



Full wwPDB EM Validation Report ⓘ

Dec 2, 2025 – 03:27 am GMT

PDB ID : 6SGB / pdb_00006sgb
EMDB ID : EMD-10180
Title : mt-SSU assemblosome of Trypanosoma brucei
Authors : Saurer, M.; Ramrath, D.J.F.; Niemann, M.; Calderaro, S.; Prange, C.; Mattei, S.; Scaiola, A.; Leitner, A.; Bieri, P.; Horn, E.K.; Leibundgut, M.; Boehringer, D.; Schneider, A.; Ban, N.
Deposited on : 2019-08-03
Resolution : 3.30 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.dev129
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
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) : 2.46

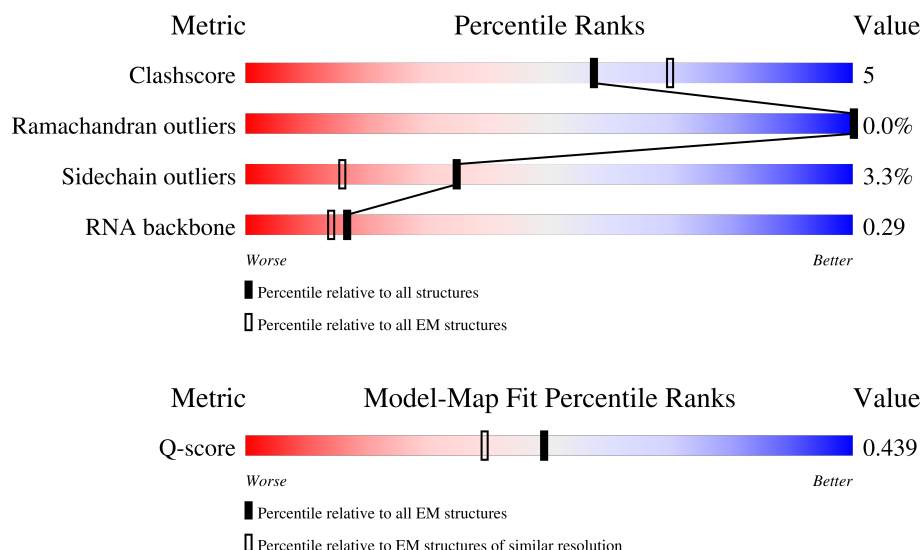
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	15087 (2.80 - 3.80)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	CE	435	
2	CF	160	
3	CH	282	

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Mol	Chain	Length	Quality of chain
4	CK	326	
5	CO	429	
6	CP	188	
7	CQ	336	
8	CR	320	
9	Ca	602	
10	Cb	311	
11	Cd	440	
12	Cj	257	
13	Cn	250	
14	Cp	187	
15	DD	812	
16	DI	407	
17	DL	307	
18	DO	282	
19	DP	274	
20	DR	270	
21	DU	228	
22	DZ	94	
23	F2	1024	
24	F3	966	
25	F5	754	
26	F6	676	
27	F7	679	
28	F8	726	

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Mol	Chain	Length	Quality of chain
29	F9	608	
30	FA	642	
31	FB	579	
31	FC	579	
32	FE	553	
33	FJ	362	
34	FM	370	
34	FN	370	
35	FO	334	
36	FP	349	
37	FQ	307	
37	FR	307	
37	FS	307	
37	FT	307	
37	FU	307	
38	FW	263	
39	FX	239	
40	FY	188	
41	FZ	178	
42	Fa	171	
43	Fb	151	
44	Fc	148	
45	Fd	143	
46	UA	21	
47	UB	27	

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Mol	Chain	Length	Quality of chain
47	Uk	27	
48	UC	10	
49	UD	9	
49	UM	9	
49	UQ	9	
49	Uf	9	
50	UE	45	
50	UP	45	
51	UF	11	
51	Um	11	
52	UG	17	
53	UH	5	
54	UI	8	
54	UN	8	
55	UJ	16	
56	UK	24	
57	UL	22	
58	UO	30	
59	UY	468	
60	CA	620	
61	CC	74	
62	CI	443	
63	CJ	817	
64	CN	166	
65	CS	244	

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Mol	Chain	Length	Quality of chain
66	Cg	498	
67	Ci	181	
68	Ck	874	
69	DB	1181	
70	DC	1165	
71	DE	747	
72	DF	666	
73	DG	631	
74	DH	581	
75	DJ	396	
76	DK	324	
77	DT	247	
78	DV	183	
79	DW	179	
80	DX	169	
81	DY	163	
82	F1	1041	
83	F4	811	
84	FD	579	
85	FF	474	
86	FG	463	
87	FH	457	
88	FI	445	
89	FK	372	
90	FL	353	

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Mol	Chain	Length	Quality of chain
91	FV	264	
92	Fe	123	
93	Ua	47	
94	Ub	42	
95	Uc	12	
96	Ud	59	
97	Ue	29	
98	Ug	167	
99	Uh	255	
100	Ui	32	
101	Uj	19	
102	Ul	14	
103	Ux	110	

2 Entry composition [i](#)

There are 110 unique types of molecules in this entry. The entry contains 240624 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 uS5m.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CE	392	Total	C	N	O	S	0	0
			3147	1992	579	561	15		

- Molecule 2 is a protein called bS6m.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	CF	159	Total	C	N	O	S	0	0
			1317	835	234	242	6		

- Molecule 3 is a protein called uS8m.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	CH	222	Total	C	N	O	S	0	0
			1824	1144	349	321	10		

- Molecule 4 is a protein called uS11m.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	CK	211	Total	C	N	O	S	0	0
			1721	1084	316	311	10		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CK	3	ARG	GLN	conflict	UNP Q389T7

- Molecule 5 is a protein called uS15m.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	CO	358	Total	C	N	O	S	0	0
			2979	1891	557	514	17		

- Molecule 6 is a protein called bS16m.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	CP	180	Total	C	N	O	S	0	0
			1489	956	274	250	9		

- Molecule 7 is a protein called uS17m.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	CQ	219	Total	C	N	O	S	0	0
			1805	1151	340	306	8		

- Molecule 8 is a protein called bS18m.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	CR	153	Total	C	N	O	S	0	0
			1274	821	233	218	2		

- Molecule 9 is a protein called mS22.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	Ca	512	Total	C	N	O	S	0	0
			4340	2778	770	771	21		

- Molecule 10 is a protein called mS23.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	Cb	153	Total	C	N	O	S	0	0
			1274	819	232	217	6		

- Molecule 11 is a protein called mS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	Cd	185	Total	C	N	O	S	0	0
			1616	1032	297	279	8		

- Molecule 12 is a protein called mS34.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Cj	226	Total	C	N	O	S	0	0
			1792	1138	310	340	4		

- Molecule 13 is a protein called mS38.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	Cn	27	Total	C	N	O	0	0
			234	155	44	35		

- Molecule 14 is a protein called mS41.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Cp	178	Total	C	N	O	S	0	0
			1506	952	272	277	5		

- Molecule 15 is a protein called mS51 (KRIPP1).

Mol	Chain	Residues	Atoms					AltConf	Trace
15	DD	786	Total	C	N	O	S	0	0
			6488	4110	1168	1169	41		

- Molecule 16 is a protein called mS56.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	DI	390	Total	C	N	O	S	0	0
			3182	2020	554	594	14		

- Molecule 17 is a protein called mS59.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	DL	203	Total	C	N	O	S	0	0
			1656	1059	296	291	10		

- Molecule 18 is a protein called mS62 (KRIPP14).

Mol	Chain	Residues	Atoms					AltConf	Trace
18	DO	204	Total	C	N	O	S	0	0
			1648	1031	300	307	10		

- Molecule 19 is a protein called mS63 (KRIPP16).

Mol	Chain	Residues	Atoms					AltConf	Trace
19	DP	212	Total	C	N	O	S	0	0
			1800	1156	321	314	9		

- Molecule 20 is a protein called mS65.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	DR	254	Total	C	N	O	S	0	0
			2042	1313	373	346	10		

- Molecule 21 is a protein called mS68.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	DU	219	Total	C	N	O	S	0	0
			1738	1095	308	331	4		

- Molecule 22 is a protein called mS73.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	DZ	30	Total	C	N	O	S	0	0
			254	167	41	45	1		

- Molecule 23 is a protein called mt-SAF2 (KRIPP2).

Mol	Chain	Residues	Atoms					AltConf	Trace
23	F2	915	Total	C	N	O	S	0	0
			7274	4570	1281	1384	39		

- Molecule 24 is a protein called mt-SAF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	F3	888	Total	C	N	O	S	0	0
			6879	4302	1222	1303	52		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F3	44	THR	ALA	conflict	UNP Q38E61
F3	190	VAL	ILE	conflict	UNP Q38E61
F3	303	ALA	SER	conflict	UNP Q38E61
F3	418	ASP	ASN	conflict	UNP Q38E61

- Molecule 25 is a protein called mt-SAF5.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	F5	480	Total	C	N	O	S	0	0
			3474	2167	646	647	14		

- Molecule 26 is a protein called mt-SAF6.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	F6	456	Total	C	N	O	S	0	0
			3646	2311	635	686	14		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F6	285	ARG	HIS	conflict	UNP Q38FQ8
F6	291	ILE	THR	conflict	UNP Q38FQ8
F6	602	ALA	VAL	conflict	UNP Q38FQ8
F6	676	CYS	PHE	conflict	UNP Q38FQ8

- Molecule 27 is a protein called mt-SAF7 (KRIPP10).

Mol	Chain	Residues	Atoms					AltConf	Trace
27	F7	662	Total	C	N	O	S	0	0
			5225	3322	918	950	35		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F7	36	ILE	THR	conflict	UNP Q57UW6
F7	470	GLU	LYS	conflict	UNP Q57UW6
F7	474	VAL	ALA	conflict	UNP Q57UW6

- Molecule 28 is a protein called mt-SAF8.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	F8	513	Total	C	N	O	S	0	0
			3934	2493	721	701	19		

- Molecule 29 is a protein called mt-SAF9.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	F9	216	Total	C	N	O	S	0	0
			1755	1088	325	337	5		

- Molecule 30 is a protein called mt-SAF10.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	FA	579	Total	C	N	O	S	0	0
			4421	2801	785	813	22		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
FA	173	ALA	THR	conflict	UNP Q386U1
FA	352	TYR	HIS	conflict	UNP Q386U1

- Molecule 31 is a protein called mt-SAF11.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	FB	377	Total	C	N	O	S	0	0
			3055	1928	574	543	10		
31	FC	311	Total	C	N	O	S	0	0
			2572	1629	488	447	8		

- Molecule 32 is a protein called mt-SAF13.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	FE	434	Total	C	N	O	S	0	0
			3523	2268	611	626	18		

- Molecule 33 is a protein called mt-SAF18.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	FJ	353	Total	C	N	O	S	0	0
			2917	1843	550	516	8		

- Molecule 34 is a protein called mt-SAF21.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	FM	326	Total	C	N	O	S	0	0
			2449	1515	449	465	20		
34	FN	319	Total	C	N	O	S	0	0
			2392	1478	436	458	20		

- Molecule 35 is a protein called mt-SAF22 (KRIPP17).

Mol	Chain	Residues	Atoms					AltConf	Trace
35	FO	324	Total	C	N	O	S	0	0
			2671	1674	509	474	14		

- Molecule 36 is a protein called mt-SAF23.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	FP	348	Total	C	N	O	S	0	0
			2643	1682	464	487	10		

- Molecule 37 is a protein called mt-SAF24.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	FQ	257	Total	C	N	O	S	0	0
			2003	1265	358	373	7		
37	FR	243	Total	C	N	O	S	0	0
			1923	1217	344	355	7		
37	FS	277	Total	C	N	O	S	0	0
			2198	1389	397	404	8		
37	FT	233	Total	C	N	O	S	0	0
			1854	1177	331	339	7		
37	FU	270	Total	C	N	O	S	0	0
			2105	1331	380	386	8		

- Molecule 38 is a protein called mt-SAF26.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	FW	247	Total	C	N	O	S	0	0
			2034	1272	384	371	7		

- Molecule 39 is a protein called mt-SAF27 (KRIPP11).

Mol	Chain	Residues	Atoms					AltConf	Trace
39	FX	220	Total	C	N	O	S	0	0
			1741	1093	318	316	14		

- Molecule 40 is a protein called mt-SAF28.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	FY	160	Total	C	N	O	S	0	0
			1289	819	229	235	6		

- Molecule 41 is a protein called mt-SAF29.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	FZ	133	Total	C	N	O	S	0	0
			973	605	181	185	2		

- Molecule 42 is a protein called mt-SAF30.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Fa	163	Total	C	N	O	S	0	0
			1323	860	236	223	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Fa	73	ALA	VAL	conflict	UNP Q57VU7

- Molecule 43 is a protein called mt-SAF31.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Fb	129	Total	C	N	O	S	0	0
			1091	701	198	184	8		

- Molecule 44 is a protein called mt-SAF32.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Fc	84	Total	C	N	O	S	0	0
			669	427	106	135	1		

- Molecule 45 is a protein called mt-SAF33.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Fd	96	Total	C	N	O	S	0	0
			758	481	147	122	8		

- Molecule 46 is a protein called UNK-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	UA	21	Total	C	N	O	0	0
			126	84	21	21		

- Molecule 47 is a protein called UNK-B, UNK-k.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	UB	27	Total	C	N	O	0	0
			162	108	27	27		
47	Uk	27	Total	C	N	O	0	0
			162	108	27	27		

- Molecule 48 is a protein called UNK-C.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	UC	10	Total	C	N	O	0	0
			60	40	10	10		

- Molecule 49 is a protein called UNK-D, UNK-M, UNK-Q, UNK-f.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	UD	9	Total	C	N	O	0	0
			54	36	9	9		
49	UM	9	Total	C	N	O	0	0
			54	36	9	9		
49	UQ	9	Total	C	N	O	0	0
			54	36	9	9		
49	Uf	9	Total	C	N	O	0	0
			54	36	9	9		

- Molecule 50 is a protein called UNK-E, UNK-P.

Mol	Chain	Residues	Atoms				AltConf	Trace
50	UE	45	Total	C	N	O	0	0
			270	180	45	45		
50	UP	45	Total	C	N	O	0	0
			270	180	45	45		

- Molecule 51 is a protein called UNK-F, UNK-m.

Mol	Chain	Residues	Atoms				AltConf	Trace
51	UF	11	Total	C	N	O	0	0
			66	44	11	11		
51	Um	11	Total	C	N	O	0	0
			66	44	11	11		

- Molecule 52 is a protein called UNK-G.

Mol	Chain	Residues	Atoms				AltConf	Trace
52	UG	17	Total	C	N	O	0	0
			102	68	17	17		

- Molecule 53 is a protein called UNK-H.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	UH	5	Total	C	N	O	0	0
			30	20	5	5		

- Molecule 54 is a protein called UNK-I, UNK-N.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	UI	8	Total	C	N	O	0	0
			48	32	8	8		
54	UN	8	Total	C	N	O	0	0
			48	32	8	8		

- Molecule 55 is a protein called UNK-J.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	UJ	16	Total	C	N	O	0	0
			96	64	16	16		

- Molecule 56 is a protein called UNK-K.

Mol	Chain	Residues	Atoms				AltConf	Trace
56	UK	24	Total	C	N	O	0	0
			144	96	24	24		

- Molecule 57 is a protein called UNK-L.

Mol	Chain	Residues	Atoms				AltConf	Trace
57	UL	22	Total	C	N	O	0	0
			132	88	22	22		

- Molecule 58 is a protein called UNK-O.

Mol	Chain	Residues	Atoms				AltConf	Trace
58	UO	30	Total	C	N	O	0	0
			180	120	30	30		

- Molecule 59 is a protein called UNK-Y.

Mol	Chain	Residues	Atoms				AltConf	Trace
59	UY	468	Total	C	N	O	0	0
			2808	1872	468	468		

- Molecule 60 is a RNA chain called 9S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	CA	609	Total	C	N	O	P	0	0
			11352	5038	1602	4102	610		

- Molecule 61 is a protein called mS3m.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	CC	74	Total	C	N	O	S	0	0
			646	451	96	98	1		

- Molecule 62 is a protein called uS9m.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	CI	423	Total	C	N	O	S	0	0
			3357	2108	601	631	17		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CI	370	ALA	VAL	conflict	UNP Q57W62

- Molecule 63 is a protein called uS10m.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	CJ	701	Total	C	N	O	S	0	0
			5709	3605	1017	1064	23		

- Molecule 64 is a protein called uS14m.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	CN	153	Total	C	N	O	S	0	0
			1285	820	242	216	7		

- Molecule 65 is a protein called uS19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	CS	85	Total	C	N	O	S	0	0
			708	463	121	121	3		

- Molecule 66 is a protein called mS29.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Cg	484	Total	C	N	O	S	0	0
			3922	2511	688	703	20		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Cg	181	VAL	ALA	conflict	UNP Q585C2
Cg	498	ARG	MET	conflict	UNP Q585C2

- Molecule 67 is a protein called mS33.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	Ci	147	Total	C	N	O	S	0	0
			1222	770	226	218	8		

- Molecule 68 is a protein called mS35.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Ck	638	Total	C	N	O	S	0	0
			5123	3220	927	953	23		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Ck	107	SER	LEU	conflict	UNP Q387C7
Ck	144	PHE	LEU	conflict	UNP Q387C7
Ck	253	TYR	PHE	conflict	UNP Q387C7
Ck	339	GLU	VAL	conflict	UNP Q387C7
Ck	871	GLY	GLU	conflict	UNP Q387C7

- Molecule 69 is a protein called mS49.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	DB	679	Total	C	N	O	S	0	0
			5688	3558	1062	1047	21		

- Molecule 70 is a protein called mS50.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	DC	1028	Total	C	N	O	S	0	0
			8223	5194	1453	1546	30		

- Molecule 71 is a protein called mS52.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	DE	590	Total	C	N	O	S	0	0
			4639	2957	832	834	16		

- Molecule 72 is a protein called mS53.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	DF	491	Total	C	N	O	S	0	0
			3967	2496	745	703	23		

- Molecule 73 is a protein called mS54.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	DG	566	Total	C	N	O	S	0	0
			4575	2875	835	834	31		

- Molecule 74 is a protein called mS55 (KRIPP8).

Mol	Chain	Residues	Atoms					AltConf	Trace
74	DH	472	Total	C	N	O	S	0	0
			3849	2417	720	693	19		

- Molecule 75 is a protein called mS57.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	DJ	308	Total	C	N	O	S	0	0
			2521	1612	446	450	13		

- Molecule 76 is a protein called mS58.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	DK	245	Total	C	N	O	S	0	0
			1929	1213	349	362	5		

- Molecule 77 is a protein called mS67.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	DT	221	Total	C	N	O	S	0	0
			1912	1231	334	337	10		

- Molecule 78 is a protein called mS69.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	DV	157	Total	C	N	O	S	0	0
			1323	840	248	231	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DV	163	ALA	THR	conflict	UNP Q57UZ6

- Molecule 79 is a protein called mS70.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	DW	133	Total	C	N	O	S	0	0
			1140	730	216	190	4		

- Molecule 80 is a protein called mS71.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	DX	115	Total	C	N	O	S	0	0
			967	612	182	166	7		

- Molecule 81 is a protein called mS72.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	DY	154	Total	C	N	O	S	0	0
			1295	829	247	214	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DY	34	HIS	ASP	conflict	UNP Q57YD4

- Molecule 82 is a protein called mt-SAF1 (RSM22).

Mol	Chain	Residues	Atoms					AltConf	Trace
82	F1	889	Total	C	N	O	S	0	0
			7194	4493	1372	1289	40		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F1	707	SER	GLY	conflict	UNP Q385R2
F1	973	THR	MET	conflict	UNP Q385R2

- Molecule 83 is a protein called mt-SAF4.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	F4	541	Total	C	N	O	S	0	0
			4382	2783	775	802	22		

- Molecule 84 is a protein called mt-SAF12 (KRIPP18).

Mol	Chain	Residues	Atoms					AltConf	Trace
84	FD	394	Total	C	N	O	S	0	0
			3135	2004	546	566	19		

- Molecule 85 is a protein called mt-SAF14.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	FF	408	Total	C	N	O	S	0	0
			3265	2052	586	603	24		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
FF	70	ALA	PRO	conflict	UNP Q57W60
FF	179	PHE	LEU	conflict	UNP Q57W60

- Molecule 86 is a protein called mt-SAF15.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	FG	169	Total	C	N	O	S	0	0
			1359	852	260	240	7		

- Molecule 87 is a protein called mt-SAF16.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	FH	317	Total	C	N	O	S	0	0
			2486	1555	440	471	20		

- Molecule 88 is a protein called mt-SAF17.

Mol	Chain	Residues	Atoms					AltConf	Trace
88	FI	348	Total	C	N	O	S	0	0
			2786	1726	510	537	13		

- Molecule 89 is a protein called mt-SAF19.

Mol	Chain	Residues	Atoms					AltConf	Trace
89	FK	208	Total	C	N	O	S	0	0
			1699	1084	284	325	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
FK	38	HIS	ARG	conflict	UNP Q57XS8

- Molecule 90 is a protein called mt-SAF20.

Mol	Chain	Residues	Atoms					AltConf	Trace
90	FL	320	Total	C	N	O	S	0	0
			2555	1609	470	459	17		

- Molecule 91 is a protein called mt-SAF25.

Mol	Chain	Residues	Atoms					AltConf	Trace
91	FV	210	Total	C	N	O	S	0	0
			1636	1039	283	303	11		

- Molecule 92 is a protein called mt-SAF34.

Mol	Chain	Residues	Atoms					AltConf	Trace
92	Fe	122	Total	C	N	O	S	0	0
			1033	642	200	184	7		

- Molecule 93 is a protein called UNK-a.

Mol	Chain	Residues	Atoms				AltConf	Trace
93	Ua	47	Total	C	N	O	0	0
			282	188	47	47		

- Molecule 94 is a protein called UNK-b.

Mol	Chain	Residues	Atoms				AltConf	Trace
94	Ub	42	Total	C	N	O	0	0
			252	168	42	42		

- Molecule 95 is a protein called UNK-c.

Mol	Chain	Residues	Atoms				AltConf	Trace
95	Uc	12	Total	C	N	O	0	0
			72	48	12	12		

- Molecule 96 is a protein called UNK-d.

Mol	Chain	Residues	Atoms				AltConf	Trace
96	Ud	59	Total	C	N	O	0	0
			354	236	59	59		

- Molecule 97 is a protein called UNK-e.

Mol	Chain	Residues	Atoms				AltConf	Trace
97	Ue	29	Total	C	N	O	0	0
			174	116	29	29		

- Molecule 98 is a protein called UNK-g.

Mol	Chain	Residues	Atoms				AltConf	Trace
98	Ug	167	Total	C	N	O	0	0
			1002	668	167	167		

- Molecule 99 is a protein called UNK-h.

Mol	Chain	Residues	Atoms				AltConf	Trace
99	Uh	255	Total	C	N	O	0	0
			1530	1020	255	255		

- Molecule 100 is a protein called UNK-i.

Mol	Chain	Residues	Atoms				AltConf	Trace
100	Ui	32	Total	C	N	O	0	0
			192	128	32	32		

- Molecule 101 is a protein called UNK-j.

Mol	Chain	Residues	Atoms				AltConf	Trace
101	Uj	19	Total	C	N	O	0	0
			114	76	19	19		

- Molecule 102 is a protein called UNK-l.

Mol	Chain	Residues	Atoms				AltConf	Trace
102	Ul	14	Total	C	N	O	0	0
			84	56	14	14		

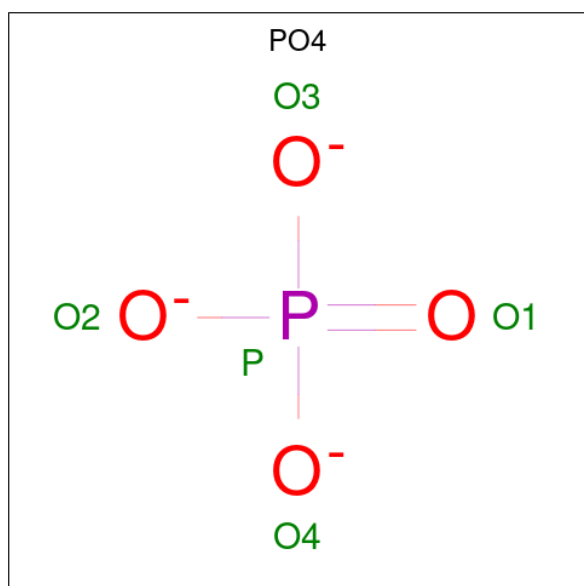
- Molecule 103 is a protein called UNK-x.

Mol	Chain	Residues	Atoms				AltConf	Trace
103	Ux	108	Total	C	N	O	0	0
			648	432	108	108		

- Molecule 104 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

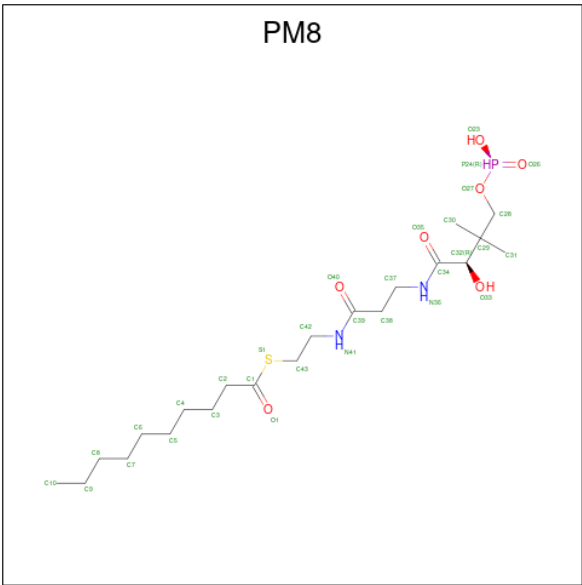
Mol	Chain	Residues	Atoms		AltConf
104	FP	1	Total	Mg	0
			1	1	
104	FW	1	Total	Mg	0
			1	1	
104	CA	2	Total	Mg	0
			2	2	
104	Cg	1	Total	Mg	0
			1	1	

- Molecule 105 is PHOSPHATE ION (CCD ID: PO4) (formula: O₄P).



Mol	Chain	Residues	Atoms			AltConf
105	FW	1	Total	O	P	0
			5	4	1	

- Molecule 106 is S-(2-{[N-(2-HYDROXY-4-{[HYDROXY(OXIDO)PHOSPHINO]OXY}-3,3-DIMETHYLBUTANOYL)-BETA-ALANYL]AMINO}ETHYL) DECANETHIOATE (CCD ID: PM8) (formula: C₂₁H₄₁N₂O₇PS).

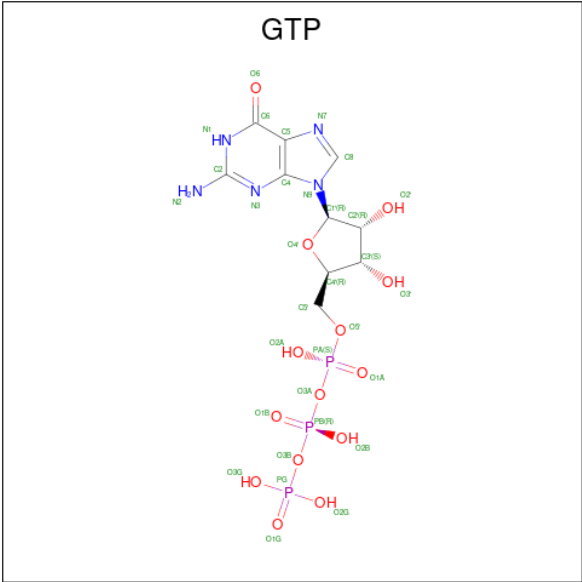


Mol	Chain	Residues	Atoms					AltConf	
106	Fc	1	Total	C	N	O	P	S	0
			32	21	2	7	1	1	

- Molecule 107 is ZINC ION (CCD ID: ZN) (formula: Zn).

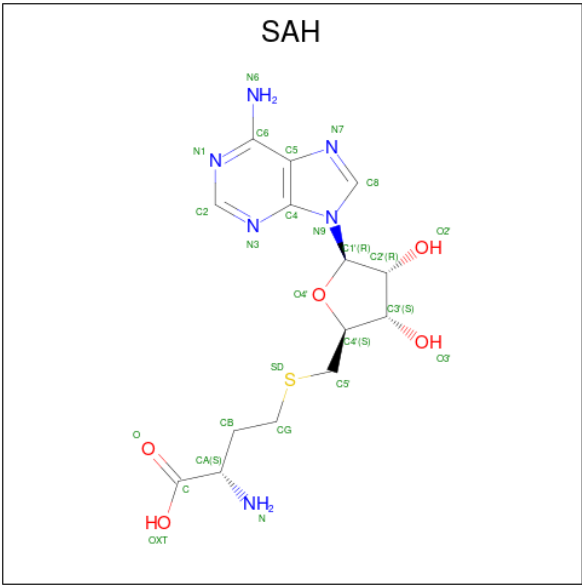
Mol	Chain	Residues	Atoms		AltConf
107	Fd	1	Total	Zn	0
			1	1	
107	F1	1	Total	Zn	0
			1	1	
107	FG	1	Total	Zn	0
			1	1	
107	FL	2	Total	Zn	0
			2	2	
107	Fe	1	Total	Zn	0
			1	1	

- Molecule 108 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃).



Mol	Chain	Residues	Atoms					AltConf
108	Cg	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 109 is S-ADENOSYL-L-HOMOCYSTEINE (CCD ID: SAH) (formula: $C_{14}H_{20}N_6O_5S$).



Mol	Chain	Residues	Atoms					AltConf
109	F1	1	Total	C	N	O	S	0
			26	14	6	5	1	
109	FF	1	Total	C	N	O	S	0
			26	14	6	5	1	

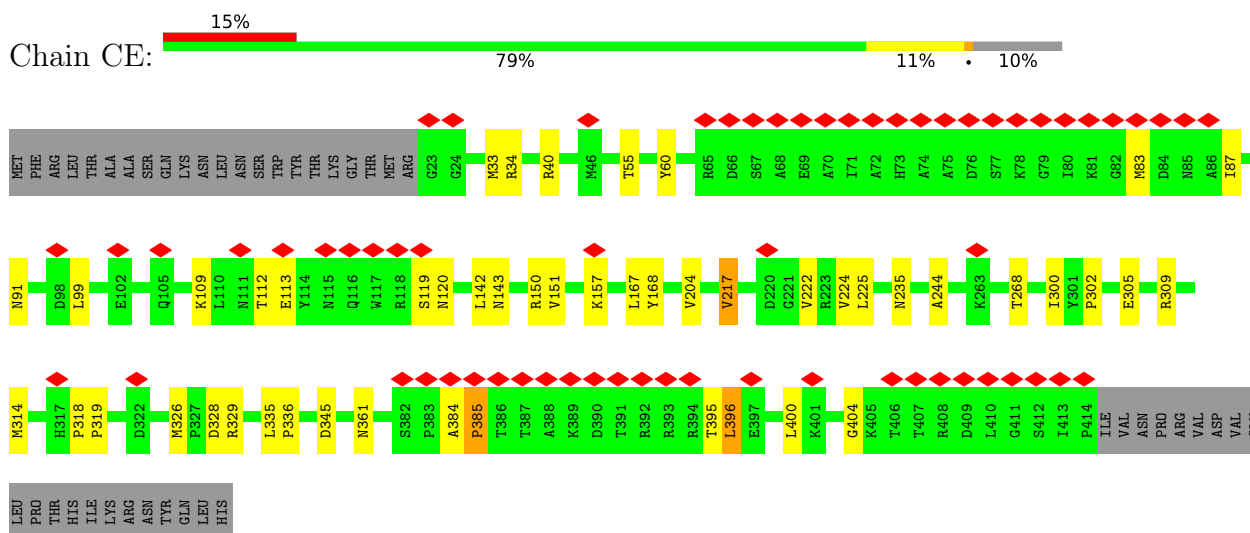
- Molecule 110 is water.

Mol	Chain	Residues	Atoms		AltConf
110	Cg	3	Total 3	O 3	0

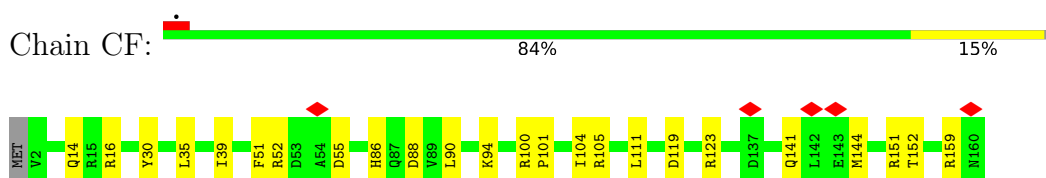
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

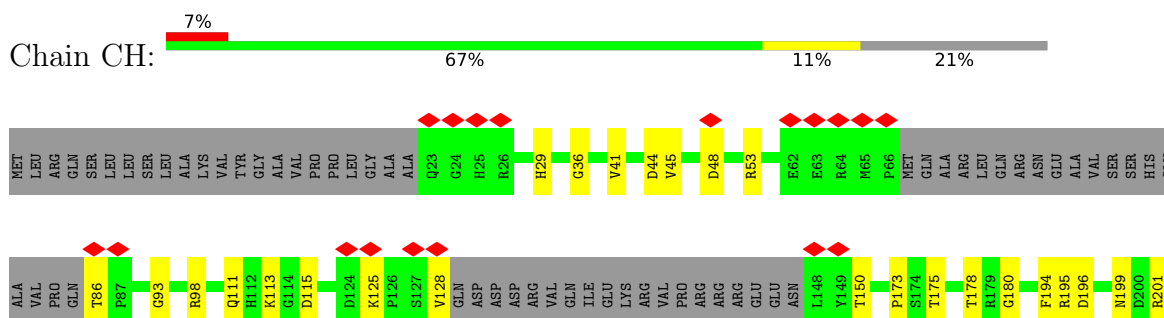
• Molecule 1: uS5m

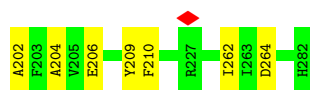


• Molecule 2: bS6m

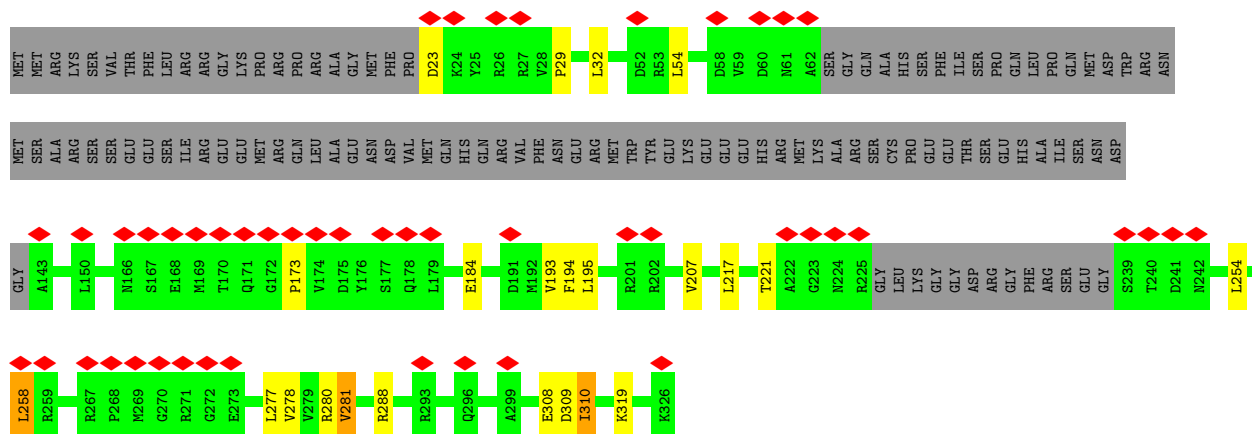


• Molecule 3: uS8m

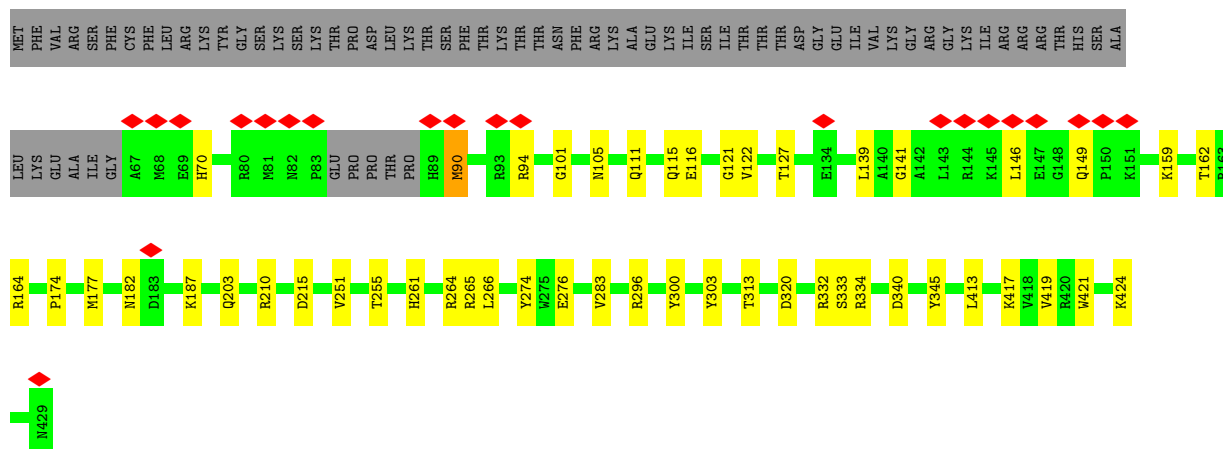
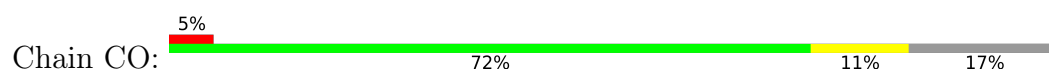




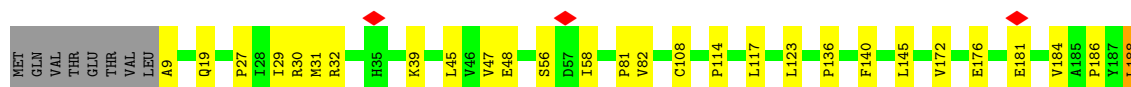
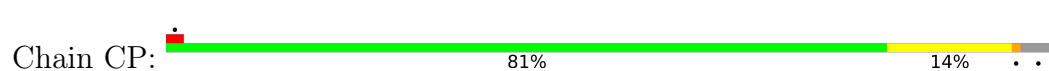
• Molecule 4: uS11m



• Molecule 5: uS15m



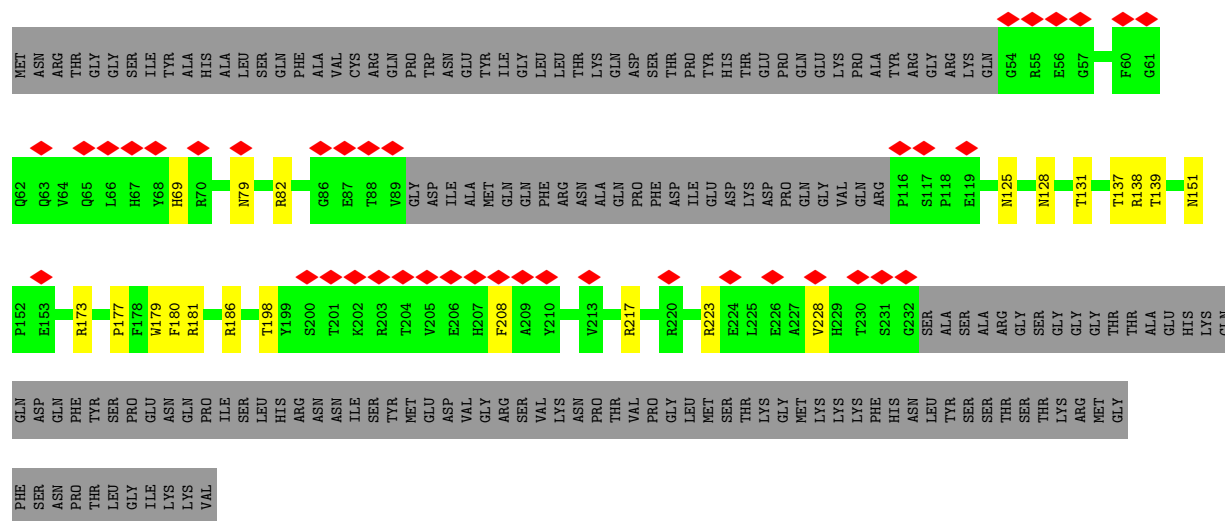
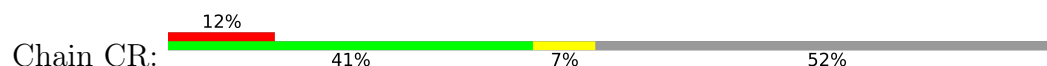
• Molecule 6: bS16m



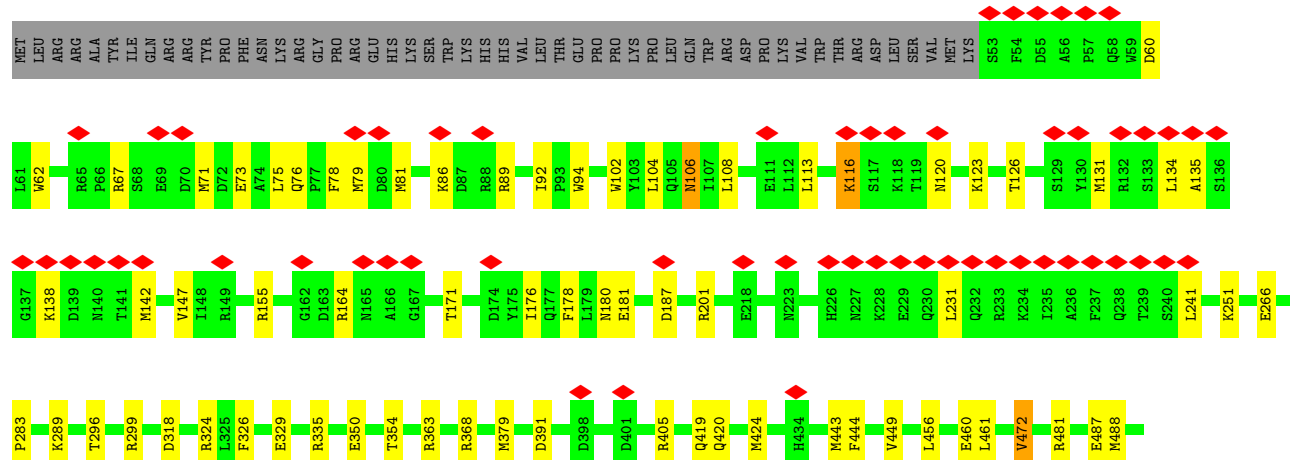
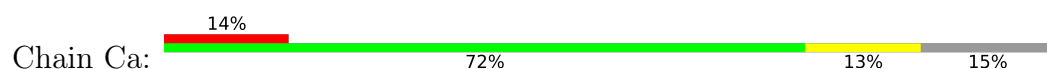
• Molecule 7: uS17m



