Full wwPDB EM Validation Report ⓘ

Nov 19, 2026 – 12:46 PM EST

PDB ID	:	36AU / pdb_000036au
EMDB ID	:	EMD-77335
Title	:	Cryo-EM structure of the VchCAST holo integration complex (HIC)
Authors	:	Florez Ariza, A.J.; Dubey, S.; Truong, V.H.; Fatma, S.; Kellogg, E.H.
Deposited on	:	2026-05-28
Resolution	:	4.50 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:

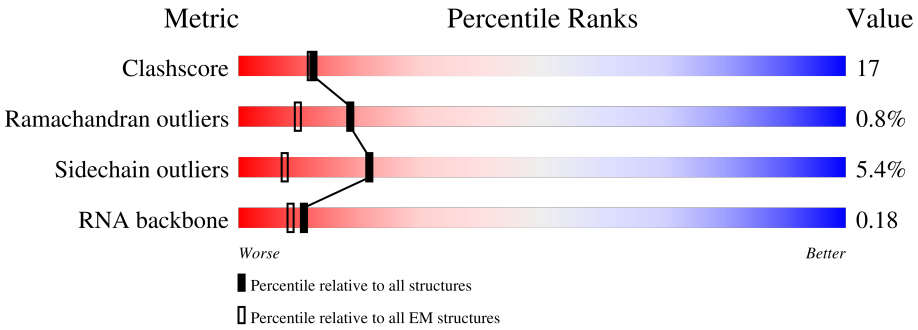
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.2
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

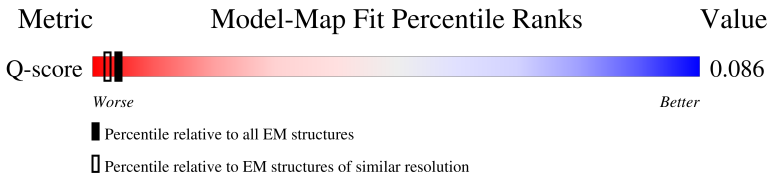
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.50 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	2937 (4.00 - 5.00)

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	1	317	5% 8% 6% 81%
2	2	20	15% 20% 35% 45%
3	3	189	32% 35% 32%

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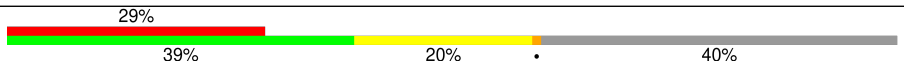
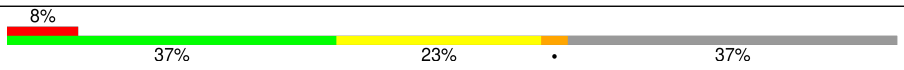
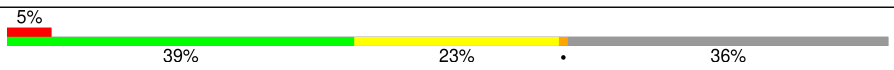
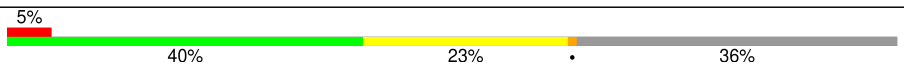
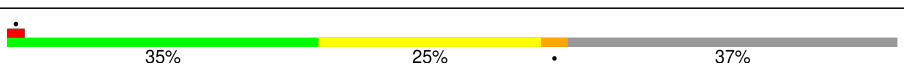
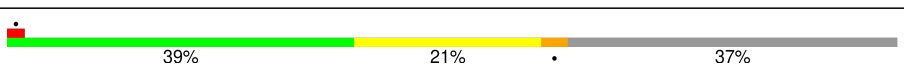
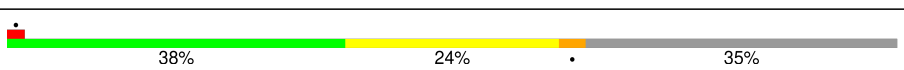
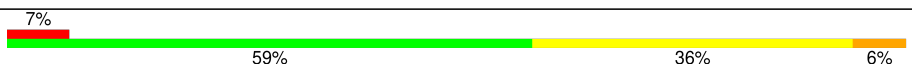
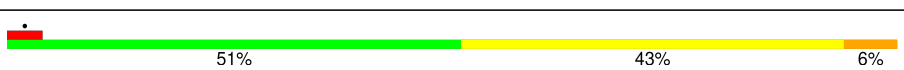
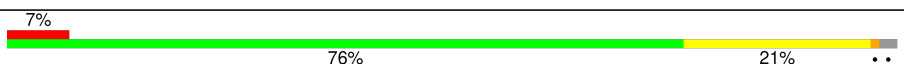
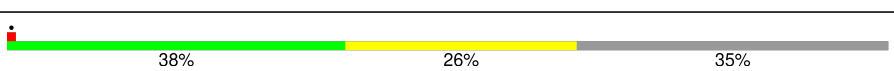
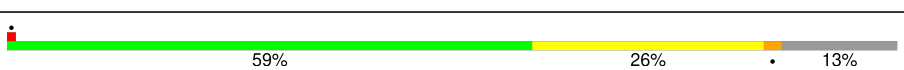
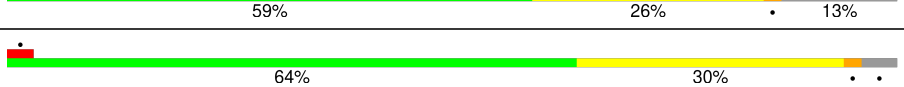
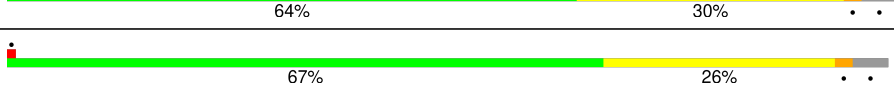
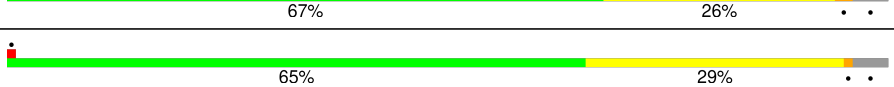
Mol	Chain	Length	Quality of chain
4	4	133	
5	5	128	
6	6	91	
7	A	236	
7	B	236	
8	C	709	
8	D	709	
8	E	709	
8	F	709	
9	G	479	
9	H	479	
9	I	479	
9	J	479	
9	K	479	
9	L	479	
9	M	479	
10	N	394	
10	O	394	
11	P	199	
12	W	640	
13	7	99	
14	Q	352	
14	R	352	
14	S	352	
14	T	352	

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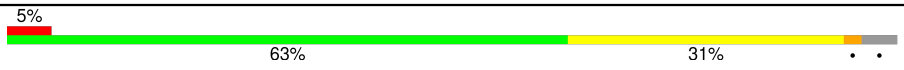
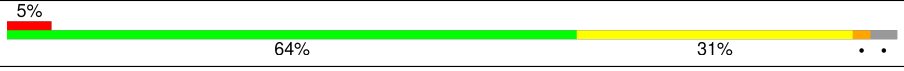
Mol	Chain	Length	Quality of chain
14	U	352	
14	V	352	

2 Entry composition (i)

There are 16 unique types of molecules in this entry. The entry contains 72103 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 RNA chain called Guide RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	60	1286	574	235	417	60	0	0

- Molecule 2 is a DNA chain called TargetFlank-RC.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	11	229	109	41	68	11	0	0

- Molecule 3 is a DNA chain called RE-TS.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	129	2645	1260	474	782	129	0	0

- Molecule 4 is a DNA chain called LE-TSD-TargetFlank.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	4	52	1056	509	184	311	52	0	0

- Molecule 5 is a DNA chain called HFR-LE.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	5	42	867	416	157	252	42	0	0

- Molecule 6 is a DNA chain called HFR-RE.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	6	38	777	373	143	223	38	0	0

- Molecule 7 is a protein called TnsA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	223	Total	C	N	O	S	0	0
			1807	1150	317	338	2		
7	B	216	Total	C	N	O	S	0	0
			1758	1119	310	327	2		

- Molecule 8 is a protein called TnsB.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	F	529	Total	C	N	O	S	0	0
			4349	2767	757	813	12		
8	E	532	Total	C	N	O	S	0	0
			4366	2775	770	809	12		
8	C	329	Total	C	N	O	S	0	0
			2709	1726	454	520	9		
8	D	336	Total	C	N	O	S	0	0
			2761	1756	465	531	9		

- Molecule 9 is a protein called TnsC.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	M	311	Total	C	N	O	S	0	0
			2486	1577	433	465	11		
9	G	289	Total	C	N	O	S	0	0
			2309	1468	401	429	11		
9	H	303	Total	C	N	O	S	0	0
			2431	1548	422	450	11		
9	I	305	Total	C	N	O	S	0	0
			2442	1556	424	451	11		
9	J	306	Total	C	N	O	S	0	0
			2455	1562	428	454	11		
9	L	302	Total	C	N	O	S	0	0
			2424	1544	421	448	11		
9	K	304	Total	C	N	O	S	0	0
			2437	1551	423	452	11		

- Molecule 10 is a protein called TniQ.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	N	394	Total	C	N	O	S	0	0
			3211	2055	557	580	19		
10	O	393	Total	C	N	O	S	0	0
			3203	2050	556	579	18		

- Molecule 11 is a protein called Cas6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	P	195	Total	C	N	O	S	0	0
			1594	1012	283	292	7		

- Molecule 12 is a protein called CRISPR-associated protein Cas8.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	W	627	Total	C	N	O	S	0	0
			4972	3136	875	938	23		

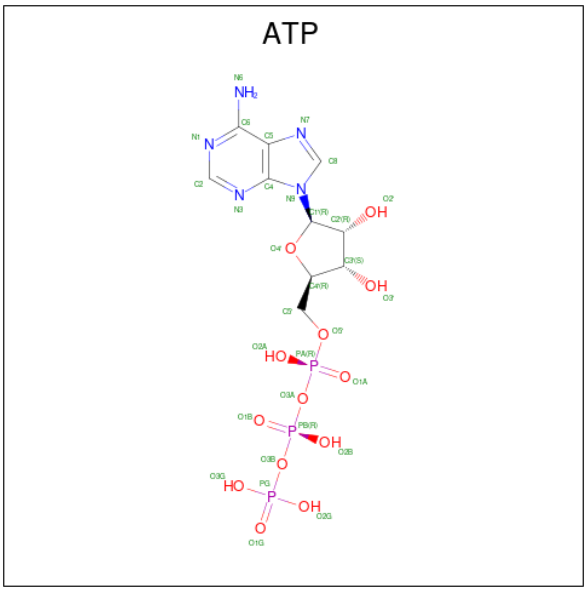
- Molecule 13 is a DNA chain called NTS-Scramble.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	7	64	Total	C	N	O	P	0	0
			1315	622	248	381	64		

- Molecule 14 is a protein called Cas7.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	V	340	Total	C	N	O	S	0	0
			2715	1728	465	507	15		
14	R	338	Total	C	N	O	S	0	0
			2700	1719	463	503	15		
14	S	337	Total	C	N	O	S	0	0
			2696	1717	462	502	15		
14	T	337	Total	C	N	O	S	0	0
			2696	1717	462	502	15		
14	U	337	Total	C	N	O	S	0	0
			2696	1717	462	502	15		
14	Q	308	Total	C	N	O	S	0	0
			2487	1590	425	458	14		

- Molecule 15 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
15	M	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	G	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	H	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	I	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	J	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	L	1	Total	C	N	O	P	0
			31	10	5	13	3	
15	K	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 16 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
16	M	1	Total	Mg	0
			1	1	
16	G	1	Total	Mg	0
			1	1	
16	H	1	Total	Mg	0
			1	1	
16	I	1	Total	Mg	0
			1	1	

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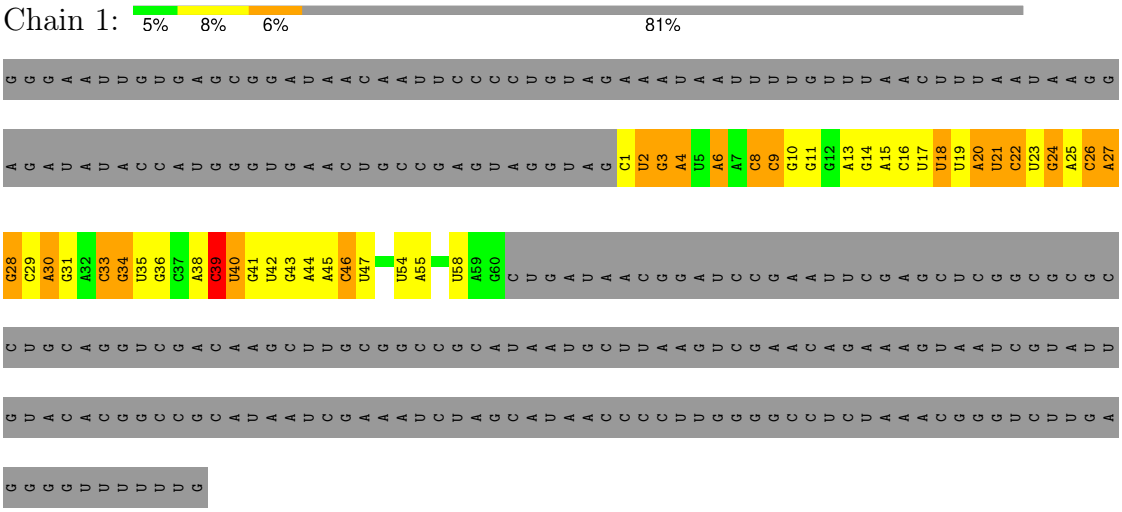
Mol	Chain	Residues	Atoms	AltConf
16	J	1	Total Mg 1 1	0
16	L	1	Total Mg 1 1	0
16	K	1	Total Mg 1 1	0

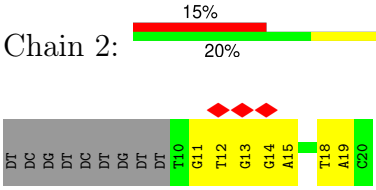
3 Residue-property plots (i)

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

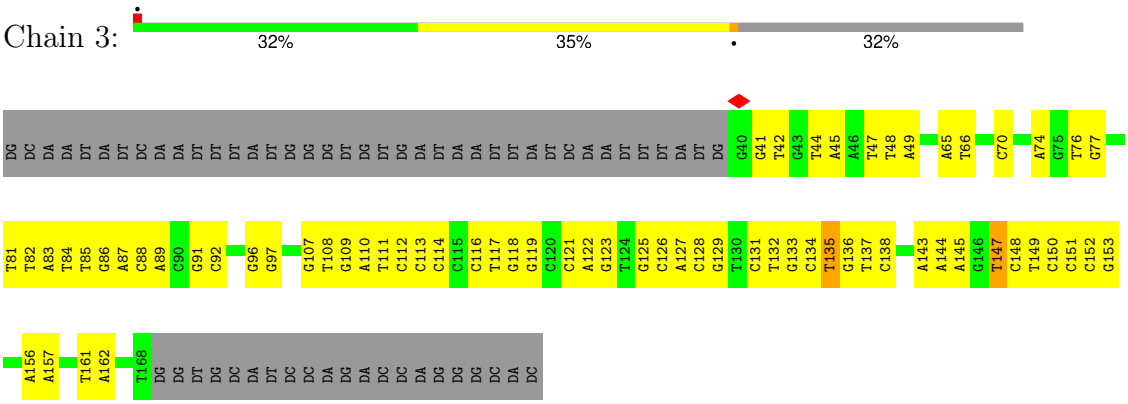
- Molecule 1: Guide RNA



- Molecule 2: TargetFlank-RC



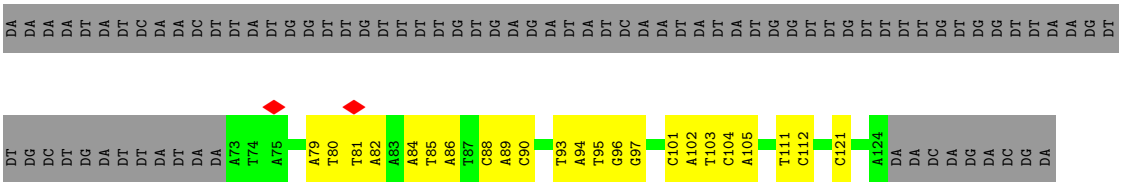
- Molecule 3: RE-TS



• Molecule 4: LE-TSD-TargetFlank

Chain 4:

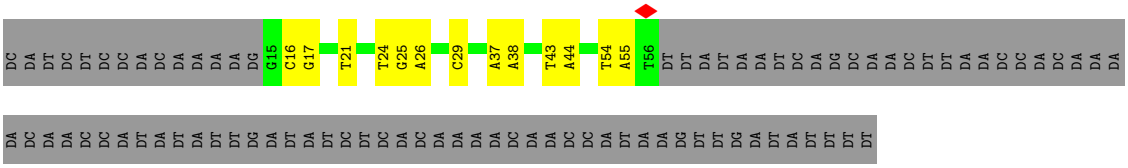




• Molecule 5: HFR-LE

Chain 5:

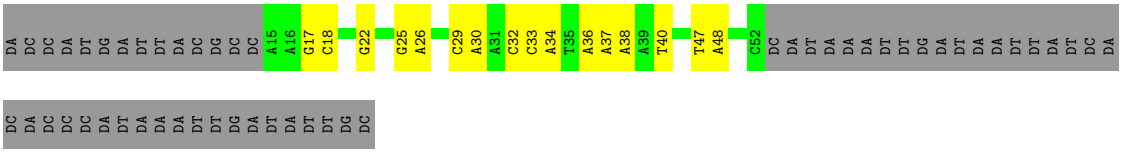




• Molecule 6: HFR-RE

Chain 6:

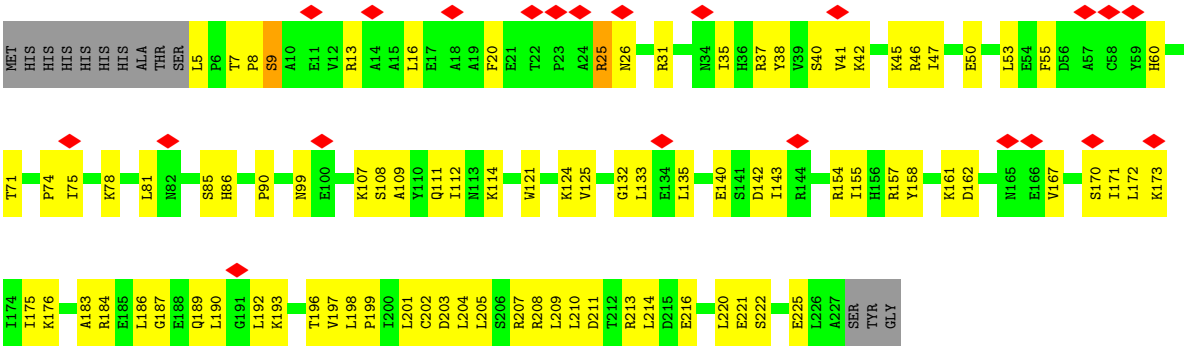




• Molecule 7: TnsA

Chain A:

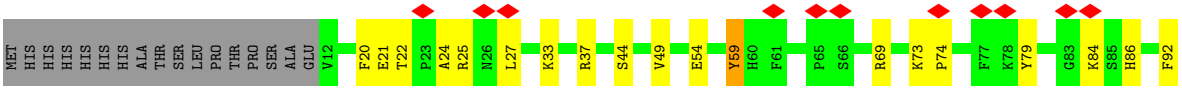


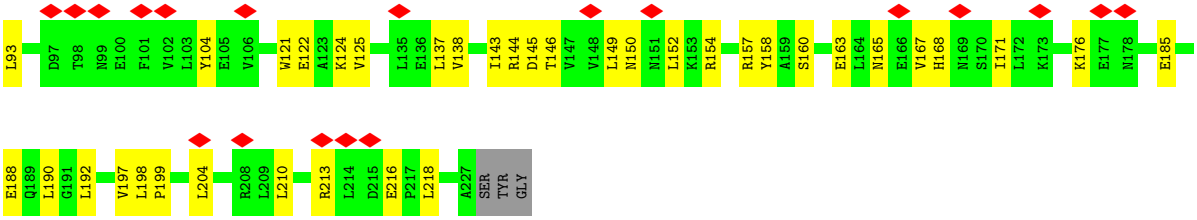


• Molecule 7: TnsA

Chain B:



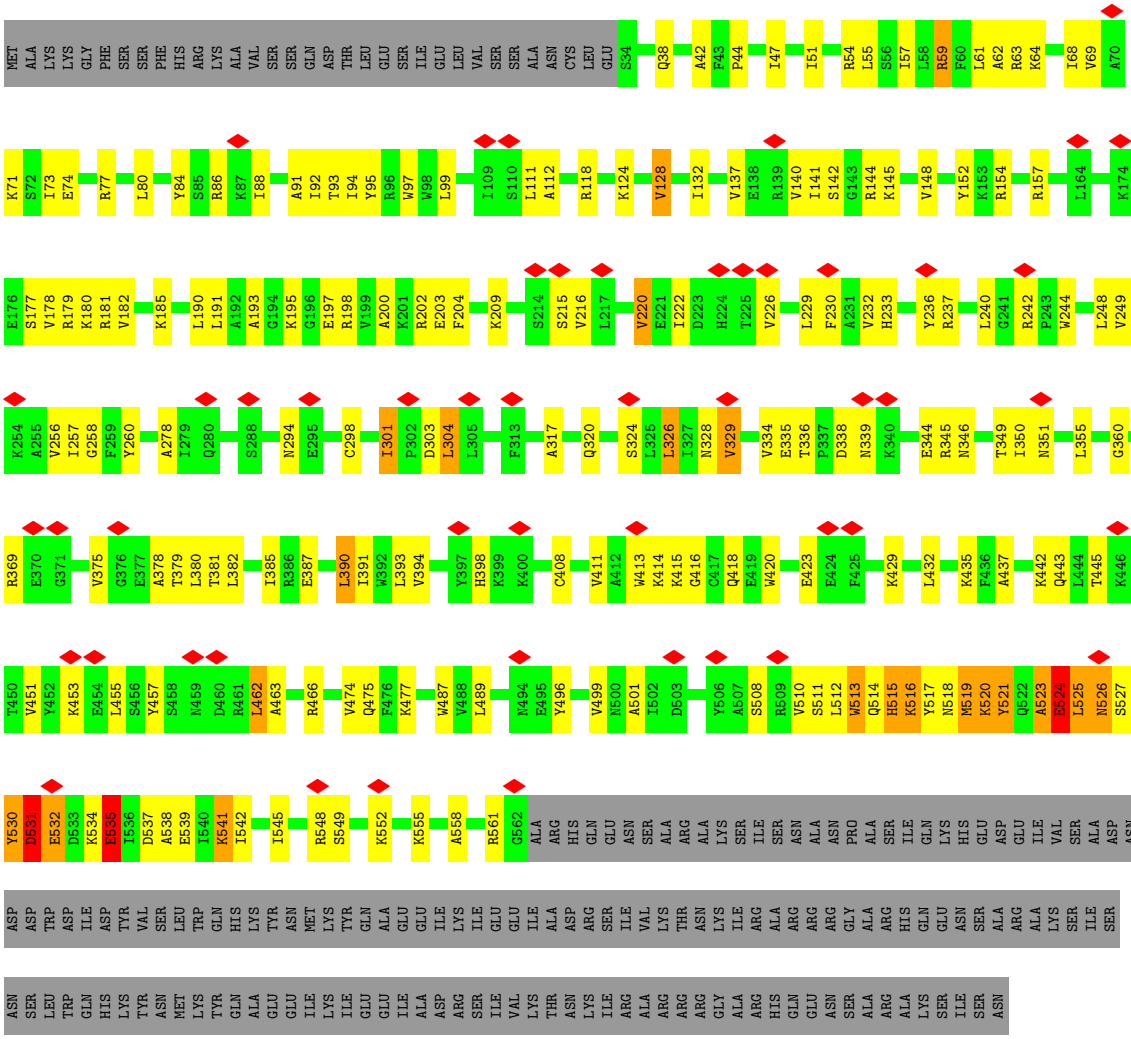




• Molecule 8: TnsB

Chain F:

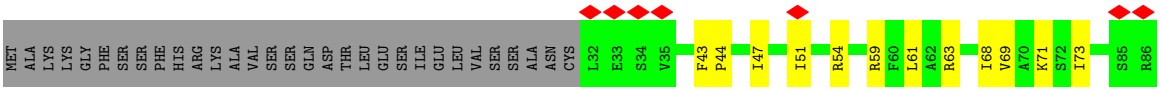


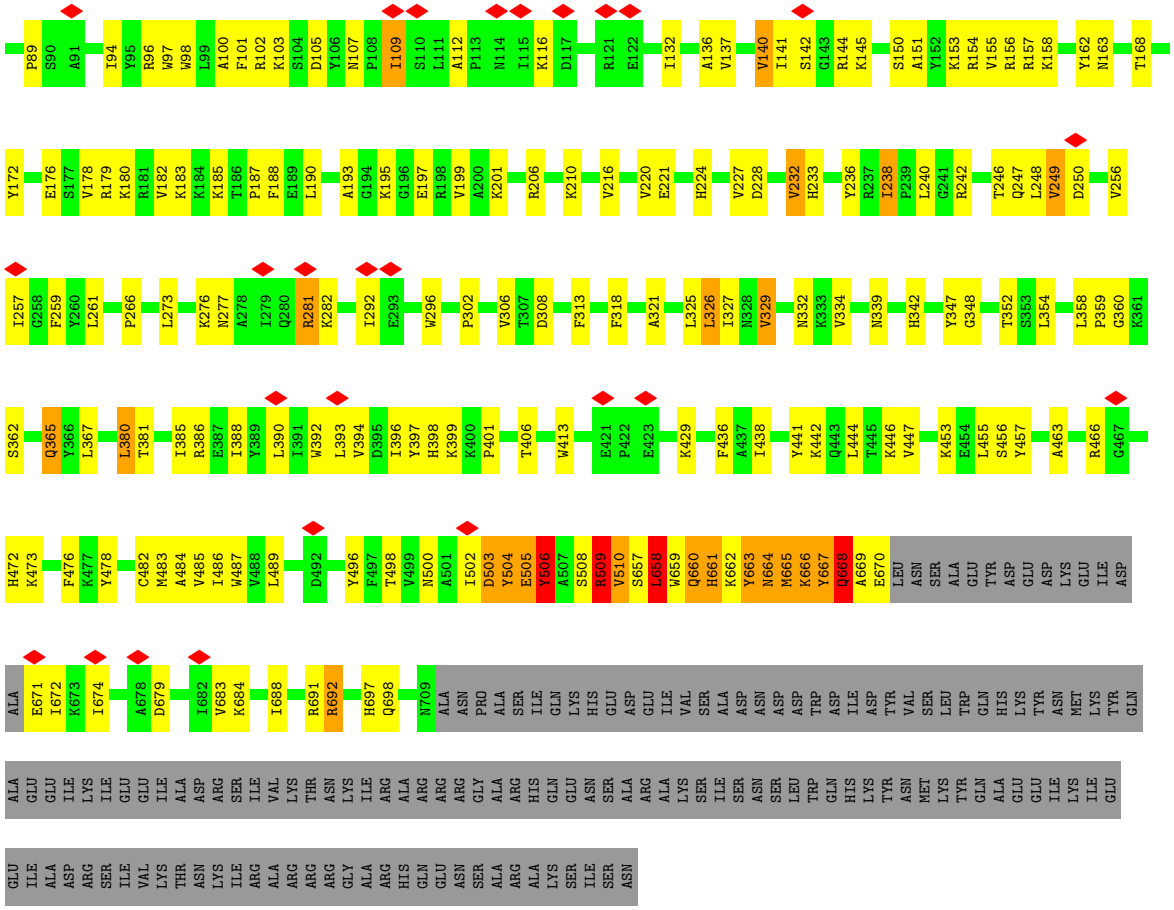


• Molecule 8: TnsB

Chain E:



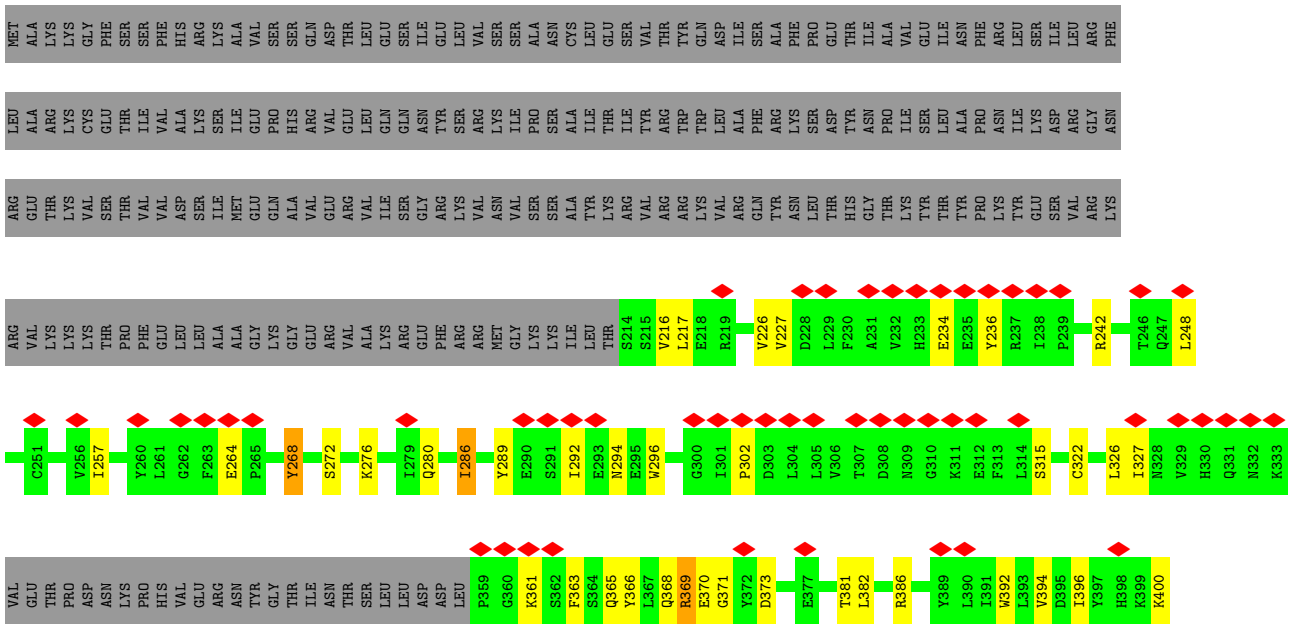


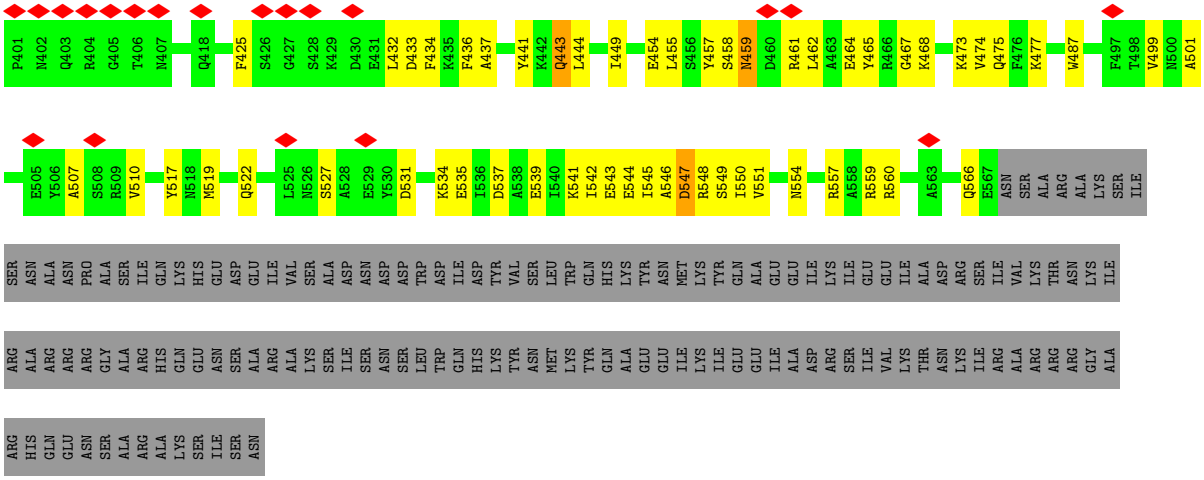


• Molecule 8: TnsB

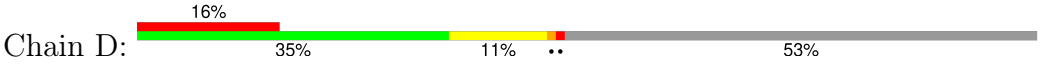
Chain C:

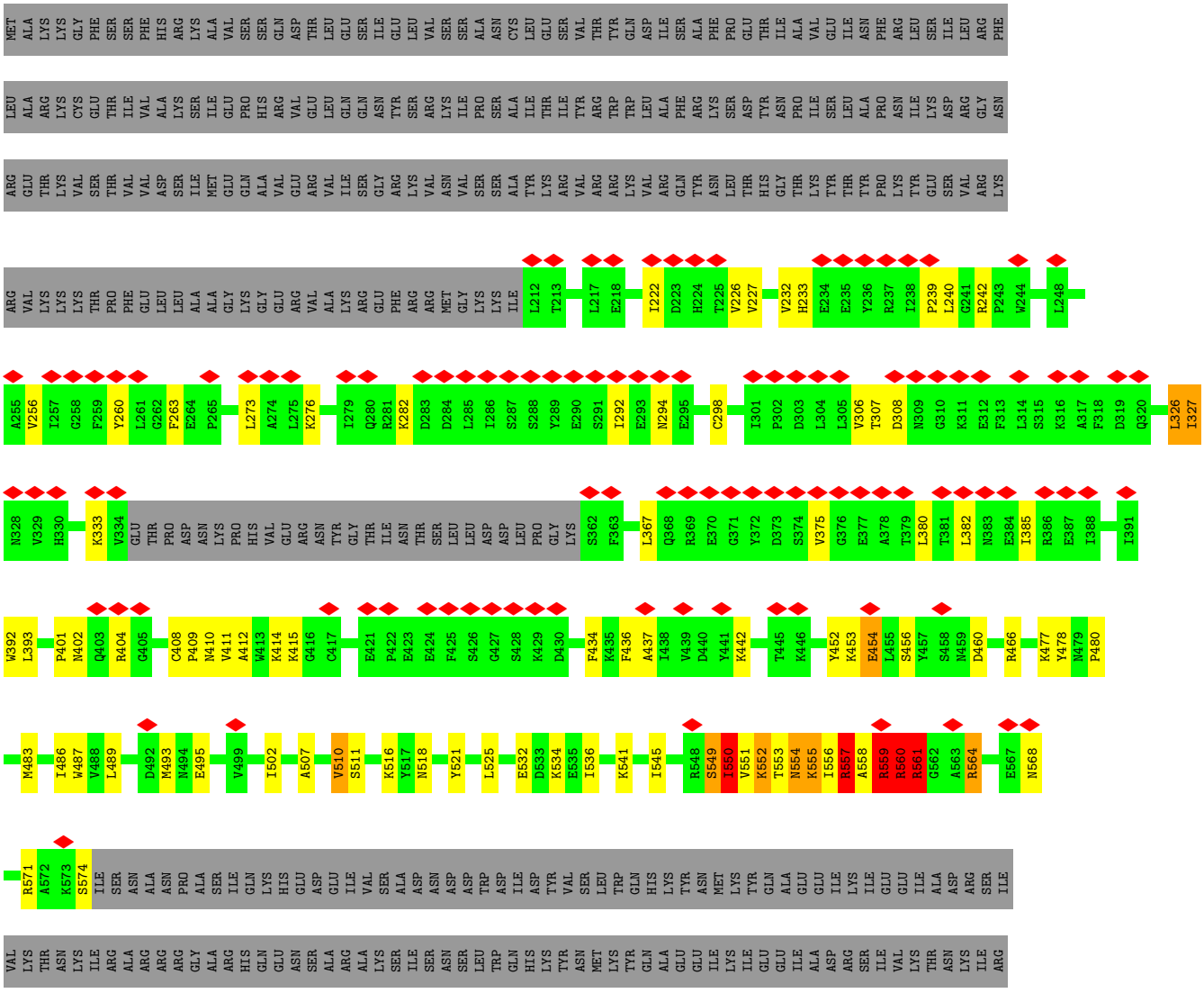






- Molecule 8: TnsB

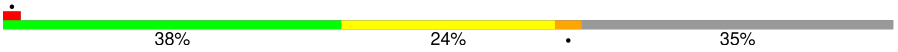


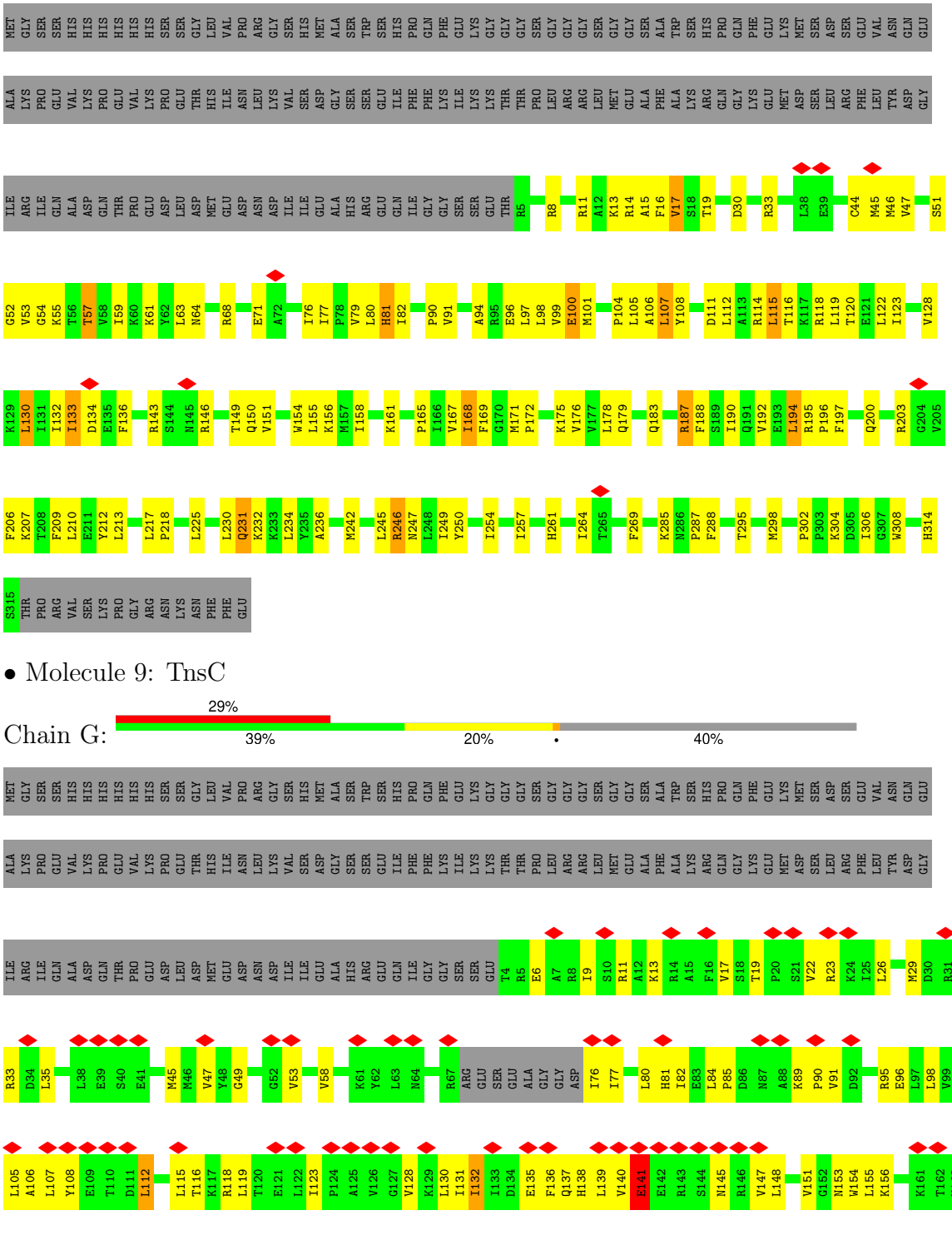




• Molecule 9: TnsC

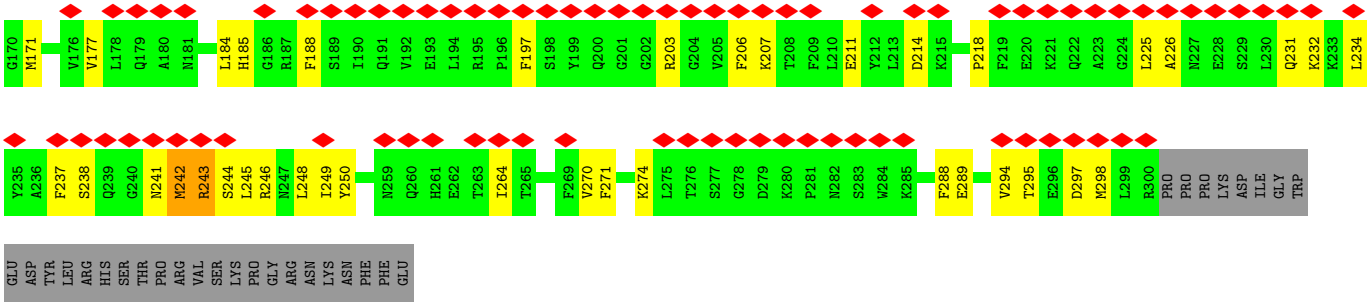
Chain M:





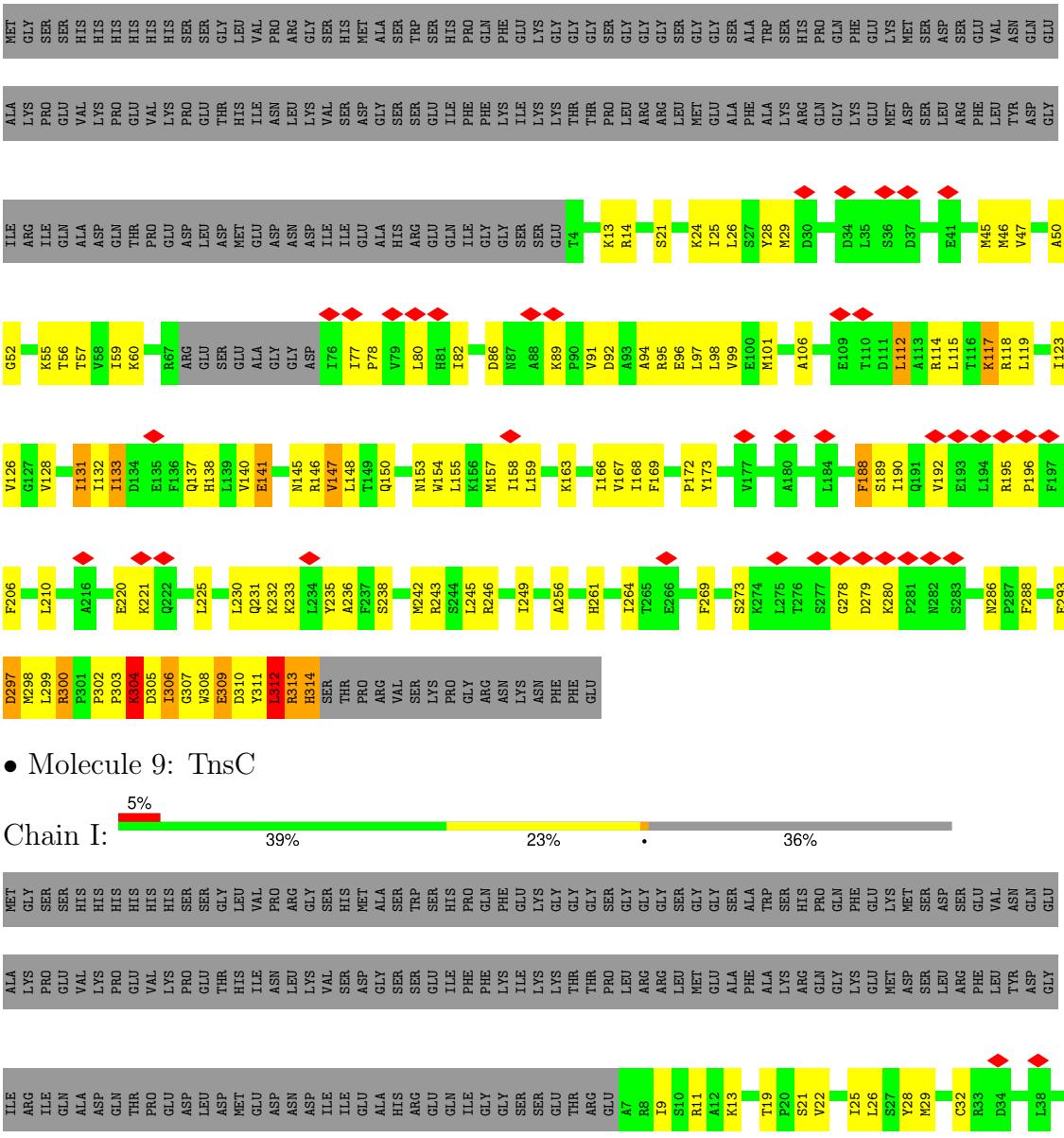
• Molecule 9: TnsC

Chain G:

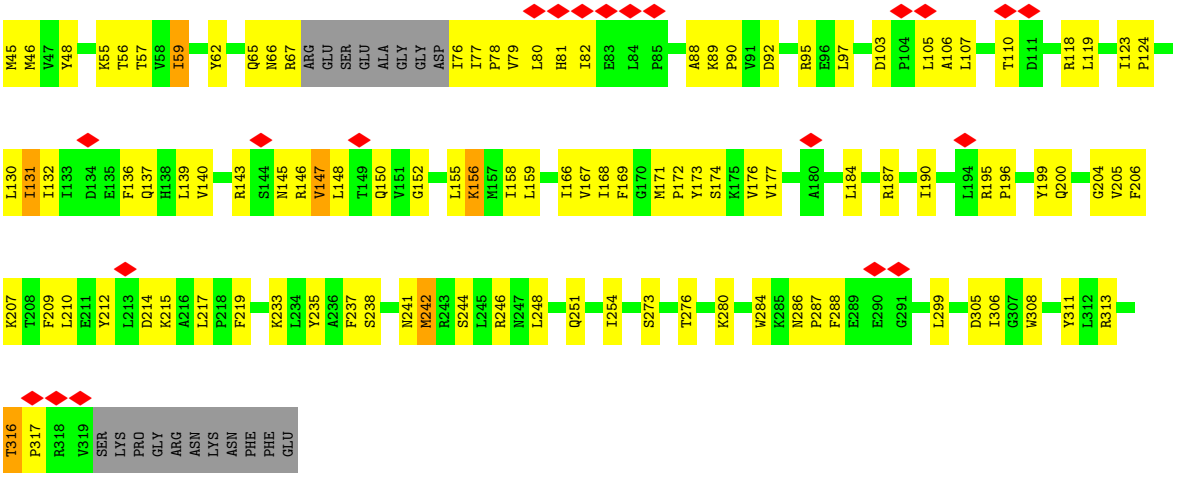


• Molecule 9: TnsC



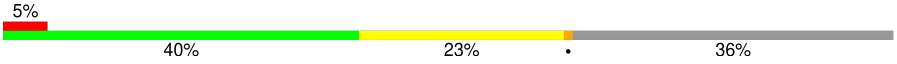


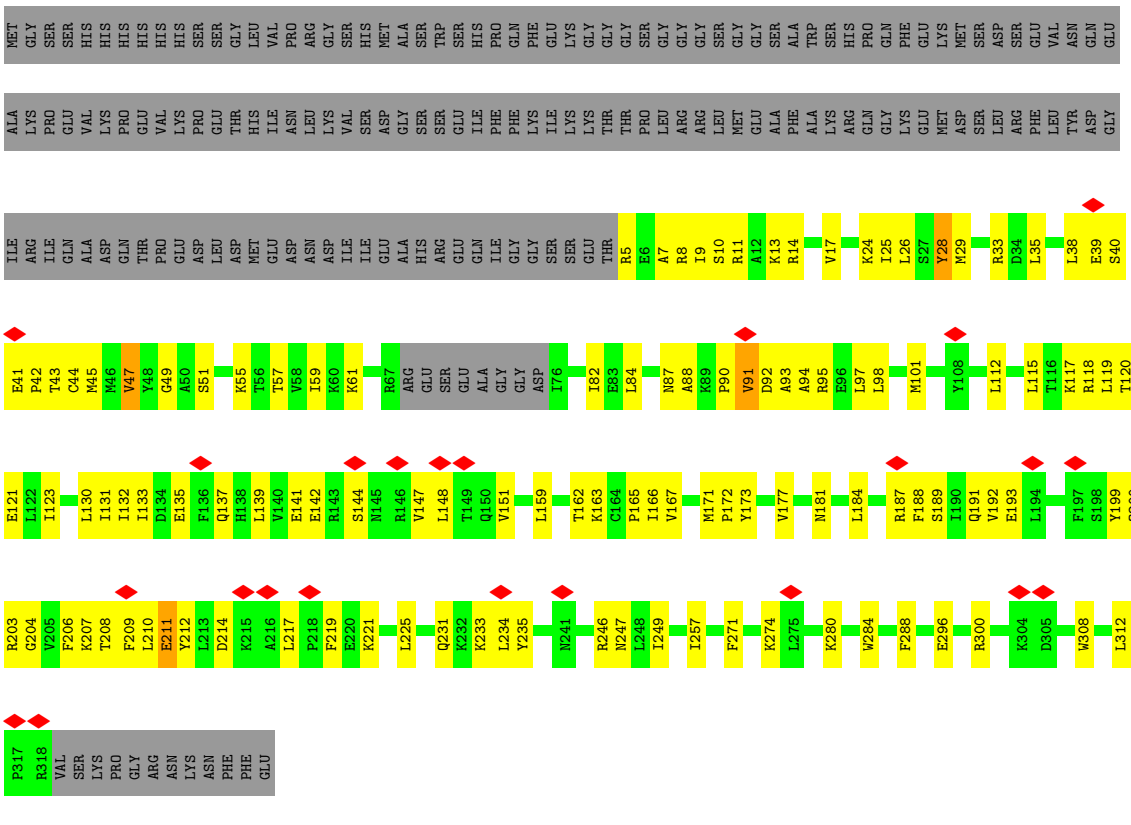
• Molecule 9: TnsC



• Molecule 9: TnsC

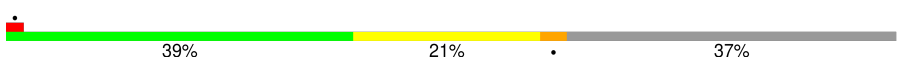
Chain J:

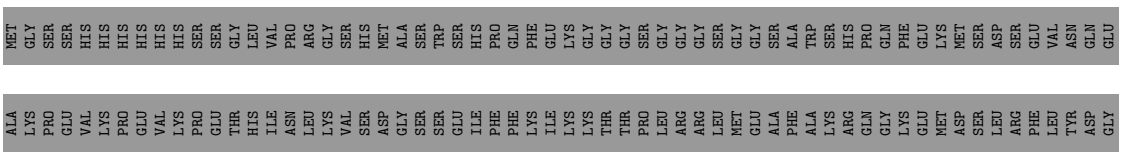


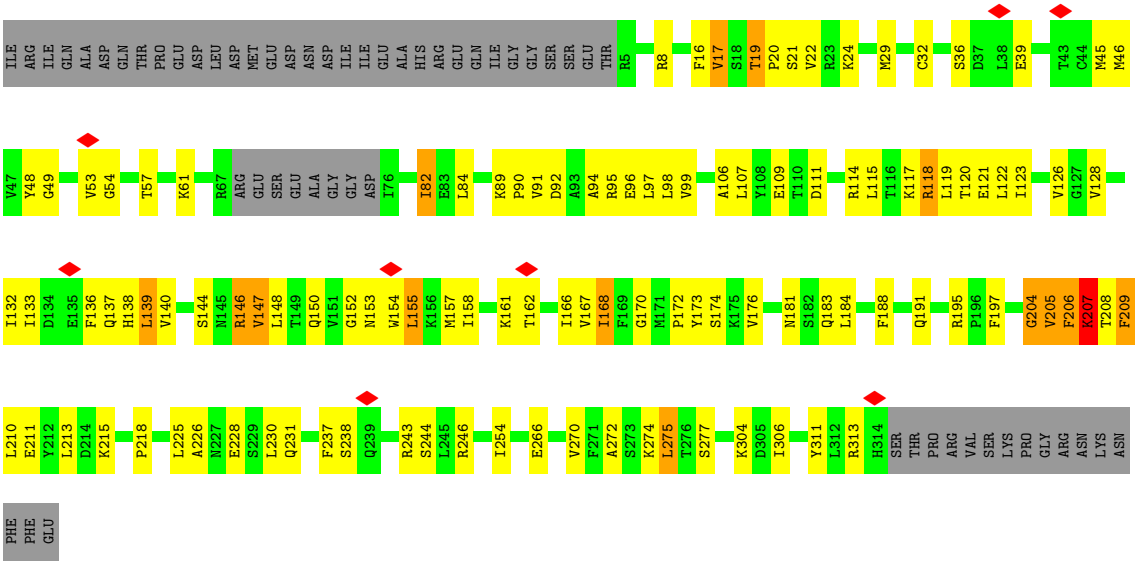


• Molecule 9: TnsC

Chain L:

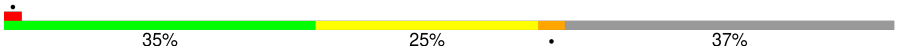


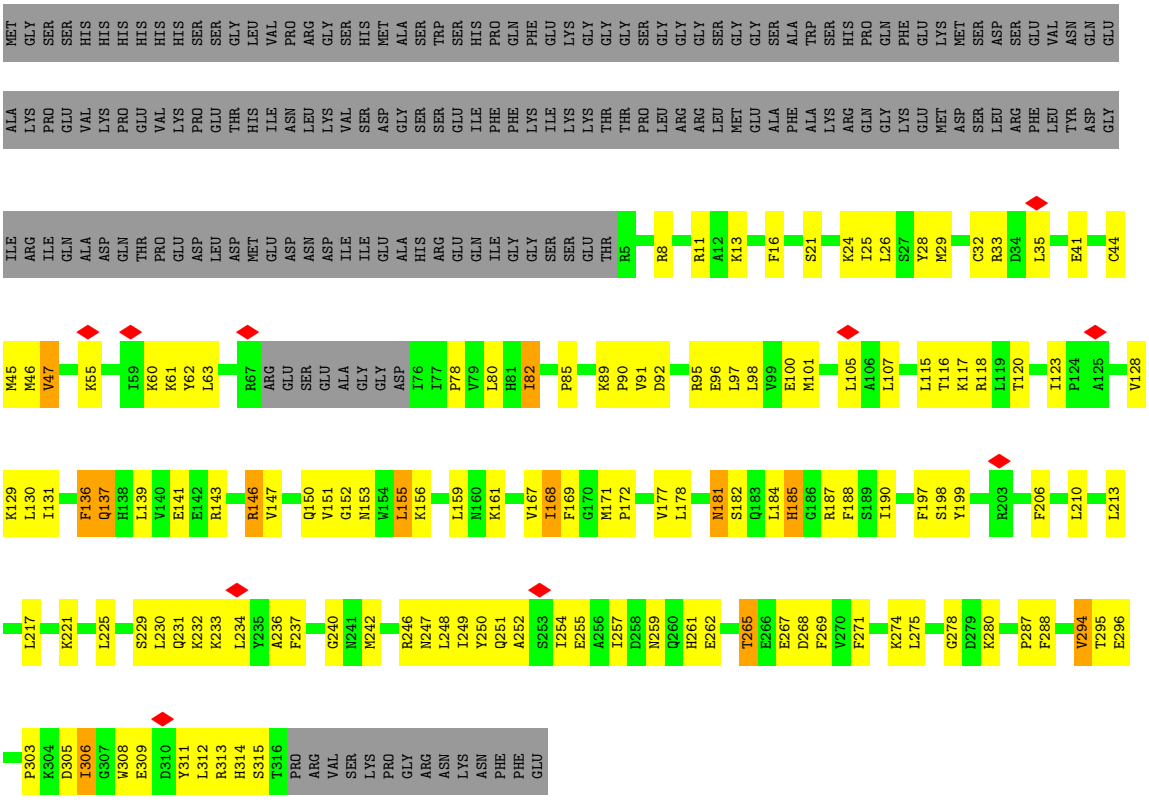




• Molecule 9: TnsC

Chain K:

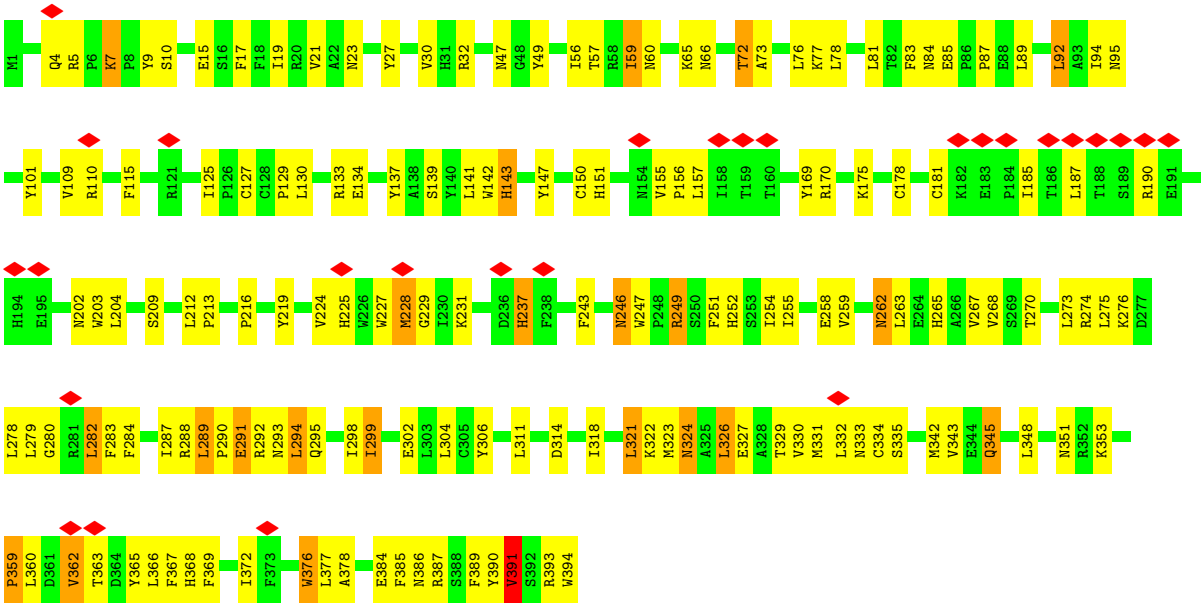


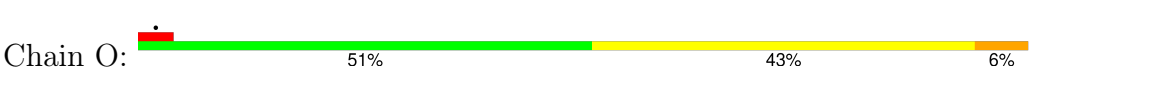


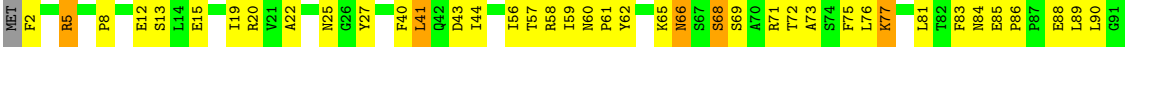
• Molecule 10: TniQ

Chain N:





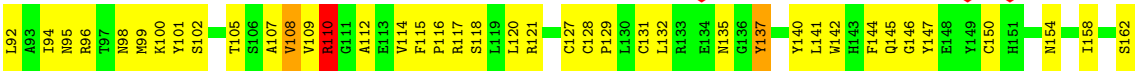


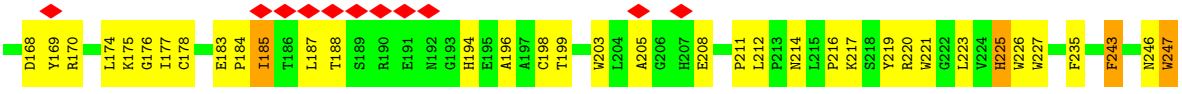


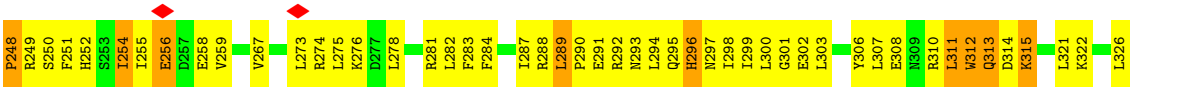


• Molecule 10: TniQ

Chain O:







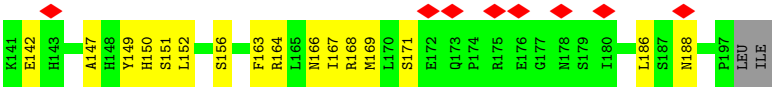


• Molecule 11: Cas6

Chain P:

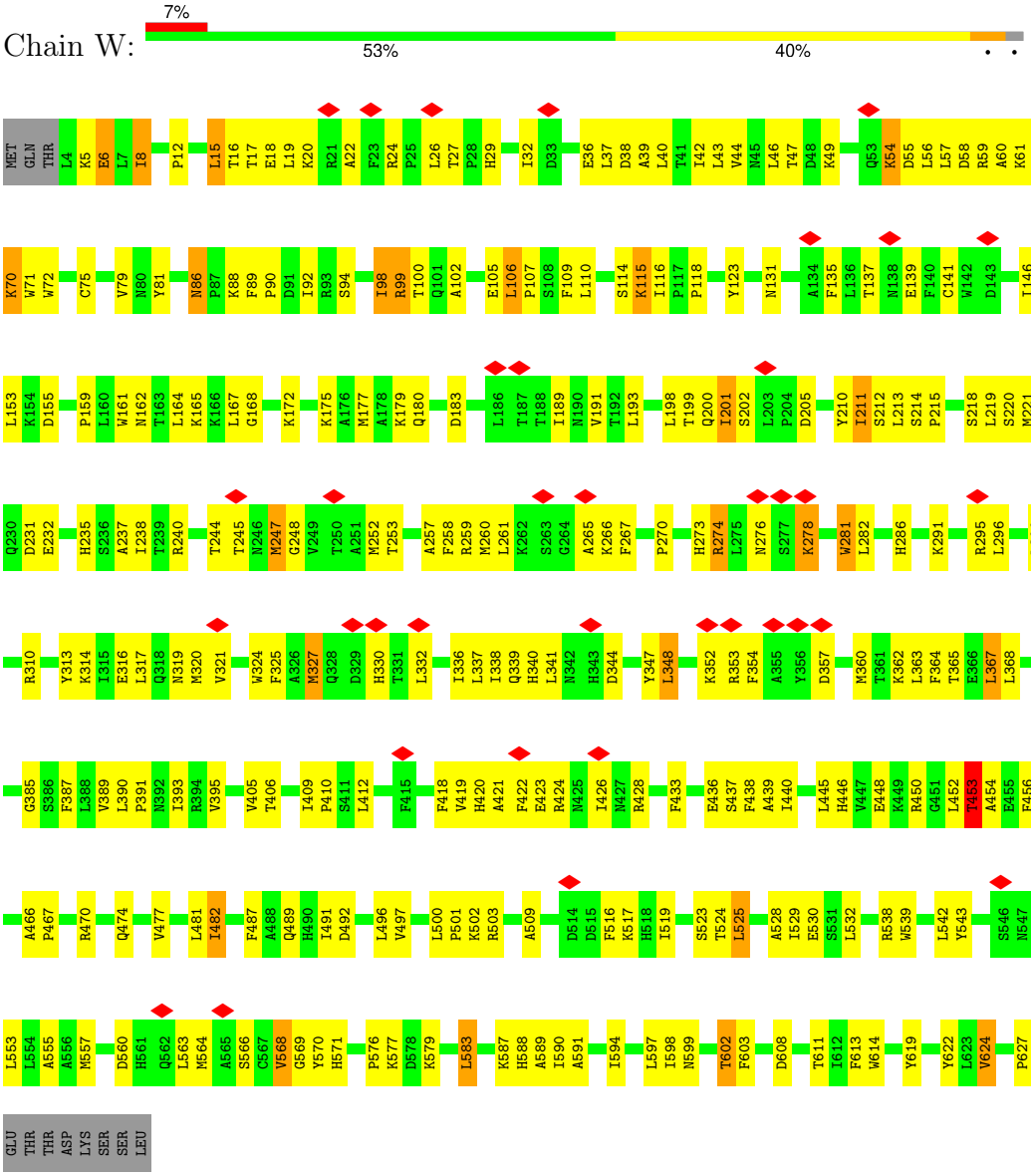






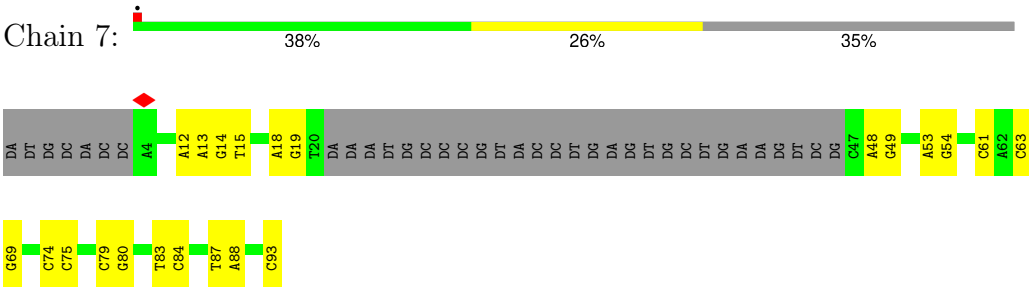
• Molecule 12: CRISPR-associated protein Cas8

Chain W:



• Molecule 13: NTS-Scramble

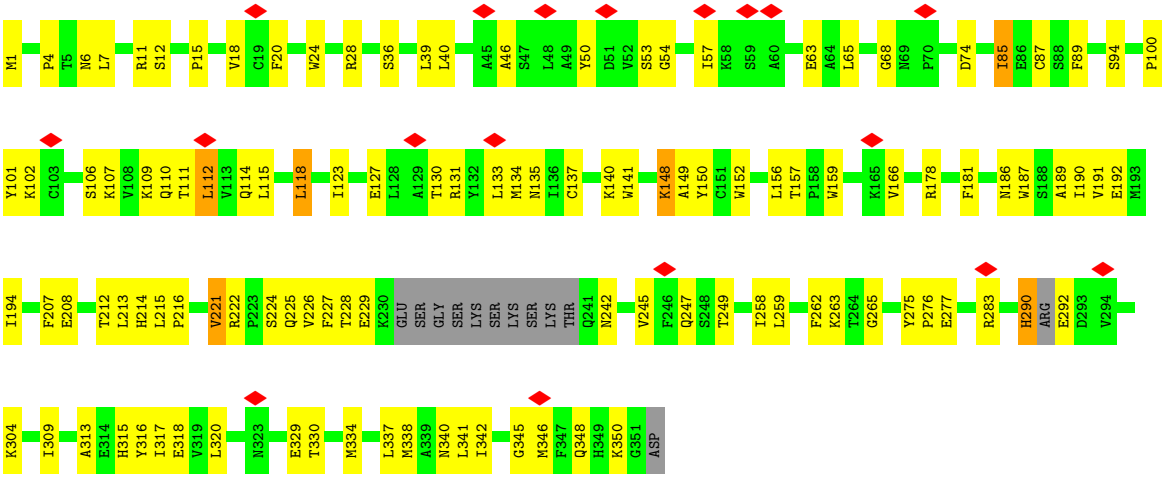
Chain 7:



• Molecule 14: Cas7

Chain V:

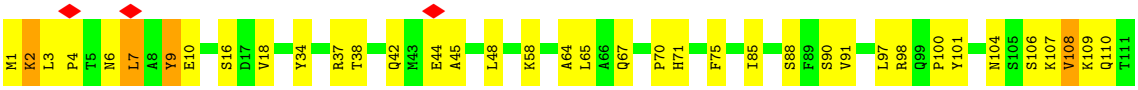


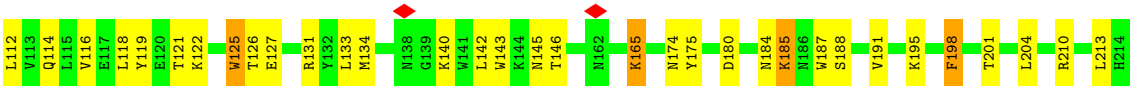


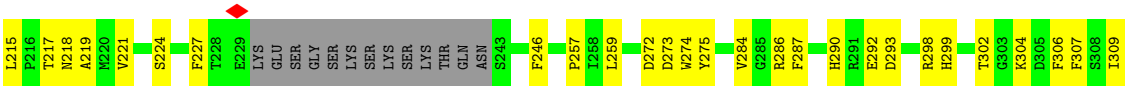
- Molecule 14: Cas7

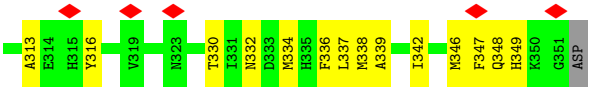
Chain R:







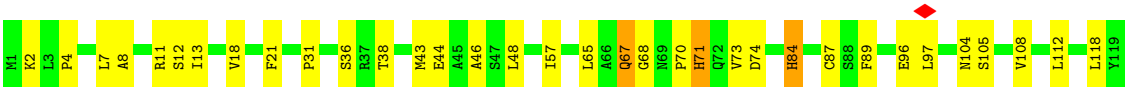




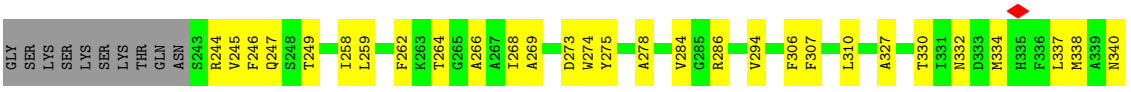
- Molecule 14: Cas7

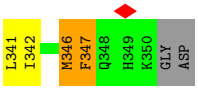
Chain S:





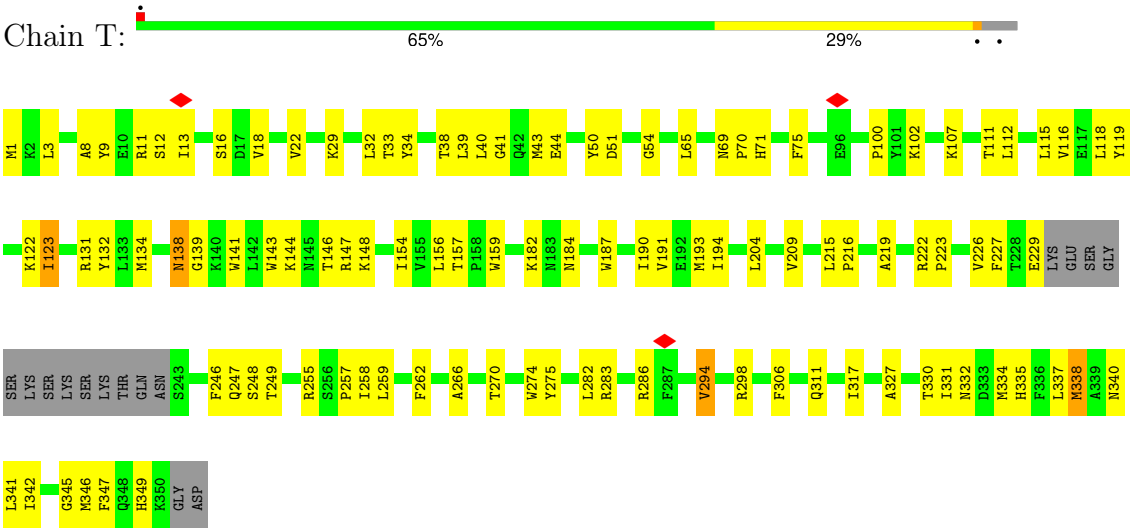






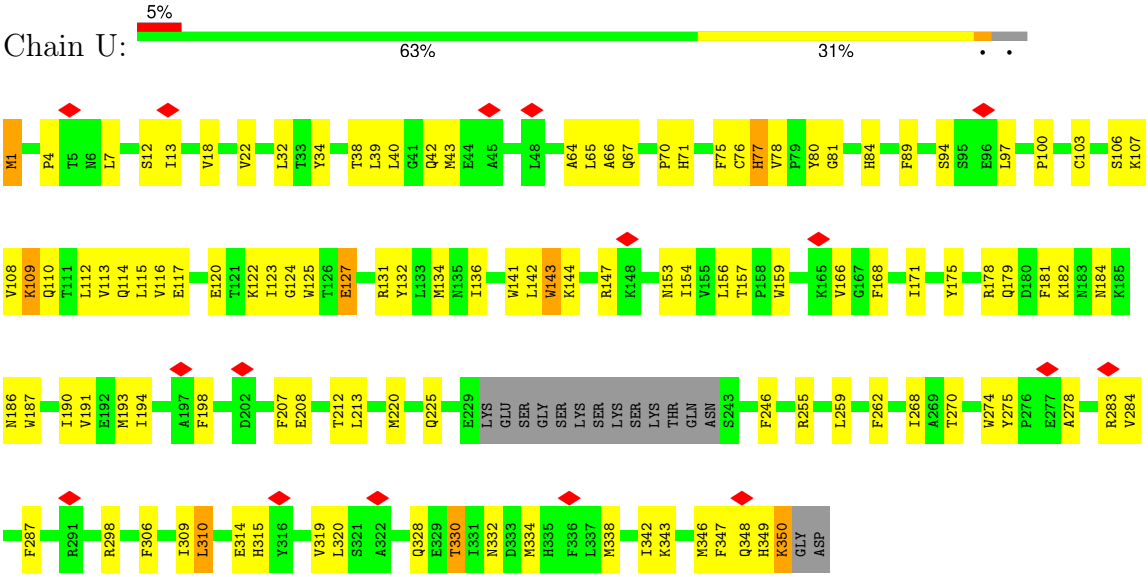
• Molecule 14: Cas7

Chain T:



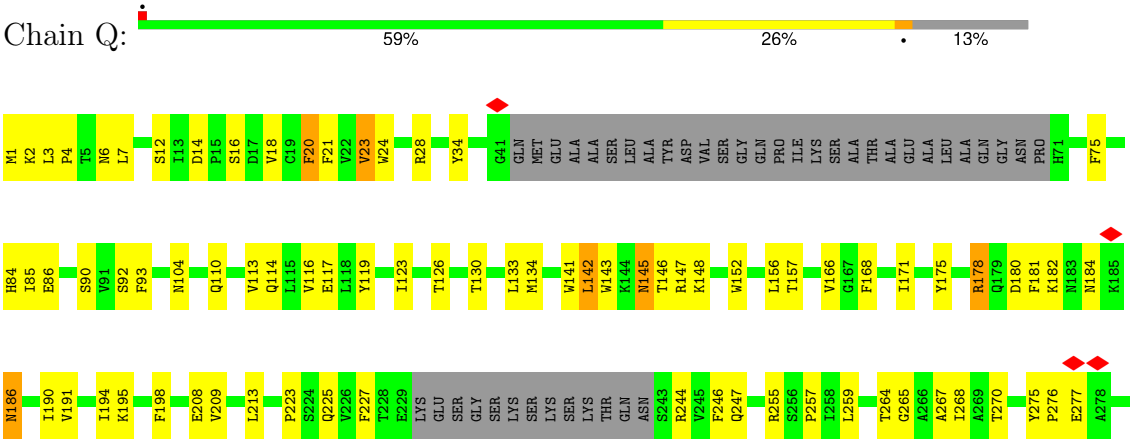
• Molecule 14: Cas7

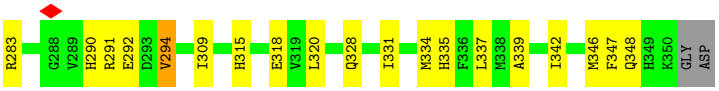
Chain U:



• Molecule 14: Cas7

Chain Q:




R283
G288
V289
H290
R291
E292
D293
V294
I309
H315
E318
V319
L320
Q328
I331
M334
H335
F336
L337
M338
A339
I342
M346
F347
Q348
H349
K350
GLY
ASP

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	41561	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.264	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.019	Depositor
Recommended contour level	0.019	Depositor
Map size (Å)	650.0, 650.0, 650.0	wwPDB
Map dimensions	500, 500, 500	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.3, 1.3, 1.3	Depositor

5 Model quality

5.1 Standard geometry

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

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	1	0.27	0/1439	0.92	9/2242 (0.4%)
2	2	0.74	0/256	0.95	0/394
3	3	0.74	0/2964	0.96	4/4574 (0.1%)
4	4	0.73	0/1182	0.90	0/1819
5	5	0.70	0/973	0.90	0/1501
6	6	0.70	0/872	0.89	0/1342
7	A	0.14	0/1841	0.42	0/2488
7	B	0.12	0/1790	0.37	0/2416
8	C	0.10	0/2770	0.31	0/3744
8	D	0.24	0/2821	0.51	4/3814 (0.1%)
8	E	0.32	0/4458	0.57	4/6019 (0.1%)
8	F	0.22	0/4442	0.45	4/6001 (0.1%)
9	G	0.14	0/2349	0.44	1/3169 (0.0%)
9	H	0.29	0/2478	0.58	1/3347 (0.0%)
9	I	0.15	0/2490	0.43	0/3365
9	J	0.16	0/2503	0.50	2/3381 (0.1%)
9	K	0.17	0/2484	0.53	0/3355
9	L	0.22	0/2471	0.64	9/3337 (0.3%)
9	M	0.16	0/2534	0.48	0/3422
10	N	0.24	0/3302	0.71	1/4475 (0.0%)
10	O	0.27	0/3294	0.77	7/4465 (0.2%)
11	P	0.10	0/1631	0.30	0/2200
12	W	0.20	0/5081	0.60	3/6891 (0.0%)
13	7	0.77	0/1475	0.87	0/2272
14	Q	0.16	0/2554	0.43	0/3468
14	R	0.15	0/2771	0.43	0/3764
14	S	0.15	0/2767	0.45	1/3759 (0.0%)
14	T	0.15	0/2767	0.42	0/3759
14	U	0.16	0/2767	0.42	2/3759 (0.1%)
14	V	0.15	0/2785	0.45	0/3781
All	All	0.30	0/74311	0.59	52/102323 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
8	D	0	6
8	E	0	2
9	H	0	1
9	J	0	1
9	L	0	2
9	M	0	1
10	O	0	6
All	All	0	19

There are no bond length outliers.

All (52) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	L	207	LYS	CG-CD-CE	13.37	142.05	111.30
3	3	135	DT	O4'-C1'-N1	10.98	115.69	108.00
9	L	207	LYS	CD-CE-NZ	-10.66	77.78	111.90
10	O	110	ARG	CA-CB-CG	8.29	130.68	114.10
9	L	207	LYS	N-CA-CB	-8.12	96.77	110.49
1	1	39	C	N1-C2-O2	7.94	123.67	118.90
1	1	18	U	N1-C2-O2	7.79	128.25	122.80
9	L	207	LYS	N-CA-C	7.47	126.72	110.80
1	1	18	U	N3-C2-O2	-7.46	116.98	122.20
3	3	135	DT	C1'-O4'-C4'	-7.32	102.78	110.10
8	D	554	ASN	N-CA-C	-7.21	102.52	111.75
8	F	535	GLU	CA-C-N	-6.94	111.38	121.65
8	F	535	GLU	C-N-CA	-6.94	111.38	121.65
9	H	312	LEU	N-CA-C	-6.87	103.87	111.36
14	U	66	ALA	CA-C-N	-6.70	108.74	121.54
14	U	66	ALA	C-N-CA	-6.70	108.74	121.54
12	W	281	TRP	CA-C-N	6.60	132.90	122.93
12	W	281	TRP	C-N-CA	6.60	132.90	122.93
10	O	313	GLN	CA-CB-CG	6.59	127.29	114.10
8	D	550	ILE	N-CA-C	-6.44	104.24	110.42
1	1	18	U	C2-N1-C1'	6.28	125.23	117.70
3	3	147	DT	O4'-C4'-C3'	-6.25	102.25	106.00
1	1	39	C	N3-C2-O2	-6.23	117.54	121.90
9	L	207	LYS	CA-CB-CG	6.17	126.45	114.10
8	F	59	ARG	CA-CB-CG	6.16	126.42	114.10

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Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	E	664	ASN	N-CA-C	-6.14	103.53	111.02
10	O	110	ARG	CB-CG-CD	6.10	125.33	111.30
10	O	110	ARG	CG-CD-NE	-6.10	98.58	112.00
10	O	118	SER	N-CA-C	-6.03	104.75	114.09
8	E	664	ASN	CB-CA-C	-5.88	101.57	110.92
9	G	242	MET	CB-CG-SD	5.83	130.17	112.70
1	1	39	C	C2-N1-C1'	5.75	125.12	118.80
8	E	660	GLN	CB-CA-C	-5.70	99.08	110.42
1	1	18	U	C5-C4-O4	5.66	129.30	125.90
8	D	549	SER	N-CA-C	-5.46	105.40	111.36
9	L	204	GLY	CA-C-N	5.36	128.39	122.22
9	L	204	GLY	C-N-CA	5.36	128.39	122.22
3	3	128	DC	O4'-C4'-C3'	-5.34	102.80	106.00
8	F	531	ASP	N-CA-C	-5.33	106.48	112.87
14	S	67	GLN	CA-CB-CG	5.32	124.74	114.10
8	D	557	ARG	N-CA-CB	-5.29	104.09	112.08
10	N	314	ASP	CB-CA-C	-5.28	110.47	116.54
12	W	281	TRP	N-CA-C	5.25	116.76	109.31
9	L	205	VAL	N-CA-C	-5.20	99.01	106.55
1	1	34	G	P-O3'-C3'	5.18	125.92	119.70
10	O	84	ASN	CA-C-N	5.14	128.58	120.97
10	O	84	ASN	C-N-CA	5.14	128.58	120.97
9	L	207	LYS	CB-CG-CD	5.14	123.12	111.30
8	E	668	GLN	N-CA-C	-5.14	105.68	111.28
1	1	39	C	C6-N1-C2	-5.13	118.25	120.30
9	J	28	TYR	CA-C-N	-5.06	111.72	121.58
9	J	28	TYR	C-N-CA	-5.06	111.72	121.58

There are no chirality outliers.

All (19) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
8	D	466	ARG	Sidechain
8	D	557	ARG	Sidechain
8	D	559	ARG	Sidechain
8	D	560	ARG	Sidechain
8	D	561	ARG	Sidechain
8	D	564	ARG	Sidechain
8	E	509	ARG	Sidechain
8	E	692	ARG	Sidechain
9	H	300	ARG	Sidechain
9	J	212	TYR	Peptide

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Mol	Chain	Res	Type	Group
9	L	206	PHE	Peptide
9	L	207	LYS	Peptide
9	M	246	ARG	Sidechain
10	O	102	SER	Peptide
10	O	110	ARG	Sidechain
10	O	247	TRP	Peptide
10	O	289	LEU	Peptide
10	O	387	ARG	Peptide,Sidechain

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	1	1286	0	648	42	0
2	2	229	0	126	16	0
3	3	2645	0	1457	64	0
4	4	1056	0	591	27	0
5	5	867	0	478	10	0
6	6	777	0	430	11	0
7	A	1807	0	1835	78	0
7	B	1758	0	1787	40	0
8	C	2709	0	2633	69	0
8	D	2761	0	2686	93	0
8	E	4366	0	4374	193	0
8	F	4349	0	4343	165	0
9	G	2309	0	2356	70	0
9	H	2431	0	2467	131	0
9	I	2442	0	2483	76	0
9	J	2455	0	2487	92	0
9	K	2437	0	2473	96	0
9	L	2424	0	2455	94	0
9	M	2486	0	2509	108	0
10	N	3211	0	3117	147	0
10	O	3203	0	3103	171	0
11	P	1594	0	1570	28	0
12	W	4972	0	4941	251	0
13	7	1315	0	718	29	0
14	Q	2487	0	2423	73	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	R	2700	0	2634	99	0
14	S	2696	0	2631	79	0
14	T	2696	0	2627	82	0
14	U	2696	0	2631	87	0
14	V	2715	0	2647	94	0
15	G	31	0	10	3	0
15	H	31	0	11	2	0
15	I	31	0	12	3	0
15	J	31	0	10	2	0
15	K	31	0	12	3	0
15	L	31	0	12	3	0
15	M	31	0	12	5	0
16	G	1	0	0	0	0
16	H	1	0	0	0	0
16	I	1	0	0	0	0
16	J	1	0	0	0	0
16	K	1	0	0	0	0
16	L	1	0	0	0	0
16	M	1	0	0	0	0
All	All	72103	0	67739	2382	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 17.

