Full wwPDB EM Validation Report ⓘ

Nov 19, 2026 – 12:57 PM EST

PDB ID	:	36BV / pdb_000036bv
EMDB ID	:	EMD-77370
Title	:	Cryo-EM structure of the VchCAST STC/TnsC complex
Authors	:	Dubey, S.; Florez Ariza, A.J.; Truong, V.H.; Fatma, S.; Kellogg, E.H.
Deposited on	:	2026-05-29
Resolution	:	3.80 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:

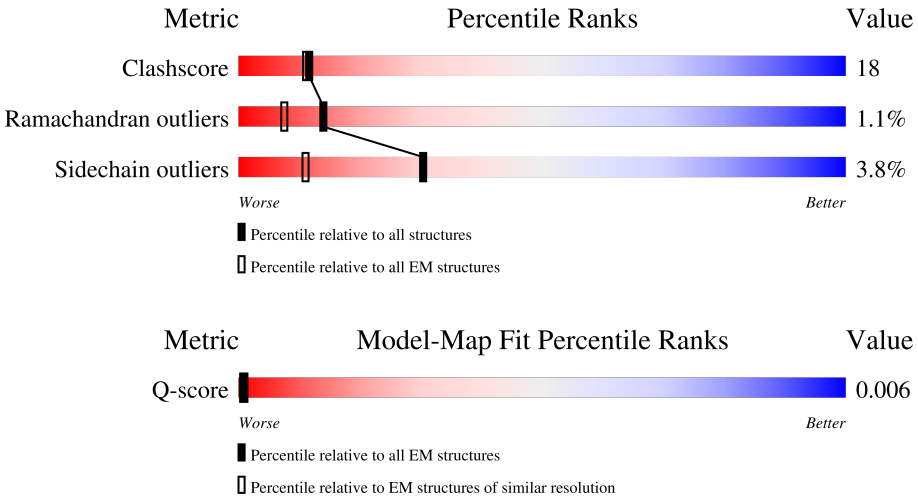
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.2
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data 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

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

The reported resolution of this entry is 3.80 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	-
Q-score	-	25397	10198 (3.30 - 4.30)

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	A	236	38% 67% 28% 6%
1	B	236	31% 62% 28% • 8%
2	C	603	33% 38% 16% 45%
2	D	603	31% 40% 14% • 45%

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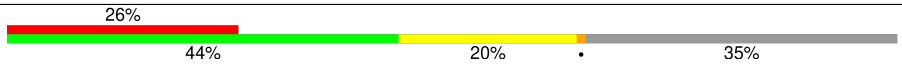
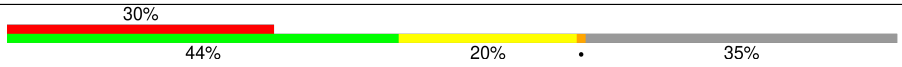
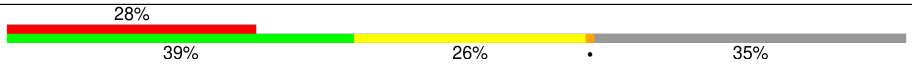
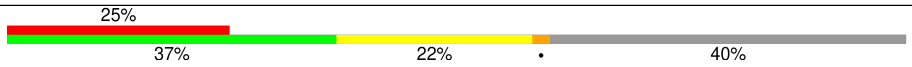
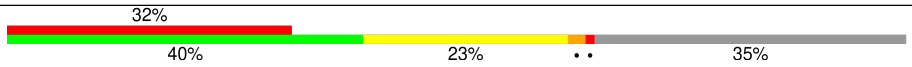
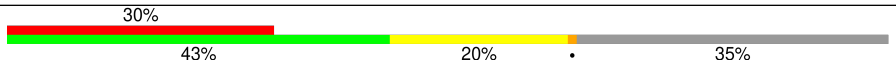
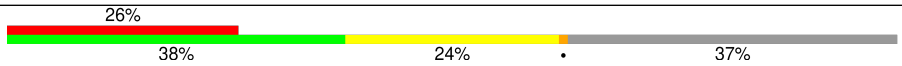
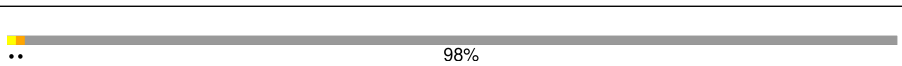
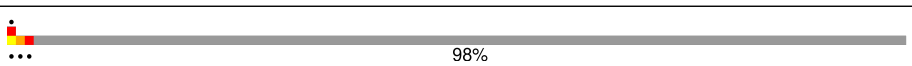
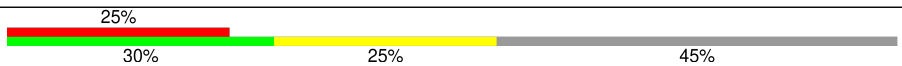
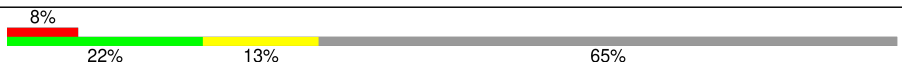
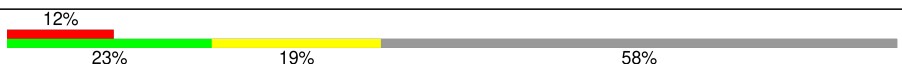
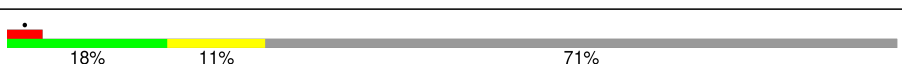
Mol	Chain	Length	Quality of chain
2	E	603	
2	F	603	
3	G	479	
3	H	479	
3	I	479	
3	J	479	
3	K	479	
3	L	479	
3	M	479	
3	c1	479	
3	c2	479	
4	2	20	
5	3	189	
6	4	133	
7	5	128	
8	6	91	
9	7	99	

2 Entry composition (i)

There are 11 unique types of molecules in this entry. The entry contains 40153 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called TnsA.

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

- Molecule 2 is a protein called TnsB.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	329	Total	C	N	O	S	0	0
			2709	1726	454	520	9		
2	D	331	Total	C	N	O	S	0	0
			2725	1735	456	525	9		
2	E	531	Total	C	N	O	S	0	0
			4353	2768	768	805	12		
2	F	527	Total	C	N	O	S	0	0
			4322	2746	765	799	12		

- Molecule 3 is a protein called TnsC.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	313	Total	C	N	O	S	0	0
			2498	1586	435	466	11		
3	H	311	Total	C	N	O	S	0	0
			2487	1578	433	465	11		
3	I	313	Total	C	N	O	S	0	0
			2498	1586	435	466	11		
3	J	289	Total	C	N	O	S	0	0
			2315	1472	401	431	11		
3	K	313	Total	C	N	O	S	0	0
			2500	1586	435	468	11		
3	L	310	Total	C	N	O	S	0	0
			2480	1574	432	463	11		
3	M	302	Total	C	N	O	S	0	0
			2415	1535	417	452	11		

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Mol	Chain	Residues	Atoms	AltConf	Trace
3	c1	10	Total C N O 87 56 17 14	0	0
3	c2	11	Total C N O 93 59 18 16	0	0

- Molecule 4 is a DNA chain called TargetFlank-RC.

Mol	Chain	Residues	Atoms	AltConf	Trace
4	2	11	Total C N O P 229 109 41 68 11	0	0

- Molecule 5 is a DNA chain called RE-TS.

Mol	Chain	Residues	Atoms	AltConf	Trace
5	3	66	Total C N O P 1362 650 247 399 66	0	0

- Molecule 6 is a DNA chain called LE-TSD-TargetFlank.

Mol	Chain	Residues	Atoms	AltConf	Trace
6	4	52	Total C N O P 1056 509 184 311 52	0	0

- Molecule 7 is a DNA chain called HFR-LE.

Mol	Chain	Residues	Atoms	AltConf	Trace
7	5	42	Total C N O P 867 416 157 252 42	0	0

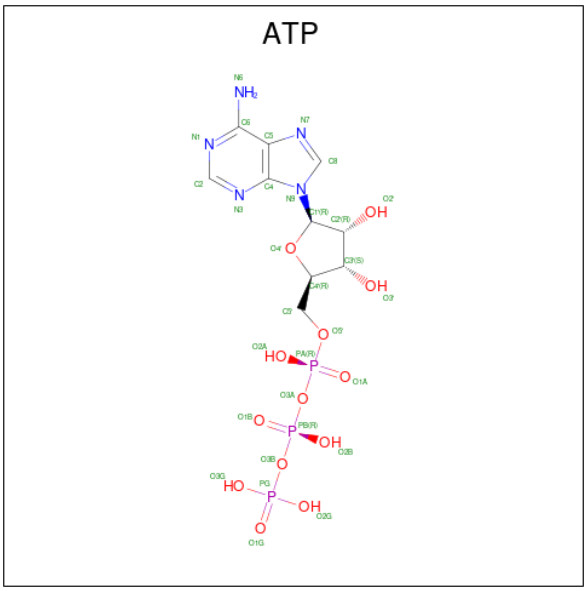
- Molecule 8 is a DNA chain called HFR-RE.

Mol	Chain	Residues	Atoms	AltConf	Trace
8	6	38	Total C N O P 777 373 143 223 38	0	0

- Molecule 9 is a DNA chain called NTS-Scramble.

Mol	Chain	Residues	Atoms	AltConf	Trace
9	7	29	Total C N O P 591 281 106 175 29	0	0

- Molecule 10 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



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

- Molecule 11 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
11	H	1	Total	Mg	0
			1	1	
11	I	1	Total	Mg	0
			1	1	
11	J	1	Total	Mg	0
			1	1	
11	K	1	Total	Mg	0
			1	1	
11	L	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
11	M	2	Total 2	Mg 2	0

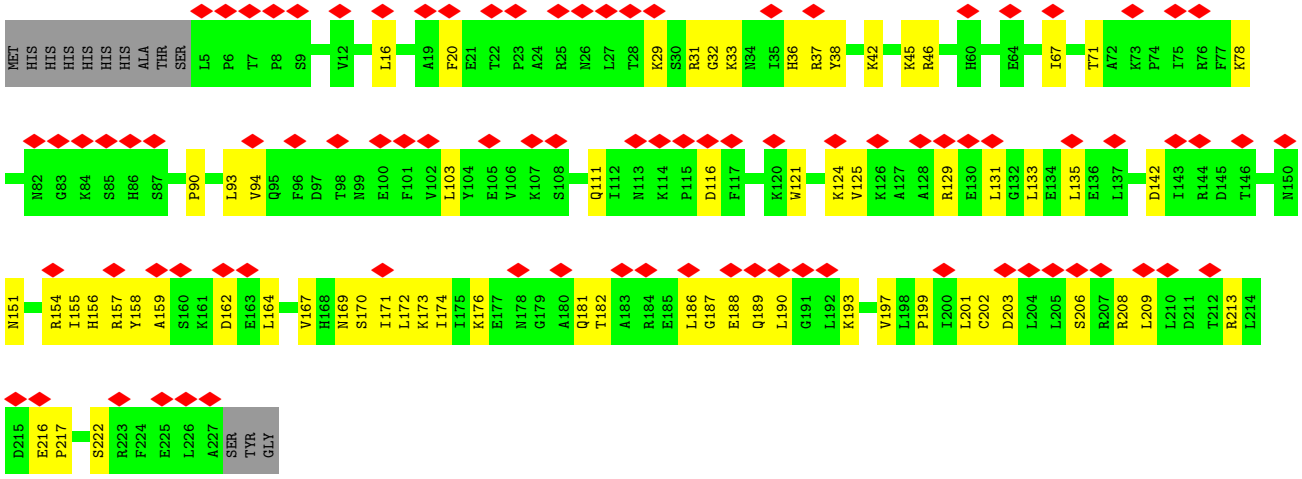
3 Residue-property plots (i)

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: TnsA

Chain A:

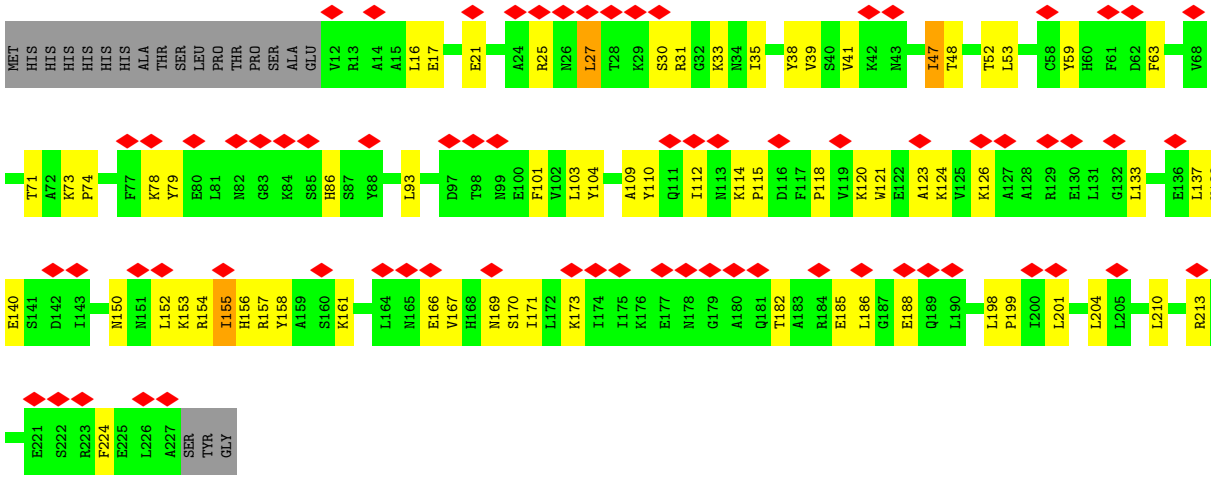




• Molecule 1: TnsA

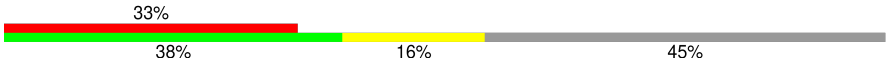
Chain B:

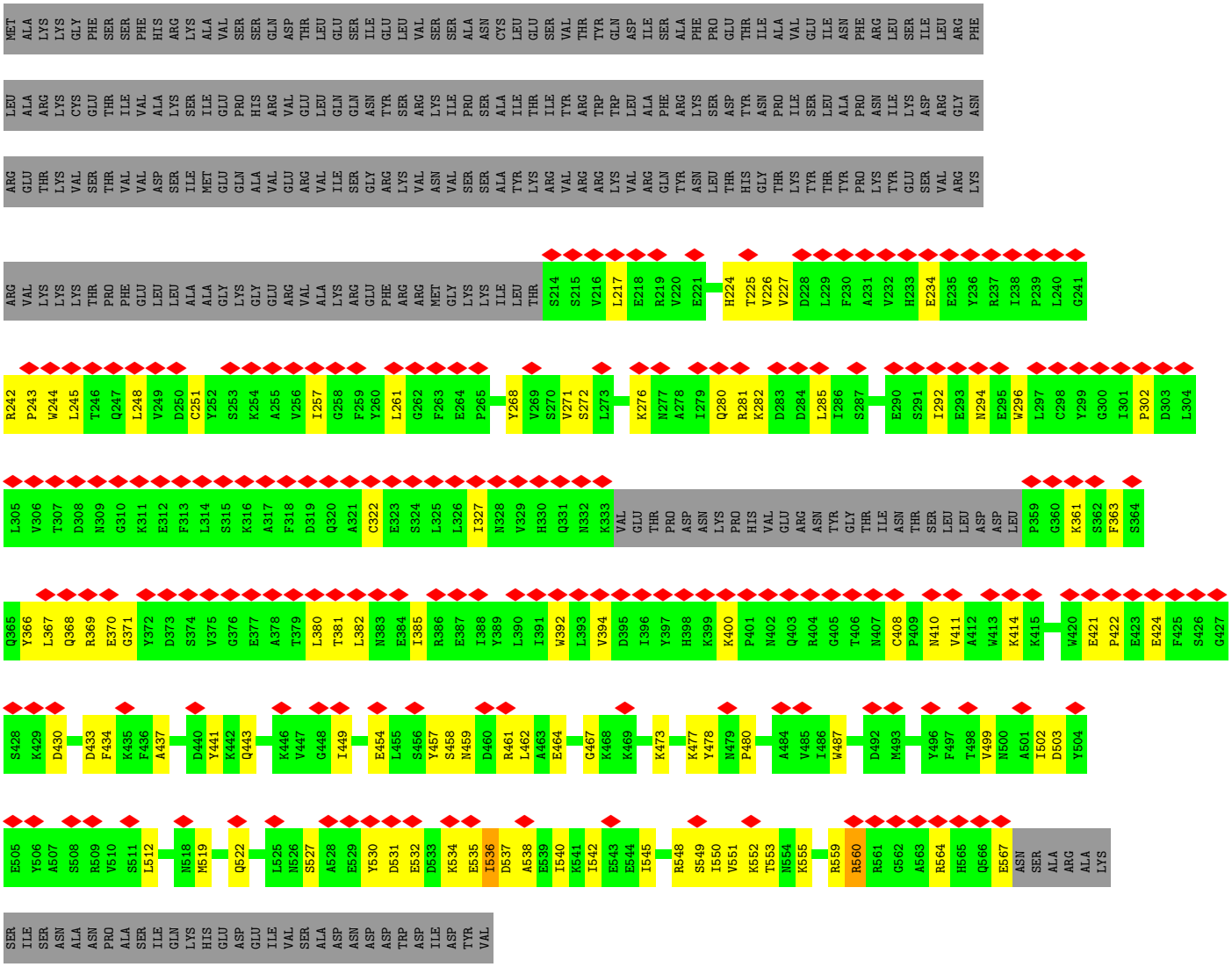




• Molecule 2: TnsB

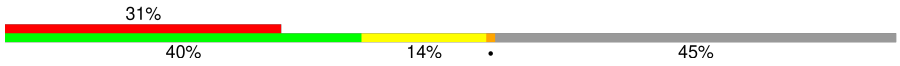
Chain C:

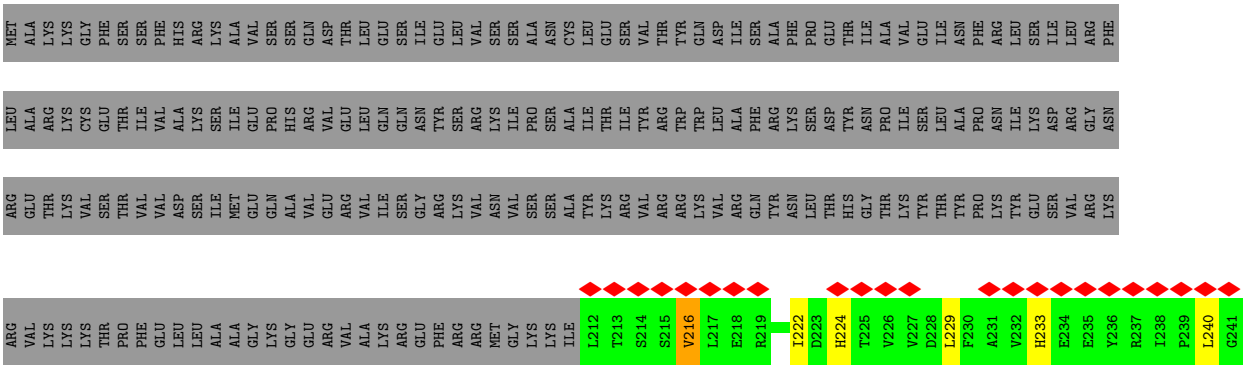


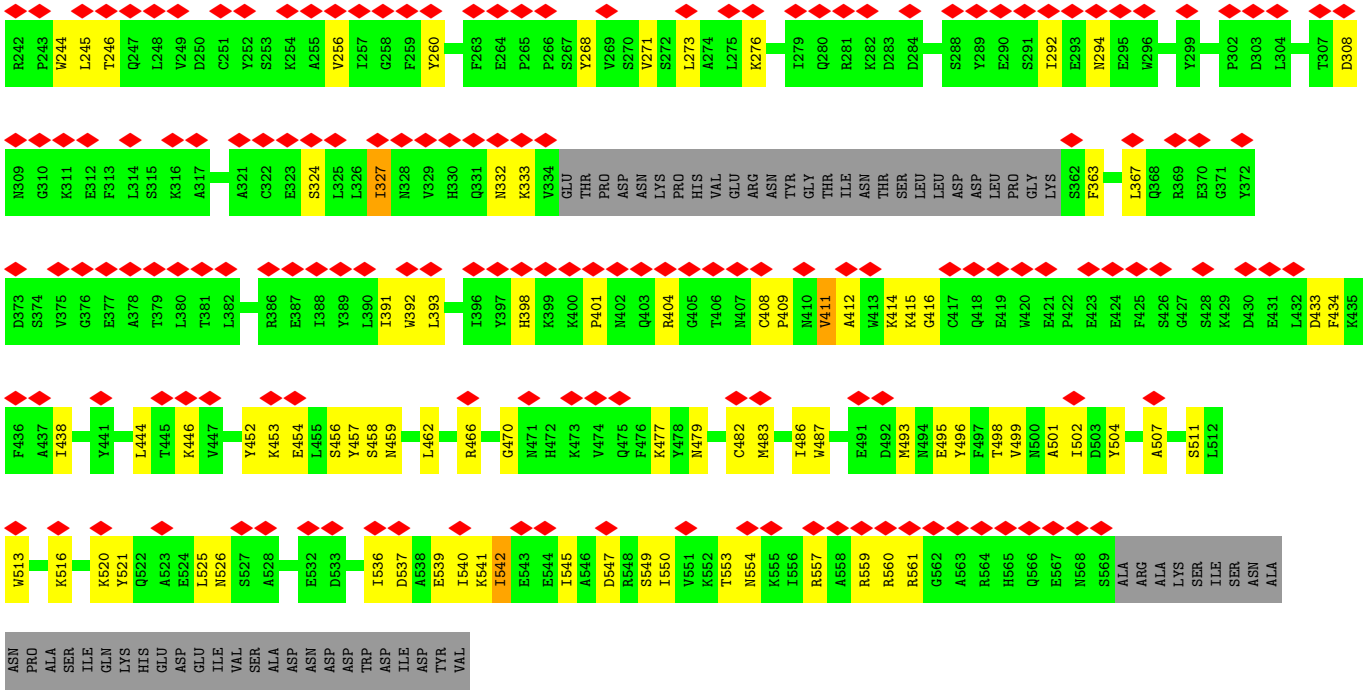


- Molecule 2: TnsB

Chain D:

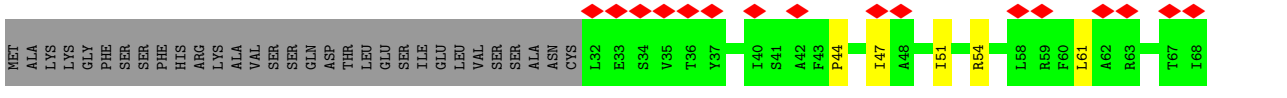


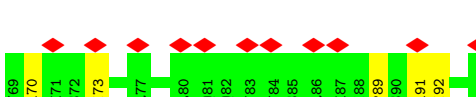






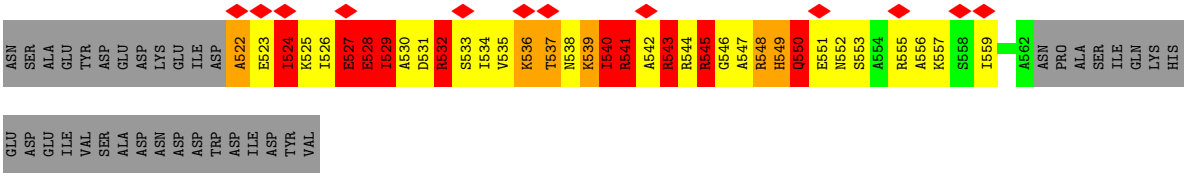






• Molecule 2: TnsB

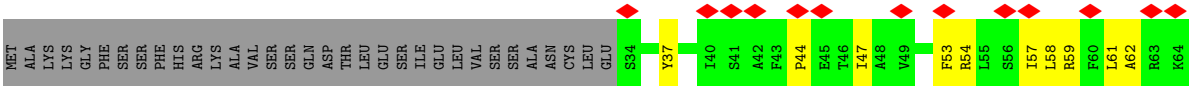
Chain E:

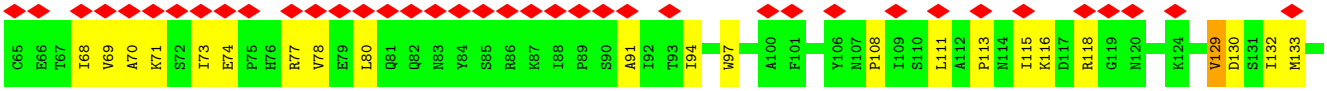


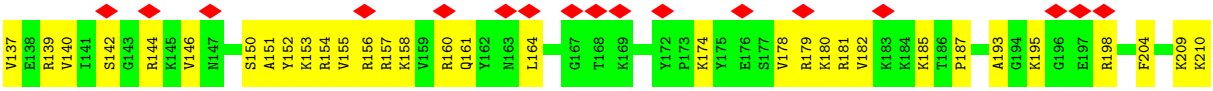
• Molecule 2: TnsB

Chain F:

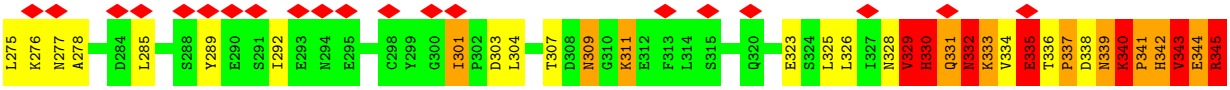


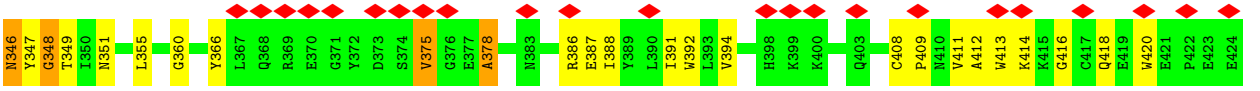


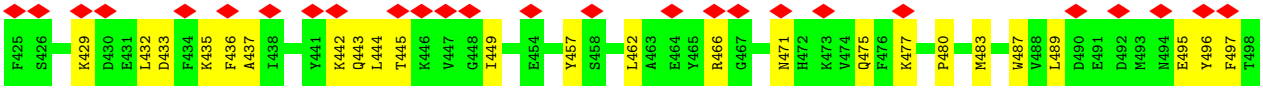


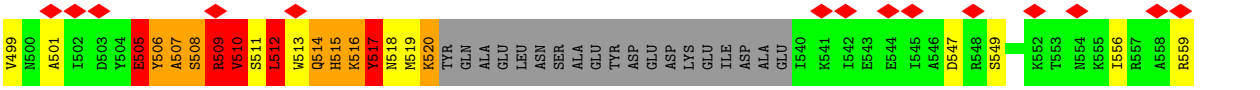


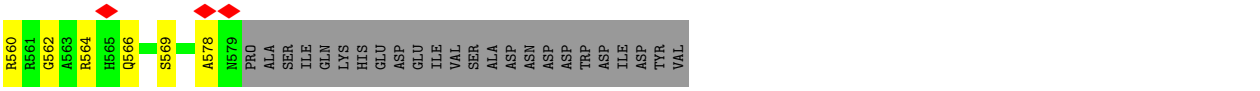


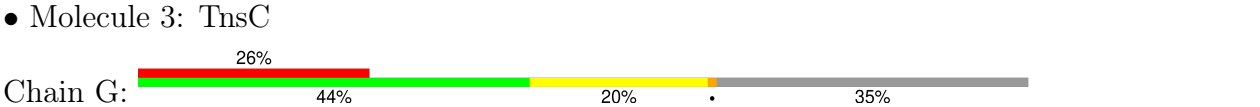


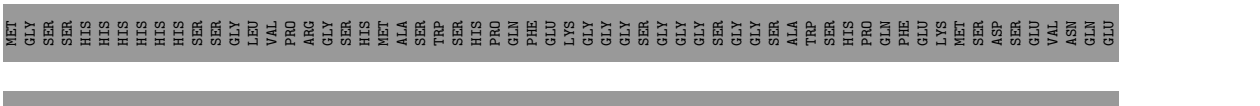










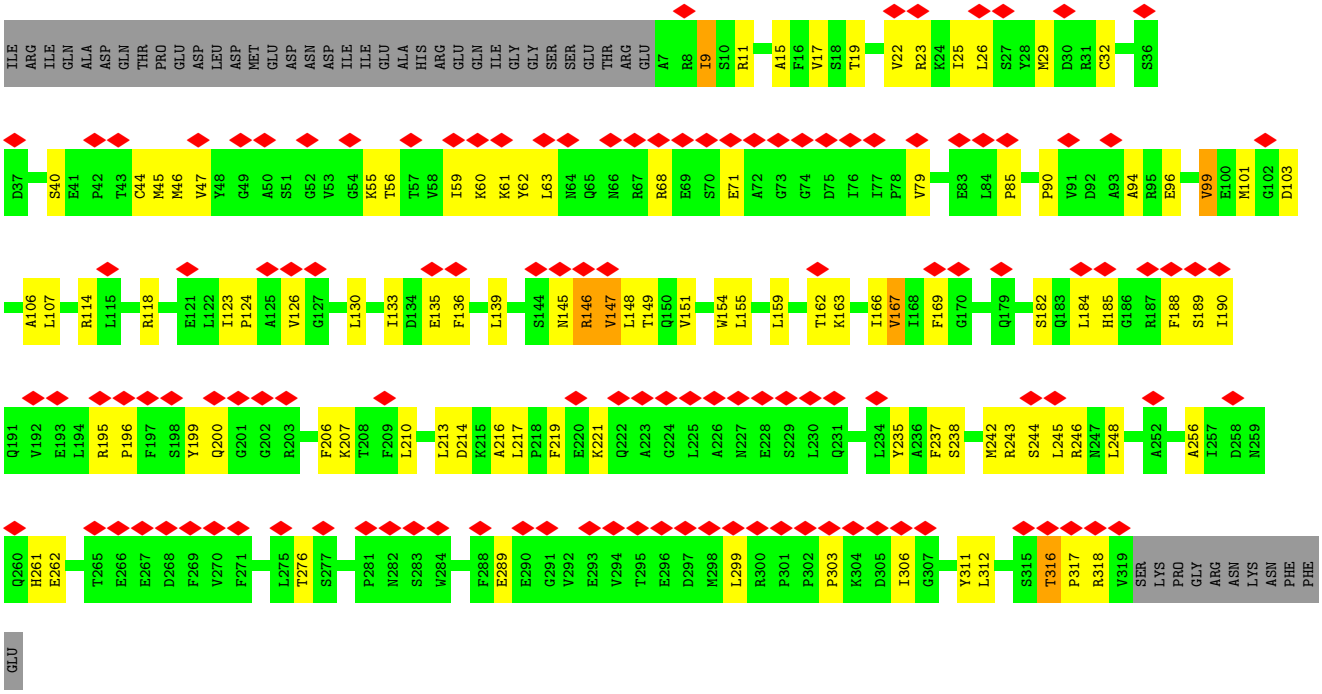




• Molecule 3: TnsC

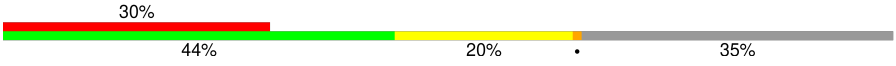
Chain G:

