2:N:61:PRO:HD3	2:N:155:ILE:HD11	2.01	0.43
1:O:104:ASP:CG	1:O:105:GLU:N	2.77	0.43
1:U:77:ASP:O	1:U:79:PRO:HD3	2.18	0.43
2:D:27:GLU:HG2	2:D:247:GLY:HA2	2.01	0.43
1:G:145:TYR:OH	2:L:82:HIS:HE1	2.01	0.43
2:T:131:ILE:HD11	2:T:142:SER:HB2	2.01	0.43
2:T:160:LEU:HD11	2:T:236:LEU:HD22	2.00	0.43
2:N:12:LEU:HD12	2:N:170:ASP:OD1	2.17	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:165:ALA:HA	2:P:190:PRO:HA	2.00	0.43
1:S:32:ARG:CZ	1:S:38:ARG:HG3	2.49	0.43
1:S:91:LEU:HD22	2:V:80:ARG:HH12	1.83	0.43
1:W:105:GLU:OE1	2:X:105:LYS:HG3	2.19	0.43
1:E:240:LYS:HB2	2:F:203:PHE:HB3	2.00	0.43
2:F:65:HIS:CB	2:F:66:PRO:CD	2.97	0.43
1:G:130:VAL:HA	1:G:137:VAL:HG12	2.00	0.43
2:H:61:PRO:HD3	2:H:155:ILE:HD11	2.01	0.43
2:J:155:ILE:HA	2:J:156:PRO:HD3	1.88	0.43
2:L:23:ARG:HH21	2:L:178:ASN:ND2	2.15	0.43
1:M:32:ARG:CZ	1:M:38:ARG:HG3	2.48	0.43
1:C:104:ASP:HB3	1:C:107:ALA:HB3	2.01	0.43
2:N:193:MET:HG3	2:N:225:ILE:HD13	2.00	0.43
2:P:223:LYS:HB3	2:P:248:VAL:CG1	2.48	0.43
2:V:155:ILE:HA	2:V:156:PRO:HD3	1.88	0.43
1:C:130:VAL:HA	1:C:137:VAL:HG12	2.01	0.42
1:S:104:ASP:HB3	1:S:107:ALA:HB3	2.01	0.42
1:U:112:ARG:NH1	2:V:102:GLU:OE1	2.49	0.42
2:V:165:ALA:HA	2:V:190:PRO:HA	2.01	0.42
2:D:1:MET:C	2:D:3:GLU:H	2.26	0.42
2:H:160:LEU:HD11	2:H:236:LEU:HD22	2.00	0.42
1:I:32:ARG:CZ	1:I:38:ARG:HG3	2.48	0.42
2:L:65:HIS:CB	2:L:66:PRO:CD	2.95	0.42
1:S:77:ASP:O	1:S:79:PRO:HD3	2.19	0.42
1:U:11:ILE:HA	1:U:12:PRO:HD3	1.94	0.42
2:B:82:HIS:HB3	2:B:130:GLU:OE2	2.19	0.42
2:B:129:THR:HG21	2:B:142:SER:HG	1.83	0.42
2:D:135:ASP:O	2:D:136:ALA:HB3	2.20	0.42
1:U:32:ARG:CZ	1:U:38:ARG:HG3	2.49	0.42
1:U:121:SER:HB3	1:U:236:VAL:HG11	2.00	0.42
2:X:34:GLU:HB3	2:X:240:TYR:CD1	2.50	0.42
1:A:13:ILE:H	1:A:13:ILE:HG13	1.69	0.42
2:B:159:ASP:OD2	2:B:196:SER:HB2	2.19	0.42
2:H:165:ALA:HA	2:H:190:PRO:HA	2.02	0.42
1:M:28:ARG:CZ	1:M:210:VAL:HG13	2.49	0.42
2:R:41:ALA:HA	2:R:59:TYR:CE2	2.54	0.42
2:V:115:VAL:CG2	2:V:150:LEU:HD13	2.49	0.42
2:X:160:LEU:HD11	2:X:236:LEU:HD22	2.02	0.42
1:E:16:LYS:HG3	1:E:220:ILE:HB	2.01	0.42
1:G:60:THR:HB	2:L:40:ASN:ND2	2.35	0.42
1:M:11:ILE:HA	1:M:12:PRO:HD3	1.92	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:159:ASP:OD2	2:N:196:SER:HB2	2.19	0.42
2:P:131:ILE:HD11	2:P:142:SER:HB2	2.01	0.42
2:V:202:LEU:HD23	2:V:203:PHE:N	2.34	0.42
1:C:77:ASP:O	1:C:79:PRO:HD3	2.19	0.42
2:D:136:ALA:HA	3:D:404:ADP:H5'2	2.02	0.42
2:F:19:ARG:HD3	2:F:174:ILE:HG21	2.01	0.42
2:H:224:GLY:HA2	2:H:248:VAL:HG11	2.01	0.42
1:K:13:ILE:H	1:K:13:ILE:HG13	1.67	0.42
2:N:192:ALA:HB3	2:N:202:LEU:HB3	2.01	0.42
1:O:174:GLU:O	1:O:181:SER:N	2.47	0.42
2:V:83:MET:HE2	2:V:99:ARG:NH2	2.34	0.42
2:B:82:HIS:HE1	1:E:145:TYR:OH	2.02	0.42
2:F:190:PRO:HG2	2:F:204:GLN:HB2	2.02	0.42
1:G:13:ILE:O	1:G:17:GLU:HG3	2.20	0.42
1:G:60:THR:HB	2:L:40:ASN:HD21	1.83	0.42
2:L:159:ASP:OD1	2:L:160:LEU:N	2.53	0.42
1:M:112:ARG:NH2	2:N:99:ARG:HB2	2.34	0.42
2:N:41:ALA:HA	2:N:59:TYR:CE2	2.55	0.42
3:N:404:ADP:O3B	3:N:404:ADP:O3'	2.30	0.42
2:P:23:ARG:HH12	2:P:176:ASP:HB3	1.85	0.42
1:U:130:VAL:HA	1:U:137:VAL:HG12	2.00	0.42
1:W:104:ASP:CG	1:W:105:GLU:N	2.78	0.42
2:D:233:ARG:HH11	2:D:233:ARG:CG	2.33	0.42
2:F:160:LEU:HD11	2:F:236:LEU:HD22	2.01	0.42
1:G:32:ARG:CZ	1:G:38:ARG:HG3	2.50	0.42
2:L:99:ARG:HH12	3:L:404:ADP:PA	2.40	0.42
1:Q:112:ARG:NH1	2:R:102:GLU:OE1	2.53	0.42
2:R:193:MET:HG3	2:R:225:ILE:HD13	2.00	0.42
1:U:28:ARG:CZ	1:U:210:VAL:HG13	2.50	0.42
2:B:227:ILE:HD12	2:B:248:VAL:HG13	2.01	0.42
2:D:9:ARG:HG3	2:D:184:TRP:HB3	2.01	0.42
2:D:227:ILE:HD12	2:D:248:VAL:HG22	2.01	0.42
1:E:77:ASP:O	1:E:79:PRO:HD3	2.20	0.42
1:G:30:ASP:OD1	1:G:32:ARG:HG2	2.20	0.42
2:J:129:THR:HG21	2:J:142:SER:HG	1.85	0.42
1:K:88:VAL:HG12	1:K:89:GLU:N	2.35	0.42
2:N:165:ALA:HA	2:N:190:PRO:HA	2.01	0.42
1:Q:28:ARG:CZ	1:Q:210:VAL:HG13	2.50	0.42
2:R:2:ARG:CD	2:R:4:MET:HG2	2.50	0.42
1:S:247:SER:HA	2:T:198:ASN:O	2.20	0.42
2:D:29:ARG:C	2:D:245:GLU:HB3	2.45	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:165:ALA:HA	2:F:190:PRO:HA	2.02	0.42
2:P:78:ARG:HD3	2:P:126:ASP:OD1	2.20	0.42
1:U:3:SER:HB3	2:V:78:ARG:CG	2.50	0.42
2:X:64:MET:HE1	2:X:76:VAL:HB	2.02	0.42
1:A:166:TYR:HB2	1:A:273:LEU:HD21	2.01	0.41
1:C:75:TYR:N	1:C:75:TYR:HD1	2.17	0.41
1:I:129:LEU:HB3	1:I:138:TRP:HB2	2.02	0.41
2:J:132:LEU:HD22	1:K:64:LEU:CD2	2.50	0.41
1:K:104:ASP:CG	1:K:105:GLU:N	2.78	0.41
2:L:159:ASP:OD2	2:L:196:SER:HB2	2.19	0.41
1:M:38:ARG:HD2	1:M:59:GLY:HA3	2.02	0.41
1:O:125:ASP:CG	1:O:128:LYS:HG3	2.44	0.41
2:P:64:MET:HE1	2:P:76:VAL:HB	2.02	0.41
2:R:3:GLU:CB	2:R:5:LEU:N	2.83	0.41
2:R:103:LEU:HD21	2:R:139:ARG:CZ	2.50	0.41
2:R:129:THR:O	2:R:129:THR:HG22	2.20	0.41
1:W:130:VAL:HA	1:W:137:VAL:HG12	2.02	0.41
1:C:13:ILE:H	1:C:13:ILE:HG13	1.69	0.41
2:D:37:VAL:HG11	2:D:46:ILE:HG13	2.02	0.41
2:D:42:ASP:O	2:D:153:ALA:HA	2.19	0.41
2:D:129:THR:O	2:D:129:THR:HG22	2.20	0.41
2:J:243:PHE:CZ	2:J:246:GLU:HG2	2.47	0.41
1:O:11:ILE:HA	1:O:12:PRO:HD3	1.92	0.41
1:O:16:LYS:HG3	1:O:220:ILE:HB	2.02	0.41
2:R:16:ASP:HB3	2:R:17:GLY:H	1.76	0.41
2:T:193:MET:HG3	2:T:225:ILE:HD13	2.01	0.41
2:B:37:VAL:HG11	2:B:46:ILE:HG13	2.02	0.41
2:F:48:GLU:CG	2:F:53:LYS:HG2	2.48	0.41
1:O:28:ARG:CZ	1:O:210:VAL:HG13	2.50	0.41
2:P:99:ARG:NH2	3:P:404:ADP:O2B	2.53	0.41
2:R:37:VAL:HG11	2:R:46:ILE:HG13	2.02	0.41
2:R:160:LEU:HD11	2:R:236:LEU:HD22	2.03	0.41
2:T:60:GLY:O	2:T:61:PRO:C	2.61	0.41
2:D:183:MET:HE3	2:D:184:TRP:CE2	2.55	0.41
2:H:59:TYR:CE1	1:I:92:PRO:HA	2.55	0.41
1:I:203:ALA:HB2	1:I:213:PRO:HG3	2.03	0.41
2:L:202:LEU:HD23	2:L:203:PHE:N	2.35	0.41
1:U:16:LYS:HG3	1:U:220:ILE:HB	2.03	0.41
2:X:37:VAL:HG11	2:X:46:ILE:HG13	2.02	0.41
2:D:60:GLY:O	2:D:61:PRO:C	2.63	0.41
2:F:37:VAL:HG11	2:F:46:ILE:HG13	2.01	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:59:TYR:CZ	1:I:92:PRO:HA	2.55	0.41
2:J:65:HIS:CB	2:J:66:PRO:CD	2.97	0.41
1:K:11:ILE:HA	1:K:12:PRO:HD3	1.94	0.41
1:O:129:LEU:HB3	1:O:138:TRP:HB2	2.02	0.41
2:P:103:LEU:HD21	2:P:139:ARG:CZ	2.51	0.41
2:B:165:ALA:HA	2:B:190:PRO:HA	2.03	0.41
1:C:16:LYS:HG3	1:C:220:ILE:HB	2.03	0.41
2:D:155:ILE:HA	2:D:156:PRO:HD3	1.88	0.41
2:F:155:ILE:HA	2:F:156:PRO:HD3	1.89	0.41
2:X:60:GLY:O	2:X:61:PRO:C	2.64	0.41
1:G:11:ILE:HA	1:G:12:PRO:HD3	1.93	0.41
2:H:195:PRO:HG2	2:H:229:TYR:CD1	2.55	0.41
1:I:252:ASP:OD1	2:J:215:ARG:NH1	2.54	0.41
2:J:195:PRO:HG2	2:J:229:TYR:CD1	2.56	0.41
1:K:104:ASP:HB3	1:K:107:ALA:HB3	2.03	0.41
1:M:77:ASP:O	1:M:79:PRO:HD3	2.21	0.41
2:R:28:LEU:HG	2:R:248:VAL:HG21	2.03	0.41
1:S:245:SER:HB2	2:T:199:GLN:HB3	2.02	0.41
2:T:32:LYS:HE2	2:T:34:GLU:OE2	2.20	0.41
1:C:183:ASN:ND2	1:C:185:ASN:OD1	2.38	0.41
1:M:240:LYS:HB2	2:N:203:PHE:HB3	2.03	0.41
2:N:159:ASP:OD1	2:N:160:LEU:N	2.54	0.41
2:P:169:ALA:HB2	2:P:174:ILE:CD1	2.51	0.41
2:B:26:ASP:O	2:B:248:VAL:HG23	2.21	0.41
2:H:190:PRO:HG2	2:H:204:GLN:HB2	2.02	0.41
1:I:248:LEU:CD2	2:J:218:PHE:CZ	3.04	0.41
2:J:9:ARG:HG2	2:J:184:TRP:CE3	2.56	0.41
1:M:16:LYS:HG3	1:M:220:ILE:HB	2.03	0.41
1:Q:32:ARG:CZ	1:Q:38:ARG:HG3	2.50	0.41
1:S:203:ALA:HB2	1:S:213:PRO:HG3	2.02	0.41
2:X:65:HIS:CB	2:X:66:PRO:CD	2.98	0.41
1:C:274:GLY:O	1:C:275:ILE:HB	2.21	0.41
2:D:30:SER:N	2:D:245:GLU:HB3	2.36	0.41
2:D:165:ALA:HA	2:D:190:PRO:HA	2.03	0.41
1:E:269:LEU:O	1:E:273:LEU:HG	2.20	0.41
2:F:13:ILE:HD11	2:F:169:ALA:HB3	2.03	0.41
2:H:116:LEU:HD12	2:H:156:PRO:HB2	2.03	0.41
2:J:202:LEU:HD23	2:J:203:PHE:N	2.36	0.41
1:K:129:LEU:HB3	1:K:138:TRP:HB2	2.03	0.41
1:K:240:LYS:HB2	2:L:203:PHE:HB3	2.02	0.41
2:L:160:LEU:HD11	2:L:236:LEU:HD22	2.03	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:16:ASP:C	2:P:18:LYS:N	2.79	0.40
2:T:103:LEU:HD21	2:T:139:ARG:CZ	2.51	0.40
2:T:138:SER:OG	3:T:404:ADP:O3B	2.29	0.40
1:W:75:TYR:HD2	1:W:75:TYR:N	2.20	0.40
1:A:203:ALA:HB2	1:A:213:PRO:HG3	2.04	0.40
2:D:41:ALA:HA	2:D:59:TYR:CE2	2.56	0.40
2:J:165:ALA:HA	2:J:190:PRO:HA	2.03	0.40
2:L:103:LEU:HD21	2:L:139:ARG:CZ	2.51	0.40
2:P:245:GLU:O	2:P:246:GLU:HB3	2.22	0.40
2:R:2:ARG:HD2	2:R:4:MET:HG2	2.02	0.40
1:S:243:LYS:HG2	2:T:112:GLU:OE1	2.21	0.40
1:K:32:ARG:CZ	1:K:38:ARG:HG3	2.51	0.40
2:N:160:LEU:HD11	2:N:236:LEU:HD22	2.04	0.40
2:P:115:VAL:CG2	2:P:150:LEU:HD13	2.51	0.40
1:U:183:ASN:O	1:U:185:ASN:N	2.52	0.40
1:C:44:LEU:HD22	1:C:167:ASN:HB2	2.03	0.40
2:D:16:ASP:C	2:D:18:LYS:H	2.29	0.40
2:F:193:MET:HG3	2:F:225:ILE:HD13	2.03	0.40
1:G:28:ARG:CZ	1:G:210:VAL:HG13	2.51	0.40
1:G:129:LEU:HB3	1:G:138:TRP:HB2	2.02	0.40
2:H:39:LYS:HG2	1:I:148:ASP:OD2	2.22	0.40
2:J:91:ARG:HD2	1:K:141:TRP:CG	2.57	0.40
1:K:6:SER:C	1:K:8:GLN:N	2.76	0.40
1:K:247:SER:O	1:K:250:ASP:HB2	2.21	0.40
2:R:189:MET:HE1	2:R:214:PHE:HD1	1.87	0.40
1:W:112:ARG:NH1	2:X:102:GLU:OE1	2.53	0.40
2:F:202:LEU:HD23	2:F:203:PHE:N	2.37	0.40
2:H:135:ASP:O	2:H:136:ALA:CB	2.70	0.40
1:W:44:LEU:HD22	1:W:167:ASN:HB2	2.03	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	254/275 (92%)	241 (95%)	10 (4%)	3 (1%)	11	38
1	C	254/275 (92%)	240 (94%)	8 (3%)	6 (2%)	5	25
1	E	254/275 (92%)	241 (95%)	11 (4%)	2 (1%)	16	46
1	G	254/275 (92%)	239 (94%)	11 (4%)	4 (2%)	8	32
1	I	254/275 (92%)	242 (95%)	10 (4%)	2 (1%)	16	46
1	K	254/275 (92%)	240 (94%)	11 (4%)	3 (1%)	11	38
1	M	254/275 (92%)	240 (94%)	11 (4%)	3 (1%)	11	38
1	O	254/275 (92%)	245 (96%)	7 (3%)	2 (1%)	16	46
1	Q	254/275 (92%)	238 (94%)	13 (5%)	3 (1%)	11	38
1	S	253/275 (92%)	242 (96%)	9 (4%)	2 (1%)	16	46
1	U	249/275 (90%)	236 (95%)	11 (4%)	2 (1%)	16	46
1	W	253/275 (92%)	241 (95%)	9 (4%)	3 (1%)	11	38
2	B	239/248 (96%)	221 (92%)	15 (6%)	3 (1%)	10	36
2	D	246/248 (99%)	231 (94%)	10 (4%)	5 (2%)	6	28
2	F	239/248 (96%)	226 (95%)	10 (4%)	3 (1%)	10	36
2	H	226/248 (91%)	216 (96%)	8 (4%)	2 (1%)	14	44
2	J	239/248 (96%)	225 (94%)	10 (4%)	4 (2%)	7	31
2	L	245/248 (99%)	231 (94%)	13 (5%)	1 (0%)	30	61
2	N	237/248 (96%)	224 (94%)	12 (5%)	1 (0%)	30	61
2	P	246/248 (99%)	230 (94%)	13 (5%)	3 (1%)	11	38
2	R	246/248 (99%)	230 (94%)	13 (5%)	3 (1%)	11	38
2	T	246/248 (99%)	233 (95%)	11 (4%)	2 (1%)	16	46
2	V	237/248 (96%)	218 (92%)	15 (6%)	4 (2%)	7	31
2	X	235/248 (95%)	223 (95%)	11 (5%)	1 (0%)	30	61
All	All	5922/6276 (94%)	5593 (94%)	262 (4%)	67 (1%)	12	40