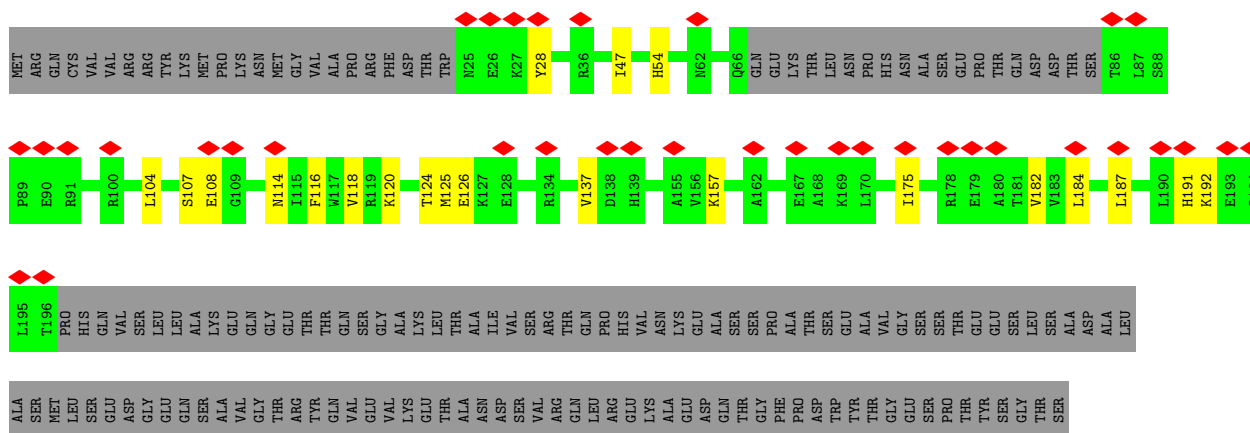
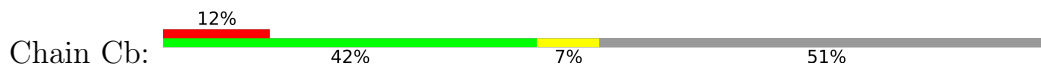
- Molecule 8: bS18m



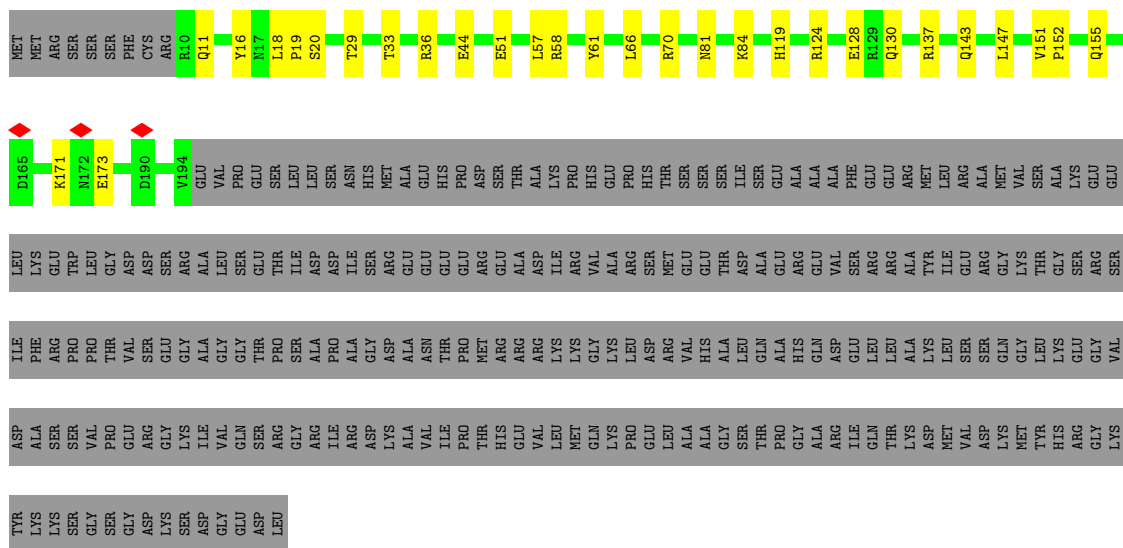
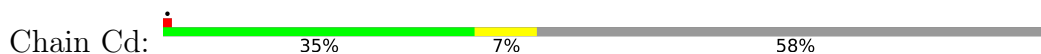
- Molecule 9: mS22



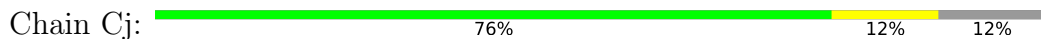
- Molecule 10: mS23



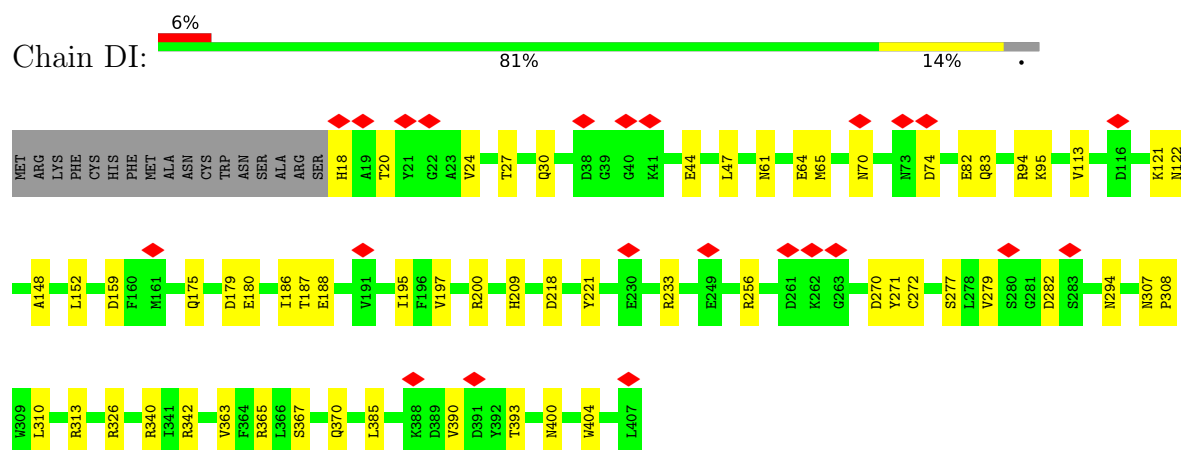
- Molecule 11: mS26



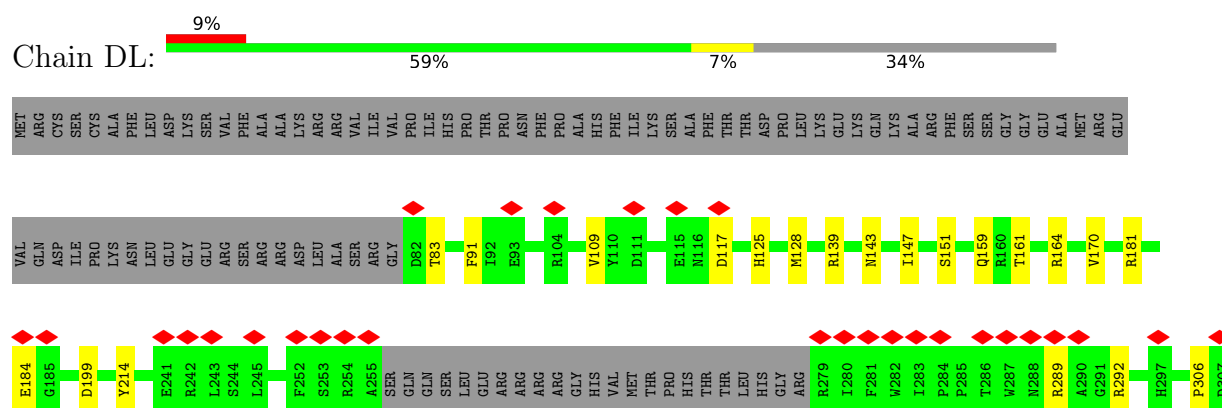
- Molecule 12: mS34



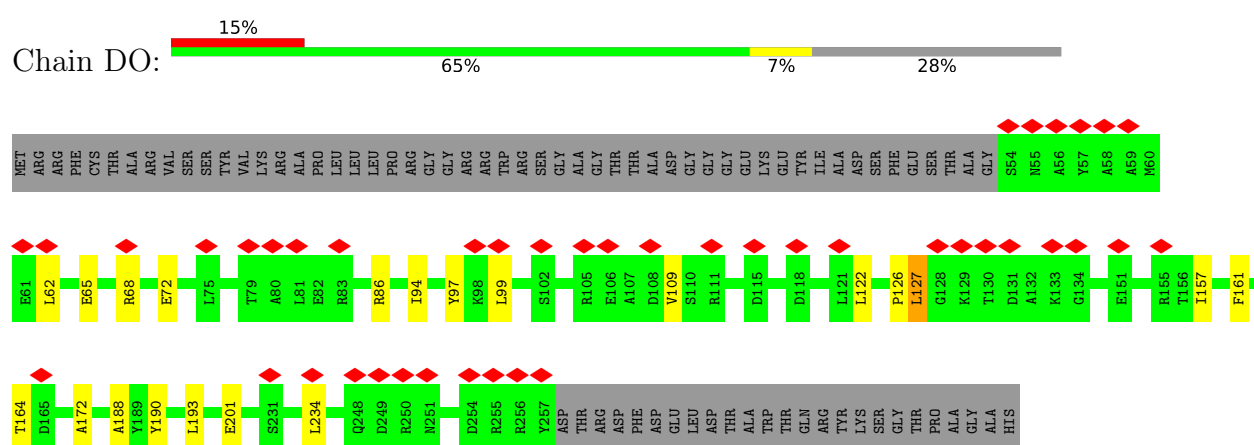
- Molecule 16: mS56



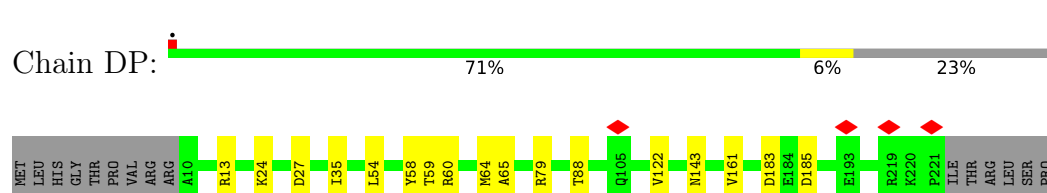
- Molecule 17: mS59



- Molecule 18: mS62 (KRIPP14)



- Molecule 19: mS63 (KRIPP16)



GLY SER GLY THR ILE SER ASP GLY GLU PRO SER THR ASP VAL GLY THR THR VAL ASP ASP GLU ILE ALA GLN LEU ALA GLU LEU LEU ALA LEU ARG GLU GLY GLY LYS

• Molecule 20: mS65

Chain DR:  82% 12% 6%

MET PHE SER GLU SER LEU CYS ILE LEU S10 F13 M16 T17 K18 V33 V44 V60 I63 I64 E74 D88 I117 V118 L126 D129 D130 C135 L154 R158 S161 Q162 G163 GLY THR THR GLY SER GLU THR G171 K188 E189 L190

R221 R227 T232 P240 R250 A252 V254 P255 G260 R262 S263 H288 F270

• Molecule 21: mS68

Chain DU:  19% 83% 12% .

MET ARG ARG GLY ALA LEU SER LEU L9 K10 G15 Q18 E30 S31 T32 T33 Y34 P35 G36 P37 I38 R39 A40 L53 D71 T86 Q99 P106 K107 D108 S109 T110 I111 V120 N122 Q123 P143 T146 N164 D165 L168 H169 R170 D171 D172

P175 R176 D177 W178 T179 V180 D181 E182 E186 D187 V188 K189 R190 S191 M196 E197 M198 Q199 P200 L201 Q202 N203 L204 A205 P206 E209 A210 R211 P212 K213 G214 Y221 M224 K225 Q226 S227 SER

• Molecule 22: mS73

Chain DZ:  10% 26% 5% 68%

MET LEU ARG ARG SER ILE LEU PHE ARG MET LYS TYR ALA ASP LEU LEU THR ARG GLY PHE PRO HIS GLY MET LYS LEU LEU ASP GLN ASN ILE PRO TRP TYR PHE SER THR TYR ARG SER MET THR HIS TRP PRO ILE THR GLY ASP ASN TRP

SER ASP L63 N64 E65 A66 E67 K68 H69 L72 W80 E85 G86 I87 F88 E92 ASP SER

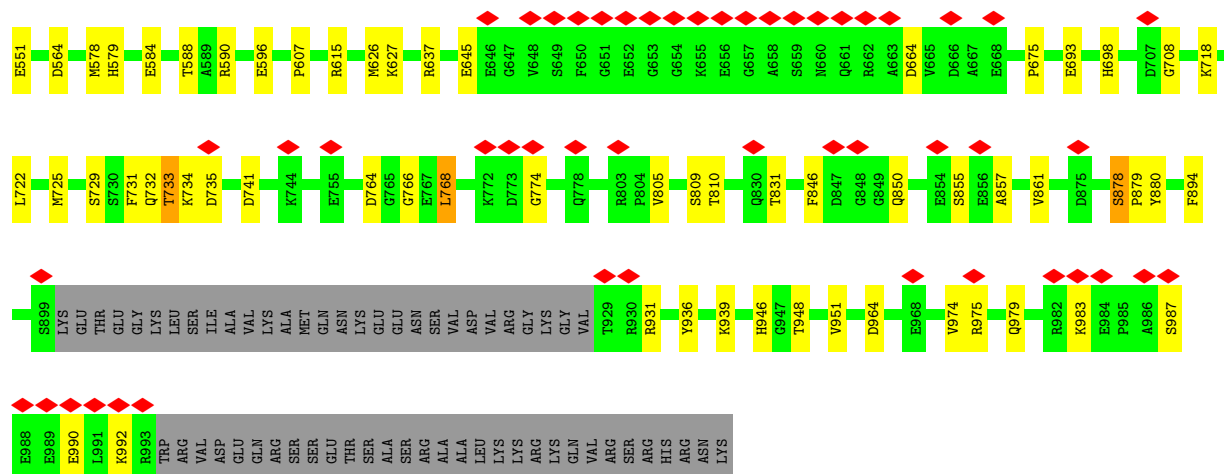
• Molecule 23: mt-SAF2 (KRIPP2)

Chain F2:  7% 78% 11% 11%

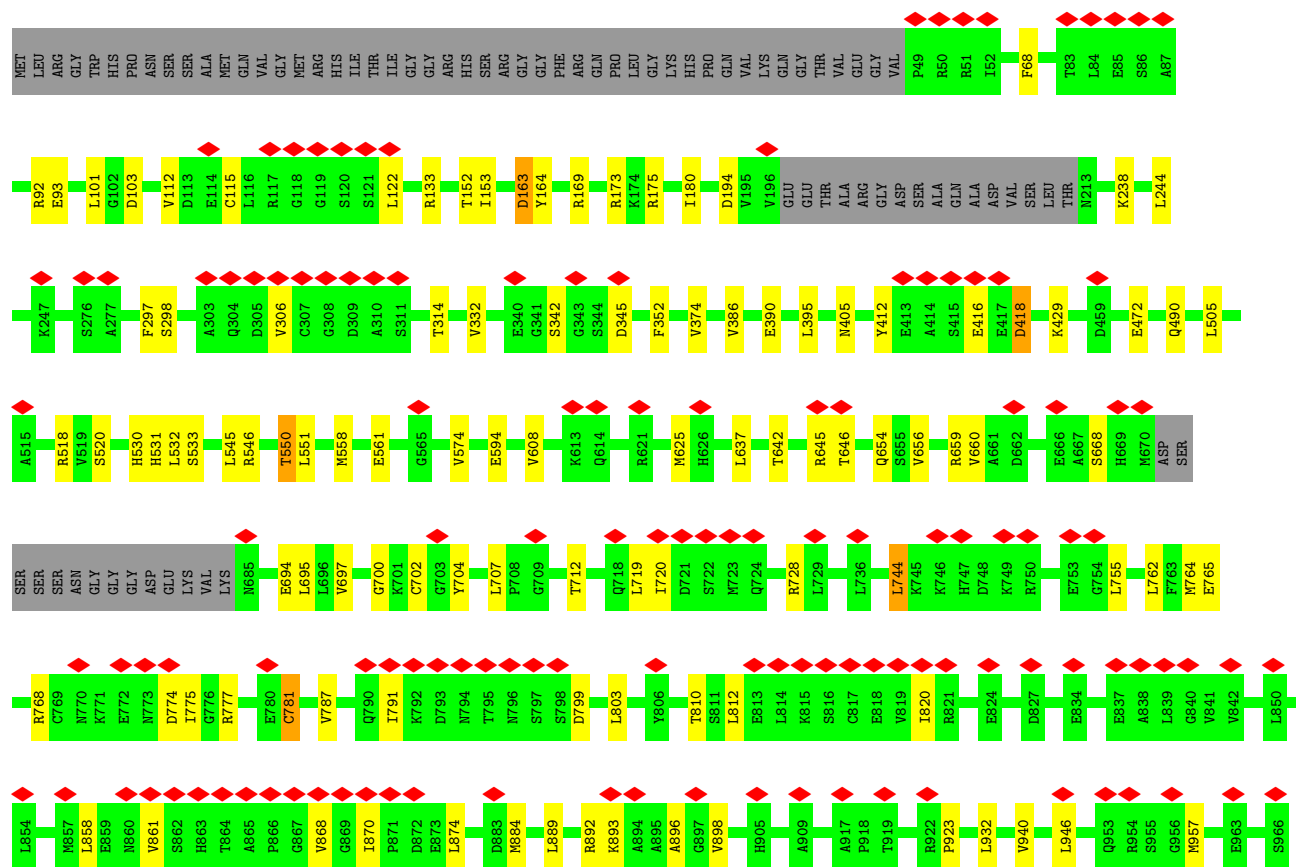
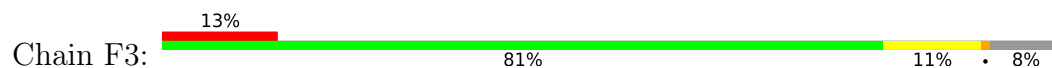
MET THR PRO THR ARG ARG ASN THR PRO K10 A11 P14 Q17 R25 A29 E38 T46 R52 P53 P54 V55 Q56 Q57 Q58 W59 D60 Y68 F72 P73 A74 Q76 D79 K83 E86 R87 G99 E110 P111 L112 S113 G114 K115 A116 S117 K118

G124 ASP MET SER GLY THR ALA LEU PRO ASN PRO THR TYR ASP VAL GLU GLN VAL R165 A166 E167 E168 L169 K172 Y173 N174 A178 T205 E206 I224 G225 R226

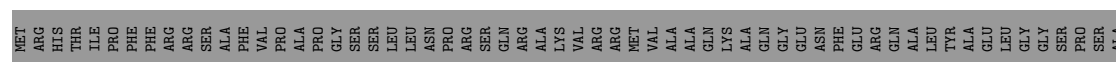
D230 M235 R245 S252 E266 T273 E281 Y284 D291 Q297 N301 K304 N307 V313 Q337 S351 R352 L377 V387 R417 D445 K448 E449 K450 D451 E470 R475 V478 W499 D504 D532 Q546

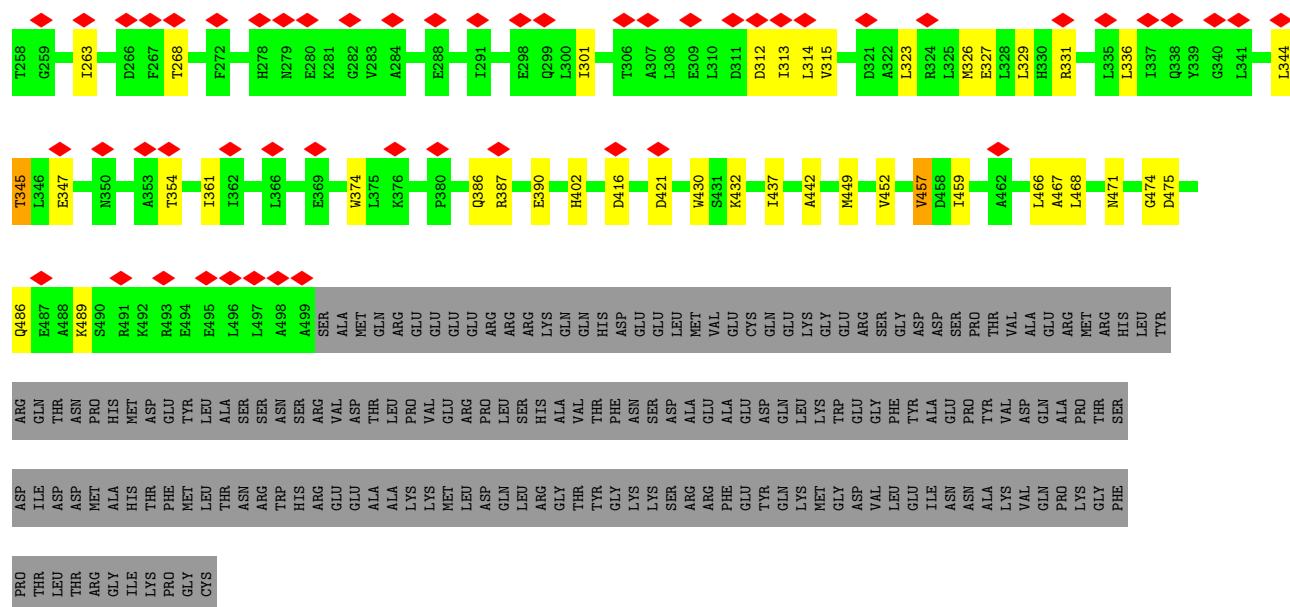


• Molecule 24: mt-SAF3

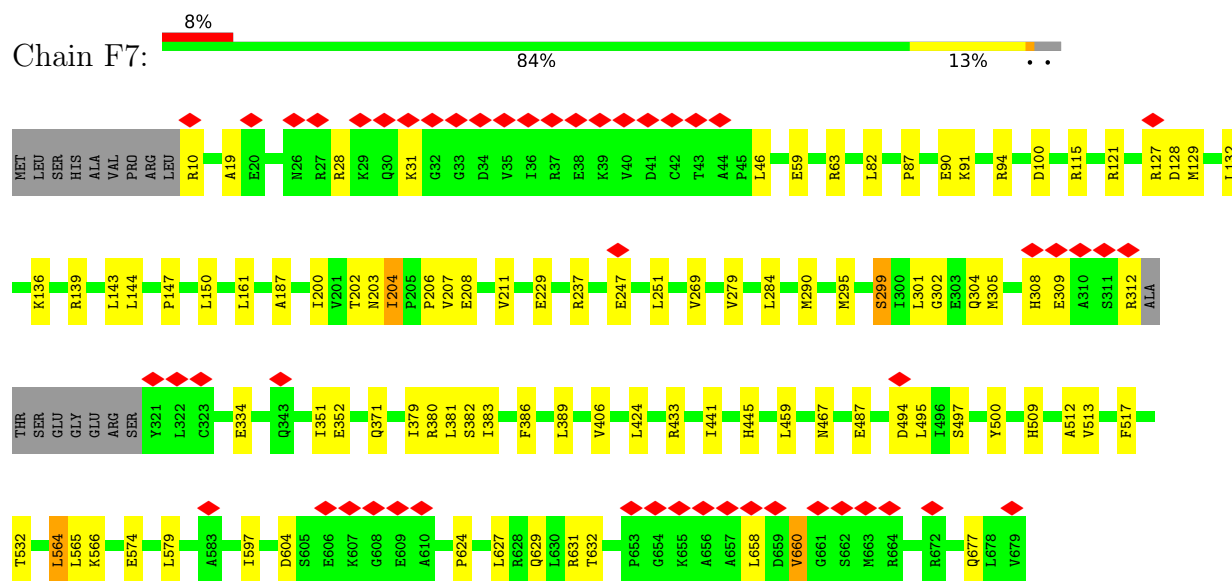


• Molecule 25: mt-SAF5

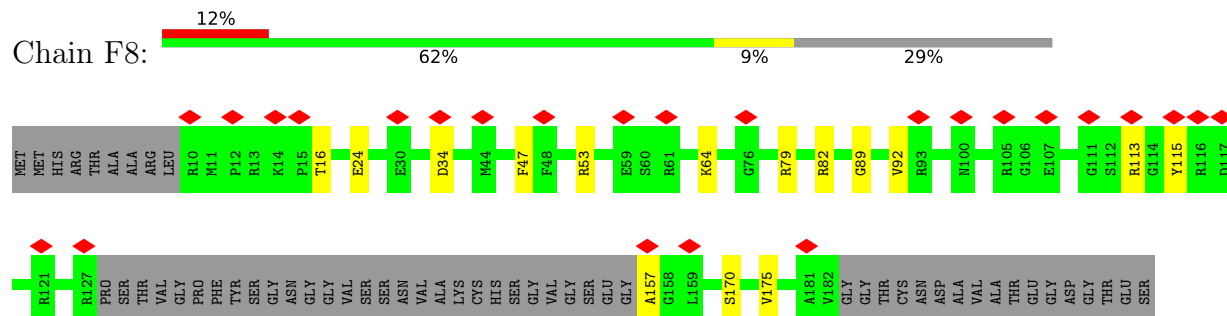


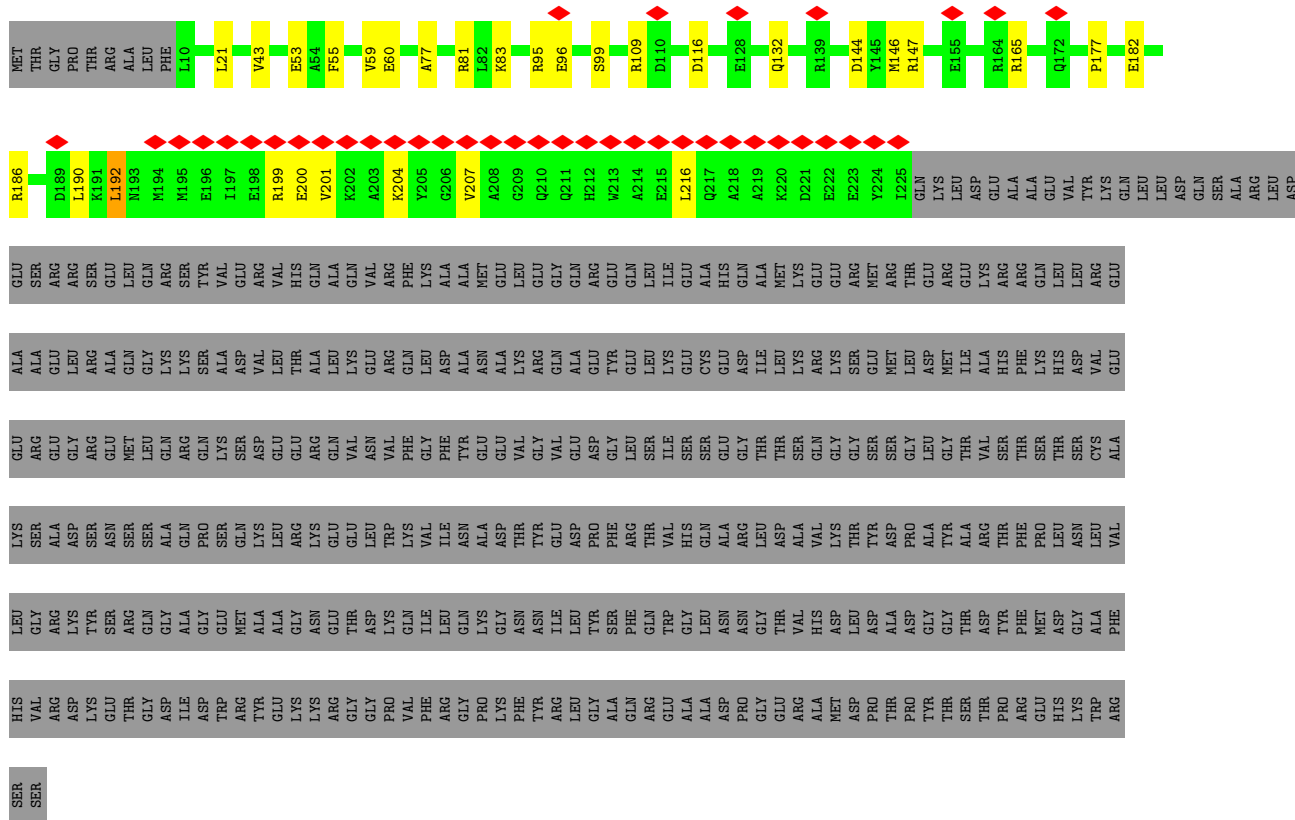


• Molecule 27: mt-SAF7 (KRIPP10)

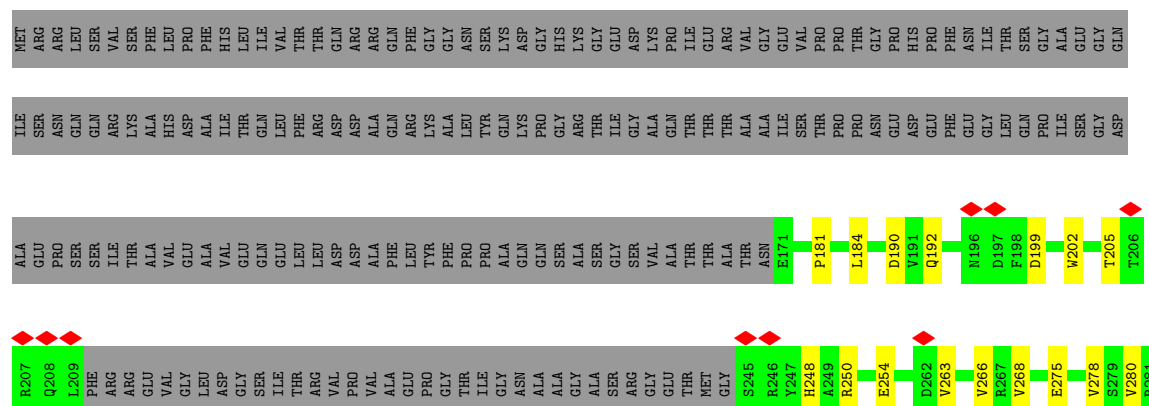


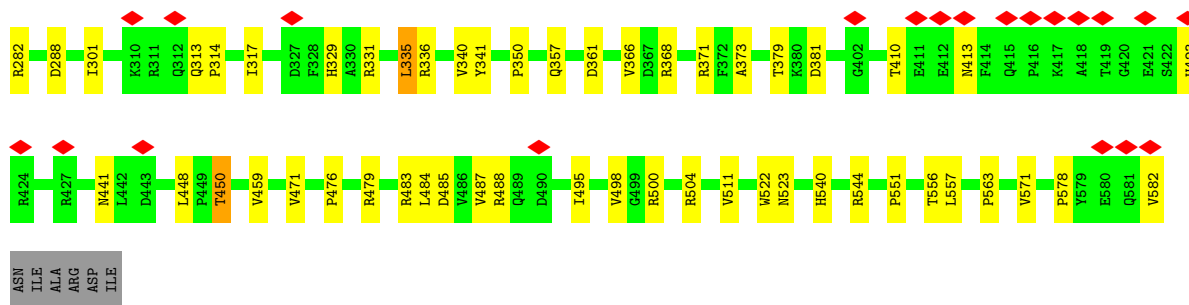
• Molecule 28: mt-SAF8



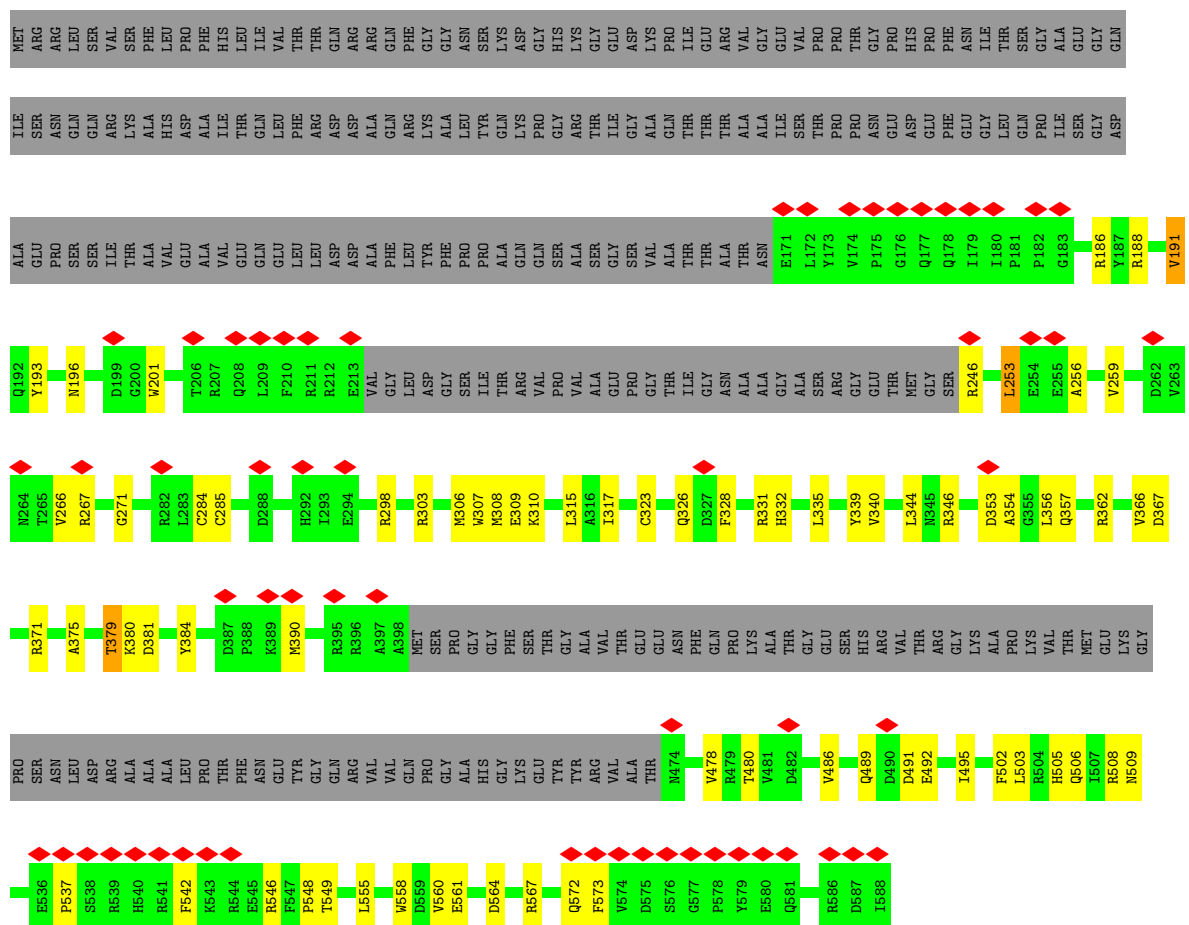


Chain FA:

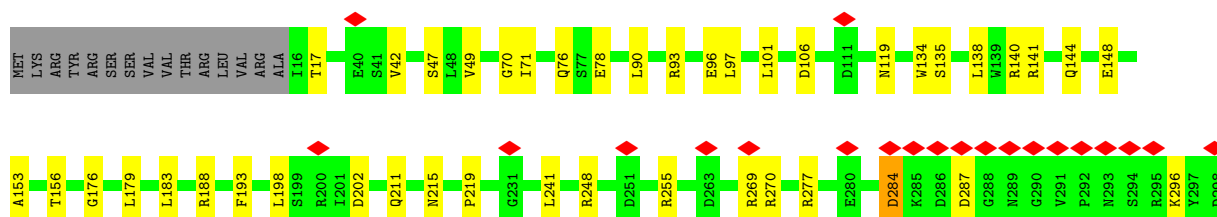


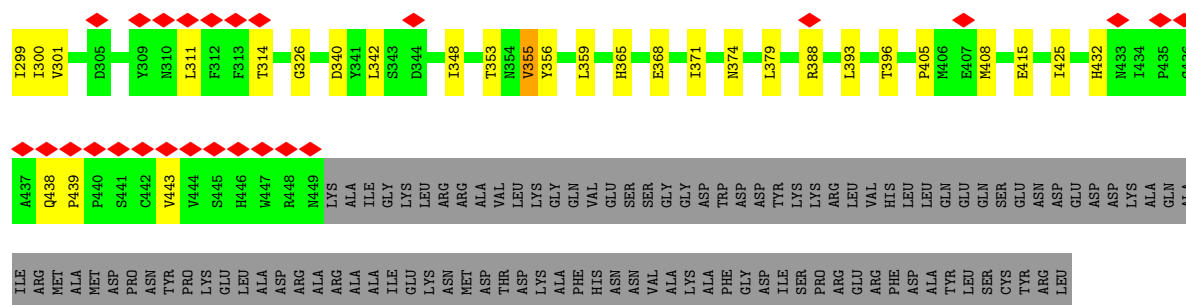


• Molecule 31: mt-SAF11

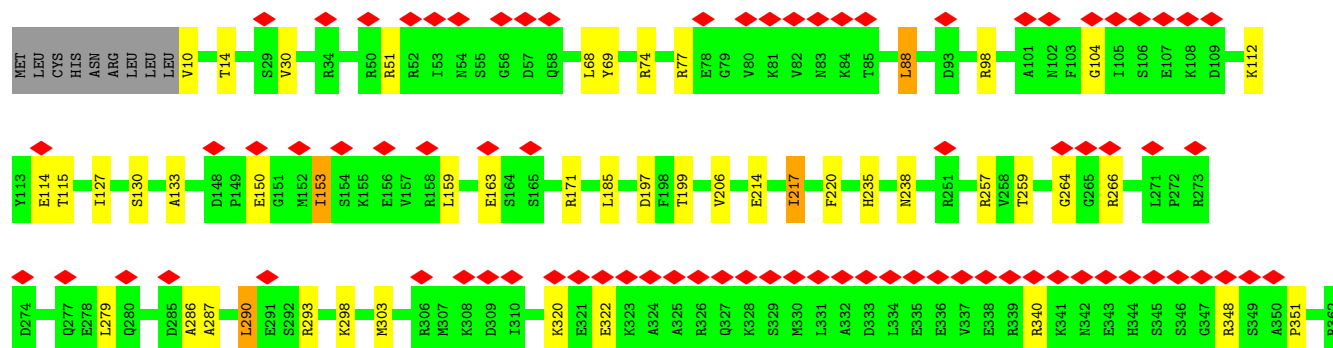
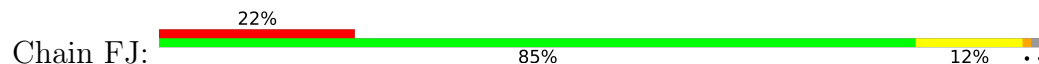


• Molecule 32: mt-SAF13

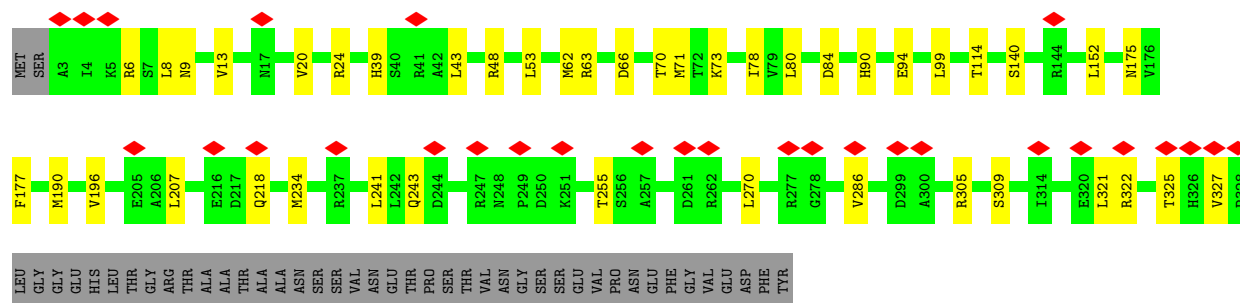
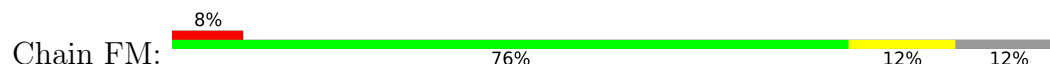




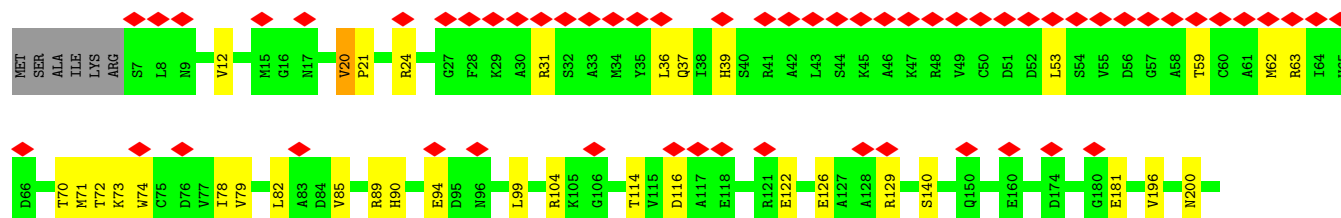
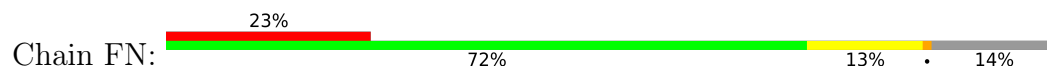
• Molecule 33: mt-SAF18