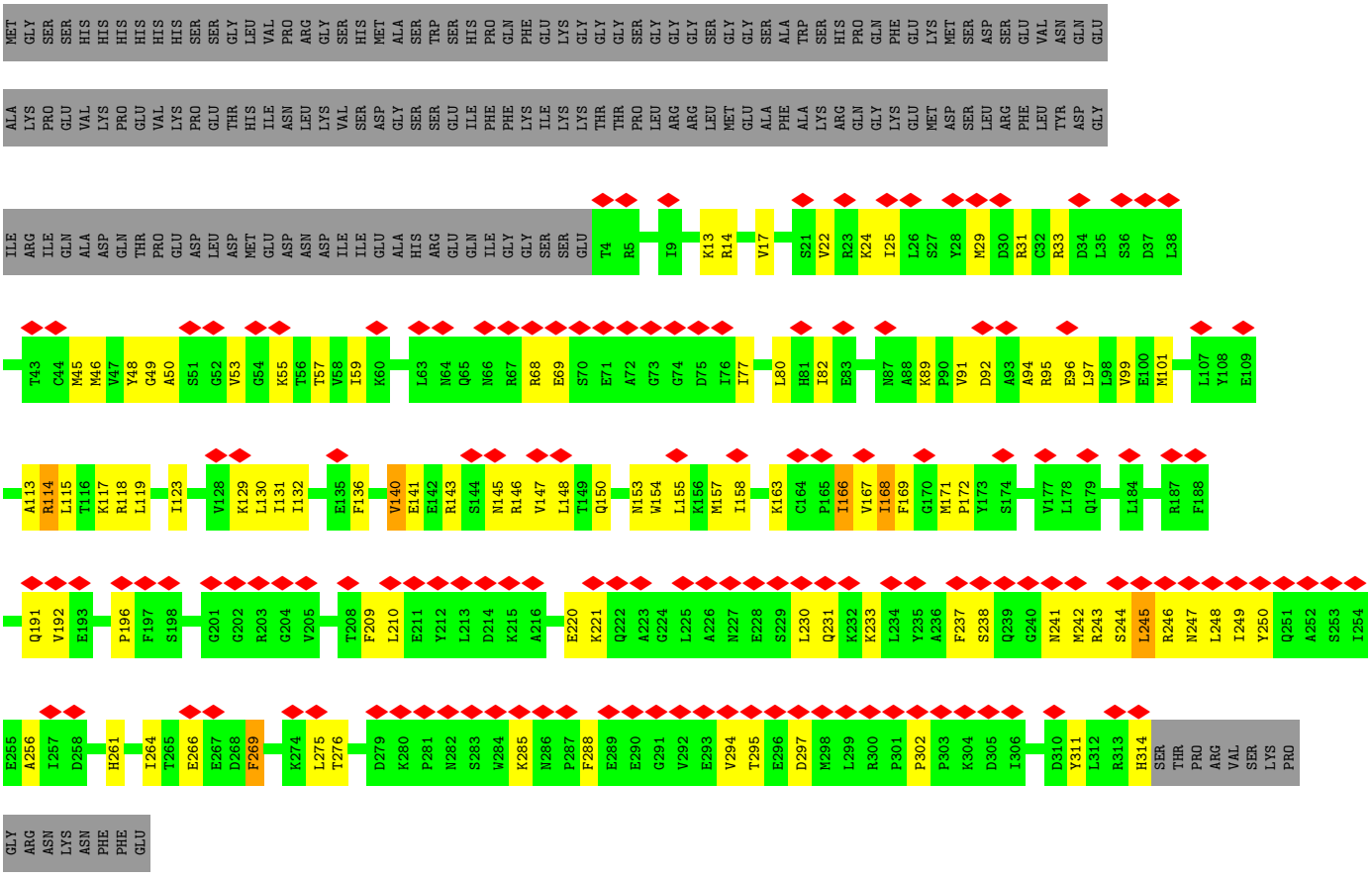




• Molecule 3: TnsC

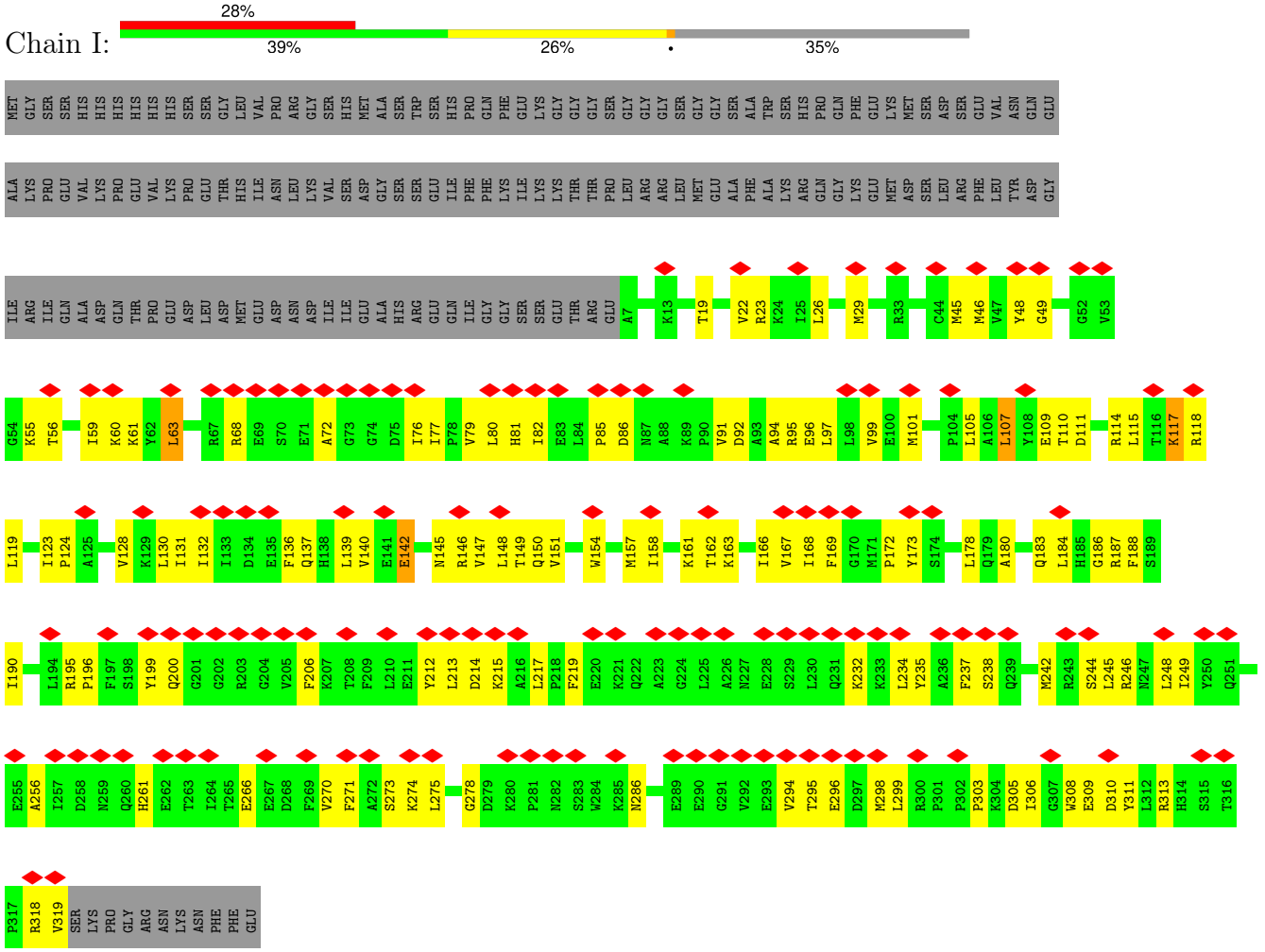
Chain H:





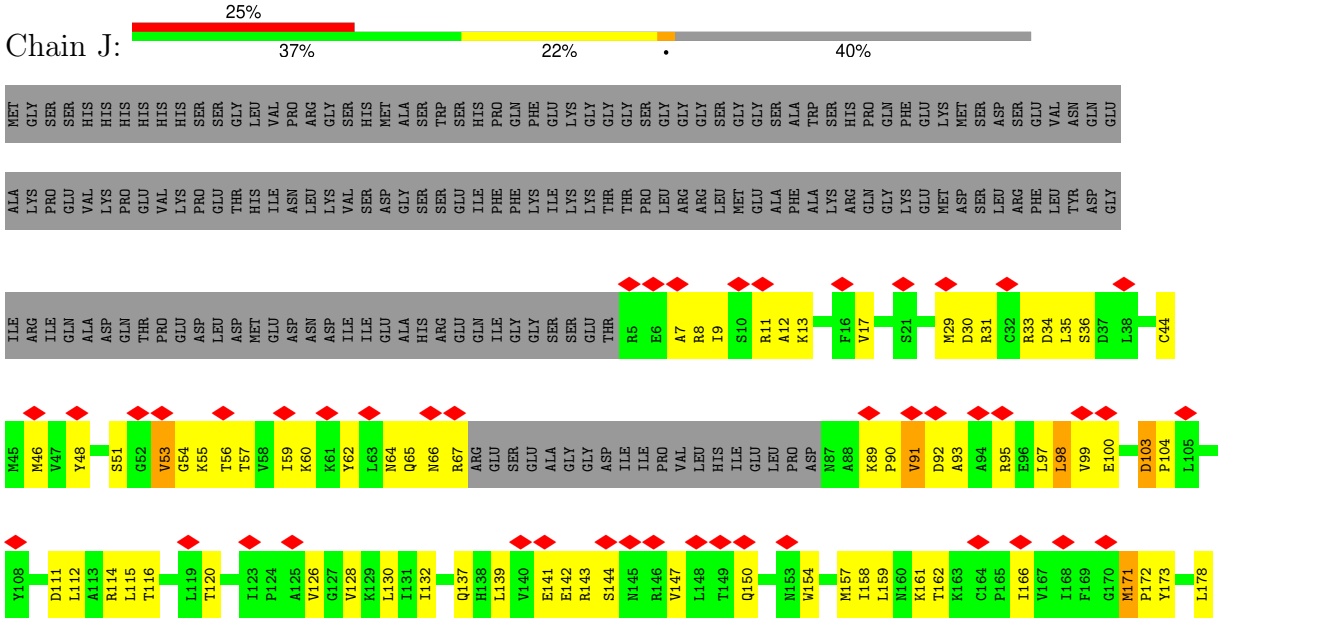
• Molecule 3: TnsC

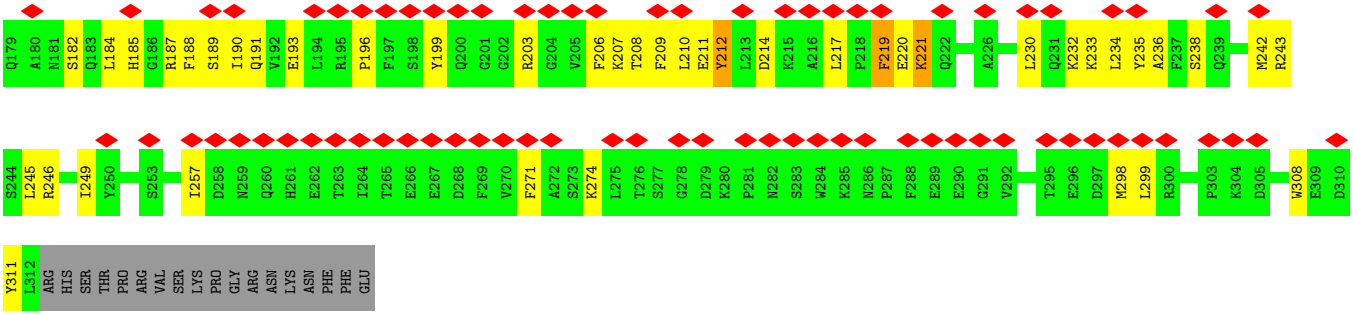
Chain I:



• Molecule 3: TnsC

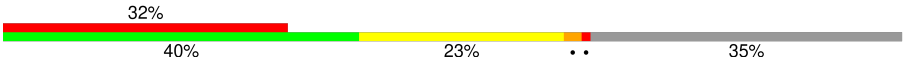
Chain J:

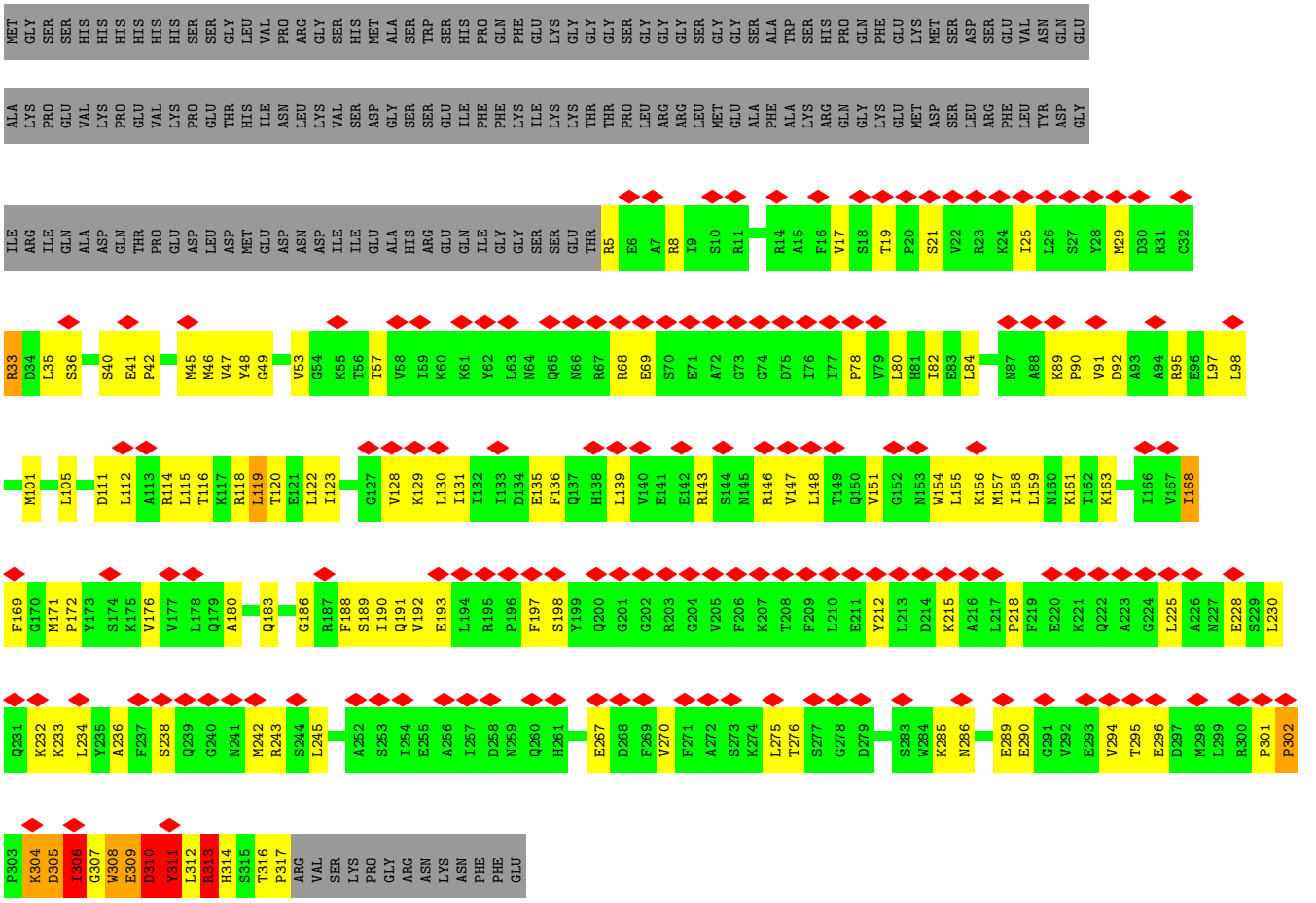




• Molecule 3: TnsC

Chain K:

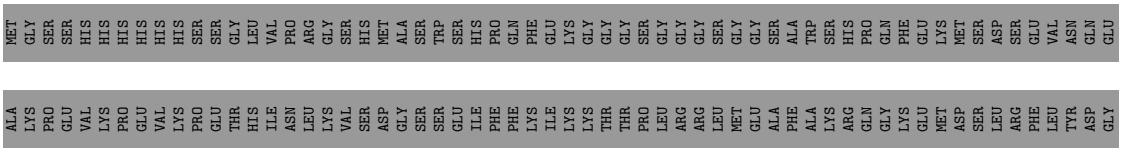


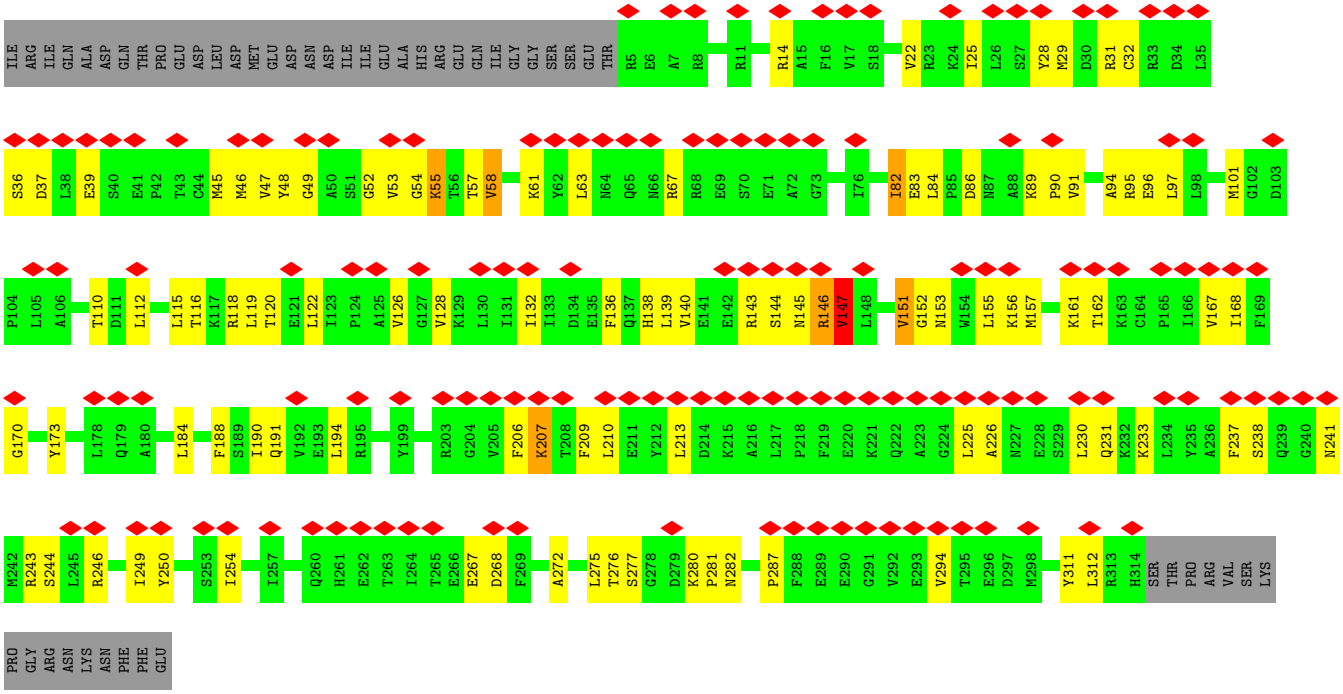


• Molecule 3: TnsC

Chain L:

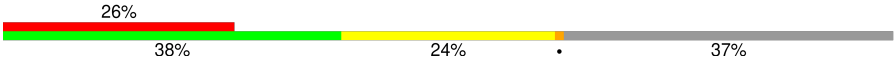


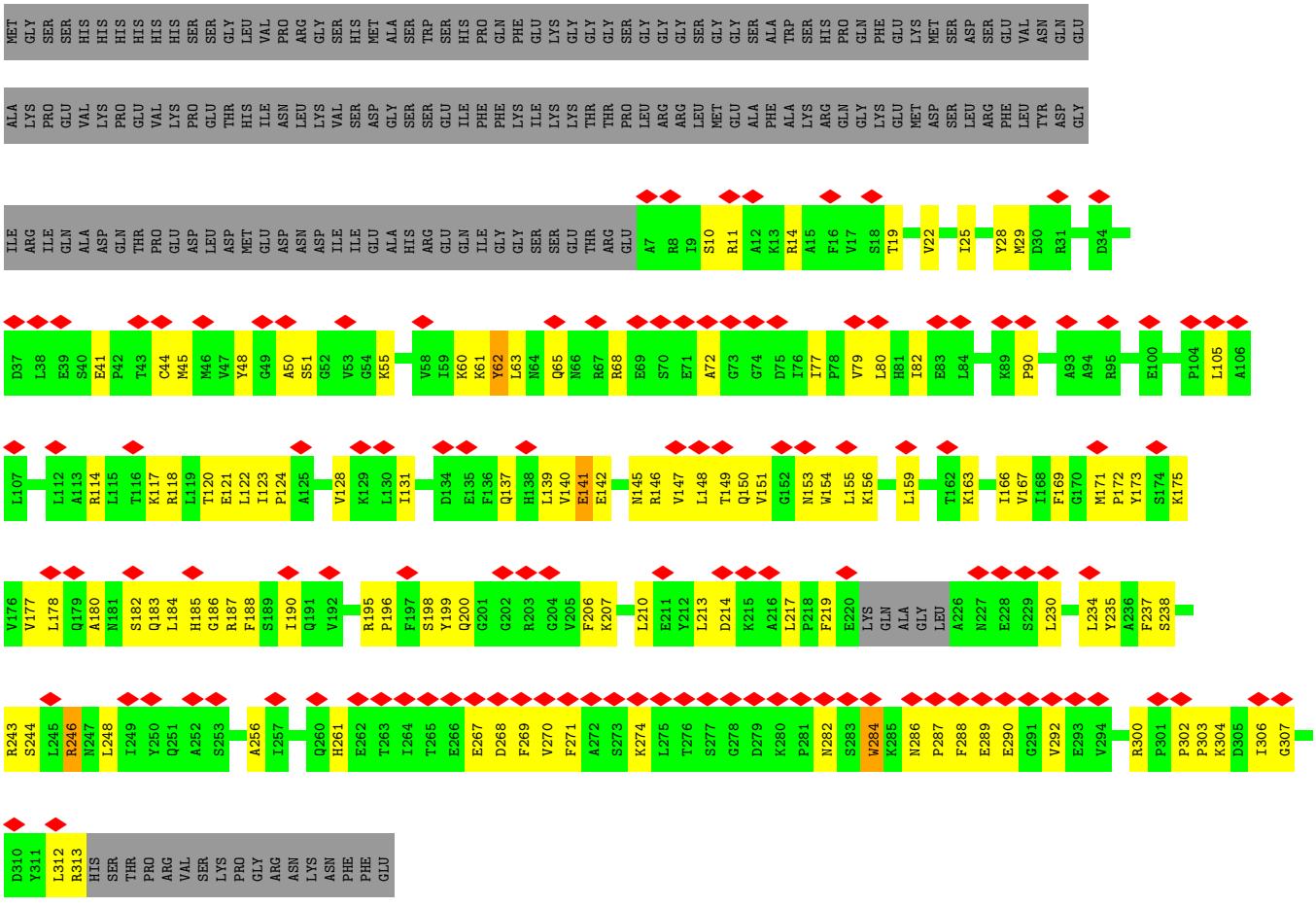




• Molecule 3: TnsC

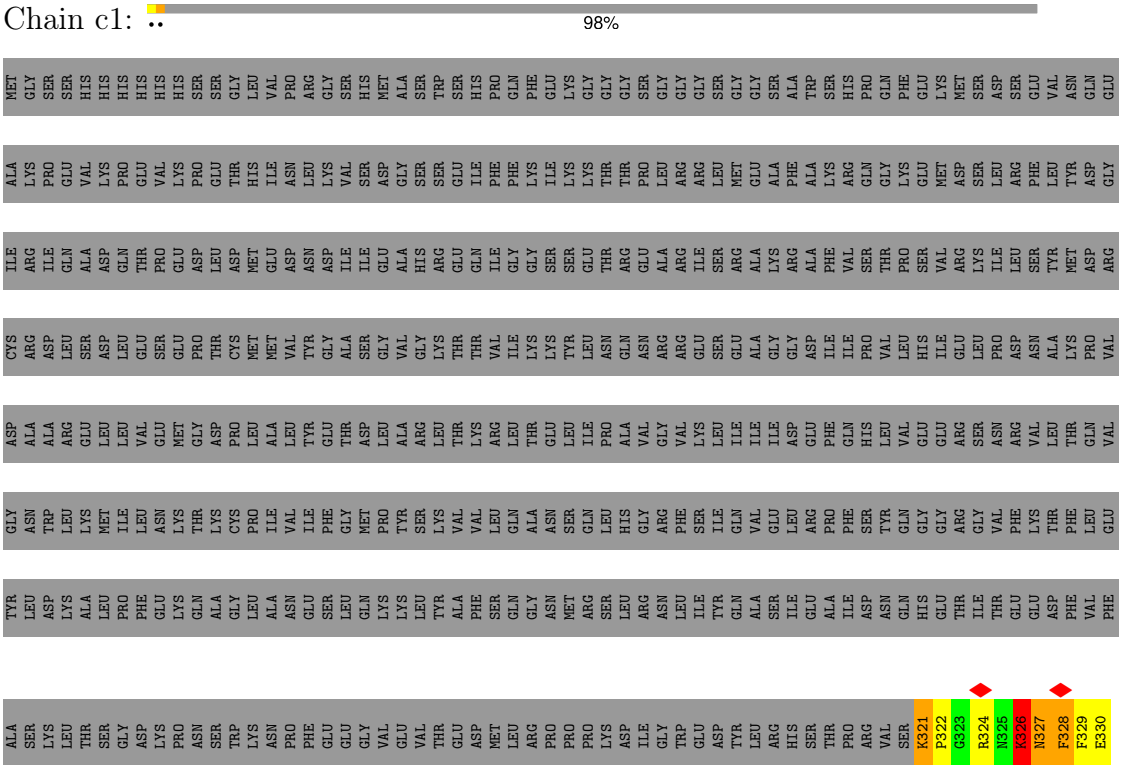
Chain M:





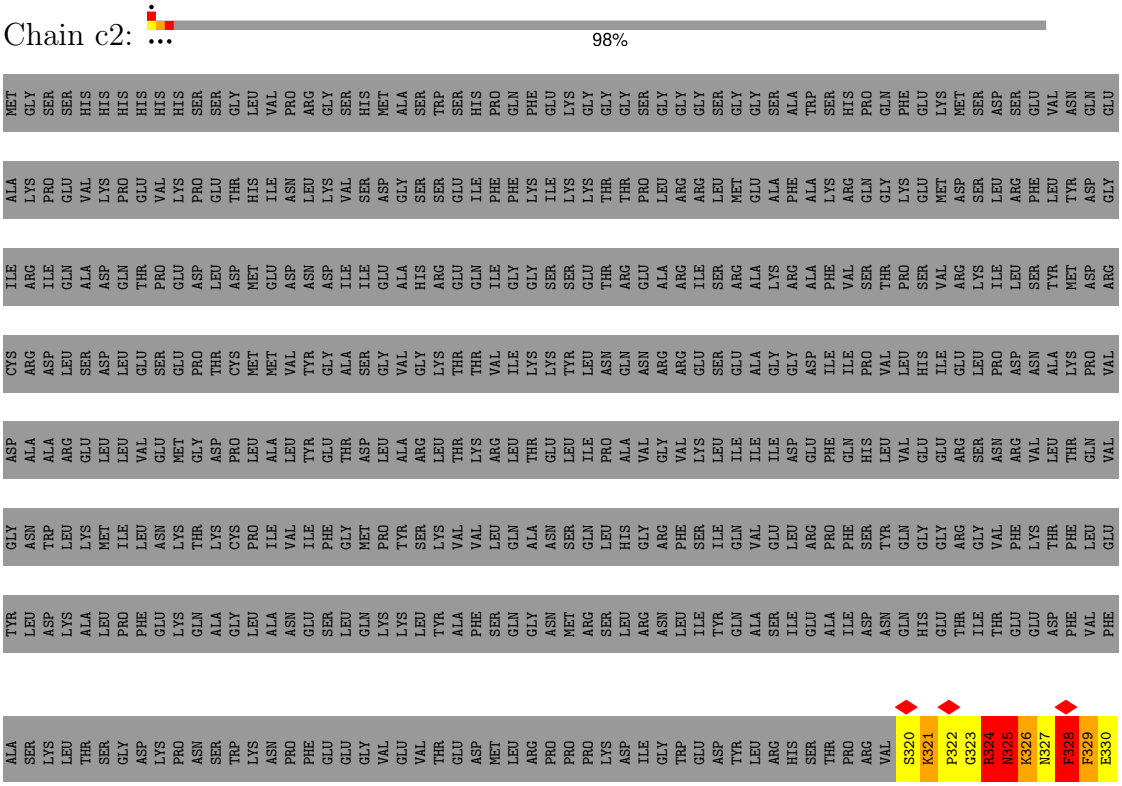
• Molecule 3: TnsC

Chain c1:



• Molecule 3: TnsC

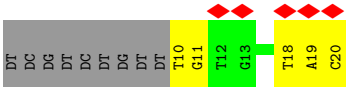
Chain c2:



• Molecule 4: TargetFlank-RC

Chain 2:

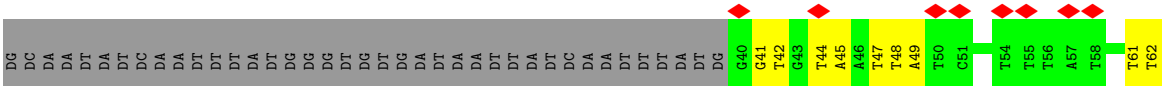


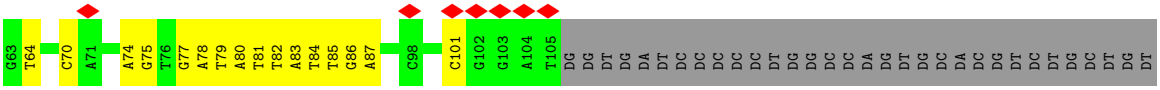


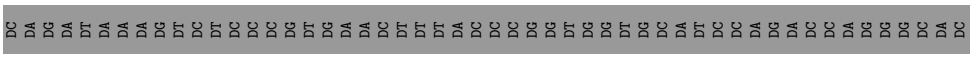
• Molecule 5: RE-TS

Chain 3:





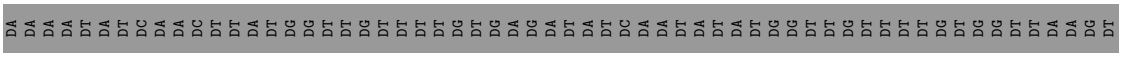


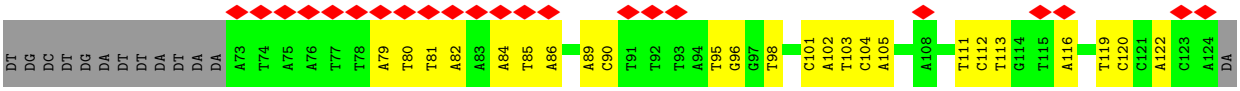


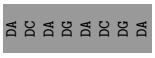
• Molecule 6: LE-TSD-TargetFlank

Chain 4:





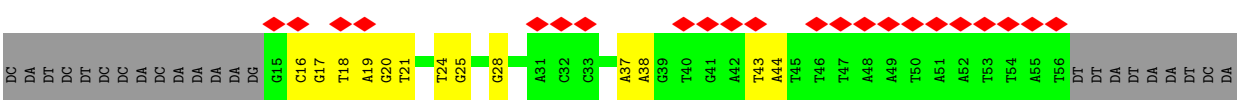


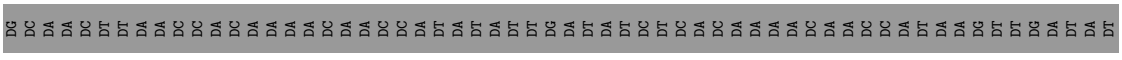


• Molecule 7: HFR-LE

Chain 5:





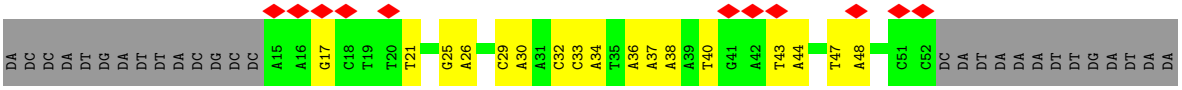


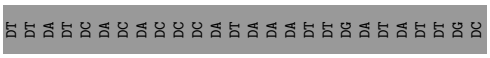


• Molecule 8: HFR-RE

Chain 6:





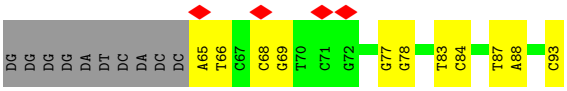


• Molecule 9: NTS-Scramble

Chain 7:







4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15190	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)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.221	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.009	Depositor
Recommended contour level	0.07	Depositor
Map size (Å)	780.0, 780.0, 780.0	wwPDB
Map dimensions	600, 600, 600	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	A	0.12	0/1841	0.33	0/2488
1	B	0.11	0/1790	0.33	0/2416
2	C	0.13	0/2770	0.33	0/3744
2	D	0.13	0/2785	0.37	0/3767
2	E	0.37	1/4446 (0.0%)	0.86	22/6005 (0.4%)
2	F	0.37	0/4413	0.71	20/5958 (0.3%)
3	G	0.14	0/2547	0.44	2/3442 (0.1%)
3	H	0.14	0/2535	0.39	0/3424
3	I	0.15	0/2547	0.43	0/3442
3	J	0.16	0/2358	0.47	1/3181 (0.0%)
3	K	0.26	0/2549	0.56	7/3444 (0.2%)
3	L	0.14	0/2528	0.39	0/3414
3	M	0.15	0/2461	0.49	1/3324 (0.0%)
3	c1	0.81	0/89	1.51	0/116
3	c2	0.86	0/95	1.43	2/124 (1.6%)
4	2	0.75	0/256	0.93	0/394
5	3	0.69	0/1528	0.86	0/2359
6	4	0.75	0/1182	0.91	0/1819
7	5	0.71	0/973	0.90	0/1501
8	6	0.68	0/872	0.88	0/1342
9	7	0.68	0/661	0.79	0/1017
All	All	0.34	1/41226 (0.0%)	0.61	55/56721 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	E	0	7
2	F	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	H	0	1
3	I	0	1
3	K	0	1
3	c2	0	2
All	All	0	15

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	521	TYR	CA-C	5.99	1.60	1.52

All (55) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	541	ARG	N-CA-CB	-22.87	71.84	110.49
2	E	541	ARG	CB-CA-C	-22.70	65.25	110.42
2	E	543	ARG	N-CA-C	-16.12	93.12	111.82
2	E	541	ARG	CB-CG-CD	13.72	142.86	111.30
2	F	344	GLU	N-CA-C	-9.11	102.08	113.02
2	F	347	TYR	N-CA-CB	9.10	123.72	109.71
2	E	541	ARG	CA-CB-CG	8.88	131.87	114.10
2	F	347	TYR	N-CA-C	-8.30	97.39	109.59
2	F	330	HIS	CB-CA-C	-7.72	95.05	110.42
3	K	302	PRO	N-CA-C	7.43	119.77	110.70
3	c2	329	PHE	CB-CA-C	7.33	121.64	111.23
2	E	506	TYR	N-CA-C	-7.04	101.78	110.65
2	E	550	GLN	CB-CA-C	6.89	124.14	110.42
2	F	512	LEU	N-CA-C	-6.79	102.94	111.90
2	E	516	LYS	N-CA-C	-6.75	105.03	113.20
2	E	543	ARG	CB-CA-C	-6.67	97.87	110.67
2	E	550	GLN	N-CA-CB	-6.63	99.29	110.49
2	F	244	TRP	N-CA-CB	6.62	120.87	110.87
2	F	514	GLN	N-CA-C	-6.54	104.19	111.71
3	c2	329	PHE	CA-CB-CG	6.42	120.22	113.80
2	E	518	ASN	N-CA-C	-6.30	103.68	111.75
2	F	508	SER	N-CA-C	-6.18	105.73	113.28
3	K	311	TYR	N-CA-C	-5.96	104.03	111.90
2	E	543	ARG	N-CA-CB	5.92	119.45	110.28
2	F	348	GLY	N-CA-C	-5.88	106.96	114.37
3	K	308	TRP	N-CA-C	-5.85	104.25	111.33
2	E	517	TYR	N-CA-C	-5.84	104.92	112.68
3	J	171	MET	CB-CG-SD	5.82	130.15	112.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	517	TYR	N-CA-C	-5.81	104.58	111.03
2	F	341	PRO	CB-CA-C	-5.78	102.03	111.56
2	E	539	LYS	N-CA-C	5.77	116.84	107.32
2	F	244	TRP	CA-CB-CG	5.75	124.53	113.60
2	F	332	ASN	CA-C-N	-5.72	113.76	122.23
2	F	332	ASN	C-N-CA	-5.72	113.76	122.23
2	F	343	VAL	N-CA-CB	5.66	120.57	111.23
2	F	342	HIS	CA-C-O	-5.64	115.54	122.36
3	M	141	GLU	CA-CB-CG	5.60	125.30	114.10
2	E	506	TYR	CB-CA-C	5.58	119.39	111.74
2	F	329	VAL	N-CA-CB	-5.58	102.02	111.23
2	F	346	ASN	N-CA-C	-5.55	106.01	112.89
2	F	348	GLY	CA-C-N	-5.53	112.86	122.36
2	F	348	GLY	C-N-CA	-5.53	112.86	122.36
3	K	304	LYS	N-CA-C	-5.51	105.65	112.38
2	E	527	GLU	N-CA-CB	5.49	118.25	110.13
3	K	301	PRO	CA-C-N	5.43	125.97	120.38
3	K	301	PRO	C-N-CA	5.43	125.97	120.38
2	E	541	ARG	N-CA-C	5.40	122.30	110.80
2	E	529	ILE	N-CA-C	-5.29	104.48	111.09
3	G	146	ARG	CA-C-N	5.22	131.37	121.97
3	G	146	ARG	C-N-CA	5.22	131.37	121.97
2	E	528	GLU	N-CA-C	-5.21	106.76	113.01
2	E	515	HIS	N-CA-C	-5.17	105.82	111.82
2	E	532	ARG	N-CA-C	-5.14	106.20	113.20
3	K	305	ASP	N-CA-C	-5.09	107.14	113.19
2	E	504	TYR	CA-CB-CG	5.09	123.06	113.90

There are no chirality outliers.

All (15) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	E	509	ARG	Sidechain
2	E	510	VAL	Peptide
2	E	532	ARG	Sidechain
2	E	541	ARG	Sidechain
2	E	543	ARG	Sidechain
2	E	545	ARG	Sidechain
2	E	548	ARG	Sidechain
2	F	242	ARG	Sidechain
2	F	345	ARG	Sidechain
2	F	509	ARG	Sidechain

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Mol	Chain	Res	Type	Group
3	H	114	ARG	Sidechain
3	I	107	LEU	Peptide
3	K	313	ARG	Sidechain
3	c2	324	ARG	Sidechain
3	c2	325	ASN	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1807	0	1835	50	0
1	B	1758	0	1787	54	0
2	C	2709	0	2633	83	0
2	D	2725	0	2647	65	0
2	E	4353	0	4369	322	0
2	F	4322	0	4335	218	0
3	G	2498	0	2530	75	0
3	H	2487	0	2512	87	0
3	I	2498	0	2529	98	0
3	J	2315	0	2340	86	0
3	K	2500	0	2522	98	0
3	L	2480	0	2502	80	0
3	M	2415	0	2438	96	0
3	c1	87	0	84	31	0
3	c2	93	0	89	30	0
4	2	229	0	126	4	0
5	3	1362	0	748	30	0
6	4	1056	0	591	18	0
7	5	867	0	478	12	0
8	6	777	0	430	15	0
9	7	591	0	327	6	0
10	G	31	0	11	4	0
10	H	31	0	11	3	0
10	I	62	0	22	5	0
10	K	31	0	12	4	0
10	L	31	0	12	1	0
10	M	31	0	12	1	0
11	H	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	I	1	0	0	0	0
11	J	1	0	0	0	0
11	K	1	0	0	0	0
11	L	1	0	0	0	0
11	M	2	0	0	0	0
All	All	40153	0	37932	1385	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 18.