All (67) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	8	GLN
2	J	15	ASP
2	P	16	ASP
1	Q	8	GLN
2	V	91	ARG
2	V	169	ALA

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	8	GLN
1	A	105	GLU
1	C	8	GLN
1	C	9	ASN
1	C	105	GLU
2	D	7	VAL
1	E	105	GLU
1	G	7	ASN
1	G	105	GLU
1	I	105	GLU
1	K	105	GLU
1	M	105	GLU
1	O	105	GLU
1	Q	105	GLU
2	R	169	ALA
1	S	105	GLU
1	U	105	GLU
1	U	184	LYS
1	W	105	GLU
1	C	7	ASN
1	C	76	GLU
2	F	169	ALA
1	W	9	ASN
2	B	170	ASP
2	D	176	ASP
2	H	176	ASP
2	V	176	ASP
2	B	176	ASP
2	D	2	ARG
2	D	16	ASP
2	F	176	ASP
2	J	65	HIS
2	J	169	ALA
1	K	76	GLU
2	P	7	VAL
2	R	176	ASP
2	T	176	ASP
2	V	65	HIS
2	B	65	HIS
2	D	65	HIS
2	F	65	HIS
2	H	65	HIS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	J	176	ASP
2	L	65	HIS
1	M	8	GLN
2	N	65	HIS
2	P	65	HIS
2	R	65	HIS
2	X	65	HIS
2	T	65	HIS
1	C	91	LEU
1	K	91	LEU
1	O	91	LEU
1	S	91	LEU
1	W	91	LEU
1	E	91	LEU
1	G	91	LEU
1	Q	91	LEU
1	A	91	LEU
1	I	91	LEU
1	M	91	LEU

### 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	212/242 (88%)	201 (95%)	11 (5%)	19	47
1	C	212/242 (88%)	201 (95%)	11 (5%)	19	47
1	E	218/242 (90%)	209 (96%)	9 (4%)	26	54
1	G	216/242 (89%)	207 (96%)	9 (4%)	25	53
1	I	214/242 (88%)	206 (96%)	8 (4%)	29	56
1	K	215/242 (89%)	203 (94%)	12 (6%)	17	45
1	M	216/242 (89%)	205 (95%)	11 (5%)	20	48
1	O	213/242 (88%)	204 (96%)	9 (4%)	25	53
1	Q	214/242 (88%)	204 (95%)	10 (5%)	22	51

*Continued on next page...*

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	S	216/242 (89%)	204 (94%)	12 (6%)	17	45
1	U	208/242 (86%)	198 (95%)	10 (5%)	21	50
1	W	214/242 (88%)	203 (95%)	11 (5%)	20	48
2	B	186/208 (89%)	175 (94%)	11 (6%)	16	43
2	D	200/208 (96%)	185 (92%)	15 (8%)	11	34
2	F	193/208 (93%)	182 (94%)	11 (6%)	17	44
2	H	179/208 (86%)	168 (94%)	11 (6%)	15	42
2	J	194/208 (93%)	184 (95%)	10 (5%)	19	47
2	L	199/208 (96%)	186 (94%)	13 (6%)	14	40
2	N	188/208 (90%)	179 (95%)	9 (5%)	21	50
2	P	201/208 (97%)	184 (92%)	17 (8%)	8	30
2	R	194/208 (93%)	183 (94%)	11 (6%)	17	44
2	T	196/208 (94%)	180 (92%)	16 (8%)	9	31
2	V	189/208 (91%)	181 (96%)	8 (4%)	25	53
2	X	191/208 (92%)	180 (94%)	11 (6%)	17	44
All	All	4878/5400 (90%)	4612 (94%)	266 (6%)	18	45

All (266) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	7	ASN
1	A	13	ILE
1	A	18	SER
1	A	51	ASP
1	A	182	VAL
1	A	191	LEU
1	A	233	LEU
1	A	236	VAL
1	A	255	GLU
1	A	257	THR
1	A	275	ILE
2	B	12	LEU
2	B	13	ILE
2	B	20	THR
2	B	26	ASP
2	B	78	ARG
2	B	89	ASP

Continued on next page...

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	99	ARG
2	B	129	THR
2	B	164	VAL
2	B	177	LEU
2	B	201	THR
1	C	13	ILE
1	C	30	ASP
1	C	182	VAL
1	C	183	ASN
1	C	191	LEU
1	C	233	LEU
1	C	236	VAL
1	C	249	GLN
1	C	255	GLU
1	C	257	THR
1	C	267	GLU
2	D	1	MET
2	D	2	ARG
2	D	7	VAL
2	D	8	GLU
2	D	20	THR
2	D	34	GLU
2	D	78	ARG
2	D	99	ARG
2	D	129	THR
2	D	164	VAL
2	D	177	LEU
2	D	201	THR
2	D	212	ASP
2	D	233	ARG
2	D	245	GLU
1	E	13	ILE
1	E	18	SER
1	E	37	TYR
1	E	191	LEU
1	E	232	ASP
1	E	233	LEU
1	E	236	VAL
1	E	255	GLU
1	E	257	THR
2	F	15	ASP
2	F	18	LYS

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	F	20	THR
2	F	34	GLU
2	F	39	LYS
2	F	78	ARG
2	F	99	ARG
2	F	129	THR
2	F	164	VAL
2	F	177	LEU
2	F	201	THR
1	G	13	ILE
1	G	182	VAL
1	G	191	LEU
1	G	206	ASP
1	G	233	LEU
1	G	236	VAL
1	G	249	GLN
1	G	255	GLU
1	G	257	THR
2	H	20	THR
2	H	39	LYS
2	H	78	ARG
2	H	89	ASP
2	H	99	ARG
2	H	129	THR
2	H	164	VAL
2	H	177	LEU
2	H	178	ASN
2	H	201	THR
2	H	212	ASP
1	I	13	ILE
1	I	182	VAL
1	I	191	LEU
1	I	232	ASP
1	I	233	LEU
1	I	236	VAL
1	I	255	GLU
1	I	257	THR
2	J	15	ASP
2	J	20	THR
2	J	78	ARG
2	J	99	ARG
2	J	129	THR

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	J	164	VAL
2	J	177	LEU
2	J	201	THR
2	J	233	ARG
2	J	246	GLU
1	K	13	ILE
1	K	24	GLU
1	K	30	ASP
1	K	182	VAL
1	K	191	LEU
1	K	232	ASP
1	K	233	LEU
1	K	236	VAL
1	K	249	GLN
1	K	255	GLU
1	K	257	THR
1	K	275	ILE
2	L	7	VAL
2	L	20	THR
2	L	78	ARG
2	L	99	ARG
2	L	129	THR
2	L	164	VAL
2	L	177	LEU
2	L	178	ASN
2	L	179	GLU
2	L	201	THR
2	L	206	ASN
2	L	218	PHE
2	L	233	ARG
1	M	8	GLN
1	M	13	ILE
1	M	29	GLN
1	M	170	VAL
1	M	182	VAL
1	M	191	LEU
1	M	233	LEU
1	M	236	VAL
1	M	255	GLU
1	M	257	THR
1	M	275	ILE
2	N	12	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	N	20	THR
2	N	78	ARG
2	N	99	ARG
2	N	129	THR
2	N	164	VAL
2	N	177	LEU
2	N	201	THR
2	N	234	GLU
1	O	13	ILE
1	O	18	SER
1	O	182	VAL
1	O	191	LEU
1	O	233	LEU
1	O	236	VAL
1	O	243	LYS
1	O	255	GLU
1	O	257	THR
2	P	1	MET
2	P	2	ARG
2	P	5	LEU
2	P	9	ARG
2	P	20	THR
2	P	34	GLU
2	P	53	LYS
2	P	78	ARG
2	P	99	ARG
2	P	129	THR
2	P	164	VAL
2	P	177	LEU
2	P	183	MET
2	P	201	THR
2	P	206	ASN
2	P	233	ARG
2	P	234	GLU
1	Q	9	ASN
1	Q	13	ILE
1	Q	18	SER
1	Q	37	TYR
1	Q	182	VAL
1	Q	191	LEU
1	Q	200	ILE
1	Q	233	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	Q	236	VAL
1	Q	255	GLU
2	R	1	MET
2	R	6	GLN
2	R	20	THR
2	R	78	ARG
2	R	99	ARG
2	R	129	THR
2	R	164	VAL
2	R	177	LEU
2	R	201	THR
2	R	233	ARG
2	R	242	GLU
1	S	13	ILE
1	S	18	SER
1	S	30	ASP
1	S	122	LYS
1	S	182	VAL
1	S	191	LEU
1	S	200	ILE
1	S	233	LEU
1	S	236	VAL
1	S	243	LYS
1	S	255	GLU
1	S	257	THR
2	T	1	MET
2	T	5	LEU
2	T	20	THR
2	T	34	GLU
2	T	53	LYS
2	T	78	ARG
2	T	99	ARG
2	T	129	THR
2	T	164	VAL
2	T	168	LYS
2	T	177	LEU
2	T	183	MET
2	T	186	GLU
2	T	201	THR
2	T	242	GLU
2	T	246	GLU
1	U	8	GLN

