Full wwPDB EM Validation Report ⓘ

Nov 29, 2022 – 12:13 AM JST

PDB ID	:	7VDV
EMDB ID	:	EMD-31926
Title	:	The overall structure of human chromatin remodeling PBAF-nucleosome complex
Authors	:	Chen, Z.C.; Chen, K.J.; Yuan, J.J.
Deposited on	:	2021-09-07
Resolution	:	3.40 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*
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:

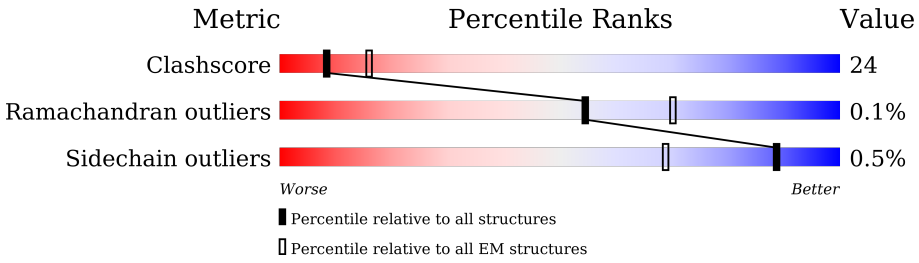
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	B	103	65% 19% 16%
1	F	103	64% 19% 17%
2	C	130	66% 16% 18%
2	G	130	61% 22% 17%
3	D	126	60% 14% 26%
3	H	126	49% 25% 26%
4	E	136	52% 18% 30%
4	K	136	54% 17% 28%

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Mol	Chain	Length	Quality of chain
5	I	207	25% 40% 35%
6	J	207	20% 45% 34%
7	A	1485	28% 26% 46%
8	N	429	18% 45% 33% 22%
9	P	375	37% 50% 34% 15%
10	Q	870	26% 31% 43%
11	R	514	8% 10% 82%
12	T	652	11% 25% 16% 59%
13	U	7	29% 86% 14%
14	V	385	31% 31% 38%
15	W	1214	11% 9% 80%
15	X	1214	5% 9% 12% 79%
16	Y	529	17% 26% 20% 54%
17	Z	411	11% 11% 11% 78%
18	a	1020	9% 91%
19	M	16	56% 44%

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
20	BEF	A	1701	-	-	X	-
22	ADP	A	1703	-	-	X	-

2 Entry composition

There are 22 unique types of molecules in this entry. The entry contains 40028 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 Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	87	Total 703	C 443	N 142	O 117	S 1	0	0
1	F	86	Total 672	C 424	N 130	O 117	S 1	0	0

- Molecule 2 is a protein called Histone H2A.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	C	107	Total 811	C 510	N 158	O 143	0	0
2	G	108	Total 828	C 522	N 162	O 144	0	0

- Molecule 3 is a protein called Histone H2B 1.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	93	Total 717	C 450	N 128	O 137	S 2	0	0
3	H	93	Total 725	C 456	N 130	O 137	S 2	0	0

- Molecule 4 is a protein called Histone H3.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	95	Total 779	C 492	N 148	O 136	S 3	0	0
4	K	98	Total 801	C 506	N 153	O 139	S 3	0	0

- Molecule 5 is a DNA chain called DNA (207-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	135	Total	C	N	O	P	0	0
			2752	1307	499	811	135		

- Molecule 6 is a DNA chain called DNA (207-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
6	J	137	Total	C	N	O	P	0	0
			2827	1337	532	821	137		

- Molecule 7 is a protein called Isoform 2 of Transcription activator BRG1.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	809	Total	C	N	O	S	0	0
			6652	4216	1208	1196	32		

There are 30 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	159	MET	-	initiating methionine	UNP P51532
A	1615	ALA	-	expression tag	UNP P51532
A	1616	SER	-	expression tag	UNP P51532
A	1617	GLY	-	expression tag	UNP P51532
A	1618	GLY	-	expression tag	UNP P51532
A	1619	SER	-	expression tag	UNP P51532
A	1620	TRP	-	expression tag	UNP P51532
A	1621	SER	-	expression tag	UNP P51532
A	1622	HIS	-	expression tag	UNP P51532
A	1623	PRO	-	expression tag	UNP P51532
A	1624	GLN	-	expression tag	UNP P51532
A	1625	PHE	-	expression tag	UNP P51532
A	1626	GLU	-	expression tag	UNP P51532
A	1627	LYS	-	expression tag	UNP P51532
A	1628	TRP	-	expression tag	UNP P51532
A	1629	SER	-	expression tag	UNP P51532
A	1630	HIS	-	expression tag	UNP P51532
A	1631	PRO	-	expression tag	UNP P51532
A	1632	GLN	-	expression tag	UNP P51532
A	1633	PHE	-	expression tag	UNP P51532
A	1634	GLU	-	expression tag	UNP P51532
A	1635	LYS	-	expression tag	UNP P51532
A	1636	TRP	-	expression tag	UNP P51532
A	1637	SER	-	expression tag	UNP P51532
A	1638	HIS	-	expression tag	UNP P51532

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1639	PRO	-	expression tag	UNP P51532
A	1640	GLN	-	expression tag	UNP P51532
A	1641	PHE	-	expression tag	UNP P51532
A	1642	GLU	-	expression tag	UNP P51532
A	1643	LYS	-	expression tag	UNP P51532

- Molecule 8 is a protein called Actin-like protein 6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	N	334	Total	C	N	O	S	0	0
			2612	1656	441	495	20		

- Molecule 9 is a protein called Actin, cytoplasmic 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	P	317	Total	C	N	O	S	0	0
			2482	1575	409	480	18		

- Molecule 10 is a protein called AT-rich interactive domain-containing protein 2,AT-rich interactive domain-containing protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	Q	500	Total	C	N	O	S	0	0
			3981	2540	670	748	23		

- Molecule 11 is a protein called PHD finger protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	R	92	Total	C	N	O	S	0	0
			771	498	132	140	1		

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	-15	MET	-	expression tag	UNP Q8WUB8
R	-14	HIS	-	expression tag	UNP Q8WUB8
R	-13	HIS	-	expression tag	UNP Q8WUB8
R	-12	HIS	-	expression tag	UNP Q8WUB8
R	-11	HIS	-	expression tag	UNP Q8WUB8
R	-10	HIS	-	expression tag	UNP Q8WUB8
R	-9	HIS	-	expression tag	UNP Q8WUB8

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Chain	Residue	Modelled	Actual	Comment	Reference
R	-8	HIS	-	expression tag	UNP Q8WUB8
R	-7	HIS	-	expression tag	UNP Q8WUB8
R	-6	HIS	-	expression tag	UNP Q8WUB8
R	-5	HIS	-	expression tag	UNP Q8WUB8
R	-4	HIS	-	expression tag	UNP Q8WUB8
R	-3	HIS	-	expression tag	UNP Q8WUB8
R	-2	GLY	-	expression tag	UNP Q8WUB8
R	-1	GLU	-	expression tag	UNP Q8WUB8
R	0	PHE	-	expression tag	UNP Q8WUB8

- Molecule 12 is a protein called Isoform 2 of Bromodomain-containing protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	T	267	Total	C	N	O	S	3	0
			2166	1368	367	416	15		

- Molecule 13 is a protein called unknown.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	U	7	Total	C	N	O	0	0
			35	21	7	7		

- Molecule 14 is a protein called SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily B member 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	V	238	Total	C	N	O	S	0	0
			1910	1191	336	370	13		

- Molecule 15 is a protein called SWI/SNF complex subunit SMARCC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	W	248	Total	C	N	O	S	0	0
			2056	1305	362	379	10		
15	X	252	Total	C	N	O	S	0	0
			2072	1320	363	378	11		

- Molecule 16 is a protein called SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily D member 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Y	245	Total	C	N	O	S	0	0
			2057	1308	368	370	11		

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	516	ALA	-	expression tag	UNP Q96GM5
Y	517	SER	-	expression tag	UNP Q96GM5
Y	518	HIS	-	expression tag	UNP Q96GM5
Y	519	HIS	-	expression tag	UNP Q96GM5
Y	520	HIS	-	expression tag	UNP Q96GM5
Y	521	HIS	-	expression tag	UNP Q96GM5
Y	522	HIS	-	expression tag	UNP Q96GM5
Y	523	HIS	-	expression tag	UNP Q96GM5
Y	524	HIS	-	expression tag	UNP Q96GM5
Y	525	HIS	-	expression tag	UNP Q96GM5
Y	526	HIS	-	expression tag	UNP Q96GM5
Y	527	HIS	-	expression tag	UNP Q96GM5
Y	528	HIS	-	expression tag	UNP Q96GM5
Y	529	HIS	-	expression tag	UNP Q96GM5

- Molecule 17 is a protein called SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily E member 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Z	92	Total	C	N	O	S	0	0
			757	469	147	137	4		

- Molecule 18 is a protein called Protein polybromo-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	a	92	Total	C	N	O	S	0	0
			750	471	141	135	3		

There are 41 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	670	MET	-	initiating methionine	UNP Q86U86
a	?	-	ALA	deletion	UNP Q86U86
a	?	-	ALA	deletion	UNP Q86U86
a	?	-	GLN	deletion	UNP Q86U86
a	?	-	GLN	deletion	UNP Q86U86
a	?	-	GLN	deletion	UNP Q86U86

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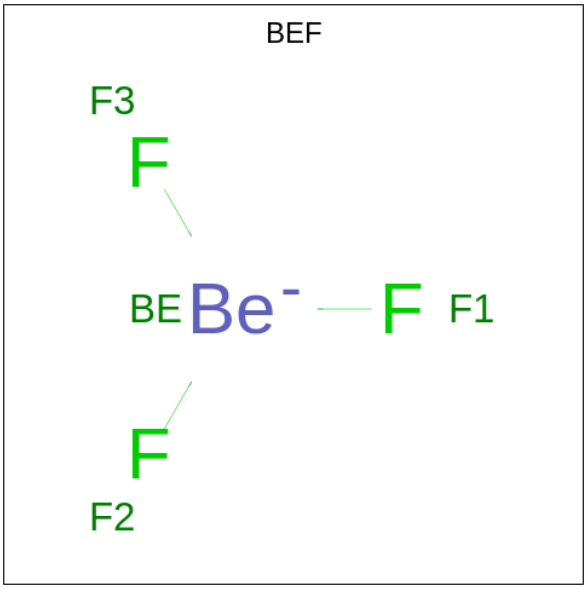
Chain	Residue	Modelled	Actual	Comment	Reference
a	?	-	GLN	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	SER	deletion	UNP Q86U86
a	?	-	ALA	deletion	UNP Q86U86
a	?	-	SER	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	ARG	deletion	UNP Q86U86
a	?	-	ALA	deletion	UNP Q86U86
a	?	-	GLY	deletion	UNP Q86U86
a	?	-	THR	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	VAL	deletion	UNP Q86U86
a	?	-	GLY	deletion	UNP Q86U86
a	?	-	ALA	deletion	UNP Q86U86
a	?	-	LEU	deletion	UNP Q86U86
a	?	-	MET	deletion	UNP Q86U86
a	?	-	GLY	deletion	UNP Q86U86
a	?	-	VAL	deletion	UNP Q86U86
a	?	-	VAL	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	THR	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	MET	deletion	UNP Q86U86
a	?	-	GLY	deletion	UNP Q86U86
a	?	-	MET	deletion	UNP Q86U86
a	?	-	LEU	deletion	UNP Q86U86
a	?	-	ASN	deletion	UNP Q86U86
a	?	-	GLN	deletion	UNP Q86U86
a	?	-	GLN	deletion	UNP Q86U86
a	?	-	LEU	deletion	UNP Q86U86
a	?	-	THR	deletion	UNP Q86U86
a	?	-	PRO	deletion	UNP Q86U86
a	?	-	VAL	deletion	UNP Q86U86

- Molecule 19 is a protein called unknown.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	M	16	80	48	16	16	0	0

- Molecule 20 is BERYLLIUM TRIFLUORIDE ION (three-letter code: BEF) (formula: BeF_3) (labeled as "Ligand of Interest" by depositor).

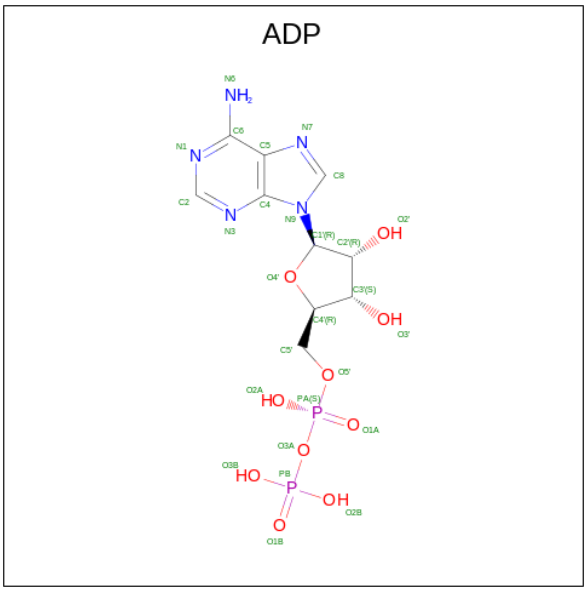


Mol	Chain	Residues	Atoms			AltConf
			Total	Be	F	
20	A	1	4	1	3	0

- Molecule 21 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
21	A	1	1	1	0

- Molecule 22 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



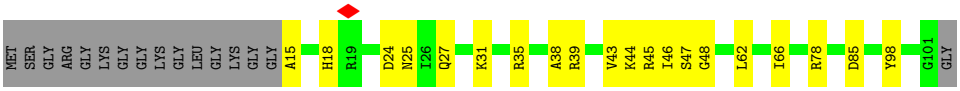
Mol	Chain	Residues	Atoms					AltConf
22	A	1	Total	C	N	O	P	0
			27	10	5	10	2	

3 Residue-property plots (i)

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

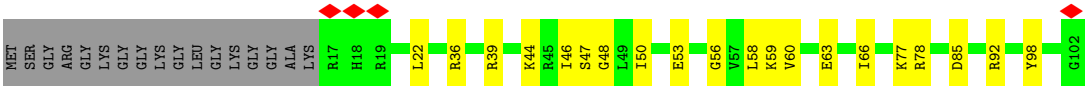
• Molecule 1: Histone H4

Chain B:



• Molecule 1: Histone H4

Chain F:

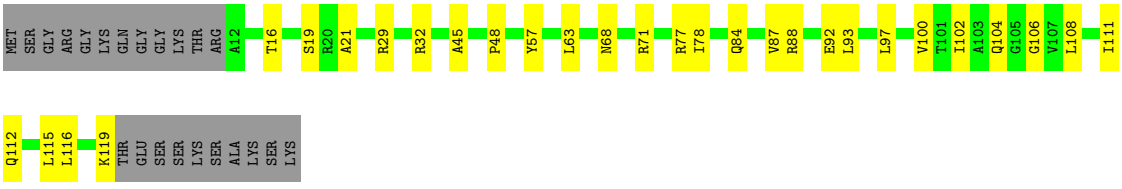


• Molecule 2: Histone H2A

Chain C:

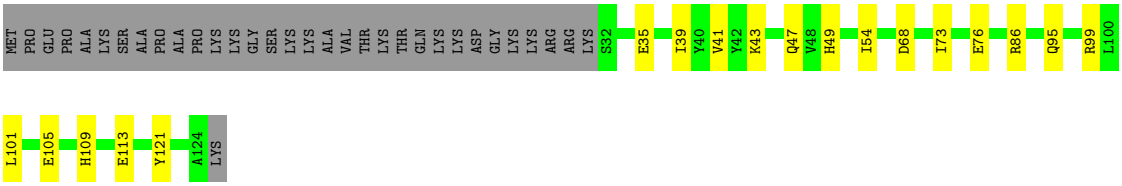
• Molecule 2: Histone H2A

Chain G:



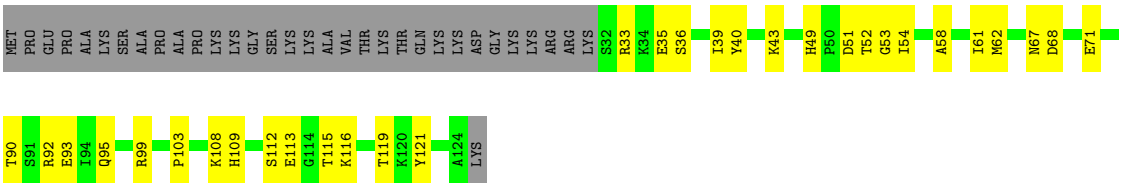
• Molecule 3: Histone H2B 1.1

Chain D:



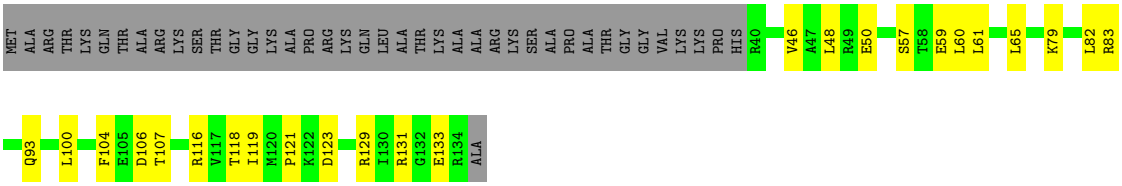
• Molecule 3: Histone H2B 1.1

Chain H:



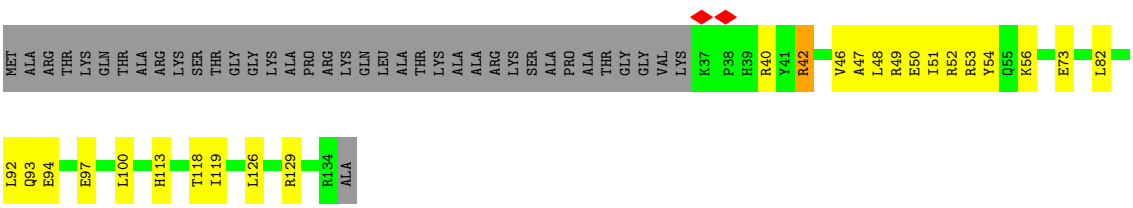
• Molecule 4: Histone H3

Chain E:



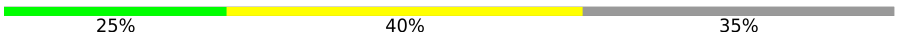
• Molecule 4: Histone H3

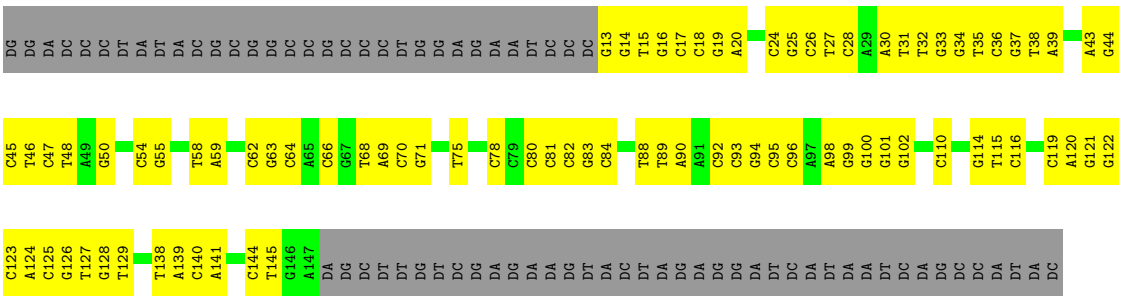
Chain K:



• Molecule 5: DNA (207-MER)

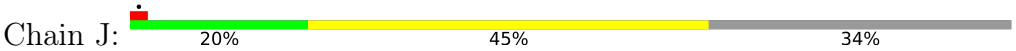
Chain I:

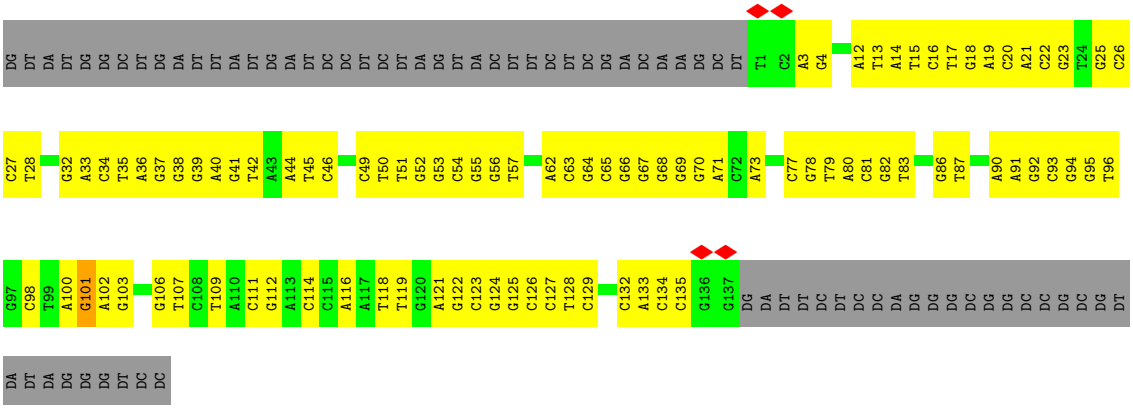




• Molecule 6: DNA (207-MER)

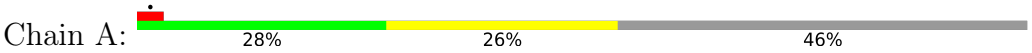
Chain J:

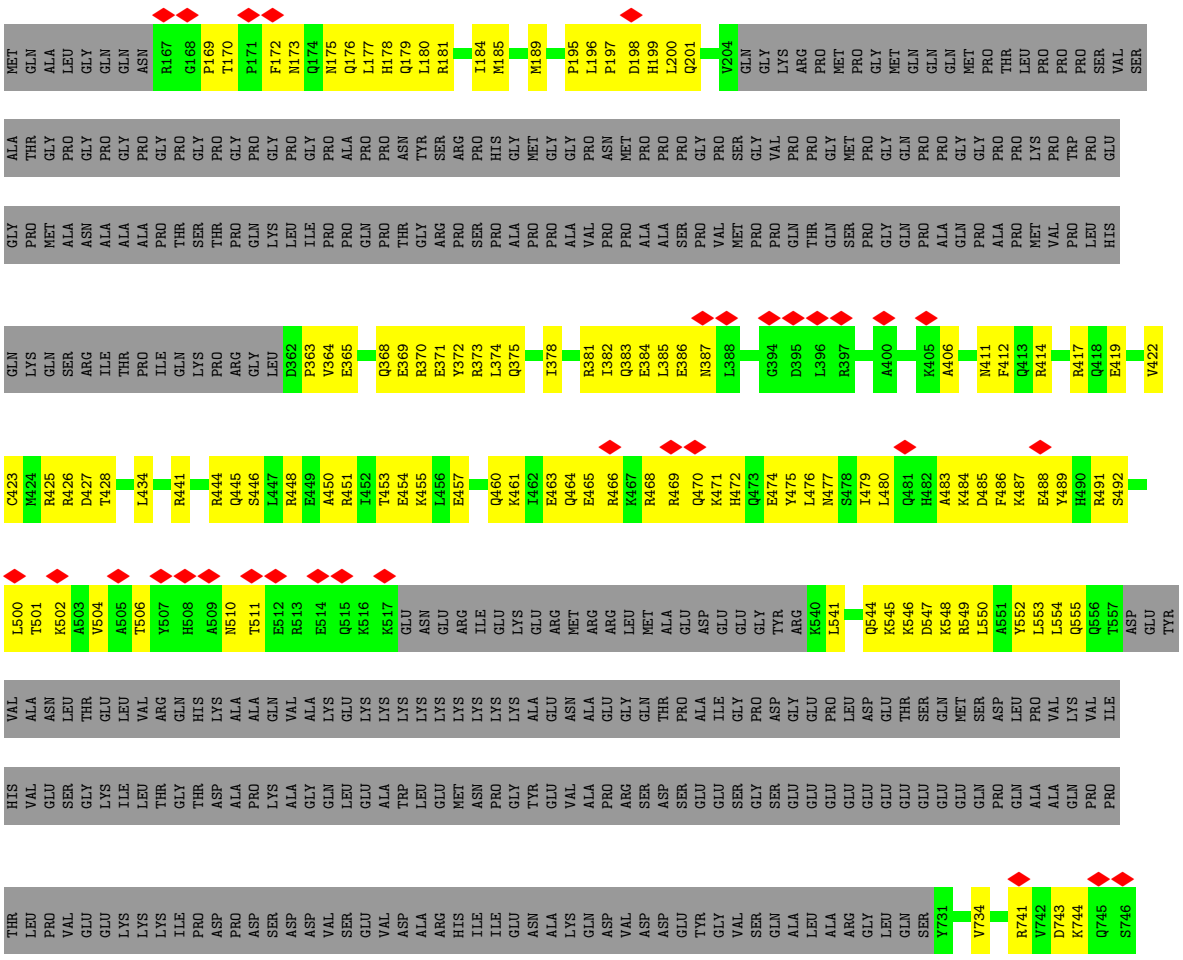


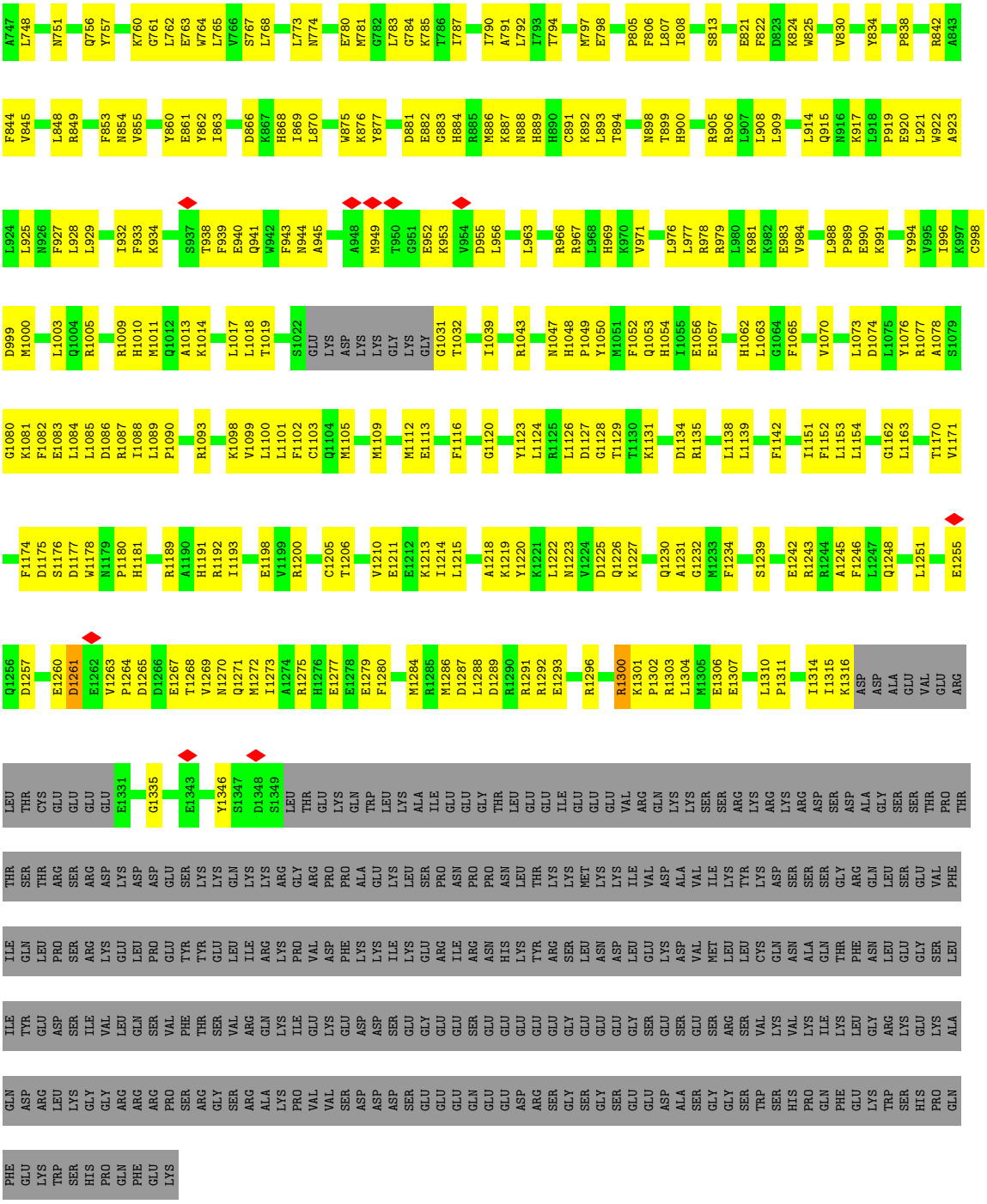


• Molecule 7: Isoform 2 of Transcription activator BRG1

Chain A:

