



## Full wwPDB EM Validation Report ⓘ

Dec 16, 2024 – 05:39 PM EST

PDB ID : 6UQE  
EMDB ID : EMD-20845  
Title : ClpA/ClpP Disengaged State bound to RepA-GFP  
Authors : Lopez, K.L.; Rizo, A.R.; Southworth, D.R.  
Deposited on : 2019-10-18  
Resolution : 3.00 Å (reported)

This is a Full wwPDB EM 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/EMValidationReportHelp>

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:

EMDB validation analysis : 0.0.1.dev113  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.40

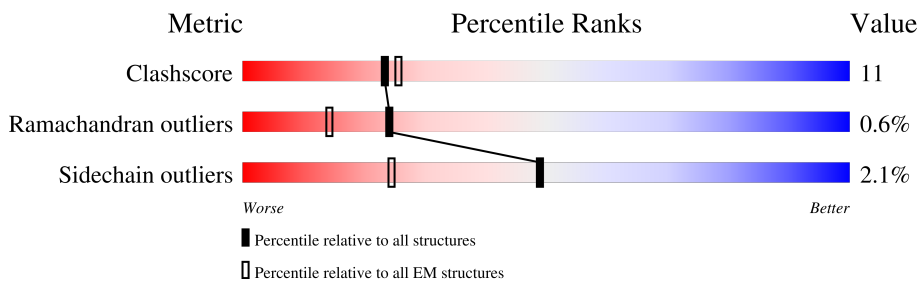
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	578	
1	B	578	
1	C	578	
1	D	578	
1	E	578	
1	F	578	
2	G	192	
2	H	192	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	I	192	 5% 84% 14% ..
2	J	192	 5% 91% 8% .
2	K	192	 6% 88% 11% .
2	L	192	 5% 86% 11% .
2	M	192	 5% 92% 6% ..
2	N	192	 5% 90% 9% ..
2	O	192	 5% 90% 10%
2	P	192	 5% 91% 8% .
2	Q	192	 5% 91% 9% .
2	R	192	 5% 92% 8% .
2	S	192	 5% 93% 7% .
2	T	192	 6% 92% 8%
3	X	10	 70% 50% 50%
4	Y	11	 9% 64% 36%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	ADP	A	801	X	-	-	-
5	ADP	A	802	X	-	-	-
5	ADP	E	801	X	-	-	-
5	ADP	E	802	X	-	X	-
5	ADP	F	801	X	-	-	-
6	AGS	B	801	X	-	-	-
6	AGS	B	802	X	-	-	-
6	AGS	C	801	X	-	-	-
6	AGS	C	802	X	-	-	-
6	AGS	D	801	X	-	-	-
6	AGS	D	802	X	-	-	-
6	AGS	E	803	X	-	X	-

## 2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 48402 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called ATP-dependent Clp protease ATP-binding subunit ClpA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	562	4377	2760	778	825	14	0	0
1	B	578	4511	2841	805	851	14	0	0
1	C	578	4511	2841	805	851	14	0	0
1	D	578	4510	2841	805	850	14	0	0
1	E	578	4511	2841	805	851	14	0	0
1	F	578	4511	2841	805	851	14	0	0

- Molecule 2 is a protein called ATP-dependent Clp protease proteolytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	G	192	1501	946	260	283	12	0	0
2	H	192	1501	946	260	283	12	0	0
2	I	192	1501	946	260	283	12	0	0
2	J	192	1501	946	260	283	12	0	0
2	K	192	1501	946	260	283	12	0	0
2	L	192	1501	946	260	283	12	0	0
2	M	192	1501	946	260	283	12	0	0
2	N	192	1501	946	260	283	12	0	0
2	O	192	1501	946	260	283	12	0	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	P	192	Total	C	N	O	S	0	0
			1501	946	260	283	12		
2	Q	192	Total	C	N	O	S	0	0
			1501	946	260	283	12		
2	R	192	Total	C	N	O	S	0	0
			1501	946	260	283	12		
2	S	192	Total	C	N	O	S	0	0
			1501	946	260	283	12		
2	T	192	Total	C	N	O	S	0	0
			1501	946	260	283	12		

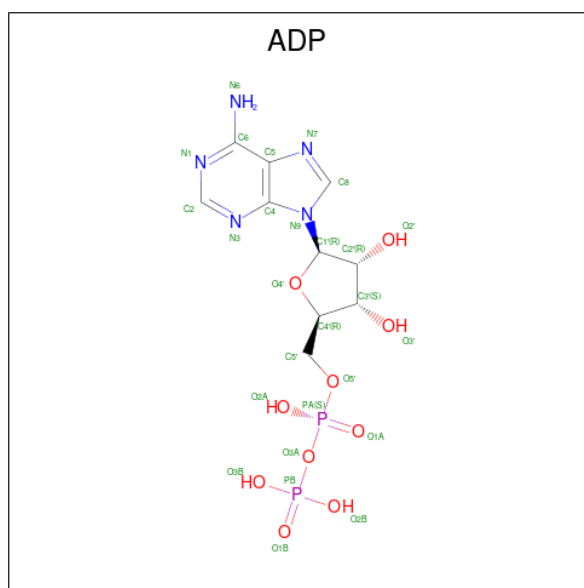
- Molecule 3 is a protein called RepA-GFP.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	X	10	Total	C	N	O	0	0
			50	30	10	10		

- Molecule 4 is a protein called RepA-GFP.

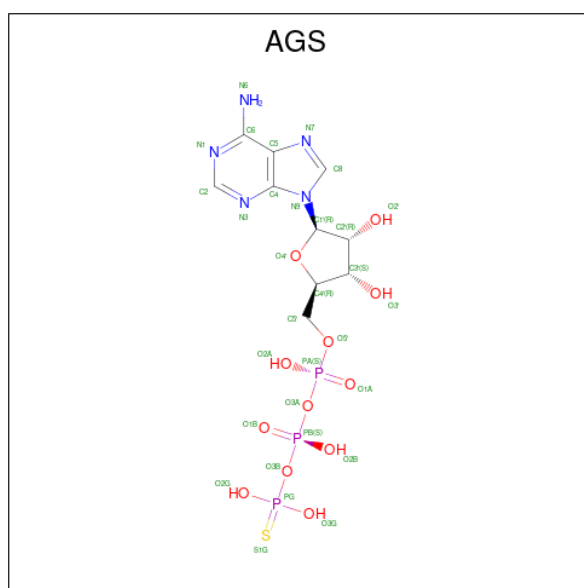
Mol	Chain	Residues	Atoms				AltConf	Trace
4	Y	11	Total	C	N	O	0	0
			55	33	11	11		

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



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
5	A	1	27	10	5	10	2	0
5	A	1	27	10	5	10	2	0
5	E	1	27	10	5	10	2	0
5	E	1	27	10	5	10	2	0
5	F	1	27	10	5	10	2	0

- Molecule 6 is PHOSPHOTHIOPHOSPHORIC ACID-ADENYLATE ESTER (three-letter code: AGS) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>12</sub>P<sub>3</sub>S).



Mol	Chain	Residues	Atoms						AltConf
			Total	C	N	O	P	S	
6	B	1	31	10	5	12	3	1	0
6	B	1	31	10	5	12	3	1	0
6	C	1	31	10	5	12	3	1	0
6	C	1	31	10	5	12	3	1	0
6	D	1	31	10	5	12	3	1	0
6	D	1	31	10	5	12	3	1	0

*Continued on next page...*

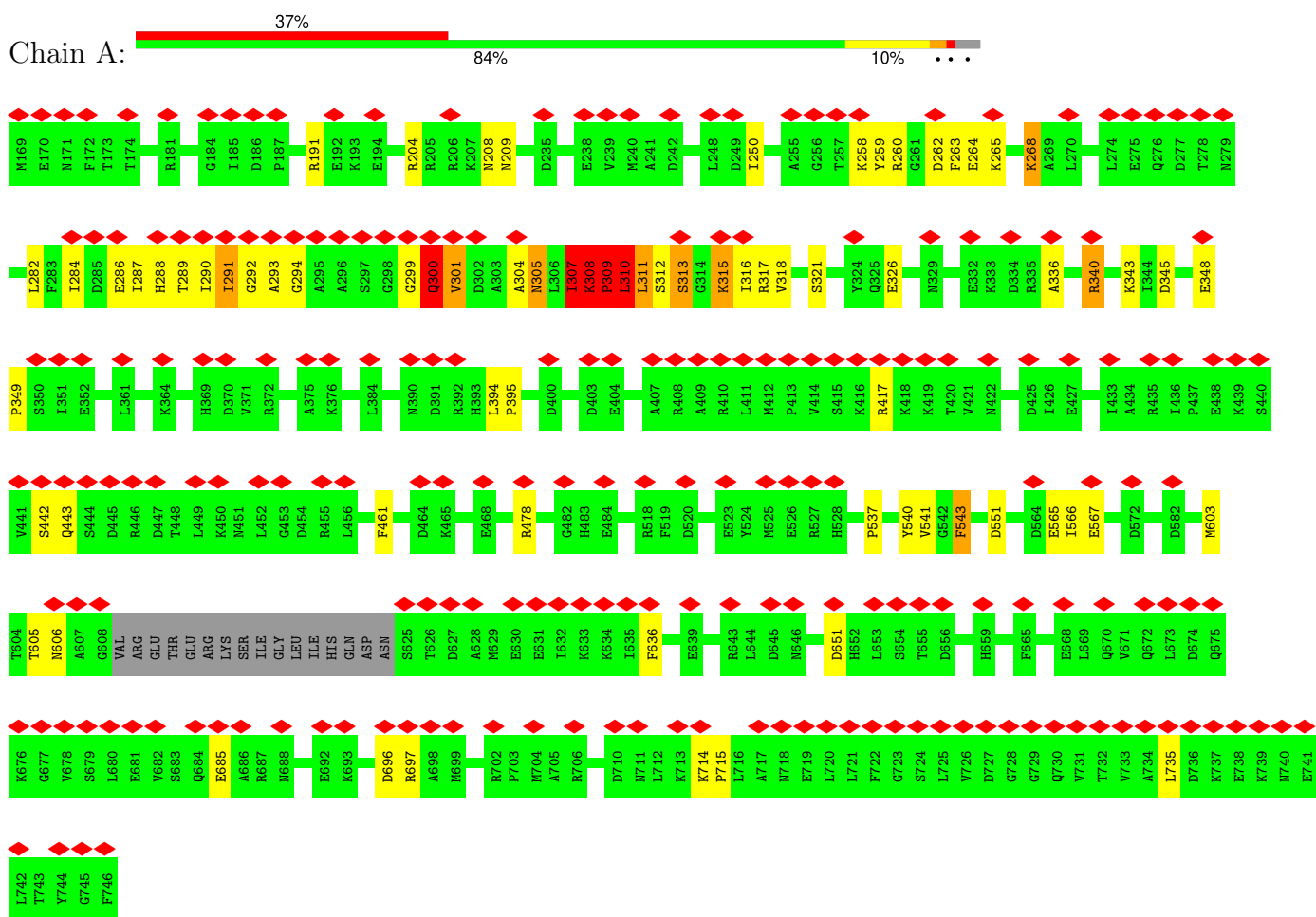
*Continued from previous page...*

Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
6	E	1	31	10	5	12	3	1	0

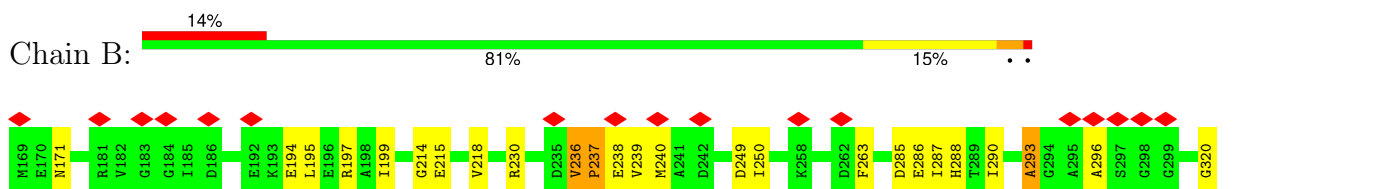
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

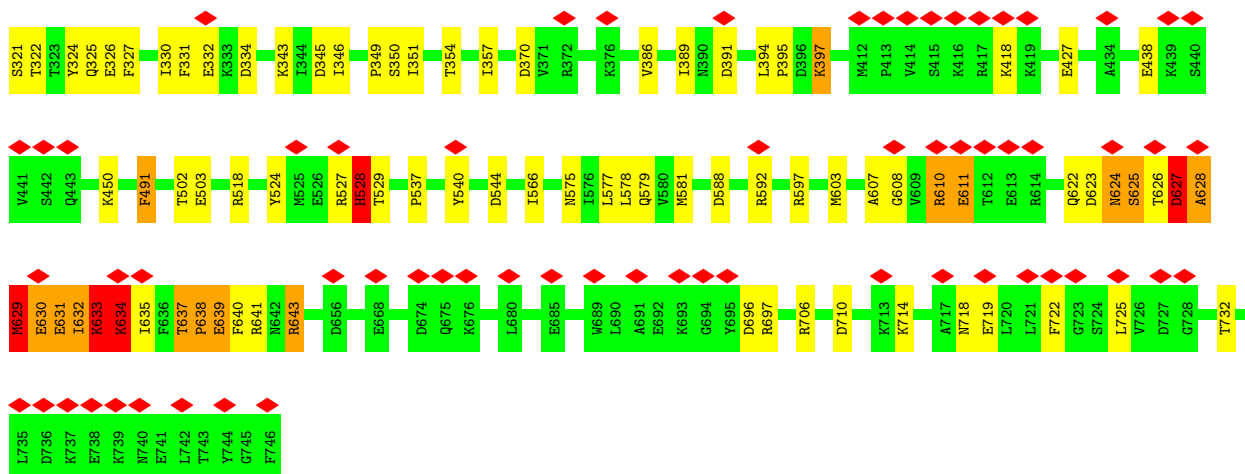
- Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA



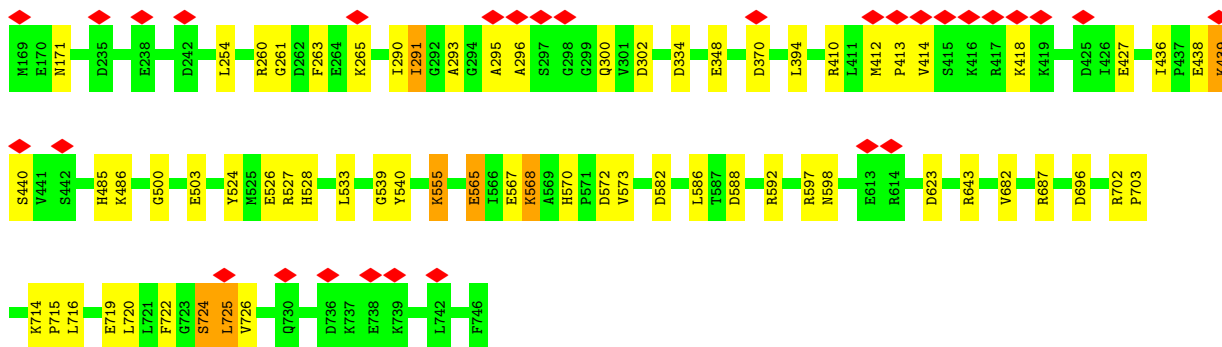
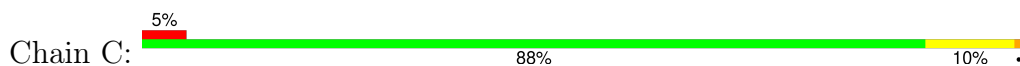
- Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA



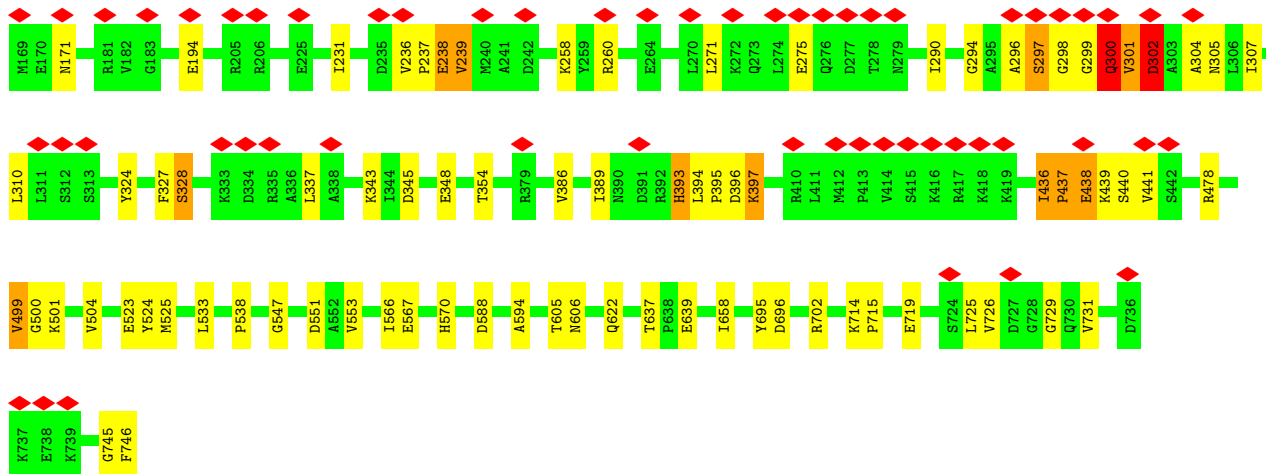
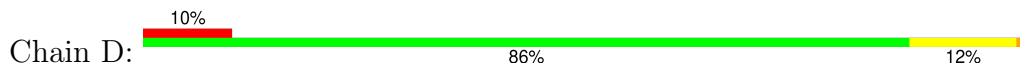




- Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA



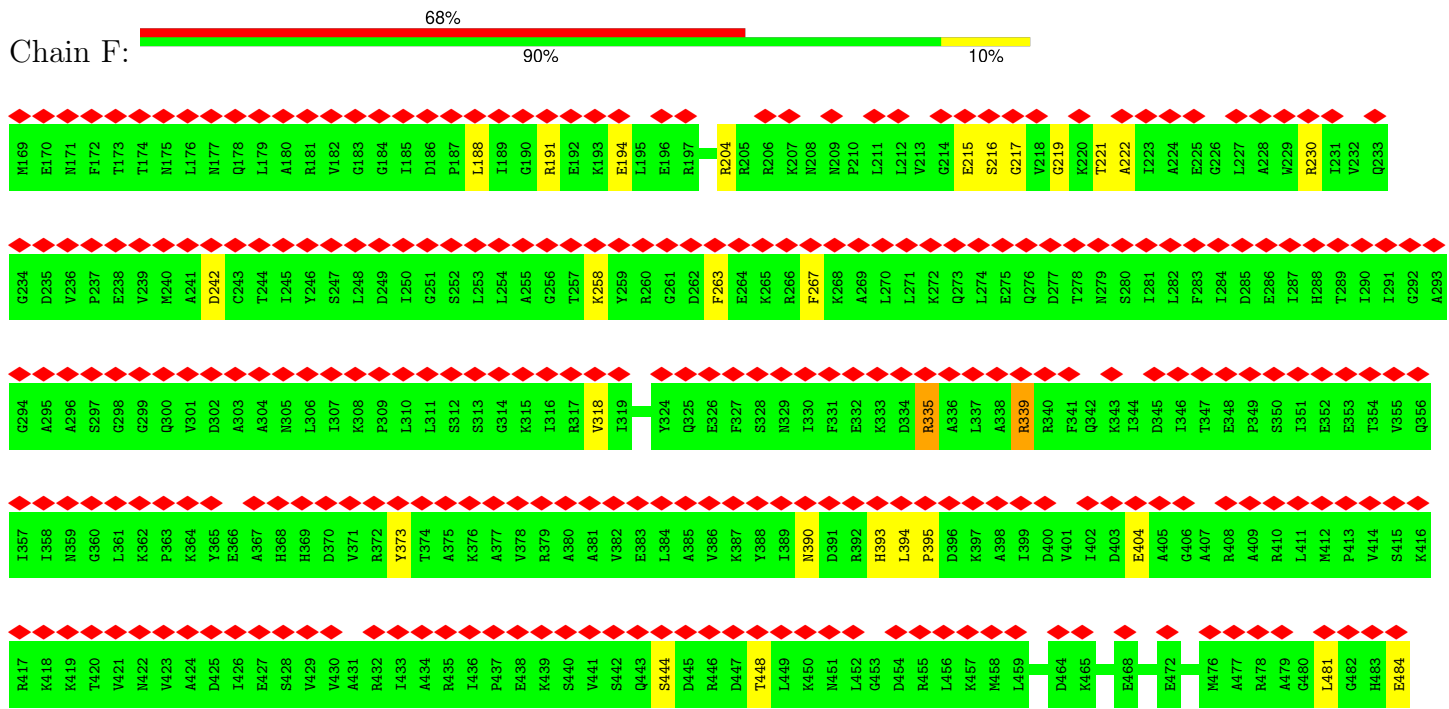
- Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA



- Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA

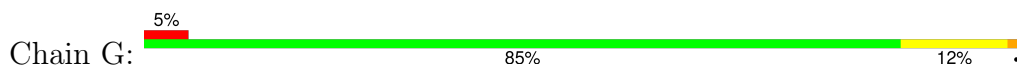


• Molecule 1: ATP-dependent Clp protease ATP-binding subunit ClpA

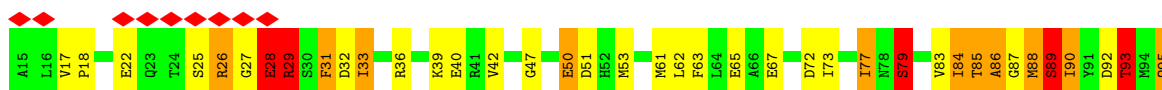




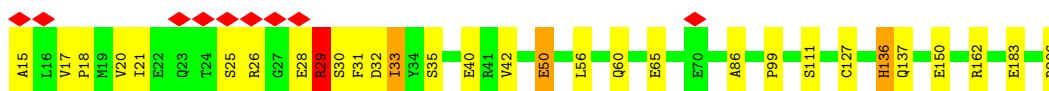
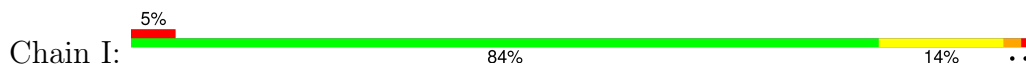
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



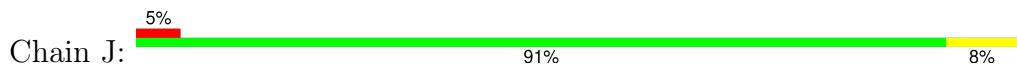
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



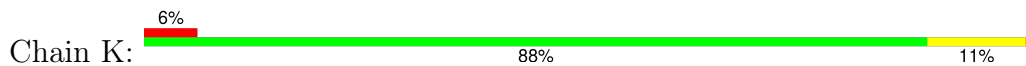
- Molecule 2: ATP-dependent Clp protease proteolytic subunit

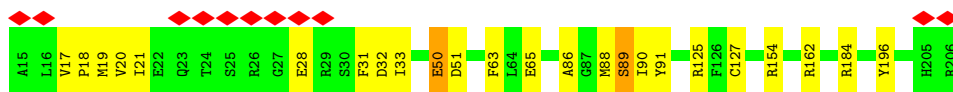


- Molecule 2: ATP-dependent Clp protease proteolytic subunit

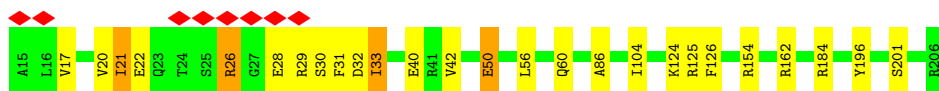
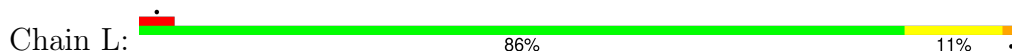


- Molecule 2: ATP-dependent Clp protease proteolytic subunit





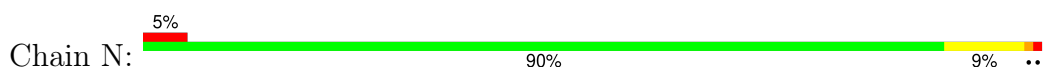
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



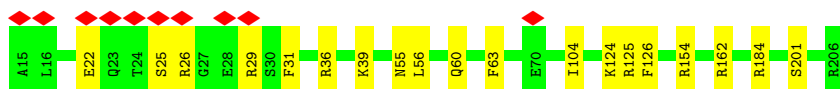
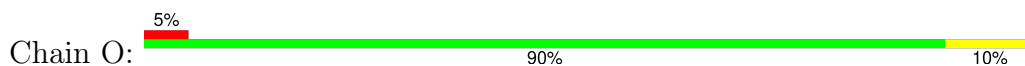
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



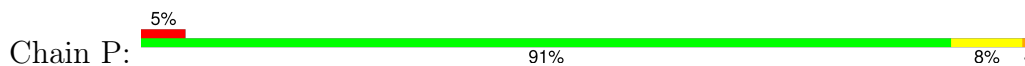
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



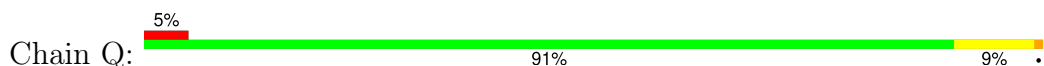
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



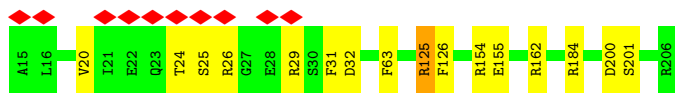
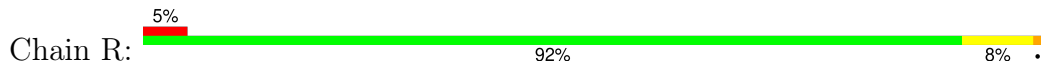
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



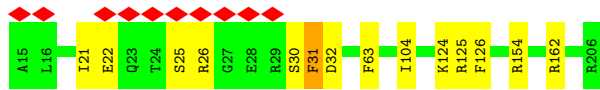
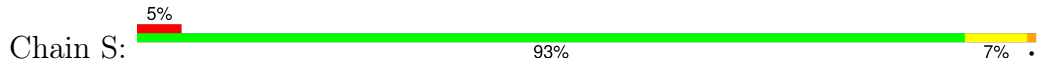
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



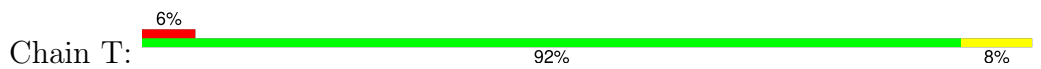
- Molecule 2: ATP-dependent Clp protease proteolytic subunit



• Molecule 2: ATP-dependent Clp protease proteolytic subunit



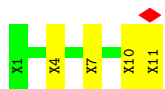
• Molecule 2: ATP-dependent Clp protease proteolytic subunit



• Molecule 3: RepA-GFP



• Molecule 4: RepA-GFP



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	169000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	69	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	58616	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	4.117	Depositor
Minimum map value	-1.677	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.080	Depositor
Recommended contour level	0.77	Depositor
Map size (Å)	511.8, 511.8, 511.8	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.853, 0.853, 0.853	Depositor