All (2382) 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)
9:H:313:ARG:CB	8:D:571:ARG:HG2	1.53	1.36
9:H:313:ARG:NH1	8:D:574:SER:C	1.89	1.31
4:4:112:DC:C3'	8:E:688:ILE:HD12	1.70	1.20
9:H:313:ARG:CG	8:D:571:ARG:HG2	1.72	1.18
9:H:311:TYR:HA	9:H:314:HIS:CD2	1.79	1.17
9:H:313:ARG:HG2	8:D:571:ARG:CG	1.79	1.13
4:4:112:DC:H3'	8:E:688:ILE:HD12	1.22	1.13
9:H:313:ARG:HB3	8:D:571:ARG:HG2	1.25	1.11
9:H:313:ARG:CG	8:D:571:ARG:CG	2.28	1.10
9:H:172:PRO:HB2	9:H:308:TRP:HE1	1.06	1.08
9:H:311:TYR:HA	9:H:314:HIS:HD2	0.96	1.08
9:H:313:ARG:HG2	8:D:571:ARG:HG3	1.34	1.08
4:4:112:DC:H3'	8:E:688:ILE:CD1	1.87	1.04
9:H:313:ARG:NH1	8:D:574:SER:O	1.89	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:311:TYR:CA	9:H:314:HIS:HD2	1.72	1.02
4:4:112:DC:H5'	8:E:688:ILE:CD1	1.97	0.95
9:H:173:TYR:HB3	9:H:308:TRP:HA	1.48	0.95
14:V:134:MET:HE1	14:V:178:ARG:HA	1.49	0.94
4:4:112:DC:H5'	8:E:688:ILE:HD13	1.50	0.92
8:E:663:TYR:HA	8:E:666:LYS:HB3	1.52	0.90
9:H:313:ARG:CB	8:D:571:ARG:CG	2.48	0.90
9:H:313:ARG:HH11	8:D:574:SER:C	1.79	0.89
12:W:338:ILE:HD11	12:W:368:LEU:HD11	1.52	0.89
9:M:105:LEU:HD22	9:M:118:ARG:HH22	1.39	0.88
9:L:89:LYS:HD2	9:L:90:PRO:HD2	1.52	0.88
14:U:190:ILE:HA	14:U:193:MET:HE3	1.55	0.87
12:W:568:VAL:HG23	12:W:569:GLY:H	1.40	0.87
9:H:313:ARG:HG3	8:D:571:ARG:HE	1.38	0.86
14:U:107:LYS:HA	14:U:110:GLN:HE21	1.40	0.86
9:H:172:PRO:HB2	9:H:308:TRP:NE1	1.89	0.85
9:H:172:PRO:O	9:H:308:TRP:CE2	2.32	0.83
2:2:14:DG:H3'	8:E:684:LYS:HE3	1.60	0.83
2:2:15:DA:OP2	8:E:684:LYS:HG3	1.77	0.82
8:E:668:GLN:HG2	8:E:674:ILE:HD11	1.62	0.82
8:F:55:LEU:O	8:F:59:ARG:HB2	1.80	0.81
10:O:292:ARG:HE	10:O:295:GLN:HE21	1.29	0.81
7:A:202:CYS:HA	7:A:205:LEU:HB2	1.60	0.81
7:B:198:LEU:HD12	7:B:199:PRO:HD3	1.61	0.81
9:H:172:PRO:O	9:H:308:TRP:CZ2	2.32	0.81
8:E:396:ILE:HG22	8:E:397:TYR:H	1.44	0.81
9:I:195:ARG:HE	9:I:196:PRO:HD2	1.43	0.81
8:F:520:LYS:HB2	8:F:524:GLU:HB2	1.62	0.80
10:N:130:LEU:HD12	10:N:155:VAL:HG11	1.61	0.80
10:O:57:THR:HA	10:O:170:ARG:HD3	1.62	0.80
9:J:200:GLN:HE22	9:J:206:PHE:HB3	1.45	0.80
12:W:410:PRO:HG2	12:W:566:SER:HB3	1.63	0.80
8:E:657:SER:H	8:E:661:HIS:H	1.29	0.79
4:4:112:DC:C5'	8:E:688:ILE:CD1	2.59	0.79
10:O:221:TRP:HB3	10:O:289:LEU:HD22	1.64	0.79
9:H:246:ARG:HE	9:H:249:ILE:HD11	1.47	0.79
9:H:189:SER:HB3	9:I:276:THR:HB	1.65	0.78
3:3:84:DT:H2"	3:3:85:DT:H5"	1.65	0.78
10:N:227:TRP:HE1	10:N:299:ILE:HG21	1.45	0.78
2:2:15:DA:P	8:E:684:LYS:HG3	2.23	0.78
10:O:110:ARG:NE	10:O:144:PHE:HZ	1.76	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:14:DG:H5”	8:E:684:LYS:NZ	1.97	0.78
12:W:261:LEU:HD21	12:W:406:THR:HG22	1.66	0.77
9:H:313:ARG:NE	8:D:574:SER:OG	2.16	0.77
12:W:212:SER:HB3	12:W:588:HIS:HD1	1.46	0.77
7:A:157:ARG:HH22	8:F:301:ILE:HG23	1.50	0.77
14:V:228:THR:HG22	14:V:229:GLU:H	1.48	0.77
11:P:99:VAL:HG12	11:P:100:SER:H	1.49	0.77
2:2:15:DA:OP2	8:E:684:LYS:CG	2.34	0.76
7:A:213:ARG:HB3	7:A:216:GLU:HB2	1.68	0.76
12:W:282:LEU:HD22	12:W:348:LEU:HD22	1.67	0.76
14:T:215:LEU:HD12	14:T:216:PRO:HD2	1.65	0.76
14:U:136:ILE:HG22	14:U:268:ILE:HG12	1.67	0.75
9:H:311:TYR:CA	9:H:314:HIS:CD2	2.58	0.75
2:2:14:DG:H3’	8:E:684:LYS:CE	2.17	0.75
10:N:304:LEU:HD22	10:N:332:LEU:HD12	1.68	0.75
12:W:281:TRP:CZ3	12:W:324:TRP:HB2	2.22	0.75
14:U:18:VAL:HB	14:U:259:LEU:HB2	1.69	0.75
10:N:125:ILE:HD13	10:N:170:ARG:HH12	1.51	0.74
8:E:660:GLN:O	8:E:661:HIS:C	2.30	0.74
10:O:292:ARG:HE	10:O:295:GLN:NE2	1.86	0.74
12:W:193:LEU:HD21	12:W:588:HIS:HD2	1.52	0.74
10:O:13:SER:HA	10:O:140:TYR:CE1	2.22	0.74
8:E:657:SER:O	8:E:658:LEU:C	2.30	0.74
8:F:237:ARG:HD3	8:D:556:ILE:HG12	1.70	0.74
9:J:17:VAL:HG11	9:J:209:PHE:HA	1.69	0.74
10:N:275:LEU:HD12	10:N:323:MET:HB3	1.70	0.74
14:Q:152:TRP:HE1	14:Q:171:ILE:HB	1.51	0.74
9:J:33:ARG:HB3	9:J:130:LEU:HD22	1.68	0.73
9:M:120:THR:HG21	9:M:161:LYS:HD3	1.70	0.73
7:A:107:LYS:HZ1	7:A:111:GLN:H	1.36	0.73
10:O:65:LYS:NZ	13:7:61:DC:H1’	2.03	0.73
8:E:392:TRP:HA	8:E:396:ILE:HD13	1.69	0.73
9:H:313:ARG:HA	8:D:571:ARG:NE	2.03	0.73
9:J:144:SER:HB2	9:K:143:ARG:HH22	1.54	0.73
14:R:2:LYS:HE3	14:R:346:MET:HB2	1.69	0.73
3:3:134:DC:H5”	3:3:135:DT:H5”	1.71	0.73
12:W:105:GLU:HG2	12:W:114:SER:HB2	1.70	0.73
6:6:40:DT:H5’	8:E:89:PRO:HB3	1.71	0.72
10:N:394:TRP:HD1	10:O:66:ASN:HA	1.54	0.72
9:H:173:TYR:HB2	9:H:311:TYR:HB2	1.70	0.72
10:O:203:TRP:HZ3	10:O:220:ARG:HG2	1.55	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:M:46:MET:HE3	9:M:188:PHE:HA	1.70	0.72
10:O:194:HIS:CE1	10:O:196:ALA:HB3	2.24	0.72
4:4:97:DG:H5'	8:F:124:LYS:HD3	1.72	0.72
14:Q:16:SER:HB3	14:Q:90:SER:H	1.54	0.72
8:D:401:PRO:HA	8:D:408:CYS:H	1.55	0.72
12:W:569:GLY:HA2	12:W:594:ILE:H	1.55	0.71
3:3:133:DG:H4'	14:R:1:MET:HE2	1.72	0.71
8:F:256:VAL:HG11	8:F:393:LEU:HD21	1.71	0.71
10:N:321:LEU:HB2	10:N:369:PHE:HE1	1.55	0.71
9:L:254:ILE:HD13	9:K:35:LEU:HD13	1.73	0.71
2:2:14:DG:C3'	8:E:684:LYS:HE3	2.20	0.71
10:N:280:GLY:N	10:N:283:PHE:HB3	2.05	0.71
8:E:238:ILE:HD11	8:E:691:ARG:CZ	2.20	0.71
9:L:32:CYS:O	9:L:36:SER:HB2	1.91	0.71
10:O:205:ALA:HB2	10:O:216:PRO:HG3	1.73	0.71
10:N:324:ASN:HB3	10:N:365:TYR:H	1.56	0.71
9:H:196:PRO:HB2	9:H:302:PRO:HG2	1.71	0.71
4:4:112:DC:C5'	8:E:688:ILE:HD12	2.19	0.71
9:M:44:CYS:HB2	9:M:46:MET:HE1	1.72	0.71
8:F:336:THR:OG1	8:F:339:ASN:ND2	2.23	0.70
9:H:311:TYR:CB	9:H:314:HIS:CD2	2.72	0.70
9:J:171:MET:SD	9:J:172:PRO:HD2	2.30	0.70
14:R:227:PHE:HZ	14:S:70:PRO:HB3	1.56	0.70
4:4:112:DC:C4'	8:E:688:ILE:HD12	2.21	0.70
10:N:130:LEU:HG	10:N:187:LEU:HD12	1.74	0.70
12:W:563:LEU:HD21	12:W:597:LEU:HB3	1.72	0.70
10:N:292:ARG:HD3	10:N:333:ASN:HB3	1.73	0.70
10:N:332:LEU:H	10:N:387:ARG:NH2	1.90	0.70
3:3:77:DG:H1	13:7:93:DC:H5	1.40	0.70
9:J:214:ASP:H	9:J:221:LYS:HD2	1.57	0.70
14:S:4:PRO:HG2	14:S:7:LEU:HB2	1.73	0.70
8:E:510:VAL:HB	8:E:661:HIS:HA	1.73	0.70
9:J:25:ILE:HG12	9:J:192:VAL:HG11	1.74	0.70
10:O:292:ARG:HG2	10:O:296:HIS:HE1	1.57	0.69
8:E:505:GLU:H	8:E:508:SER:HB3	1.57	0.69
9:H:55:LYS:HD2	9:H:169:PHE:HB3	1.74	0.69
9:H:172:PRO:CB	9:H:308:TRP:HE1	1.95	0.69
8:F:71:LYS:HA	8:F:71:LYS:HE3	1.73	0.69
9:G:77:ILE:HG12	9:G:80:LEU:H	1.57	0.69
7:B:121:TRP:HA	7:B:124:LYS:HZ3	1.57	0.69
14:Q:142:LEU:HD12	14:Q:145:ASN:HD22	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:475:GLN:HB3	8:F:489:LEU:HB2	1.75	0.69
8:F:508:SER:HB2	8:F:555:LYS:HG3	1.75	0.69
14:R:184:ASN:HB3	14:R:187:TRP:HB2	1.74	0.69
12:W:63:LYS:HA	12:W:66:LEU:HD12	1.73	0.69
8:E:679:ASP:OD1	8:E:698:GLN:NE2	2.25	0.69
8:D:553:THR:HA	8:D:556:ILE:HB	1.75	0.69
14:S:18:VAL:HB	14:S:259:LEU:HB2	1.75	0.69
14:S:338:MET:O	14:S:342:ILE:HD12	1.93	0.69
12:W:90:PRO:HG2	12:W:470:ARG:HH21	1.58	0.69
8:C:226:VAL:HG13	8:C:242:ARG:HD3	1.75	0.69
12:W:281:TRP:HZ3	12:W:324:TRP:HB2	1.55	0.68
10:N:212:LEU:HD12	10:N:213:PRO:HD2	1.76	0.68
9:J:246:ARG:HG2	15:J:600:ATP:H1'	1.74	0.68
9:H:233:LYS:HB3	9:H:288:PHE:HE1	1.57	0.68
8:C:217:LEU:HB3	8:C:302:PRO:HA	1.75	0.68
8:C:280:GLN:HG3	8:C:432:LEU:HD12	1.74	0.68
10:N:125:ILE:HD13	10:N:170:ARG:NH1	2.08	0.68
8:F:47:ILE:H	8:F:47:ILE:HD12	1.58	0.68
9:H:21:SER:O	9:H:25:ILE:HG12	1.94	0.68
9:L:107:LEU:HB3	9:K:117:LYS:HZ2	1.57	0.68
14:Q:191:VAL:O	14:Q:195:LYS:HG2	1.93	0.68
9:H:313:ARG:CA	8:D:571:ARG:HG2	2.24	0.68
7:A:25:ARG:HE	7:A:26:ASN:H	1.42	0.67
14:R:227:PHE:CD2	14:S:38:THR:HB	2.29	0.67
8:F:517:TYR:O	8:F:518:ASN:C	2.38	0.67
10:O:15:GLU:HG2	10:O:170:ARG:HG2	1.74	0.67
9:J:159:LEU:HD13	9:J:187:ARG:HD3	1.75	0.67
9:K:234:LEU:HD23	9:K:248:LEU:HD21	1.76	0.67
7:A:209:LEU:HD23	7:A:210:LEU:H	1.59	0.67
4:4:112:DC:C5'	8:E:688:ILE:HD13	2.23	0.67
10:O:217:LYS:O	10:O:221:TRP:HD1	1.76	0.67
10:O:243:PHE:HZ	10:O:254:ILE:HD12	1.59	0.67
10:O:292:ARG:HG2	10:O:296:HIS:CE1	2.29	0.67
14:R:88:SER:HB2	14:R:210:ARG:HG2	1.76	0.67
2:2:14:DG:H5"	8:E:684:LYS:HZ1	1.58	0.67
8:F:529:GLU:HB3	8:F:541:LYS:HG2	1.75	0.67
10:N:130:LEU:HD23	10:N:133:ARG:HH21	1.60	0.67
10:N:327:GLU:HA	10:N:330:VAL:HG12	1.77	0.67
8:D:553:THR:C	8:D:555:LYS:N	2.48	0.67
8:F:346:ASN:HA	8:F:349:THR:HG22	1.77	0.67
10:O:59:ILE:HA	10:O:71:ARG:HH21	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:233:HIS:CE1	8:F:236:TYR:H	2.13	0.67
9:M:30:ASP:HB2	9:M:33:ARG:HH21	1.59	0.67
10:N:321:LEU:HB2	10:N:369:PHE:CE1	2.30	0.67
11:P:99:VAL:HA	11:P:171:SER:HA	1.76	0.67
1:1:10:G:H2'	1:1:11:G:C8	2.30	0.67
9:M:254:ILE:HA	9:M:257:ILE:HD12	1.77	0.66
8:E:233:HIS:ND1	8:E:236:TYR:HB2	2.11	0.66
8:E:179:ARG:HH12	8:E:183:LYS:HE2	1.58	0.66
9:L:144:SER:HB2	9:L:147:VAL:HG22	1.78	0.66
14:R:45:ALA:HB3	14:R:48:LEU:HG	1.77	0.66
14:U:178:ARG:HG2	14:U:182:LYS:HE3	1.77	0.66
8:F:226:VAL:HG22	8:F:244:TRP:CE3	2.29	0.66
8:F:408:CYS:HB3	8:F:411:VAL:HB	1.78	0.66
10:N:369:PHE:HB3	10:N:372:ILE:HD12	1.76	0.66
12:W:568:VAL:HG21	12:W:624:VAL:HG23	1.77	0.66
8:E:509:ARG:HG3	8:E:671:GLU:HG2	1.75	0.66
8:F:142:SER:HB3	8:F:193:ALA:HB1	1.77	0.66
14:R:2:LYS:HG3	14:R:348:GLN:H	1.60	0.66
14:T:11:ARG:HH12	14:U:220:MET:HE1	1.60	0.66
9:L:49:GLY:HA3	9:L:53:VAL:HG21	1.77	0.66
10:O:289:LEU:HD12	10:O:299:ILE:HD12	1.78	0.66
12:W:409:ILE:H	12:W:564:MET:HE1	1.61	0.66
9:H:313:ARG:HG3	8:D:571:ARG:NE	2.11	0.66
9:L:119:LEU:O	9:L:123:ILE:HG12	1.96	0.66
8:D:256:VAL:HG11	8:D:393:LEU:HD21	1.76	0.66
14:U:142:LEU:HD23	14:U:213:LEU:HD22	1.78	0.66
9:H:195:ARG:HH12	9:H:304:LYS:HA	1.60	0.66
14:Q:346:MET:HG2	14:Q:348:GLN:HG3	1.77	0.66
10:N:57:THR:HB	10:N:170:ARG:HE	1.60	0.66
8:C:539:GLU:HA	8:C:542:ILE:HG13	1.78	0.66
12:W:58:ASP:HB3	12:W:61:LYS:HD2	1.78	0.65
8:C:449:ILE:HB	8:C:457:TYR:HB2	1.78	0.65
10:O:92:LEU:HG	10:O:140:TYR:OH	1.96	0.65
10:O:212:LEU:HB2	10:O:214:ASN:HD22	1.61	0.65
9:M:171:MET:HE3	9:M:172:PRO:HD2	1.78	0.65
8:E:447:VAL:HG11	8:E:456:SER:HB3	1.77	0.65
9:I:316:THR:H	9:I:317:PRO:HD2	1.60	0.65
12:W:338:ILE:HD13	12:W:365:THR:HG22	1.78	0.65
14:R:4:PRO:HA	14:R:349:HIS:HD2	1.61	0.65
14:R:274:TRP:HB3	14:R:332:ASN:HB3	1.79	0.65
5:5:29:DC:H41	8:F:179:ARG:HH12	1.45	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:127:CYS:HG	10:N:142:TRP:CG	2.14	0.65
10:N:343:VAL:HG21	10:N:367:PHE:CZ	2.32	0.65
10:N:345:GLN:HA	10:N:345:GLN:HE21	1.62	0.65
9:L:152:GLY:HA2	9:L:155:LEU:HD23	1.79	0.65
9:M:98:LEU:HB2	9:M:106:ALA:HB2	1.77	0.65
9:M:195:ARG:HD2	9:M:196:PRO:HD2	1.78	0.65
10:O:293:ASN:OD1	10:O:385:PHE:HA	1.96	0.65
9:K:89:LYS:HD2	9:K:90:PRO:HD2	1.76	0.65
14:T:3:LEU:HB2	14:T:349:HIS:HB2	1.78	0.65
8:E:250:ASP:HB3	8:E:257:ILE:HD11	1.77	0.65
14:R:18:VAL:HB	14:R:259:LEU:HB2	1.79	0.65
14:R:45:ALA:HA	14:Q:346:MET:HE1	1.78	0.65
1:1:2:U:H3	12:W:418:PHE:HD2	1.45	0.65
9:M:79:VAL:HG23	9:M:130:LEU:HB3	1.78	0.65
12:W:141:CYS:HA	12:W:146:ILE:HA	1.78	0.65
11:P:103:ARG:HB3	11:P:188:ASN:HD22	1.60	0.65
14:R:131:ARG:HA	14:R:134:MET:HG2	1.78	0.65
7:A:60:HIS:HE1	7:A:143:ILE:HG23	1.61	0.64
10:N:95:ASN:HB3	10:N:109:VAL:HG13	1.79	0.64
9:H:199:TYR:CE1	9:H:299:LEU:HD22	2.32	0.64
9:K:82:ILE:HD13	9:K:97:LEU:HB3	1.79	0.64
9:L:89:LYS:HB3	9:L:91:VAL:HG22	1.78	0.64
9:L:207:LYS:C	9:L:207:LYS:HE2	2.22	0.64
9:M:245:LEU:O	9:M:249:ILE:HG13	1.97	0.64
12:W:16:THR:HG22	12:W:56:LEU:HD11	1.77	0.64
8:E:228:ASP:HB3	8:E:362:SER:HB2	1.79	0.64
14:Q:7:LEU:H	14:Q:348:GLN:HG2	1.62	0.64
14:Q:21:PHE:HB2	14:Q:86:GLU:HB3	1.79	0.64
7:A:172:LEU:HG	7:A:209:LEU:HD21	1.80	0.64
10:O:203:TRP:HH2	10:O:223:LEU:HD22	1.61	0.64
9:K:33:ARG:HD3	9:K:129:LYS:HB3	1.79	0.64
7:B:49:VAL:HG13	7:B:54:GLU:HG2	1.80	0.64
10:O:72:THR:HA	10:O:75:PHE:HD2	1.61	0.64
9:K:90:PRO:HD3	9:K:151:VAL:HG22	1.78	0.64
12:W:422:PHE:HE2	12:W:500:LEU:HD13	1.63	0.64
8:D:233:HIS:HB2	8:D:240:LEU:HD21	1.80	0.64
7:B:154:ARG:HG3	7:B:218:LEU:HD11	1.79	0.64
10:O:203:TRP:CH2	10:O:223:LEU:HD22	2.33	0.64
8:E:233:HIS:HB2	8:E:240:LEU:HD11	1.79	0.64
12:W:238:ILE:HG12	12:W:259:ARG:HH12	1.61	0.64
8:E:359:PRO:HG2	8:E:380:LEU:HD21	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:190:LEU:HD12	7:A:192:LEU:H	1.62	0.64
8:F:222:ILE:HB	8:F:248:LEU:HD12	1.80	0.64
8:F:232:VAL:HB	8:F:378:ALA:HB1	1.81	0.64
9:G:295:THR:HG23	9:G:297:ASP:H	1.63	0.64
14:U:191:VAL:HA	14:U:194:ILE:HD12	1.80	0.64
3:3:131:DC:C4	14:S:71:HIS:CE1	2.85	0.63
12:W:18:GLU:HG3	12:W:22:ALA:HB2	1.80	0.63
14:V:133:LEU:HD12	14:V:190:ILE:HD12	1.79	0.63
8:F:44:PRO:HD2	8:F:47:ILE:HD13	1.80	0.63
8:E:657:SER:O	8:E:660:GLN:N	2.31	0.63
9:I:55:LYS:HD2	9:I:169:PHE:HB3	1.79	0.63
14:R:70:PRO:HB3	14:Q:227:PHE:CE1	2.33	0.63
12:W:81:TYR:HA	12:W:99:ARG:HH12	1.61	0.63
9:I:80:LEU:HB3	9:I:131:ILE:HG22	1.80	0.63
4:4:101:DC:H2"	4:4:102:DA:H5"	1.80	0.63
8:E:658:LEU:CA	8:E:661:HIS:HB3	2.29	0.63
9:L:97:LEU:HD13	9:L:119:LEU:HD11	1.81	0.63
8:F:351:ASN:HA	8:F:355:LEU:HB3	1.80	0.63
8:F:453:LYS:HB2	8:F:519:MET:SD	2.38	0.63
8:D:555:LYS:C	8:D:557:ARG:N	2.54	0.63
12:W:201:ILE:HG22	12:W:215:PRO:HD3	1.81	0.63
9:H:313:ARG:O	8:D:571:ARG:HD3	1.97	0.63
9:L:207:LYS:HG2	9:L:226:ALA:HB2	1.80	0.63
8:D:553:THR:C	8:D:556:ILE:H	2.07	0.63
4:4:112:DC:H5'	8:E:688:ILE:HD12	1.74	0.63
7:B:167:VAL:O	7:B:171:ILE:HG12	1.99	0.63
12:W:139:GLU:HG2	12:W:148:CYS:HB2	1.81	0.63
8:E:51:ILE:HD11	8:E:112:ALA:HB2	1.81	0.63
11:P:60:SER:HB3	11:P:66:LEU:HG	1.81	0.63
9:I:45:MET:HG3	9:I:190:ILE:HB	1.80	0.63
10:N:60:ASN:HB3	10:N:94:ILE:HB	1.81	0.62
9:H:26:LEU:HD22	9:H:29:MET:HE1	1.81	0.62
9:H:236:ALA:HB2	9:H:294:VAL:HG13	1.80	0.62
9:K:206:PHE:O	9:K:210:LEU:HG	1.98	0.62
14:U:168:PHE:HB3	14:U:171:ILE:HD11	1.81	0.62
1:1:54:U:H3	11:P:138:PHE:HA	1.65	0.62
8:F:257:ILE:HD13	8:F:298:CYS:HB3	1.79	0.62
9:M:154:TRP:O	9:M:158:ILE:HG12	1.99	0.62
8:E:660:GLN:HE21	8:E:697:HIS:CG	2.17	0.62
8:D:555:LYS:C	8:D:557:ARG:H	2.06	0.62
8:F:77:ARG:HA	8:F:80:LEU:HD12	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:142:TRP:HH2	10:N:150:CYS:HA	1.63	0.62
10:N:394:TRP:CD1	10:O:66:ASN:HA	2.34	0.62
14:T:8:ALA:HB3	14:T:102:LYS:HB2	1.82	0.62
8:F:442:LYS:HG2	8:F:449:ILE:HG23	1.80	0.62
8:D:551:VAL:O	8:D:553:THR:N	2.32	0.62
14:R:6:ASN:O	14:R:347:PHE:HB2	1.99	0.62
1:1:3:G:C8	12:W:199:THR:HG21	2.35	0.62
10:O:150:CYS:O	10:O:154:ASN:HA	2.00	0.62
10:O:274:ARG:HG2	10:O:322:LYS:HB2	1.82	0.62
8:D:550:ILE:O	8:D:554:ASN:N	2.24	0.62
14:U:225:GLN:HA	14:U:246:PHE:HA	1.82	0.62
9:I:200:GLN:HE22	9:I:206:PHE:HB3	1.65	0.62
9:I:242:MET:HE2	15:I:600:ATP:H1'	1.80	0.62
9:K:236:ALA:HB3	9:K:287:PRO:HG3	1.81	0.62
7:A:78:LYS:HB3	7:A:85:SER:HB2	1.82	0.62
12:W:301:ILE:HG13	12:W:306:ARG:HB3	1.82	0.62
9:J:41:GLU:HB2	9:K:13:LYS:HE2	1.81	0.62
8:C:276:LYS:HD2	8:C:433:ASP:HA	1.82	0.62
8:F:249:VAL:HA	8:F:256:VAL:HA	1.82	0.61
9:M:11:ARG:HB3	9:M:14:ARG:HH21	1.65	0.61
9:M:133:ILE:HG23	9:M:168:ILE:HD13	1.82	0.61
9:G:232:LYS:HB3	9:G:294:VAL:HB	1.82	0.61
9:H:82:ILE:HD11	9:H:96:GLU:HG3	1.82	0.61
14:S:337:LEU:O	14:S:341:LEU:HD22	1.99	0.61
9:M:45:MET:HB3	9:M:167:VAL:HG22	1.81	0.61
8:E:406:THR:HG22	8:C:522:GLN:HE22	1.64	0.61
14:V:12:SER:HB2	14:V:342:ILE:HG23	1.82	0.61
14:U:106:SER:O	14:U:110:GLN:HG3	2.00	0.61
1:1:22:C:H2'	1:1:23:U:C6	2.35	0.61
3:3:47:DT:H2'	3:3:48:DT:H71	1.82	0.61
10:O:95:ASN:HB2	10:O:109:VAL:H	1.65	0.61
8:E:658:LEU:HD12	8:E:661:HIS:HD2	1.65	0.61
9:H:172:PRO:C	9:H:308:TRP:NE1	2.57	0.61
9:H:313:ARG:CG	8:D:571:ARG:HG3	2.08	0.61
14:Q:175:TYR:HA	14:Q:180:ASP:HB3	1.83	0.61
12:W:321:VAL:O	12:W:324:TRP:HB3	2.00	0.61
12:W:552:ASP:HA	12:W:555:ALA:HB3	1.82	0.61
9:L:54:GLY:HA2	15:L:600:ATP:O2A	2.00	0.61
9:K:152:GLY:O	9:K:156:LYS:HG3	2.00	0.61
14:R:37:ARG:HD2	14:R:75:PHE:HD2	1.65	0.61
14:U:12:SER:HB2	14:U:342:ILE:HG23	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:237:ARG:HD2	8:D:556:ILE:HG23	1.82	0.61
12:W:213:LEU:HD12	12:W:214:SER:H	1.65	0.61
8:E:233:HIS:CE1	8:E:236:TYR:HB2	2.34	0.61
8:C:459:ASN:HD21	8:C:499:VAL:HG13	1.65	0.61
9:M:146:ARG:HH11	9:G:107:LEU:HB2	1.64	0.61
12:W:450:ARG:HG2	12:W:474:GLN:HE21	1.66	0.61
14:V:111:THR:O	14:V:115:LEU:HD12	2.00	0.61
8:F:59:ARG:HG2	8:D:327:ILE:H	1.65	0.61
8:F:530:TYR:HD1	8:F:541:LYS:HB3	1.66	0.61
8:E:43:PHE:HB3	8:E:47:ILE:HD12	1.82	0.61
9:G:243:ARG:HB2	9:G:243:ARG:HH11	1.64	0.61
9:H:21:SER:HA	9:H:24:LYS:HE3	1.83	0.61
9:H:233:LYS:HB3	9:H:288:PHE:CE1	2.35	0.61
9:J:120:THR:HA	9:J:162:THR:HG22	1.82	0.61
9:L:82:ILE:HD11	9:L:97:LEU:HA	1.83	0.61
9:K:55:LYS:HB3	9:K:169:PHE:HD2	1.65	0.61
14:R:4:PRO:HA	14:R:349:HIS:CD2	2.36	0.61
14:T:227:PHE:HB3	14:U:38:THR:OG1	2.01	0.61
10:N:251:PHE:HA	10:N:254:ILE:HG12	1.81	0.61
10:O:247:TRP:O	10:O:249:ARG:HG2	2.01	0.61
10:O:340:ALA:HA	10:O:360:LEU:HD12	1.80	0.61
12:W:72:TRP:CE3	12:W:177:MET:HE2	2.35	0.61
12:W:193:LEU:HD21	12:W:588:HIS:CD2	2.35	0.61
9:I:105:LEU:HB2	9:I:118:ARG:HH12	1.65	0.61
14:R:227:PHE:CZ	14:S:70:PRO:HB3	2.34	0.61
8:E:505:GLU:O	8:E:506:TYR:C	2.44	0.61
8:F:141:ILE:HD11	8:F:190:LEU:HB2	1.83	0.61
12:W:212:SER:HB3	12:W:588:HIS:ND1	2.15	0.61
12:W:282:LEU:HD13	12:W:348:LEU:HD13	1.83	0.61
9:J:137:GLN:HB3	9:J:171:MET:HB3	1.81	0.61
9:L:136:PHE:HB3	9:L:170:GLY:HA3	1.83	0.61
9:J:91:VAL:HA	9:J:112:LEU:HD11	1.81	0.60
7:B:122:GLU:HA	7:B:125:VAL:HG22	1.82	0.60
9:M:246:ARG:HD3	9:M:250:TYR:OH	2.01	0.60
10:O:72:THR:HA	10:O:75:PHE:CD2	2.36	0.60
8:E:438:ILE:HB	8:E:478:TYR:HE1	1.65	0.60
9:H:14:ARG:HH22	9:H:60:LYS:HZ2	1.49	0.60
10:O:127:CYS:HB2	10:O:169:TYR:OH	2.01	0.60
12:W:266:LYS:HD3	12:W:538:ARG:NE	2.16	0.60
8:E:179:ARG:HH21	8:E:180:LYS:HD2	1.66	0.60
9:K:314:HIS:CG	9:K:315:SER:H	2.20	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:275:LEU:HD22	10:N:279:LEU:HD22	1.82	0.60
8:E:441:TYR:HB3	8:E:473:LYS:HE2	1.82	0.60
14:V:127:GLU:O	14:V:131:ARG:HG2	2.01	0.60
8:C:547:ASP:O	8:C:551:VAL:HG22	2.02	0.60
8:D:411:VAL:HA	8:D:414:LYS:HZ3	1.67	0.60
9:K:105:LEU:HB2	9:K:118:ARG:HH22	1.66	0.60
14:S:105:SER:HB3	14:S:108:VAL:HG22	1.82	0.60
9:M:96:GLU:HA	9:M:99:VAL:HG12	1.84	0.60
14:T:141:TRP:CD1	14:T:141:TRP:H	2.19	0.60
8:F:513:TRP:O	8:F:514:GLN:C	2.45	0.60
10:N:204:LEU:HD21	10:N:224:VAL:HG21	1.83	0.60
9:H:96:GLU:HA	9:H:99:VAL:HG12	1.84	0.60
8:D:557:ARG:C	8:D:559:ARG:H	2.09	0.60
8:F:380:LEU:HB3	8:F:385:ILE:HG23	1.84	0.60
12:W:26:LEU:HD12	12:W:253:THR:HB	1.83	0.60
8:E:292:ILE:HD11	8:E:390:LEU:HB3	1.83	0.60
14:V:152:TRP:HB3	14:V:213:LEU:HD12	1.82	0.60
9:I:77:ILE:HD12	9:I:78:PRO:HD2	1.84	0.60
8:C:559:ARG:HH21	8:C:560:ARG:HG3	1.67	0.60
9:K:137:GLN:HG3	9:K:171:MET:HE1	1.84	0.60
9:K:177:VAL:HG23	9:K:178:LEU:HD22	1.84	0.60
14:S:13:ILE:H	14:S:13:ILE:HD12	1.67	0.60
7:A:9:SER:HA	7:A:13:ARG:HE	1.67	0.59
7:A:184:ARG:HH12	7:A:221:GLU:HB3	1.66	0.59
9:M:118:ARG:O	9:M:122:LEU:HG	2.02	0.59
10:O:255:ILE:O	10:O:259:VAL:HG23	2.01	0.59
9:J:206:PHE:O	9:J:210:LEU:HD12	2.03	0.59
9:K:46:MET:HA	9:K:168:ILE:HG23	1.84	0.59
14:T:39:LEU:HD12	14:T:40:LEU:H	1.67	0.59
14:T:187:TRP:O	14:T:191:VAL:HG12	2.03	0.59
4:4:102:DA:H2'	4:4:103:DT:H71	1.84	0.59
8:E:665:MET:N	8:E:665:MET:SD	2.76	0.59
10:O:115:PHE:HB3	10:O:220:ARG:HD3	1.84	0.59
12:W:167:LEU:HD12	12:W:168:GLY:H	1.68	0.59
8:E:484:ALA:HB1	8:E:504:TYR:CE1	2.38	0.59
14:T:332:ASN:HA	14:T:335:HIS:CD2	2.36	0.59
9:M:156:LYS:HA	9:M:187:ARG:HH12	1.67	0.59
9:G:131:ILE:HD11	9:G:166:ILE:HG12	1.84	0.59
14:T:131:ARG:N	14:T:131:ARG:HD3	2.18	0.59
5:5:21:DT:H1'	8:E:210:LYS:HA	1.83	0.59
11:P:31:PHE:CD2	11:P:69:LEU:HD13	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:S:274:TRP:HB3	14:S:332:ASN:HB3	1.85	0.59
6:6:32:DC:H2"	6:6:33:DC:H5"	1.82	0.59
9:H:242:MET:HA	9:H:245:LEU:HB3	1.84	0.59
8:D:553:THR:O	8:D:556:ILE:N	2.34	0.59
9:K:60:LYS:HE2	9:K:60:LYS:HA	1.83	0.59
8:F:237:ARG:HH21	8:D:559:ARG:C	2.11	0.59
9:H:94:ALA:HA	9:H:97:LEU:HB2	1.85	0.59
8:D:456:SER:HB2	8:D:502:ILE:HD12	1.85	0.59
9:K:303:PRO:HG2	9:K:306:ILE:HA	1.85	0.59
14:Q:265:GLY:HA2	14:Q:268:ILE:HD12	1.84	0.59
3:3:41:DG:H2"	3:3:42:DT:H5"	1.85	0.59
9:L:205:VAL:C	9:L:207:LYS:HD3	2.21	0.59
14:Q:142:LEU:HD11	14:Q:145:ASN:HB2	1.85	0.59
7:A:81:LEU:HB3	7:A:86:HIS:HE1	1.66	0.59
7:B:154:ARG:HB2	7:B:218:LEU:HD21	1.84	0.59
9:M:119:LEU:O	9:M:123:ILE:HG12	2.02	0.59
10:O:68:SER:O	10:O:71:ARG:HG3	2.03	0.59
12:W:568:VAL:CG2	12:W:569:GLY:H	2.13	0.59
9:M:97:LEU:HA	9:M:100:GLU:OE1	2.03	0.58
10:O:65:LYS:HZ3	13:7:61:DC:H1'	1.67	0.58
12:W:200:GLN:HG3	12:W:583:LEU:HD13	1.86	0.58
9:L:92:ASP:O	9:L:96:GLU:HG2	2.03	0.58
9:L:210:LEU:HB3	9:L:225:LEU:HD12	1.84	0.58
8:D:553:THR:O	8:D:554:ASN:C	2.43	0.58
9:K:229:SER:O	9:K:233:LYS:HG3	2.02	0.58
10:N:333:ASN:O	10:N:387:ARG:HG3	2.02	0.58
9:H:303:PRO:O	9:H:304:LYS:C	2.46	0.58
9:H:235:TYR:CE2	9:H:299:LEU:HA	2.39	0.58
12:W:153:LEU:HB3	12:W:161:TRP:HZ2	1.68	0.58
14:V:156:LEU:HD11	14:V:207:PHE:HB3	1.86	0.58
9:H:308:TRP:HB2	9:H:312:LEU:HD22	1.86	0.58
9:J:90:PRO:HA	9:J:93:ALA:HB3	1.85	0.58
10:O:275:LEU:HD11	10:O:327:GLU:HG2	1.85	0.58
12:W:341:LEU:HA	12:W:344:ASP:OD2	2.03	0.58
10:N:345:GLN:HA	10:N:345:GLN:NE2	2.19	0.58
12:W:201:ILE:HG23	12:W:213:LEU:HB3	1.86	0.58
9:H:77:ILE:HG13	9:H:80:LEU:H	1.68	0.58
9:H:313:ARG:HA	8:D:571:ARG:CD	2.34	0.58
9:L:48:TYR:HE1	9:L:191:GLN:HB3	1.69	0.58
14:T:306:PHE:HE2	14:T:347:PHE:HB3	1.69	0.58
12:W:265:ALA:HB1	12:W:267:PHE:CE1	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:7:63:DC:H2'	13:7:64:DC:C6	2.39	0.58
9:L:204:GLY:HA3	9:L:206:PHE:CE2	2.39	0.58
14:R:3:LEU:HB3	14:R:4:PRO:HD2	1.86	0.58
12:W:94:SER:HB2	12:W:198:LEU:HD22	1.85	0.58
12:W:281:TRP:CD1	12:W:282:LEU:HD12	2.39	0.58
8:E:485:VAL:HG12	8:E:500:ASN:HA	1.85	0.58
9:G:19:THR:HB	9:G:22:VAL:HG23	1.86	0.58
14:U:7:LEU:H	14:U:348:GLN:HG2	1.68	0.58
1:1:33:C:C5	14:R:227:PHE:HA	2.39	0.58
7:B:121:TRP:HA	7:B:124:LYS:NZ	2.17	0.58
8:F:240:LEU:HB3	8:F:542:ILE:HD13	1.86	0.58
10:O:194:HIS:HE1	10:O:196:ALA:HB3	1.66	0.58
10:O:258:GLU:HG3	10:O:282:LEU:HD11	1.84	0.58
8:E:142:SER:HB3	8:E:193:ALA:HB1	1.85	0.58
9:I:235:TYR:HE2	9:I:299:LEU:HA	1.69	0.58
7:A:107:LYS:HZ1	7:A:111:GLN:HB3	1.69	0.57
10:N:334:CYS:N	10:N:387:ARG:HE	2.01	0.57
10:O:129:PRO:HG3	10:O:158:ILE:HD12	1.85	0.57
10:O:226:TRP:HB3	10:O:235:PHE:HE1	1.68	0.57
9:J:45:MET:HB3	9:J:167:VAL:HG22	1.86	0.57
9:L:57:THR:O	9:L:61:LYS:HG2	2.03	0.57
14:R:38:THR:OG1	14:Q:227:PHE:HB3	2.04	0.57
10:O:294:LEU:HG	10:O:295:GLN:OE1	2.03	0.57
9:H:236:ALA:HB2	9:H:294:VAL:CG1	2.34	0.57
9:I:95:ARG:HH21	9:I:110:THR:HG22	1.68	0.57
9:L:19:THR:HG22	9:L:22:VAL:HG13	1.86	0.57
12:W:568:VAL:HG23	12:W:569:GLY:N	2.14	0.57
8:E:365:GLN:OE1	8:E:367:LEU:HB3	2.03	0.57
14:Q:157:THR:HB	14:Q:208:GLU:HB2	1.85	0.57
10:O:178:CYS:HB2	10:O:183:GLU:O	2.04	0.57
10:O:336:LEU:HA	10:O:339:ILE:HG22	1.85	0.57
8:E:348:GLY:O	8:E:352:THR:HG22	2.04	0.57
14:R:119:TYR:CD2	14:R:338:MET:HG3	2.39	0.57
1:1:9:C:C5	14:V:227:PHE:HA	2.39	0.57
1:1:33:C:H5	14:R:227:PHE:HA	1.70	0.57
7:A:167:VAL:O	7:A:171:ILE:HG12	2.05	0.57
12:W:503:ARG:NH2	14:V:11:ARG:HH22	2.02	0.57
14:S:73:VAL:HB	14:S:244:ARG:HH21	1.70	0.57
14:T:100:PRO:HG3	14:T:112:LEU:HD21	1.87	0.57
10:N:15:GLU:O	10:N:19:ILE:HG13	2.05	0.57
10:N:251:PHE:HB3	10:N:302:GLU:OE2	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:228:ASP:HA	8:E:242:ARG:HG2	1.86	0.57
14:S:67:GLN:NE2	14:S:68:GLY:H	2.02	0.57
9:M:175:LYS:HA	9:M:178:LEU:HD13	1.87	0.57
8:E:510:VAL:HG23	8:E:661:HIS:HB2	1.87	0.57
9:H:308:TRP:HB3	9:H:312:LEU:N	2.19	0.57
14:U:109:LYS:O	14:U:113:VAL:HG22	2.04	0.57
14:Q:12:SER:HB2	14:Q:342:ILE:HG13	1.86	0.57
9:M:195:ARG:HH22	9:M:304:LYS:HD3	1.69	0.57
8:E:447:VAL:N	8:E:466:ARG:HH12	2.03	0.57
9:G:33:ARG:HB2	9:G:130:LEU:HD22	1.87	0.57
9:H:47:VAL:HB	9:H:169:PHE:HD1	1.69	0.57
9:I:103:ASP:HB3	9:I:106:ALA:HB2	1.86	0.57
14:R:106:SER:HA	14:R:109:LYS:HD2	1.87	0.57
14:R:287:PHE:HZ	14:S:43:MET:HB2	1.69	0.57
14:T:274:TRP:HB3	14:T:332:ASN:HB3	1.86	0.57
10:O:115:PHE:CB	10:O:220:ARG:HD3	2.35	0.57
8:E:487:TRP:HZ3	8:E:498:THR:HG23	1.70	0.57
9:H:98:LEU:HD23	9:H:106:ALA:HB2	1.85	0.57
9:K:199:TYR:HE2	9:K:232:LYS:HE3	1.68	0.57
8:F:326:LEU:HD23	8:F:326:LEU:H	1.70	0.57
10:O:101:TYR:CD1	10:O:116:PRO:HG3	2.40	0.57
9:I:280:LYS:HB3	9:I:284:TRP:HD1	1.70	0.57
9:K:32:CYS:HB2	9:K:45:MET:HE1	1.86	0.57
12:W:286:HIS:HB3	12:W:320:MET:HG3	1.87	0.56
9:G:45:MET:HG3	9:G:167:VAL:HG13	1.87	0.56
9:H:145:ASN:HA	9:H:148:LEU:HD12	1.87	0.56
9:M:143:ARG:HH22	9:M:314:HIS:HB3	1.68	0.56
10:N:139:SER:H	10:N:142:TRP:HD1	1.52	0.56
12:W:16:THR:HA	12:W:19:LEU:HG	1.88	0.56
14:V:127:GLU:HG2	14:V:131:ARG:NH2	2.19	0.56
9:H:25:ILE:HG22	9:H:29:MET:SD	2.45	0.56
14:U:132:TYR:O	14:U:136:ILE:HG23	2.05	0.56
14:Q:178:ARG:O	14:Q:182:LYS:HG2	2.06	0.56
9:M:98:LEU:HA	9:M:101:MET:HE2	1.87	0.56
9:M:105:LEU:HB2	9:M:118:ARG:HH12	1.70	0.56
9:M:176:VAL:HA	9:M:179:GLN:HE21	1.71	0.56
12:W:49:LYS:HD3	13:7:18:DA:P	2.45	0.56
12:W:502:LYS:HZ1	14:V:94:SER:HB2	1.70	0.56
14:V:85:ILE:HG23	14:V:213:LEU:HB3	1.87	0.56
9:H:28:TYR:HB2	9:H:45:MET:HE1	1.88	0.56
9:L:155:LEU:HG	9:L:184:LEU:HD21	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:K:259:ASN:HB2	9:K:261:HIS:CE1	2.40	0.56
14:R:275:TYR:HB3	14:R:298:ARG:NH1	2.20	0.56
14:R:286:ARG:HG3	14:S:44:GLU:HA	1.85	0.56
10:N:293:ASN:H	10:N:385:PHE:HD2	1.53	0.56
9:J:132:ILE:HD13	9:J:167:VAL:HG12	1.87	0.56
14:R:114:GLN:O	14:R:118:LEU:HG	2.05	0.56
7:A:186:LEU:HA	7:A:189:GLN:HB2	1.88	0.56
10:N:150:CYS:HB3	10:N:155:VAL:HG22	1.87	0.56
10:O:114:VAL:HB	10:O:217:LYS:HE3	1.87	0.56
10:O:310:ARG:HH12	10:O:313:GLN:HB2	1.70	0.56
8:C:542:ILE:HD12	8:C:543:GLU:N	2.20	0.56
10:N:125:ILE:HG23	10:N:143:HIS:HA	1.87	0.56
10:N:130:LEU:HD23	10:N:133:ARG:HE	1.70	0.56
12:W:228:ARG:HH11	12:W:550:LEU:HB3	1.69	0.56
9:L:173:TYR:HD2	9:L:311:TYR:HB2	1.69	0.56
14:U:89:PHE:CE2	14:U:141:TRP:HE3	2.24	0.56
14:U:186:ASN:O	14:U:190:ILE:HG12	2.06	0.56
1:1:26:C:H5'	14:S:266:ALA:HB2	1.88	0.56
3:3:65:DA:H5'	8:D:442:LYS:HD2	1.87	0.56
9:M:225:LEU:HD22	9:M:234:LEU:HD11	1.88	0.56
10:N:47:ASN:HB3	10:N:49:TYR:CE2	2.41	0.56
14:V:36:SER:HA	14:V:74:ASP:HA	1.87	0.56
14:V:187:TRP:O	14:V:191:VAL:HG22	2.05	0.56
14:S:57:ILE:H	14:S:57:ILE:HD12	1.71	0.56
14:S:156:LEU:HB2	14:S:166:VAL:HG12	1.87	0.56
7:A:157:ARG:HD2	7:A:157:ARG:C	2.30	0.56
8:F:157:ARG:NH2	8:C:539:GLU:HB3	2.20	0.56
8:F:414:LYS:O	8:F:418:GLN:HG2	2.06	0.56
8:E:216:VAL:HG11	8:E:413:TRP:HA	1.87	0.56
8:E:444:LEU:HD13	8:E:472:HIS:HE1	1.69	0.56
8:C:458:SER:HA	8:C:462:LEU:HD23	1.87	0.56
8:D:557:ARG:HE	8:D:560:ARG:HH12	1.53	0.56
14:U:287:PHE:HA	14:U:298:ARG:HB2	1.88	0.56
12:W:62:CYS:SG	12:W:167:LEU:HD21	2.46	0.56
12:W:66:LEU:HD11	12:W:167:LEU:HG	1.88	0.56
9:L:118:ARG:O	9:L:122:LEU:HG	2.06	0.56
8:F:84:TYR:HB3	8:F:86:ARG:NH1	2.21	0.56
9:M:53:VAL:HG23	9:M:194:LEU:HD13	1.88	0.56
9:M:54:GLY:HA2	15:M:600:ATP:PA	2.46	0.56
12:W:105:GLU:O	12:W:106:LEU:HB2	2.06	0.56
10:N:329:THR:HG23	10:N:334:CYS:HB2	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:205:VAL:HG22	9:I:209:PHE:CZ	2.41	0.55
10:O:41:LEU:HG	10:O:77:LYS:HZ2	1.71	0.55
10:O:41:LEU:HG	10:O:77:LYS:NZ	2.21	0.55
10:O:73:ALA:HA	10:O:76:LEU:HD12	1.89	0.55
12:W:40:LEU:O	12:W:44:VAL:HG23	2.05	0.55
12:W:266:LYS:HD3	12:W:538:ARG:HE	1.71	0.55
9:H:313:ARG:CZ	8:D:574:SER:C	2.73	0.55
14:U:18:VAL:HG22	14:U:89:PHE:HD2	1.70	0.55
14:Q:130:THR:O	14:Q:134:MET:HG2	2.06	0.55
7:A:109:ALA:HA	7:A:112:ILE:HG12	1.87	0.55
10:O:19:ILE:HG21	10:O:174:LEU:HB2	1.89	0.55
9:H:92:ASP:HA	9:H:95:ARG:HB2	1.89	0.55
9:H:206:PHE:O	9:H:210:LEU:HG	2.06	0.55
9:J:51:SER:HA	9:J:55:LYS:HE2	1.88	0.55
9:J:191:GLN:HE21	9:K:278:GLY:H	1.52	0.55
14:U:334:MET:O	14:U:338:MET:HG3	2.06	0.55
7:B:150:ASN:O	7:B:154:ARG:HG2	2.07	0.55
10:N:274:ARG:HE	10:N:365:TYR:HD2	1.54	0.55
8:E:498:THR:HG22	8:E:500:ASN:H	1.72	0.55
14:R:125:TRP:CZ3	14:R:198:PHE:HB3	2.41	0.55
14:T:144:LYS:HZ1	14:T:147:ARG:HH11	1.54	0.55
14:U:190:ILE:O	14:U:194:ILE:HG13	2.06	0.55
4:4:85:DT:H2"	4:4:86:DA:C8	2.42	0.55
8:F:148:VAL:HG11	8:F:182:VAL:HG21	1.87	0.55
10:N:156:PRO:HG3	10:N:190:ARG:O	2.05	0.55
8:E:69:VAL:HG22	8:E:71:LYS:H	1.71	0.55
8:C:365:GLN:HG3	8:C:369:ARG:HD2	1.88	0.55
7:A:13:ARG:HH22	7:A:99:ASN:HB3	1.72	0.55
12:W:54:LYS:HD3	12:W:55:ASP:H	1.72	0.55
12:W:338:ILE:HA	12:W:341:LEU:HD13	1.88	0.55
8:E:657:SER:O	8:E:661:HIS:N	2.39	0.55
9:K:90:PRO:HG3	9:K:151:VAL:HA	1.88	0.55
14:S:184:ASN:HB2	14:S:187:TRP:HB2	1.87	0.55
8:F:233:HIS:HB2	8:F:240:LEU:HD21	1.89	0.55
9:M:136:PHE:HZ	9:M:155:LEU:HD11	1.70	0.55
10:O:301:GLY:HA2	10:O:390:TYR:CE1	2.42	0.55
9:K:242:MET:HE3	15:K:600:ATP:C8	2.42	0.55
7:A:41:VAL:HG12	7:A:208:ARG:HH22	1.71	0.55
9:M:59:ILE:HG21	9:M:81:HIS:CD2	2.41	0.55
12:W:36:GLU:HA	12:W:39:ALA:HB3	1.89	0.55
12:W:66:LEU:HD21	12:W:164:LEU:HD11	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:146:ILE:H	12:W:146:ILE:HD12	1.72	0.55
8:C:545:ILE:HA	8:C:548:ARG:HG2	1.89	0.55
8:F:177:SER:O	8:F:181:ARG:HG2	2.07	0.55
12:W:221:MET:HE3	12:W:405:VAL:HG21	1.89	0.55
12:W:237:ALA:HB3	12:W:260:MET:HB3	1.87	0.55
8:D:227:VAL:HG23	8:D:242:ARG:HH12	1.70	0.55
14:Q:290:HIS:NE2	14:Q:292:GLU:HB2	2.22	0.55
10:N:326:LEU:HB2	10:N:362:VAL:HA	1.89	0.55
10:O:96:ARG:HA	10:O:107:ALA:O	2.07	0.55
9:G:270:VAL:HG13	9:G:289:GLU:HG3	1.89	0.55
8:F:451:VAL:HB	8:F:455:LEU:HD23	1.88	0.54
10:N:227:TRP:NE1	10:N:299:ILE:HG21	2.19	0.54
10:N:378:ALA:HB2	10:N:389:PHE:HD1	1.72	0.54
12:W:282:LEU:HA	12:W:286:HIS:HB2	1.89	0.54
12:W:487:PHE:HB2	12:W:489:GLN:OE1	2.08	0.54
9:H:137:GLN:H	9:H:137:GLN:CD	2.15	0.54
8:D:282:LYS:HE3	8:D:298:CYS:H	1.72	0.54
8:D:551:VAL:O	8:D:552:LYS:C	2.50	0.54
3:3:83:DA:H2"	3:3:84:DT:H5"	1.89	0.54
8:F:57:ILE:HD11	8:F:88:ILE:HD12	1.89	0.54
10:N:267:VAL:HG12	10:N:268:VAL:HG22	1.90	0.54
10:N:345:GLN:HE21	10:N:345:GLN:CA	2.19	0.54
10:N:366:LEU:HD23	10:N:366:LEU:O	2.07	0.54
12:W:201:ILE:HG21	12:W:570:TYR:HE1	1.72	0.54
8:E:238:ILE:HD11	8:E:691:ARG:NE	2.22	0.54
8:E:658:LEU:N	8:E:661:HIS:HB3	2.22	0.54
9:L:205:VAL:C	9:L:208:THR:H	2.15	0.54
9:K:21:SER:O	9:K:25:ILE:HG13	2.07	0.54
14:U:141:TRP:CD1	14:U:142:LEU:HD12	2.42	0.54
1:1:11:G:N2	14:U:346:MET:HE2	2.22	0.54
8:F:521:TYR:C	8:F:523:ALA:H	2.15	0.54
8:F:530:TYR:HE1	8:F:545:ILE:HG21	1.71	0.54
9:M:209:PHE:HB3	9:M:213:LEU:HB3	1.90	0.54
12:W:569:GLY:HA2	12:W:594:ILE:N	2.21	0.54
8:E:658:LEU:HA	8:E:661:HIS:HB3	1.88	0.54
9:G:84:LEU:HG	9:G:85:PRO:HD2	1.89	0.54
7:A:140:GLU:HA	7:A:143:ILE:HD12	1.88	0.54
7:A:157:ARG:HD2	7:A:157:ARG:O	2.07	0.54
14:V:330:THR:O	14:V:334:MET:HG3	2.07	0.54
9:L:84:LEU:HD22	9:L:136:PHE:HD1	1.72	0.54
2:2:15:DA:P	8:E:684:LYS:HE3	2.48	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:143:ILE:O	7:B:149:LEU:HD21	2.07	0.54
8:F:92:ILE:HD12	8:F:93:THR:N	2.22	0.54
8:F:529:GLU:C	8:F:531:ASP:N	2.65	0.54
10:O:59:ILE:HA	10:O:71:ARG:NH2	2.21	0.54
11:P:107:ILE:HB	11:P:166:ASN:HD22	1.72	0.54
12:W:202:SER:HA	12:W:212:SER:HA	1.90	0.54
12:W:281:TRP:HD1	12:W:282:LEU:HD12	1.71	0.54
12:W:352:LYS:HE3	12:W:352:LYS:HA	1.89	0.54
12:W:422:PHE:O	12:W:426:ILE:HG12	2.08	0.54
9:G:147:VAL:O	9:G:151:VAL:HG12	2.07	0.54
9:I:273:SER:HB2	9:I:286:ASN:HD21	1.72	0.54
9:L:206:PHE:O	9:L:209:PHE:HB3	2.08	0.54
9:K:16:PHE:HA	15:K:600:ATP:H2	1.72	0.54
14:U:306:PHE:HA	14:U:309:ILE:HD12	1.90	0.54
3:3:74:DA:H2'	8:F:369:ARG:HH12	1.72	0.54
9:M:17:VAL:H	15:M:600:ATP:HN62	1.54	0.54
9:H:172:PRO:O	9:H:308:TRP:NE1	2.40	0.54
9:J:43:THR:HG23	9:J:189:SER:HB3	1.88	0.54
7:B:25:ARG:HB2	7:B:73:LYS:HG3	1.88	0.54
10:N:170:ARG:HH11	10:N:170:ARG:HG3	1.73	0.54
12:W:419:VAL:O	12:W:423:GLU:HG3	2.07	0.54
8:E:509:ARG:HH21	8:E:671:GLU:HG3	1.71	0.54
14:V:24:TRP:CD1	14:V:28:ARG:HE	2.26	0.54
10:N:298:ILE:C	10:N:299:ILE:HD12	2.33	0.54
10:O:211:PRO:HB2	10:O:219:TYR:OH	2.08	0.54
12:W:115:LYS:HG2	12:W:115:LYS:O	2.08	0.54
8:E:660:GLN:O	8:E:664:ASN:N	2.28	0.54
14:V:127:GLU:HG2	14:V:131:ARG:HH21	1.73	0.54
9:L:57:THR:HG23	9:L:61:LYS:HE3	1.90	0.54
1:1:8:C:H1'	14:V:263:LYS:HE2	1.90	0.54
7:A:175:ILE:HG12	7:A:210:LEU:HG	1.90	0.54
10:O:339:ILE:HA	10:O:342:MET:HE3	1.89	0.54
8:E:132:ILE:HG12	8:E:158:LYS:HD2	1.90	0.54
8:C:554:ASN:HB2	8:C:557:ARG:HH21	1.72	0.54
14:R:1:MET:HB2	14:R:2:LYS:HG2	1.90	0.54
14:T:227:PHE:HE2	14:U:40:LEU:HD13	1.72	0.54
10:O:128:CYS:HB2	10:O:142:TRP:CH2	2.42	0.54
12:W:274:ARG:HH12	12:W:276:ASN:HB2	1.72	0.54
12:W:325:PHE:HB3	12:W:330:HIS:CD2	2.42	0.54
9:H:57:THR:HG21	15:H:600:ATP:C6	2.43	0.54
8:D:507:ALA:HA	8:D:510:VAL:HB	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:U:112:LEU:O	14:U:116:VAL:HG22	2.08	0.54
14:Q:20:PHE:HD2	14:Q:257:PRO:HG2	1.73	0.54
7:A:37:ARG:HH21	8:F:329:VAL:HG22	1.72	0.53
8:F:528:ALA:O	8:F:530:TYR:N	2.37	0.53
9:H:220:GLU:HG3	9:H:221:LYS:HG3	1.89	0.53
9:J:214:ASP:HA	9:J:217:LEU:HB2	1.89	0.53
8:F:240:LEU:HD12	8:F:382:LEU:HD21	1.89	0.53
8:F:443:GLN:HB3	8:F:445:THR:HG23	1.89	0.53
9:K:314:HIS:CG	9:K:315:SER:N	2.76	0.53
14:S:133:LEU:HA	14:S:136:ILE:HG22	1.90	0.53
14:T:141:TRP:HZ2	14:T:154:ILE:HD12	1.71	0.53
7:A:111:GLN:OE1	7:A:114:LYS:HE2	2.08	0.53
10:O:147:TYR:CZ	10:O:203:TRP:HB3	2.44	0.53
10:O:226:TRP:HB3	10:O:235:PHE:CE1	2.43	0.53
12:W:105:GLU:O	12:W:110:LEU:HG	2.07	0.53
12:W:452:LEU:HB3	14:V:227:PHE:CD2	2.43	0.53
9:G:89:LYS:HE3	9:G:90:PRO:HD2	1.90	0.53
9:I:143:ARG:HD3	9:I:145:ASN:H	1.73	0.53
8:C:294:ASN:HB2	8:C:394:VAL:HG13	1.91	0.53
14:S:269:ALA:HB1	14:S:284:VAL:HG12	1.90	0.53
3:3:152:DC:H2"	3:3:153:DG:O4'	2.08	0.53
12:W:159:PRO:HA	12:W:162:ASN:HB2	1.90	0.53
12:W:218:SER:HB2	12:W:221:MET:HB2	1.89	0.53
9:G:136:PHE:HE1	9:G:151:VAL:HG21	1.73	0.53
9:H:155:LEU:HD22	9:H:166:ILE:HG21	1.90	0.53
9:J:84:LEU:HB2	9:J:135:GLU:HG3	1.90	0.53
9:L:46:MET:HB3	9:L:191:GLN:HG3	1.91	0.53
9:L:119:LEU:HD12	9:L:123:ILE:HD11	1.89	0.53
3:3:152:DC:OP1	14:U:350:LYS:HE3	2.09	0.53
7:B:154:ARG:HA	7:B:157:ARG:HE	1.73	0.53
9:M:80:LEU:HD23	9:M:128:VAL:HG21	1.89	0.53
9:M:178:LEU:H	9:M:178:LEU:HD12	1.72	0.53
12:W:70:LYS:HE3	12:W:70:LYS:H	1.73	0.53
9:J:208:THR:HA	9:J:211:GLU:HG2	1.90	0.53
9:K:294:VAL:HG22	9:K:296:GLU:H	1.73	0.53
14:S:227:PHE:HE2	14:T:40:LEU:HB3	1.74	0.53
14:U:184:ASN:HB2	14:U:187:TRP:HB2	1.89	0.53
3:3:70:DC:H1'	8:F:344:GLU:HB3	1.91	0.53
9:M:91:VAL:HG23	9:M:112:LEU:HD13	1.90	0.53
10:N:227:TRP:HE3	10:N:228:MET:H	1.55	0.53
10:N:246:ASN:HA	10:N:249:ARG:HH21	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:560:ASP:OD2	12:W:563:LEU:HD13	2.08	0.53
8:E:259:PHE:H	8:E:277:ASN:ND2	2.06	0.53
8:E:292:ILE:HG23	8:E:394:VAL:HG11	1.90	0.53
9:H:313:ARG:HB3	8:D:571:ARG:CG	2.18	0.53
9:J:191:GLN:HE21	9:K:278:GLY:N	2.06	0.53
9:L:120:THR:HG22	9:L:161:LYS:HB3	1.90	0.53
9:L:195:ARG:HH12	9:L:197:PHE:HA	1.73	0.53
14:R:119:TYR:CE2	14:R:338:MET:HG3	2.44	0.53
14:S:264:THR:O	14:S:268:ILE:HG12	2.08	0.53
8:F:74:GLU:HA	8:F:77:ARG:HG3	1.89	0.53
8:F:137:VAL:HA	8:F:140:VAL:HG12	1.90	0.53
10:N:376:TRP:CE3	10:N:376:TRP:HA	2.44	0.53
14:V:149:ALA:HA	14:V:215:LEU:HD23	1.91	0.53
9:J:41:GLU:HG2	9:J:163:LYS:NZ	2.24	0.53
9:K:230:LEU:HA	9:K:233:LYS:NZ	2.23	0.53
8:F:477:LYS:HG2	8:F:487:TRP:HB2	1.90	0.53
12:W:66:LEU:HD23	12:W:72:TRP:HZ2	1.73	0.53
9:H:86:ASP:HB3	9:H:138:HIS:HB3	1.90	0.53
8:C:289:TYR:HB2	8:C:292:ILE:HD12	1.89	0.53
1:1:6:A:H5”	14:V:11:ARG:HE	1.72	0.53
3:3:132:DT:H1’	14:R:1:MET:HA	1.91	0.53
6:6:25:DG:H2”	6:6:26:DA:C8	2.44	0.53
10:N:302:GLU:HA	10:N:306:TYR:CD2	2.44	0.53
12:W:281:TRP:HZ2	12:W:344:ASP:OD1	1.91	0.53
12:W:303:GLU:HA	12:W:306:ARG:HG2	1.89	0.53
8:E:54:ARG:HH11	8:E:97:TRP:HE1	1.57	0.53
9:H:140:VAL:HG23	9:H:141:GLU:H	1.74	0.53
9:H:294:VAL:HG11	9:H:299:LEU:HD21	1.90	0.53
14:S:87:CYS:HB2	14:S:211:ALA:HB3	1.90	0.53
14:S:227:PHE:HB3	14:T:38:THR:OG1	2.08	0.53
10:N:288:ARG:HH12	10:N:292:ARG:N	2.06	0.52
12:W:313:TYR:O	12:W:317:LEU:HG	2.09	0.52
9:G:207:LYS:O	9:G:211:GLU:HG2	2.09	0.52
14:U:4:PRO:HD3	14:U:108:VAL:HG21	1.91	0.52
8:F:198:ARG:HH21	8:F:202:ARG:HG2	1.73	0.52
9:M:55:LYS:HB2	9:M:169:PHE:HD2	1.74	0.52
9:M:90:PRO:HG2	9:M:150:GLN:HG3	1.90	0.52
12:W:278:LYS:NZ	12:W:327:MET:HE3	2.24	0.52
12:W:324:TRP:HH2	12:W:340:HIS:CE1	2.27	0.52
9:I:48:TYR:HB2	9:I:172:PRO:HG3	1.90	0.52
8:D:478:TYR:HA	8:D:486:ILE:HG22	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:R:127:GLU:OE1	14:R:131:ARG:HD2	2.09	0.52
1:1:30:A:H5'	14:R:346:MET:HE1	1.91	0.52
3:3:74:DA:H2'	3:3:74:DA:N3	2.24	0.52
3:3:116:DC:H2'	3:3:117:DT:H71	1.90	0.52
3:3:161:DT:H2"	3:3:162:DA:C8	2.44	0.52