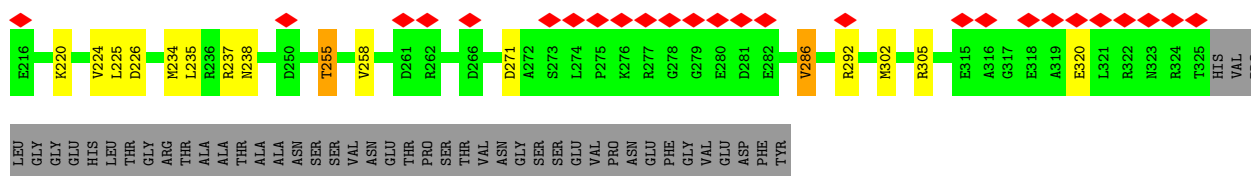


• Molecule 34: mt-SAF21

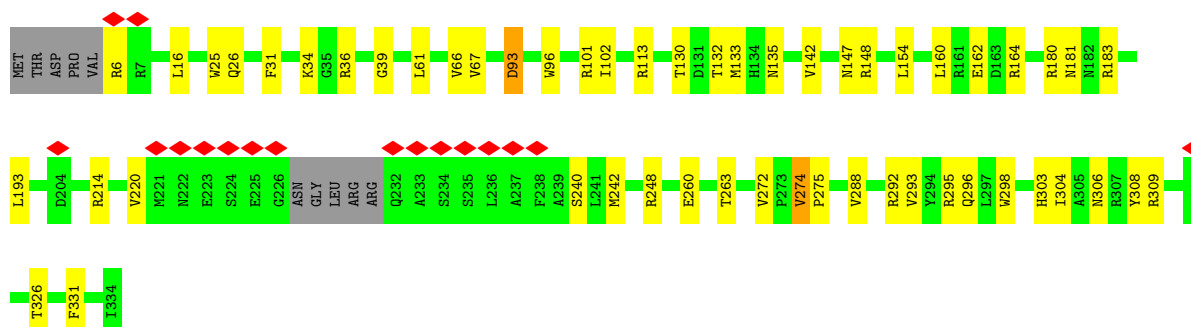
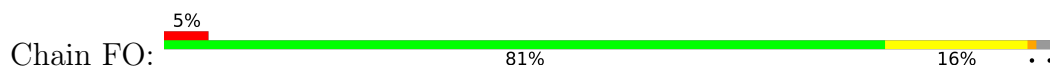


• Molecule 34: mt-SAF21

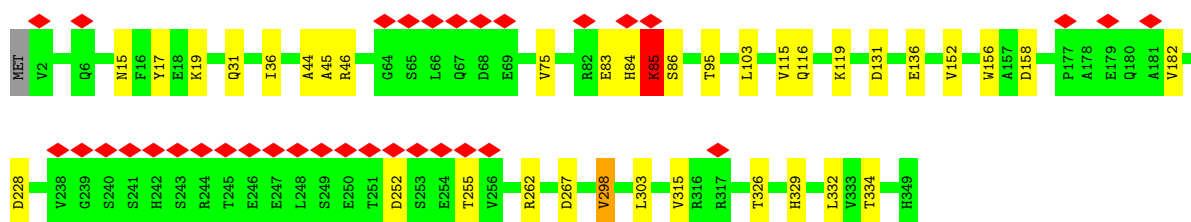
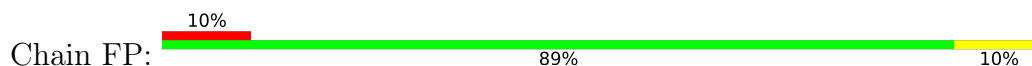




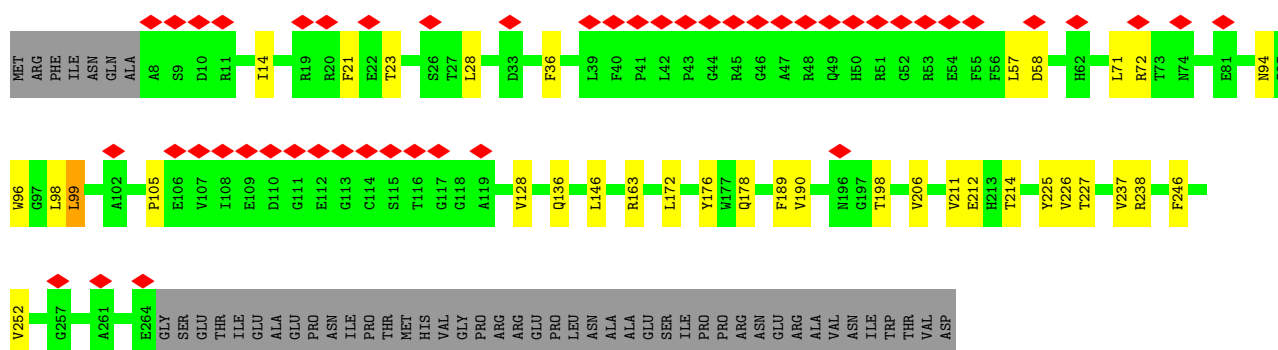
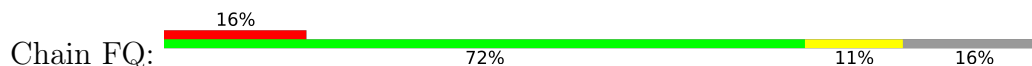
• Molecule 35: mt-SAF22 (KRIPP17)



• Molecule 36: mt-SAF23

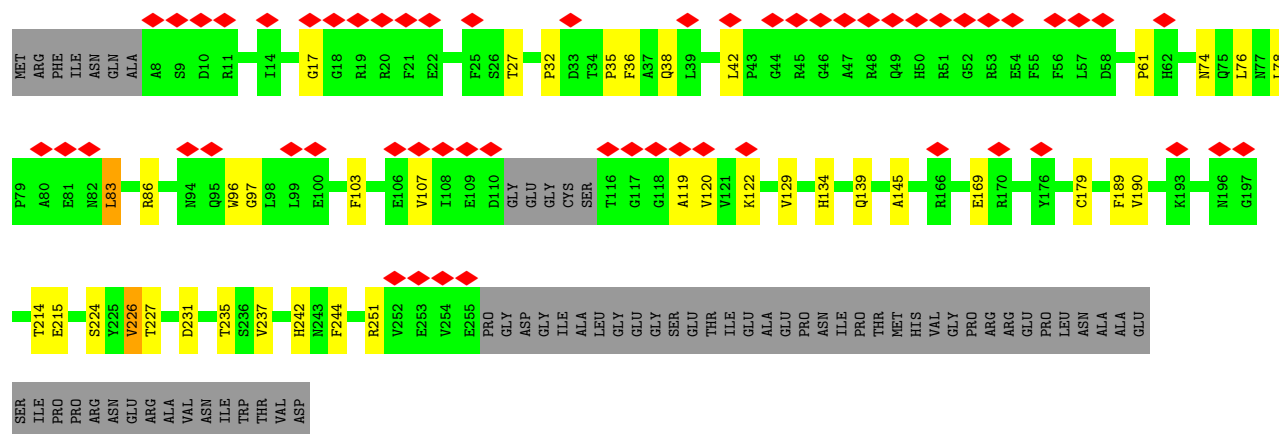


• Molecule 37: mt-SAF24

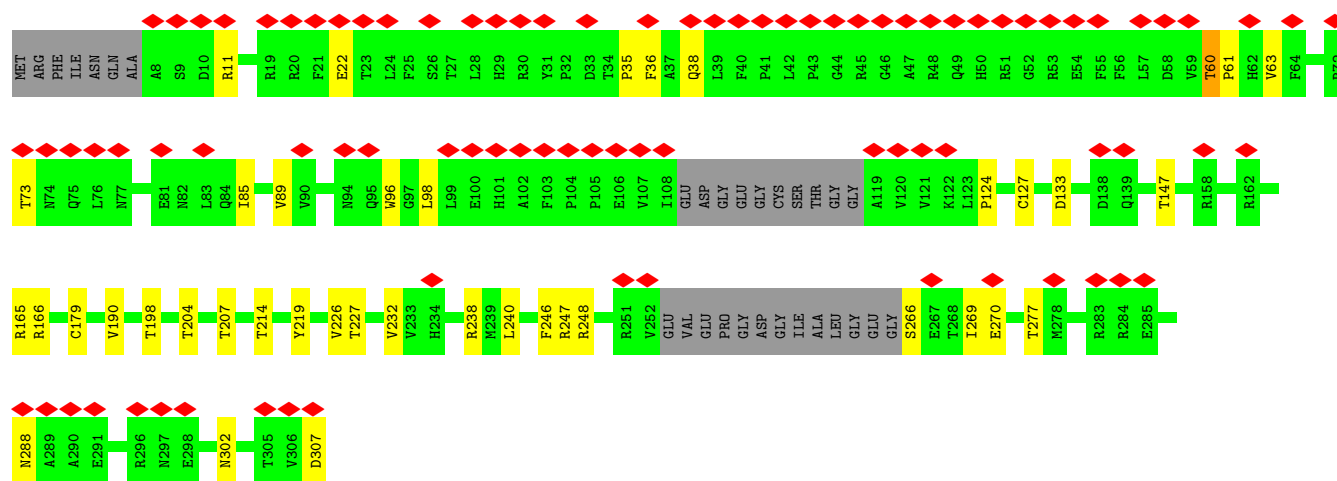
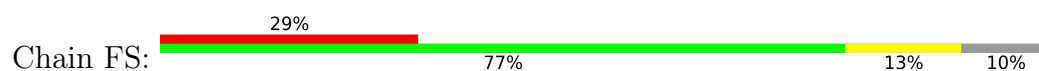


• Molecule 37: mt-SAF24

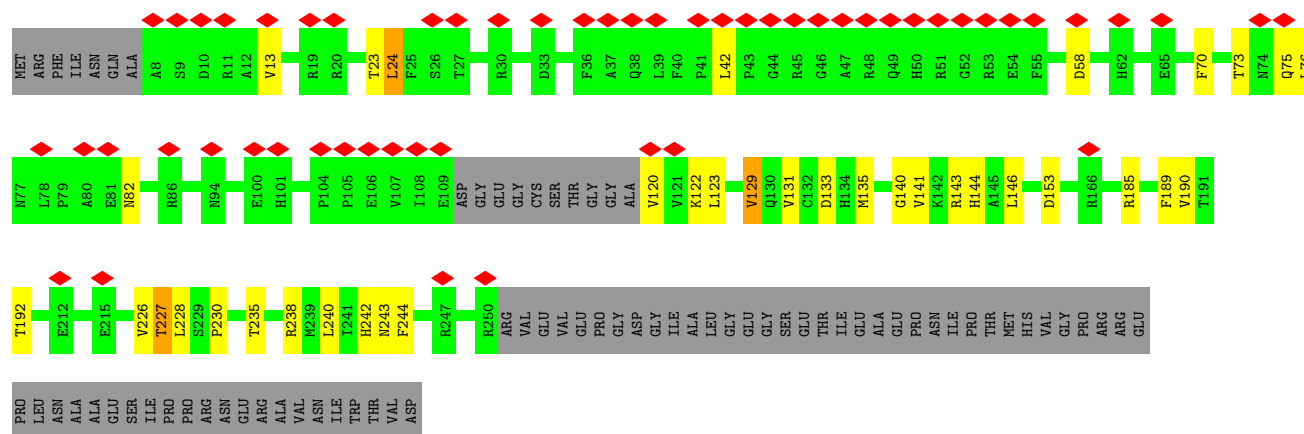




• Molecule 37: mt-SAF24

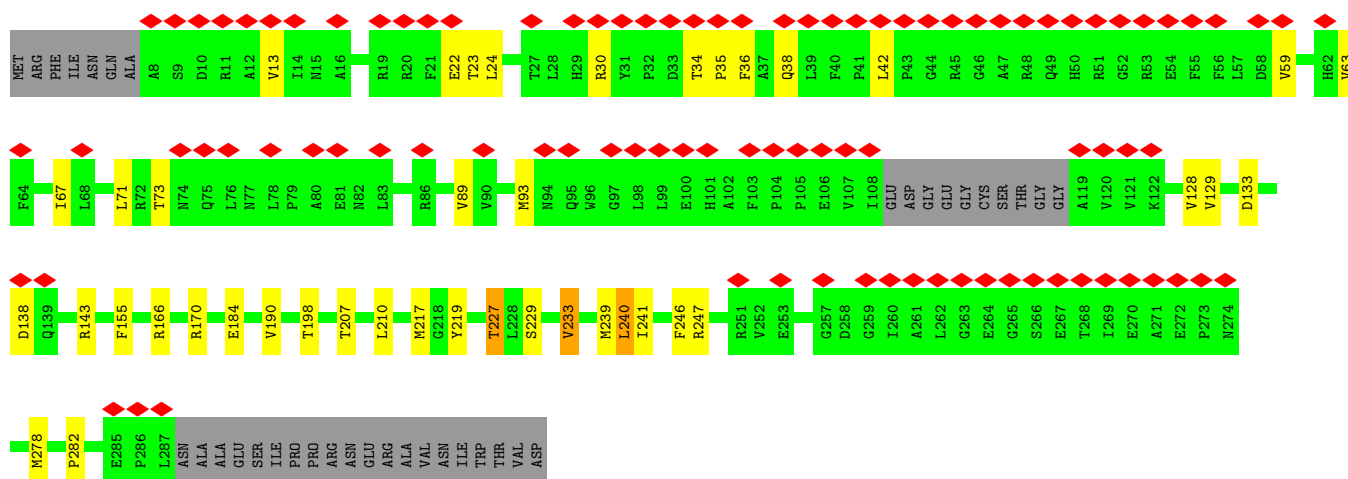


• Molecule 37: mt-SAF24



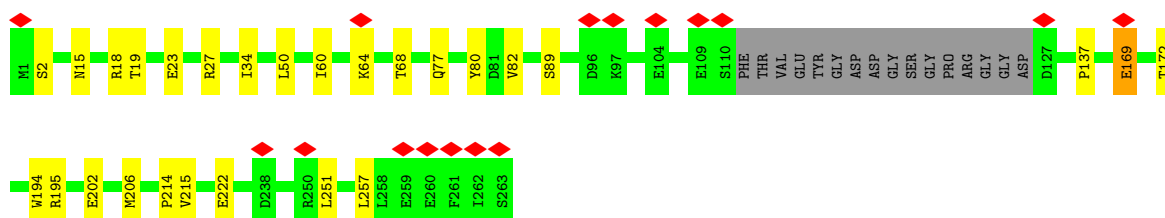
• Molecule 37: mt-SAF24

Chain FU: 



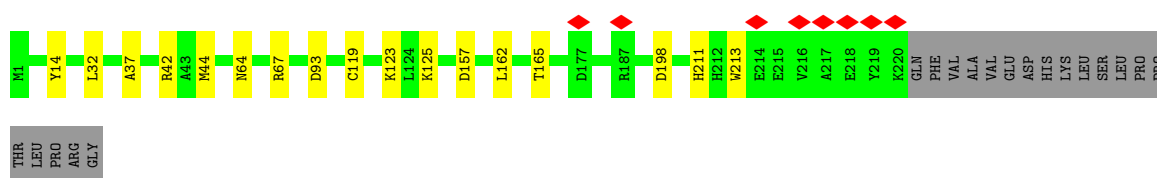
• Molecule 38: mt-SAF26

Chain FW: 



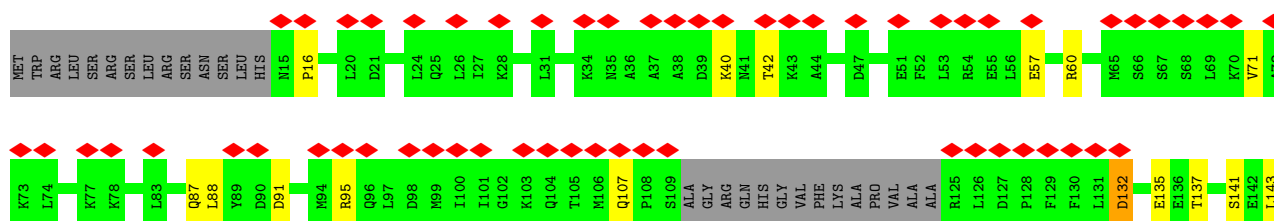
• Molecule 39: mt-SAF27 (KRIPP11)

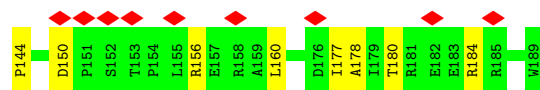
Chain FX: 



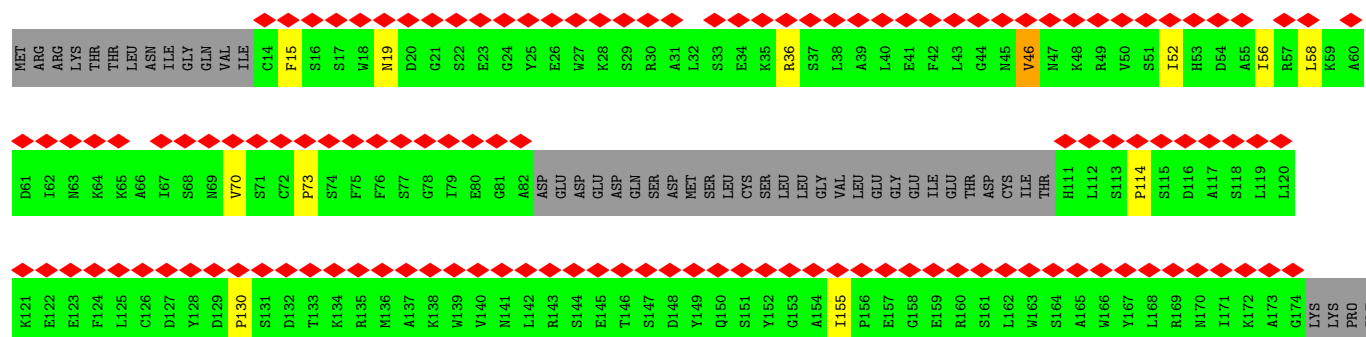
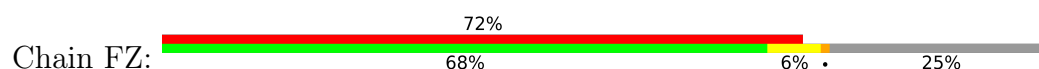
• Molecule 40: mt-SAF28

Chain FY: 

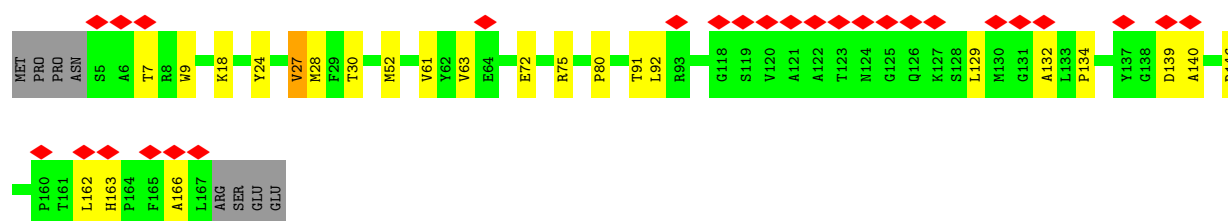
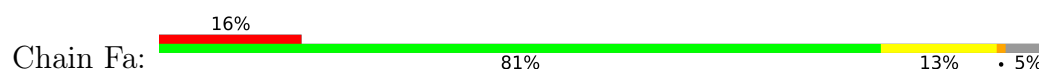




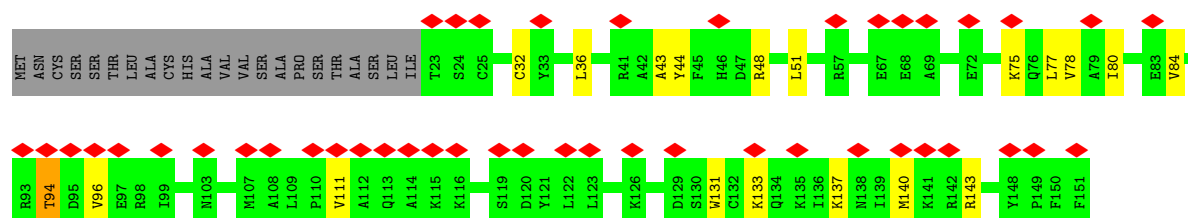
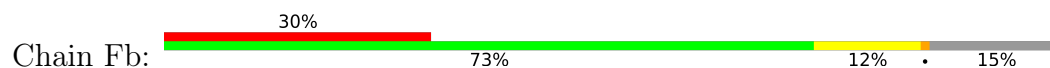
- Molecule 41: mt-SAF29



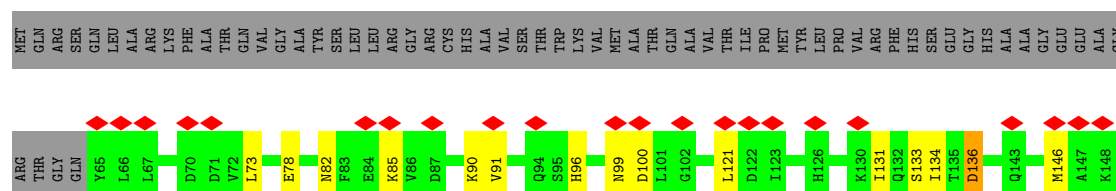
- Molecule 42: mt-SAF30



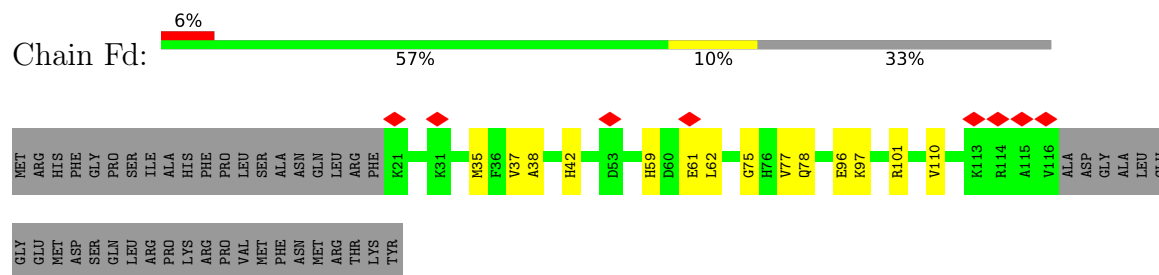
- Molecule 43: mt-SAF31



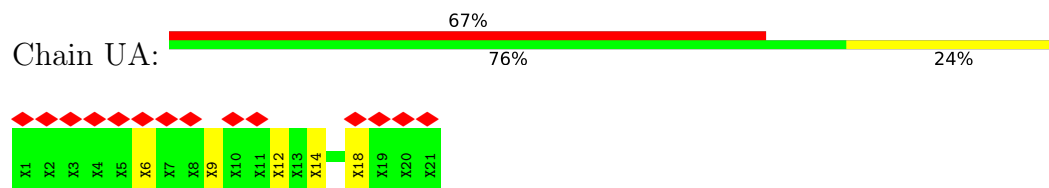
- Molecule 44: mt-SAF32



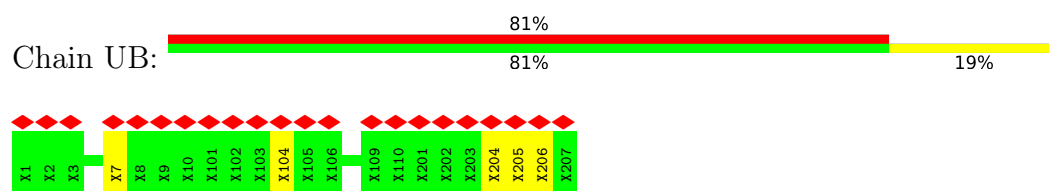
- Molecule 45: mt-SAF33



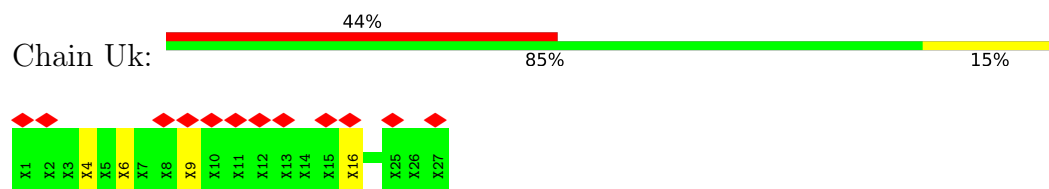
- Molecule 46: UNK-A



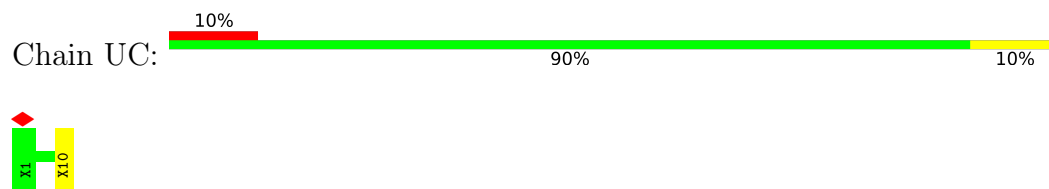
- Molecule 47: UNK-B, UNK-k



- Molecule 47: UNK-B, UNK-k



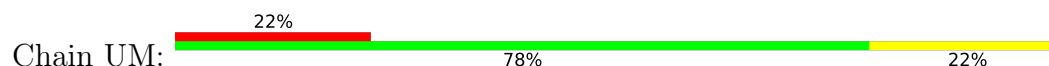
- Molecule 48: UNK-C

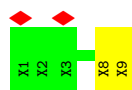


- Molecule 49: UNK-D, UNK-M, UNK-Q, UNK-f



- Molecule 49: UNK-D, UNK-M, UNK-Q, UNK-f





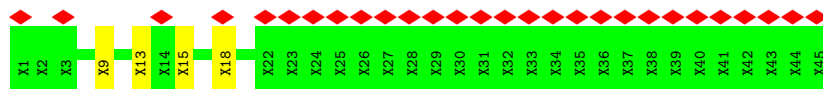
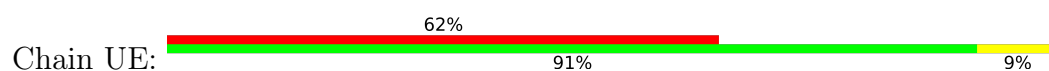
- Molecule 49: UNK-D, UNK-M, UNK-Q, UNK-f



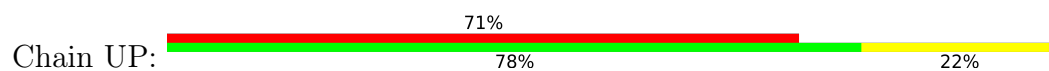
- Molecule 49: UNK-D, UNK-M, UNK-Q, UNK-f



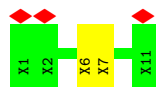
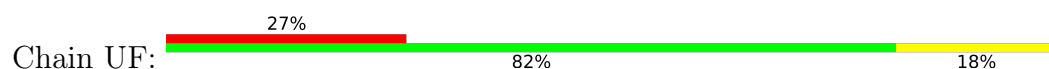
- Molecule 50: UNK-E, UNK-P



- Molecule 50: UNK-E, UNK-P



- Molecule 51: UNK-F, UNK-m



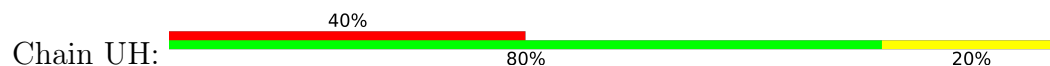
- Molecule 51: UNK-F, UNK-m



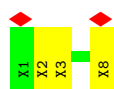
- Molecule 52: UNK-G



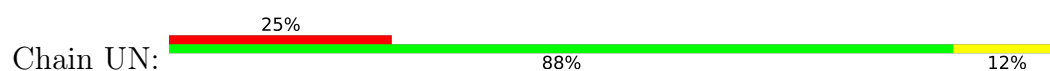
- Molecule 53: UNK-H



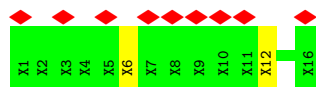
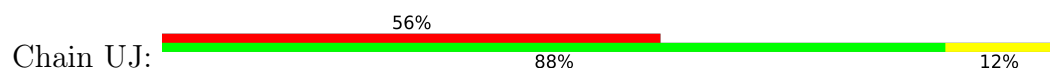
- Molecule 54: UNK-I, UNK-N



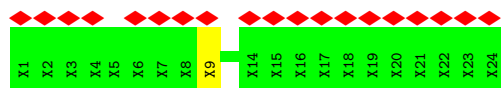
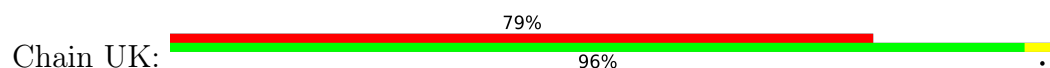
- Molecule 54: UNK-I, UNK-N



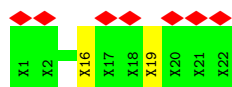
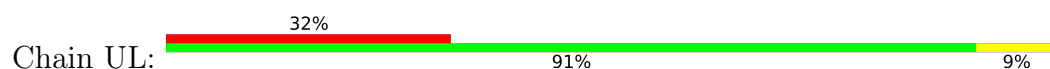
- Molecule 55: UNK-J



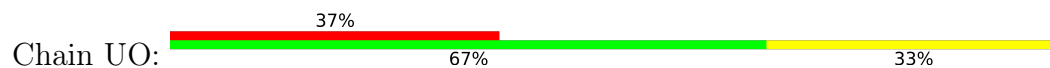
- Molecule 56: UNK-K



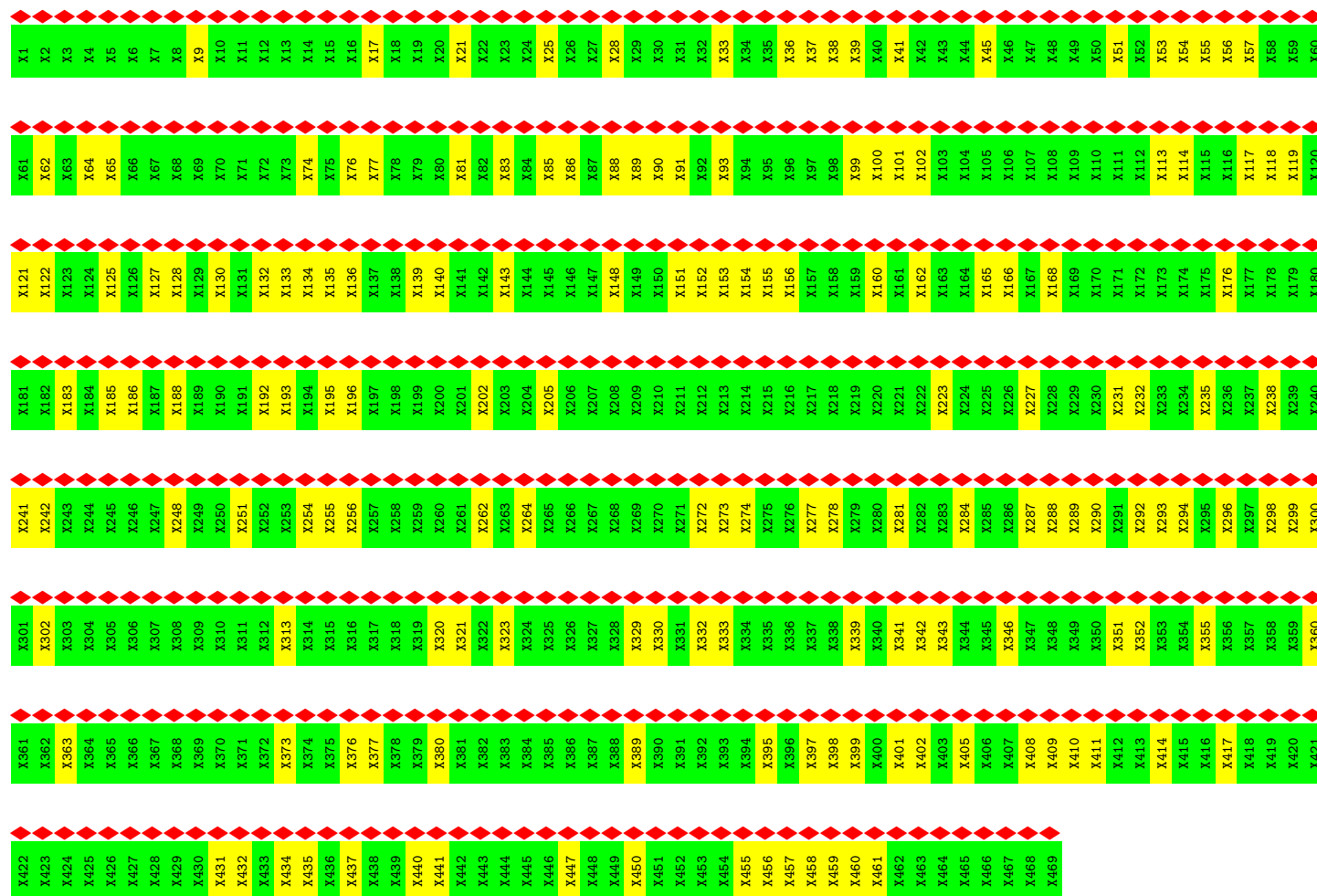
- Molecule 57: UNK-L



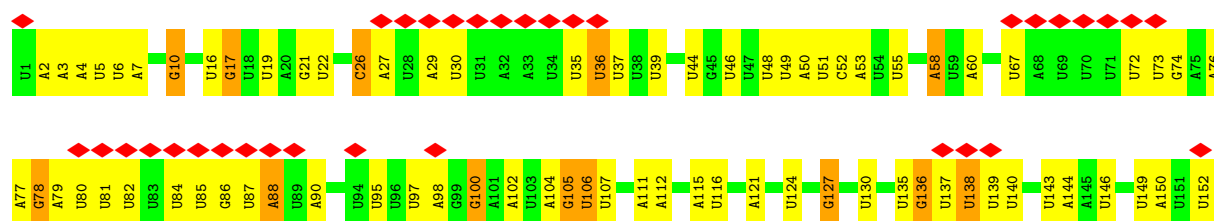
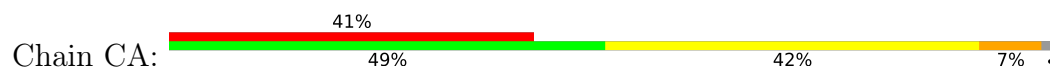
• Molecule 58: UNK-O

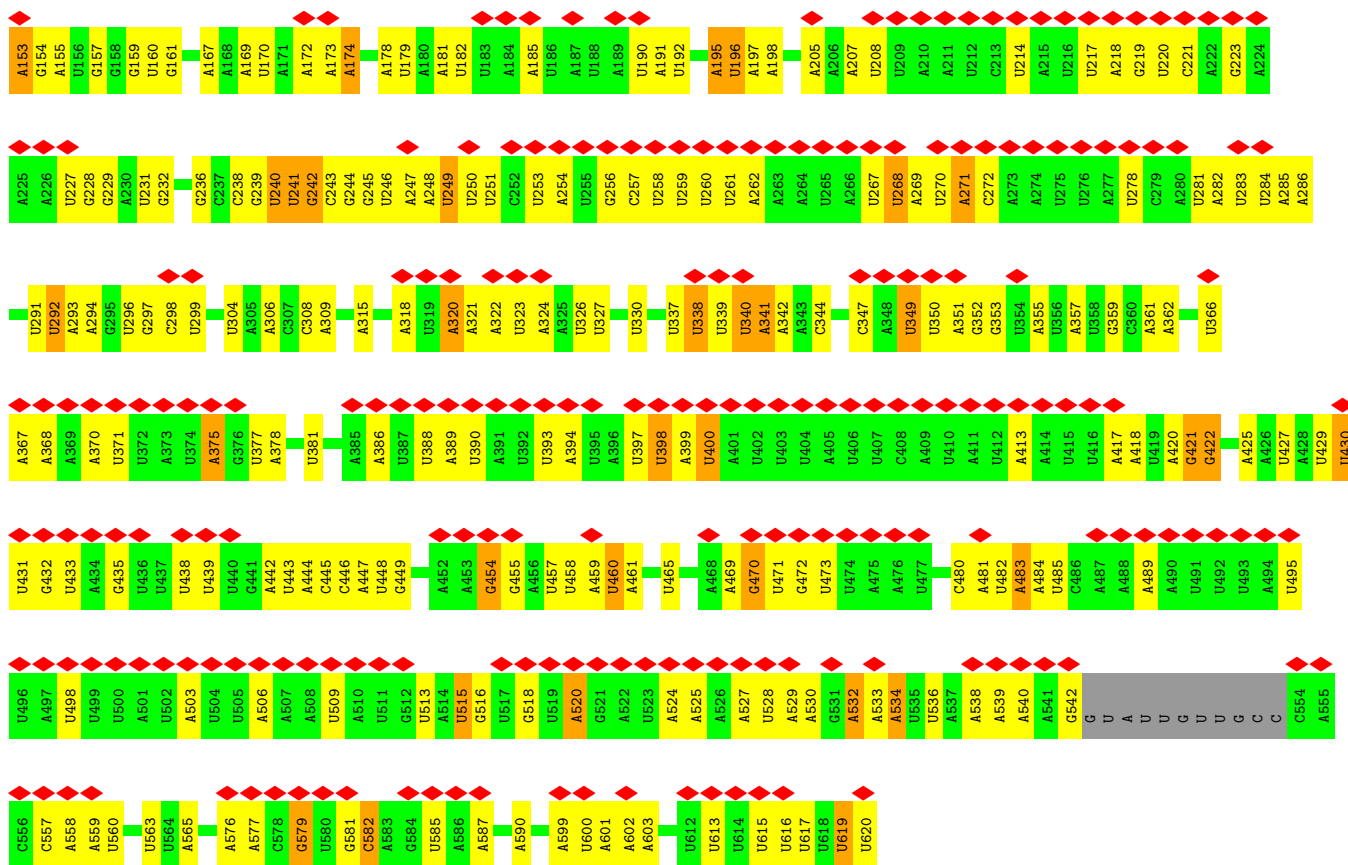


• Molecule 59: UNK-Y

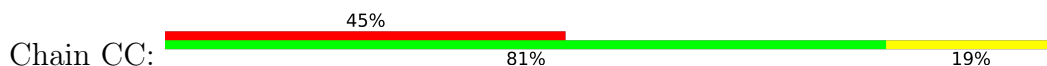


• Molecule 60: 9S rRNA

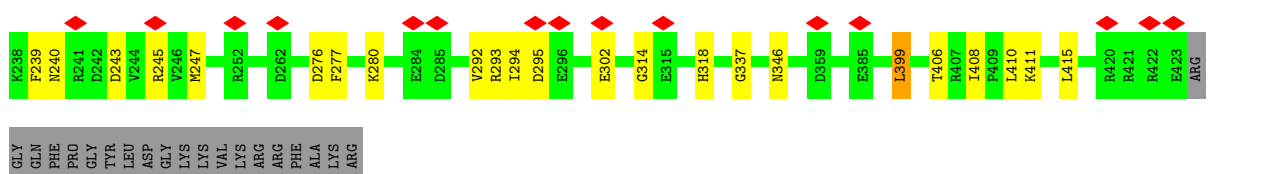
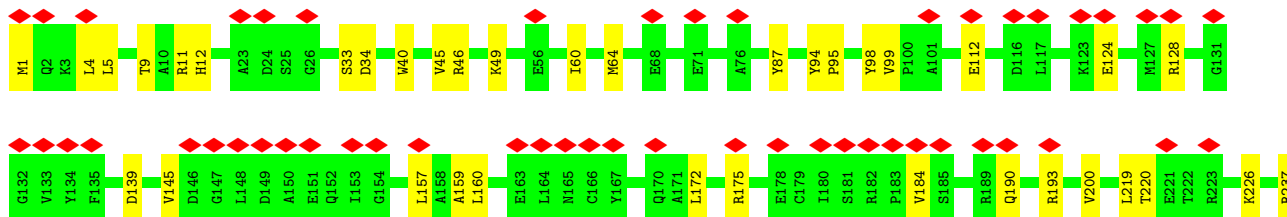
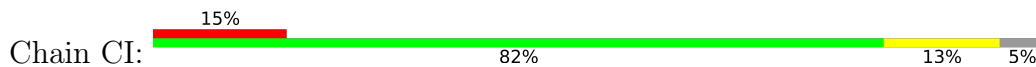




• Molecule 61: mS3m



• Molecule 62: uS9m





MET ALA PHE ARG ASN THR PHE THR PRO GLY LYS PHE SER THR VAL SER LYS ASN ILE VAL LEU LEU ILE TRP ARG VAL LYS VAL PHE LEU ARG ALA GLY PHE LEU ALA HIS SER LEU VAL MET LEU PRO VAL SER LYS TYR SER LYS ILE LEU LEU CYS ASP VAL LYS LYS

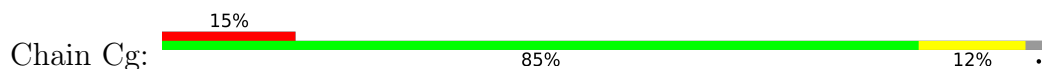
ILE VAL TYR PHE HIS CYS THR ARG LYS LYS SER MET LEU ARG CYS PRO CYS VAL TRP PRO ASP GLY PRO THR LYS SER SER VAL SER ILE GLY THR ARG LEU GLN LYS ARG PHE LEU LYS ILE ALA SER LYS ALA TYR PHE GLY PHE TYR LEU LEU CYS ASP VAL LYS LYS ARG GLN ARG

LYS Y50 P51 F52 L53 R54 R55 P56 H57 F58 LYS ASN THR HIS SER MET N65 P66 S67 A68 P69 Y70 F71 W72 S73 F74 W75 T76 A77 K78 S79 Q80 M81 A82 F83 L84 P85 E86 E87 N88 Y89 I90 T91 G92 D93 Y94 T95 G96 F98 F99 V100 S101 K102 R103 Q104 V105 Y106 T107 I108