## 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, AGS

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	1.08	1/4441 (0.0%)	0.96	14/5991 (0.2%)
1	B	1.04	0/4577	0.93	10/6175 (0.2%)
1	C	1.17	1/4577 (0.0%)	0.91	6/6175 (0.1%)
1	D	1.14	2/4576 (0.0%)	0.89	4/6175 (0.1%)
1	E	1.11	15/4577 (0.3%)	0.95	10/6175 (0.2%)
1	F	1.04	12/4576 (0.3%)	0.92	9/6172 (0.1%)
2	G	1.35	4/1525 (0.3%)	0.91	3/2054 (0.1%)
2	H	1.34	10/1525 (0.7%)	1.09	12/2054 (0.6%)
2	I	1.19	0/1525	0.86	1/2054 (0.0%)
2	J	1.27	0/1525	0.90	4/2054 (0.2%)
2	K	1.25	1/1525 (0.1%)	0.92	6/2054 (0.3%)
2	L	1.25	0/1525	0.93	6/2054 (0.3%)
2	M	1.34	1/1525 (0.1%)	0.89	2/2054 (0.1%)
2	N	1.21	0/1525	0.93	5/2054 (0.2%)
2	O	1.21	0/1525	0.93	5/2054 (0.2%)
2	P	1.28	0/1525	0.92	4/2054 (0.2%)
2	Q	1.33	0/1525	0.95	5/2054 (0.2%)
2	R	1.29	0/1525	0.89	3/2054 (0.1%)
2	S	1.29	1/1525 (0.1%)	0.96	5/2054 (0.2%)
2	T	1.24	0/1525	0.90	2/2054 (0.1%)
All	All	1.18	48/48674 (0.1%)	0.93	116/65619 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3
1	B	1	1
1	E	0	1

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	#Chirality outliers	#Planarity outliers
1	F	0	3
2	H	0	3
All	All	1	11

All (48) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	437	PRO	N-CA	13.68	1.70	1.47
1	E	536	ALA	C-N	8.59	1.50	1.34
1	C	565	GLU	CG-CD	-8.56	1.39	1.51
2	S	32	ASP	CB-CG	-7.87	1.35	1.51
1	E	741	GLU	CD-OE1	-7.04	1.18	1.25
2	G	31	PHE	CB-CG	-6.92	1.39	1.51
1	F	267	PHE	CB-CG	-6.83	1.39	1.51
1	F	685	GLU	CG-CD	-6.78	1.41	1.51
1	E	558	HIS	CB-CG	-6.72	1.38	1.50
1	E	741	GLU	CD-OE2	-6.58	1.18	1.25
1	E	746	PHE	CB-CG	-6.42	1.40	1.51
2	H	92	ASP	C-O	-6.36	1.11	1.23
1	F	741	GLU	CD-OE1	-6.29	1.18	1.25
2	H	87	GLY	C-O	-6.22	1.13	1.23
2	K	65	GLU	CD-OE1	-6.19	1.18	1.25
1	E	567	GLU	CD-OE1	-6.14	1.19	1.25
1	F	597	ARG	CG-CD	-6.09	1.36	1.51
1	D	436	ILE	C-N	6.08	1.45	1.34
1	E	526	GLU	CD-OE2	-6.05	1.19	1.25
2	H	90	ILE	C-O	-5.98	1.11	1.23
2	H	102	SER	CA-CB	-5.89	1.44	1.52
2	H	77	ILE	C-O	-5.89	1.12	1.23
1	E	565	GLU	CD-OE2	-5.84	1.19	1.25
2	H	84	ILE	C-O	-5.74	1.12	1.23
2	G	22	GLU	CD-OE1	-5.73	1.19	1.25
2	H	79	SER	C-O	-5.62	1.12	1.23
1	F	689	TRP	CB-CG	-5.60	1.40	1.50
2	H	79	SER	CA-CB	-5.58	1.44	1.52
1	E	741	GLU	CG-CD	-5.53	1.43	1.51
2	G	104	ILE	C-O	-5.49	1.12	1.23
1	E	543	PHE	CB-CG	-5.48	1.42	1.51
1	E	611	GLU	CG-CD	-5.40	1.43	1.51
2	M	65	GLU	CD-OE1	-5.34	1.19	1.25
1	A	308	LYS	C-O	-5.30	1.13	1.23
2	H	96	PHE	C-O	-5.27	1.13	1.23

*Continued on next page...*



Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	567	GLU	CG-CD	-5.26	1.44	1.51
1	F	404	GLU	CD-OE1	-5.26	1.19	1.25
1	F	484	GLU	CD-OE2	-5.25	1.19	1.25
1	F	491	PHE	CB-CG	-5.23	1.42	1.51
1	E	611	GLU	CD-OE1	-5.22	1.20	1.25
2	H	103	THR	C-O	-5.19	1.13	1.23
1	F	741	GLU	CD-OE2	-5.15	1.20	1.25
1	F	215	GLU	CD-OE2	-5.13	1.20	1.25
1	E	611	GLU	CD-OE2	-5.13	1.20	1.25
1	F	526	GLU	CD-OE2	-5.11	1.20	1.25
2	G	70	GLU	CD-OE1	-5.08	1.20	1.25
1	E	685	GLU	CD-OE2	-5.04	1.20	1.25
1	F	567	GLU	CD-OE2	-5.01	1.20	1.25

All (116) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	436	ILE	C-N-CD	-14.59	88.51	120.60
2	S	31	PHE	CB-CA-C	-13.37	83.66	110.40
1	B	633	LYS	CB-CA-C	-10.54	89.31	110.40
1	C	592	ARG	NE-CZ-NH2	-9.83	115.39	120.30
2	K	184	ARG	NE-CZ-NH1	9.66	125.13	120.30
1	A	204	ARG	NE-CZ-NH2	-9.12	115.74	120.30
2	O	125	ARG	NE-CZ-NH1	9.04	124.82	120.30
2	Q	125	ARG	NE-CZ-NH1	8.71	124.66	120.30
2	N	184	ARG	NE-CZ-NH1	8.61	124.61	120.30
2	H	93	THR	CA-CB-OG1	-8.46	91.23	109.00
2	L	125	ARG	NE-CZ-NH1	8.22	124.41	120.30
1	D	437	PRO	CA-N-CD	-8.15	100.09	111.50
2	H	125	ARG	NE-CZ-NH1	8.14	124.37	120.30
2	O	162	ARG	NE-CZ-NH2	-8.12	116.24	120.30
2	H	162	ARG	NE-CZ-NH2	-8.08	116.26	120.30
2	J	162	ARG	NE-CZ-NH2	-8.04	116.28	120.30
2	N	162	ARG	NE-CZ-NH2	-8.03	116.29	120.30
2	P	125	ARG	NE-CZ-NH1	8.02	124.31	120.30
1	C	643	ARG	NE-CZ-NH2	-7.88	116.36	120.30
2	Q	184	ARG	NE-CZ-NH1	7.88	124.24	120.30
2	S	125	ARG	NE-CZ-NH1	7.86	124.23	120.30
2	L	162	ARG	NE-CZ-NH2	-7.74	116.43	120.30
2	Q	162	ARG	NE-CZ-NH2	-7.74	116.43	120.30
1	C	410	ARG	NE-CZ-NH2	-7.68	116.46	120.30
2	G	162	ARG	NE-CZ-NH2	-7.64	116.48	120.30

Continued on next page...

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	T	162	ARG	NE-CZ-NH2	-7.64	116.48	120.30
2	R	184	ARG	NE-CZ-NH1	7.59	124.10	120.30
1	F	204	ARG	NE-CZ-NH2	-7.50	116.55	120.30
2	P	184	ARG	NE-CZ-NH1	7.44	124.02	120.30
2	M	162	ARG	NE-CZ-NH2	-7.37	116.62	120.30
2	G	184	ARG	NE-CZ-NH1	7.32	123.96	120.30
2	L	154	ARG	NE-CZ-NH2	-7.27	116.67	120.30
2	H	184	ARG	NE-CZ-NH1	7.25	123.93	120.30
2	M	154	ARG	NE-CZ-NH2	-7.22	116.69	120.30
2	P	162	ARG	NE-CZ-NH2	-7.18	116.71	120.30
2	S	162	ARG	NE-CZ-NH2	-7.17	116.72	120.30
2	N	154	ARG	NE-CZ-NH2	-7.09	116.75	120.30
1	A	636	PHE	CB-CG-CD1	7.07	125.75	120.80
1	A	307	ILE	CB-CA-C	-7.06	97.48	111.60
2	G	154	ARG	NE-CZ-NH2	-7.04	116.78	120.30
1	A	478	ARG	NE-CZ-NH2	-7.02	116.79	120.30
1	E	643	ARG	NE-CZ-NH2	-6.96	116.82	120.30
2	R	154	ARG	NE-CZ-NH2	-6.92	116.84	120.30
2	S	154	ARG	NE-CZ-NH2	-6.91	116.84	120.30
2	H	88	MET	CB-CG-SD	-6.89	91.73	112.40
1	B	592	ARG	NE-CZ-NH2	-6.85	116.87	120.30
2	T	154	ARG	NE-CZ-NH2	-6.84	116.88	120.30
2	K	154	ARG	NE-CZ-NH2	-6.81	116.90	120.30
1	B	518	ARG	NE-CZ-NH2	-6.80	116.90	120.30
1	A	651	ASP	CB-CG-OD2	6.78	124.40	118.30
2	H	154	ARG	NE-CZ-NH2	-6.77	116.92	120.30
2	Q	154	ARG	NE-CZ-NH2	-6.77	116.92	120.30
1	A	310	LEU	CA-CB-CG	-6.76	99.75	115.30
2	K	184	ARG	NE-CZ-NH2	-6.75	116.93	120.30
1	A	543	PHE	CB-CG-CD1	-6.73	116.09	120.80
2	J	154	ARG	NE-CZ-NH2	-6.69	116.96	120.30
2	R	162	ARG	NE-CZ-NH2	-6.63	116.98	120.30
2	O	154	ARG	NE-CZ-NH2	-6.62	116.99	120.30
2	I	162	ARG	NE-CZ-NH2	-6.61	117.00	120.30
1	C	410	ARG	NE-CZ-NH1	6.59	123.59	120.30
1	E	592	ARG	NE-CZ-NH2	-6.57	117.01	120.30
1	A	543	PHE	CB-CG-CD2	6.54	125.38	120.80
2	L	184	ARG	NE-CZ-NH1	6.50	123.55	120.30
1	B	631	GLU	C-N-CA	6.47	137.87	121.70
1	E	643	ARG	NE-CZ-NH1	6.46	123.53	120.30
2	K	89	SER	N-CA-C	-6.46	93.57	111.00
1	A	340	ARG	NE-CZ-NH1	6.41	123.50	120.30

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	302	ASP	CB-CA-C	-6.36	97.69	110.40
2	K	162	ARG	NE-CZ-NH2	-6.33	117.14	120.30
1	F	191	ARG	NE-CZ-NH1	6.21	123.40	120.30
1	A	636	PHE	CB-CG-CD2	-6.18	116.47	120.80
2	Q	125	ARG	NE-CZ-NH2	-6.18	117.21	120.30
1	E	260	ARG	NE-CZ-NH2	-6.15	117.22	120.30
2	P	125	ARG	NE-CZ-NH2	-6.11	117.25	120.30
2	H	100	ASP	CB-CA-C	-6.07	98.27	110.40
1	F	373	TYR	CB-CG-CD1	-6.05	117.37	121.00
1	E	191	ARG	NE-CZ-NH1	6.04	123.32	120.30
1	F	643	ARG	NE-CZ-NH1	6.04	123.32	120.30
1	D	297	SER	C-N-CA	6.00	134.89	122.30
1	A	309	PRO	CA-N-CD	-5.99	103.11	111.50
2	O	125	ARG	NE-CZ-NH2	-5.99	117.30	120.30
2	H	28	GLU	C-N-CA	5.90	136.44	121.70
1	B	597	ARG	NE-CZ-NH1	5.89	123.25	120.30
1	D	702	ARG	NE-CZ-NH2	-5.89	117.36	120.30
2	L	125	ARG	NE-CZ-NH2	-5.86	117.37	120.30
2	S	125	ARG	NE-CZ-NH2	-5.79	117.40	120.30
2	H	125	ARG	NE-CZ-NH2	-5.74	117.43	120.30
1	C	643	ARG	NE-CZ-NH1	5.66	123.13	120.30
2	O	162	ARG	NE-CZ-NH1	5.65	123.12	120.30
2	N	184	ARG	NE-CZ-NH2	-5.64	117.48	120.30
1	E	536	ALA	C-N-CD	-5.57	108.34	120.60
1	B	633	LYS	CB-CG-CD	5.56	126.06	111.60
1	F	263	PHE	CB-CG-CD2	-5.55	116.91	120.80
1	F	643	ARG	NE-CZ-NH2	-5.51	117.55	120.30
1	B	706	ARG	NE-CZ-NH2	-5.49	117.55	120.30
1	A	191	ARG	NE-CZ-NH2	-5.46	117.57	120.30
1	A	308	LYS	C-N-CD	5.42	139.77	128.40
1	E	437	PRO	N-CA-C	5.39	126.11	112.10
2	L	196	TYR	CB-CG-CD1	-5.37	117.78	121.00
2	J	162	ARG	NE-CZ-NH1	5.34	122.97	120.30
1	B	628	ALA	C-N-CA	5.33	135.03	121.70
2	H	162	ARG	NE-CZ-NH1	5.29	122.94	120.30
1	B	634	LYS	N-CA-CB	5.26	120.07	110.60
2	J	196	TYR	CB-CG-CD1	-5.26	117.84	121.00
1	B	629	MET	CB-CA-C	5.25	120.91	110.40
1	E	340	ARG	NE-CZ-NH2	-5.21	117.70	120.30
1	F	204	ARG	NE-CZ-NH1	5.20	122.90	120.30
1	F	230	ARG	NE-CZ-NH1	5.12	122.86	120.30
2	N	196	TYR	CB-CG-CD1	-5.10	117.94	121.00

*Continued on next page...*

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	300	GLN	C-N-CA	-5.09	108.97	121.70
1	F	540	TYR	CB-CG-CD2	-5.09	117.95	121.00
2	H	103	THR	OG1-CB-CG2	-5.09	98.30	110.00
1	C	597	ARG	NE-CZ-NH1	5.09	122.84	120.30
1	E	260	ARG	NE-CZ-NH1	5.03	122.82	120.30
2	K	196	TYR	CB-CG-CD1	-5.03	117.98	121.00
2	H	87	GLY	C-N-CA	5.03	134.26	121.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	B	629	MET	CA

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	300	GLN	Peptide
1	A	313	SER	Peptide
1	A	417	ARG	Mainchain
1	B	627	ASP	Mainchain
1	E	484	GLU	Mainchain
1	F	318	VAL	Mainchain
1	F	481	LEU	Mainchain
1	F	620	ILE	Peptide
2	H	27	GLY	Peptide
2	H	79	SER	Mainchain
2	H	89	SER	Mainchain

## 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	4377	0	4468	131	0
1	B	4511	0	4609	188	0
1	C	4511	0	4609	113	0
1	D	4510	0	4609	97	0
1	E	4511	0	4609	127	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	4511	0	4608	56	0
2	G	1501	0	1512	36	0
2	H	1501	0	1512	87	0
2	I	1501	0	1512	83	0
2	J	1501	0	1512	40	0
2	K	1501	0	1512	36	0
2	L	1501	0	1512	29	0
2	M	1501	0	1512	32	0
2	N	1501	0	1512	34	0
2	O	1501	0	1512	26	0
2	P	1501	0	1512	26	0
2	Q	1501	0	1512	18	0
2	R	1501	0	1512	17	0
2	S	1501	0	1512	15	0
2	T	1501	0	1512	15	0
3	X	50	0	13	19	0
4	Y	55	0	15	6	0
5	A	54	0	23	1	0
5	E	54	0	22	19	0
5	F	27	0	11	1	0
6	B	62	0	24	4	0
6	C	62	0	22	1	0
6	D	62	0	22	1	0
6	E	31	0	11	9	0
All	All	48402	0	48843	1052	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 11.

All (1052) 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:I:29:ARG:HD3	2:I:31:PHE:CE1	1.15	1.66
2:J:31:PHE:CZ	2:K:21:ILE:HD11	1.43	1.50
2:J:31:PHE:CE2	2:K:21:ILE:HD11	1.47	1.48
1:A:259:TYR:CD2	3:X:2:UNK:O	1.69	1.45
1:C:263:PHE:CZ	1:C:293:ALA:CB	2.04	1.39
1:E:441:VAL:HG11	1:F:721:LEU:CD2	1.52	1.38
1:B:540:TYR:OH	1:C:528:HIS:CB	1.71	1.38
2:J:31:PHE:CZ	2:K:21:ILE:CD1	2.04	1.38
2:I:29:ARG:HD3	2:I:31:PHE:CZ	1.58	1.37

Continued on next page...

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:29:ARG:CD	2:I:31:PHE:CE1	2.08	1.36
1:D:437:PRO:N	1:D:437:PRO:CA	1.70	1.36
1:B:540:TYR:CZ	1:C:528:HIS:CD2	2.16	1.32
2:N:17:VAL:CG1	2:N:33:ILE:HG22	1.59	1.31
1:A:307:ILE:HD12	1:A:340:ARG:NH1	1.44	1.30
1:B:287:ILE:CD1	1:B:320:GLY:HA3	1.61	1.29
2:M:17:VAL:CG1	2:M:33:ILE:HG22	1.64	1.26
5:E:801:ADP:O4'	5:E:801:ADP:C1'	1.64	1.23
1:E:438:GLU:O	1:E:439:LYS:HG2	1.36	1.23
1:C:539:GLY:O	4:Y:7:UNK:CB	1.87	1.22
5:F:801:ADP:O4'	5:F:801:ADP:C1'	1.64	1.21
1:C:263:PHE:CZ	1:C:293:ALA:HB1	1.71	1.20
1:A:259:TYR:CE2	3:X:2:UNK:O	1.93	1.20
2:J:31:PHE:HZ	2:K:21:ILE:CD1	1.47	1.20
1:B:540:TYR:OH	1:C:528:HIS:CG	1.93	1.20
2:I:32:ASP:OD2	2:I:35:SER:CB	1.90	1.18
1:A:537:PRO:CD	1:B:528:HIS:NE2	2.05	1.18
2:N:17:VAL:HG13	2:N:33:ILE:CG2	1.70	1.18
1:C:263:PHE:CE2	1:C:293:ALA:CB	2.27	1.18
1:E:437:PRO:O	1:E:438:GLU:CB	1.83	1.17
1:E:335:ARG:NH2	5:E:802:ADP:O3B	1.76	1.16
1:E:441:VAL:CG1	1:F:721:LEU:CD2	2.22	1.16
2:H:17:VAL:CG1	2:H:33:ILE:HG22	1.74	1.16
1:C:527:ARG:N	1:C:570:HIS:CD2	2.15	1.15
2:I:29:ARG:CD	2:I:31:PHE:HE1	1.53	1.15
2:K:17:VAL:CG1	2:K:33:ILE:HG22	1.77	1.15
2:J:29:ARG:NE	2:K:28:GLU:OE1	1.79	1.15
2:N:18:PRO:HG2	2:N:33:ILE:HD13	1.24	1.14
1:E:442:SER:OG	1:E:446:ARG:HD3	1.33	1.13
1:B:287:ILE:HD12	1:B:320:GLY:CA	1.78	1.12
2:M:17:VAL:HG13	2:M:33:ILE:CG2	1.79	1.11
2:N:33:ILE:HG21	2:O:56:LEU:HD11	1.30	1.11
2:I:29:ARG:CD	2:I:31:PHE:CZ	2.31	1.10
1:A:250:ILE:HD13	1:A:290:ILE:HG21	1.32	1.10
1:B:540:TYR:OH	1:C:528:HIS:HB2	1.39	1.10
1:D:525:MET:O	1:D:570:HIS:HB2	1.51	1.09
2:K:17:VAL:HG13	2:K:33:ILE:HG22	1.17	1.09
2:H:18:PRO:HG2	2:H:33:ILE:HD13	1.18	1.09
2:I:17:VAL:CG1	2:I:33:ILE:HG22	1.82	1.09
1:B:386:VAL:HG22	1:B:394:LEU:HD11	1.36	1.08
2:H:32:ASP:OD2	2:I:15:ALA:HB2	1.50	1.08

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:719:GLU:HA	1:E:723:GLY:HA3	1.26	1.08
1:A:537:PRO:HG3	1:B:528:HIS:CE1	1.87	1.07
1:E:244:THR:HG21	1:E:246:TYR:CZ	1.87	1.07
1:B:287:ILE:HD13	1:B:320:GLY:HA3	1.32	1.07
2:I:50:GLU:O	2:I:86:ALA:HB1	1.52	1.07
1:E:441:VAL:CG1	1:F:721:LEU:HD23	1.83	1.07
2:J:31:PHE:CZ	2:K:21:ILE:CG1	2.37	1.07
1:A:250:ILE:HD13	1:A:290:ILE:CG2	1.83	1.07
1:E:244:THR:CG2	1:E:246:TYR:CE1	2.37	1.07
2:I:50:GLU:O	2:I:86:ALA:CB	2.03	1.06
2:I:137:GLN:NE2	2:P:145:GLN:OE1	1.88	1.06
1:D:236:VAL:HG12	1:D:237:PRO:HD2	1.37	1.06
1:E:179:LEU:O	1:E:183:GLY:O	1.73	1.05
1:E:348:GLU:OE2	1:E:394:LEU:N	1.90	1.05
1:A:250:ILE:HG21	1:A:290:ILE:CG2	1.86	1.05
1:A:537:PRO:HD3	1:B:528:HIS:CE1	1.91	1.05
2:M:18:PRO:HG2	2:M:33:ILE:HD13	1.36	1.05
1:D:348:GLU:OE2	1:D:393:HIS:HB3	1.56	1.05
1:A:307:ILE:CD1	1:A:340:ARG:HH12	1.68	1.04
2:M:17:VAL:HG13	2:M:33:ILE:HG22	1.13	1.04
1:E:719:GLU:CA	1:E:723:GLY:HA3	1.88	1.04
1:B:296:ALA:CB	3:X:1:UNK:O	2.06	1.03
1:C:263:PHE:CZ	1:C:293:ALA:HB2	1.88	1.03
2:I:32:ASP:OD2	2:I:35:SER:HB2	1.52	1.03
1:B:540:TYR:CE1	1:C:528:HIS:HD2	1.77	1.03
1:A:537:PRO:CD	1:B:528:HIS:CE1	2.42	1.02
1:A:259:TYR:HD2	3:X:2:UNK:O	1.18	1.02
1:B:637:THR:HB	1:B:638:PRO:HD3	1.39	1.02
1:E:441:VAL:HG11	1:F:721:LEU:HD23	1.34	1.02
1:B:287:ILE:CD1	1:B:320:GLY:CA	2.37	1.02
1:B:296:ALA:HB3	3:X:1:UNK:O	1.60	1.02
2:H:17:VAL:HG13	2:H:33:ILE:CG2	1.87	1.02
1:B:263:PHE:CZ	1:B:293:ALA:CB	2.43	1.01
1:B:578:LEU:HD11	1:B:643:ARG:HH11	1.25	1.01
1:D:296:ALA:O	1:D:297:SER:OG	1.77	1.01
2:I:31:PHE:HE2	2:J:21:ILE:HD11	1.24	1.01
1:E:441:VAL:HG11	1:F:721:LEU:HD21	1.37	1.01
2:G:128:LEU:HD22	2:G:129:PRO:HD2	1.42	1.01
1:B:354:THR:HG23	1:B:395:PRO:HB3	1.40	1.01
1:E:244:THR:HG21	1:E:246:TYR:CE1	1.95	1.01
1:B:354:THR:HG23	1:B:395:PRO:CB	1.91	1.00

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:538:PRO:HB2	1:E:536:ALA:HB2	1.40	1.00
2:N:17:VAL:HG13	2:N:33:ILE:HG22	1.03	1.00
1:B:578:LEU:HD12	1:B:643:ARG:HD2	1.42	1.00
2:H:61:MET:HE3	2:H:93:THR:HG21	1.37	1.00
1:A:282:LEU:HB3	1:A:318:VAL:HG22	1.43	1.00
1:C:527:ARG:HB2	1:C:570:HIS:NE2	1.77	0.99
2:H:31:PHE:HZ	2:I:21:ILE:CG1	1.76	0.99
1:E:442:SER:OG	1:E:446:ARG:CD	1.88	0.99
1:B:578:LEU:HD11	1:B:643:ARG:NH1	1.77	0.99
1:C:263:PHE:CE2	1:C:293:ALA:HB3	1.95	0.98
1:B:263:PHE:CZ	1:B:293:ALA:HB1	1.98	0.98
1:B:296:ALA:HB2	3:X:1:UNK:CA	1.92	0.98
2:N:17:VAL:CG1	2:N:32:ASP:OD1	2.11	0.98
1:B:386:VAL:CG2	1:B:394:LEU:HD11	1.93	0.98
2:N:18:PRO:CG	2:N:33:ILE:HD13	1.92	0.98
2:H:31:PHE:HZ	2:I:21:ILE:HG13	1.25	0.97
2:M:17:VAL:HG11	2:M:32:ASP:OD1	1.64	0.97
1:A:537:PRO:CG	1:B:528:HIS:NE2	2.28	0.97
5:E:802:ADP:O2A	1:F:221:THR:OG1	1.83	0.97
2:K:17:VAL:HG13	2:K:33:ILE:CG2	1.93	0.97
1:A:537:PRO:CG	1:B:528:HIS:CE1	2.49	0.96
1:B:719:GLU:O	1:B:725:LEU:HB3	1.66	0.96
2:J:31:PHE:CZ	2:K:21:ILE:HG13	2.00	0.95
2:H:17:VAL:HG13	2:H:33:ILE:HG22	1.44	0.95
1:E:441:VAL:O	1:E:443:GLN:N	2.00	0.95
1:F:617:ILE:HG21	2:I:40:GLU:HG3	1.46	0.95
1:C:263:PHE:CE1	1:C:293:ALA:HB1	2.00	0.95
1:E:441:VAL:HG21	1:E:478:ARG:O	1.67	0.95
1:B:287:ILE:HD12	1:B:320:GLY:HA2	1.47	0.95
1:C:348:GLU:OE2	1:C:394:LEU:N	2.00	0.94
1:A:307:ILE:HD12	1:A:340:ARG:HH12	0.78	0.94
2:H:29:ARG:HH21	2:H:39:LYS:NZ	1.64	0.94
2:H:18:PRO:CG	2:H:33:ILE:HD13	1.97	0.94
1:C:439:LYS:HE2	1:C:439:LYS:H	1.31	0.94
2:N:17:VAL:HG11	2:N:32:ASP:OD1	1.66	0.94
2:M:18:PRO:CG	2:M:33:ILE:HD13	1.97	0.94
1:E:719:GLU:HA	1:E:723:GLY:CA	1.96	0.93
2:I:17:VAL:HG13	2:I:33:ILE:CG2	1.98	0.93
1:E:502:THR:OG1	6:E:803:AGS:O1A	1.86	0.93
1:D:719:GLU:HB3	1:D:725:LEU:CD1	1.98	0.93
2:I:32:ASP:OD2	2:I:35:SER:N	2.00	0.93