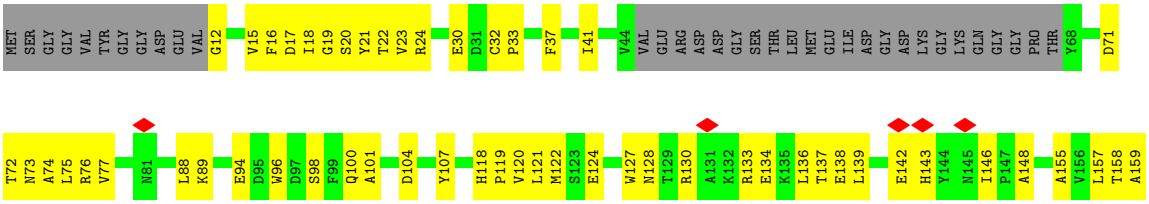


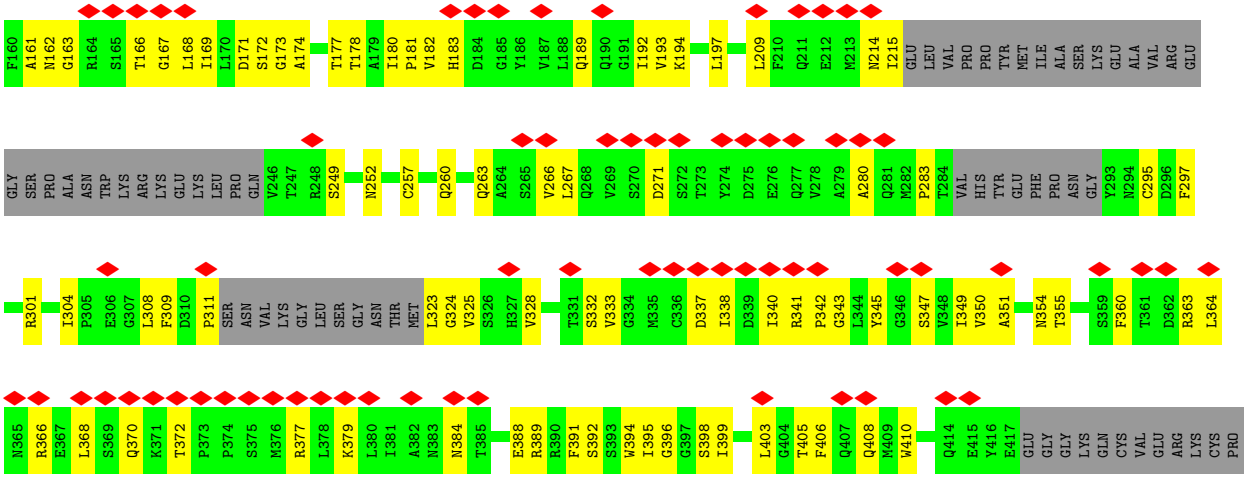




• Molecule 8: Actin-like protein 6A

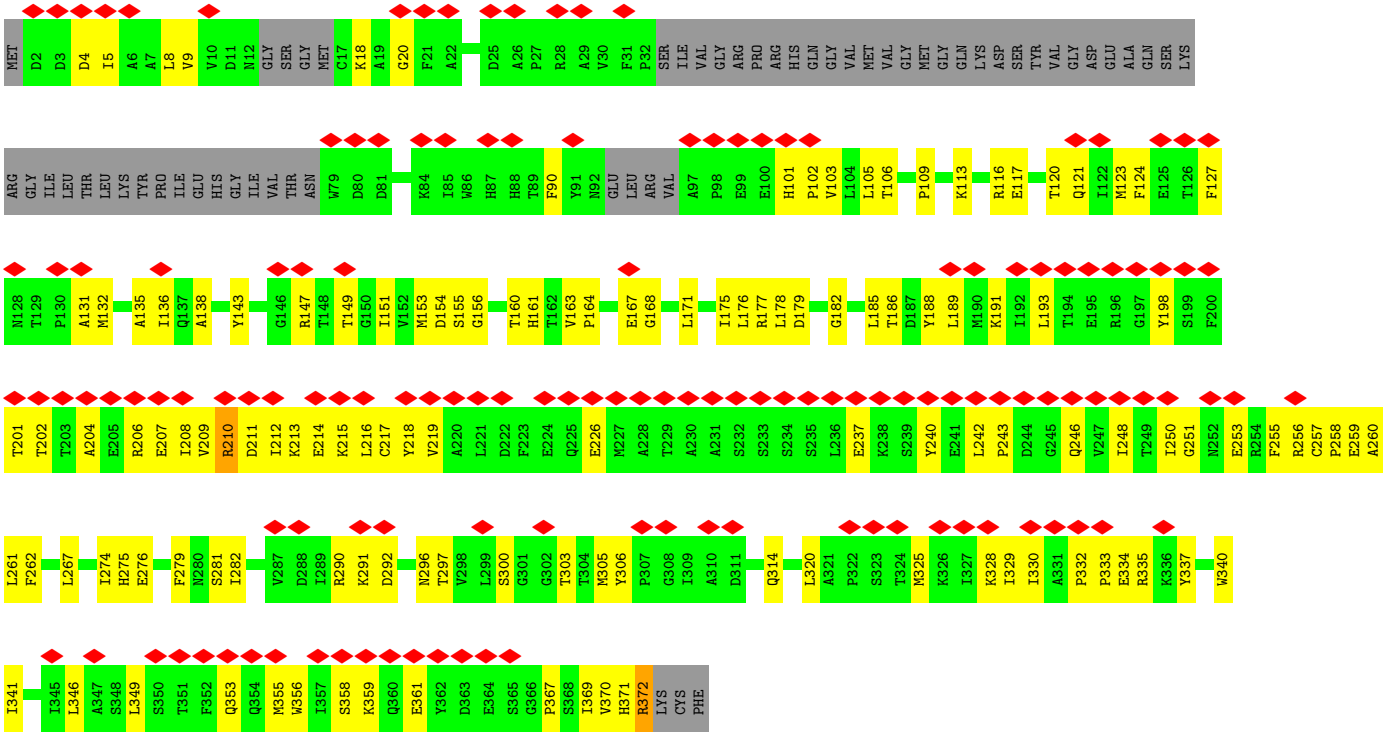
Chain N:





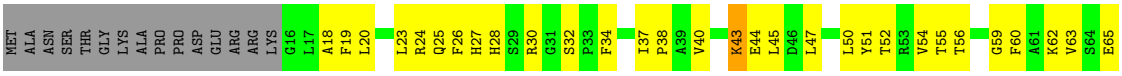
• Molecule 9: Actin, cytoplasmic 1

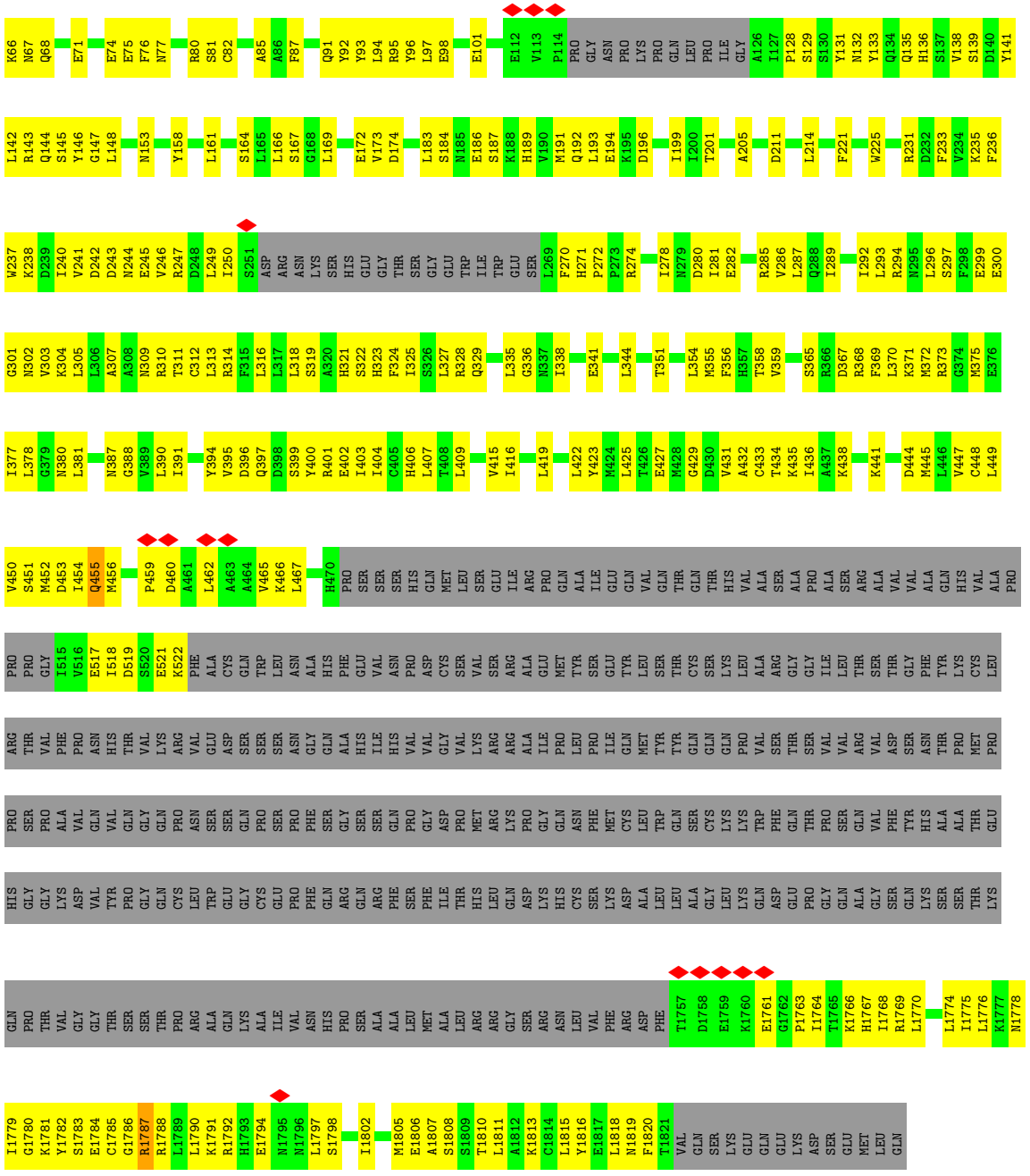
Chain P:



• Molecule 10: AT-rich interactive domain-containing protein 2,AT-rich interactive domain-containing protein 2

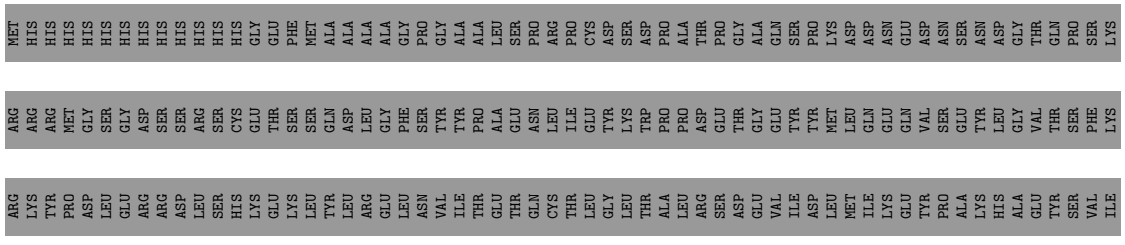
Chain Q:

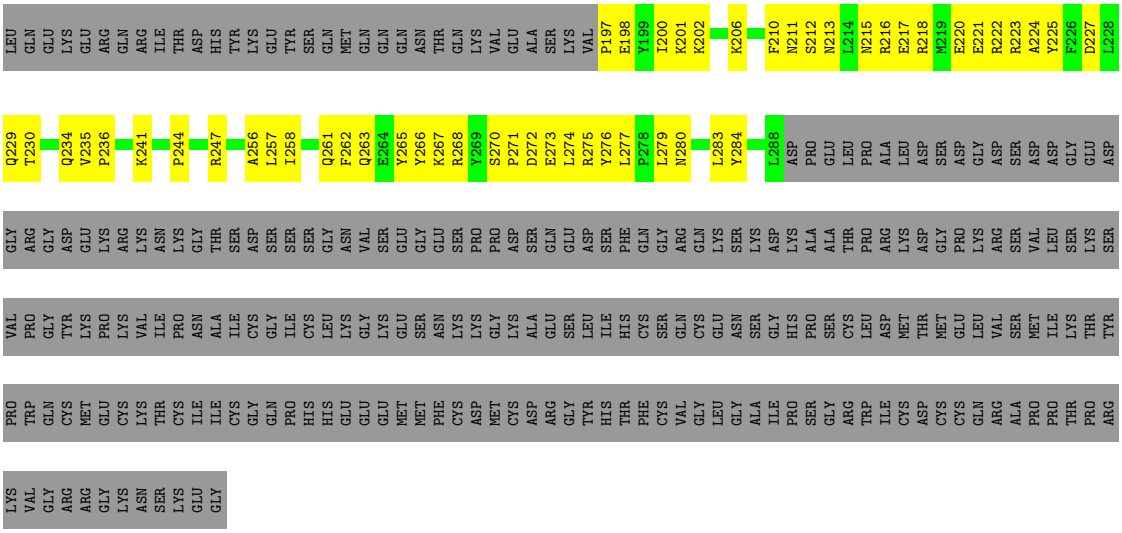




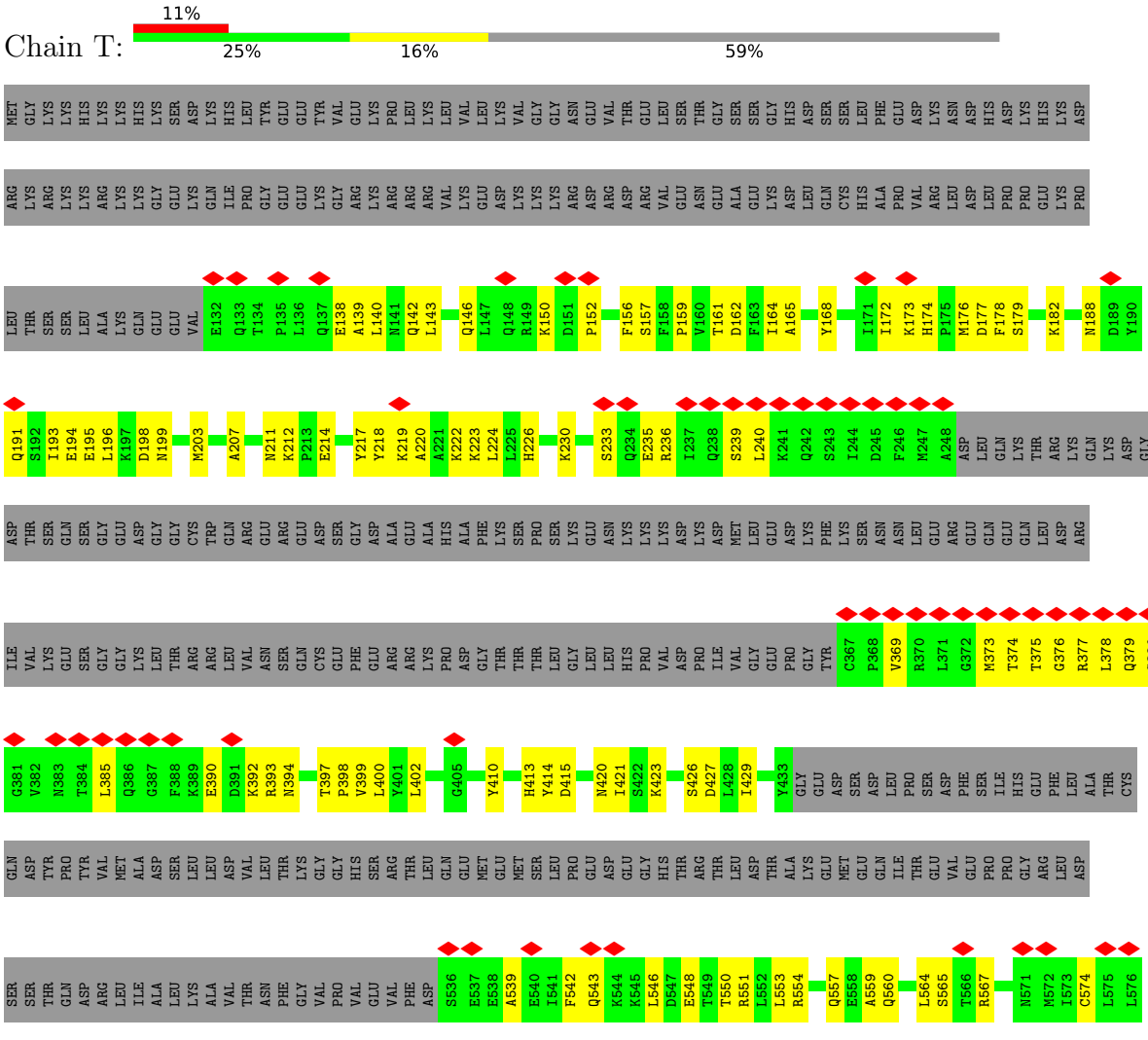
• Molecule 11: PHD finger protein 10

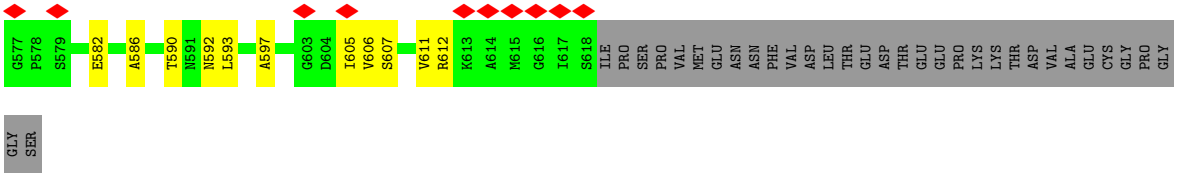
Chain R:





• Molecule 12: Isoform 2 of Bromodomain-containing protein 7



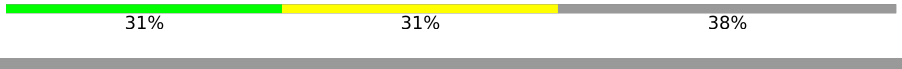


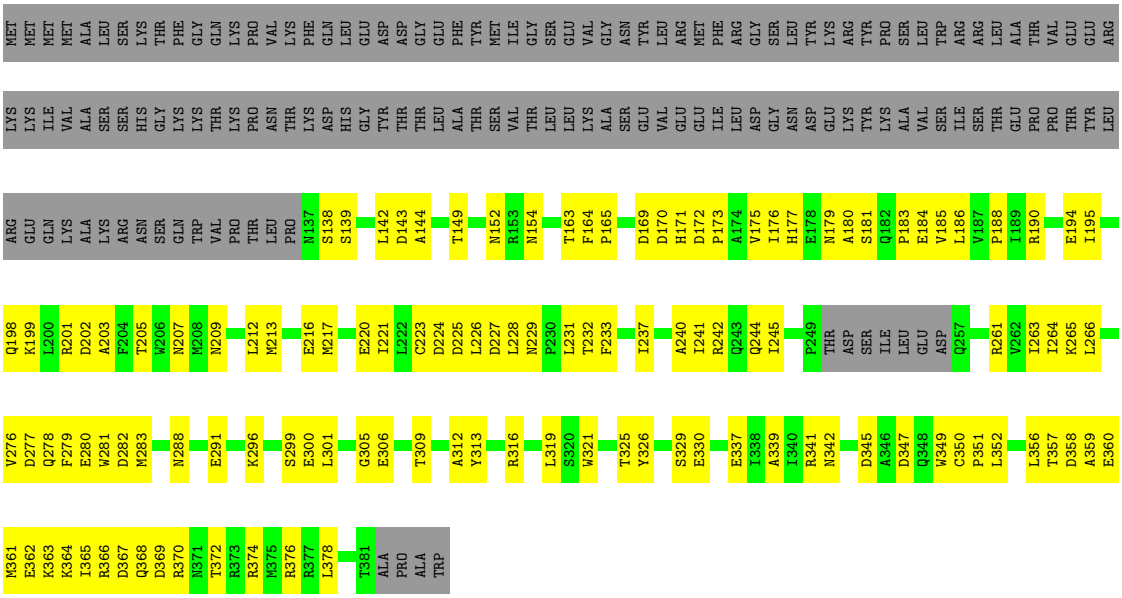
• Molecule 13: unknown

Chain U:

• Molecule 14: SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily B member 1

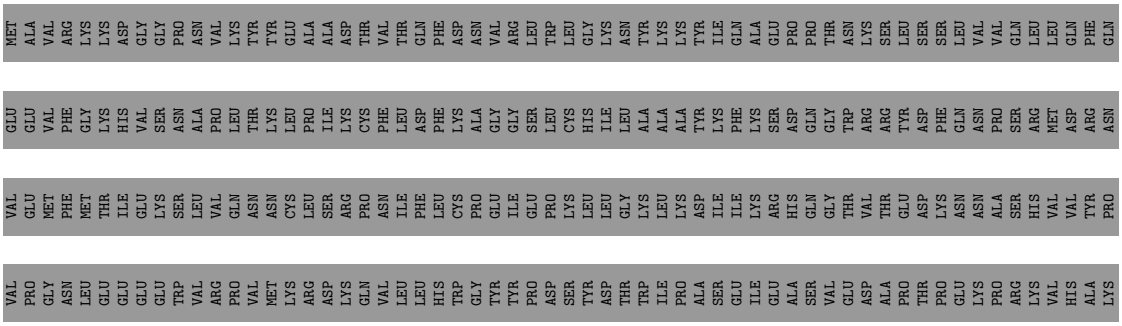
Chain V:

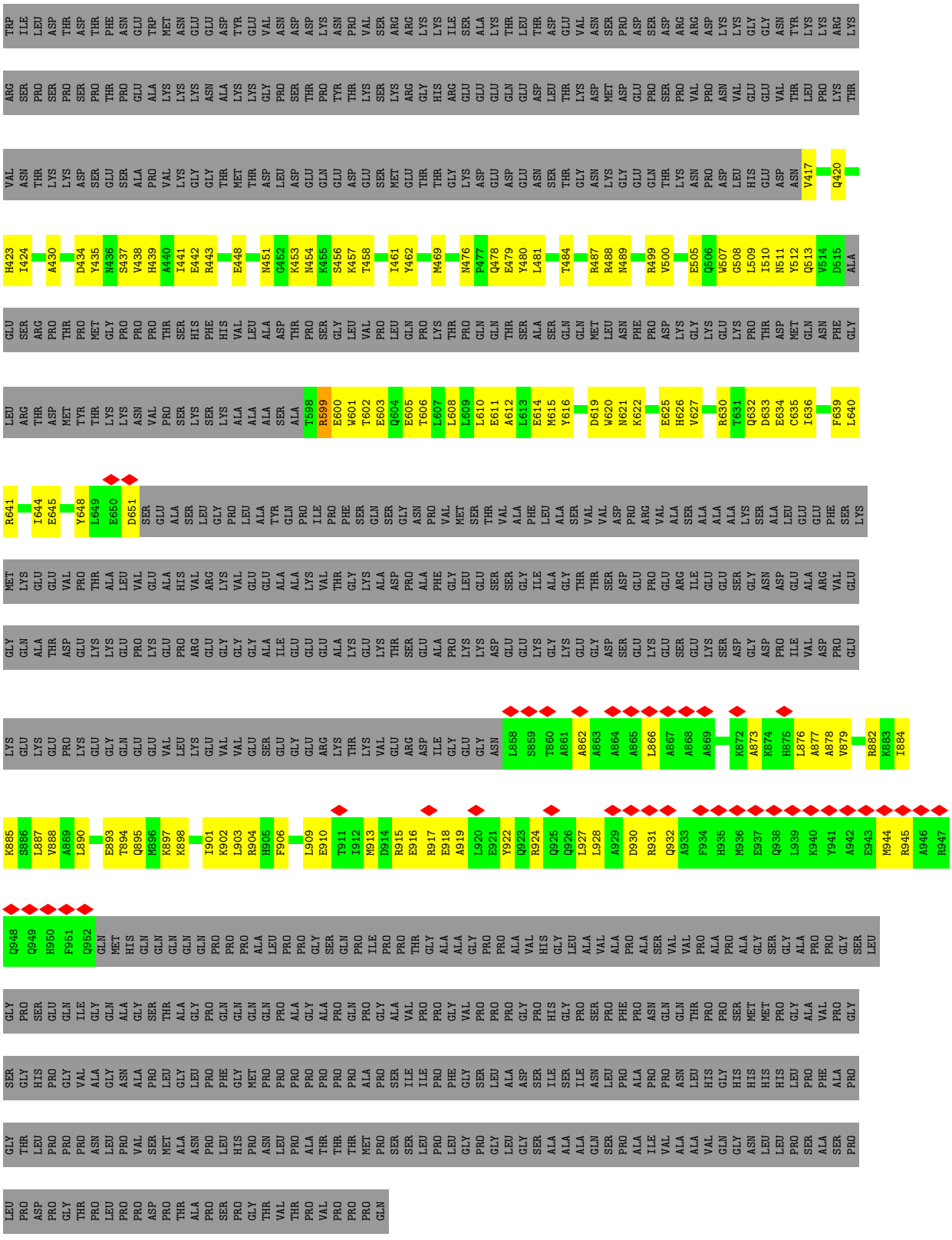




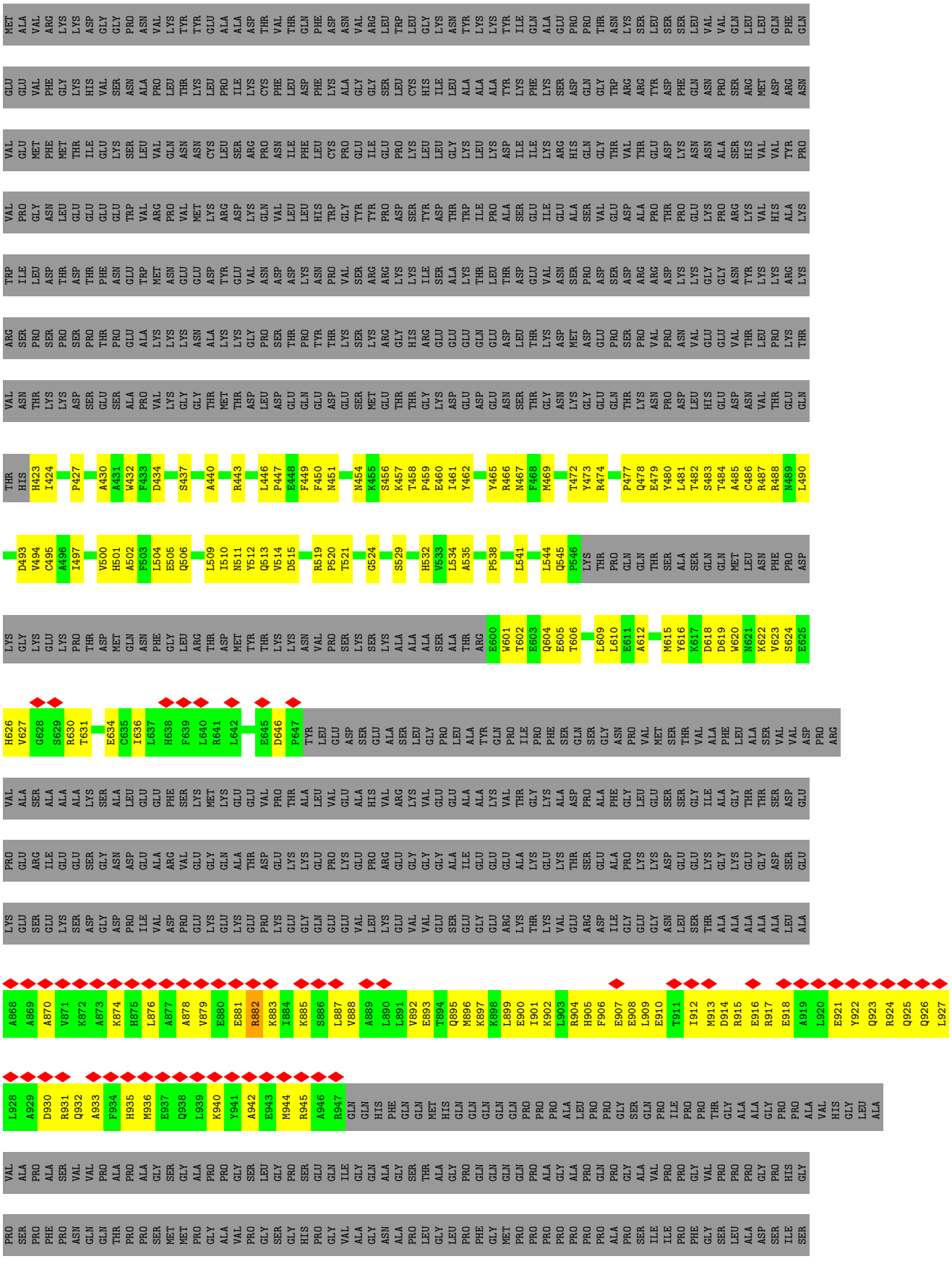
• Molecule 15: SWI/SNF complex subunit SMARCC2

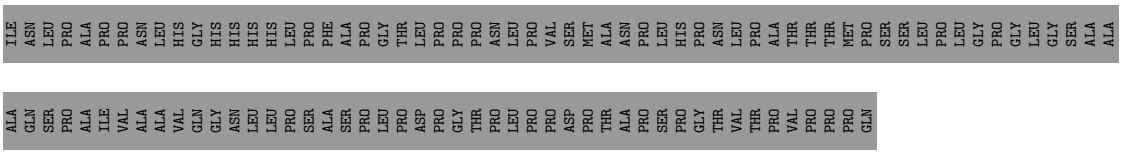
Chain W:





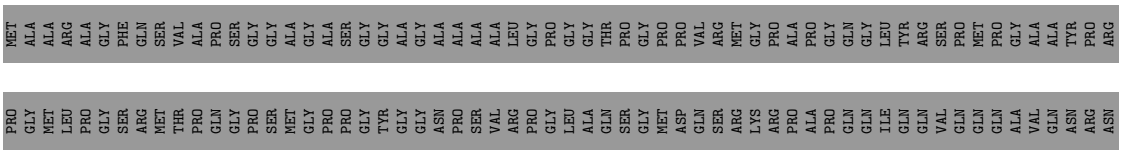
• Molecule 15: SWI/SNF complex subunit SMARCC2

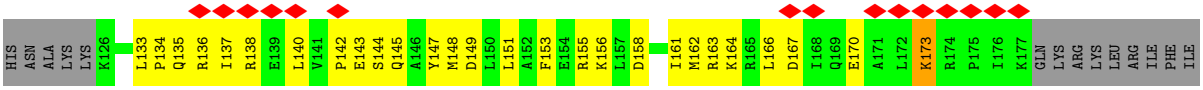


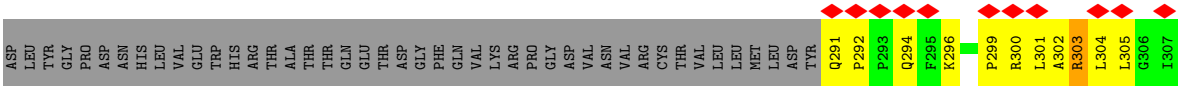


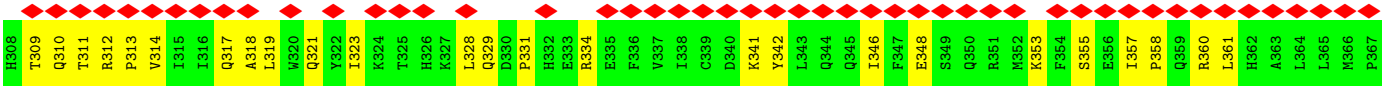
• Molecule 16: SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily D member 1

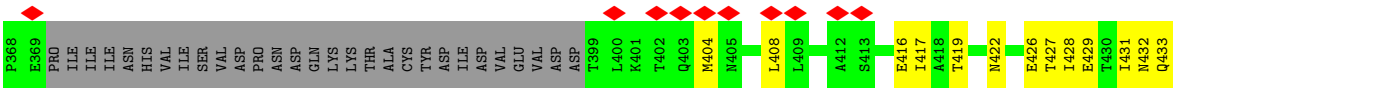
Chain Y:





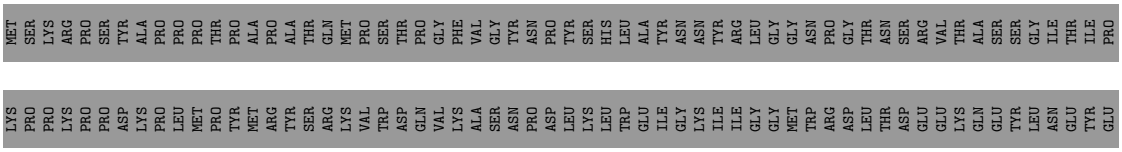


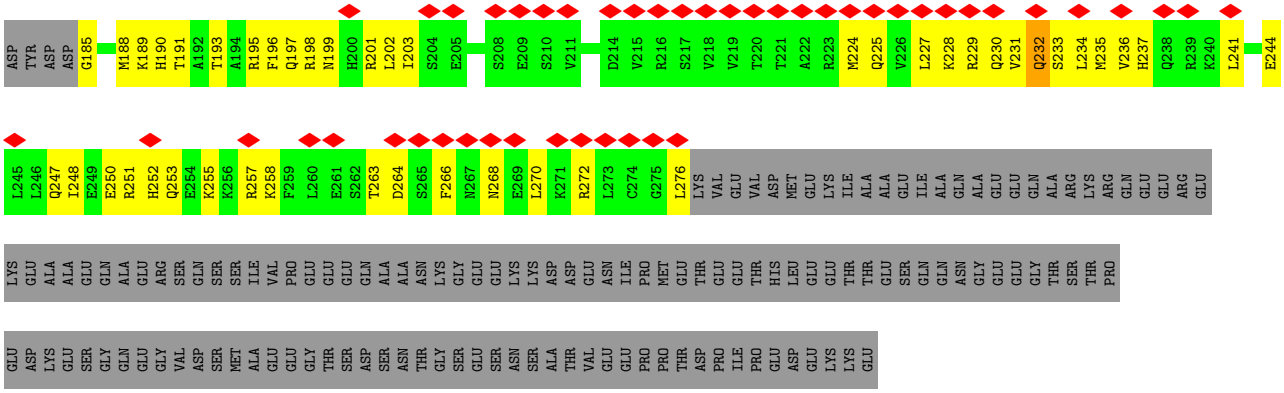




• Molecule 17: SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily E member 1

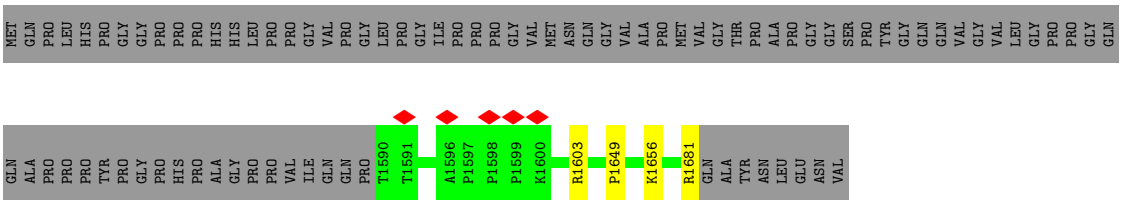
Chain Z:





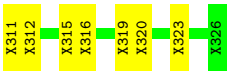
• Molecule 18: Protein polybromo-1

Chain a: 9% 91%



• Molecule 19: unknown

Chain M:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	137659	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.056	Depositor
Minimum map value	-0.021	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0062	Depositor
Map size (Å)	389.69998, 389.69998, 389.69998	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0825, 1.0825, 1.0825	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: BEF, MG, ADP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	B	0.87	0/711	0.69	0/950
1	F	0.83	0/680	0.73	0/912
2	C	0.69	0/821	0.59	0/1112
2	G	0.67	0/838	0.61	0/1131
3	D	0.75	0/728	0.62	0/983
3	H	0.76	0/736	0.63	0/991
4	E	0.74	0/789	0.65	0/1059
4	K	0.75	0/813	0.64	0/1093
5	I	1.32	1/3083 (0.0%)	0.98	0/4752
6	J	1.32	1/3175 (0.0%)	0.97	0/4903
7	A	0.36	0/6771	0.55	2/9102 (0.0%)
8	N	0.27	0/2667	0.51	0/3615
9	P	0.27	0/2535	0.49	0/3436
10	Q	0.37	0/4051	0.55	0/5466
11	R	0.47	0/792	0.56	0/1072
12	T	0.29	0/2210	0.51	0/2977
14	V	0.46	0/1947	0.58	0/2638
15	W	0.44	0/2097	0.52	0/2831
15	X	0.33	0/2120	0.52	0/2869
16	Y	0.30	0/2097	0.48	0/2822
17	Z	0.29	0/765	0.54	0/1021
18	a	0.32	0/767	0.61	0/1037
All	All	0.66	2/41193 (0.0%)	0.65	2/56772 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	I	88	DT	C3'-O3'	-5.48	1.36	1.44
6	J	101	DG	C3'-O3'	-5.48	1.36	1.44

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1257	ASP	CB-CG-OD2	5.21	122.99	118.30
7	A	1261	ASP	CB-CG-OD2	5.18	122.96	118.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	703	0	757	21	0
1	F	672	0	698	20	0
2	C	811	0	849	19	0
2	G	828	0	884	29	0
3	D	717	0	723	19	0
3	H	725	0	745	26	0
4	E	779	0	815	21	0
4	K	801	0	831	28	0
5	I	2752	0	1516	116	0
6	J	2827	0	1537	123	0
7	A	6652	0	6786	373	0
8	N	2612	0	2557	108	0
9	P	2482	0	2432	97	0
10	Q	3981	0	4002	248	0
11	R	771	0	774	68	0
12	T	2166	0	2163	91	0
13	U	35	0	10	2	0
14	V	1910	0	1860	120	0
15	W	2056	0	2028	115	0
15	X	2072	0	2052	147	0
16	Y	2057	0	2088	104	0
17	Z	757	0	786	46	0
18	a	750	0	761	0	0
19	M	80	0	18	4	0
20	A	4	0	0	3	0
21	A	1	0	0	0	0
22	A	27	0	12	11	0
All	All	40028	0	37684	1689	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 24.