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	U	13	ILE
1	U	29	GLN
1	U	170	VAL
1	U	182	VAL
1	U	191	LEU
1	U	233	LEU
1	U	236	VAL
1	U	255	GLU
1	U	257	THR
2	V	20	THR
2	V	78	ARG
2	V	99	ARG
2	V	129	THR
2	V	164	VAL
2	V	168	LYS
2	V	177	LEU
2	V	201	THR
1	W	13	ILE
1	W	170	VAL
1	W	182	VAL
1	W	183	ASN
1	W	191	LEU
1	W	233	LEU
1	W	236	VAL
1	W	255	GLU
1	W	257	THR
1	W	263	VAL
1	W	264	LYS
2	X	13	ILE
2	X	14	LEU
2	X	20	THR
2	X	78	ARG
2	X	89	ASP
2	X	99	ARG
2	X	129	THR
2	X	164	VAL
2	X	177	LEU
2	X	201	THR
2	X	246	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (52) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	7	ASN
2	B	178	ASN
2	B	216	GLN
1	C	83	ASN
2	D	133	GLN
2	D	178	ASN
2	D	216	GLN
1	E	83	ASN
2	F	82	HIS
2	F	216	GLN
1	G	83	ASN
1	G	249	GLN
2	H	178	ASN
2	H	216	GLN
1	I	183	ASN
1	I	256	ASN
2	J	82	HIS
2	J	178	ASN
2	J	216	GLN
1	K	9	ASN
1	K	83	ASN
1	K	183	ASN
1	K	185	ASN
2	L	40	ASN
2	L	82	HIS
2	L	178	ASN
2	L	216	GLN
1	M	83	ASN
1	M	183	ASN
2	N	178	ASN
2	N	216	GLN
1	O	8	GLN
1	O	183	ASN
2	P	178	ASN
2	P	216	GLN
1	Q	83	ASN
2	R	6	GLN
2	R	82	HIS
2	R	216	GLN
1	S	9	ASN
1	S	29	GLN
1	S	83	ASN
1	S	256	ASN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	T	40	ASN
2	T	82	HIS
2	T	216	GLN
1	U	83	ASN
1	U	183	ASN
2	V	82	HIS
2	V	216	GLN
2	X	133	GLN
2	X	216	GLN

### 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 oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

12 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
3	ADP	R	404	-	24,29,29	1.22	4 (16%)	29,45,45	1.30	5 (17%)
3	ADP	P	404	-	24,29,29	1.08	2 (8%)	29,45,45	1.59	4 (13%)
3	ADP	T	404	-	24,29,29	0.96	2 (8%)	29,45,45	1.26	3 (10%)
3	ADP	L	404	-	24,29,29	1.12	3 (12%)	29,45,45	1.59	5 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	ADP	N	404	-	24,29,29	1.17	2 (8%)	29,45,45	1.22	2 (6%)
3	ADP	J	404	-	6,8,29	0.90	0	13,13,45	1.14	1 (7%)
3	ADP	D	404	-	24,29,29	1.16	3 (12%)	29,45,45	1.48	3 (10%)
3	ADP	F	404	-	15,17,29	1.66	2 (13%)	21,26,45	1.15	1 (4%)
3	ADP	V	404	-	15,17,29	0.88	1 (6%)	21,26,45	1.25	2 (9%)
3	ADP	H	404	-	24,29,29	1.06	2 (8%)	29,45,45	1.34	4 (13%)
3	ADP	X	404	-	15,17,29	1.95	2 (13%)	21,26,45	1.47	3 (14%)
3	ADP	B	404	-	24,29,29	1.12	3 (12%)	29,45,45	1.20	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
3	ADP	R	404	-	-	3/12/32/32	0/3/3/3
3	ADP	P	404	-	-	5/12/32/32	0/3/3/3
3	ADP	T	404	-	-	3/12/32/32	0/3/3/3
3	ADP	L	404	-	-	3/12/32/32	0/3/3/3
3	ADP	N	404	-	-	5/12/32/32	0/3/3/3
3	ADP	J	404	-	-	0/6/6/32	-
3	ADP	D	404	-	-	1/12/32/32	0/3/3/3
3	ADP	F	404	-	-	2/12/25/32	0/1/1/3
3	ADP	V	404	-	-	0/12/25/32	0/1/1/3
3	ADP	H	404	-	-	4/12/32/32	0/3/3/3
3	ADP	X	404	-	-	6/12/25/32	0/1/1/3
3	ADP	B	404	-	-	6/12/32/32	0/3/3/3

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	X	404	ADP	O4'-C1'	6.17	1.57	1.43
3	F	404	ADP	O4'-C1'	5.34	1.55	1.43
3	X	404	ADP	C1'-C2'	3.31	1.57	1.51
3	B	404	ADP	C5-C4	2.87	1.48	1.40
3	R	404	ADP	C5-C4	2.83	1.48	1.40
3	N	404	ADP	C5-C4	2.76	1.48	1.40
3	L	404	ADP	C5-C4	2.74	1.48	1.40

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	H	404	ADP	C5-C4	2.64	1.47	1.40
3	F	404	ADP	C1'-C2'	2.51	1.56	1.51
3	D	404	ADP	C5-C4	2.51	1.47	1.40
3	N	404	ADP	O4'-C1'	2.47	1.44	1.41
3	R	404	ADP	O4'-C1'	2.42	1.44	1.41
3	D	404	ADP	C2-N3	2.41	1.36	1.32
3	R	404	ADP	C2-N3	2.39	1.35	1.32
3	P	404	ADP	C5-C4	2.39	1.47	1.40
3	P	404	ADP	C2-N3	2.38	1.35	1.32
3	D	404	ADP	O4'-C1'	2.29	1.44	1.41
3	B	404	ADP	O4'-C1'	2.28	1.44	1.41
3	L	404	ADP	C2-N3	2.24	1.35	1.32
3	B	404	ADP	C2-N3	2.22	1.35	1.32
3	H	404	ADP	O4'-C1'	2.22	1.44	1.41
3	T	404	ADP	C5-C4	2.18	1.46	1.40
3	V	404	ADP	O4'-C1'	2.13	1.48	1.43
3	T	404	ADP	C2-N3	2.12	1.35	1.32
3	L	404	ADP	C6-C5	2.07	1.51	1.43
3	R	404	ADP	C2'-C1'	-2.00	1.50	1.53

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	P	404	ADP	N3-C2-N1	-4.06	122.33	128.68
3	X	404	ADP	C1'-C2'-C3'	3.89	107.55	101.63
3	P	404	ADP	PA-O3A-PB	-3.87	119.53	132.83
3	D	404	ADP	N3-C2-N1	-3.76	122.80	128.68
3	L	404	ADP	C4-C5-N7	-3.67	105.58	109.40
3	L	404	ADP	PA-O3A-PB	-3.65	120.29	132.83
3	V	404	ADP	C1'-C2'-C3'	3.61	107.13	101.63
3	N	404	ADP	N3-C2-N1	-3.60	123.05	128.68
3	H	404	ADP	N3-C2-N1	-3.52	123.17	128.68
3	B	404	ADP	N3-C2-N1	-3.43	123.31	128.68
3	T	404	ADP	N3-C2-N1	-3.24	123.62	128.68
3	F	404	ADP	C1'-C2'-C3'	3.18	106.47	101.63
3	L	404	ADP	N3-C2-N1	-3.06	123.90	128.68
3	T	404	ADP	PA-O3A-PB	-3.00	122.54	132.83
3	D	404	ADP	PA-O3A-PB	-3.00	122.54	132.83
3	R	404	ADP	N3-C2-N1	-2.96	124.04	128.68
3	X	404	ADP	PA-O3A-PB	-2.83	123.10	132.83
3	D	404	ADP	C4-C5-N7	-2.83	106.45	109.40
3	H	404	ADP	PA-O3A-PB	-2.79	123.24	132.83

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	P	404	ADP	C4-C5-N7	-2.76	106.53	109.40
3	X	404	ADP	O4'-C1'-C2'	-2.71	100.75	105.99
3	B	404	ADP	C4-C5-N7	-2.54	106.75	109.40
3	R	404	ADP	C4-C5-N7	-2.51	106.78	109.40
3	L	404	ADP	O3B-PB-O2B	2.50	117.19	107.64
3	V	404	ADP	PA-O3A-PB	-2.27	125.04	132.83
3	H	404	ADP	C3'-C2'-C1'	2.18	104.26	100.98
3	N	404	ADP	PA-O3A-PB	-2.16	125.41	132.83
3	H	404	ADP	C4-C5-N7	-2.15	107.16	109.40
3	R	404	ADP	O3B-PB-O2B	2.15	115.84	107.64
3	P	404	ADP	O3B-PB-O2B	2.10	115.65	107.64
3	T	404	ADP	N6-C6-N1	2.06	122.85	118.57
3	J	404	ADP	O3B-PB-O1B	2.04	118.67	110.68
3	L	404	ADP	C5-C6-N6	2.02	123.42	120.35
3	R	404	ADP	O2'-C2'-C1'	-2.02	103.41	110.85
3	R	404	ADP	PA-O3A-PB	-2.01	125.92	132.83

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	404	ADP	C5'-O5'-PA-O2A
3	B	404	ADP	C5'-O5'-PA-O3A
3	H	404	ADP	C5'-O5'-PA-O3A
3	L	404	ADP	PB-O3A-PA-O5'
3	L	404	ADP	C3'-C4'-C5'-O5'
3	N	404	ADP	C5'-O5'-PA-O1A
3	P	404	ADP	C5'-O5'-PA-O1A
3	P	404	ADP	C5'-O5'-PA-O3A
3	R	404	ADP	C5'-O5'-PA-O1A
3	T	404	ADP	C5'-O5'-PA-O1A
3	T	404	ADP	C5'-O5'-PA-O3A
3	X	404	ADP	C5'-O5'-PA-O1A
3	X	404	ADP	C5'-O5'-PA-O3A
3	B	404	ADP	O4'-C4'-C5'-O5'
3	L	404	ADP	O4'-C4'-C5'-O5'
3	X	404	ADP	O4'-C4'-C5'-O5'
3	X	404	ADP	C3'-C4'-C5'-O5'
3	B	404	ADP	C3'-C4'-C5'-O5'
3	N	404	ADP	O4'-C4'-C5'-O5'
3	F	404	ADP	C3'-C4'-C5'-O5'
3	N	404	ADP	C3'-C4'-C5'-O5'

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
3	B	404	ADP	PB-O3A-PA-O5'
3	D	404	ADP	PB-O3A-PA-O5'
3	P	404	ADP	PA-O3A-PB-O1B
3	N	404	ADP	C5'-O5'-PA-O3A
3	H	404	ADP	C5'-O5'-PA-O1A
3	N	404	ADP	C5'-O5'-PA-O2A
3	P	404	ADP	C5'-O5'-PA-O2A
3	T	404	ADP	C5'-O5'-PA-O2A
3	X	404	ADP	C5'-O5'-PA-O2A
3	F	404	ADP	O4'-C4'-C5'-O5'
3	H	404	ADP	O4'-C4'-C5'-O5'
3	R	404	ADP	O4'-C4'-C5'-O5'
3	R	404	ADP	PB-O3A-PA-O5'
3	B	404	ADP	PA-O3A-PB-O1B
3	P	404	ADP	PA-O3A-PB-O2B
3	H	404	ADP	C3'-C4'-C5'-O5'
3	X	404	ADP	PA-O3A-PB-O1B