All (1385) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:236:TYR:CZ	2:E:535:VAL:HA	1.44	1.51
2:F:556:ILE:CD1	5:3:75:DG:H3'	1.49	1.41
3:c2:321:LYS:CB	3:c2:324:ARG:HG2	1.50	1.41
2:F:556:ILE:HD12	5:3:75:DG:C3'	1.54	1.38
2:E:238:ILE:HG12	2:E:538:ASN:ND2	1.55	1.20
2:E:233:HIS:CD2	2:E:534:ILE:HG21	1.83	1.14
2:E:236:TYR:CE1	2:E:535:VAL:HA	1.83	1.13
2:E:483:MET:CG	2:E:510:VAL:HG11	1.79	1.12
2:F:562:GLY:N	3:c2:329:PHE:HZ	1.49	1.11
2:E:525:LYS:NZ	2:E:532:ARG:HH22	1.49	1.10
2:E:273:LEU:HD11	2:E:555:ARG:CZ	1.83	1.09
2:E:483:MET:HG2	2:E:510:VAL:HG11	1.10	1.08
2:E:512:LEU:HD21	2:E:552:ASN:HB3	1.13	1.08
2:F:375:VAL:HG21	2:F:556:ILE:HD11	1.29	1.08
2:E:238:ILE:CG1	2:E:538:ASN:HD22	1.67	1.07
2:E:536:LYS:CE	2:E:537:THR:HG23	1.85	1.07
2:E:238:ILE:HG12	2:E:538:ASN:HD22	0.93	1.07
3:c2:321:LYS:HB2	3:c2:324:ARG:CG	1.85	1.06
2:E:540:ILE:HG13	3:c1:330:GLU:OE2	1.53	1.06
2:E:236:TYR:CZ	2:E:535:VAL:CA	2.39	1.06
2:E:525:LYS:NZ	2:E:532:ARG:NH2	2.04	1.05
2:F:239:PRO:HG2	2:F:559:ARG:HH11	1.20	1.05
2:F:562:GLY:CA	3:c2:329:PHE:HZ	1.68	1.04
2:E:536:LYS:HE3	2:E:537:THR:HG23	1.34	1.03
2:F:375:VAL:HG21	2:F:556:ILE:CD1	1.89	1.02
2:F:562:GLY:N	3:c2:329:PHE:CZ	2.28	1.02
3:c2:321:LYS:CB	3:c2:324:ARG:CG	2.39	1.00
2:E:238:ILE:CG1	2:E:538:ASN:ND2	2.24	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:236:TYR:CE2	2:E:535:VAL:HG13	1.98	0.99
3:H:114:ARG:HE	3:I:107:LEU:HD22	1.28	0.98
2:F:562:GLY:CA	3:c2:329:PHE:CZ	2.46	0.98
2:E:483:MET:HE2	2:E:512:LEU:HA	1.46	0.97
2:E:512:LEU:HD21	2:E:552:ASN:CB	1.94	0.97
2:E:236:TYR:OH	2:E:535:VAL:HA	1.63	0.97
2:E:509:ARG:HD3	2:E:557:LYS:HE2	1.44	0.97
2:E:509:ARG:HD3	2:E:557:LYS:CE	1.94	0.97
2:E:456:SER:HB2	2:E:502:ILE:HG12	1.49	0.95
2:E:512:LEU:CD1	2:E:552:ASN:OD1	2.16	0.94
2:E:525:LYS:HZ1	2:E:532:ARG:NH2	1.62	0.94
2:F:239:PRO:HG2	2:F:559:ARG:NH1	1.84	0.93
2:C:540:ILE:HD11	2:F:160:ARG:HH21	1.30	0.93
2:F:375:VAL:CG2	2:F:556:ILE:HD11	1.98	0.93
2:E:522:ALA:HB3	2:E:526:ILE:HD13	1.53	0.91
2:E:526:ILE:HA	2:E:529:ILE:HB	1.54	0.90
2:E:512:LEU:HD11	2:E:552:ASN:OD1	1.71	0.89
3:c2:321:LYS:HB2	3:c2:324:ARG:HG2	0.89	0.89
2:E:512:LEU:HD11	2:E:552:ASN:CG	1.97	0.88
2:E:236:TYR:CG	2:E:535:VAL:HG22	2.08	0.88
3:c2:321:LYS:HB3	3:c2:324:ARG:HG2	1.52	0.88
2:E:540:ILE:HG13	3:c1:330:GLU:CD	2.00	0.87
3:J:171:MET:HE3	3:J:172:PRO:HD2	1.55	0.86
2:E:481:GLU:HA	2:E:512:LEU:HB3	1.58	0.84
2:E:511:SER:HB3	2:E:514:GLN:HB2	1.59	0.84
3:H:242:MET:HG3	10:H:600:ATP:H1'	1.60	0.82
2:E:236:TYR:CD2	2:E:535:VAL:HG22	2.16	0.81
2:F:346:ASN:HA	2:F:349:THR:HG22	1.62	0.81
1:A:42:LYS:HB2	1:A:208:ARG:HH12	1.45	0.80
2:E:455:LEU:HD11	2:E:515:HIS:CE1	2.16	0.80
2:E:483:MET:CB	2:E:510:VAL:HG11	2.12	0.80
2:F:549:SER:HB3	3:c2:328:PHE:HB2	1.64	0.79
2:E:236:TYR:OH	2:E:535:VAL:O	1.99	0.79
3:c2:320:SER:O	3:c2:321:LYS:NZ	2.15	0.79
2:E:483:MET:HB2	2:E:510:VAL:CG1	2.12	0.79
3:c1:326:LYS:HE3	3:c1:330:GLU:HG3	1.65	0.79
2:E:541:ARG:HG2	2:E:543:ARG:N	1.96	0.79
2:E:541:ARG:HE	2:E:543:ARG:H	1.29	0.78
3:I:55:LYS:HD2	3:I:169:PHE:HB3	1.65	0.78
2:E:132:ILE:HD12	2:E:158:LYS:HD2	1.65	0.78
2:E:540:ILE:HG13	2:E:541:ARG:HG3	1.64	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:483:MET:CE	2:E:512:LEU:HA	2.13	0.78
2:E:541:ARG:HG3	3:c1:330:GLU:OE2	1.83	0.78
2:E:89:PRO:HB3	8:6:40:DT:H5'	1.66	0.77
2:F:339:ASN:C	2:F:341:PRO:HD3	2.10	0.77
5:3:84:DT:H2"	5:3:85:DT:H5"	1.67	0.77
3:J:137:GLN:HB3	3:J:171:MET:HG2	1.66	0.77
2:E:481:GLU:OE2	2:E:559:ILE:CD1	2.33	0.76
3:c2:321:LYS:HB3	3:c2:324:ARG:CG	2.11	0.76
3:I:46:MET:HB3	3:I:168:ILE:HB	1.69	0.75
3:M:195:ARG:HE	3:M:196:PRO:HD2	1.49	0.75
2:E:518:ASN:HB3	2:E:522:ALA:HA	1.68	0.75
2:E:540:ILE:N	6:4:113:DT:OP1	2.19	0.75
2:E:542:ALA:HA	2:E:544:ARG:HG3	1.68	0.75
3:M:48:TYR:HB2	3:M:172:PRO:HG3	1.69	0.74
2:F:375:VAL:CG2	2:F:556:ILE:CD1	2.59	0.74
2:E:512:LEU:CD2	2:E:552:ASN:HB3	2.08	0.74
2:F:483:MET:HE3	2:F:512:LEU:HB2	1.68	0.74
3:I:48:TYR:HB2	3:I:172:PRO:HG3	1.69	0.74
3:K:186:GLY:HA3	3:L:243:ARG:HG3	1.69	0.74
3:L:29:MET:HE1	3:L:45:MET:HG2	1.68	0.74
2:C:522:GLN:HE22	2:E:406:THR:HG22	1.52	0.74
3:L:29:MET:HE3	3:L:29:MET:HA	1.70	0.74
2:E:236:TYR:CE1	2:E:535:VAL:CA	2.66	0.74
1:A:32:GLY:HA2	2:F:333:LYS:HG2	1.70	0.73
3:G:195:ARG:HE	3:G:196:PRO:HD2	1.50	0.73
2:E:509:ARG:O	2:E:510:VAL:C	2.31	0.73
2:F:249:VAL:HA	2:F:256:VAL:HA	1.69	0.73
2:E:540:ILE:HD11	3:c1:326:LYS:HE3	1.70	0.72
3:H:242:MET:HG2	3:H:246:ARG:HB2	1.70	0.72
3:H:246:ARG:HD2	3:H:249:ILE:HD11	1.71	0.72
2:C:502:ILE:HA	2:E:206:ARG:HH22	1.55	0.72
2:E:541:ARG:HB3	3:c1:330:GLU:OE2	1.89	0.72
3:M:243:ARG:H	3:M:243:ARG:HD2	1.53	0.72
3:H:89:LYS:HE2	3:H:91:VAL:HB	1.71	0.72
2:E:511:SER:O	2:E:515:HIS:N	2.22	0.71
2:E:517:TYR:O	2:E:520:LYS:N	2.22	0.71
2:E:233:HIS:HB2	2:E:240:LEU:HD21	1.71	0.71
2:E:541:ARG:HG2	2:E:542:ALA:C	2.16	0.71
2:E:518:ASN:O	2:E:521:TYR:N	2.21	0.71
2:E:525:LYS:HZ3	2:E:532:ARG:HH22	1.34	0.71
2:C:537:ASP:HA	2:C:540:ILE:HG12	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:233:HIS:CD2	2:E:534:ILE:CG2	2.70	0.70
2:E:483:MET:HG2	2:E:510:VAL:CG1	2.05	0.70
2:F:265:PRO:HD2	2:F:564:ARG:CZ	2.21	0.70
2:D:493:MET:HE1	2:D:495:GLU:HB2	1.73	0.70
2:E:548:ARG:O	2:E:549:HIS:C	2.34	0.70
2:F:556:ILE:HD13	5:3:75:DG:H5"	1.71	0.70
2:F:251:CYS:HA	2:F:342:HIS:CE1	2.27	0.70
2:F:309:ASN:C	2:F:309:ASN:HD22	1.97	0.70
2:C:276:LYS:HD2	2:C:433:ASP:HA	1.74	0.70
2:E:536:LYS:HE2	2:E:537:THR:HG23	1.72	0.70
2:E:546:GLY:HA2	3:c1:329:PHE:CE2	2.27	0.70
3:J:219:PHE:HD1	3:J:220:GLU:H	1.37	0.69
2:E:540:ILE:CG1	3:c1:330:GLU:CD	2.65	0.69
2:F:549:SER:HB3	3:c2:328:PHE:CB	2.22	0.69
3:J:236:ALA:HB1	3:J:298:MET:HE2	1.74	0.69
2:E:273:LEU:CD1	2:E:555:ARG:CZ	2.67	0.69
2:C:441:TYR:HB3	2:C:473:LYS:HD2	1.73	0.69
3:K:236:ALA:HB1	3:K:296:GLU:HG3	1.74	0.69
2:C:536:ILE:HG12	2:F:160:ARG:NH2	2.07	0.69
2:F:133:MET:HE1	2:F:181:ARG:HE	1.58	0.69
2:C:540:ILE:HD11	2:F:160:ARG:NH2	2.06	0.69
2:E:509:ARG:CD	2:E:557:LYS:CE	2.70	0.68
3:J:90:PRO:HA	3:J:93:ALA:HB3	1.75	0.68
3:M:29:MET:HA	3:M:45:MET:HE1	1.74	0.68
3:M:141:GLU:CD	3:M:142:GLU:H	2.01	0.68
1:A:157:ARG:HH11	2:F:303:ASP:HB3	1.57	0.68
3:K:146:ARG:HE	3:L:143:ARG:HH11	1.40	0.68
2:D:256:VAL:HG11	2:D:393:LEU:HD21	1.75	0.68
2:F:547:ASP:OD1	2:F:566:GLN:NE2	2.25	0.68
2:F:562:GLY:HA2	3:c2:329:PHE:CZ	2.27	0.68
3:M:123:ILE:HD12	3:M:128:VAL:HG21	1.75	0.68
2:E:512:LEU:HD13	2:E:552:ASN:OD1	1.93	0.68
2:E:236:TYR:OH	2:E:535:VAL:CA	2.35	0.67
2:E:521:TYR:O	2:E:522:ALA:HB2	1.94	0.67
3:I:140:VAL:HG13	3:I:146:ARG:HH22	1.59	0.67
2:D:367:LEU:HD22	2:D:392:TRP:HB2	1.76	0.67
2:E:365:GLN:HG3	2:E:367:LEU:H	1.59	0.67
2:E:540:ILE:H	2:E:541:ARG:HD3	1.60	0.67
3:G:316:THR:H	3:G:317:PRO:HD2	1.58	0.67
3:K:89:LYS:HD3	3:K:91:VAL:H	1.58	0.67
3:L:152:GLY:HA2	3:L:155:LEU:HD23	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:82:ILE:HD11	3:H:96:GLU:HG3	1.75	0.67
3:I:305:ASP:HB2	3:I:318:ARG:HH12	1.59	0.67
3:I:295:THR:H	3:I:298:MET:HE1	1.59	0.67
3:J:139:LEU:HG	3:J:147:VAL:HG21	1.77	0.67
2:E:236:TYR:CD1	2:E:535:VAL:HG22	2.29	0.67
2:F:325:LEU:HB2	2:F:435:LYS:HE2	1.76	0.66
3:M:45:MET:HB3	3:M:190:ILE:HG23	1.77	0.66
3:G:303:PRO:HD2	3:G:306:ILE:HD11	1.76	0.66
3:J:54:GLY:H	3:J:242:MET:HE2	1.61	0.66
2:C:503:ASP:HB3	2:E:209:LYS:HE2	1.77	0.66
2:F:179:ARG:HH21	7:5:28:DG:H8	1.44	0.66
2:C:550:ILE:HD13	2:E:379:THR:HG21	1.78	0.66
2:E:263:PHE:CD2	2:E:544:ARG:HB3	2.30	0.66
2:F:330:HIS:O	2:F:331:GLN:C	2.39	0.66
2:E:481:GLU:HG3	2:E:559:ILE:HD12	1.78	0.66
2:E:484:ALA:HB2	2:E:508:SER:HA	1.77	0.66
3:J:208:THR:HA	3:J:211:GLU:HG3	1.76	0.66
3:I:45:MET:HB2	3:I:167:VAL:HG23	1.78	0.66
2:E:228:ASP:HB3	2:E:362:SER:HB3	1.77	0.66
2:E:511:SER:O	2:E:512:LEU:C	2.39	0.66
3:I:95:ARG:HH21	3:I:110:THR:HG22	1.60	0.66
2:E:142:SER:HB3	2:E:193:ALA:HB1	1.76	0.65
2:F:239:PRO:CG	2:F:559:ARG:NH1	2.58	0.65
2:E:540:ILE:CD1	3:c1:330:GLU:CD	2.69	0.65
3:K:46:MET:HB2	3:K:188:PHE:HB3	1.77	0.65
3:K:143:ARG:HH12	3:K:313:ARG:N	1.94	0.65
3:M:199:TYR:HB2	3:M:235:TYR:CZ	2.32	0.65
2:D:483:MET:HE3	2:D:511:SER:HA	1.78	0.65
3:K:305:ASP:O	3:K:306:ILE:C	2.39	0.65
2:E:219:ARG:HG2	2:E:304:LEU:HD23	1.78	0.65
3:G:46:MET:HB2	3:G:188:PHE:HD1	1.62	0.65
3:I:158:ILE:HD11	3:I:166:ILE:HD11	1.77	0.65
2:F:222:ILE:HD13	2:F:248:LEU:HG	1.79	0.65
3:I:117:LYS:HD3	3:J:100:GLU:HG2	1.77	0.64
3:J:246:ARG:HD2	3:J:249:ILE:HD11	1.78	0.64
3:G:55:LYS:HD2	3:G:169:PHE:HB3	1.78	0.64
3:I:310:ASP:HA	3:I:313:ARG:HD3	1.78	0.64
2:C:217:LEU:HB3	2:C:302:PRO:HA	1.79	0.64
2:F:47:ILE:HG23	2:F:113:PRO:HD2	1.79	0.64
3:G:103:ASP:HB3	3:G:106:ALA:HB2	1.79	0.64
3:K:25:ILE:HG22	3:K:29:MET:HE1	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:157:ARG:HA	2:F:160:ARG:CZ	2.27	0.64
3:M:182:SER:HA	3:M:185:HIS:NE2	2.13	0.64
2:F:562:GLY:H	3:c2:329:PHE:HZ	1.41	0.64
2:D:483:MET:HB2	2:D:507:ALA:HB1	1.79	0.64
2:F:442:LYS:HG2	2:F:449:ILE:HG23	1.79	0.64
3:G:62:TYR:HB3	3:G:68:ARG:HH21	1.62	0.64
2:C:366:TYR:H	2:C:369:ARG:HG3	1.63	0.64
2:F:44:PRO:HD2	2:F:47:ILE:HD13	1.79	0.64
4:2:10:DT:H2'	4:2:11:DG:C8	2.33	0.64
2:D:401:PRO:HA	2:D:408:CYS:H	1.63	0.63
2:E:540:ILE:HD12	3:c1:330:GLU:OE1	1.97	0.63
2:D:520:LYS:HE3	2:D:520:LYS:HA	1.81	0.63
2:E:241:GLY:HA3	2:E:544:ARG:HG2	1.79	0.63
3:H:115:LEU:HD12	3:H:115:LEU:H	1.63	0.63
2:F:227:VAL:HB	2:F:243:PRO:HG2	1.80	0.63
2:D:327:ILE:H	2:F:59:ARG:HG3	1.63	0.63
2:F:229:LEU:O	2:F:243:PRO:HD2	1.97	0.63
2:F:351:ASN:HA	2:F:355:LEU:HB2	1.81	0.63
2:E:460:ASP:HB2	3:L:282:ASN:HD21	1.62	0.63
2:F:263:PHE:CD1	2:F:560:ARG:HG3	2.34	0.63
3:M:28:TYR:HB2	3:M:29:MET:HE2	1.79	0.63
2:F:232:VAL:HB	2:F:378:ALA:HB1	1.81	0.63
1:A:16:LEU:HD11	1:A:133:LEU:HD21	1.81	0.62
2:F:549:SER:CB	3:c2:328:PHE:CB	2.77	0.62
3:J:44:CYS:HB2	3:J:188:PHE:HA	1.81	0.62
2:E:263:PHE:HD2	2:E:544:ARG:HB3	1.64	0.62
2:E:521:TYR:O	2:E:522:ALA:CB	2.47	0.62
2:C:527:SER:HA	2:E:401:PRO:HG3	1.81	0.62
2:C:459:ASN:HD21	2:C:499:VAL:HG22	1.63	0.62
2:D:233:HIS:HB2	2:D:240:LEU:HD21	1.82	0.62
2:E:236:TYR:OH	2:E:535:VAL:C	2.43	0.62
2:F:549:SER:CB	3:c2:328:PHE:HB3	2.30	0.62
3:L:45:MET:HE2	3:L:47:VAL:HG23	1.82	0.62
3:I:80:LEU:HD13	3:I:131:ILE:HG22	1.82	0.62
2:E:152:TYR:O	2:E:156:ARG:HG3	2.00	0.61
3:c2:320:SER:O	3:c2:321:LYS:C	2.42	0.61
2:E:210:LYS:HA	7:5:21:DT:H1'	1.82	0.61
3:J:214:ASP:HA	3:J:217:LEU:HB2	1.82	0.61
3:L:120:THR:HG22	3:L:161:LYS:HB3	1.82	0.61
5:3:77:DG:H1	9:7:93:DC:H5	1.48	0.61
2:F:309:ASN:C	2:F:309:ASN:ND2	2.57	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:63:LEU:HA	3:I:68:ARG:HE	1.64	0.61
3:M:55:LYS:HD2	3:M:169:PHE:HB3	1.82	0.61
2:E:483:MET:HB2	2:E:510:VAL:HG13	1.82	0.61
2:E:536:LYS:HE3	2:E:537:THR:CG2	2.22	0.61
3:G:26:LEU:HA	3:G:29:MET:SD	2.40	0.61
3:M:243:ARG:HD2	3:M:243:ARG:N	2.15	0.61
2:C:551:VAL:HG23	2:C:552:LYS:HD3	1.82	0.61
2:E:397:TYR:HA	2:E:400:LYS:HB3	1.81	0.61
1:B:30:SER:HB3	1:B:35:ILE:HD11	1.83	0.61
2:F:346:ASN:CA	2:F:349:THR:HG22	2.29	0.61
2:E:521:TYR:CG	3:c1:328:PHE:HD2	2.19	0.61
2:F:289:TYR:CE2	2:F:387:GLU:HB2	2.36	0.61
3:G:221:LYS:HE2	3:G:262:GLU:HB3	1.82	0.61
2:E:389:TYR:O	2:E:393:LEU:HD22	2.00	0.61
3:K:189:SER:HB2	3:L:276:THR:HA	1.83	0.61
1:A:67:ILE:HD13	1:A:94:VAL:HG13	1.81	0.61
3:K:148:LEU:HD21	3:K:176:VAL:HG23	1.82	0.61
1:B:121:TRP:HA	1:B:124:LYS:HE2	1.82	0.60
2:E:233:HIS:NE2	2:E:534:ILE:HG21	2.15	0.60
3:J:171:MET:CE	3:J:172:PRO:HD2	2.30	0.60
7:5:24:DT:H2”	7:5:25:DG:C8	2.35	0.60
2:F:457:TYR:HA	2:F:501:ALA:HA	1.82	0.60
2:F:244:TRP:HD1	2:F:262:GLY:O	1.84	0.60
2:F:344:GLU:HG2	5:3:70:DC:H2”	1.83	0.60
3:H:114:ARG:HE	3:I:107:LEU:CD2	2.08	0.60
2:E:51:ILE:HD11	2:E:112:ALA:HB2	1.83	0.60
2:E:536:LYS:CE	2:E:537:THR:CG2	2.73	0.60
3:L:140:VAL:HG22	3:L:151:VAL:HG21	1.84	0.60
2:E:533:SER:HA	3:c1:327:ASN:CG	2.27	0.60
3:K:136:PHE:HB2	3:K:168:ILE:HD11	1.83	0.60
2:F:244:TRP:CZ2	2:F:265:PRO:HA	2.37	0.60
2:F:307:THR:O	2:F:331:GLN:HA	2.01	0.60
3:I:237:PHE:HE2	3:I:248:LEU:HD13	1.66	0.60
3:L:144:SER:HB2	3:L:147:VAL:HG22	1.83	0.60
2:E:151:ALA:O	2:E:155:VAL:HG23	2.01	0.60
2:E:238:ILE:HG13	2:E:538:ASN:ND2	2.16	0.60
3:K:57:THR:HG21	10:K:600:ATP:H8	1.66	0.60
3:L:207:LYS:H	3:L:207:LYS:HD3	1.67	0.60
1:A:37:ARG:HB3	1:A:46:ARG:HD2	1.84	0.60
2:E:433:ASP:OD2	2:E:559:ILE:HG23	2.01	0.60
2:E:481:GLU:OE2	2:E:559:ILE:HD13	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:219:ARG:HH22	2:F:339:ASN:ND2	2.00	0.59
3:G:238:SER:HA	3:G:244:SER:HB3	1.84	0.59
2:E:522:ALA:C	2:E:526:ILE:HB	2.27	0.59
2:F:137:VAL:HA	2:F:140:VAL:HG12	1.84	0.59
3:J:48:TYR:HE1	3:J:193:GLU:HG3	1.66	0.59
3:K:33:ARG:HD3	3:K:130:LEU:HB2	1.84	0.59
3:J:91:VAL:HG23	3:J:112:LEU:HD21	1.84	0.59
1:A:172:LEU:HD11	1:A:209:LEU:HG	1.85	0.59
2:E:396:ILE:CG2	2:E:397:TYR:H	2.15	0.59
2:E:540:ILE:N	2:E:541:ARG:HD3	2.17	0.59
2:E:540:ILE:O	2:E:541:ARG:NH1	2.36	0.59
3:G:17:VAL:H	10:G:600:ATP:HN62	1.51	0.59
3:J:51:SER:HA	3:J:55:LYS:HD2	1.83	0.59
3:K:308:TRP:O	3:K:309:GLU:C	2.45	0.59
2:E:511:SER:HB3	2:E:514:GLN:CB	2.31	0.59
2:F:509:ARG:HH12	2:F:518:ASN:HD21	1.50	0.59
2:F:151:ALA:O	2:F:155:VAL:HG23	2.03	0.59
3:I:157:MET:HA	3:I:157:MET:HE2	1.85	0.59
3:I:245:LEU:O	3:I:249:ILE:HG12	2.02	0.59
3:J:31:ARG:HH22	3:K:275:LEU:HD21	1.67	0.59
3:M:267:GLU:HG2	3:M:271:PHE:CZ	2.38	0.59
2:E:458:SER:HA	2:E:462:LEU:HD23	1.84	0.59
3:G:316:THR:H	3:G:317:PRO:CD	2.14	0.58
3:J:159:LEU:HD13	3:J:187:ARG:HD3	1.85	0.58
3:K:84:LEU:HD23	3:K:84:LEU:H	1.67	0.58
3:L:82:ILE:HD11	3:L:97:LEU:HA	1.85	0.58
2:F:429:LYS:HA	2:F:432:LEU:HD12	1.85	0.58
3:I:77:ILE:HD12	3:I:77:ILE:O	2.03	0.58
3:K:35:LEU:HD13	3:L:254:ILE:HD13	1.84	0.58
3:L:45:MET:HE3	3:L:46:MET:H	1.69	0.58
1:B:33:LYS:HD3	7:5:17:DG:H22	1.67	0.58
1:B:185:GLU:HA	1:B:188:GLU:HG3	1.84	0.58
3:M:182:SER:HA	3:M:185:HIS:CE1	2.39	0.58
2:E:540:ILE:HD12	3:c1:330:GLU:CD	2.28	0.58
3:H:233:LYS:HB3	3:H:288:PHE:HE1	1.69	0.58
2:D:456:SER:HB3	2:D:502:ILE:HD12	1.85	0.58
3:G:136:PHE:HE1	3:G:139:LEU:HD23	1.69	0.58
2:E:541:ARG:NE	2:E:543:ARG:H	2.01	0.58
2:E:544:ARG:O	2:E:545:ARG:C	2.47	0.58
2:F:517:TYR:O	2:F:518:ASN:C	2.47	0.58
2:E:532:ARG:O	3:c1:327:ASN:ND2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:59:ILE:HD11	3:H:169:PHE:HE2	1.69	0.58
2:F:219:ARG:HH22	2:F:339:ASN:CG	2.12	0.57
2:F:246:THR:HG23	2:F:260:TYR:HE2	1.69	0.57
3:M:270:VAL:HG13	3:M:274:LYS:HE3	1.86	0.57
2:D:260:TYR:CD1	2:D:273:LEU:HD22	2.39	0.57
2:E:541:ARG:NH1	6:4:113:DT:OP1	2.38	0.57
3:H:101:MET:N	3:H:101:MET:HE2	2.19	0.57
1:A:213:ARG:HB2	1:A:216:GLU:HB2	1.86	0.57
3:L:52:GLY:HA3	3:L:241:ASN:OD1	2.05	0.57
2:E:542:ALA:O	2:E:545:ARG:HB2	2.04	0.57
3:H:82:ILE:HD13	3:H:97:LEU:HD23	1.86	0.57
3:I:26:LEU:HA	3:I:29:MET:HG2	1.86	0.57
2:D:222:ILE:HD11	2:D:308:ASP:H	1.69	0.57
2:E:54:ARG:HH11	2:E:97:TRP:HE1	1.51	0.57
2:E:536:LYS:O	2:E:537:THR:C	2.47	0.57
1:A:151:ASN:HB2	1:A:213:ARG:HH21	1.68	0.57
2:C:434:PHE:HB2	2:C:487:TRP:CE2	2.39	0.57
2:D:240:LEU:HD13	2:D:513:TRP:HH2	1.69	0.57
2:E:152:TYR:HB2	2:E:178:VAL:HG11	1.87	0.57
3:I:234:LEU:HD12	3:I:245:LEU:HD12	1.87	0.57
3:K:57:THR:HG21	10:K:600:ATP:C8	2.40	0.57
3:L:32:CYS:O	3:L:36:SER:HB2	2.05	0.57
2:C:458:SER:HA	2:C:462:LEU:HD23	1.85	0.57
2:C:480:PRO:HA	2:C:512:LEU:HD23	1.86	0.57
2:E:419:GLU:HG3	2:E:420:TRP:CD2	2.40	0.57
2:E:217:LEU:HG	2:E:302:PRO:HA	1.86	0.57
3:M:237:PHE:HE2	3:M:248:LEU:HD13	1.70	0.57
2:E:517:TYR:O	2:E:518:ASN:C	2.47	0.56
2:F:154:ARG:HA	2:F:157:ARG:HG3	1.87	0.56
3:I:195:ARG:HE	3:I:196:PRO:HD2	1.70	0.56
3:M:256:ALA:HB1	3:M:261:HIS:HB2	1.86	0.56
1:A:182:THR:O	1:A:186:LEU:HD12	2.05	0.56
2:F:182:VAL:HA	2:F:185:LYS:HG2	1.87	0.56
3:H:89:LYS:HG3	3:H:92:ASP:H	1.70	0.56
3:K:157:MET:O	3:K:161:LYS:HG2	2.05	0.56
2:C:370:GLU:HG2	2:C:371:GLY:H	1.70	0.56
2:F:174:LYS:HD3	6:4:98:DT:H5"	1.87	0.56
2:F:265:PRO:CD	2:F:564:ARG:CZ	2.83	0.56
3:H:55:LYS:HD2	3:H:169:PHE:HB3	1.86	0.56
3:H:114:ARG:O	3:H:118:ARG:HG2	2.05	0.56
2:F:62:ALA:HA	2:F:68:ILE:HD11	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:244:TRP:CE2	2:F:560:ARG:NH2	2.73	0.56
3:G:147:VAL:HG23	3:G:149:THR:H	1.70	0.56
3:I:97:LEU:O	3:I:101:MET:HE1	2.05	0.56
3:L:312:LEU:H	3:L:312:LEU:HD23	1.70	0.56
6:4:101:DC:H2"	6:4:102:DA:H5"	1.87	0.56
1:B:204:LEU:HD13	1:B:210:LEU:HD23	1.86	0.56
2:D:493:MET:HE2	2:D:493:MET:O	2.05	0.56
3:J:53:VAL:HG11	3:J:196:PRO:HA	1.88	0.56
3:K:286:ASN:HB2	3:K:290:GLU:HG3	1.86	0.56
3:L:91:VAL:O	3:L:95:ARG:HG3	2.06	0.56
2:F:54:ARG:HD3	2:F:111:LEU:HD22	1.88	0.56
2:E:228:ASP:HA	2:E:242:ARG:HD3	1.88	0.56
3:L:25:ILE:HD11	3:L:58:VAL:HG21	1.88	0.56
2:E:404:ARG:NH2	7:5:24:DT:H2'	2.20	0.56
2:F:160:ARG:HG2	2:F:160:ARG:HH11	1.71	0.56
2:F:505:GLU:O	2:F:508:SER:N	2.39	0.56
2:E:460:ASP:HB2	3:L:282:ASN:ND2	2.21	0.56
2:E:481:GLU:OE2	2:E:559:ILE:HD11	2.06	0.56
3:H:295:THR:HG23	3:H:297:ASP:H	1.70	0.56
3:J:190:ILE:HD12	3:K:275:LEU:HG	1.88	0.56
3:H:94:ALA:HB2	3:H:154:TRP:HZ2	1.71	0.56
1:A:167:VAL:O	1:A:171:ILE:HG12	2.07	0.55
1:A:173:LYS:HD2	1:A:174:ILE:HD13	1.87	0.55
1:B:152:LEU:HA	1:B:155:ILE:HG22	1.88	0.55
2:E:509:ARG:CG	2:E:557:LYS:HE3	2.37	0.55
3:M:146:ARG:HB2	3:M:150:GLN:HE22	1.71	0.55
2:E:222:ILE:HG22	2:E:248:LEU:HD21	1.87	0.55
2:F:222:ILE:HD11	2:F:246:THR:HB	1.88	0.55
2:D:276:LYS:HE2	2:D:433:ASP:HA	1.87	0.55
3:M:300:ARG:NH1	3:M:303:PRO:HD3	2.20	0.55
2:E:236:TYR:CG	2:E:236:TYR:O	2.59	0.55
3:G:146:ARG:O	3:G:147:VAL:HG22	2.06	0.55
3:J:311:TYR:CE1	3:K:317:PRO:C	2.85	0.55
3:K:197:PHE:HD1	3:K:198:SER:H	1.53	0.55
3:M:198:SER:HA	3:M:302:PRO:HD2	1.89	0.55
3:H:113:ALA:HB3	3:I:107:LEU:HD21	1.89	0.55
1:B:103:LEU:HD11	1:B:133:LEU:HD11	1.87	0.55
2:E:153:LYS:O	2:E:157:ARG:HG3	2.05	0.55
2:E:529:ILE:HG12	2:E:532:ARG:HH21	1.72	0.55
2:F:244:TRP:CZ3	2:F:266:PRO:HD3	2.41	0.55
2:F:346:ASN:HA	2:F:349:THR:CG2	2.34	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:64:ASN:HA	3:J:67:ARG:HE	1.72	0.55
3:G:199:TYR:HB2	3:G:235:TYR:CZ	2.42	0.55
3:K:33:ARG:HH12	3:K:36:SER:HB3	1.72	0.55
3:M:105:LEU:HB2	3:M:118:ARG:HH12	1.72	0.55
2:F:150:SER:O	2:F:153:LYS:HG3	2.07	0.55
3:J:57:THR:HA	3:J:60:LYS:HB2	1.89	0.55
3:K:80:LEU:HD23	3:K:131:ILE:HG12	1.89	0.55
1:B:74:PRO:HB3	1:B:93:LEU:HB2	1.88	0.55
2:E:140:VAL:HG23	2:E:151:ALA:HB2	1.88	0.54
2:E:318:PHE:HZ	2:E:329:VAL:HG11	1.72	0.54
3:H:80:LEU:HD23	3:H:131:ILE:HG12	1.89	0.54
3:H:242:MET:HG3	10:H:600:ATP:C1'	2.34	0.54
3:M:139:LEU:HG	3:M:151:VAL:HG13	1.89	0.54
2:F:237:ARG:HA	2:F:237:ARG:NE	2.22	0.54
2:F:562:GLY:HA3	3:c2:329:PHE:CZ	2.42	0.54
3:J:230:LEU:O	3:J:234:LEU:HD22	2.06	0.54
3:M:141:GLU:CD	3:M:142:GLU:HG3	2.32	0.54
1:B:169:ASN:HB2	1:B:173:LYS:HZ2	1.72	0.54
2:E:419:GLU:HG3	2:E:420:TRP:CE3	2.42	0.54
2:E:511:SER:O	2:E:514:GLN:N	2.40	0.54
3:H:220:GLU:HG3	3:H:221:LYS:HG3	1.89	0.54
6:4:111:DT:H2"	6:4:112:DC:O4'	2.08	0.54
3:c1:321:LYS:O	3:c1:322:PRO:C	2.51	0.54
2:E:273:LEU:HD11	2:E:555:ARG:NH2	2.18	0.54
2:F:449:ILE:HG12	2:F:462:LEU:HD21	1.90	0.54
3:J:182:SER:HA	3:J:185:HIS:HB2	1.90	0.54
3:K:156:LYS:HZ3	3:K:183:GLN:HB3	1.72	0.54
3:L:84:LEU:HD22	3:L:136:PHE:HA	1.90	0.54
5:3:41:DG:H2"	5:3:42:DT:H5"	1.87	0.54
2:C:226:VAL:HG13	2:C:242:ARG:HD3	1.88	0.54
2:E:542:ALA:C	2:E:545:ARG:H	2.16	0.54
2:F:511:SER:O	2:F:512:LEU:C	2.51	0.54
3:G:243:ARG:HG2	3:M:186:GLY:HA3	1.89	0.54
3:J:143:ARG:HG3	3:J:144:SER:H	1.72	0.54
3:L:139:LEU:HD22	3:L:173:TYR:CE1	2.43	0.54
2:E:220:VAL:HG12	2:E:250:ASP:HA	1.90	0.54
2:F:212:LEU:HD23	2:F:212:LEU:H	1.73	0.54
3:c2:327:ASN:O	3:c2:328:PHE:C	2.51	0.54
2:C:281:ARG:HD3	2:C:424:GLU:HB2	1.90	0.54
2:C:411:VAL:HA	2:C:414:LYS:HD2	1.90	0.54
3:G:45:MET:SD	3:G:47:VAL:HG13	2.47	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:101:MET:HE2	3:L:101:MET:N	2.22	0.54
2:F:244:TRP:CH2	2:F:266:PRO:HD3	2.42	0.54
2:F:304:LEU:HD21	2:F:330:HIS:CG	2.43	0.54
2:C:449:ILE:HB	2:C:457:TYR:HB2	1.89	0.54
2:D:457:TYR:HD2	2:D:501:ALA:HA	1.73	0.54
2:F:339:ASN:HB2	8:6:21:DT:H73	1.90	0.54
3:J:30:ASP:HA	3:J:33:ARG:HG2	1.90	0.54
3:J:92:ASP:HB2	3:J:95:ARG:NH2	2.23	0.54
2:D:537:ASP:O	2:D:541:LYS:HG2	2.09	0.53
3:H:150:GLN:HG2	3:I:86:ASP:HB3	1.88	0.53
3:H:233:LYS:HB3	3:H:288:PHE:CE1	2.42	0.53
3:K:155:LEU:HD13	3:K:158:ILE:HD11	1.90	0.53
3:L:91:VAL:HG12	3:L:112:LEU:HB2	1.89	0.53
2:E:457:TYR:HA	2:E:501:ALA:HA	1.91	0.53
2:F:549:SER:OG	3:c2:328:PHE:HB3	2.08	0.53
2:F:556:ILE:HD12	5:3:75:DG:C2'	2.32	0.53
3:K:47:VAL:HB	3:K:169:PHE:HA	1.90	0.53
3:L:153:ASN:O	3:L:157:MET:HE3	2.07	0.53
2:D:457:TYR:CG	2:D:486:ILE:HG12	2.42	0.53
3:K:80:LEU:HB3	3:K:131:ILE:HA	1.91	0.53
2:D:559:ARG:O	2:D:560:ARG:HG2	2.09	0.53
2:E:292:ILE:HG23	2:E:394:VAL:HG11	1.89	0.53
2:F:216:VAL:HG13	2:F:416:GLY:HA3	1.89	0.53
2:D:553:THR:HG21	2:D:557:ARG:HH21	1.74	0.53
3:J:17:VAL:HG13	3:J:212:TYR:HD2	1.73	0.53
3:M:72:ALA:HB3	3:M:77:ILE:HA	1.89	0.53
2:D:308:ASP:HA	2:D:332:ASN:HB2	1.89	0.53
2:E:216:VAL:HG11	2:E:413:TRP:HA	1.90	0.53
2:F:443:GLN:HB3	2:F:445:THR:HG23	1.89	0.53
6:4:89:DA:H2'	6:4:90:DC:C6	2.44	0.53
8:6:47:DT:H2"	8:6:48:DA:N7	2.23	0.53
1:A:170:SER:O	1:A:174:ILE:HG12	2.08	0.53
1:A:173:LYS:HA	1:A:176:LYS:HB3	1.91	0.53
2:C:540:ILE:N	2:F:157:ARG:HH21	1.91	0.53
2:E:61:LEU:HD22	2:E:73:ILE:HD12	1.91	0.53
3:I:184:LEU:HA	3:I:187:ARG:HB2	1.90	0.53
2:C:536:ILE:HG12	2:F:160:ARG:HH22	1.72	0.53
2:D:549:SER:O	2:D:553:THR:HG22	2.09	0.53
2:E:273:LEU:CD1	2:E:555:ARG:NE	2.71	0.53
2:E:455:LEU:HD11	2:E:515:HIS:NE2	2.22	0.53
2:F:549:SER:OG	3:c2:328:PHE:CB	2.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:182:SER:HB2	3:H:243:ARG:HE	1.74	0.53
3:I:178:LEU:HD13	3:I:184:LEU:HD12	1.90	0.53
2:F:556:ILE:HD12	5:3:75:DG:H3'	0.64	0.53
3:I:271:PHE:HA	3:I:274:LYS:HD3	1.90	0.53
3:J:112:LEU:O	3:J:116:THR:HG23	2.09	0.53
1:A:197:VAL:O	1:A:201:LEU:HG	2.09	0.52
2:F:226:VAL:HG22	2:F:244:TRP:CE3	2.44	0.52
2:F:343:VAL:H	2:F:345:ARG:H	1.56	0.52
3:H:49:GLY:HA3	3:H:53:VAL:HG21	1.91	0.52
3:M:118:ARG:O	3:M:122:LEU:HB3	2.09	0.52
9:7:68:DC:H2"	9:7:69:DG:C8	2.43	0.52
2:D:521:TYR:O	2:D:525:LEU:HG	2.09	0.52
2:E:509:ARG:CD	2:E:557:LYS:HE3	2.38	0.52
3:L:157:MET:HE2	3:L:157:MET:N	2.24	0.52
2:E:47:ILE:HG23	2:E:113:PRO:HD2	1.91	0.52
2:E:392:TRP:CE2	2:E:396:ILE:HG21	2.44	0.52
2:E:524:ILE:N	2:E:527:GLU:HB2	2.24	0.52
1:B:35:ILE:HB	2:E:331:GLN:HE22	1.73	0.52
2:E:236:TYR:CE2	2:E:535:VAL:HG22	2.44	0.52
3:J:173:TYR:CE2	3:J:311:TYR:HB2	2.44	0.52
3:M:195:ARG:CZ	3:M:304:LYS:HD3	2.39	0.52
2:C:545:ILE:HA	2:C:548:ARG:HG2	1.90	0.52
2:E:240:LEU:HD22	2:E:543:ARG:HH12	1.75	0.52
3:I:199:TYR:HB2	3:I:235:TYR:CZ	2.44	0.52
3:J:59:ILE:HG12	3:J:132:ILE:HG12	1.91	0.52
3:K:190:ILE:HB	3:L:275:LEU:HB2	1.90	0.52
1:B:121:TRP:HZ2	1:B:137:LEU:HD21	1.75	0.52
2:C:531:ASP:H	2:E:400:LYS:HZ1	1.58	0.52
2:E:305:LEU:HG	2:E:327:ILE:HG21	1.92	0.52
3:K:135:GLU:O	3:K:135:GLU:HG3	2.10	0.52
1:B:63:PHE:HE2	1:B:156:HIS:HB2	1.73	0.52
2:C:536:ILE:HG12	2:F:160:ARG:CZ	2.39	0.52
2:E:546:GLY:HA2	3:c1:329:PHE:CZ	2.45	0.52
3:L:132:ILE:HA	3:L:167:VAL:HG13	1.91	0.52
3:L:213:LEU:HD13	3:L:249:ILE:HD13	1.92	0.52
1:B:93:LEU:HD11	1:B:101:PHE:HD2	1.75	0.52
2:C:548:ARG:HG3	2:C:549:SER:N	2.25	0.52
3:J:33:ARG:HB3	3:J:130:LEU:HD22	1.92	0.52
3:J:199:TYR:HB2	3:J:235:TYR:CE2	2.44	0.52
3:K:307:GLY:O	3:K:308:TRP:C	2.53	0.52
2:E:269:VAL:O	2:E:273:LEU:HG	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:46:MET:HB2	3:L:188:PHE:CD2	2.45	0.51
8:6:32:DC:H2"	8:6:33:DC:H5"	1.91	0.51
8:6:37:DA:H2"	8:6:38:DA:C8	2.44	0.51
3:I:94:ALA:HA	3:I:97:LEU:HD12	1.93	0.51
3:J:51:SER:HB2	3:J:171:MET:SD	2.50	0.51
3:L:57:THR:O	3:L:61:LYS:HG2	2.10	0.51
2:C:536:ILE:HD11	2:F:156:ARG:HE	1.75	0.51
3:H:145:ASN:HA	3:H:148:LEU:HD12	1.92	0.51
3:K:17:VAL:HG12	10:K:600:ATP:N1	2.26	0.51
3:K:111:ASP:HB3	3:K:114:ARG:HG3	1.91	0.51
1:B:109:ALA:HA	1:B:140:GLU:OE1	2.09	0.51
2:C:294:ASN:HB2	2:C:394:VAL:HG13	1.92	0.51
2:E:238:ILE:CG2	2:E:538:ASN:HD21	2.24	0.51
2:E:503:ASP:C	2:E:505:GLU:H	2.18	0.51
2:F:506:TYR:C	2:F:508:SER:H	2.18	0.51
3:J:178:LEU:HA	3:J:184:LEU:HB2	1.92	0.51
3:L:280:LYS:HE3	3:L:281:PRO:HD2	1.91	0.51
2:D:444:LEU:HG	2:D:466:ARG:HH11	1.76	0.51
2:E:257:ILE:H	2:E:257:ILE:HD12	1.76	0.51
2:E:381:THR:O	2:E:385:ILE:HG12	2.10	0.51
2:E:456:SER:CB	2:E:502:ILE:HG12	2.33	0.51
2:E:542:ALA:C	2:E:544:ARG:N	2.59	0.51
2:F:142:SER:HB3	2:F:193:ALA:HB1	1.93	0.51
3:G:146:ARG:HG3	3:G:148:LEU:H	1.76	0.51
3:H:13:LYS:HG2	3:H:250:TYR:CE1	2.45	0.51
3:M:284:TRP:HE3	3:M:284:TRP:H	1.57	0.51
2:E:222:ILE:HG12	2:E:307:THR:HG22	1.93	0.51
3:H:77:ILE:HG13	3:H:80:LEU:H	1.76	0.51
3:L:226:ALA:HA	3:L:231:GLN:HB3	1.93	0.51
1:A:159:ALA:HB3	2:F:326:LEU:HD13	1.92	0.51
2:C:368:GLN:HG2	2:C:369:ARG:HG2	1.93	0.51
2:C:467:GLY:O	2:E:187:PRO:HD2	2.11	0.51
2:E:456:SER:HB2	2:E:502:ILE:CG1	2.33	0.51
3:H:256:ALA:HB1	3:H:261:HIS:O	2.11	0.51
8:6:25:DG:H2"	8:6:26:DA:C8	2.46	0.51
1:B:52:THR:HG21	7:5:20:DG:C8	2.45	0.51
2:E:444:LEU:HD11	2:E:462:LEU:HD11	1.92	0.51
2:E:452:TYR:HE2	2:E:519:MET:HG3	1.75	0.51
3:G:276:THR:HG22	3:M:190:ILE:HA	1.93	0.51
3:H:59:ILE:HD12	3:H:132:ILE:HD13	1.93	0.51
3:J:154:TRP:CE2	3:J:158:ILE:HD11	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:361:LYS:HG2	2:C:363:PHE:H	1.76	0.51
2:C:552:LYS:HD3	2:C:552:LYS:N	2.25	0.51
2:E:261:LEU:HD21	2:E:385:ILE:HB	1.91	0.51
2:E:354:LEU:HD13	2:E:392:TRP:CD1	2.45	0.51
2:E:392:TRP:O	2:E:396:ILE:HB	2.11	0.51
2:E:513:TRP:HA	2:E:516:LYS:HD2	1.92	0.51
2:E:540:ILE:CG1	3:c1:330:GLU:OE2	2.43	0.51
2:F:152:TYR:HB2	2:F:178:VAL:HG21	1.92	0.51
3:H:248:LEU:HD11	3:H:276:THR:HG21	1.92	0.51
3:I:109:GLU:HG2	3:I:114:ARG:HG3	1.93	0.51
3:J:8:ARG:HD3	3:J:257:ILE:HG23	1.93	0.51
2:C:292:ILE:HG23	2:C:394:VAL:HG21	1.93	0.51
2:F:118:ARG:HH21	7:5:38:DA:H1'	1.76	0.50
2:C:322:CYS:HB3	2:C:327:ILE:HB	1.93	0.50
2:C:559:ARG:HH21	2:C:560:ARG:HG3	1.75	0.50
2:D:292:ILE:HD11	2:D:294:ASN:HB2	1.92	0.50
2:E:179:ARG:HH12	2:E:183:LYS:HE2	1.76	0.50
2:E:483:MET:H	2:E:510:VAL:HG21	1.76	0.50
2:F:229:LEU:O	2:F:242:ARG:HA	2.11	0.50
2:F:243:PRO:HB2	2:F:261:LEU:HD22	1.93	0.50
2:F:511:SER:C	2:F:513:TRP:N	2.62	0.50
2:F:229:LEU:HB2	2:F:355:LEU:HD11	1.93	0.50
2:F:388:ILE:HA	2:F:391:ILE:HG12	1.94	0.50
1:A:29:LYS:HD2	1:A:33:LYS:HD3	1.94	0.50
2:C:461:ARG:O	2:C:464:GLU:HG3	2.11	0.50
2:C:549:SER:HB3	2:E:379:THR:HB	1.94	0.50
2:E:276:LYS:HZ1	2:E:429:LYS:HD2	1.75	0.50
2:E:441:TYR:HB3	2:E:473:LYS:HE2	1.94	0.50
3:G:46:MET:HB2	3:G:188:PHE:CD1	2.45	0.50
3:M:289:GLU:O	3:M:290:GLU:HG3	2.10	0.50
9:7:83:DT:H2"	9:7:84:DC:C6	2.47	0.50
2:D:541:LYS:O	2:D:545:ILE:HG12	2.11	0.50
3:M:62:TYR:HA	3:M:65:GLN:NE2	2.26	0.50
3:M:123:ILE:N	3:M:124:PRO:HD2	2.26	0.50
1:A:164:LEU:HG	1:A:169:ASN:HB2	1.93	0.50
2:E:320:GLN:HA	2:E:323:GLU:OE2	2.12	0.50
3:G:237:PHE:HE2	3:G:248:LEU:HD13	1.77	0.50
3:H:45:MET:HE1	3:H:192:VAL:HG13	1.94	0.50
3:L:82:ILE:HG12	3:L:97:LEU:HD23	1.94	0.50
5:3:83:DA:H2"	5:3:84:DT:H5"	1.92	0.50
6:4:119:DT:H2"	6:4:120:DC:H5'	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:443:GLN:HA	2:C:473:LYS:HA	1.93	0.50
2:F:227:VAL:HG23	2:F:244:TRP:HA	1.94	0.50
1:B:27:LEU:HD13	1:B:35:ILE:HG21	1.93	0.50
1:B:41:VAL:HG23	1:B:161:LYS:HE3	1.94	0.50
2:E:128:VAL:O	2:E:132:ILE:HG12	2.12	0.50
3:J:157:MET:HE2	3:J:157:MET:C	2.37	0.50
3:J:238:SER:HB3	3:J:245:LEU:HB2	1.94	0.50
3:L:136:PHE:HB3	3:L:170:GLY:HA3	1.93	0.50
3:M:137:GLN:HB2	3:M:173:TYR:CZ	2.47	0.50
3:c1:326:LYS:O	3:c1:328:PHE:N	2.45	0.50
2:F:244:TRP:O	2:F:261:LEU:HD23	2.12	0.50
3:G:235:TYR:HE2	3:G:299:LEU:HA	1.76	0.50
3:I:172:PRO:HB2	3:I:308:TRP:HE1	1.76	0.50
3:K:147:VAL:O	3:K:151:VAL:HG22	2.12	0.50
8:6:33:DC:H2'	8:6:34:DA:C8	2.46	0.50
2:C:548:ARG:HB2	2:C:552:LYS:NZ	2.25	0.49
2:D:452:TYR:HE2	2:D:516:LYS:HA	1.77	0.49
2:D:493:MET:HA	2:F:116:LYS:HE3	1.94	0.49
2:E:271:VAL:O	2:E:275:LEU:HG	2.11	0.49
2:E:503:ASP:O	2:E:505:GLU:N	2.41	0.49
2:E:529:ILE:HD13	2:E:532:ARG:HD2	1.92	0.49
2:F:160:ARG:HG2	2:F:160:ARG:NH1	2.27	0.49
2:F:414:LYS:O	2:F:418:GLN:HG2	2.12	0.49
2:F:519:MET:O	2:F:520:LYS:C	2.54	0.49
3:c1:326:LYS:HZ3	3:c1:327:ASN:HB2	1.75	0.49
2:C:550:ILE:HA	2:E:379:THR:HG21	1.95	0.49
2:E:481:GLU:O	2:E:556:ALA:HB2	2.12	0.49
2:F:53:PHE:CZ	2:F:57:ILE:HD11	2.47	0.49
1:A:103:LEU:HG	1:A:133:LEU:HD12	1.95	0.49
1:B:150:ASN:O	1:B:154:ARG:HG2	2.11	0.49
2:D:411:VAL:HA	2:D:414:LYS:HE3	1.94	0.49
3:G:17:VAL:H	10:G:600:ATP:N6	2.10	0.49
3:I:186:GLY:HA3	3:J:243:ARG:HD2	1.93	0.49
3:M:140:VAL:HG13	3:M:146:ARG:HH22	1.77	0.49
3:I:80:LEU:HD11	3:I:128:VAL:HG12	1.95	0.49
2:E:273:LEU:HD22	2:E:555:ARG:HD3	1.93	0.49
3:I:97:LEU:HB3	3:I:119:LEU:HD11	1.93	0.49
3:c2:321:LYS:HB3	3:c2:324:ARG:CD	2.42	0.49
2:D:224:HIS:HB3	2:D:244:TRP:HZ2	1.78	0.49
2:D:526:ASN:OD1	2:F:408:CYS:HB2	2.12	0.49
2:E:540:ILE:CG1	2:E:541:ARG:HG3	2.37	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:160:ARG:O	2:F:164:LEU:HG	2.12	0.49
2:F:311:LYS:HD3	6:4:116:DA:N3	2.26	0.49
3:H:92:ASP:HA	3:H:95:ARG:HB2	1.95	0.49
3:I:123:ILE:N	3:I:124:PRO:HD2	2.27	0.49
6:4:102:DA:H2'	6:4:103:DT:H71	1.94	0.49
1:A:46:ARG:HH21	2:F:323:GLU:HG3	1.78	0.49
1:A:169:ASN:HA	1:A:172:LEU:HD23	1.95	0.49
2:E:530:ALA:HA	3:c1:328:PHE:CE1	2.47	0.49
2:F:411:VAL:O	2:F:414:LYS:HG3	2.12	0.49
2:F:562:GLY:HA3	3:c2:329:PHE:HZ	1.67	0.49
3:G:238:SER:HB3	3:G:245:LEU:HB3	1.93	0.49
3:H:13:LYS:HG2	3:H:250:TYR:HE1	1.78	0.49
3:H:22:VAL:HA	3:H:25:ILE:HG22	1.94	0.49
3:H:153:ASN:HD21	3:I:86:ASP:HA	1.78	0.49
3:K:101:MET:HE1	3:K:122:LEU:HB3	1.95	0.49
1:B:16:LEU:HB3	1:B:101:PHE:CE2	2.48	0.49
2:F:221:GLU:OE1	2:F:340:LYS:HG2	2.13	0.49
3:K:33:ARG:NH1	3:K:36:SER:HB3	2.28	0.49
3:K:228:GLU:O	3:K:232:LYS:HG3	2.13	0.49
3:M:230:LEU:O	3:M:234:LEU:HD22	2.12	0.49
2:E:517:TYR:C	2:E:519:MET:N	2.66	0.49
2:F:219:ARG:HG2	2:F:304:LEU:HD22	1.94	0.49
3:K:17:VAL:H	10:K:600:ATP:HN62	1.61	0.49
3:K:230:LEU:HD22	3:K:233:LYS:HZ1	1.78	0.49
3:M:90:PRO:HB3	3:M:154:TRP:CD1	2.48	0.49
3:M:234:LEU:HD11	3:M:269:PHE:CE1	2.48	0.49
5:3:74:DA:H2'	5:3:74:DA:N3	2.28	0.49
2:E:513:TRP:C	2:E:515:HIS:N	2.70	0.49
3:G:60:LYS:HZ2	10:G:600:ATP:H3'	1.78	0.49
3:G:242:MET:SD	3:G:246:ARG:HG2	2.52	0.49
3:J:206:PHE:CZ	3:J:210:LEU:HD11	2.47	0.49
1:B:31:ARG:HA	2:E:334:VAL:HG13	1.95	0.48
2:C:366:TYR:CZ	2:C:392:TRP:HB2	2.48	0.48
2:C:552:LYS:HA	2:C:555:LYS:HZ3	1.77	0.48
3:I:149:THR:HG21	3:J:141:GLU:H	1.78	0.48
3:J:12:ALA:HA	3:J:217:LEU:HD23	1.95	0.48
3:K:112:LEU:HD11	3:K:154:TRP:HE1	1.77	0.48
3:M:25:ILE:O	3:M:29:MET:HG2	2.13	0.48
2:D:553:THR:OG1	2:F:237:ARG:HD2	2.13	0.48
2:E:396:ILE:CG2	2:E:397:TYR:N	2.76	0.48
2:E:513:TRP:CE3	2:E:514:GLN:HG3	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:243:ARG:HG2	3:M:186:GLY:CA	2.43	0.48
3:J:187:ARG:HG3	3:K:243:ARG:HE	1.78	0.48
3:K:98:LEU:HD12	3:K:115:LEU:HD22	1.95	0.48
2:C:560:ARG:HA	2:C:564:ARG:HD3	1.96	0.48
2:E:236:TYR:CE2	2:E:535:VAL:CG1	2.85	0.48
3:G:29:MET:HA	3:G:32:CYS:HB2	1.94	0.48
3:K:105:LEU:HB2	3:K:118:ARG:HH22	1.77	0.48
3:L:89:LYS:HD3	3:L:90:PRO:HD2	1.95	0.48
3:I:105:LEU:HB2	3:I:118:ARG:HH12	1.79	0.48
3:K:154:TRP:O	3:K:158:ILE:HG12	2.13	0.48
8:6:29:DC:H2"	8:6:30:DA:C8	2.48	0.48
2:E:513:TRP:O	2:E:516:LYS:N	2.45	0.48
2:F:475:GLN:HB3	2:F:489:LEU:HB3	1.95	0.48
3:I:123:ILE:HD11	3:I:162:THR:HG21	1.94	0.48