8:F:387:GLU:O	8:F:391:ILE:HG12	2.10	0.52
12:W:75:CYS:O	12:W:79:VAL:HG12	2.08	0.52
8:E:154:ARG:HE	8:E:157:ARG:HH21	1.56	0.52
14:V:329:GLU:H	14:V:329:GLU:CD	2.17	0.52
9:M:82:ILE:HD11	9:M:133:ILE:HD13	1.91	0.52
9:M:105:LEU:HG	10:O:40:PHE:CZ	2.44	0.52
10:O:65:LYS:HE2	13:7:61:DC:O3'	2.09	0.52
12:W:450:ARG:HH11	14:V:247:GLN:HG2	1.75	0.52
9:I:171:MET:HE2	9:I:171:MET:HA	1.90	0.52
14:U:330:THR:O	14:U:334:MET:HG2	2.09	0.52
3:3:150:DC:H2"	3:3:151:DC:H5"	1.92	0.52
8:F:154:ARG:HD2	8:F:157:ARG:HD2	1.90	0.52
10:O:108:VAL:O	10:O:114:VAL:HG22	2.10	0.52
10:O:247:TRP:HB3	10:O:248:PRO:HD3	1.91	0.52
8:E:658:LEU:O	8:E:659:TRP:C	2.52	0.52
8:C:361:LYS:HG2	8:C:363:PHE:H	1.75	0.52
8:D:367:LEU:HD22	8:D:392:TRP:HB2	1.90	0.52
9:K:246:ARG:HA	9:K:249:ILE:HB	1.91	0.52
14:R:34:TYR:HD1	14:R:257:PRO:HD3	1.73	0.52
3:3:156:DA:H2"	3:3:157:DA:C8	2.45	0.52
13:7:83:DT:H2"	13:7:84:DC:C6	2.45	0.52
8:D:222:ILE:HD11	8:D:308:ASP:H	1.75	0.52
9:K:213:LEU:O	9:K:217:LEU:HD22	2.09	0.52
14:Q:20:PHE:HE2	14:Q:223:PRO:HG3	1.75	0.52
8:E:393:LEU:HA	8:E:398:HIS:CE1	2.45	0.52
9:J:8:ARG:HD3	9:J:257:ILE:HG23	1.90	0.52
14:R:217:THR:HG22	14:R:218:ASN:OD1	2.10	0.52
8:F:54:ARG:HD3	8:F:111:LEU:HD22	1.92	0.52
8:F:381:THR:O	8:F:385:ILE:HG12	2.10	0.52
8:E:446:LYS:HZ1	9:K:313:ARG:HB3	1.73	0.52
8:D:226:VAL:HG13	8:D:242:ARG:HH21	1.74	0.52
14:T:306:PHE:CE1	14:T:340:ASN:ND2	2.77	0.52
3:3:136:DG:H1'	14:T:70:PRO:HG2	1.91	0.52
7:A:170:SER:HA	7:A:173:LYS:HD2	1.92	0.52
9:M:149:THR:HG21	9:G:107:LEU:HD13	1.91	0.52
10:O:85:GLU:N	10:O:86:PRO:HD2	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:43:LEU:HB3	12:W:135:PHE:CD1	2.45	0.52
12:W:201:ILE:HG21	12:W:570:TYR:CE1	2.45	0.52
8:E:259:PHE:HE1	8:E:261:LEU:HB2	1.75	0.52
9:I:199:TYR:HB2	9:I:235:TYR:CZ	2.45	0.52
14:U:153:ASN:HB2	14:U:212:THR:HB	1.92	0.52
4:4:112:DC:H3'	8:E:688:ILE:HD11	1.85	0.51
7:A:20:PHE:HA	7:A:71:THR:HB	1.91	0.51
10:O:371:ASP:O	10:O:375:LEU:HB2	2.11	0.51
9:J:28:TYR:CE1	9:K:275:LEU:HD11	2.46	0.51
14:R:2:LYS:HB3	14:R:346:MET:HG2	1.92	0.51
3:3:129:DG:H2"	14:S:67:GLN:CD	2.35	0.51
6:6:47:DT:H2"	6:6:48:DA:N7	2.25	0.51
9:M:306:ILE:HB	9:M:308:TRP:HD1	1.76	0.51
12:W:191:VAL:HG11	12:W:590:ILE:HD11	1.91	0.51
12:W:608:ASP:HB3	12:W:611:THR:HG23	1.92	0.51
8:E:261:LEU:HD23	8:E:386:ARG:HD2	1.92	0.51
9:G:105:LEU:HG	9:G:118:ARG:HE	1.75	0.51
9:K:45:MET:HB2	9:K:167:VAL:HG22	1.91	0.51
14:S:157:THR:HB	14:S:208:GLU:HB2	1.93	0.51
7:A:42:LYS:HE3	7:A:208:ARG:HD3	1.91	0.51
12:W:619:TYR:HE2	12:W:624:VAL:HG12	1.74	0.51
14:V:157:THR:HB	14:V:208:GLU:HB2	1.92	0.51
14:V:350:LYS:HD2	14:V:350:LYS:C	2.35	0.51
9:G:13:LYS:HE2	9:G:250:TYR:CZ	2.45	0.51
3:3:116:DC:H2"	3:3:117:DT:O5'	2.10	0.51
8:F:463:ALA:HA	8:F:466:ARG:HE	1.76	0.51
13:7:12:DA:H2"	13:7:13:DA:C8	2.46	0.51
13:7:14:DG:H2'	13:7:15:DT:H71	1.93	0.51
14:V:181:PHE:HB3	14:V:187:TRP:CD1	2.45	0.51
9:H:132:ILE:HG13	9:H:167:VAL:HG23	1.93	0.51
9:H:235:TYR:CD2	9:H:299:LEU:HA	2.46	0.51
9:J:139:LEU:HD23	9:J:139:LEU:H	1.75	0.51
8:C:434:PHE:HB2	8:C:487:TRP:CE2	2.46	0.51
8:D:553:THR:C	8:D:555:LYS:H	2.17	0.51
9:K:141:GLU:HB2	9:K:146:ARG:HG3	1.91	0.51
14:S:226:VAL:HG23	14:S:247:GLN:HA	1.90	0.51
10:O:60:ASN:HB2	10:O:62:TYR:CD2	2.45	0.51
10:O:176:GLY:HA2	10:O:185:ILE:HG13	1.93	0.51
11:P:13:GLU:CD	11:P:13:GLU:H	2.18	0.51
14:V:133:LEU:HD21	14:V:194:ILE:HG21	1.91	0.51
14:V:309:ILE:HG23	14:V:316:TYR:HE2	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:V:337:LEU:HA	14:V:340:ASN:ND2	2.26	0.51
9:G:185:HIS:CD2	9:H:278:GLY:C	2.88	0.51
1:1:9:C:O2'	14:V:225:GLN:HG2	2.11	0.51
7:B:21:GLU:HG3	7:B:22:THR:HG23	1.91	0.51
7:B:79:TYR:HD2	7:B:86:HIS:HB2	1.74	0.51
7:B:144:ARG:HH12	7:B:146:THR:HG23	1.75	0.51
9:M:98:LEU:HD11	9:M:115:LEU:HD11	1.93	0.51
9:M:236:ALA:HB3	9:M:287:PRO:HG3	1.91	0.51
12:W:47:THR:HG21	12:W:71:TRP:HE1	1.76	0.51
8:E:132:ILE:HG22	8:E:155:VAL:HG22	1.92	0.51
13:7:68:DC:H2"	13:7:69:DG:C8	2.45	0.51
9:K:271:PHE:HA	9:K:274:LYS:HZ3	1.75	0.51
14:R:3:LEU:HD21	14:R:307:PHE:CG	2.46	0.51
14:T:226:VAL:HG12	14:T:247:GLN:HG3	1.93	0.51
4:4:112:DC:O3'	8:E:688:ILE:HD12	2.10	0.51
10:N:110:ARG:HB2	10:N:115:PHE:CE2	2.45	0.51
10:N:288:ARG:HH12	10:N:291:GLU:C	2.17	0.51
10:O:110:ARG:NE	10:O:144:PHE:CZ	2.65	0.51
12:W:453:THR:HG23	12:W:454:ALA:H	1.76	0.51
8:E:236:TYR:CE2	8:E:683:VAL:HG21	2.45	0.51
9:H:21:SER:O	9:H:24:LYS:HG2	2.11	0.51
9:L:82:ILE:HB	9:L:132:ILE:O	2.10	0.51
14:S:12:SER:HB2	14:S:96:GLU:OE1	2.11	0.51
14:T:132:TYR:CE2	14:T:342:ILE:HG21	2.46	0.51
6:6:37:DA:H2"	6:6:38:DA:C8	2.46	0.51
7:B:145:ASP:O	7:B:149:LEU:HG	2.10	0.51
8:F:518:ASN:HA	8:F:525:LEU:HD23	1.92	0.51
9:M:17:VAL:HB	9:M:213:LEU:HA	1.92	0.51
10:N:7:LYS:HB2	10:N:9:TYR:CE2	2.46	0.51
8:E:236:TYR:CE2	8:E:683:VAL:CG2	2.94	0.51
14:V:18:VAL:HG22	14:V:89:PHE:HB3	1.93	0.51
9:L:119:LEU:CD1	9:L:123:ILE:HD11	2.41	0.51
8:C:547:ASP:O	8:C:550:ILE:HG13	2.11	0.51
8:D:483:MET:HE3	8:D:511:SER:HA	1.91	0.51
14:R:126:THR:HG22	14:R:195:LYS:HZ1	1.75	0.51
14:S:120:GLU:HG2	14:S:125:TRP:HE1	1.75	0.51
14:S:249:THR:HG23	14:S:258:ILE:HD13	1.92	0.51
14:T:270:THR:HA	14:T:283:ARG:HA	1.92	0.51
14:Q:290:HIS:HE2	14:Q:292:GLU:HB2	1.75	0.51
2:2:12:DT:H2"	2:2:13:DG:C8	2.46	0.51
6:6:17:DG:H4'	6:6:18:DC:H5'	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:390:TYR:O	10:N:391:VAL:HG23	2.11	0.51
10:O:342:MET:HA	10:O:345:GLN:HB3	1.93	0.51
12:W:338:ILE:HG13	12:W:368:LEU:HD21	1.92	0.51
12:W:529:ILE:HG12	12:W:539:TRP:CZ2	2.46	0.51
9:G:82:ILE:HD12	9:G:100:GLU:HG3	1.93	0.51
9:G:98:LEU:HA	9:G:101:MET:HE2	1.93	0.51
14:R:1:MET:HE3	14:R:349:HIS:HA	1.93	0.51
14:T:184:ASN:HB3	14:T:187:TRP:HB2	1.93	0.51
8:F:437:ALA:HB3	8:F:477:LYS:HD3	1.93	0.51
8:F:457:TYR:HA	8:F:501:ALA:HA	1.93	0.51
10:N:127:CYS:HG	10:N:142:TRP:CD1	2.29	0.51
10:N:343:VAL:HG22	10:N:348:LEU:O	2.11	0.51
10:O:247:TRP:HH2	10:O:298:ILE:HB	1.76	0.51
12:W:102:ALA:HB1	12:W:571:HIS:NE2	2.26	0.51
12:W:291:LYS:HZ1	12:W:353:ARG:HD2	1.75	0.51
8:E:140:VAL:HG23	8:E:151:ALA:HB2	1.92	0.51
9:G:81:HIS:HA	9:G:132:ILE:HG23	1.93	0.51
9:H:133:ILE:HB	9:H:168:ILE:HG22	1.93	0.51
14:T:118:LEU:HD21	14:T:317:ILE:HA	1.92	0.51
9:M:14:ARG:HD2	9:M:16:PHE:CE2	2.46	0.50
10:O:62:TYR:HD1	10:O:117:ARG:HH21	1.58	0.50
11:P:43:SER:HB3	11:P:57:SER:HB2	1.93	0.50
12:W:70:LYS:HE3	12:W:70:LYS:N	2.26	0.50
12:W:106:LEU:HD12	12:W:107:PRO:HD2	1.92	0.50
14:S:306:PHE:CE2	14:S:310:LEU:HD22	2.46	0.50
14:T:227:PHE:CZ	14:U:70:PRO:HB3	2.46	0.50
14:T:275:TYR:HB3	14:T:298:ARG:NH1	2.27	0.50
14:Q:291:ARG:HA	14:Q:294:VAL:HA	1.93	0.50
14:Q:309:ILE:H	14:Q:309:ILE:HD12	1.75	0.50
6:6:22:DG:C6	8:F:338:ASP:OD1	2.64	0.50
10:O:5:ARG:NE	10:O:83:PHE:HB2	2.26	0.50
10:O:221:TRP:CE3	10:O:289:LEU:HA	2.45	0.50
12:W:266:LYS:HD2	12:W:267:PHE:N	2.27	0.50
8:E:688:ILE:O	8:E:692:ARG:HG3	2.11	0.50
14:V:50:TYR:HB3	14:V:54:GLY:HA2	1.93	0.50
9:G:135:GLU:HB2	9:G:138:HIS:CE1	2.46	0.50
9:H:173:TYR:CB	9:H:311:TYR:HB2	2.41	0.50
9:J:214:ASP:CB	9:J:221:LYS:HD2	2.42	0.50
8:F:144:ARG:CZ	8:E:359:PRO:HA	2.41	0.50
12:W:29:HIS:CG	12:W:146:ILE:HG21	2.45	0.50
8:E:390:LEU:HA	8:E:393:LEU:HD12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:L:243:ARG:HH21	9:K:187:ARG:CZ	2.23	0.50
7:A:107:LYS:NZ	7:A:111:GLN:HB3	2.25	0.50
7:A:125:VAL:HG12	7:A:135:LEU:HB3	1.94	0.50
8:F:258:GLY:HA3	8:F:278:ALA:HB2	1.92	0.50
12:W:364:PHE:O	12:W:368:LEU:HG	2.12	0.50
8:E:663:TYR:O	8:E:664:ASN:C	2.54	0.50
9:I:233:LYS:HG3	9:I:288:PHE:CE1	2.46	0.50
8:D:380:LEU:HD13	8:D:385:ILE:HB	1.93	0.50
14:Q:225:GLN:C	14:Q:247:GLN:HE22	2.20	0.50
7:A:107:LYS:NZ	7:A:111:GLN:H	2.08	0.50
8:F:63:ARG:HD3	8:D:326:LEU:HD12	1.93	0.50
9:M:63:LEU:HD11	9:M:81:HIS:ND1	2.26	0.50
10:N:23:ASN:HD22	10:N:175:LYS:HE3	1.77	0.50
10:O:252:HIS:HA	10:O:255:ILE:HG13	1.92	0.50
8:E:503:ASP:O	8:E:504:TYR:C	2.54	0.50
8:C:443:GLN:HA	8:C:473:LYS:HA	1.92	0.50
8:D:551:VAL:C	8:D:553:THR:N	2.67	0.50
8:F:154:ARG:O	8:F:157:ARG:HG2	2.11	0.50
8:F:298:CYS:HA	8:F:413:TRP:CZ2	2.46	0.50
8:F:394:VAL:HA	8:F:398:HIS:ND1	2.27	0.50
8:F:530:TYR:C	8:F:532:GLU:N	2.67	0.50
9:M:105:LEU:HG	10:O:40:PHE:HZ	1.76	0.50
9:M:183:GLN:O	9:M:187:ARG:HG3	2.11	0.50
10:N:17:PHE:O	10:N:21:VAL:HG12	2.12	0.50
10:O:115:PHE:HZ	10:O:120:LEU:HD12	1.76	0.50
10:O:221:TRP:HE3	10:O:289:LEU:HA	1.76	0.50
10:O:296:HIS:HB3	10:O:299:ILE:HG13	1.94	0.50
12:W:20:LYS:O	12:W:24:ARG:HG2	2.12	0.50
8:E:59:ARG:O	8:E:63:ARG:HG2	2.11	0.50
9:J:55:LYS:O	9:J:59:ILE:HG12	2.11	0.50
8:C:268:TYR:HD2	8:C:315:SER:HB3	1.76	0.50
14:T:43:MET:HE2	14:T:43:MET:N	2.27	0.50
3:3:81:DT:H2'	3:3:82:DT:H71	1.94	0.50
7:A:37:ARG:HB3	7:A:46:ARG:HD2	1.93	0.50
7:A:81:LEU:HB3	7:A:86:HIS:CE1	2.46	0.50
7:B:122:GLU:H	7:B:122:GLU:CD	2.19	0.50
8:F:128:VAL:O	8:F:132:ILE:HG12	2.12	0.50
12:W:100:THR:HB	12:W:189:ILE:HD11	1.94	0.50
12:W:316:GLU:HA	12:W:319:ASN:HB3	1.93	0.50
8:E:221:GLU:HB3	8:E:306:VAL:HB	1.92	0.50
14:T:143:TRP:O	14:T:146:THR:HG22	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:131:DC:H2"	3:3:132:DT:O4'	2.12	0.50
10:O:13:SER:HA	10:O:140:TYR:CD1	2.47	0.50
12:W:153:LEU:HB3	12:W:161:TRP:CZ2	2.46	0.50
9:L:206:PHE:N	9:L:207:LYS:HD3	2.27	0.50
9:K:116:THR:O	9:K:120:THR:HG23	2.10	0.50
14:Q:1:MET:HE2	14:Q:1:MET:HA	1.93	0.50
10:N:72:THR:OG1	10:O:378:ALA:HB2	2.12	0.50
12:W:270:PRO:HD2	12:W:538:ARG:HB3	1.92	0.50
12:W:354:PHE:HB3	12:W:360:MET:HG3	1.93	0.50
9:G:294:VAL:HG13	9:G:298:MET:HE3	1.93	0.50
9:I:32:CYS:HB2	9:I:45:MET:HE1	1.94	0.50
14:Q:85:ILE:HB	14:Q:213:LEU:HG	1.93	0.50
7:A:196:THR:C	7:A:199:PRO:HD2	2.37	0.49
9:M:111:ASP:HB3	9:M:114:ARG:HD3	1.94	0.49
10:N:270:THR:HA	10:N:273:LEU:HG	1.93	0.49
8:E:504:TYR:O	8:E:505:GLU:HB2	2.10	0.49
9:H:195:ARG:HH22	9:H:304:LYS:HG2	1.77	0.49
9:I:305:ASP:HA	9:I:308:TRP:HD1	1.76	0.49
9:L:146:ARG:H	9:L:146:ARG:HE	1.60	0.49
9:L:211:GLU:HG3	9:L:215:LYS:HE3	1.93	0.49
8:C:292:ILE:HG23	8:C:394:VAL:HG21	1.94	0.49
14:S:67:GLN:NE2	14:S:68:GLY:O	2.45	0.49
14:Q:7:LEU:HG	14:Q:347:PHE:HB2	1.94	0.49
1:1:6:A:H1'	14:V:345:GLY:HA2	1.93	0.49
8:F:539:GLU:HA	8:F:542:ILE:HG12	1.93	0.49
10:N:212:LEU:HD12	10:N:213:PRO:CD	2.41	0.49
10:O:296:HIS:HB3	10:O:299:ILE:CG1	2.42	0.49
8:E:313:PHE:HA	8:E:318:PHE:HD2	1.76	0.49
14:V:135:ASN:HA	14:V:140:LYS:HD2	1.94	0.49
9:H:56:THR:HA	9:H:59:ILE:HG22	1.92	0.49
9:J:206:PHE:CE2	9:J:210:LEU:HD11	2.47	0.49
9:K:78:PRO:HB2	9:K:129:LYS:HB2	1.94	0.49
9:K:150:GLN:HA	9:K:153:ASN:HD22	1.77	0.49
14:R:339:ALA:O	14:R:342:ILE:HG22	2.12	0.49
14:S:175:TYR:HB3	14:S:181:PHE:CZ	2.47	0.49
14:Q:190:ILE:O	14:Q:194:ILE:HG22	2.12	0.49
3:3:110:DA:H4'	3:3:111:DT:OP1	2.13	0.49
8:F:61:LEU:HD13	8:F:94:ILE:HG21	1.95	0.49
9:M:51:SER:HA	15:M:600:ATP:O2G	2.12	0.49
10:N:27:TYR:HB3	10:N:32:ARG:HD2	1.93	0.49
12:W:337:LEU:O	12:W:341:LEU:HD12	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:338:ILE:HD13	12:W:365:THR:CG2	2.42	0.49
12:W:357:ASP:HB3	12:W:360:MET:HE1	1.93	0.49
14:V:118:LEU:HD11	14:V:317:ILE:HD13	1.93	0.49
9:G:96:GLU:O	9:G:100:GLU:HG2	2.12	0.49
9:I:140:VAL:HG13	9:I:146:ARG:HH22	1.76	0.49
9:I:233:LYS:HD2	9:I:287:PRO:HB2	1.93	0.49
9:L:16:PHE:HA	15:L:600:ATP:C2	2.47	0.49
9:L:150:GLN:CD	9:L:150:GLN:H	2.21	0.49
9:K:184:LEU:HD13	9:K:188:PHE:HE1	1.75	0.49
14:T:115:LEU:HA	14:T:118:LEU:HG	1.93	0.49
14:U:112:LEU:O	14:U:115:LEU:HG	2.12	0.49
7:A:31:ARG:HH11	8:F:334:VAL:HG11	1.78	0.49
7:A:35:ILE:HD13	7:A:50:GLU:HA	1.94	0.49
8:F:521:TYR:O	8:F:523:ALA:N	2.38	0.49
9:M:97:LEU:HD12	9:M:98:LEU:HD23	1.94	0.49
9:M:261:HIS:HE1	9:M:264:ILE:HA	1.76	0.49
11:P:147:ALA:HB3	11:P:168:ARG:CZ	2.42	0.49
12:W:273:HIS:ND1	12:W:273:HIS:O	2.45	0.49
13:7:13:DA:H2"	13:7:14:DG:H8	1.77	0.49
14:V:214:HIS:ND1	14:V:214:HIS:O	2.45	0.49
9:G:177:VAL:O	9:G:184:LEU:HD11	2.12	0.49
9:K:225:LEU:HD12	9:K:231:GLN:HG3	1.95	0.49
14:R:2:LYS:HE2	14:R:348:GLN:N	2.28	0.49
14:Q:223:PRO:HD2	14:Q:246:PHE:CE2	2.48	0.49
1:1:6:A:H5"	14:V:11:ARG:NE	2.27	0.49
7:B:92:PHE:HB2	7:B:104:TYR:HB2	1.95	0.49
10:O:199:THR:O	10:O:203:TRP:HD1	1.96	0.49
10:O:300:LEU:HD13	10:O:385:PHE:HZ	1.78	0.49
8:E:141:ILE:HD11	8:E:190:LEU:HA	1.94	0.49
8:E:660:GLN:C	8:E:664:ASN:HB2	2.37	0.49
9:J:171:MET:HE3	9:J:173:TYR:CE2	2.47	0.49
9:L:155:LEU:HB3	9:L:184:LEU:HD11	1.94	0.49
8:C:248:LEU:HB2	8:C:257:ILE:HG12	1.94	0.49
1:1:28:G:H2'	1:1:29:C:C6	2.48	0.49
5:5:24:DT:H2"	5:5:25:DG:C8	2.47	0.49
7:A:107:LYS:HZ1	7:A:111:GLN:N	2.07	0.49
8:F:95:TYR:CZ	8:F:99:LEU:HD11	2.48	0.49
8:F:157:ARG:HH11	8:C:543:GLU:HB2	1.77	0.49
8:F:179:ARG:HD2	8:F:180:LYS:HZ2	1.78	0.49
10:N:178:CYS:HB2	10:N:181:CYS:SG	2.53	0.49
12:W:116:ILE:O	12:W:118:PRO:HD3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:V:228:THR:HG22	14:V:229:GLU:N	2.22	0.49
8:C:366:TYR:H	8:C:369:ARG:HG3	1.78	0.49
14:Q:315:HIS:O	14:Q:318:GLU:HG2	2.13	0.49
3:3:132:DT:O2	14:R:1:MET:HA	2.11	0.49
4:4:89:DA:H2'	4:4:90:DC:C6	2.48	0.49
7:B:74:PRO:HB3	7:B:93:LEU:HB2	1.93	0.49
8:F:80:LEU:HB3	8:F:88:ILE:HG13	1.95	0.49
11:P:47:TRP:HH2	11:P:167:ILE:HG13	1.77	0.49
8:E:510:VAL:CG2	8:E:661:HIS:HB2	2.42	0.49
9:J:5:ARG:HH12	9:J:9:ILE:HD11	1.77	0.49
14:R:1:MET:CB	14:R:2:LYS:HG2	2.42	0.49
14:S:104:ASN:HD21	14:T:294:VAL:HG23	1.78	0.49
9:M:269:PHE:HB3	9:M:288:PHE:HE2	1.77	0.49
10:N:216:PRO:HD2	10:N:219:TYR:HB2	1.94	0.49
14:V:123:ILE:HD11	14:V:320:LEU:HD11	1.95	0.49
9:H:114:ARG:HG2	9:H:114:ARG:HH11	1.78	0.49
9:J:271:PHE:HA	9:J:274:LYS:HE3	1.94	0.49
8:C:366:TYR:CZ	8:C:392:TRP:HB2	2.48	0.49
8:C:461:ARG:O	8:C:464:GLU:HG3	2.12	0.49
14:U:64:ALA:C	14:U:67:GLN:HE22	2.20	0.49
1:1:8:C:H5	14:V:283:ARG:HD2	1.76	0.49
3:3:129:DG:H2"	14:S:67:GLN:OE1	2.13	0.49
8:F:511:SER:H	8:F:514:GLN:HB3	1.78	0.49
8:F:521:TYR:C	8:F:523:ALA:N	2.71	0.49
10:N:251:PHE:O	10:N:255:ILE:HD12	2.12	0.49
10:O:110:ARG:HE	10:O:144:PHE:HZ	1.56	0.49
12:W:37:LEU:HD12	12:W:38:ASP:H	1.78	0.49
12:W:389:VAL:HG21	12:W:528:ALA:HB1	1.94	0.49
14:T:262:PHE:CD2	14:U:39:LEU:HD21	2.47	0.49
2:2:14:DG:H5"	8:E:684:LYS:HZ2	1.73	0.49
3:3:116:DC:H4'	3:3:117:DT:OP1	2.13	0.49
7:B:198:LEU:HD12	7:B:199:PRO:CD	2.40	0.49
9:M:295:THR:HG23	9:M:298:MET:HG3	1.94	0.49
9:M:304:LYS:HB2	9:M:306:ILE:HG23	1.95	0.49
10:O:299:ILE:HG22	10:O:300:LEU:H	1.77	0.49
9:L:109:GLU:OE2	9:L:114:ARG:HD2	2.13	0.49
14:T:107:LYS:O	14:T:111:THR:HG23	2.13	0.49
7:A:209:LEU:HD22	7:A:210:LEU:HD12	1.93	0.48
12:W:245:THR:HG23	13:7:19:DG:C8	2.48	0.48
12:W:247:MET:HE3	12:W:248:GLY:H	1.78	0.48
8:E:308:ASP:HA	8:E:332:ASN:H	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:7:65:DA:H2'	13:7:66:DT:H71	1.94	0.48
9:H:313:ARG:HG3	8:D:571:ARG:CG	2.37	0.48
9:L:90:PRO:HB3	9:L:154:TRP:HD1	1.78	0.48
9:K:234:LEU:HD11	9:K:269:PHE:HD1	1.78	0.48
14:S:130:THR:O	14:S:134:MET:HG2	2.12	0.48
14:U:127:GLU:HB3	14:U:131:ARG:HH21	1.78	0.48
8:F:257:ILE:HG22	8:F:278:ALA:HB1	1.94	0.48
12:W:437:SER:HB2	12:W:613:PHE:HB3	1.94	0.48
12:W:439:ALA:HB3	12:W:482:ILE:HG23	1.95	0.48
8:E:116:LYS:HB2	8:E:116:LYS:HE3	1.64	0.48
9:H:52:GLY:HA3	9:H:243:ARG:HG2	1.95	0.48
8:C:437:ALA:HB3	8:C:477:LYS:HG2	1.95	0.48
9:K:98:LEU:HD12	9:K:115:LEU:HD22	1.95	0.48
14:S:262:PHE:N	14:S:262:PHE:CD2	2.80	0.48
14:S:275:TYR:CE1	14:S:278:ALA:HA	2.49	0.48
14:T:9:TYR:HD2	14:T:347:PHE:HZ	1.61	0.48
14:Q:147:ARG:HG2	14:Q:148:LYS:HD3	1.96	0.48
3:3:76:DT:OP1	8:F:535:GLU:N	2.46	0.48
7:A:107:LYS:HD3	7:A:108:SER:O	2.12	0.48
9:M:82:ILE:HG12	9:M:133:ILE:HA	1.94	0.48
10:O:290:PRO:HB2	10:O:292:ARG:NH1	2.28	0.48
12:W:116:ILE:CD1	12:W:220:SER:HB3	2.43	0.48
9:H:146:ARG:HG3	9:H:147:VAL:N	2.28	0.48
9:H:153:ASN:O	9:H:157:MET:HG2	2.13	0.48
9:L:94:ALA:HA	9:L:97:LEU:HB2	1.95	0.48
9:K:47:VAL:HG13	9:K:169:PHE:HA	1.95	0.48
14:S:166:VAL:HG23	14:S:186:ASN:HB2	1.96	0.48
9:M:136:PHE:HD2	9:M:168:ILE:HG12	1.78	0.48
12:W:457:VAL:HG13	12:W:458:GLU:N	2.28	0.48
9:G:226:ALA:HA	9:G:231:GLN:HE22	1.78	0.48
9:I:123:ILE:N	9:I:124:PRO:HD2	2.28	0.48
9:J:41:GLU:HG2	9:J:163:LYS:HZ2	1.79	0.48
9:L:111:ASP:O	9:L:115:LEU:HD12	2.13	0.48
8:D:437:ALA:HA	8:D:477:LYS:HE3	1.96	0.48
14:U:77:HIS:C	14:U:77:HIS:HD1	2.20	0.48
3:3:113:DC:H5"	10:O:117:ARG:HD3	1.95	0.48
9:M:107:LEU:HD13	9:M:108:TYR:CE1	2.48	0.48
10:N:299:ILE:HG23	10:N:302:GLU:OE1	2.13	0.48
11:P:107:ILE:HB	11:P:166:ASN:ND2	2.29	0.48
12:W:66:LEU:HD23	12:W:72:TRP:CZ2	2.48	0.48
12:W:450:ARG:NH2	14:V:226:VAL:HA	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:663:TYR:O	8:E:667:TYR:N	2.40	0.48
14:V:189:ALA:O	14:V:192:GLU:HG3	2.13	0.48
9:G:89:LYS:HG3	9:G:91:VAL:H	1.76	0.48
9:H:150:GLN:O	9:H:154:TRP:HB2	2.13	0.48
9:I:237:PHE:HE2	9:I:248:LEU:HD13	1.79	0.48
9:K:55:LYS:HB3	9:K:169:PHE:CD2	2.47	0.48
1:1:6:A:P	14:V:11:ARG:HH21	2.37	0.48
7:B:204:LEU:HD13	7:B:210:LEU:HD23	1.96	0.48
9:M:61:LYS:HA	9:M:61:LYS:HE2	1.95	0.48
10:N:127:CYS:O	10:N:157:LEU:HD22	2.13	0.48
8:E:453:LYS:H	8:E:453:LYS:HD2	1.79	0.48
14:V:18:VAL:HB	14:V:259:LEU:HB2	1.94	0.48
14:V:130:THR:HB	14:V:131:ARG:NH1	2.28	0.48
9:H:133:ILE:O	9:H:168:ILE:HG22	2.14	0.48
8:D:557:ARG:O	8:D:559:ARG:N	2.33	0.48
9:K:309:GLU:HA	9:K:312:LEU:HB2	1.95	0.48
5:5:38:DA:H1'	8:F:118:ARG:HH21	1.78	0.48
8:E:185:LYS:HZ2	8:E:190:LEU:HD23	1.78	0.48
14:V:46:ALA:HB3	14:U:349:HIS:HB3	1.95	0.48
15:G:600:ATP:N3	15:G:600:ATP:H2'	2.28	0.48
9:I:136:PHE:HE1	9:I:139:LEU:HD23	1.77	0.48
9:J:10:SER:HA	9:J:13:LYS:HZ3	1.79	0.48
8:D:292:ILE:HD11	8:D:294:ASN:HB2	1.96	0.48
9:K:60:LYS:NZ	9:K:63:LEU:HD12	2.29	0.48
9:K:280:LYS:HD3	9:K:280:LYS:N	2.28	0.48
14:R:3:LEU:HD23	14:S:46:ALA:HB2	1.96	0.48
14:S:73:VAL:HB	14:S:244:ARG:NH2	2.29	0.48
14:T:215:LEU:HD11	14:T:219:ALA:HB3	1.95	0.48
10:N:255:ILE:HD12	10:N:255:ILE:H	1.78	0.48
8:E:61:LEU:HD22	8:E:73:ILE:HD12	1.96	0.48
8:E:232:VAL:O	8:E:381:THR:HA	2.13	0.48
8:E:505:GLU:HA	8:E:508:SER:OG	2.14	0.48
9:I:62:TYR:HA	9:I:65:GLN:NE2	2.29	0.48
8:C:519:MET:O	8:C:522:GLN:HG3	2.14	0.48
14:U:43:MET:HE2	14:U:43:MET:N	2.29	0.48
3:3:143:DA:H2'	3:3:143:DA:N3	2.29	0.48
7:A:37:ARG:HB3	7:A:46:ARG:NH1	2.29	0.48
10:N:203:TRP:HB2	10:N:209:SER:HB3	1.95	0.48
10:O:58:ARG:HH12	13:7:61:DC:H2'	1.79	0.48
10:O:348:LEU:HB3	10:O:367:PHE:HE1	1.78	0.48
12:W:177:MET:HA	12:W:180:GLN:OE1	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:244:THR:HG23	13:7:19:DG:H8	1.78	0.48
12:W:362:LYS:HA	12:W:365:THR:OG1	2.14	0.48
8:E:302:PRO:HG2	8:E:327:ILE:HG21	1.96	0.48
9:H:313:ARG:CZ	8:D:574:SER:OG	2.61	0.48
9:I:26:LEU:HA	9:I:29:MET:HG2	1.96	0.48
14:R:85:ILE:HD11	14:R:213:LEU:HD23	1.94	0.48
3:3:110:DA:H2"	3:3:111:DT:O5'	2.14	0.48
7:A:154:ARG:NH2	7:A:199:PRO:HA	2.29	0.48
8:F:530:TYR:C	8:F:532:GLU:H	2.21	0.48
12:W:6:GLU:HB3	12:W:32:ILE:HD13	1.95	0.48
12:W:273:HIS:HB2	12:W:529:ILE:HG22	1.95	0.48
9:I:217:LEU:HB3	9:I:219:PHE:HD2	1.79	0.48
14:R:3:LEU:HD23	14:R:3:LEU:HA	1.74	0.48
14:R:116:VAL:HG22	14:R:338:MET:HE1	1.96	0.48
1:1:40:U:H2'	1:1:41:G:C4	2.49	0.47
8:F:38:GLN:HE22	8:D:495:GLU:HA	1.78	0.47
10:N:343:VAL:HG21	10:N:367:PHE:CE1	2.49	0.47
10:O:276:LYS:HA	10:O:284:PHE:HE2	1.79	0.47
12:W:278:LYS:HZ1	12:W:327:MET:HE3	1.78	0.47
12:W:344:ASP:HA	12:W:347:TYR:CG	2.49	0.47
8:E:509:ARG:HH22	8:E:672:ILE:HA	1.79	0.47
8:E:660:GLN:HB2	8:E:661:HIS:H	1.52	0.47
13:7:48:DA:H5"	13:7:48:DA:C8	2.49	0.47
9:H:199:TYR:CE2	9:H:299:LEU:HD13	2.49	0.47
9:J:214:ASP:H	9:J:221:LYS:CD	2.24	0.47
9:J:233:LYS:HZ1	9:J:288:PHE:HA	1.79	0.47
14:R:145:ASN:HD22	14:R:221:VAL:HG23	1.79	0.47
14:S:120:GLU:HG2	14:S:125:TRP:NE1	2.29	0.47
14:Q:152:TRP:NE1	14:Q:171:ILE:HB	2.26	0.47
7:B:198:LEU:N	7:B:199:PRO:HD2	2.29	0.47
8:F:549:SER:HA	8:F:552:LYS:HE3	1.96	0.47
8:E:446:LYS:HA	8:E:466:ARG:HH22	1.79	0.47
9:I:171:MET:HG3	9:I:173:TYR:CD2	2.49	0.47
8:D:483:MET:HB2	8:D:507:ALA:HB1	1.96	0.47
8:D:532:GLU:O	8:D:536:ILE:HG23	2.15	0.47
14:T:132:TYR:HE2	14:T:342:ILE:HG21	1.76	0.47
14:U:315:HIS:O	14:U:319:VAL:HG12	2.14	0.47
8:F:144:ARG:HH12	8:E:360:GLY:H	1.62	0.47
12:W:19:LEU:HD12	12:W:20:LYS:N	2.29	0.47
12:W:273:HIS:CD2	12:W:530:GLU:HB2	2.49	0.47
8:E:176:GLU:O	8:E:180:LYS:HG2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:G:116:THR:HA	9:G:119:LEU:HD12	1.95	0.47
9:H:238:SER:HB2	9:H:245:LEU:HB2	1.95	0.47
9:I:46:MET:HB2	9:I:168:ILE:HB	1.97	0.47
14:S:178:ARG:O	14:S:182:LYS:HG3	2.14	0.47
14:S:227:PHE:HZ	14:T:70:PRO:HB3	1.78	0.47
3:3:119:DG:O6	10:O:322:LYS:HD3	2.15	0.47
8:F:558:ALA:HB1	8:F:561:ARG:HH12	1.79	0.47
9:M:46:MET:CE	9:M:188:PHE:HA	2.43	0.47
9:M:236:ALA:HA	9:M:298:MET:HE3	1.96	0.47
10:O:62:TYR:HB3	10:O:94:ILE:HG22	1.97	0.47
8:E:137:VAL:HG22	8:E:182:VAL:HG12	1.95	0.47
9:H:256:ALA:HB1	9:H:261:HIS:O	2.14	0.47
9:I:147:VAL:HB	9:J:142:GLU:HA	1.25	0.47
9:J:199:TYR:HB2	9:J:235:TYR:CE2	2.49	0.47
8:D:367:LEU:HB2	8:D:392:TRP:CD1	2.49	0.47
8:F:157:ARG:NH1	8:C:543:GLU:HB2	2.29	0.47
10:N:5:ARG:HH22	10:N:84:ASN:CG	2.22	0.47
10:O:223:LEU:HD12	10:O:227:TRP:HE1	1.79	0.47
11:P:27:VAL:HG11	11:P:74:TYR:CD2	2.48	0.47
13:7:87:DT:H2”	13:7:88:DA:C8	2.50	0.47
9:I:119:LEU:O	9:I:123:ILE:HG12	2.14	0.47
9:I:155:LEU:O	9:I:159:LEU:HG	2.15	0.47
8:C:382:LEU:HG	8:C:386:ARG:HE	1.80	0.47
9:M:146:ARG:HD3	9:G:108:TYR:HA	1.96	0.47
9:M:151:VAL:O	9:M:155:LEU:HG	2.15	0.47
10:N:258:GLU:OE2	10:N:282:LEU:HB2	2.14	0.47
12:W:421:ALA:HA	12:W:424:ARG:HG2	1.96	0.47
12:W:459:LYS:HE2	12:W:467:PRO:HA	1.95	0.47
9:L:90:PRO:HB3	9:L:154:TRP:CD1	2.49	0.47
8:C:457:TYR:HD1	8:C:501:ALA:HA	1.79	0.47
14:U:103:CYS:HB3	14:U:109:LYS:HD3	1.97	0.47
8:F:182:VAL:HA	8:F:185:LYS:HG2	1.96	0.47
8:F:236:TYR:O	8:F:237:ARG:HG2	2.15	0.47
9:M:197:PHE:CG	9:M:209:PHE:HZ	2.33	0.47
10:N:9:TYR:HD1	10:N:137:TYR:CD1	2.32	0.47
10:O:121:ARG:NH2	10:O:145:GLN:HA	2.30	0.47
11:P:149:TYR:HB3	11:P:168:ARG:HH21	1.79	0.47
12:W:123:TYR:HB2	12:W:137:THR:HG21	1.96	0.47
8:E:162:TYR:CZ	8:E:168:THR:HG21	2.49	0.47
14:V:1:MET:HG2	14:V:313:ALA:HB3	1.97	0.47
14:V:6:ASN:HD22	14:V:102:LYS:HG2	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:V:15:PRO:HG3	14:V:265:GLY:HA3	1.97	0.47
9:H:47:VAL:HA	9:H:192:VAL:HB	1.97	0.47
9:H:89:LYS:HE2	9:H:91:VAL:HB	1.96	0.47
8:C:322:CYS:HB3	8:C:327:ILE:HB	1.95	0.47
8:D:561:ARG:HD3	8:D:561:ARG:HA	1.46	0.47
14:R:3:LEU:HD11	14:R:307:PHE:CD1	2.49	0.47
14:S:65:LEU:HD12	14:S:65:LEU:O	2.15	0.47
14:Q:186:ASN:O	14:Q:190:ILE:HG13	2.13	0.47
1:1:26:C:H3'	14:T:40:LEU:HD11	1.97	0.47
7:A:155:ILE:HD11	7:A:205:LEU:HB3	1.97	0.47
7:B:59:TYR:C	7:B:152:LEU:HD21	2.40	0.47
7:B:192:LEU:HD13	7:B:197:VAL:HA	1.97	0.47
9:M:136:PHE:CZ	9:M:155:LEU:HD11	2.49	0.47
10:N:178:CYS:SG	10:N:185:ILE:HG13	2.55	0.47
12:W:49:LYS:HE3	12:W:49:LYS:HB2	1.66	0.47
8:E:429:LYS:HD3	8:E:429:LYS:HA	1.70	0.47
9:G:140:VAL:HG23	9:G:141:GLU:H	1.80	0.47
9:I:89:LYS:HB3	9:I:90:PRO:HD2	1.96	0.47
9:J:132:ILE:HA	9:J:167:VAL:O	2.15	0.47
9:L:29:MET:C	9:L:29:MET:HE2	2.40	0.47
9:K:250:TYR:O	9:K:254:ILE:HG22	2.14	0.47
14:R:3:LEU:N	14:R:347:PHE:HA	2.30	0.47
14:R:131:ARG:HH12	14:R:274:TRP:HE1	1.62	0.47
14:S:226:VAL:HB	14:S:245:VAL:HG13	1.96	0.47
14:U:270:THR:HA	14:U:283:ARG:HA	1.97	0.47
8:F:449:ILE:HG12	8:F:462:LEU:HD21	1.97	0.47
10:O:15:GLU:O	10:O:19:ILE:HG12	2.14	0.47
10:O:306:TYR:O	10:O:310:ARG:HB2	2.14	0.47
11:P:156:SER:HB2	11:P:163:PHE:HE2	1.80	0.47
9:G:214:ASP:HB2	9:G:225:LEU:HD11	1.97	0.47
9:H:114:ARG:HE	9:I:107:LEU:HD11	1.45	0.47
14:S:262:PHE:HE1	14:T:39:LEU:HD22	1.79	0.47
14:T:223:PRO:HG3	14:T:257:PRO:HB2	1.96	0.47
14:U:84:HIS:HB2	14:U:213:LEU:O	2.14	0.47
14:Q:270:THR:HA	14:Q:283:ARG:HA	1.97	0.47
3:3:121:DC:H2"	3:3:122:DA:C8	2.50	0.47
8:F:226:VAL:HG12	8:F:242:ARG:HH21	1.80	0.47
8:F:229:LEU:HD12	8:F:230:PHE:H	1.79	0.47
10:N:335:SER:HB3	10:N:386:ASN:HB2	1.96	0.47
10:O:141:LEU:HB3	10:O:147:TYR:CD1	2.50	0.47
11:P:107:ILE:HA	11:P:110:LEU:HG	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:43:LEU:HB3	12:W:135:PHE:HD1	1.80	0.47
9:G:11:ARG:NE	9:G:218:PRO:HB3	2.30	0.47
9:H:80:LEU:HD12	9:H:80:LEU:HA	1.83	0.47
9:I:152:GLY:HA3	9:I:177:VAL:HG13	1.97	0.47
9:L:213:LEU:HD11	9:L:246:ARG:NH1	2.30	0.47
8:D:276:LYS:HB2	8:D:436:PHE:CZ	2.50	0.47
9:K:8:ARG:HE	9:K:11:ARG:HD3	1.80	0.47
9:K:92:ASP:HA	9:K:95:ARG:HG2	1.97	0.47
9:K:255:GLU:HB2	9:K:268:ASP:OD2	2.15	0.47
7:A:158:TYR:HE2	7:A:199:PRO:HB3	1.80	0.46
8:F:394:VAL:HA	8:F:398:HIS:HD1	1.79	0.46
8:F:515:HIS:O	8:F:516:LYS:C	2.56	0.46
9:M:16:PHE:HA	15:M:600:ATP:N1	2.30	0.46
9:M:136:PHE:HB2	9:M:168:ILE:HD11	1.96	0.46
10:O:128:CYS:O	10:O:132:LEU:HG	2.15	0.46
12:W:19:LEU:HD11	12:W:56:LEU:CD1	2.45	0.46
8:E:489:LEU:HB2	8:E:496:TYR:CE2	2.49	0.46
9:L:181:ASN:OD1	9:L:184:LEU:HB2	2.15	0.46
8:C:441:TYR:HB3	8:C:473:LYS:HD2	1.97	0.46
9:K:178:LEU:HB3	9:K:185:HIS:HB2	1.97	0.46
14:R:126:THR:HG22	14:R:195:LYS:NZ	2.29	0.46
1:1:58:U:H3'	11:P:103:ARG:HH22	1.79	0.46
3:3:108:DT:H2"	3:3:109:DG:C8	2.50	0.46
10:N:73:ALA:O	10:N:77:LYS:HG2	2.15	0.46
10:N:274:ARG:NH1	10:N:274:ARG:HA	2.30	0.46
10:N:326:LEU:HA	13:7:49:DG:H22	1.81	0.46
10:N:351:ASN:ND2	10:N:368:HIS:H	2.13	0.46
14:T:9:TYR:CD2	14:T:347:PHE:HZ	2.32	0.46
14:U:75:PHE:HE1	14:U:220:MET:HG3	1.80	0.46
14:U:112:LEU:HD23	14:U:115:LEU:HD21	1.97	0.46
3:3:49:DA:H5'	3:3:49:DA:C8	2.51	0.46
9:M:71:GLU:HB2	9:M:76:ILE:HD11	1.96	0.46
10:N:30:VAL:HG21	10:N:56:ILE:HD12	1.97	0.46
10:N:293:ASN:OD1	10:N:384:GLU:HB3	2.16	0.46
12:W:270:PRO:HB2	12:W:602:THR:HB	1.98	0.46
12:W:324:TRP:HE1	12:W:337:LEU:HD11	1.80	0.46
12:W:426:ILE:HD12	12:W:496:LEU:HD23	1.96	0.46
12:W:550:LEU:HD12	12:W:553:LEU:HB3	1.97	0.46
8:E:503:ASP:HB3	8:E:506:TYR:HD2	1.81	0.46
14:V:115:LEU:HG	14:V:317:ILE:HD11	1.96	0.46
9:J:148:LEU:HD12	9:J:177:VAL:HG12	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:L:272:ALA:HA	9:L:275:LEU:HB2	1.97	0.46
8:C:286:ILE:HD12	8:C:296:TRP:HB2	1.98	0.46
6:6:29:DC:H2"	6:6:30:DA:C8	2.51	0.46
6:6:33:DC:H2'	6:6:34:DA:C8	2.50	0.46
8:F:191:LEU:HD23	8:F:200:ALA:HA	1.97	0.46
8:F:529:GLU:O	8:F:531:ASP:N	2.48	0.46
9:M:130:LEU:HD13	9:M:165:PRO:HG2	1.98	0.46
10:N:351:ASN:HD21	10:N:368:HIS:H	1.62	0.46
12:W:320:MET:HE2	12:W:320:MET:HB3	1.88	0.46
8:E:256:VAL:HG12	8:E:296:TRP:HZ2	1.80	0.46
9:G:237:PHE:HB2	9:G:288:PHE:CE2	2.50	0.46
14:R:286:ARG:HB3	14:R:307:PHE:CZ	2.50	0.46
14:U:144:LYS:HA	14:U:144:LYS:HD2	1.67	0.46
1:1:22:C:H2'	1:1:23:U:C5	2.50	0.46
5:5:37:DA:H2"	5:5:38:DA:C8	2.51	0.46
12:W:115:LYS:HE3	12:W:548:ASN:C	2.40	0.46
12:W:393:ILE:HG22	12:W:509:ALA:HB1	1.97	0.46
12:W:450:ARG:CZ	14:V:226:VAL:HA	2.45	0.46
8:E:249:VAL:HG11	8:E:342:HIS:HB3	1.97	0.46
9:J:39:GLU:O	9:J:163:LYS:HE3	2.16	0.46
9:J:51:SER:HB2	9:J:171:MET:SD	2.55	0.46
9:J:88:ALA:HB1	9:J:92:ASP:OD1	2.16	0.46
14:R:7:LEU:HB3	14:R:108:VAL:HB	1.97	0.46
14:S:74:ASP:H	14:S:244:ARG:HE	1.64	0.46
14:T:18:VAL:HB	14:T:259:LEU:HB2	1.98	0.46
3:3:49:DA:H5'	3:3:49:DA:H8	1.80	0.46
7:B:121:TRP:HZ2	7:B:137:LEU:HD21	1.81	0.46
9:M:30:ASP:HB2	9:M:33:ARG:NH2	2.28	0.46
9:M:107:LEU:HB2	9:M:108:TYR:CD1	2.51	0.46
9:M:195:ARG:HH22	9:M:304:LYS:HA	1.81	0.46
10:N:294:LEU:HD13	10:N:333:ASN:HD22	1.81	0.46
10:O:288:ARG:HG3	10:O:288:ARG:O	2.15	0.46
8:E:102:ARG:HE	8:E:105:ASP:HA	1.81	0.46
9:I:9:ILE:O	9:I:13:LYS:HG2	2.15	0.46
8:C:370:GLU:HG2	8:C:371:GLY:H	1.80	0.46
14:T:122:LYS:HE3	14:T:123:ILE:H	1.80	0.46
14:T:141:TRP:CZ2	14:T:154:ILE:HD12	2.49	0.46
14:U:131:ARG:HA	14:U:134:MET:HG2	1.97	0.46
14:Q:156:LEU:HB2	14:Q:166:VAL:HB	1.98	0.46
1:1:24:G:H5"	14:S:11:ARG:HB3	1.97	0.46
10:N:376:TRP:HZ2	10:O:76:LEU:HD13	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:37:LEU:HD12	12:W:38:ASP:N	2.31	0.46
12:W:420:HIS:HA	12:W:423:GLU:CD	2.40	0.46
8:E:178:VAL:O	8:E:182:VAL:HG13	2.15	0.46
8:E:365:GLN:NE2	8:E:367:LEU:H	2.14	0.46
9:I:92:ASP:HA	9:I:95:ARG:HB2	1.98	0.46
9:I:171:MET:CE	9:I:172:PRO:HD2	2.45	0.46
9:L:20:PRO:O	9:L:24:LYS:HG2	2.16	0.46
14:S:8:ALA:HA	14:S:346:MET:HB3	1.97	0.46
14:T:9:TYR:CE1	14:T:100:PRO:HA	2.50	0.46
14:U:284:VAL:HG13	14:U:343:LYS:HD2	1.98	0.46
1:1:6:A:H5'	14:V:11:ARG:HG3	1.98	0.46
7:A:38:TYR:CZ	7:A:40:SER:HA	2.50	0.46
7:A:154:ARG:HH22	7:A:199:PRO:HA	1.81	0.46
11:P:101:PHE:HB3	11:P:167:ILE:HD11	1.98	0.46
8:E:195:LYS:HG2	8:E:199:VAL:HG21	1.98	0.46
14:V:100:PRO:HG3	14:V:112:LEU:HD13	1.98	0.46
14:V:106:SER:HA	14:V:109:LYS:HE2	1.97	0.46
9:G:47:VAL:HB	9:G:169:PHE:CE2	2.50	0.46
9:H:279:ASP:OD1	9:H:280:LYS:HG2	2.16	0.46
9:H:307:GLY:O	9:H:308:TRP:C	2.58	0.46
9:L:136:PHE:CD2	9:L:168:ILE:HD11	2.51	0.46
14:R:143:TRP:O	14:R:146:THR:HG22	2.15	0.46
1:1:28:G:H5"	14:S:225:GLN:HE22	1.81	0.46
3:3:113:DC:H5"	10:O:117:ARG:CD	2.46	0.46
7:A:60:HIS:CE1	7:A:143:ILE:HG23	2.47	0.46
9:M:57:THR:O	9:M:61:LYS:HG2	2.16	0.46
10:O:388:SER:HA	10:O:391:VAL:HG23	1.98	0.46
12:W:458:GLU:HG3	12:W:459:LYS:H	1.81	0.46
12:W:619:TYR:CE2	12:W:624:VAL:HG12	2.51	0.46
13:7:53:DA:H4'	13:7:54:DG:OP1	2.15	0.46
9:G:243:ARG:HB2	9:G:243:ARG:NH1	2.29	0.46
9:J:214:ASP:HB3	9:J:221:LYS:HD2	1.98	0.46
8:D:410:ASN:O	8:D:414:LYS:HG3	2.15	0.46
9:K:95:ARG:NH2	9:K:107:LEU:HA	2.30	0.46
14:R:313:ALA:HA	14:R:316:TYR:HE1	1.81	0.46
14:S:133:LEU:HD21	14:S:190:ILE:HD11	1.98	0.46
14:U:42:GLN:C	14:U:43:MET:HE2	2.41	0.46
1:1:20:A:OP2	14:T:266:ALA:HB2	2.16	0.46
4:4:104:DC:H2"	4:4:105:DA:C8	2.51	0.46
7:A:172:LEU:O	7:A:176:LYS:HG2	2.16	0.46
12:W:450:ARG:HD3	14:V:247:GLN:OE1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:136:ALA:HB1	8:E:151:ALA:HB1	1.98	0.46
8:E:664:ASN:OD1	8:E:674:ILE:HG21	2.15	0.46
14:V:249:THR:HG23	14:V:258:ILE:HG21	1.97	0.46
14:V:337:LEU:HA	14:V:340:ASN:HD21	1.80	0.46
9:H:158:ILE:HG13	9:H:166:ILE:HD11	1.98	0.46
9:H:190:ILE:HD12	9:H:190:ILE:H	1.81	0.46
9:J:10:SER:HA	9:J:13:LYS:NZ	2.31	0.46
9:K:151:VAL:O	9:K:155:LEU:HD23	2.16	0.46
9:K:197:PHE:CD1	9:K:240:GLY:HA2	2.51	0.46
14:R:2:LYS:HG3	14:R:348:GLN:O	2.16	0.46
8:F:51:ILE:HD11	8:F:112:ALA:HB2	1.98	0.45
8:F:216:VAL:HG13	8:F:416:GLY:HA3	1.97	0.45
9:G:22:VAL:HG22	9:G:58:VAL:HG12	1.99	0.45
8:C:286:ILE:HG12	8:C:292:ILE:HG21	1.98	0.45
14:T:144:LYS:NZ	14:T:147:ARG:HH11	2.14	0.45
14:Q:175:TYR:HB3	14:Q:181:PHE:CZ	2.51	0.45
10:O:61:PRO:HG2	10:O:94:ILE:O	2.16	0.45
12:W:47:THR:HA	12:W:131:ASN:O	2.17	0.45
14:V:63:GLU:H	14:V:63:GLU:CD	2.24	0.45
9:J:26:LEU:HA	9:J:29:MET:HE1	1.97	0.45
9:L:226:ALA:HA	9:L:231:GLN:HB3	1.99	0.45
14:R:2:LYS:O	14:R:349:HIS:HB3	2.17	0.45
14:R:133:LEU:HB3	14:R:187:TRP:CH2	2.50	0.45
5:5:43:DT:H2"	5:5:44:DA:C8	2.51	0.45
10:O:101:TYR:HA	10:O:221:TRP:CZ3	2.51	0.45
10:O:117:ARG:O	10:O:117:ARG:HG2	2.16	0.45
12:W:110:LEU:HD22	12:W:594:ILE:HG21	1.96	0.45
12:W:175:LYS:O	12:W:179:LYS:HG3	2.17	0.45
9:G:145:ASN:HA	9:G:148:LEU:HD12	1.96	0.45
9:I:131:ILE:HG13	9:I:166:ILE:HG12	1.98	0.45
14:S:334:MET:O	14:S:338:MET:HG2	2.16	0.45
14:T:159:TRP:HE1	14:T:204:LEU:HD23	1.81	0.45
14:T:330:THR:O	14:T:334:MET:HG2	2.16	0.45
14:U:314:GLU:H	14:U:314:GLU:CD	2.24	0.45
14:Q:24:TRP:HB2	14:Q:28:ARG:HB2	1.98	0.45
1:1:46:C:H2'	1:1:47:U:C6	2.51	0.45
3:3:137:DT:H2"	3:3:138:DC:O4'	2.16	0.45
7:A:204:LEU:HD12	7:A:209:LEU:HD13	1.98	0.45
8:F:95:TYR:OH	8:F:99:LEU:HD11	2.16	0.45
8:F:457:TYR:HB3	8:F:499:VAL:HG12	1.98	0.45
10:N:393:ARG:HH12	10:O:98:ASN:N	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:O:326:LEU:O	10:O:330:VAL:HG23	2.16	0.45
8:E:463:ALA:O	8:E:466:ARG:HG2	2.17	0.45
14:V:242:ASN:ND2	14:V:245:VAL:HG22	2.32	0.45
9:G:140:VAL:HG23	9:G:141:GLU:N	2.32	0.45
9:H:117:LYS:HZ3	9:H:118:ARG:NH2	2.15	0.45
9:H:236:ALA:HB1	9:H:298:MET:SD	2.56	0.45
9:J:49:GLY:HA3	9:J:193:GLU:HA	1.97	0.45
9:L:139:LEU:HD22	9:L:173:TYR:CZ	2.51	0.45
9:K:139:LEU:HD11	9:K:151:VAL:HG11	1.98	0.45
14:S:133:LEU:HB3	14:S:187:TRP:CH2	2.51	0.45
7:A:16:LEU:HD11	7:A:133:LEU:HD21	1.98	0.45
7:B:144:ARG:HH22	7:B:146:THR:HG23	1.82	0.45
9:M:217:LEU:HD23	9:M:218:PRO:HD2	1.98	0.45
12:W:16:THR:HB	12:W:20:LYS:HB3	1.99	0.45
12:W:391:PRO:HD2	12:W:519:ILE:HD13	1.99	0.45
8:E:455:LEU:HD12	8:E:457:TYR:CZ	2.52	0.45
9:H:210:LEU:HB3	9:H:225:LEU:HD11	1.98	0.45
9:I:137:GLN:HB2	9:I:173:TYR:CZ	2.51	0.45
9:I:145:ASN:O	9:I:146:ARG:HG2	2.16	0.45
9:I:200:GLN:HG3	9:I:204:GLY:HA3	1.99	0.45
9:J:181:ASN:HD21	9:J:184:LEU:HD12	1.82	0.45
9:J:214:ASP:H	9:J:221:LYS:CE	2.29	0.45
14:R:273:ASP:HA	14:R:275:TYR:CE2	2.51	0.45
14:T:262:PHE:HD2	14:U:39:LEU:HD21	1.81	0.45
14:Q:171:ILE:HA	14:Q:175:TYR:HD2	1.82	0.45
7:A:111:GLN:CD	7:A:114:LYS:HE2	2.42	0.45
10:N:288:ARG:NH1	10:N:291:GLU:C	2.75	0.45
10:N:351:ASN:HB2	10:N:366:LEU:O	2.17	0.45
11:P:74:TYR:O	11:P:78:MET:HG2	2.16	0.45
12:W:539:TRP:CD1	12:W:603:PHE:HB2	2.52	0.45
8:E:503:ASP:HB3	8:E:506:TYR:CD2	2.52	0.45
14:V:215:LEU:HD22	14:V:216:PRO:HD2	1.98	0.45
15:L:600:ATP:H4'	9:K:41:GLU:OE2	2.16	0.45
8:C:396:ILE:HA	8:C:400:LYS:HB3	1.99	0.45
8:C:437:ALA:H	8:C:477:LYS:HZ1	1.65	0.45
14:R:9:TYR:CD1	14:R:100:PRO:HA	2.52	0.45
14:Q:18:VAL:HB	14:Q:259:LEU:HB2	1.97	0.45
1:1:54:U:N3	11:P:138:PHE:HA	2.28	0.45
2:2:15:DA:OP1	8:E:684:LYS:HG3	2.17	0.45
3:3:149:DT:H6	3:3:149:DT:H2'	1.59	0.45
4:4:111:DT:H2"	4:4:112:DC:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:157:ARG:HH21	8:F:423:GLU:HB3	1.82	0.45
7:B:165:ASN:OD1	7:B:167:VAL:HG12	2.15	0.45
8:F:516:LYS:HA	8:F:519:MET:HB2	1.98	0.45
9:M:52:GLY:O	9:M:242:MET:HB3	2.15	0.45
9:M:94:ALA:O	9:M:97:LEU:HG	2.16	0.45
9:M:146:ARG:HD2	9:M:146:ARG:HA	1.66	0.45
10:N:287:ILE:HG22	10:N:330:VAL:HG21	1.98	0.45
10:O:8:PRO:HG2	10:O:89:LEU:HD12	1.98	0.45
12:W:63:LYS:HA	12:W:66:LEU:HB2	1.97	0.45
12:W:240:ARG:NE	12:W:257:ALA:HB2	2.32	0.45
8:E:188:PHE:CE2	8:C:467:GLY:HA3	2.51	0.45
9:G:123:ILE:HG23	9:G:128:VAL:HB	1.98	0.45
9:H:296:GLU:HA	9:H:299:LEU:HB2	1.99	0.45
9:J:40:SER:O	9:J:163:LYS:HD2	2.17	0.45
8:C:535:GLU:O	8:C:539:GLU:HG2	2.15	0.45
8:D:557:ARG:C	8:D:559:ARG:N	2.74	0.45
9:K:141:GLU:CB	9:K:146:ARG:HG3	2.47	0.45
14:T:286:ARG:NH2	14:T:345:GLY:HA3	2.32	0.45
14:U:67:GLN:N	14:U:67:GLN:CD	2.75	0.45
8:F:429:LYS:HA	8:F:432:LEU:HD12	1.97	0.45
10:O:56:ILE:O	10:O:59:ILE:HG22	2.17	0.45
10:O:86:PRO:HB2	10:O:89:LEU:HD23	1.99	0.45
10:O:135:ASN:OD1	10:O:137:TYR:CG	2.61	0.45
12:W:281:TRP:HB2	12:W:282:LEU:H	1.36	0.45
12:W:412:LEU:HB2	12:W:568:VAL:HG12	1.98	0.45
14:V:118:LEU:HD13	14:V:320:LEU:HB3	1.98	0.45
9:G:151:VAL:HG23	9:G:154:TRP:CZ3	2.52	0.45
9:L:254:ILE:HG12	9:K:35:LEU:HD22	1.98	0.45
8:C:465:TYR:OH	8:C:474:VAL:HG13	2.17	0.45
8:D:273:LEU:HD21	8:D:480:PRO:HG2	1.99	0.45
9:K:80:LEU:HB3	9:K:131:ILE:HA	1.99	0.45
14:R:107:LYS:O	14:R:110:GLN:HG3	2.17	0.45
14:Q:320:LEU:HD12	14:Q:320:LEU:HA	1.87	0.45
3:3:118:DG:H2'	10:O:363:THR:HG21	1.98	0.45
7:B:138:VAL:HB	7:B:143:ILE:HD11	1.99	0.45
8:F:54:ARG:HG3	8:F:97:TRP:CE3	2.52	0.45
8:F:152:TYR:HB2	8:F:178:VAL:HG21	1.99	0.45
8:F:294:ASN:HD21	8:D:534:LYS:HE3	1.80	0.45
8:F:528:ALA:O	8:F:541:LYS:HG2	2.17	0.45
10:O:203:TRP:CZ3	10:O:220:ARG:HG2	2.42	0.45
12:W:38:ASP:O	12:W:42:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:7:14:DG:H4'	13:7:15:DT:OP1	2.17	0.45
9:G:238:SER:OG	9:G:241:ASN:HB2	2.17	0.45
9:I:148:LEU:HD12	9:I:148:LEU:HA	1.85	0.45
9:J:191:GLN:NE2	9:K:278:GLY:H	2.14	0.45
8:C:454:GLU:O	8:C:454:GLU:HG3	2.17	0.45
9:K:82:ILE:HG22	9:K:100:GLU:HG2	1.99	0.45
14:T:306:PHE:CE2	14:T:347:PHE:HB3	2.50	0.45
7:B:160:SER:HA	8:E:326:LEU:HD22	1.99	0.45
8:F:414:LYS:HD2	8:F:415:LYS:N	2.32	0.45
8:F:520:LYS:HB2	8:F:524:GLU:CB	2.42	0.45
9:M:302:PRO:C	9:M:304:LYS:H	2.25	0.45
10:N:130:LEU:HD23	10:N:133:ARG:NH2	2.30	0.45
10:N:394:TRP:O	10:O:68:SER:HB3	2.17	0.45
10:O:289:LEU:HB2	10:O:299:ILE:HG23	1.99	0.45
12:W:563:LEU:HD12	12:W:599:ASN:HA	1.99	0.45
12:W:563:LEU:HG	12:W:598:ILE:O	2.17	0.45
9:H:47:VAL:HB	9:H:169:PHE:CD1	2.49	0.45
8:C:234:GLU:HG3	8:C:381:THR:HG21	1.99	0.45
8:C:368:GLN:HG2	8:C:369:ARG:HG2	1.99	0.45
8:D:560:ARG:HH11	8:D:560:ARG:HA	1.82	0.45
14:S:286:ARG:HE	14:T:44:GLU:HG2	1.82	0.45
14:Q:34:TYR:HB2	14:Q:75:PHE:O	2.17	0.45
9:M:269:PHE:HB3	9:M:288:PHE:CE2	2.51	0.44
10:N:288:ARG:HG3	10:N:289:LEU:O	2.17	0.44
10:O:283:PHE:CZ	10:O:331:MET:HE3	2.52	0.44
12:W:43:LEU:HD12	12:W:135:PHE:O	2.16	0.44
8:E:657:SER:O	8:E:659:TRP:N	2.49	0.44
9:H:57:THR:HG21	15:H:600:ATP:C5	2.52	0.44
9:I:155:LEU:HD12	9:I:166:ILE:HD12	1.97	0.44
9:J:42:PRO:HB2	9:J:165:PRO:HB3	2.00	0.44
9:J:94:ALA:HA	9:J:97:LEU:HG	1.99	0.44