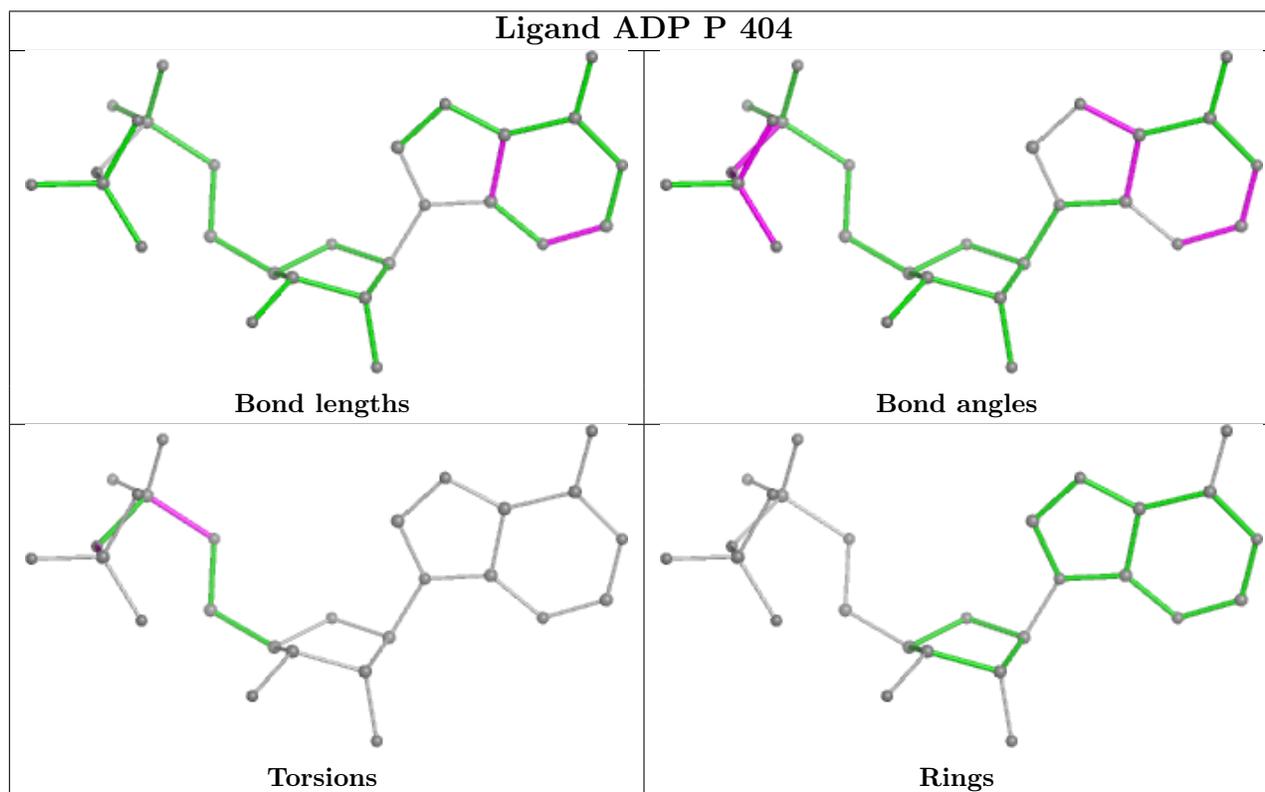
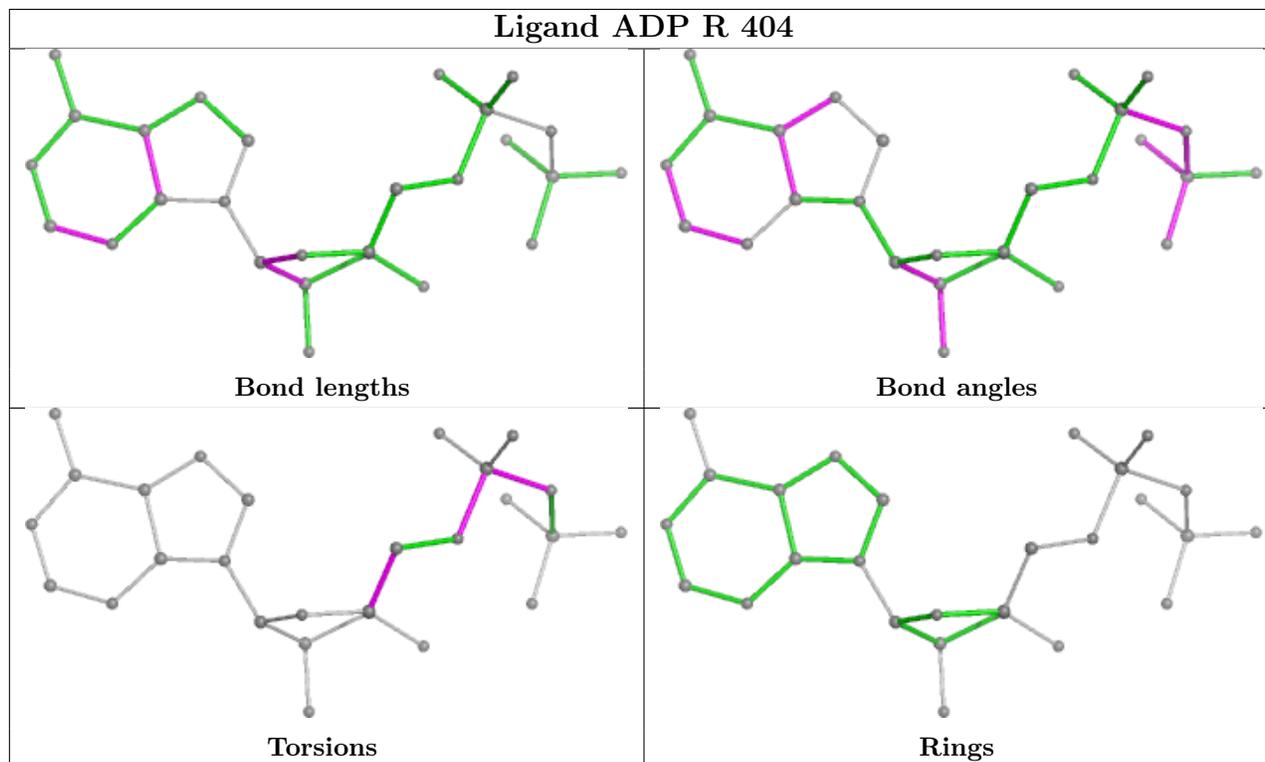
There are no ring outliers.

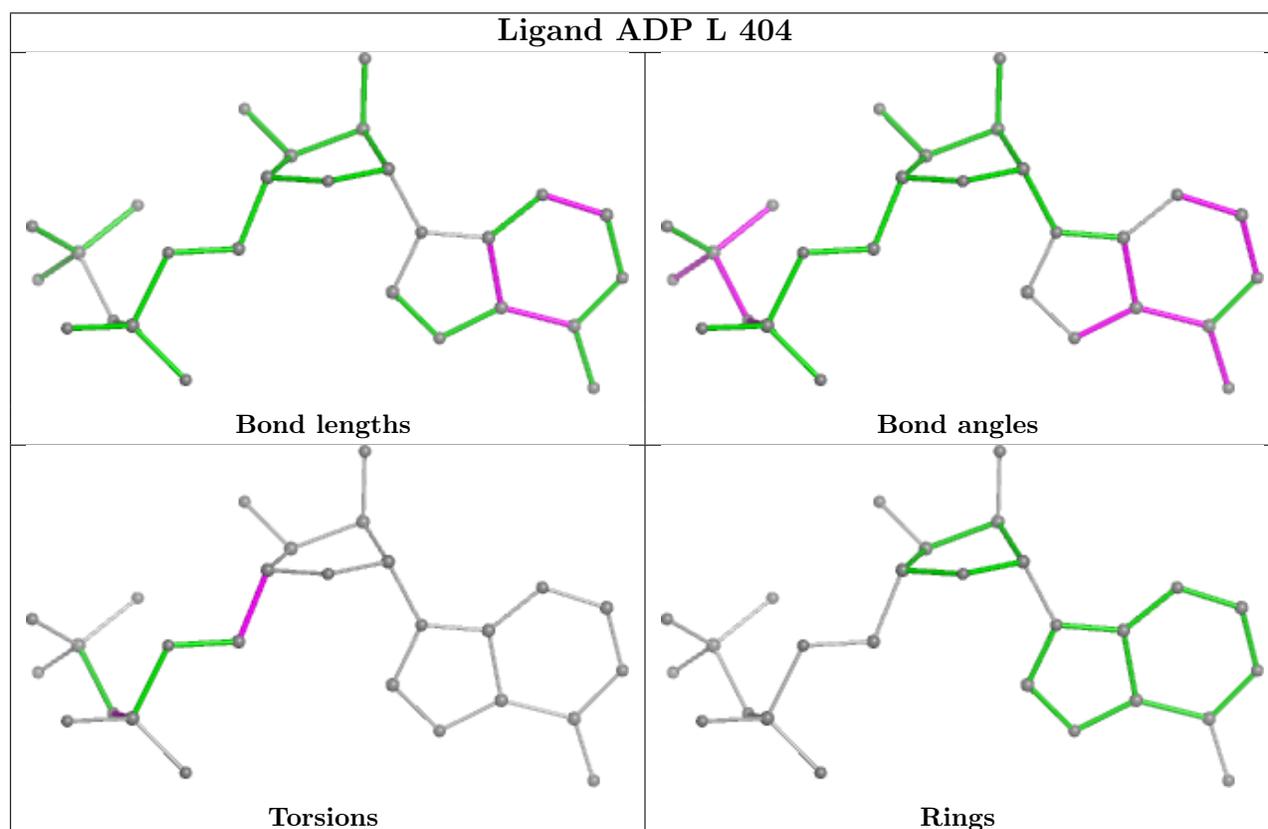
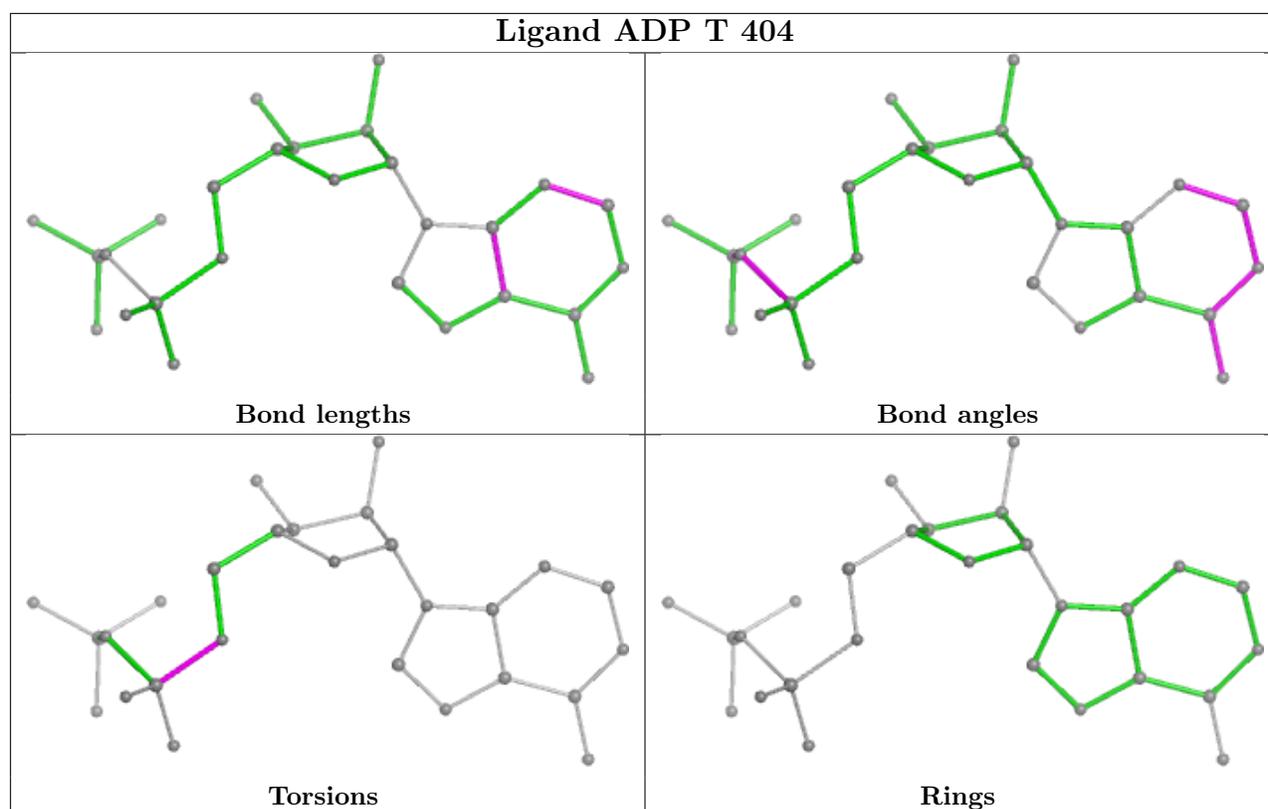
12 monomers are involved in 28 short contacts:

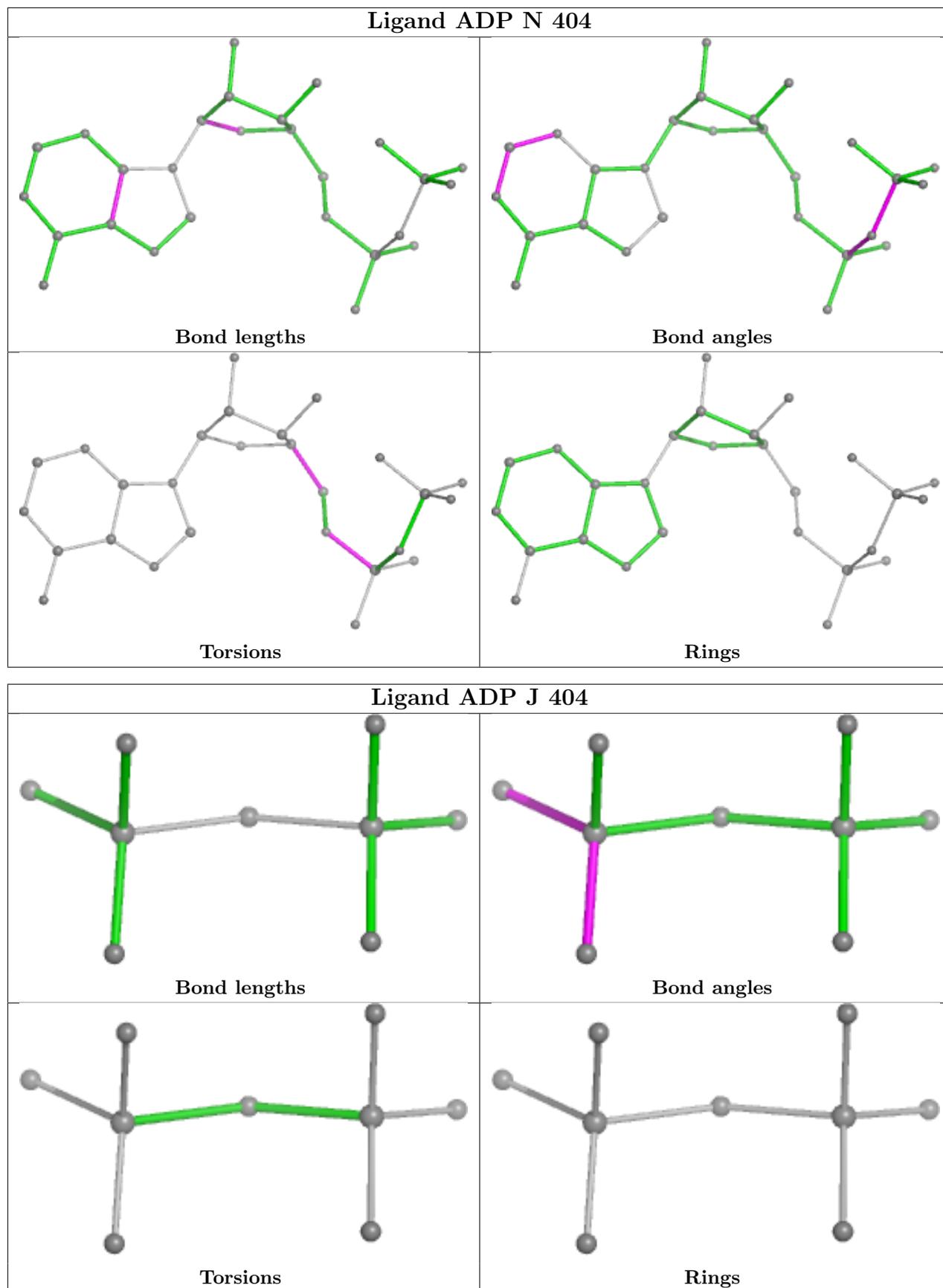
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	R	404	ADP	1	0
3	P	404	ADP	3	0
3	T	404	ADP	3	0
3	L	404	ADP	3	0
3	N	404	ADP	3	0
3	J	404	ADP	1	0
3	D	404	ADP	4	0
3	F	404	ADP	1	0
3	V	404	ADP	2	0
3	H	404	ADP	2	0
3	X	404	ADP	1	0
3	B	404	ADP	4	0

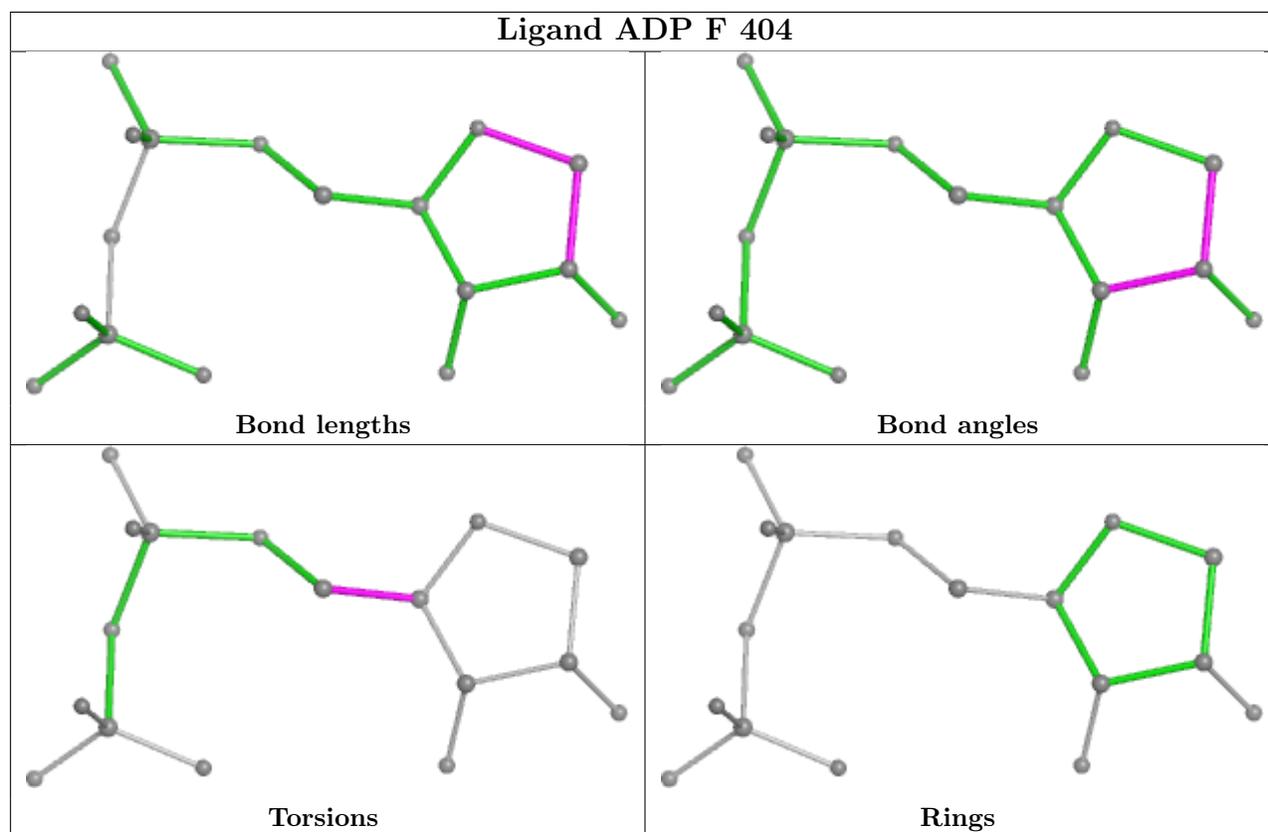
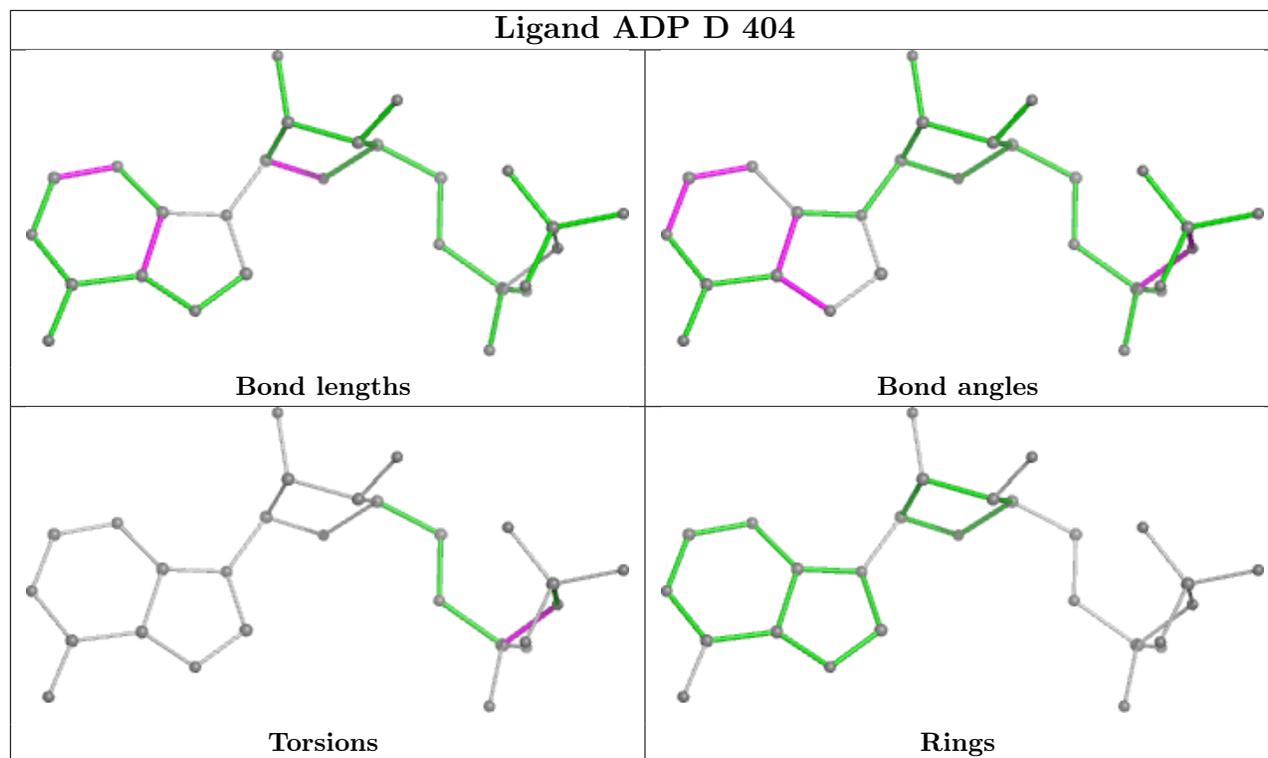
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

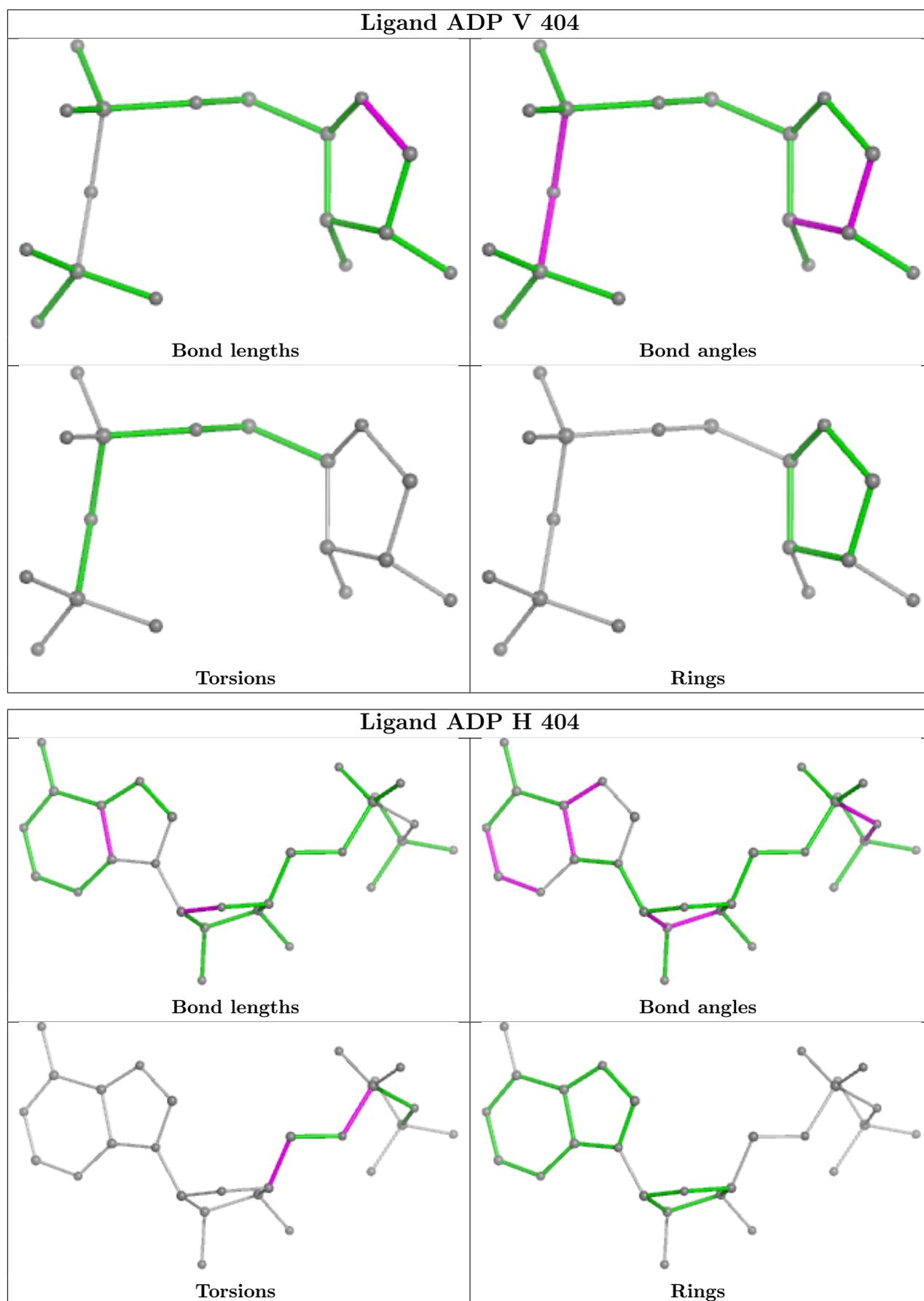
in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