Q109 H110 A111 T112 S113 G114 A115 K116 V117 R118 V119 K120 SER PHE PRO SER I125 F126 E127 F128 M129 S130 S132 R133 W134 M135 I136 G137 K138 E139 M140 N141 T142 L143 L144 PRO LYS ASP MET ASP ILE ASP GLU GLN MET THR LYS GLN ARG LEU TYR VAL ARG GLY

LEU LEU PRO LYS

• Molecule 66: mS29



MET ARG SER LYS THR LEU K7 K8 S9 A12 M13 Y14 M15 V19 W33 D34 L39 K40 E41 T42 R43 K44 L45 K46 N47 G48 V49 P50 V51 R52 R56 T65 S70 F71 I74 V80 L85 I86 Q87 F88 F89 L93 G94 R96 Q99 P102

P103 G104 H105 P106 R107 G108 F109 L110 D123 T143 D148 G149 P150 K155 V163 R167 N170 I171 V172 T173 L174 Y175 D178 I186 S191 D202 R205 A217 D230 L231 P232 T233 E234 Q235 Q236 E237 F238 Q239 E248 A253 V254 A255 P256 A257

S258 L259 M270 L279 V284 E294 T295 H296 F304 L305 R306 G307 L308 A309 S310 F311 N312 E313 S314 S315 T316 D317 I318 D319 L320 Y321 E324 L325 P329 A330 S331 R332 V336 D347 D348 P349 N350 K351 D360 D365 G366 I367 V373 E374 T375 N380

D383 E384 P390 S394 E408 H458 Q461 R473 E484 C485 M486 S487 R488 A490 SER SER GLY ALA VAL GLY VAL ARG

• Molecule 67: mS33

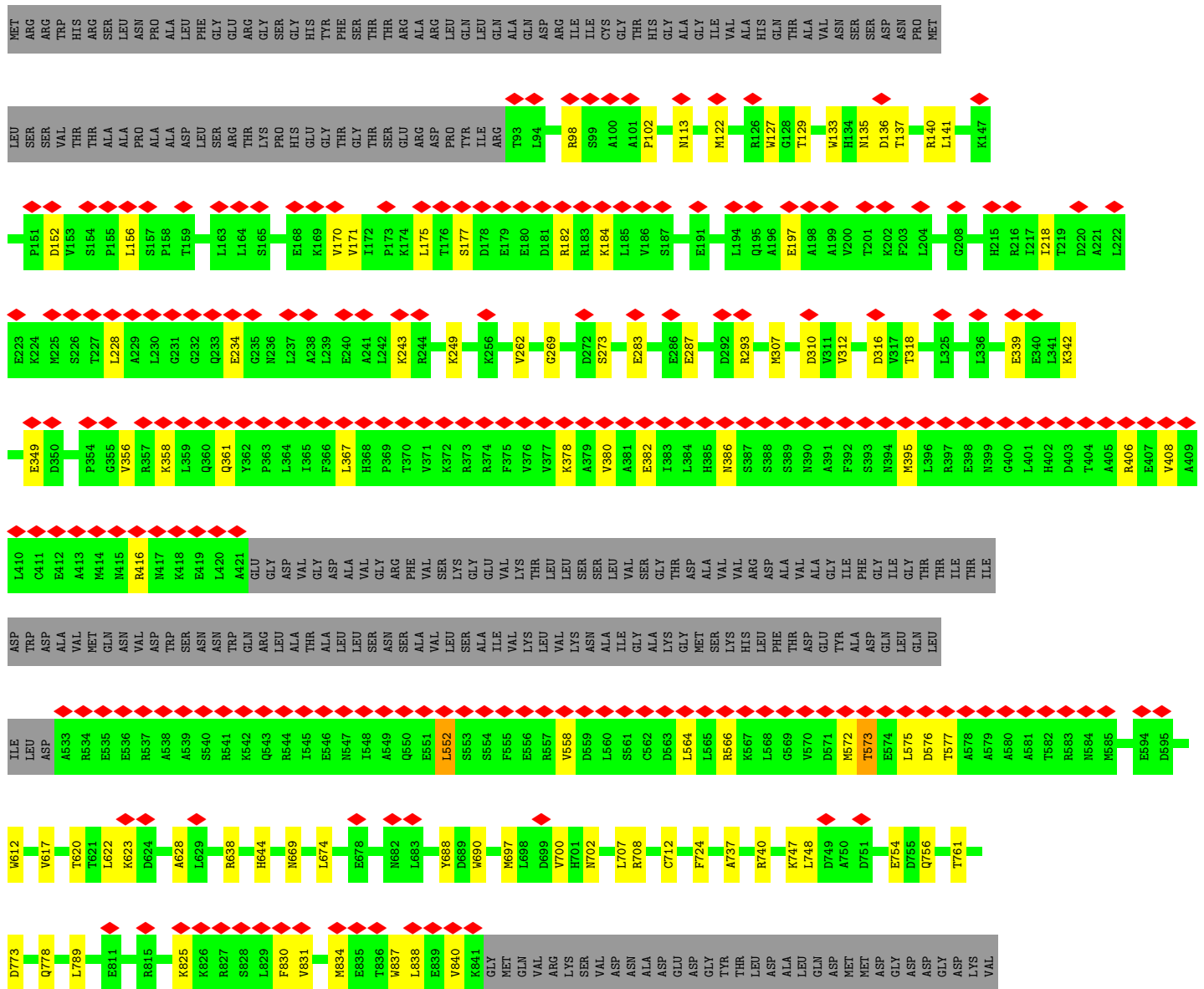


MET VAL LEU ARG ARG TRP PHE PRO LEU G11 R14 T22 D32 L33 R34 R39 Q42 E43 K48 G51 A52 A53 Q54 L55 E56 R74 F78 G79 Y80 Q81 Q82 N83 L84 P85 D86 Y87 I88 M89 K90 K91 R92 N95 N96 E100 L101 F102 A103 R104

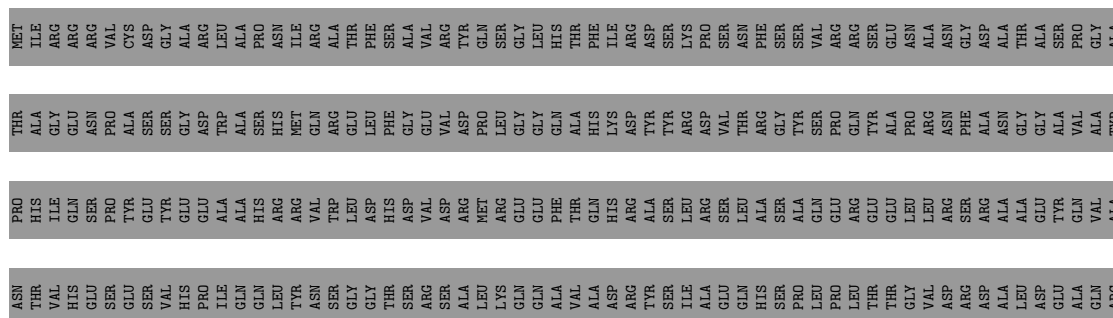
R105 D106 T107 P108 N109 E110 D111 A112 A113 M114 T127 S128 L129 Y133 R134 M135 K137 D138 T139 M140 K141 A142 Q143 R144 L145 N146 D146 R147 K148 L149 S150 G151 N152 R153 F154 K155 V156 L157 CYS SER SER GLY ALA LYS ASN PRO PRO SER GLY TRP GLU PRO ILE PRO ASP ALA THR GLU

GLU GLU ASP

• Molecule 68: mS35

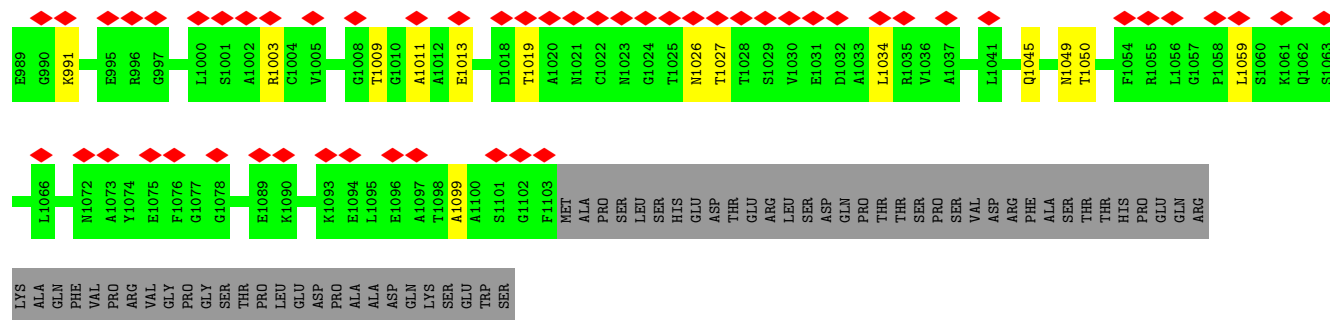


Chain DB:

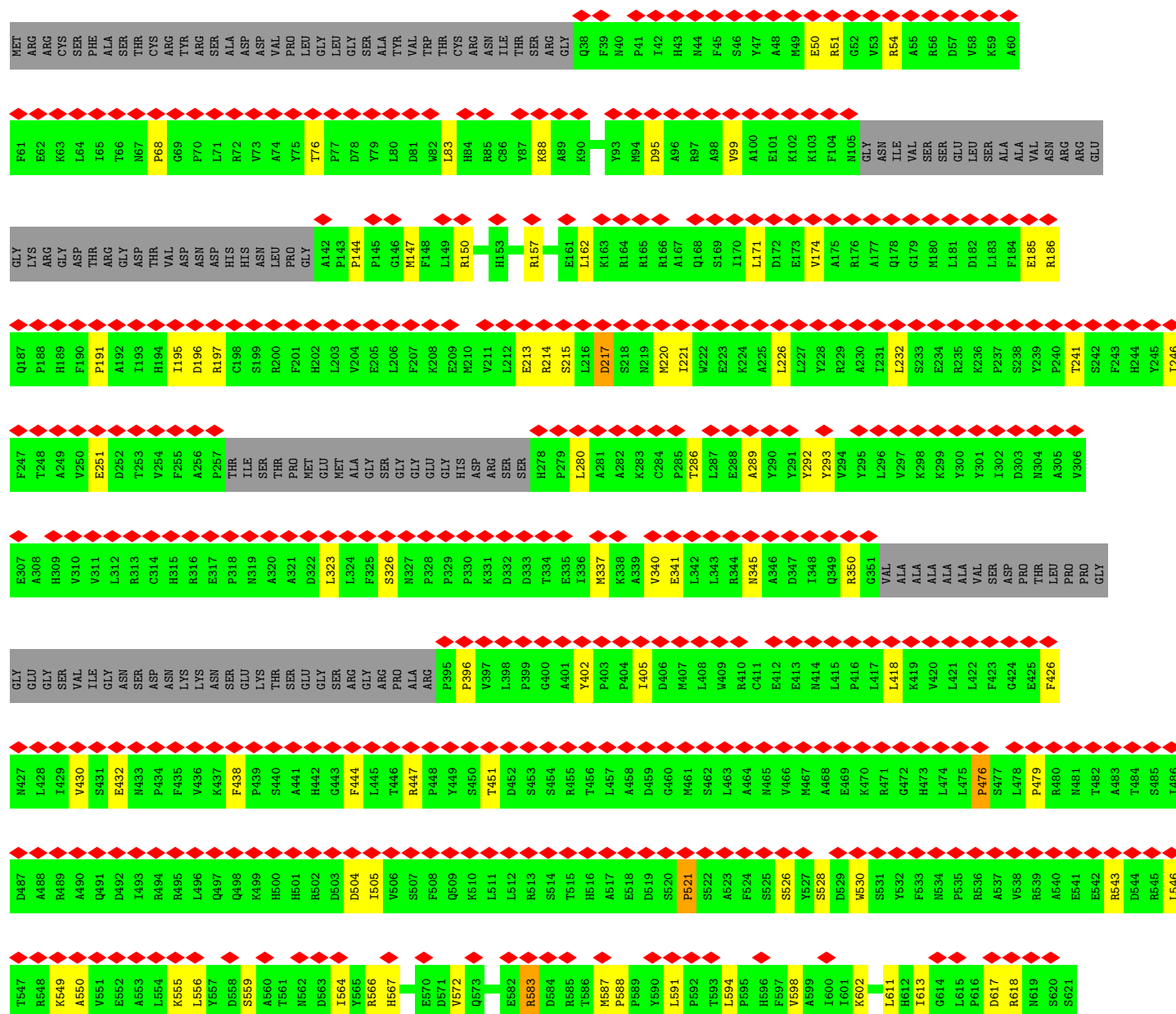


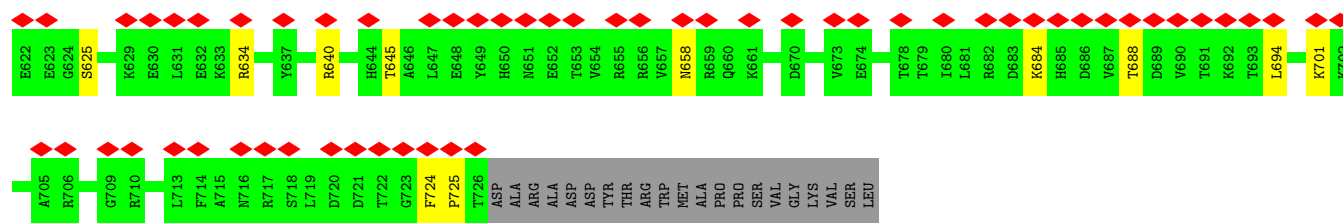




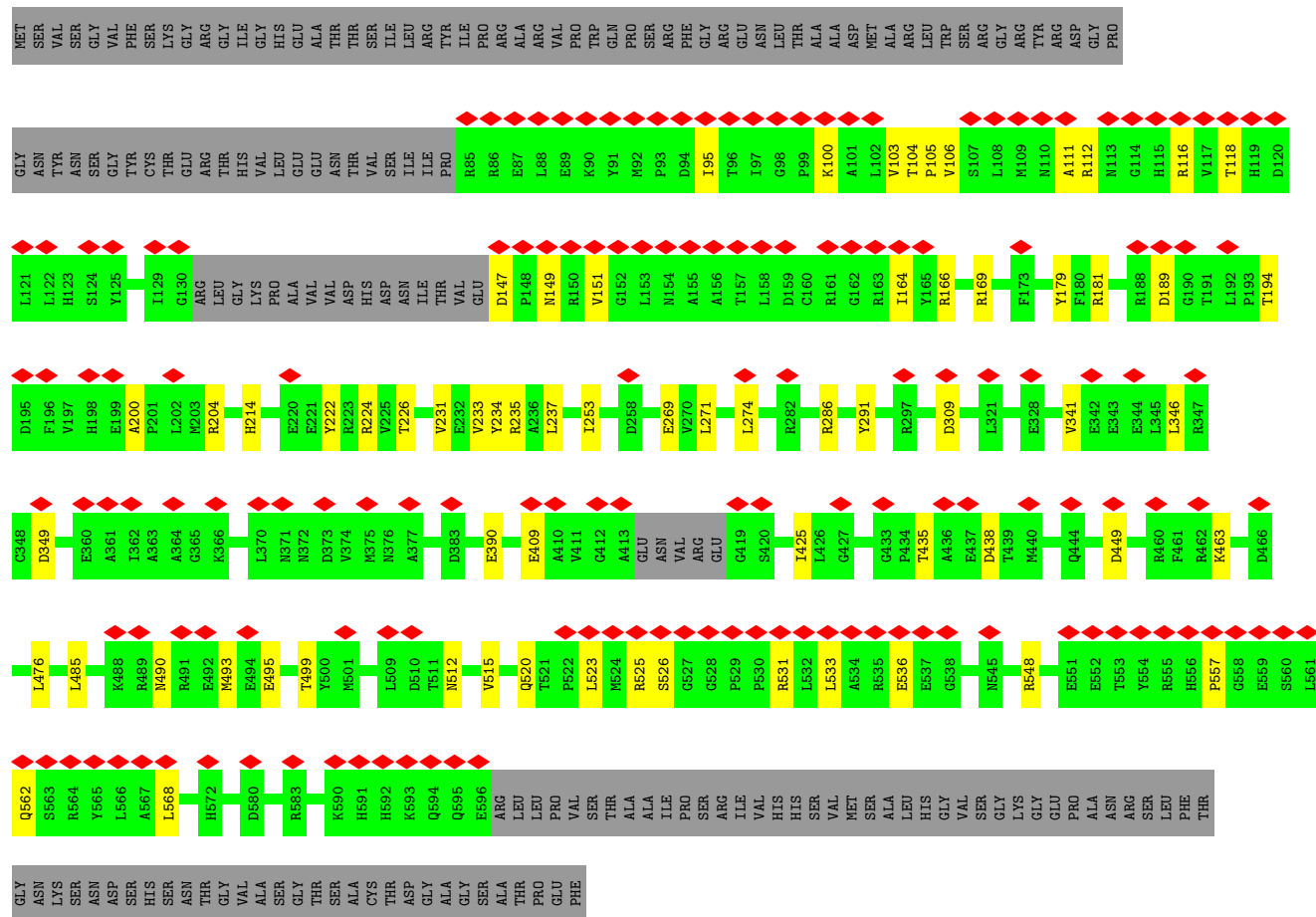


• Molecule 71: mS52

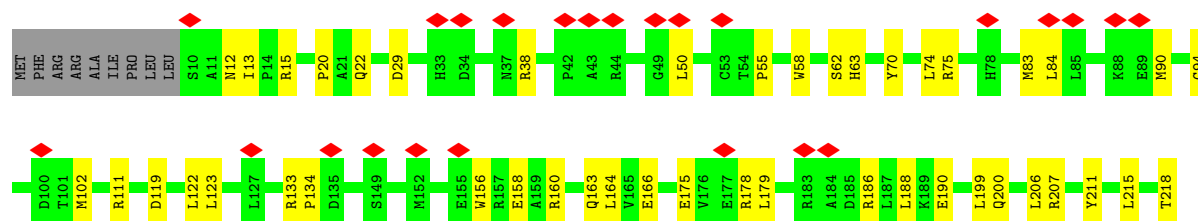
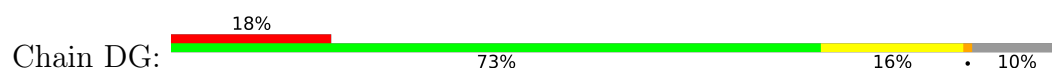


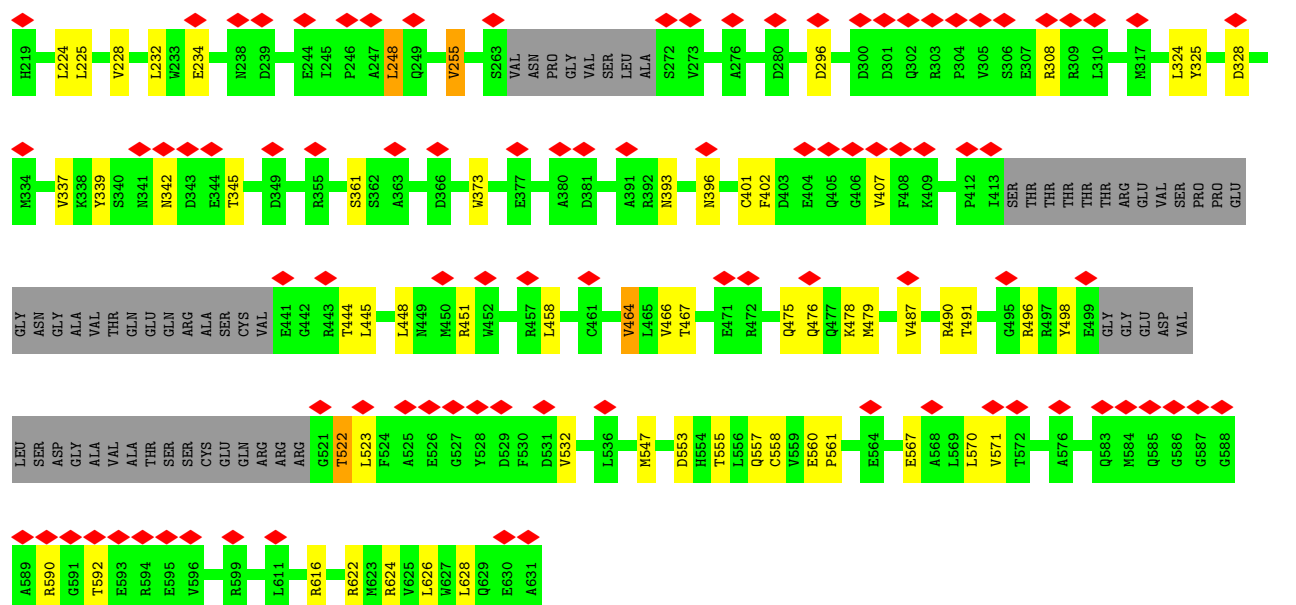


• Molecule 72: mS53

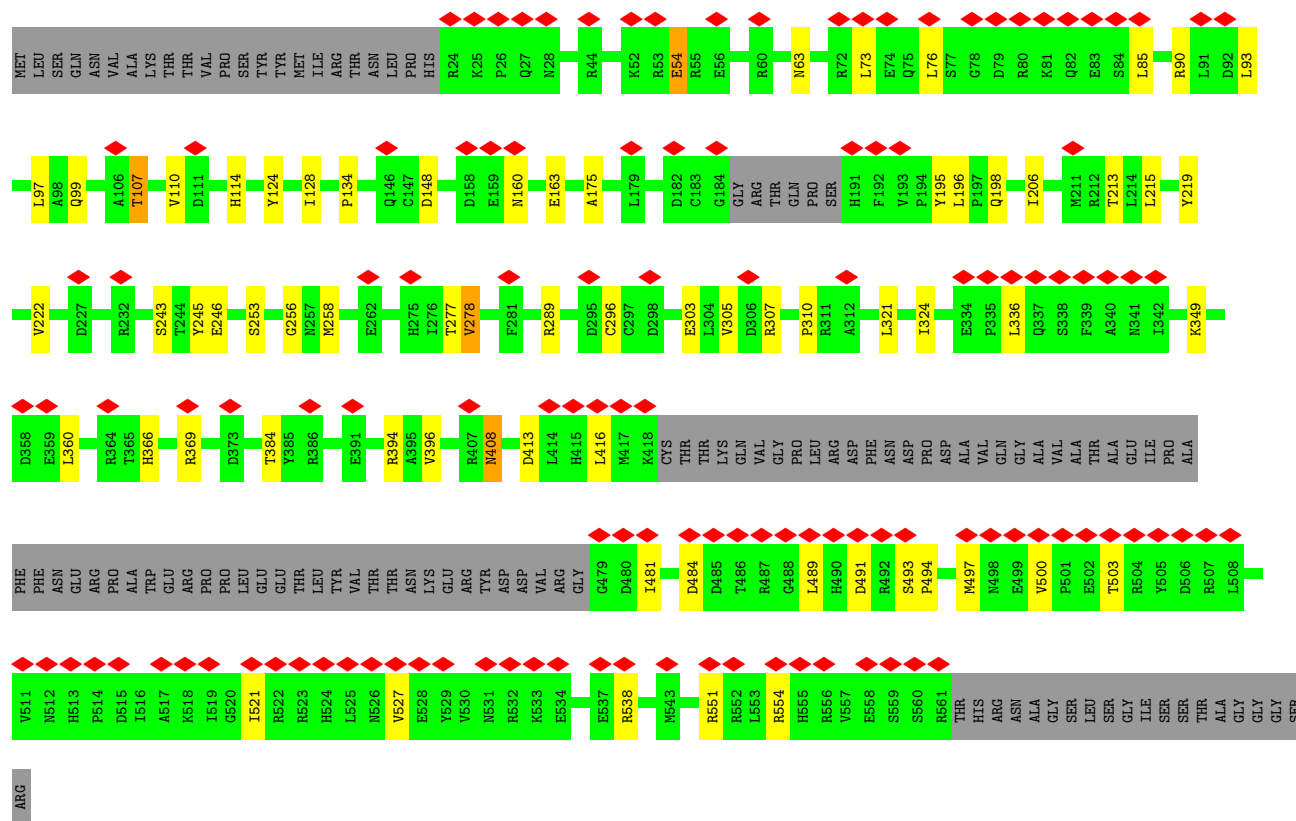
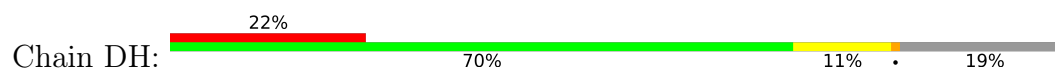


• Molecule 73: mS54



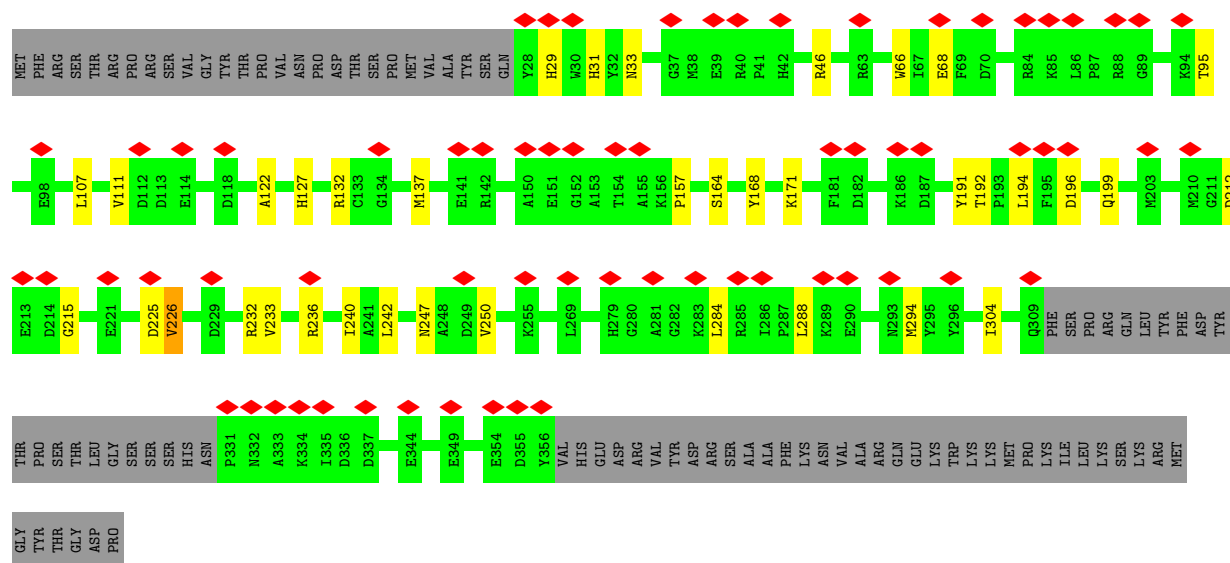


• Molecule 74: mS55 (KRIPP8)

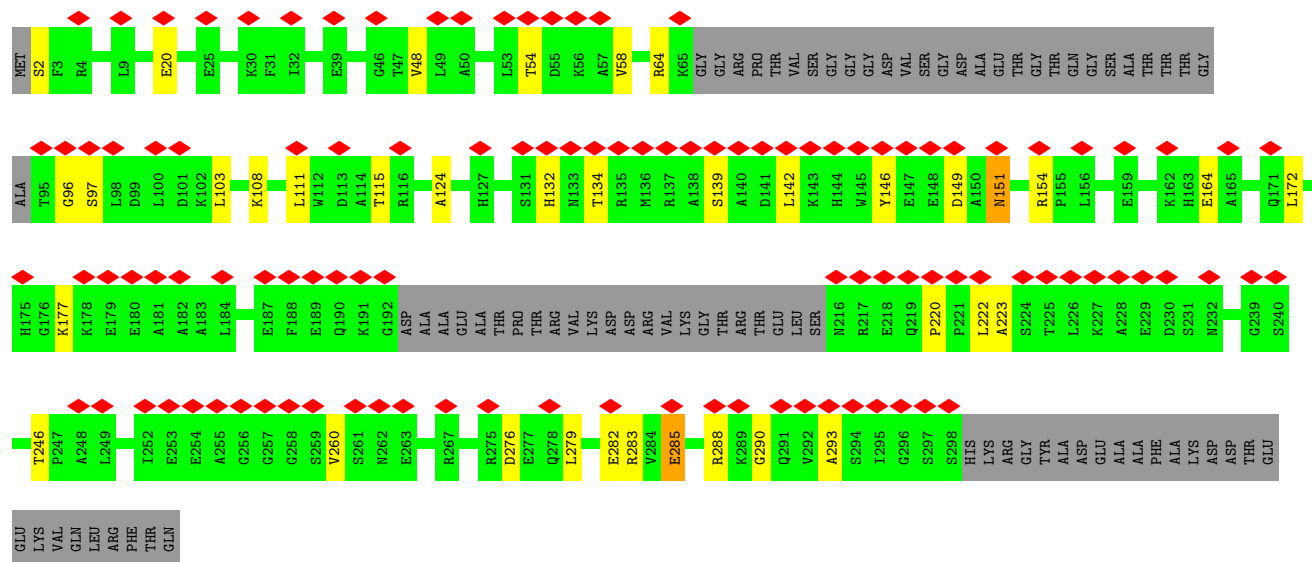


• Molecule 75: mS57

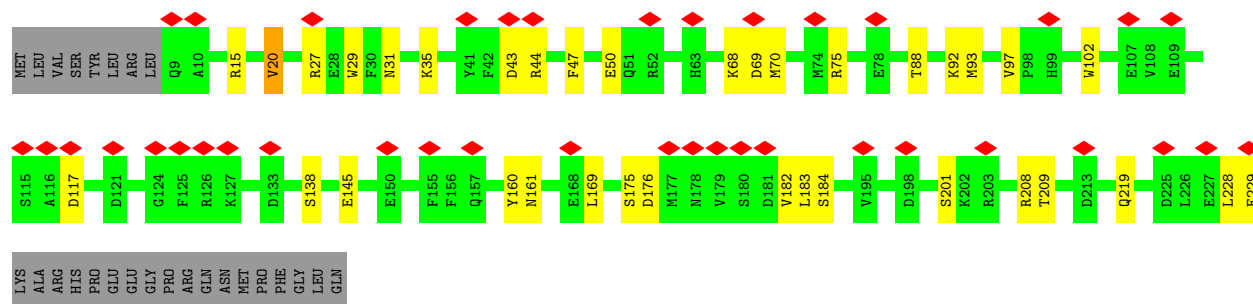
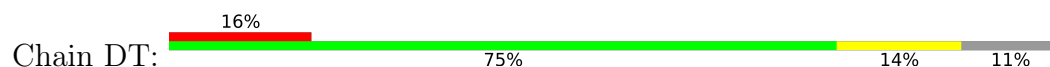




- Molecule 76: mS58

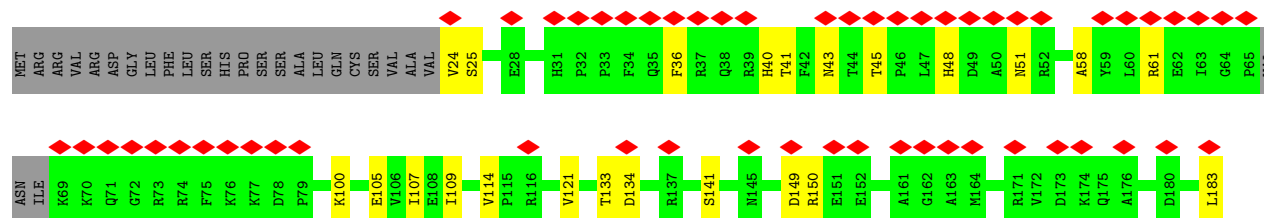


- Molecule 77: mS67



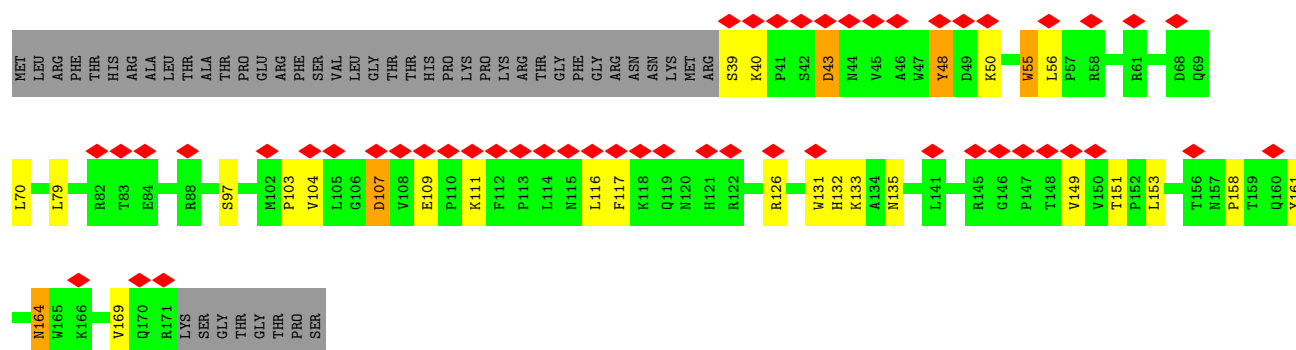
- Molecule 78: mS69

Chain DV: 



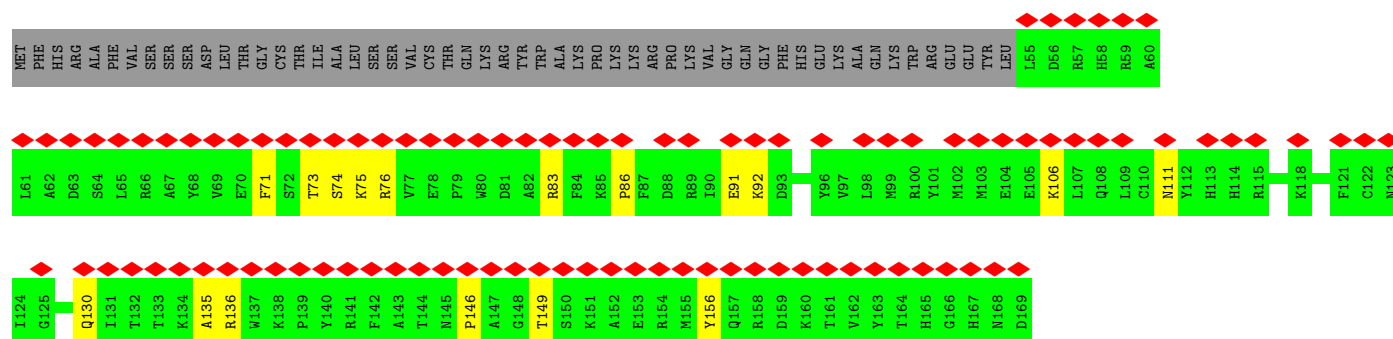
- Molecule 79: mS70

Chain DW: 



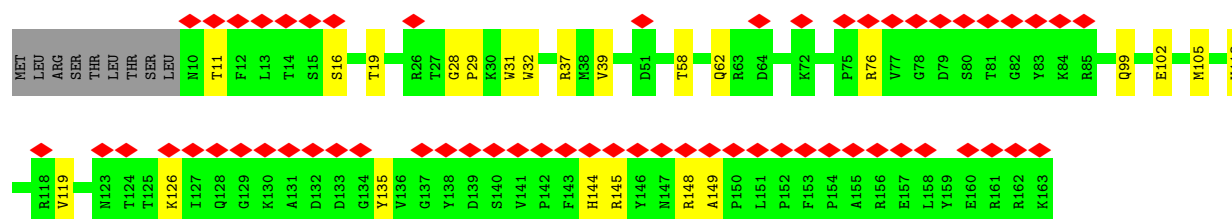
- Molecule 80: mS71

Chain DX: 



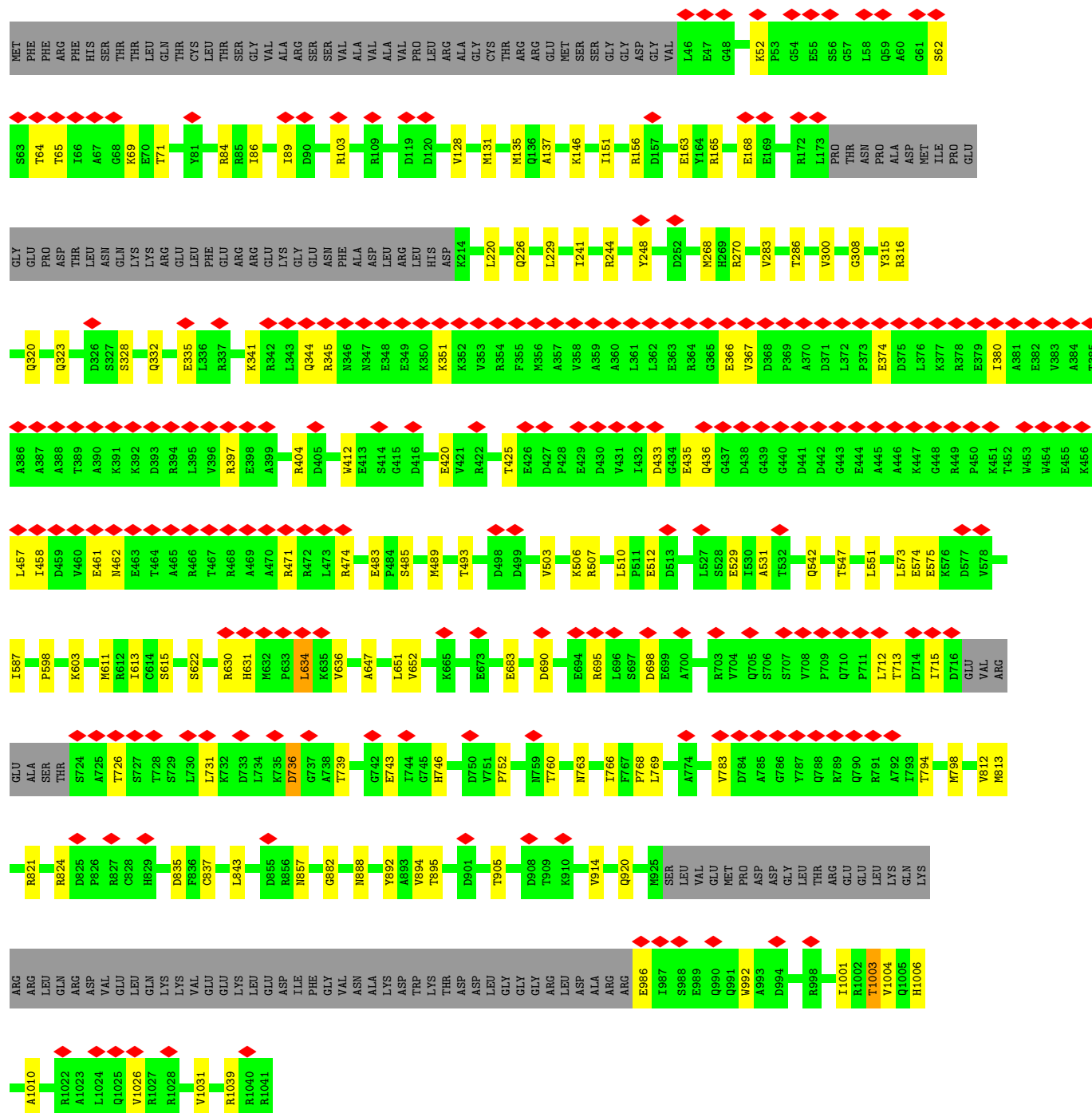
- Molecule 81: mS72

Chain DY: 



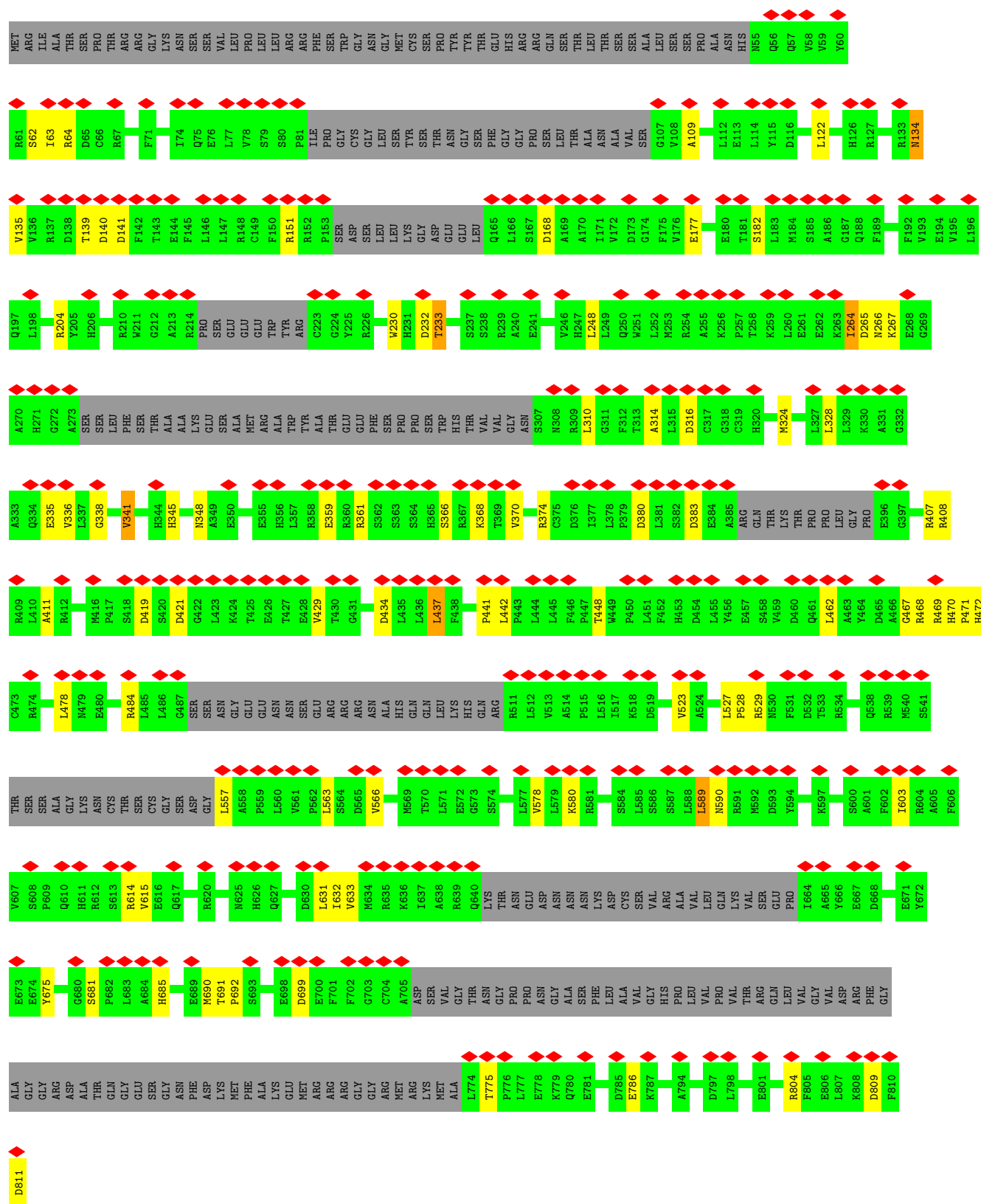
• Molecule 82: mt-SAF1 (RSM22)