9:L:46:MET:HB2	9:L:188:PHE:CD2	2.52	0.44
8:C:272:SER:O	8:C:276:LYS:HG3	2.17	0.44
8:C:507:ALA:HA	8:C:510:VAL:HG12	2.00	0.44
14:T:182:LYS:HA	14:T:187:TRP:CD1	2.53	0.44
3:3:76:DT:P	8:F:535:GLU:H	2.39	0.44
4:4:79:DA:C8	4:4:80:DT:H72	2.52	0.44
7:B:185:GLU:HA	7:B:188:GLU:HB2	1.97	0.44
8:F:510:VAL:HA	8:F:514:GLN:CD	2.42	0.44
9:M:200:GLN:HE22	9:M:203:ARG:C	2.24	0.44
10:N:170:ARG:NH1	10:N:170:ARG:HG3	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:255:ILE:HD11	10:N:302:GLU:OE2	2.17	0.44
12:W:202:SER:OG	12:W:210:TYR:HD1	2.00	0.44
12:W:390:LEU:HD23	12:W:390:LEU:O	2.16	0.44
9:J:115:LEU:O	9:J:119:LEU:HD23	2.17	0.44
14:R:2:LYS:CE	14:R:346:MET:HB2	2.43	0.44
14:R:42:GLN:O	14:R:44:GLU:HG3	2.17	0.44
14:R:306:PHE:HB2	14:R:336:PHE:CE2	2.53	0.44
14:S:330:THR:O	14:S:334:MET:HG2	2.17	0.44
14:T:227:PHE:HD2	14:U:40:LEU:HB2	1.82	0.44
14:U:274:TRP:HB3	14:U:332:ASN:ND2	2.32	0.44
3:3:144:DA:H2"	3:3:145:DA:C8	2.51	0.44
8:F:202:ARG:NH1	8:F:336:THR:HG22	2.32	0.44
9:M:61:LYS:HA	9:M:64:ASN:OD1	2.17	0.44
9:H:173:TYR:HD2	9:H:308:TRP:HA	1.82	0.44
9:H:173:TYR:CD2	9:H:308:TRP:HA	2.53	0.44
9:L:205:VAL:HB	9:L:208:THR:HG23	1.99	0.44
9:L:243:ARG:HA	9:L:243:ARG:HD3	1.69	0.44
2:2:15:DA:OP2	8:E:684:LYS:CE	2.66	0.44
10:N:127:CYS:HB2	10:N:169:TYR:CE2	2.52	0.44
10:N:243:PHE:HB3	10:N:251:PHE:HE1	1.82	0.44
10:N:295:GLN:O	10:N:295:GLN:HG2	2.17	0.44
12:W:8:ILE:HA	12:W:12:PRO:HG3	1.99	0.44
12:W:15:LEU:C	12:W:17:THR:H	2.25	0.44
12:W:98:ILE:O	12:W:100:THR:HG22	2.17	0.44
12:W:542:LEU:HD12	12:W:543:TYR:N	2.31	0.44
9:H:273:SER:HB2	9:H:288:PHE:HD2	1.82	0.44
9:I:150:GLN:HG3	9:J:87:ASN:ND2	2.33	0.44
9:I:238:SER:O	9:I:241:ASN:HB2	2.17	0.44
9:L:94:ALA:HB3	9:L:115:LEU:HD22	1.98	0.44
9:K:8:ARG:NE	9:K:8:ARG:HA	2.32	0.44
9:K:172:PRO:HB2	9:K:308:TRP:CD1	2.53	0.44
14:R:306:PHE:HA	14:R:309:ILE:HG12	2.00	0.44
7:A:157:ARG:HD3	8:F:303:ASP:HB3	1.99	0.44
12:W:436:GLU:HB3	12:W:628:ARG:NH2	2.32	0.44
8:E:660:GLN:HE21	8:E:697:HIS:CD2	2.34	0.44
14:V:150:TYR:HE2	14:U:159:TRP:CG	2.35	0.44
9:H:269:PHE:CE2	9:H:288:PHE:HB3	2.52	0.44
8:C:366:TYR:OH	8:C:392:TRP:HB2	2.18	0.44
9:K:24:LYS:HD2	9:K:28:TYR:CZ	2.52	0.44
9:K:61:LYS:HD2	9:K:61:LYS:HA	1.79	0.44
9:K:89:LYS:HB3	9:K:92:ASP:OD2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:S:327:ALA:HB3	14:S:330:THR:HG23	1.99	0.44
3:3:44:DT:H2"	3:3:45:DA:C8	2.52	0.44
3:3:96:DG:H2"	3:3:97:DG:C8	2.53	0.44
7:A:107:LYS:HZ1	7:A:111:GLN:CB	2.29	0.44
10:N:227:TRP:C	10:N:229:GLY:H	2.25	0.44
12:W:553:LEU:O	12:W:557:MET:HG2	2.18	0.44
8:E:657:SER:C	8:E:661:HIS:HB3	2.43	0.44
13:7:12:DA:H2"	13:7:13:DA:N7	2.32	0.44
14:V:221:VAL:C	14:V:222:ARG:HD2	2.43	0.44
9:I:242:MET:HE2	15:I:600:ATP:C1'	2.45	0.44
9:J:131:ILE:HD12	9:J:133:ILE:HD11	1.99	0.44
9:K:26:LEU:HA	9:K:29:MET:HE2	1.98	0.44
14:R:2:LYS:CG	14:R:348:GLN:H	2.27	0.44
14:R:104:ASN:HB3	14:S:294:VAL:HG23	2.00	0.44
14:R:133:LEU:HA	14:R:133:LEU:HD12	1.86	0.44
14:T:327:ALA:O	14:T:331:ILE:HG12	2.18	0.44
1:1:9:C:C4	14:V:227:PHE:CD1	3.05	0.44
4:4:95:DT:H2"	4:4:96:DG:H8	1.82	0.44
8:F:62:ALA:HA	8:F:68:ILE:HD11	1.99	0.44
8:F:237:ARG:HE	8:D:559:ARG:CA	2.30	0.44
9:M:156:LYS:HG3	9:M:187:ARG:HH22	1.82	0.44
12:W:193:LEU:HD22	12:W:579:LYS:HB2	1.99	0.44
12:W:193:LEU:HD13	12:W:579:LYS:HD2	2.00	0.44
12:W:450:ARG:CG	12:W:474:GLN:HE21	2.30	0.44
12:W:459:LYS:HD3	12:W:459:LYS:HA	1.64	0.44
12:W:614:TRP:CD1	12:W:614:TRP:H	2.35	0.44
8:E:100:ALA:HA	8:E:103:LYS:HE2	2.00	0.44
8:E:101:PHE:CZ	8:C:326:LEU:HD11	2.52	0.44
9:G:11:ARG:HE	9:G:218:PRO:HB3	1.82	0.44
9:G:35:LEU:HB3	9:H:13:LYS:HE2	1.99	0.44
9:H:163:LYS:HE2	9:H:163:LYS:HB2	1.77	0.44
9:H:309:GLU:N	9:H:312:LEU:HB2	2.33	0.44
9:J:45:MET:HG2	9:J:167:VAL:HG13	2.00	0.44
14:S:138:ASN:C	14:S:138:ASN:OD1	2.60	0.44
14:T:229:GLU:OE1	14:T:229:GLU:N	2.51	0.44
3:3:86:DG:H2"	3:3:87:DA:C8	2.52	0.44
8:F:215:SER:HB2	8:F:420:TRP:CD1	2.53	0.44
9:M:46:MET:HG2	9:M:190:ILE:O	2.18	0.44
10:N:293:ASN:HB3	10:N:294:LEU:H	1.45	0.44
10:O:141:LEU:HD22	10:O:147:TYR:CE1	2.53	0.44
10:O:273:LEU:HD22	10:O:278:LEU:HD21	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:258:PHE:HE1	12:W:260:MET:HE2	1.82	0.44
8:E:667:TYR:CE1	8:E:674:ILE:HG12	2.53	0.44
14:V:276:PRO:O	14:V:277:GLU:HG2	2.18	0.44
9:L:32:CYS:SG	9:L:45:MET:HE3	2.58	0.44
9:K:107:LEU:H	9:K:107:LEU:HD22	1.83	0.44
14:S:108:VAL:O	14:S:112:LEU:HD23	2.16	0.44
14:T:190:ILE:O	14:T:194:ILE:HG22	2.17	0.44
6:6:40:DT:H2'	8:E:96:ARG:HH22	1.82	0.44
7:A:204:LEU:HA	7:A:207:ARG:HG2	2.00	0.44
7:B:24:ALA:H	7:B:73:LYS:HB2	1.83	0.44
8:F:462:LEU:HD12	8:F:462:LEU:HA	1.88	0.44
10:N:204:LEU:H	10:N:204:LEU:HD12	1.82	0.44
10:N:262:ASN:OD1	10:N:278:LEU:HA	2.18	0.44
10:O:100:LYS:HG2	10:O:288:ARG:NH2	2.33	0.44
12:W:232:GLU:HB2	12:W:235:HIS:ND1	2.33	0.44
9:G:95:ARG:HD2	9:G:107:LEU:HG	1.99	0.44
9:G:237:PHE:HB2	9:G:288:PHE:HE2	1.83	0.44
8:D:434:PHE:HB2	8:D:487:TRP:NE1	2.33	0.44
8:D:541:LYS:O	8:D:545:ILE:HG23	2.18	0.44
9:K:8:ARG:HH21	9:K:11:ARG:HG2	1.83	0.44
1:1:39:C:O2'	14:Q:225:GLN:HB2	2.18	0.43
3:3:113:DC:OP1	10:O:117:ARG:HD2	2.18	0.43
4:4:81:DT:H2"	4:4:82:DA:C8	2.53	0.43
9:M:261:HIS:CE1	9:M:264:ILE:HA	2.53	0.43
10:N:345:GLN:NE2	10:N:345:GLN:CA	2.81	0.43
10:O:62:TYR:HD1	10:O:117:ARG:NH2	2.15	0.43
10:O:89:LEU:O	10:O:92:LEU:HB2	2.17	0.43
11:P:133:PHE:HD1	11:P:134:ASP:N	2.16	0.43
12:W:419:VAL:HG12	12:W:423:GLU:OE2	2.17	0.43
8:E:401:PRO:HG3	8:C:527:SER:HA	2.00	0.43
13:7:19:DG:H2'	13:7:19:DG:N3	2.33	0.43
9:G:197:PHE:HB3	9:G:206:PHE:HD1	1.83	0.43
9:I:171:MET:HE2	9:I:172:PRO:HD2	1.98	0.43
9:J:24:LYS:HG2	9:J:28:TYR:CZ	2.52	0.43
9:J:233:LYS:HA	9:J:233:LYS:HD2	1.85	0.43
9:L:139:LEU:HD11	9:L:174:SER:HB3	2.00	0.43
9:L:148:LEU:HB2	9:L:150:GLN:OE1	2.18	0.43
8:D:532:GLU:OE2	8:D:536:ILE:HD13	2.17	0.43
9:K:221:LYS:HE2	9:K:262:GLU:HB2	2.00	0.43
14:T:32:LEU:HD12	14:T:33:THR:N	2.33	0.43
14:U:97:LEU:HD11	14:U:125:TRP:HH2	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:U:120:GLU:HG2	14:U:125:TRP:NE1	2.33	0.43
14:U:122:LYS:HD2	14:U:122:LYS:HA	1.74	0.43
14:Q:34:TYR:CZ	14:Q:255:ARG:HD3	2.53	0.43
14:Q:339:ALA:O	14:Q:342:ILE:HG22	2.17	0.43
3:3:117:DT:H2"	3:3:118:DG:C8	2.53	0.43
3:3:132:DT:H6	3:3:132:DT:H2'	1.59	0.43
8:F:220:VAL:HG13	8:F:250:ASP:HA	2.00	0.43
10:O:77:LYS:O	10:O:81:LEU:HG	2.17	0.43
10:O:176:GLY:HA3	10:O:184:PRO:HB3	2.00	0.43
8:E:153:LYS:O	8:E:157:ARG:HG3	2.18	0.43
13:7:53:DA:H2'	13:7:53:DA:N3	2.32	0.43
14:V:150:TYR:HE2	14:U:159:TRP:CD2	2.36	0.43
14:V:275:TYR:HB2	14:V:304:LYS:HZ3	1.82	0.43
9:H:273:SER:HB2	9:H:286:ASN:HD21	1.83	0.43
9:I:46:MET:HE1	9:I:48:TYR:HD2	1.82	0.43
9:I:62:TYR:O	9:I:66:ASN:HB2	2.18	0.43
9:J:191:GLN:HE21	9:K:278:GLY:CA	2.31	0.43
9:J:296:GLU:HG3	9:J:300:ARG:HH22	1.83	0.43
9:K:136:PHE:HD1	9:K:136:PHE:HA	1.68	0.43
14:R:330:THR:O	14:R:334:MET:HG2	2.18	0.43
14:T:147:ARG:HG2	14:T:148:LYS:HD2	2.00	0.43
14:U:166:VAL:HG13	14:U:186:ASN:HD21	1.84	0.43
14:Q:194:ILE:HD11	14:Q:198:PHE:CE2	2.53	0.43
7:A:37:ARG:HE	8:F:329:VAL:HG13	1.83	0.43
8:F:520:LYS:O	8:F:521:TYR:C	2.60	0.43
9:M:306:ILE:HB	9:M:308:TRP:CD1	2.52	0.43
10:N:273:LEU:HB2	10:N:321:LEU:HD22	2.00	0.43
10:N:292:ARG:HH21	13:7:48:DA:N6	2.15	0.43
10:O:348:LEU:HD23	10:O:348:LEU:HA	1.84	0.43
12:W:106:LEU:HD13	12:W:622:TYR:CE1	2.53	0.43
14:V:114:GLN:O	14:V:118:LEU:HG	2.18	0.43
14:V:290:HIS:CE1	14:V:292:GLU:HB2	2.53	0.43
14:V:338:MET:O	14:V:341:LEU:HD12	2.18	0.43
9:I:146:ARG:C	9:J:142:GLU:HB3	2.44	0.43
9:J:246:ARG:HA	9:J:249:ILE:HG12	2.00	0.43
9:L:266:GLU:O	9:L:270:VAL:HG22	2.18	0.43
8:D:559:ARG:C	8:D:561:ARG:N	2.74	0.43
14:R:64:ALA:HA	14:R:67:GLN:HE22	1.81	0.43
14:S:286:ARG:H	14:S:286:ARG:HG2	1.53	0.43
14:T:41:GLY:H	14:T:69:ASN:H	1.66	0.43
10:N:141:LEU:HD23	10:N:141:LEU:HA	1.90	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:22:ALA:HA	12:W:27:THR:HG21	1.99	0.43
12:W:395:VAL:HG12	12:W:477:VAL:HB	2.01	0.43
9:G:45:MET:O	9:G:167:VAL:HA	2.19	0.43
9:G:131:ILE:HG12	9:G:164:CYS:SG	2.59	0.43
14:R:185:LYS:H	14:R:185:LYS:HG3	1.43	0.43
14:U:100:PRO:HG2	14:U:109:LYS:HA	2.00	0.43
14:Q:113:VAL:HA	14:Q:116:VAL:HG22	1.99	0.43
14:Q:264:THR:O	14:Q:268:ILE:HG13	2.17	0.43
7:A:211:ASP:OD2	7:A:225:GLU:HG2	2.18	0.43
10:N:59:ILE:HD12	10:N:59:ILE:HA	1.84	0.43
10:N:342:MET:HE1	10:N:390:TYR:O	2.19	0.43
10:O:69:SER:HA	10:O:72:THR:HG23	2.00	0.43
12:W:88:LYS:HB3	12:W:92:ILE:HA	2.01	0.43
8:E:261:LEU:HD21	8:E:385:ILE:HB	2.00	0.43
8:E:273:LEU:HA	8:E:276:LYS:HE3	2.00	0.43
8:E:354:LEU:HD13	8:E:392:TRP:CD1	2.53	0.43
8:E:657:SER:H	8:E:661:HIS:N	2.05	0.43
9:H:78:PRO:HA	9:H:128:VAL:HG22	2.00	0.43
9:J:14:ARG:NH2	9:J:61:LYS:HE2	2.34	0.43
9:J:280:LYS:HD2	9:J:284:TRP:CD2	2.52	0.43
8:C:361:LYS:HE3	8:C:361:LYS:HB3	1.86	0.43
14:R:165:LYS:H	14:R:165:LYS:HG3	1.40	0.43
14:U:156:LEU:HD21	14:U:207:PHE:CE1	2.52	0.43
1:1:39:C:H5	3:3:123:DG:H1	1.66	0.43
2:2:18:DT:H2'	2:2:19:DA:C8	2.54	0.43
8:F:145:LYS:HD3	8:F:145:LYS:N	2.33	0.43
8:F:324:SER:HB2	8:F:435:LYS:HD2	1.99	0.43
8:F:515:HIS:HB3	8:F:516:LYS:HZ3	1.83	0.43
10:N:65:LYS:HE3	14:Q:277:GLU:HG2	2.00	0.43
10:N:204:LEU:CD2	10:N:224:VAL:HG21	2.49	0.43
12:W:26:LEU:HD23	12:W:26:LEU:HA	1.85	0.43
12:W:446:HIS:ND1	14:V:249:THR:HA	2.34	0.43
8:E:396:ILE:CG2	8:E:397:TYR:H	2.25	0.43
8:E:662:LYS:O	8:E:666:LYS:N	2.37	0.43
13:7:13:DA:H2"	13:7:14:DG:C8	2.54	0.43
9:L:82:ILE:HD11	9:L:97:LEU:HD23	2.00	0.43
9:L:133:ILE:HG21	9:L:154:TRP:HH2	1.84	0.43
8:C:276:LYS:HG2	8:C:436:PHE:HD2	1.83	0.43
8:D:560:ARG:O	8:D:561:ARG:C	2.62	0.43
14:R:3:LEU:HB2	14:R:347:PHE:CD1	2.54	0.43
14:R:272:ASP:HB2	14:R:284:VAL:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:U:141:TRP:HZ2	14:U:154:ILE:HD12	1.83	0.43
14:U:175:TYR:HB3	14:U:181:PHE:CE2	2.53	0.43
1:1:21:U:C6	14:T:227:PHE:HA	2.52	0.43
7:A:5:LEU:HD22	7:A:132:GLY:HA2	1.99	0.43
8:F:526:ASN:O	8:F:527:SER:C	2.62	0.43
9:M:246:ARG:HA	9:M:249:ILE:HD12	2.00	0.43
10:N:66:ASN:HD21	10:O:346:ARG:HB2	1.83	0.43
12:W:491:ILE:HD12	12:W:491:ILE:HA	1.82	0.43
9:H:296:GLU:O	9:H:300:ARG:N	2.51	0.43
14:Q:110:GLN:HA	14:Q:113:VAL:HG22	2.00	0.43
3:3:84:DT:H2'	3:3:85:DT:H71	2.01	0.43
6:6:36:DA:H2"	6:6:37:DA:C8	2.53	0.43
8:F:529:GLU:O	8:F:532:GLU:N	2.42	0.43
10:O:101:TYR:O	10:O:289:LEU:HD23	2.19	0.43
10:O:147:TYR:CE1	10:O:203:TRP:HB3	2.53	0.43
10:O:283:PHE:CE1	10:O:287:ILE:HD11	2.54	0.43
12:W:86:ASN:HB2	12:W:219:LEU:HG	2.00	0.43
12:W:489:GLN:O	12:W:492:ASP:HB2	2.18	0.43
8:E:197:GLU:HG3	8:E:201:LYS:HZ2	1.83	0.43
8:E:236:TYR:HB3	8:E:238:ILE:HG22	1.99	0.43
9:G:6:GLU:H	9:G:6:GLU:CD	2.27	0.43
9:G:49:GLY:HA3	9:G:53:VAL:HG21	2.00	0.43
9:I:196:PRO:HG3	9:I:306:ILE:HD13	2.01	0.43
9:I:207:LYS:HA	9:I:210:LEU:HD12	2.01	0.43
9:J:25:ILE:O	9:J:29:MET:HE3	2.18	0.43
9:J:123:ILE:HG21	9:J:162:THR:HB	2.01	0.43
9:L:117:LYS:HA	9:L:117:LYS:HD2	1.69	0.43
9:L:238:SER:HA	9:L:244:SER:OG	2.19	0.43
8:C:425:PHE:CE2	8:C:432:LEU:HD21	2.53	0.43
8:C:546:ALA:O	8:C:550:ILE:HG12	2.19	0.43
9:K:29:MET:HG3	9:K:62:TYR:CE2	2.53	0.43
9:K:44:CYS:SG	9:K:159:LEU:HD11	2.59	0.43
9:K:123:ILE:HD12	9:K:128:VAL:HG21	2.01	0.43
14:R:16:SER:HB3	14:R:90:SER:O	2.19	0.43
14:T:147:ARG:HD3	14:T:148:LYS:NZ	2.34	0.43
14:Q:20:PHE:HD1	14:Q:20:PHE:HA	1.74	0.43
14:Q:23:VAL:HG12	14:Q:84:HIS:H	1.83	0.43
7:A:121:TRP:HA	7:A:124:LYS:HD2	2.01	0.43
7:A:198:LEU:HG	7:A:199:PRO:HD3	2.01	0.43
7:B:25:ARG:HD2	7:B:25:ARG:HA	1.82	0.43
8:F:185:LYS:HA	8:F:185:LYS:HD2	1.92	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:195:LYS:HB3	8:F:195:LYS:HE2	1.72	0.43
8:F:226:VAL:HG12	8:F:242:ARG:NH2	2.34	0.43
8:F:517:TYR:C	8:F:519:MET:N	2.76	0.43
9:M:116:THR:HA	9:M:119:LEU:HG	2.01	0.43
10:O:128:CYS:HB2	10:O:142:TRP:CZ2	2.54	0.43
10:O:243:PHE:CZ	10:O:254:ILE:HD12	2.45	0.43
10:O:246:ASN:HB3	10:O:250:SER:HB3	2.00	0.43
10:O:251:PHE:O	10:O:255:ILE:HG13	2.19	0.43
8:E:358:LEU:HD12	8:E:359:PRO:HD2	2.00	0.43
14:V:20:PHE:HB3	14:V:85:ILE:HD11	1.99	0.43
9:G:115:LEU:O	9:G:119:LEU:HG	2.19	0.43
9:H:232:LYS:C	9:H:294:VAL:HG21	2.44	0.43
9:I:156:LYS:HA	9:I:159:LEU:HG	2.01	0.43
9:I:159:LEU:HD12	9:I:187:ARG:HD2	1.99	0.43
9:J:82:ILE:HB	9:J:133:ILE:HD12	2.01	0.43
8:C:537:ASP:C	8:C:541:LYS:HZ2	2.26	0.43
8:D:260:TYR:CZ	8:D:273:LEU:HD12	2.54	0.43
9:K:85:PRO:HD3	9:K:96:GLU:HG3	2.00	0.43
14:U:287:PHE:C	14:U:298:ARG:HB2	2.43	0.43
3:3:65:DA:H2"	3:3:66:DT:O5'	2.18	0.43
7:A:176:LYS:HA	7:A:176:LYS:HD2	1.86	0.43
7:B:190:LEU:HD23	7:B:190:LEU:HA	1.78	0.43
8:F:55:LEU:O	8:F:59:ARG:CB	2.59	0.43
8:F:538:ALA:O	8:F:542:ILE:HG23	2.19	0.43
10:O:168:ASP:OD1	10:O:168:ASP:C	2.62	0.43
12:W:57:LEU:O	12:W:59:ARG:HD2	2.19	0.43
8:E:482:CYS:C	8:E:483:MET:HE2	2.44	0.43
8:E:510:VAL:HB	8:E:661:HIS:CA	2.45	0.43
14:V:6:ASN:HA	14:V:348:GLN:NE2	2.34	0.43
9:G:9:ILE:HD12	9:G:9:ILE:HA	1.88	0.43
9:I:155:LEU:O	9:I:158:ILE:HG13	2.19	0.43
9:L:207:LYS:HE2	9:L:207:LYS:O	2.19	0.43
8:C:444:LEU:HD12	8:C:444:LEU:HA	1.75	0.43
8:C:468:LYS:HD2	8:C:468:LYS:HA	1.83	0.43
14:S:346:MET:HB2	14:S:346:MET:HE2	1.64	0.43
3:3:125:DG:C5	14:R:71:HIS:CE1	3.07	0.42
10:N:142:TRP:CH2	10:N:150:CYS:HA	2.49	0.42
10:N:147:TYR:CE1	10:N:204:LEU:HD13	2.53	0.42
10:N:259:VAL:O	10:N:263:LEU:HB2	2.19	0.42
10:O:12:GLU:OE2	10:O:20:ARG:HD3	2.19	0.42
10:O:128:CYS:HB3	10:O:131:CYS:HB2	1.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:O:141:LEU:HB3	10:O:147:TYR:CE1	2.54	0.42
10:O:290:PRO:HB2	10:O:292:ARG:HH12	1.84	0.42
10:O:298:ILE:HG12	10:O:298:ILE:O	2.19	0.42
12:W:43:LEU:HD13	12:W:46:LEU:HD22	2.01	0.42
12:W:106:LEU:HD13	12:W:622:TYR:HE1	1.83	0.42
8:E:281:ARG:HE	8:E:281:ARG:HB3	1.63	0.42
14:V:40:LEU:HD11	14:V:68:GLY:HA3	2.00	0.42
9:G:84:LEU:HD21	9:G:139:LEU:HD23	2.01	0.42
9:I:206:PHE:CZ	9:I:210:LEU:HD11	2.54	0.42
9:J:159:LEU:HD21	9:J:166:ILE:HG12	2.01	0.42
14:R:65:LEU:HD23	14:R:65:LEU:HA	1.84	0.42
14:R:299:HIS:HB3	14:R:302:THR:HG23	2.01	0.42
14:T:11:ARG:NH1	14:U:220:MET:HE1	2.30	0.42
7:A:74:PRO:HG2	7:A:90:PRO:HG2	2.01	0.42
7:A:197:VAL:O	7:A:201:LEU:HG	2.19	0.42
8:F:42:ALA:HB1	8:D:489:LEU:HD13	2.01	0.42
9:M:107:LEU:C	9:L:114:ARG:HH12	2.26	0.42
10:O:25:ASN:HB3	10:O:27:TYR:CE1	2.54	0.42
10:O:198:CYS:HB2	10:O:208:GLU:OE2	2.19	0.42
10:O:298:ILE:C	10:O:299:ILE:HD13	2.45	0.42
10:O:322:LYS:HB3	10:O:365:TYR:HB3	2.00	0.42
12:W:260:MET:HE1	12:W:405:VAL:C	2.44	0.42
8:E:386:ARG:HH11	8:E:386:ARG:HG3	1.84	0.42
9:H:123:ILE:HA	9:H:126:VAL:HG12	2.02	0.42
9:H:138:HIS:CD2	9:H:138:HIS:N	2.87	0.42
9:I:56:THR:OG1	15:I:600:ATP:H5'2	2.18	0.42
9:L:226:ALA:O	9:L:230:LEU:HB2	2.19	0.42
14:R:215:LEU:HB3	14:R:219:ALA:HB3	2.00	0.42
14:T:29:LYS:HE2	14:T:29:LYS:HB2	1.89	0.42
14:Q:267:ALA:O	14:Q:270:THR:HG22	2.19	0.42
3:3:88:DC:H2"	3:3:89:DA:C8	2.54	0.42
8:F:57:ILE:HG12	8:F:84:TYR:HE1	1.84	0.42
8:F:94:ILE:H	8:F:94:ILE:HD12	1.85	0.42
8:F:144:ARG:NH1	8:E:360:GLY:H	2.17	0.42
10:N:225:HIS:HA	10:N:228:MET:SD	2.59	0.42
12:W:72:TRP:CD2	12:W:177:MET:HE2	2.54	0.42
12:W:109:PHE:CE2	12:W:542:LEU:HD21	2.55	0.42
12:W:116:ILE:HD11	12:W:220:SER:HB3	2.02	0.42
12:W:307:ILE:O	12:W:310:ARG:HG2	2.20	0.42
8:E:657:SER:H	8:E:660:GLN:HB2	1.85	0.42
9:I:148:LEU:HD21	9:I:176:VAL:HG23	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:L:8:ARG:HE	9:L:218:PRO:HB2	1.84	0.42
14:U:110:GLN:OE1	14:U:110:GLN:C	2.63	0.42
14:U:275:TYR:CZ	14:U:278:ALA:HA	2.55	0.42
14:Q:148:LYS:HE2	14:Q:148:LYS:HB2	1.90	0.42
1:1:27:A:H4'	1:1:28:G:OP1	2.20	0.42
1:1:28:G:H5"	14:S:225:GLN:NE2	2.33	0.42
8:F:489:LEU:HG	8:F:496:TYR:CE2	2.55	0.42
9:M:81:HIS:HA	9:M:132:ILE:HB	2.02	0.42
10:N:249:ARG:O	10:N:252:HIS:HB2	2.18	0.42
10:O:187:LEU:HD23	10:O:187:LEU:HA	1.88	0.42
12:W:180:GLN:HA	12:W:183:ASP:HB2	2.00	0.42
8:E:102:ARG:NE	8:E:102:ARG:HA	2.34	0.42
9:G:271:PHE:HA	9:G:274:LYS:HG2	2.02	0.42
9:H:173:TYR:CB	9:H:308:TRP:HA	2.35	0.42
9:I:66:ASN:C	9:I:67:ARG:HD3	2.44	0.42
9:J:300:ARG:HH11	9:J:300:ARG:HG3	1.84	0.42
9:L:209:PHE:HZ	9:L:246:ARG:HH12	1.67	0.42
14:T:119:TYR:HD1	14:T:119:TYR:O	2.03	0.42
14:T:223:PRO:HG2	14:T:246:PHE:CG	2.54	0.42
14:Q:6:ASN:H	14:Q:104:ASN:HD21	1.68	0.42
3:3:65:DA:C8	3:3:66:DT:H72	2.55	0.42
7:A:158:TYR:O	7:A:203:ASP:HA	2.19	0.42
7:B:37:ARG:HB3	8:E:329:VAL:HG22	2.00	0.42
8:F:237:ARG:NH2	8:D:560:ARG:HB2	2.35	0.42
8:F:529:GLU:C	8:F:531:ASP:H	2.27	0.42
10:N:101:TYR:CE1	10:N:290:PRO:HG3	2.55	0.42
11:P:140:GLN:HE22	11:P:142:GLU:HA	1.85	0.42
12:W:497:VAL:CG1	14:V:159:TRP:HH2	2.33	0.42
13:7:53:DA:C4	13:7:54:DG:C8	3.07	0.42
14:V:166:VAL:HG22	14:V:186:ASN:HB3	2.02	0.42
9:G:151:VAL:O	9:G:155:LEU:HG	2.19	0.42
9:J:7:ALA:O	9:J:11:ARG:HG2	2.19	0.42
8:C:236:TYR:HD2	8:C:517:TYR:HE2	1.67	0.42
14:S:18:VAL:HG22	14:S:89:PHE:HB3	2.01	0.42
14:S:135:ASN:HB3	14:S:268:ILE:HA	2.01	0.42
14:T:122:LYS:HE3	14:T:122:LYS:HB3	1.92	0.42
2:2:15:DA:OP2	8:E:684:LYS:HE3	2.19	0.42
3:3:96:DG:H2"	3:3:97:DG:H8	1.84	0.42
7:A:158:TYR:CE2	7:A:199:PRO:HB3	2.54	0.42
10:O:101:TYR:CD1	10:O:221:TRP:CD2	3.08	0.42
10:O:223:LEU:HB2	10:O:235:PHE:CZ	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:W:229:LEU:HD23	12:W:229:LEU:HA	1.84	0.42
12:W:258:PHE:CE1	12:W:260:MET:HE2	2.54	0.42
12:W:452:LEU:HB3	14:V:227:PHE:HD2	1.83	0.42
8:E:247:GLN:HG3	8:E:347:TYR:CE1	2.54	0.42
8:E:442:LYS:HB2	8:E:476:PHE:CE2	2.54	0.42
14:V:20:PHE:HD1	14:V:87:CYS:HB3	1.85	0.42
9:G:246:ARG:HA	9:G:249:ILE:HG12	2.00	0.42
9:I:88:ALA:HB3	9:I:139:LEU:HA	2.02	0.42
15:K:600:ATP:O1A	15:K:600:ATP:H8	2.02	0.42
14:R:304:LYS:HD3	14:R:304:LYS:HA	1.79	0.42
14:T:11:ARG:HH22	14:U:220:MET:HE1	1.85	0.42
1:1:4:A:H8	14:V:101:TYR:HE2	1.67	0.42
4:4:84:DA:OP2	8:F:69:VAL:HB	2.20	0.42
7:A:45:LYS:HA	7:A:45:LYS:HD3	1.83	0.42
7:A:161:LYS:O	7:A:161:LYS:HD3	2.20	0.42
7:B:176:LYS:HA	7:B:176:LYS:HD2	1.67	0.42
10:N:141:LEU:HD22	10:N:147:TYR:CE2	2.54	0.42
10:O:221:TRP:CD2	10:O:290:PRO:HG3	2.55	0.42
10:O:256:GLU:HG2	10:O:306:TYR:OH	2.20	0.42
10:O:345:GLN:O	10:O:345:GLN:HG3	2.18	0.42
12:W:577:LYS:C	12:W:587:LYS:HG3	2.45	0.42
12:W:614:TRP:HA	12:W:627:PRO:HA	2.01	0.42
9:H:279:ASP:CG	9:H:280:LYS:HG2	2.44	0.42
8:D:333:LYS:HD3	8:D:333:LYS:HA	1.87	0.42
14:S:307:PHE:HE1	14:S:347:PHE:HB3	1.83	0.42
14:T:138:ASN:HB3	14:T:139:GLY:H	1.72	0.42
14:T:282:LEU:HD12	14:T:283:ARG:H	1.83	0.42
14:Q:14:ASP:HB3	14:Q:92:SER:HB3	2.02	0.42
14:Q:143:TRP:O	14:Q:146:THR:HG22	2.19	0.42
4:4:121:DC:H4'	8:C:566:GLN:HE22	1.84	0.42
5:5:25:DG:H2"	5:5:26:DA:H8	1.84	0.42
7:A:38:TYR:HB2	7:A:55:PHE:CE1	2.54	0.42
7:A:187:GLY:HA2	7:A:197:VAL:HG11	2.01	0.42
8:F:64:LYS:HA	8:F:64:LYS:HD3	1.82	0.42
9:M:17:VAL:HG23	9:M:212:TYR:HB3	2.00	0.42
9:M:187:ARG:HG3	9:M:187:ARG:H	1.54	0.42
10:N:83:PHE:CE2	10:N:87:PRO:HG3	2.55	0.42
10:N:292:ARG:HD3	10:N:333:ASN:CB	2.44	0.42
10:O:299:ILE:O	10:O:301:GLY:N	2.52	0.42
12:W:418:PHE:CE2	12:W:501:PRO:HB2	2.55	0.42
12:W:438:PHE:CE1	12:W:614:TRP:HB2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:V:228:THR:CG2	14:V:229:GLU:H	2.25	0.42
9:G:23:ARG:HA	9:G:26:LEU:HB2	2.01	0.42
9:G:80:LEU:O	9:G:82:ILE:HG12	2.19	0.42
9:L:176:VAL:HG21	9:L:311:TYR:CZ	2.54	0.42
9:L:270:VAL:O	9:L:274:LYS:HG2	2.20	0.42
8:D:493:MET:HE2	8:D:493:MET:HA	2.02	0.42
9:K:287:PRO:HG2	9:K:288:PHE:CD2	2.54	0.42
14:R:3:LEU:HB2	14:R:347:PHE:HB3	2.02	0.42
14:R:3:LEU:HB2	14:R:347:PHE:HD1	1.84	0.42
14:R:98:ARG:HG2	14:R:98:ARG:HH11	1.85	0.42
14:S:245:VAL:HG22	14:S:246:PHE:H	1.85	0.42
14:S:286:ARG:HG3	14:T:44:GLU:HA	2.01	0.42
14:U:80:TYR:HD1	14:U:81:GLY:N	2.18	0.42
1:1:2:U:N3	12:W:418:PHE:HD2	2.14	0.42
7:A:78:LYS:HA	7:A:78:LYS:HD3	1.86	0.42
8:F:390:LEU:O	8:F:394:VAL:HG23	2.20	0.42
12:W:155:ASP:OD1	12:W:155:ASP:C	2.63	0.42
12:W:395:VAL:HB	12:W:509:ALA:HB2	2.02	0.42
8:E:380:LEU:HB3	8:E:385:ILE:CD1	2.50	0.42
9:G:137:GLN:HE21	9:G:171:MET:HG2	1.84	0.42
9:G:153:ASN:OD1	9:G:156:LYS:HE3	2.19	0.42
9:I:251:GLN:O	9:I:254:ILE:HG12	2.20	0.42
9:J:92:ASP:HB2	9:J:95:ARG:NH2	2.34	0.42
9:J:210:LEU:HB3	9:J:225:LEU:HG	2.02	0.42
9:J:234:LEU:HD23	9:J:234:LEU:HA	1.91	0.42
9:L:138:HIS:CD2	9:L:138:HIS:N	2.88	0.42
9:K:252:ALA:HA	9:K:268:ASP:OD2	2.19	0.42
14:R:227:PHE:HD2	14:S:38:THR:HB	1.83	0.42
14:S:334:MET:N	14:S:334:MET:SD	2.93	0.42
14:U:143:TRP:HB3	14:U:144:LYS:H	1.54	0.42
14:U:208:GLU:HA	14:U:208:GLU:OE2	2.20	0.42
3:3:144:DA:H2	14:T:346:MET:SD	2.43	0.42
7:A:216:GLU:HG2	7:A:222:SER:HA	2.02	0.42
8:F:73:ILE:HB	8:F:91:ALA:HB1	2.02	0.42
8:F:360:GLY:H	8:E:144:ARG:NH2	2.18	0.42
9:M:207:LYS:HA	9:M:207:LYS:HD3	1.66	0.42
10:N:295:GLN:H	10:N:295:GLN:CD	2.28	0.42
10:N:359:PRO:HB2	10:N:360:LEU:H	1.68	0.42
12:W:387:PHE:CE2	12:W:525:LEU:HB2	2.55	0.42
12:W:450:ARG:HH12	14:V:225:GLN:C	2.28	0.42
12:W:543:TYR:HB3	12:W:597:LEU:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:187:PRO:HA	8:E:190:LEU:HG	2.02	0.42
8:E:662:LYS:O	8:E:663:TYR:C	2.60	0.42
14:V:133:LEU:O	14:V:137:CYS:HB2	2.19	0.42
9:J:118:ARG:HD3	9:J:121:GLU:OE2	2.20	0.42
8:C:382:LEU:O	8:C:386:ARG:HG3	2.20	0.42
14:R:121:THR:OG1	14:R:122:LYS:HD2	2.19	0.42
14:Q:3:LEU:HD23	14:Q:4:PRO:HD2	2.02	0.42
14:Q:119:TYR:CE1	14:Q:123:ILE:HB	2.54	0.42
5:5:16:DC:H1'	5:5:17:DG:C8	2.55	0.41
5:5:24:DT:H2"	5:5:25:DG:N7	2.35	0.41
7:A:38:TYR:HD2	7:A:47:ILE:HB	1.85	0.41
7:B:158:TYR:CD2	7:B:199:PRO:HA	2.55	0.41
8:F:542:ILE:O	8:F:545:ILE:HG13	2.20	0.41
9:M:104:PRO:HG2	10:O:2:PHE:CD1	2.55	0.41
10:N:329:THR:HA	10:N:334:CYS:HB2	2.02	0.41
10:N:332:LEU:HB3	10:N:387:ARG:NH1	2.35	0.41
10:O:275:LEU:HB3	10:O:369:PHE:CE2	2.55	0.41
12:W:89:PHE:HA	12:W:90:PRO:HA	1.89	0.41
8:E:68:ILE:HD13	8:E:98:TRP:CD2	2.55	0.41
9:L:96:GLU:HA	9:L:99:VAL:HG22	2.02	0.41
9:L:158:ILE:HB	9:L:166:ILE:HD11	2.01	0.41
14:R:1:MET:C	14:R:2:LYS:HG2	2.44	0.41
14:S:97:LEU:H	14:S:97:LEU:HD23	1.85	0.41
14:Q:309:ILE:HG22	14:Q:337:LEU:HD22	2.02	0.41
14:Q:328:GLN:HA	14:Q:331:ILE:HG22	2.01	0.41
1:1:1:C:H4'	12:W:202:SER:HB3	2.01	0.41
3:3:107:DG:H2'	3:3:108:DT:H71	2.02	0.41
3:3:111:DT:H2"	3:3:112:DC:OP2	2.20	0.41
3:3:114:DC:OP2	10:O:105:THR:HG22	2.19	0.41
10:O:225:HIS:NE2	10:O:298:ILE:HD11	2.34	0.41
10:O:311:LEU:HG	10:O:312:TRP:H	1.85	0.41
12:W:332:LEU:HB3	12:W:337:LEU:HD13	2.02	0.41
12:W:497:VAL:HG13	14:V:159:TRP:HH2	1.85	0.41
8:E:660:GLN:O	8:E:662:LYS:N	2.53	0.41
13:7:64:DC:H2"	13:7:65:DA:H8	1.85	0.41
9:I:238:SER:HA	9:I:244:SER:HB3	2.00	0.41
9:J:130:LEU:HD13	9:J:165:PRO:HG2	2.02	0.41
9:L:46:MET:HE2	9:L:48:TYR:HB3	2.02	0.41
9:L:49:GLY:C	9:L:172:PRO:HD3	2.45	0.41
9:L:95:ARG:O	9:L:99:VAL:HG13	2.20	0.41
9:K:8:ARG:O	9:K:11:ARG:HG3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:R:107:LYS:HD3	14:R:107:LYS:C	2.46	0.41
14:R:131:ARG:NH1	14:R:274:TRP:HE1	2.18	0.41
14:Q:171:ILE:HA	14:Q:175:TYR:CD2	2.56	0.41
7:A:7:THR:HA	7:A:8:PRO:HD3	1.92	0.41
8:F:528:ALA:C	8:F:530:TYR:N	2.79	0.41
10:N:311:LEU:O	10:N:318:ILE:HD13	2.20	0.41
8:E:107:ASN:HB3	8:E:109:ILE:HG12	2.03	0.41
8:E:399:LYS:HE2	8:E:399:LYS:HA	2.02	0.41
14:V:87:CYS:HB2	14:V:141:TRP:HH2	1.84	0.41
9:J:147:VAL:O	9:J:151:VAL:HG12	2.20	0.41
8:C:551:VAL:HA	8:C:554:ASN:ND2	2.35	0.41
8:D:408:CYS:O	8:D:411:VAL:HG22	2.20	0.41
14:T:50:TYR:CD2	14:T:54:GLY:HA2	2.55	0.41
14:U:123:ILE:HG23	14:U:124:GLY:H	1.85	0.41
14:Q:225:GLN:OE1	14:Q:244:ARG:HG2	2.20	0.41
8:F:203:GLU:HG3	8:F:204:PHE:HD1	1.84	0.41
8:F:510:VAL:HA	8:F:514:GLN:NE2	2.35	0.41
8:F:514:GLN:NE2	8:F:548:ARG:HG3	2.35	0.41
10:O:22:ALA:HB1	10:O:27:TYR:HB2	2.03	0.41
11:P:103:ARG:HB2	11:P:186:LEU:HD22	2.03	0.41
14:V:4:PRO:HG2	14:V:7:LEU:HG	2.03	0.41
9:G:242:MET:HG3	15:G:600:ATP:C1'	2.47	0.41
9:H:118:ARG:HA	9:H:118:ARG:HD3	1.86	0.41
9:I:242:MET:HE1	9:I:246:ARG:CD	2.51	0.41
9:I:313:ARG:H	9:I:313:ARG:HG2	1.61	0.41
9:L:275:LEU:HA	9:K:190:ILE:HD13	2.01	0.41
8:C:382:LEU:HD23	8:C:386:ARG:HH21	1.85	0.41
9:K:89:LYS:HG3	9:K:91:VAL:H	1.85	0.41
14:S:338:MET:HA	14:S:341:LEU:HD23	2.02	0.41
14:U:147:ARG:HD2	14:U:147:ARG:HA	1.84	0.41
14:U:274:TRP:CD1	14:U:332:ASN:HB2	2.56	0.41
14:Q:114:GLN:HA	14:Q:117:GLU:HG2	2.03	0.41
3:3:110:DA:H2'	3:3:111:DT:H71	2.02	0.41
7:A:107:LYS:HD3	7:A:108:SER:N	2.35	0.41
7:A:193:LYS:HA	7:A:193:LYS:HD2	1.87	0.41
8:F:345:ARG:HD2	8:F:345:ARG:HA	1.82	0.41
9:M:98:LEU:HD21	9:M:119:LEU:CD2	2.51	0.41
10:N:7:LYS:H	10:N:7:LYS:HG2	1.39	0.41
10:N:109:VAL:HG11	10:O:381:GLN:HB2	2.01	0.41
10:N:202:ASN:C	10:N:202:ASN:OD1	2.63	0.41
10:O:291:GLU:HG3	10:O:385:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:O:314:ASP:O	10:O:314:ASP:CG	2.64	0.41
12:W:72:TRP:O	12:W:75:CYS:HB2	2.20	0.41
12:W:205:ASP:HB3	12:W:211:ILE:HB	2.02	0.41
12:W:336:ILE:HA	12:W:339:GLN:HB2	2.02	0.41
12:W:385:GLY:HA3	12:W:523:SER:HA	2.01	0.41
8:E:156:ARG:HD2	8:E:172:TYR:HB3	2.02	0.41
14:V:148:LYS:HE2	14:V:148:LYS:HB3	1.82	0.41
9:G:84:LEU:HD22	9:G:136:PHE:HA	2.02	0.41
9:G:234:LEU:HD22	9:G:245:LEU:HD22	2.01	0.41
9:H:112:LEU:HD13	9:H:115:LEU:HD12	2.02	0.41
9:H:159:LEU:HB2	9:H:166:ILE:HD12	2.02	0.41
9:H:313:ARG:CA	8:D:571:ARG:CD	2.98	0.41
9:I:25:ILE:HA	9:I:28:TYR:CD2	2.55	0.41
9:L:126:VAL:HG23	9:L:128:VAL:HG23	2.02	0.41
8:D:222:ILE:HD13	8:D:307:THR:HG22	2.03	0.41
8:D:453:LYS:HD3	8:D:454:GLU:HB2	2.03	0.41
14:S:84:HIS:HB3	14:S:214:HIS:ND1	2.35	0.41
14:Q:331:ILE:HG13	14:Q:335:HIS:CE1	2.56	0.41
2:2:11:DG:H2'	2:2:12:DT:C6	2.56	0.41
8:F:346:ASN:O	8:F:350:ILE:HG12	2.20	0.41
8:F:537:ASP:O	8:F:541:LYS:HD2	2.20	0.41
9:M:133:ILE:HD12	9:M:134:ASP:H	1.86	0.41
10:N:141:LEU:HD12	10:N:151:HIS:HE1	1.85	0.41
10:N:270:THR:O	10:N:321:LEU:HD23	2.21	0.41
10:N:377:LEU:HD12	10:O:88:GLU:HB2	2.03	0.41
12:W:37:LEU:HB2	12:W:59:ARG:HH22	1.85	0.41
12:W:252:MET:HE3	12:W:252:MET:C	2.46	0.41
14:V:181:PHE:HB3	14:V:187:TRP:NE1	2.35	0.41
14:V:309:ILE:HG21	14:V:337:LEU:HB2	2.02	0.41
9:G:95:ARG:HA	9:G:106:ALA:HB1	2.02	0.41
9:G:244:SER:O	9:G:248:LEU:HG	2.20	0.41
9:G:246:ARG:CB	15:G:600:ATP:H1'	2.50	0.41
9:J:308:TRP:HB3	9:J:312:LEU:HD12	2.02	0.41
9:L:95:ARG:HE	9:L:95:ARG:HB2	1.59	0.41
8:D:263:PHE:HE1	8:D:382:LEU:HD21	1.86	0.41
9:K:305:ASP:OD2	9:K:308:TRP:HB2	2.20	0.41
14:R:175:TYR:HA	14:R:180:ASP:HB2	2.01	0.41
14:S:118:LEU:HD23	14:S:118:LEU:HA	1.90	0.41
14:Q:2:LYS:HB3	14:Q:2:LYS:HE3	1.88	0.41
7:A:162:ASP:OD2	7:A:162:ASP:N	2.53	0.41
8:F:390:LEU:HD13	8:F:390:LEU:HA	1.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:M:8:ARG:H	9:M:8:ARG:HD2	1.85	0.41
9:M:17:VAL:H	15:M:600:ATP:N6	2.17	0.41
10:N:9:TYR:HD1	10:N:137:TYR:HD1	1.66	0.41
10:N:76:LEU:HD11	10:O:308:GLU:OE2	2.20	0.41
12:W:60:ALA:HA	12:W:63:LYS:NZ	2.36	0.41
12:W:165:LYS:HA	12:W:165:LYS:HD2	1.83	0.41
12:W:201:ILE:HG12	12:W:570:TYR:CZ	2.56	0.41
12:W:450:ARG:HG2	12:W:474:GLN:NE2	2.34	0.41
12:W:456:PHE:CD1	12:W:466:ALA:HB2	2.54	0.41
12:W:557:MET:HA	12:W:560:ASP:OD1	2.21	0.41
8:E:61:LEU:HD13	8:E:94:ILE:HG21	2.03	0.41
8:E:325:LEU:C	8:E:326:LEU:HG	2.46	0.41
8:E:658:LEU:HD12	8:E:661:HIS:CD2	2.52	0.41
14:V:107:LYS:O	14:V:110:GLN:HG3	2.20	0.41
9:H:101:MET:HE2	9:H:101:MET:N	2.36	0.41
9:I:11:ARG:HA	9:I:11:ARG:HD2	1.99	0.41
9:J:98:LEU:HD12	9:J:115:LEU:HD22	2.02	0.41
8:C:548:ARG:HG3	8:C:549:SER:N	2.35	0.41
8:D:412:ALA:O	8:D:415:LYS:HG3	2.21	0.41
14:T:1:MET:HB3	14:T:311:GLN:O	2.21	0.41
14:U:114:GLN:O	14:U:117:GLU:HG3	2.21	0.41
1:1:8:C:H5'	14:V:262:PHE:HB3	2.02	0.41
7:A:107:LYS:HD3	7:A:107:LYS:C	2.45	0.41
9:M:14:ARG:HG2	9:M:15:ALA:N	2.36	0.41
10:N:359:PRO:HB2	12:W:300:LEU:HD23	2.03	0.41
10:O:315:LYS:HE3	10:O:315:LYS:HB2	1.86	0.41
12:W:321:VAL:HG12	12:W:325:PHE:CE2	2.55	0.41
12:W:363:LEU:O	12:W:367:LEU:HD13	2.21	0.41
12:W:503:ARG:HD2	12:W:503:ARG:HA	1.82	0.41
8:E:246:THR:O	8:E:259:PHE:HA	2.21	0.41
13:7:79:DC:H2"	13:7:80:DG:C8	2.56	0.41
9:J:44:CYS:HB2	9:J:188:PHE:HA	2.02	0.41
9:J:47:VAL:HG13	9:J:192:VAL:HG13	2.01	0.41
9:J:210:LEU:HD13	9:J:231:GLN:CD	2.46	0.41
8:D:232:VAL:HG12	8:D:239:PRO:HA	2.03	0.41
9:K:130:LEU:HD12	9:K:131:ILE:N	2.36	0.41
14:R:10:GLU:HB2	14:R:101:TYR:HB2	2.02	0.41
14:R:292:GLU:O	14:R:293:ASP:C	2.63	0.41
14:Q:141:TRP:CZ3	14:Q:142:LEU:HB2	2.56	0.41
14:Q:342:ILE:HD12	14:Q:342:ILE:HA	1.98	0.41
3:3:91:DG:H2"	3:3:92:DC:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:126:DC:H2'	3:3:127:DA:C4	2.56	0.41
4:4:94:DA:H2'	4:4:95:DT:H72	2.02	0.41
7:B:20:PHE:HB3	7:B:69:ARG:HH22	1.86	0.41
8:F:209:LYS:H	8:F:209:LYS:HD2	1.85	0.41
8:F:304:LEU:HA	8:F:328:ASN:O	2.21	0.41
10:N:7:LYS:HB2	10:N:9:TYR:HE2	1.86	0.41
10:N:139:SER:HB3	10:N:142:TRP:CD1	2.56	0.41
10:N:247:TRP:O	10:N:251:PHE:HB2	2.21	0.41
11:P:47:TRP:CH2	11:P:167:ILE:HG13	2.55	0.41
11:P:72:GLN:O	11:P:76:VAL:HG22	2.21	0.41
11:P:81:LEU:C	11:P:82:GLN:HG3	2.46	0.41
11:P:97:THR:OG1	11:P:98:TYR:N	2.46	0.41
12:W:201:ILE:HG12	12:W:570:TYR:CE1	2.56	0.41
12:W:226:HIS:CE1	12:W:259:ARG:HG2	2.56	0.41
12:W:332:LEU:HD23	12:W:337:LEU:HD13	2.03	0.41
12:W:516:PHE:HE2	14:V:159:TRP:CE2	2.39	0.41
8:E:44:PRO:HD2	8:E:47:ILE:HD12	2.03	0.41
8:E:206:ARG:NE	8:C:459:ASN:HA	2.35	0.41
8:E:224:HIS:HD2	8:E:266:PRO:HB3	1.86	0.41
8:E:385:ILE:O	8:E:388:ILE:HG13	2.21	0.41
8:E:393:LEU:HD23	8:E:398:HIS:NE2	2.36	0.41
14:V:315:HIS:O	14:V:318:GLU:HG2	2.20	0.41
9:G:203:ARG:HD2	9:G:207:LYS:HD3	2.02	0.41
9:H:46:MET:HE3	9:H:188:PHE:O	2.21	0.41
9:H:80:LEU:HD23	9:H:131:ILE:HG22	2.03	0.41
9:H:89:LYS:HG3	9:H:92:ASP:H	1.85	0.41
9:H:225:LEU:HB2	9:H:230:LEU:HB2	2.02	0.41
9:I:59:ILE:HD11	9:I:81:HIS:CG	2.56	0.41
9:I:79:VAL:HA	9:I:130:LEU:O	2.21	0.41
9:J:38:LEU:HD23	9:J:38:LEU:HA	1.90	0.41
9:J:57:THR:HB	15:J:600:ATP:C8	2.55	0.41
9:L:17:VAL:HG11	9:L:209:PHE:HD1	1.85	0.41
9:L:19:THR:O	9:L:22:VAL:HG22	2.21	0.41
9:L:183:GLN:CD	9:L:183:GLN:H	2.29	0.41
9:K:181:ASN:OD1	9:K:184:LEU:HB2	2.21	0.41
9:K:230:LEU:HD22	9:K:269:PHE:CE1	2.56	0.41
14:R:188:SER:HA	14:R:191:VAL:HG12	2.03	0.41
14:R:275:TYR:H	14:R:275:TYR:HD2	1.69	0.41
14:S:21:PHE:CD1	14:S:31:PRO:HA	2.56	0.41
14:T:249:THR:HG23	14:T:258:ILE:HD13	2.03	0.41
14:U:1:MET:HE1	14:U:310:LEU:HG	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:93:DT:H2"	4:4:94:DA:C8	2.56	0.41
7:B:213:ARG:HB3	7:B:216:GLU:OE1	2.20	0.41
9:M:247:ASN:HA	9:M:250:TYR:CD1	2.56	0.41
10:N:129:PRO:HG2	10:N:187:LEU:HG	2.02	0.41
10:O:162:SER:HB3	10:O:188:THR:HG21	2.03	0.41
12:W:26:LEU:HD13	12:W:226:HIS:CD2	2.56	0.41
12:W:213:LEU:HD11	12:W:591:ALA:CB	2.50	0.41
12:W:433:PHE:HB2	12:W:489:GLN:HE21	1.85	0.41
8:E:141:ILE:HD12	8:E:141:ILE:HA	1.79	0.41
8:E:668:GLN:H	8:E:668:GLN:HG3	1.49	0.41
9:G:112:LEU:O	9:G:116:THR:HG23	2.21	0.41
9:J:5:ARG:HA	9:J:5:ARG:HD2	1.76	0.41
8:C:531:ASP:HB3	8:C:534:LYS:HE3	2.03	0.41
8:D:402:ASN:HB2	8:D:409:PRO:HD3	2.03	0.41
14:T:34:TYR:HD1	14:T:257:PRO:HD3	1.84	0.41
14:T:116:VAL:HG22	14:T:338:MET:HE1	2.03	0.41
14:U:34:TYR:HE1	14:U:255:ARG:HG2	1.86	0.41
14:U:34:TYR:HB2	14:U:76:CYS:HB2	2.03	0.41
14:U:65:LEU:HD12	14:U:65:LEU:O	2.21	0.41
14:U:275:TYR:HA	14:U:298:ARG:HH12	1.86	0.41
14:U:320:LEU:HD12	14:U:320:LEU:HA	1.91	0.41
1:1:9:C:C2	1:1:10:G:C6	3.09	0.40
1:1:24:G:C2	14:S:346:MET:HE1	2.56	0.40
9:M:68:ARG:HH11	9:M:77:ILE:HG12	1.86	0.40
9:M:231:GLN:HG3	9:M:232:LYS:N	2.36	0.40
9:M:242:MET:C	9:M:242:MET:SD	3.04	0.40
10:N:4:GLN:H	10:N:4:GLN:HG2	1.75	0.40
10:N:228:MET:HA	10:N:231:LYS:HE2	2.03	0.40
10:O:145:GLN:HB2	10:O:146:GLY:H	1.70	0.40
12:W:576:PRO:HB3	12:W:589:ALA:HB2	2.03	0.40
8:E:282:LYS:HD2	8:E:296:TRP:CE3	2.56	0.40
8:E:321:ALA:HB1	8:E:436:PHE:HE2	1.86	0.40
9:I:212:TYR:HA	9:I:215:LYS:HG2	2.03	0.40
14:T:337:LEU:HD23	14:T:341:LEU:HD23	2.02	0.40
14:Q:147:ARG:HG2	14:Q:148:LYS:CD	2.51	0.40
4:4:88:DC:H2"	4:4:89:DA:H8	1.86	0.40
5:5:54:DT:H2"	5:5:55:DA:H8	1.86	0.40
7:B:84:LYS:HB2	7:B:86:HIS:CE1	2.56	0.40
8:F:317:ALA:O	8:F:320:GLN:HG3	2.22	0.40
9:M:55:LYS:HB2	9:M:169:PHE:CD2	2.54	0.40
9:M:99:VAL:HG21	9:L:117:LYS:HD3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:N:92:LEU:H	10:N:92:LEU:HG	1.72	0.40
10:N:334:CYS:CA	10:N:387:ARG:HE	2.35	0.40
12:W:19:LEU:HD11	12:W:56:LEU:HD12	2.04	0.40
8:E:332:ASN:HD21	8:E:339:ASN:HB3	1.86	0.40
8:E:478:TYR:HB3	8:E:486:ILE:HG23	2.03	0.40
9:I:214:ASP:HA	9:I:217:LEU:HD12	2.01	0.40
9:J:208:THR:HA	9:J:211:GLU:CG	2.51	0.40
9:L:19:THR:HG23	9:L:21:SER:H	1.87	0.40
9:L:237:PHE:CZ	9:L:277:SER:HB3	2.56	0.40
8:D:549:SER:O	8:D:550:ILE:C	2.62	0.40
9:K:101:MET:HE2	9:K:101:MET:O	2.21	0.40
14:R:198:PHE:HD1	14:R:198:PHE:HA	1.76	0.40
14:S:97:LEU:HD11	14:S:125:TRP:CH2	2.57	0.40
14:U:22:VAL:HG23	14:U:32:LEU:HB2	2.02	0.40
14:U:141:TRP:CD1	14:U:141:TRP:N	2.89	0.40
14:Q:142:LEU:CD1	14:Q:145:ASN:HB2	2.49	0.40
7:A:75:ILE:O	7:A:90:PRO:HD2	2.21	0.40
8:F:366:TYR:HA	8:F:369:ARG:NH2	2.36	0.40
10:O:99:MET:O	10:O:107:ALA:HB2	2.22	0.40
10:O:100:LYS:HG2	10:O:288:ARG:HH21	1.85	0.40
11:P:151:SER:OG	11:P:164:ARG:HD3	2.22	0.40
12:W:55:ASP:C	12:W:56:LEU:HD23	2.45	0.40
8:E:669:ALA:O	8:E:670:GLU:C	2.63	0.40
14:V:346:MET:HE1	14:V:348:GLN:CD	2.47	0.40
9:H:50:ALA:HB1	9:H:306:ILE:O	2.21	0.40
9:H:123:ILE:HG13	9:H:124:PRO:CD	2.51	0.40
9:J:28:TYR:CZ	9:K:275:LEU:HD11	2.56	0.40
9:L:98:LEU:HD12	9:L:106:ALA:HB2	2.03	0.40
9:L:153:ASN:O	9:L:157:MET:HG2	2.22	0.40
8:C:264:GLU:H	8:C:264:GLU:HG3	1.69	0.40
8:C:268:TYR:HD1	8:C:268:TYR:HA	1.79	0.40
8:D:452:TYR:CE2	8:D:516:LYS:HG2	2.55	0.40
8:D:553:THR:O	8:D:555:LYS:N	2.54	0.40
9:K:257:ILE:HD13	9:K:257:ILE:HA	1.84	0.40
14:R:125:TRP:HZ3	14:R:198:PHE:HB3	1.83	0.40
14:T:332:ASN:HA	14:T:335:HIS:HD2	1.81	0.40
14:T:337:LEU:HA	14:T:340:ASN:OD1	2.21	0.40
14:U:141:TRP:CD1	14:U:141:TRP:H	2.40	0.40
14:U:153:ASN:C	14:U:154:ILE:HD13	2.46	0.40
14:Q:168:PHE:HE1	14:Q:184:ASN:HD22	1.70	0.40
1:1:2:U:H6	1:1:2:U:P	2.45	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:O:297:ASN:O	10:O:302:GLU:HG3	2.21	0.40
10:O:321:LEU:HB2	10:O:369:PHE:CD2	2.57	0.40
12:W:161:TRP:H	12:W:161:TRP:CD1	2.39	0.40
8:E:163:ASN:HA	8:E:168:THR:HG22	2.03	0.40
8:E:236:TYR:CE2	8:E:683:VAL:HG22	2.57	0.40
9:G:166:ILE:HB	9:G:188:PHE:CZ	2.56	0.40
9:J:204:GLY:H	9:J:207:LYS:HB2	1.86	0.40
9:L:120:THR:HA	9:L:162:THR:HG22	2.02	0.40
9:L:204:GLY:HA3	9:L:206:PHE:CD2	2.57	0.40
8:D:551:VAL:C	8:D:553:THR:H	2.30	0.40
9:K:265:THR:HB	9:K:267:GLU:OE1	2.21	0.40
14:T:144:LYS:HB2	14:T:222:ARG:HD2	2.03	0.40
14:Q:93:PHE:HD2	14:Q:194:ILE:CD1	2.34	0.40
14:Q:275:TYR:HB2	14:Q:276:PRO:HD2	2.03	0.40
3:3:147:DT:H73	3:3:148:DC:C5	2.56	0.40
7:A:183:ALA:HB3	7:A:220:LEU:C	2.47	0.40
7:B:79:TYR:CD2	7:B:86:HIS:HB2	2.56	0.40
8:F:197:GLU:H	8:F:197:GLU:CD	2.30	0.40
9:M:206:PHE:HA	9:M:209:PHE:CE2	2.56	0.40
10:N:139:SER:H	10:N:142:TRP:CD1	2.36	0.40
10:O:217:LYS:O	10:O:220:ARG:HB2	2.22	0.40
8:E:453:LYS:HD2	8:E:453:LYS:N	2.37	0.40
13:7:74:DC:H2"	13:7:75:DC:C6	2.56	0.40
9:H:297:ASP:HA	9:H:300:ARG:HG3	2.03	0.40
9:I:19:THR:HG23	9:I:22:VAL:HG12	2.03	0.40
9:J:101:MET:HE2	9:J:101:MET:HB2	1.96	0.40
9:J:117:LYS:O	9:J:121:GLU:HG3	2.20	0.40
14:R:107:LYS:O	14:R:107:LYS:HD3	2.21	0.40
14:R:286:ARG:HD2	14:R:307:PHE:HE1	1.86	0.40
14:S:145:ASN:HB3	14:S:222:ARG:HG2	2.02	0.40
14:Q:328:GLN:HA	14:Q:328:GLN:OE1	2.22	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	
7	A	221/236 (94%)	201 (91%)	19 (9%)	1 (0%)	24	63
7	B	214/236 (91%)	206 (96%)	8 (4%)	0	100	100
8	C	325/709 (46%)	310 (95%)	15 (5%)	0	100	100
8	D	332/709 (47%)	307 (92%)	21 (6%)	4 (1%)	10	43
8	E	528/709 (74%)	476 (90%)	45 (8%)	7 (1%)	9	41
8	F	527/709 (74%)	467 (89%)	51 (10%)	9 (2%)	7	35
9	G	285/479 (60%)	262 (92%)	21 (7%)	2 (1%)	18	55
9	H	299/479 (62%)	266 (89%)	29 (10%)	4 (1%)	9	41
9	I	301/479 (63%)	285 (95%)	14 (5%)	2 (1%)	18	55
9	J	302/479 (63%)	267 (88%)	35 (12%)	0	100	100
9	K	300/479 (63%)	265 (88%)	33 (11%)	2 (1%)	18	55
9	L	298/479 (62%)	269 (90%)	26 (9%)	3 (1%)	12	47
9	M	309/479 (64%)	287 (93%)	22 (7%)	0	100	100
10	N	392/394 (100%)	300 (76%)	84 (21%)	8 (2%)	6	31
10	O	391/394 (99%)	322 (82%)	60 (15%)	9 (2%)	5	28
11	P	193/199 (97%)	181 (94%)	10 (5%)	2 (1%)	12	47
12	W	625/640 (98%)	543 (87%)	77 (12%)	5 (1%)	16	53
14	Q	302/352 (86%)	286 (95%)	15 (5%)	1 (0%)	36	71
14	R	334/352 (95%)	314 (94%)	20 (6%)	0	100	100
14	S	333/352 (95%)	319 (96%)	14 (4%)	0	100	100
14	T	333/352 (95%)	312 (94%)	18 (5%)	3 (1%)	14	49
14	U	333/352 (95%)	316 (95%)	17 (5%)	0	100	100
14	V	334/352 (95%)	314 (94%)	20 (6%)	0	100	100
All	All	7811/10400 (75%)	7075 (91%)	674 (9%)	62 (1%)	18	53