3:K:171:MET:SD	3:K:172:PRO:HD2	2.53	0.48
3:K:310:ASP:C	3:K:312:LEU:N	2.67	0.48
3:L:237:PHE:CZ	3:L:277:SER:HB3	2.48	0.48
3:M:62:TYR:HA	3:M:65:GLN:HE21	1.78	0.48
3:M:238:SER:HA	3:M:244:SER:HB3	1.94	0.48
2:C:519:MET:O	2:C:522:GLN:HG3	2.14	0.48
2:D:554:ASN:HA	2:D:557:ARG:HD2	1.96	0.48
2:E:506:TYR:OH	2:E:515:HIS:O	2.30	0.48
2:E:518:ASN:O	2:E:519:MET:C	2.57	0.48
2:F:549:SER:CB	3:c2:328:PHE:HB2	2.39	0.48
1:B:182:THR:HG22	1:B:185:GLU:HG2	1.95	0.48
2:E:511:SER:HB3	2:E:514:GLN:C	2.38	0.48
3:H:94:ALA:HB2	3:H:154:TRP:CZ2	2.48	0.48
3:I:200:GLN:NE2	3:I:206:PHE:H	2.12	0.48
3:J:29:MET:HE3	3:J:62:TYR:CD1	2.48	0.48
3:K:92:ASP:HA	3:K:95:ARG:HG2	1.96	0.48
3:L:86:ASP:HB3	3:L:138:HIS:ND1	2.28	0.48
1:B:25:ARG:CZ	1:B:73:LYS:HE2	2.43	0.48
2:C:224:HIS:HB3	2:C:244:TRP:CZ3	2.49	0.48
2:F:339:ASN:HB2	8:6:21:DT:C7	2.44	0.48
2:F:512:LEU:HD12	2:F:512:LEU:HA	1.66	0.48
1:B:31:ARG:NH2	7:5:16:DC:H42	2.12	0.48
2:C:553:THR:HB	2:E:379:THR:HG22	1.96	0.48
2:F:61:LEU:HD13	2:F:73:ILE:HG12	1.95	0.48
2:F:562:GLY:N	3:c2:329:PHE:CE2	2.80	0.48
3:G:256:ALA:HB1	3:G:261:HIS:HB2	1.95	0.48
3:H:94:ALA:HA	3:H:97:LEU:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:230:LEU:HA	3:L:233:LYS:HD3	1.96	0.48
3:M:200:GLN:HE22	3:M:206:PHE:H	1.62	0.48
1:A:16:LEU:HB3	1:A:93:LEU:HD21	1.96	0.47
3:G:123:ILE:N	3:G:124:PRO:HD2	2.27	0.47
3:H:29:MET:HE1	3:H:167:VAL:HG11	1.95	0.47
3:I:137:GLN:HB2	3:I:173:TYR:CZ	2.48	0.47
2:E:70:ALA:HA	2:E:91:ALA:HB1	1.96	0.47
3:G:155:LEU:O	3:G:159:LEU:HG	2.13	0.47
3:G:200:GLN:NE2	3:G:206:PHE:H	2.12	0.47
3:I:68:ARG:HA	3:I:72:ALA:HA	1.95	0.47
3:I:132:ILE:HG22	3:I:167:VAL:HG12	1.96	0.47
3:J:126:VAL:HG23	3:J:128:VAL:HG23	1.95	0.47
3:M:145:ASN:O	3:M:146:ARG:HG2	2.14	0.47
1:B:17:GLU:O	1:B:21:GLU:HG2	2.15	0.47
2:E:144:ARG:NH2	2:F:360:GLY:H	2.12	0.47
2:E:176:GLU:HG2	5:3:62:DT:H71	1.96	0.47
2:E:540:ILE:H	2:E:541:ARG:HH11	1.62	0.47
3:I:186:GLY:HA3	3:J:243:ARG:HH11	1.79	0.47
3:J:89:LYS:HG3	3:J:150:GLN:HG2	1.95	0.47
3:L:173:TYR:HD2	3:L:311:TYR:HB2	1.78	0.47
5:3:49:DA:C8	5:3:49:DA:H5'	2.49	0.47
2:D:504:TYR:H	2:F:209:LYS:HZ1	1.62	0.47
2:E:257:ILE:HG13	2:E:413:TRP:HH2	1.80	0.47
2:F:178:VAL:O	2:F:182:VAL:HG12	2.14	0.47
2:F:211:ILE:HG12	8:6:21:DT:O4	2.14	0.47
2:F:477:LYS:HG2	2:F:487:TRP:HB2	1.95	0.47
3:G:15:ALA:HB1	3:G:216:ALA:HB1	1.96	0.47
3:I:95:ARG:HD2	3:I:107:LEU:HG	1.95	0.47
3:I:232:LYS:HG2	3:I:294:VAL:HG11	1.96	0.47
3:L:45:MET:HE3	3:L:46:MET:N	2.29	0.47
3:L:63:LEU:HD22	3:L:67:ARG:HH11	1.79	0.47
3:M:183:GLN:O	3:M:187:ARG:HG2	2.14	0.47
3:G:45:MET:HE3	3:G:167:VAL:HB	1.95	0.47
6:4:85:DT:H2"	6:4:86:DA:C8	2.49	0.47
8:6:36:DA:H2"	8:6:37:DA:C8	2.50	0.47
1:B:201:LEU:HD13	1:B:204:LEU:HD11	1.97	0.47
2:E:149:SER:O	2:E:153:LYS:HG2	2.14	0.47
2:E:222:ILE:HG22	2:E:248:LEU:CD2	2.45	0.47
2:F:258:GLY:HA3	2:F:278:ALA:HB2	1.97	0.47
2:F:272:SER:O	2:F:275:LEU:HD12	2.14	0.47
3:H:33:ARG:HD3	3:H:129:LYS:HD3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:48:TYR:CZ	3:K:193:GLU:HG2	2.50	0.47
3:L:156:LYS:C	3:L:157:MET:HE2	2.40	0.47
1:A:36:HIS:HD2	2:F:330:HIS:CD2	2.32	0.47
2:E:275:LEU:O	2:E:279:ILE:HG12	2.14	0.47
2:E:318:PHE:CZ	2:E:329:VAL:HG11	2.49	0.47
2:E:541:ARG:CG	3:c1:330:GLU:OE2	2.57	0.47
2:E:541:ARG:CB	3:c1:330:GLU:OE2	2.60	0.47
2:F:74:GLU:HA	2:F:77:ARG:HG3	1.95	0.47
2:F:144:ARG:HG3	2:F:146:VAL:HG13	1.96	0.47
2:F:334:VAL:HA	4:2:20:DC:OP1	2.14	0.47
2:F:505:GLU:C	2:F:507:ALA:N	2.70	0.47
2:F:556:ILE:CD1	5:3:75:DG:H5"	2.43	0.47
3:I:308:TRP:CZ2	3:I:319:VAL:HB	2.50	0.47
3:J:7:ALA:O	3:J:11:ARG:HG2	2.15	0.47
3:K:148:LEU:HD13	3:K:180:ALA:HB2	1.95	0.47
3:L:84:LEU:HD22	3:L:136:PHE:HD1	1.80	0.47
3:M:141:GLU:OE1	3:M:142:GLU:HG3	2.15	0.47
1:B:167:VAL:O	1:B:171:ILE:HG12	2.15	0.47
2:E:503:ASP:C	2:E:505:GLU:N	2.73	0.47
2:E:542:ALA:HB3	2:E:545:ARG:HG3	1.96	0.47
2:F:153:LYS:O	2:F:157:ARG:HG3	2.14	0.47
2:F:221:GLU:OE2	2:F:340:LYS:HA	2.15	0.47
3:H:33:ARG:HG2	3:H:130:LEU:HD23	1.96	0.47
3:I:59:ILE:HD12	3:I:60:LYS:N	2.30	0.47
3:I:296:GLU:HA	3:I:299:LEU:HB2	1.95	0.47
3:M:214:ASP:HA	3:M:217:LEU:HD12	1.97	0.47
3:c2:321:LYS:O	3:c2:322:PRO:C	2.57	0.47
1:B:79:TYR:HD2	1:B:86:HIS:HB2	1.80	0.47
2:D:470:GLY:HA2	2:F:187:PRO:HG3	1.97	0.47
2:E:269:VAL:CG2	2:E:555:ARG:NH1	2.78	0.47
2:E:489:LEU:HB2	2:E:496:TYR:CE2	2.50	0.47
2:E:542:ALA:HB1	2:E:544:ARG:HB2	1.96	0.47
2:F:222:ILE:HD12	2:F:223:ASP:H	1.80	0.47
3:G:147:VAL:H	3:H:314:HIS:HB3	1.80	0.47
3:I:56:THR:HA	3:I:59:ILE:HG13	1.96	0.47
3:J:62:TYR:HA	3:J:65:GLN:HE21	1.80	0.47
1:A:20:PHE:HA	1:A:71:THR:HB	1.95	0.47
2:D:458:SER:HA	2:D:462:LEU:HD23	1.97	0.47
2:E:240:LEU:HD22	2:E:543:ARG:NH1	2.30	0.47
2:F:154:ARG:HH12	2:F:158:LYS:HE2	1.80	0.47
1:B:27:LEU:HD21	1:B:48:THR:HB	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:166:GLU:O	1:B:170:SER:HB3	2.16	0.46
2:C:531:ASP:H	2:E:400:LYS:NZ	2.13	0.46
2:E:180:LYS:HE2	2:E:180:LYS:HA	1.95	0.46
2:E:525:LYS:HZ2	2:E:532:ARG:NH2	2.07	0.46
2:E:550:GLN:O	2:E:551:GLU:C	2.55	0.46
2:F:155:VAL:HG21	2:F:178:VAL:HG11	1.96	0.46
3:G:56:THR:HA	3:G:59:ILE:HG12	1.96	0.46
3:K:89:LYS:HG2	3:K:90:PRO:HD2	1.96	0.46
3:K:143:ARG:NH1	3:K:313:ARG:HB2	2.30	0.46
3:M:200:GLN:NE2	3:M:206:PHE:H	2.13	0.46
3:I:200:GLN:HE22	3:I:206:PHE:H	1.62	0.46
3:J:206:PHE:O	3:J:210:LEU:HD12	2.14	0.46
3:M:287:PRO:HA	3:M:292:VAL:HB	1.97	0.46
2:C:478:TYR:HE2	2:C:512:LEU:HD21	1.80	0.46
3:K:309:GLU:O	3:K:310:ASP:HB2	2.15	0.46
3:K:313:ARG:CZ	3:K:314:HIS:H	2.27	0.46
3:M:80:LEU:HD11	3:M:128:VAL:HG12	1.96	0.46
5:3:47:DT:H2'	5:3:48:DT:H71	1.97	0.46
2:F:339:ASN:HA	2:F:341:PRO:HD3	1.97	0.46
3:G:23:ARG:O	3:G:26:LEU:HG	2.16	0.46
3:H:131:ILE:HB	3:H:166:ILE:HG23	1.97	0.46
3:I:295:THR:N	3:I:298:MET:HE1	2.29	0.46
3:L:37:ASP:HB2	3:L:39:GLU:OE1	2.15	0.46
3:M:246:ARG:NH2	10:M:602:ATP:H1'	2.30	0.46
1:A:31:ARG:HH21	2:F:198:ARG:HH12	1.63	0.46
2:D:412:ALA:HA	2:D:415:LYS:HE3	1.95	0.46
2:E:54:ARG:HH11	2:E:97:TRP:NE1	2.13	0.46
2:E:233:HIS:HD2	2:E:534:ILE:HG21	1.65	0.46
3:G:146:ARG:NH2	3:G:151:VAL:HB	2.30	0.46
3:J:120:THR:HA	3:J:162:THR:HG22	1.98	0.46
3:L:83:GLU:O	3:L:96:GLU:HG2	2.16	0.46
3:M:234:LEU:HD13	3:M:288:PHE:HZ	1.80	0.46
4:2:10:DT:H2'	4:2:11:DG:H8	1.79	0.46
3:c1:326:LYS:HB3	3:c1:330:GLU:HB2	1.98	0.46
1:A:37:ARG:HH21	2:F:329:VAL:HG13	1.80	0.46
1:B:39:VAL:H	2:E:328:ASN:ND2	2.14	0.46
2:E:292:ILE:HD11	2:E:390:LEU:HB3	1.98	0.46
2:E:433:ASP:OD2	2:E:559:ILE:CG2	2.63	0.46
2:E:509:ARG:O	2:E:511:SER:N	2.48	0.46
2:E:531:ASP:C	2:E:533:SER:H	2.24	0.46
2:F:130:ASP:O	2:F:133:MET:HG3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:214:ASP:HA	3:G:217:LEU:HD12	1.97	0.46
3:H:46:MET:HE1	3:H:48:TYR:HD1	1.80	0.46
3:H:50:ALA:HA	3:H:171:MET:HE1	1.96	0.46
3:H:57:THR:HG21	10:H:600:ATP:C8	2.51	0.46
3:L:110:THR:HG21	5:3:101:DC:H5'	1.96	0.46
2:E:195:LYS:HG2	2:E:199:VAL:HG11	1.98	0.46
3:H:146:ARG:HG3	3:H:147:VAL:N	2.31	0.46
3:I:256:ALA:HB1	3:I:261:HIS:HB2	1.97	0.46
3:K:310:ASP:O	3:K:312:LEU:HG	2.15	0.46
2:E:178:VAL:O	2:E:182:VAL:HG22	2.15	0.46
2:E:523:GLU:O	2:E:525:LYS:N	2.49	0.46
2:E:540:ILE:C	2:E:541:ARG:CG	2.84	0.46
3:G:90:PRO:HB3	3:G:154:TRP:CG	2.51	0.46
3:G:200:GLN:HE22	3:G:206:PHE:H	1.63	0.46
3:K:45:MET:HE3	3:K:46:MET:C	2.41	0.46
3:K:53:VAL:O	3:K:242:MET:HG2	2.16	0.46
3:K:310:ASP:O	3:K:311:TYR:C	2.58	0.46
2:E:546:GLY:HA2	3:c1:329:PHE:CD2	2.50	0.46
3:H:171:MET:HE3	3:H:172:PRO:HD2	1.97	0.46
3:I:45:MET:HG3	3:I:190:ILE:HB	1.97	0.46
3:I:148:LEU:HD23	3:I:180:ALA:HB2	1.97	0.46
10:I:403:ATP:O3G	3:J:56:THR:HG23	2.16	0.46
3:J:147:VAL:HA	3:J:150:GLN:HB3	1.97	0.46
3:K:225:LEU:HD22	3:K:234:LEU:HD11	1.98	0.46
1:B:59:TYR:HD2	1:B:152:LEU:HG	1.80	0.46
2:E:238:ILE:HG21	2:E:538:ASN:HD21	1.81	0.46
2:E:308:ASP:HB3	2:E:340:LYS:HE3	1.98	0.46
2:E:530:ALA:HA	3:c1:328:PHE:HE1	1.81	0.46
2:F:158:LYS:O	2:F:161:GLN:HG3	2.16	0.46
3:K:286:ASN:HB3	3:K:289:GLU:OE1	2.16	0.46
3:M:61:LYS:HA	3:M:61:LYS:HD3	1.62	0.46
2:E:456:SER:O	2:E:502:ILE:N	2.48	0.45
2:F:69:VAL:HB	6:4:84:DA:OP2	2.16	0.45
2:F:505:GLU:O	2:F:506:TYR:C	2.58	0.45
10:G:600:ATP:H4'	3:M:187:ARG:HH12	1.81	0.45
3:L:54:GLY:HA2	10:L:600:ATP:O2A	2.17	0.45
3:L:82:ILE:HG13	3:L:96:GLU:HG3	1.98	0.45
3:L:210:LEU:HB3	3:L:225:LEU:HD23	1.97	0.45
2:F:54:ARG:HG3	2:F:97:TRP:CE3	2.50	0.45
2:F:216:VAL:HG23	2:F:217:LEU:HD12	1.98	0.45
2:F:483:MET:HG3	2:F:512:LEU:HD13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:515:HIS:HB3	2:F:516:LYS:HE2	1.98	0.45
3:G:63:LEU:HD12	3:G:68:ARG:CZ	2.46	0.45
3:L:209:PHE:HZ	3:L:246:ARG:HH12	1.62	0.45
9:7:65:DA:H2'	9:7:66:DT:H71	1.97	0.45
1:B:38:TYR:HD2	1:B:47:ILE:HD11	1.81	0.45
2:E:233:HIS:NE2	2:E:534:ILE:HD13	2.31	0.45
2:E:261:LEU:HD23	2:E:386:ARG:HD2	1.98	0.45
3:J:203:ARG:HA	3:J:207:LYS:HB2	1.98	0.45
1:A:154:ARG:HH22	1:A:199:PRO:HA	1.81	0.45
2:C:467:GLY:HA3	2:E:188:PHE:CZ	2.51	0.45
2:E:546:GLY:O	2:E:547:ALA:C	2.57	0.45
2:E:549:HIS:HB3	2:E:550:GLN:HG2	1.97	0.45
3:H:96:GLU:HA	3:H:99:VAL:HG12	1.98	0.45
3:I:46:MET:HG3	3:I:188:PHE:HB3	1.98	0.45
3:K:48:TYR:CD1	3:K:191:GLN:HB2	2.51	0.45
3:K:313:ARG:NH2	3:K:314:HIS:H	2.14	0.45
3:L:48:TYR:HE1	3:L:191:GLN:HB3	1.82	0.45
3:M:28:TYR:HB2	3:M:29:MET:CE	2.47	0.45
3:M:51:SER:H	3:M:307:GLY:HA2	1.81	0.45
1:B:120:LYS:O	1:B:124:LYS:HG2	2.16	0.45
2:E:236:TYR:CE1	2:E:534:ILE:HG22	2.52	0.45
3:J:190:ILE:HG23	3:K:275:LEU:HD11	1.98	0.45
3:L:120:THR:HA	3:L:162:THR:HG22	1.99	0.45
3:M:268:ASP:HA	3:M:271:PHE:CD1	2.52	0.45
2:C:248:LEU:HD23	2:C:257:ILE:HD11	1.98	0.45
2:E:185:LYS:HZ2	2:E:190:LEU:HD23	1.81	0.45
2:E:396:ILE:HG22	2:E:397:TYR:N	2.31	0.45
3:G:61:LYS:HA	3:G:61:LYS:HD3	1.63	0.45
3:G:135:GLU:CD	3:M:156:LYS:HE2	2.42	0.45
3:L:267:GLU:HG2	3:L:268:ASP:N	2.30	0.45
3:G:79:VAL:HA	3:G:130:LEU:O	2.16	0.45
3:H:143:ARG:HH11	3:H:311:TYR:HE1	1.63	0.45
3:H:163:LYS:HE2	3:H:163:LYS:HB2	1.75	0.45
3:L:136:PHE:CD2	3:L:168:ILE:HD11	2.52	0.45
3:c1:326:LYS:O	3:c1:327:ASN:C	2.60	0.45
2:C:282:LYS:HG2	2:C:296:TRP:CE3	2.52	0.45
2:C:530:TYR:CD1	2:E:400:LYS:HD2	2.51	0.45
2:E:414:LYS:HD2	2:E:414:LYS:HA	1.67	0.45
3:G:44:CYS:HB3	3:G:166:ILE:O	2.17	0.45
3:H:157:MET:HE1	3:I:85:PRO:HB3	1.99	0.45
3:K:305:ASP:O	3:K:308:TRP:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:53:VAL:HG21	3:L:194:LEU:HB3	1.99	0.45
3:M:19:THR:HG22	3:M:22:VAL:HG12	1.98	0.45
2:C:410:ASN:O	2:C:414:LYS:HG3	2.17	0.45
2:C:454:GLU:HB3	2:C:519:MET:HE1	1.98	0.45
2:C:532:GLU:OE2	2:C:536:ILE:HD12	2.17	0.45
2:E:116:LYS:HE3	2:E:116:LYS:HB2	1.72	0.45
3:G:94:ALA:HB2	3:G:154:TRP:CZ2	2.52	0.45
3:H:140:VAL:HG13	3:H:141:GLU:H	1.81	0.45
3:M:178:LEU:HA	3:M:184:LEU:HD12	1.99	0.45
1:A:121:TRP:HA	1:A:124:LYS:HD2	1.97	0.45
2:F:326:LEU:H	2:F:326:LEU:HD23	1.82	0.45
2:F:375:VAL:CG2	2:F:556:ILE:HD13	2.43	0.45
3:I:79:VAL:HA	3:I:130:LEU:O	2.17	0.45
3:J:189:SER:O	3:K:276:THR:HA	2.17	0.45
3:M:82:ILE:HD12	3:M:82:ILE:HA	1.89	0.45
1:A:90:PRO:HG2	1:A:103:LEU:HD13	1.99	0.44
2:D:479:ASN:HB3	2:D:482:CYS:O	2.17	0.44
2:E:520:LYS:HE2	2:E:520:LYS:HB2	1.33	0.44
3:H:209:PHE:HZ	3:H:245:LEU:HD21	1.82	0.44
3:K:212:TYR:HA	3:K:215:LYS:HE2	1.99	0.44
3:L:207:LYS:H	3:L:207:LYS:CD	2.25	0.44
1:B:114:LYS:HE2	7:5:18:DT:OP2	2.18	0.44
2:E:232:VAL:HG22	2:E:237:ARG:HA	1.99	0.44
2:F:340:LYS:N	2:F:341:PRO:HD3	2.31	0.44
3:K:80:LEU:HD22	3:K:128:VAL:HG21	1.99	0.44
3:L:233:LYS:HB3	3:L:287:PRO:HB2	1.98	0.44
3:M:213:LEU:HD12	3:M:213:LEU:HA	1.85	0.44
6:4:81:DT:H2"	6:4:82:DA:C8	2.51	0.44
2:C:467:GLY:HA3	2:E:188:PHE:CE2	2.52	0.44
2:E:267:SER:HB3	5:3:79:DT:H5"	1.99	0.44
2:E:425:PHE:CE2	2:E:432:LEU:HB2	2.52	0.44
2:F:391:ILE:HG13	2:F:392:TRP:N	2.33	0.44
3:H:68:ARG:HD3	3:H:68:ARG:HA	1.62	0.44
3:H:115:LEU:HD12	3:H:115:LEU:N	2.31	0.44
3:J:33:ARG:HG3	3:J:34:ASP:N	2.30	0.44
3:J:44:CYS:SG	3:J:166:ILE:HB	2.57	0.44
3:J:55:LYS:O	3:J:59:ILE:HD12	2.18	0.44
3:J:308:TRP:HA	3:J:308:TRP:CE3	2.52	0.44
3:K:33:ARG:NE	3:K:129:LYS:HB3	2.32	0.44
3:L:22:VAL:HA	3:L:25:ILE:HG12	1.99	0.44
6:4:79:DA:C8	6:4:80:DT:H72	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:125:VAL:O	1:A:129:ARG:HG2	2.18	0.44
1:A:187:GLY:HA2	1:A:197:VAL:HG21	1.98	0.44
1:B:59:TYR:CD2	1:B:152:LEU:HG	2.53	0.44
2:E:396:ILE:HG22	2:E:397:TYR:H	1.81	0.44
2:F:445:THR:HG22	2:F:471:ASN:HB3	2.00	0.44
3:K:21:SER:O	3:K:25:ILE:HG13	2.17	0.44
3:L:146:ARG:H	3:L:146:ARG:HE	1.63	0.44
1:A:158:TYR:CE2	1:A:199:PRO:HB3	2.52	0.44
2:D:446:LYS:HA	2:F:204:PHE:CZ	2.52	0.44
2:E:533:SER:HA	3:c1:327:ASN:OD1	2.17	0.44
3:G:147:VAL:HG23	3:G:149:THR:N	2.33	0.44
3:H:285:LYS:HD2	3:H:285:LYS:C	2.42	0.44
1:A:129:ARG:NH1	1:A:135:LEU:H	2.16	0.44
2:D:268:TYR:HA	2:D:271:VAL:HG12	2.00	0.44
2:F:129:VAL:HA	2:F:132:ILE:HG12	1.99	0.44
3:G:184:LEU:O	3:G:188:PHE:HB2	2.18	0.44
3:H:31:ARG:HH12	3:I:275:LEU:HD22	1.82	0.44
3:H:237:PHE:CE1	3:H:244:SER:HB2	2.52	0.44
3:I:123:ILE:HB	3:I:128:VAL:HG11	2.00	0.44
3:J:46:MET:O	3:J:191:GLN:HA	2.18	0.44
3:J:111:ASP:HB2	3:J:114:ARG:HG3	2.00	0.44
3:L:210:LEU:HB3	3:L:225:LEU:HB3	1.98	0.44
3:M:217:LEU:HB3	3:M:219:PHE:HD2	1.82	0.44
2:C:242:ARG:HD2	2:C:243:PRO:O	2.17	0.44
2:E:325:LEU:O	2:E:326:LEU:HG	2.18	0.44
2:E:500:ASN:HB2	2:E:504:TYR:HE1	1.83	0.44
2:E:514:GLN:C	2:E:517:TYR:H	2.26	0.44
2:F:292:ILE:HG13	2:F:394:VAL:HG11	2.00	0.44
3:G:312:LEU:HD21	3:G:318:ARG:HG3	2.00	0.44
3:H:266:GLU:HG3	3:H:269:PHE:HE1	1.81	0.44
3:I:19:THR:HG22	3:I:22:VAL:HG12	2.00	0.44
3:I:23:ARG:O	3:I:26:LEU:HG	2.18	0.44
3:K:33:ARG:CZ	3:K:129:LYS:HB3	2.47	0.44
3:M:149:THR:HG23	3:M:153:ASN:HD22	1.83	0.44
3:M:286:ASN:HD21	3:M:288:PHE:HD1	1.65	0.44
5:3:44:DT:H2"	5:3:45:DA:C8	2.52	0.44
2:D:459:ASN:ND2	2:D:499:VAL:HA	2.33	0.44
3:M:80:LEU:HD13	3:M:131:ILE:HG22	1.99	0.44
2:D:559:ARG:HD3	2:D:559:ARG:HA	1.81	0.44
2:E:73:ILE:HB	2:E:91:ALA:HB1	2.00	0.44
3:G:101:MET:HE1	3:G:126:VAL:HG21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:207:LYS:HA	3:G:210:LEU:HD12	2.00	0.44
2:D:398:HIS:HA	2:D:409:PRO:HG2	1.99	0.43
2:E:463:ALA:O	2:E:466:ARG:HG2	2.18	0.43
2:F:510:VAL:O	2:F:514:GLN:N	2.51	0.43
2:F:516:LYS:H	2:F:516:LYS:HG2	1.37	0.43
3:G:99:VAL:HG13	3:M:117:LYS:HD3	2.00	0.43
3:H:114:ARG:HD3	3:H:117:LYS:HD3	2.00	0.43
3:I:49:GLY:H	3:I:172:PRO:HG3	1.82	0.43
3:L:45:MET:HE1	3:L:190:ILE:HG22	2.00	0.43
3:L:49:GLY:HA3	3:L:53:VAL:HG21	2.00	0.43
3:M:171:MET:SD	3:M:172:PRO:HD2	2.58	0.43
1:B:112:ILE:HD12	1:B:140:GLU:OE1	2.18	0.43
2:D:411:VAL:O	2:D:414:LYS:HG2	2.18	0.43
2:D:487:TRP:CZ2	2:D:498:THR:HB	2.52	0.43
2:E:236:TYR:CE1	2:E:238:ILE:HG21	2.53	0.43
2:E:377:GLU:O	2:E:379:THR:HG23	2.18	0.43
2:E:522:ALA:O	2:E:526:ILE:HB	2.16	0.43
3:G:11:ARG:HA	3:G:11:ARG:HD2	1.89	0.43
3:I:183:GLN:HG2	10:I:403:ATP:O2G	2.16	0.43
3:J:17:VAL:HG11	3:J:209:PHE:HA	2.00	0.43
3:J:35:LEU:HD12	3:J:36:SER:N	2.33	0.43
3:J:311:TYR:CE1	3:K:317:PRO:HA	2.53	0.43
3:M:117:LYS:O	3:M:121:GLU:HG2	2.18	0.43
3:M:155:LEU:HD12	3:M:166:ILE:HD12	2.00	0.43
1:B:71:THR:HG22	1:B:93:LEU:HB3	1.99	0.43
2:E:483:MET:H	2:E:510:VAL:CG2	2.32	0.43
2:F:276:LYS:O	2:F:276:LYS:HG2	2.18	0.43
2:F:339:ASN:C	2:F:341:PRO:CD	2.88	0.43
3:G:114:ARG:O	3:G:118:ARG:HG3	2.18	0.43
3:H:233:LYS:HA	3:H:294:VAL:HG21	2.00	0.43
3:M:187:ARG:HA	3:M:187:ARG:NE	2.33	0.43
2:C:567:GLU:C	6:4:122:DA:H5"	2.43	0.43
2:D:550:ILE:HD12	2:D:550:ILE:HA	1.90	0.43
2:E:521:TYR:CD2	3:c1:328:PHE:HD2	2.36	0.43
2:F:248:LEU:HB3	2:F:257:ILE:HD11	2.00	0.43
3:H:25:ILE:HD13	3:H:192:VAL:HG21	2.01	0.43
3:H:97:LEU:O	3:H:101:MET:HE3	2.18	0.43
3:I:148:LEU:HD12	3:I:148:LEU:HA	1.90	0.43
3:J:271:PHE:HA	3:J:274:LYS:HE3	2.00	0.43
3:M:120:THR:HG23	3:M:121:GLU:OE1	2.19	0.43
3:M:172:PRO:O	3:M:175:LYS:HG2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:319:ASP:HA	2:E:322:CYS:SG	2.58	0.43
2:E:490:ASP:HB2	2:E:497:PHE:HE2	1.83	0.43
2:F:253:SER:HB2	2:F:412:ALA:HB3	1.99	0.43
2:F:506:TYR:C	2:F:508:SER:N	2.74	0.43
3:G:56:THR:O	3:G:60:LYS:HG2	2.18	0.43
3:H:241:ASN:C	3:H:241:ASN:OD1	2.60	0.43
3:M:207:LYS:HA	3:M:210:LEU:HD12	1.99	0.43
3:M:270:VAL:O	3:M:274:LYS:HG2	2.19	0.43
2:E:202:ARG:O	2:E:205:ARG:HD3	2.18	0.43
3:H:114:ARG:HD3	3:H:114:ARG:HA	1.63	0.43
3:H:136:PHE:CD1	3:H:168:ILE:HD11	2.54	0.43
3:I:147:VAL:HB	3:J:142:GLU:HA	1.29	0.43
3:I:273:SER:HB2	3:I:286:ASN:HD21	1.84	0.43
3:J:98:LEU:HD12	3:J:98:LEU:HA	1.87	0.43
3:K:5:ARG:HE	3:K:5:ARG:HB2	1.53	0.43
3:K:25:ILE:HG12	3:K:192:VAL:HG21	2.00	0.43
3:K:119:LEU:HD13	3:K:119:LEU:HA	1.89	0.43
3:c1:326:LYS:HG3	3:c1:330:GLU:HB2	1.99	0.43
1:A:188:GLU:HA	1:A:193:LYS:HG2	2.01	0.43
2:D:539:GLU:HA	2:D:542:ILE:HG22	2.01	0.43
3:I:136:PHE:HE1	3:I:139:LEU:HD23	1.83	0.43
3:I:173:TYR:CG	3:I:311:TYR:HB2	2.54	0.43
3:I:309:GLU:H	3:I:309:GLU:HG3	1.64	0.43
3:K:8:ARG:HD3	3:K:218:PRO:HB3	2.00	0.43
3:K:78:PRO:O	3:K:130:LEU:HB3	2.19	0.43
3:L:119:LEU:HA	3:L:122:LEU:HG	2.00	0.43
2:D:434:PHE:CD2	2:F:37:TYR:HE2	2.37	0.43
2:D:536:ILE:O	2:D:540:ILE:HG12	2.18	0.43
2:E:521:TYR:CG	3:c1:328:PHE:CD2	3.04	0.43
2:F:195:LYS:HE2	2:F:195:LYS:HB3	1.74	0.43
2:F:409:PRO:O	2:F:413:TRP:HB2	2.18	0.43
2:F:444:LEU:HG	2:F:466:ARG:HG3	2.01	0.43
3:G:9:ILE:HD12	3:G:9:ILE:H	1.83	0.43
3:K:190:ILE:HD13	3:L:275:LEU:HB3	2.00	0.43
3:L:238:SER:HA	3:L:244:SER:OG	2.19	0.43
2:F:366:TYR:HB3	5:3:74:DA:C4	2.54	0.43
2:F:510:VAL:C	2:F:512:LEU:N	2.75	0.43
3:H:24:LYS:HD3	3:H:24:LYS:HA	1.78	0.43
3:I:145:ASN:O	3:I:146:ARG:HG2	2.18	0.43
3:L:184:LEU:HD12	3:L:184:LEU:HA	1.86	0.43
2:C:227:VAL:HG22	2:C:245:LEU:HD21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:265:PRO:HG2	5:3:78:DA:H4'	2.01	0.43
2:E:540:ILE:HB	2:E:541:ARG:H	1.59	0.43
2:F:514:GLN:OE1	2:F:569:SER:HB2	2.19	0.43
3:I:238:SER:HA	3:I:244:SER:HB3	2.00	0.43
3:I:242:MET:O	3:I:246:ARG:HG2	2.19	0.43
3:J:233:LYS:HD2	3:J:233:LYS:HA	1.78	0.43
3:M:10:SER:O	3:M:14:ARG:HB3	2.19	0.43
3:M:302:PRO:O	3:M:303:PRO:C	2.62	0.43
6:4:95:DT:H2"	6:4:96:DG:H8	1.84	0.43
1:B:198:LEU:N	1:B:199:PRO:HD2	2.33	0.42
2:C:234:GLU:HG3	2:C:381:THR:HB	2.01	0.42
2:E:198:ARG:HD2	2:E:198:ARG:HA	1.87	0.42
2:F:73:ILE:HG21	2:F:94:ILE:HD13	1.99	0.42
3:L:250:TYR:CZ	3:L:254:ILE:HD11	2.54	0.42
5:3:81:DT:H2'	5:3:82:DT:H71	2.00	0.42
7:5:37:DA:H2"	7:5:38:DA:C8	2.54	0.42
2:D:245:LEU:HB3	2:D:363:PHE:HE2	1.84	0.42
2:E:174:LYS:HG3	5:3:61:DT:H3'	2.01	0.42
3:G:145:ASN:O	3:G:146:ARG:HG2	2.19	0.42
3:G:189:SER:HB3	3:H:247:ASN:HB2	2.00	0.42
3:H:155:LEU:HD23	3:H:158:ILE:HD11	1.99	0.42
3:I:61:LYS:HA	3:I:61:LYS:HD3	1.65	0.42
3:K:46:MET:HA	3:K:168:ILE:HG23	2.00	0.42
3:K:116:THR:O	3:K:120:THR:HG23	2.18	0.42
3:K:151:VAL:O	3:K:155:LEU:HD23	2.19	0.42
3:L:126:VAL:HG23	3:L:128:VAL:HG23	2.00	0.42
3:M:60:LYS:HA	3:M:63:LEU:HB2	2.01	0.42
1:A:111:GLN:NE2	1:A:116:ASP:HB2	2.35	0.42
1:B:16:LEU:HD13	1:B:101:PHE:CD1	2.55	0.42
1:B:115:PRO:O	1:B:118:PRO:HD2	2.19	0.42
2:D:487:TRP:HB3	2:D:496:TYR:CD1	2.54	0.42
2:E:312:GLU:OE2	5:3:80:DA:H5'	2.20	0.42
3:I:45:MET:O	3:I:167:VAL:HA	2.20	0.42
3:K:40:SER:C	3:K:163:LYS:HD2	2.44	0.42
1:A:216:GLU:HA	1:A:217:PRO:HD3	1.91	0.42
1:B:182:THR:O	1:B:186:LEU:HG	2.19	0.42
2:D:493:MET:HE1	2:D:495:GLU:CB	2.46	0.42
2:E:513:TRP:C	2:E:515:HIS:H	2.27	0.42
3:G:206:PHE:CZ	3:G:210:LEU:HD11	2.54	0.42
3:I:72:ALA:HB3	3:I:77:ILE:HB	2.00	0.42
3:I:146:ARG:C	3:J:142:GLU:HB3	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:217:LEU:HB3	3:I:219:PHE:HD2	1.82	0.42
3:L:280:LYS:HE3	3:L:280:LYS:HB3	1.74	0.42
3:M:234:LEU:HD11	3:M:269:PHE:CD1	2.55	0.42
1:B:74:PRO:HG3	1:B:103:LEU:HD22	2.02	0.42
1:B:210:LEU:HB3	1:B:224:PHE:HD2	1.83	0.42
2:C:408:CYS:O	2:C:411:VAL:HG12	2.20	0.42
2:E:483:MET:CG	2:E:510:VAL:CG1	2.73	0.42
2:F:244:TRP:CZ2	2:F:560:ARG:NH2	2.87	0.42
3:G:146:ARG:CG	3:G:148:LEU:H	2.33	0.42
3:G:217:LEU:HB3	3:G:219:PHE:HD2	1.84	0.42
3:I:81:HIS:HB2	3:I:132:ILE:HD11	2.02	0.42
3:J:9:ILE:O	3:J:13:LYS:HG2	2.20	0.42
3:J:99:VAL:O	3:J:100:GLU:HB2	2.19	0.42
5:3:86:DG:H2"	5:3:87:DA:C8	2.55	0.42
1:A:31:ARG:HD2	1:A:31:ARG:HA	1.77	0.42
2:C:361:LYS:HB3	2:C:361:LYS:HE3	1.86	0.42
2:D:452:TYR:CE2	2:D:516:LYS:HA	2.55	0.42
2:D:453:LYS:C	2:D:454:GLU:HG2	2.45	0.42
2:D:547:ASP:O	2:D:550:ILE:HG22	2.19	0.42
2:E:138:GLU:HA	2:E:141:ILE:HG12	2.00	0.42
2:E:215:SER:H	2:E:218:GLU:HG3	1.85	0.42
2:E:240:LEU:HA	2:E:543:ARG:HH12	1.85	0.42
2:F:180:LYS:NZ	6:4:96:DG:H2'	2.34	0.42
2:F:487:TRP:HB3	2:F:496:TYR:HB3	2.01	0.42
3:G:19:THR:HG22	3:G:22:VAL:HG12	2.01	0.42
3:H:196:PRO:HB2	3:H:302:PRO:HG2	2.02	0.42
3:I:96:GLU:HA	3:I:99:VAL:HB	2.00	0.42
7:5:19:DA:H2"	7:5:20:DG:H5'	2.00	0.42
1:A:38:TYR:HE1	1:A:156:HIS:NE2	2.18	0.42
1:A:158:TYR:O	1:A:203:ASP:HA	2.20	0.42
1:B:157:ARG:HH21	2:E:303:ASP:HA	1.84	0.42
2:C:268:TYR:HA	2:C:271:VAL:HG12	2.02	0.42
2:C:366:TYR:CG	2:C:367:LEU:N	2.87	0.42
2:C:400:LYS:HB2	2:C:400:LYS:HE2	1.88	0.42
2:C:548:ARG:HB2	2:C:552:LYS:HZ1	1.84	0.42
2:D:438:ILE:H	2:D:477:LYS:HD3	1.85	0.42
2:D:561:ARG:HD3	2:D:561:ARG:HA	1.77	0.42
2:E:107:ASN:HB3	2:E:109:ILE:HG12	2.01	0.42
2:E:284:ASP:OD2	2:E:285:LEU:HD22	2.20	0.42
2:E:334:VAL:C	2:E:335:GLU:HG3	2.44	0.42
2:E:524:ILE:O	2:E:528:GLU:HG3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:348:GLY:CA	5:3:70:DC:H5"	2.50	0.42
3:G:40:SER:HB2	3:H:14:ARG:CZ	2.49	0.42
3:H:171:MET:HE3	3:H:172:PRO:CD	2.50	0.42
3:I:111:ASP:O	3:I:115:LEU:HG	2.20	0.42
3:J:221:LYS:HD3	3:J:221:LYS:HA	1.65	0.42
1:A:216:GLU:HG2	1:A:222:SER:HA	2.01	0.42
2:E:273:LEU:CD2	2:E:555:ARG:HD3	2.50	0.42
2:E:543:ARG:CZ	2:E:543:ARG:HB3	2.46	0.42
2:F:263:PHE:CE1	2:F:560:ARG:HG3	2.55	0.42
2:F:433:ASP:HA	2:F:436:PHE:CE1	2.55	0.42
3:H:129:LYS:H	3:H:129:LYS:HG2	1.58	0.42
3:H:210:LEU:HD12	3:H:231:GLN:NE2	2.35	0.42
3:M:63:LEU:HA	3:M:68:ARG:HG3	2.02	0.42
1:A:155:ILE:HA	1:A:202:CYS:SG	2.60	0.42
1:A:157:ARG:HH22	2:F:301:ILE:HG23	1.85	0.42
1:A:159:ALA:HA	1:A:206:SER:OG	2.20	0.42
1:A:162:ASP:OD2	1:A:162:ASP:C	2.63	0.42
1:A:186:LEU:HA	1:A:189:GLN:HB2	2.01	0.42
2:D:333:LYS:HA	2:D:333:LYS:HD3	1.85	0.42
2:E:203:GLU:HG3	2:E:204:PHE:CD2	2.54	0.42
2:E:514:GLN:HB2	2:E:514:GLN:HE21	1.56	0.42
2:F:113:PRO:HB2	2:F:115:ILE:HD11	2.01	0.42
2:F:139:ARG:HH12	2:F:154:ARG:HE	1.66	0.42
3:J:103:ASP:HA	3:J:104:PRO:HD3	1.92	0.42
3:K:156:LYS:NZ	3:K:183:GLN:HB3	2.34	0.42
3:M:114:ARG:O	3:M:118:ARG:HG3	2.20	0.42
6:4:104:DC:H2"	6:4:105:DA:C8	2.55	0.42
2:C:553:THR:CB	2:E:379:THR:HG22	2.50	0.42
2:E:449:ILE:HG23	2:E:457:TYR:HB2	2.02	0.42
2:E:483:MET:CB	2:E:510:VAL:CG1	2.77	0.42
2:E:541:ARG:CG	2:E:543:ARG:N	2.75	0.42
2:F:215:SER:HB2	2:F:420:TRP:CD1	2.55	0.42
2:F:556:ILE:HB	5:3:75:DG:O3'	2.19	0.42
3:G:71:GLU:OE2	3:G:101:MET:HG2	2.20	0.42
3:I:149:THR:HG23	3:I:150:GLN:HG2	2.01	0.42
3:J:8:ARG:NE	3:J:257:ILE:HG12	2.34	0.42
3:M:41:GLU:HG3	3:M:187:ARG:HH11	1.85	0.42
2:D:391:ILE:HD13	2:D:391:ILE:HA	1.91	0.41
2:E:92:ILE:O	2:E:96:ARG:HG2	2.20	0.41
2:E:521:TYR:HA	3:c2:322:PRO:CG	2.50	0.41
2:E:528:GLU:HG3	2:E:528:GLU:H	1.65	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:142:GLU:H	3:I:142:GLU:HG3	1.58	0.41
3:K:17:VAL:HG21	3:K:212:TYR:HB3	2.02	0.41
3:K:98:LEU:HD23	3:K:98:LEU:HA	1.90	0.41
3:M:303:PRO:HD2	3:M:306:ILE:HD11	2.02	0.41
2:E:325:LEU:O	2:E:327:ILE:HG12	2.19	0.41
2:E:429:LYS:HD2	2:E:429:LYS:HA	1.89	0.41
2:E:550:GLN:O	2:E:553:SER:N	2.53	0.41
2:F:77:ARG:HA	2:F:80:LEU:HD12	2.00	0.41
2:F:156:ARG:O	2:F:160:ARG:HG2	2.20	0.41
2:F:180:LYS:HZ3	6:4:96:DG:H2'	1.85	0.41
2:F:275:LEU:C	2:F:277:ASN:H	2.28	0.41
2:F:339:ASN:CA	2:F:341:PRO:HD3	2.50	0.41
3:I:212:TYR:HA	3:I:215:LYS:HG2	2.02	0.41
3:I:266:GLU:O	3:I:270:VAL:HG23	2.21	0.41
3:K:49:GLY:H	3:K:172:PRO:HD3	1.85	0.41
3:K:232:LYS:HB2	3:K:294:VAL:HG21	2.01	0.41
3:M:146:ARG:C	3:M:148:LEU:H	2.28	0.41
3:M:159:LEU:O	3:M:163:LYS:HD2	2.19	0.41
5:3:84:DT:H2'	5:3:85:DT:H71	2.01	0.41
3:c2:323:GLY:O	3:c2:324:ARG:C	2.63	0.41
1:A:29:LYS:HE2	8:6:17:DG:H5"	2.02	0.41
2:C:437:ALA:HB1	2:C:478:TYR:O	2.20	0.41
2:D:553:THR:HG23	2:D:557:ARG:HE	1.84	0.41
2:E:44:PRO:HD2	2:E:47:ILE:HD12	2.02	0.41
2:F:210:LYS:HD2	2:F:210:LYS:HA	1.73	0.41
3:G:213:LEU:HD12	3:G:213:LEU:HA	1.87	0.41
3:I:305:ASP:HB3	3:I:318:ARG:HH22	1.84	0.41
3:J:29:MET:HE3	3:J:62:TYR:CG	2.55	0.41
3:L:55:LYS:O	3:L:58:VAL:HG12	2.19	0.41
3:M:11:ARG:HA	3:M:11:ARG:HD2	1.88	0.41
1:B:213:ARG:HB3	1:B:216:GLU:OE1	2.21	0.41
2:E:236:TYR:CE1	2:E:535:VAL:HG22	2.56	0.41
3:H:230:LEU:HD23	3:H:233:LYS:HB2	2.03	0.41
3:K:80:LEU:HD12	3:K:80:LEU:HA	1.87	0.41
3:M:44:CYS:SG	3:M:159:LEU:HD11	2.59	0.41
1:A:158:TYR:HB2	1:A:202:CYS:SG	2.60	0.41
1:B:104:TYR:CD2	1:B:138:VAL:HG13	2.55	0.41
2:C:282:LYS:HG3	2:C:285:LEU:HD21	2.02	0.41
2:D:452:TYR:HD1	5:3:64:DT:H5'	1.85	0.41
2:E:44:PRO:HG2	2:E:47:ILE:HG13	2.02	0.41
2:E:222:ILE:O	2:E:222:ILE:HG13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:261:LEU:HD23	2:F:261:LEU:HA	1.86	0.41
3:G:154:TRP:CD1	3:G:155:LEU:HD13	2.55	0.41
3:I:163:LYS:HE2	3:I:163:LYS:HB3	1.88	0.41
1:B:78:LYS:HA	1:B:78:LYS:HD3	1.85	0.41
1:B:185:GLU:HG2	1:B:185:GLU:H	1.67	0.41
2:C:261:LEU:HG	2:C:382:LEU:HD11	2.02	0.41
2:E:393:LEU:HA	2:E:398:HIS:CD2	2.56	0.41
2:F:70:ALA:HA	2:F:91:ALA:HB1	2.02	0.41
2:F:556:ILE:CD1	5:3:75:DG:C3'	2.45	0.41
3:G:182:SER:HA	3:G:185:HIS:HB2	2.02	0.41
3:H:242:MET:HA	3:H:245:LEU:HB3	2.01	0.41
3:I:183:GLN:HG2	10:I:403:ATP:PG	2.61	0.41
3:L:29:MET:CE	3:L:45:MET:HG2	2.45	0.41
1:A:164:LEU:HD21	1:A:172:LEU:HD21	2.01	0.41
2:C:535:GLU:HB2	2:E:396:ILE:HD13	2.03	0.41
2:E:481:GLU:HG3	2:E:559:ILE:CD1	2.49	0.41
2:E:521:TYR:HA	3:c2:322:PRO:HG2	2.02	0.41
3:I:60:LYS:NZ	10:I:401:ATP:H3'	2.36	0.41
3:I:139:LEU:HG	3:I:151:VAL:HG13	2.02	0.41
3:K:68:ARG:C	3:K:69:GLU:HG2	2.46	0.41
3:K:112:LEU:HD11	3:K:154:TRP:NE1	2.35	0.41
3:K:136:PHE:CE1	3:K:139:LEU:HD12	2.56	0.41
3:M:235:TYR:OH	3:M:302:PRO:HD3	2.21	0.41
4:2:18:DT:H2'	4:2:19:DA:C8	2.56	0.41
1:A:78:LYS:HA	1:A:78:LYS:HD3	1.79	0.41
1:B:120:LYS:HA	1:B:120:LYS:HD3	1.84	0.41
2:E:232:VAL:HG22	2:E:238:ILE:H	1.85	0.41
2:F:219:ARG:O	2:F:251:CYS:HB3	2.21	0.41
2:F:261:LEU:HD12	2:F:386:ARG:HA	2.02	0.41
2:F:437:ALA:HA	2:F:480:PRO:HD3	2.02	0.41
3:G:25:ILE:HG22	3:G:29:MET:HE1	2.03	0.41
3:G:190:ILE:HG23	3:H:275:LEU:HG	2.03	0.41
3:H:238:SER:HA	3:H:244:SER:OG	2.21	0.41
3:J:161:LYS:HA	3:J:161:LYS:HD3	1.76	0.41
3:K:143:ARG:HG2	3:K:311:TYR:CE2	2.55	0.41
3:K:285:LYS:HE2	3:K:285:LYS:HB2	1.87	0.41
3:L:94:ALA:HB3	3:L:115:LEU:HD13	2.02	0.41
3:L:116:THR:HA	3:L:119:LEU:HB2	2.02	0.41
3:L:243:ARG:NE	3:L:243:ARG:HA	2.36	0.41
3:M:45:MET:O	3:M:167:VAL:HA	2.20	0.41
3:M:72:ALA:HB2	3:M:79:VAL:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:148:LEU:HD23	3:M:180:ALA:HB2	2.02	0.41
9:7:77:DG:H2"	9:7:78:DG:C8	2.55	0.41
1:B:110:TYR:CD2	1:B:110:TYR:N	2.89	0.41
2:C:225:THR:OG1	2:C:245:LEU:HD23	2.20	0.41
2:C:430:ASP:HA	2:C:433:ASP:OD1	2.21	0.41
2:C:534:LYS:HA	2:C:534:LYS:HD3	1.92	0.41
2:C:538:ALA:O	2:C:542:ILE:HG12	2.19	0.41
2:C:540:ILE:CD1	2:F:160:ARG:HH21	2.15	0.41
2:D:216:VAL:HG13	2:D:416:GLY:HA3	2.03	0.41
2:D:324:SER:HA	2:F:108:PRO:HG3	2.02	0.41
2:E:96:ARG:HH22	8:6:40:DT:H2'	1.85	0.41
2:E:461:ARG:O	2:E:464:GLU:HG3	2.21	0.41
2:E:507:ALA:O	2:E:508:SER:C	2.63	0.41
2:F:462:LEU:HA	2:F:462:LEU:HD12	1.85	0.41
2:F:462:LEU:HD22	2:F:499:VAL:HG11	2.03	0.41
3:G:182:SER:HB3	3:H:243:ARG:HG3	2.03	0.41
3:I:94:ALA:HB2	3:I:154:TRP:CZ2	2.56	0.41
3:I:214:ASP:HA	3:I:217:LEU:HD12	2.03	0.41
3:K:267:GLU:HA	3:K:270:VAL:HG12	2.03	0.41
3:L:139:LEU:HD22	3:L:173:TYR:CZ	2.56	0.41
3:M:312:LEU:HD12	3:M:313:ARG:NH2	2.36	0.41
9:7:87:DT:H2"	9:7:88:DA:C8	2.56	0.41
1:B:123:ALA:O	1:B:126:LYS:HG3	2.20	0.41
3:H:114:ARG:O	3:H:117:LYS:HG2	2.20	0.41
3:H:119:LEU:O	3:H:123:ILE:HG12	2.20	0.41
10:I:403:ATP:C8	3:J:57:THR:HG21	2.55	0.41
3:J:210:LEU:C	3:J:221:LYS:HE2	2.46	0.41
3:J:308:TRP:HA	3:J:308:TRP:HE3	1.86	0.41
3:L:272:ALA:O	3:L:275:LEU:HD12	2.21	0.41
2:E:154:ARG:HE	2:E:157:ARG:NH1	2.18	0.40
2:E:263:PHE:CE2	2:E:544:ARG:HB3	2.56	0.40
2:E:544:ARG:O	2:E:547:ALA:N	2.54	0.40
2:F:58:LEU:HD23	2:F:58:LEU:HA	1.88	0.40
2:F:285:LEU:HD23	2:F:285:LEU:HA	1.85	0.40
3:G:85:PRO:HD3	3:G:96:GLU:OE1	2.21	0.40
3:I:114:ARG:O	3:I:118:ARG:HG3	2.21	0.40
3:K:238:SER:HB3	3:K:245:LEU:HB2	2.03	0.40
3:M:237:PHE:HA	3:M:284:TRP:HE1	1.86	0.40
8:6:43:DT:H2"	8:6:44:DA:C8	2.56	0.40
1:A:45:LYS:HG2	1:A:46:ARG:H	1.86	0.40
2:C:380:LEU:HD11	2:C:385:ILE:HG12	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:477:LYS:HE2	2:C:477:LYS:HB3	1.77	0.40
2:E:207:MET:HE3	2:E:207:MET:HA	2.04	0.40
2:E:351:ASN:HA	2:E:355:LEU:HD12	2.03	0.40
2:F:54:ARG:HG3	2:F:97:TRP:CD2	2.56	0.40
2:F:515:HIS:O	2:F:516:LYS:C	2.64	0.40
3:I:213:LEU:HD12	3:I:213:LEU:HA	1.86	0.40
3:J:232:LYS:NZ	3:J:299:LEU:HD11	2.36	0.40
3:K:41:GLU:HA	3:K:42:PRO:HD3	1.93	0.40
3:M:178:LEU:HB3	3:M:185:HIS:HB3	2.03	0.40
1:B:53:LEU:HD12	1:B:53:LEU:HA	1.88	0.40
1:B:158:TYR:HD2	1:B:199:PRO:HA	1.87	0.40
2:C:272:SER:O	2:C:276:LYS:HG3	2.21	0.40
2:C:421:GLU:HA	2:C:422:PRO:HD3	1.97	0.40
2:D:434:PHE:CG	2:F:37:TYR:HE2	2.39	0.40
2:D:452:TYR:CD1	5:3:64:DT:H5'	2.56	0.40
2:F:337:PRO:O	2:F:341:PRO:N	2.53	0.40
3:L:82:ILE:HD12	3:L:82:ILE:HA	1.87	0.40
3:M:50:ALA:HA	3:M:307:GLY:HA3	2.02	0.40
1:B:59:TYR:CZ	1:B:153:LYS:HD3	2.56	0.40
2:E:132:ILE:HG22	2:E:155:VAL:HG13	2.02	0.40
2:E:249:VAL:HG11	2:E:342:HIS:HB3	2.03	0.40
2:E:540:ILE:HD11	3:c1:326:LYS:CE	2.46	0.40
3:G:163:LYS:HE2	3:G:163:LYS:HB3	1.92	0.40
3:H:114:ARG:NE	3:I:107:LEU:HD22	2.12	0.40
3:H:191:GLN:HG3	3:I:278:GLY:HA3	2.03	0.40
3:H:238:SER:HB2	3:H:245:LEU:HB2	2.03	0.40
3:J:98:LEU:HD23	3:J:115:LEU:HD22	2.03	0.40
3:J:111:ASP:O	3:J:115:LEU:HG	2.21	0.40
3:J:143:ARG:HA	3:J:143:ARG:HD2	1.83	0.40
3:K:123:ILE:HD12	3:K:128:VAL:HG11	2.03	0.40
8:6:33:DC:H2'	8:6:34:DA:H8	1.85	0.40
2:E:232:VAL:HG12	2:E:380:LEU:C	2.47	0.40
2:E:457:TYR:HB3	2:E:499:VAL:HG22	2.04	0.40
2:F:61:LEU:HD11	2:F:80:LEU:HD11	2.03	0.40
2:F:69:VAL:HG13	2:F:71:LYS:H	1.86	0.40
2:F:334:VAL:HG22	2:F:335:GLU:HG3	2.03	0.40
3:H:242:MET:CG	3:H:246:ARG:HB2	2.47	0.40
3:H:269:PHE:CE2	3:H:288:PHE:HB3	2.56	0.40
3:I:161:LYS:HA	3:I:161:LYS:HD3	1.80	0.40
3:K:17:VAL:CG2	3:K:212:TYR:HB3	2.51	0.40
3:K:82:ILE:HD13	3:K:97:LEU:HB3	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:118:ARG:HG2	3:L:122:LEU:HD23	2.03	0.40
3:M:178:LEU:HA	3:M:184:LEU:CD1	2.52	0.40
3:M:286:ASN:OD1	3:M:289:GLU:HG3	2.21	0.40
7:5:43:DT:H2"	7:5:44:DA:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	221/236 (94%)	203 (92%)	18 (8%)	0	100	100
1	B	214/236 (91%)	206 (96%)	8 (4%)	0	100	100
2	C	325/603 (54%)	307 (94%)	18 (6%)	0	100	100
2	D	327/603 (54%)	309 (94%)	16 (5%)	2 (1%)	21	54
2	E	529/603 (88%)	467 (88%)	49 (9%)	13 (2%)	4	28
2	F	523/603 (87%)	471 (90%)	39 (8%)	13 (2%)	4	28
3	G	311/479 (65%)	292 (94%)	17 (6%)	2 (1%)	21	54
3	H	309/479 (64%)	282 (91%)	26 (8%)	1 (0%)	36	67
3	I	311/479 (65%)	278 (89%)	32 (10%)	1 (0%)	36	67
3	J	285/479 (60%)	259 (91%)	26 (9%)	0	100	100
3	K	311/479 (65%)	283 (91%)	23 (7%)	5 (2%)	7	35
3	L	308/479 (64%)	282 (92%)	24 (8%)	2 (1%)	21	54
3	M	298/479 (62%)	267 (90%)	29 (10%)	2 (1%)	18	51
3	c1	8/479 (2%)	3 (38%)	3 (38%)	2 (25%)	0	0
3	c2	9/479 (2%)	3 (33%)	2 (22%)	4 (44%)	0	0
All	All	4289/7195 (60%)	3912 (91%)	330 (8%)	47 (1%)	14	41