All (1689) 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)
12:T:377:ARG:C	12:T:378:LEU:HD23	1.31	1.44
12:T:377:ARG:O	12:T:378:LEU:HD23	1.10	1.25
12:T:377:ARG:O	12:T:378:LEU:CD2	1.96	1.13
12:T:377:ARG:C	12:T:378:LEU:CD2	2.23	1.06
7:A:426:ARG:HA	11:R:262:PHE:HE1	1.27	0.98
7:A:1083:GLU:HB3	7:A:1301:LYS:HE3	1.42	0.98
5:I:99:DG:H1	6:J:49:DC:H42	1.11	0.97
14:V:357:THR:OG1	14:V:360:GLU:OE1	1.86	0.92
7:A:1076:TYR:HE1	7:A:1301:LYS:NZ	1.67	0.92
7:A:756:GLN:HE22	7:A:760:LYS:HE3	1.35	0.91
11:R:229:GLN:NE2	14:V:306:GLU:OE2	2.03	0.91
10:Q:1805:MET:HG3	10:Q:1806:GLU:H	1.37	0.89
7:A:1076:TYR:HE1	7:A:1301:LYS:HZ1	0.91	0.88
7:A:483:ALA:HB1	8:N:399:ILE:HG13	1.53	0.87
5:I:92:DC:H42	6:J:56:DG:H1	1.22	0.86
12:T:157:SER:HA	12:T:178:PHE:HB2	1.57	0.86
4:E:79:LYS:HB3	4:E:82:LEU:HD21	1.56	0.85
10:Q:407:LEU:HD12	10:Q:449:LEU:HD21	1.59	0.85
8:N:124:GLU:OE2	8:N:128:ASN:ND2	2.09	0.85
9:P:120:THR:HG21	9:P:370:VAL:HG11	1.59	0.84
10:Q:43:LYS:HG2	10:Q:77:ASN:HD22	1.43	0.83
5:I:78:DC:N3	6:J:70:DG:N1	2.27	0.82
15:W:901:ILE:HA	15:W:904:ARG:HE	1.41	0.82
5:I:32:DT:O4	6:J:116:DA:N6	2.11	0.82
7:A:969:HIS:HD2	7:A:1232:GLY:HA2	1.43	0.82
7:A:1076:TYR:CE1	7:A:1301:LYS:NZ	2.46	0.81
15:X:616:TYR:HE2	15:X:619:ASP:H	1.28	0.81
7:A:1087:ARG:HE	7:A:1301:LYS:HE2	1.46	0.81
14:V:179:ASN:HD22	14:V:212:LEU:HD23	1.45	0.81
17:Z:201:ARG:HG3	17:Z:202:LEU:HD12	1.63	0.80
10:Q:242:ASP:OD1	10:Q:323:HIS:NE2	2.12	0.80
7:A:549:ARG:NH1	7:A:971:VAL:O	2.14	0.80
11:R:276:TYR:OH	12:T:159:PRO:O	1.99	0.80
7:A:1127:ASP:OD1	7:A:1128:GLY:N	2.14	0.80
5:I:125:DC:N3	6:J:23:DG:N1	2.29	0.79
5:I:58:DT:O4	6:J:90:DA:N6	2.13	0.79
1:B:98:TYR:OH	3:H:68:ASP:OD1	1.99	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:115:DT:O4	6:J:33:DA:N6	2.16	0.79
9:P:260:ALA:HB1	9:P:267:LEU:HB2	1.64	0.79
12:T:392:LYS:HB3	12:T:393:ARG:HH11	1.48	0.79
16:Y:476:GLU:OE1	16:Y:482:TYR:OH	2.00	0.79
10:Q:1792:ARG:HG3	15:X:918:GLU:HG2	1.64	0.78
11:R:275:ARG:HG2	11:R:283:LEU:HD12	1.65	0.78
10:Q:1769:ARG:NH1	10:Q:1805:MET:SD	2.56	0.78
7:A:197:PRO:HG3	15:W:651:ASP:HA	1.66	0.78
4:K:50:GLU:O	4:K:54:TYR:N	2.17	0.78
11:R:220:GLU:HG3	11:R:221:GLU:OE1	1.84	0.78
11:R:270:SER:OG	11:R:272:ASP:OD1	2.02	0.77
5:I:127:DT:N3	6:J:21:DA:N1	2.32	0.77
7:A:1003:LEU:HB3	7:A:1303:ARG:HH11	1.49	0.77
12:T:548:GLU:OE1	12:T:592:ASN:ND2	2.18	0.77
5:I:116:DC:N3	6:J:32:DG:N1	2.33	0.77
8:N:166:THR:HA	8:N:183:HIS:HA	1.67	0.77
10:Q:321:HIS:HE2	10:Q:358:THR:HG1	1.26	0.77
7:A:1083:GLU:CB	7:A:1301:LYS:HE3	2.15	0.77
7:A:757:TYR:O	7:A:979:ARG:NH1	2.19	0.76
10:Q:80:ARG:HB2	11:R:223:ARG:HH22	1.50	0.76
10:Q:82:CYS:HB3	10:Q:85:ALA:HB2	1.67	0.76
5:I:34:DG:H1	6:J:114:DC:H42	1.34	0.76
5:I:99:DG:N2	6:J:49:DC:N3	2.34	0.76
12:T:564:LEU:HA	12:T:567:ARG:HH21	1.50	0.76
16:Y:137:ILE:HD13	16:Y:438:ARG:HH22	1.50	0.76
5:I:116:DC:N4	6:J:32:DG:O6	2.18	0.76
5:I:69:DA:N6	6:J:79:DT:O4	2.19	0.75
15:X:925:GLN:NE2	16:Y:321:GLN:OE1	2.18	0.75
7:A:544:GLN:O	7:A:548:LYS:NZ	2.19	0.75
3:D:109:HIS:HD2	7:A:1335:GLY:HA2	1.51	0.75
5:I:127:DT:O4	6:J:21:DA:N6	2.20	0.75
11:R:216:ARG:NH2	11:R:220:GLU:OE2	2.20	0.74
15:X:474:ARG:HA	15:X:477:PRO:HG3	1.69	0.74
7:A:1192:ARG:NH2	20:A:1701:BEF:F1	2.10	0.74
7:A:451:ARG:NH1	10:Q:1806:GLU:O	2.19	0.74
10:Q:404:ILE:HA	10:Q:407:LEU:HD23	1.68	0.74
17:Z:264:ASP:O	17:Z:268:ASN:ND2	2.21	0.74
11:R:211:ASN:HD21	15:X:481:LEU:HA	1.53	0.73
11:R:244:PRO:HG2	11:R:247:ARG:HG3	1.71	0.73
7:A:934:LYS:NZ	7:A:940:GLU:O	2.21	0.73
15:W:451:ASN:HB3	15:W:453:LYS:HG2	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:213:LYS:NZ	9:P:257:CYS:SG	2.61	0.73
10:Q:1784:GLU:HA	10:Q:1787:ARG:HE	1.54	0.73
10:Q:1761:GLU:OE1	10:Q:1769:ARG:NH2	2.22	0.73
8:N:18:ILE:HG22	8:N:88:LEU:HD11	1.70	0.73
16:Y:133:LEU:HD12	16:Y:134:PRO:HD2	1.71	0.73
7:A:785:LYS:N	22:A:1703:ADP:O3A	2.21	0.73
9:P:160:THR:OG1	9:P:178:LEU:O	2.07	0.72
10:Q:1790:LEU:HD23	10:Q:1818:LEU:HD13	1.71	0.72
11:R:222:ARG:NE	14:V:301:LEU:O	2.17	0.72
8:N:12:GLY:O	8:N:118:HIS:ND1	2.23	0.72
8:N:17:ASP:OD2	8:N:24:ARG:NH1	2.22	0.72
7:A:1053:GLN:HA	7:A:1056:GLU:HB3	1.71	0.72
7:A:450:ALA:O	7:A:453:THR:OG1	2.06	0.72
8:N:333:VAL:HG11	8:N:345:TYR:HE1	1.55	0.72
7:A:426:ARG:HA	11:R:262:PHE:CE1	2.19	0.72
7:A:1003:LEU:HB3	7:A:1303:ARG:NH1	2.04	0.72
7:A:1180:PRO:HG3	7:A:1218:ALA:HB1	1.71	0.71
10:Q:214:LEU:HB3	14:V:173:PRO:HB2	1.70	0.71
5:I:75:DT:O4	6:J:73:DA:N6	2.17	0.71
12:T:390:GLU:OE1	12:T:393:ARG:N	2.24	0.71
7:A:1192:ARG:NH1	22:A:1703:ADP:O1B	2.24	0.71
9:P:182:GLY:O	9:P:186:THR:N	2.23	0.71
7:A:1265:ASP:HB3	7:A:1268:THR:HB	1.71	0.71
8:N:283:PRO:HA	8:N:295:CYS:HB2	1.73	0.71
15:X:892:VAL:HA	15:X:895:GLN:HB3	1.73	0.71
9:P:131:ALA:HA	9:P:358:SER:HA	1.73	0.71
10:Q:466:LYS:HB2	10:Q:521:GLU:HB2	1.73	0.70
7:A:906:ARG:NH2	7:A:927:PHE:O	2.24	0.70
7:A:1077:ARG:HG2	7:A:1301:LYS:O	1.91	0.70
8:N:263:GLN:HA	8:N:267:LEU:HD13	1.72	0.70
14:V:198:GLN:NE2	14:V:199:LYS:O	2.24	0.70
14:V:229:ASN:ND2	14:V:232:THR:OG1	2.23	0.70
9:P:333:PRO:O	9:P:335:ARG:NH1	2.24	0.70
2:C:90:ASP:OD2	2:C:91:GLU:N	2.24	0.70
10:Q:38:PRO:HB3	10:Q:92:TYR:HE1	1.56	0.70
12:T:410:TYR:HA	16:Y:155:ARG:HE	1.56	0.70
7:A:952:GLU:OE2	7:A:1227:LYS:NZ	2.21	0.70
10:Q:243:ASP:HB3	10:Q:246:VAL:HG22	1.74	0.69
5:I:115:DT:N3	6:J:33:DA:N1	2.41	0.69
15:W:448:GLU:OE2	15:W:499:ARG:NE	2.25	0.69
10:Q:81:SER:HB2	11:R:224:ALA:H	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1200:ARG:HD2	7:A:1275:ARG:HE	1.57	0.69
10:Q:63:VAL:HG13	10:Q:68:GLN:HB2	1.74	0.69
16:Y:136:ARG:HB3	16:Y:435:LYS:HD2	1.74	0.69
10:Q:325:ILE:HG22	10:Q:329:GLN:HE22	1.58	0.69
11:R:257:LEU:HD12	15:X:538:PRO:HD2	1.73	0.69
15:X:504:LEU:HD22	15:X:509:LEU:HD22	1.74	0.69
10:Q:240:ILE:HD11	10:Q:324:PHE:HB3	1.74	0.69
7:A:744:LYS:NZ	7:A:763:GLU:OE1	2.25	0.69
9:P:8:LEU:HB3	9:P:103:VAL:HG12	1.73	0.68
4:E:121:PRO:HB3	1:F:53:GLU:HG3	1.74	0.68
8:N:20:SER:HB2	8:N:174:ALA:H	1.58	0.68
11:R:227:ASP:OD2	11:R:230:THR:OG1	2.12	0.68
5:I:17:DC:OP1	7:A:900:HIS:NE2	2.21	0.68
7:A:175:ASN:O	7:A:178:HIS:ND1	2.25	0.68
2:G:21:ALA:HB2	3:H:121:TYR:HB2	1.76	0.68
7:A:939:PHE:O	7:A:941:GLN:NE2	2.26	0.68
16:Y:472:ASN:ND2	16:Y:476:GLU:OE2	2.26	0.68
7:A:374:LEU:HD11	15:W:648:TYR:HB3	1.76	0.68
7:A:486:PHE:HB3	8:N:399:ILE:HD11	1.75	0.68
9:P:155:SER:HA	9:P:160:THR:HG22	1.76	0.68
9:P:213:LYS:HB3	9:P:306:TYR:HE1	1.57	0.68
10:Q:1805:MET:HG3	10:Q:1806:GLU:N	2.09	0.68
12:T:188:ASN:O	12:T:191:GLN:NE2	2.27	0.68
7:A:419:GLU:HA	7:A:422:VAL:HG22	1.75	0.67
9:P:349:LEU:O	9:P:353:GLN:NE2	2.27	0.67
5:I:99:DG:H21	5:I:100:DG:N2	1.92	0.67
7:A:914:LEU:HD23	7:A:921:LEU:HD22	1.77	0.67
5:I:125:DC:N4	6:J:23:DG:O6	2.18	0.67
5:I:78:DC:O2	6:J:70:DG:N2	2.22	0.67
7:A:943:PHE:HA	7:A:956:LEU:HD21	1.77	0.67
7:A:1287:ASP:OD1	7:A:1288:LEU:N	2.27	0.67
16:Y:300:ARG:HE	16:Y:346:ILE:HG12	1.59	0.67
15:X:502:ALA:O	15:X:506:GLN:N	2.28	0.67
15:X:913:MET:O	15:X:917:ARG:NH2	2.28	0.67
6:J:34:DC:H2'	6:J:35:DT:H71	1.76	0.67
10:Q:201:THR:O	10:Q:205:ALA:N	2.23	0.67
15:X:609:LEU:HA	15:X:627:VAL:HG11	1.75	0.67
1:B:66:ILE:HD11	4:K:92:LEU:HD11	1.77	0.67
5:I:78:DC:N4	6:J:70:DG:O6	2.19	0.66
7:A:476:LEU:HG	8:N:405:THR:HG21	1.76	0.66
7:A:1043:ARG:NH1	7:A:1176:SER:O	2.27	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1239:SER:O	7:A:1243:ARG:NH2	2.27	0.66
15:X:446:LEU:HD13	15:X:500:VAL:HG12	1.77	0.66
15:X:624:SER:OG	15:X:630:ARG:O	2.11	0.66
9:P:123:MET:HA	9:P:127:PHE:HB3	1.76	0.66
14:V:220:GLU:OE2	14:V:221:ILE:HG13	1.95	0.66
14:V:356:LEU:HD12	14:V:360:GLU:HB3	1.77	0.66
17:Z:228:LYS:HA	17:Z:231:VAL:HB	1.77	0.66
7:A:1047:ASN:OD1	7:A:1081:LYS:NZ	2.29	0.66
10:Q:335:LEU:HA	10:Q:338:ILE:HG22	1.76	0.66
7:A:969:HIS:CD2	7:A:1232:GLY:HA2	2.29	0.66
8:N:155:ALA:HB2	8:N:180:ILE:HD12	1.77	0.66
8:N:351:ALA:HB2	8:N:389:ARG:HH21	1.59	0.66
15:X:434:ASP:OD2	15:X:437:SER:N	2.28	0.66
10:Q:240:ILE:HG23	10:Q:241:VAL:HG23	1.76	0.66
8:N:351:ALA:HA	8:N:389:ARG:HE	1.60	0.66
10:Q:459:PRO:HD2	10:Q:460:ASP:H	1.60	0.66
15:X:904:ARG:O	15:X:907:GLU:HG2	1.96	0.66
4:E:61:LEU:HD12	1:F:36:ARG:HB3	1.78	0.66
11:R:211:ASN:HD22	15:X:481:LEU:HD12	1.60	0.66
11:R:274:LEU:HD23	11:R:277:LEU:HD21	1.78	0.66
3:D:68:ASP:OD1	1:F:98:TYR:OH	2.14	0.65
16:Y:305:LEU:HD12	16:Y:318:ALA:HB1	1.77	0.65
16:Y:480:GLU:HA	16:Y:483:PHE:HD1	1.61	0.65
2:G:29:ARG:NH1	3:H:36:SER:O	2.27	0.65
7:A:479:ILE:HG23	8:N:403:LEU:HD13	1.78	0.65
15:W:469:MET:HE1	15:W:500:VAL:HG12	1.78	0.65
11:R:213:ASN:OD1	11:R:216:ARG:NH1	2.26	0.65
5:I:81:DC:N4	6:J:66:DG:O6	2.29	0.65
5:I:92:DC:N4	6:J:56:DG:H1	1.94	0.65
10:Q:309:ASN:OD1	10:Q:310:ARG:N	2.28	0.65
7:A:797:MET:SD	7:A:798:GLU:HG2	2.35	0.65
15:W:608:LEU:HB3	15:W:627:VAL:HG22	1.77	0.65
16:Y:438:ARG:O	16:Y:442:LEU:N	2.27	0.65
7:A:748:LEU:HD21	7:A:798:GLU:HG3	1.79	0.65
7:A:915:GLN:HA	7:A:1181:HIS:CE1	2.32	0.65
15:W:601:TRP:CH2	15:W:630:ARG:HG3	2.32	0.65
15:W:442:GLU:OE1	15:W:462:TYR:OH	2.15	0.65
15:X:892:VAL:O	15:X:896:MET:N	2.25	0.65
5:I:83:DG:H1	6:J:65:DC:H42	1.45	0.65
6:J:91:DA:H2"	6:J:92:DG:C8	2.32	0.65
7:A:787:ILE:HD13	22:A:1703:ADP:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1163:LEU:H	7:A:1189:ARG:HH21	1.45	0.64
7:A:1310:LEU:HB3	7:A:1311:PRO:HD2	1.78	0.64
14:V:277:ASP:OD1	14:V:278:GLN:N	2.30	0.64
7:A:1177:ASP:OD2	7:A:1178:TRP:N	2.29	0.64
15:X:921:GLU:O	15:X:925:GLN:N	2.24	0.64
16:Y:435:LYS:HA	16:Y:438:ARG:NH1	2.12	0.64
8:N:41:ILE:HD11	8:N:98:SER:HB2	1.79	0.64
9:P:237:GLU:HA	9:P:251:GLY:HA2	1.77	0.64
14:V:171:HIS:HB2	14:V:176:ILE:HD11	1.78	0.64
15:X:534:LEU:HB3	15:X:541:LEU:HD22	1.79	0.64
16:Y:501:GLN:O	16:Y:504:GLN:NE2	2.25	0.64
7:A:445:GLN:O	10:Q:518:ILE:N	2.28	0.64
14:V:261:ARG:NE	14:V:280:GLU:OE1	2.25	0.64
2:G:84:GLN:NE2	2:G:106:GLY:O	2.27	0.64
5:I:128:DG:H1	6:J:20:DC:H42	1.44	0.64
7:A:1286:MET:HA	7:A:1289:ASP:HB2	1.78	0.64
7:A:441:ARG:NH1	10:Q:299:GLU:OE2	2.21	0.64
9:P:163:VAL:HG12	9:P:175:ILE:HG23	1.80	0.64
1:F:60:VAL:HA	1:F:63:GLU:OE1	1.97	0.64
9:P:202:THR:HG22	9:P:204:ALA:H	1.63	0.64
2:C:78:ILE:HB	3:D:54:ILE:HD12	1.80	0.64
7:A:466:ARG:O	7:A:470:GLN:NE2	2.30	0.64
10:Q:1776:LEU:HA	10:Q:1779:ILE:HB	1.79	0.64
5:I:100:DG:H2"	5:I:101:DG:H5"	1.79	0.63
5:I:145:DT:O4	6:J:3:DA:N6	2.19	0.63
6:J:77:DC:H2"	6:J:78:DG:C8	2.32	0.63
7:A:425:ARG:NH2	7:A:427:ASP:OD1	2.30	0.63
7:A:1211:GLU:HA	7:A:1214:ILE:HG22	1.79	0.63
10:Q:1816:TYR:O	10:Q:1820:PHE:N	2.32	0.63
14:V:172:ASP:HB3	14:V:175:VAL:HG22	1.81	0.63
2:C:115:LEU:HB3	1:F:44:LYS:HD2	1.81	0.63
7:A:1215:LEU:HG	7:A:1219:LYS:HE3	1.79	0.63
11:R:211:ASN:ND2	15:X:481:LEU:HD12	2.14	0.63
12:T:373:MET:HG3	12:T:374:THR:H	1.64	0.63
15:X:924:ARG:NH1	15:X:925:GLN:OE1	2.32	0.63
7:A:417:ARG:NH2	15:W:640:LEU:O	2.21	0.63
10:Q:296:LEU:O	10:Q:302:ASN:ND2	2.17	0.63
7:A:1239:SER:HB3	7:A:1243:ARG:HH21	1.63	0.63
14:V:282:ASP:N	15:X:493:ASP:OD1	2.24	0.63
14:V:291:GLU:OE2	14:V:316:ARG:NH1	2.31	0.62
14:V:296:LYS:O	14:V:299:SER:OG	2.13	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:N:368:LEU:O	8:N:372:THR:OG1	2.14	0.62
6:J:27:DC:H2"	6:J:28:DT:H71	1.81	0.62
6:J:123:DC:H2"	6:J:124:DG:C8	2.35	0.62
10:Q:407:LEU:HA	10:Q:415:VAL:HG23	1.80	0.62
10:Q:1813:LYS:HG2	16:Y:334:ARG:HB2	1.82	0.62
7:A:981:LYS:NZ	7:A:1191:HIS:O	2.33	0.62
15:W:930:ASP:O	15:X:931:ARG:NH2	2.32	0.62
2:C:24:GLN:NE2	3:D:47:GLN:HE22	1.98	0.62
7:A:1100:LEU:HD21	7:A:1171:VAL:HG22	1.82	0.62
9:P:147:ARG:NH1	9:P:296:ASN:OD1	2.32	0.62
15:W:898:LYS:HD2	16:Y:417:ILE:HG23	1.81	0.62
17:Z:255:LYS:O	17:Z:258:LYS:HG2	1.99	0.62
7:A:834:TYR:OH	7:A:866:ASP:OD2	2.12	0.62
7:A:1083:GLU:HB3	7:A:1301:LYS:CE	2.24	0.62
10:Q:1797:LEU:HD22	10:Q:1815:LEU:HD21	1.80	0.62
14:V:300:GLU:HA	15:X:520:PRO:HB3	1.82	0.62
14:V:364:LYS:O	14:V:368:GLN:HG2	2.00	0.62
15:W:633:ASP:OD1	15:W:634:GLU:N	2.32	0.62
8:N:158:THR:HG21	8:N:169:ILE:HG21	1.80	0.62
15:W:458:THR:OG1	15:W:461:ILE:HG12	2.00	0.62
7:A:1019:THR:OG1	7:A:1031:GLY:O	2.16	0.61
7:A:1047:ASN:ND2	7:A:1175:ASP:OD2	2.33	0.61
8:N:324:GLY:O	8:N:328:VAL:N	2.29	0.61
5:I:125:DC:H2"	5:I:126:DG:H5"	1.82	0.61
7:A:414:ARG:HH22	12:T:385:LEU:HG	1.65	0.61
7:A:1205:CYS:SG	7:A:1206:THR:N	2.73	0.61
10:Q:324:PHE:CE1	10:Q:327:LEU:HB2	2.35	0.61
16:Y:489:GLU:OE1	16:Y:493:ARG:NH1	2.33	0.61
12:T:376:GLY:O	12:T:378:LEU:CD2	2.48	0.61
9:P:151:ILE:HG21	9:P:282:ILE:HD11	1.82	0.61
10:Q:132:ASN:HB3	10:Q:135:GLN:HB2	1.80	0.61
7:A:784:GLY:HA2	22:A:1703:ADP:H5'1	1.82	0.61
10:Q:153:ASN:OD1	14:V:163:THR:OG1	2.16	0.61
7:A:967:ARG:O	7:A:971:VAL:HG23	2.00	0.61
7:A:1181:HIS:NE2	7:A:1225:ASP:OD2	2.24	0.61
7:A:483:ALA:HB2	8:N:403:LEU:HD21	1.83	0.61
7:A:1226:GLN:HA	7:A:1230:GLN:HB3	1.82	0.61
10:Q:136:HIS:NE2	14:V:227:ASP:OD1	2.32	0.61
11:R:227:ASP:HB3	11:R:234:GLN:HE22	1.66	0.61
6:J:56:DG:OP2	7:A:1135:ARG:NH2	2.34	0.61
5:I:145:DT:O2	6:J:4:DG:N2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:N:350:VAL:O	8:N:389:ARG:NE	2.32	0.61
10:Q:367:ASP:HB3	10:Q:370:LEU:HD13	1.82	0.61
2:G:16:THR:O	2:G:19:SER:OG	2.14	0.60
11:R:263:GLN:HE22	11:R:265:TYR:HB3	1.66	0.60
7:A:1085:LEU:HD23	7:A:1088:ILE:HD11	1.82	0.60
3:D:109:HIS:CD2	7:A:1335:GLY:HA2	2.36	0.60
14:V:143:ASP:OD1	14:V:144:ALA:N	2.33	0.60
14:V:365:ILE:HA	14:V:368:GLN:HE21	1.64	0.60
9:P:211:ASP:HA	9:P:214:GLU:HB2	1.84	0.60
14:V:369:ASP:OD1	14:V:370:ARG:N	2.35	0.60
9:P:153:MET:O	9:P:300:SER:OG	2.13	0.60
12:T:139:ALA:HB1	12:T:240:LEU:HD21	1.83	0.60
14:V:367:ASP:OD1	14:V:368:GLN:N	2.33	0.60
3:D:73:ILE:HD13	3:D:101:LEU:HD22	1.83	0.60
6:J:118:DT:H2"	6:J:119:DT:H71	1.84	0.60
7:A:441:ARG:O	10:Q:294:ARG:NH2	2.32	0.60
7:A:774:ASN:HB3	7:A:928:LEU:HD22	1.84	0.60
8:N:271:ASP:O	8:N:363:ARG:NH2	2.32	0.60
8:N:351:ALA:HB2	8:N:389:ARG:NH2	2.16	0.60
15:W:423:HIS:O	15:W:513:GLN:NE2	2.35	0.60
5:I:62:DC:H2"	5:I:63:DG:H8	1.67	0.60
7:A:765:LEU:HB3	7:A:792:LEU:HD12	1.84	0.60
7:A:889:HIS:ND1	7:A:923:ALA:HB2	2.16	0.60
10:Q:24:ARG:O	10:Q:28:HIS:N	2.27	0.60
8:N:309:PHE:HA	8:N:324:GLY:HA2	1.82	0.60
10:Q:138:VAL:HG21	14:V:231:LEU:HD11	1.83	0.60
14:V:220:GLU:O	14:V:224:ASP:N	2.35	0.60
16:Y:300:ARG:HH21	16:Y:346:ILE:HA	1.67	0.60
17:Z:237:HIS:O	17:Z:241:LEU:N	2.27	0.60
7:A:1098:LYS:NZ	7:A:1142:PHE:O	2.29	0.60
7:A:485:ASP:HA	7:A:488:GLU:HB2	1.84	0.59
7:A:510:ASN:OD1	7:A:511:THR:N	2.35	0.59
7:A:891:CYS:HB3	7:A:894:THR:HG23	1.84	0.59
7:A:996:ILE:HD12	7:A:1084:LEU:HD11	1.82	0.59
10:Q:309:ASN:ND2	10:Q:311:THR:OG1	2.32	0.59
7:A:917:LYS:HB3	7:A:919:PRO:HD2	1.83	0.59
14:V:139:SER:HA	14:V:142:LEU:HD23	1.84	0.59
17:Z:244:GLU:HA	17:Z:247:GLN:HG3	1.84	0.59
10:Q:43:LYS:HZ1	10:Q:45:LEU:HD12	1.67	0.59
10:Q:1815:LEU:O	10:Q:1819:ASN:N	2.32	0.59
5:I:126:DG:H2'	5:I:127:DT:H71	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:783:LEU:HD21	7:A:981:LYS:HG3	1.82	0.59
10:Q:47:LEU:HA	10:Q:50:LEU:HD23	1.85	0.59
11:R:265:TYR:HA	15:X:545:GLN:HE21	1.68	0.59
15:X:505:GLU:OE1	15:X:511:ASN:ND2	2.34	0.59
15:X:616:TYR:HD2	15:X:618:ASP:H	1.50	0.59
19:M:316:UNK:O	19:M:320:UNK:N	2.35	0.59
4:K:48:LEU:O	4:K:51:ILE:HG12	2.02	0.59
5:I:99:DG:H1	6:J:49:DC:N4	1.91	0.59
7:A:1078:ALA:HA	7:A:1303:ARG:HE	1.67	0.59
9:P:282:ILE:HG22	9:P:290:ARG:HD2	1.84	0.59
10:Q:51:TYR:O	10:Q:55:THR:OG1	2.12	0.59
14:V:341:ARG:HH21	15:X:490:LEU:C	2.05	0.59
1:B:24:ASP:HB3	1:B:27:GLN:HG2	1.85	0.59
1:F:78:ARG:NH2	1:F:85:ASP:OD2	2.35	0.59
7:A:1287:ASP:O	7:A:1291:ARG:HG3	2.02	0.59
7:A:881:ASP:OD1	7:A:882:GLU:N	2.36	0.59
7:A:1062:HIS:CD2	7:A:1310:LEU:HD11	2.38	0.59
8:N:343:GLY:O	8:N:347:SER:OG	2.16	0.59
15:W:621:ASN:HA	15:W:632:GLN:HE21	1.68	0.59
7:A:1268:THR:O	7:A:1272:MET:N	2.35	0.59
5:I:50:DG:H1	6:J:98:DC:H42	1.49	0.59
8:N:96:TRP:HH2	8:N:136:LEU:HA	1.66	0.59
8:N:333:VAL:HG11	8:N:345:TYR:CE1	2.38	0.58
10:Q:344:LEU:HD11	10:Q:381:LEU:HD22	1.85	0.58
15:W:599:ARG:HD3	15:W:600:GLU:HB2	1.85	0.58
1:B:25:ASN:HD21	4:K:73:GLU:HG3	1.67	0.58
10:Q:131:TYR:HB3	10:Q:133:TYR:CE1	2.38	0.58
10:Q:322:SER:O	10:Q:328:ARG:HD2	2.03	0.58
10:Q:131:TYR:OH	14:V:224:ASP:O	2.16	0.58
10:Q:186:GLU:HG3	10:Q:187:SER:H	1.69	0.58
10:Q:372:MET:O	10:Q:375:MET:N	2.36	0.58
14:V:177:HIS:O	14:V:181:SER:N	2.30	0.58
15:W:439:HIS:CE1	15:W:441:ILE:HG12	2.38	0.58
15:W:898:LYS:HA	15:W:901:ILE:HD12	1.85	0.58
15:X:449:PHE:HA	15:X:457:LYS:HB3	1.84	0.58
15:X:930:ASP:HA	15:X:933:ALA:HB3	1.85	0.58
7:A:460:GLN:HA	7:A:463:GLU:HB2	1.85	0.58
8:N:134:GLU:O	8:N:137:THR:OG1	2.18	0.58
10:Q:174:ASP:OD2	10:Q:285:ARG:NH2	2.36	0.58
5:I:82:DC:H42	6:J:66:DG:H1	1.52	0.58
8:N:15:VAL:HG21	8:N:398:SER:HA	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:434:THR:O	10:Q:438:LYS:HG3	2.04	0.58
2:G:77:ARG:HE	5:I:20:DA:H4'	1.69	0.58
10:Q:249:LEU:HD21	10:Q:314:ARG:HD2	1.85	0.58
14:V:179:ASN:ND2	14:V:212:LEU:HD23	2.16	0.58
16:Y:428:ILE:HA	16:Y:431:ILE:HD12	1.84	0.58
8:N:342:PRO:HA	8:N:345:TYR:HB2	1.86	0.58
11:R:266:TYR:CD1	16:Y:493:ARG:HG2	2.38	0.58
14:V:149:THR:HG23	14:V:201:ARG:H	1.69	0.58
15:W:913:MET:HA	15:W:916:GLU:HG2	1.84	0.58
8:N:30:GLU:HB3	8:N:394:TRP:HH2	1.69	0.58
8:N:173:GLY:O	8:N:354:ASN:ND2	2.36	0.58
10:Q:422:LEU:HD23	10:Q:425:LEU:HD12	1.85	0.58
10:Q:454:ILE:HG22	10:Q:455:GLN:H	1.68	0.58
14:V:183:PRO:O	14:V:209:ASN:ND2	2.37	0.58
15:X:458:THR:HG22	15:X:460:GLU:H	1.69	0.58
9:P:4:ASP:OD1	9:P:5:ILE:N	2.36	0.58
10:Q:406:HIS:HA	10:Q:409:LEU:HD23	1.86	0.58
15:W:931:ARG:HH21	15:X:923:GLN:NE2	2.02	0.58
5:I:114:DG:H2'	5:I:115:DT:H71	1.85	0.57
7:A:764:TRP:O	7:A:767:SER:OG	2.21	0.57
7:A:1210:VAL:HA	7:A:1213:LYS:HE2	1.86	0.57
14:V:202:ASP:OD1	14:V:203:ALA:N	2.36	0.57
14:V:202:ASP:OD2	15:W:487:ARG:NH1	2.26	0.57
15:X:447:PRO:O	15:X:451:ASN:N	2.37	0.57
15:X:449:PHE:HE2	15:X:461:ILE:HG22	1.68	0.57
7:A:1232:GLY:HA3	7:A:1234:PHE:CE2	2.40	0.57
12:T:194:GLU:O	12:T:198:ASP:N	2.34	0.57
12:T:539:ALA:O	12:T:543:GLN:N	2.35	0.57
15:W:438:VAL:HG22	15:W:443:ARG:HH21	1.70	0.57
15:X:513:GLN:N	15:X:513:GLN:OE1	2.37	0.57
15:W:620:TRP:CH2	15:W:636:ILE:HG13	2.39	0.57
16:Y:133:LEU:HD11	16:Y:137:ILE:HG21	1.84	0.57
15:W:903:LEU:HD11	15:X:899:LEU:HD11	1.86	0.57
7:A:953:LYS:HG2	7:A:1251:LEU:HB3	1.85	0.57
7:A:1198:GLU:HG3	7:A:1275:ARG:HD3	1.85	0.57
11:R:197:PRO:O	11:R:201:LYS:N	2.35	0.57
11:R:271:PRO:HB2	11:R:275:ARG:HH12	1.68	0.57
9:P:314:GLN:NE2	9:P:329:ILE:HG12	2.19	0.57
14:V:144:ALA:O	14:V:190:ARG:NH2	2.37	0.57
5:I:34:DG:H1	6:J:114:DC:N4	2.00	0.57
7:A:757:TYR:O	7:A:761:GLY:N	2.31	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1077:ARG:NH1	7:A:1307:GLU:OE1	2.37	0.57
10:Q:81:SER:CB	11:R:224:ALA:H	2.18	0.57
15:X:454:ASN:OD1	15:X:456:SER:N	2.38	0.57
7:A:1225:ASP:OD1	7:A:1226:GLN:N	2.37	0.57
15:X:601:TRP:O	15:X:602:THR:OG1	2.22	0.57
7:A:838:PRO:HB2	7:A:842:ARG:HH12	1.69	0.56
7:A:1124:LEU:HD22	7:A:1138:LEU:HD22	1.87	0.56
9:P:102:PRO:HB2	9:P:356:TRP:CZ3	2.40	0.56
10:Q:316:LEU:O	10:Q:319:SER:OG	2.16	0.56
10:Q:321:HIS:NE2	10:Q:358:THR:OG1	2.22	0.56
11:R:202:LYS:HG3	11:R:206:LYS:HE3	1.87	0.56
12:T:173:LYS:HG2	12:T:174:HIS:CE1	2.40	0.56
15:X:897:LYS:O	15:X:901:ILE:HG12	2.04	0.56
6:J:102:DA:H2"	6:J:103:DG:H8	1.71	0.56
8:N:159:ALA:O	8:N:163:GLY:N	2.38	0.56
10:Q:81:SER:HB3	11:R:222:ARG:HA	1.86	0.56
7:A:474:GLU:HA	7:A:477:ASN:HB2	1.87	0.56
7:A:917:LYS:O	7:A:920:GLU:HB2	2.05	0.56
10:Q:211:ASP:HB3	10:Q:311:THR:CG2	2.36	0.56
15:X:883:LYS:O	15:X:887:LEU:HB2	2.05	0.56
16:Y:133:LEU:O	16:Y:138:ARG:NH2	2.34	0.56
10:Q:1784:GLU:HA	10:Q:1787:ARG:NE	2.20	0.56
8:N:193:VAL:HG22	8:N:332:SER:HB3	1.88	0.56
10:Q:221:PHE:HB3	10:Q:225:TRP:CE3	2.40	0.56
16:Y:494:TYR:O	16:Y:498:LYS:HG2	2.05	0.56
9:P:9:VAL:HG23	9:P:340:TRP:NE1	2.21	0.56
10:Q:246:VAL:HG12	10:Q:354:LEU:HD11	1.86	0.56
10:Q:368:ARG:HB3	12:T:415:ASP:OD1	2.05	0.56
10:Q:1787:ARG:O	10:Q:1791:LYS:HG2	2.05	0.56
16:Y:505:GLU:O	16:Y:509:ALA:N	2.32	0.56
10:Q:52:THR:O	10:Q:56:THR:N	2.38	0.56
10:Q:301:GLY:HA2	10:Q:304:LYS:NZ	2.20	0.56
14:V:152:ASN:OD1	14:V:154:ASN:ND2	2.39	0.56
15:W:611:GLU:OE1	15:W:626:HIS:NE2	2.35	0.56
15:W:895:GLN:HA	15:W:898:LYS:NZ	2.21	0.56
4:K:47:ALA:O	4:K:50:GLU:HG3	2.05	0.56
8:N:349:ILE:HG22	8:N:389:ARG:NH2	2.21	0.56
10:Q:293:LEU:O	10:Q:297:SER:N	2.39	0.56
15:X:443:ARG:HA	15:X:450:PHE:CD2	2.41	0.56
16:Y:147:TYR:O	16:Y:151:LEU:N	2.32	0.56
2:C:16:THR:O	2:C:19:SER:OG	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:185:LEU:HD11	9:P:258:PRO:HA	1.88	0.56
10:Q:444:ASP:OD1	10:Q:445:MET:N	2.39	0.56
11:R:229:GLN:HG2	15:W:488:ARG:HD2	1.88	0.56
14:V:341:ARG:NH2	15:X:490:LEU:O	2.37	0.56
15:X:616:TYR:CE1	15:X:622:LYS:HG3	2.41	0.56
16:Y:323:ILE:HG23	16:Y:328:LEU:HB2	1.87	0.56
16:Y:443:SER:HA	16:Y:446:ARG:HH11	1.71	0.56
6:J:90:DA:H1'	6:J:91:DA:C8	2.40	0.55
14:V:264:ILE:HD11	14:V:319:LEU:HD11	1.87	0.55
2:G:87:VAL:HG21	2:G:97:LEU:HD12	1.87	0.55
7:A:1011:MET:HA	7:A:1011:MET:HE3	1.87	0.55
10:Q:401:ARG:HD2	10:Q:402:GLU:N	2.21	0.55
10:Q:445:MET:SD	16:Y:166:LEU:HD23	2.47	0.55
17:Z:247:GLN:HA	17:Z:250:GLU:HG3	1.87	0.55
7:A:476:LEU:O	7:A:479:ILE:HG22	2.06	0.55
9:P:207:GLU:HB2	9:P:210:ARG:HH21	1.72	0.55
10:Q:95:ARG:HG3	10:Q:96:TYR:CE1	2.41	0.55
10:Q:454:ILE:O	10:Q:456:MET:N	2.38	0.55
17:Z:198:ARG:HD3	17:Z:202:LEU:HD13	1.89	0.55
7:A:805:PRO:HD2	7:A:876:LYS:HB2	1.88	0.55
7:A:807:LEU:HB2	7:A:875:TRP:CE3	2.41	0.55
5:I:39:DA:H61	6:J:109:DT:H3	1.54	0.55
6:J:70:DG:H2"	6:J:71:DA:C8	2.41	0.55
7:A:748:LEU:HD23	7:A:748:LEU:H	1.71	0.55
8:N:197:LEU:HB3	8:N:308:LEU:HD23	1.88	0.55
11:R:217:GLU:HA	11:R:220:GLU:HG2	1.88	0.55
12:T:374:THR:O	12:T:377:ARG:NH1	2.32	0.55
16:Y:300:ARG:NE	16:Y:346:ILE:HG12	2.21	0.55
6:J:40:DA:H1'	6:J:41:DG:C8	2.42	0.55
8:N:16:PHE:O	8:N:122:MET:HA	2.07	0.55
15:X:515:ASP:O	15:X:519:ARG:NH2	2.36	0.55
16:Y:439:GLU:HA	16:Y:442:LEU:HB3	1.89	0.55
3:D:39:ILE:H	3:D:39:ILE:HD12	1.72	0.55
6:J:67:DG:H2"	6:J:68:DG:C8	2.42	0.55
8:N:189:GLN:O	8:N:192:ILE:HG12	2.07	0.55
10:Q:467:LEU:HD11	10:Q:1764:ILE:HD11	1.89	0.55
7:A:364:VAL:HG23	7:A:365:GLU:HG2	1.89	0.55
9:P:155:SER:HB2	9:P:303:THR:HB	1.88	0.55
14:V:376:ARG:HG2	14:V:376:ARG:HH11	1.71	0.55
15:W:641:ARG:HD3	16:Y:483:PHE:CE2	2.41	0.55
5:I:83:DG:H5'	5:I:83:DG:H8	1.69	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1260:GLU:O	7:A:1261:ASP:OD1	2.24	0.55
20:A:1701:BEF:F3	22:A:1703:ADP:O2B	2.14	0.55
8:N:20:SER:CB	8:N:174:ALA:H	2.19	0.55
12:T:397:THR:H	12:T:420:ASN:HB2	1.71	0.55
15:X:484:THR:HA	15:X:487:ARG:HG2	1.89	0.55
14:V:173:PRO:O	14:V:177:HIS:ND1	2.28	0.54
5:I:84:DC:H5'	4:K:40:ARG:HG3	1.89	0.54
7:A:741:ARG:HH11	7:A:763:GLU:HG2	1.73	0.54
7:A:949:MET:O	7:A:1220:TYR:OH	2.15	0.54
10:Q:243:ASP:O	10:Q:247:ARG:HG3	2.07	0.54
10:Q:356:PHE:HA	10:Q:359:VAL:HG12	1.89	0.54
12:T:161:THR:H	12:T:164:ILE:HG22	1.72	0.54
16:Y:459:GLN:OE1	17:Z:199:ASN:ND2	2.40	0.54
2:C:41:GLU:OE1	2:C:41:GLU:N	2.38	0.54
7:A:1052:PHE:O	7:A:1053:GLN:HG3	2.08	0.54
9:P:213:LYS:HB3	9:P:306:TYR:CE1	2.39	0.54
14:V:281:TRP:CZ2	14:V:288:ASN:HB3	2.41	0.54
14:V:360:GLU:O	14:V:364:LYS:HG2	2.08	0.54
6:J:57:DT:H5"	7:A:862:TYR:CE1	2.43	0.54
10:Q:444:ASP:O	10:Q:448:CYS:N	2.35	0.54
17:Z:244:GLU:HB2	17:Z:247:GLN:HE21	1.72	0.54
15:X:473:TYR:CG	15:X:510:ILE:HG13	2.42	0.54
7:A:196:LEU:HD12	7:A:200:LEU:HD22	1.90	0.54
10:Q:325:ILE:O	10:Q:328:ARG:N	2.39	0.54
14:V:169:ASP:OD1	14:V:170:ASP:N	2.41	0.54
17:Z:224:MET:HA	17:Z:227:LEU:HD12	1.88	0.54
3:H:116:LYS:HE3	14:V:378:LEU:HD11	1.89	0.54
7:A:868:HIS:CD2	7:A:869:ILE:HG23	2.42	0.54
16:Y:301:LEU:HD13	16:Y:346:ILE:HG21	1.89	0.54
3:H:115:THR:O	3:H:119:THR:HG23	2.08	0.54
7:A:180:LEU:HD21	12:T:542:PHE:HE1	1.71	0.54
14:V:342:ASN:ND2	14:V:345:ASP:OD2	2.39	0.54
4:K:53:ARG:HD3	4:K:54:TYR:CE1	2.43	0.54
3:H:49:HIS:HB3	3:H:52:THR:HG23	1.90	0.54
7:A:406:ALA:HB1	15:W:644:ILE:HG12	1.90	0.54
7:A:941:GLN:HB2	7:A:944:ASN:H	1.72	0.54
7:A:1083:GLU:CA	7:A:1301:LYS:HE3	2.38	0.54
9:P:178:LEU:HD23	9:P:274:ILE:HD13	1.90	0.54
15:X:612:ALA:HA	15:X:626:HIS:ND1	2.23	0.54
17:Z:188:MET:O	17:Z:191:THR:N	2.40	0.54
10:Q:94:LEU:HG	10:Q:98:GLU:HG3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:166:LEU:HD22	15:W:507:TRP:HZ2	1.73	0.54
5:I:14:DG:C2	5:I:15:DT:C2	2.97	0.53
14:V:351:PRO:HD3	15:X:487:ARG:NH2	2.23	0.53
15:W:622:LYS:HA	15:W:625:GLU:HB3	1.90	0.53
7:A:991:LYS:HD2	7:A:1191:HIS:ND1	2.23	0.53
9:P:164:PRO:HG3	9:P:281:SER:HB3	1.91	0.53
15:W:430:ALA:HB1	15:W:509:LEU:HD21	1.91	0.53
4:E:100:LEU:HD11	1:F:58:LEU:HD12	1.90	0.53
5:I:63:DG:N3	6:J:86:DG:N2	2.56	0.53
7:A:1074:ASP:O	7:A:1078:ALA:N	2.42	0.53
15:W:505:GLU:OE1	15:W:511:ASN:ND2	2.41	0.53
11:R:263:GLN:CD	11:R:265:TYR:H	2.09	0.53
17:Z:225:GLN:O	17:Z:229:ARG:N	2.32	0.53
4:E:106:ASP:OD2	4:E:131:ARG:NH2	2.35	0.53
7:A:1065:PHE:CZ	7:A:1070:VAL:HG13	2.42	0.53
10:Q:1783:SER:O	10:Q:1786:GLY:N	2.40	0.53
15:W:636:ILE:HD13	16:Y:495:PHE:HZ	1.74	0.53
15:X:940:LYS:O	15:X:944:MET:HG2	2.09	0.53
16:Y:134:PRO:HG2	16:Y:137:ILE:HG12	1.90	0.53
19:M:312:UNK:O	19:M:316:UNK:N	2.42	0.53
5:I:110:DC:N4	6:J:38:DG:H1	2.06	0.53
7:A:487:LYS:HG2	8:N:399:ILE:HD13	1.90	0.53
12:T:399:VAL:HG21	12:T:414:TYR:HD2	1.74	0.53
12:T:410:TYR:HA	16:Y:155:ARG:NE	2.21	0.53
15:X:481:LEU:N	15:X:511:ASN:OD1	2.35	0.53
15:X:881:GLU:OE2	15:X:885:LYS:HE3	2.08	0.53
5:I:125:DC:O2	6:J:23:DG:N2	2.41	0.53
7:A:1073:LEU:HD22	7:A:1076:TYR:CD2	2.44	0.53
7:A:1088:ILE:HG13	7:A:1089:LEU:HD22	1.90	0.53
7:A:1270:ASN:OD1	7:A:1271:GLN:N	2.42	0.53
8:N:171:ASP:HA	8:N:351:ALA:HB3	1.90	0.53
14:V:277:ASP:OD2	15:X:487:ARG:NH2	2.42	0.53
15:X:446:LEU:HD12	15:X:462:TYR:HE1	1.73	0.53
11:R:235:VAL:N	15:X:524:GLY:O	2.22	0.53
5:I:34:DG:N2	6:J:114:DC:N3	2.47	0.53
8:N:138:GLU:HG2	8:N:142:GLU:HG3	1.90	0.53
10:Q:246:VAL:HG11	10:Q:321:HIS:CD2	2.44	0.53
15:W:895:GLN:HA	15:W:898:LYS:HZ2	1.74	0.53
16:Y:429:GLU:O	16:Y:433:GLN:HG3	2.09	0.53
7:A:549:ARG:HH12	7:A:971:VAL:C	2.12	0.53
7:A:1135:ARG:O	7:A:1139:LEU:HD13	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:452:MET:HB2	10:Q:454:ILE:HG12	1.91	0.53
15:X:423:HIS:CG	15:X:424:ILE:H	2.27	0.53
15:X:482:THR:HB	15:X:484:THR:HG22	1.90	0.53
15:X:483:SER:HB3	15:X:501:HIS:CG	2.44	0.53
15:X:602:THR:HG22	15:X:604:GLN:H	1.74	0.53
15:X:897:LYS:HA	15:X:900:GLU:HB3	1.91	0.53
16:Y:300:ARG:NH1	16:Y:300:ARG:HB3	2.24	0.53
7:A:764:TRP:CZ2	7:A:768:LEU:HD11	2.44	0.52
9:P:116:ARG:HB3	9:P:371:HIS:HE1	1.74	0.52
10:Q:300:GLU:HG2	10:Q:301:GLY:N	2.24	0.52
2:C:35:ARG:HG3	2:C:35:ARG:HH11	1.73	0.52
3:H:58:ALA:O	3:H:62:MET:HG2	2.08	0.52
5:I:36:DC:H42	6:J:112:DG:H1	1.57	0.52
8:N:209:LEU:HD12	8:N:304:ILE:HD11	1.90	0.52
10:Q:1774:LEU:HD21	10:Q:1810:THR:HG21	1.91	0.52
15:W:876:LEU:O	15:W:879:VAL:HG22	2.09	0.52
6:J:91:DA:H2"	6:J:92:DG:H8	1.71	0.52
7:A:781:MET:O	20:A:1701:BEF:F3	2.18	0.52
7:A:805:PRO:HB2	7:A:875:TRP:CZ3	2.45	0.52
7:A:989:PRO:HB2	7:A:1198:GLU:HA	1.90	0.52
10:Q:128:PRO:HB2	14:V:152:ASN:OD1	2.09	0.52
14:V:276:VAL:N	14:V:352:LEU:O	2.42	0.52
15:X:605:GLU:O	15:X:609:LEU:N	2.42	0.52
15:X:620:TRP:CZ3	15:X:636:ILE:HD12	2.45	0.52
15:X:870:ALA:O	15:X:874:LYS:N	2.37	0.52
16:Y:443:SER:HA	16:Y:446:ARG:HE	1.75	0.52
7:A:547:ASP:OD1	7:A:548:LYS:N	2.42	0.52
7:A:1269:VAL:O	7:A:1273:ILE:HG13	2.08	0.52
12:T:553:LEU:O	12:T:557:GLN:HG3	2.10	0.52
15:W:898:LYS:HB3	15:W:902:LYS:NZ	2.24	0.52
5:I:45:DC:H1'	5:I:46:DT:H5'	1.91	0.52
7:A:1280:PHE:O	7:A:1284:MET:N	2.36	0.52
8:N:171:ASP:O	8:N:178:THR:N	2.31	0.52
10:Q:34:PHE:HZ	10:Q:37:ILE:HD12	1.75	0.52
12:T:390:GLU:HG2	12:T:394:ASN:HB3	1.90	0.52
7:A:780:GLU:HG2	7:A:781:MET:H	1.73	0.52
7:A:1126:LEU:HD11	7:A:1135:ARG:HG2	1.92	0.52
10:Q:244:ASN:OD1	10:Q:245:GLU:N	2.41	0.52
15:W:434:ASP:OD2	15:W:437:SER:HB3	2.09	0.52
15:X:936:MET:O	15:X:940:LYS:N	2.33	0.52
16:Y:500:GLN:CD	16:Y:503:ARG:HH22	2.13	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:95:GLN:OE1	3:H:99:ARG:NH2	2.43	0.52
7:A:824:LYS:HE2	7:A:825:TRP:CD1	2.45	0.52
7:A:1267:GLU:O	7:A:1269:VAL:N	2.43	0.52
8:N:21:TYR:CD2	8:N:22:THR:HG23	2.44	0.52
14:V:264:ILE:O	14:V:278:GLN:HA	2.10	0.52
1:F:47:SER:OG	1:F:48:GLY:N	2.42	0.52
7:A:368:GLN:HB3	7:A:372:TYR:CZ	2.45	0.52
9:P:18:LYS:HD3	9:P:337:TYR:CD1	2.44	0.52
10:Q:377:ILE:O	10:Q:381:LEU:N	2.36	0.52
14:V:325:THR:O	14:V:329:SER:N	2.43	0.52
14:V:369:ASP:O	14:V:372:THR:OG1	2.21	0.52
15:X:906:PHE:O	15:X:910:GLU:HG2	2.08	0.52
1:F:46:ILE:HG22	1:F:47:SER:O	2.10	0.52
9:P:113:LYS:HB2	9:P:371:HIS:NE2	2.25	0.52
9:P:261:LEU:HB3	9:P:274:ILE:HG12	1.92	0.52
11:R:241:LYS:HE2	15:W:417:VAL:HG21	1.92	0.52
11:R:271:PRO:HA	11:R:274:LEU:HB2	1.91	0.52
12:T:373:MET:CG	12:T:374:THR:H	2.23	0.52
16:Y:170:GLU:O	16:Y:173:LYS:HG3	2.10	0.52
4:K:53:ARG:O	4:K:56:LYS:HG2	2.10	0.52
7:A:1048:HIS:CE1	7:A:1050:TYR:HB2	2.45	0.52
8:N:130:ARG:HD2	8:N:133:ARG:HD2	1.91	0.52
9:P:120:THR:HB	9:P:124:PHE:CE2	2.45	0.52
10:Q:454:ILE:C	10:Q:456:MET:H	2.13	0.52
15:X:469:MET:HA	15:X:472:THR:HG22	1.92	0.52
7:A:554:LEU:HD21	7:A:734:VAL:HB	1.92	0.51
7:A:830:VAL:O	7:A:854:ASN:HB2	2.11	0.51
9:P:256:ARG:HA	9:P:259:GLU:HG2	1.92	0.51
10:Q:34:PHE:CE1	10:Q:38:PRO:HD3	2.44	0.51
15:X:901:ILE:HA	15:X:904:ARG:HG2	1.92	0.51
2:C:115:LEU:HD22	1:F:44:LYS:HB2	1.91	0.51
4:K:51:ILE:HG13	4:K:52:ARG:N	2.26	0.51
1:B:78:ARG:NH2	1:B:85:ASP:OD2	2.42	0.51
10:Q:373:ARG:O	10:Q:377:ILE:HG12	2.10	0.51
10:Q:381:LEU:O	10:Q:387:ASN:ND2	2.33	0.51
4:E:104:PHE:HA	4:E:107:THR:HG22	1.91	0.51
6:J:100:DA:H2"	6:J:101:DG:C8	2.45	0.51
7:A:444:ARG:HH11	10:Q:517:GLU:HB2	1.76	0.51
7:A:1063:LEU:HD22	7:A:1065:PHE:HE1	1.74	0.51
12:T:559:ALA:HB1	12:T:582:GLU:HG2	1.92	0.51
4:E:83:ARG:HD3	5:I:50:DG:H4'	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:92:ARG:CZ	1:F:92:ARG:HB3	2.40	0.51
5:I:82:DC:N4	6:J:66:DG:H1	2.08	0.51
9:P:218:TYR:O	9:P:255:PHE:HA	2.10	0.51
15:X:494:VAL:HA	15:X:497:ILE:HD12	1.93	0.51
6:J:35:DT:H2"	6:J:36:DA:C8	2.46	0.51
7:A:198:ASP:HA	7:A:201:GLN:OE1	2.11	0.51
7:A:444:ARG:HA	10:Q:519:ASP:HB3	1.93	0.51
7:A:963:LEU:HD22	7:A:966:ARG:HH12	1.75	0.51
9:P:198:TYR:HB2	9:P:248:ILE:HD12	1.92	0.51
11:R:265:TYR:HD2	16:Y:496:TYR:CE1	2.29	0.51
12:T:195:GLU:HA	12:T:198:ASP:HB2	1.92	0.51
12:T:400:LEU:HD11	12:T:415:ASP:HB2	1.93	0.51
14:V:364:LYS:HE2	14:V:364:LYS:HA	1.92	0.51
15:X:459:PRO:O	15:X:462:TYR:HB3	2.11	0.51
5:I:83:DG:H5'	5:I:83:DG:C8	2.45	0.51
7:A:1049:PRO:CG	7:A:1303:ARG:HH22	2.24	0.51
8:N:389:ARG:HD2	8:N:392:SER:HB3	1.93	0.51
14:V:263:ILE:HG23	14:V:265:LYS:NZ	2.25	0.51
15:W:479:GLU:OE2	15:W:480:TYR:N	2.44	0.51
6:J:82:DG:H2"	6:J:83:DT:H5'	1.91	0.51
7:A:990:GLU:OE2	7:A:1200:ARG:NH2	2.43	0.51
7:A:1063:LEU:HD22	7:A:1065:PHE:CE1	2.46	0.51
8:N:127:TRP:CH2	8:N:192:ILE:HD12	2.46	0.51
10:Q:396:ASP:OD2	10:Q:397:GLN:N	2.41	0.51
11:R:271:PRO:HA	11:R:274:LEU:HD12	1.92	0.51
15:X:616:TYR:CZ	15:X:622:LYS:HG3	2.45	0.51
1:B:98:TYR:CE2	2:G:100:VAL:HG11	2.45	0.51
8:N:139:LEU:O	8:N:143:HIS:HB3	2.11	0.51
8:N:388:GLU:HG3	8:N:391:PHE:HD2	1.75	0.51
10:Q:415:VAL:O	10:Q:419:LEU:HG	2.10	0.51
16:Y:480:GLU:HA	16:Y:483:PHE:CD1	2.45	0.51
7:A:860:TYR:O	7:A:863:ILE:HG22	2.11	0.51
7:A:1275:ARG:N	7:A:1279:GLU:OE2	2.20	0.51
8:N:75:LEU:HD23	8:N:76:ARG:HG3	1.93	0.51
10:Q:147:GLY:O	10:Q:148:LEU:HD23	2.11	0.51
10:Q:301:GLY:O	10:Q:305:LEU:HD23	2.11	0.51
11:R:283:LEU:HD21	15:W:622:LYS:HG2	1.93	0.51
15:W:602:THR:O	15:W:606:THR:N	2.34	0.51
15:X:922:TYR:O	15:X:926:GLN:N	2.35	0.51
17:Z:247:GLN:O	17:Z:251:ARG:N	2.33	0.51
7:A:422:VAL:HA	7:A:425:ARG:HG2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:427:ASP:OD1	7:A:428:THR:N	2.45	0.50
7:A:925:LEU:H	7:A:925:LEU:HD12	1.77	0.50
10:Q:365:SER:O	10:Q:371:LYS:NZ	2.24	0.50
11:R:210:PHE:HE2	15:X:485:ALA:HA	1.76	0.50
11:R:280:ASN:HB3	15:W:619:ASP:CB	2.40	0.50
15:W:931:ARG:HH21	15:X:923:GLN:HE21	1.57	0.50
7:A:464:GLN:O	7:A:468:ARG:N	2.33	0.50
7:A:983:GLU:OE2	7:A:984:VAL:HG23	2.10	0.50
8:N:391:PHE:O	8:N:395:ILE:HG12	2.11	0.50
10:Q:211:ASP:HB3	10:Q:311:THR:HG21	1.94	0.50
10:Q:452:MET:SD	10:Q:453:ASP:N	2.85	0.50
11:R:266:TYR:OH	11:R:268:ARG:NE	2.43	0.50
16:Y:341:LYS:HG2	16:Y:342:TYR:N	2.27	0.50
7:A:411:ASN:OD1	7:A:412:PHE:N	2.45	0.50
8:N:377:ARG:NE	8:N:377:ARG:HA	2.25	0.50
14:V:347:ASP:HA	15:X:488:ARG:HH21	1.76	0.50
1:B:47:SER:OG	1:B:48:GLY:N	2.45	0.50
2:C:79:ILE:HG12	2:C:82:HIS:CE1	2.46	0.50
4:E:48:LEU:HD21	1:F:44:LYS:HE3	1.93	0.50
3:H:51:ASP:OD1	3:H:51:ASP:N	2.36	0.50
7:A:888:ASN:HB3	7:A:891:CYS:HB2	1.93	0.50
8:N:71:ASP:OD2	8:N:73:ASN:ND2	2.43	0.50
8:N:172:SER:HA	8:N:177:THR:HA	1.92	0.50
12:T:375:THR:HB	12:T:377:ARG:CZ	2.41	0.50
12:T:551:ARG:HA	12:T:551:ARG:NE	2.27	0.50
6:J:15:DT:H4'	6:J:16:DC:OP1	2.10	0.50
6:J:25:DG:N7	6:J:26:DC:N4	2.60	0.50
7:A:489:TYR:O	7:A:492:SER:OG	2.17	0.50
7:A:780:GLU:O	7:A:785:LYS:NZ	2.43	0.50
8:N:355:THR:HB	8:N:384:ASN:OD1	2.11	0.50
9:P:18:LYS:HD3	9:P:337:TYR:HD1	1.76	0.50
10:Q:429:GLY:O	10:Q:433:CYS:HB2	2.12	0.50
11:R:280:ASN:HB3	15:W:619:ASP:HB2	1.94	0.50
14:V:266:LEU:N	14:V:277:ASP:O	2.43	0.50
14:V:356:LEU:HD12	14:V:360:GLU:CB	2.42	0.50
15:X:437:SER:O	15:X:466:ARG:NH1	2.44	0.50
16:Y:142:PRO:O	16:Y:143:GLU:HG3	2.12	0.50
16:Y:329:GLN:HE21	16:Y:334:ARG:HB3	1.76	0.50
2:G:78:ILE:HB	3:H:54:ILE:HG13	1.94	0.50
7:A:1065:PHE:HZ	7:A:1070:VAL:HG13	1.77	0.50
7:A:1099:VAL:HG23	7:A:1170:THR:HG23	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1268:THR:O	7:A:1271:GLN:HB3	2.12	0.50
9:P:143:TYR:HE2	9:P:346:LEU:HD13	1.77	0.50
9:P:151:ILE:HG22	9:P:164:PRO:HA	1.93	0.50
10:Q:63:VAL:O	10:Q:67:ASN:N	2.45	0.50
10:Q:132:ASN:N	14:V:227:ASP:OD2	2.34	0.50
15:W:603:GLU:HA	15:W:606:THR:HB	1.93	0.50
19:M:311:UNK:O	19:M:315:UNK:N	2.45	0.50
7:A:378:ILE:HG22	15:W:648:TYR:HE2	1.77	0.50
7:A:768:LEU:HD22	7:A:773:LEU:HB2	1.93	0.50
7:A:1088:ILE:HG22	7:A:1273:ILE:HD11	1.93	0.50
9:P:149:THR:HG22	9:P:167:GLU:H	1.77	0.50
10:Q:60:PHE:HB2	10:Q:93:TYR:CE1	2.47	0.50
10:Q:309:ASN:HD21	10:Q:311:THR:HG1	1.59	0.50
10:Q:400:TYR:HA	10:Q:403:ILE:HD12	1.93	0.50
14:V:360:GLU:HA	14:V:363:LYS:NZ	2.26	0.50
15:X:896:MET:O	15:X:900:GLU:N	2.38	0.50
15:X:905:HIS:HB3	17:Z:252:HIS:HD1	1.75	0.50
6:J:118:DT:H2"	6:J:119:DT:C7	2.42	0.50
7:A:185:MET:HB3	7:A:189:MET:HE1	1.93	0.50
8:N:249:SER:HA	8:N:252:ASN:HB2	1.94	0.50
12:T:211:ASN:HD21	12:T:217:TYR:C	2.15	0.50
14:V:276:VAL:HB	14:V:352:LEU:HB2	1.94	0.50
3:H:39:ILE:HG13	3:H:40:TYR:N	2.27	0.50
6:J:73:DA:H5'	6:J:73:DA:C8	2.46	0.50
7:A:417:ARG:HG2	15:W:640:LEU:HG	1.93	0.50
7:A:1009:ARG:O	7:A:1013:ALA:N	2.44	0.50
8:N:260:GLN:HA	8:N:263:GLN:HG2	1.93	0.50
10:Q:87:PHE:O	10:Q:91:GLN:HG2	2.12	0.50
11:R:212:SER:HA	15:X:479:GLU:OE2	2.11	0.50
14:V:326:TYR:O	14:V:329:SER:OG	2.19	0.50
5:I:123:DC:H2"	5:I:124:DA:C8	2.46	0.49
7:A:1162:GLY:HA2	7:A:1189:ARG:NH2	2.27	0.49
15:W:605:GLU:O	15:W:608:LEU:HB2	2.12	0.49
4:E:133:GLU:N	4:E:133:GLU:OE2	2.45	0.49
7:A:1223:ASN:HB3	7:A:1227:LYS:NZ	2.27	0.49
9:P:164:PRO:HB2	9:P:171:LEU:HD23	1.94	0.49
9:P:262:PHE:O	9:P:275:HIS:HE1	1.95	0.49
14:V:190:ARG:HB2	14:V:313:TYR:OH	2.12	0.49
14:V:279:PHE:HB2	15:X:494:VAL:HG21	1.94	0.49
7:A:197:PRO:HB2	7:A:199:HIS:CE1	2.47	0.49
16:Y:348:GLU:H	16:Y:360:ARG:HH22	1.58	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:95:GLN:OE1	3:D:99:ARG:NH2	2.45	0.49
7:A:1300:ARG:HB3	7:A:1300:ARG:NH1	2.27	0.49
11:R:258:ILE:H	11:R:261:GLN:NE2	2.11	0.49
14:V:241:ILE:O	14:V:245:ILE:HG13	2.12	0.49
14:V:362:GLU:HG3	14:V:366:ARG:HH11	1.76	0.49
14:V:363:LYS:HA	14:V:366:ARG:HG2	1.93	0.49
15:W:610:LEU:O	15:W:614:GLU:HG2	2.12	0.49
5:I:82:DC:N3	6:J:66:DG:N2	2.53	0.49
7:A:783:LEU:N	22:A:1703:ADP:O3B	2.44	0.49
7:A:1049:PRO:HG2	7:A:1303:ARG:HH22	1.76	0.49
8:N:405:THR:HA	8:N:408:GLN:HG2	1.93	0.49
9:P:193:LEU:HD11	9:P:253:GLU:HG3	1.94	0.49
10:Q:94:LEU:HA	10:Q:98:GLU:HG2	1.94	0.49
10:Q:432:ALA:HA	10:Q:435:LYS:HG2	1.93	0.49
11:R:218:ARG:HD3	14:V:300:GLU:O	2.13	0.49
11:R:266:TYR:CZ	16:Y:489:GLU:HG3	2.47	0.49
11:R:276:TYR:HD1	11:R:284:TYR:HB2	1.76	0.49
14:V:312:ALA:O	14:V:316:ARG:HG3	2.11	0.49
5:I:101:DG:H2"	5:I:102:DG:C8	2.47	0.49
7:A:382:ILE:O	7:A:386:GLU:N	2.40	0.49
7:A:898:ASN:OD1	7:A:899:THR:N	2.45	0.49
8:N:72:THR:HG21	9:P:176:LEU:HD21	1.94	0.49
8:N:101:ALA:HA	8:N:104:ASP:HB3	1.94	0.49
15:W:424:ILE:HA	15:W:513:GLN:OE1	2.11	0.49
15:W:611:GLU:HA	15:W:614:GLU:HG2	1.94	0.49
15:X:631:THR:HG22	15:X:634:GLU:HG2	1.93	0.49
1:B:46:ILE:HG22	1:B:47:SER:O	2.13	0.49
5:I:34:DG:H5'	5:I:34:DG:C8	2.47	0.49
5:I:92:DC:N3	6:J:56:DG:N2	2.49	0.49
6:J:134:DC:H2"	6:J:135:DC:C5	2.48	0.49
7:A:383:GLN:O	7:A:387:ASN:ND2	2.46	0.49
8:N:19:GLY:HA3	8:N:24:ARG:CZ	2.43	0.49
10:Q:52:THR:HA	10:Q:55:THR:HB	1.95	0.49
10:Q:166:LEU:HD22	15:W:507:TRP:CZ2	2.47	0.49
10:Q:231:ARG:NH1	10:Q:281:ILE:HD12	2.27	0.49
14:V:225:ASP:OD1	14:V:226:LEU:N	2.45	0.49
1:F:77:LYS:HE2	3:H:92:ARG:CZ	2.43	0.49
7:A:375:GLN:HG2	12:T:385:LEU:HB3	1.95	0.49
7:A:955:ASP:OD1	7:A:1227:LYS:HE3	2.13	0.49
10:Q:167:SER:OG	10:Q:172:GLU:OE2	2.19	0.49
10:Q:1778:ASN:HA	10:Q:1781:LYS:HB2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:1808:SER:HB2	16:Y:355:SER:HB3	1.94	0.49
12:T:611:VAL:O	12:T:612:ARG:HD2	2.12	0.49
15:X:913:MET:HA	15:X:916:GLU:OE1	2.13	0.49
4:E:46:VAL:O	4:E:50:GLU:HG3	2.13	0.49
5:I:54:DC:H2'	5:I:55:DG:C8	2.48	0.49
6:J:62:DA:H5'	6:J:62:DA:C8	2.48	0.49
7:A:790:ILE:HG12	7:A:822:PHE:HE1	1.77	0.49
7:A:1017:LEU:HD12	7:A:1018:LEU:H	1.78	0.49
10:Q:238:LYS:O	10:Q:247:ARG:NH2	2.46	0.49
15:W:435:TYR:CD2	15:X:529:SER:HB3	2.48	0.49
16:Y:137:ILE:HD13	16:Y:438:ARG:NH2	2.24	0.49
5:I:36:DC:H2"	5:I:37:DG:C8	2.47	0.49
7:A:454:GLU:OE2	10:Q:1770:LEU:HD13	2.12	0.49
7:A:501:THR:HG21	9:P:168:GLY:HA3	1.94	0.49
7:A:546:LYS:O	7:A:550:LEU:HD23	2.13	0.49
7:A:967:ARG:O	7:A:971:VAL:N	2.45	0.49
7:A:1153:LEU:C	7:A:1154:LEU:HD12	2.33	0.49
10:Q:192:GLN:HB3	10:Q:194:GLU:OE2	2.11	0.49
11:R:263:GLN:NE2	11:R:265:TYR:HB3	2.28	0.49
14:V:305:GLY:HA2	15:W:489:ASN:OD1	2.12	0.49
15:W:612:ALA:HA	15:W:626:HIS:CD2	2.48	0.49
15:X:478:GLN:O	15:X:514:VAL:HG12	2.12	0.49
15:X:616:TYR:OH	15:X:623:VAL:HG23	2.12	0.49
5:I:89:DT:H2"	5:I:90:DA:C8	2.48	0.48
5:I:98:DA:H2"	5:I:99:DG:C8	2.47	0.48
7:A:370:ARG:O	7:A:374:LEU:HD23	2.13	0.48
7:A:743:ASP:HB3	7:A:762:LEU:HD23	1.93	0.48
8:N:360:PHE:CE2	8:N:364:LEU:HD22	2.48	0.48
15:X:535:ALA:HB2	15:X:544:LEU:HD23	1.94	0.48
2:G:57:TYR:HB2	3:H:113:GLU:OE1	2.13	0.48
6:J:124:DG:C6	6:J:125:DG:C6	3.00	0.48
7:A:790:ILE:HG12	7:A:822:PHE:CE1	2.48	0.48
7:A:1048:HIS:CD2	7:A:1082:PHE:CE2	3.01	0.48
1:F:22:LEU:H	1:F:22:LEU:HD12	1.78	0.48
6:J:22:DC:H2"	6:J:23:DG:H8	1.78	0.48
7:A:774:ASN:OD1	7:A:905:ARG:NH1	2.45	0.48
8:N:23:VAL:HG12	8:N:37:PHE:O	2.13	0.48
12:T:369:VAL:O	12:T:369:VAL:HG12	2.13	0.48