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:578:LEU:CD1	1:B:643:ARG:HH11	1.81	0.92
1:B:349:PRO:HG3	1:B:395:PRO:HD3	1.51	0.92
1:B:633:LYS:HG2	1:B:641:ARG:HH12	1.34	0.92
1:A:288:HIS:CA	1:A:291:ILE:HD11	1.99	0.92
2:G:105:CYS:SG	2:G:105:CYS:O	2.25	0.92
1:B:296:ALA:HB2	3:X:1:UNK:C	1.99	0.92
1:D:260:ARG:NH2	1:D:298:GLY:O	2.02	0.92
1:A:250:ILE:CD1	1:A:290:ILE:HG21	2.00	0.91
1:A:537:PRO:HD2	1:B:528:HIS:NE2	1.83	0.91
1:A:348:GLU:OE2	1:A:394:LEU:N	2.02	0.90
2:G:106:MET:HA	2:G:128:LEU:HD12	1.53	0.90
1:A:287:ILE:N	1:A:321:SER:O	2.04	0.90
2:N:18:PRO:HG2	2:N:33:ILE:CD1	2.01	0.90
1:B:540:TYR:CZ	1:C:528:HIS:CG	2.55	0.90
1:E:719:GLU:OE1	1:E:723:GLY:CA	2.19	0.90
2:G:106:MET:CA	2:G:128:LEU:HD12	2.01	0.90
1:B:540:TYR:CE1	1:C:528:HIS:CD2	2.57	0.90
2:I:29:ARG:HG3	2:I:29:ARG:HH11	1.38	0.89
1:B:624:ASN:O	1:B:624:ASN:ND2	2.06	0.89
1:C:527:ARG:HB2	1:C:570:HIS:CE1	2.08	0.89
1:B:296:ALA:HB2	3:X:1:UNK:CB	2.01	0.89
1:A:250:ILE:CG2	1:A:290:ILE:HG21	2.03	0.89
2:N:33:ILE:HG21	2:O:56:LEU:CD1	2.01	0.88
1:B:633:LYS:HG3	1:B:641:ARG:NH1	1.88	0.88
1:B:296:ALA:CB	3:X:1:UNK:C	2.52	0.88
1:C:263:PHE:CE2	1:C:293:ALA:HB1	1.99	0.88
1:E:244:THR:HG22	1:E:246:TYR:CE1	2.08	0.87
2:I:17:VAL:CG1	2:I:33:ILE:CG2	2.52	0.87
1:A:250:ILE:HG21	1:A:290:ILE:HG21	1.54	0.87
1:B:633:LYS:CG	1:B:641:ARG:NH1	2.37	0.87
2:I:137:GLN:NE2	2:P:145:GLN:CD	2.28	0.87
2:J:31:PHE:CE2	2:K:21:ILE:CD1	2.43	0.87
1:B:263:PHE:CZ	1:B:293:ALA:HB3	2.09	0.87
1:E:440:SER:CB	1:E:443:GLN:HA	2.05	0.87
1:C:524:TYR:CZ	1:C:533:LEU:HD21	2.09	0.87
2:K:50:GLU:O	2:K:86:ALA:HB1	1.74	0.86
2:L:50:GLU:O	2:L:86:ALA:CB	2.23	0.86
1:A:308:LYS:NZ	1:A:336:ALA:HB1	1.90	0.86
2:G:50:GLU:O	2:G:86:ALA:CB	2.24	0.85
1:A:209:ASN:OD1	1:A:317:ARG:HA	1.77	0.85
2:H:61:MET:HE3	2:H:93:THR:CG2	2.05	0.85

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:540:TYR:HH	1:C:528:HIS:HB2	1.41	0.85
2:I:17:VAL:HG12	2:I:33:ILE:HG22	1.59	0.85
1:B:236:VAL:HB	1:B:237:PRO:HD2	1.57	0.84
2:S:124:LYS:HA	2:S:126:PHE:CE1	2.12	0.84
1:D:547:GLY:O	1:D:551:ASP:HB3	1.77	0.84
1:E:438:GLU:O	1:E:439:LYS:CG	2.22	0.84
2:I:31:PHE:CE2	2:J:21:ILE:HD11	2.13	0.83
1:A:250:ILE:CG2	1:A:290:ILE:CG2	2.56	0.83
1:B:637:THR:CB	1:B:638:PRO:HD3	2.09	0.83
1:D:547:GLY:O	1:D:551:ASP:CB	2.27	0.83
1:F:677:GLY:O	1:F:728:GLY:HA2	1.76	0.83
1:D:299:GLY:HA2	1:E:297:SER:OG	1.77	0.83
1:F:619:LEU:O	2:H:96:PHE:HZ	1.62	0.82
2:K:50:GLU:O	2:K:86:ALA:CB	2.26	0.82
2:I:111:SER:OG	2:I:136:HIS:HE1	1.61	0.82
2:L:17:VAL:CG1	2:L:32:ASP:OD1	2.27	0.82
2:M:17:VAL:CG1	2:M:32:ASP:OD1	2.27	0.82
2:L:50:GLU:O	2:L:86:ALA:HB1	1.80	0.82
1:E:440:SER:OG	1:E:443:GLN:HA	1.79	0.82
2:O:29:ARG:HB3	2:O:31:PHE:HE1	1.45	0.82
1:C:586:LEU:HD12	1:D:523:GLU:OE2	1.78	0.82
1:D:499:VAL:CG1	1:D:501:LYS:HG3	2.11	0.81
1:B:625:SER:O	1:B:628:ALA:HB2	1.79	0.81
1:C:527:ARG:CA	1:C:570:HIS:CD2	2.62	0.81
2:H:105:CYS:HB3	2:H:127:CYS:HA	1.62	0.81
1:D:567:GLU:OE2	1:D:606:ASN:HB2	1.81	0.81
5:E:802:ADP:O2A	1:F:221:THR:CB	2.29	0.81
1:A:258:LYS:O	1:A:299:GLY:N	2.14	0.81
2:N:124:LYS:HA	2:N:126:PHE:CZ	2.16	0.80
2:I:18:PRO:HG2	2:I:33:ILE:HD13	1.62	0.80
1:A:311:LEU:HD12	1:A:311:LEU:N	1.96	0.80
2:H:18:PRO:HG2	2:H:33:ILE:CD1	2.05	0.80
2:J:31:PHE:HE2	2:K:21:ILE:HD11	1.35	0.80
2:M:18:PRO:HG2	2:M:33:ILE:CD1	2.11	0.80
1:E:719:GLU:OE1	1:E:723:GLY:HA3	1.78	0.80
1:A:208:ASN:ND2	1:A:317:ARG:HD2	1.97	0.80
2:J:31:PHE:HZ	2:K:21:ILE:HD12	1.45	0.80
2:H:17:VAL:CG1	2:H:33:ILE:CG2	2.51	0.79
1:B:389:ILE:CG2	1:B:397:LYS:HD3	2.12	0.79
1:B:626:THR:O	1:B:628:ALA:N	2.15	0.79
1:D:348:GLU:CD	1:D:393:HIS:HB3	2.03	0.79

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:617:ILE:CG2	2:I:40:GLU:HG3	2.12	0.79
1:D:567:GLU:CD	1:D:606:ASN:H	1.86	0.79
2:N:124:LYS:HA	2:N:126:PHE:CE1	2.18	0.79
1:B:540:TYR:CZ	1:C:528:HIS:HD2	1.78	0.79
2:G:125:ARG:O	2:G:199:VAL:HB	1.83	0.79
1:D:236:VAL:HG12	1:D:237:PRO:CD	2.12	0.79
1:E:437:PRO:O	1:E:438:GLU:HB2	0.90	0.78
2:I:31:PHE:HE2	2:J:21:ILE:CD1	1.95	0.78
1:B:540:TYR:OH	1:C:528:HIS:HB3	1.79	0.78
1:B:637:THR:CB	1:B:638:PRO:CD	2.61	0.78
1:B:633:LYS:CG	1:B:641:ARG:HH12	1.95	0.78
2:L:124:LYS:HA	2:L:126:PHE:CE1	2.19	0.78
2:I:111:SER:OG	2:I:136:HIS:CE1	2.37	0.78
2:L:17:VAL:CG1	2:L:33:ILE:HG22	2.14	0.78
1:C:439:LYS:H	1:C:439:LYS:CE	1.96	0.78
1:B:296:ALA:HB2	3:X:1:UNK:O	1.80	0.78
1:B:237:PRO:HD2	1:B:240:MET:HB2	1.65	0.78
2:H:31:PHE:CZ	2:I:21:ILE:CG1	2.65	0.78
1:B:354:THR:CG2	1:B:395:PRO:HB3	2.13	0.77
1:A:311:LEU:HD12	1:A:311:LEU:H	1.48	0.77
1:B:578:LEU:CD1	1:B:643:ARG:NH1	2.43	0.77
1:C:720:LEU:O	1:C:726:VAL:HG23	1.85	0.77
2:L:56:LEU:HD11	2:M:33:ILE:HG21	1.67	0.77
2:P:22:GLU:OE2	2:P:31:PHE:HZ	1.68	0.77
1:E:440:SER:HB2	1:E:443:GLN:N	1.98	0.77
2:J:29:ARG:HG2	2:K:28:GLU:OE2	1.85	0.77
2:G:128:LEU:CD2	2:G:129:PRO:HD2	2.15	0.77
1:B:195:LEU:O	1:B:199:ILE:HG12	1.85	0.76
2:J:29:ARG:HG2	2:K:28:GLU:CD	2.05	0.76
2:N:20:VAL:HB	2:O:63:PHE:CZ	2.20	0.76
2:O:29:ARG:HB3	2:O:31:PHE:CE1	2.21	0.76
2:L:17:VAL:HG11	2:L:32:ASP:OD1	1.83	0.76
1:A:208:ASN:ND2	1:A:317:ARG:CD	2.49	0.76
2:I:32:ASP:OD2	2:I:35:SER:OG	2.02	0.76
1:B:215:GLU:OE2	1:C:555:LYS:HE2	1.85	0.75
2:L:17:VAL:HG13	2:L:33:ILE:HG22	1.68	0.75
2:J:124:LYS:HA	2:J:126:PHE:CE1	2.21	0.75
1:A:308:LYS:CE	1:A:336:ALA:HB1	2.15	0.75
1:E:440:SER:N	1:E:441:VAL:HA	2.02	0.75
1:B:389:ILE:HG22	1:B:397:LYS:HD3	1.67	0.75
1:E:348:GLU:CD	1:E:394:LEU:H	1.90	0.75

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:440:SER:HB2	1:E:443:GLN:CA	2.17	0.75
2:N:21:ILE:HD11	2:O:31:PHE:HE2	1.51	0.75
1:D:538:PRO:CB	1:E:536:ALA:HB2	2.16	0.75
1:E:438:GLU:C	1:E:439:LYS:HG2	2.07	0.75
1:D:499:VAL:HG12	1:D:501:LYS:HG3	1.69	0.75
2:O:22:GLU:OE2	2:O:39:LYS:NZ	2.20	0.75
1:B:349:PRO:CG	1:B:395:PRO:HD3	2.18	0.74
2:I:29:ARG:CG	2:I:31:PHE:CZ	2.71	0.74
1:A:315:LYS:HD2	1:A:315:LYS:N	2.02	0.74
1:B:637:THR:HB	1:B:638:PRO:CD	2.17	0.74
1:D:354:THR:HG23	1:D:395:PRO:HB3	1.68	0.74
2:H:17:VAL:HG12	2:H:33:ILE:HG22	1.67	0.74
2:P:22:GLU:OE2	2:P:31:PHE:CZ	2.40	0.74
1:A:260:ARG:HB3	3:X:1:UNK:CB	2.18	0.74
1:B:540:TYR:CE2	1:C:528:HIS:CD2	2.75	0.74
1:D:719:GLU:HB3	1:D:725:LEU:HD12	1.68	0.74
2:N:33:ILE:HD11	2:O:60:GLN:HG2	1.70	0.73
2:H:29:ARG:HH21	2:H:39:LYS:HZ2	1.33	0.73
1:A:250:ILE:HG21	1:A:290:ILE:HG22	1.69	0.73
1:A:284:ILE:CD1	1:A:318:VAL:HG11	2.18	0.73
1:E:436:ILE:HG22	1:E:437:PRO:N	2.04	0.73
2:H:26:ARG:NE	2:H:26:ARG:H	1.87	0.73
2:H:61:MET:CE	2:H:93:THR:CG2	2.65	0.73
3:X:7:UNK:C	3:X:8:UNK:O	2.19	0.73
1:E:440:SER:HB2	1:E:443:GLN:HA	1.68	0.73
1:B:389:ILE:HB	1:B:397:LYS:CD	2.20	0.72
1:E:441:VAL:CG2	1:E:478:ARG:O	2.37	0.72
2:H:17:VAL:HG13	2:H:33:ILE:HG21	1.69	0.72
1:A:287:ILE:HG22	1:A:321:SER:H	1.55	0.72
1:A:307:ILE:HD12	1:A:340:ARG:CZ	2.17	0.72
1:B:263:PHE:CE1	1:B:293:ALA:HB1	2.23	0.72
1:C:524:TYR:CE2	1:C:533:LEU:HD21	2.25	0.72
1:A:288:HIS:HA	1:A:291:ILE:HD11	1.70	0.72
1:A:304:ALA:O	1:A:307:ILE:HG13	1.88	0.72
2:N:17:VAL:HG12	2:N:32:ASP:OD1	1.87	0.72
1:D:302:ASP:OD1	1:D:302:ASP:N	2.14	0.72
2:G:50:GLU:O	2:G:86:ALA:HB1	1.88	0.72
1:A:250:ILE:CD1	1:A:290:ILE:HG12	2.19	0.72
2:P:17:VAL:HG11	2:P:32:ASP:OD1	1.90	0.72
1:C:527:ARG:H	1:C:570:HIS:CD2	2.08	0.72
2:H:115:PHE:CE1	2:H:163:MET:HE3	2.25	0.72

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:32:ASP:OD2	2:I:35:SER:CA	2.37	0.72
1:B:630:GLU:C	1:B:632:ILE:H	1.92	0.71
2:I:29:ARG:HH11	2:I:29:ARG:CG	2.03	0.71
2:T:124:LYS:HA	2:T:126:PHE:CE1	2.24	0.71
1:E:438:GLU:C	1:E:439:LYS:CG	2.58	0.71
1:F:619:LEU:O	2:H:96:PHE:CZ	2.44	0.71
1:A:250:ILE:CG1	1:A:290:ILE:HG21	2.19	0.71
1:B:236:VAL:HB	1:B:237:PRO:CD	2.19	0.71
1:E:335:ARG:HH22	5:E:802:ADP:PB	2.13	0.71
1:E:441:VAL:HG21	1:E:478:ARG:C	2.11	0.71
1:A:537:PRO:HG3	1:B:528:HIS:NE2	1.98	0.71
1:C:439:LYS:HE2	1:C:439:LYS:N	2.05	0.71
1:D:538:PRO:HB2	1:E:536:ALA:CB	2.19	0.71
5:E:802:ADP:O2B	1:F:217:GLY:N	2.23	0.71
1:A:537:PRO:HG2	1:A:540:TYR:CD1	2.25	0.71
1:E:441:VAL:HG13	1:E:442:SER:N	2.06	0.71
2:J:31:PHE:CE1	2:K:21:ILE:HG13	2.25	0.71
2:J:56:LEU:HD11	2:K:33:ILE:HG21	1.73	0.71
1:E:443:GLN:HG3	1:E:444:SER:N	2.06	0.71
1:B:540:TYR:HH	1:C:528:HIS:CB	1.96	0.70
2:I:29:ARG:CG	2:I:31:PHE:CE1	2.74	0.70
1:A:262:ASP:OD1	1:A:265:LYS:HE2	1.91	0.70
2:Q:124:LYS:HA	2:Q:126:PHE:CE1	2.26	0.70
2:H:103:THR:HG23	2:H:120:GLY:HA3	1.73	0.70
1:A:288:HIS:N	1:A:291:ILE:HD11	2.07	0.70
1:E:442:SER:O	1:E:443:GLN:C	2.30	0.70
1:F:616:SER:HB2	1:F:621:HIS:HB2	1.74	0.70
1:E:440:SER:CB	1:E:443:GLN:CA	2.70	0.70
1:C:527:ARG:HA	1:C:570:HIS:CG	2.27	0.69
1:F:619:LEU:HD21	2:H:62:LEU:HD21	1.72	0.69
2:O:124:LYS:HA	2:O:126:PHE:CE1	2.26	0.69
1:A:208:ASN:HD21	1:A:317:ARG:HD3	1.57	0.69
1:B:581:MET:HE2	1:B:640:PHE:CE1	2.27	0.69
1:C:527:ARG:N	1:C:570:HIS:HD2	1.87	0.69
1:C:570:HIS:HB3	1:C:573:VAL:HG23	1.75	0.69
1:D:260:ARG:CZ	1:D:298:GLY:O	2.40	0.69
1:D:296:ALA:C	1:D:297:SER:HG	1.91	0.69
2:H:31:PHE:CZ	2:I:21:ILE:HG13	2.17	0.69
1:C:439:LYS:NZ	1:C:439:LYS:HB3	2.06	0.69
2:I:17:VAL:HG13	2:I:33:ILE:HG21	1.73	0.69
2:J:17:VAL:CG1	2:J:33:ILE:HG22	2.23	0.69

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:357:ILE:HD11	1:B:395:PRO:CG	2.23	0.69
1:E:719:GLU:O	1:E:723:GLY:N	2.26	0.69
2:I:29:ARG:HG3	2:I:29:ARG:NH1	2.07	0.69
1:B:540:TYR:CZ	1:C:528:HIS:HB2	2.27	0.68
1:A:307:ILE:O	1:A:309:PRO:N	2.26	0.68
2:H:85:THR:O	2:H:85:THR:OG1	2.10	0.68
1:B:354:THR:HG23	1:B:395:PRO:HB2	1.73	0.68
1:D:231:ILE:HA	1:D:236:VAL:HG21	1.75	0.68
1:B:632:ILE:O	1:B:635:ILE:HB	1.94	0.68
2:I:32:ASP:CG	2:I:35:SER:H	1.97	0.68
2:S:22:GLU:OE1	2:S:31:PHE:CE2	2.47	0.68
1:E:441:VAL:CG1	1:F:721:LEU:HD22	2.22	0.67
1:A:311:LEU:HD11	1:A:340:ARG:HH11	1.59	0.67
1:C:439:LYS:O	1:C:439:LYS:HG2	1.93	0.67
2:N:124:LYS:C	2:N:126:PHE:CE1	2.67	0.67
2:M:17:VAL:HG12	2:M:33:ILE:HG22	1.74	0.67
1:A:250:ILE:HD13	1:A:290:ILE:HG23	1.76	0.67
5:E:802:ADP:H5'1	1:F:219:GLY:HA2	1.75	0.67
1:E:540:TYR:O	4:Y:11:UNK:HA	1.94	0.67
1:B:607:ALA:HB3	1:B:632:ILE:HD11	1.76	0.67
1:D:500:GLY:O	1:D:504:VAL:N	2.27	0.67
1:E:244:THR:CG2	1:E:246:TYR:CZ	2.66	0.67
1:E:540:TYR:HA	4:Y:11:UNK:HA	1.77	0.67
1:B:389:ILE:HB	1:B:397:LYS:HD2	1.77	0.67
1:A:208:ASN:HD21	1:A:317:ARG:CD	2.06	0.66
1:A:288:HIS:HB2	1:A:326:GLU:HB3	1.77	0.66
1:E:440:SER:HB2	1:E:441:VAL:O	1.94	0.66
2:N:21:ILE:HD11	2:O:31:PHE:CE2	2.30	0.66
1:D:354:THR:HG23	1:D:395:PRO:CB	2.24	0.66
2:P:17:VAL:CG1	2:P:32:ASP:OD1	2.43	0.66
1:B:296:ALA:HB2	3:X:1:UNK:N	2.11	0.66
2:H:115:PHE:CD1	2:H:163:MET:HE3	2.31	0.66
2:G:106:MET:CB	2:G:128:LEU:HD12	2.26	0.65
2:I:29:ARG:CD	2:I:31:PHE:HZ	2.00	0.65
1:E:441:VAL:HG13	1:E:442:SER:H	1.60	0.65
1:F:617:ILE:HD11	2:H:63:PHE:HA	1.78	0.65
1:B:287:ILE:HG22	1:B:322:THR:HB	1.76	0.65
1:D:499:VAL:HG13	1:D:500:GLY:N	2.11	0.65
1:E:534:ILE:O	1:E:547:GLY:HA3	1.96	0.65
1:B:218:VAL:HG22	1:B:346:ILE:HG22	1.79	0.65
1:C:436:ILE:HD11	1:C:598:ASN:CG	2.17	0.65

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:567:GLU:OE1	1:A:605:THR:HA	1.97	0.65
1:D:231:ILE:HA	1:D:236:VAL:CG2	2.26	0.65
1:C:527:ARG:HA	1:C:570:HIS:CD2	2.31	0.65
1:E:244:THR:HG21	1:E:246:TYR:OH	1.97	0.65
2:I:21:ILE:HD13	2:I:30:SER:HB2	1.79	0.65
2:J:76:TYR:CD2	2:J:106:MET:CE	2.80	0.65
5:E:802:ADP:O2'	1:F:222:ALA:HB2	1.97	0.65
1:A:250:ILE:HD11	1:A:290:ILE:HG12	1.78	0.65
2:I:21:ILE:HD13	2:I:30:SER:CB	2.27	0.65
1:E:719:GLU:CB	1:E:723:GLY:HA3	2.27	0.64
2:J:29:ARG:HG2	2:K:28:GLU:OE1	1.97	0.64
1:C:524:TYR:CE2	1:C:533:LEU:CD2	2.80	0.64
2:Q:20:VAL:HB	2:R:63:PHE:CZ	2.32	0.64
1:C:567:GLU:HG2	1:C:567:GLU:O	1.97	0.64
2:R:29:ARG:HB3	2:R:31:PHE:HE1	1.60	0.64
2:J:29:ARG:CG	2:K:28:GLU:OE1	2.45	0.64
1:A:259:TYR:HE2	3:X:2:UNK:O	1.70	0.64
1:D:301:VAL:CG2	1:E:295:ALA:HB1	2.28	0.64
2:L:17:VAL:HG12	2:L:32:ASP:OD1	1.96	0.64
2:P:17:VAL:CG1	2:P:32:ASP:OD2	2.46	0.64
1:C:719:GLU:HB3	1:C:725:LEU:HB2	1.80	0.64
1:D:389:ILE:O	1:D:397:LYS:HD3	1.97	0.64
1:D:566:ILE:O	1:D:566:ILE:HG13	1.98	0.64
2:J:29:ARG:CD	2:K:28:GLU:OE1	2.45	0.64
1:C:527:ARG:CB	1:C:570:HIS:NE2	2.58	0.63
1:A:537:PRO:HG3	1:B:528:HIS:CD2	2.34	0.63
1:C:254:LEU:CD2	1:C:263:PHE:CE1	2.82	0.63
2:G:128:LEU:HD22	2:G:129:PRO:CD	2.24	0.63
1:D:389:ILE:O	1:D:397:LYS:CD	2.47	0.63
1:A:537:PRO:CG	1:B:528:HIS:CD2	2.82	0.63
1:B:610:ARG:O	1:B:610:ARG:HG2	1.99	0.63
1:B:630:GLU:HB3	1:B:633:LYS:HE3	1.80	0.62
1:D:236:VAL:CG1	1:D:237:PRO:HD2	2.23	0.62
2:H:26:ARG:O	2:H:26:ARG:HG2	1.99	0.62
1:E:436:ILE:CG2	1:E:437:PRO:N	2.61	0.62
2:J:17:VAL:HG13	2:J:33:ILE:HG22	1.82	0.62
2:N:124:LYS:CA	2:N:126:PHE:CE1	2.81	0.62
1:B:288:HIS:CE1	1:B:326:GLU:CD	2.72	0.62
1:E:441:VAL:HG21	1:E:478:ARG:HB3	1.82	0.62
1:B:218:VAL:HG21	1:B:346:ILE:O	2.00	0.62
2:K:17:VAL:HG12	2:K:33:ILE:HG22	1.78	0.62

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:19:MET:HE3	2:K:31:PHE:O	1.99	0.62
1:B:263:PHE:HZ	1:B:293:ALA:HB3	1.64	0.62
2:G:129:PRO:HD2	2:M:92:ASP:OD2	2.00	0.62
1:D:567:GLU:OE1	1:D:605:THR:HA	1.99	0.62
1:C:291:ILE:HG22	1:C:291:ILE:O	2.00	0.62
1:E:348:GLU:HG2	1:E:349:PRO:HD2	1.82	0.62
1:B:629:MET:SD	1:B:631:GLU:HB2	2.40	0.62
2:J:124:LYS:HA	2:J:126:PHE:CZ	2.35	0.62
1:A:308:LYS:NZ	1:A:336:ALA:CB	2.62	0.61
1:C:261:GLY:O	1:C:265:LYS:HG3	2.00	0.61
1:B:732:THR:HG22	1:B:732:THR:O	2.00	0.61
1:D:499:VAL:HG13	1:D:501:LYS:H	1.64	0.61
5:E:802:ADP:C8	1:F:395:PRO:HG2	2.34	0.61
2:R:29:ARG:HB3	2:R:31:PHE:CE1	2.35	0.61
1:D:271:LEU:O	1:D:275:GLU:HG3	2.00	0.61
1:F:622:GLN:O	1:F:624:ASN:N	2.33	0.61
1:A:260:ARG:HA	1:A:299:GLY:HA2	1.82	0.61
1:C:254:LEU:HD21	1:C:263:PHE:CE1	2.34	0.61
1:C:719:GLU:HB3	1:C:724:SER:OG	2.00	0.61
1:A:287:ILE:HG22	1:A:321:SER:O	2.01	0.61
1:A:310:LEU:HD23	1:A:315:LYS:HD3	1.82	0.61
1:D:553:VAL:HG11	1:D:594:ALA:HB1	1.82	0.61
1:D:294:GLY:HA3	1:D:302:ASP:HA	1.82	0.61
2:H:61:MET:CE	2:H:93:THR:HG22	2.30	0.61
2:L:56:LEU:CD1	2:M:33:ILE:HG21	2.30	0.61
2:P:124:LYS:HA	2:P:126:PHE:CE1	2.36	0.61
1:D:547:GLY:O	1:D:551:ASP:HB2	2.01	0.61
1:A:348:GLU:OE2	1:A:394:LEU:CB	2.48	0.60
1:E:441:VAL:HG12	1:F:721:LEU:HD23	1.79	0.60
2:T:29:ARG:HB3	2:T:31:PHE:HE1	1.65	0.60
1:C:290:ILE:HD12	1:C:290:ILE:O	2.01	0.60
1:F:617:ILE:CG2	2:I:40:GLU:CG	2.80	0.60
1:B:581:MET:HE3	1:B:643:ARG:HD3	1.83	0.60
1:E:440:SER:CB	1:E:443:GLN:N	2.64	0.60
2:H:103:THR:O	2:H:103:THR:OG1	2.08	0.60
2:J:76:TYR:CD2	2:J:106:MET:HE1	2.37	0.60
2:J:29:ARG:HH21	2:K:28:GLU:HB2	1.67	0.60
6:E:803:AGS:O2A	6:E:803:AGS:H4'	2.01	0.60
1:F:621:HIS:HD2	2:I:206:ARG:NH1	2.00	0.60
2:G:28:GLU:OE2	2:M:26:ARG:NE	2.35	0.60
2:L:124:LYS:HA	2:L:126:PHE:CZ	2.36	0.59

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:S:21:ILE:CD1	2:S:30:SER:HB2	2.31	0.59
1:A:311:LEU:HD11	1:A:340:ARG:HD2	1.83	0.59
1:B:357:ILE:HD11	1:B:395:PRO:HG2	1.82	0.59
2:N:17:VAL:HG13	2:N:33:ILE:HG21	1.76	0.59
1:A:264:GLU:OE2	1:A:300:GLN:O	2.20	0.59
2:G:106:MET:CB	2:G:128:LEU:CD1	2.80	0.59
2:H:26:ARG:H	2:H:26:ARG:HE	1.49	0.59
2:H:90:ILE:HG22	2:H:90:ILE:O	2.03	0.59
1:B:296:ALA:CB	3:X:1:UNK:N	2.65	0.59
2:S:21:ILE:HD11	2:T:31:PHE:HE2	1.67	0.59
2:H:105:CYS:HB3	2:H:127:CYS:CB	2.33	0.59
1:B:579:GLN:O	1:B:579:GLN:HG2	2.01	0.59
2:J:104:ILE:HA	2:J:126:PHE:O	2.02	0.59
1:A:551:ASP:OD1	1:A:551:ASP:N	2.34	0.58
1:B:503:GLU:OE1	1:B:503:GLU:HA	2.03	0.58
1:F:617:ILE:HG23	1:F:617:ILE:O	2.02	0.58
1:B:349:PRO:HD2	1:B:394:LEU:O	2.04	0.58
2:H:105:CYS:HB3	2:H:127:CYS:CA	2.30	0.58
2:K:19:MET:CE	2:K:31:PHE:O	2.52	0.58
1:C:719:GLU:CB	1:C:724:SER:OG	2.51	0.58
2:L:26:ARG:HB2	2:L:26:ARG:NH1	2.19	0.58
1:E:175:ASN:HB2	1:E:246:TYR:CE2	2.38	0.58
1:D:719:GLU:O	1:D:725:LEU:HD12	2.04	0.58
2:H:63:PHE:CZ	2:I:20:VAL:HB	2.39	0.58
2:H:29:ARG:HH21	2:H:39:LYS:HZ1	1.47	0.58
1:A:537:PRO:HG3	1:B:528:HIS:ND1	2.16	0.58
2:G:128:LEU:CD2	2:G:129:PRO:CD	2.81	0.58
1:E:534:ILE:O	1:E:547:GLY:CA	2.52	0.58
2:H:47:GLY:O	2:H:79:SER:HB2	2.04	0.58
1:F:621:HIS:HD2	2:I:206:ARG:CZ	2.15	0.58
2:H:32:ASP:OD2	2:I:15:ALA:CB	2.41	0.58
2:I:29:ARG:HD3	2:I:31:PHE:HE1	0.80	0.58
1:A:349:PRO:HD2	1:A:395:PRO:HD3	1.87	0.57
1:C:524:TYR:CZ	1:C:533:LEU:CD2	2.86	0.57
1:C:540:TYR:HA	4:Y:7:UNK:HA	1.85	0.57
1:C:524:TYR:CE2	1:C:533:LEU:HG	2.39	0.57
1:D:348:GLU:OE2	1:D:393:HIS:CB	2.44	0.57
2:L:17:VAL:HG13	2:L:33:ILE:CG2	2.34	0.57
2:S:124:LYS:CA	2:S:126:PHE:CE1	2.87	0.57
1:D:297:SER:HB2	1:D:298:GLY:HA2	1.86	0.57
2:N:17:VAL:CG1	2:N:33:ILE:CG2	2.48	0.57