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	404	ARG
2	E	510	VAL
2	E	511	SER
2	E	512	LEU
2	E	521	TYR
2	E	522	ALA
2	E	537	THR
2	E	540	ILE
2	E	541	ARG
2	F	343	VAL
3	G	147	VAL
3	G	316	THR
3	c2	325	ASN
2	D	327	ILE
2	E	109	ILE
2	E	249	VAL
2	E	500	ASN
2	E	524	ILE
2	F	332	ASN
2	F	335	GLU
2	F	507	ALA
3	K	302	PRO
3	K	306	ILE
3	K	310	ASP
2	E	504	TYR
3	c2	328	PHE
2	F	331	GLN
2	F	337	PRO
2	F	578	ALA
3	L	147	VAL
3	c2	326	LYS
2	F	340	LYS
2	F	375	VAL
2	F	505	GLU
3	K	295	THR
3	K	309	GLU
3	M	147	VAL
3	M	282	ASN
3	c1	326	LYS
3	c1	327	ASN
3	c2	324	ARG
2	F	378	ALA

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Mol	Chain	Res	Type
3	L	145	ASN
2	F	329	VAL
2	F	510	VAL
3	H	264	ILE
3	I	303	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	200/211 (95%)	196 (98%)	4 (2%)	48	65
1	B	194/211 (92%)	191 (98%)	3 (2%)	57	69
2	C	295/541 (54%)	291 (99%)	4 (1%)	59	70
2	D	298/541 (55%)	293 (98%)	5 (2%)	53	67
2	E	476/541 (88%)	447 (94%)	29 (6%)	17	43
2	F	474/541 (88%)	442 (93%)	32 (7%)	14	40
3	G	276/418 (66%)	268 (97%)	8 (3%)	37	58
3	H	274/418 (66%)	267 (97%)	7 (3%)	40	60
3	I	276/418 (66%)	268 (97%)	8 (3%)	37	58
3	J	255/418 (61%)	246 (96%)	9 (4%)	32	54
3	K	276/418 (66%)	265 (96%)	11 (4%)	28	52
3	L	273/418 (65%)	261 (96%)	12 (4%)	25	49
3	M	267/418 (64%)	262 (98%)	5 (2%)	50	66
3	c1	9/418 (2%)	5 (56%)	4 (44%)	0	0
3	c2	10/418 (2%)	4 (40%)	6 (60%)	0	0
All	All	3853/6348 (61%)	3706 (96%)	147 (4%)	30	53

All (147) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	131	LEU

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Mol	Chain	Res	Type
1	A	142	ASP
1	A	181	GLN
1	A	190	LEU
1	B	27	LEU
1	B	47	ILE
1	B	155	ILE
2	C	251	CYS
2	C	280	GLN
2	C	536	ILE
2	C	560	ARG
2	D	216	VAL
2	D	229	LEU
2	D	246	THR
2	D	411	VAL
2	D	542	ILE
2	E	140	VAL
2	E	226	VAL
2	E	269	VAL
2	E	291	SER
2	E	323	GLU
2	E	346	ASN
2	E	499	VAL
2	E	500	ASN
2	E	502	ILE
2	E	509	ARG
2	E	510	VAL
2	E	512	LEU
2	E	514	GLN
2	E	515	HIS
2	E	516	LYS
2	E	519	MET
2	E	520	LYS
2	E	524	ILE
2	E	527	GLU
2	E	528	GLU
2	E	529	ILE
2	E	536	LYS
2	E	539	LYS
2	E	540	ILE
2	E	541	ARG
2	E	543	ARG
2	E	545	ARG

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Mol	Chain	Res	Type
2	E	549	HIS
2	E	550	GLN
2	F	78	VAL
2	F	129	VAL
2	F	213	THR
2	F	242	ARG
2	F	244	TRP
2	F	245	LEU
2	F	257	ILE
2	F	301	ILE
2	F	309	ASN
2	F	311	LYS
2	F	328	ASN
2	F	330	HIS
2	F	332	ASN
2	F	333	LYS
2	F	335	GLU
2	F	336	THR
2	F	338	ASP
2	F	339	ASN
2	F	340	LYS
2	F	343	VAL
2	F	345	ARG
2	F	495	GLU
2	F	497	PHE
2	F	505	GLU
2	F	506	TYR
2	F	509	ARG
2	F	510	VAL
2	F	512	LEU
2	F	515	HIS
2	F	516	LYS
2	F	517	TYR
2	F	520	LYS
3	G	9	ILE
3	G	99	VAL
3	G	107	LEU
3	G	133	ILE
3	G	162	THR
3	G	167	VAL
3	G	289	GLU
3	G	311	TYR

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Mol	Chain	Res	Type
3	H	17	VAL
3	H	69	GLU
3	H	140	VAL
3	H	166	ILE
3	H	168	ILE
3	H	245	LEU
3	H	269	PHE
3	I	63	LEU
3	I	76	ILE
3	I	82	ILE
3	I	91	VAL
3	I	92	ASP
3	I	117	LYS
3	I	142	GLU
3	I	306	ILE
3	J	53	VAL
3	J	66	ASN
3	J	91	VAL
3	J	97	LEU
3	J	98	LEU
3	J	103	ASP
3	J	212	TYR
3	J	219	PHE
3	J	221	LYS
3	K	19	THR
3	K	33	ARG
3	K	119	LEU
3	K	159	LEU
3	K	168	ILE
3	K	304	LYS
3	K	306	ILE
3	K	310	ASP
3	K	311	TYR
3	K	313	ARG
3	K	316	THR
3	L	14	ARG
3	L	28	TYR
3	L	31	ARG
3	L	55	LYS
3	L	58	VAL
3	L	82	ILE
3	L	146	ARG

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Mol	Chain	Res	Type
3	L	147	VAL
3	L	151	VAL
3	L	206	PHE
3	L	207	LYS
3	L	294	VAL
3	M	62	TYR
3	M	177	VAL
3	M	188	PHE
3	M	246	ARG
3	M	284	TRP
3	c1	321	LYS
3	c1	324	ARG
3	c1	326	LYS
3	c1	328	PHE
3	c2	321	LYS
3	c2	324	ARG
3	c2	325	ASN
3	c2	326	LYS
3	c2	328	PHE
3	c2	330	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	HIS
2	E	538	ASN
2	F	309	ASN
2	F	339	ASN
2	F	342	HIS
2	F	346	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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	$\#\|Z\| > 2$
10	ATP	H	600	11	32,33,33	0.29	0	48,52,52	0.41	0
10	ATP	L	600	11	32,33,33	0.41	0	48,52,52	0.43	0
10	ATP	M	602	11	32,33,33	0.29	0	48,52,52	0.39	0
10	ATP	K	600	11	32,33,33	0.31	0	48,52,52	0.40	0
10	ATP	I	403	11	32,33,33	0.30	0	48,52,52	0.39	0
10	ATP	G	600	11	32,33,33	0.30	0	48,52,52	0.36	0
10	ATP	I	401	11	32,33,33	0.30	0	48,52,52	0.41	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
10	ATP	H	600	11	-	7/22/38/38	0/3/3/3
10	ATP	L	600	11	-	9/22/38/38	0/3/3/3
10	ATP	M	602	11	-	5/22/38/38	0/3/3/3
10	ATP	K	600	11	-	5/22/38/38	0/3/3/3
10	ATP	I	403	11	-	8/22/38/38	0/3/3/3
10	ATP	G	600	11	-	3/22/38/38	0/3/3/3
10	ATP	I	401	11	-	5/22/38/38	0/3/3/3

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (42) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
10	G	600	ATP	C5'-O5'-PA-O2A
10	G	600	ATP	C5'-O5'-PA-O3A
10	H	600	ATP	C5'-O5'-PA-O1A
10	H	600	ATP	C5'-O5'-PA-O2A
10	H	600	ATP	C5'-O5'-PA-O3A
10	I	401	ATP	C5'-O5'-PA-O2A
10	I	401	ATP	C5'-O5'-PA-O3A
10	I	403	ATP	PB-O3B-PG-O3G
10	I	403	ATP	C5'-O5'-PA-O2A
10	I	403	ATP	C5'-O5'-PA-O3A
10	K	600	ATP	C5'-O5'-PA-O3A
10	L	600	ATP	C5'-O5'-PA-O3A
10	M	602	ATP	C5'-O5'-PA-O2A
10	M	602	ATP	C5'-O5'-PA-O3A
10	H	600	ATP	O4'-C4'-C5'-O5'
10	H	600	ATP	C3'-C4'-C5'-O5'
10	K	600	ATP	O4'-C4'-C5'-O5'
10	K	600	ATP	C3'-C4'-C5'-O5'
10	I	403	ATP	C3'-C4'-C5'-O5'
10	M	602	ATP	C4'-C5'-O5'-PA
10	I	403	ATP	O4'-C4'-C5'-O5'
10	L	600	ATP	C3'-C4'-C5'-O5'
10	L	600	ATP	PA-O3A-PB-O1B
10	G	600	ATP	C5'-O5'-PA-O1A
10	I	401	ATP	C5'-O5'-PA-O1A
10	I	403	ATP	C5'-O5'-PA-O1A
10	K	600	ATP	C5'-O5'-PA-O1A
10	L	600	ATP	C5'-O5'-PA-O1A
10	M	602	ATP	C5'-O5'-PA-O1A
10	I	401	ATP	C4'-C5'-O5'-PA
10	K	600	ATP	C4'-C5'-O5'-PA
10	L	600	ATP	C4'-C5'-O5'-PA
10	L	600	ATP	PG-O3B-PB-O1B
10	L	600	ATP	PG-O3B-PB-O2B
10	L	600	ATP	O4'-C4'-C5'-O5'
10	I	403	ATP	C4'-C5'-O5'-PA
10	I	403	ATP	PB-O3B-PG-O1G
10	H	600	ATP	C4'-C5'-O5'-PA
10	L	600	ATP	PA-O3A-PB-O2B
10	M	602	ATP	PB-O3A-PA-O2A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
10	H	600	ATP	PB-O3A-PA-O2A
10	I	401	ATP	PB-O3A-PA-O2A

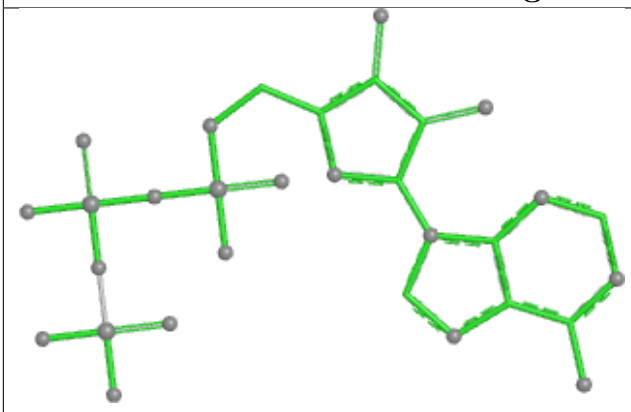
There are no ring outliers.