12:T:392:LYS:CB	12:T:393:ARG:HH11	2.22	0.48
15:W:632:GLN:O	15:W:636:ILE:HD12	2.13	0.48
16:Y:153:PHE:HA	16:Y:156:LYS:HG3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:90:THR:OG1	3:H:93:GLU:OE1	2.17	0.48
7:A:179:GLN:OE1	12:T:546:LEU:HD22	2.13	0.48
7:A:550:LEU:HD13	7:A:553:LEU:HD22	1.96	0.48
7:A:886:MET:HG3	7:A:894:THR:HG22	1.94	0.48
7:A:929:LEU:HB3	7:A:932:ILE:HB	1.93	0.48
7:A:988:LEU:HD13	7:A:989:PRO:HD2	1.95	0.48
14:V:142:LEU:HD21	14:V:321:TRP:CG	2.49	0.48
14:V:144:ALA:O	14:V:190:ARG:NH1	2.46	0.48
15:X:615:MET:SD	15:X:626:HIS:ND1	2.86	0.48
4:K:52:ARG:O	4:K:56:LYS:HE3	2.13	0.48
4:E:129:ARG:NH1	4:E:129:ARG:O	2.46	0.48
5:I:58:DT:H4'	5:I:59:DA:H5'	1.95	0.48
7:A:943:PHE:O	7:A:956:LEU:HD11	2.13	0.48
7:A:1062:HIS:CE1	7:A:1310:LEU:HD21	2.47	0.48
9:P:337:TYR:O	9:P:341:ILE:HG12	2.13	0.48
9:P:369:ILE:O	9:P:372:ARG:HD2	2.12	0.48
10:Q:37:ILE:HG21	10:Q:44:GLU:CD	2.34	0.48
14:V:358:ASP:OD2	14:V:359:ALA:N	2.46	0.48
2:G:87:VAL:HG23	2:G:93:LEU:HB3	1.96	0.48
7:A:552:TYR:HA	7:A:555:GLN:OE1	2.13	0.48
7:A:805:PRO:HB2	7:A:875:TRP:CE3	2.48	0.48
8:N:100:GLN:O	8:N:104:ASP:N	2.42	0.48
10:Q:43:LYS:NZ	10:Q:45:LEU:HD12	2.28	0.48
10:Q:431:VAL:O	10:Q:435:LYS:HG2	2.13	0.48
11:R:256:ALA:N	11:R:263:GLN:HB3	2.28	0.48
11:R:272:ASP:OD1	11:R:273:GLU:N	2.47	0.48
14:V:362:GLU:HG3	14:V:366:ARG:NH1	2.28	0.48
3:H:108:LYS:HG3	3:H:109:HIS:N	2.28	0.48
7:A:1039:ILE:H	7:A:1039:ILE:HD12	1.77	0.48
9:P:189:LEU:HD23	9:P:209:VAL:HB	1.95	0.48
10:Q:74:GLU:CD	10:Q:80:ARG:HA	2.34	0.48
14:V:165:PRO:HB2	14:V:171:HIS:NE2	2.29	0.48
14:V:242:ARG:HA	14:V:245:ILE:HD12	1.95	0.48
15:W:894:THR:O	15:W:898:LYS:HG3	2.14	0.48
15:X:427:PRO:HG3	15:X:512:TYR:CZ	2.48	0.48
16:Y:500:GLN:NE2	16:Y:503:ARG:HH12	2.12	0.48
4:E:119:ILE:HG13	4:E:119:ILE:O	2.13	0.48
7:A:363:PRO:HB3	17:Z:193:THR:HG21	1.96	0.48
7:A:785:LYS:HB3	7:A:909:LEU:HD23	1.95	0.48
7:A:1128:GLY:O	7:A:1129:THR:OG1	2.23	0.48
9:P:154:ASP:HB3	9:P:161:HIS:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:275:HIS:CD2	9:P:276:GLU:HG3	2.48	0.48
15:X:914:ASP:OD2	15:X:915:ARG:N	2.46	0.48
16:Y:161:ILE:HG13	16:Y:162:MET:N	2.29	0.48
7:A:180:LEU:O	7:A:184:ILE:HG12	2.13	0.48
7:A:549:ARG:O	7:A:552:TYR:N	2.46	0.48
8:N:167:GLY:HA2	8:N:347:SER:OG	2.13	0.48
12:T:611:VAL:HG13	13:U:51:UNK:O	2.13	0.48
2:G:111:ILE:HG12	4:K:51:ILE:HG21	1.96	0.48
5:I:15:DT:C2	5:I:16:DG:C8	3.01	0.48
8:N:172:SER:N	8:N:351:ALA:O	2.47	0.48
8:N:181:PRO:HD2	8:N:192:ILE:HG22	1.96	0.48
12:T:611:VAL:HG22	13:U:51:UNK:O	2.13	0.48
15:W:878:ALA:O	15:W:882:ARG:HG2	2.14	0.48
17:Z:266:PHE:CZ	17:Z:270:LEU:HD21	2.49	0.48
7:A:196:LEU:HD23	7:A:196:LEU:H	1.79	0.47
7:A:757:TYR:C	7:A:979:ARG:HH11	2.16	0.47
9:P:219:VAL:HG11	9:P:262:PHE:CE2	2.48	0.47
10:Q:287:LEU:HD12	10:Q:324:PHE:CZ	2.49	0.47
15:W:601:TRP:CZ3	15:W:630:ARG:HG3	2.49	0.47
15:W:887:LEU:HD23	15:W:890:LEU:HD13	1.95	0.47
15:X:909:LEU:HB2	15:X:913:MET:HE1	1.96	0.47
15:X:924:ARG:HH12	16:Y:317:GLN:NE2	2.12	0.47
7:A:741:ARG:NH1	7:A:763:GLU:HG2	2.29	0.47
7:A:953:LYS:NZ	7:A:1255:GLU:OE2	2.41	0.47
10:Q:237:TRP:HB3	10:Q:250:ILE:HD13	1.96	0.47
10:Q:271:HIS:ND1	10:Q:272:PRO:HD2	2.30	0.47
10:Q:1794:GLU:O	10:Q:1798:SER:N	2.33	0.47
2:C:69:ALA:HA	7:A:1346:TYR:CD1	2.49	0.47
3:D:105:GLU:OE2	3:D:109:HIS:HE1	1.97	0.47
5:I:36:DC:N4	6:J:112:DG:H1	2.13	0.47
5:I:82:DC:H2"	5:I:83:DG:H8	1.79	0.47
5:I:83:DG:H1	6:J:65:DC:N4	2.11	0.47
7:A:869:ILE:HG13	7:A:870:LEU:HD22	1.95	0.47
7:A:1085:LEU:HD11	7:A:1174:PHE:HE2	1.79	0.47
8:N:100:GLN:HB3	8:N:139:LEU:HD11	1.95	0.47
9:P:20:GLY:HA3	9:P:340:TRP:HZ2	1.77	0.47
9:P:136:ILE:HG22	9:P:138:ALA:H	1.78	0.47
10:Q:281:ILE:HG13	10:Q:282:GLU:N	2.28	0.47
11:R:236:PRO:HB3	15:X:521:THR:OG1	2.12	0.47
15:W:600:GLU:O	15:W:630:ARG:NH1	2.47	0.47
16:Y:136:ARG:HG3	16:Y:438:ARG:NH2	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:J:27:DC:H2"	6:J:28:DT:C7	2.43	0.47
9:P:212:ILE:HG12	9:P:240:TYR:CD2	2.49	0.47
10:Q:24:ARG:NH1	10:Q:25:GLN:OE1	2.46	0.47
10:Q:1780:GLY:O	10:Q:1787:ARG:HD2	2.14	0.47
12:T:593:LEU:O	12:T:597:ALA:N	2.46	0.47
4:E:116:ARG:NH1	4:E:118:THR:O	2.48	0.47
3:H:67:ASN:O	3:H:71:GLU:OE1	2.33	0.47
5:I:119:DC:H2"	5:I:120:DA:N7	2.29	0.47
7:A:898:ASN:OD1	7:A:899:THR:HG23	2.14	0.47
7:A:978:ARG:HG3	7:A:979:ARG:H	1.79	0.47
10:Q:161:LEU:O	10:Q:164:SER:OG	2.26	0.47
7:A:899:THR:OG1	7:A:900:HIS:ND1	2.41	0.47
9:P:261:LEU:HB3	9:P:274:ILE:CG1	2.44	0.47
10:Q:450:VAL:HG21	10:Q:1776:LEU:HD11	1.96	0.47
14:V:185:VAL:O	14:V:207:ASN:HA	2.14	0.47
15:W:885:LYS:HA	15:W:888:VAL:HG12	1.96	0.47
15:X:619:ASP:HB3	15:X:622:LYS:HG2	1.97	0.47
16:Y:341:LYS:HG2	16:Y:342:TYR:H	1.80	0.47
16:Y:463:LEU:HB3	17:Z:196:PHE:CE1	2.50	0.47
1:B:35:ARG:O	1:B:39:ARG:HG2	2.14	0.47
1:B:45:ARG:HG2	4:K:118:THR:HG23	1.97	0.47
2:C:63:LEU:HD11	3:D:41:VAL:HG13	1.95	0.47
5:I:35:DT:H1'	5:I:36:DC:H5'	1.96	0.47
5:I:43:DA:C6	5:I:44:DG:C6	3.03	0.47
7:A:1192:ARG:NH1	22:A:1703:ADP:O1A	2.48	0.47
9:P:20:GLY:HA3	9:P:340:TRP:CZ2	2.50	0.47
9:P:219:VAL:HG11	9:P:262:PHE:HE2	1.79	0.47
10:Q:286:VAL:HA	10:Q:289:ILE:HG22	1.96	0.47
14:V:288:ASN:HA	15:X:495:CYS:SG	2.55	0.47
15:W:610:LEU:HD12	15:W:611:GLU:N	2.30	0.47
15:W:924:ARG:NH2	17:Z:263:THR:HA	2.30	0.47
15:W:927:LEU:HD21	15:X:923:GLN:OE1	2.15	0.47
16:Y:158:ASP:HA	16:Y:161:ILE:HG12	1.95	0.47
16:Y:319:LEU:O	16:Y:323:ILE:HG12	2.15	0.47
17:Z:195:ARG:O	17:Z:198:ARG:HG2	2.14	0.47
6:J:17:DT:H2"	6:J:18:DG:N7	2.30	0.47
7:A:484:LYS:HE2	8:N:163:GLY:HA2	1.97	0.47
7:A:546:LYS:HG2	7:A:550:LEU:HD23	1.96	0.47
7:A:791:ALA:O	7:A:794:THR:OG1	2.24	0.47
8:N:168:LEU:HA	8:N:181:PRO:HA	1.95	0.47
10:Q:51:TYR:HB2	10:Q:97:LEU:HD13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:R:263:GLN:OE1	11:R:265:TYR:N	2.27	0.47
12:T:377:ARG:HB3	12:T:379:GLN:OE1	2.15	0.47
15:X:918:GLU:O	15:X:922:TYR:N	2.34	0.47
6:J:91:DA:C6	6:J:92:DG:C6	3.03	0.47
7:A:1047:ASN:HD22	7:A:1105:MET:CE	2.28	0.47
7:A:1100:LEU:HD23	7:A:1100:LEU:H	1.80	0.47
10:Q:138:VAL:HG23	10:Q:139:SER:N	2.30	0.47
14:V:306:GLU:O	14:V:309:THR:N	2.47	0.47
16:Y:494:TYR:O	16:Y:497:SER:OG	2.27	0.47
9:P:90:PHE:HE1	9:P:103:VAL:HG11	1.80	0.47
9:P:279:PHE:CD2	9:P:320:LEU:HD22	2.50	0.47
10:Q:433:CYS:SG	10:Q:1779:ILE:HD13	2.55	0.47
14:V:183:PRO:HA	15:W:454:ASN:OD1	2.14	0.47
15:X:454:ASN:ND2	15:X:457:LYS:HG3	2.30	0.47
3:H:112:SER:OG	14:V:374:ARG:NH2	2.48	0.46
5:I:31:DT:C6	5:I:32:DT:H72	2.51	0.46
7:A:1090:PRO:O	7:A:1093:ARG:HB2	2.13	0.46
10:Q:54:VAL:HG11	10:Q:93:TYR:CE2	2.51	0.46
10:Q:304:LYS:HA	10:Q:341:GLU:HG2	1.97	0.46
15:W:931:ARG:HE	17:Z:270:LEU:HD12	1.81	0.46
3:D:39:ILE:O	3:D:43:LYS:HG3	2.15	0.46
6:J:53:DG:H2"	6:J:54:DC:H6	1.81	0.46
22:A:1703:ADP:O1B	22:A:1703:ADP:H5'2	2.14	0.46
9:P:367:PRO:O	9:P:370:VAL:HG22	2.15	0.46
15:W:608:LEU:O	15:W:612:ALA:N	2.46	0.46
15:X:465:TYR:CE2	15:X:490:LEU:HB3	2.50	0.46
2:G:77:ARG:HA	3:H:53:GLY:O	2.15	0.46
5:I:83:DG:OP1	4:K:46:VAL:HB	2.15	0.46
5:I:129:DT:H3	6:J:19:DA:N6	2.13	0.46
6:J:12:DA:H1'	6:J:13:DT:H5'	1.97	0.46
7:A:877:TYR:CD1	7:A:905:ARG:HB2	2.51	0.46
9:P:106:THR:HA	9:P:135:ALA:O	2.15	0.46
9:P:291:LYS:HA	9:P:325:MET:SD	2.56	0.46
10:Q:32:SER:HB3	10:Q:129:SER:HB2	1.98	0.46
10:Q:274:ARG:HH21	10:Q:280:ASP:HB2	1.80	0.46
12:T:233:SER:HB2	12:T:235:GLU:OE1	2.16	0.46
15:W:456:SER:O	15:W:461:ILE:HG13	2.15	0.46
15:W:476:ASN:OD1	15:W:478:GLN:NE2	2.48	0.46
15:X:485:ALA:O	15:X:488:ARG:HG2	2.14	0.46
16:Y:135:GLN:HA	16:Y:138:ARG:NE	2.31	0.46
5:I:82:DC:H2"	5:I:83:DG:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:991:LYS:HB2	7:A:1191:HIS:CD2	2.51	0.46
8:N:107:TYR:OH	8:N:146:ILE:HD13	2.16	0.46
10:Q:62:LYS:O	10:Q:66:LYS:HG2	2.16	0.46
11:R:197:PRO:HB2	11:R:200:ILE:HG12	1.98	0.46
15:W:484:THR:HA	15:W:487:ARG:HG2	1.97	0.46
15:W:917:ARG:HD2	15:W:918:GLU:N	2.31	0.46
7:A:446:SER:HA	10:Q:517:GLU:HA	1.97	0.46
7:A:785:LYS:H	22:A:1703:ADP:PB	2.39	0.46
10:Q:441:LYS:HD2	16:Y:163:ARG:NE	2.30	0.46
10:Q:1816:TYR:HB3	16:Y:334:ARG:NH1	2.30	0.46
15:X:908:GLU:O	15:X:912:ILE:HG12	2.16	0.46
16:Y:463:LEU:HB3	17:Z:196:PHE:CZ	2.50	0.46
17:Z:198:ARG:HH11	17:Z:201:ARG:NH2	2.13	0.46
17:Z:230:GLN:O	17:Z:234:LEU:HD13	2.16	0.46
4:K:42:ARG:HD3	4:K:42:ARG:N	2.31	0.46
1:F:56:GLY:O	1:F:59:LYS:HB3	2.15	0.46
5:I:26:DC:H2"	5:I:27:DT:C6	2.50	0.46
5:I:100:DG:C6	5:I:101:DG:N1	2.84	0.46
5:I:121:DG:H2"	5:I:122:DG:C8	2.50	0.46
6:J:94:DG:H2"	6:J:95:DG:O5'	2.14	0.46
7:A:787:ILE:H	7:A:787:ILE:HD12	1.81	0.46
7:A:991:LYS:HD2	7:A:1191:HIS:CG	2.51	0.46
7:A:1142:PHE:CE2	7:A:1152:PHE:HB2	2.51	0.46
8:N:280:ALA:HB2	8:N:301:ARG:HE	1.79	0.46
10:Q:131:TYR:CE1	14:V:227:ASP:HB2	2.50	0.46
10:Q:292:ILE:H	10:Q:292:ILE:HD12	1.81	0.46
16:Y:299:PRO:HA	16:Y:302:ALA:HB3	1.98	0.46
16:Y:427:THR:HG22	16:Y:431:ILE:HD11	1.97	0.46
6:J:37:DG:H2"	6:J:38:DG:N7	2.31	0.46
6:J:49:DC:C2	6:J:50:DT:C4	3.04	0.46
10:Q:422:LEU:HA	10:Q:425:LEU:HB2	1.98	0.46
12:T:398:PRO:HB3	12:T:421:ILE:HD11	1.97	0.46
4:E:65:LEU:HD23	6:J:92:DG:OP2	2.16	0.46
10:Q:304:LYS:HG3	10:Q:305:LEU:HD22	1.96	0.46
10:Q:390:LEU:HD13	10:Q:394:TYR:HE2	1.80	0.46
12:T:399:VAL:HG12	12:T:426:SER:OG	2.15	0.46
14:V:138:SER:C	14:V:321:TRP:HD1	2.19	0.46
5:I:18:DC:H2"	5:I:19:DG:C8	2.51	0.46
7:A:170:THR:HG21	7:A:177:LEU:HB2	1.97	0.46
7:A:541:LEU:HB3	7:A:545:LYS:NZ	2.31	0.46
7:A:883:GLY:HA3	7:A:908:LEU:HD12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:N:157:LEU:O	8:N:161:ALA:N	2.39	0.46
16:Y:148:MET:SD	16:Y:149:ASP:N	2.89	0.46
6:J:92:DG:C4	6:J:93:DC:C5	3.04	0.46
7:A:785:LYS:HB2	22:A:1703:ADP:O2B	2.15	0.46
8:N:167:GLY:O	8:N:182:VAL:N	2.32	0.46
10:Q:416:ILE:HA	10:Q:419:LEU:HD12	1.97	0.46
11:R:266:TYR:HA	16:Y:496:TYR:HD1	1.81	0.46
15:W:924:ARG:HH22	17:Z:263:THR:HA	1.80	0.46
16:Y:163:ARG:HG2	16:Y:163:ARG:HH21	1.81	0.46
17:Z:185:GLY:HA2	17:Z:190:HIS:CD2	2.51	0.46
5:I:124:DA:H1'	5:I:125:DC:H5'	1.97	0.45
8:N:257:CYS:HA	8:N:260:GLN:OE1	2.16	0.45
9:P:177:ARG:NH2	9:P:179:ASP:OD1	2.49	0.45
9:P:328:LYS:HG2	9:P:330:ILE:HG23	1.97	0.45
10:Q:1764:ILE:O	10:Q:1768:ILE:HG13	2.16	0.45
11:R:274:LEU:HA	11:R:277:LEU:HG	1.97	0.45
12:T:193:ILE:HD13	12:T:240:LEU:HD23	1.98	0.45
15:W:622:LYS:O	15:W:626:HIS:N	2.37	0.45
17:Z:193:THR:O	17:Z:197:GLN:HG2	2.16	0.45
1:B:31:LYS:O	1:B:35:ARG:HG3	2.16	0.45
6:J:80:DA:H2"	6:J:81:DC:C5	2.51	0.45
7:A:1078:ALA:HB1	7:A:1303:ARG:HH21	1.81	0.45
7:A:1231:ALA:HA	7:A:1246:PHE:CD2	2.51	0.45
10:Q:336:GLY:O	10:Q:380:ASN:ND2	2.47	0.45
10:Q:1785:CYS:HA	10:Q:1788:ARG:HE	1.81	0.45
11:R:270:SER:OG	11:R:273:GLU:OE1	2.32	0.45
14:V:361:MET:O	14:V:365:ILE:HG23	2.17	0.45
15:X:469:MET:HB3	15:X:469:MET:HE2	1.80	0.45
16:Y:422:ASN:O	16:Y:426:GLU:HG2	2.16	0.45
2:G:112:GLN:HB2	2:G:115:LEU:HD23	1.97	0.45
5:I:24:DC:C2	6:J:125:DG:N2	2.84	0.45
5:I:32:DT:H2"	5:I:33:DG:H8	1.81	0.45
14:V:229:ASN:HB3	14:V:232:THR:HB	1.98	0.45
2:G:88:ARG:HB2	2:G:108:LEU:HD21	1.97	0.45
5:I:37:DG:H2"	5:I:38:DT:H71	1.97	0.45
6:J:98:DC:H5'	6:J:98:DC:H6	1.82	0.45
7:A:434:LEU:HD23	7:A:434:LEU:O	2.17	0.45
7:A:939:PHE:CE1	7:A:941:GLN:HG3	2.52	0.45
7:A:1010:HIS:O	7:A:1014:LYS:N	2.47	0.45
7:A:1300:ARG:HB3	7:A:1300:ARG:CZ	2.47	0.45
9:P:291:LYS:HG3	9:P:292:ASP:N	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:54:VAL:HG11	10:Q:93:TYR:HE2	1.81	0.45
10:Q:68:GLN:HG2	10:Q:71:GLU:OE2	2.16	0.45
10:Q:75:GLU:OE2	10:Q:76:PHE:HB2	2.17	0.45
10:Q:184:SER:HB3	10:Q:292:ILE:HG23	1.98	0.45
10:Q:271:HIS:CG	10:Q:272:PRO:HD2	2.51	0.45
10:Q:351:THR:O	10:Q:355:MET:HG2	2.17	0.45
10:Q:465:VAL:HG23	10:Q:466:LYS:N	2.32	0.45
15:W:640:LEU:HD23	16:Y:482:TYR:CE1	2.51	0.45
15:W:893:GLU:O	15:W:897:LYS:HG3	2.17	0.45
16:Y:331:PRO:HA	16:Y:334:ARG:HD3	1.99	0.45
17:Z:232:GLN:OE1	17:Z:233:SER:OG	2.29	0.45
1:B:44:LYS:HD3	2:G:115:LEU:HD12	1.99	0.45
6:J:121:DA:C6	6:J:122:DG:C6	3.03	0.45
7:A:845:VAL:O	7:A:849:ARG:HG2	2.16	0.45
7:A:1087:ARG:O	7:A:1090:PRO:HD2	2.17	0.45
7:A:1200:ARG:NH2	7:A:1275:ARG:HG2	2.30	0.45
7:A:1293:GLU:O	7:A:1296:ARG:HD3	2.17	0.45
8:N:271:ASP:HA	8:N:363:ARG:HE	1.81	0.45
10:Q:26:PHE:O	10:Q:30:ARG:HD3	2.17	0.45
15:W:508:GLY:O	15:W:512:TYR:HB2	2.15	0.45
15:W:882:ARG:HH21	15:W:885:LYS:NZ	2.14	0.45
16:Y:303:ARG:NH1	16:Y:304:LEU:HB2	2.31	0.45
4:K:46:VAL:O	4:K:49:ARG:HG2	2.16	0.45
3:D:109:HIS:O	3:D:113:GLU:HG2	2.17	0.45
5:I:26:DC:H2"	5:I:27:DT:H6	1.80	0.45
7:A:1082:PHE:O	7:A:1086:ASP:N	2.45	0.45
8:N:366:ARG:O	8:N:370:GLN:HG2	2.16	0.45
10:Q:40:VAL:O	10:Q:43:LYS:HG3	2.17	0.45
10:Q:292:ILE:O	10:Q:296:LEU:N	2.42	0.45
11:R:217:GLU:HA	11:R:220:GLU:CG	2.47	0.45
12:T:222:LYS:HG2	12:T:226[B]:HIS:CD2	2.52	0.45
2:C:112:GLN:HB2	2:C:115:LEU:HD12	1.97	0.45
3:D:86:ARG:HG3	3:D:86:ARG:NH1	2.32	0.45
2:G:32:ARG:NH1	5:I:30:DA:OP1	2.49	0.45
8:N:33:PRO:HD3	8:N:394:TRP:CE3	2.52	0.45
8:N:158:THR:HG23	8:N:169:ILE:HG12	1.99	0.45
10:Q:235:LYS:HE2	10:Q:235:LYS:HA	1.98	0.45
11:R:276:TYR:CD1	11:R:284:TYR:HB2	2.51	0.45
12:T:379:GLN:O	12:T:380:SER:OG	2.32	0.45
15:W:928:LEU:O	15:W:932:GLN:HG3	2.17	0.45
16:Y:404:MET:O	16:Y:408:LEU:HD23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Y:491:VAL:HA	16:Y:494:TYR:HB3	1.98	0.45
17:Z:247:GLN:NE2	17:Z:248:ILE:HG23	2.32	0.45
2:G:68:ASN:HD22	2:G:71:ARG:NH2	2.14	0.45
2:G:77:ARG:NE	5:I:20:DA:H4'	2.30	0.45
5:I:68:DT:H2"	5:I:69:DA:C8	2.52	0.45
7:A:500:LEU:HD11	9:P:355:MET:HG3	1.99	0.45
7:A:838:PRO:HB2	7:A:842:ARG:NH1	2.31	0.45
7:A:978:ARG:O	7:A:979:ARG:HG3	2.17	0.45
7:A:991:LYS:HB2	7:A:1191:HIS:NE2	2.32	0.45
12:T:195:GLU:O	12:T:199:ASN:N	2.46	0.45
12:T:605:ILE:HG23	15:X:646:ASP:OD1	2.17	0.45
15:W:901:ILE:HA	15:W:904:ARG:NE	2.21	0.45
15:X:449:PHE:CE2	15:X:461:ILE:HG22	2.50	0.45
15:X:466:ARG:HB2	15:X:504:LEU:HD11	1.97	0.45
5:I:13:DG:C5	5:I:14:DG:C5	3.05	0.45
6:J:52:DG:C2	6:J:53:DG:C4	3.04	0.45
7:A:1073:LEU:O	7:A:1076:TYR:HB3	2.17	0.45
7:A:1131:LYS:HB3	7:A:1134:ASP:OD2	2.17	0.45
8:N:32:CYS:SG	8:N:33:PRO:HD2	2.56	0.45
10:Q:191:MET:HE1	10:Q:199:ILE:HG21	1.99	0.45
10:Q:193:LEU:HD21	10:Q:296:LEU:HD11	1.98	0.45
10:Q:193:LEU:HD21	10:Q:296:LEU:HD21	1.99	0.45
12:T:567:ARG:NH1	12:T:574:CYS:SG	2.90	0.45
14:V:164:PHE:CE2	14:V:220:GLU:OE2	2.70	0.45
14:V:195:ILE:O	14:V:198:GLN:N	2.37	0.45
8:N:89:LYS:HB2	8:N:94:GLU:HG3	1.98	0.45
10:Q:233:PHE:CE1	10:Q:282:GLU:HB2	2.52	0.45
10:Q:359:VAL:HG21	10:Q:378:LEU:HD21	1.98	0.45
14:V:350:CYS:HB3	15:X:488:ARG:HE	1.82	0.45
15:W:931:ARG:NH2	15:X:927:LEU:HD13	2.32	0.45
15:X:454:ASN:CG	15:X:457:LYS:HG3	2.37	0.45
16:Y:508:GLN:O	16:Y:508:GLN:NE2	2.41	0.45
7:A:460:GLN:HG3	7:A:463:GLU:OE1	2.17	0.44
7:A:764:TRP:CE3	7:A:977:LEU:HB2	2.52	0.44
7:A:998:CYS:SG	7:A:1084:LEU:HD13	2.57	0.44
9:P:201:THR:OG1	9:P:202:THR:N	2.50	0.44
10:Q:141:TYR:O	10:Q:145:SER:N	2.44	0.44
10:Q:433:CYS:O	10:Q:436:ILE:HB	2.16	0.44
10:Q:441:LYS:HD2	16:Y:163:ARG:HE	1.82	0.44
12:T:586:ALA:O	12:T:590:THR:N	2.41	0.44
2:G:104:GLN:N	4:K:94:GLU:OE2	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:47:DC:H2"	5:I:48:DT:C5	2.52	0.44
6:J:87:DT:H6	6:J:87:DT:H2'	1.61	0.44
10:Q:18:ALA:O	10:Q:19:PHE:HB3	2.16	0.44
14:V:194:GLU:HG2	14:V:199:LYS:HB3	1.98	0.44
15:W:910:GLU:HA	15:W:913:MET:HB3	1.98	0.44
15:X:481:LEU:HD22	15:X:510:ILE:HD11	1.99	0.44
16:Y:294:GLN:NE2	16:Y:310:GLN:O	2.49	0.44
16:Y:311:THR:O	16:Y:314:VAL:HG12	2.17	0.44
16:Y:329:GLN:NE2	16:Y:334:ARG:HB3	2.32	0.44
2:C:31:HIS:CD2	2:C:35:ARG:NH1	2.86	0.44
7:A:181:ARG:HH11	15:X:646:ASP:HB3	1.82	0.44
7:A:195:PRO:O	15:W:651:ASP:HB3	2.18	0.44
7:A:417:ARG:HH22	16:Y:479:ALA:HB2	1.82	0.44
7:A:502:LYS:O	7:A:506:THR:HG23	2.18	0.44
10:Q:50:LEU:C	10:Q:52:THR:H	2.19	0.44
10:Q:141:TYR:HA	10:Q:144:GLN:HB2	2.00	0.44
12:T:413:HIS:ND1	12:T:414:TYR:HD1	2.15	0.44
5:I:138:DT:H2"	5:I:139:DA:C8	2.52	0.44
7:A:999:ASP:OD2	7:A:1264:PRO:HG3	2.18	0.44
7:A:1292:ARG:NE	7:A:1292:ARG:HA	2.33	0.44
9:P:215:LYS:HE3	9:P:216:LEU:HD21	1.97	0.44
10:Q:183:LEU:HD12	10:Q:189:HIS:O	2.16	0.44
10:Q:1802:ILE:HD12	16:Y:357:ILE:HD12	2.00	0.44
12:T:423:LYS:HA	12:T:426:SER:HB3	2.00	0.44
15:W:884:ILE:O	15:W:888:VAL:HG12	2.18	0.44
15:W:906:PHE:HE2	15:X:906:PHE:CE2	2.35	0.44
2:G:32:ARG:NH2	3:H:35:GLU:OE2	2.48	0.44
5:I:66:DC:N4	6:J:81:DC:H42	2.16	0.44
5:I:70:DC:N4	6:J:78:DG:H1	2.16	0.44
10:Q:278:ILE:O	10:Q:278:ILE:HG13	2.17	0.44
10:Q:1764:ILE:HD12	10:Q:1764:ILE:H	1.82	0.44
12:T:156:PHE:O	12:T:177:ASP:HB2	2.18	0.44
15:W:605:GLU:HA	15:W:608:LEU:HD12	2.00	0.44
16:Y:465:THR:O	17:Z:189:LYS:HE3	2.17	0.44
1:B:43:VAL:HG11	4:K:119:ILE:HD13	2.00	0.44
6:J:44:DA:H2"	6:J:45:DT:H71	1.99	0.44
7:A:1099:VAL:HG13	7:A:1151:ILE:HG22	1.99	0.44
7:A:1300:ARG:NH2	7:A:1302:PRO:CG	2.80	0.44
8:N:177:THR:HG21	8:N:197:LEU:O	2.18	0.44
10:Q:38:PRO:HB3	10:Q:92:TYR:CE1	2.44	0.44
10:Q:433:CYS:SG	10:Q:1782:TYR:HB2	2.58	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:T:375:THR:HB	12:T:377:ARG:NH2	2.32	0.44
12:T:612:ARG:CZ	12:T:612:ARG:HA	2.48	0.44
14:V:296:LYS:O	14:V:299:SER:N	2.51	0.44
15:X:450:PHE:CD1	15:X:459:PRO:HB3	2.53	0.44
1:F:50:ILE:O	1:F:53:GLU:N	2.50	0.44
8:N:74:ALA:HA	8:N:77:VAL:HG22	1.99	0.44
9:P:297:THR:OG1	9:P:329:ILE:HA	2.18	0.44
10:Q:139:SER:OG	10:Q:142:LEU:HB2	2.17	0.44
10:Q:237:TRP:CE3	10:Q:318:LEU:HD23	2.53	0.44
10:Q:371:LYS:HD3	10:Q:406:HIS:NE2	2.32	0.44
10:Q:388:GLY:HA2	10:Q:391:ILE:HD11	1.99	0.44
12:T:176:MET:HG2	12:T:203:MET:HG2	1.99	0.44
15:X:606:THR:O	15:X:610:LEU:HG	2.18	0.44
5:I:63:DG:C2	6:J:86:DG:N2	2.85	0.44
5:I:140:DC:H2"	5:I:141:DA:C8	2.53	0.44
6:J:41:DG:H1'	6:J:42:DT:H5'	1.99	0.44
6:J:56:DG:H4'	7:A:861:GLU:HG2	1.99	0.44
7:A:780:GLU:HG2	7:A:781:MET:N	2.32	0.44
7:A:877:TYR:HD1	7:A:905:ARG:HB2	1.82	0.44
7:A:976:LEU:HD23	7:A:977:LEU:N	2.33	0.44
10:Q:40:VAL:HG22	10:Q:43:LYS:HE3	1.99	0.44
10:Q:158:TYR:HB2	10:Q:196:ASP:OD2	2.17	0.44
11:R:198:GLU:HA	11:R:201:LYS:HB3	1.99	0.44
16:Y:348:GLU:N	16:Y:360:ARG:HH22	2.15	0.44
4:K:82:LEU:HA	4:K:82:LEU:HD23	1.77	0.44
5:I:25:DG:C4	5:I:26:DC:C5	3.06	0.44
5:I:50:DG:H1	6:J:98:DC:N4	2.16	0.44
7:A:465:GLU:HA	7:A:468:ARG:HB3	1.99	0.44
7:A:764:TRP:CE2	7:A:768:LEU:HD11	2.53	0.44
7:A:889:HIS:CE1	7:A:923:ALA:HB2	2.53	0.44
7:A:1101:LEU:HD12	7:A:1102:PHE:H	1.83	0.44
15:X:477:PRO:HB3	15:X:513:GLN:HE21	1.82	0.44
4:E:57:SER:HB2	4:E:59:GLU:OE1	2.18	0.43
4:E:100:LEU:HD23	4:E:100:LEU:HA	1.67	0.43
5:I:34:DG:H5'	5:I:34:DG:H8	1.82	0.43
5:I:39:DA:N6	6:J:109:DT:H3	2.16	0.43
7:A:757:TYR:HA	7:A:760:LYS:HB2	2.00	0.43
7:A:1311:PRO:HA	7:A:1314:ILE:HB	1.99	0.43
8:N:127:TRP:CZ3	8:N:192:ILE:HD12	2.52	0.43
9:P:156:GLY:O	9:P:303:THR:OG1	2.33	0.43
9:P:208:ILE:HD13	9:P:243:PRO:HD3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:138:VAL:HG23	10:Q:139:SER:H	1.82	0.43
10:Q:423:TYR:O	10:Q:427:GLU:HG3	2.17	0.43
12:T:423:LYS:O	12:T:427:ASP:N	2.41	0.43
15:W:481:LEU:HD12	15:W:481:LEU:HA	1.81	0.43
15:X:887:LEU:HD21	17:Z:235:MET:SD	2.57	0.43
2:C:100:VAL:HG11	1:F:98:TYR:CE2	2.53	0.43
6:J:45:DT:H2"	6:J:46:DC:C5	2.53	0.43
7:A:963:LEU:O	7:A:967:ARG:HG2	2.19	0.43
8:N:162:ASN:HD22	8:N:349:ILE:CG2	2.31	0.43
8:N:172:SER:OG	8:N:354:ASN:HB2	2.18	0.43
10:Q:233:PHE:O	10:Q:236:PHE:HB3	2.19	0.43
10:Q:287:LEU:HD12	10:Q:324:PHE:HZ	1.82	0.43
10:Q:427:GLU:HG2	10:Q:1778:ASN:ND2	2.34	0.43
14:V:306:GLU:H	14:V:306:GLU:CD	2.20	0.43
14:V:358:ASP:OD2	14:V:358:ASP:N	2.51	0.43
15:W:928:LEU:HG	17:Z:266:PHE:HE1	1.83	0.43
15:X:512:TYR:HB3	15:X:513:GLN:OE1	2.17	0.43
17:Z:272:ARG:HH11	17:Z:276:LEU:HD13	1.83	0.43
4:K:94:GLU:HA	4:K:94:GLU:OE1	2.17	0.43
4:E:119:ILE:O	1:F:50:ILE:HD11	2.18	0.43
7:A:1261:ASP:O	7:A:1263:VAL:HG23	2.18	0.43
7:A:1277:GLU:O	7:A:1280:PHE:HB2	2.18	0.43
8:N:120:VAL:N	8:N:148:ALA:O	2.50	0.43
11:R:235:VAL:O	15:X:524:GLY:N	2.52	0.43
12:T:168:TYR:CE1	12:T:172:ILE:HD13	2.53	0.43
15:W:862:ALA:O	15:W:866:LEU:N	2.40	0.43
15:W:944:MET:SD	15:W:945:ARG:N	2.91	0.43
17:Z:244:GLU:HA	17:Z:247:GLN:CG	2.47	0.43
3:D:76:GLU:HG2	3:D:101:LEU:HD11	1.99	0.43
6:J:68:DG:H21	6:J:69:DG:N2	2.15	0.43
7:A:173:ASN:HD21	7:A:176:GLN:HB2	1.83	0.43
7:A:1311:PRO:N	7:A:1314:ILE:HD12	2.33	0.43
10:Q:59:GLY:HA2	10:Q:101:GLU:OE2	2.19	0.43
10:Q:270:PHE:HA	17:Z:195:ARG:NH1	2.32	0.43
10:Q:1797:LEU:HD22	10:Q:1815:LEU:HD11	2.00	0.43
14:V:261:ARG:HA	14:V:283:MET:H	1.82	0.43
4:K:46:VAL:HA	4:K:49:ARG:HG2	2.00	0.43
4:K:51:ILE:HG13	4:K:52:ARG:HD2	2.00	0.43
1:B:15:ALA:N	1:B:18:HIS:O	2.51	0.43
4:E:50:GLU:OE2	1:F:39:ARG:NE	2.44	0.43
7:A:468:ARG:HA	7:A:471:LYS:HD2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:242:LEU:HD12	9:P:246:GLN:NE2	2.33	0.43
9:P:358:SER:H	9:P:361:GLU:CD	2.22	0.43
10:Q:187:SER:O	10:Q:187:SER:OG	2.36	0.43
10:Q:381:LEU:HA	10:Q:381:LEU:HD23	1.84	0.43
10:Q:462:LEU:HD12	10:Q:465:VAL:HG11	1.99	0.43
14:V:233:PHE:O	14:V:237:ILE:HG12	2.19	0.43
15:X:465:TYR:CD2	15:X:490:LEU:HD13	2.52	0.43
15:X:913:MET:C	15:X:917:ARG:HH21	2.19	0.43
3:H:33:ARG:HG3	6:J:123:DC:H4'	2.00	0.43
7:A:448:ARG:HE	7:A:448:ARG:HB2	1.66	0.43
7:A:1073:LEU:HD23	7:A:1073:LEU:HA	1.88	0.43
7:A:1243:ARG:H	7:A:1243:ARG:HG3	1.48	0.43
9:P:109:PRO:HA	9:P:136:ILE:HD12	2.01	0.43
9:P:226:GLU:HB3	9:P:255:PHE:CE2	2.54	0.43
14:V:177:HIS:HA	14:V:180:ALA:HB3	1.99	0.43
15:W:919:ALA:O	15:W:922:TYR:HB3	2.18	0.43
15:X:443:ARG:HA	15:X:450:PHE:CE2	2.54	0.43
15:X:905:HIS:HA	15:X:908:GLU:OE2	2.19	0.43
2:C:67:GLY:HA3	3:D:49:HIS:CD2	2.54	0.43
2:G:71:ARG:CB	2:G:71:ARG:HH11	2.31	0.43
6:J:26:DC:H6	6:J:26:DC:H2'	1.68	0.43
7:A:487:LYS:HE3	8:N:399:ILE:HD13	1.99	0.43
7:A:1248:GLN:OE1	7:A:1248:GLN:HA	2.18	0.43
7:A:1292:ARG:O	7:A:1296:ARG:NH1	2.51	0.43
15:W:510:ILE:HA	15:W:510:ILE:HD13	1.83	0.43
15:W:909:LEU:HD21	16:Y:164:LYS:HE3	2.00	0.43
1:B:66:ILE:CD1	4:K:92:LEU:HD11	2.47	0.43
2:G:102:ILE:HG23	3:H:61:ILE:HD13	2.01	0.43
3:H:33:ARG:HH22	5:I:28:DC:H5"	1.84	0.43
5:I:33:DG:H2"	5:I:34:DG:H8	1.83	0.43
6:J:68:DG:H2"	6:J:69:DG:C8	2.54	0.43
7:A:472:HIS:O	7:A:475:TYR:HB2	2.19	0.43
7:A:768:LEU:HD23	7:A:768:LEU:HA	1.83	0.43
7:A:808:ILE:HD13	7:A:855:VAL:HG13	2.01	0.43
7:A:925:LEU:HA	7:A:928:LEU:HB2	2.00	0.43
7:A:929:LEU:HB2	7:A:933:PHE:HB2	2.00	0.43
7:A:1112:MET:HG3	7:A:1116:PHE:CE1	2.54	0.43
7:A:1304:LEU:O	7:A:1304:LEU:HG	2.18	0.43
7:A:1315:ILE:HG22	7:A:1316:LYS:HG3	1.99	0.43
8:N:89:LYS:HB2	8:N:94:GLU:CG	2.49	0.43
8:N:311:PRO:HG3	8:N:323:LEU:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:242:LEU:HD12	9:P:246:GLN:HE22	1.84	0.43
10:Q:235:LYS:NZ	10:Q:238:LYS:HD2	2.34	0.43
12:T:212:LYS:O	12:T:214:GLU:N	2.52	0.43
12:T:429:ILE:HD13	17:Z:190:HIS:HB3	2.01	0.43
14:V:223:CYS:SG	14:V:228:LEU:HB2	2.59	0.43
15:X:878:ALA:O	15:X:882:ARG:HD2	2.18	0.43
4:E:123:ASP:OD1	4:K:113:HIS:NE2	2.51	0.43
5:I:58:DT:H1'	5:I:59:DA:C8	2.54	0.43
6:J:55:DG:C5	6:J:56:DG:C6	3.07	0.43
6:J:94:DG:C4	6:J:95:DG:C8	3.06	0.43
7:A:370:ARG:HG3	7:A:373:ARG:NH2	2.34	0.43
7:A:1113:GLU:HG3	7:A:1123:TYR:CE2	2.53	0.43
8:N:127:TRP:CZ2	8:N:194:LYS:HB2	2.53	0.43
8:N:138:GLU:O	8:N:142:GLU:N	2.46	0.43
9:P:151:ILE:HG22	9:P:164:PRO:HB3	2.01	0.43
10:Q:1792:ARG:HG2	10:Q:1792:ARG:HH11	1.83	0.43
14:V:367:ASP:O	14:V:370:ARG:HB3	2.19	0.43
15:W:615:MET:SD	15:W:615:MET:N	2.87	0.43
15:X:612:ALA:HB1	15:X:623:VAL:HG13	2.01	0.43
17:Z:244:GLU:O	17:Z:248:ILE:HG12	2.19	0.43
1:B:62:LEU:HD23	1:B:62:LEU:HA	1.70	0.43
3:H:33:ARG:CG	6:J:123:DC:H4'	2.49	0.43
6:J:14:DA:H8	6:J:14:DA:H5"	1.82	0.43
7:A:546:LYS:HG2	7:A:550:LEU:CD2	2.49	0.43
7:A:906:ARG:NH2	7:A:928:LEU:O	2.51	0.43
7:A:928:LEU:HA	7:A:928:LEU:HD23	1.79	0.43
8:N:337:ASP:O	8:N:340:ILE:HG12	2.19	0.43
9:P:213:LYS:HA	9:P:217:CYS:SG	2.58	0.43
10:Q:43:LYS:CG	10:Q:77:ASN:HD22	2.20	0.43
10:Q:329:GLN:HG3	10:Q:369:PHE:CE1	2.54	0.43
10:Q:395:VAL:HG13	10:Q:400:TYR:OH	2.18	0.43
11:R:215:ASN:ND2	15:X:480:TYR:O	2.50	0.43
12:T:188:ASN:ND2	12:T:191:GLN:OE1	2.52	0.43
12:T:390:GLU:CD	12:T:394:ASN:H	2.21	0.43
5:I:83:DG:N2	6:J:65:DC:N3	2.61	0.42
7:A:381:ARG:HE	7:A:385:LEU:HD21	1.83	0.42
7:A:943:PHE:C	7:A:945:ALA:H	2.23	0.42
9:P:204:ALA:O	9:P:207:GLU:HG2	2.19	0.42
10:Q:454:ILE:HD12	10:Q:454:ILE:HG23	1.76	0.42
10:Q:522:LYS:HB2	10:Q:522:LYS:HE3	1.83	0.42
14:V:213:MET:HA	14:V:217:MET:HE3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:W:903:LEU:HD13	15:X:902:LYS:NZ	2.34	0.42
16:Y:479:ALA:HA	16:Y:482:TYR:HD2	1.83	0.42
6:J:13:DT:H6	6:J:13:DT:H2'	1.72	0.42
7:A:884:HIS:O	7:A:887:LYS:HG2	2.19	0.42
7:A:1303:ARG:HG2	7:A:1307:GLU:OE1	2.18	0.42
8:N:119:PRO:HG2	8:N:406:PHE:HZ	1.84	0.42
8:N:121:LEU:HD13	8:N:410:TRP:CH2	2.53	0.42
8:N:162:ASN:HD22	8:N:349:ILE:HG23	1.83	0.42
10:Q:427:GLU:HG2	10:Q:1778:ASN:HD22	1.83	0.42
12:T:143:LEU:HA	12:T:146:GLN:HE21	1.84	0.42
12:T:218:TYR:CE2	12:T:222:LYS:HB2	2.54	0.42
15:X:450:PHE:CE1	15:X:459:PRO:HB3	2.54	0.42
6:J:63:DC:H1'	6:J:64:DG:H5'	2.01	0.42
7:A:371:GLU:O	7:A:375:GLN:HG3	2.20	0.42
7:A:844:PHE:O	7:A:848:LEU:HG	2.19	0.42
9:P:103:VAL:O	9:P:132:MET:HA	2.19	0.42
9:P:117:GLU:O	9:P:121:GLN:HG3	2.19	0.42
10:Q:455:GLN:HG2	10:Q:462:LEU:HD22	2.00	0.42
11:R:257:LEU:H	11:R:261:GLN:HE21	1.68	0.42
12:T:402:LEU:HD21	12:T:413:HIS:HA	2.01	0.42
16:Y:455:TRP:CE2	17:Z:203:ILE:HD12	2.54	0.42
2:C:21:ALA:HB2	3:D:121:TYR:HB2	2.01	0.42
5:I:16:DG:C2	6:J:133:DA:C2	3.08	0.42
5:I:93:DC:H6	5:I:93:DC:H2'	1.65	0.42
7:A:1103:CYS:SG	7:A:1109:MET:HG3	2.59	0.42
8:N:12:GLY:O	8:N:119:PRO:HD2	2.19	0.42
9:P:256:ARG:HA	9:P:259:GLU:OE2	2.18	0.42
12:T:236:ARG:HA	12:T:239[A]:SER:HB2	2.01	0.42
14:V:188:PRO:HG3	14:V:316:ARG:C	2.39	0.42
14:V:337:GLU:OE1	14:V:337:GLU:N	2.51	0.42
15:X:423:HIS:CG	15:X:424:ILE:N	2.87	0.42
15:X:440:ALA:HA	15:X:443:ARG:HG3	2.01	0.42
17:Z:233:SER:HA	17:Z:236:VAL:HG22	2.01	0.42
1:B:66:ILE:HD11	4:K:92:LEU:CD1	2.48	0.42
4:E:60:LEU:HD13	4:E:93:GLN:CD	2.40	0.42
3:H:39:ILE:HD11	3:H:40:TYR:CZ	2.55	0.42
9:P:188:TYR:HA	9:P:191:LYS:HB2	2.00	0.42
9:P:332:PRO:O	9:P:335:ARG:HD3	2.19	0.42
10:Q:95:ARG:O	10:Q:95:ARG:HD2	2.19	0.42
10:Q:138:VAL:HG22	10:Q:143:ARG:HH21	1.84	0.42
11:R:210:PHE:CE2	15:X:485:ALA:HA	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:T:178:PHE:O	12:T:182:LYS:HG3	2.18	0.42
12:T:539:ALA:HA	12:T:542:PHE:HB3	2.01	0.42
14:V:169:ASP:OD1	14:V:169:ASP:C	2.58	0.42
14:V:186:LEU:HD22	14:V:205:THR:HG22	2.01	0.42
14:V:300:GLU:OE1	14:V:300:GLU:N	2.51	0.42
6:J:106:DG:H2"	6:J:107:DT:H5"	2.02	0.42
7:A:370:ARG:HG3	7:A:373:ARG:HH22	1.84	0.42
7:A:374:LEU:HD12	15:W:645:GLU:OE2	2.19	0.42
7:A:1052:PHE:O	7:A:1054:HIS:N	2.52	0.42
10:Q:309:ASN:HB3	10:Q:312:CYS:SG	2.60	0.42
11:R:265:TYR:CE2	11:R:267:LYS:HB2	2.55	0.42
12:T:157:SER:O	12:T:179:SER:HB3	2.20	0.42
12:T:560:GLN:O	12:T:564:LEU:HG	2.20	0.42
15:W:420:GLN:NE2	15:X:532:HIS:O	2.40	0.42
15:X:477:PRO:HB3	15:X:513:GLN:NE2	2.35	0.42
15:X:481:LEU:HB3	15:X:511:ASN:HD21	1.84	0.42
16:Y:296:LYS:HG3	16:Y:309:THR:OG1	2.20	0.42
4:K:100:LEU:HD23	4:K:100:LEU:HA	1.79	0.42
1:F:66:ILE:HA	1:F:66:ILE:HD13	1.83	0.42
6:J:132:DC:H2"	6:J:133:DA:C8	2.54	0.42
7:A:197:PRO:HB2	7:A:199:HIS:ND1	2.34	0.42
7:A:1017:LEU:O	7:A:1032:THR:HB	2.20	0.42
7:A:1082:PHE:CE1	7:A:1112:MET:HE1	2.55	0.42
7:A:1085:LEU:HA	7:A:1088:ILE:HG12	2.01	0.42
12:T:156:PHE:HZ	12:T:207:ALA:HB2	1.85	0.42
15:W:884:ILE:HD13	16:Y:137:ILE:HD12	2.02	0.42
15:X:905:HIS:HB3	17:Z:252:HIS:ND1	2.34	0.42
15:X:933:ALA:HA	15:X:936:MET:CE	2.50	0.42
16:Y:163:ARG:NH2	16:Y:167:ASP:OD2	2.33	0.42
6:J:125:DG:C5	6:J:126:DC:N4	2.88	0.42
7:A:412:PHE:HD2	15:W:639:PHE:HZ	1.68	0.42
7:A:941:GLN:OE1	7:A:944:ASN:HA	2.20	0.42
7:A:1219:LYS:O	7:A:1222:LEU:HB2	2.20	0.42
10:Q:169:LEU:O	10:Q:173:VAL:HG23	2.19	0.42
10:Q:399:SER:O	10:Q:403:ILE:HG13	2.18	0.42
10:Q:466:LYS:CB	10:Q:521:GLU:HB2	2.44	0.42
10:Q:1763:PRO:O	10:Q:1766:LYS:HB2	2.20	0.42
11:R:225:TYR:O	11:R:234:GLN:N	2.33	0.42
15:X:942:ALA:HA	15:X:945:ARG:NH1	2.34	0.42
16:Y:353:LYS:HE3	16:Y:355:SER:OG	2.20	0.42
4:K:93:GLN:O	4:K:97:GLU:HG2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:M:319:UNK:O	19:M:323:UNK:N	2.53	0.42
5:I:128:DG:H2'	5:I:129:DT:H71	2.01	0.42
6:J:95:DG:C6	6:J:96:DT:C4	3.08	0.42
6:J:133:DA:N7	6:J:134:DC:N4	2.67	0.42
7:A:748:LEU:HD21	7:A:798:GLU:CG	2.48	0.42
9:P:9:VAL:HG23	9:P:340:TRP:CD1	2.55	0.42
9:P:334:GLU:OE2	9:P:334:GLU:N	2.51	0.42
11:R:272:ASP:HA	11:R:275:ARG:NH2	2.35	0.42
12:T:162:ASP:HA	12:T:165:ALA:O	2.20	0.42
15:W:897:LYS:O	15:W:901:ILE:HG13	2.20	0.42
15:W:917:ARG:HH11	17:Z:255:LYS:NZ	2.18	0.42
15:X:606:THR:HA	15:X:609:LEU:HB3	2.01	0.42
16:Y:312:ARG:N	16:Y:313:PRO:HD2	2.35	0.42
16:Y:500:GLN:HA	16:Y:503:ARG:NH2	2.34	0.42
3:D:86:ARG:HG3	3:D:86:ARG:HH11	1.84	0.42
7:A:455:LYS:HE2	7:A:455:LYS:HA	2.01	0.42
7:A:500:LEU:O	7:A:504:VAL:HG23	2.20	0.42
7:A:757:TYR:HB2	7:A:979:ARG:HH11	1.84	0.42
10:Q:196:ASP:O	10:Q:199:ILE:HG22	2.20	0.42
10:Q:310:ARG:N	10:Q:310:ARG:HD3	2.34	0.42
15:X:466:ARG:HG3	15:X:467:ASN:N	2.35	0.42
15:X:932:GLN:O	15:X:935:HIS:HB3	2.20	0.42
5:I:94:DG:C2	6:J:55:DG:C2	3.08	0.41
6:J:68:DG:H2"	6:J:69:DG:N7	2.35	0.41
6:J:102:DA:H2"	6:J:103:DG:C8	2.52	0.41
6:J:126:DC:H2"	6:J:127:DC:O5'	2.19	0.41
7:A:830:VAL:HG12	7:A:853:PHE:HA	2.02	0.41
7:A:1242:GLU:HA	7:A:1245:ALA:HB3	2.02	0.41
9:P:8:LEU:O	9:P:103:VAL:HA	2.19	0.41
9:P:213:LYS:HD2	9:P:306:TYR:OH	2.20	0.41
10:Q:325:ILE:HG23	10:Q:328:ARG:NH1	2.35	0.41
12:T:138:GLU:O	12:T:142:GLN:HG2	2.20	0.41
15:W:616:TYR:CE1	15:W:622:LYS:HE3	2.55	0.41
1:B:44:LYS:HB2	2:G:115:LEU:HD12	2.01	0.41
2:C:32:ARG:NH2	3:D:35:GLU:OE1	2.50	0.41
7:A:915:GLN:HA	7:A:1181:HIS:ND1	2.34	0.41
7:A:1000:MET:HE1	7:A:1005:ARG:HA	2.01	0.41
7:A:1198:GLU:CG	7:A:1275:ARG:HD3	2.49	0.41
8:N:396:GLY:O	8:N:399:ILE:HG22	2.20	0.41
9:P:116:ARG:HD2	9:P:371:HIS:CE1	2.56	0.41
10:Q:20:LEU:O	10:Q:23:LEU:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:325:ILE:HG22	10:Q:329:GLN:NE2	2.32	0.41
10:Q:371:LYS:HE2	10:Q:371:LYS:HB2	1.85	0.41
10:Q:1770:LEU:O	10:Q:1774:LEU:HD23	2.20	0.41
14:V:216:GLU:OE2	14:V:242:ARG:NH1	2.42	0.41
14:V:240:ALA:O	14:V:244:GLN:HG3	2.20	0.41
14:V:376:ARG:HG2	14:V:376:ARG:NH1	2.34	0.41
15:W:438:VAL:HG13	15:W:443:ARG:NH2	2.35	0.41
16:Y:416:GLU:O	16:Y:419:THR:OG1	2.29	0.41
17:Z:198:ARG:HH11	17:Z:201:ARG:HH21	1.67	0.41
5:I:47:DC:H2"	5:I:48:DT:C7	2.50	0.41
5:I:70:DC:H2"	5:I:71:DG:C8	2.56	0.41
5:I:95:DC:H2"	5:I:96:DC:O5'	2.20	0.41
8:N:266:VAL:HG11	8:N:297:PHE:CE2	2.55	0.41
8:N:338:ILE:HA	8:N:341:ARG:HG3	2.01	0.41
12:T:150:LYS:O	12:T:152:PRO:HD3	2.20	0.41
15:W:439:HIS:ND1	15:W:441:ILE:HG12	2.35	0.41
15:W:944:MET:SD	15:W:945:ARG:HG2	2.60	0.41
15:X:427:PRO:HG3	15:X:512:TYR:CE1	2.55	0.41
16:Y:501:GLN:HG3	16:Y:502:ARG:NH2	2.35	0.41
5:I:144:DC:H6	5:I:144:DC:H2'	1.71	0.41
7:A:488:GLU:HA	7:A:491:ARG:HD2	2.02	0.41
7:A:1010:HIS:ND1	7:A:1018:LEU:HD11	2.36	0.41
10:Q:27:HIS:CE1	10:Q:32:SER:HB2	2.55	0.41
10:Q:132:ASN:CB	10:Q:135:GLN:HB2	2.50	0.41
10:Q:146:TYR:CE2	14:V:231:LEU:HD23	2.55	0.41
10:Q:307:ALA:N	10:Q:338:ILE:HD11	2.35	0.41
12:T:140:LEU:HD22	12:T:196:LEU:HD22	2.02	0.41
14:V:341:ARG:HD2	15:X:488:ARG:O	2.21	0.41
14:V:341:ARG:NH1	14:V:349:TRP:CD2	2.88	0.41
16:Y:498:LYS:O	16:Y:502:ARG:HG2	2.20	0.41
17:Z:251:ARG:NH1	17:Z:255:LYS:HG3	2.35	0.41
2:G:92:GLU:OE2	3:H:103:PRO:HG2	2.21	0.41
5:I:63:DG:H2"	5:I:64:DC:H5'	2.02	0.41
6:J:111:DC:C2	6:J:112:DG:C6	3.09	0.41
7:A:463:GLU:O	7:A:466:ARG:HG3	2.19	0.41
7:A:465:GLU:O	7:A:469:ARG:N	2.54	0.41
7:A:545:LYS:HE3	7:A:940:GLU:OE2	2.21	0.41
7:A:806:PHE:HD1	7:A:877:TYR:HB3	1.86	0.41
7:A:1054:HIS:HA	7:A:1057:GLU:HG2	2.03	0.41
9:P:216:LEU:HD12	9:P:250:ILE:HD11	2.01	0.41
11:R:272:ASP:OD2	12:T:161:THR:HG22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:T:429:ILE:CD1	17:Z:190:HIS:HB3	2.51	0.41
12:T:605:ILE:HG22	12:T:606:VAL:HG12	2.03	0.41
12:T:606:VAL:HG22	12:T:607:SER:N	2.35	0.41
14:V:176:ILE:O	14:V:180:ALA:N	2.39	0.41
14:V:184:GLU:HA	14:V:209:ASN:HD22	1.84	0.41
16:Y:136:ARG:NH1	16:Y:140:LEU:HD11	2.36	0.41
3:D:105:GLU:OE2	3:D:109:HIS:CE1	2.74	0.41
5:I:70:DC:N3	6:J:78:DG:N2	2.66	0.41
6:J:81:DC:H2"	6:J:82:DG:C8	2.56	0.41
7:A:423:CYS:SG	16:Y:493:ARG:HB2	2.61	0.41
7:A:821:GLU:OE2	7:A:821:GLU:HA	2.21	0.41
7:A:999:ASP:O	7:A:1080:GLY:HA3	2.20	0.41
9:P:305:MET:HG2	9:P:305:MET:O	2.21	0.41
10:Q:367:ASP:CB	10:Q:370:LEU:HD13	2.50	0.41
10:Q:1775:ILE:O	10:Q:1779:ILE:HG12	2.19	0.41
14:V:301:LEU:HD23	14:V:301:LEU:HA	1.79	0.41
15:W:457:LYS:HB2	15:W:457:LYS:HE2	1.91	0.41
15:X:927:LEU:O	15:X:931:ARG:N	2.44	0.41
16:Y:432:ASN:O	16:Y:436:THR:HG23	2.21	0.41
4:K:126:LEU:O	4:K:129:ARG:N	2.53	0.41
2:G:71:ARG:NH1	2:G:71:ARG:HB2	2.35	0.41
2:G:116:LEU:HD23	2:G:116:LEU:H	1.85	0.41
6:J:39:DG:C6	6:J:40:DA:C6	3.09	0.41
7:A:893:LEU:HD12	7:A:893:LEU:HA	1.87	0.41
7:A:941:GLN:HB2	7:A:944:ASN:HA	2.02	0.41
10:Q:316:LEU:HA	10:Q:316:LEU:HD23	1.82	0.41
10:Q:1807:ALA:O	10:Q:1811:LEU:HD12	2.20	0.41
12:T:220:ALA:O	12:T:224:LEU:HB2	2.21	0.41
16:Y:142:PRO:C	16:Y:144:SER:H	2.24	0.41
16:Y:294:GLN:HE21	16:Y:310:GLN:C	2.23	0.41
16:Y:455:TRP:HD1	16:Y:456:LEU:HD12	1.84	0.41
6:J:53:DG:C4	6:J:54:DC:C5	3.09	0.41
7:A:448:ARG:N	10:Q:1767:HIS:ND1	2.69	0.41
7:A:994:TYR:OH	7:A:1200:ARG:NH1	2.54	0.41
9:P:105:LEU:HD21	9:P:123:MET:CE	2.51	0.41
9:P:359:LYS:H	9:P:359:LYS:HG2	1.70	0.41
10:Q:65:GLU:CD	10:Q:65:GLU:H	2.24	0.41
10:Q:310:ARG:O	10:Q:313:LEU:HB2	2.21	0.41
15:X:493:ASP:OD2	15:X:495:CYS:HB3	2.20	0.41
16:Y:145:GLN:HA	16:Y:148:MET:HG3	2.02	0.41
16:Y:291:GLN:HG3	16:Y:292:PRO:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:43:LYS:HB2	3:H:43:LYS:NZ	2.35	0.41
5:I:33:DG:H2"	5:I:34:DG:C8	2.56	0.41
7:A:476:LEU:O	7:A:480:LEU:HG	2.20	0.41
7:A:1063:LEU:O	7:A:1063:LEU:HD23	2.20	0.41
7:A:1078:ALA:CA	7:A:1303:ARG:HH21	2.34	0.41
7:A:1193:ILE:HD12	22:A:1703:ADP:C8	2.56	0.41
8:N:333:VAL:HG21	8:N:345:TYR:CE1	2.55	0.41
10:Q:1794:GLU:OE2	10:Q:1818:LEU:HD21	2.21	0.41
11:R:266:TYR:O	11:R:266:TYR:CG	2.74	0.41
12:T:219:LYS:O	12:T:223:LYS:HB3	2.21	0.41
12:T:402:LEU:HD23	12:T:402:LEU:H	1.86	0.41
14:V:339:ALA:HB1	15:X:465:TYR:CD2	2.56	0.41
15:W:620:TRP:HZ3	15:W:635:CYS:CB	2.34	0.41
17:Z:253:GLN:O	17:Z:257:ARG:HG2	2.21	0.41
2:C:58:LEU:HD23	2:C:58:LEU:HA	1.81	0.41
2:G:45:ALA:O	2:G:48:PRO:HD2	2.21	0.41
6:J:25:DG:C5	6:J:26:DC:C4	3.09	0.41
7:A:382:ILE:O	7:A:386:GLU:HG3	2.20	0.41
7:A:892:LYS:O	7:A:892:LYS:HG3	2.20	0.41
8:N:214:ASN:CG	8:N:215:ILE:H	2.25	0.41
12:T:550:THR:O	12:T:554:ARG:HD3	2.21	0.41
14:V:263:ILE:HG23	14:V:265:LYS:HZ2	1.84	0.41
15:W:909:LEU:O	15:W:913:MET:N	2.48	0.41
15:W:915:ARG:O	15:W:918:GLU:HG2	2.21	0.41
15:X:888:VAL:HG12	17:Z:234:LEU:HD21	2.03	0.41
1:B:38:ALA:HB1	1:B:43:VAL:CG2	2.51	0.40
6:J:128:DT:H2"	6:J:129:DC:C5	2.57	0.40
7:A:172:PHE:O	7:A:172:PHE:CG	2.73	0.40
7:A:765:LEU:HB3	7:A:792:LEU:CD1	2.51	0.40
7:A:805:PRO:HG2	7:A:875:TRP:HA	2.02	0.40
7:A:941:GLN:HB2	7:A:944:ASN:N	2.34	0.40
7:A:1077:ARG:HH11	7:A:1077:ARG:HD2	1.75	0.40
8:N:325:VAL:HA	8:N:328:VAL:HB	2.02	0.40
8:N:389:ARG:HA	8:N:392:SER:HB3	2.03	0.40
10:Q:93:TYR:OH	10:Q:101:GLU:OE1	2.26	0.40
15:X:602:THR:HB	15:X:605:GLU:CB	2.51	0.40
15:X:893:GLU:OE2	15:X:897:LYS:HE3	2.21	0.40
4:E:46:VAL:HB	6:J:83:DT:P	2.61	0.40
5:I:46:DT:H2"	5:I:47:DC:C6	2.56	0.40
5:I:80:DC:H2"	5:I:81:DC:C6	2.56	0.40
6:J:51:DT:H2"	6:J:52:DG:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:369:GLU:HG2	12:T:565:SER:CB	2.52	0.40
7:A:384:GLU:HA	7:A:387:ASN:HD21	1.85	0.40
7:A:461:LYS:O	7:A:465:GLU:HG3	2.21	0.40
7:A:751:ASN:HB2	7:A:824:LYS:O	2.21	0.40
7:A:813:SER:OG	7:A:1135:ARG:NH1	2.54	0.40
8:N:214:ASN:OD1	8:N:215:ILE:N	2.52	0.40
10:Q:299:GLU:O	10:Q:303:VAL:HG23	2.22	0.40
10:Q:447:VAL:O	10:Q:450:VAL:HB	2.21	0.40
14:V:299:SER:OG	14:V:300:GLU:OE1	2.40	0.40
14:V:330:GLU:H	14:V:330:GLU:CD	2.24	0.40
14:V:368:GLN:O	14:V:372:THR:HG23	2.21	0.40
15:X:430:ALA:HA	15:X:432:TRP:NE1	2.35	0.40
2:C:15:LYS:HG2	2:C:19:SER:OG	2.22	0.40
2:G:63:LEU:HD23	2:G:63:LEU:HA	1.77	0.40
2:G:119:LYS:HE2	2:G:119:LYS:HB3	1.86	0.40
5:I:47:DC:H2"	5:I:48:DT:H71	2.03	0.40
5:I:82:DC:H2"	5:I:83:DG:H5'	2.04	0.40
7:A:886:MET:N	7:A:886:MET:SD	2.94	0.40
7:A:938:THR:O	7:A:940:GLU:N	2.53	0.40
7:A:1116:PHE:O	7:A:1120:GLY:N	2.55	0.40
7:A:1304:LEU:O	7:A:1306:GLU:N	2.54	0.40
8:N:193:VAL:CG2	8:N:332:SER:HB3	2.50	0.40
9:P:209:VAL:HA	9:P:212:ILE:HD12	2.04	0.40
12:T:236:ARG:HA	12:T:239[B]:SER:HB3	2.02	0.40
12:T:377:ARG:O	12:T:378:LEU:CG	2.64	0.40
15:W:438:VAL:HA	15:W:442:GLU:OE2	2.20	0.40
15:W:873:ALA:O	15:W:877:ALA:N	2.39	0.40
16:Y:358:PRO:HA	16:Y:361:LEU:HB2	2.03	0.40
1:B:38:ALA:HB1	1:B:43:VAL:HG21	2.03	0.40
5:I:16:DG:H2"	5:I:17:DC:H5'	2.03	0.40
5:I:18:DC:C2	5:I:19:DG:C5	3.09	0.40
5:I:116:DC:O2	6:J:32:DG:N2	2.54	0.40
6:J:91:DA:C4	6:J:92:DG:C5	3.10	0.40
7:A:922:TRP:CZ3	7:A:933:PHE:HE1	2.39	0.40
7:A:941:GLN:HB3	7:A:943:PHE:CE1	2.57	0.40
10:Q:93:TYR:CE2	10:Q:97:LEU:HB2	2.55	0.40
10:Q:161:LEU:HA	10:Q:161:LEU:HD23	1.84	0.40
10:Q:214:LEU:HG	14:V:177:HIS:CE1	2.57	0.40
10:Q:221:PHE:HB3	10:Q:225:TRP:CZ3	2.56	0.40
11:R:279:LEU:HD13	15:W:620:TRP:HB2	2.04	0.40
14:V:212:LEU:HD13	14:V:212:LEU:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:X:486:CYS:O	15:X:490:LEU:HG	2.22	0.40
15:X:876:LEU:HA	15:X:879:VAL:HG12	2.03	0.40
1:B:45:ARG:O	4:K:118:THR:HA	2.22	0.40
7:A:371:GLU:OE1	7:A:375:GLN:NE2	2.54	0.40
7:A:457:GLU:HA	7:A:460:GLN:OE1	2.22	0.40
7:A:908:LEU:C	7:A:909:LEU:HD12	2.42	0.40
7:A:1300:ARG:NH1	7:A:1300:ARG:CB	2.84	0.40
9:P:90:PHE:CE1	9:P:103:VAL:HG11	2.55	0.40
10:Q:142:LEU:O	10:Q:145:SER:OG	2.24	0.40
15:W:599:ARG:HD3	15:W:599:ARG:C	2.42	0.40
15:X:465:TYR:HD2	15:X:490:LEU:HD22	1.85	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	B	85/103 (82%)	78 (92%)	7 (8%)	0	100	100
1	F	84/103 (82%)	81 (96%)	3 (4%)	0	100	100
2	C	105/130 (81%)	102 (97%)	3 (3%)	0	100	100
2	G	106/130 (82%)	103 (97%)	3 (3%)	0	100	100
3	D	91/126 (72%)	89 (98%)	2 (2%)	0	100	100
3	H	91/126 (72%)	89 (98%)	2 (2%)	0	100	100
4	E	93/136 (68%)	90 (97%)	3 (3%)	0	100	100
4	K	96/136 (71%)	91 (95%)	5 (5%)	0	100	100
7	A	797/1485 (54%)	714 (90%)	82 (10%)	1 (0%)	51	82
8	N	324/429 (76%)	300 (93%)	24 (7%)	0	100	100
9	P	309/375 (82%)	295 (96%)	14 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
10	Q	490/870 (56%)	432 (88%)	56 (11%)	2 (0%)	34 67
11	R	90/514 (18%)	83 (92%)	7 (8%)	0	100 100
12	T	264/652 (40%)	236 (89%)	28 (11%)	0	100 100
14	V	234/385 (61%)	215 (92%)	19 (8%)	0	100 100
15	W	242/1214 (20%)	230 (95%)	12 (5%)	0	100 100
15	X	246/1214 (20%)	231 (94%)	15 (6%)	0	100 100
16	Y	239/529 (45%)	229 (96%)	10 (4%)	0	100 100
17	Z	90/411 (22%)	88 (98%)	2 (2%)	0	100 100
18	a	90/1020 (9%)	75 (83%)	14 (16%)	1 (1%)	14 44
All	All	4166/10088 (41%)	3851 (92%)	311 (8%)	4 (0%)	54 82