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:626:THR:C	1:B:628:ALA:N	2.55	0.57
1:C:439:LYS:HB3	1:C:439:LYS:HZ3	1.68	0.57
1:D:238:GLU:CD	1:D:238:GLU:H	2.08	0.57
1:F:617:ILE:HG21	2:I:40:GLU:CG	2.30	0.57
1:B:578:LEU:CD1	1:B:643:ARG:HD2	2.26	0.57
2:N:33:ILE:CG2	2:O:56:LEU:CD1	2.81	0.57
1:B:296:ALA:CB	3:X:1:UNK:CA	2.77	0.57
1:B:629:MET:HG3	1:B:631:GLU:HB2	1.87	0.57
2:H:115:PHE:CE1	2:H:163:MET:CE	2.88	0.57
1:E:723:GLY:O	1:E:726:VAL:HG13	2.05	0.56
2:H:51:ASP:OD1	2:H:86:ALA:CB	2.52	0.56
1:B:566:ILE:HG13	1:B:566:ILE:O	2.05	0.56
1:E:540:TYR:O	4:Y:10:UNK:O	2.21	0.56
2:I:29:ARG:HG2	2:I:31:PHE:CZ	2.39	0.56
2:Q:124:LYS:HA	2:Q:126:PHE:CZ	2.41	0.56
1:B:263:PHE:HZ	1:B:293:ALA:CB	2.11	0.56
2:G:28:GLU:OE2	2:M:26:ARG:CD	2.54	0.56
2:I:137:GLN:HE22	2:O:184:ARG:HH22	1.54	0.56
2:R:155:GLU:HA	2:R:155:GLU:OE1	2.06	0.56
2:S:124:LYS:HA	2:S:126:PHE:CZ	2.41	0.56
2:T:29:ARG:HB3	2:T:31:PHE:CE1	2.41	0.56
2:T:91:TYR:OH	2:T:166:LEU:HD22	2.05	0.56
1:B:238:GLU:OE2	1:C:414:VAL:HG12	2.06	0.56
1:C:719:GLU:CB	1:C:725:LEU:HB2	2.36	0.56
2:I:137:GLN:NE2	2:I:183:GLU:O	2.38	0.56
2:M:18:PRO:HG2	2:M:33:ILE:HB	1.86	0.56
2:S:21:ILE:HD11	2:T:31:PHE:CE2	2.40	0.56
2:L:40:GLU:O	2:L:42:VAL:HG23	2.05	0.56
1:E:186:ASP:OD2	1:E:364:LYS:NZ	2.39	0.56
2:H:105:CYS:O	2:H:128:LEU:HG	2.06	0.56
1:A:311:LEU:HD13	1:A:311:LEU:C	2.26	0.56
1:B:288:HIS:CE1	1:B:326:GLU:OE1	2.58	0.56
1:D:345:ASP:OD2	1:E:435:ARG:CZ	2.53	0.56
2:H:29:ARG:NH2	2:H:39:LYS:HZ2	2.03	0.56
2:L:124:LYS:CA	2:L:126:PHE:CE1	2.89	0.56
1:E:244:THR:HG22	1:E:246:TYR:CD1	2.41	0.56
2:M:17:VAL:HG13	2:M:33:ILE:HG21	1.83	0.55
2:L:60:GLN:HG2	2:M:33:ILE:HD11	1.88	0.55
1:A:288:HIS:HA	1:A:291:ILE:CD1	2.34	0.55
2:H:51:ASP:OD1	2:H:86:ALA:HB1	2.07	0.55
2:N:124:LYS:O	2:N:126:PHE:CE1	2.60	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:357:ILE:CD1	1:B:395:PRO:HG3	2.37	0.55
1:D:499:VAL:HG22	1:D:500:GLY:H	1.71	0.55
1:C:263:PHE:HZ	1:C:293:ALA:HB2	1.61	0.55
2:H:88:MET:O	2:H:88:MET:HG3	2.06	0.55
2:P:21:ILE:CD1	2:P:30:SER:HB2	2.36	0.55
2:P:185:ASP:OD1	2:P:185:ASP:N	2.38	0.55
1:A:250:ILE:HD13	1:A:290:ILE:HG12	1.88	0.55
1:A:287:ILE:CG2	1:A:321:SER:H	2.20	0.55
1:D:725:LEU:HD23	1:D:746:PHE:CE1	2.42	0.55
1:E:719:GLU:OE1	1:E:723:GLY:HA2	2.05	0.55
2:H:29:ARG:NH2	2:H:39:LYS:NZ	2.46	0.55
2:H:105:CYS:HB3	2:H:127:CYS:HB2	1.89	0.55
1:B:194:GLU:N	1:B:194:GLU:OE1	2.40	0.54
1:B:629:MET:CG	1:B:631:GLU:HB2	2.36	0.54
1:C:260:ARG:HH12	1:D:300:GLN:HG2	1.71	0.54
2:H:77:ILE:HG22	2:H:77:ILE:O	2.07	0.54
2:P:17:VAL:CG1	2:P:32:ASP:CG	2.75	0.54
1:D:236:VAL:CG1	1:D:237:PRO:CD	2.84	0.54
1:E:719:GLU:HA	1:E:723:GLY:N	2.22	0.54
2:H:103:THR:CG2	2:H:120:GLY:HA3	2.36	0.54
1:B:195:LEU:CD1	1:B:230:ARG:HE	2.21	0.54
1:C:526:GLU:C	1:C:570:HIS:CD2	2.78	0.54
1:D:297:SER:HA	1:D:299:GLY:H	1.72	0.54
2:I:50:GLU:O	2:I:86:ALA:HB2	1.99	0.54
1:C:527:ARG:CB	1:C:570:HIS:CE1	2.87	0.54
2:R:29:ARG:HD2	2:R:31:PHE:CZ	2.42	0.54
1:A:287:ILE:HG22	1:A:321:SER:N	2.22	0.54
1:A:311:LEU:N	1:A:311:LEU:CD1	2.70	0.54
1:A:290:ILE:HD12	1:A:290:ILE:O	2.08	0.54
1:B:195:LEU:HD11	1:B:230:ARG:HE	1.72	0.54
2:R:20:VAL:HB	2:S:63:PHE:CZ	2.43	0.54
1:B:450:LYS:HB2	1:C:722:PHE:HE2	1.71	0.54
2:O:29:ARG:HD2	2:O:31:PHE:CZ	2.42	0.54
1:A:259:TYR:O	1:A:299:GLY:HA2	2.09	0.53
1:A:250:ILE:CG2	1:A:290:ILE:HG22	2.33	0.53
1:E:335:ARG:CZ	5:E:802:ADP:O3B	2.52	0.53
2:H:18:PRO:HD2	2:H:33:ILE:HG21	1.90	0.53
2:H:26:ARG:HG2	2:H:26:ARG:HH11	1.72	0.53
2:H:95:GLN:NE2	2:H:95:GLN:N	2.56	0.53
1:D:622:GLN:NE2	2:G:74:TYR:CE1	2.76	0.53
5:E:802:ADP:C8	1:F:395:PRO:CG	2.90	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:25:SER:OG	2:T:26:ARG:N	2.42	0.53
1:D:345:ASP:OD2	1:E:435:ARG:NE	2.42	0.53
1:E:442:SER:O	1:E:443:GLN:O	2.27	0.53
1:D:389:ILE:HB	1:D:397:LYS:HD2	1.91	0.53
2:K:20:VAL:HG22	2:K:32:ASP:O	2.08	0.53
2:M:18:PRO:HG3	2:M:33:ILE:HD13	1.85	0.53
2:T:104:ILE:HA	2:T:126:PHE:O	2.09	0.53
1:E:719:GLU:OE1	1:E:724:SER:N	2.42	0.53
2:G:128:LEU:HD22	2:M:92:ASP:OD2	2.09	0.53
1:B:214:GLY:HA2	1:B:324:TYR:CE1	2.44	0.53
2:I:29:ARG:HG2	2:I:31:PHE:CE1	2.44	0.53
1:B:608:GLY:HA3	1:B:629:MET:HB3	1.89	0.53
1:C:427:GLU:HB3	1:C:439:LYS:HZ2	1.74	0.53
2:J:124:LYS:CA	2:J:126:PHE:CE1	2.91	0.53
1:A:208:ASN:O	1:A:317:ARG:HB3	2.08	0.52
1:B:710:ASP:OD1	1:B:714:LYS:NZ	2.42	0.52
1:E:348:GLU:HG2	1:E:394:LEU:HB2	1.91	0.52
1:A:259:TYR:O	1:A:299:GLY:CA	2.57	0.52
1:A:287:ILE:HG22	1:A:321:SER:C	2.30	0.52
1:C:439:LYS:N	1:C:439:LYS:HZ3	2.07	0.52
1:E:440:SER:H	1:E:441:VAL:HA	1.71	0.52
2:L:124:LYS:C	2:L:126:PHE:CE1	2.82	0.52
1:A:284:ILE:HD12	1:A:318:VAL:HG11	1.88	0.52
1:D:499:VAL:CG1	1:D:501:LYS:CG	2.86	0.52
1:E:719:GLU:O	1:E:723:GLY:CA	2.57	0.52
2:G:106:MET:HA	2:G:128:LEU:CD1	2.33	0.52
2:J:17:VAL:HG13	2:J:33:ILE:CG2	2.39	0.52
1:A:287:ILE:HG12	1:A:291:ILE:HG12	1.92	0.52
1:D:290:ILE:HD12	1:D:304:ALA:HB2	1.92	0.52
5:E:802:ADP:N1	1:F:188:LEU:HD12	2.24	0.52
1:C:726:VAL:HG12	1:C:726:VAL:O	2.10	0.52
1:D:275:GLU:OE2	1:D:310:LEU:HD22	2.10	0.52
1:F:671:VAL:O	1:F:675:GLN:HG3	2.09	0.52
2:G:128:LEU:HD22	2:M:92:ASP:CB	2.40	0.52
2:Q:25:SER:OG	2:Q:26:ARG:N	2.43	0.52
2:Q:104:ILE:HA	2:Q:126:PHE:O	2.09	0.52
1:A:308:LYS:HZ2	1:A:336:ALA:HB1	1.70	0.52
1:B:637:THR:OG1	1:B:638:PRO:CD	2.57	0.52
1:E:441:VAL:CG2	1:E:478:ARG:HB3	2.39	0.52
1:F:619:LEU:CD2	2:H:62:LEU:HD21	2.40	0.52
1:F:621:HIS:CD2	2:I:206:ARG:NH1	2.77	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:537:PRO:HG3	1:B:528:HIS:CG	2.44	0.52
6:E:803:AGS:O2A	6:E:803:AGS:O3'	2.28	0.52
2:O:124:LYS:HA	2:O:126:PHE:CZ	2.44	0.52
1:A:288:HIS:CG	1:A:326:GLU:HG3	2.45	0.52
1:D:260:ARG:HG2	1:D:300:GLN:OE1	2.09	0.52
1:D:343:LYS:NZ	1:D:345:ASP:OD1	2.40	0.52
1:F:617:ILE:HG22	2:I:40:GLU:HB3	1.92	0.52
2:N:33:ILE:CG2	2:O:56:LEU:HD11	2.22	0.52
1:B:330:ILE:HG22	1:B:330:ILE:O	2.10	0.51
1:E:503:GLU:HA	1:E:503:GLU:OE1	2.10	0.51
2:I:137:GLN:CD	2:P:145:GLN:CD	2.68	0.51
1:A:264:GLU:OE1	1:A:300:GLN:O	2.28	0.51
1:B:610:ARG:HG3	1:B:610:ARG:HH11	1.76	0.51
1:D:438:GLU:OE1	1:D:438:GLU:HA	2.10	0.51
2:O:104:ILE:HA	2:O:126:PHE:O	2.10	0.51
2:S:22:GLU:OE1	2:S:31:PHE:HE2	1.92	0.51
1:A:264:GLU:CD	1:A:300:GLN:O	2.48	0.51
1:A:311:LEU:CD1	1:A:340:ARG:HD2	2.40	0.51
1:B:389:ILE:HB	1:B:397:LYS:HD3	1.91	0.51
1:F:617:ILE:CG2	2:I:40:GLU:CB	2.89	0.51
2:H:31:PHE:CE2	2:I:21:ILE:HD11	2.45	0.51
2:I:25:SER:OG	2:I:26:ARG:N	2.42	0.51
2:Q:185:ASP:N	2:Q:185:ASP:OD1	2.41	0.51
1:A:537:PRO:HD3	1:B:528:HIS:NE2	1.98	0.51
2:H:112:MET:CE	2:H:115:PHE:CD2	2.93	0.51
2:I:21:ILE:CD1	2:I:30:SER:CB	2.88	0.51
2:L:104:ILE:HA	2:L:126:PHE:O	2.11	0.51
1:B:389:ILE:CB	1:B:397:LYS:HD3	2.40	0.51
1:E:719:GLU:CA	1:E:723:GLY:CA	2.70	0.51
1:C:719:GLU:CA	1:C:724:SER:OG	2.58	0.51
1:D:301:VAL:HG23	1:E:295:ALA:HB1	1.93	0.51
1:A:307:ILE:O	1:A:308:LYS:C	2.46	0.51
1:B:544:ASP:OD1	1:B:544:ASP:N	2.37	0.51
2:I:137:GLN:NE2	2:P:145:GLN:NE2	2.59	0.51
2:P:31:PHE:CD1	2:P:31:PHE:N	2.77	0.51
1:B:215:GLU:OE2	1:C:555:LYS:CE	2.56	0.51
1:B:491:PHE:N	1:B:491:PHE:CD1	2.79	0.51
1:C:524:TYR:HE2	1:C:533:LEU:HG	1.76	0.51
2:P:104:ILE:HA	2:P:126:PHE:O	2.10	0.51
2:S:104:ILE:HA	2:S:126:PHE:O	2.11	0.51
1:A:537:PRO:HD3	1:B:528:HIS:HE1	1.63	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:29:ARG:HB3	2:L:31:PHE:CE1	2.46	0.50
1:B:285:ASP:OD1	1:B:285:ASP:N	2.43	0.50
1:B:627:ASP:C	1:B:629:MET:H	2.13	0.50
1:E:461:PHE:N	6:E:803:AGS:HN62	2.09	0.50
2:H:89:SER:O	2:H:89:SER:OG	2.27	0.50
2:N:25:SER:OG	2:N:26:ARG:N	2.44	0.50
1:E:441:VAL:CG1	1:E:442:SER:N	2.74	0.50
2:G:128:LEU:CD2	2:M:92:ASP:HB3	2.42	0.50
2:R:25:SER:OG	2:R:26:ARG:N	2.43	0.50
1:A:308:LYS:HZ1	1:A:336:ALA:CB	2.25	0.50
1:B:357:ILE:CD1	1:B:395:PRO:CG	2.89	0.50
1:B:633:LYS:C	1:B:635:ILE:N	2.65	0.50
1:D:296:ALA:O	1:D:297:SER:CB	2.57	0.50
2:J:124:LYS:C	2:J:126:PHE:CE1	2.85	0.50
2:N:33:ILE:CD1	2:O:60:GLN:HG2	2.40	0.50
1:B:287:ILE:HG22	1:B:321:SER:O	2.12	0.50
1:C:436:ILE:HG12	1:C:598:ASN:ND2	2.27	0.50
1:E:437:PRO:CD	1:E:558:HIS:CE1	2.94	0.50
2:L:26:ARG:HB2	2:L:26:ARG:CZ	2.42	0.50
1:B:643:ARG:O	1:B:643:ARG:HG3	2.12	0.50
2:H:73:ILE:O	2:H:101:VAL:HA	2.11	0.50
2:I:31:PHE:CE2	2:J:21:ILE:CD1	2.86	0.50
1:F:621:HIS:CD2	1:F:621:HIS:H	2.29	0.50
2:T:124:LYS:HA	2:T:126:PHE:CZ	2.46	0.50
2:H:79:SER:O	2:H:79:SER:OG	2.22	0.50
2:O:124:LYS:CA	2:O:126:PHE:CE1	2.95	0.50
1:A:262:ASP:OD1	1:A:265:LYS:CE	2.60	0.49
1:D:231:ILE:CA	1:D:236:VAL:HG21	2.40	0.49
1:E:441:VAL:CG1	1:E:442:SER:H	2.25	0.49
2:J:76:TYR:CD2	2:J:106:MET:HE3	2.46	0.49
2:O:22:GLU:OE1	2:O:36:ARG:NE	2.45	0.49
1:B:296:ALA:HB3	3:X:1:UNK:C	2.31	0.49
1:B:427:GLU:OE2	1:B:438:GLU:N	2.44	0.49
1:B:195:LEU:CD1	1:B:230:ARG:NE	2.75	0.49
1:C:439:LYS:H	1:C:439:LYS:NZ	2.10	0.49
1:A:287:ILE:HG23	1:A:287:ILE:O	2.12	0.49
1:A:343:LYS:NZ	1:A:345:ASP:OD1	2.45	0.49
1:E:179:LEU:C	1:E:183:GLY:O	2.48	0.49
2:H:124:LYS:HA	2:H:126:PHE:CE1	2.47	0.49
2:I:21:ILE:CD1	2:I:30:SER:HB3	2.42	0.49
2:T:22:GLU:OE2	2:T:39:LYS:NZ	2.46	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:305:ASN:HB3	1:B:286:GLU:OE1	2.12	0.49
1:B:502:THR:OG1	6:B:802:AGS:PB	2.70	0.49
1:E:220:LYS:NZ	5:E:801:ADP:O3B	2.35	0.49
2:H:26:ARG:HG2	2:H:26:ARG:NH1	2.27	0.49
2:J:76:TYR:HD2	2:J:106:MET:HE3	1.77	0.49
1:C:682:VAL:O	1:C:687:ARG:NH1	2.45	0.49
1:E:441:VAL:HG21	1:E:478:ARG:CA	2.43	0.49
2:Q:21:ILE:CG1	2:R:31:PHE:HE2	2.25	0.49
1:A:284:ILE:HD11	1:A:318:VAL:HG11	1.93	0.49
1:A:288:HIS:CD2	1:A:289:THR:HG23	2.48	0.49
5:E:802:ADP:O2A	1:F:221:THR:HB	2.11	0.49
2:G:25:SER:OG	2:G:26:ARG:N	2.45	0.49
1:A:287:ILE:CG1	1:A:291:ILE:HG12	2.43	0.49
1:B:632:ILE:HA	1:B:635:ILE:HG13	1.95	0.49
1:D:436:ILE:HB	1:D:437:PRO:HD2	1.95	0.49
1:A:685:GLU:O	1:A:735:LEU:HD11	2.13	0.49
1:E:415:SER:O	1:E:417:ARG:N	2.46	0.49
2:H:40:GLU:O	2:H:42:VAL:HG23	2.13	0.49
2:H:72:ASP:OD1	2:H:100:ASP:HB2	2.13	0.49
2:J:25:SER:OG	2:J:26:ARG:N	2.45	0.49
1:C:719:GLU:HA	1:C:724:SER:OG	2.13	0.48
1:F:696:ASP:O	1:F:700:GLY:N	2.46	0.48
1:C:348:GLU:HG3	1:C:394:LEU:O	2.14	0.48
2:H:95:GLN:NE2	2:H:95:GLN:CA	2.75	0.48
2:T:126:PHE:HD2	2:T:201:SER:HG	1.61	0.48
1:A:288:HIS:C	1:A:291:ILE:HD11	2.33	0.48
1:E:441:VAL:HG13	1:F:721:LEU:HD22	1.93	0.48
2:T:124:LYS:CA	2:T:126:PHE:CE1	2.96	0.48
1:A:442:SER:OG	1:A:443:GLN:N	2.46	0.48
1:B:325:GLN:O	1:B:325:GLN:HG2	2.13	0.48
1:E:418:LYS:HA	1:E:418:LYS:CE	2.44	0.48
2:H:31:PHE:CZ	2:I:21:ILE:HG12	2.48	0.48
1:C:486:LYS:NZ	1:C:582:ASP:OD1	2.47	0.48
1:C:524:TYR:CE2	1:C:533:LEU:CG	2.97	0.48
1:E:175:ASN:HB2	1:E:246:TYR:HE2	1.77	0.48
2:G:51:ASP:OD1	2:G:86:ALA:HB2	2.12	0.48
2:M:127:CYS:SG	2:M:190:ALA:HB1	2.54	0.48
1:A:292:GLY:HA2	1:A:293:ALA:HA	1.56	0.48
2:H:65:GLU:HG3	2:H:97:ILE:HB	1.95	0.48
2:H:115:PHE:CE2	2:H:163:MET:HE1	2.48	0.48
1:B:450:LYS:HB2	1:C:722:PHE:CE2	2.49	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:716:LEU:HD23	1:C:725:LEU:CD2	2.44	0.48
2:P:21:ILE:HD13	2:P:30:SER:HB2	1.95	0.48
2:N:126:PHE:HD2	2:N:201:SER:OG	1.97	0.48
2:R:126:PHE:HD2	2:R:201:SER:OG	1.95	0.48
1:E:441:VAL:C	1:E:443:GLN:N	2.67	0.47
2:M:26:ARG:HB2	2:M:26:ARG:CZ	2.42	0.47
2:S:124:LYS:C	2:S:126:PHE:CE1	2.87	0.47
1:B:322:THR:HG21	1:B:327:PHE:HB2	1.95	0.47
2:I:137:GLN:OE1	2:P:145:GLN:HB3	2.13	0.47
2:K:63:PHE:CZ	2:L:20:VAL:CG1	2.97	0.47
2:P:17:VAL:HG12	2:P:32:ASP:CG	2.35	0.47
1:E:440:SER:N	1:E:441:VAL:CA	2.72	0.47
2:G:128:LEU:HD22	2:M:92:ASP:HB3	1.95	0.47
2:S:22:GLU:CD	2:S:31:PHE:HE2	2.18	0.47
1:B:171:ASN:OD1	1:B:171:ASN:N	2.45	0.47
1:D:567:GLU:OE2	1:D:606:ASN:CB	2.59	0.47
2:L:126:PHE:CD2	2:L:201:SER:OG	2.68	0.47
2:M:18:PRO:HD2	2:M:33:ILE:HG21	1.96	0.47
2:O:124:LYS:C	2:O:126:PHE:CE1	2.88	0.47
1:F:621:HIS:CD2	2:I:206:ARG:CZ	2.97	0.47
2:N:29:ARG:HD2	2:N:31:PHE:CE1	2.49	0.47
2:P:25:SER:OG	2:P:26:ARG:N	2.47	0.47
1:B:696:ASP:OD1	1:B:697:ARG:N	2.48	0.47
1:D:290:ILE:CD1	1:D:304:ALA:HB2	2.45	0.47
2:M:32:ASP:C	2:M:34:TYR:H	2.17	0.47
2:I:40:GLU:O	2:I:42:VAL:HG23	2.14	0.47
2:L:126:PHE:HD2	2:L:201:SER:OG	1.98	0.47
1:C:171:ASN:OD1	1:C:171:ASN:N	2.44	0.47
6:D:802:AGS:O1A	6:D:802:AGS:H8	2.15	0.47
2:G:126:PHE:HD2	2:G:201:SER:OG	1.98	0.47
1:A:293:ALA:HA	1:A:294:GLY:HA3	1.70	0.46
1:B:630:GLU:CB	1:B:633:LYS:HE3	2.44	0.46
1:C:527:ARG:NH1	1:C:572:ASP:OD2	2.48	0.46
1:D:393:HIS:ND1	1:D:393:HIS:N	2.62	0.46
2:K:33:ILE:O	2:K:33:ILE:HG13	2.15	0.46
1:B:637:THR:OG1	1:B:638:PRO:HD2	2.16	0.46
2:R:125:ARG:O	2:R:200:ASP:N	2.39	0.46
1:E:460:VAL:HG13	6:E:803:AGS:N6	2.29	0.46
5:E:802:ADP:O3B	1:F:216:SER:HB2	2.15	0.46
1:F:393:HIS:CG	1:F:394:LEU:H	2.34	0.46
2:S:25:SER:OG	2:S:26:ARG:N	2.43	0.46