7 monomers are involved in 18 short contacts:

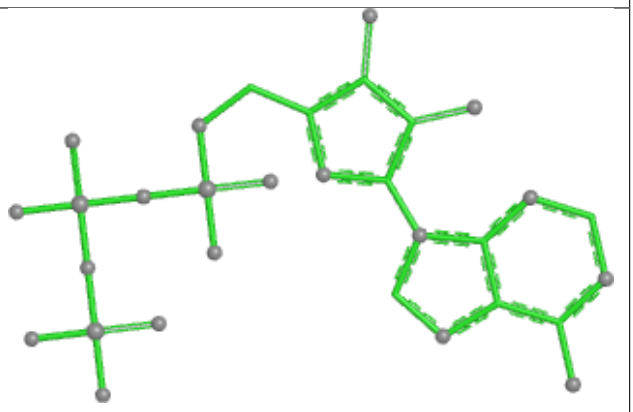
Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	H	600	ATP	3	0
10	L	600	ATP	1	0
10	M	602	ATP	1	0
10	K	600	ATP	4	0
10	I	403	ATP	4	0
10	G	600	ATP	4	0
10	I	401	ATP	1	0

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

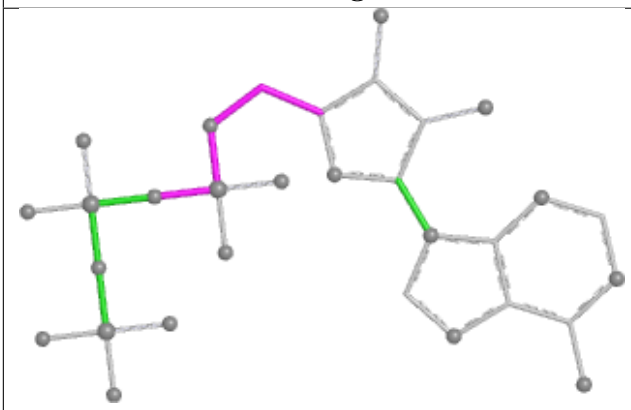
Ligand ATP H 600



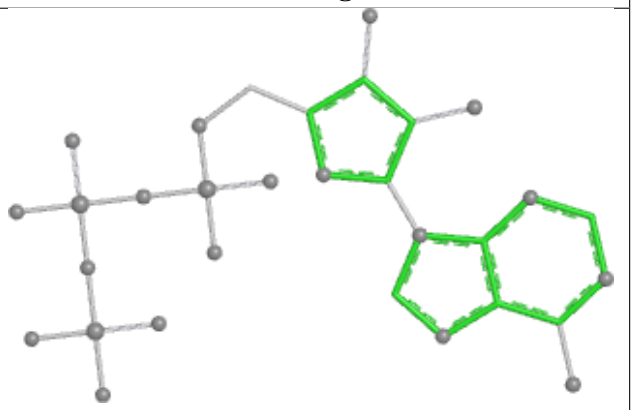
Bond lengths



Bond angles

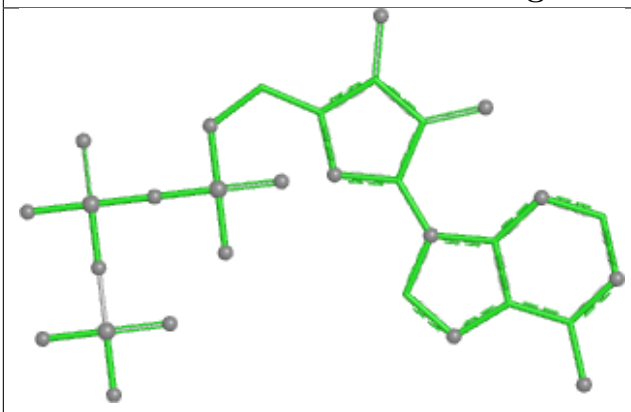


Torsions

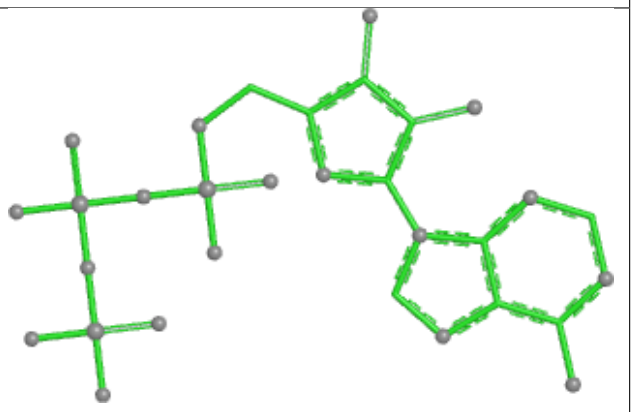


Rings

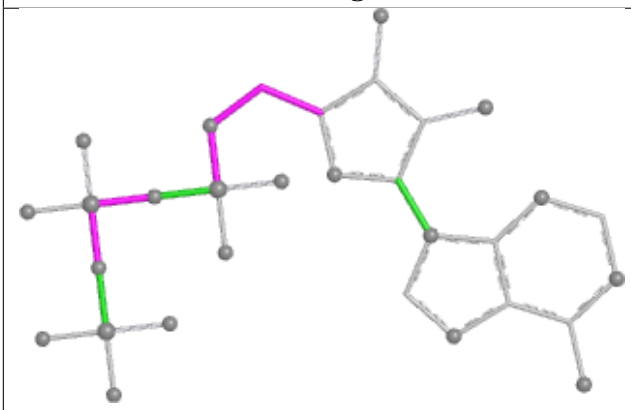
Ligand ATP L 600



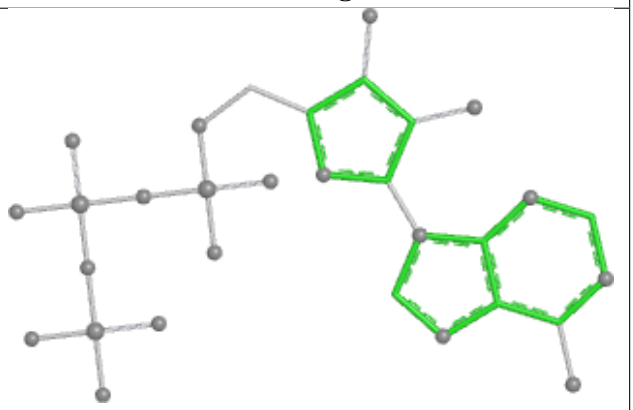
Bond lengths



Bond angles

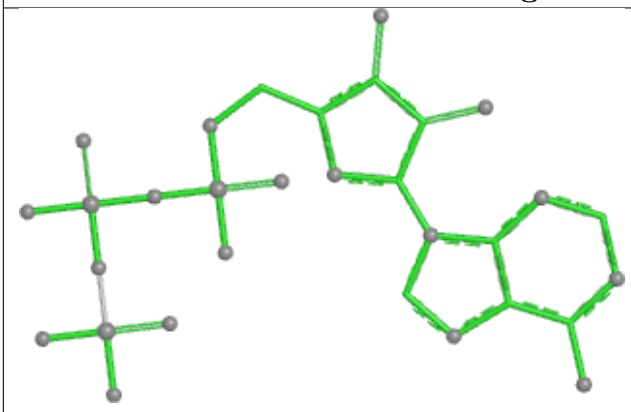


Torsions

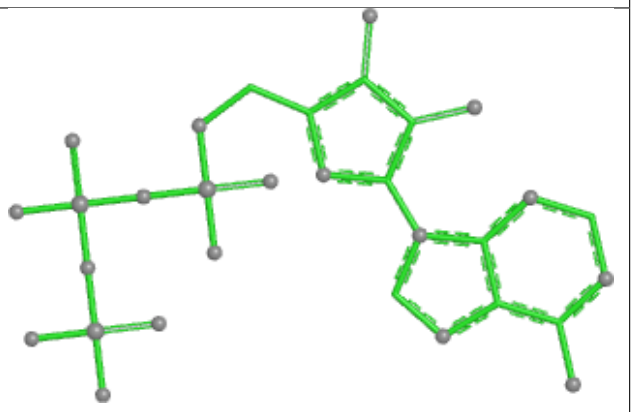


Rings

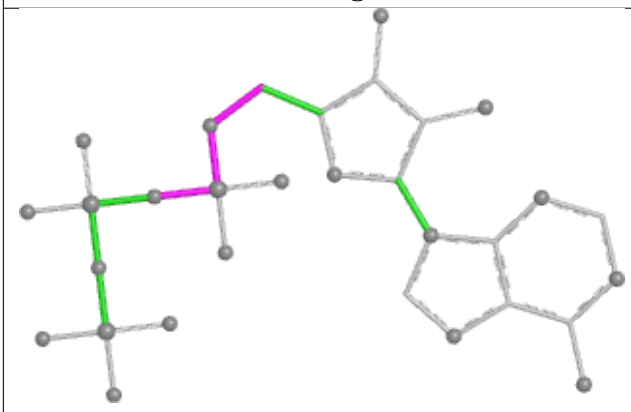
Ligand ATP M 602



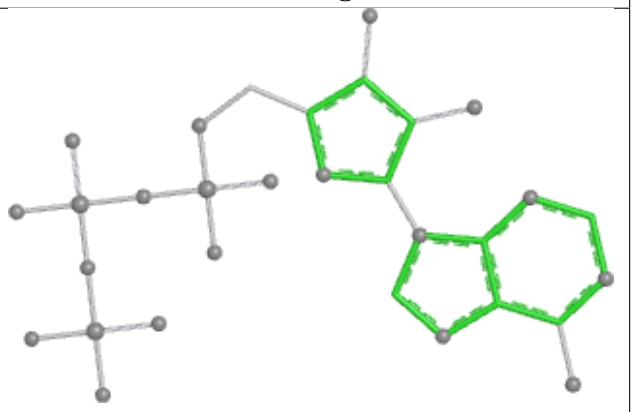
Bond lengths



Bond angles

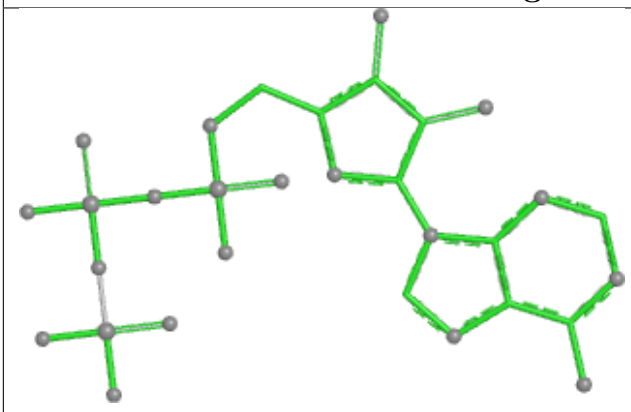


Torsions

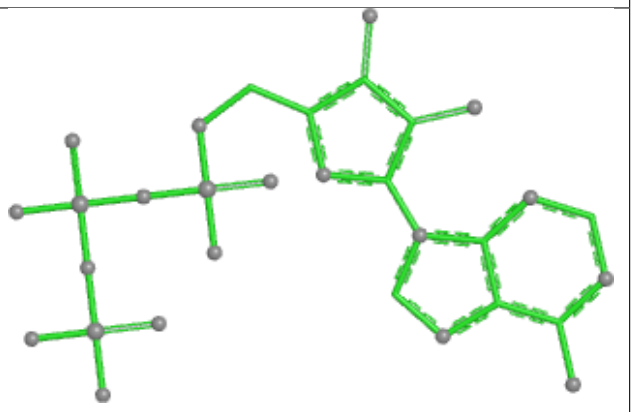


Rings

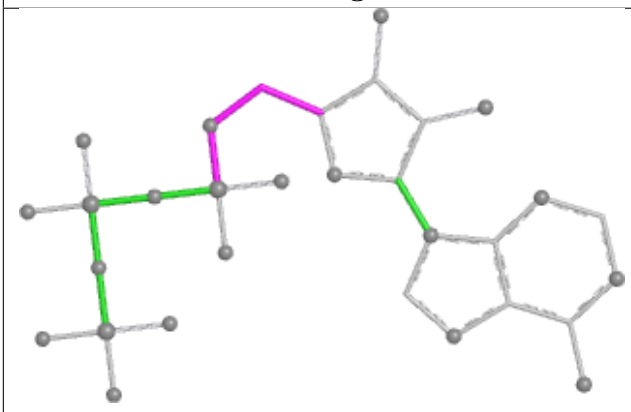
Ligand ATP K 600



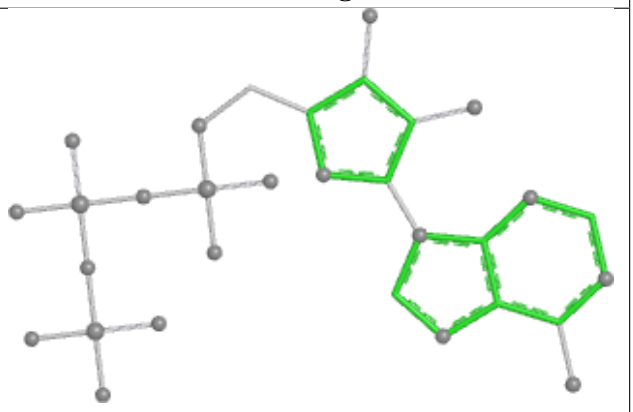
Bond lengths



Bond angles

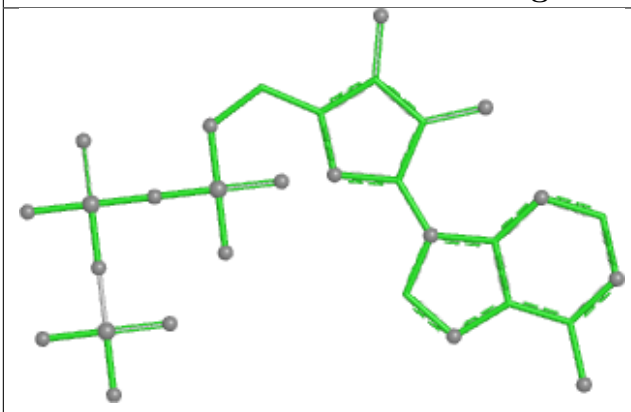


Torsions

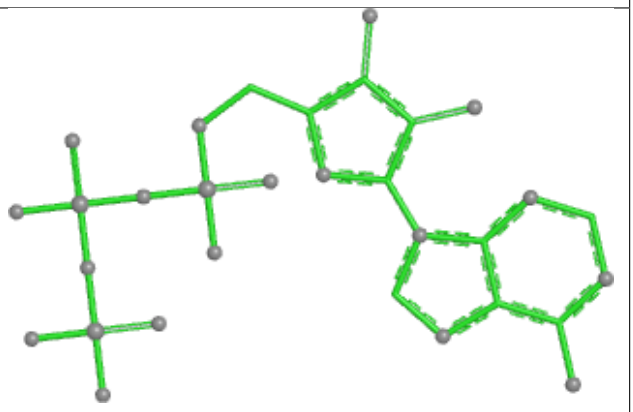


Rings

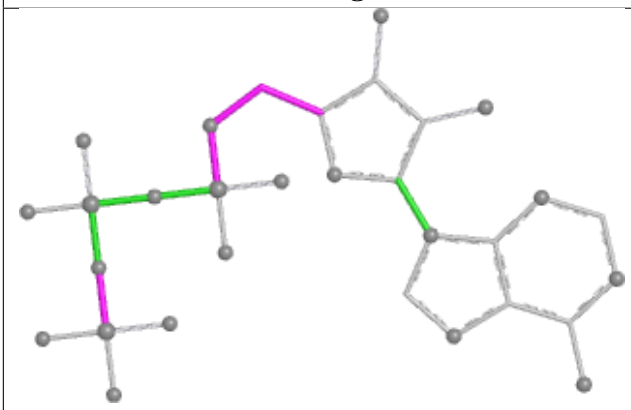
Ligand ATP I 403



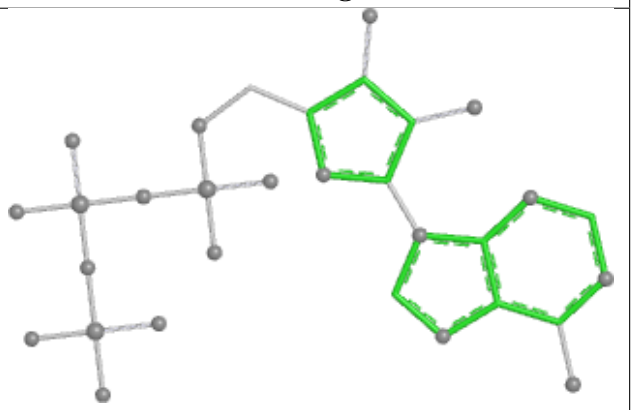
Bond lengths



Bond angles

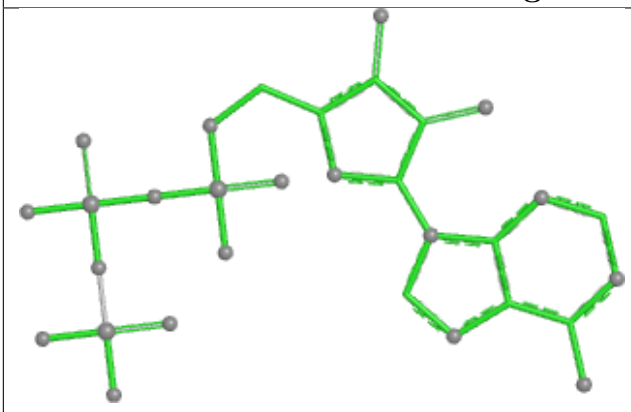


Torsions

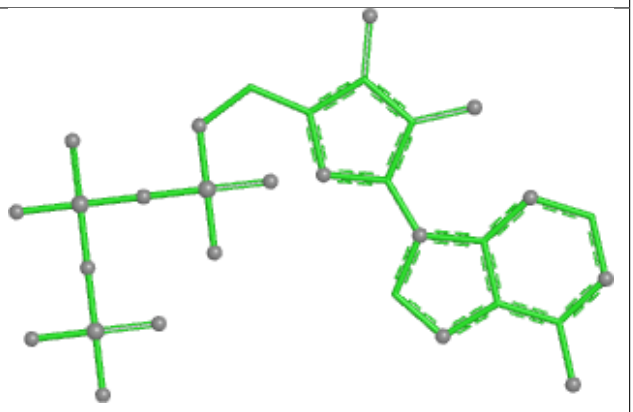


Rings

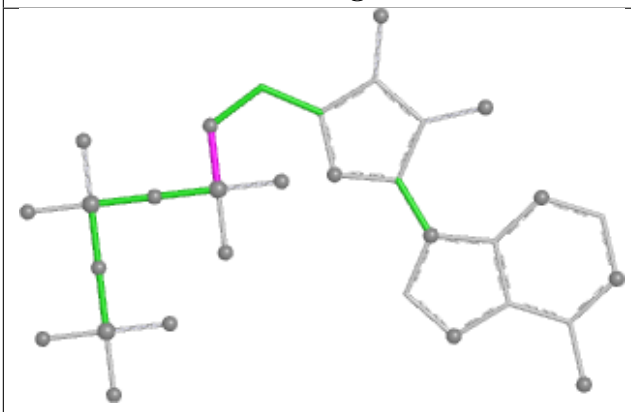
Ligand ATP G 600



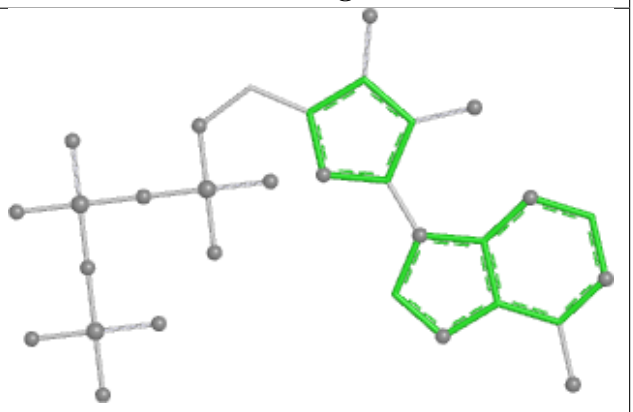
Bond lengths



Bond angles

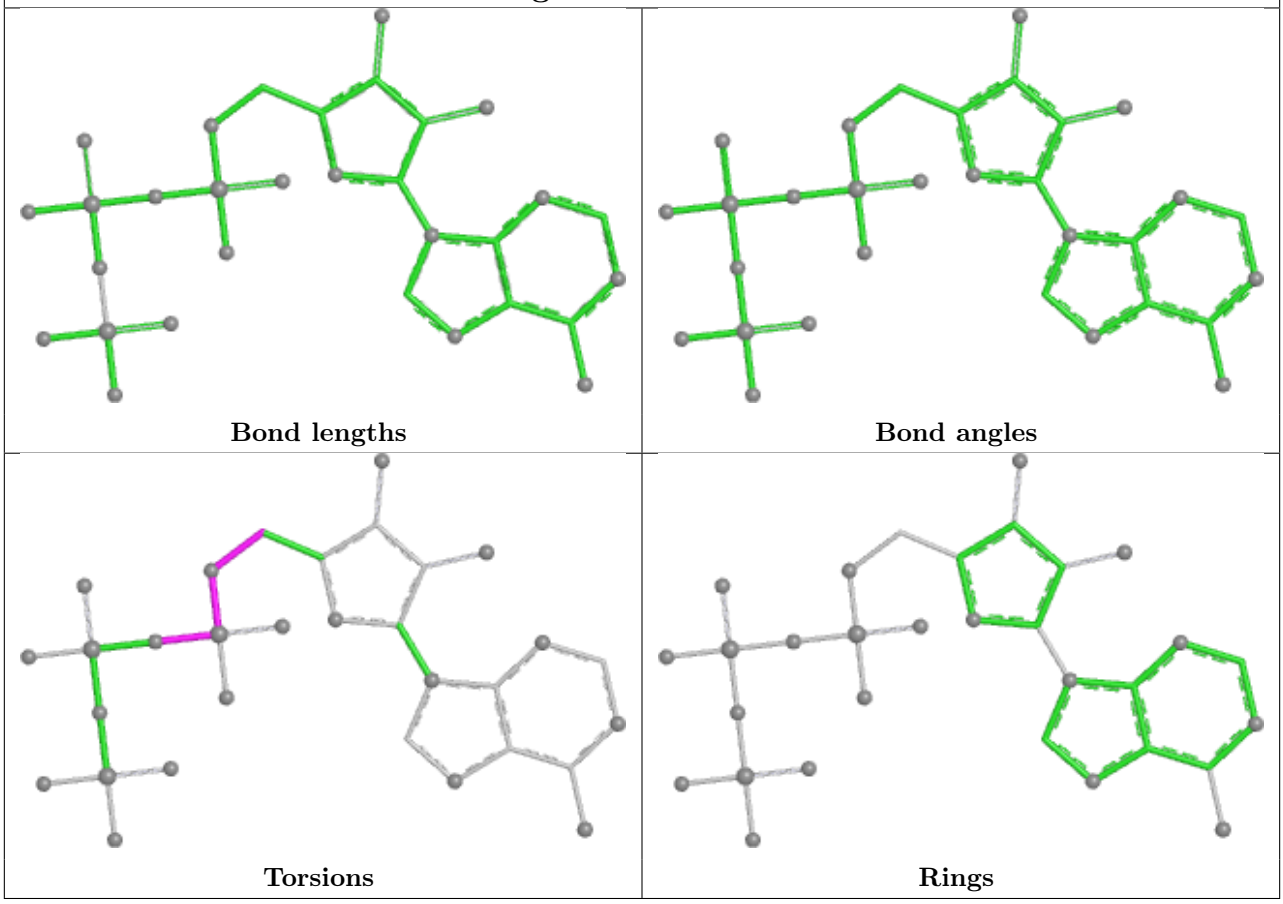


Torsions



Rings

Ligand ATP I 401



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.

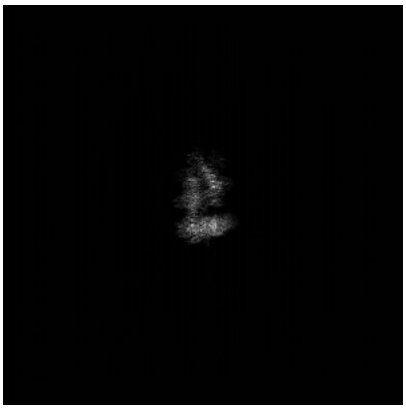
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-77370. These allow visual inspection of the internal detail of the map and identification of artifacts.