Chain F1: 



• Molecule 83: mt-SAF4

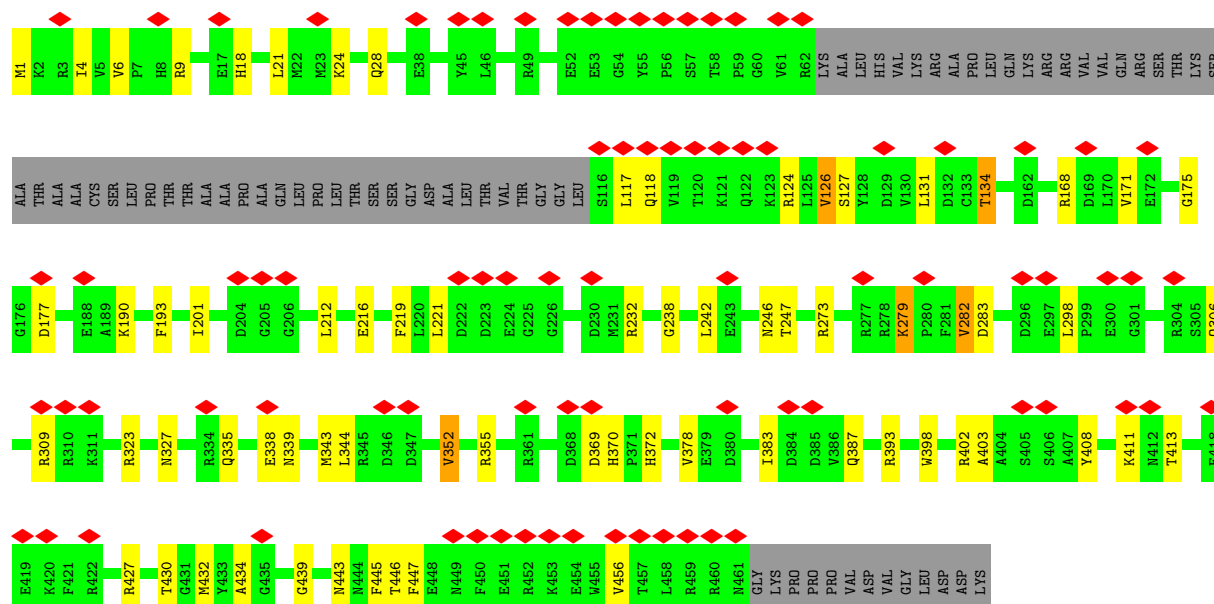
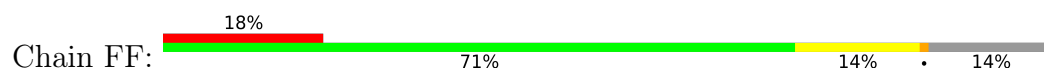
Chain F4: 



• Molecule 84: mt-SAF12 (KRIPP18)

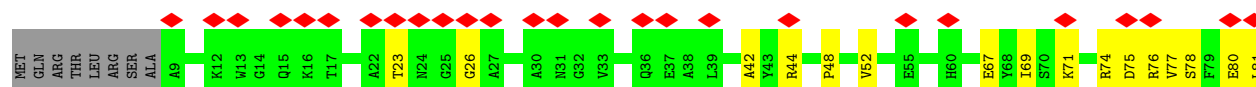


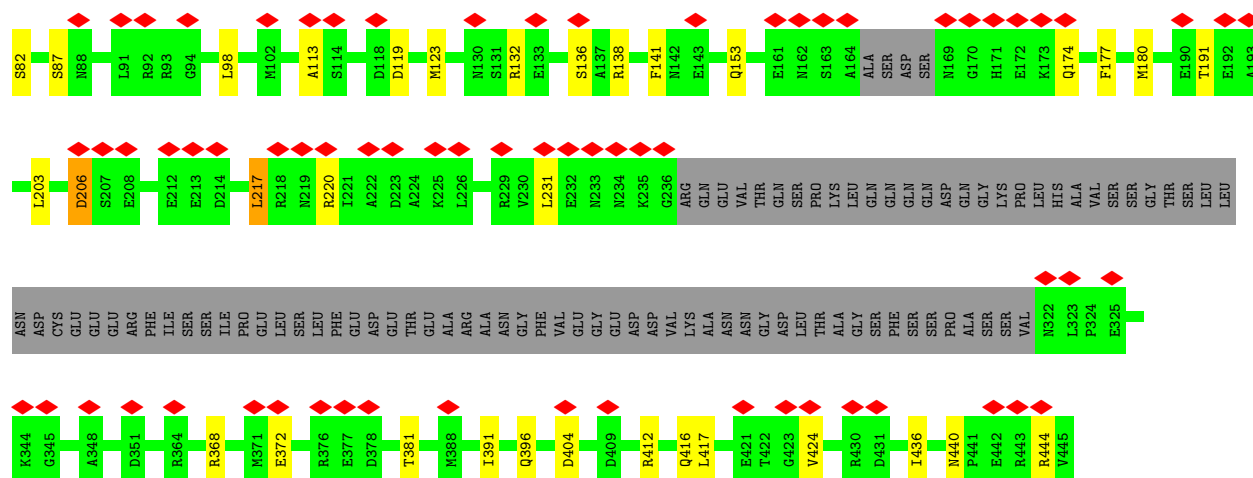
- Molecule 85: mt-SAF14



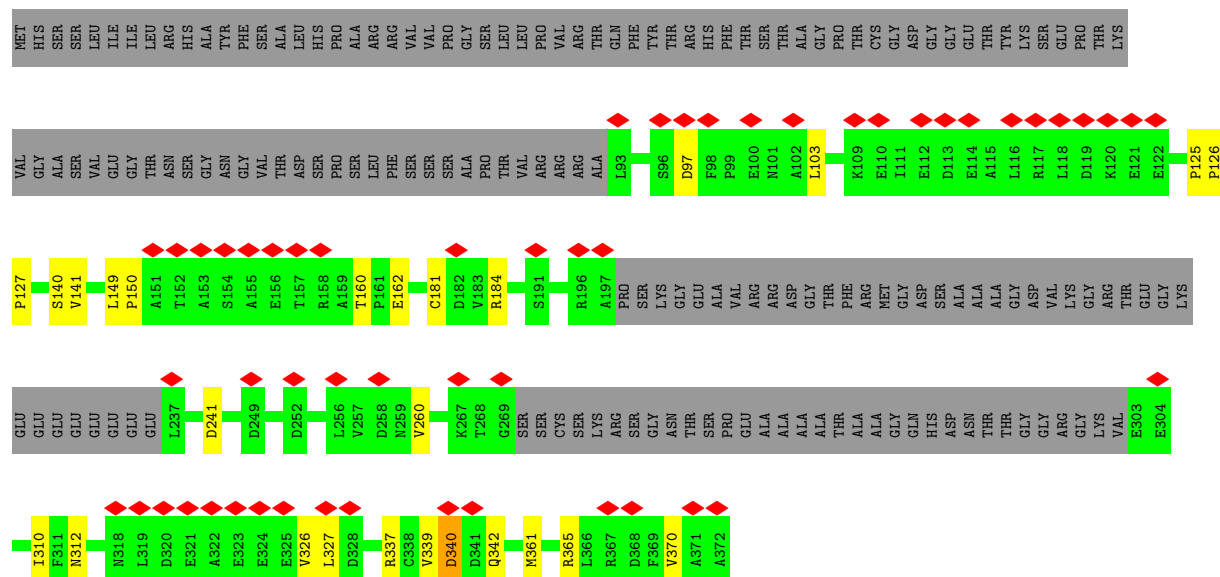
- Molecule 86: mt-SAF15



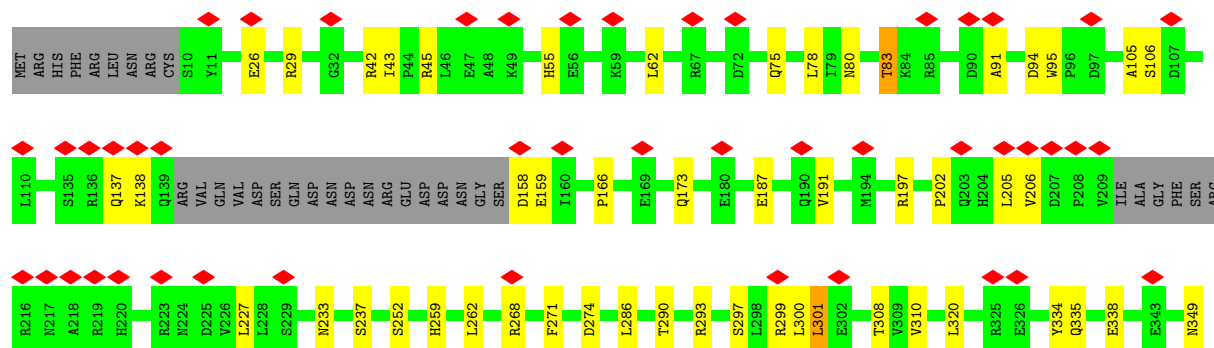
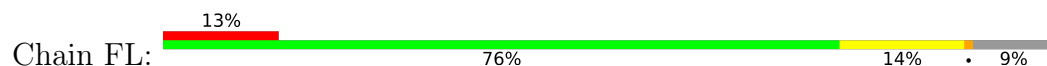




• Molecule 89: mt-SAF19

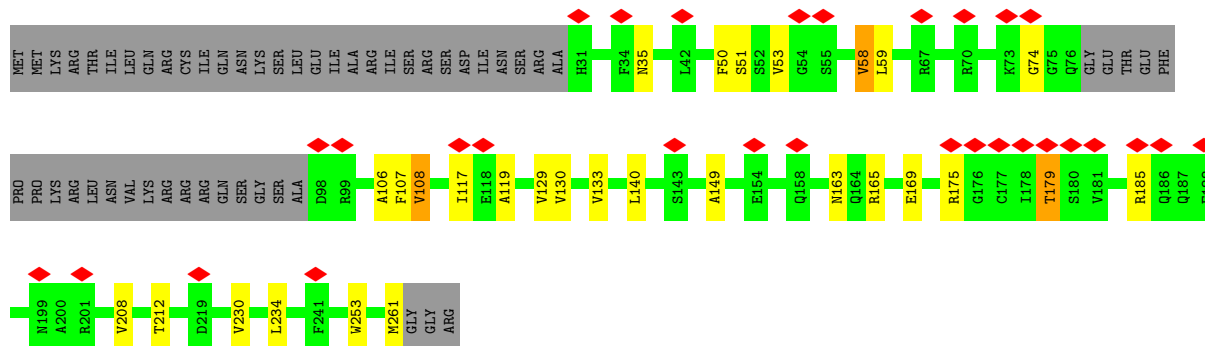


• Molecule 90: mt-SAF20

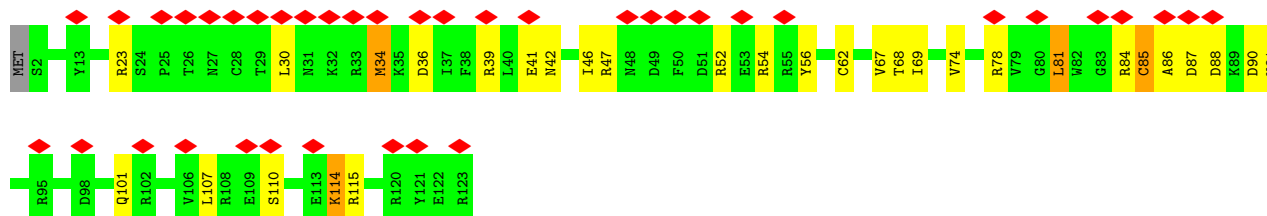
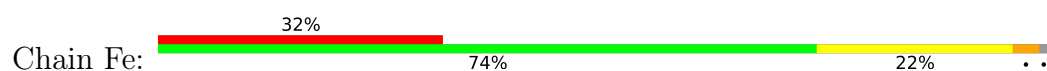




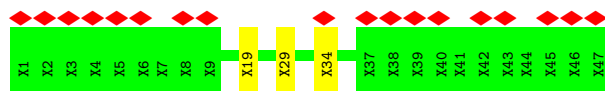
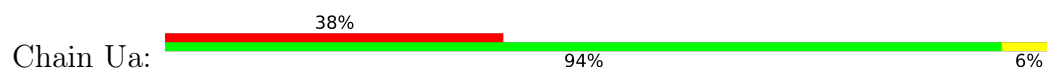
- Molecule 91: mt-SAF25



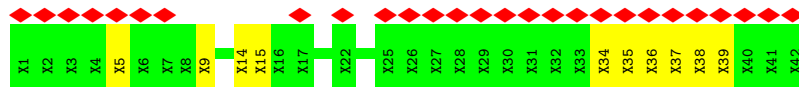
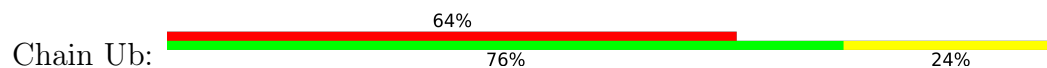
- Molecule 92: mt-SAF34



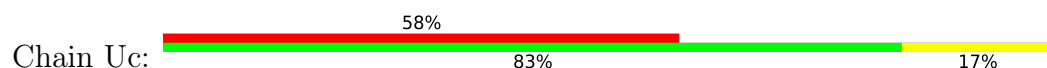
- Molecule 93: UNK-a

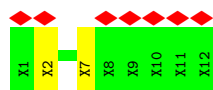


- Molecule 94: UNK-b

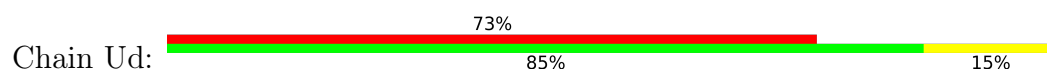


- Molecule 95: UNK-c

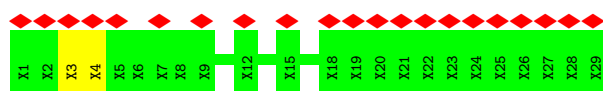
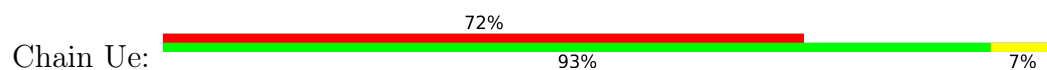




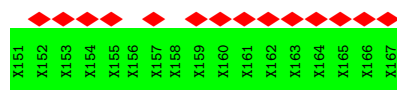
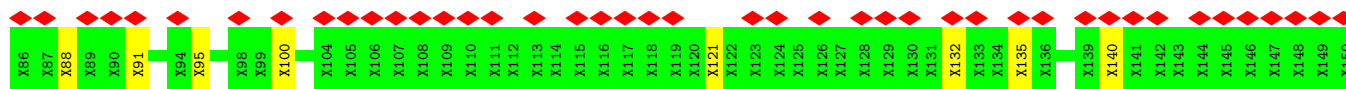
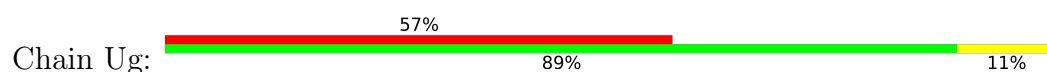
- Molecule 96: UNK-d



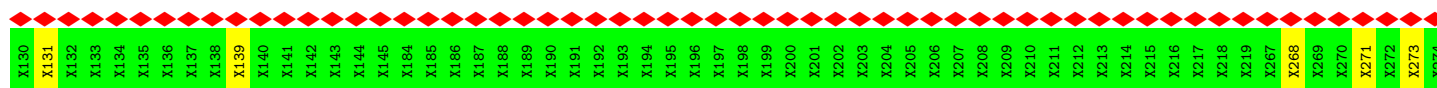
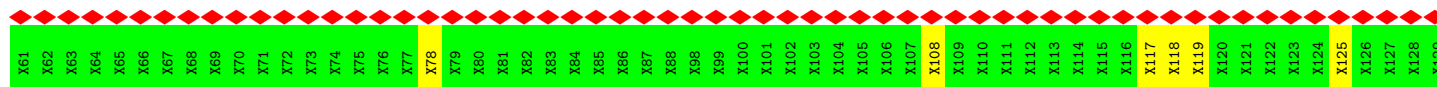
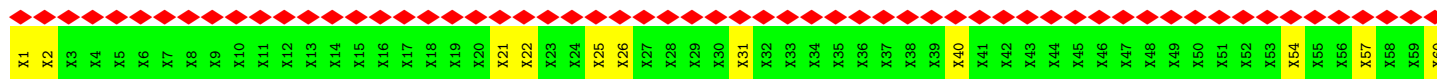
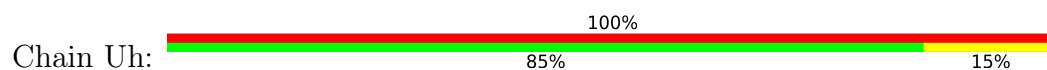
- Molecule 97: UNK-e

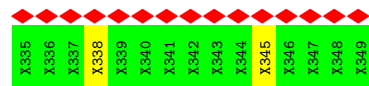
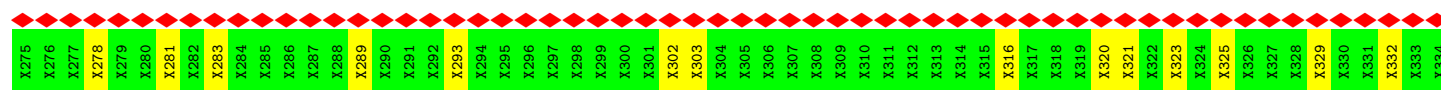


- Molecule 98: UNK-g

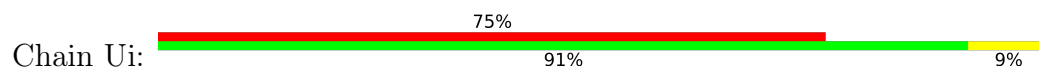


- Molecule 99: UNK-h

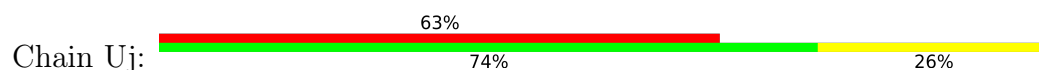




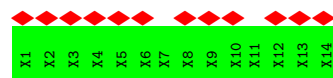
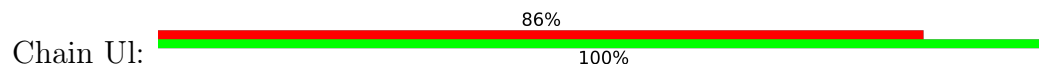
• Molecule 100: UNK-i



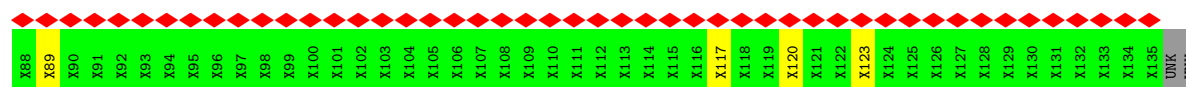
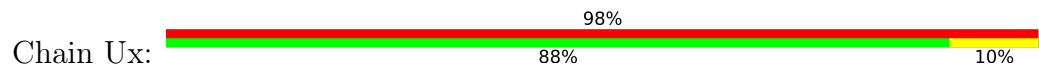
• Molecule 101: UNK-j



• Molecule 102: UNK-l



• Molecule 103: UNK-x



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	104838	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; On the fly in RELION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	100719	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.613	Depositor
Minimum map value	-0.285	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.021	Depositor
Recommended contour level	0.09	Depositor
Map size (Å)	444.8, 444.8, 444.8	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.39, 1.39, 1.39	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, SAH, ZN, GTP, PO4, UBD, PM8

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	CE	0.16	0/3226	0.42	1/4364 (0.0%)
2	CF	0.14	0/1344	0.35	0/1813
3	CH	0.17	0/1864	0.41	0/2511
4	CK	0.17	0/1760	0.43	0/2372
5	CO	0.16	0/3057	0.39	0/4121
6	CP	0.18	0/1533	0.44	0/2074
7	CQ	0.17	0/1856	0.40	0/2509
8	CR	0.15	0/1315	0.43	0/1785
9	Ca	0.17	0/4474	0.42	1/6052 (0.0%)
10	Cb	0.17	0/1304	0.41	0/1751
11	Cd	0.23	0/1662	0.36	0/2234
12	Cj	0.15	0/1842	0.38	0/2511
13	Cn	0.20	0/245	0.51	0/333
14	Cp	0.14	0/1551	0.35	0/2103
15	DD	0.16	0/6678	0.38	0/9051
16	DI	0.14	0/3248	0.35	0/4401
17	DL	0.16	0/1699	0.40	0/2293
18	DO	0.12	0/1680	0.33	0/2265
19	DP	0.14	0/1854	0.36	0/2511
20	DR	0.16	0/2107	0.42	0/2871
21	DU	0.17	0/1780	0.51	2/2416 (0.1%)
22	DZ	0.14	0/263	0.33	0/355
23	F2	0.17	0/7432	0.40	2/10042 (0.0%)
24	F3	0.16	0/6999	0.41	4/9472 (0.0%)
25	F5	0.18	0/3533	0.45	3/4798 (0.1%)
26	F6	0.17	0/3728	0.45	0/5060
27	F7	0.18	0/5342	0.45	0/7236
28	F8	0.15	0/4025	0.37	0/5450
29	F9	0.15	0/1785	0.36	0/2399
30	FA	0.19	0/4507	0.46	0/6139
31	FB	0.16	0/3132	0.39	0/4248
31	FC	0.16	0/2635	0.41	0/3572

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	FE	0.15	0/3629	0.37	0/4935
33	FJ	0.22	0/2986	0.47	0/4030
34	FM	0.17	0/2489	0.39	0/3365
34	FN	0.14	0/2430	0.37	0/3285
35	FO	0.17	0/2733	0.42	0/3692
36	FP	0.16	0/2710	0.42	2/3709 (0.1%)
37	FQ	0.16	0/2048	0.36	0/2786
37	FR	0.14	0/1966	0.34	0/2673
37	FS	0.14	0/2249	0.35	0/3063
37	FT	0.15	0/1897	0.34	0/2580
37	FU	0.15	0/2154	0.37	0/2933
38	FW	0.14	0/2077	0.36	0/2805
39	FX	0.15	0/1783	0.39	0/2410
40	FY	0.19	0/1321	0.45	0/1788
41	FZ	0.14	0/989	0.49	3/1336 (0.2%)
42	Fa	0.15	0/1363	0.40	0/1853
43	Fb	0.14	0/1123	0.40	0/1513
44	Fc	0.11	0/679	0.29	0/923
45	Fd	0.16	0/779	0.38	0/1054
60	CA	0.16	0/12605	0.36	1/19567 (0.0%)
61	CC	0.15	0/666	0.37	0/900
62	CI	0.13	0/3424	0.36	0/4626
63	CJ	0.15	0/5865	0.40	0/7974
64	CN	0.12	0/1323	0.33	0/1790
65	CS	0.12	0/731	0.35	0/987
66	Cg	0.14	0/4043	0.35	0/5489
67	Ci	0.12	0/1256	0.36	0/1695
68	Ck	0.14	0/5215	0.37	0/7050
69	DB	0.14	0/5830	0.40	2/7889 (0.0%)
70	DC	0.14	0/8409	0.36	0/11399
71	DE	0.13	0/4756	0.39	3/6462 (0.0%)
72	DF	0.15	0/4056	0.41	0/5493
73	DG	0.13	0/4674	0.35	0/6333
74	DH	0.15	0/3935	0.41	2/5321 (0.0%)
75	DJ	0.13	0/2591	0.38	0/3508
76	DK	0.13	0/1965	0.37	0/2652
77	DT	0.13	0/1982	0.38	0/2686
78	DV	0.15	0/1358	0.39	0/1836
79	DW	0.24	0/1182	0.47	0/1613
80	DX	0.15	0/993	0.41	0/1336
81	DY	0.15	0/1337	0.39	0/1814
82	F1	0.16	0/7334	0.40	1/9883 (0.0%)
83	F4	0.14	0/4483	0.40	0/6061

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
84	FD	0.13	0/3216	0.36	0/4380
85	FF	0.15	0/3335	0.41	0/4498
86	FG	0.14	0/1386	0.40	0/1869
87	FH	0.14	0/2537	0.35	0/3442
88	FI	0.13	0/2834	0.36	0/3821
89	FK	0.13	0/1748	0.33	0/2378
90	FL	0.15	0/2613	0.38	0/3538
91	FV	0.13	0/1680	0.36	0/2281
92	Fe	0.16	0/1057	0.46	0/1421
All	All	0.15	0/237284	0.39	27/323837 (0.0%)

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
15	DD	0	1
24	F3	0	1
27	F7	0	1
28	F8	0	1
36	FP	0	1
38	FW	0	1
74	DH	0	1
79	DW	0	1
85	FF	0	1
92	Fe	0	1
All	All	0	10

There are no bond length outliers.

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	Ca	525	PRO	N-CA-CB	10.94	110.56	103.23
1	CE	385	PRO	N-CA-CB	8.12	111.78	103.25
21	DU	206	PRO	N-CA-CB	7.99	110.39	103.36
21	DU	200	PRO	N-CA-CB	7.55	110.36	103.19
25	F5	521	PRO	N-CA-CB	7.35	110.21	103.08
41	FZ	130	PRO	N-CA-CB	7.19	110.15	103.46
71	DE	479	PRO	N-CA-CB	7.11	110.72	103.25
23	F2	946	HIS	CA-C-N	6.94	134.19	121.70
23	F2	946	HIS	C-N-CA	6.94	134.19	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	F5	496	PRO	N-CA-CB	6.89	110.62	103.38
41	FZ	73	PRO	N-CA-CB	6.79	110.38	103.25
71	DE	476	PRO	N-CA-CB	6.70	110.28	103.25
71	DE	521	PRO	N-CA-CB	6.39	109.96	103.25
25	F5	522	PRO	N-CA-CB	6.30	110.19	103.52
41	FZ	114	PRO	N-CA-CB	6.26	110.15	103.52
36	FP	83	GLU	CA-C-N	5.81	132.63	121.54
36	FP	83	GLU	C-N-CA	5.81	132.63	121.54
24	F3	702	CYS	CA-C-N	5.80	132.13	121.70
24	F3	702	CYS	C-N-CA	5.80	132.13	121.70
69	DB	588	ASN	CA-C-N	5.63	129.27	120.82
69	DB	588	ASN	C-N-CA	5.63	129.27	120.82
24	F3	645	ARG	CA-C-N	5.22	131.51	121.54
24	F3	645	ARG	C-N-CA	5.22	131.51	121.54
60	CA	349	U	P-O3'-C3'	5.13	127.89	120.20
74	DH	349	LYS	CA-C-N	5.12	123.47	120.24
74	DH	349	LYS	C-N-CA	5.12	123.47	120.24
82	F1	84	ARG	CA-CB-CG	5.09	124.29	114.10

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	DD	414	ARG	Peptide
74	DH	484	ASP	Peptide
79	DW	55	TRP	Peptide
24	F3	490	GLN	Peptide
27	F7	381	LEU	Peptide
28	F8	644	ASP	Peptide
85	FF	279	LYS	Peptide
36	FP	84	HIS	Peptide
38	FW	214	PRO	Peptide
92	Fe	85	CYS	Peptide

5.2 Too-close contacts ⓘ

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	CE	3147	0	3091	31	0
2	CF	1317	0	1309	18	0
3	CH	1824	0	1800	21	0
4	CK	1721	0	1689	15	0
5	CO	2979	0	2974	31	0
6	CP	1489	0	1510	19	0
7	CQ	1805	0	1811	32	0
8	CR	1274	0	1223	11	0
9	Ca	4340	0	4127	52	0
10	Cb	1274	0	1287	10	0
11	Cd	1616	0	1568	23	0
12	Cj	1792	0	1744	21	0
13	Cn	234	0	222	2	0
14	Cp	1506	0	1467	14	0
15	DD	6488	0	6251	67	0
16	DI	3182	0	3153	38	0
17	DL	1656	0	1632	13	0
18	DO	1648	0	1615	11	0
19	DP	1800	0	1765	12	0
20	DR	2042	0	2043	22	0
21	DU	1738	0	1640	18	0
22	DZ	254	0	230	4	0
23	F2	7274	0	7113	66	0
24	F3	6879	0	6854	54	0
25	F5	3474	0	3070	30	0
26	F6	3646	0	3608	40	0
27	F7	5225	0	5177	61	0
28	F8	3934	0	3908	32	0
29	F9	1755	0	1709	18	0
30	FA	4421	0	4534	43	0
31	FB	3055	0	3011	39	0
31	FC	2572	0	2544	42	0
32	FE	3523	0	3460	44	0
33	FJ	2917	0	2966	31	0
34	FM	2449	0	2440	24	0
34	FN	2392	0	2375	26	0
35	FO	2671	0	2636	44	0
36	FP	2643	0	2554	20	0
37	FQ	2003	0	1928	20	0
37	FR	1923	0	1862	21	0
37	FS	2198	0	2142	21	0
37	FT	1854	0	1802	23	0
37	FU	2105	0	2031	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	FW	2034	0	2035	17	0
39	FX	1741	0	1693	12	0
40	FY	1289	0	1291	19	0
41	FZ	973	0	869	8	0
42	Fa	1323	0	1336	12	0
43	Fb	1091	0	1085	11	0
44	Fc	669	0	663	8	0
45	Fd	758	0	764	8	0
46	UA	126	0	128	5	0
47	UB	162	0	169	5	0
47	Uk	162	0	164	3	0
48	UC	60	0	63	1	0
49	UD	54	0	57	5	0
49	UM	54	0	58	4	0
49	UQ	54	0	56	2	0
49	Uf	54	0	56	4	0
50	UE	270	0	272	2	0
50	UP	270	0	272	10	0
51	UF	66	0	70	3	0
51	Um	66	0	68	1	0
52	UG	102	0	104	5	0
53	UH	30	0	32	1	0
54	UI	48	0	50	4	0
54	UN	48	0	50	1	0
55	UJ	96	0	99	3	0
56	UK	144	0	146	1	0
57	UL	132	0	135	2	0
58	UO	180	0	183	9	0
59	UY	2808	0	2852	113	0
60	CA	11352	0	5672	102	0
61	CC	646	0	682	9	0
62	CI	3357	0	3310	42	0
63	CJ	5709	0	5508	63	0
64	CN	1285	0	1264	17	0
65	CS	708	0	688	9	0
66	Cg	3922	0	3811	40	0
67	Ci	1222	0	1192	16	0
68	Ck	5123	0	5154	55	0
69	DB	5688	0	5497	67	0
70	DC	8223	0	8043	65	0
71	DE	4639	0	4417	47	0
72	DF	3967	0	3957	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
73	DG	4575	0	4490	63	0
74	DH	3849	0	3811	39	0
75	DJ	2521	0	2464	20	0
76	DK	1929	0	1928	25	0
77	DT	1912	0	1787	22	0
78	DV	1323	0	1308	16	0
79	DW	1140	0	1117	17	0
80	DX	967	0	956	12	0
81	DY	1295	0	1290	20	0
82	F1	7194	0	7263	71	0
83	F4	4382	0	4291	54	0
84	FD	3135	0	3117	29	0
85	FF	3265	0	3204	46	0
86	FG	1359	0	1375	19	0
87	FH	2486	0	2430	32	0
88	FI	2786	0	2712	35	0
89	FK	1699	0	1589	17	0
90	FL	2555	0	2530	33	0
91	FV	1636	0	1567	18	0
92	Fe	1033	0	1004	17	0
93	Ua	282	0	285	3	0
94	Ub	252	0	255	9	0
95	Uc	72	0	75	3	0
96	Ud	354	0	356	8	0
97	Ue	174	0	176	4	0
98	Ug	1002	0	1025	11	0
99	Uh	1530	0	1558	30	0
100	Ui	192	0	194	2	0
101	Uj	114	0	117	5	0
102	Ul	84	0	86	0	0
103	Ux	648	0	656	6	0
104	CA	2	0	0	0	0
104	Cg	1	0	0	0	0
104	FP	1	0	0	0	0
104	FW	1	0	0	0	0
105	FW	5	0	0	1	0
106	Fc	32	0	39	1	0
107	F1	1	0	0	0	0
107	FG	1	0	0	0	0
107	FL	2	0	0	0	0
107	Fd	1	0	0	0	0
107	Fe	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
108	Cg	32	0	12	3	0
109	F1	26	0	19	2	0
109	FF	26	0	19	2	0
110	Cg	3	0	0	0	0
All	All	240624	0	230995	2162	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 5.