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	Q	455	GLN
10	Q	451	SER
18	a	1649	PRO
7	A	169	PRO

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	B	72/79 (91%)	72 (100%)	0	100 100
1	F	67/79 (85%)	67 (100%)	0	100 100
2	C	81/102 (79%)	81 (100%)	0	100 100
2	G	84/102 (82%)	84 (100%)	0	100 100
3	D	77/106 (73%)	77 (100%)	0	100 100
3	H	79/106 (74%)	79 (100%)	0	100 100
4	E	82/111 (74%)	82 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	K	84/111 (76%)	83 (99%)	1 (1%)	71 85
7	A	720/1303 (55%)	719 (100%)	1 (0%)	93 98
8	N	287/364 (79%)	286 (100%)	1 (0%)	92 97
9	P	270/318 (85%)	266 (98%)	4 (2%)	65 82
10	Q	446/765 (58%)	444 (100%)	2 (0%)	91 95
11	R	83/452 (18%)	83 (100%)	0	100 100
12	T	245/587 (42%)	245 (100%)	0	100 100
14	V	214/346 (62%)	214 (100%)	0	100 100
15	W	216/1030 (21%)	215 (100%)	1 (0%)	88 94
15	X	222/1030 (22%)	221 (100%)	1 (0%)	88 94
16	Y	227/455 (50%)	225 (99%)	2 (1%)	78 90
17	Z	86/361 (24%)	85 (99%)	1 (1%)	71 85
18	a	82/912 (9%)	79 (96%)	3 (4%)	34 62
All	All	3724/8719 (43%)	3707 (100%)	17 (0%)	89 94