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:29:ARG:HD2	2:T:31:PHE:CZ	2.51	0.46
1:B:237:PRO:HG2	1:B:239:VAL:HG22	1.98	0.46
1:B:238:GLU:OE2	1:C:414:VAL:CG1	2.64	0.46
1:C:254:LEU:HD23	1:C:263:PHE:CE1	2.50	0.46
2:P:30:SER:O	2:P:30:SER:OG	2.33	0.46
1:E:520:ASP:C	1:E:520:ASP:OD1	2.54	0.46
2:I:30:SER:O	2:I:30:SER:OG	2.31	0.46
2:T:124:LYS:C	2:T:126:PHE:CE1	2.88	0.46
1:A:714:LYS:HB3	1:A:715:PRO:HD3	1.96	0.46
1:B:249:ASP:OD1	1:B:250:ILE:N	2.49	0.46
1:D:304:ALA:HB1	1:D:337:LEU:HD11	1.97	0.46
1:D:637:THR:HG23	1:D:639:GLU:HG2	1.98	0.46
2:H:84:ILE:HD11	2:H:138:PRO:HB3	1.98	0.46
2:H:115:PHE:CD1	2:H:163:MET:CE	2.98	0.46
2:I:18:PRO:CG	2:I:33:ILE:HD13	2.41	0.46
2:H:31:PHE:CZ	2:I:21:ILE:HD11	2.51	0.46
2:P:17:VAL:HG12	2:P:32:ASP:OD2	2.13	0.46
1:A:268:LYS:HD3	1:A:268:LYS:HA	1.61	0.46
1:B:634:LYS:HE3	1:B:634:LYS:HB2	1.46	0.46
1:D:725:LEU:HD23	1:D:746:PHE:CZ	2.51	0.46
2:H:50:GLU:CD	2:H:53:MET:H	2.20	0.46
1:B:215:GLU:O	1:B:218:VAL:HG12	2.16	0.46
1:C:524:TYR:OH	1:C:533:LEU:CD2	2.63	0.46
1:E:437:PRO:HD2	1:E:558:HIS:CE1	2.51	0.46
2:P:17:VAL:HG11	2:P:32:ASP:CG	2.34	0.46
1:A:311:LEU:C	1:A:311:LEU:CD1	2.83	0.46
1:B:354:THR:CG2	1:B:395:PRO:CB	2.77	0.46
1:E:179:LEU:O	1:E:183:GLY:C	2.52	0.46
2:O:22:GLU:OE1	2:O:36:ARG:CD	2.64	0.46
1:D:275:GLU:OE2	1:D:310:LEU:CD2	2.64	0.45
1:D:389:ILE:O	1:D:397:LYS:HD2	2.16	0.45
1:E:412:MET:HB3	1:E:413:PRO:HD3	1.98	0.45
2:H:32:ASP:OD1	2:H:33:ILE:N	2.50	0.45
2:P:124:LYS:HA	2:P:126:PHE:CZ	2.51	0.45
1:D:567:GLU:OE2	1:D:606:ASN:N	2.47	0.45
1:E:302:ASP:OD2	1:F:258:LYS:NZ	2.43	0.45
1:F:444:SER:HG	1:F:448:THR:H	1.62	0.45
2:G:106:MET:O	2:G:106:MET:HG3	2.16	0.45
1:B:502:THR:HG1	6:B:802:AGS:PB	2.39	0.45
2:H:17:VAL:CG1	2:H:32:ASP:OD1	2.64	0.45
1:B:718:ASN:O	1:B:722:PHE:CG	2.70	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:298:GLY:N	1:D:300:GLN:OE1	2.45	0.45
1:E:533:LEU:HD22	1:E:549:LEU:HB2	1.99	0.45
2:H:26:ARG:NE	2:H:26:ARG:N	2.62	0.45
2:Q:20:VAL:CG1	2:R:63:PHE:CZ	3.00	0.45
1:B:350:SER:OG	1:B:351:ILE:N	2.49	0.45
1:F:537:PRO:HB2	1:F:538:PRO:HD3	1.99	0.45
2:H:63:PHE:CZ	2:I:20:VAL:CG1	3.00	0.45
1:B:370:ASP:O	1:B:418:LYS:NZ	2.49	0.45
2:N:18:PRO:HG3	2:N:33:ILE:HD13	1.90	0.45
1:A:263:PHE:HB3	1:A:301:VAL:N	2.32	0.45
1:B:386:VAL:HG22	1:B:394:LEU:CD1	2.26	0.45
1:B:631:GLU:N	1:B:631:GLU:CD	2.69	0.45
1:C:412:MET:N	1:C:413:PRO:CD	2.80	0.45
1:E:434:ALA:HB3	1:E:436:ILE:HD12	1.99	0.45
1:E:440:SER:CB	1:E:441:VAL:C	2.85	0.45
2:M:17:VAL:CG1	2:M:33:ILE:CG2	2.53	0.45
2:T:126:PHE:HD2	2:T:201:SER:OG	2.00	0.45
1:C:565:GLU:C	1:C:567:GLU:H	2.19	0.45
1:E:437:PRO:HD2	1:E:558:HIS:HE1	1.82	0.45
2:Q:22:GLU:OE1	2:Q:36:ARG:CD	2.65	0.45
1:A:263:PHE:CB	1:A:301:VAL:H	2.29	0.45
1:A:461:PHE:H	5:A:802:ADP:N6	2.15	0.45
1:B:632:ILE:HA	1:B:632:ILE:HD12	1.42	0.45
1:D:327:PHE:CG	1:D:327:PHE:O	2.70	0.45
2:G:56:LEU:HD11	2:H:33:ILE:HG21	1.99	0.45
1:C:263:PHE:CD1	1:C:293:ALA:HB1	2.48	0.45
1:F:617:ILE:HG22	2:I:40:GLU:CB	2.47	0.45
2:I:137:GLN:HE21	2:P:145:GLN:NE2	2.15	0.45
1:E:461:PHE:H	6:E:803:AGS:HN62	1.63	0.44
2:K:63:PHE:CZ	2:L:20:VAL:HB	2.52	0.44
2:N:20:VAL:CB	2:O:63:PHE:CZ	2.96	0.44
2:P:21:ILE:HD11	2:Q:31:PHE:HE2	1.82	0.44
1:B:357:ILE:HD13	1:B:395:PRO:HG3	1.99	0.44
1:B:391:ASP:N	1:B:391:ASP:OD1	2.42	0.44
1:C:296:ALA:HA	3:X:4:UNK:HA	1.99	0.44
1:D:440:SER:HB3	1:D:478:ARG:NH2	2.32	0.44
2:H:112:MET:HE3	2:H:115:PHE:HD2	1.83	0.44
1:C:714:LYS:HB2	1:C:715:PRO:HD3	1.99	0.44
5:E:802:ADP:C6	1:F:188:LEU:HD12	2.52	0.44
2:R:24:THR:OG1	2:R:25:SER:N	2.49	0.44
1:C:527:ARG:CA	1:C:570:HIS:NE2	2.81	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:60:GLN:HA	2:J:33:ILE:HD11	1.99	0.44
1:E:503:GLU:HB2	6:E:803:AGS:O3'	2.17	0.44
1:E:714:LYS:HB2	1:E:715:PRO:HD3	1.99	0.44
2:S:22:GLU:CD	2:S:31:PHE:CE2	2.91	0.44
1:C:263:PHE:CD2	1:C:293:ALA:HB1	2.48	0.44
1:E:503:GLU:HB2	6:E:803:AGS:O2A	2.17	0.44
1:F:544:ASP:OD1	1:F:544:ASP:N	2.51	0.44
2:H:17:VAL:HG11	2:H:32:ASP:OD1	2.17	0.44
2:I:56:LEU:HD11	2:J:33:ILE:HG21	2.00	0.44
2:L:21:ILE:HD13	2:L:21:ILE:HA	1.81	0.44
1:D:258:LYS:O	3:X:8:UNK:N	2.51	0.44
1:E:175:ASN:HA	1:E:246:TYR:CD2	2.52	0.44
1:A:288:HIS:CD2	1:A:326:GLU:HG3	2.53	0.44
1:A:565:GLU:C	1:A:567:GLU:H	2.21	0.44
1:D:714:LYS:HB2	1:D:715:PRO:HD3	1.99	0.44
1:D:729:GLY:O	1:D:746:PHE:CD2	2.70	0.44
1:E:719:GLU:CD	1:E:723:GLY:HA3	2.36	0.44
1:F:617:ILE:HG22	2:I:40:GLU:CG	2.45	0.44
1:A:258:LYS:C	1:A:299:GLY:H	2.19	0.44
1:A:305:ASN:OD1	1:A:305:ASN:N	2.50	0.44
1:B:287:ILE:CG2	1:B:322:THR:HB	2.48	0.44
1:C:570:HIS:C	1:C:572:ASP:H	2.21	0.44
1:D:327:PHE:O	1:D:327:PHE:CD2	2.71	0.44
1:E:348:GLU:CG	1:E:349:PRO:HD2	2.47	0.44
2:H:112:MET:HE3	2:H:115:PHE:CD2	2.52	0.44
1:B:288:HIS:CD2	1:B:288:HIS:O	2.70	0.43
2:I:60:GLN:HG2	2:J:33:ILE:HD13	2.00	0.43
1:B:581:MET:HE3	1:B:643:ARG:CD	2.47	0.43
1:D:194:GLU:N	1:D:194:GLU:OE1	2.51	0.43
1:D:304:ALA:HA	1:D:307:ILE:HG22	2.00	0.43
1:D:441:VAL:HG12	1:D:441:VAL:O	2.18	0.43
1:F:194:GLU:OE1	1:F:194:GLU:N	2.50	0.43
2:H:185:ASP:OD1	2:H:185:ASP:N	2.50	0.43
1:B:334:ASP:C	1:B:334:ASP:OD1	2.56	0.43
1:C:526:GLU:C	1:C:570:HIS:HD2	2.19	0.43
1:C:588:ASP:OD1	1:C:588:ASP:C	2.57	0.43
1:B:633:LYS:C	1:B:635:ILE:H	2.20	0.43
1:E:440:SER:HG	1:E:443:GLN:HA	1.83	0.43
2:O:29:ARG:HD2	2:O:31:PHE:HZ	1.82	0.43
1:B:575:ASN:OD1	1:C:568:LYS:HE3	2.18	0.43
1:B:625:SER:O	1:B:628:ALA:CB	2.59	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:500:GLY:N	6:E:803:AGS:O2B	2.46	0.43
2:G:65:GLU:HG3	2:G:99:PRO:CD	2.49	0.43
2:K:88:MET:C	2:K:89:SER:O	2.48	0.43
1:A:315:LYS:HD2	1:A:315:LYS:H	1.80	0.43
1:C:439:LYS:H	1:C:439:LYS:HZ3	1.66	0.43
1:D:239:VAL:CG1	1:E:410:ARG:NH1	2.82	0.43
1:E:335:ARG:NH1	5:E:802:ADP:O3B	2.51	0.43
2:N:104:ILE:HA	2:N:126:PHE:O	2.18	0.43
2:G:106:MET:H	2:G:106:MET:HG2	1.59	0.43
2:I:21:ILE:CD1	2:I:30:SER:HB2	2.48	0.43
2:O:25:SER:OG	2:O:26:ARG:N	2.50	0.43
1:A:307:ILE:O	1:A:309:PRO:CD	2.66	0.43
1:B:327:PHE:O	1:B:327:PHE:CD2	2.72	0.43
1:B:343:LYS:NZ	1:B:345:ASP:OD1	2.50	0.43
1:B:537:PRO:O	1:B:540:TYR:HB2	2.19	0.43
1:D:745:GLY:O	1:D:746:PHE:C	2.57	0.43
2:G:185:ASP:N	2:G:185:ASP:OD1	2.47	0.43
2:N:19:MET:HA	2:N:31:PHE:O	2.18	0.43
2:Q:29:ARG:HD2	2:Q:31:PHE:CZ	2.54	0.43
2:J:56:LEU:CD1	2:K:33:ILE:HG21	2.47	0.43
1:A:209:ASN:OD1	1:A:317:ARG:CA	2.56	0.43
1:A:308:LYS:CD	1:A:336:ALA:HB1	2.49	0.43
1:B:502:THR:OG1	6:B:802:AGS:O3A	2.37	0.43
2:I:65:GLU:HG3	2:I:99:PRO:HD2	2.01	0.43
1:B:630:GLU:OE1	1:B:630:GLU:HA	2.19	0.42
1:E:302:ASP:OD1	1:E:302:ASP:N	2.46	0.42
2:Q:124:LYS:CA	2:Q:126:PHE:CE1	3.00	0.42
1:B:287:ILE:HB	1:B:321:SER:H	1.83	0.42
1:C:485:HIS:O	1:C:485:HIS:ND1	2.50	0.42
1:F:335:ARG:O	1:F:339:ARG:HB2	2.19	0.42
2:I:29:ARG:NE	2:I:31:PHE:HZ	2.17	0.42
2:L:26:ARG:NH2	2:M:28:GLU:OE1	2.52	0.42
2:Q:20:VAL:CB	2:R:63:PHE:CZ	3.02	0.42
1:C:254:LEU:HD23	1:C:263:PHE:CD1	2.54	0.42
1:D:725:LEU:HD22	1:D:729:GLY:HA2	2.01	0.42
1:E:441:VAL:HG21	1:E:478:ARG:CB	2.47	0.42
1:F:501:LYS:NZ	1:F:605:THR:O	2.53	0.42
2:G:128:LEU:HB2	2:G:131:SER:HB3	2.01	0.42
1:A:259:TYR:O	1:A:299:GLY:HA3	2.19	0.42
1:A:348:GLU:OE2	1:A:394:LEU:HB3	2.19	0.42
1:B:327:PHE:HA	1:B:331:PHE:CB	2.50	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:639:GLU:H	1:B:639:GLU:HG2	1.36	0.42
1:D:231:ILE:HA	1:D:236:VAL:HG23	2.02	0.42
2:H:31:PHE:CZ	2:I:21:ILE:CD1	3.03	0.42
2:Q:21:ILE:CG1	2:R:31:PHE:CE2	3.02	0.42
1:D:324:TYR:O	1:D:328:SER:HB2	2.20	0.42
1:E:443:GLN:CG	1:E:444:SER:N	2.75	0.42
5:E:802:ADP:H8	1:F:395:PRO:HG2	1.83	0.42
2:H:25:SER:OG	2:H:26:ARG:N	2.52	0.42
2:I:29:ARG:NE	2:I:31:PHE:CZ	2.86	0.42
2:I:150:GLU:HB2	2:P:157:LEU:HD11	2.01	0.42
2:Q:24:THR:OG1	2:Q:25:SER:N	2.51	0.42
1:A:291:ILE:HD12	1:A:291:ILE:H	1.85	0.42
1:C:702:ARG:N	1:C:703:PRO:CD	2.82	0.42
1:E:194:GLU:OE1	1:E:194:GLU:N	2.48	0.42
1:E:719:GLU:C	1:E:723:GLY:H	2.22	0.42
2:K:18:PRO:HD2	2:K:33:ILE:HG21	2.01	0.42
1:D:171:ASN:N	1:D:171:ASN:OD1	2.53	0.42
2:Q:29:ARG:HB3	2:Q:31:PHE:HE1	1.84	0.42
2:R:20:VAL:CG1	2:S:63:PHE:CZ	3.01	0.42
1:D:696:ASP:C	1:D:696:ASP:OD1	2.57	0.42
1:E:532:ARG:O	1:E:548:LEU:HG	2.20	0.42
5:E:802:ADP:C5'	1:F:219:GLY:HA2	2.48	0.42
1:F:242:ASP:OD1	1:F:242:ASP:N	2.44	0.42
1:B:528:HIS:ND1	1:B:528:HIS:C	2.73	0.42
1:D:294:GLY:H	1:D:302:ASP:CB	2.33	0.42
2:H:51:ASP:OD1	2:H:86:ALA:HB2	2.19	0.42
1:B:322:THR:CG2	1:B:327:PHE:HB2	2.49	0.41
1:E:391:ASP:N	1:E:391:ASP:OD1	2.45	0.41
2:H:96:PHE:CD2	2:H:96:PHE:C	2.92	0.41
2:O:126:PHE:HD2	2:O:201:SER:OG	2.03	0.41
1:B:566:ILE:HG21	1:B:603:MET:HB3	2.02	0.41
1:C:300:GLN:N	1:C:300:GLN:OE1	2.53	0.41
1:C:302:ASP:C	1:C:302:ASP:OD1	2.58	0.41
2:G:65:GLU:O	2:G:65:GLU:HG2	2.20	0.41
1:A:259:TYR:C	1:A:299:GLY:HA2	2.41	0.41
1:B:631:GLU:OE2	1:B:631:GLU:HA	2.20	0.41
1:C:370:ASP:OD2	1:C:418:LYS:NZ	2.53	0.41
1:C:586:LEU:CD1	1:D:523:GLU:OE2	2.61	0.41
1:C:334:ASP:C	1:C:334:ASP:OD1	2.59	0.41
1:C:696:ASP:C	1:C:696:ASP:OD1	2.58	0.41
1:F:714:LYS:HB2	1:F:715:PRO:HD3	2.02	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:28:GLU:HB3	2:J:29:ARG:H	1.61	0.41
1:C:436:ILE:HD11	1:C:598:ASN:CB	2.50	0.41
1:D:524:TYR:CZ	1:D:533:LEU:HD21	2.55	0.41
1:A:541:VAL:HA	4:Y:4:UNK:CB	2.51	0.41
1:C:290:ILE:O	1:C:290:ILE:CG1	2.67	0.41
1:C:500:GLY:HA2	1:C:503:GLU:HB2	2.02	0.41
1:E:180:ALA:HA	1:E:183:GLY:O	2.21	0.41
2:H:22:GLU:OE1	2:H:36:ARG:NE	2.54	0.41
1:A:567:GLU:CD	1:A:606:ASN:H	2.23	0.41
1:D:658:ILE:HG13	1:D:695:TYR:CD1	2.56	0.41
2:G:60:GLN:HG2	2:H:33:ILE:HD11	2.03	0.41
1:C:503:GLU:HG2	6:C:802:AGS:H4'	2.02	0.41
1:D:386:VAL:CG2	1:D:394:LEU:HD21	2.51	0.41
2:G:125:ARG:HE	2:G:125:ARG:HB2	1.57	0.41
2:G:128:LEU:HD22	2:M:92:ASP:CG	2.41	0.41
2:Q:126:PHE:HD2	2:Q:201:SER:OG	2.04	0.41
1:A:307:ILE:HD12	1:A:340:ARG:NH2	2.35	0.41
1:B:195:LEU:HD23	1:B:195:LEU:HA	1.82	0.41
1:B:577:LEU:C	1:B:579:GLN:H	2.23	0.41
1:C:524:TYR:OH	1:C:533:LEU:HD21	2.17	0.41
1:E:536:ALA:HA	1:E:537:PRO:HD3	1.66	0.41
2:G:65:GLU:HG3	2:G:99:PRO:HD2	2.02	0.41
2:K:89:SER:O	2:K:90:ILE:HB	2.20	0.41
2:N:46:THR:HG21	2:O:55:ASN:OD1	2.21	0.41
1:A:696:ASP:OD1	1:A:697:ARG:N	2.54	0.41
1:B:578:LEU:HD12	1:B:643:ARG:HH11	1.76	0.41
1:C:720:LEU:HD23	1:C:725:LEU:HB3	2.02	0.41
2:L:21:ILE:HD13	2:L:30:SER:HA	2.02	0.41
2:M:17:VAL:HG12	2:M:32:ASP:OD1	2.14	0.41
1:A:567:GLU:O	1:A:567:GLU:HG2	2.21	0.40
1:B:588:ASP:OD1	1:B:588:ASP:C	2.59	0.40
1:C:623:ASP:O	2:M:71:LYS:NZ	2.53	0.40
1:E:348:GLU:HG3	1:E:394:LEU:O	2.21	0.40
1:A:348:GLU:OE2	1:A:394:LEU:HB2	2.22	0.40
1:A:685:GLU:O	1:A:735:LEU:CD1	2.70	0.40
2:R:126:PHE:HD2	2:R:201:SER:HG	1.65	0.40
1:A:537:PRO:HG3	1:B:528:HIS:O	2.21	0.40
1:B:611:GLU:OE1	1:B:611:GLU:HA	2.21	0.40
1:B:631:GLU:OE2	1:B:631:GLU:CA	2.70	0.40
2:N:126:PHE:CD1	2:N:126:PHE:N	2.90	0.40
1:B:236:VAL:CB	1:B:237:PRO:CD	2.90	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:502:THR:CG2	6:B:802:AGS:O1B	2.70	0.40
1:C:716:LEU:CD2	1:C:725:LEU:CD2	3.00	0.40
1:D:231:ILE:CG1	1:D:236:VAL:HG21	2.51	0.40
2:G:104:ILE:HA	2:G:126:PHE:O	2.21	0.40
2:L:26:ARG:NH1	2:L:26:ARG:CB	2.84	0.40
2:M:26:ARG:H	2:M:26:ARG:HG3	1.65	0.40
2:Q:21:ILE:HG13	2:R:31:PHE:CZ	2.57	0.40
1:A:250:ILE:CB	1:A:290:ILE:HG21	2.51	0.40
1:A:566:ILE:HG21	1:A:603:MET:HB3	2.04	0.40
1:B:524:TYR:HA	1:B:529:THR:HG21	2.04	0.40
1:B:629:MET:HG3	1:B:631:GLU:CB	2.51	0.40
1:B:718:ASN:O	1:B:722:PHE:CD2	2.74	0.40
1:D:588:ASP:OD1	1:D:588:ASP:C	2.60	0.40
1:F:696:ASP:C	1:F:696:ASP:OD1	2.59	0.40
2:H:115:PHE:CZ	2:H:163:MET:CE	3.05	0.40
2:K:89:SER:O	2:K:91:TYR:N	2.54	0.40
2:K:90:ILE:O	2:K:91:TYR:C	2.59	0.40
2:L:124:LYS:O	2:L:126:PHE:CE1	2.75	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	558/578 (96%)	537 (96%)	18 (3%)	3 (0%)	25 61
1	B	576/578 (100%)	545 (95%)	24 (4%)	7 (1%)	11 41
1	C	576/578 (100%)	553 (96%)	21 (4%)	2 (0%)	37 70
1	D	576/578 (100%)	555 (96%)	17 (3%)	4 (1%)	19 54
1	E	576/578 (100%)	554 (96%)	15 (3%)	7 (1%)	11 41
1	F	574/578 (99%)	559 (97%)	12 (2%)	3 (0%)	25 61

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	G	190/192 (99%)	177 (93%)	13 (7%)	0	100	100
2	H	190/192 (99%)	171 (90%)	15 (8%)	4 (2%)	5	28
2	I	190/192 (99%)	180 (95%)	8 (4%)	2 (1%)	12	44
2	J	190/192 (99%)	184 (97%)	6 (3%)	0	100	100
2	K	190/192 (99%)	180 (95%)	10 (5%)	0	100	100
2	L	190/192 (99%)	181 (95%)	9 (5%)	0	100	100
2	M	190/192 (99%)	180 (95%)	9 (5%)	1 (0%)	25	61
2	N	190/192 (99%)	182 (96%)	7 (4%)	1 (0%)	25	61
2	O	190/192 (99%)	184 (97%)	6 (3%)	0	100	100
2	P	190/192 (99%)	183 (96%)	7 (4%)	0	100	100
2	Q	190/192 (99%)	184 (97%)	6 (3%)	0	100	100
2	R	190/192 (99%)	183 (96%)	7 (4%)	0	100	100
2	S	190/192 (99%)	184 (97%)	6 (3%)	0	100	100
2	T	190/192 (99%)	183 (96%)	7 (4%)	0	100	100
All	All	6096/6156 (99%)	5839 (96%)	223 (4%)	34 (1%)	24	57

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	308	LYS
1	B	293	ALA
1	B	637	THR
1	E	438	GLU
1	E	442	SER
1	E	443	GLN
1	F	623	ASP
1	C	295	ALA
1	D	300	GLN
1	D	305	ASN
1	E	295	ALA
1	E	416	LYS
1	F	727	ASP
2	H	28	GLU
2	H	29	ARG
2	H	86	ALA
1	B	528	HIS
1	C	724	SER

Continued on next page...



*Continued from previous page...*

Mol	Chain	Res	Type
2	I	29	ARG
1	D	439	LYS
1	E	543	PHE
1	A	309	PRO
1	B	610	ARG
1	B	638	PRO
1	F	390	ASN
2	H	89	SER
1	B	237	PRO
1	E	437	PRO
2	I	28	GLU
2	M	33	ILE
1	B	290	ILE
1	D	499	VAL
1	A	301	VAL
2	N	33	ILE

### 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 PDB entries followed by that with respect to all EM entries.

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	469/485 (97%)	457 (97%)	12 (3%)	41	72
1	B	485/485 (100%)	465 (96%)	20 (4%)	26	60
1	C	485/485 (100%)	478 (99%)	7 (1%)	62	83
1	D	485/485 (100%)	473 (98%)	12 (2%)	42	73
1	E	485/485 (100%)	478 (99%)	7 (1%)	62	83
1	F	485/485 (100%)	483 (100%)	2 (0%)	89	95
2	G	162/162 (100%)	159 (98%)	3 (2%)	52	79
2	H	162/162 (100%)	147 (91%)	15 (9%)	7	29
2	I	162/162 (100%)	157 (97%)	5 (3%)	35	68
2	J	162/162 (100%)	160 (99%)	2 (1%)	67	86
2	K	162/162 (100%)	158 (98%)	4 (2%)	42	73

*Continued on next page...*

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	L	162/162 (100%)	156 (96%)	6 (4%)	29	63
2	M	162/162 (100%)	156 (96%)	6 (4%)	29	63
2	N	162/162 (100%)	160 (99%)	2 (1%)	67	86
2	O	162/162 (100%)	162 (100%)	0	100	100
2	P	162/162 (100%)	160 (99%)	2 (1%)	67	86
2	Q	162/162 (100%)	161 (99%)	1 (1%)	84	93
2	R	162/162 (100%)	160 (99%)	2 (1%)	67	86
2	S	162/162 (100%)	162 (100%)	0	100	100
2	T	162/162 (100%)	161 (99%)	1 (1%)	84	93
All	All	5162/5178 (100%)	5053 (98%)	109 (2%)	49	77

All (109) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	268	LYS
1	A	286	GLU
1	A	291	ILE
1	A	305	ASN
1	A	307	ILE
1	A	310	LEU
1	A	311	LEU
1	A	312	SER
1	A	313	SER
1	A	315	LYS
1	A	316	ILE
1	A	543	PHE
1	B	197	ARG
1	B	236	VAL
1	B	332	GLU
1	B	397	LYS
1	B	491	PHE
1	B	527	ARG
1	B	528	HIS
1	B	611	GLU
1	B	622	GLN
1	B	623	ASP
1	B	624	ASN
1	B	625	SER
1	B	627	ASP

Continued on next page...

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	629	MET
1	B	630	GLU
1	B	632	ILE
1	B	633	LYS
1	B	634	LYS
1	B	639	GLU
1	B	643	ARG
1	C	291	ILE
1	C	438	GLU
1	C	439	LYS
1	C	440	SER
1	C	555	LYS
1	C	568	LYS
1	C	725	LEU
1	D	238	GLU
1	D	239	VAL
1	D	300	GLN
1	D	301	VAL
1	D	302	ASP
1	D	328	SER
1	D	393	HIS
1	D	396	ASP
1	D	397	LYS
1	D	438	GLU
1	D	726	VAL
1	D	731	VAL
1	E	416	LYS
1	E	418	LYS
1	E	438	GLU
1	E	440	SER
1	E	463	GLN
1	E	534	ILE
1	E	722	PHE
1	F	335	ARG
1	F	339	ARG
2	G	50	GLU
2	G	105	CYS
2	G	125	ARG
2	H	26	ARG
2	H	28	GLU
2	H	29	ARG
2	H	31	PHE

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	H	33	ILE
2	H	50	GLU
2	H	67	GLU
2	H	83	VAL
2	H	85	THR
2	H	89	SER
2	H	93	THR
2	H	95	GLN
2	H	101	VAL
2	H	104	ILE
2	H	106	MET
2	I	29	ARG
2	I	33	ILE
2	I	50	GLU
2	I	127	CYS
2	I	136	HIS
2	J	28	GLU
2	J	29	ARG
2	K	50	GLU
2	K	51	ASP
2	K	125	ARG
2	K	127	CYS
2	L	21	ILE
2	L	22	GLU
2	L	26	ARG
2	L	28	GLU
2	L	33	ILE
2	L	50	GLU
2	M	26	ARG
2	M	28	GLU
2	M	29	ARG
2	M	33	ILE
2	M	125	ARG
2	M	127	CYS
2	N	33	ILE
2	N	126	PHE
2	P	31	PHE
2	P	125	ARG
2	Q	125	ARG
2	R	32	ASP
2	R	125	ARG
2	T	32	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	273	GLN
1	A	288	HIS
1	B	288	HIS
1	C	483	HIS
1	C	528	HIS
1	C	570	HIS
1	C	598	ASN
1	D	579	GLN
1	F	621	HIS
2	G	55	ASN
2	H	95	GLN
2	I	55	ASN
2	I	136	HIS
2	I	137	GLN
2	R	55	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no 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
6	AGS	C	801	-	28,33,33	3.51	11 (39%)	31,52,52	2.02	7 (22%)
6	AGS	D	801	-	28,33,33	3.08	11 (39%)	31,52,52	1.79	5 (16%)
6	AGS	B	801	-	28,33,33	3.44	12 (42%)	31,52,52	2.98	8 (25%)
5	ADP	A	801	-	24,29,29	4.05	10 (41%)	29,45,45	1.78	5 (17%)
5	ADP	F	801	-	24,29,29	4.43	9 (37%)	29,45,45	2.04	8 (27%)
5	ADP	E	802	-	24,29,29	4.18	5 (20%)	29,45,45	2.14	4 (13%)
6	AGS	D	802	-	28,33,33	3.78	14 (50%)	31,52,52	2.04	10 (32%)
6	AGS	B	802	-	28,33,33	3.38	12 (42%)	31,52,52	1.80	7 (22%)
5	ADP	A	802	-	24,29,29	4.11	8 (33%)	29,45,45	2.07	6 (20%)
5	ADP	E	801	-	24,29,29	4.27	10 (41%)	29,45,45	1.74	4 (13%)
6	AGS	C	802	-	28,33,33	3.60	12 (42%)	31,52,52	2.32	8 (25%)
6	AGS	E	803	-	28,33,33	3.68	11 (39%)	31,52,52	1.92	6 (19%)

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
6	AGS	C	801	-	2/2/7/7	2/17/38/38	0/3/3/3
6	AGS	D	801	-	2/2/7/7	4/17/38/38	0/3/3/3
6	AGS	B	801	-	2/2/7/7	3/17/38/38	0/3/3/3
5	ADP	A	801	-	2/2/6/6	4/12/32/32	0/3/3/3
5	ADP	F	801	-	2/2/6/6	0/12/32/32	0/3/3/3
5	ADP	E	802	-	2/2/6/6	5/12/32/32	0/3/3/3
6	AGS	D	802	-	3/3/7/7	4/17/38/38	0/3/3/3
6	AGS	B	802	-	3/3/7/7	1/17/38/38	0/3/3/3
5	ADP	A	802	-	1/1/6/6	1/12/32/32	0/3/3/3
5	ADP	E	801	-	2/2/6/6	4/12/32/32	0/3/3/3
6	AGS	C	802	-	2/2/7/7	6/17/38/38	0/3/3/3
6	AGS	E	803	-	2/2/7/7	1/17/38/38	0/3/3/3

All (125) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	F	801	ADP	O4'-C1'	18.26	1.64	1.40
5	E	801	ADP	O4'-C1'	17.82	1.64	1.40

Continued on next page...