All (2162) 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)
40:FY:87:GLN:HG2	97:Ue:4:UNK:HA	1.55	0.89
59:UY:355:UNK:HG1	60:CA:579:G:H5'	1.56	0.88
27:F7:206:PRO:HB3	59:UY:193:UNK:HB1	1.56	0.87
35:FO:148:ARG:HH21	54:UI:2:UNK:HB1	1.42	0.84
59:UY:9:UNK:HG1	59:UY:461:UNK:HB2	1.59	0.83
33:FJ:286:ALA:O	33:FJ:290:LEU:HB2	1.80	0.82
92:Fe:62:CYS:HB3	92:Fe:85:CYS:SG	2.20	0.80
60:CA:100:G:H1	60:CA:127:G:HO2'	1.31	0.79
59:UY:272:UNK:HB1	59:UY:294:UNK:HB1	1.66	0.78
33:FJ:266:ARG:HH12	79:DW:103:PRO:HB2	1.49	0.77
59:UY:153:UNK:HG2	59:UY:296:UNK:HB1	1.67	0.76
7:CQ:215:GLN:HG2	59:UY:156:UNK:HG1	1.69	0.75
27:F7:204:ILE:HB	59:UY:277:UNK:HB2	1.71	0.73
59:UY:192:UNK:HG2	59:UY:193:UNK:HG2	1.70	0.73
59:UY:351:UNK:HB1	60:CA:542:G:H5'	1.70	0.73
99:Uh:329:UNK:HB2	99:Uh:332:UNK:HG3	1.71	0.71
31:FB:483:ARG:NH1	31:FB:485:ASP:OD2	2.24	0.71
31:FC:537:PRO:HG3	31:FC:542:PHE:HB3	1.73	0.71
62:CI:159:ALA:HB1	98:Ug:31:UNK:HG3	1.73	0.71
59:UY:332:UNK:HG2	59:UY:333:UNK:HG3	1.73	0.70
59:UY:440:UNK:HG2	59:UY:441:UNK:HG2	1.73	0.70
9:Ca:405:ARG:HE	15:DD:776:ALA:HB1	1.55	0.70
16:DI:367:SER:H	16:DI:370:GLN:HE21	1.40	0.70
40:FY:87:GLN:NE2	97:Ue:3:UNK:O	2.25	0.70
99:Uh:108:UNK:HG1	99:Uh:325:UNK:HG3	1.74	0.69
59:UY:153:UNK:HB2	59:UY:299:UNK:HG1	1.74	0.69
59:UY:37:UNK:HB2	59:UY:41:UNK:HG3	1.74	0.69
31:FC:503:LEU:HD23	52:UG:10:UNK:HG2	1.75	0.68
59:UY:90:UNK:HG3	59:UY:91:UNK:HG3	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:DH:336:LEU:HB2	94:Ub:5:UNK:HG1	1.75	0.67
35:FO:147:ASN:HD21	35:FO:180:ARG:HD2	1.59	0.67
34:FM:39:HIS:HB2	34:FM:71:MET:HE3	1.77	0.67
59:UY:290:UNK:HG2	59:UY:320:UNK:HG2	1.75	0.67
35:FO:296:GLN:HA	51:UF:6:UNK:HG1	1.76	0.67
3:CH:111:GLN:HE21	3:CH:113:LYS:HE2	1.60	0.67
59:UY:99:UNK:HB1	59:UY:130:UNK:HB1	1.77	0.66
45:Fd:38:ALA:HA	45:Fd:42:HIS:HB2	1.77	0.66
59:UY:256:UNK:HG2	59:UY:321:UNK:HB1	1.77	0.66
27:F7:203:ASN:HB3	59:UY:278:UNK:CG	2.26	0.66
4:CK:310:ILE:HG22	40:FY:141:SER:HB3	1.78	0.65
26:F6:416:ASP:HB3	26:F6:452:VAL:HG23	1.77	0.65
46:UA:18:UNK:HB1	58:UO:17:UNK:HA	1.76	0.65
71:DE:725:PRO:HG2	96:Ud:28:UNK:HG1	1.77	0.65
26:F6:57:SER:HA	26:F6:106:PHE:O	1.97	0.65
86:FG:16:ARG:H	90:FL:335:GLN:HE22	1.43	0.65
73:DG:476:GLN:HE22	73:DG:560:GLU:H	1.43	0.64
87:FH:108:ARG:HH12	87:FH:347:GLU:HG3	1.63	0.64
27:F7:128:ASP:HB3	59:UY:298:UNK:HB1	1.78	0.64
59:UY:192:UNK:O	59:UY:278:UNK:HB1	1.97	0.64
84:FD:167:CYS:HB3	84:FD:246:PRO:HG2	1.79	0.64
30:FA:239:VAL:HB	47:UB:104:UNK:HG1	1.80	0.64
79:DW:48:TYR:HB3	81:DY:126:LYS:HD2	1.79	0.64
59:UY:113:UNK:HB1	59:UY:122:UNK:HB1	1.80	0.64
76:DK:2:SER:N	77:DT:160:TYR:HH	1.96	0.64
59:UY:17:UNK:HG3	59:UY:76:UNK:HG2	1.79	0.64
11:Cd:171:LYS:HG3	11:Cd:173:GLU:H	1.63	0.63
37:FU:34:THR:HG22	37:FU:36:PHE:H	1.64	0.63
66:Cg:110:LEU:H	108:Cg:501:GTP:HN1	1.45	0.63
99:Uh:54:UNK:HB2	99:Uh:117:UNK:HG1	1.81	0.63
30:FA:49:SER:HB3	30:FA:521:ILE:HG22	1.81	0.63
109:FF:501:SAH:N	109:FF:501:SAH:SD	2.72	0.63
12:Cj:195:THR:HG21	15:DD:588:ARG:HE	1.64	0.63
25:F5:401:GLN:HE21	25:F5:405:GLN:HE21	1.45	0.63
59:UY:188:UNK:HB2	59:UY:193:UNK:HB2	1.79	0.62
40:FY:87:GLN:CG	97:Ue:4:UNK:HA	2.29	0.62
101:Uj:6:UNK:HA	101:Uj:9:UNK:HB2	1.82	0.62
99:Uh:40:UNK:H2	99:Uh:125:UNK:HB1	1.64	0.62
4:CK:280:ARG:HB3	4:CK:310:ILE:HG12	1.80	0.62
76:DK:134:THR:HA	76:DK:139:SER:H	1.64	0.62
21:DU:180:VAL:HG23	24:F3:530:HIS:HB3	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:FJ:266:ARG:NH1	79:DW:104:VAL:O	2.33	0.62
59:UY:125:UNK:HA	59:UY:127:UNK:HG2	1.80	0.62
40:FY:87:GLN:HB3	97:Ue:4:UNK:O	2.00	0.61
59:UY:25:UNK:HB2	59:UY:28:UNK:HG2	1.82	0.61
59:UY:140:UNK:HG2	59:UY:143:UNK:HB1	1.82	0.61
88:FI:81:LEU:O	92:Fe:78:ARG:NH2	2.33	0.61
61:CC:32:SER:HB3	49:Uf:1:UNK:HG1	1.82	0.61
44:Fc:96:HIS:HD2	44:Fc:99:ASN:H	1.48	0.61
6:CP:188:LEU:HD13	15:DD:226:THR:HG22	1.83	0.61
12:Cj:10:ARG:NH1	60:CA:76:A:OP1	2.33	0.61
34:FM:140:SER:HB3	34:FM:152:LEU:HB3	1.83	0.61
32:FE:432:HIS:HB3	32:FE:439:PRO:HB3	1.82	0.61
88:FI:153:GLN:HE21	88:FI:180:MET:HE3	1.66	0.61
92:Fe:46:ILE:HD12	92:Fe:54:ARG:HH12	1.65	0.61
11:Cd:70:ARG:HH11	15:DD:156:GLN:HE21	1.48	0.60
52:UG:6:UNK:HG3	52:UG:17:UNK:HA	1.83	0.60
59:UY:399:UNK:HG2	59:UY:410:UNK:HG2	1.83	0.60
87:FH:393:TYR:HA	89:FK:140:SER:HB3	1.83	0.60
99:Uh:293:UNK:HB2	99:Uh:316:UNK:HG3	1.82	0.60
99:Uh:289:UNK:HG3	99:Uh:320:UNK:HG3	1.81	0.60
9:Ca:89:ARG:HA	50:UP:5:UNK:HG2	1.83	0.60
73:DG:570:LEU:HD11	73:DG:626:LEU:HD13	1.83	0.60
27:F7:121:ARG:HH21	27:F7:143:LEU:HD22	1.65	0.60
70:DC:968:THR:HB	70:DC:971:MET:HB2	1.83	0.60
68:Ck:349:GLU:OE2	69:DB:882:ARG:NH2	2.35	0.60
16:DI:186:ILE:HG12	16:DI:197:VAL:HG22	1.84	0.60
16:DI:307:ASN:HB3	16:DI:310:LEU:HB2	1.83	0.60
63:CJ:246:LYS:HB2	63:CJ:432:HIS:HB2	1.83	0.60
27:F7:203:ASN:HB3	59:UY:278:UNK:HG1	1.83	0.60
83:F4:448:THR:HG21	83:F4:462:LEU:HA	1.82	0.60
1:CE:235:ASN:ND2	60:CA:26:C:OP1	2.35	0.59
9:Ca:283:PRO:HG2	23:F2:626:MET:HE1	1.84	0.59
24:F3:386:VAL:HG13	24:F3:390:GLU:HB2	1.83	0.59
59:UY:389:UNK:HB1	59:UY:455:UNK:HB1	1.83	0.59
77:DT:35:LYS:HD2	77:DT:219:GLN:HE21	1.66	0.59
15:DD:709:ARG:HE	60:CA:138:U:H5'	1.67	0.59
31:FC:390:MET:HE3	52:UG:9:UNK:HB2	1.85	0.59
37:FQ:36:PHE:HB2	37:FQ:96:TRP:HB3	1.84	0.59
63:CJ:415:ARG:HH22	73:DG:12:ASN:HA	1.66	0.59
83:F4:380:ASP:OD1	83:F4:484:ARG:NH2	2.36	0.59
24:F3:418:ASP:N	24:F3:418:ASP:OD1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:FA:19:ARG:HH12	30:FA:544:LYS:HD3	1.67	0.59
9:Ca:419:GLN:HB2	36:FP:334:THR:HG23	1.84	0.59
27:F7:82:LEU:HD22	51:UF:7:UNK:HG2	1.85	0.59
37:FT:129:VAL:HG23	37:FT:244:PHE:HB2	1.85	0.59
58:UO:18:UNK:HB1	58:UO:23:UNK:HB1	1.83	0.59
59:UY:55:UNK:HB1	59:UY:395:UNK:HG1	1.83	0.59
37:FQ:146:LEU:HB3	37:FQ:189:PHE:HB3	1.84	0.59
15:DD:44:MET:SD	15:DD:57:HIS:NE2	2.76	0.59
70:DC:151:SER:HB2	70:DC:227:GLN:HE22	1.67	0.59
82:F1:412:TRP:HB2	85:FF:177:ASP:HA	1.85	0.59
1:CE:300:ILE:HG22	1:CE:302:PRO:HD2	1.83	0.59
3:CH:36:GLY:O	3:CH:53:ARG:NH2	2.35	0.59
37:FR:36:PHE:HB2	37:FR:96:TRP:HB3	1.85	0.59
70:DC:469:THR:HG22	76:DK:290:GLY:H	1.68	0.59
68:Ck:133:TRP:HB3	68:Ck:141:LEU:HB2	1.85	0.59
82:F1:341:LYS:HA	82:F1:345:ARG:HD2	1.85	0.59
82:F1:736:ASP:OD1	82:F1:736:ASP:N	2.36	0.59
3:CH:41:VAL:HA	5:CO:115:GLN:HE21	1.67	0.59
16:DI:233:ARG:NH2	16:DI:270:ASP:OD1	2.36	0.59
69:DB:748:HIS:HD2	69:DB:751:THR:H	1.51	0.59
72:DF:106:VAL:HG11	72:DF:226:THR:HB	1.85	0.59
9:Ca:164:ARG:HH22	50:UP:6:UNK:HG2	1.68	0.59
24:F3:352:PHE:H	24:F3:405:ASN:HD21	1.51	0.58
79:DW:55:TRP:NE1	79:DW:132:HIS:O	2.35	0.58
35:FO:6:ARG:NH1	35:FO:39:GLY:O	2.37	0.58
59:UY:273:UNK:HG2	59:UY:293:UNK:HG2	1.84	0.58
85:FF:439:GLY:O	85:FF:443:ASN:ND2	2.37	0.58
37:FQ:227:THR:HA	37:FT:227:THR:HG21	1.85	0.58
70:DC:791:ALA:HB3	70:DC:806:SER:HB3	1.85	0.58
98:Ug:100:UNK:HB1	98:Ug:121:UNK:HG1	1.85	0.58
7:CQ:211:ALA:HB2	59:UY:160:UNK:HG1	1.86	0.58
31:FB:366:VAL:HG11	31:FB:488:ARG:HB2	1.85	0.58
31:FC:271:GLY:HA2	31:FC:331:ARG:HG2	1.85	0.58
59:UY:114:UNK:HG2	59:UY:121:UNK:HG2	1.86	0.58
59:UY:254:UNK:HB2	59:UY:437:UNK:HG3	1.85	0.58
9:Ca:92:ILE:HD11	50:UP:4:UNK:HB1	1.86	0.58
34:FN:90:HIS:HA	34:FN:94:GLU:HB2	1.85	0.58
66:Cg:109:PHE:HA	108:Cg:501:GTP:HN21	1.69	0.58
69:DB:546:ARG:NH1	69:DB:875:GLY:O	2.37	0.58
70:DC:258:ILE:HD13	70:DC:387:ARG:HH12	1.68	0.58
84:FD:158:PRO:HD2	84:FD:161:LEU:HD12	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:F9:53:GLU:O	29:F9:109:ARG:NH2	2.37	0.58
2:CF:86:HIS:HD2	2:CF:88:ASP:H	1.51	0.58
2:CF:159:ARG:HH21	26:F6:314:LEU:HB3	1.68	0.58
71:DE:341:GLU:O	71:DE:345:ASN:ND2	2.37	0.58
79:DW:131:TRP:O	79:DW:135:ASN:ND2	2.35	0.58
16:DI:18:HIS:HD2	16:DI:65:MET:HB2	1.68	0.58
63:CJ:271:VAL:HG11	63:CJ:415:ARG:HG2	1.86	0.58
90:FL:26:GLU:OE1	90:FL:29:ARG:NH1	2.37	0.58
33:FJ:206:VAL:HG22	33:FJ:217:ILE:HG22	1.85	0.58
5:CO:215:ASP:OD2	11:CD:124:ARG:NH1	2.37	0.57
59:UY:39:UNK:HB1	59:UY:402:UNK:HB1	1.84	0.57
64:CN:140:ASP:OD1	64:CN:140:ASP:N	2.36	0.57
74:DH:175:ALA:HB1	74:DH:206:ILE:HD13	1.86	0.57
74:DH:554:ARG:HB2	90:FL:106:SER:HA	1.86	0.57
18:DO:157:ILE:HD12	18:DO:188:ALA:HB1	1.84	0.57
25:F5:641:ARG:HB3	43:Fb:111:VAL:HG13	1.86	0.57
37:FR:78:LEU:HB3	37:FR:86:ARG:HG3	1.86	0.57
82:F1:52:LYS:HB3	82:F1:69:LYS:HE2	1.86	0.57
59:UY:287:UNK:HA	59:UY:323:UNK:HA	1.85	0.57
70:DC:965:ASN:ND2	71:DE:559:SER:O	2.37	0.57
86:FG:117:ALA:HB1	91:FV:163:ASN:HD22	1.69	0.57
24:F3:395:LEU:HD12	24:F3:505:LEU:HD22	1.84	0.57
70:DC:153:ARG:NH2	76:DK:293:ALA:O	2.37	0.57
103:Ux:14:UNK:HG2	103:Ux:50:UNK:HB1	1.85	0.57
28:F8:389:PRO:HB3	28:F8:641:THR:HA	1.87	0.57
3:CH:48:ASP:OD1	3:CH:201:ARG:NH1	2.38	0.57
24:F3:163:ASP:OD1	24:F3:163:ASP:N	2.35	0.57
37:FS:11:ARG:HD2	37:FS:22:GLU:HB3	1.86	0.57
69:DB:1070:SER:HB3	69:DB:1074:SER:HB2	1.87	0.57
69:DB:1133:PRO:HA	69:DB:1137:MET:HB3	1.86	0.57
83:F4:603:ILE:HD11	83:F4:615:VAL:HG23	1.86	0.57
86:FG:133:GLN:HE21	86:FG:167:GLU:HB3	1.70	0.57
31:FB:329:HIS:HD2	31:FB:331:ARG:H	1.52	0.57
34:FN:24:ARG:HA	34:FN:53:LEU:HD21	1.85	0.57
68:Ck:644:HIS:HD2	68:Ck:669:ASN:HD22	1.52	0.57
9:Ca:201:ARG:NH1	22:DZ:87:ILE:O	2.38	0.57
9:Ca:350:GLU:HG3	15:DD:107:ASP:HA	1.87	0.57
12:Cj:205:ARG:NH2	20:DR:232:THR:O	2.38	0.57
33:FJ:104:GLY:HA3	33:FJ:127:ILE:H	1.70	0.57
34:FM:90:HIS:HA	34:FM:94:GLU:HB2	1.86	0.57
61:CC:31:ASN:HD22	88:FI:113:ALA:H	1.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:Cg:294:GLU:HA	66:Cg:329:PRO:HA	1.86	0.57
81:DY:144:HIS:HB2	81:DY:149:ALA:H	1.70	0.57
98:Ug:71:UNK:HA	98:Ug:74:UNK:HB1	1.87	0.57
6:CP:136:PRO:HD2	38:FW:137:PRO:HB2	1.87	0.57
21:DU:106:PRO:HG2	21:DU:109:SER:HB3	1.87	0.57
23:F2:764:ASP:OD2	34:FM:63:ARG:NH2	2.37	0.57
35:FO:135:ASN:ND2	37:FQ:176:TYR:OH	2.36	0.57
82:F1:458:ILE:O	82:F1:462:ASN:ND2	2.37	0.57
7:CQ:151:ARG:NH2	20:DR:13:PHE:O	2.38	0.57
24:F3:744:LEU:HD22	24:F3:755:LEU:HD12	1.87	0.57
73:DG:200:GLN:HE21	73:DG:234:GLU:HG3	1.68	0.57
88:FI:67:GLU:OE2	92:Fe:78:ARG:NH1	2.37	0.57
103:Ux:56:UNK:HB2	103:Ux:60:UNK:HB2	1.87	0.57
32:FE:270:ARG:NH1	60:CA:36:U:OP2	2.38	0.56
88:FI:48:PRO:O	92:Fe:52:ARG:NH2	2.38	0.56
7:CQ:200:LEU:HD22	27:F7:136:LYS:HB3	1.87	0.56
23:F2:627:LYS:HE3	23:F2:708:GLY:HA3	1.87	0.56
24:F3:115:CYS:SG	24:F3:133:ARG:NH1	2.78	0.56
37:FT:131:VAL:HB	37:FT:242:HIS:HB3	1.88	0.56
63:CJ:236:ASP:OD2	69:DB:892:ARG:NH2	2.38	0.56
63:CJ:705:ARG:NH2	66:Cg:313:GLU:OE2	2.37	0.56
69:DB:526:PRO:HB3	69:DB:530:GLU:HB2	1.88	0.56
71:DE:144:PRO:HG2	71:DE:147:MET:HB2	1.87	0.56
4:CK:29:PRO:HD2	4:CK:32:LEU:HD12	1.87	0.56
9:Ca:296:THR:HG22	9:Ca:299:ARG:HH11	1.69	0.56
28:F8:53:ARG:HB2	28:F8:82:ARG:HH11	1.71	0.56
82:F1:404:ARG:NH1	85:FF:193:PHE:O	2.37	0.56
87:FH:91:ASP:HB3	87:FH:98:ALA:HB2	1.87	0.56
92:Fe:107:LEU:HG	92:Fe:115:ARG:HG2	1.87	0.56
43:Fb:80:ILE:HD13	43:Fb:143:ARG:HG2	1.88	0.56
59:UY:281:UNK:HG3	59:UY:417:UNK:HG2	1.88	0.56
72:DF:204:ARG:HG2	99:Uh:303:UNK:HB2	1.88	0.56
83:F4:341:VAL:HG21	83:F4:471:PRO:HG2	1.87	0.56
59:UY:53:UNK:HB1	59:UY:397:UNK:HG3	1.88	0.56
84:FD:330:MET:HE3	101:Uj:6:UNK:HG2	1.87	0.56
7:CQ:144:LEU:HB3	7:CQ:166:GLU:HB3	1.88	0.56
15:DD:571:VAL:HG22	15:DD:603:GLU:HB2	1.87	0.56
30:FA:164:THR:HG23	30:FA:167:ALA:H	1.70	0.56
30:FA:275:LEU:O	30:FA:353:LYS:NZ	2.38	0.56
32:FE:284:ASP:OD1	32:FE:284:ASP:N	2.39	0.56
43:Fb:32:CYS:HB2	43:Fb:78:VAL:HG13	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:UY:153:UNK:CB	59:UY:299:UNK:HG1	2.35	0.56
72:DF:237:LEU:HB3	72:DF:253:ILE:HD13	1.87	0.56
82:F1:598:PRO:HB2	82:F1:843:LEU:HB2	1.88	0.56
87:FH:307:LEU:HA	87:FH:311:ALA:HB2	1.88	0.56
99:Uh:139:UNK:HG1	99:Uh:281:UNK:HG1	1.87	0.56
26:F6:457:VAL:HA	26:F6:467:ALA:O	2.06	0.56
74:DH:63:ASN:HD21	76:DK:132:HIS:HE1	1.51	0.56
33:FJ:348:ARG:NH1	82:F1:512:GLU:OE1	2.39	0.56
46:UA:14:UNK:HG2	58:UO:17:UNK:HB1	1.88	0.56
63:CJ:804:ASN:HD21	64:CN:155:VAL:HG21	1.71	0.56
63:CJ:810:ARG:NH2	68:Ck:702:ASN:OD1	2.39	0.56
76:DK:20:GLU:OE1	76:DK:154:ARG:NH1	2.39	0.56
80:DX:91:GLU:HG2	80:DX:92:LYS:HG3	1.88	0.56
82:F1:308:GLY:O	82:F1:397:ARG:NH2	2.39	0.56
16:DI:326:ARG:NH1	18:DO:201:GLU:OE2	2.39	0.56
25:F5:652:SER:O	43:Fb:48:ARG:NH1	2.38	0.56
32:FE:76:GLN:HG2	32:FE:90:LEU:HD21	1.88	0.56
68:Ck:761:THR:HG23	69:DB:1069:THR:HB	1.88	0.56
71:DE:613:ILE:HG22	76:DK:108:LYS:HE3	1.87	0.56
23:F2:352:ARG:NH1	23:F2:387:VAL:O	2.39	0.56
37:FR:224:SER:HB2	37:FR:242:HIS:HE1	1.71	0.56
67:Ci:101:LEU:HD13	68:Ck:697:MET:HE1	1.87	0.56
69:DB:525:ARG:NH1	69:DB:957:TYR:O	2.37	0.56
86:FG:143:CYS:SG	86:FG:145:ASN:ND2	2.79	0.56
87:FH:397:TYR:HB3	87:FH:400:GLU:HB2	1.88	0.56
9:Ca:443:MET:HE1	9:Ca:487:GLU:HB3	1.88	0.55
70:DC:61:ILE:HG13	70:DC:536:SER:HB2	1.86	0.55
77:DT:69:ASP:OD1	88:FI:440:ASN:ND2	2.39	0.55
82:F1:506:LYS:HA	85:FF:238:GLY:HA3	1.87	0.55
29:F9:216:LEU:HD12	41:FZ:36:ARG:HH21	1.72	0.55
63:CJ:345:VAL:HG22	63:CJ:347:GLY:H	1.71	0.55
68:Ck:113:ASN:O	68:Ck:140:ARG:NH2	2.39	0.55
90:FL:197:ARG:NH1	90:FL:202:PRO:O	2.38	0.55
11:Cd:20:SER:HB3	11:Cd:29:THR:HG23	1.87	0.55
15:DD:181:MET:HE1	15:DD:215:TYR:HD1	1.71	0.55
15:DD:325:LYS:O	15:DD:385:ASN:ND2	2.39	0.55
37:FU:13:VAL:HG22	37:FU:22:GLU:HG2	1.87	0.55
59:UY:274:UNK:HG3	59:UY:292:UNK:HB1	1.88	0.55
85:FF:171:VAL:HG13	85:FF:175:GLY:HA3	1.87	0.55
32:FE:287:ASP:N	32:FE:287:ASP:OD1	2.40	0.55
37:FQ:136:GLN:HG2	37:FQ:237:VAL:HG22	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:FR:235:THR:HG21	37:FS:238:ARG:HH21	1.71	0.55
40:FY:16:PRO:HD2	85:FF:413:THR:HA	1.89	0.55
62:CI:410:LEU:HD22	62:CI:415:LEU:HD12	1.88	0.55
78:DV:149:ASP:N	78:DV:149:ASP:OD1	2.40	0.55
99:Uh:2:UNK:HB1	99:Uh:329:UNK:HG1	1.89	0.55
19:DP:79:ARG:O	35:FO:248:ARG:NH1	2.40	0.55
24:F3:92:ARG:NH1	24:F3:93:GLU:O	2.40	0.55
28:F8:234:ARG:HD2	28:F8:238:ARG:HH21	1.70	0.55
62:CI:46:ARG:NH2	66:Cg:74:ILE:O	2.40	0.55
7:CQ:93:ASP:HB3	7:CQ:146:HIS:HE1	1.71	0.55
15:DD:709:ARG:NH2	60:CA:138:U:OP1	2.39	0.55
27:F7:121:ARG:HE	27:F7:143:LEU:HD13	1.70	0.55
31:FB:476:PRO:O	31:FB:479:ARG:NH1	2.40	0.55
40:FY:107:GLN:HB3	59:UY:117:UNK:HG3	1.88	0.55
60:CA:26:C:H42	60:CA:268:U:H4'	1.71	0.55
70:DC:270:LEU:HD13	70:DC:435:LEU:HD21	1.88	0.55
2:CF:100:ARG:NH2	60:CA:309:A:OP2	2.40	0.55
16:DI:148:ALA:O	16:DI:152:LEU:HB2	2.06	0.55
85:FF:232:ARG:NH1	85:FF:238:GLY:O	2.39	0.55
16:DI:340:ARG:HB3	16:DI:404:TRP:HB3	1.89	0.55
27:F7:94:ARG:HH22	59:UY:302:UNK:HB1	1.71	0.55
27:F7:208:GLU:HG2	59:UY:188:UNK:HB1	1.89	0.55
31:FB:361:ASP:O	31:FC:298:ARG:NH1	2.39	0.55
31:FC:367:ASP:OD2	31:FC:371:ARG:NH2	2.40	0.55
35:FO:292:ARG:NH1	35:FO:298:TRP:O	2.38	0.55
83:F4:64:ARG:NH1	83:F4:141:ASP:OD2	2.40	0.55
11:Cd:51:GLU:OE2	12:Cj:15:ASN:ND2	2.40	0.55
64:CN:51:LEU:O	64:CN:68:GLN:NE2	2.40	0.55
6:CP:29:ILE:HG12	6:CP:47:VAL:HG22	1.89	0.54
16:DI:282:ASP:O	16:DI:313:ARG:NH1	2.40	0.54
24:F3:173:ARG:NH2	60:CA:116:U:O2	2.40	0.54
25:F5:447:VAL:HA	25:F5:450:MET:HE2	1.90	0.54
25:F5:733:PRO:HB2	25:F5:744:ARG:HG2	1.88	0.54
60:CA:100:G:O2'	60:CA:127:G:N2	2.40	0.54
2:CF:119:ASP:OD2	11:Cd:137:ARG:NH2	2.40	0.54
27:F7:424:LEU:HD11	27:F7:624:PRO:HB3	1.88	0.54
34:FN:36:LEU:O	34:FN:62:MET:HA	2.07	0.54
34:FN:39:HIS:HB2	34:FN:71:MET:HE3	1.90	0.54
36:FP:46:ARG:NH1	36:FP:46:ARG:O	2.39	0.54
70:DC:86:THR:HG23	70:DC:959:VAL:HG21	1.89	0.54
7:CQ:30:ARG:NH1	60:CA:153:A:OP2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:DD:287:ARG:NH2	21:DU:71:ASP:OD1	2.39	0.54
30:FA:15:ARG:HH12	30:FA:543:ARG:HA	1.71	0.54
63:CJ:263:ASP:OD1	69:DB:1023:ARG:NH2	2.40	0.54
66:Cg:304:PHE:HA	80:DX:106:LYS:HE3	1.89	0.54
68:Ck:382:GLU:O	68:Ck:386:ASN:ND2	2.41	0.54
74:DH:413:ASP:HB3	74:DH:416:LEU:HB2	1.89	0.54
80:DX:73:THR:O	80:DX:111:ASN:ND2	2.41	0.54
81:DY:58:THR:HG23	81:DY:99:GLN:HG2	1.90	0.54
82:F1:510:LEU:O	82:F1:542:GLN:NE2	2.40	0.54
89:FK:184:ARG:HB3	91:FV:185:ARG:HH21	1.72	0.54
91:FV:129:VAL:HG21	91:FV:165:ARG:HD3	1.88	0.54
92:Fe:85:CYS:SG	92:Fe:86:ALA:N	2.79	0.54
1:CE:91:ASN:O	1:CE:120:ASN:ND2	2.41	0.54
16:DI:94:ARG:HH21	16:DI:95:LYS:HZ1	1.55	0.54
32:FE:269:ARG:HH21	60:CA:254:A:H5'	1.71	0.54
32:FE:355:VAL:HG21	32:FE:393:LEU:HD21	1.88	0.54
34:FM:70:THR:HA	34:FM:73:LYS:HG2	1.89	0.54
59:UY:89:UNK:HG1	59:UY:136:UNK:HG2	1.90	0.54
19:DP:27:ASP:N	19:DP:27:ASP:OD1	2.41	0.54
30:FA:279:ALA:HB2	47:UB:204:UNK:HG1	1.90	0.54
31:FC:256:ALA:HB2	31:FC:308:MET:HE3	1.89	0.54
32:FE:388:ARG:HH21	82:F1:1010:ALA:HB1	1.72	0.54
50:UE:15:UNK:HA	50:UE:18:UNK:HG3	1.90	0.54
13:Cn:160:PRO:HD2	33:FJ:322:GLU:HB3	1.88	0.54
15:DD:608:ASP:OD1	20:DR:221:ARG:NH2	2.40	0.54
29:F9:59:VAL:HG11	29:F9:116:ASP:HB2	1.89	0.54
35:FO:25:TRP:HH2	49:UD:5:UNK:O	1.91	0.54
41:FZ:52:ILE:HA	41:FZ:56:ILE:HD12	1.90	0.54
70:DC:62:SER:O	70:DC:539:ASN:ND2	2.41	0.54
82:F1:131:MET:HE3	82:F1:135:MET:HG3	1.88	0.54
15:DD:90:MET:SD	15:DD:90:MET:N	2.76	0.54
15:DD:238:GLU:OE1	16:DI:18:HIS:N	2.41	0.54
21:DU:171:ASP:OD1	21:DU:171:ASP:N	2.41	0.54
30:FA:513:LEU:HD23	30:FA:545:LYS:HB3	1.89	0.54
33:FJ:30:VAL:HG13	60:CA:615:U:H1'	1.90	0.54
59:UY:380:UNK:HB1	59:UY:460:UNK:HG1	1.89	0.54
74:DH:278:VAL:HG22	74:DH:310:PRO:HB2	1.90	0.54
84:FD:61:LYS:O	84:FD:65:ASN:ND2	2.41	0.54
87:FH:227:PRO:O	87:FH:431:GLN:NE2	2.41	0.54
92:Fe:87:ASP:N	92:Fe:87:ASP:OD1	2.39	0.54
10:Cb:184:LEU:HD23	10:Cb:187:LEU:HD21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:F8:495:TYR:HB2	28:F8:684:LEU:HB2	1.90	0.54
31:FB:450:THR:OG1	32:FE:141:ARG:NH1	2.41	0.54
75:DJ:236:ARG:HH21	75:DJ:284:LEU:HD23	1.72	0.54
87:FH:131:ALA:HB3	87:FH:134:ASN:HD22	1.73	0.54
91:FV:106:ALA:HB3	91:FV:119:ALA:HB3	1.89	0.54
1:CE:217:VAL:HG23	27:F7:677:GLN:HB2	1.89	0.54
2:CF:52:ARG:NH2	40:FY:132:ASP:OD2	2.39	0.54
25:F5:351:ARG:NH2	25:F5:464:GLU:OE1	2.41	0.54
29:F9:199:ARG:NH2	29:F9:200:GLU:OE1	2.40	0.54
32:FE:300:ILE:HB	32:FE:348:ILE:HG22	1.88	0.54
35:FO:295:ARG:HG3	35:FO:308:TYR:HB2	1.90	0.54
80:DX:75:LYS:HA	80:DX:111:ASN:HB3	1.90	0.54
5:CO:121:GLY:O	11:CD:130:GLN:NE2	2.38	0.54
14:Cp:77:SER:O	14:Cp:95:ARG:NH1	2.41	0.54
16:DI:27:THR:HG22	16:DI:30:GLN:HE21	1.73	0.54
34:FM:196:VAL:HG13	34:FM:234:MET:HE3	1.90	0.54
60:CA:421:G:OP2	72:DF:166:ARG:NH1	2.41	0.54
63:CJ:457:THR:H	63:CJ:460:HIS:HD2	1.56	0.54
71:DE:213:GLU:OE1	71:DE:214:ARG:NH2	2.41	0.54
78:DV:51:ASN:ND2	81:DY:11:THR:OG1	2.40	0.54
85:FF:352:VAL:HG13	85:FF:398:TRP:HB2	1.90	0.54
90:FL:42:ARG:NH1	90:FL:94:ASP:O	2.40	0.54
24:F3:103:ASP:O	24:F3:175:ARG:NH1	2.41	0.53
24:F3:532:LEU:HD13	24:F3:551:LEU:HD11	1.90	0.53
32:FE:296:LYS:NZ	32:FE:340:ASP:O	2.42	0.53
38:FW:34:ILE:HD11	38:FW:251:LEU:HD22	1.89	0.53
59:UY:90:UNK:HG1	59:UY:139:UNK:HG3	1.89	0.53
62:CI:302:GLU:OE1	63:CJ:119:ARG:NH1	2.41	0.53
70:DC:277:TYR:HD1	70:DC:283:LYS:HE2	1.73	0.53
73:DG:70:TYR:HB3	73:DG:90:MET:HE2	1.88	0.53
74:DH:303:GLU:OE2	74:DH:307:ARG:NH1	2.41	0.53
84:FD:52:ALA:O	84:FD:264:GLN:NE2	2.41	0.53
34:FN:237:ARG:HG2	38:FW:2:SER:HB2	1.91	0.53
35:FO:162:GLU:OE1	35:FO:164:ARG:NH1	2.41	0.53
36:FP:45:ALA:HB1	36:FP:298:VAL:HG13	1.89	0.53
37:FU:63:VAL:HG13	37:FU:89:VAL:HG12	1.89	0.53
39:FX:37:ALA:O	39:FX:67:ARG:NH2	2.41	0.53
59:UY:341:UNK:HG2	59:UY:409:UNK:HG2	1.89	0.53
63:CJ:185:ASP:O	73:DG:133:ARG:NH2	2.41	0.53
63:CJ:368:VAL:HG13	64:CN:140:ASP:HB3	1.90	0.53
73:DG:232:LEU:HD22	73:DG:255:VAL:HG21	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:F4:151:ARG:NH2	83:F4:168:ASP:OD1	2.40	0.53
83:F4:232:ASP:O	83:F4:345:HIS:NE2	2.41	0.53
8:CR:186:ARG:NH1	26:F6:442:ALA:O	2.39	0.53
24:F3:169:ARG:NH2	60:CA:104:A:O2'	2.41	0.53
59:UY:329:UNK:HG3	59:UY:431:UNK:H2	1.72	0.53
24:F3:775:ILE:HD13	24:F3:812:LEU:HD13	1.89	0.53
31:FC:188:ARG:NH1	31:FC:284:CYS:SG	2.82	0.53
37:FS:127:CYS:HB3	37:FS:246:PHE:HB2	1.91	0.53
37:FT:146:LEU:HB3	37:FT:189:PHE:HB3	1.91	0.53
59:UY:21:UNK:HG2	59:UY:33:UNK:HG2	1.91	0.53
60:CA:271:A:N6	60:CA:371:U:OP1	2.40	0.53
70:DC:116:TYR:O	71:DE:150:ARG:NH1	2.41	0.53
1:CE:113:GLU:OE2	29:F9:186:ARG:NH1	2.41	0.53
14:Cp:12:THR:O	14:Cp:17:LYS:NZ	2.38	0.53
24:F3:297:PHE:HB2	24:F3:314:THR:HG23	1.91	0.53
35:FO:6:ARG:N	59:UY:152:UNK:O	2.42	0.53
74:DH:253:SER:HA	74:DH:258:MET:HE1	1.91	0.53
83:F4:692:PRO:O	88:FI:44:ARG:NH2	2.41	0.53
28:F8:225:ASP:N	28:F8:225:ASP:OD1	2.42	0.53
59:UY:85:UNK:HB1	59:UY:118:UNK:HB1	1.90	0.53
66:Cg:88:PHE:O	66:Cg:167:ARG:NH1	2.39	0.53
3:CH:98:ARG:HH22	16:DI:308:PRO:HG3	1.73	0.53
5:CO:264:ARG:NH1	5:CO:300:TYR:O	2.41	0.53
19:DP:183:ASP:OD1	19:DP:183:ASP:N	2.37	0.53
28:F8:439:ARG:HH11	28:F8:440:PRO:HD2	1.74	0.53
35:FO:214:ARG:HH11	35:FO:242:MET:HG3	1.74	0.53
59:UY:231:UNK:HG2	59:UY:288:UNK:HG1	1.91	0.53
60:CA:420:A:H3'	72:DF:166:ARG:HH12	1.73	0.53
66:Cg:373:VAL:HG11	78:DV:51:ASN:HD22	1.74	0.53
73:DG:166:GLU:OE1	73:DG:207:ARG:NH2	2.41	0.53
73:DG:475:GLN:HG2	73:DG:557:GLN:HE21	1.74	0.53
76:DK:220:PRO:HG2	76:DK:223:ALA:HB2	1.91	0.53
82:F1:547:THR:HG21	82:F1:551:LEU:HB2	1.91	0.53
6:CP:45:LEU:HD21	6:CP:117:LEU:HD23	1.90	0.53
9:Ca:420:GLN:HA	9:Ca:481:ARG:HA	1.90	0.53
24:F3:884:MET:O	24:F3:892:ARG:NH2	2.41	0.53
31:FB:254:GLU:HG3	31:FB:268:VAL:HG12	1.90	0.53
66:Cg:103:PRO:HA	66:Cg:107:ARG:HH22	1.73	0.53
70:DC:790:ARG:HG2	70:DC:807:VAL:HG22	1.91	0.53
83:F4:314:ALA:HB3	83:F4:336:VAL:HG12	1.90	0.53
22:DZ:80:TRP:HB3	22:DZ:87:ILE:HD12	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:F2:14:PRO:HA	23:F2:17:GLN:HB2	1.91	0.53
23:F2:74:ALA:HB2	29:F9:21:LEU:HD22	1.91	0.53
34:FN:196:VAL:HG13	34:FN:234:MET:HE3	1.90	0.53
84:FD:232:ASP:HB3	84:FD:235:VAL:HG22	1.91	0.53
25:F5:187:HIS:O	29:F9:204:LYS:NZ	2.40	0.53
25:F5:202:ASP:O	25:F5:205:HIS:HB3	2.08	0.53
28:F8:527:GLN:HB3	28:F8:546:PHE:HE2	1.73	0.53
31:FC:354:ALA:HB1	83:F4:411:ALA:HB3	1.90	0.53
37:FR:129:VAL:HB	37:FR:244:PHE:HB2	1.91	0.53
59:UY:186:UNK:HG2	59:UY:195:UNK:HG2	1.91	0.53
62:CI:112:GLU:HG3	62:CI:175:ARG:HH12	1.73	0.53
85:FF:309:ARG:NH2	85:FF:355:ARG:O	2.42	0.53
86:FG:41:THR:O	86:FG:49:ASN:ND2	2.42	0.53
3:CH:195:ARG:NH1	3:CH:206:GLU:OE1	2.42	0.52
18:DO:172:ALA:HB2	27:F7:564:LEU:HD13	1.91	0.52
31:FC:354:ALA:O	83:F4:407:ARG:NH2	2.41	0.52
34:FN:302:MET:SD	34:FN:305:ARG:NH1	2.81	0.52
69:DB:1074:SER:O	69:DB:1077:ARG:NH1	2.43	0.52
72:DF:435:THR:HG23	72:DF:438:ASP:H	1.74	0.52
87:FH:108:ARG:NH1	87:FH:347:GLU:O	2.42	0.52
23:F2:964:ASP:OD1	23:F2:964:ASP:N	2.39	0.52
24:F3:774:ASP:H	24:F3:812:LEU:HD11	1.74	0.52
34:FM:43:LEU:HD13	34:FM:66:ASP:HB3	1.90	0.52
37:FS:302:ASN:OD1	37:FS:302:ASN:N	2.43	0.52
65:CS:87:GLU:HG2	65:CS:101:SER:HB3	1.90	0.52
70:DC:851:CYS:SG	70:DC:855:ARG:NH1	2.77	0.52
72:DF:525:ARG:NH1	72:DF:526:SER:O	2.43	0.52
73:DG:467:THR:O	73:DG:478:LYS:NZ	2.41	0.52
82:F1:163:GLU:OE1	82:F1:630:ARG:NH2	2.42	0.52
82:F1:316:ARG:NH1	82:F1:335:GLU:OE1	2.42	0.52
87:FH:122:ARG:HB3	87:FH:222:LEU:HB2	1.92	0.52
88:FI:412:ARG:NH2	95:Uc:7:UNK:O	2.42	0.52
8:CR:180:PHE:O	8:CR:186:ARG:NH1	2.42	0.52
9:Ca:178:PHE:HA	50:UP:1:UNK:HB2	1.90	0.52
18:DO:86:ARG:NH2	18:DO:126:PRO:O	2.41	0.52
71:DE:617:ASP:OD1	76:DK:108:LYS:NZ	2.39	0.52
3:CH:194:PHE:HB2	23:F2:304:MET:HG2	1.91	0.52
5:CO:149:GLN:O	11:Cd:143:GLN:NE2	2.41	0.52
31:FB:361:ASP:OD1	31:FB:361:ASP:N	2.42	0.52
35:FO:292:ARG:HB3	35:FO:306:ASN:HB3	1.90	0.52
60:CA:241:U:O2'	60:CA:242:G:O4'	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:CA:536:U:N3	82:F1:226:GLN:OE1	2.41	0.52
69:DB:881:ARG:HB2	69:DB:935:ASP:HB3	1.91	0.52
81:DY:62:GLN:OE1	81:DY:99:GLN:NE2	2.42	0.52
84:FD:136:GLU:OE2	84:FD:189:ARG:NH1	2.42	0.52
85:FF:383:ILE:O	85:FF:387:GLN:NE2	2.42	0.52
91:FV:108:VAL:HG13	91:FV:117:ILE:HB	1.90	0.52
16:DI:342:ARG:NH2	16:DI:400:ASN:O	2.41	0.52
31:FB:441:ASN:HB2	32:FE:148:GLU:HB2	1.89	0.52
31:FB:483:ARG:HB3	31:FB:498:VAL:HB	1.91	0.52
37:FR:32:PRO:O	37:FR:38:GLN:NE2	2.43	0.52
37:FR:35:PRO:HD2	37:FR:97:GLY:HA3	1.92	0.52
37:FR:74:ASN:OD1	37:FR:251:ARG:NH2	2.43	0.52
50:UE:9:UNK:O	50:UE:13:UNK:N	2.43	0.52
59:UY:51:UNK:HG3	59:UY:65:UNK:HG1	1.91	0.52
59:UY:281:UNK:HG1	59:UY:414:UNK:O	2.10	0.52
63:CJ:571:GLN:HE22	99:Uh:31:UNK:HG3	1.73	0.52
70:DC:119:THR:HG23	70:DC:132:SER:HB3	1.91	0.52
70:DC:817:ASP:OD1	70:DC:817:ASP:N	2.40	0.52
83:F4:139:THR:HG22	83:F4:141:ASP:H	1.74	0.52
85:FF:344:LEU:O	85:FF:402:ARG:NH1	2.42	0.52
23:F2:733:THR:OG1	23:F2:734:LYS:N	2.43	0.52
31:FB:379:THR:HB	37:FT:140:GLY:HA3	1.91	0.52
31:FB:504:ARG:NH1	60:CA:243:C:OP2	2.41	0.52
37:FU:143:ARG:NH1	60:CA:240:U:O4	2.43	0.52