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	A	1300	ARG
8	N	379	LYS
9	P	101	HIS
9	P	206	ARG
9	P	210	ARG
9	P	372	ARG
10	Q	43	LYS
10	Q	1787	ARG
15	W	599	ARG
15	X	882	ARG
16	Y	173	LYS
16	Y	303	ARG
17	Z	232	GLN
18	a	1603	ARG
18	a	1656	LYS
18	a	1681	ARG
4	K	42	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
3	D	47	GLN
3	D	109	HIS
3	H	47	GLN
7	A	183	GLN
7	A	470	GLN
7	A	756	GLN
7	A	771	ASN
7	A	1185	GLN
9	P	246	GLN
10	Q	77	ASN
11	R	211	ASN
14	V	154	ASN
14	V	179	ASN
14	V	209	ASN
14	V	260	GLN
14	V	368	GLN
16	Y	294	GLN
16	Y	472	ASN
16	Y	501	GLN
17	Z	268	ASN
18	a	1606	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
22	ADP	A	1703	7,21	24,29,29	0.92	1 (4%)	29,45,45	1.56	4 (13%)
20	BEF	A	1701	-	0,3,3	-	-	-		

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
22	ADP	A	1703	7,21	-	7/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A	1703	ADP	C5-C4	2.39	1.47	1.40

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	A	1703	ADP	C3'-C2'-C1'	3.56	106.33	100.98
22	A	1703	ADP	PA-O3A-PB	-3.19	121.88	132.83
22	A	1703	ADP	N3-C2-N1	-3.03	123.94	128.68
22	A	1703	ADP	C4-C5-N7	-2.46	106.83	109.40

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
22	A	1703	ADP	C5'-O5'-PA-O2A
22	A	1703	ADP	C5'-O5'-PA-O3A
22	A	1703	ADP	O4'-C4'-C5'-O5'
22	A	1703	ADP	C3'-C4'-C5'-O5'
22	A	1703	ADP	PB-O3A-PA-O1A
22	A	1703	ADP	C5'-O5'-PA-O1A
22	A	1703	ADP	PB-O3A-PA-O2A

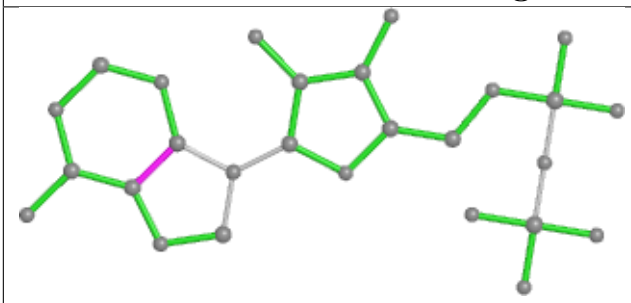
There are no ring outliers.