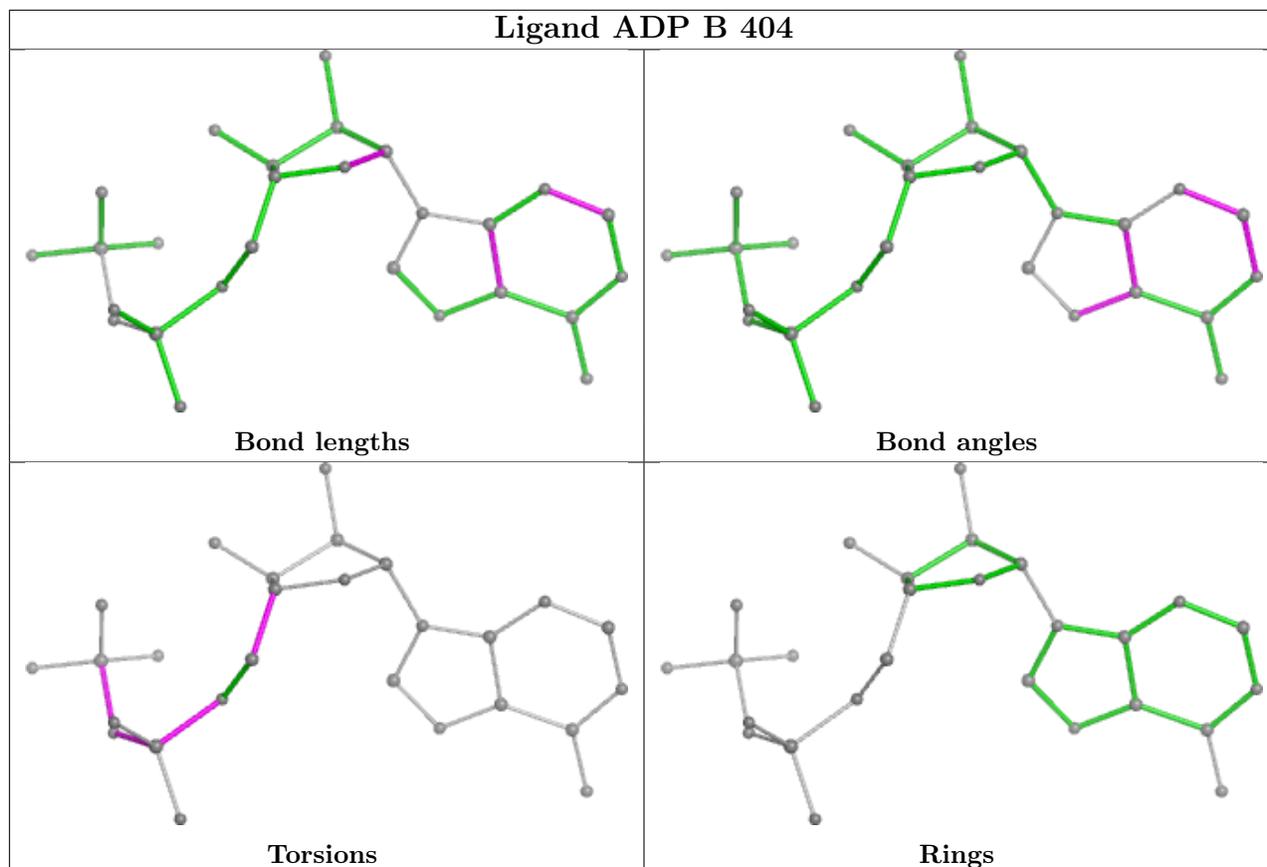
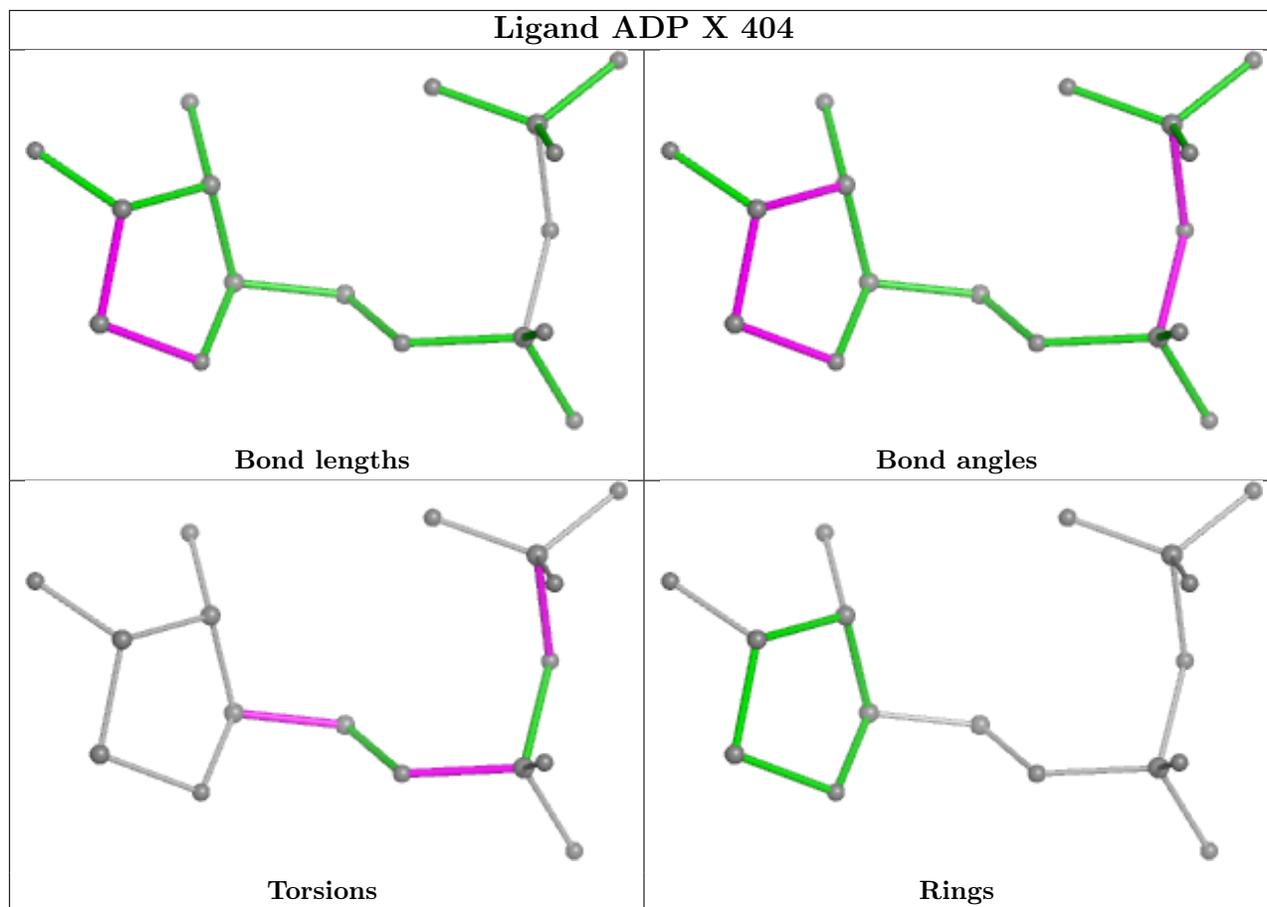












## 5.7 Other polymers [i](#)

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

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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	260/275 (94%)	0.17	4 (1%) 71 58	46, 53, 67, 74	0
1	C	260/275 (94%)	0.16	4 (1%) 71 58	46, 53, 67, 75	0
1	E	260/275 (94%)	0.03	1 (0%) 89 83	46, 53, 67, 74	0
1	G	260/275 (94%)	0.30	5 (1%) 66 51	46, 53, 67, 74	0
1	I	260/275 (94%)	0.22	3 (1%) 76 64	46, 53, 67, 73	0
1	K	260/275 (94%)	0.27	6 (2%) 61 46	46, 53, 67, 75	0
1	M	260/275 (94%)	0.17	4 (1%) 71 58	46, 53, 67, 75	0
1	O	260/275 (94%)	0.33	6 (2%) 61 46	46, 53, 67, 75	0
1	Q	260/275 (94%)	0.06	1 (0%) 89 83	46, 53, 67, 74	0
1	S	259/275 (94%)	0.34	9 (3%) 47 35	46, 53, 67, 73	0
1	U	255/275 (92%)	0.66	13 (5%) 34 27	46, 53, 66, 73	0
1	W	259/275 (94%)	0.33	5 (1%) 66 51	46, 53, 67, 75	0
2	B	241/248 (97%)	0.06	1 (0%) 89 83	46, 52, 68, 80	0
2	D	248/248 (100%)	0.19	3 (1%) 76 64	45, 52, 68, 80	0
2	F	241/248 (97%)	0.05	4 (1%) 69 55	46, 52, 68, 80	0
2	H	230/248 (92%)	0.37	6 (2%) 57 42	46, 52, 69, 80	0
2	J	241/248 (97%)	0.26	3 (1%) 76 64	46, 52, 68, 80	0
2	L	247/248 (99%)	0.22	1 (0%) 89 83	45, 52, 68, 80	0
2	N	239/248 (96%)	0.11	2 (0%) 82 72	46, 52, 69, 79	0
2	P	248/248 (100%)	0.25	6 (2%) 59 44	45, 52, 68, 80	0
2	R	248/248 (100%)	0.16	2 (0%) 82 72	45, 52, 69, 80	0
2	T	248/248 (100%)	0.21	2 (0%) 82 72	45, 52, 69, 79	0
2	V	239/248 (96%)	0.54	10 (4%) 41 31	46, 52, 68, 79	0
2	X	239/248 (96%)	0.46	8 (3%) 49 36	46, 52, 69, 79	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
All	All	6022/6276 (95%)	0.25	109 (1%) 67 53	45, 52, 68, 80	0

All (109) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	S	166	TYR	3.9
2	L	248	VAL	3.6
1	O	134	GLY	3.5
2	X	172	VAL	3.5
1	C	12	PRO	3.5
1	S	171	TYR	3.3
2	T	248	VAL	3.2
1	K	275	ILE	3.2
2	R	60	GLY	3.1
1	S	138	TRP	3.0
1	M	275	ILE	3.0
1	A	134	GLY	3.0
2	B	15	ASP	3.0
2	N	247	GLY	3.0
2	N	15	ASP	2.9
2	V	170	ASP	2.9
1	U	52	GLY	2.9
1	E	275	ILE	2.9
2	J	169	ALA	2.8
1	U	273	LEU	2.8
1	K	149	TYR	2.8
2	F	165	ALA	2.8
2	H	171	GLY	2.8
2	V	132	LEU	2.8
2	X	54	ALA	2.8
2	H	131	ILE	2.8
1	S	175	GLN	2.7
1	U	44	LEU	2.7
1	A	181	SER	2.7
2	X	12	LEU	2.6
1	I	275	ILE	2.6
2	F	247	GLY	2.6
2	V	217	ALA	2.6
1	S	167	ASN	2.6
1	U	171	TYR	2.5
1	O	180	ILE	2.5
1	W	213	PRO	2.5

Continued on next page...

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	W	134	GLY	2.5
2	V	247	GLY	2.5
1	G	126	LEU	2.5
1	U	64	LEU	2.5
1	O	104	ASP	2.5
1	Q	104	ASP	2.5
1	W	275	ILE	2.4
2	T	60	GLY	2.4
1	U	88	VAL	2.4
1	O	36	ASP	2.4
2	V	41	ALA	2.4
1	C	275	ILE	2.4
1	M	6	SER	2.4
1	M	77	ASP	2.4
2	X	165	ALA	2.4
1	S	144	VAL	2.4
2	R	248	VAL	2.4
1	A	275	ILE	2.3
2	V	55	ILE	2.3
1	U	30	ASP	2.3
1	U	61	THR	2.3
1	C	77	ASP	2.3
1	S	88	VAL	2.3
2	H	246	GLU	2.3
1	S	199	THR	2.3
1	U	9	ASN	2.3
2	P	178	ASN	2.3
2	V	131	ILE	2.3
1	K	37	TYR	2.3
1	U	40	LEU	2.3
1	I	27	ILE	2.2
1	K	120	ASP	2.2
1	M	134	GLY	2.2
2	D	60	GLY	2.2
2	X	137	GLY	2.2
2	D	161	ILE	2.2
1	G	155	ASP	2.2
1	U	197	VAL	2.2
2	P	248	VAL	2.2
1	U	1	MET	2.2
1	I	248	LEU	2.2
1	S	184	LYS	2.2

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
2	V	25	PRO	2.2
1	G	13	ILE	2.2
2	P	101	ILE	2.2
1	W	130	VAL	2.2
2	X	141	VAL	2.2
1	K	13	ILE	2.1
2	P	48	GLU	2.1
1	O	80	ASN	2.1
1	K	171	TYR	2.1
1	C	105	GLU	2.1
2	V	71	LEU	2.1
2	P	15	ASP	2.1
2	V	133	GLN	2.1
2	P	217	ALA	2.1
1	A	14	ILE	2.1
2	F	60	GLY	2.1
2	H	60	GLY	2.1
1	G	29	GLN	2.1
1	W	80	ASN	2.1
1	U	182	VAL	2.1
1	G	237	GLY	2.1
1	O	149	TYR	2.1
2	D	73	ASP	2.1
2	J	231	LEU	2.1
2	H	228	ILE	2.0
2	J	13	ILE	2.0
2	H	140	LEU	2.0
2	X	35	LEU	2.0
2	X	205	LEU	2.0
2	F	248	VAL	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 oligosaccharides in this entry.