63:CJ:128:LYS:NZ	69:DB:891:GLN:O	2.42	0.52
69:DB:960:ALA:O	69:DB:963:ARG:NH1	2.43	0.52
7:CQ:166:GLU:OE1	15:DD:261:ARG:NH1	2.42	0.52
17:DL:306:PRO:HB2	33:FJ:98:ARG:HG2	1.92	0.52
30:FA:50:VAL:O	30:FA:79:ARG:NE	2.42	0.52
37:FQ:71:LEU:HD21	37:FQ:98:LEU:HD21	1.91	0.52
37:FR:134:HIS:HB2	37:FR:145:ALA:HB3	1.91	0.52
39:FX:44:MET:HE3	48:UC:10:UNK:HB1	1.92	0.52
70:DC:991:LYS:HG2	70:DC:1003:ARG:HG2	1.90	0.52
23:F2:178:ALA:HB2	23:F2:235:MET:HB3	1.92	0.52
37:FU:229:SER:HB3	37:FU:239:MET:HB2	1.92	0.52
59:UY:284:UNK:HG3	59:UY:432:UNK:HG3	1.91	0.52
66:Cg:461:GLN:HG2	81:DY:39:VAL:HG21	1.92	0.52
69:DB:1128:PRO:HG2	69:DB:1129:GLN:HG3	1.92	0.52
70:DC:158:TYR:O	84:FD:270:ARG:NH2	2.42	0.52
79:DW:43:ASP:O	79:DW:133:LYS:NZ	2.42	0.52
85:FF:124:ARG:NE	85:FF:127:SER:OG	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CE:109:LYS:HA	29:F9:192:LEU:HA	1.92	0.52
5:CO:413:LEU:HD22	5:CO:417:LYS:HD2	1.91	0.52
15:DD:296:LEU:HG	15:DD:300:GLN:HE21	1.75	0.52
15:DD:414:ARG:NH1	15:DD:514:ASP:OD1	2.42	0.52
25:F5:601:GLU:OE1	25:F5:604:ARG:NH2	2.42	0.52
31:FB:205:THR:O	60:CA:244:G:O2'	2.27	0.52
65:CS:88:ASN:HD22	65:CS:105:VAL:HG13	1.73	0.52
75:DJ:132:ARG:NH1	75:DJ:171:LYS:O	2.43	0.52
99:Uh:78:UNK:HB1	99:Uh:283:UNK:HG3	1.92	0.52
3:CH:209:TYR:O	23:F2:337:GLN:NE2	2.43	0.52
24:F3:520:SER:HA	24:F3:558:MET:HE3	1.91	0.52
35:FO:6:ARG:HB3	59:UY:155:UNK:HG2	1.92	0.52
37:FR:237:VAL:O	37:FS:238:ARG:NH2	2.42	0.52
44:Fc:131:ILE:HG22	44:Fc:136:ASP:HB2	1.91	0.52
61:CC:46:ILE:HG22	61:CC:47:ILE:HG13	1.90	0.52
63:CJ:324:ARG:HH22	68:Ck:127:TRP:HB2	1.74	0.52
82:F1:244:ARG:HB2	82:F1:531:ALA:HA	1.91	0.52
83:F4:383:ASP:OD1	83:F4:383:ASP:N	2.43	0.52
86:FG:128:CYS:SG	86:FG:143:CYS:HB3	2.50	0.52
18:DO:68:ARG:NH1	18:DO:72:GLU:OE2	2.43	0.51
23:F2:68:TYR:HD2	29:F9:43:VAL:HG23	1.75	0.51
23:F2:205:THR:OG1	23:F2:206:GLU:N	2.43	0.51
25:F5:327:ARG:HD3	25:F5:490:ASP:HA	1.90	0.51
42:Fa:140:ALA:O	42:Fa:146:ARG:NH1	2.43	0.51
62:CI:293:ARG:NH1	62:CI:295:ASP:OD2	2.43	0.51
70:DC:793:ASP:N	70:DC:793:ASP:OD1	2.43	0.51
74:DH:305:VAL:HG22	74:DH:360:LEU:HD11	1.91	0.51
82:F1:529:GLU:HG3	109:F1:1102:SAH:H5'1	1.91	0.51
83:F4:681:SER:OG	90:FL:299:ARG:NH1	2.43	0.51
3:CH:45:VAL:HG21	60:CA:315:A:H5''	1.92	0.51
24:F3:342:SER:HB2	24:F3:345:ASP:HB3	1.92	0.51
27:F7:19:ALA:HB1	27:F7:46:LEU:HD23	1.91	0.51
27:F7:127:ARG:NH1	59:UY:313:UNK:O	2.43	0.51
30:FA:603:GLU:HG3	31:FB:578:PRO:HG2	1.91	0.51
32:FE:193:PHE:O	32:FE:255:ARG:NH2	2.42	0.51
36:FP:44:ALA:HB1	36:FP:75:VAL:HG13	1.91	0.51
43:Fb:131:TRP:HB2	50:UP:29:UNK:HG2	1.92	0.51
69:DB:1080:ARG:NH1	69:DB:1081:TYR:OH	2.43	0.51
71:DE:337:MET:HA	71:DE:340:VAL:HG12	1.91	0.51
72:DF:169:ARG:O	74:DH:394:ARG:NH1	2.41	0.51
82:F1:165:ARG:HE	82:F1:241:ILE:HG23	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
88:FI:217:LEU:HD12	88:FI:220:ARG:HH12	1.74	0.51
89:FK:241:ASP:OD1	89:FK:241:ASP:N	2.43	0.51
9:Ca:134:LEU:HD22	41:FZ:58:LEU:HD11	1.92	0.51
9:Ca:335:ARG:HE	15:DD:779:MET:HE2	1.76	0.51
24:F3:153:ILE:HG13	24:F3:238:LYS:HE2	1.92	0.51
24:F3:518:ARG:NH2	24:F3:561:GLU:O	2.43	0.51
31:FC:186:ARG:NH1	31:FC:328:PHE:O	2.44	0.51
31:FC:303:ARG:NH2	32:FE:374:ASN:O	2.44	0.51
37:FS:269:ILE:HB	85:FF:4:ILE:HG12	1.92	0.51
42:Fa:24:TYR:HB2	42:Fa:27:VAL:HG22	1.91	0.51
61:CC:49:ILE:HG12	88:FI:67:GLU:HG2	1.91	0.51
70:DC:68:VAL:HG23	70:DC:547:ILE:HD11	1.93	0.51
91:FV:51:SER:HB3	91:FV:58:VAL:HG13	1.93	0.51
98:Ug:88:UNK:HA	98:Ug:91:UNK:HG3	1.90	0.51
99:Uh:118:UNK:HG2	99:Uh:283:UNK:HB2	1.92	0.51
16:DI:233:ARG:NH2	16:DI:272:CYS:O	2.43	0.51
34:FM:6:ARG:NH1	34:FM:9:ASN:OD1	2.44	0.51
37:FT:73:THR:HG23	37:FT:75:GLN:H	1.75	0.51
72:DF:100:LYS:HE3	99:Uh:21:UNK:HB1	1.91	0.51
85:FF:232:ARG:HA	85:FF:327:ASN:HD21	1.75	0.51
30:FA:251:THR:HB	47:UB:7:UNK:HG1	1.91	0.51
45:Fd:75:GLY:HA2	45:Fd:96:GLU:HB3	1.92	0.51
2:CF:105:ARG:NH2	60:CA:309:A:OP2	2.44	0.51
31:FC:491:ASP:N	31:FC:491:ASP:OD1	2.41	0.51
34:FN:37:GLN:HG2	34:FN:63:ARG:HB2	1.93	0.51
38:FW:195:ARG:NH2	38:FW:202:GLU:O	2.44	0.51
60:CA:442:A:H4'	60:CA:485:U:H5'	1.91	0.51
62:CI:314:GLY:O	62:CI:318:HIS:NE2	2.43	0.51
63:CJ:235:GLU:HG3	68:Ck:310:ASP:HB3	1.92	0.51
63:CJ:488:SER:H	63:CJ:491:ALA:HB3	1.75	0.51
66:Cg:99:GLN:NE2	108:Cg:501:GTP:O3'	2.43	0.51
70:DC:150:LEU:HD12	70:DC:155:VAL:HG21	1.92	0.51
70:DC:1011:ALA:HB2	76:DK:115:THR:HG21	1.92	0.51
82:F1:366:GLU:HG2	82:F1:367:VAL:HG23	1.93	0.51
87:FH:110:ARG:NH2	87:FH:348:VAL:O	2.43	0.51
92:Fe:110:SER:HB3	92:Fe:114:LYS:HB3	1.93	0.51
103:Ux:76:UNK:HG2	103:Ux:89:UNK:HA	1.92	0.51
5:CO:101:GLY:HA2	5:CO:105:ASN:HB2	1.93	0.51
6:CP:19:GLN:NE2	60:CA:174:A:O2'	2.44	0.51
8:CR:217:ARG:NH1	26:F6:421:ASP:OD1	2.43	0.51
66:Cg:14:TYR:OH	66:Cg:56:ARG:NH1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:DB:514:ARG:HH21	69:DB:851:ILE:HG12	1.74	0.51
73:DG:102:MET:HE1	73:DG:134:PRO:HA	1.91	0.51
82:F1:458:ILE:HA	82:F1:461:GLU:HG2	1.92	0.51
1:CE:361:ASN:HA	16:DI:122:ASN:HD21	1.76	0.51
7:CQ:88:PRO:HB3	15:DD:129:ARG:HA	1.93	0.51
23:F2:11:ALA:HB1	23:F2:879:PRO:HG3	1.92	0.51
23:F2:637:ARG:NH1	23:F2:698:HIS:O	2.42	0.51
39:FX:119:CYS:HB2	54:UN:1:UNK:H2	1.75	0.51
59:UY:352:UNK:HG2	60:CA:542:G:H5"	1.92	0.51
67:CI:39:ARG:NH1	68:CK:773:ASP:OD2	2.43	0.51
73:DG:401:CYS:SG	73:DG:402:PHE:N	2.84	0.51
83:F4:685:HIS:HA	83:F4:690:MET:HE3	1.93	0.51
5:CO:424:LYS:NZ	60:CA:130:U:OP2	2.42	0.51
24:F3:545:LEU:HD23	24:F3:594:GLU:HB3	1.92	0.51
30:FA:440:ASP:HA	30:FA:443:GLN:HG2	1.93	0.51
31:FC:357:GLN:NE2	31:FC:492:GLU:OE2	2.44	0.51
33:FJ:320:LYS:NZ	60:CA:375:A:OP1	2.44	0.51
35:FO:303:HIS:HB3	35:FO:306:ASN:HB2	1.92	0.51
37:FU:219:TYR:HB3	37:FU:246:PHE:HB3	1.93	0.51
63:CJ:130:ARG:NH1	68:CK:712:CYS:SG	2.84	0.51
63:CJ:799:ASP:OD2	65:CS:54:ARG:NH1	2.44	0.51
70:DC:147:ARG:NH2	76:DK:282:GLU:OE1	2.44	0.51
75:DJ:33:ASN:HB2	94:UB:34:UNK:HB2	1.92	0.51
85:FF:372:HIS:ND1	85:FF:403:ALA:O	2.40	0.51
5:CO:210:ARG:NH2	5:CO:276:GLU:OE2	2.44	0.51
7:CQ:134:ASP:N	7:CQ:134:ASP:OD1	2.43	0.51
18:DO:193:LEU:HD12	18:DO:234:LEU:HD22	1.93	0.51
19:DP:64:MET:HA	24:F3:472:GLU:HG2	1.93	0.51
66:Cg:86:ILE:HG22	79:DW:79:LEU:HA	1.93	0.51
68:CK:834:MET:HA	68:CK:838:LEU:HB2	1.93	0.51
73:DG:448:LEU:HA	73:DG:451:ARG:HB2	1.93	0.51
83:F4:421:ASP:N	83:F4:421:ASP:OD1	2.44	0.51
24:F3:728:ARG:HG2	24:F3:777:ARG:HD3	1.93	0.50
69:DB:493:ARG:NH2	73:DG:29:ASP:OD2	2.41	0.50
69:DB:547:LEU:HD23	69:DB:550:LEU:HD12	1.92	0.50
3:CH:196:ASP:H	23:F2:307:ASN:HD21	1.60	0.50
8:CR:125:ASN:OD1	8:CR:128:ASN:ND2	2.44	0.50
12:Cj:155:GLU:OE1	15:DD:626:ARG:NH2	2.43	0.50
15:DD:157:GLU:HA	15:DD:160:HIS:HB3	1.92	0.50
26:F6:180:LYS:HB2	26:F6:185:GLU:HG2	1.93	0.50
30:FA:126:ARG:NH1	82:F1:435:GLU:O	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:FE:215:ASN:HD22	82:F1:1003:THR:HG23	1.76	0.50
44:Fc:78:GLU:O	44:Fc:82:ASN:ND2	2.41	0.50
66:Cg:329:PRO:HG2	66:Cg:332:ARG:HG2	1.93	0.50
73:DG:211:TYR:OH	73:DG:234:GLU:OE1	2.29	0.50
9:Ca:135:ALA:HB3	9:Ca:138:LYS:HE2	1.93	0.50
20:DR:16:ASN:ND2	21:DU:53:LEU:O	2.45	0.50
35:FO:296:GLN:CA	51:UF:6:UNK:HG1	2.39	0.50
72:DF:116:ARG:NH1	72:DF:179:TYR:OH	2.44	0.50
20:DR:88:ASP:OD2	20:DR:158:ARG:NH1	2.44	0.50
37:FU:23:THR:OG1	37:FU:24:LEU:N	2.44	0.50
70:DC:48:GLU:OE1	77:DT:75:ARG:NH2	2.41	0.50
5:CO:313:THR:O	15:DD:261:ARG:NH2	2.45	0.50
27:F7:10:ARG:N	27:F7:334:GLU:OE2	2.44	0.50
31:FB:368:ARG:NH2	31:FB:522:TRP:O	2.34	0.50
34:FM:152:LEU:HD11	34:FN:224:VAL:HG23	1.93	0.50
37:FR:83:LEU:HD11	37:FS:247:ARG:HD2	1.93	0.50
49:UQ:3:UNK:HG1	49:UQ:5:UNK:HG3	1.93	0.50
63:CJ:312:ASP:OD1	63:CJ:312:ASP:N	2.40	0.50
66:Cg:178:ASP:N	66:Cg:178:ASP:OD1	2.45	0.50
69:DB:1020:ASP:OD1	69:DB:1020:ASP:N	2.42	0.50
79:DW:39:SER:O	81:DY:145:ARG:NH1	2.37	0.50
86:FG:146:ARG:NH1	91:FV:74:GLY:O	2.44	0.50
89:FK:340:ASP:OD1	89:FK:342:GLN:NE2	2.44	0.50
30:FA:503:ILE:HG23	82:F1:712:LEU:HD22	1.93	0.50
38:FW:18:ARG:NH1	38:FW:206:MET:O	2.44	0.50
1:CE:157:LYS:O	83:F4:804:ARG:NH1	2.45	0.50
3:CH:210:PHE:HB2	23:F2:337:GLN:HE21	1.74	0.50
7:CQ:34:THR:O	60:CA:150:A:O2'	2.30	0.50
9:Ca:326:PHE:HB3	9:Ca:329:GLU:HB2	1.94	0.50
16:DI:179:ASP:OD1	16:DI:179:ASP:N	2.43	0.50
26:F6:327:GLU:HG3	26:F6:331:ARG:HH12	1.77	0.50
34:FN:126:GLU:OE1	34:FN:129:ARG:NH2	2.44	0.50
83:F4:316:ASP:HB3	83:F4:338:GLY:HA2	1.92	0.50
4:CK:173:PRO:O	26:F6:432:LYS:NZ	2.45	0.50
6:CP:39:LYS:HB2	38:FW:172:THR:HG21	1.94	0.50
21:DU:120:VAL:HG23	21:DU:121:GLU:HG3	1.93	0.50
24:F3:889:LEU:O	24:F3:893:LYS:NZ	2.45	0.50
30:FA:565:PRO:HG3	30:FA:596:MET:HE2	1.94	0.50
69:DB:490:ARG:NH2	69:DB:1009:ASP:O	2.45	0.50
70:DC:77:ASP:H	70:DC:81:HIS:HD2	1.59	0.50
71:DE:326:SER:HA	71:DE:438:PHE:HB3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Cp:122:ASP:OD1	14:Cp:124:LYS:NZ	2.41	0.50
15:DD:402:GLN:HE21	15:DD:406:ARG:HH21	1.60	0.50
16:DI:47:LEU:HD21	16:DI:200:ARG:HH22	1.77	0.50
26:F6:486:GLN:HA	26:F6:489:LYS:HG2	1.93	0.50
27:F7:304:GLN:O	27:F7:308:HIS:ND1	2.44	0.50
31:FB:181:PRO:HG2	31:FB:184:LEU:HD12	1.94	0.50
38:FW:23:GLU:OE2	38:FW:27:ARG:NH2	2.45	0.50
42:Fa:139:ASP:O	73:DG:75:ARG:NH2	2.44	0.50
59:UY:232:UNK:HA	59:UY:235:UNK:HG3	1.94	0.50
63:CJ:708:HIS:O	69:DB:1132:ARG:NH2	2.45	0.50
70:DC:349:ASP:HB3	70:DC:352:GLU:HB2	1.94	0.50
72:DF:104:THR:OG1	72:DF:112:ARG:NH1	2.42	0.50
72:DF:520:GLN:O	72:DF:531:ARG:NH1	2.45	0.50
83:F4:109:ALA:O	83:F4:614:ARG:NH2	2.44	0.50
15:DD:323:LEU:HD11	15:DD:444:SER:HB2	1.92	0.49
37:FU:35:PRO:HA	37:FU:38:GLN:HB3	1.94	0.49
70:DC:518:CYS:HA	70:DC:521:TYR:HB3	1.94	0.49
84:FD:125:ALA:HB3	84:FD:128:ALA:HB2	1.93	0.49
21:DU:86:ILE:HD13	21:DU:99:GLN:HB2	1.93	0.49
35:FO:148:ARG:NH2	54:UI:2:UNK:HB1	2.21	0.49
61:CC:29:LYS:HD3	95:Uc:2:UNK:HG3	1.94	0.49
70:DC:1045:GLN:O	70:DC:1049:ASN:ND2	2.37	0.49
86:FG:67:ARG:NH1	87:FH:238:PRO:O	2.45	0.49
16:DI:83:GLN:HE21	16:DI:175:GLN:HE21	1.60	0.49
23:F2:297:GLN:O	23:F2:301:ASN:ND2	2.45	0.49
27:F7:128:ASP:OD1	27:F7:128:ASP:N	2.42	0.49
29:F9:95:ARG:NH1	29:F9:99:SER:OG	2.44	0.49
71:DE:186:ARG:NE	71:DE:426:PHE:O	2.40	0.49
74:DH:160:ASN:HD21	76:DK:124:ALA:HB2	1.77	0.49
81:DY:145:ARG:O	81:DY:148:ARG:NH2	2.44	0.49
82:F1:573:LEU:HD11	82:F1:587:ILE:HD11	1.92	0.49
3:CH:44:ASP:OD2	5:CO:111:GLN:NE2	2.46	0.49
5:CO:215:ASP:N	5:CO:215:ASP:OD1	2.45	0.49
9:Ca:67:ARG:NH1	9:Ca:181:GLU:OE2	2.45	0.49
27:F7:269:VAL:HG11	27:F7:301:LEU:HB2	1.94	0.49
27:F7:433:ARG:HE	27:F7:467:ASN:HB3	1.77	0.49
28:F8:507:HIS:HB2	28:F8:609:LYS:HB2	1.94	0.49
28:F8:564:SER:HB3	32:FE:47:SER:HB2	1.95	0.49
30:FA:242:SER:O	30:FA:247:ARG:NH1	2.45	0.49
36:FP:326:THR:HB	36:FP:329:HIS:HB3	1.94	0.49
63:CJ:750:PRO:HG3	78:DV:107:ILE:HD13	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:DF:341:VAL:HG12	72:DF:346:LEU:HD11	1.95	0.49
73:DG:487:VAL:HA	73:DG:490:ARG:HB3	1.95	0.49
2:CF:14:GLN:OE1	2:CF:16:ARG:NH2	2.43	0.49
16:DI:27:THR:H	16:DI:30:GLN:HE21	1.60	0.49
25:F5:723:ARG:HG3	25:F5:728:LEU:HB2	1.94	0.49
27:F7:203:ASN:HB3	59:UY:278:UNK:HG3	1.92	0.49
31:FC:362:ARG:NH2	82:F1:695:ARG:O	2.44	0.49
35:FO:160:LEU:HD11	35:FO:193:LEU:HD21	1.94	0.49
37:FQ:146:LEU:HD21	37:FQ:206:VAL:HG11	1.93	0.49
60:CA:515:U:O2	79:DW:126:ARG:NH1	2.46	0.49
63:CJ:729:ASP:N	63:CJ:729:ASP:OD1	2.45	0.49
69:DB:560:THR:OG1	72:DF:548:ARG:NH1	2.46	0.49
71:DE:251:GLU:OE2	71:DE:350:ARG:NH2	2.46	0.49
74:DH:551:ARG:HG3	90:FL:105:ALA:HB1	1.94	0.49
82:F1:743:GLU:HB2	82:F1:746:HIS:HB2	1.95	0.49
1:CE:151:VAL:HG11	82:F1:220:LEU:HD22	1.95	0.49
15:DD:112:LYS:NZ	15:DD:757:GLU:OE2	2.43	0.49
23:F2:226:ARG:NH2	23:F2:266:GLU:OE2	2.45	0.49
26:F6:329:LEU:HD22	26:F6:336:LEU:HD11	1.95	0.49
30:FA:151:THR:OG1	30:FA:154:MET:SD	2.68	0.49
69:DB:484:PHE:O	69:DB:487:ARG:NH2	2.45	0.49
69:DB:706:GLU:OE2	71:DE:634:ARG:NH2	2.45	0.49
69:DB:878:VAL:HG12	69:DB:938:ILE:HG22	1.94	0.49
86:FG:121:PRO:HB3	91:FV:169:GLU:HG2	1.95	0.49
7:CQ:86:ASN:O	15:DD:128:ASN:ND2	2.43	0.49
17:DL:147:ILE:O	17:DL:151:SER:OG	2.29	0.49
31:FC:323:CYS:O	31:FC:326:GLN:NE2	2.46	0.49
34:FM:13:VAL:HA	34:FM:39:HIS:HB3	1.93	0.49
37:FQ:72:ARG:NH1	37:FT:58:ASP:OD1	2.45	0.49
42:Fa:91:THR:OG1	42:Fa:92:LEU:N	2.43	0.49
59:UY:85:UNK:HG1	59:UY:134:UNK:HG2	1.95	0.49
63:CJ:245:TYR:HB2	63:CJ:403:CYS:HB2	1.95	0.49
70:DC:443:ARG:HH21	70:DC:490:THR:HG22	1.78	0.49
78:DV:40:HIS:HB3	81:DY:16:SER:HA	1.95	0.49
82:F1:137:ALA:HA	85:FF:445:PHE:HZ	1.78	0.49
82:F1:420:GLU:OE2	85:FF:168:ARG:NH2	2.46	0.49
3:CH:199:ASN:ND2	3:CH:202:ALA:O	2.45	0.49
8:CR:208:PHE:HE2	58:UO:7:UNK:HB1	1.78	0.49
9:Ca:461:LEU:HD22	9:Ca:488:MET:HB3	1.93	0.49
15:DD:250:LYS:O	15:DD:287:ARG:NE	2.45	0.49
30:FA:608:ILE:HG12	30:FA:623:LEU:HB3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:FE:342:LEU:HD11	32:FE:348:ILE:HG23	1.95	0.49
34:FN:200:ASN:OD1	34:FN:238:ASN:ND2	2.46	0.49
40:FY:156:ARG:HH21	40:FY:180:THR:HG23	1.78	0.49
66:Cg:70:SER:OG	66:Cg:71:PHE:N	2.46	0.49
71:DE:217:ASP:OD1	71:DE:217:ASP:N	2.36	0.49
82:F1:603:LYS:HG2	82:F1:920:GLN:HB2	1.94	0.49
82:F1:611:MET:HA	82:F1:824:ARG:HH21	1.78	0.49
83:F4:366:SER:O	83:F4:368:LYS:NZ	2.46	0.49
1:CE:33:MET:O	1:CE:40:ARG:NH2	2.45	0.49
4:CK:281:VAL:HG11	4:CK:288:ARG:HG3	1.94	0.49
7:CQ:58:HIS:NE2	7:CQ:60:ALA:O	2.45	0.49
14:Cp:66:HIS:HD2	14:Cp:68:LEU:H	1.60	0.49
15:DD:593:ASP:OD1	15:DD:593:ASP:N	2.43	0.49
16:DI:277:SER:HB2	24:F3:923:PRO:HG3	1.95	0.49
23:F2:855:SER:O	25:F5:468:ARG:NH1	2.46	0.49
30:FA:85:ARG:NH2	82:F1:436:GLN:O	2.46	0.49
30:FA:519:SER:OG	30:FA:541:LEU:O	2.31	0.49
33:FJ:340:ARG:NH2	85:FF:279:LYS:O	2.42	0.49
36:FP:158:ASP:OD1	36:FP:158:ASP:N	2.43	0.49
36:FP:262:ARG:NH1	36:FP:267:ASP:OD1	2.46	0.49
37:FS:36:PHE:HB2	37:FS:96:TRP:HB3	1.93	0.49
37:FT:143:ARG:NH1	37:FT:144:HIS:O	2.45	0.49
45:Fd:97:LYS:HA	45:Fd:101:ARG:HB2	1.95	0.49
59:UY:401:UNK:HG2	59:UY:408:UNK:HG2	1.94	0.49
64:CN:31:MET:HE1	64:CN:89:LEU:HD23	1.94	0.49
68:Ck:566:ARG:NH1	68:Ck:572:MET:O	2.41	0.49
89:FK:162:GLU:OE2	89:FK:337:ARG:NH1	2.46	0.49
91:FV:50:PHE:HD1	91:FV:59:LEU:HD13	1.77	0.49
7:CQ:70:ARG:NE	60:CA:149:U:OP2	2.41	0.49
7:CQ:176:LYS:O	27:F7:380:ARG:NH2	2.46	0.49
9:Ca:142:MET:HE3	9:Ca:147:VAL:HG12	1.94	0.49
28:F8:47:PHE:HB3	28:F8:557:LEU:HD22	1.95	0.49
32:FE:17:THR:HA	32:FE:156:THR:HG22	1.94	0.49
34:FM:177:PHE:HB3	34:FN:220:LYS:HE2	1.94	0.49
37:FS:219:TYR:HE1	37:FS:248:ARG:HD2	1.76	0.49
68:Ck:175:LEU:HD11	68:Ck:234:GLU:HB3	1.93	0.49
71:DE:526:SER:O	71:DE:530:TRP:N	2.44	0.49
7:CQ:47:LYS:HB2	7:CQ:50:ALA:HB3	1.94	0.48
25:F5:188:ARG:NH2	41:FZ:15:PHE:O	2.43	0.48
32:FE:314:THR:HG22	32:FE:326:GLY:HA3	1.95	0.48
59:UY:62:UNK:HB2	59:UY:64:UNK:HG3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:CI:87:TYR:O	66:Cg:473:ARG:NH1	2.46	0.48
68:Ck:395:MET:HB3	68:Ck:564:LEU:HD11	1.95	0.48
69:DB:493:ARG:NH1	69:DB:507:LEU:O	2.46	0.48
5:CO:332:ARG:NH1	5:CO:340:ASP:OD2	2.41	0.48
6:CP:9:ALA:N	60:CA:58:A:OP1	2.46	0.48
9:Ca:164:ARG:NH2	50:UP:6:UNK:HG2	2.28	0.48
26:F6:430:TRP:HE1	26:F6:468:LEU:HB2	1.78	0.48
34:FM:190:MET:HB3	34:FM:270:LEU:HD13	1.95	0.48
34:FN:70:THR:O	34:FN:74:TRP:HB2	2.13	0.48
70:DC:295:VAL:HG23	70:DC:363:ILE:HG12	1.94	0.48
82:F1:1001:ILE:HA	82:F1:1004:VAL:HG22	1.95	0.48
83:F4:63:ILE:HG12	83:F4:141:ASP:HB3	1.95	0.48
83:F4:335:GLU:HB3	83:F4:429:VAL:HG13	1.96	0.48
83:F4:675:TYR:HB3	90:FL:300:LEU:HB2	1.94	0.48
84:FD:109:TYR:OH	88:FI:404:ASP:OD1	2.31	0.48
88:FI:206:ASP:OD1	88:FI:206:ASP:N	2.37	0.48
95:Uc:2:UNK:HB1	49:Uf:4:UNK:O	2.13	0.48
5:CO:182:ASN:OD1	5:CO:182:ASN:N	2.46	0.48
9:Ca:444:PHE:HB2	9:Ca:472:VAL:HG12	1.96	0.48
16:DI:159:ASP:OD1	16:DI:159:ASP:N	2.42	0.48
31:FC:332:HIS:HB3	31:FC:335:LEU:HB2	1.94	0.48
31:FC:503:LEU:HB2	31:FC:506:GLN:HB2	1.94	0.48
32:FE:119:ASN:HD22	32:FE:135:SER:HB2	1.78	0.48
62:CI:45:VAL:HG12	62:CI:49:LYS:HE2	1.95	0.48
66:Cg:279:LEU:O	66:Cg:350:ASN:ND2	2.44	0.48
73:DG:179:LEU:HD12	73:DG:188:LEU:HD13	1.95	0.48
80:DX:146:PRO:O	80:DX:149:THR:OG1	2.32	0.48
90:FL:252:SER:HB2	90:FL:297:SER:HB3	1.96	0.48
1:CE:302:PRO:HG2	23:F2:607:PRO:HG3	1.94	0.48
11:Cd:66:LEU:HD12	15:DD:154:ILE:HD11	1.96	0.48
26:F6:256:ASP:OD1	26:F6:256:ASP:N	2.45	0.48
27:F7:351:ILE:HG13	27:F7:379:ILE:HG21	1.95	0.48
28:F8:494:THR:HG23	28:F8:683:VAL:HG13	1.96	0.48
30:FA:56:VAL:HG12	30:FA:76:LEU:HD21	1.95	0.48
30:FA:254:VAL:HG21	30:FA:287:VAL:HG21	1.95	0.48
35:FO:132:THR:OG1	37:FQ:178:GLN:NE2	2.46	0.48
63:CJ:489:TRP:HE1	63:CJ:512:THR:HA	1.77	0.48
74:DH:160:ASN:HB3	74:DH:163:GLU:HB2	1.95	0.48
75:DJ:66:TRP:HD1	75:DJ:68:GLU:HG3	1.77	0.48
84:FD:327:GLU:OE2	84:FD:331:ARG:NH2	2.45	0.48
99:Uh:40:UNK:HG2	99:Uh:125:UNK:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:CQ:72:ARG:NH2	60:CA:149:U:O4	2.46	0.48
12:Cj:52:LEU:HA	12:Cj:96:THR:HG21	1.94	0.48
15:DD:704:ASP:OD1	15:DD:704:ASP:N	2.45	0.48
32:FE:42:VAL:HG11	32:FE:70:GLY:HA3	1.96	0.48
60:CA:454:G:O6	60:CA:472:G:O6	2.30	0.48
63:CJ:369:ARG:NH1	63:CJ:804:ASN:O	2.46	0.48
69:DB:462:ASP:OD2	69:DB:464:THR:OG1	2.31	0.48
85:FF:221:LEU:HD13	85:FF:298:LEU:HD13	1.94	0.48
5:CO:159:LYS:NZ	27:F7:494:ASP:OD2	2.43	0.48
9:Ca:106:ASN:HB2	9:Ca:155:ARG:HD3	1.94	0.48
14:Cp:17:LYS:HE2	23:F2:766:GLY:HA3	1.95	0.48
23:F2:417:ARG:NH1	23:F2:878:SER:O	2.46	0.48
25:F5:191:ASN:O	25:F5:194:THR:OG1	2.27	0.48
30:FA:98:TRP:HH2	55:UJ:6:UNK:HG2	1.78	0.48
60:CA:338:U:O2'	60:CA:340:U:OP2	2.31	0.48
62:CI:33:SER:HB2	73:DG:624:ARG:HH21	1.77	0.48
71:DE:157:ARG:HG3	71:DE:564:ILE:HG23	1.94	0.48
1:CE:60:TYR:HE1	1:CE:244:ALA:HB2	1.79	0.48
2:CF:144:MET:HE1	10:Cb:104:LEU:HD12	1.96	0.48
5:CO:146:LEU:HD21	11:Cd:147:LEU:HD11	1.95	0.48
8:CR:177:PRO:O	8:CR:181:ARG:NH2	2.44	0.48
15:DD:77:SER:O	15:DD:85:ASN:ND2	2.46	0.48
16:DI:188:GLU:HG2	16:DI:195:ILE:HG13	1.96	0.48
30:FA:98:TRP:CH2	55:UJ:6:UNK:HG2	2.49	0.48
59:UY:235:UNK:HA	59:UY:238:UNK:HG3	1.96	0.48
71:DE:185:GLU:OE2	71:DE:543:ARG:NH2	2.46	0.48
88:FI:132:ARG:NH2	88:FI:416:GLN:OE1	2.47	0.48
90:FL:262:LEU:HB2	90:FL:271:PHE:HB2	1.95	0.48
91:FV:175:ARG:NH1	91:FV:179:THR:OG1	2.47	0.48
8:CR:79:ASN:OD1	8:CR:82:ARG:NH1	2.47	0.48
9:Ca:62:TRP:O	9:Ca:94:TRP:NE1	2.44	0.48
16:DI:294:ASN:O	16:DI:365:ARG:NH2	2.47	0.48
35:FO:183:ARG:NH1	49:UM:8:UNK:HG2	2.29	0.48
42:Fa:30:THR:HG22	42:Fa:80:PRO:HB3	1.95	0.48
58:UO:25:UNK:HA	58:UO:28:UNK:HG3	1.95	0.48
59:UY:74:UNK:O	59:UY:132:UNK:HG1	2.14	0.48
72:DF:224:ARG:HH12	99:Uh:26:UNK:HG3	1.79	0.48
86:FG:133:GLN:NE2	86:FG:167:GLU:O	2.47	0.48
88:FI:26:GLY:HA3	90:FL:233:ASN:HD22	1.79	0.48
100:Ui:13:UNK:HG1	101:Uj:17:UNK:HG1	1.96	0.48
7:CQ:115:VAL:HG13	7:CQ:124:VAL:HG23	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:CR:137:THR:OG1	8:CR:138:ARG:N	2.47	0.48
12:Cj:72:ASP:N	12:Cj:72:ASP:OD1	2.41	0.48
28:F8:595:ARG:NH1	32:FE:78:GLU:O	2.47	0.48
31:FB:199:ASP:HB3	31:FB:248:HIS:HD2	1.79	0.48
31:FC:489:GLN:NE2	37:FU:282:PRO:O	2.46	0.48
35:FO:93:ASP:OD1	35:FO:93:ASP:N	2.46	0.48
84:FD:215:ASP:O	84:FD:219:THR:OG1	2.31	0.48
85:FF:446:THR:OG1	85:FF:447:PHE:N	2.47	0.48
12:Cj:102:GLN:HA	19:DP:143:ASN:HD21	1.79	0.48
15:DD:303:LEU:HD21	15:DD:400:VAL:HG23	1.94	0.48
19:DP:13:ARG:NH1	60:CA:55:U:OP1	2.47	0.48
27:F7:187:ALA:HB1	60:CA:292:U:H1'	1.96	0.48
27:F7:295:MET:O	27:F7:299:SER:OG	2.31	0.48
59:UY:360:UNK:HA	59:UY:363:UNK:HG3	1.96	0.48
63:CJ:773:GLU:HB3	78:DV:100:LYS:HG3	1.95	0.48
69:DB:986:TYR:OH	73:DG:119:ASP:OD2	2.30	0.48
70:DC:112:TYR:HB3	70:DC:960:VAL:HG13	1.96	0.48
73:DG:160:ARG:NH1	73:DG:163:GLN:OE1	2.42	0.48
74:DH:76:LEU:HD12	74:DH:93:LEU:HD22	1.96	0.48
20:DR:74:GLU:HG2	24:F3:429:LYS:HG3	1.96	0.47
24:F3:858:LEU:HD22	24:F3:898:VAL:HG21	1.95	0.47
32:FE:49:VAL:HG12	32:FE:97:LEU:HD22	1.96	0.47
35:FO:154:LEU:HB3	54:UI:8:UNK:HG2	1.95	0.47
59:UY:342:UNK:HG2	59:UY:408:UNK:HB1	1.95	0.47
70:DC:280:VAL:O	70:DC:283:LYS:NZ	2.40	0.47
71:DE:583:ARG:NH2	76:DK:146:TYR:OH	2.47	0.47
90:FL:233:ASN:O	90:FL:237:SER:OG	2.32	0.47
99:Uh:1:UNK:HG1	99:Uh:125:UNK:N	2.28	0.47
15:DD:95:ARG:NH1	60:CA:143:U:O4	2.48	0.47
31:FB:487:VAL:HG21	37:FU:278:MET:HB3	1.96	0.47
37:FS:165:ARG:NH2	37:FS:179:CYS:O	2.46	0.47
38:FW:15:ASN:HD22	38:FW:68:THR:H	1.61	0.47
39:FX:211:HIS:HB2	39:FX:213:TRP:HD1	1.79	0.47
64:CN:29:ARG:NH1	67:Ci:102:PHE:O	2.44	0.47
66:Cg:231:LEU:O	66:Cg:239:GLN:NE2	2.47	0.47
68:Ck:702:ASN:O	68:Ck:756:GLN:NE2	2.46	0.47
73:DG:215:LEU:HD22	73:DG:224:LEU:HD12	1.96	0.47
74:DH:148:ASP:OD1	74:DH:289:ARG:NH2	2.45	0.47
75:DJ:31:HIS:CD2	94:Ub:34:UNK:HG2	2.48	0.47
77:DT:29:TRP:HE1	77:DT:201:SER:HB3	1.78	0.47
83:F4:264:ILE:HD11	83:F4:267:LYS:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:FF:190:LYS:HB2	85:FF:339:ASN:HB3	1.97	0.47
9:Ca:113:LEU:HD22	9:Ca:120:ASN:HA	1.96	0.47
9:Ca:460:GLU:OE1	9:Ca:492:TYR:OH	2.31	0.47
10:Cb:124:THR:HG22	26:F6:16:ASP:HB3	1.96	0.47
12:Cj:128:LYS:HB2	12:Cj:152:PHE:HD1	1.78	0.47
15:DD:229:MET:HG2	16:DI:186:ILE:HG21	1.95	0.47
27:F7:229:GLU:OE1	45:Fd:78:GLN:NE2	2.47	0.47
27:F7:309:GLU:HA	27:F7:312:ARG:HE	1.78	0.47
34:FM:218:GLN:HB3	34:FM:243:GLN:HE21	1.78	0.47
34:FN:89:ARG:NH1	34:FN:122:GLU:OE1	2.48	0.47
34:FN:255:THR:HA	34:FN:305:ARG:HA	1.96	0.47
37:FS:63:VAL:HG22	37:FS:85:ILE:HG23	1.97	0.47
68:Ck:218:ILE:HG13	68:Ck:243:LYS:HD3	1.96	0.47
68:Ck:573:THR:HA	68:Ck:576:ASP:HB2	1.95	0.47
69:DB:1131:ASN:HB2	69:DB:1140:ASN:HD21	1.79	0.47
70:DC:681:ARG:HH12	70:DC:749:GLU:HG2	1.78	0.47
87:FH:112:PRO:HA	87:FH:335:GLU:HA	1.96	0.47
6:CP:176:GLU:HG3	36:FP:116:GLN:HG2	1.96	0.47
19:DP:54:LEU:HD13	19:DP:58:TYR:HB3	1.97	0.47
19:DP:60:ARG:NH1	19:DP:65:ALA:O	2.47	0.47
21:DU:175:PRO:HG2	21:DU:178:TRP:HB2	1.96	0.47
37:FQ:58:ASP:OD2	37:FR:27:THR:OG1	2.31	0.47
37:FT:122:LYS:NZ	37:FT:123:LEU:O	2.47	0.47
37:FU:30:ARG:NH1	37:FU:71:LEU:O	2.45	0.47
82:F1:320:GLN:O	82:F1:323:GLN:NE2	2.47	0.47
6:CP:123:LEU:O	11:Cd:61:TYR:OH	2.30	0.47
15:DD:460:THR:HA	15:DD:463:GLU:HG2	1.96	0.47
23:F2:53:PRO:HB2	23:F2:55:VAL:HG13	1.97	0.47
23:F2:56:GLN:HE21	23:F2:58:ARG:HB2	1.79	0.47
27:F7:513:VAL:O	27:F7:517:PHE:HB2	2.14	0.47
35:FO:66:VAL:HA	49:UD:1:UNK:H2	1.79	0.47
35:FO:220:VAL:HG11	35:FO:240:SER:HB3	1.95	0.47
42:Fa:9:TRP:HZ2	60:CA:619:U:H5"	1.79	0.47
59:UY:54:UNK:HG3	59:UY:398:UNK:HG2	1.95	0.47
60:CA:386:A:H5"	81:DY:76:ARG:HB2	1.96	0.47
73:DG:324:LEU:HA	73:DG:361:SER:HB3	1.97	0.47
81:DY:32:TRP:O	81:DY:37:ARG:NH1	2.47	0.47
88:FI:69:ILE:HD13	88:FI:82:SER:HB2	1.96	0.47
90:FL:158:ASP:N	90:FL:158:ASP:OD1	2.45	0.47
7:CQ:123:ARG:NH1	15:DD:727:PRO:O	2.48	0.47
15:DD:303:LEU:HD22	15:DD:396:VAL:HG13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:DD:421:PHE:HB3	15:DD:531:LYS:HG3	1.96	0.47
23:F2:245:ARG:NH1	60:CA:2:A:O2'	2.48	0.47
34:FN:70:THR:HA	34:FN:73:LYS:HG2	1.97	0.47
36:FP:15:ASN:HD22	36:FP:17:TYR:H	1.63	0.47
60:CA:465:U:OP1	62:CI:293:ARG:NH2	2.48	0.47
66:Cg:256:PRO:HG2	68:Ck:830:PHE:HB2	1.97	0.47
71:DE:588:PRO:HD2	96:Ud:31:UNK:HG1	1.95	0.47
7:CQ:211:ALA:HB2	59:UY:160:UNK:CG	2.44	0.47
9:Ca:134:LEU:HB3	41:FZ:58:LEU:HD21	1.96	0.47
11:Cd:152:PRO:HG2	11:Cd:155:GLN:HB2	1.97	0.47
15:DD:571:VAL:O	15:DD:606:ARG:NH1	2.46	0.47
23:F2:532:ASP:OD2	60:CA:10:G:N1	2.47	0.47
23:F2:894:PHE:O	23:F2:939:LYS:NZ	2.45	0.47
26:F6:301:ILE:HG12	26:F6:313:ILE:HD12	1.97	0.47
27:F7:28:ARG:HA	27:F7:31:LYS:HG2	1.97	0.47
28:F8:436:THR:HG21	28:F8:503:LEU:HD22	1.95	0.47
33:FJ:220:PHE:HB3	33:FJ:264:GLY:H	1.80	0.47
35:FO:25:TRP:CH2	49:UD:5:UNK:O	2.67	0.47
38:FW:60:ILE:HD11	38:FW:257:LEU:HD21	1.96	0.47
59:UY:162:UNK:HG1	59:UY:183:UNK:HB2	1.95	0.47
64:CN:91:ASN:ND2	64:CN:100:GLY:O	2.38	0.47
68:Ck:197:GLU:OE1	68:Ck:249:LYS:NZ	2.44	0.47
74:DH:114:HIS:ND1	74:DH:124:TYR:OH	2.43	0.47
83:F4:324:MET:HE2	83:F4:437:LEU:HD22	1.96	0.47
85:FF:427:ARG:HA	85:FF:432:MET:HG3	1.95	0.47
98:Ug:11:UNK:HG3	98:Ug:81:UNK:HG2	1.96	0.47
10:Cb:107:SER:OG	10:Cb:108:GLU:OE1	2.33	0.47
11:Cd:128:GLU:OE1	18:DO:190:TYR:OH	2.32	0.47
26:F6:132:ASP:OD2	26:F6:136:ARG:NH1	2.48	0.47
27:F7:121:ARG:NH1	60:CA:362:A:OP1	2.48	0.47
30:FA:385:HIS:HD2	30:FA:387:VAL:HG12	1.80	0.47
31:FB:190:ASP:OD2	31:FB:282:ARG:NH2	2.48	0.47
37:FR:231:ASP:OD1	37:FR:231:ASP:N	2.46	0.47
60:CA:582:C:O4'	85:FF:273:ARG:NH2	2.47	0.47
63:CJ:551:ARG:HH22	63:CJ:590:PHE:HB3	1.79	0.47
72:DF:271:LEU:HD23	72:DF:274:LEU:HD12	1.97	0.47
87:FH:416:ASP:OD1	88:FI:71:LYS:NZ	2.42	0.47
92:Fe:41:GLU:OE2	92:Fe:54:ARG:NH1	2.48	0.47