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	802	ADP	O4'-C1'	17.18	1.63	1.40
5	A	801	ADP	O4'-C1'	16.68	1.62	1.40
5	E	802	ADP	O4'-C1'	16.13	1.62	1.40
6	D	802	AGS	O4'-C1'	12.15	1.56	1.40
6	C	802	AGS	O4'-C1'	12.06	1.56	1.40
6	C	801	AGS	O4'-C1'	12.06	1.56	1.40
6	E	803	AGS	O4'-C1'	11.78	1.56	1.40
6	B	802	AGS	O4'-C1'	11.44	1.55	1.40
6	B	801	AGS	O4'-C1'	10.70	1.54	1.40
6	D	801	AGS	O4'-C1'	10.68	1.54	1.40
5	E	802	ADP	PA-O3A	9.30	1.69	1.59
6	E	803	AGS	PA-O3A	8.18	1.68	1.59
6	C	802	AGS	PB-O3B	-7.78	1.51	1.59
6	B	801	AGS	PB-O3B	-7.77	1.51	1.59
6	D	802	AGS	PB-O3B	-7.51	1.51	1.59
6	E	803	AGS	C3'-C4'	-7.28	1.34	1.53
6	D	802	AGS	C3'-C4'	-6.88	1.35	1.53
5	A	802	ADP	O4'-C4'	-6.69	1.30	1.45
6	B	802	AGS	PB-O3B	-6.50	1.52	1.59
6	C	802	AGS	C3'-C4'	-6.49	1.36	1.53
6	C	801	AGS	C3'-C4'	-6.34	1.36	1.53
5	E	802	ADP	O4'-C4'	-6.34	1.30	1.45
6	E	803	AGS	PB-O3A	6.27	1.66	1.59
6	D	801	AGS	C3'-C4'	-6.19	1.37	1.53
6	C	801	AGS	PB-O3B	-5.93	1.53	1.59
5	F	801	ADP	PA-O3A	5.85	1.65	1.59
5	F	801	ADP	O4'-C4'	-5.83	1.32	1.45
6	C	801	AGS	O4'-C4'	5.68	1.57	1.45
6	B	801	AGS	C3'-C4'	-5.68	1.38	1.53
6	B	802	AGS	C3'-C4'	-5.63	1.38	1.53
6	B	802	AGS	O4'-C4'	5.35	1.56	1.45
5	E	801	ADP	PA-O3A	5.20	1.65	1.59
5	A	801	ADP	O4'-C4'	-5.16	1.33	1.45
6	B	801	AGS	O4'-C4'	5.15	1.56	1.45
5	E	801	ADP	O4'-C4'	-4.90	1.34	1.45
5	A	801	ADP	PA-O3A	4.90	1.64	1.59
6	D	802	AGS	O4'-C4'	4.83	1.55	1.45
6	E	803	AGS	O4'-C4'	4.80	1.55	1.45
5	A	802	ADP	PA-O3A	4.65	1.64	1.59
6	B	801	AGS	C2'-C3'	4.51	1.65	1.53
6	D	801	AGS	O4'-C4'	4.48	1.54	1.45
6	C	802	AGS	C2'-C3'	4.31	1.65	1.53

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	D	802	AGS	C5'-C4'	4.31	1.64	1.51
6	D	801	AGS	C2'-C3'	4.19	1.64	1.53
6	C	802	AGS	O4'-C4'	4.18	1.54	1.45
6	B	801	AGS	C5'-C4'	4.13	1.64	1.51
6	C	801	AGS	C2-N3	4.12	1.38	1.32
6	D	802	AGS	PG-S1G	-4.10	1.81	1.90
6	B	802	AGS	C5'-C4'	4.08	1.63	1.51
6	B	802	AGS	C2'-C3'	3.92	1.64	1.53
6	D	802	AGS	C2'-C3'	3.87	1.63	1.53
6	C	801	AGS	C2'-C3'	3.87	1.63	1.53
5	E	802	ADP	C6-N6	3.70	1.47	1.34
6	D	801	AGS	C2-N3	3.61	1.37	1.32
6	C	802	AGS	C2-N3	3.60	1.37	1.32
5	F	801	ADP	C4-N3	3.48	1.40	1.35
5	F	801	ADP	C2-N3	3.45	1.37	1.32
6	D	802	AGS	C4-N3	3.42	1.40	1.35
5	E	801	ADP	C2-N3	3.42	1.37	1.32
6	C	801	AGS	C5'-C4'	3.37	1.61	1.51
6	E	803	AGS	C2'-C3'	3.33	1.62	1.53
6	D	802	AGS	PA-O3A	3.33	1.63	1.59
5	E	801	ADP	C2-N1	3.28	1.39	1.33
5	F	801	ADP	C2-N1	3.26	1.39	1.33
6	D	802	AGS	C2-N3	3.25	1.37	1.32
6	C	802	AGS	C4-N3	3.22	1.40	1.35
5	A	801	ADP	C2-N3	3.21	1.37	1.32
5	E	801	ADP	C3'-C4'	3.20	1.61	1.53
6	C	801	AGS	C4-N3	3.18	1.39	1.35
5	E	801	ADP	C4-N3	3.15	1.39	1.35
6	B	802	AGS	C2-N3	3.09	1.36	1.32
5	A	801	ADP	C3'-C4'	3.05	1.60	1.53
6	C	802	AGS	C5'-C4'	3.04	1.60	1.51
6	D	802	AGS	O3'-C3'	-3.03	1.35	1.43
6	E	803	AGS	PG-O2G	3.01	1.64	1.54
6	D	801	AGS	C4-N3	2.98	1.39	1.35
6	B	801	AGS	C2-N3	2.97	1.36	1.32
6	C	801	AGS	O3'-C3'	-2.96	1.35	1.43
6	E	803	AGS	C6-N6	2.86	1.44	1.34
5	A	801	ADP	C4-N3	2.86	1.39	1.35
5	A	801	ADP	C2-N1	2.86	1.39	1.33
6	D	801	AGS	C5'-C4'	2.86	1.60	1.51
6	B	802	AGS	C4-N3	2.86	1.39	1.35
6	C	802	AGS	PG-S1G	-2.83	1.84	1.90

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	802	ADP	C5'-C4'	2.80	1.60	1.51
5	F	801	ADP	C5'-C4'	2.78	1.59	1.51
6	C	802	AGS	O3'-C3'	-2.75	1.36	1.43
6	E	803	AGS	O3'-C3'	-2.72	1.36	1.43
6	B	801	AGS	PG-S1G	-2.71	1.84	1.90
6	E	803	AGS	C5'-C4'	2.71	1.59	1.51
6	D	802	AGS	PB-O2B	-2.70	1.42	1.55
6	D	801	AGS	O3'-C3'	-2.66	1.36	1.43
6	D	801	AGS	PB-O3B	-2.64	1.56	1.59
6	D	801	AGS	PG-O2G	2.62	1.63	1.54
6	B	801	AGS	C4-N3	2.61	1.39	1.35
6	E	803	AGS	PG-O3G	2.57	1.63	1.54
5	F	801	ADP	C3'-C4'	2.56	1.59	1.53
5	A	802	ADP	C4-N3	2.54	1.39	1.35
5	A	801	ADP	C6-N6	2.48	1.43	1.34
5	A	801	ADP	C5'-C4'	2.48	1.59	1.51
5	E	801	ADP	C6-N6	2.46	1.42	1.34
6	B	801	AGS	O3'-C3'	-2.45	1.36	1.43
6	C	801	AGS	PG-O2G	2.44	1.62	1.54
6	B	802	AGS	PG-O3G	2.41	1.62	1.54
5	A	802	ADP	C3'-C4'	2.33	1.58	1.53
5	F	801	ADP	C6-N6	2.29	1.42	1.34
5	A	802	ADP	C6-N6	2.23	1.42	1.34
6	D	801	AGS	PG-O3G	2.21	1.61	1.54
6	C	802	AGS	C8-N7	-2.19	1.30	1.34
6	C	801	AGS	PG-O3G	2.18	1.61	1.54
6	D	802	AGS	PG-O3G	2.16	1.61	1.54
6	B	802	AGS	PA-O3A	2.16	1.61	1.59
6	B	801	AGS	C8-N7	-2.16	1.30	1.34
6	B	801	AGS	PG-O2G	2.12	1.61	1.54
6	B	802	AGS	O3'-C3'	-2.11	1.37	1.43
5	E	801	ADP	C5-N7	-2.10	1.32	1.39
6	B	802	AGS	PG-O2G	2.08	1.61	1.54
5	A	802	ADP	C2-N1	2.08	1.37	1.33
6	C	802	AGS	PG-O2G	2.08	1.61	1.54
5	A	801	ADP	C1'-N9	2.06	1.55	1.49
6	D	802	AGS	PB-O3A	-2.06	1.57	1.59
5	E	802	ADP	C3'-C4'	2.04	1.58	1.53
5	E	801	ADP	C1'-N9	2.03	1.55	1.49

All (78) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	801	AGS	C4'-O4'-C1'	-11.41	99.48	109.92
5	E	802	ADP	O4'-C1'-N9	-7.74	98.48	108.75
6	C	802	AGS	C4'-O4'-C1'	-6.76	103.73	109.92
6	B	801	AGS	O4'-C1'-N9	6.63	117.54	108.75
6	E	803	AGS	C4'-O4'-C1'	-6.62	103.87	109.92
5	A	802	ADP	O4'-C1'-N9	-6.06	100.71	108.75
6	C	802	AGS	N3-C2-N1	-5.75	120.87	128.67
5	F	801	ADP	N3-C2-N1	-5.71	120.92	128.67
6	D	801	AGS	N3-C2-N1	-5.61	121.06	128.67
6	C	801	AGS	N3-C2-N1	-5.57	121.11	128.67
5	E	801	ADP	N3-C2-N1	-5.55	121.14	128.67
5	A	801	ADP	N3-C2-N1	-5.52	121.19	128.67
6	B	801	AGS	N3-C2-N1	-5.42	121.31	128.67
5	E	801	ADP	O4'-C1'-N9	-5.29	101.73	108.75
6	D	802	AGS	N3-C2-N1	-5.26	121.54	128.67
5	A	802	ADP	N3-C2-N1	-5.23	121.58	128.67
5	E	802	ADP	C4'-O4'-C1'	-5.18	105.18	109.92
6	B	802	AGS	N3-C2-N1	-5.15	121.69	128.67
6	E	803	AGS	N3-C2-N1	-4.96	121.93	128.67
5	E	802	ADP	N3-C2-N1	-4.92	122.00	128.67
5	A	801	ADP	O4'-C1'-N9	-4.86	102.30	108.75
6	C	801	AGS	PB-O3B-PG	-4.72	115.90	133.17
6	D	802	AGS	PB-O3B-PG	-4.55	116.52	133.17
6	C	801	AGS	C4'-O4'-C1'	-4.51	105.79	109.92
5	F	801	ADP	O4'-C1'-N9	-4.48	102.80	108.75
6	C	802	AGS	PB-O3B-PG	-4.44	116.91	133.17
6	D	801	AGS	C4'-O4'-C1'	-4.24	106.04	109.92
5	A	802	ADP	O4'-C4'-C3'	-4.18	96.85	105.15
6	B	801	AGS	O2B-PB-O3B	4.07	118.28	107.27
5	F	801	ADP	O4'-C4'-C3'	-4.04	97.13	105.15
6	D	802	AGS	O2G-PG-O3B	4.00	118.00	104.64
6	B	801	AGS	PB-O3B-PG	-3.89	118.93	133.17
5	A	802	ADP	C4'-O4'-C1'	-3.75	106.49	109.92
6	C	802	AGS	O4'-C4'-C3'	-3.72	97.77	105.15
6	B	802	AGS	PB-O3B-PG	-3.72	119.56	133.17
6	D	802	AGS	O2A-PA-O3A	3.68	117.23	107.27
5	F	801	ADP	C4'-O4'-C1'	-3.61	106.62	109.92
6	B	802	AGS	O2B-PB-O3B	3.57	116.92	107.27
6	D	801	AGS	PB-O3B-PG	-3.56	120.16	133.17
6	B	802	AGS	C4-C5-N7	-3.30	105.85	109.34
6	B	802	AGS	O2G-PG-O3B	3.25	115.50	104.64
6	C	801	AGS	O4'-C1'-N9	3.23	113.03	108.75
6	B	801	AGS	O2G-PG-O3B	3.17	115.22	104.64

*Continued on next page...*

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	802	ADP	C4-C5-N7	-3.15	106.00	109.34
5	A	801	ADP	C4-C5-N7	-3.14	106.01	109.34
6	C	801	AGS	O2G-PG-O3B	3.12	115.06	104.64
6	E	803	AGS	C4-C5-N7	-3.06	106.10	109.34
6	D	802	AGS	C4-C5-N7	-3.03	106.14	109.34
5	A	802	ADP	C4-C5-N7	-3.00	106.17	109.34
6	C	802	AGS	O2A-PA-O3A	2.96	115.26	107.27
6	C	802	AGS	O2G-PG-O3B	2.95	114.48	104.64
6	D	802	AGS	C4'-O4'-C1'	-2.93	107.24	109.92
6	D	802	AGS	O5'-C5'-C4'	2.88	118.79	108.99
6	E	803	AGS	C2'-C3'-C4'	2.85	108.11	102.61
6	E	803	AGS	O4'-C1'-N9	2.76	112.41	108.75
6	E	803	AGS	PB-O3B-PG	-2.70	123.28	133.17
6	C	802	AGS	C4-C5-N7	-2.67	106.52	109.34
6	D	802	AGS	O4'-C4'-C3'	-2.61	99.97	105.15
5	F	801	ADP	C4-C5-N7	-2.58	106.61	109.34
6	B	802	AGS	O4'-C1'-N9	2.58	112.17	108.75
5	F	801	ADP	O2B-PB-O3A	2.55	113.18	104.64
6	C	802	AGS	O2B-PB-O3A	2.51	114.06	107.27
5	E	801	ADP	O2B-PB-O3A	2.46	112.89	104.64
5	A	802	ADP	O2A-PA-O3A	2.42	113.81	107.27
6	C	801	AGS	C4-C5-N7	-2.41	106.79	109.34
5	A	801	ADP	C4'-O4'-C1'	-2.36	107.76	109.92
5	F	801	ADP	O3B-PB-O3A	2.31	112.37	104.64
6	B	801	AGS	C5-C6-N6	-2.25	116.88	120.31
6	D	801	AGS	O2B-PB-O3A	2.24	113.33	107.27
5	F	801	ADP	O2A-PA-O3A	2.21	113.25	107.27
6	B	801	AGS	C4-C5-N7	-2.19	107.03	109.34
6	D	801	AGS	O3G-PG-O3B	2.18	111.91	104.64
6	B	802	AGS	C4'-O4'-C1'	-2.16	107.94	109.92
6	D	802	AGS	O3G-PG-O3B	2.16	111.86	104.64
6	C	801	AGS	O2B-PB-O1B	-2.14	102.49	112.44
5	E	801	ADP	C4-C5-N7	-2.03	107.19	109.34
5	A	801	ADP	O2B-PB-O3A	2.03	111.43	104.64
6	D	802	AGS	O4'-C4'-C5'	2.00	115.75	109.33

All (25) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
5	A	801	ADP	C1'
5	A	801	ADP	C3'
5	A	802	ADP	C1'

Continued on next page...

*Continued from previous page...*

Mol	Chain	Res	Type	Atom
5	E	801	ADP	C1'
5	E	801	ADP	C3'
5	E	802	ADP	C2'
5	E	802	ADP	C3'
5	F	801	ADP	C1'
5	F	801	ADP	C3'
6	B	801	AGS	C4'
6	B	801	AGS	C3'
6	B	802	AGS	C4'
6	B	802	AGS	C1'
6	B	802	AGS	C3'
6	C	801	AGS	C4'
6	C	801	AGS	C3'
6	C	802	AGS	C4'
6	C	802	AGS	C3'
6	D	801	AGS	C4'
6	D	801	AGS	C3'
6	D	802	AGS	C4'
6	D	802	AGS	C1'
6	D	802	AGS	C3'
6	E	803	AGS	C4'
6	E	803	AGS	C3'

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	801	ADP	C5'-O5'-PA-O2A
5	A	801	ADP	C5'-O5'-PA-O3A
5	A	801	ADP	C4'-C5'-O5'-PA
5	A	802	ADP	C5'-O5'-PA-O1A
5	E	801	ADP	C5'-O5'-PA-O2A
5	E	801	ADP	C5'-O5'-PA-O3A
6	B	801	AGS	C5'-O5'-PA-O1A
6	B	801	AGS	C5'-O5'-PA-O3A
6	C	801	AGS	C4'-C5'-O5'-PA
6	C	802	AGS	C5'-O5'-PA-O1A
6	C	802	AGS	C5'-O5'-PA-O3A
6	C	802	AGS	C4'-C5'-O5'-PA
6	D	801	AGS	C5'-O5'-PA-O1A
6	D	801	AGS	C5'-O5'-PA-O2A
6	D	801	AGS	C5'-O5'-PA-O3A
6	E	803	AGS	C4'-C5'-O5'-PA

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
6	C	802	AGS	C3'-C4'-C5'-O5'
6	D	802	AGS	C4'-C5'-O5'-PA
6	C	802	AGS	O4'-C4'-C5'-O5'
6	D	801	AGS	C4'-C5'-O5'-PA
6	B	802	AGS	C4'-C5'-O5'-PA
5	A	801	ADP	PB-O3A-PA-O5'
5	E	801	ADP	PB-O3A-PA-O5'
5	E	802	ADP	PB-O3A-PA-O5'
6	C	802	AGS	C5'-O5'-PA-O2A
6	D	802	AGS	C5'-O5'-PA-O1A
5	E	802	ADP	PA-O3A-PB-O1B
6	D	802	AGS	PB-O3A-PA-O1A
5	E	801	ADP	C4'-C5'-O5'-PA
6	B	801	AGS	PB-O3B-PG-O2G
5	E	802	ADP	PA-O3A-PB-O2B
5	E	802	ADP	PA-O3A-PB-O3B
6	C	801	AGS	PB-O3A-PA-O1A
6	D	802	AGS	PB-O3A-PA-O2A
5	E	802	ADP	O4'-C4'-C5'-O5'

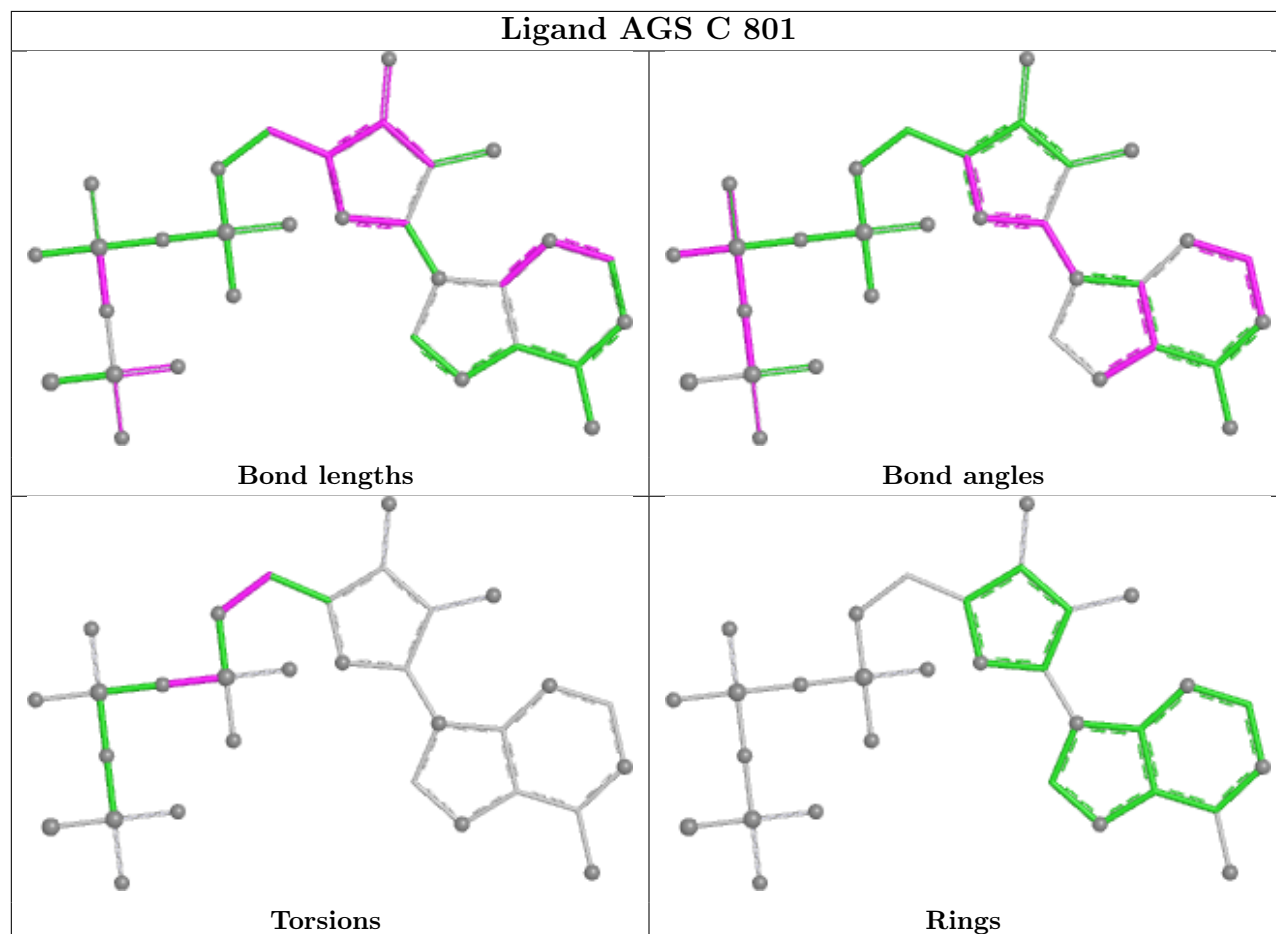
There are no ring outliers.

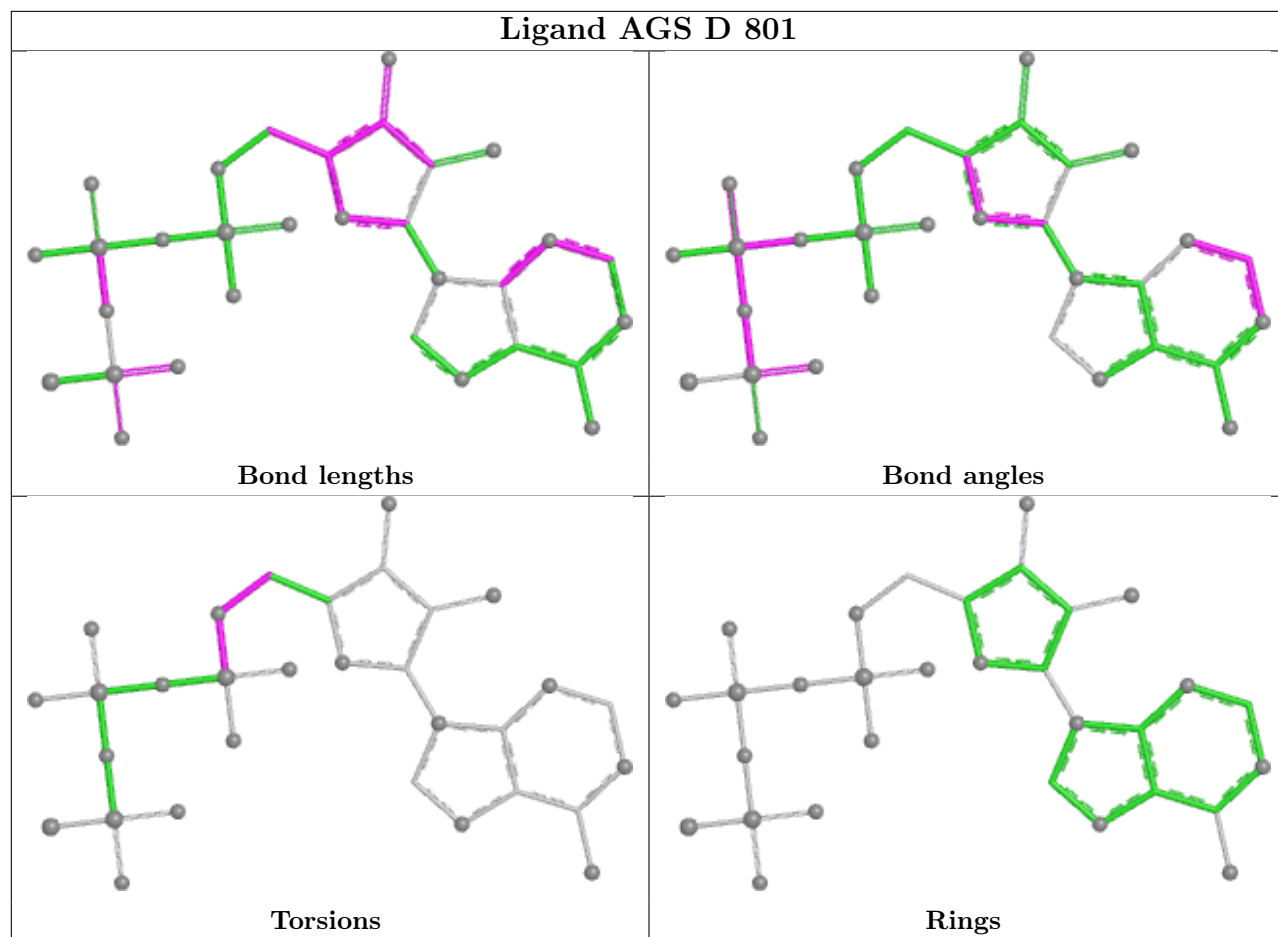
8 monomers are involved in 36 short contacts:

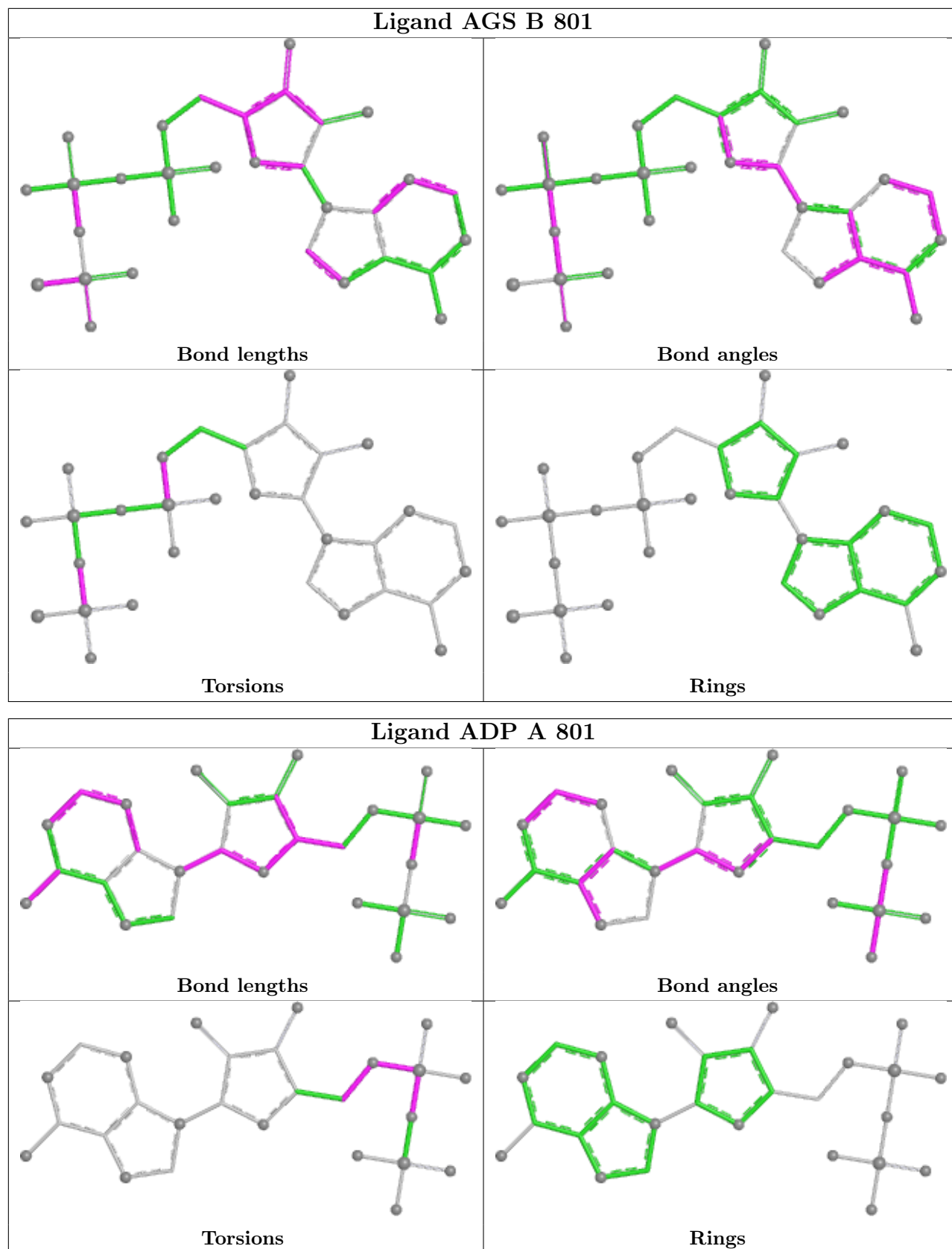
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	F	801	ADP	1	0
5	E	802	ADP	17	0
6	D	802	AGS	1	0
6	B	802	AGS	4	0
5	A	802	ADP	1	0
5	E	801	ADP	2	0
6	C	802	AGS	1	0
6	E	803	AGS	9	0

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

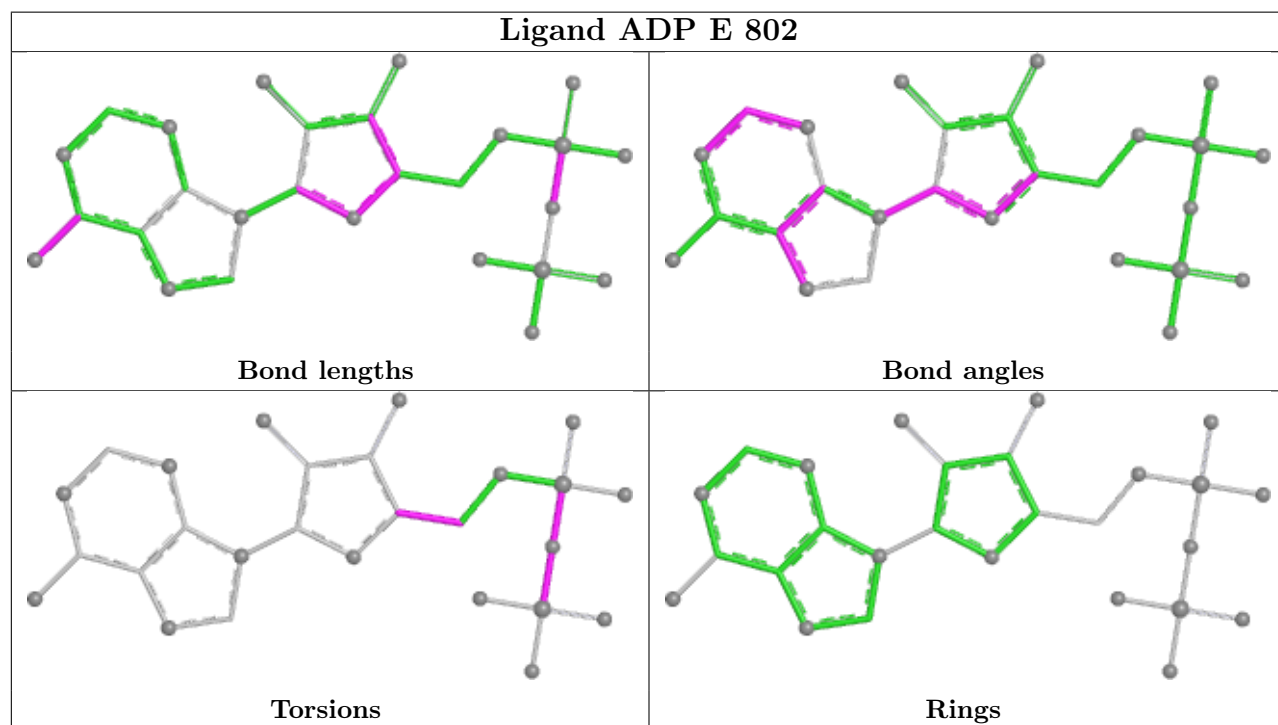
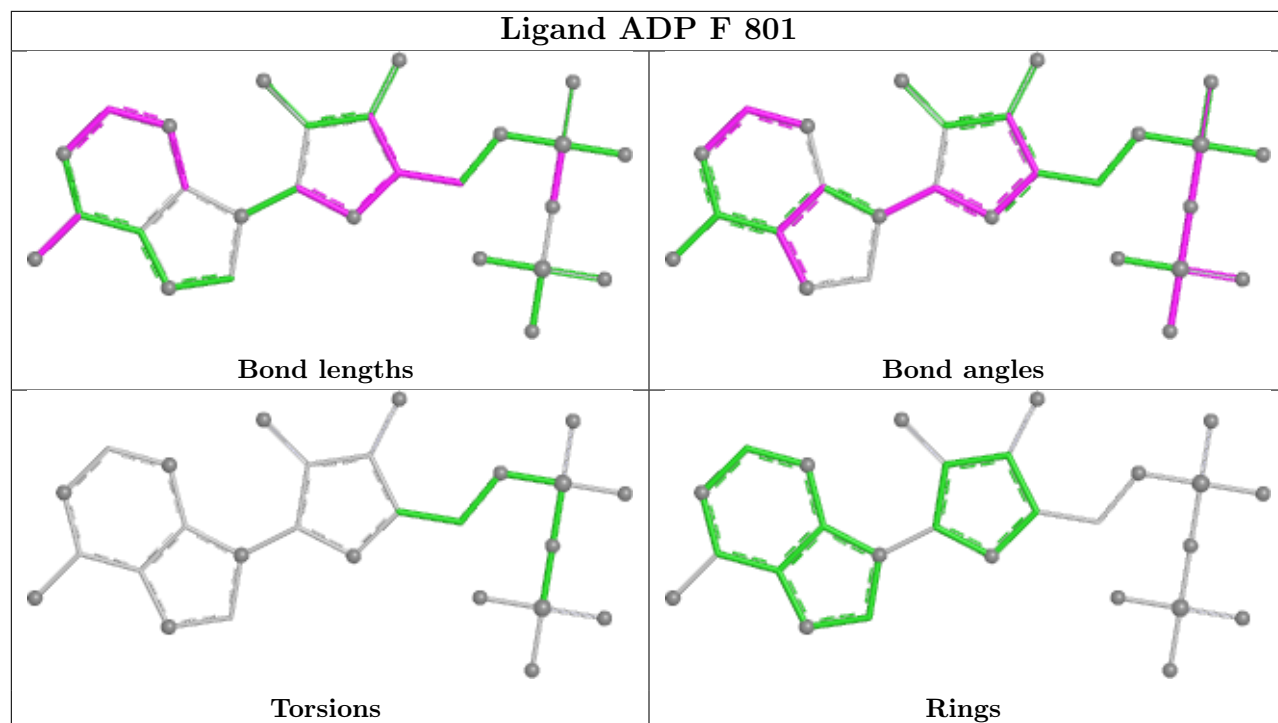
any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

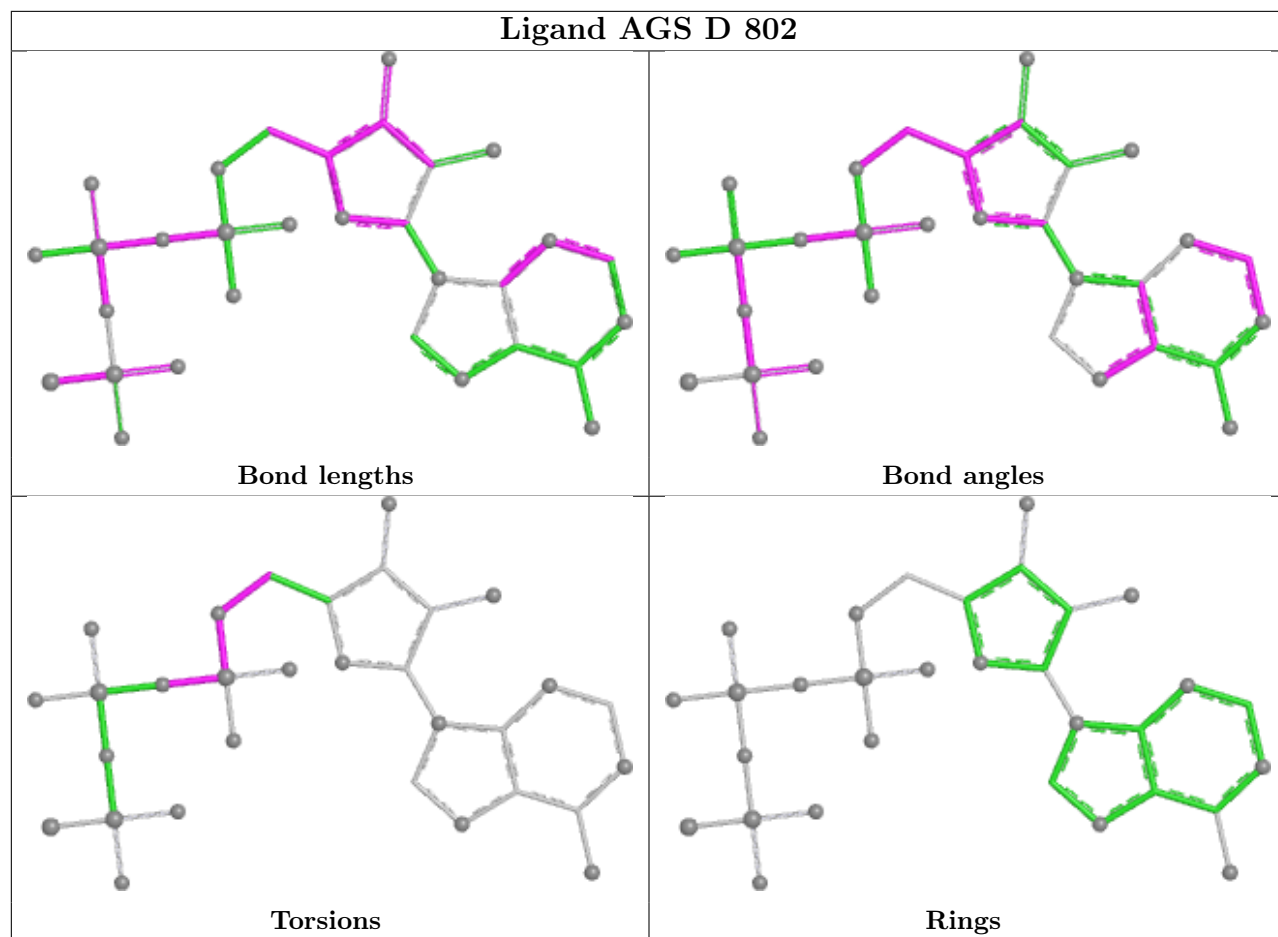


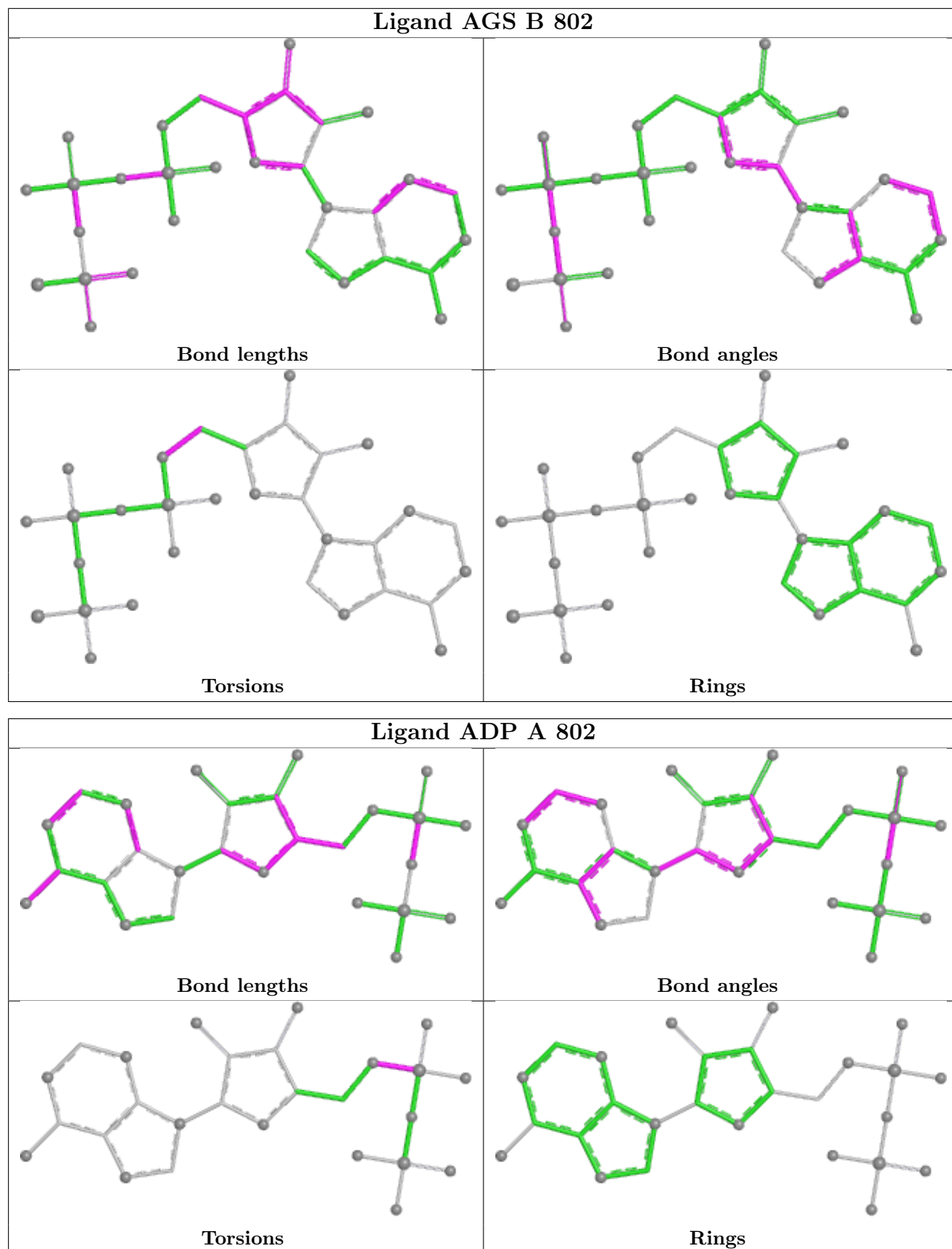


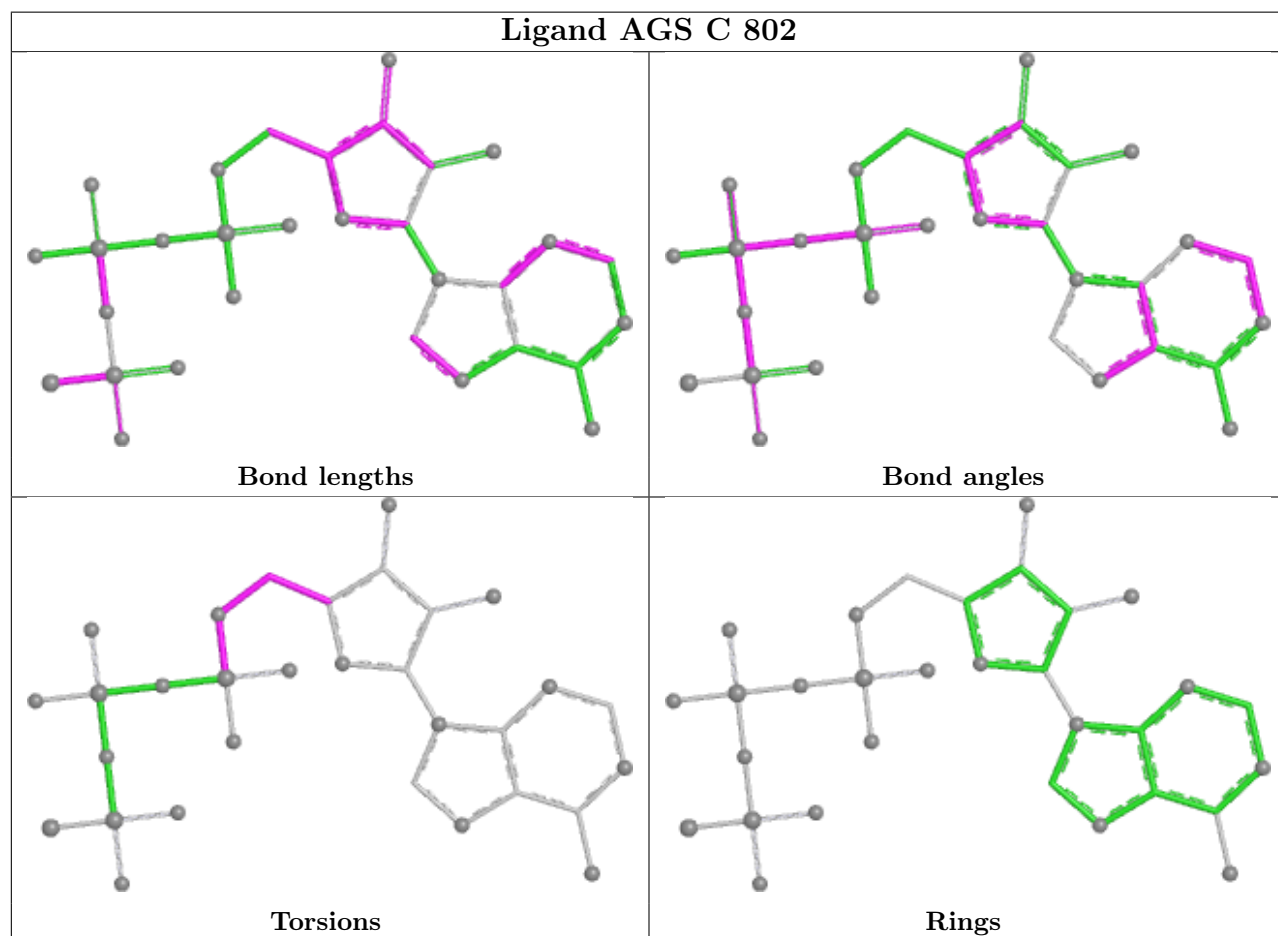
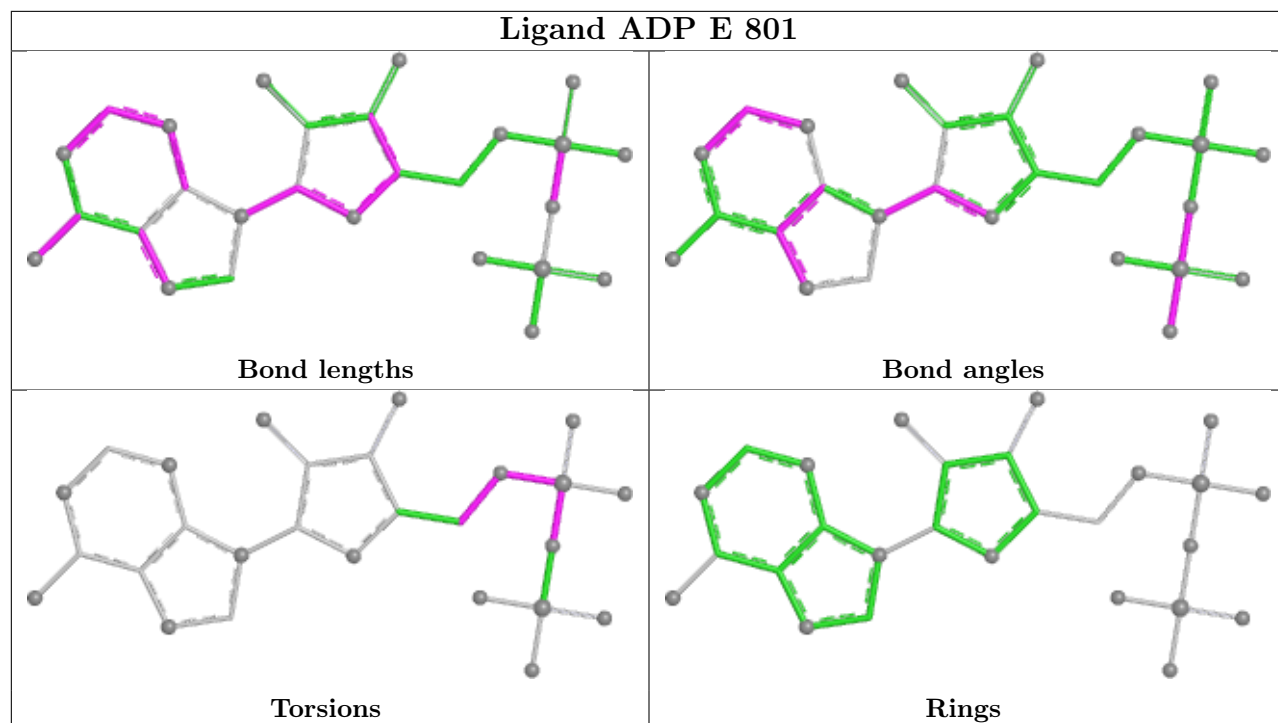


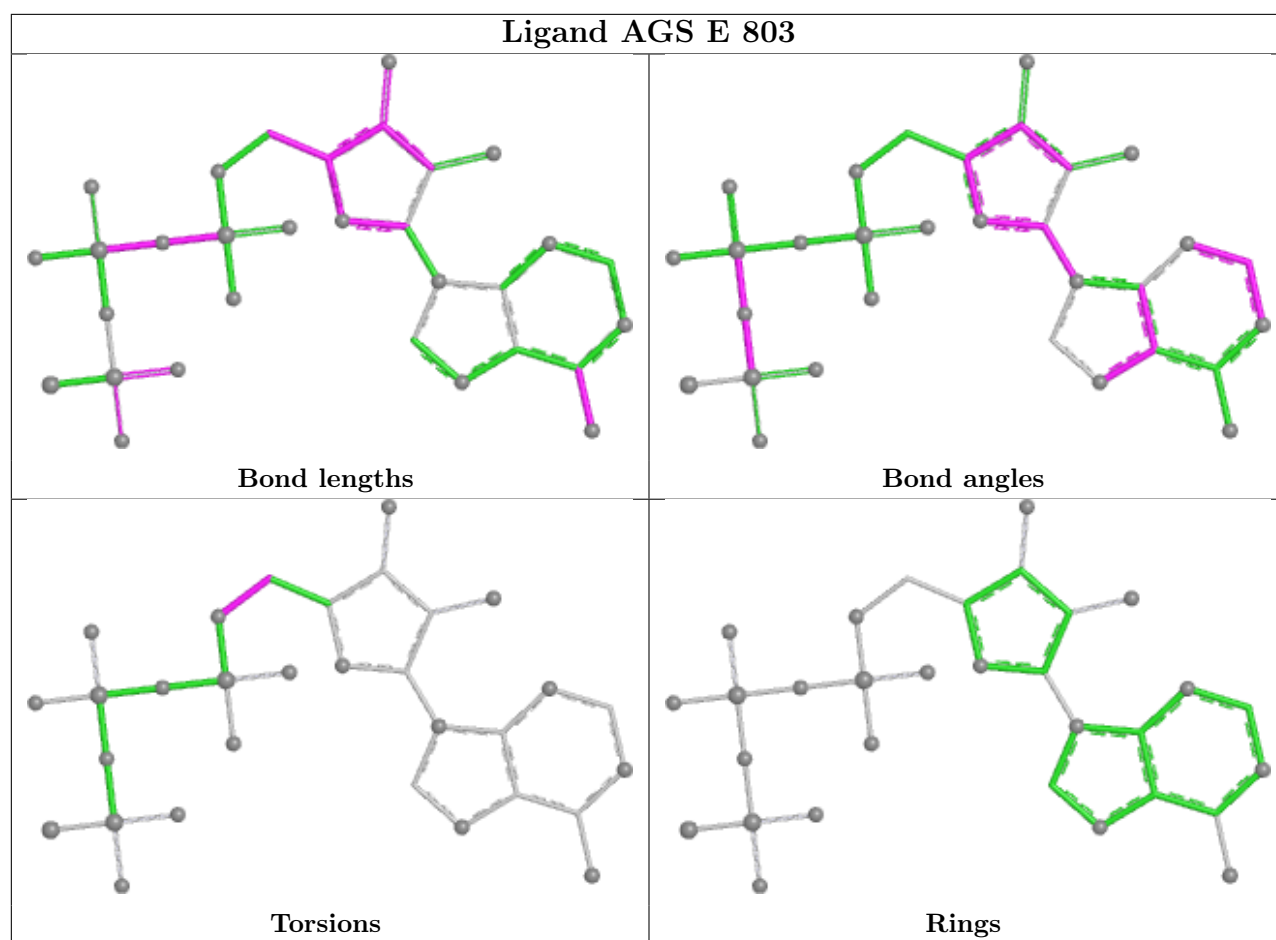












## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	F	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	F	214:GLY	C	215:GLU	N	3.06

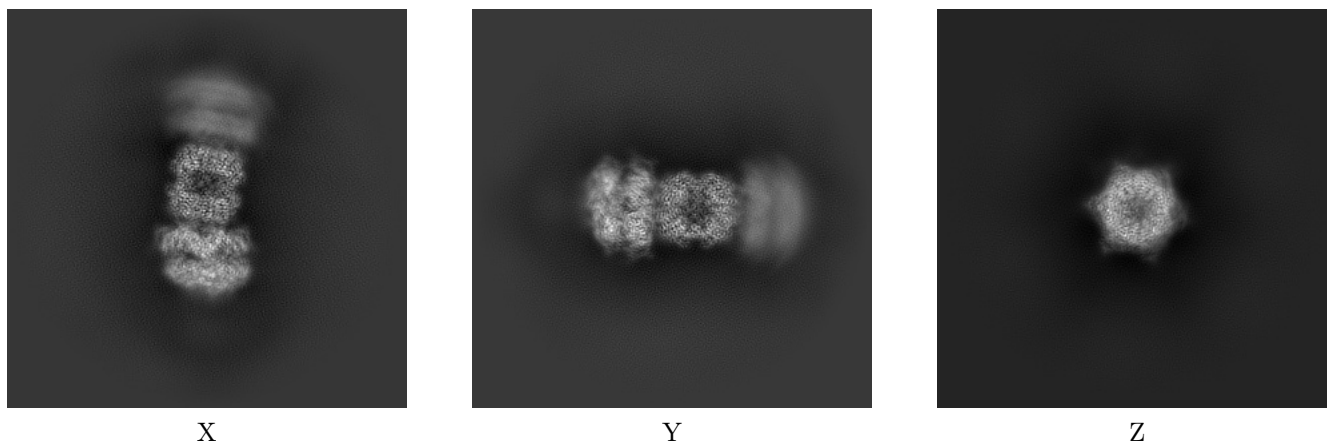
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20845. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