All (62) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	N	10	SER
10	N	237	HIS
10	N	359	PRO
10	N	391	VAL

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Mol	Chain	Res	Type
10	O	112	ALA
10	O	185	ILE
12	W	15	LEU
12	W	453	THR
8	E	505	GLU
9	G	141	GLU
9	L	207	LYS
8	D	327	ILE
8	D	404	ARG
14	T	138	ASN
8	F	512	LEU
8	F	530	TYR
10	N	289	LEU
10	N	294	LEU
10	N	362	VAL
11	P	99	VAL
12	W	568	VAL
8	E	109	ILE
8	E	658	LEU
8	E	661	HIS
9	H	141	GLU
9	K	182	SER
14	T	123	ILE
8	F	524	GLU
10	O	68	SER
10	O	248	PRO
10	O	393	ARG
12	W	106	LEU
9	H	304	LYS
9	I	316	THR
9	K	198	SER
7	A	214	LEU
11	P	97	THR
8	E	249	VAL
8	E	506	TYR
9	H	309	GLU
9	L	147	VAL
8	F	375	VAL
8	F	515	HIS
8	F	525	LEU
8	F	528	ALA
10	O	296	HIS

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Mol	Chain	Res	Type
10	O	312	TRP
12	W	247	MET
8	D	558	ALA
8	F	523	ALA
8	F	526	ASN
10	N	299	ILE
10	O	311	LEU
9	L	228	GLU
8	D	326	LEU
8	E	510	VAL
10	O	177	ILE
9	I	147	VAL
9	H	264	ILE
14	Q	294	VAL
9	G	264	ILE
14	T	294	VAL