2 monomers are involved in 13 short contacts:

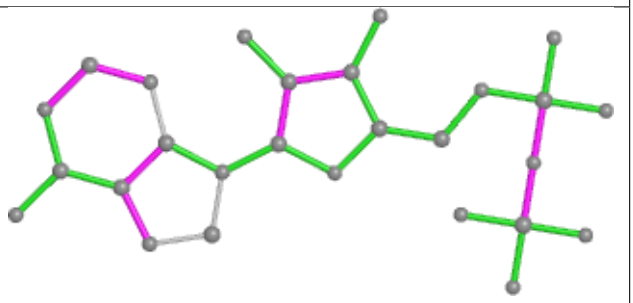
Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	A	1703	ADP	11	0
20	A	1701	BEF	3	0

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

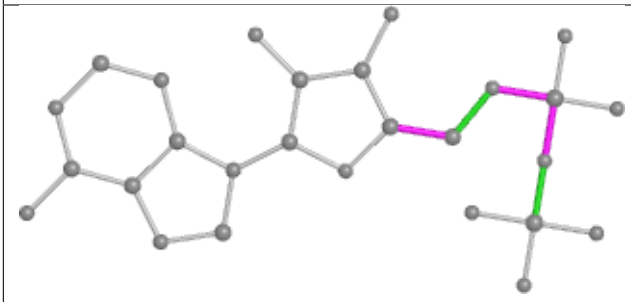
Ligand ADP A 1703



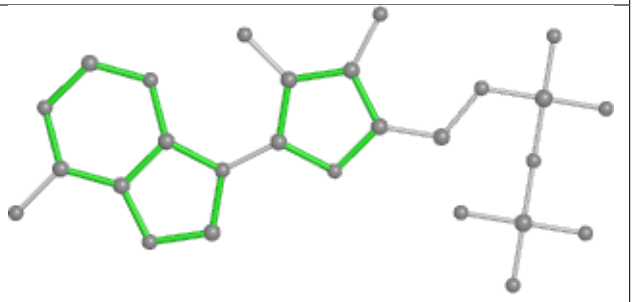
Bond lengths



Bond angles

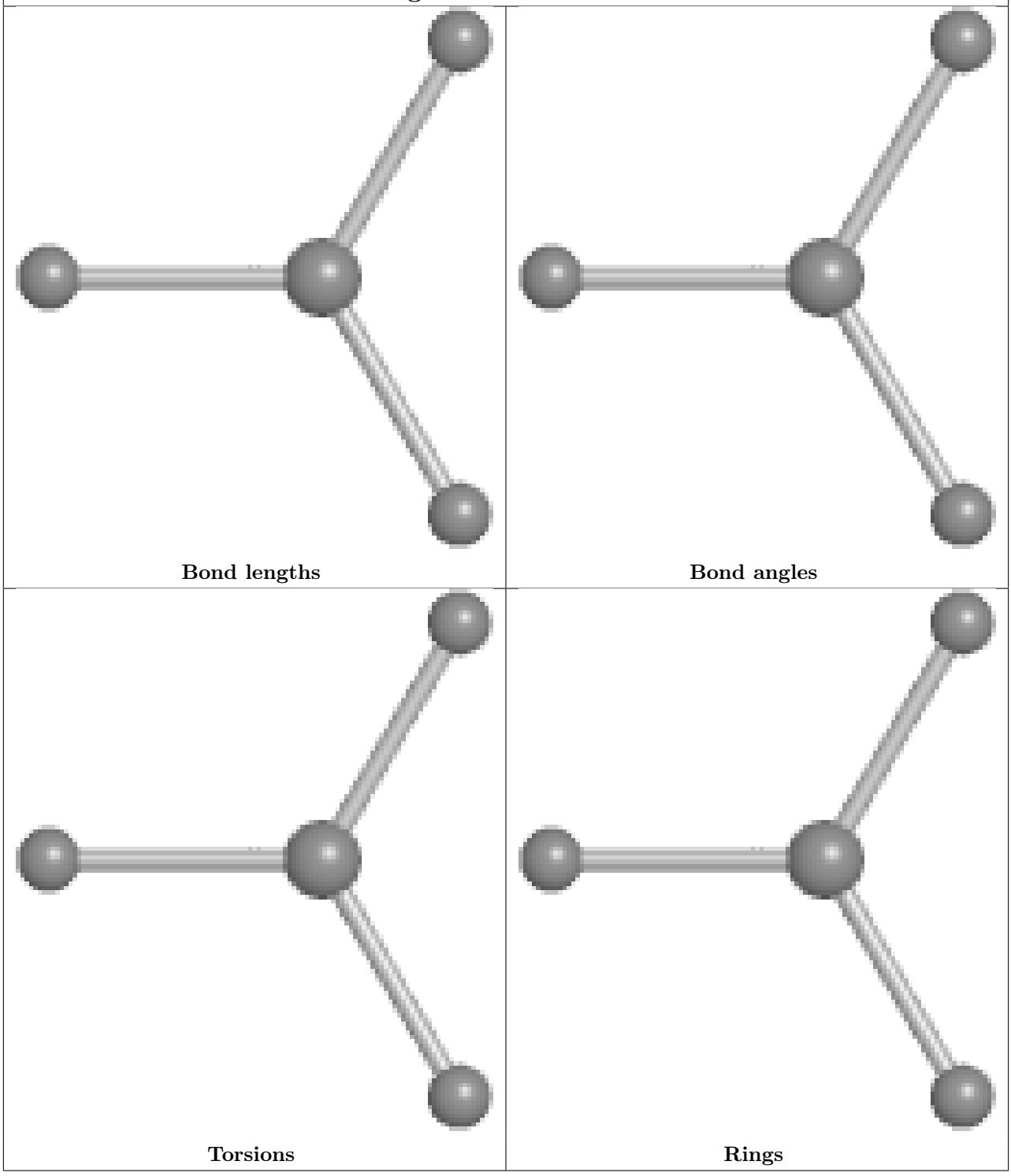


Torsions



Rings

Ligand BEF A 1701



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

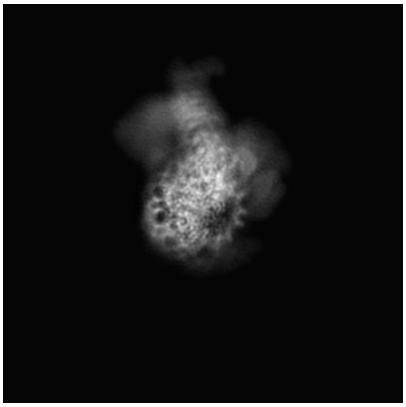
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-31926. These allow visual inspection of the internal detail of the map and identification of artifacts.

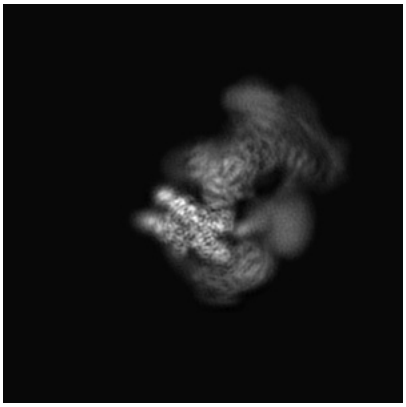
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

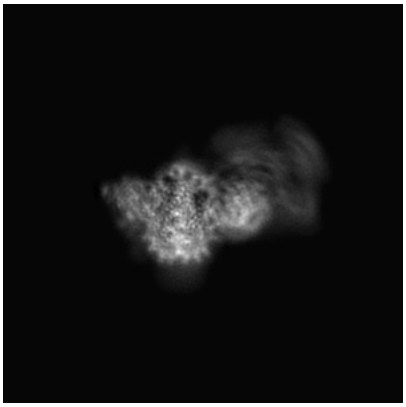
6.1.1 Primary map



X



Y

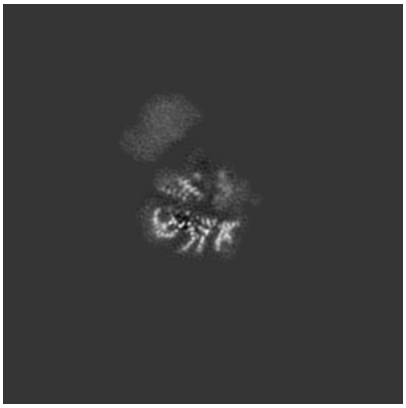


Z

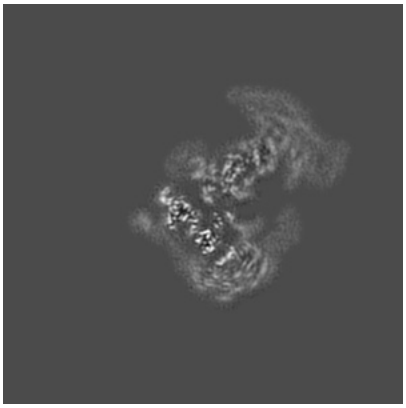
The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map



X Index: 180



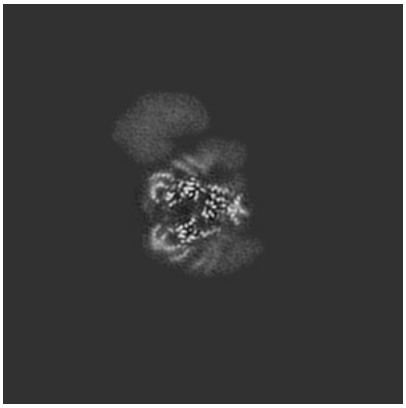
Y Index: 180

Z Index: 180

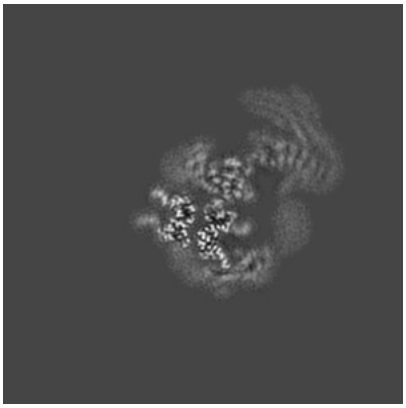
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

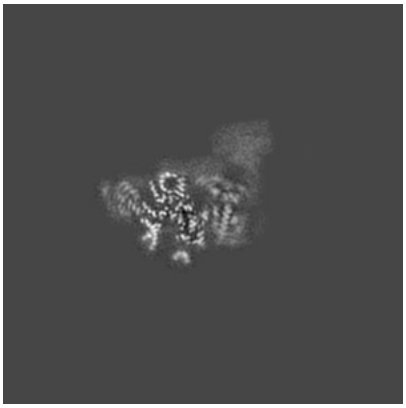
6.3.1 Primary map



X Index: 159



Y Index: 169



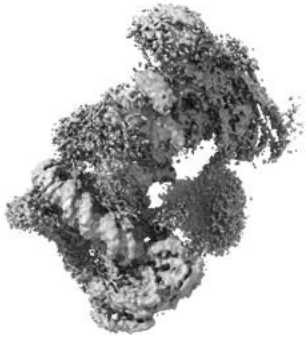
Z Index: 192

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.0062. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

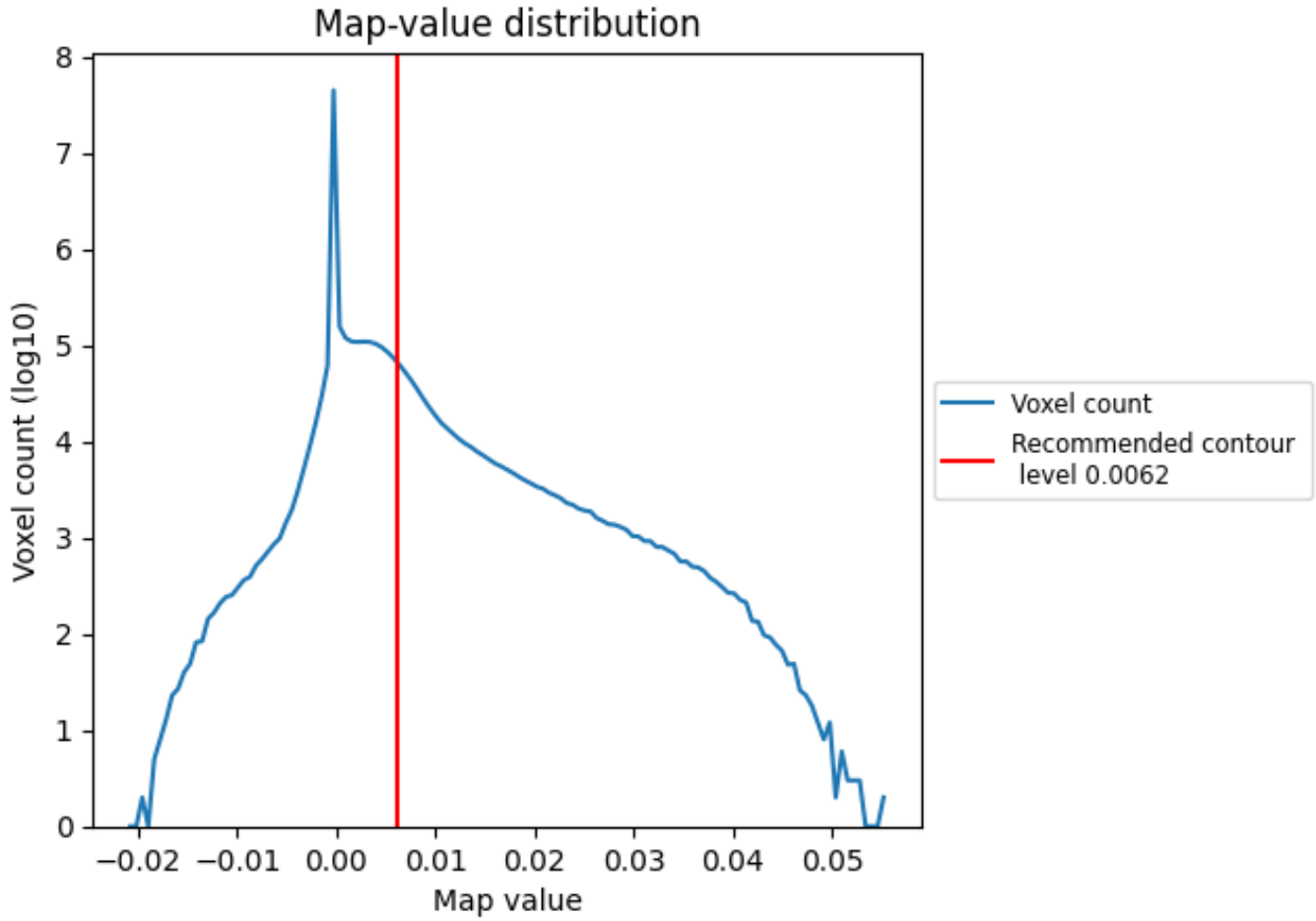
6.5 Mask visualisation (i)

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

7 Map analysis

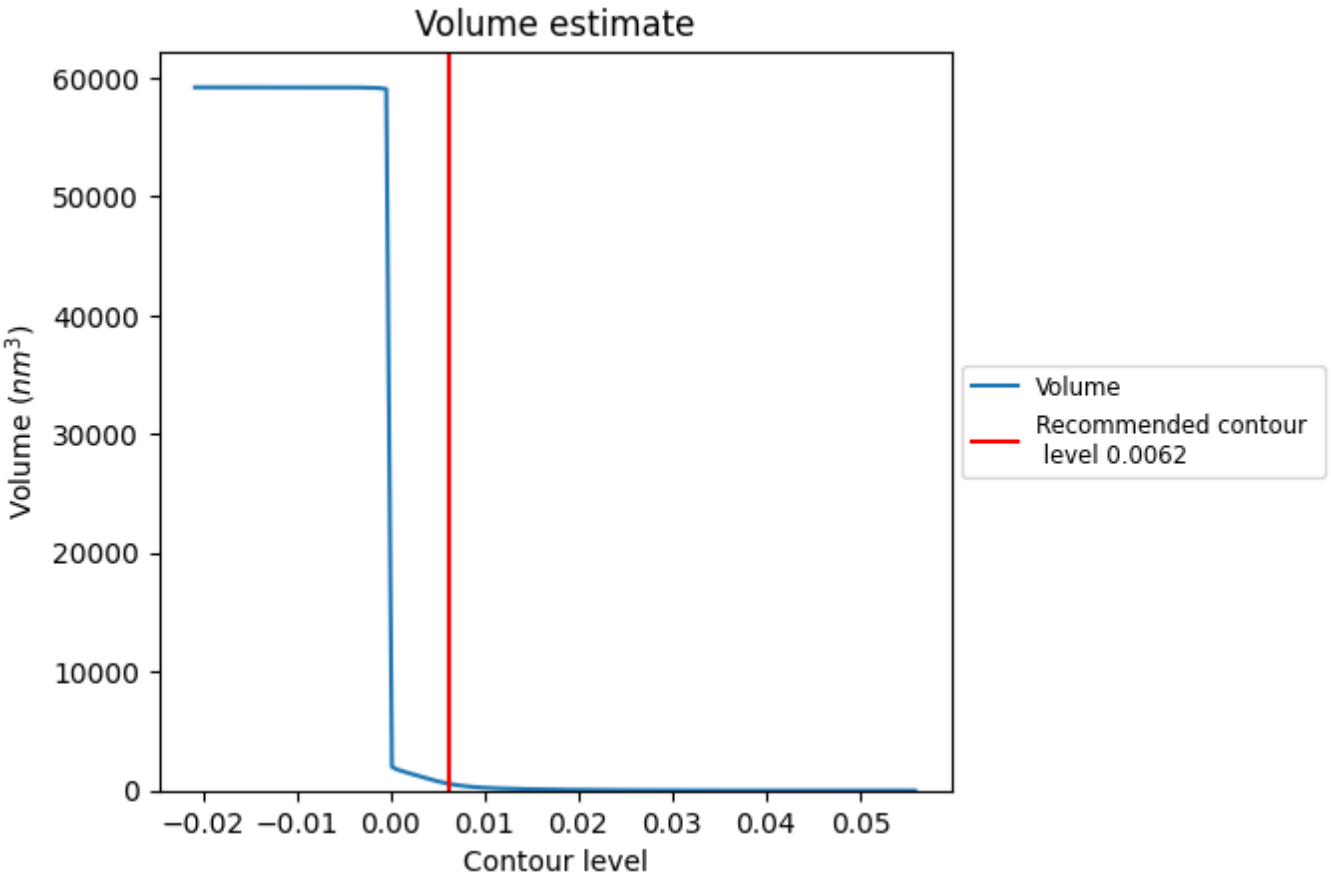
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

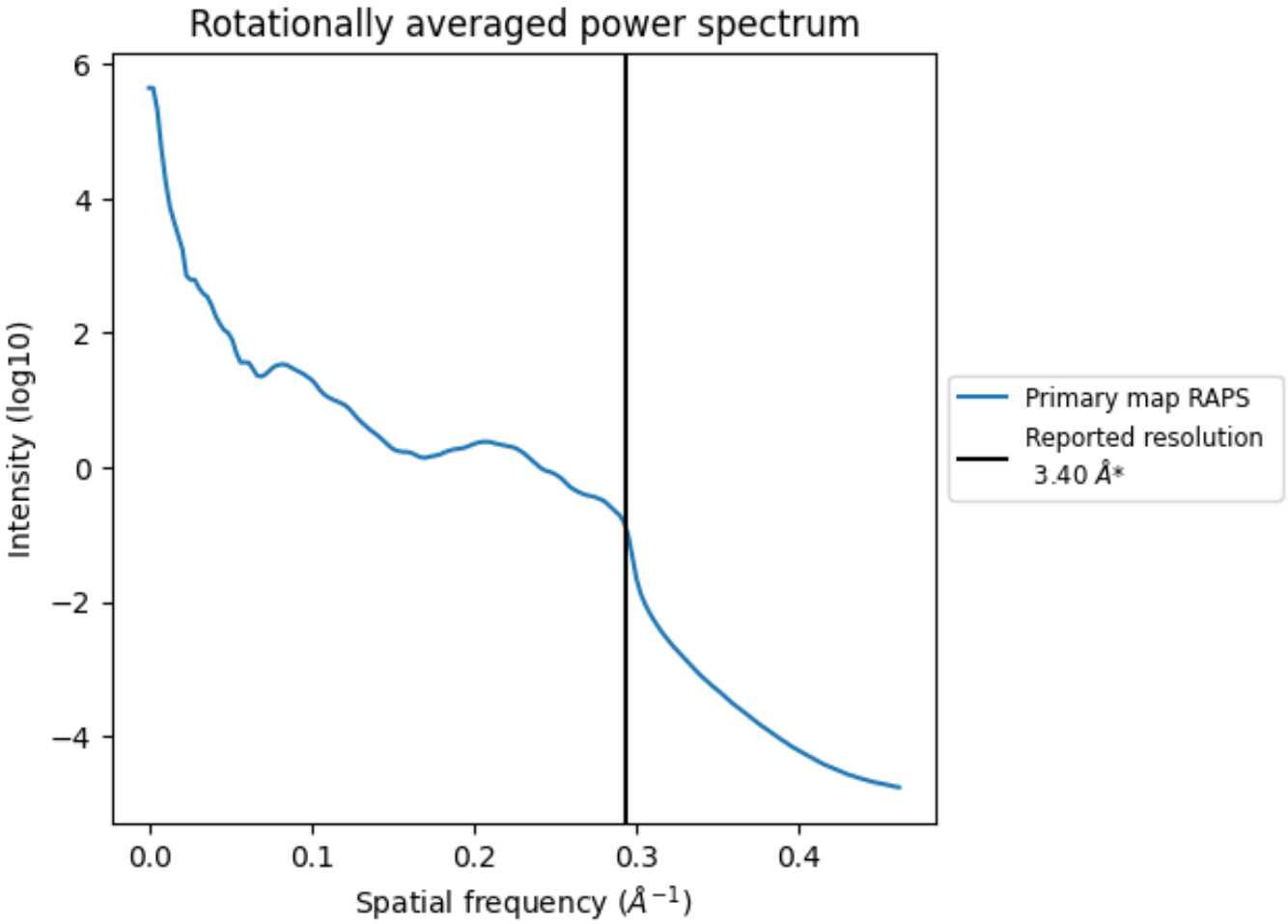
7.2 Volume estimate



The volume at the recommended contour level is 575 nm^3; this corresponds to an approximate mass of 519 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 0.294 $Å^{-1}$

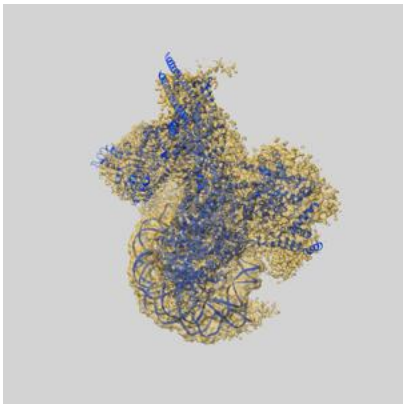
8 Fourier-Shell correlation (i)

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

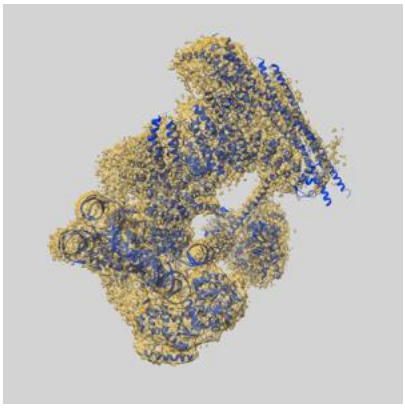
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-31926 and PDB model 7VDV. Per-residue inclusion information can be found in section 3 on page 12.

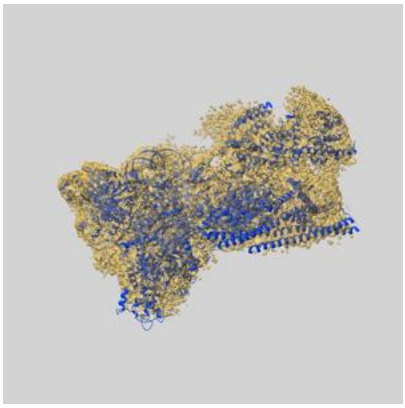
9.1 Map-model overlay



X



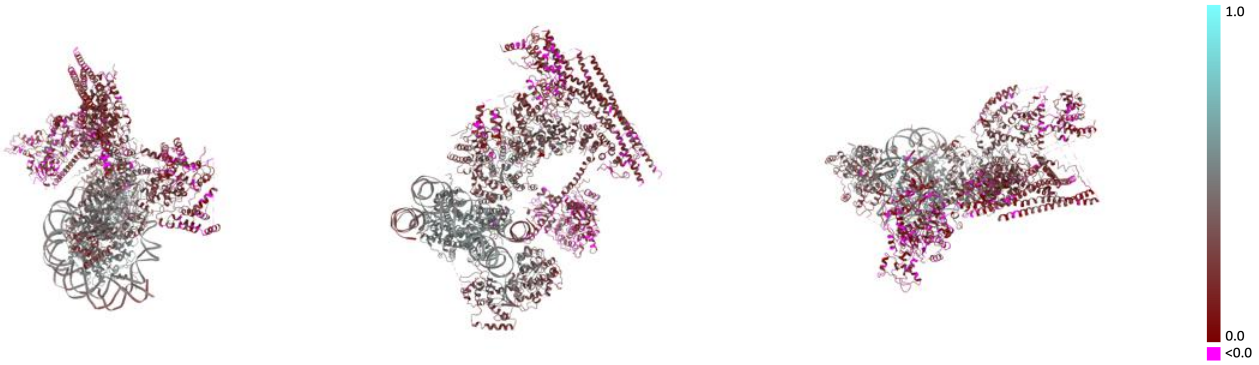
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0062 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.

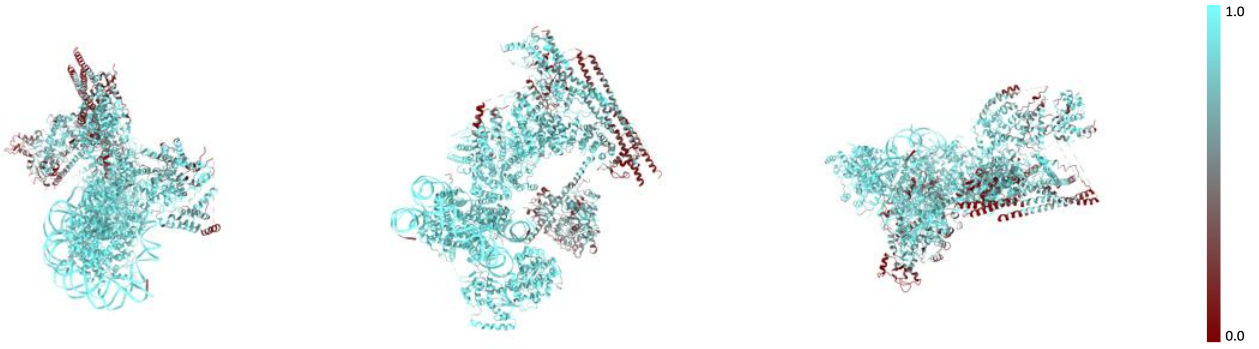
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

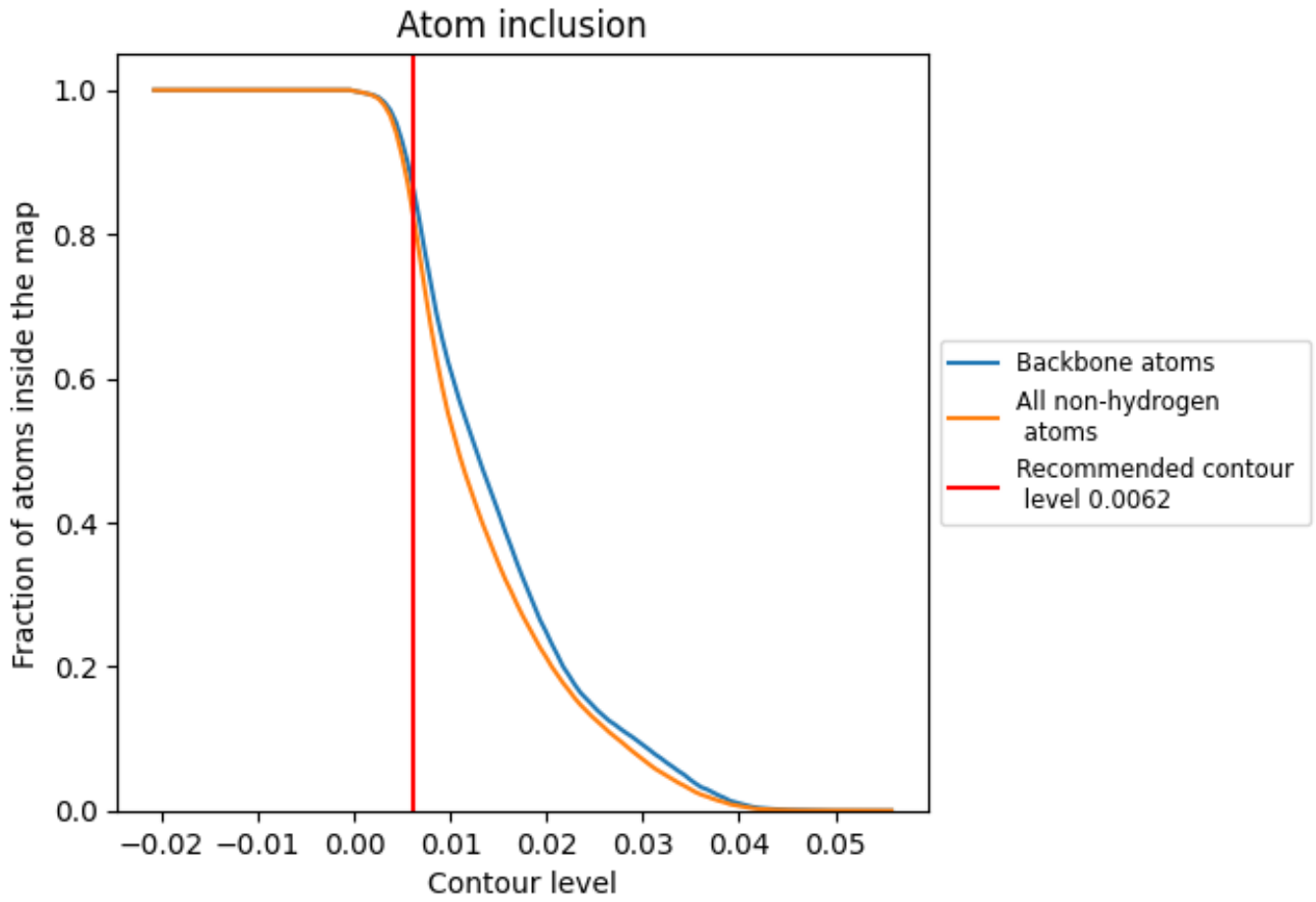
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.0062).

9.4 Atom inclusion (i)



At the recommended contour level, 86% of all backbone atoms, 82% 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 (0.0062) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8207	0.3150
A	0.8638	0.3170
B	0.9569	0.5090
C	0.9936	0.5150
D	0.9943	0.5110
E	0.9920	0.5150
F	0.9522	0.5190
G	0.9776	0.5090
H	0.9845	0.5050
I	0.9975	0.4350
J	0.9675	0.4190
K	0.9547	0.4920
M	0.7750	0.1570
N	0.6515	0.1120
P	0.4899	0.1020
Q	0.8734	0.3070
R	0.9733	0.3480
T	0.6501	0.1690
U	0.7714	0.2360
V	0.9663	0.3910
W	0.7646	0.3070
X	0.7280	0.2340
Y	0.5598	0.1990
Z	0.4600	0.1730
a	0.8377	0.3010