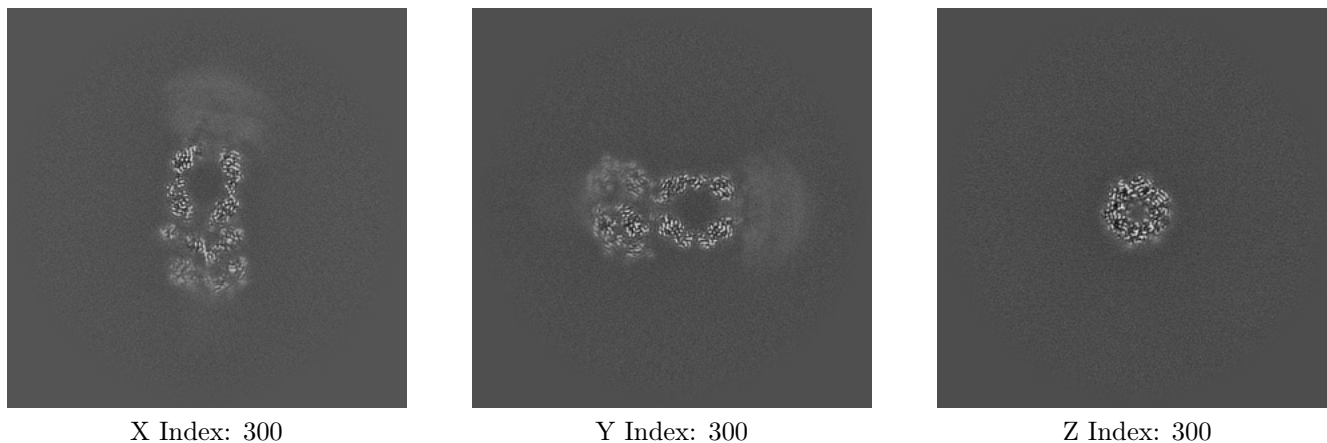
#### 6.1.1 Primary map



The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

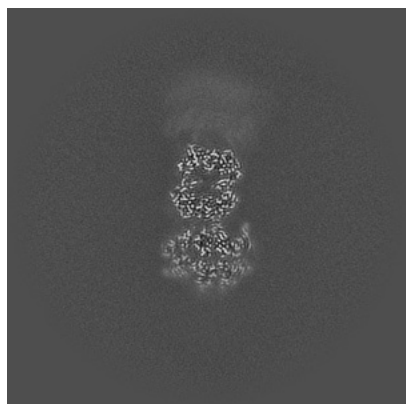
#### 6.2.1 Primary map



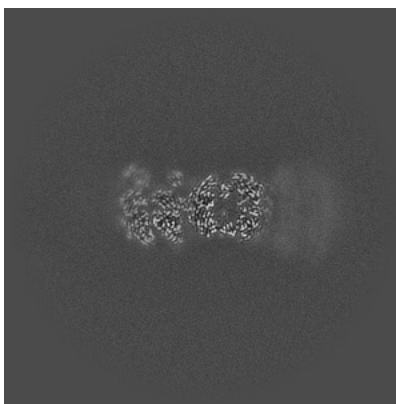
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

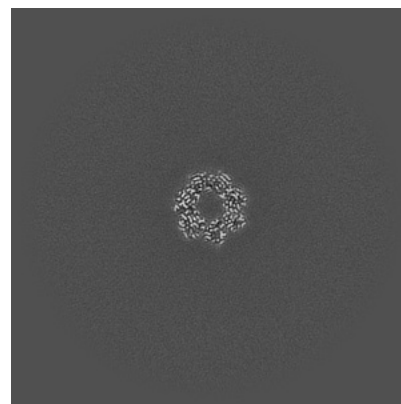
### 6.3.1 Primary map



X Index: 273



Y Index: 324

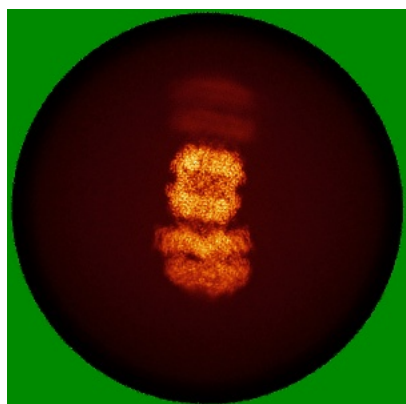


Z Index: 363

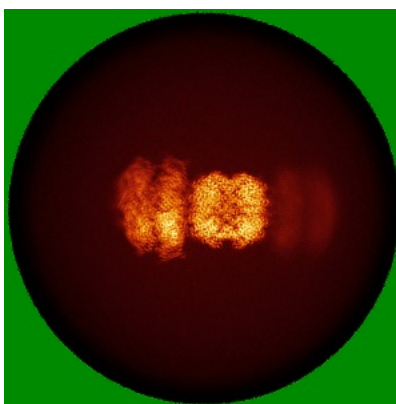
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

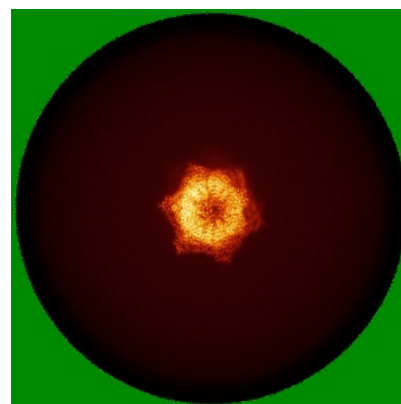
### 6.4.1 Primary map



X



Y



Z

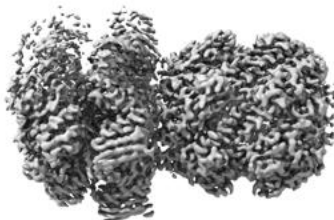
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

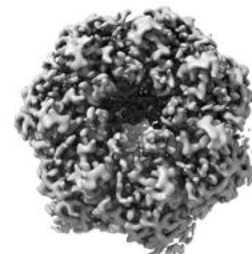
### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.77. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

## 6.6 Mask visualisation [i](#)

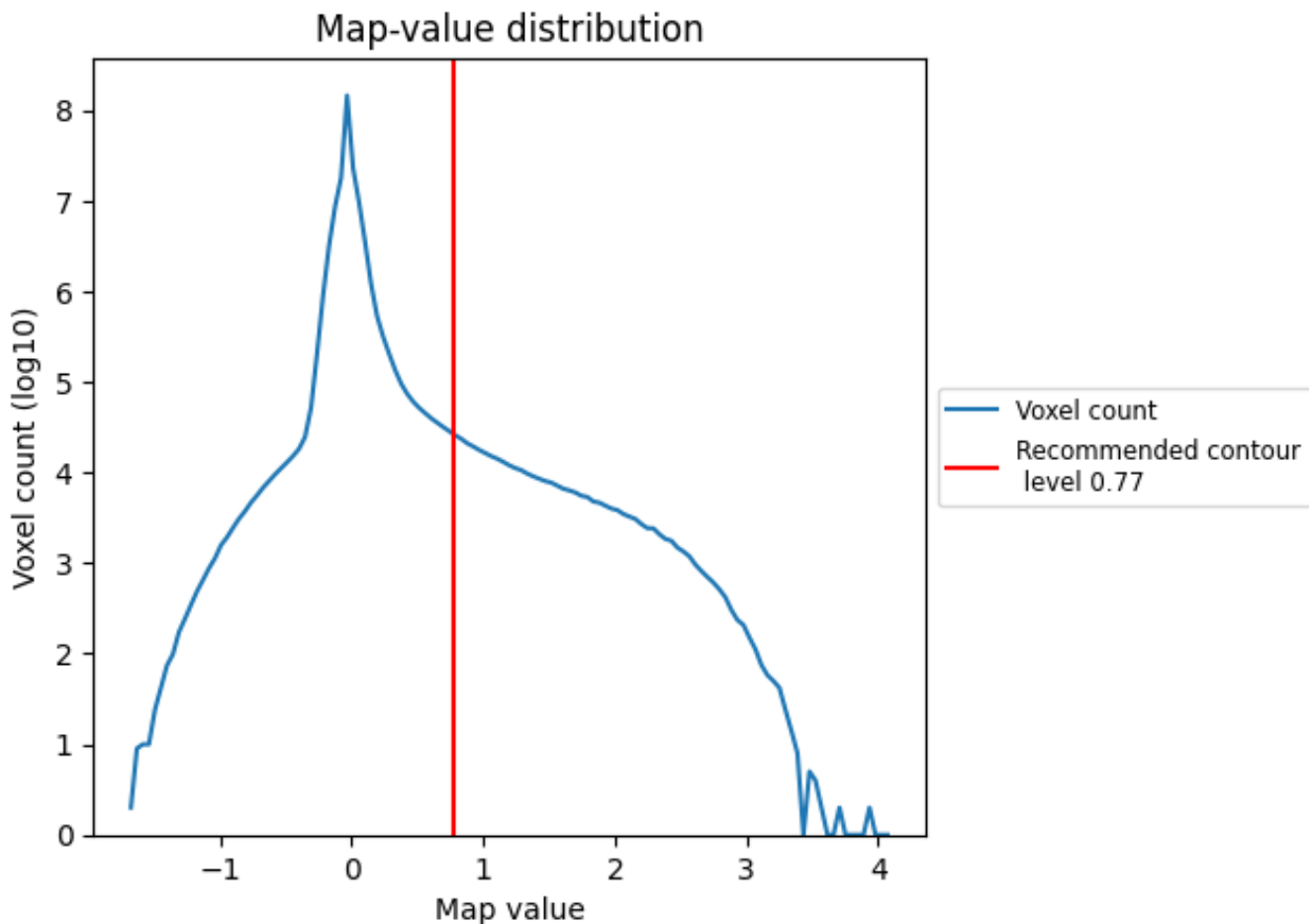
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

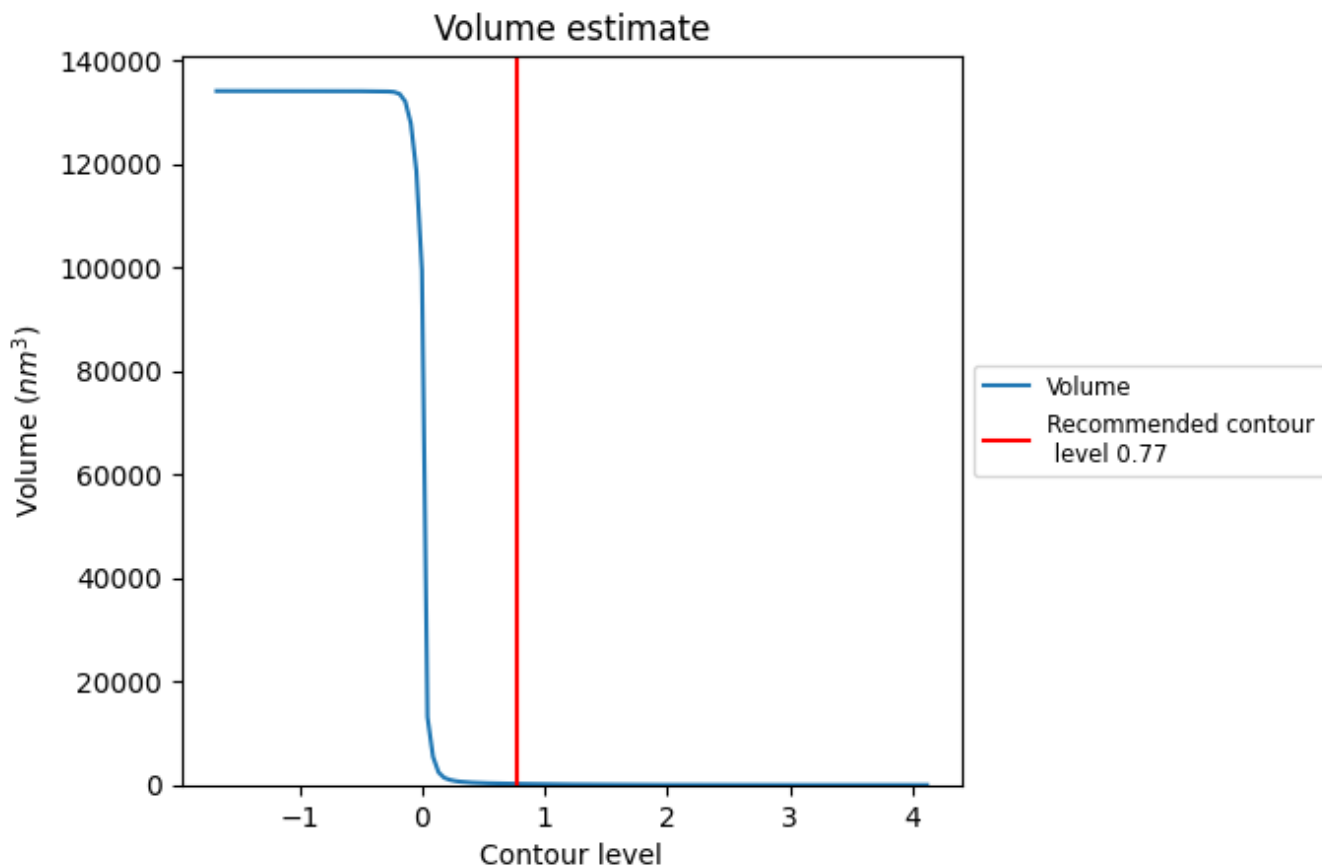
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

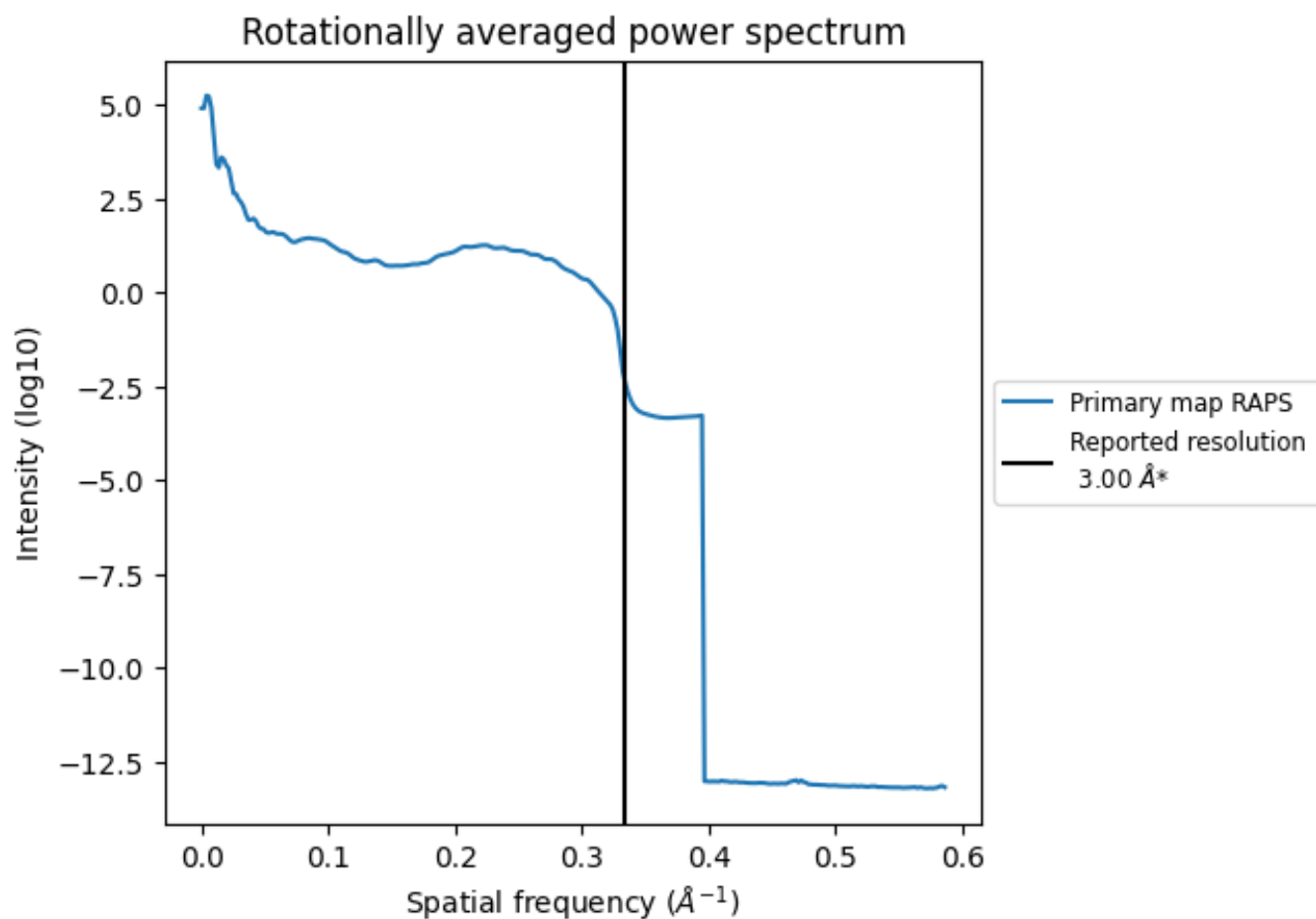
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is  $214 \text{ nm}^3$ ; this corresponds to an approximate mass of 193 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum [i](#)



\*Reported resolution corresponds to spatial frequency of  $0.333 \text{ \AA}^{-1}$

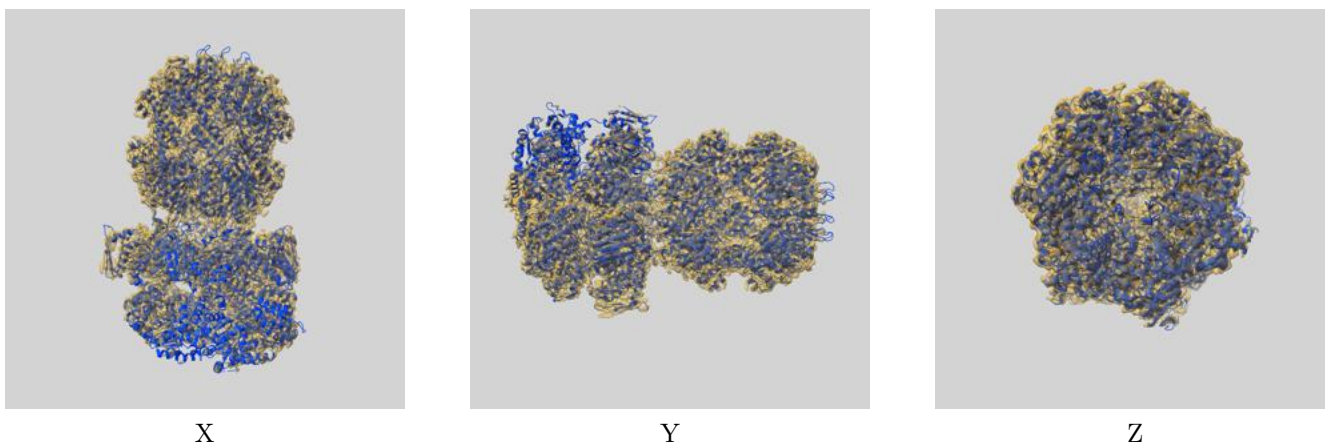
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit [i](#)

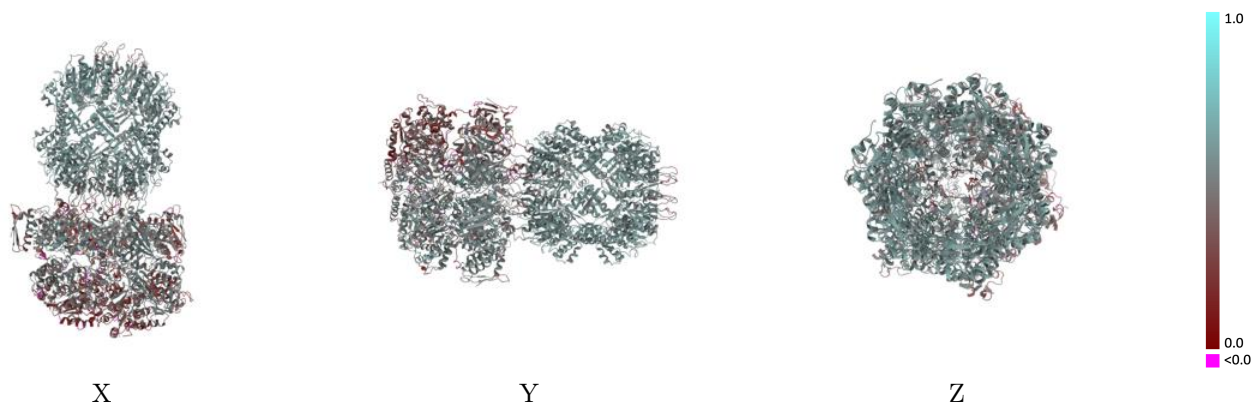
This section contains information regarding the fit between EMDB map EMD-20845 and PDB model 6UQE. Per-residue inclusion information can be found in section 3 on page 8.

### 9.1 Map-model overlay [i](#)



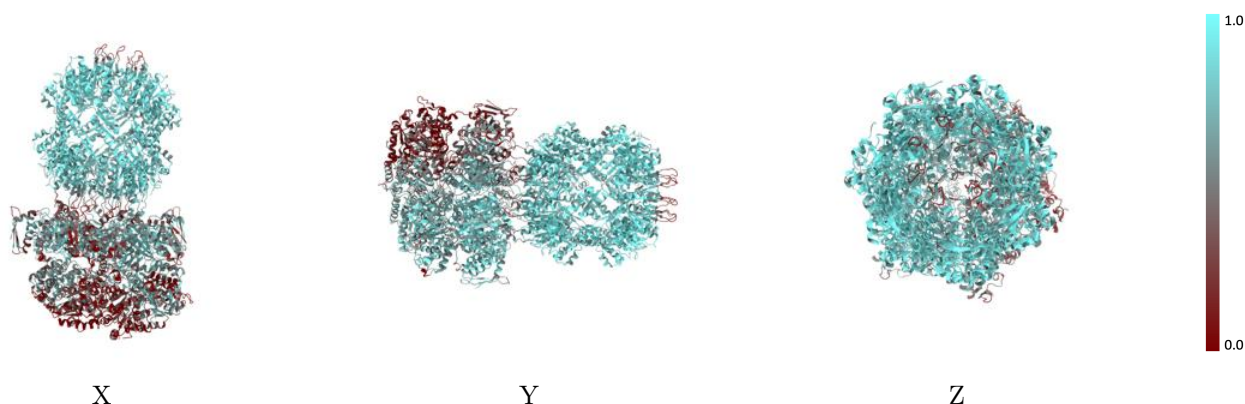
The images above show the 3D surface view of the map at the recommended contour level 0.77 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



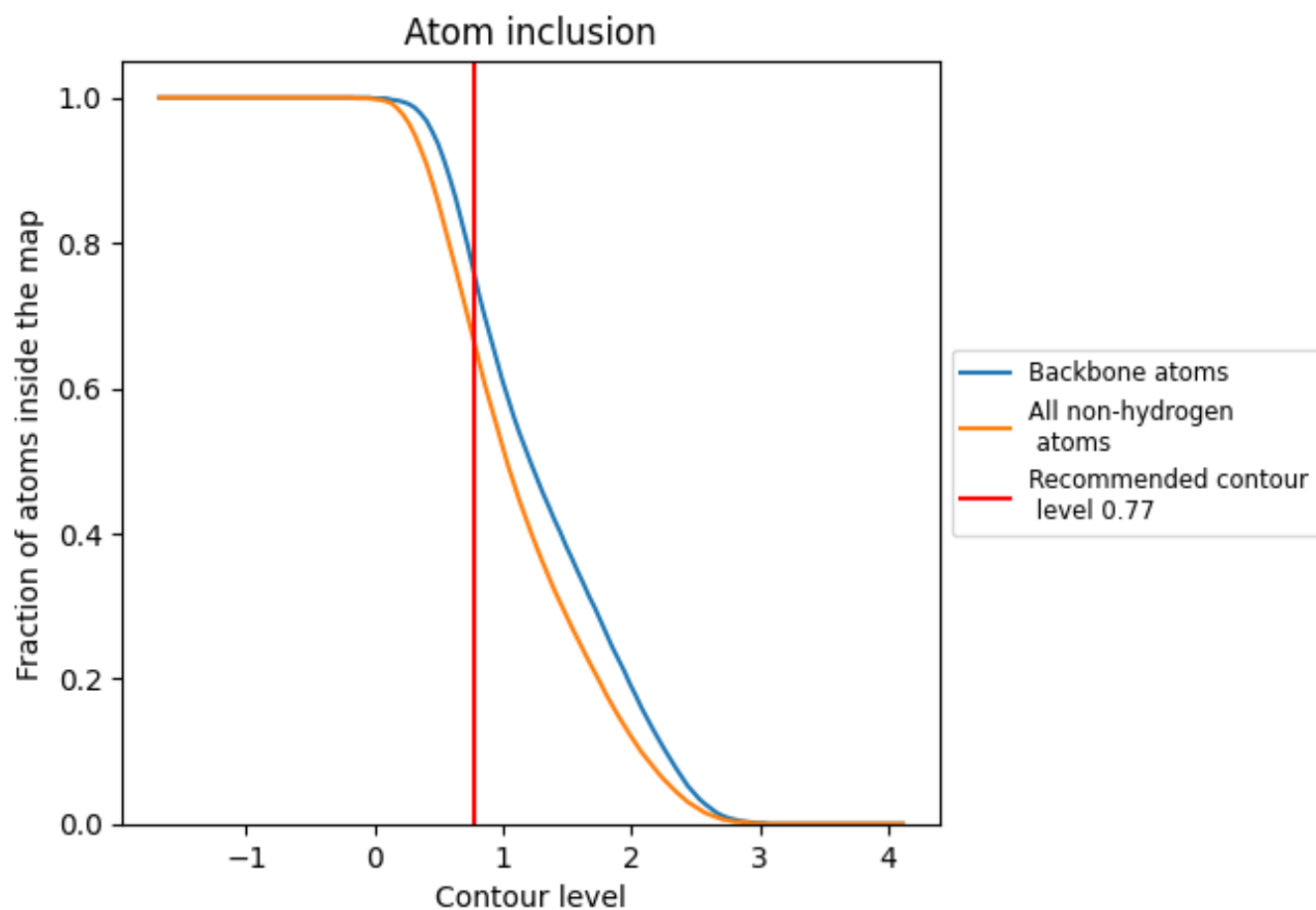
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.77).















































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 67% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.77) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6670	 0.4930
A	 0.4780	 0.4220
B	 0.6560	 0.4860
C	 0.7390	 0.5160
D	 0.6950	 0.5000
E	 0.4250	 0.4090
F	 0.2750	 0.3550
G	 0.8390	 0.5490
H	 0.8220	 0.5400
I	 0.8100	 0.5420
J	 0.8200	 0.5460
K	 0.8170	 0.5510
L	 0.8330	 0.5540
M	 0.8450	 0.5590
N	 0.8060	 0.5420
O	 0.8100	 0.5500
P	 0.8320	 0.5560
Q	 0.8300	 0.5600
R	 0.8320	 0.5540
S	 0.8400	 0.5600
T	 0.8150	 0.5520
X	 0.3200	 0.3930
Y	 0.7640	 0.5010