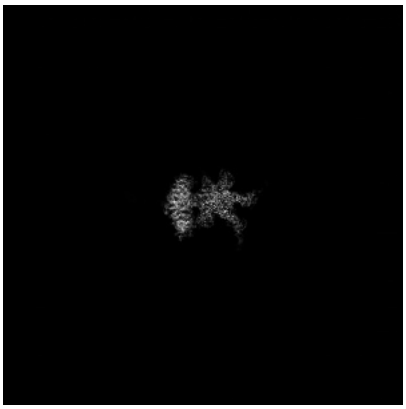
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

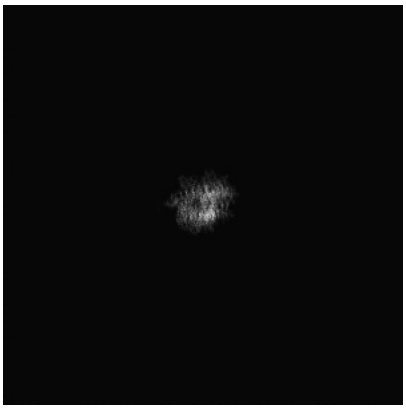
6.1.1 Primary map



X

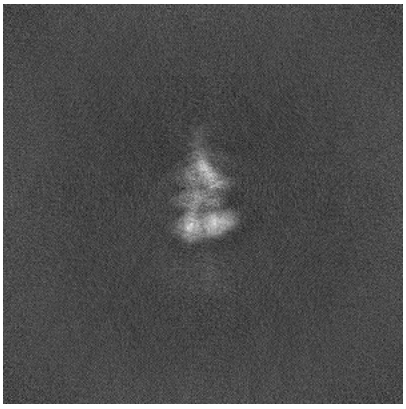


Y

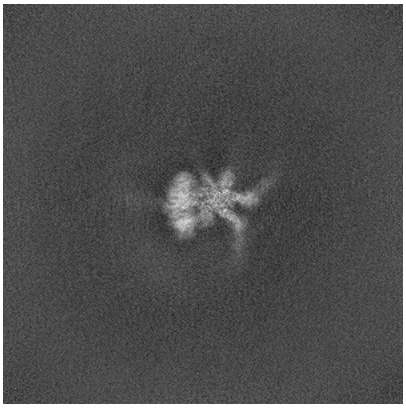


Z

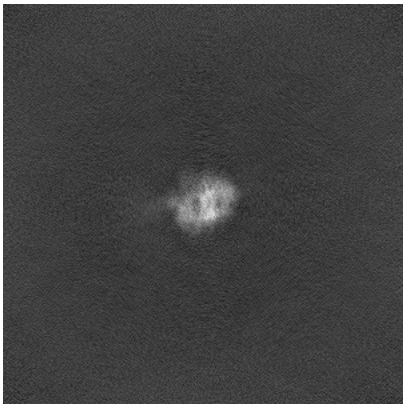
6.1.2 Raw map



X



Y

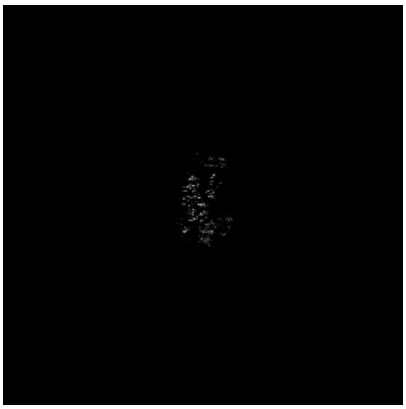


Z

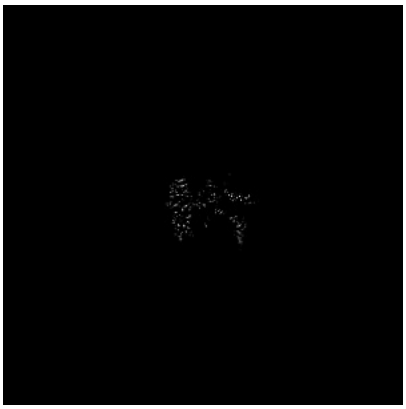
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

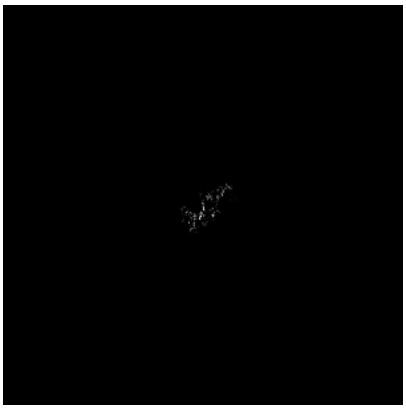
6.2.1 Primary map



X Index: 300

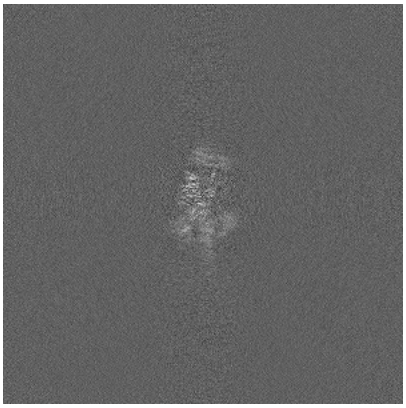


Y Index: 300

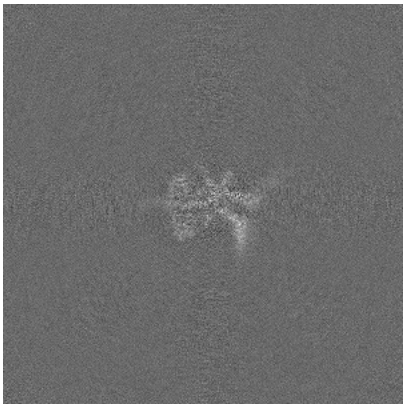


Z Index: 300

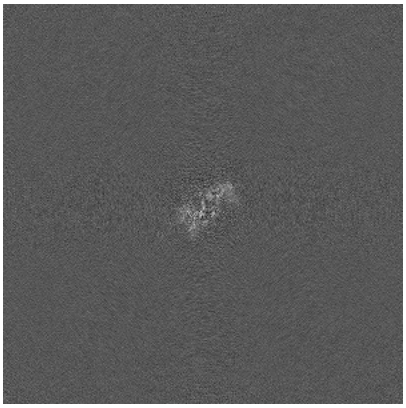
6.2.2 Raw map



X Index: 300



Y Index: 300



Z Index: 300

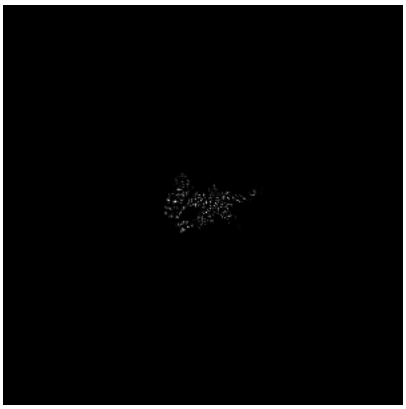
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

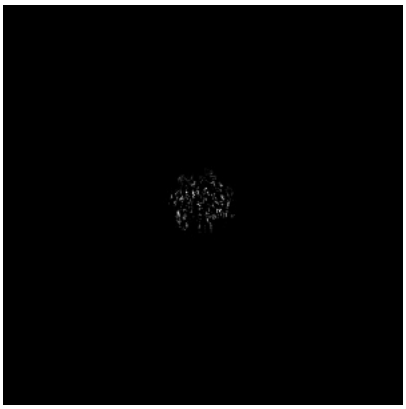
6.3.1 Primary map



X Index: 304

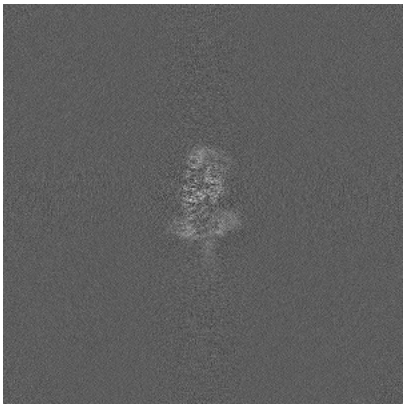


Y Index: 284

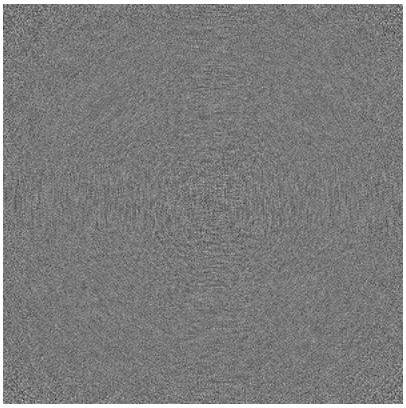


Z Index: 269

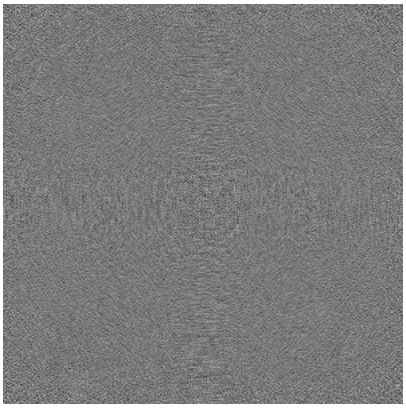
6.3.2 Raw map



X Index: 304



Y Index: 0

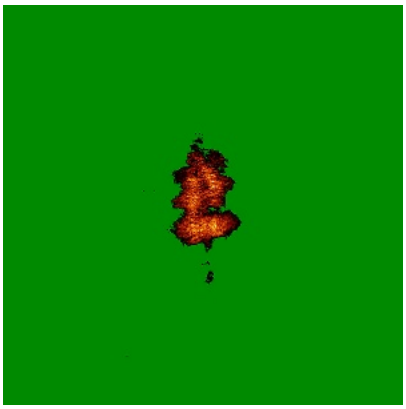


Z Index: 0

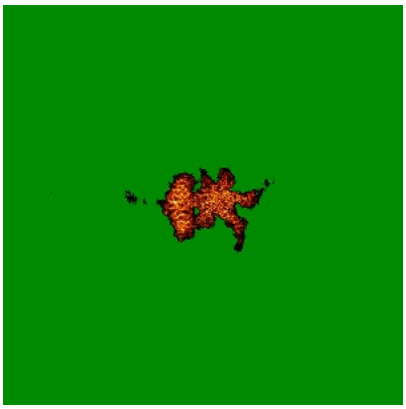
The images above show the largest variance slices of the map in three orthogonal directions.

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

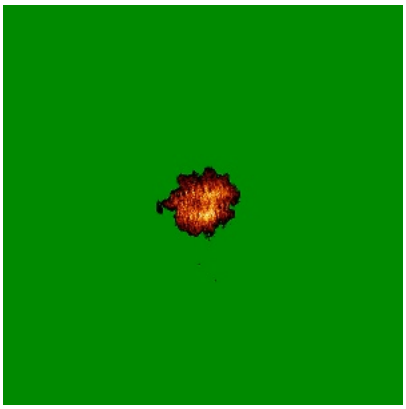
6.4.1 Primary map



X

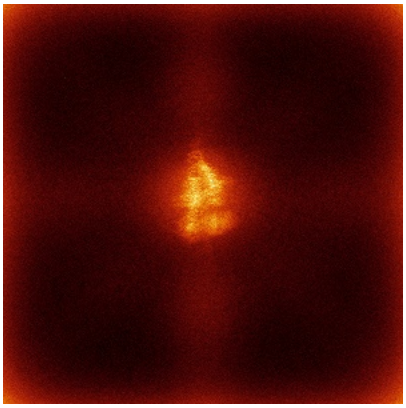


Y

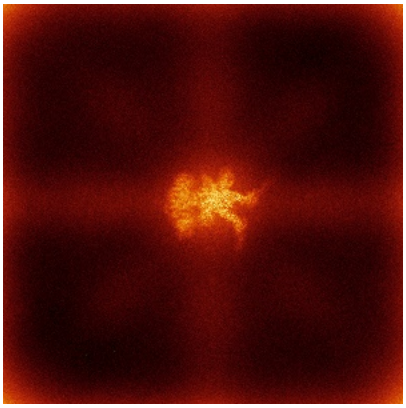


Z

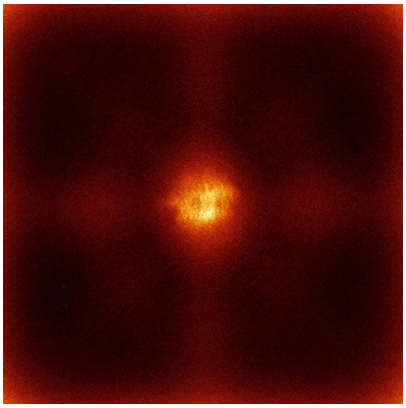
6.4.2 Raw map



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 0.07. 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.

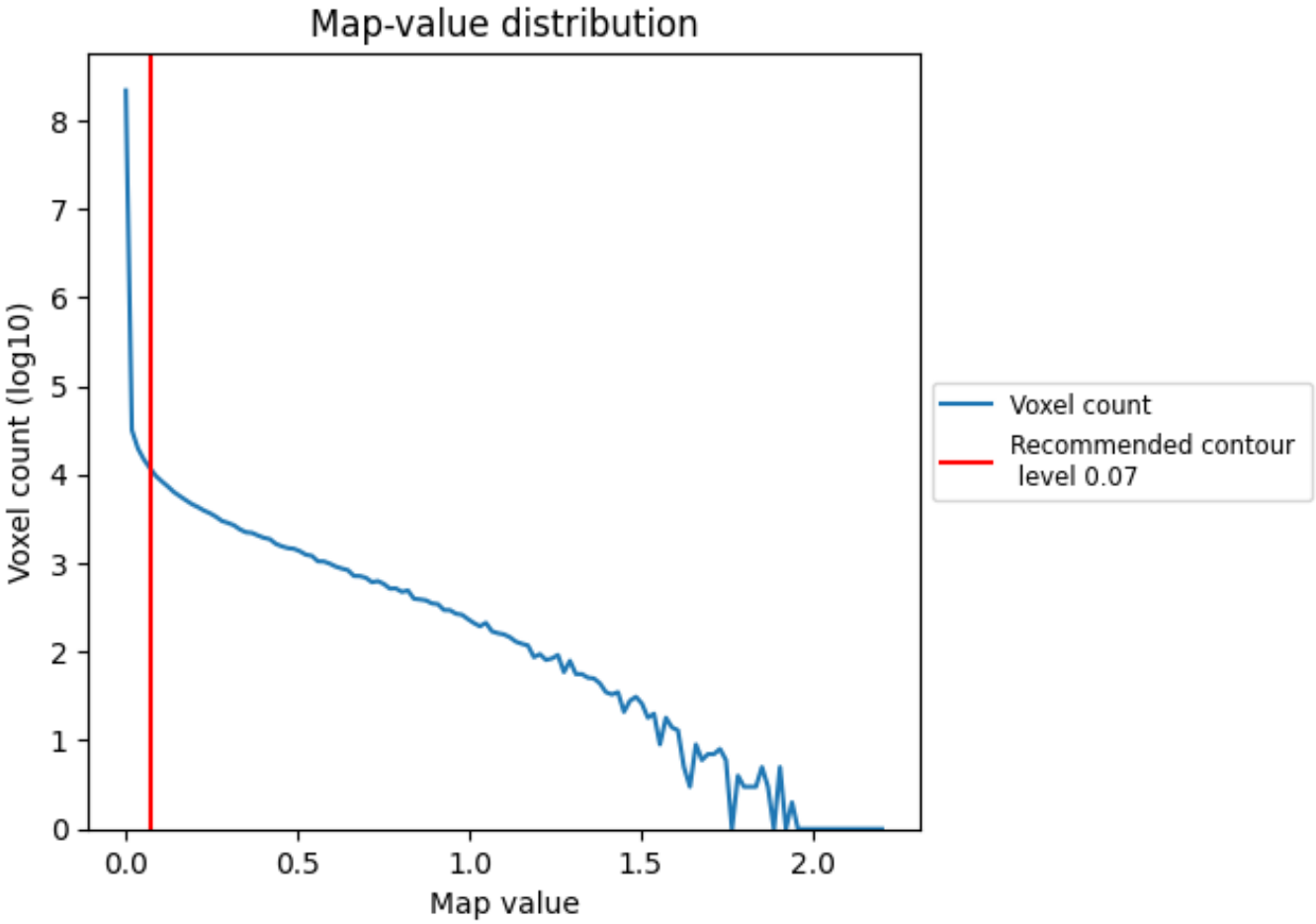
6.6 Mask visualisation (i)

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

7 Map analysis

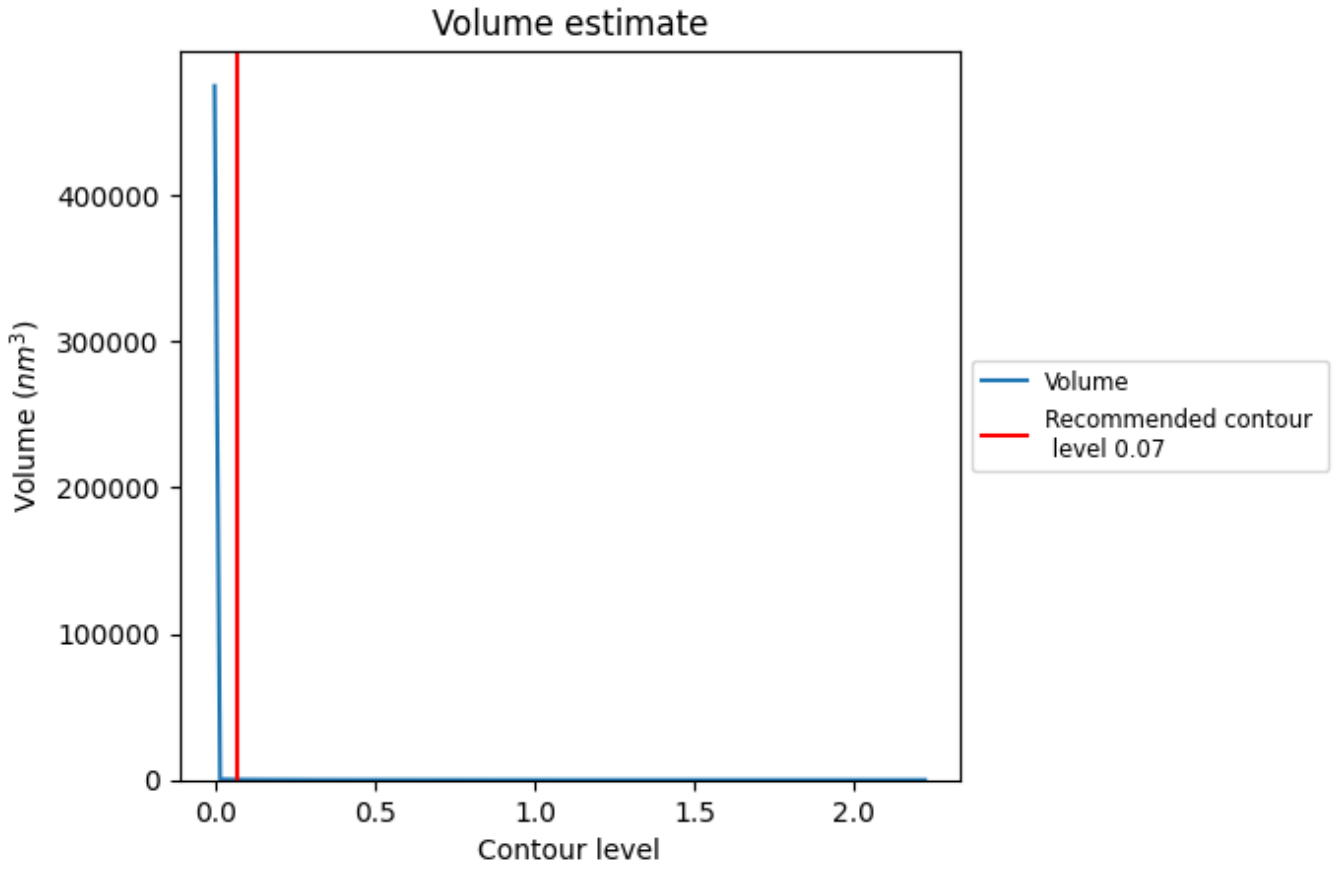
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

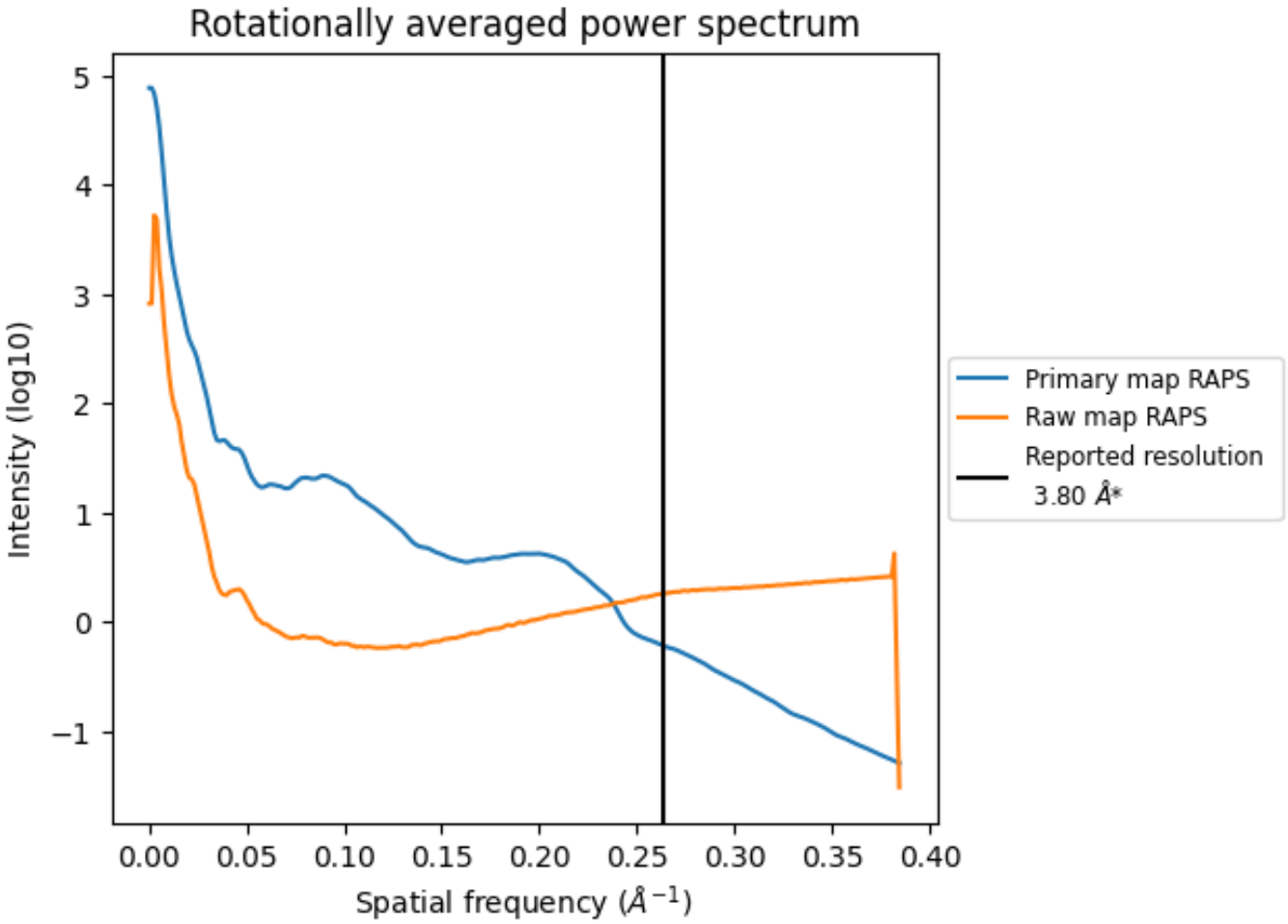
7.2 Volume estimate



The volume at the recommended contour level is 268 nm^3; this corresponds to an approximate mass of 242 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)

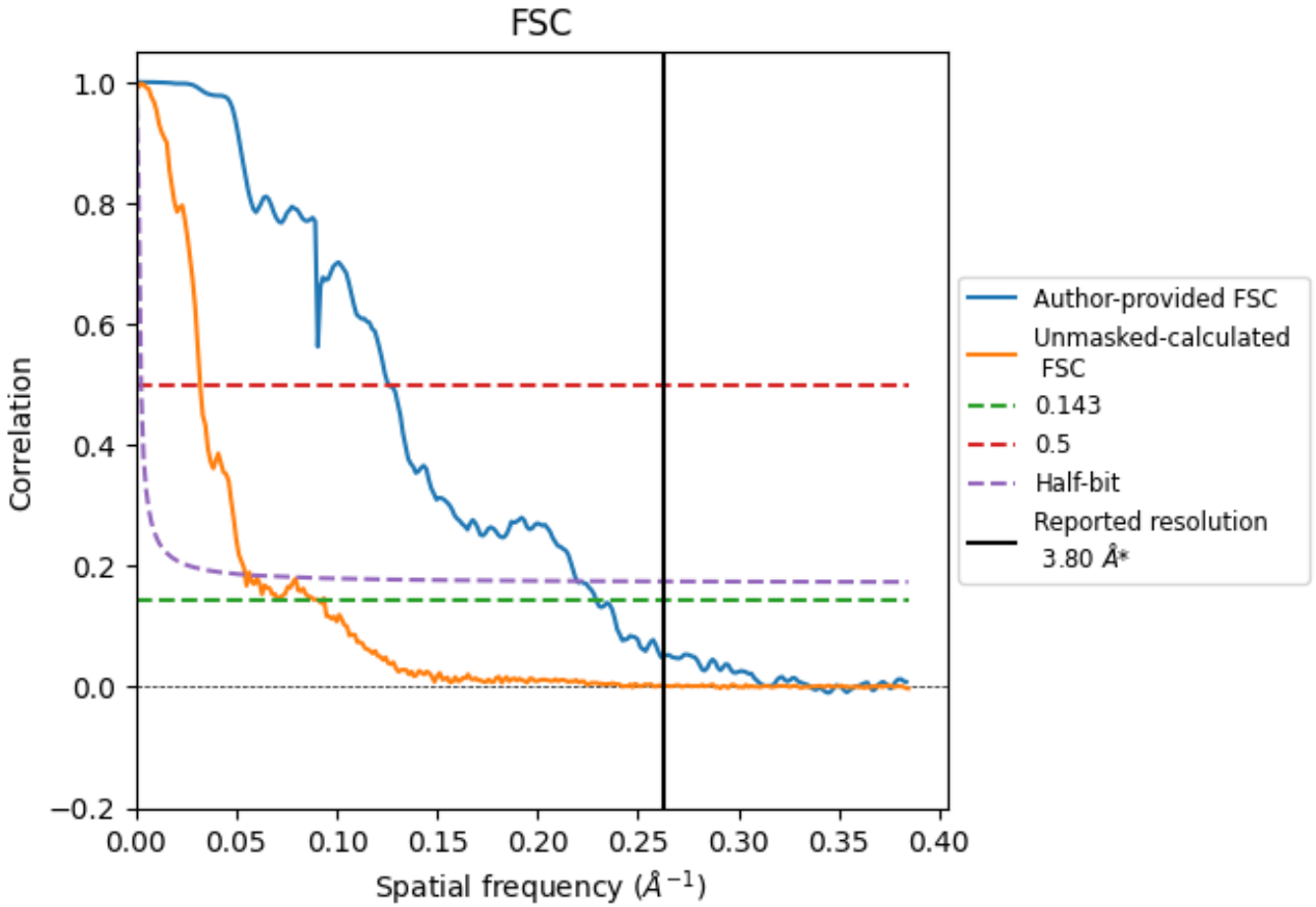


*Reported resolution corresponds to spatial frequency of 0.263 Å^{-1}

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 0.263 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	4.36	7.94	4.55
Unmasked-calculated*	10.98	31.25	18.38

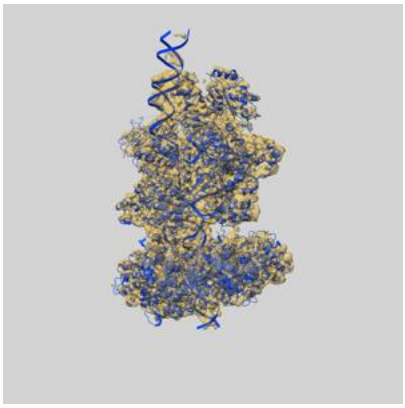
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.36 differs from the reported value 3.8 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 10.98 differs from the reported value 3.8 by more than 10 %

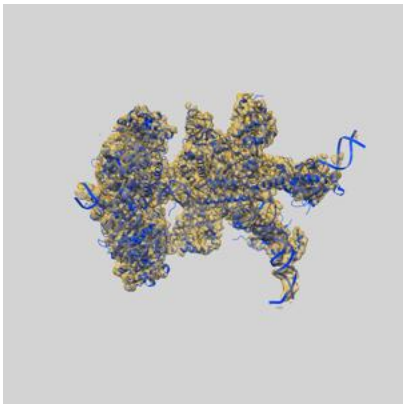
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-77370 and PDB model 36BV. Per-residue inclusion information can be found in section 3 on page 8.

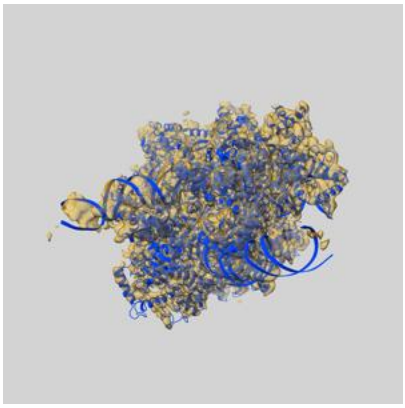
9.1 Map-model overlay



X



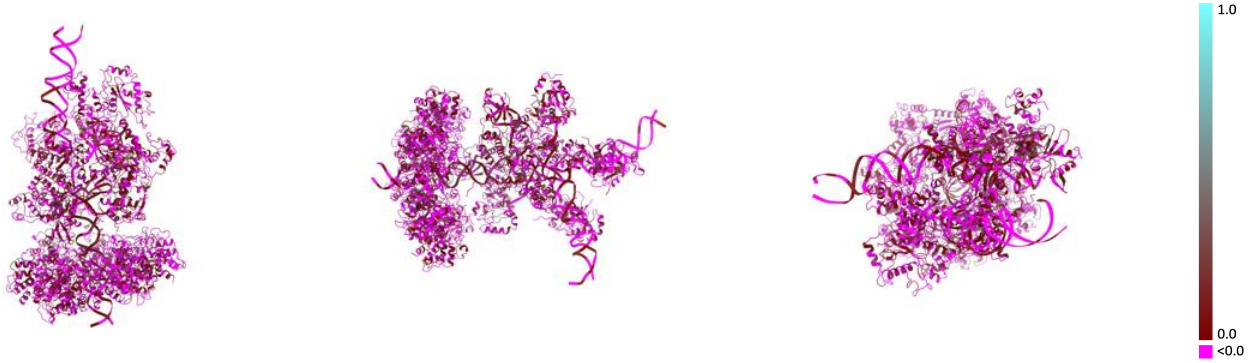
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.07 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.

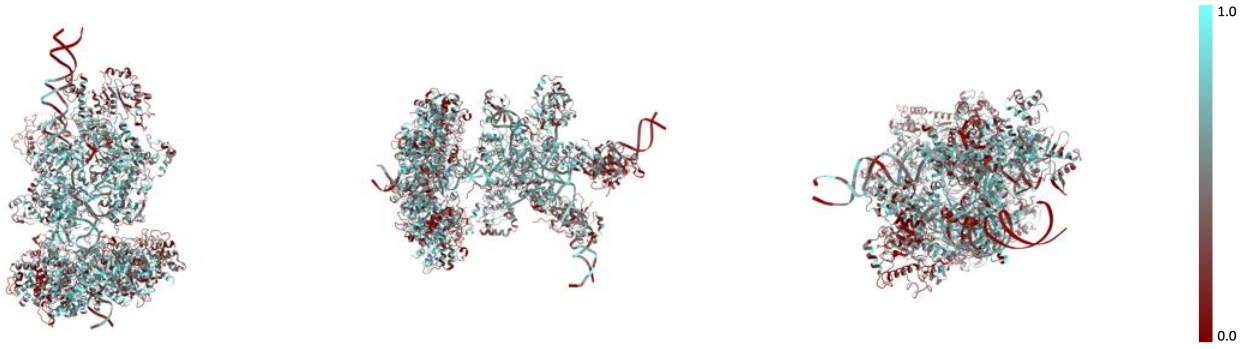
9.2 Q-score mapped to coordinate model



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.

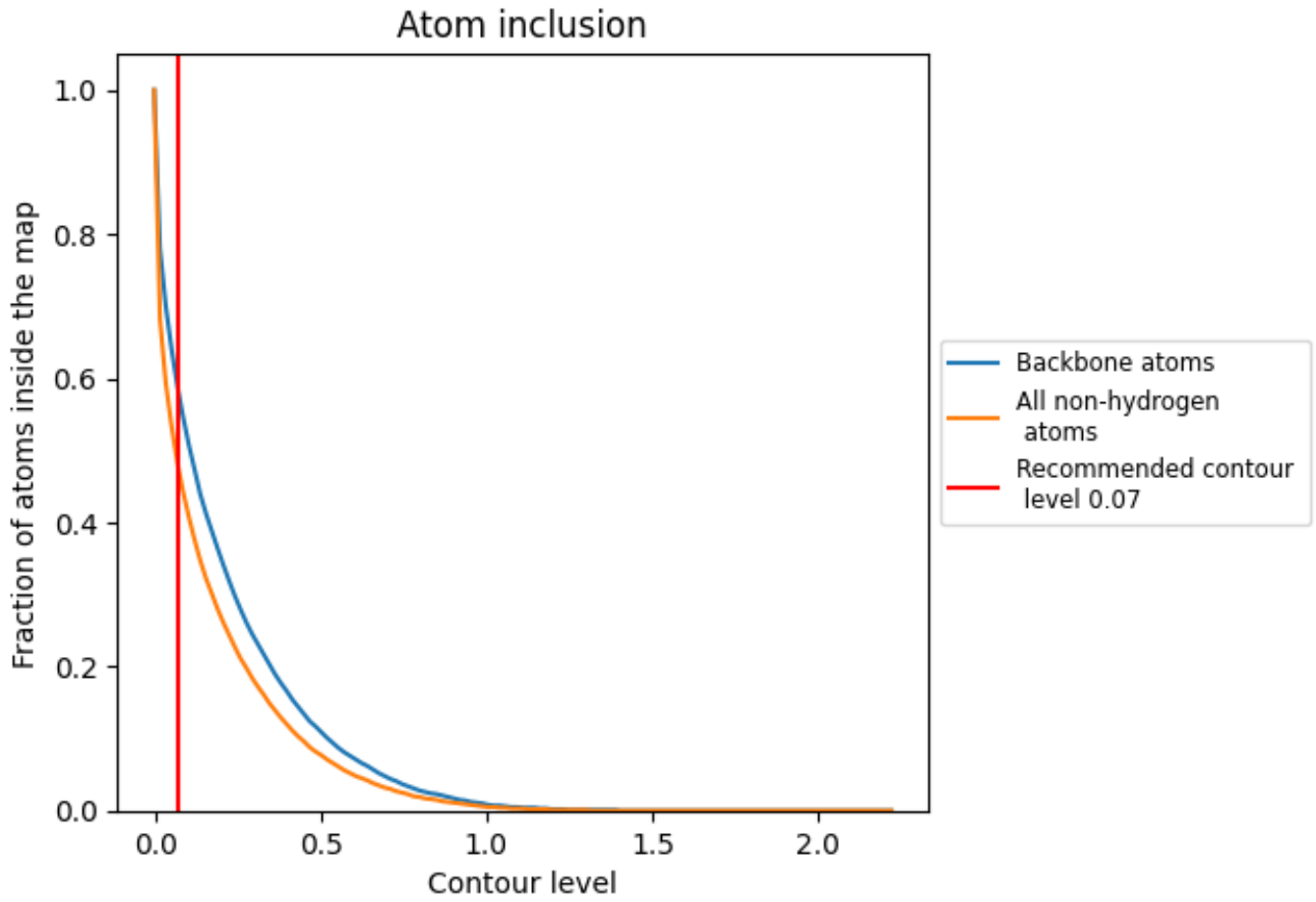
9.3 Atom inclusion mapped to coordinate model



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 (0.07).

9.4 Atom inclusion (i)



At the recommended contour level, 58% of all backbone atoms, 48% 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 (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4780	0.0060
2	0.4760	0.0480
3	0.5720	0.0240
4	0.4420	-0.0180
5	0.3930	-0.0270
6	0.4950	0.0100
7	0.6580	0.0800
A	0.4840	0.0310
B	0.5270	0.0110
C	0.3150	-0.0040
D	0.3680	-0.0090
E	0.5800	0.0380
F	0.5450	0.0290
G	0.5000	0.0150
H	0.4310	-0.0170
I	0.4720	-0.0280
J	0.4830	-0.0060
K	0.4330	-0.0110
L	0.4400	-0.0100
M	0.5020	-0.0100
c1	0.5180	0.0380
c2	0.5380	0.1180