## 6.4 Ligands

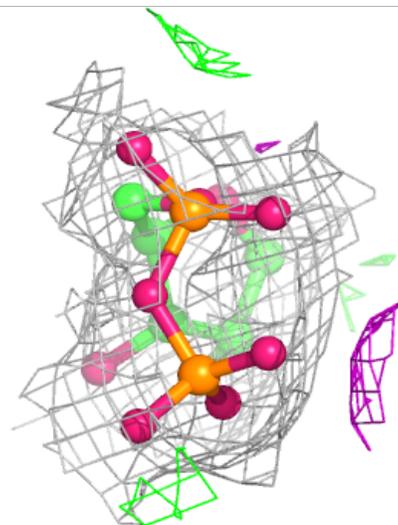
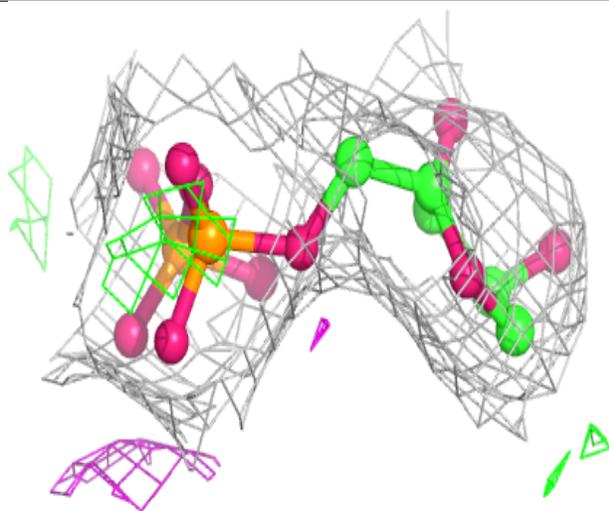
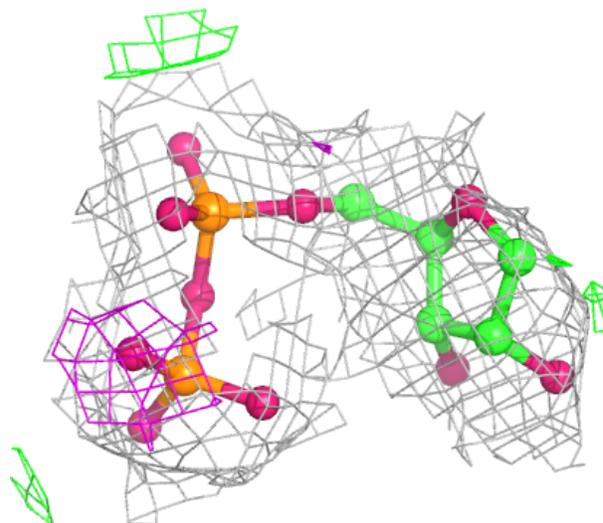
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	ADP	V	404	17/27	0.78	0.14	90,93,95,95	0
3	ADP	X	404	17/27	0.81	0.14	86,87,89,89	0
3	ADP	F	404	17/27	0.84	0.12	91,94,95,95	0
3	ADP	H	404	27/27	0.84	0.14	116,117,119,119	0
3	ADP	J	404	9/27	0.89	0.07	100,100,101,101	0
3	ADP	B	404	27/27	0.92	0.08	79,90,95,95	0
3	ADP	N	404	27/27	0.92	0.09	59,62,64,64	0
3	ADP	L	404	27/27	0.94	0.08	52,54,56,58	0
3	ADP	D	404	27/27	0.94	0.08	48,50,51,51	0
3	ADP	R	404	27/27	0.95	0.08	47,55,58,58	0
3	ADP	P	404	27/27	0.96	0.07	33,39,41,42	0
3	ADP	T	404	27/27	0.96	0.07	55,60,63,63	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.

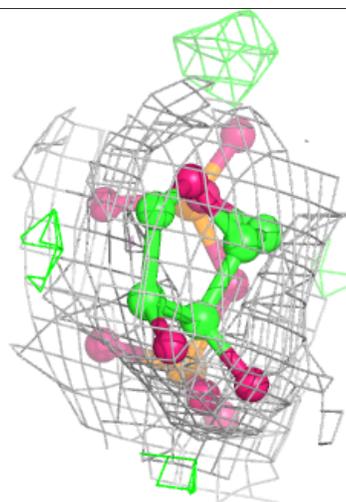
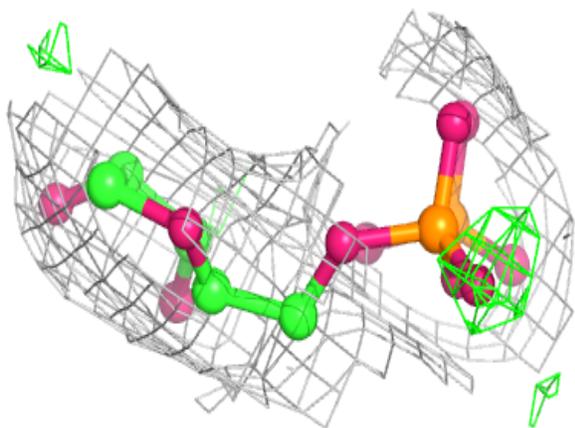
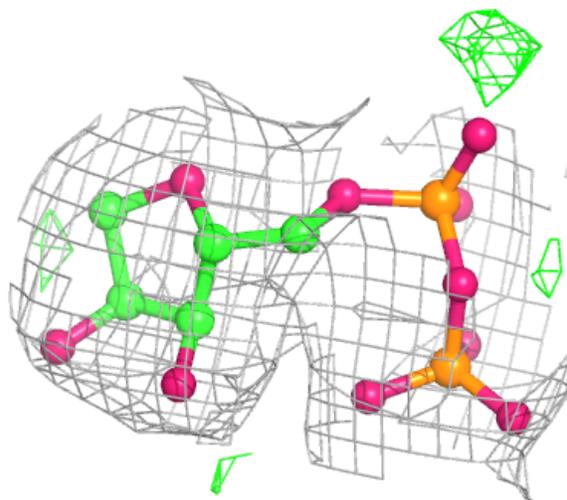
**Electron density around ADP V 404:**

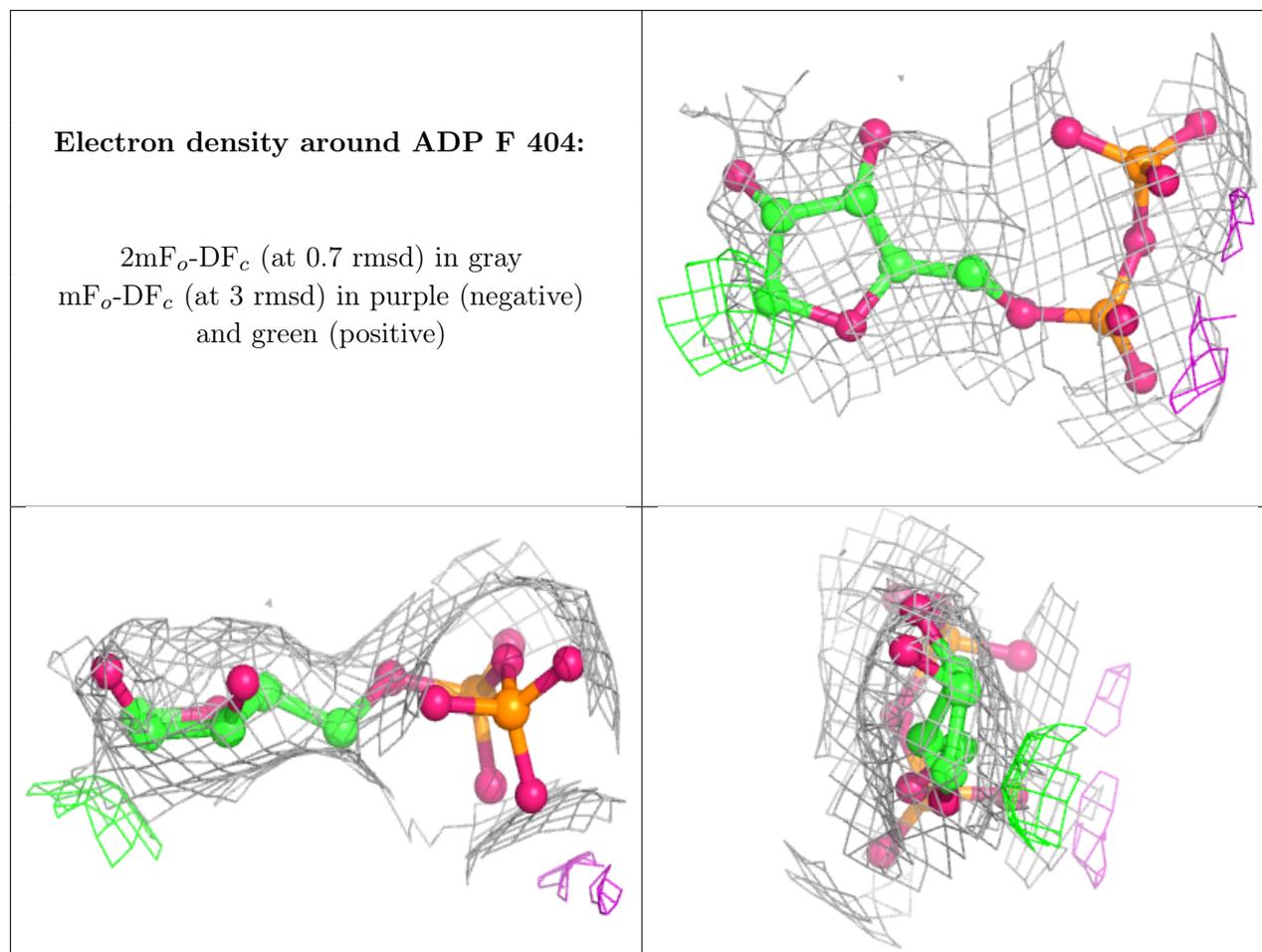
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around ADP X 404:**

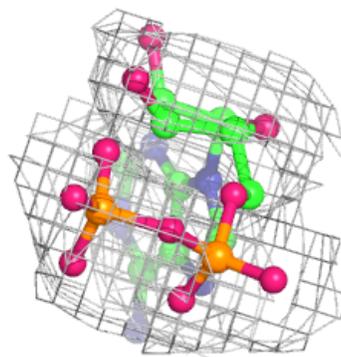
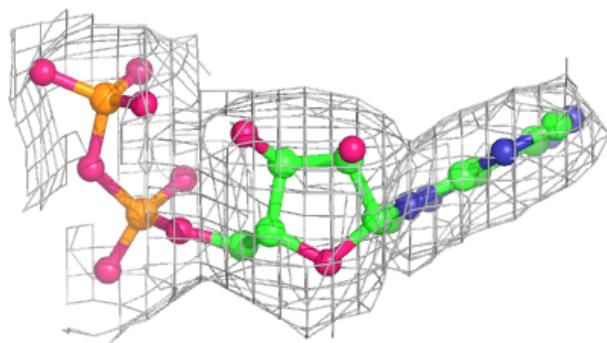
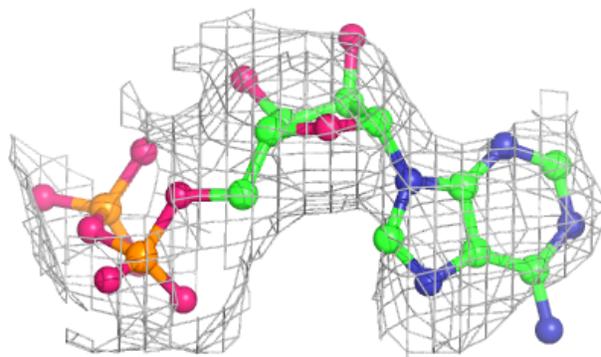
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





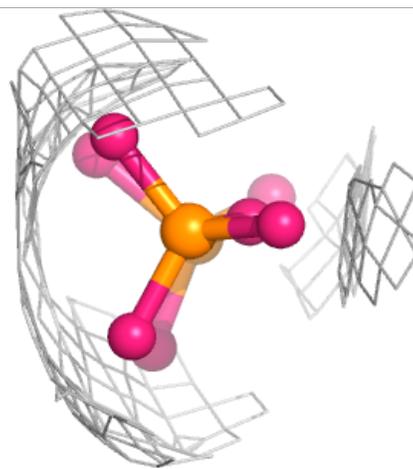
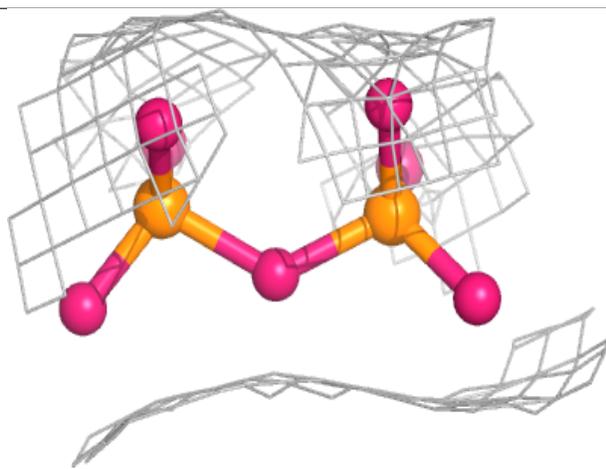
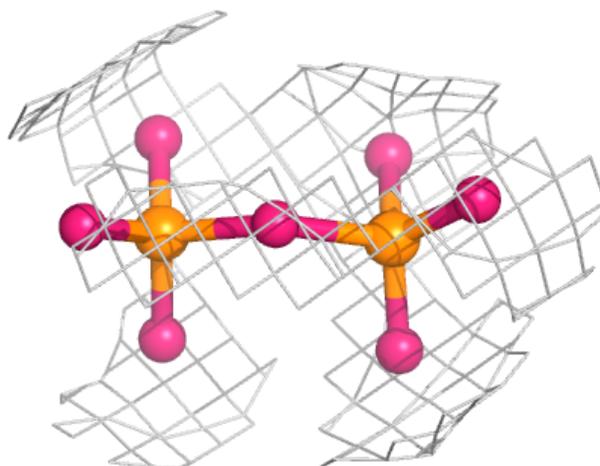
**Electron density around ADP H 404:**