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	
7	A	200/211 (95%)	196 (98%)	4 (2%)	48	65
7	B	194/211 (92%)	188 (97%)	6 (3%)	35	56
8	C	295/633 (47%)	283 (96%)	12 (4%)	27	49
8	D	301/633 (48%)	285 (95%)	16 (5%)	20	42
8	E	478/633 (76%)	453 (95%)	25 (5%)	21	43
8	F	477/633 (75%)	454 (95%)	23 (5%)	23	45
9	G	256/418 (61%)	249 (97%)	7 (3%)	39	59
9	H	269/418 (64%)	251 (93%)	18 (7%)	15	37
9	I	271/418 (65%)	257 (95%)	14 (5%)	21	43
9	J	272/418 (65%)	264 (97%)	8 (3%)	37	58
9	K	270/418 (65%)	251 (93%)	19 (7%)	14	36

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	L	268/418 (64%)	249 (93%)	19 (7%)	13	35
9	M	274/418 (66%)	255 (93%)	19 (7%)	14	36
10	N	356/356 (100%)	326 (92%)	30 (8%)	10	30
10	O	355/356 (100%)	332 (94%)	23 (6%)	15	37
11	P	177/181 (98%)	173 (98%)	4 (2%)	44	63
12	W	559/573 (98%)	520 (93%)	39 (7%)	14	36
14	Q	274/308 (89%)	264 (96%)	10 (4%)	31	52
14	R	295/308 (96%)	274 (93%)	21 (7%)	13	35
14	S	295/308 (96%)	278 (94%)	17 (6%)	18	40
14	T	295/308 (96%)	279 (95%)	16 (5%)	20	42
14	U	295/308 (96%)	277 (94%)	18 (6%)	17	39
14	V	297/308 (96%)	285 (96%)	12 (4%)	28	49
All	All	7023/9194 (76%)	6643 (95%)	380 (5%)	21	42

All (380) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	A	9	SER
7	A	25	ARG
7	A	53	LEU
7	A	142	ASP
7	B	27	LEU
7	B	33	LYS
7	B	44	SER
7	B	59	TYR
7	B	163	GLU
7	B	168	HIS
8	F	128	VAL
8	F	220	VAL
8	F	260	TYR
8	F	301	ILE
8	F	304	LEU
8	F	326	LEU
8	F	329	VAL
8	F	335	GLU
8	F	379	THR
8	F	390	LEU
8	F	462	LEU

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Mol	Chain	Res	Type
8	F	474	VAL
8	F	513	TRP
8	F	516	LYS
8	F	519	MET
8	F	520	LYS
8	F	521	TYR
8	F	524	GLU
8	F	531	ASP
8	F	532	GLU
8	F	534	LYS
8	F	535	GLU
8	F	541	LYS
9	M	13	LYS
9	M	17	VAL
9	M	19	THR
9	M	47	VAL
9	M	57	THR
9	M	81	HIS
9	M	100	GLU
9	M	107	LEU
9	M	115	LEU
9	M	130	LEU
9	M	133	ILE
9	M	168	ILE
9	M	187	ARG
9	M	192	VAL
9	M	194	LEU
9	M	210	LEU
9	M	230	LEU
9	M	231	GLN
9	M	285	LYS
10	N	7	LYS
10	N	59	ILE
10	N	72	THR
10	N	78	LEU
10	N	81	LEU
10	N	85	GLU
10	N	89	LEU
10	N	92	LEU
10	N	134	GLU
10	N	143	HIS
10	N	228	MET

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Mol	Chain	Res	Type
10	N	237	HIS
10	N	246	ASN
10	N	249	ARG
10	N	262	ASN
10	N	265	HIS
10	N	276	LYS
10	N	282	LEU
10	N	284	PHE
10	N	291	GLU
10	N	321	LEU
10	N	322	LYS
10	N	324	ASN
10	N	326	LEU
10	N	331	MET
10	N	345	GLN
10	N	353	LYS
10	N	363	THR
10	N	376	TRP
10	N	391	VAL
10	O	5	ARG
10	O	41	LEU
10	O	43	ASP
10	O	44	ILE
10	O	66	ASN
10	O	77	LYS
10	O	90	LEU
10	O	108	VAL
10	O	137	TYR
10	O	175	LYS
10	O	225	HIS
10	O	243	PHE
10	O	254	ILE
10	O	256	GLU
10	O	267	VAL
10	O	281	ARG
10	O	303	LEU
10	O	307	LEU
10	O	315	LYS
10	O	369	PHE
10	O	375	LEU
10	O	376	TRP
10	O	379	GLU

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Mol	Chain	Res	Type
11	P	73	HIS
11	P	150	HIS
11	P	152	LEU
11	P	169	MET
12	W	5	LYS
12	W	6	GLU
12	W	8	ILE
12	W	54	LYS
12	W	64	GLN
12	W	70	LYS
12	W	86	ASN
12	W	98	ILE
12	W	99	ARG
12	W	115	LYS
12	W	152	LEU
12	W	172	LYS
12	W	201	ILE
12	W	211	ILE
12	W	231	ASP
12	W	274	ARG
12	W	278	LYS
12	W	295	ARG
12	W	296	LEU
12	W	301	ILE
12	W	314	LYS
12	W	327	MET
12	W	348	LEU
12	W	367	LEU
12	W	428	ARG
12	W	440	ILE
12	W	445	LEU
12	W	448	GLU
12	W	453	THR
12	W	459	LYS
12	W	481	LEU
12	W	482	ILE
12	W	517	LYS
12	W	524	THR
12	W	525	LEU
12	W	532	LEU
12	W	583	LEU
12	W	602	THR

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Mol	Chain	Res	Type
12	W	624	VAL
8	E	140	VAL
8	E	145	LYS
8	E	150	SER
8	E	220	VAL
8	E	227	VAL
8	E	232	VAL
8	E	238	ILE
8	E	248	LEU
8	E	281	ARG
8	E	326	LEU
8	E	329	VAL
8	E	334	VAL
8	E	365	GLN
8	E	380	LEU
8	E	502	ILE
8	E	503	ASP
8	E	504	TYR
8	E	506	TYR
8	E	509	ARG
8	E	658	LEU
8	E	663	TYR
8	E	665	MET
8	E	666	LYS
8	E	667	TYR
8	E	668	GLN
14	V	39	LEU
14	V	53	SER
14	V	57	ILE
14	V	65	LEU
14	V	85	ILE
14	V	112	LEU
14	V	118	LEU
14	V	148	LYS
14	V	212	THR
14	V	221	VAL
14	V	224	SER
14	V	290	HIS
9	G	17	VAL
9	G	29	MET
9	G	76	ILE
9	G	112	LEU

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Mol	Chain	Res	Type
9	G	132	ILE
9	G	141	GLU
9	G	243	ARG
9	H	112	LEU
9	H	117	LYS
9	H	119	LEU
9	H	131	ILE
9	H	133	ILE
9	H	147	VAL
9	H	188	PHE
9	H	231	GLN
9	H	293	GLU
9	H	295	THR
9	H	297	ASP
9	H	304	LYS
9	H	305	ASP
9	H	306	ILE
9	H	310	ASP
9	H	312	LEU
9	H	313	ARG
9	H	314	HIS
9	I	21	SER
9	I	57	THR
9	I	59	ILE
9	I	76	ILE
9	I	82	ILE
9	I	97	LEU
9	I	131	ILE
9	I	132	ILE
9	I	156	LYS
9	I	167	VAL
9	I	174	SER
9	I	184	LEU
9	I	242	MET
9	I	311	TYR
9	J	35	LEU
9	J	47	VAL
9	J	91	VAL
9	J	141	GLU
9	J	203	ARG
9	J	211	GLU
9	J	219	PHE

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Mol	Chain	Res	Type
9	J	247	ASN
9	L	17	VAL
9	L	19	THR
9	L	39	GLU
9	L	82	ILE
9	L	118	ARG
9	L	121	GLU
9	L	137	GLN
9	L	139	LEU
9	L	140	VAL
9	L	146	ARG
9	L	155	LEU
9	L	167	VAL
9	L	168	ILE
9	L	207	LYS
9	L	209	PHE
9	L	275	LEU
9	L	304	LYS
9	L	306	ILE
9	L	313	ARG
8	C	216	VAL
8	C	227	VAL
8	C	268	TYR
8	C	286	ILE
8	C	369	ARG
8	C	373	ASP
8	C	443	GLN
8	C	455	LEU
8	C	459	ASN
8	C	475	GLN
8	C	544	GLU
8	C	547	ASP
8	D	306	VAL
8	D	375	VAL
8	D	454	GLU
8	D	460	ASP
8	D	510	VAL
8	D	518	ASN
8	D	521	TYR
8	D	525	LEU
8	D	550	ILE
8	D	552	LYS

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Mol	Chain	Res	Type
8	D	555	LYS
8	D	559	ARG
8	D	560	ARG
8	D	561	ARG
8	D	564	ARG
8	D	568	ASN
9	K	47	VAL
9	K	82	ILE
9	K	136	PHE
9	K	137	GLN
9	K	146	ARG
9	K	147	VAL
9	K	155	LEU
9	K	161	LYS
9	K	168	ILE
9	K	181	ASN
9	K	185	HIS
9	K	237	PHE
9	K	247	ASN
9	K	251	GLN
9	K	265	THR
9	K	294	VAL
9	K	295	THR
9	K	306	ILE
9	K	311	TYR
14	R	2	LYS
14	R	7	LEU
14	R	9	TYR
14	R	58	LYS
14	R	91	VAL
14	R	97	LEU
14	R	108	VAL
14	R	112	LEU
14	R	125	TRP
14	R	140	LYS
14	R	142	LEU
14	R	165	LYS
14	R	174	ASN
14	R	185	LYS
14	R	198	PHE
14	R	201	THR
14	R	204	LEU

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Mol	Chain	Res	Type
14	R	224	SER
14	R	246	PHE
14	R	290	HIS
14	R	337	LEU
14	S	2	LYS
14	S	36	SER
14	S	48	LEU
14	S	71	HIS
14	S	84	HIS
14	S	127	GLU
14	S	128	LEU
14	S	133	LEU
14	S	148	LYS
14	S	150	TYR
14	S	165	LYS
14	S	221	VAL
14	S	226	VAL
14	S	273	ASP
14	S	340	ASN
14	S	346	MET
14	S	347	PHE
14	T	12	SER
14	T	13	ILE
14	T	16	SER
14	T	22	VAL
14	T	51	ASP
14	T	65	LEU
14	T	71	HIS
14	T	75	PHE
14	T	134	MET
14	T	156	LEU
14	T	157	THR
14	T	193	MET
14	T	209	VAL
14	T	248	SER
14	T	255	ARG
14	T	338	MET
14	U	1	MET
14	U	13	ILE
14	U	71	HIS
14	U	77	HIS
14	U	78	VAL

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Mol	Chain	Res	Type
14	U	94	SER
14	U	109	LYS
14	U	127	GLU
14	U	143	TRP
14	U	157	THR
14	U	179	GLN
14	U	198	PHE
14	U	262	PHE
14	U	310	LEU
14	U	328	GLN
14	U	330	THR
14	U	347	PHE
14	U	350	LYS
14	Q	20	PHE
14	Q	23	VAL
14	Q	126	THR
14	Q	133	LEU
14	Q	142	LEU
14	Q	145	ASN
14	Q	178	ARG
14	Q	186	ASN
14	Q	209	VAL
14	Q	334	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
8	F	339	ASN
8	F	514	GLN
8	F	526	ASN
10	N	151	HIS
10	N	345	GLN
10	O	151	HIS
10	O	295	GLN
12	W	392	ASN
12	W	444	GLN
12	W	626	GLN
8	E	114	ASN
8	E	660	GLN
8	E	661	HIS
8	E	668	GLN
8	E	697	HIS

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Mol	Chain	Res	Type
9	H	231	GLN
9	I	314	HIS
8	D	565	HIS
8	D	566	GLN
9	K	153	ASN
14	R	349	HIS
14	S	67	GLN
14	S	71	HIS
14	S	214	HIS
14	T	153	ASN
14	U	110	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	59/317 (18%)	36 (61%)	5 (8%)

All (36) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	2	U
1	1	3	G
1	1	4	A
1	1	6	A
1	1	8	C
1	1	9	C
1	1	13	A
1	1	14	G
1	1	15	A
1	1	16	C
1	1	17	U
1	1	18	U
1	1	19	U
1	1	20	A
1	1	21	U
1	1	22	C
1	1	24	G
1	1	25	A
1	1	26	C
1	1	27	A
1	1	28	G

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Mol	Chain	Res	Type
1	1	30	A
1	1	31	G
1	1	33	C
1	1	34	G
1	1	35	U
1	1	36	G
1	1	38	A
1	1	39	C
1	1	40	U
1	1	42	U
1	1	43	G
1	1	44	A
1	1	45	A
1	1	46	C
1	1	55	A

All (5) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	15	A
1	1	18	U
1	1	19	U
1	1	34	G
1	1	39	C

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 14 ligands modelled in this entry, 7 are monoatomic - leaving 7 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	$\#\|Z\| > 2$
15	ATP	J	600	16	32,33,33	0.30	0	48,52,52	0.38	0
15	ATP	G	600	16	32,33,33	0.46	0	48,52,52	0.76	2 (4%)
15	ATP	M	600	16	32,33,33	0.33	0	48,52,52	0.45	0
15	ATP	I	600	16	32,33,33	0.30	0	48,52,52	0.41	0
15	ATP	H	600	16	32,33,33	0.30	0	48,52,52	0.44	0
15	ATP	L	600	16	32,33,33	0.46	0	48,52,52	0.43	0
15	ATP	K	600	16	32,33,33	0.31	0	48,52,52	0.38	0

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
15	ATP	J	600	16	-	7/22/38/38	0/3/3/3
15	ATP	G	600	16	-	10/22/38/38	0/3/3/3
15	ATP	M	600	16	-	5/22/38/38	0/3/3/3
15	ATP	I	600	16	-	7/22/38/38	0/3/3/3
15	ATP	H	600	16	-	5/22/38/38	0/3/3/3
15	ATP	L	600	16	-	10/22/38/38	0/3/3/3
15	ATP	K	600	16	-	6/22/38/38	0/3/3/3

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
15	G	600	ATP	O2'-C2'-C1'	2.95	120.26	110.10
15	G	600	ATP	O2'-C2'-C3'	2.22	118.94	111.82

There are no chirality outliers.

All (50) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
15	M	600	ATP	C5'-O5'-PA-O1A
15	M	600	ATP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
15	G	600	ATP	C5'-O5'-PA-O2A
15	G	600	ATP	C5'-O5'-PA-O3A
15	H	600	ATP	C5'-O5'-PA-O1A
15	H	600	ATP	C5'-O5'-PA-O2A
15	H	600	ATP	C5'-O5'-PA-O3A
15	I	600	ATP	C5'-O5'-PA-O2A
15	I	600	ATP	C5'-O5'-PA-O3A
15	J	600	ATP	C5'-O5'-PA-O1A
15	J	600	ATP	C5'-O5'-PA-O2A
15	J	600	ATP	C5'-O5'-PA-O3A
15	L	600	ATP	PB-O3B-PG-O2G
15	L	600	ATP	C5'-O5'-PA-O1A
15	L	600	ATP	C5'-O5'-PA-O2A
15	L	600	ATP	C5'-O5'-PA-O3A
15	K	600	ATP	C5'-O5'-PA-O1A
15	K	600	ATP	C5'-O5'-PA-O2A
15	K	600	ATP	C5'-O5'-PA-O3A
15	K	600	ATP	O4'-C4'-C5'-O5'
15	G	600	ATP	C3'-C4'-C5'-O5'
15	K	600	ATP	C3'-C4'-C5'-O5'
15	I	600	ATP	O4'-C4'-C5'-O5'
15	I	600	ATP	C3'-C4'-C5'-O5'
15	G	600	ATP	O4'-C4'-C5'-O5'
15	K	600	ATP	C4'-C5'-O5'-PA
15	G	600	ATP	PB-O3A-PA-O2A
15	I	600	ATP	PB-O3A-PA-O1A
15	J	600	ATP	C4'-C5'-O5'-PA
15	L	600	ATP	C4'-C5'-O5'-PA
15	G	600	ATP	C2'-C1'-N9-C8
15	M	600	ATP	C2'-C1'-N9-C4
15	I	600	ATP	C5'-O5'-PA-O1A
15	M	600	ATP	C4'-C5'-O5'-PA
15	H	600	ATP	C4'-C5'-O5'-PA
15	I	600	ATP	C4'-C5'-O5'-PA
15	M	600	ATP	C2'-C1'-N9-C8
15	G	600	ATP	C4'-C5'-O5'-PA
15	G	600	ATP	C2'-C1'-N9-C4
15	L	600	ATP	PA-O3A-PB-O1B
15	L	600	ATP	PB-O3B-PG-O1G
15	H	600	ATP	C2'-C1'-N9-C8
15	G	600	ATP	PB-O3A-PA-O1A
15	J	600	ATP	PB-O3A-PA-O1A

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Mol	Chain	Res	Type	Atoms
15	J	600	ATP	PB-O3A-PA-O2A
15	G	600	ATP	PA-O3A-PB-O2B
15	L	600	ATP	PG-O3B-PB-O2B
15	L	600	ATP	PA-O3A-PB-O2B
15	L	600	ATP	C3'-C4'-C5'-O5'
15	J	600	ATP	PG-O3B-PB-O3A

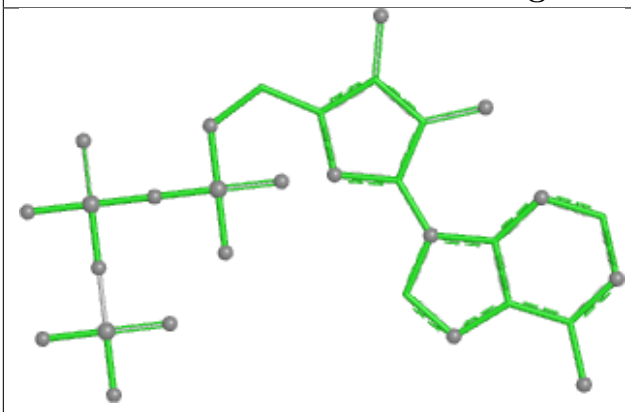
There are no ring outliers.

7 monomers are involved in 21 short contacts:

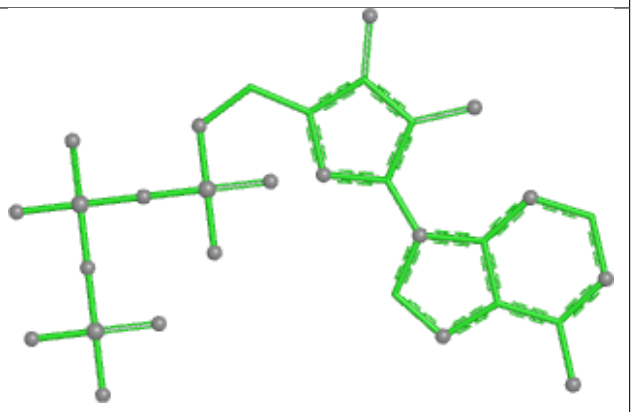
Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	J	600	ATP	2	0
15	G	600	ATP	3	0
15	M	600	ATP	5	0
15	I	600	ATP	3	0
15	H	600	ATP	2	0
15	L	600	ATP	3	0
15	K	600	ATP	3	0

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.