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



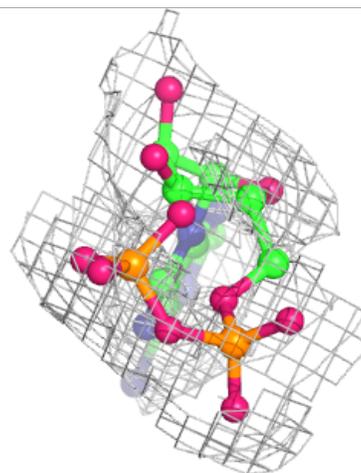
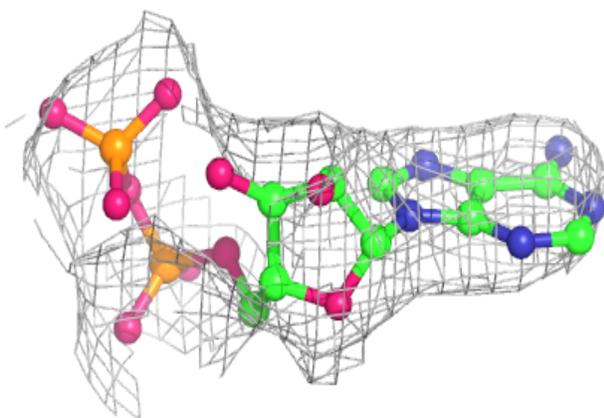
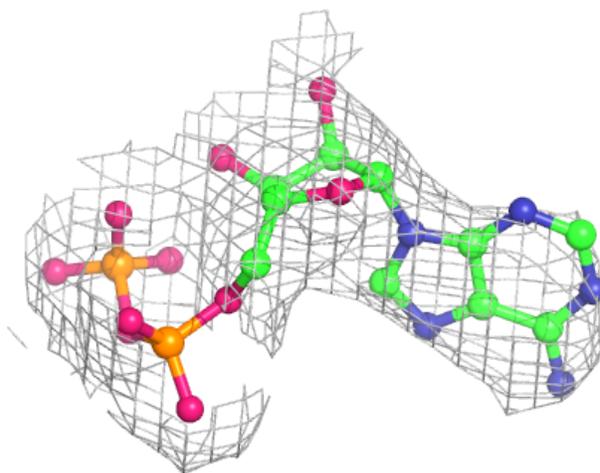
**Electron density around ADP J 404:**

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



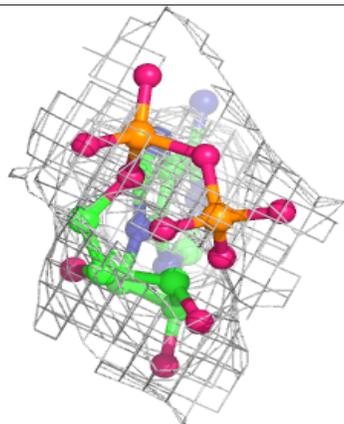
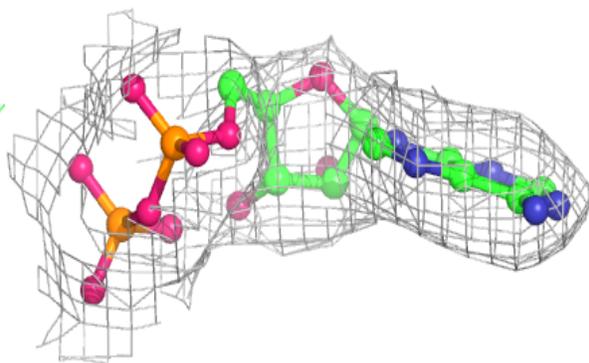
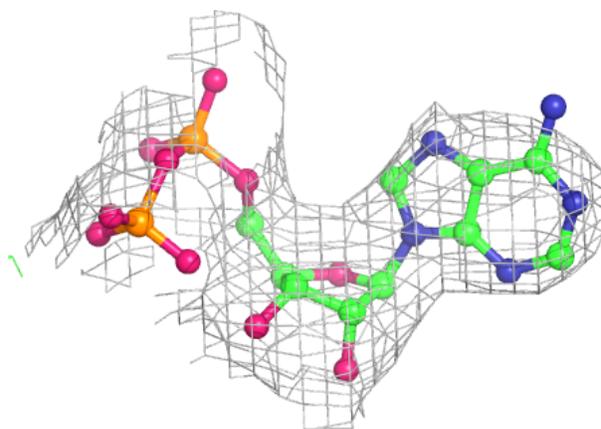
**Electron density around ADP B 404:**

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

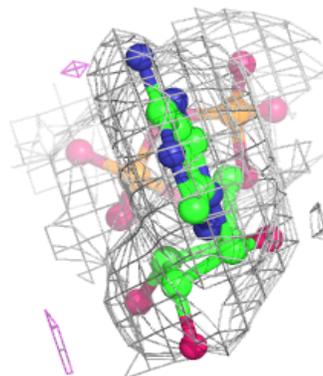
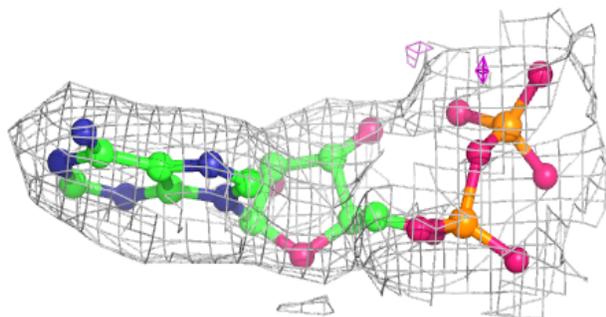
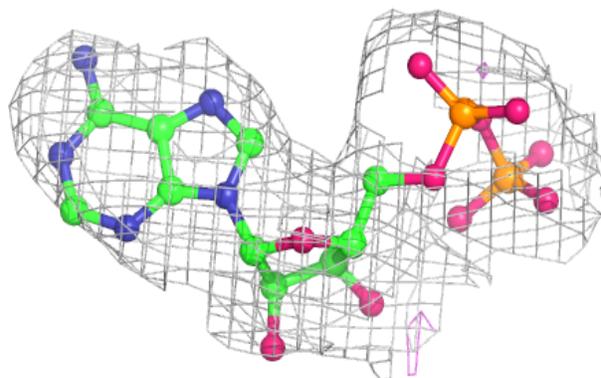


**Electron density around ADP N 404:**

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

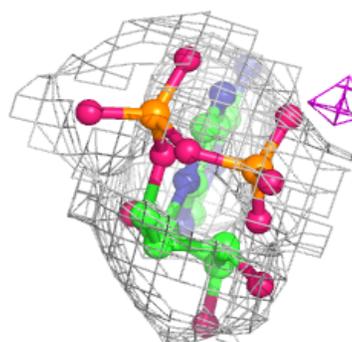
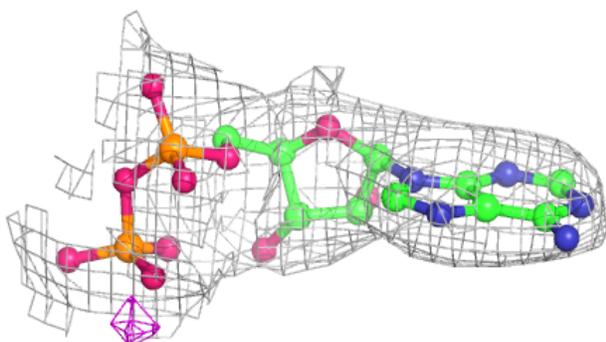
**Electron density around ADP L 404:**

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

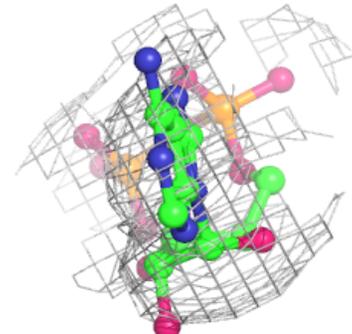
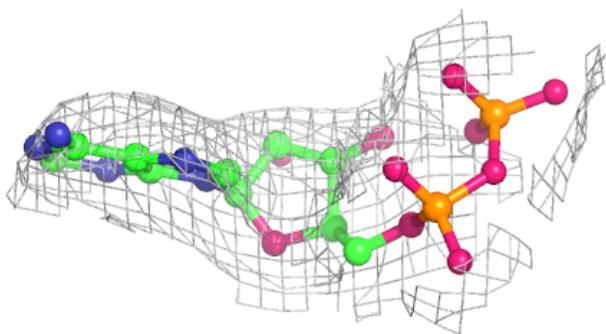
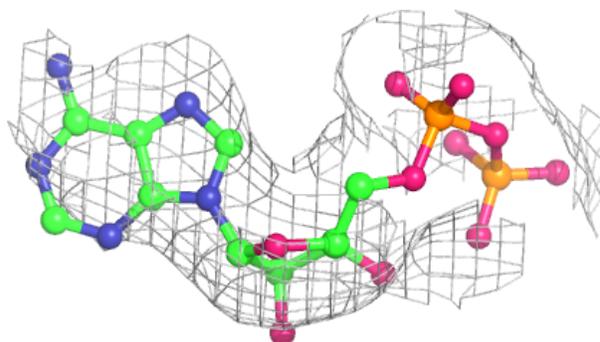


**Electron density around ADP D 404:**

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

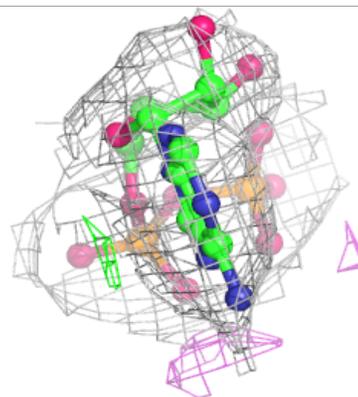
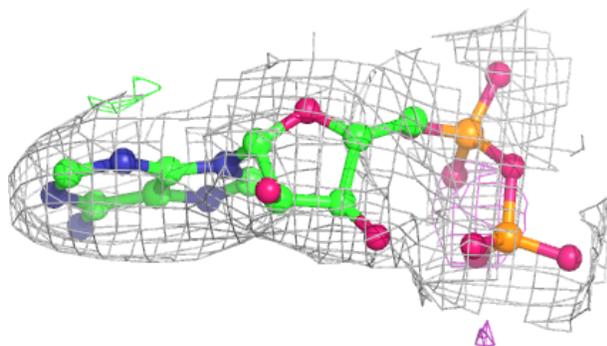
**Electron density around ADP R 404:**

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

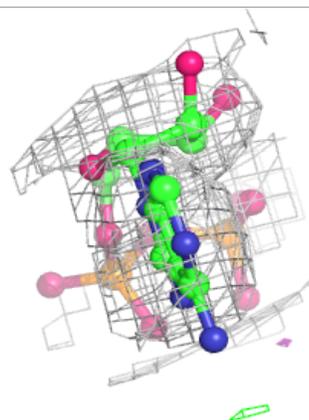
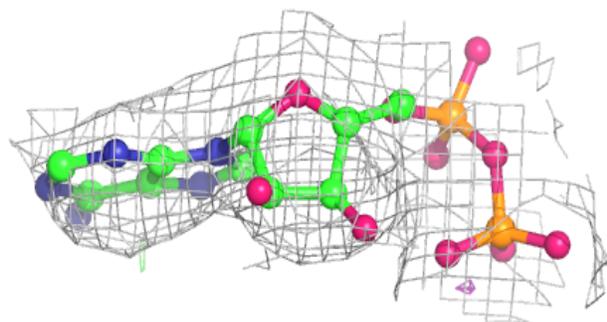
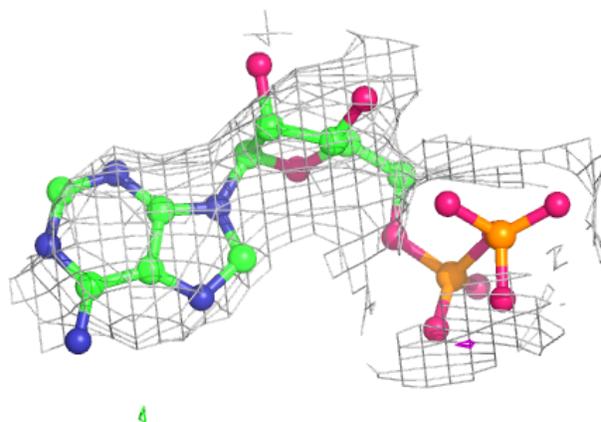


**Electron density around ADP P 404:**

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

**Electron density around ADP T 404:**

$2mF_o-DF_c$  (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.