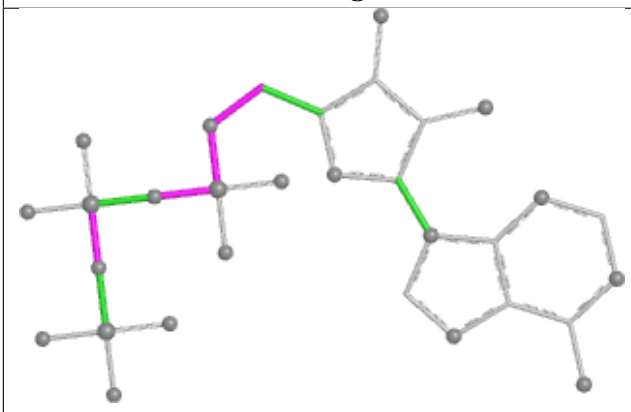
Ligand ATP J 600



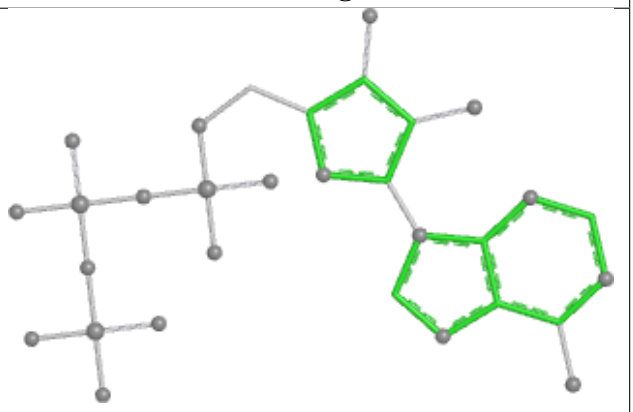
Bond lengths



Bond angles

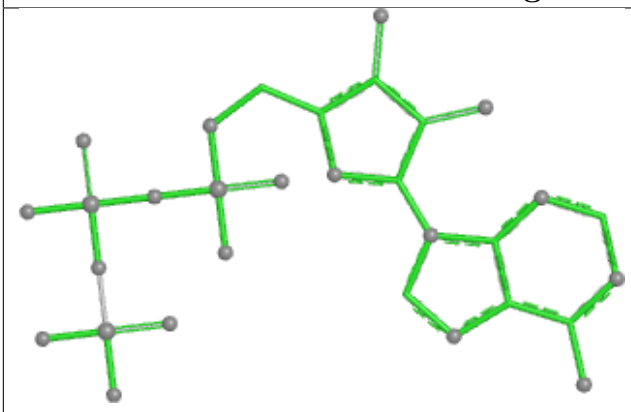


Torsions

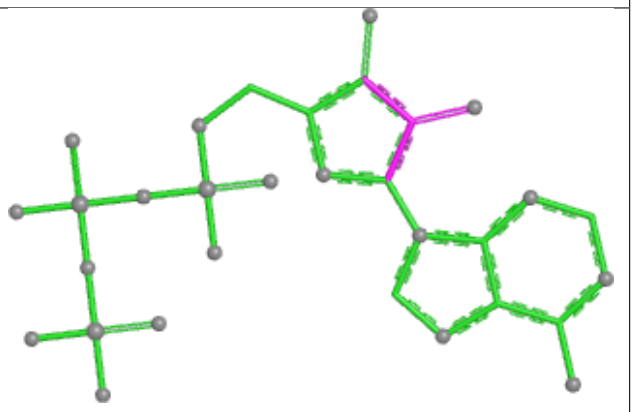


Rings

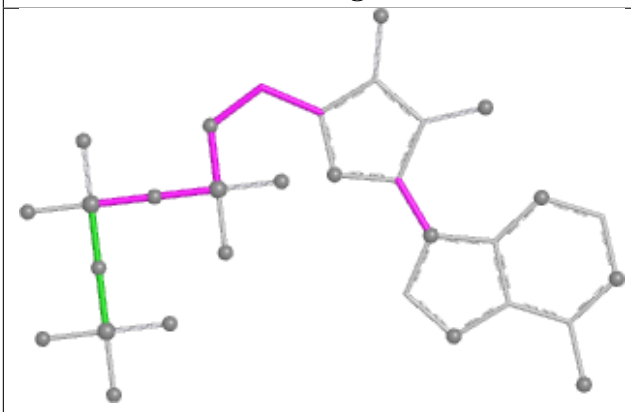
Ligand ATP G 600



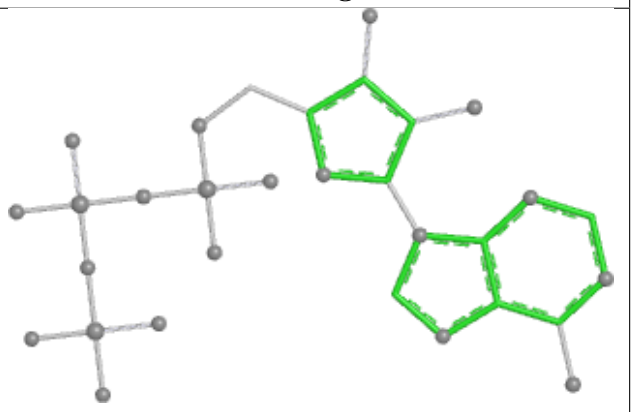
Bond lengths



Bond angles

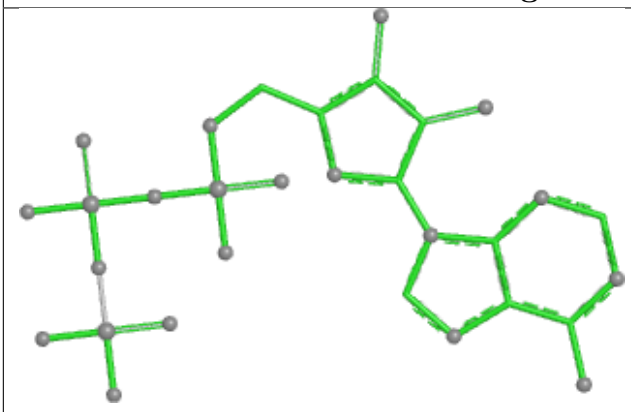


Torsions

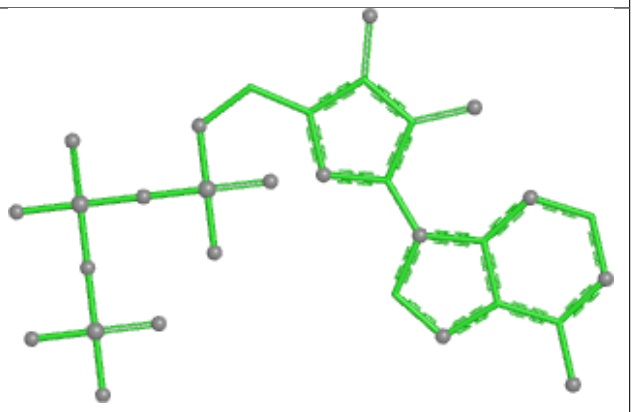


Rings

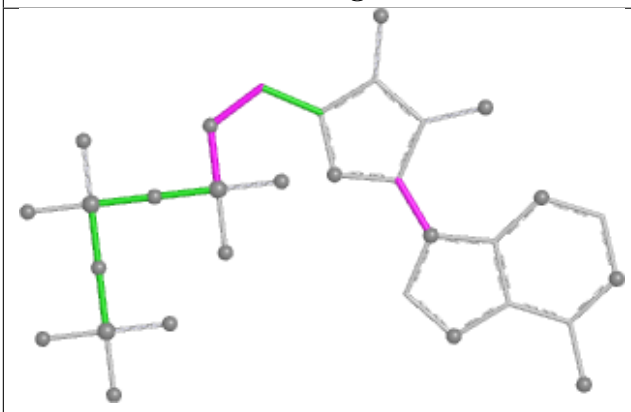
Ligand ATP M 600



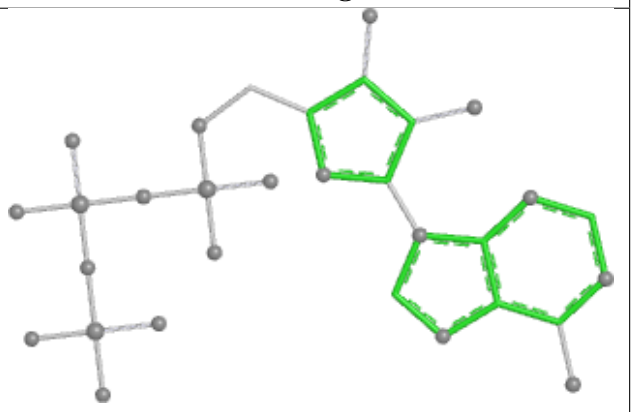
Bond lengths



Bond angles

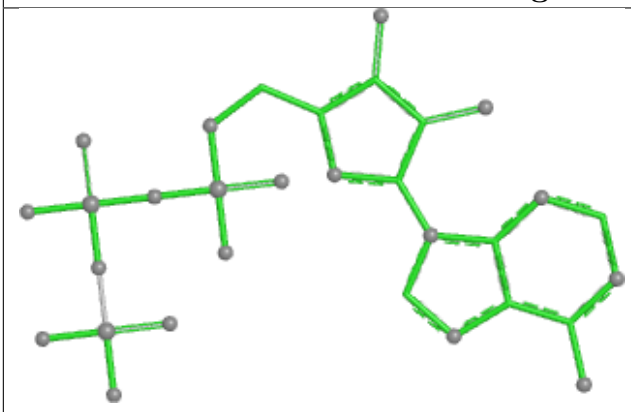


Torsions

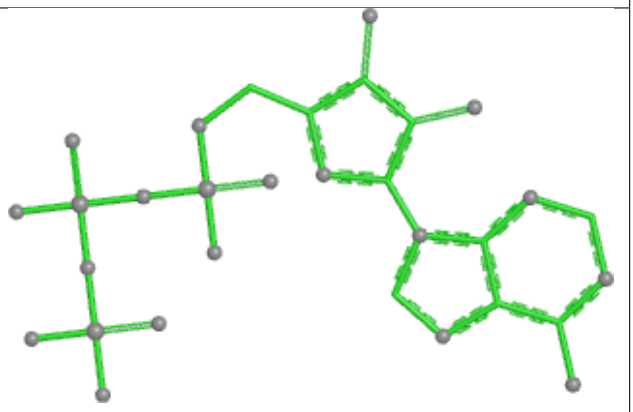


Rings

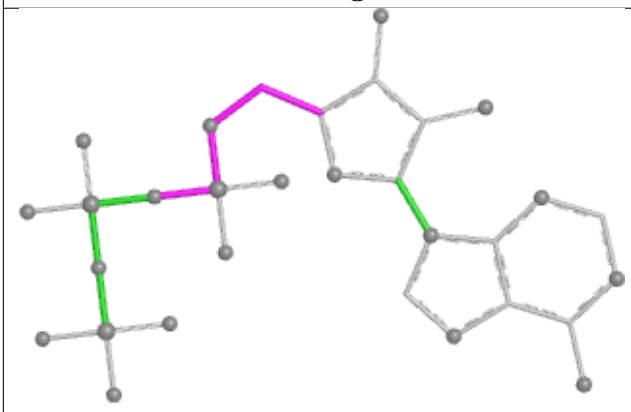
Ligand ATP I 600



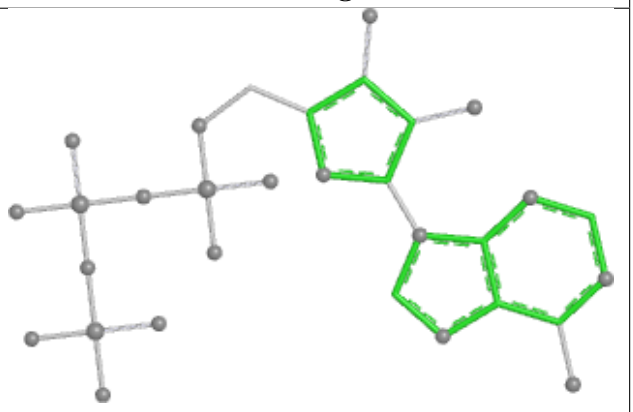
Bond lengths



Bond angles

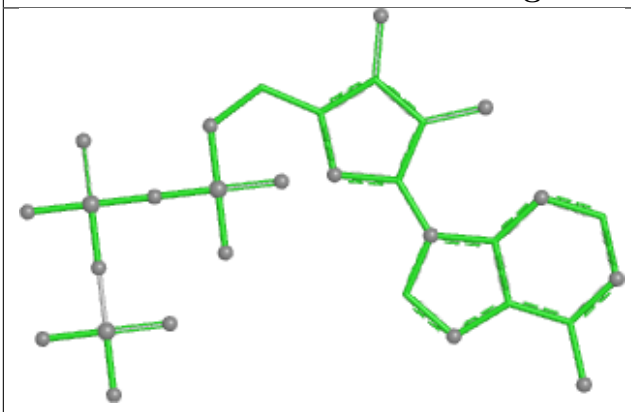


Torsions

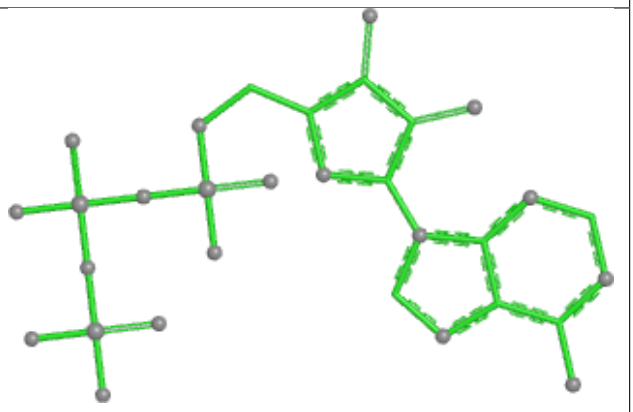


Rings

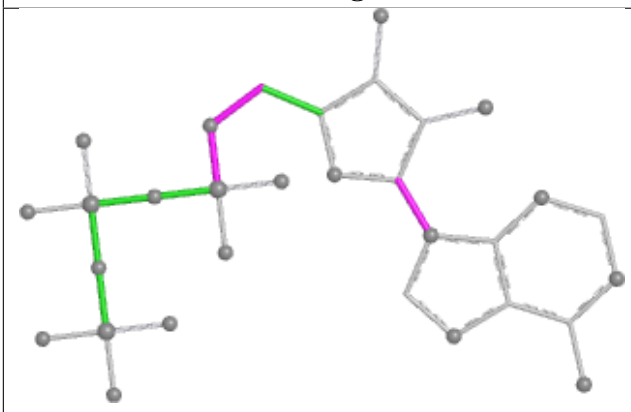
Ligand ATP H 600



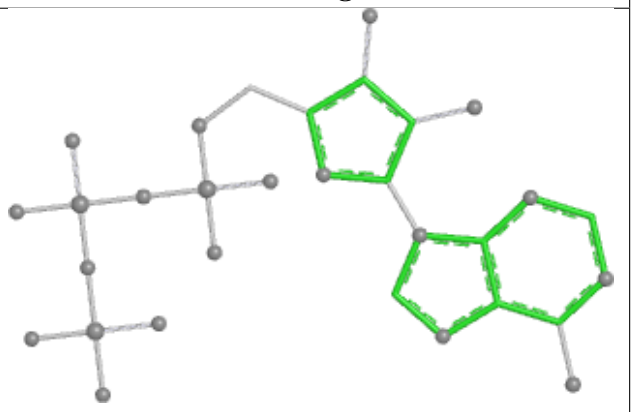
Bond lengths



Bond angles

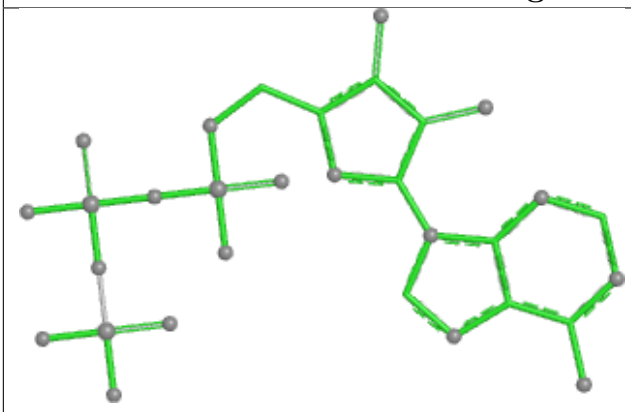


Torsions

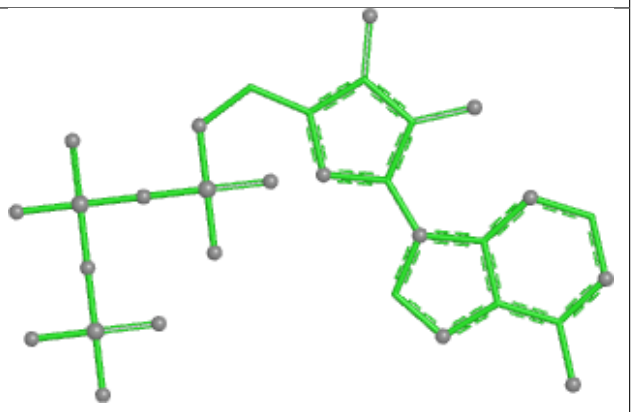


Rings

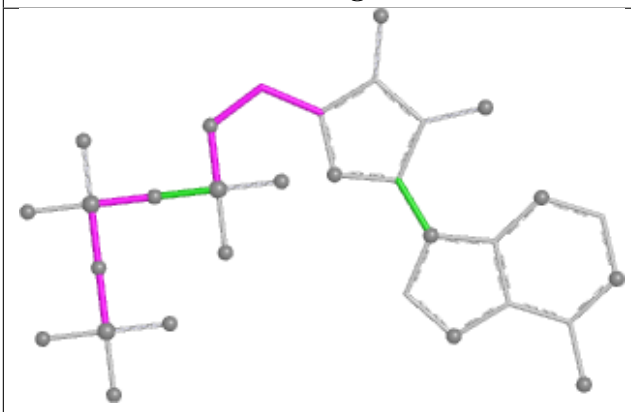
Ligand ATP L 600



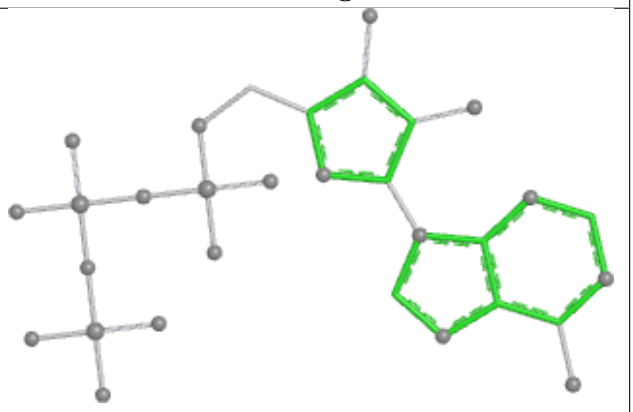
Bond lengths



Bond angles

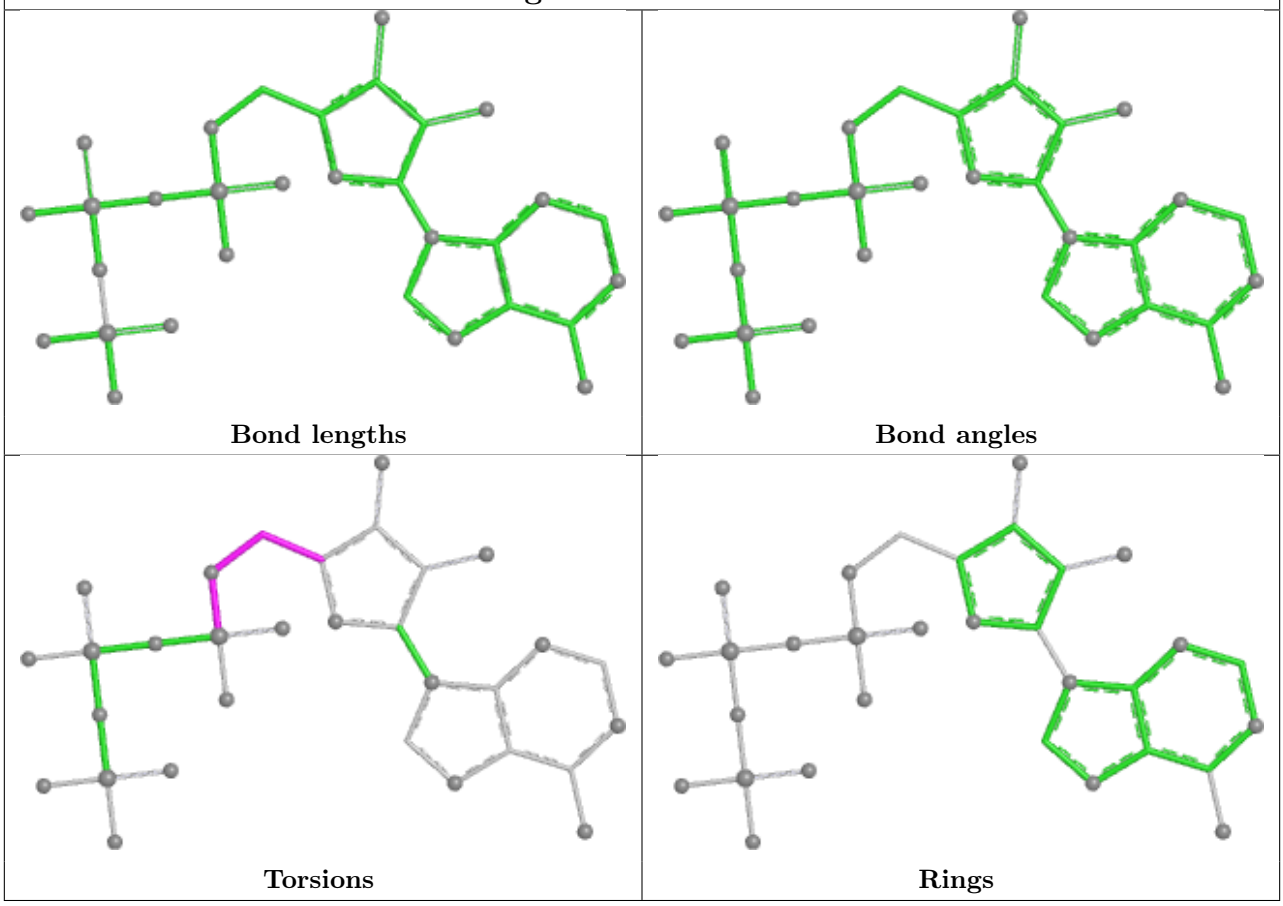


Torsions



Rings

Ligand ATP K 600



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.

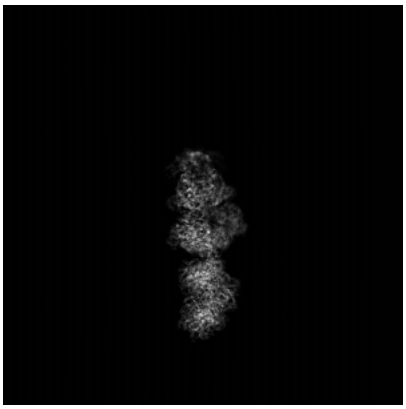
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-77335. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

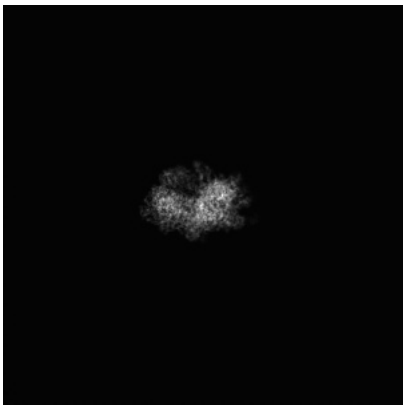
6.1.1 Primary map



X

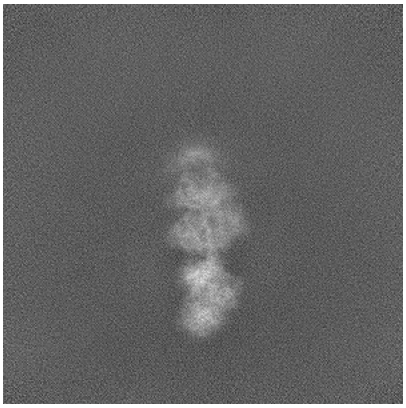


Y

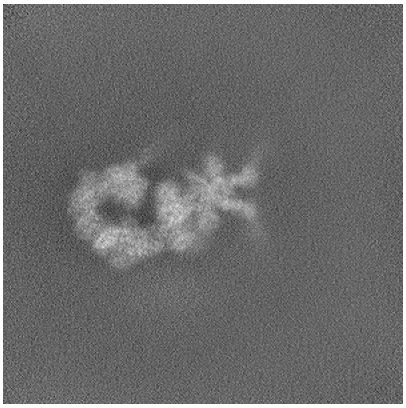


Z

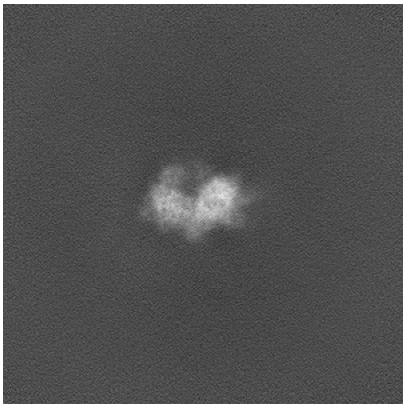
6.1.2 Raw map



X



Y



Z

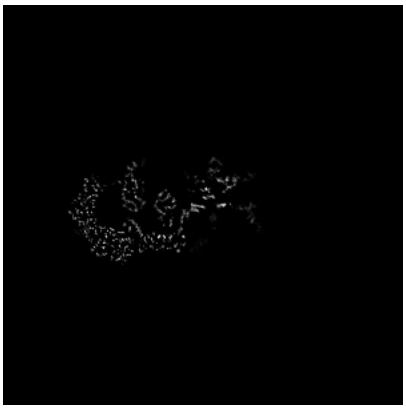
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

6.2.1 Primary map



X Index: 250

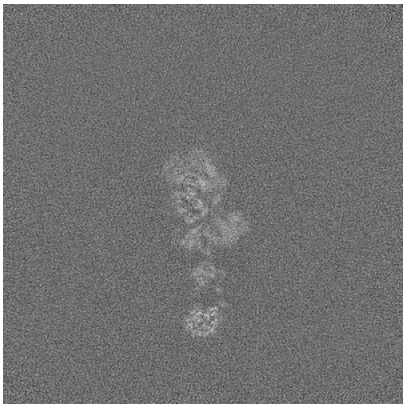


Y Index: 250

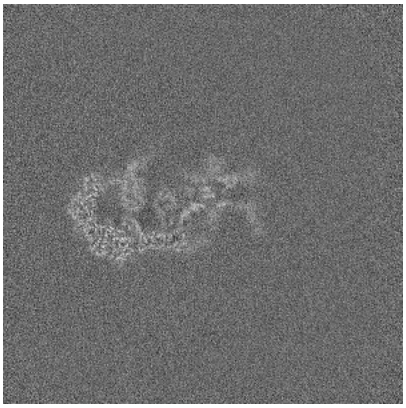


Z Index: 250

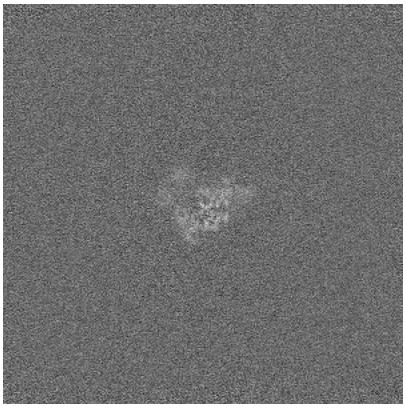
6.2.2 Raw map



X Index: 250



Y Index: 250



Z Index: 250

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: 248

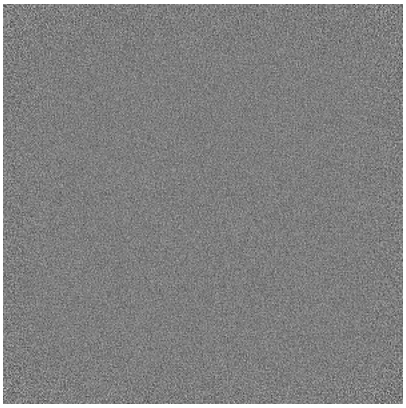


Y Index: 256

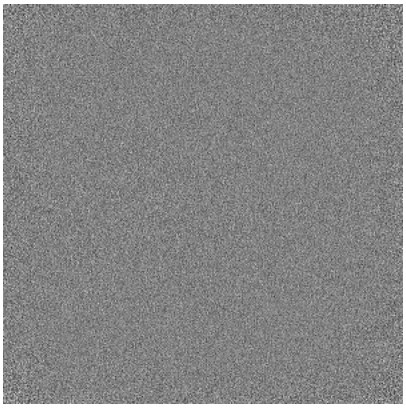


Z Index: 209

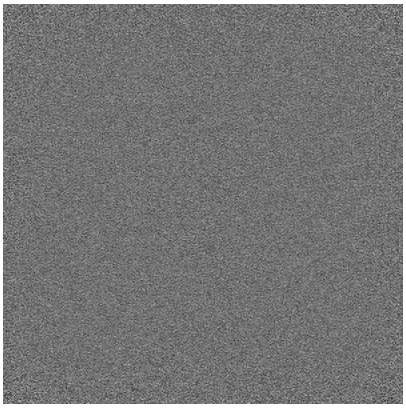
6.3.2 Raw map



X Index: 0



Y Index: 0

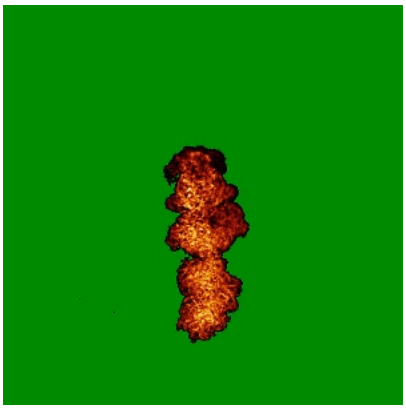


Z Index: 0

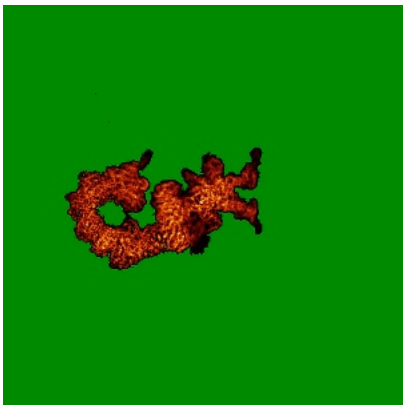
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

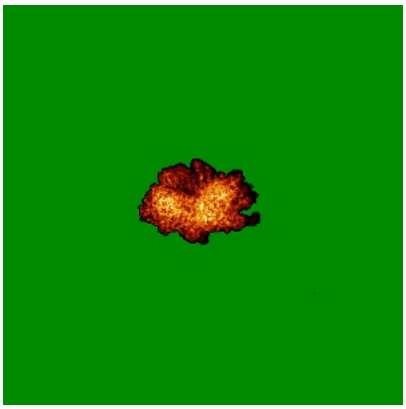
6.4.1 Primary map



X

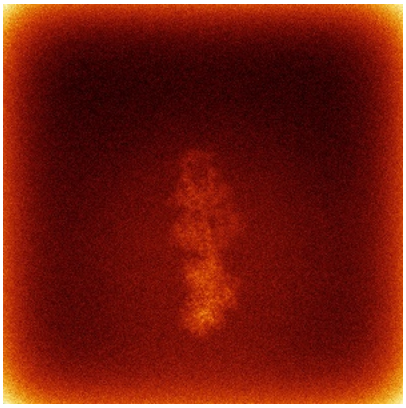


Y

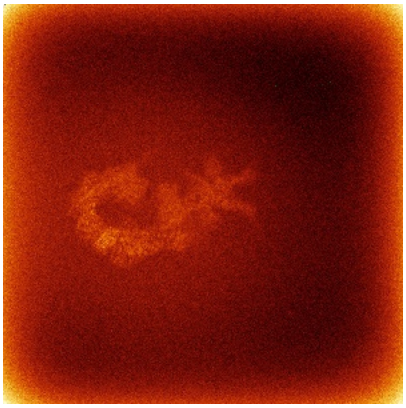


Z

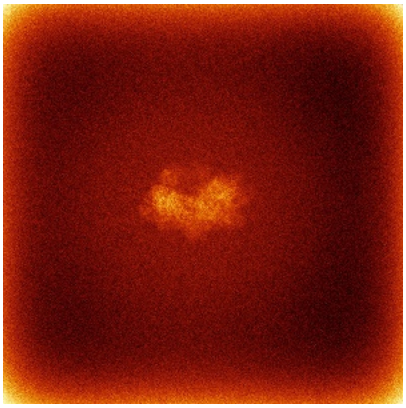
6.4.2 Raw map



X



Y

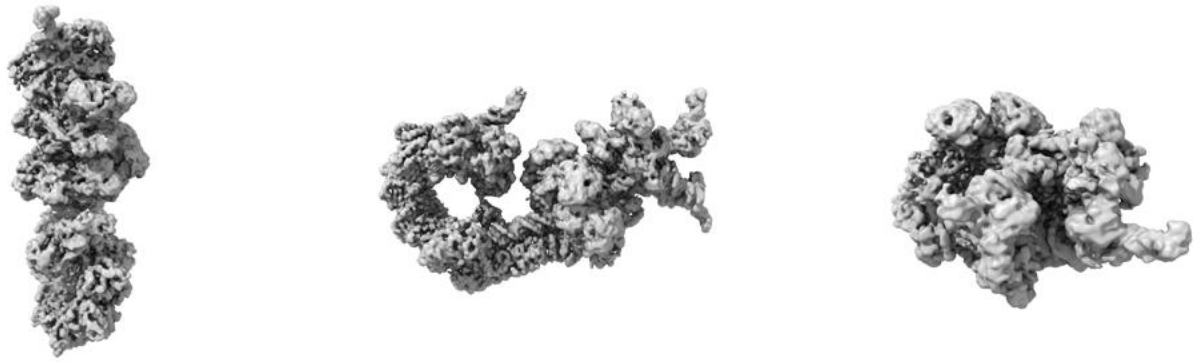


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.019. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

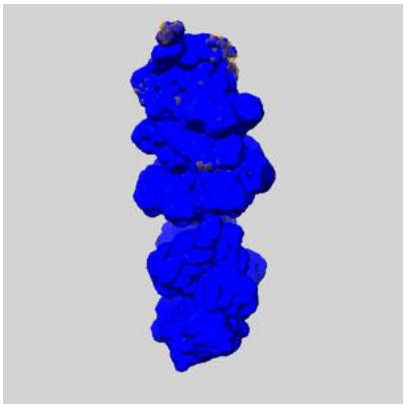
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

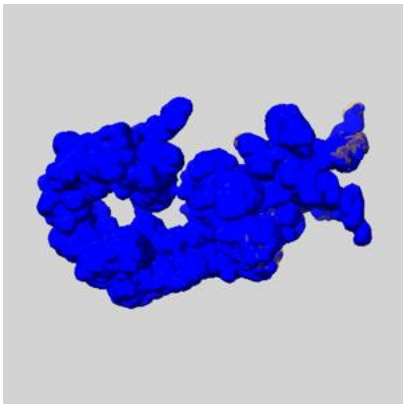
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

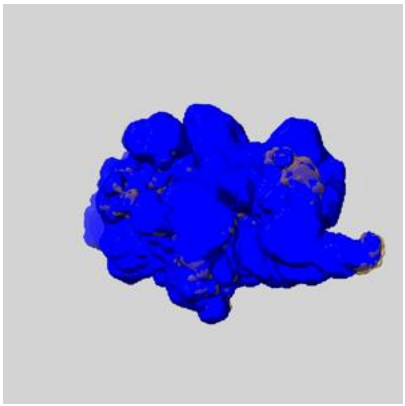
6.6.1 emd_77335_msk_1.map (i)



X



Y

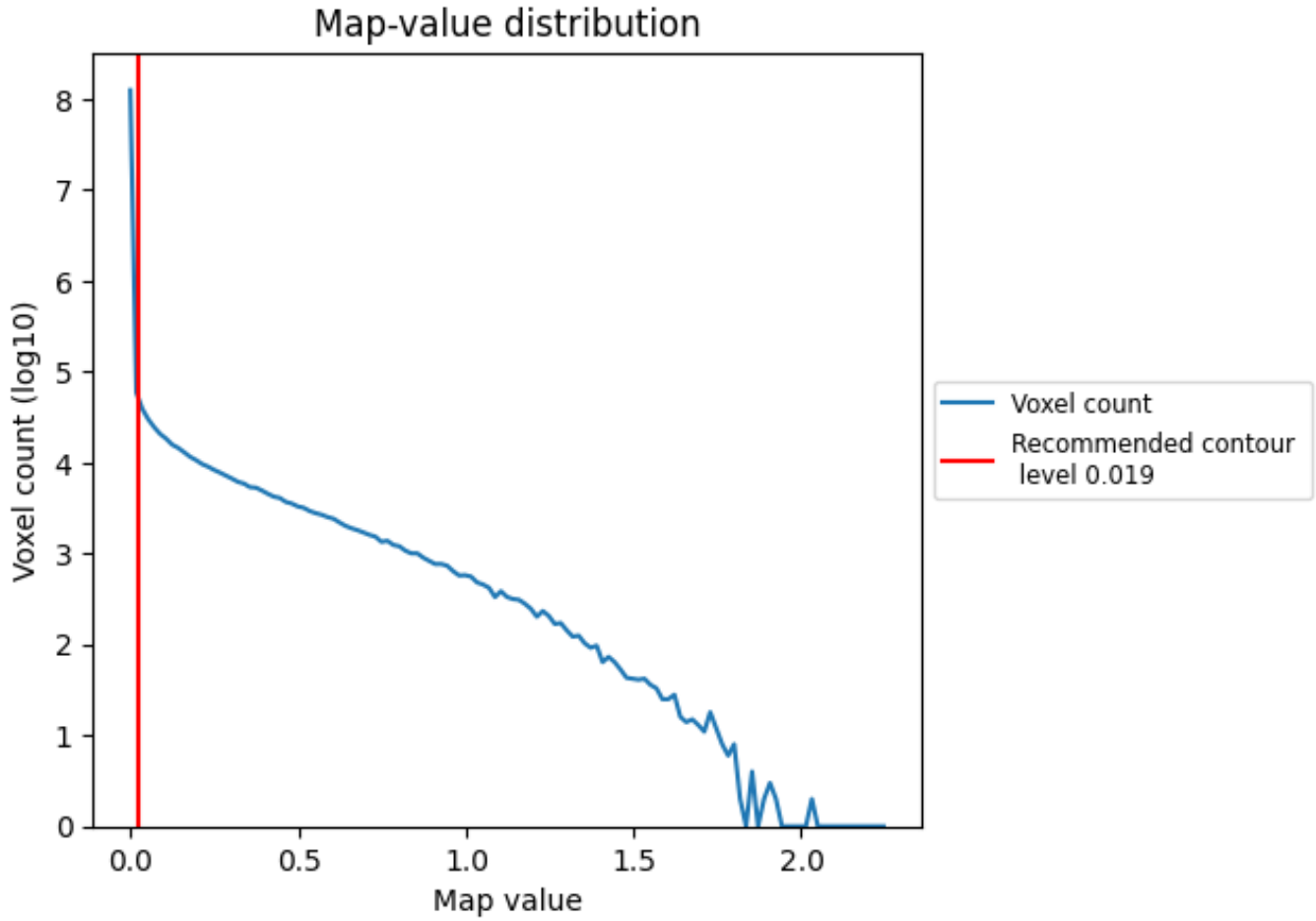


Z

7 Map analysis

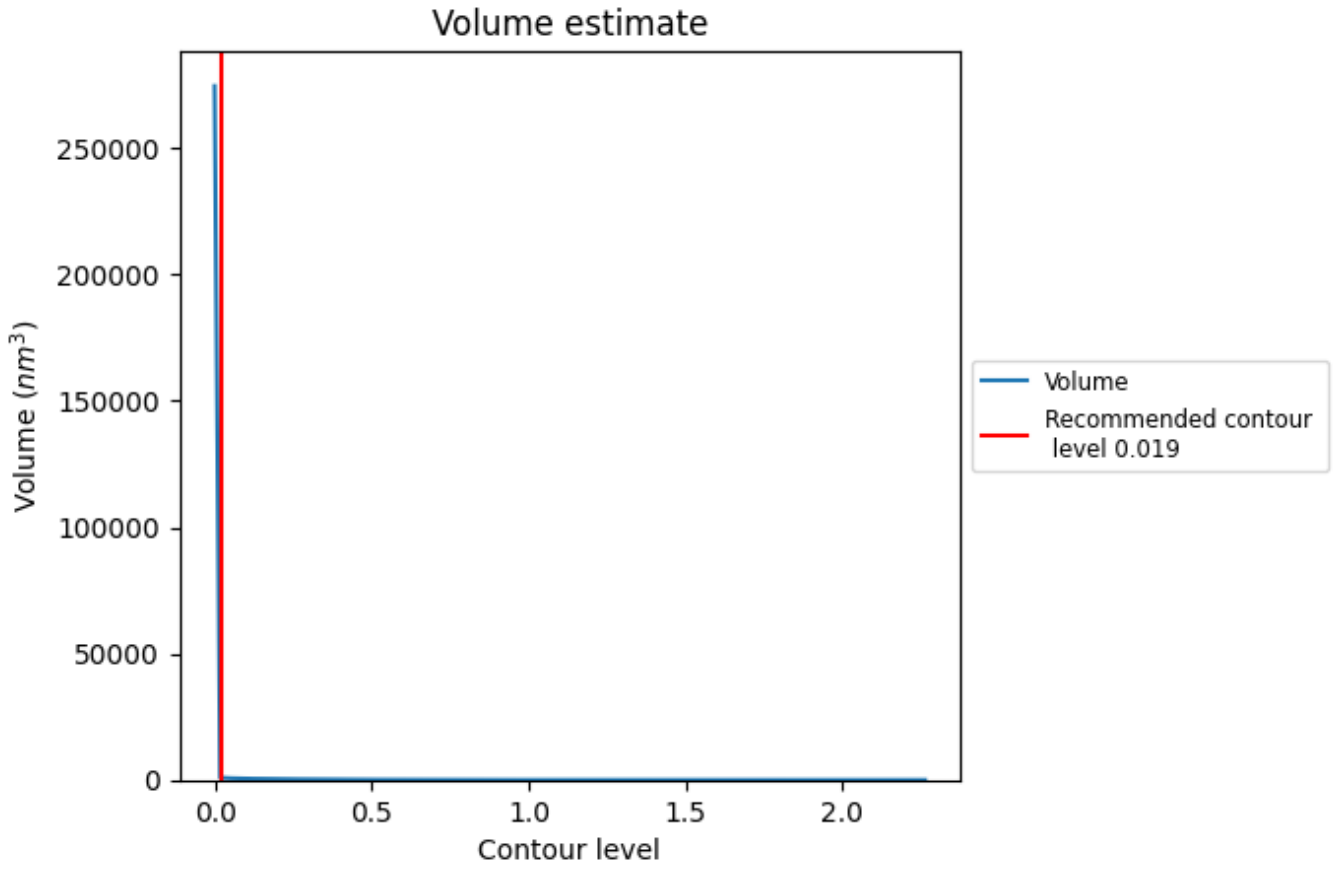
This section contains the results of statistical analysis of the map.

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.

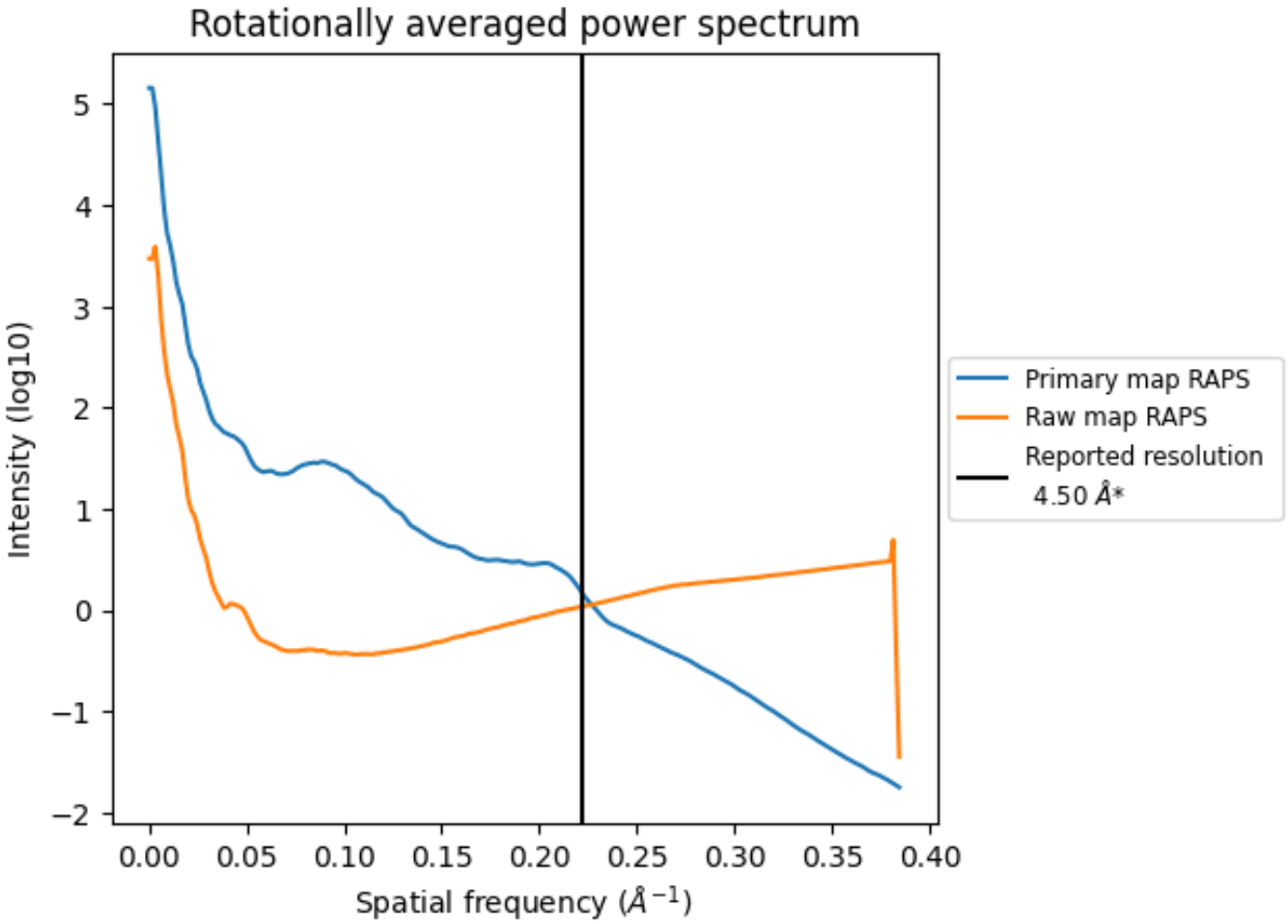
7.2 Volume estimate



The volume at the recommended contour level is 871 nm^3; this corresponds to an approximate mass of 787 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)

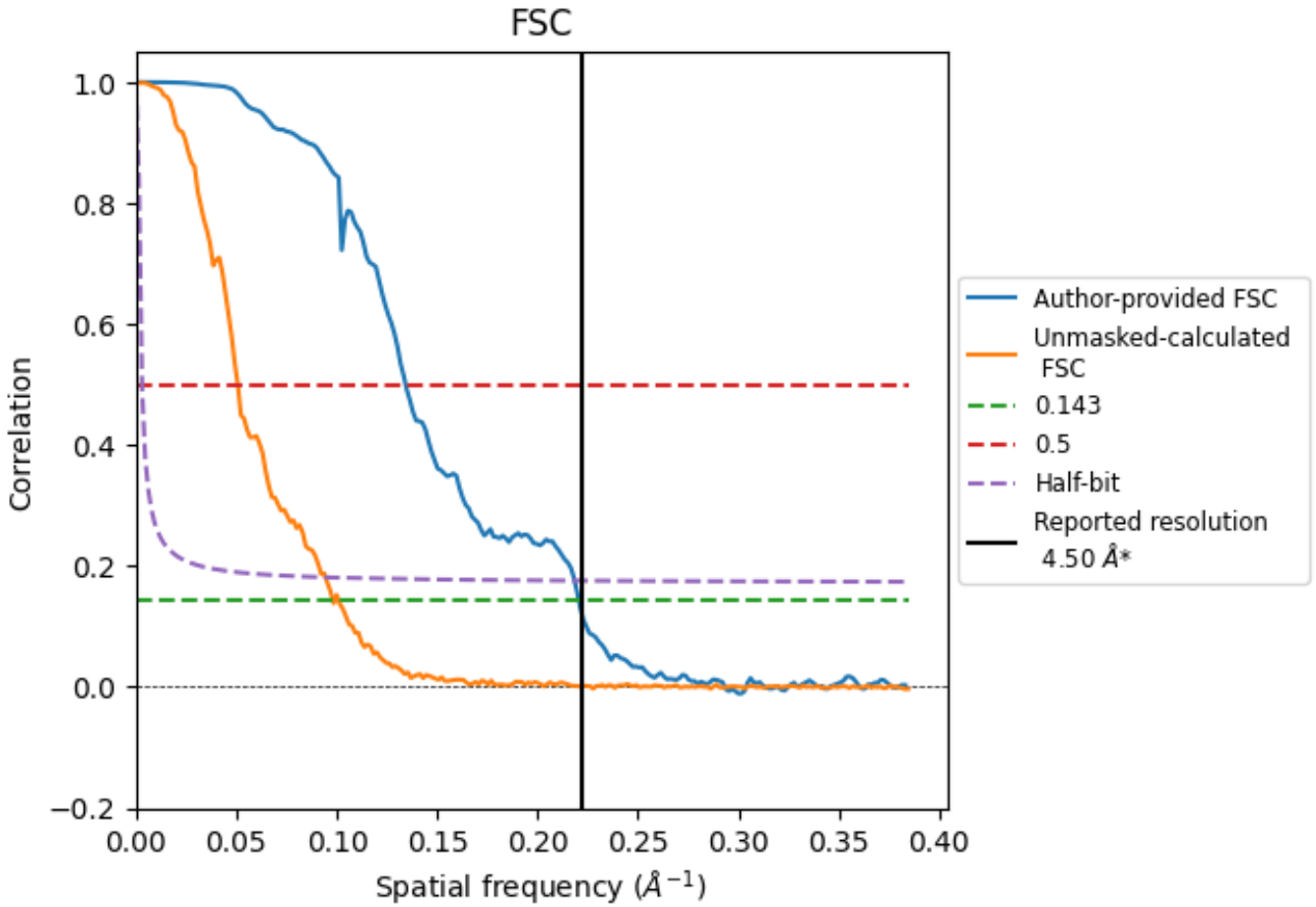


*Reported resolution corresponds to spatial frequency of 0.222 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.222 Å^{-1}

8.2 Resolution estimates (i)

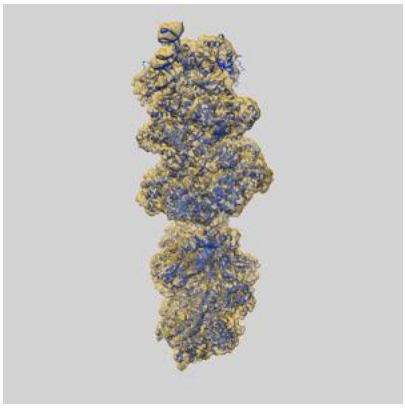
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.50	-	-
Author-provided FSC curve	4.53	7.45	4.58
Unmasked-calculated*	10.19	19.72	10.58

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 10.19 differs from the reported value 4.5 by more than 10 %

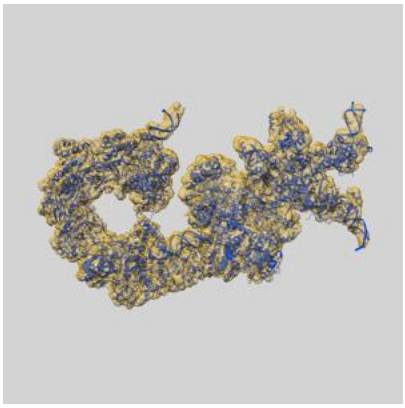
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-77335 and PDB model 36AU. Per-residue inclusion information can be found in section 3 on page 10.

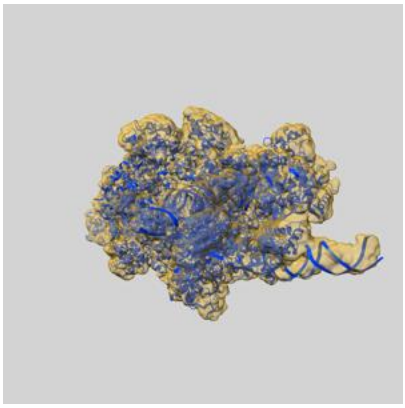
9.1 Map-model overlay



X



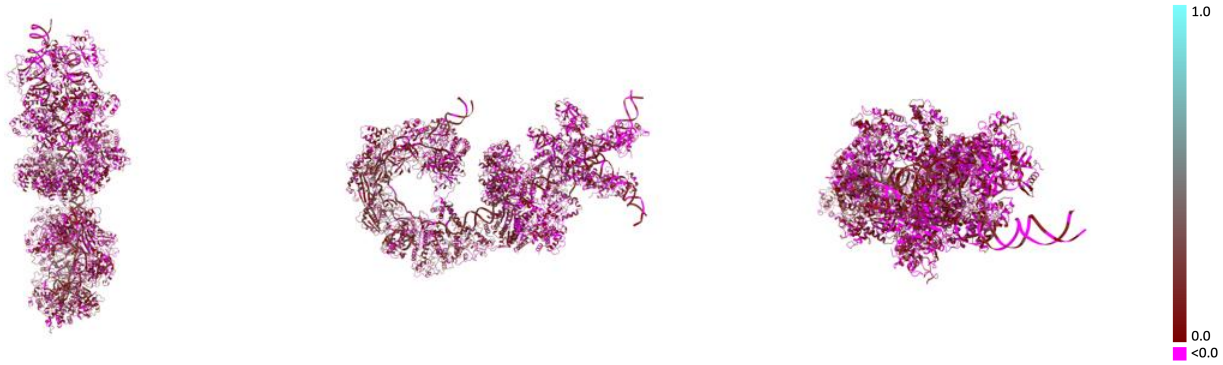
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.019 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.

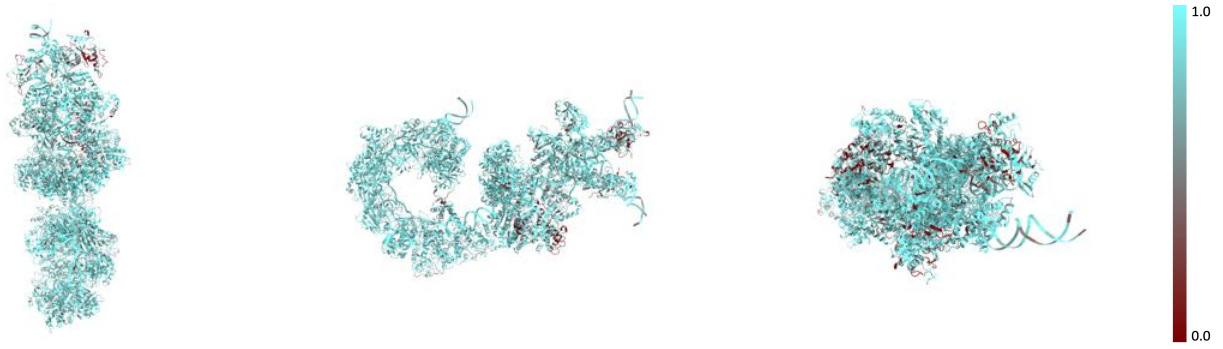
9.2 Q-score mapped to coordinate model



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.

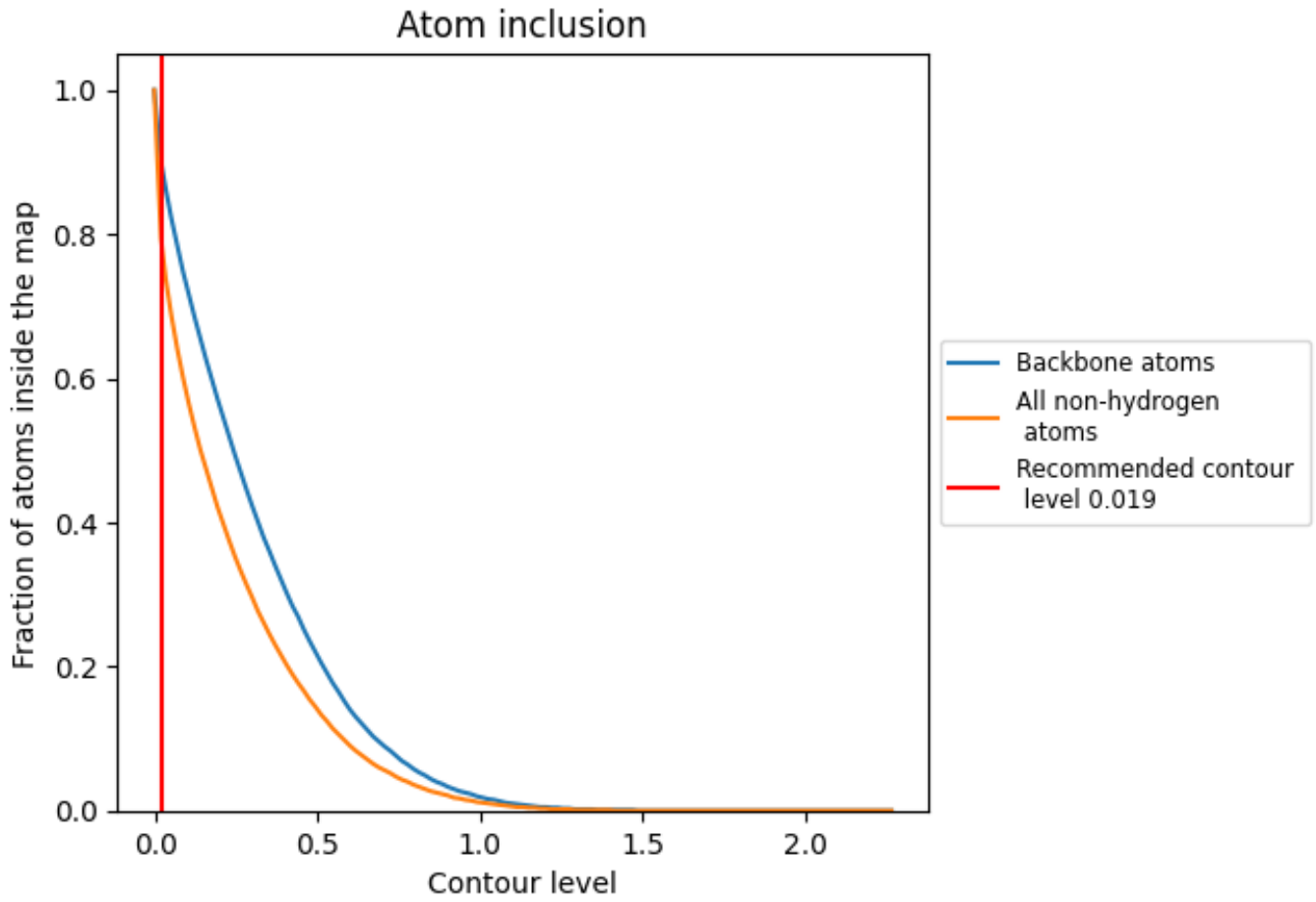
9.3 Atom inclusion mapped to coordinate model



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 (0.019).

9.4 Atom inclusion (i)



At the recommended contour level, 90% of all backbone atoms, 79% 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 (0.019) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7940	0.0860
1	0.9200	0.1710
2	0.6900	-0.0030
3	0.8850	0.1280
4	0.8270	0.0590
5	0.8930	0.0990
6	0.8920	0.0920
7	0.9150	0.1510
A	0.8020	0.0460
B	0.7170	0.0320
C	0.6640	0.0110
D	0.5920	0.0020
E	0.8010	0.0670
F	0.7940	0.0310
G	0.4540	-0.0200
H	0.8070	0.0270
I	0.8320	0.0530
J	0.8260	0.0550
K	0.8540	0.1070
L	0.8240	0.0900
M	0.8390	0.1050
N	0.7810	0.1390
O	0.8090	0.1360
P	0.7570	0.0930
Q	0.8470	0.1660
R	0.8300	0.1610
S	0.8320	0.1520
T	0.8300	0.1610
U	0.7930	0.1040
V	0.8210	0.0820
W	0.7990	0.0770