96:Ud:26:UNK:HB2	96:Ud:29:UNK:HG3	1.95	0.47
103:Ux:120:UNK:HA	103:Ux:123:UNK:HB1	1.97	0.47
1:CE:314:MET:HE3	23:F2:291:ASP:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Cp:12:THR:HA	34:FM:63:ARG:HG3	1.96	0.47
44:Fc:136:ASP:OD1	44:Fc:136:ASP:N	2.44	0.47
60:CA:77:A:H3'	60:CA:78:G:H2'	1.96	0.47
70:DC:460:SER:OG	70:DC:461:SER:N	2.48	0.47
71:DE:68:PRO:O	71:DE:197:ARG:NH1	2.48	0.47
71:DE:174:VAL:HG11	71:DE:550:ALA:HB2	1.96	0.47
73:DG:490:ARG:HD3	73:DG:571:VAL:HG11	1.97	0.47
76:DK:276:ASP:HA	76:DK:279:LEU:HB2	1.95	0.47
89:FK:312:ASN:HB2	91:FV:149:ALA:HB2	1.97	0.47
96:Ud:17:UNK:HG3	96:Ud:37:UNK:HB1	1.97	0.47
99:Uh:1:UNK:HG1	99:Uh:125:UNK:H2	1.80	0.47
1:CE:143:ASN:ND2	1:CE:168:TYR:OH	2.46	0.47
14:Cp:97:ILE:O	14:Cp:102:ARG:NH1	2.47	0.47
15:DD:347:GLU:OE2	20:DR:188:LYS:NZ	2.41	0.47
17:DL:199:ASP:OD1	17:DL:214:TYR:OH	2.31	0.47
27:F7:509:HIS:CE1	53:UH:3:UNK:HG2	2.50	0.47
30:FA:588:GLU:HB3	30:FA:623:LEU:HD21	1.95	0.47
31:FB:301:ILE:HG23	31:FB:317:ILE:HB	1.97	0.47
34:FM:255:THR:HA	34:FM:305:ARG:HA	1.97	0.47
61:CC:54:ILE:HD12	92:Fe:34:MET:HG2	1.96	0.47
62:CI:124:GLU:HG3	62:CI:128:ARG:HH21	1.80	0.47
63:CJ:467:ALA:O	69:DB:1097:ARG:NH1	2.39	0.47
74:DH:494:PRO:HB2	74:DH:497:MET:HG2	1.97	0.47
83:F4:204:ARG:NH2	83:F4:230:TRP:O	2.48	0.47
98:Ug:67:UNK:HG1	98:Ug:140:UNK:HB2	1.97	0.47
24:F3:654:GLN:HE21	24:F3:704:TYR:HE1	1.63	0.46
30:FA:410:LYS:NZ	30:FA:440:ASP:OD2	2.49	0.46
31:FB:335:LEU:HD13	31:FB:563:PRO:HD3	1.96	0.46
35:FO:101:ARG:NH2	35:FO:102:ILE:O	2.46	0.46
35:FO:113:ARG:NH1	54:UI:3:UNK:HG2	2.29	0.46
36:FP:131:ASP:OD1	36:FP:131:ASP:N	2.47	0.46
37:FQ:163:ARG:NH2	37:FQ:212:GLU:OE1	2.48	0.46
37:FS:204:THR:HA	37:FS:207:THR:HG22	1.97	0.46
37:FT:153:ASP:OD1	37:FT:185:ARG:NH2	2.39	0.46
42:Fa:134:PRO:HD2	62:CI:220:THR:HG21	1.96	0.46
71:DE:566:ARG:NH1	71:DE:567:HIS:O	2.48	0.46
74:DH:99:GLN:HG2	74:DH:134:PRO:HD2	1.97	0.46
76:DK:151:ASN:N	76:DK:151:ASN:OD1	2.48	0.46
82:F1:165:ARG:NH1	82:F1:248:TYR:OH	2.48	0.46
83:F4:328:LEU:HD11	83:F4:437:LEU:HD21	1.97	0.46
88:FI:78:SER:OG	88:FI:80:GLU:OE1	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CE:142:LEU:HD11	1:CE:167:LEU:HD22	1.96	0.46
7:CQ:106:THR:HA	7:CQ:132:ALA:O	2.15	0.46
20:DR:63:ILE:HG23	20:DR:64:ILE:HG13	1.98	0.46
59:UY:202:UNK:HA	59:UY:205:UNK:HG3	1.97	0.46
68:Ck:98:ARG:NH2	74:DH:296:CYS:SG	2.89	0.46
71:DE:618:ARG:O	71:DE:625:SER:OG	2.32	0.46
75:DJ:240:ILE:HG12	75:DJ:288:LEU:HD21	1.97	0.46
85:FF:306:GLN:O	85:FF:393:ARG:NH2	2.49	0.46
34:FM:78:ILE:HG21	34:FM:99:LEU:HD13	1.97	0.46
34:FN:20:VAL:HG13	34:FN:21:PRO:HD3	1.97	0.46
36:FP:156:TRP:O	39:FX:42:ARG:NH2	2.41	0.46
37:FQ:14:ILE:HD11	37:FQ:57:LEU:HG	1.97	0.46
37:FR:17:GLY:HA3	37:FR:61:PRO:HD3	1.97	0.46
60:CA:430:U:H4'	60:CA:431:U:H5'	1.96	0.46
60:CA:518:G:OP1	82:F1:631:HIS:NE2	2.48	0.46
62:CI:243:ASP:OD2	62:CI:280:LYS:NZ	2.40	0.46
65:CS:105:VAL:HA	65:CS:139:GLU:HA	1.97	0.46
68:Ck:617:VAL:HG21	68:Ck:638:ARG:HD2	1.97	0.46
68:Ck:700:VAL:HG22	68:Ck:754:GLU:HB3	1.97	0.46
83:F4:529:ARG:HB3	83:F4:563:LEU:HD23	1.96	0.46
90:FL:137:GLN:HE22	90:FL:159:GLU:HA	1.81	0.46
6:CP:145:LEU:HB3	15:DD:656:LEU:HB3	1.98	0.46
12:Cj:13:PRO:O	20:DR:263:SER:OG	2.32	0.46
28:F8:432:MET:HE3	32:FE:93:ARG:HB2	1.97	0.46
36:FP:103:LEU:HD23	36:FP:332:LEU:HD22	1.98	0.46
62:CI:1:MET:HG2	73:DG:523:LEU:HA	1.98	0.46
67:CI:34:ARG:NH1	67:CI:43:GLU:OE1	2.49	0.46
69:DB:455:ARG:NH2	74:DH:256:GLY:O	2.49	0.46
69:DB:982:PHE:O	69:DB:985:LYS:NZ	2.48	0.46
69:DB:1095:GLU:HG2	72:DF:111:ALA:HB2	1.96	0.46
70:DC:367:MET:O	70:DC:377:THR:OG1	2.33	0.46
72:DF:222:TYR:OH	72:DF:234:TYR:OH	2.31	0.46
73:DG:616:ARG:HG3	78:DV:183:LEU:HD11	1.98	0.46
79:DW:97:SER:OG	81:DY:105:MET:SD	2.73	0.46
88:FI:203:LEU:HD11	88:FI:396:GLN:HB3	1.98	0.46
89:FK:127:PRO:HD2	93:Ua:29:UNK:HB2	1.98	0.46
5:CO:261:HIS:ND1	5:CO:303:TYR:OH	2.49	0.46
7:CQ:64:THR:OG1	60:CA:136:G:OP1	2.31	0.46
7:CQ:153:ILE:O	20:DR:10:SER:N	2.49	0.46
9:Ca:78:PHE:HE2	9:Ca:176:ILE:HG22	1.80	0.46
11:Cd:18:LEU:O	11:Cd:29:THR:OG1	2.32	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:DI:256:ARG:NH1	16:DI:271:TYR:O	2.49	0.46
23:F2:551:GLU:HG2	39:FX:123:LYS:HA	1.97	0.46
26:F6:215:ARG:HB3	58:UO:20:UNK:HB1	1.97	0.46
26:F6:314:LEU:HB2	26:F6:347:GLU:HA	1.98	0.46
82:F1:351:LYS:HB3	82:F1:351:LYS:HE3	1.76	0.46
90:FL:301:LEU:HD13	90:FL:320:LEU:HD11	1.98	0.46
1:CE:34:ARG:HH12	15:DD:86:ILE:HG21	1.80	0.46
7:CQ:224:PHE:HA	27:F7:87:PRO:HG2	1.98	0.46
15:DD:239:LEU:HB3	15:DD:291:THR:HG23	1.98	0.46
24:F3:332:VAL:HG11	24:F3:390:GLU:HB3	1.97	0.46
25:F5:648:PRO:HG2	43:Fb:96:VAL:HG12	1.97	0.46
26:F6:312:ASP:H	26:F6:345:THR:HG22	1.81	0.46
31:FC:307:TRP:HA	31:FC:310:LYS:HG2	1.98	0.46
33:FJ:197:ASP:OD2	33:FJ:199:THR:OG1	2.33	0.46
37:FQ:211:VAL:HG12	37:FQ:246:PHE:HZ	1.79	0.46
40:FY:160:LEU:HD22	60:CA:344:C:H5''	1.97	0.46
62:CI:292:VAL:HG21	62:CI:408:ILE:HA	1.97	0.46
71:DE:684:LYS:HE3	71:DE:701:LYS:HB3	1.98	0.46
73:DG:175:GLU:HG2	73:DG:178:ARG:HH21	1.80	0.46
83:F4:578:VAL:HB	83:F4:633:VAL:HG13	1.98	0.46
85:FF:219:PHE:HE1	85:FF:323:ARG:HG3	1.81	0.46
2:CF:101:PRO:HD2	2:CF:104:ILE:HD12	1.98	0.46
15:DD:54:ASP:O	34:FM:48:ARG:NH2	2.48	0.46
20:DR:240:PRO:HG3	20:DR:269:TRP:HB3	1.97	0.46
20:DR:255:PRO:HG2	20:DR:260:GLY:HA3	1.97	0.46
21:DU:146:THR:OG1	24:F3:518:ARG:NH1	2.49	0.46
31:FC:196:ASN:O	31:FC:246:ARG:NH1	2.47	0.46
31:FC:505:HIS:O	31:FC:509:ASN:ND2	2.49	0.46
33:FJ:130:SER:H	33:FJ:133:ALA:HB3	1.81	0.46
33:FJ:351:PRO:HG2	85:FF:282:VAL:HG22	1.98	0.46
49:UQ:3:UNK:HG2	49:UQ:6:UNK:N	2.31	0.46
60:CA:460:U:H5'	62:CI:240:ASN:HB3	1.98	0.46
64:CN:132:VAL:HG11	64:CN:138:GLY:HA2	1.97	0.46
66:Cg:110:LEU:HD21	66:Cg:408:GLU:HB2	1.97	0.46
68:Ck:102:PRO:HD3	73:DG:22:GLN:HG2	1.98	0.46
73:DG:328:ASP:N	73:DG:328:ASP:OD1	2.43	0.46
75:DJ:247:ASN:HB2	75:DJ:250:VAL:HG22	1.97	0.46
15:DD:281:ASP:OD1	15:DD:281:ASP:N	2.45	0.46
15:DD:387:GLN:HE22	15:DD:453:ASN:H	1.63	0.46
38:FW:18:ARG:N	105:FW:301:PO4:O3	2.49	0.46
43:Fb:44:TYR:HB2	43:Fb:51:LEU:HD13	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:Fb:77:LEU:HB3	106:Fc:201:PM8:H21	1.98	0.46
60:CA:249:U:H2'	60:CA:250:U:C6	2.51	0.46
68:Ck:358:LYS:HB2	68:Ck:361:GLN:HG2	1.98	0.46
69:DB:983:LEU:HD13	73:DG:84:LEU:HD22	1.96	0.46
72:DF:390:GLU:HB3	72:DF:476:LEU:HD21	1.97	0.46
74:DH:408:ASN:OD1	74:DH:408:ASN:N	2.47	0.46
77:DT:138:SER:OG	77:DT:176:ASP:OD2	2.33	0.46
82:F1:821:ARG:NH2	82:F1:882:GLY:O	2.49	0.46
85:FF:335:GLN:HA	85:FF:338:GLU:HG2	1.98	0.46
88:FI:136:SER:HA	88:FI:138:ARG:HH11	1.80	0.46
92:Fe:52:ARG:HD3	92:Fe:69:ILE:HD12	1.98	0.46
1:CE:99:LEU:HD11	29:F9:83:LYS:HD3	1.98	0.46
3:CH:93:GLY:HA2	3:CH:111:GLN:O	2.15	0.46
7:CQ:118:PRO:O	60:CA:146:U:O2'	2.34	0.46
9:Ca:363:ARG:NH2	23:F2:596:GLU:OE1	2.48	0.46
12:Cj:126:TYR:HD2	20:DR:268:HIS:HA	1.80	0.46
17:DL:161:THR:HA	17:DL:164:ARG:HD2	1.98	0.46
20:DR:129:ASP:N	20:DR:129:ASP:OD1	2.48	0.46
29:F9:146:MET:HE1	29:F9:177:PRO:HG3	1.98	0.46
32:FE:93:ARG:NH1	32:FE:96:GLU:OE1	2.49	0.46
33:FJ:351:PRO:HB2	85:FF:282:VAL:HG13	1.98	0.46
59:UY:36:UNK:HG2	59:UY:38:UNK:HG2	1.98	0.46
59:UY:99:UNK:HG2	59:UY:255:UNK:HG2	1.98	0.46
59:UY:119:UNK:HA	59:UY:133:UNK:HA	1.98	0.46
59:UY:242:UNK:HB2	59:UY:248:UNK:HG1	1.97	0.46
59:UY:262:UNK:HG2	59:UY:264:UNK:HG3	1.97	0.46
70:DC:177:THR:HG23	70:DC:507:PRO:HG2	1.97	0.46
77:DT:92:LYS:NZ	77:DT:175:SER:O	2.44	0.46
86:FG:163:ASP:HB3	86:FG:172:ALA:H	1.80	0.46
90:FL:173:GLN:HB3	49:Uf:2:UNK:HG1	1.98	0.46
4:CK:195:LEU:HB2	4:CK:277:LEU:HD11	1.98	0.46
26:F6:58:PHE:HE2	26:F6:60:LEU:HD13	1.81	0.46
31:FC:191:VAL:HG13	31:FC:317:ILE:HG12	1.97	0.46
36:FP:228:ASP:OD1	36:FP:228:ASP:N	2.49	0.46
38:FW:77:GLN:HG2	38:FW:194:TRP:HB2	1.98	0.46
42:Fa:72:GLU:O	42:Fa:75:ARG:NH1	2.48	0.46
60:CA:229:G:H1	60:CA:251:U:H3	1.64	0.46
62:CI:399:LEU:HB3	62:CI:406:THR:HG21	1.98	0.46
69:DB:550:LEU:HD23	69:DB:877:PRO:HB3	1.98	0.46
81:DY:105:MET:HE3	81:DY:105:MET:HB3	1.87	0.46
1:CE:314:MET:HE2	1:CE:326:MET:HG2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:CF:123:ARG:NH2	5:CO:141:GLY:O	2.48	0.45
4:CK:319:LYS:O	40:FY:184:ARG:NH2	2.49	0.45
5:CO:203:GLN:HG2	27:F7:632:THR:HG21	1.98	0.45
24:F3:764:MET:HE2	24:F3:799:ASP:HB3	1.98	0.45
24:F3:896:ALA:HB2	24:F3:957:MET:HB3	1.98	0.45
31:FB:280:VAL:HG12	31:FB:557:LEU:HB3	1.98	0.45
37:FR:103:PHE:O	37:FR:122:LYS:NZ	2.50	0.45
42:Fa:28:MET:HB2	42:Fa:52:MET:HE2	1.98	0.45
62:CI:190:GLN:HG3	62:CI:193:ARG:HH21	1.81	0.45
63:CJ:668:GLU:OE2	67:CI:39:ARG:NH2	2.50	0.45
67:CI:100:GLU:OE2	67:CI:104:ARG:NH1	2.43	0.45
68:Ck:273:SER:HB2	68:Ck:349:GLU:HG2	1.97	0.45
68:Ck:406:ARG:HH22	73:DG:156:TRP:HE1	1.64	0.45
69:DB:742:SER:OG	69:DB:791:GLU:OE2	2.34	0.45
83:F4:359:GLU:HB3	83:F4:361:ARG:HG2	1.98	0.45
87:FH:322:GLU:HG2	89:FK:310:ILE:HD11	1.98	0.45
94:Ub:35:UNK:O	94:Ub:38:UNK:HG3	2.16	0.45
98:Ug:71:UNK:O	98:Ug:75:UNK:HG3	2.16	0.45
99:Uh:321:UNK:HG3	99:Uh:323:UNK:HG3	1.96	0.45
15:DD:801:GLU:OE2	21:DU:221:TYR:OH	2.35	0.45
21:DU:165:ASP:N	21:DU:165:ASP:OD1	2.49	0.45
31:FB:544:ARG:HB3	32:FE:277:ARG:HH11	1.80	0.45
32:FE:153:ALA:O	37:FT:143:ARG:NE	2.49	0.45
32:FE:425:ILE:HG23	32:FE:443:VAL:HG13	1.98	0.45
33:FJ:74:ARG:HA	33:FJ:77:ARG:HD2	1.98	0.45
34:FM:175:ASN:OD1	38:FW:68:THR:OG1	2.35	0.45
39:FX:162:LEU:O	39:FX:165:THR:OG1	2.32	0.45
59:UY:56:UNK:HA	59:UY:57:UNK:HA	1.98	0.45
63:CJ:543:THR:HG22	63:CJ:545:SER:H	1.80	0.45
63:CJ:551:ARG:NH1	63:CJ:589:GLU:O	2.49	0.45
67:CI:155:LYS:HG3	90:FL:338:GLU:HB3	1.99	0.45
70:DC:753:LEU:HD22	70:DC:930:ALA:HB1	1.98	0.45
79:DW:50:LYS:NZ	82:F1:62:SER:O	2.41	0.45
83:F4:62:SER:OG	83:F4:63:ILE:N	2.49	0.45
83:F4:681:SER:O	90:FL:299:ARG:NH1	2.41	0.45
87:FH:410:LEU:HD22	87:FH:414:LYS:HE3	1.97	0.45
96:Ud:42:UNK:O	96:Ud:46:UNK:HB2	2.15	0.45
98:Ug:91:UNK:O	98:Ug:95:UNK:HG3	2.16	0.45
5:CO:164:ARG:HH21	5:CO:215:ASP:HA	1.82	0.45
28:F8:79:ARG:HH21	28:F8:691:VAL:HG11	1.81	0.45
29:F9:144:ASP:OD2	29:F9:147:ARG:NH2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:FA:56:VAL:HA	30:FA:59:VAL:HG22	1.98	0.45
35:FO:183:ARG:HH11	49:UM:8:UNK:HG2	1.80	0.45
37:FU:155:PHE:HD1	37:FU:217:MET:HE3	1.81	0.45
59:UY:188:UNK:HB2	59:UY:193:UNK:CB	2.44	0.45
60:CA:506:A:H5''	80:DX:156:TYR:HB3	1.98	0.45
64:CN:53:GLU:O	64:CN:64:GLN:NE2	2.50	0.45
67:CI:39:ARG:O	67:CI:42:GLN:NE2	2.50	0.45
68:Ck:789:LEU:HD12	78:DV:109:ILE:HD12	1.98	0.45
73:DG:63:HIS:ND1	73:DG:94:GLY:O	2.49	0.45
82:F1:328:SER:OG	82:F1:332:GLN:NE2	2.50	0.45
87:FH:300:SER:OG	87:FH:301:MET:N	2.49	0.45
4:CK:288:ARG:HH21	33:FJ:199:THR:HA	1.80	0.45
19:DP:24:LYS:HG2	60:CA:52:C:H3'	1.99	0.45
23:F2:351:SER:OG	23:F2:352:ARG:N	2.50	0.45
23:F2:741:ASP:OD1	23:F2:741:ASP:N	2.49	0.45
28:F8:268:SER:HB2	28:F8:305:VAL:HG13	1.99	0.45
30:FA:372:ARG:HH21	30:FA:377:ALA:HA	1.81	0.45
32:FE:365:HIS:HB3	32:FE:368:GLU:HB2	1.99	0.45
33:FJ:51:ARG:NH2	60:CA:458:U:OP1	2.49	0.45
35:FO:295:ARG:NE	35:FO:331:PHE:O	2.49	0.45
37:FU:217:MET:HE2	37:FU:217:MET:HB2	1.86	0.45
59:UY:102:UNK:HA	59:UY:434:UNK:HG1	1.99	0.45
63:CJ:647:ASP:OD1	63:CJ:647:ASP:N	2.47	0.45
66:Cg:167:ARG:HE	66:Cg:173:THR:HG1	1.57	0.45
66:Cg:317:ASP:OD1	66:Cg:317:ASP:N	2.48	0.45
69:DB:733:HIS:HB3	69:DB:800:GLN:HE21	1.82	0.45
75:DJ:242:LEU:HB3	75:DJ:294:MET:HE2	1.98	0.45
77:DT:184:SER:OG	84:FD:195:GLN:NE2	2.47	0.45
79:DW:117:PHE:HZ	85:FF:430:THR:HG22	1.81	0.45
82:F1:768:PRO:HA	82:F1:888:ASN:HB3	1.98	0.45
87:FH:449:VAL:HG11	91:FV:117:ILE:HD11	1.97	0.45
92:Fe:42:ASN:O	92:Fe:47:ARG:NH2	2.48	0.45
15:DD:209:THR:HG1	15:DD:290:ARG:HH11	1.64	0.45
17:DL:181:ARG:HA	17:DL:184:GLU:HG2	1.98	0.45
20:DR:18:LYS:NZ	60:CA:88:A:OP1	2.49	0.45
23:F2:245:ARG:HE	23:F2:281:GLU:HG2	1.81	0.45
23:F2:475:ARG:NH2	23:F2:880:TYR:O	2.40	0.45
69:DB:882:ARG:HD2	69:DB:883:PRO:HD2	1.98	0.45
70:DC:346:ASP:OD1	70:DC:346:ASP:N	2.47	0.45
72:DF:512:ASN:HB2	72:DF:515:VAL:HG22	1.99	0.45
74:DH:85:LEU:O	74:DH:90:ARG:NH2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:DH:246:GLU:OE2	74:DH:277:THR:OG1	2.33	0.45
80:DX:71:PHE:O	80:DX:76:ARG:NH2	2.50	0.45
83:F4:589:LEU:HD12	83:F4:590:ASN:H	1.82	0.45
90:FL:55:HIS:HB3	90:FL:62:LEU:HB3	1.97	0.45
1:CE:83:MET:HE1	1:CE:87:ILE:HD11	1.99	0.45
5:CO:174:PRO:HD2	5:CO:177:MET:HE3	1.98	0.45
5:CO:266:LEU:HG	5:CO:274:TYR:HB2	1.97	0.45
20:DR:252:ALA:HA	20:DR:262:ARG:HG3	1.98	0.45
21:DU:15:GLY:O	21:DU:18:GLN:HB2	2.16	0.45
30:FA:74:ARG:NE	82:F1:435:GLU:OE1	2.50	0.45
37:FS:166:ARG:HH21	37:FS:270:GLU:HG2	1.81	0.45
68:Ck:380:VAL:HG21	68:Ck:552:LEU:HD21	1.97	0.45
70:DC:940:ALA:HA	70:DC:944:GLU:HB2	1.98	0.45
75:DJ:225:ASP:OD2	77:DT:68:LYS:NZ	2.33	0.45
85:FF:131:LEU:HB3	85:FF:201:ILE:HG12	1.99	0.45
99:Uh:271:UNK:HG1	99:Uh:345:UNK:HG1	1.98	0.45
6:CP:184:VAL:HG23	6:CP:186:PRO:HD2	1.98	0.45
16:DI:18:HIS:N	16:DI:180:GLU:OE2	2.49	0.45
16:DI:70:ASN:OD1	16:DI:70:ASN:N	2.50	0.45
23:F2:857:ALA:O	29:F9:165:ARG:NH2	2.50	0.45
27:F7:100:ASP:OD1	27:F7:139:ARG:NH1	2.50	0.45
28:F8:509:PRO:HD3	28:F8:608:TRP:HA	1.99	0.45
29:F9:81:ARG:NH1	29:F9:96:GLU:OE2	2.50	0.45
30:FA:142:MET:HB3	85:FF:1:MET:H1	1.81	0.45
34:FM:286:VAL:HG13	34:FN:286:VAL:HB	1.97	0.45
37:FT:228:LEU:HD21	37:FT:238:ARG:HB3	1.98	0.45
59:UY:88:UNK:HG1	85:FF:393:ARG:CZ	2.47	0.45
59:UY:402:UNK:HG1	59:UY:405:UNK:HG2	1.98	0.45
63:CJ:639:ARG:HB3	63:CJ:644:GLY:HA2	1.98	0.45
63:CJ:692:LYS:HE2	63:CJ:692:LYS:HB3	1.82	0.45
72:DF:499:THR:O	74:DH:245:TYR:OH	2.33	0.45
83:F4:266:ASN:ND2	83:F4:434:ASP:OD2	2.50	0.45
87:FH:277:ALA:HB3	87:FH:301:MET:HG2	1.98	0.45
7:CQ:123:ARG:HH12	15:DD:727:PRO:HG2	1.82	0.45
9:Ca:266:GLU:HB3	23:F2:731:PHE:HZ	1.81	0.45
14:Cp:69:ARG:HE	14:Cp:100:MET:HE2	1.82	0.45
21:DU:214:GLY:HA3	21:DU:224:MET:HB2	1.98	0.45
30:FA:134:TRP:HZ3	55:UJ:12:UNK:HG2	1.81	0.45
34:FN:226:ASP:OD2	38:FW:80:TYR:OH	2.35	0.45
37:FT:228:LEU:HD12	37:FT:240:LEU:HD12	1.99	0.45
43:Fb:43:ALA:O	43:Fb:94:THR:OG1	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:UY:227:UNK:HB2	59:UY:290:UNK:HG1	1.98	0.45
60:CA:77:A:OP2	60:CA:78:G:O2'	2.33	0.45
60:CA:361:A:H2'	60:CA:362:A:C8	2.52	0.45
63:CJ:370:MET:HA	63:CJ:393:GLU:HA	1.98	0.45
67:CI:32:ASP:OD1	67:CI:32:ASP:N	2.50	0.45
70:DC:665:LEU:HG	70:DC:758:VAL:HB	1.98	0.45
72:DF:151:VAL:HB	99:UH:22:UNK:HB1	1.98	0.45
73:DG:225:LEU:HD13	73:DG:248:LEU:HD21	1.98	0.45
76:DK:279:LEU:HB3	76:DK:283:ARG:HH12	1.82	0.45
77:DT:183:LEU:HG	84:FD:156:ALA:HB2	1.99	0.45
82:F1:89:ILE:HG12	82:F1:315:TYR:HE1	1.80	0.45
83:F4:442:LEU:HG	83:F4:528:PRO:HG3	1.97	0.45
91:FV:58:VAL:HA	91:FV:108:VAL:HA	1.99	0.45
15:DD:243:GLU:HB2	15:DD:246:GLU:HG3	1.99	0.45
27:F7:144:LEU:HD22	27:F7:150:LEU:HD11	1.99	0.45
30:FA:610:HIS:HA	30:FA:613:LYS:HG2	1.99	0.45
37:FR:139:GLN:HG3	60:CA:563:U:H1'	1.99	0.45
37:FS:35:PRO:HA	37:FS:38:GLN:HG2	1.99	0.45
60:CA:248:A:H2'	60:CA:249:U:C6	2.52	0.45
62:CI:294:ILE:O	73:DG:62:SER:OG	2.35	0.45
68:CK:135:ASN:ND2	68:CK:137:THR:O	2.49	0.45
80:DX:86:PRO:HD2	80:DX:135:ALA:HB2	1.98	0.45
88:FI:136:SER:H	94:UB:9:UNK:HB2	1.82	0.45
90:FL:166:PRO:HG3	90:FL:227:LEU:HD22	1.99	0.45
1:CE:345:ASP:N	1:CE:345:ASP:OD1	2.50	0.45
2:CF:151:ARG:HG3	2:CF:152:THR:HG23	1.97	0.45
9:CA:123:LYS:HA	9:CA:126:THR:HG22	1.99	0.45
11:CD:11:GLN:HB3	60:CA:48:U:H4'	1.97	0.45
12:CJ:10:ARG:HH12	60:CA:76:A:H5''	1.82	0.45
13:CN:141:ARG:N	83:F4:809:ASP:OD2	2.50	0.45
14:CP:182:GLN:NE2	19:DP:161:VAL:O	2.50	0.45
20:DR:126:LEU:HB2	20:DR:135:CYS:HB3	1.98	0.45
23:F2:252:SER:HB3	23:F2:284:TYR:HD2	1.82	0.45
27:F7:211:VAL:HG21	27:F7:251:LEU:HA	2.00	0.45
31:FB:192:GLN:HA	31:FB:280:VAL:HG23	1.99	0.45
31:FB:350:PRO:HB3	31:FB:357:GLN:HE21	1.81	0.45
35:FO:295:ARG:NH2	35:FO:309:ARG:O	2.48	0.45
59:UY:100:UNK:HA	59:UY:254:UNK:HB1	1.99	0.45
64:CN:30:LEU:HD11	72:DF:164:ILE:HD12	1.99	0.45
69:DB:952:ASP:OD1	69:DB:952:ASP:N	2.45	0.45
70:DC:372:ASP:N	70:DC:372:ASP:OD1	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:DG:325:TYR:O	73:DG:373:TRP:NE1	2.48	0.45
86:FG:127:VAL:HG13	86:FG:144:MET:HA	1.98	0.45
90:FL:80:ASN:ND2	90:FL:83:THR:OG1	2.50	0.45
12:Cj:10:ARG:HD3	12:Cj:30:SER:HB3	1.99	0.44
17:DL:289:ARG:HH11	60:CA:532:A:H8	1.65	0.44
18:DO:94:ILE:HG23	18:DO:99:LEU:HB2	1.99	0.44
28:F8:24:GLU:O	82:F1:1039:ARG:NH2	2.50	0.44
31:FB:341:TYR:OH	31:FB:551:PRO:O	2.33	0.44
31:FB:373:ALA:HB1	31:FB:484:LEU:HG	1.99	0.44
31:FC:353:ASP:HB3	31:FC:356:LEU:HB2	1.99	0.44
36:FP:31:GLN:NE2	36:FP:152:VAL:O	2.49	0.44
37:FR:179:CYS:HB2	37:FR:189:PHE:HD1	1.83	0.44
37:FS:133:ASP:HB3	37:FS:240:LEU:HB3	1.99	0.44
62:CI:34:ASP:OD2	73:DG:622:ARG:NH1	2.50	0.44
63:CJ:418:ASP:HB3	69:DB:1052:GLU:HG2	1.99	0.44
63:CJ:775:ASP:OD1	63:CJ:775:ASP:N	2.47	0.44
70:DC:455:TYR:OH	70:DC:479:ALA:O	2.31	0.44
74:DH:54:GLU:H	74:DH:54:GLU:HG2	1.56	0.44
82:F1:268:MET:HB3	82:F1:300:VAL:HG21	1.98	0.44
83:F4:233:THR:HG21	83:F4:348:ASN:HD22	1.82	0.44
4:CK:281:VAL:H	4:CK:309:ASP:HA	1.82	0.44
9:Ca:73:GLU:HG2	9:Ca:78:PHE:HB3	1.99	0.44
16:DI:121:LYS:HD3	16:DI:121:LYS:HA	1.74	0.44
25:F5:722:GLU:HA	25:F5:725:ARG:HG2	1.97	0.44
28:F8:636:ARG:HD3	28:F8:636:ARG:HA	1.79	0.44
59:UY:160:UNK:CG	59:UY:450:UNK:HG2	2.47	0.44
60:CA:195:A:H3'	60:CA:196:U:H2'	1.98	0.44
63:CJ:791:HIS:HD2	67:CI:81:GLY:HA2	1.81	0.44
68:Ck:623:LYS:HA	68:Ck:623:LYS:HD3	1.90	0.44
70:DC:367:MET:HB3	70:DC:379:LEU:HB2	1.99	0.44
72:DF:235:ARG:HG2	72:DF:269:GLU:HB3	1.97	0.44
72:DF:291:TYR:OH	74:DH:366:HIS:NE2	2.40	0.44
73:DG:74:LEU:HD22	73:DG:90:MET:HE1	1.99	0.44
87:FH:240:VAL:HG12	87:FH:242:ILE:HG12	1.99	0.44
88:FI:141:PHE:O	94:Ub:15:UNK:N	2.50	0.44
9:Ca:368:ARG:NH2	39:FX:14:TYR:O	2.48	0.44
24:F3:244:LEU:HB3	27:F7:63:ARG:HH21	1.82	0.44
27:F7:161:LEU:HB2	27:F7:207:VAL:HG22	1.98	0.44
28:F8:92:VAL:HB	28:F8:113:ARG:HB2	2.00	0.44
31:FC:193:TYR:HB3	31:FC:315:LEU:HD12	1.98	0.44
36:FP:115:VAL:HG13	36:FP:119:LYS:HE3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:FT:133:ASP:HB3	37:FT:240:LEU:HB3	1.98	0.44
50:UP:34:UNK:HB2	50:UP:37:UNK:HG3	1.99	0.44
82:F1:613:ILE:HG22	82:F1:615:SER:HB3	1.99	0.44
83:F4:699:ASP:OD1	83:F4:699:ASP:N	2.49	0.44
88:FI:98:LEU:HB3	92:Fe:81:LEU:HD11	1.98	0.44
6:CP:31:MET:HG3	6:CP:114:PRO:HG3	2.00	0.44
9:Ca:75:LEU:HD12	9:Ca:180:ASN:HB2	1.98	0.44
24:F3:164:TYR:HB3	49:UD:6:UNK:HG2	1.98	0.44
24:F3:668:SER:HB3	24:F3:719:LEU:HD11	1.99	0.44
27:F7:352:GLU:OE2	27:F7:382:SER:OG	2.33	0.44
29:F9:55:PHE:HB2	29:F9:60:GLU:HG2	1.99	0.44
31:FB:340:VAL:HG23	31:FB:556:THR:HB	1.99	0.44
36:FP:85:LYS:HE3	36:FP:86:SER:H	1.81	0.44
37:FQ:94:ASN:HA	37:FQ:99:LEU:HD22	1.97	0.44
59:UY:277:UNK:HB1	59:UY:289:UNK:HB2	1.99	0.44
62:CI:160:LEU:HD11	98:Ug:12:UNK:HA	1.99	0.44
66:Cg:85:LEU:HD22	66:Cg:107:ARG:HG2	1.99	0.44
66:Cg:105:HIS:O	66:Cg:107:ARG:NH1	2.51	0.44
70:DC:716:ILE:HD11	70:DC:1050:THR:HG21	1.99	0.44
72:DF:495:GLU:OE2	74:DH:243:SER:OG	2.34	0.44
75:DJ:29:HIS:HB2	94:Ub:39:UNK:HB2	1.99	0.44
84:FD:98:ILE:HG23	84:FD:106:ALA:HB1	1.99	0.44
88:FI:119:ASP:OD2	88:FI:191:THR:OG1	2.32	0.44
1:CE:109:LYS:HD3	29:F9:190:LEU:HB2	2.00	0.44
1:CE:318:PRO:HA	1:CE:319:PRO:HD3	1.90	0.44
5:CO:90:MET:HE2	5:CO:94:ARG:HH21	1.83	0.44
7:CQ:102:SER:HB3	60:CA:121:A:H5''	1.99	0.44
15:DD:524:LYS:HD3	15:DD:524:LYS:HA	1.79	0.44
16:DI:47:LEU:HD23	16:DI:47:LEU:HA	1.88	0.44
21:DU:181:ASP:OD1	21:DU:181:ASP:N	2.48	0.44
23:F2:579:HIS:CD2	23:F2:590:ARG:HE	2.36	0.44
23:F2:615:ARG:HH11	60:CA:16:U:H2'	1.81	0.44
23:F2:718:LYS:HE3	23:F2:718:LYS:HB3	1.86	0.44
28:F8:494:THR:HB	28:F8:604:VAL:HB	2.00	0.44
37:FT:135:MET:HG2	37:FT:144:HIS:HD2	1.83	0.44
39:FX:198:ASP:N	39:FX:198:ASP:OD1	2.50	0.44
59:UY:343:UNK:O	59:UY:346:UNK:HG3	2.17	0.44
60:CA:520:A:H1'	78:DV:36:PHE:HE2	1.83	0.44
61:CC:52:ILE:HD13	88:FI:42:ALA:HB2	1.99	0.44
66:Cg:150:PRO:O	66:Cg:155:LYS:NZ	2.50	0.44
73:DG:308:ARG:HE	73:DG:345:THR:HG21	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:DG:393:ASN:HB3	73:DG:396:ASN:HB2	2.00	0.44
74:DH:195:TYR:HA	74:DH:198:GLN:HE21	1.83	0.44
76:DK:64:ARG:NH2	76:DK:97:SER:O	2.51	0.44
87:FH:419:VAL:HG13	87:FH:423:LEU:HD22	1.98	0.44
90:FL:43:ILE:O	90:FL:95:TRP:NE1	2.50	0.44
6:CP:108:CYS:O	11:Cd:58:ARG:NH2	2.48	0.44
16:DI:385:LEU:HD13	16:DI:393:THR:HG22	1.98	0.44
22:DZ:68:LYS:HA	22:DZ:68:LYS:HD3	1.76	0.44
24:F3:932:LEU:HD11	27:F7:512:ALA:HB2	1.98	0.44
34:FN:271:ASP:OD1	34:FN:271:ASP:N	2.50	0.44
42:Fa:163:HIS:HB2	42:Fa:166:ALA:HB2	1.99	0.44
59:UY:151:UNK:HA	59:UY:154:UNK:HG3	2.00	0.44
62:CI:4:LEU:HD12	73:DG:498:TYR:HA	2.00	0.44
68:Ck:98:ARG:O	73:DG:15:ARG:NH1	2.42	0.44
70:DC:472:ARG:NH1	76:DK:285:GLU:OE2	2.46	0.44
70:DC:1026:ASN:ND2	76:DK:96:GLY:O	2.51	0.44
82:F1:483:GLU:OE2	82:F1:485:SER:OG	2.35	0.44
83:F4:248:LEU:HD13	83:F4:631:LEU:HD11	2.00	0.44
83:F4:469:ARG:HH11	87:FH:368:GLY:HA3	1.82	0.44
89:FK:125:PRO:HA	89:FK:126:PRO:HD3	1.87	0.44
90:FL:290:THR:HB	90:FL:293:ARG:HB2	2.00	0.44
103:Ux:117:UNK:HA	103:Ux:120:UNK:HG3	2.00	0.44
4:CK:280:ARG:HG2	4:CK:308:GLU:HG3	2.00	0.44
7:CQ:65:GLY:HA2	60:CA:136:G:H5'	2.00	0.44
26:F6:180:LYS:HB3	26:F6:184:ASP:HB3	1.98	0.44
27:F7:279:VAL:HG21	27:F7:290:MET:HE1	1.99	0.44
31:FC:381:ASP:HA	31:FC:478:VAL:HA	1.99	0.44
62:CI:139:ASP:OD1	62:CI:139:ASP:N	2.48	0.44
70:DC:57:GLU:OE2	70:DC:481:SER:OG	2.35	0.44
70:DC:1099:ALA:HB3	74:DH:63:ASN:HB2	2.00	0.44
71:DE:323:LEU:HD22	71:DE:444:PHE:HB2	2.00	0.44
77:DT:27:ARG:H	90:FL:349:ASN:HD21	1.65	0.44
78:DV:105:GLU:OE2	78:DV:150:ARG:NH2	2.49	0.44
82:F1:270:ARG:NH2	82:F1:882:GLY:O	2.51	0.44
82:F1:489:MET:HE1	82:F1:507:ARG:HG2	1.99	0.44
87:FH:317:GLU:HB2	87:FH:320:PHE:HB3	2.00	0.44
90:FL:75:GLN:HE22	90:FL:91:ALA:HA	1.82	0.44
98:Ug:45:UNK:HG3	98:Ug:47:UNK:HB2	2.00	0.44
1:CE:150:ARG:NH1	33:FJ:112:LYS:O	2.50	0.44
7:CQ:214:ILE:HD12	35:FO:34:LYS:HD3	2.00	0.44
12:Cj:50:VAL:HG22	60:CA:51:U:H2'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DP:185:ASP:OD1	19:DP:185:ASP:N	2.47	0.44
20:DR:64:ILE:HD11	20:DR:154:LEU:HD23	2.00	0.44
31:FB:441:ASN:HD22	32:FE:144:GLN:HE21	1.66	0.44
32:FE:176:GLY:HA3	32:FE:188:ARG:HD3	1.99	0.44
35:FO:260:GLU:HA	35:FO:263:THR:HG22	2.00	0.44
60:CA:245:G:H3'	60:CA:246:U:H2'	2.00	0.44
63:CJ:263:ASP:O	69:DB:1023:ARG:NH2	2.46	0.44
64:CN:113:VAL:HB	64:CN:117:THR:HB	2.00	0.44
65:CS:84:LEU:HD22	65:CS:105:VAL:HG11	2.00	0.44
68:Ck:269:GLY:HA3	68:Ck:273:SER:HB3	2.00	0.44
75:DJ:226:VAL:O	88:FI:444:ARG:NH1	2.51	0.44
83:F4:374:ARG:NH1	93:Ua:34:UNK:O	2.51	0.44
86:FG:89:ASP:H	86:FG:92:GLU:HB2	1.83	0.44
3:CH:195:ARG:HB2	3:CH:204:ALA:HB3	2.00	0.44
12:Cj:235:PRO:O	34:FN:31:ARG:NH1	2.50	0.44
28:F8:222:LEU:O	28:F8:238:ARG:NH1	2.51	0.44
33:FJ:68:LEU:O	33:FJ:77:ARG:NH1	2.45	0.44
33:FJ:214:GLU:HG3	33:FJ:257:ARG:HB2	1.98	0.44
67:Ci:111:ASP:HA	67:Ci:114:MET:HG2	2.00	0.44
69:DB:496:ASP:N	69:DB:589:ASP:OD1	2.45	0.44
70:DC:469:THR:HA	76:DK:290:GLY:HA3	1.99	0.44
73:DG:55:PRO:HA	73:DG:58:TRP:HB2	2.00	0.44
82:F1:824:ARG:HB2	82:F1:835:ASP:HB2	2.00	0.44
84:FD:245:ASN:HA	84:FD:246:PRO:HD3	1.88	0.44
87:FH:258:ASP:OD1	87:FH:258:ASP:N	2.47	0.44
88:FI:75:ASP:OD1	88:FI:75:ASP:N	2.46	0.44
99:Uh:78:UNK:HB1	99:Uh:283:UNK:CG	2.48	0.44
47:Uk:4:UNK:O	47:Uk:9:UNK:HG3	2.18	0.44
2:CF:94:LYS:NZ	60:CA:294:A:OP1	2.45	0.43
6:CP:32:ARG:NH2	7:CQ:24:LEU:O	2.51	0.43
12:Cj:81:GLU:HA	12:Cj:84:ARG:HG2	1.99	0.43
14:Cp:46:ILE:HA	14:Cp:113:GLN:HE22	1.82	0.43
33:FJ:69:TYR:O	33:FJ:74:ARG:NH2	2.51	0.43
45:Fd:59:HIS:HD2	45:Fd:61:GLU:H	1.65	0.43
59:UY:77:UNK:O	59:UY:81:UNK:HG3	2.18	0.43
69:DB:1027:ILE:HD11	69:DB:1040:PRO:HG3	1.99	0.43
72:DF:105:PRO:HB3	99:Uh:25:UNK:HA	2.00	0.43
72:DF:309:ASP:OD1	72:DF:309:ASP:N	2.44	0.43
76:DK:288:ARG:NH1	77:DT:88:THR:O	2.51	0.43
9:Ca:318:ASP:OD2	9:Ca:324:ARG:NH2	2.51	0.43
10:Cb:120:LYS:HA	26:F6:197:THR:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:F5:744:ARG:HB2	50:UP:8:UNK:HG2	1.99	0.43
27:F7:371:GLN:HG2	27:F7:389:LEU:HD21	2.00	0.43
28:F8:219:HIS:HD2	28:F8:221:GLY:H	1.66	0.43
34:FN:72:THR:O	34:FN:104:ARG:NH1	2.50	0.43
39:FX:32:LEU:O	39:FX:64:ASN:ND2	2.44	0.43
39:FX:125:LYS:NZ	39:FX:157:ASP:O	2.51	0.43
40:FY:60:ARG:NH2	40:FY:91:ASP:OD1	2.44	0.43
60:CA:308:C:H2'	60:CA:309:A:H8	1.83	0.43
62:CI:220:THR:O	62:CI:226:LYS:NZ	2.51	0.43
63:CJ:792:HIS:HB3	63:CJ:795:LYS:HB2	1.99	0.43
66:Cg:205:ARG:HH21	66:Cg:259:ILE:HG12	1.83	0.43
69:DB:520:SER:OG	69:DB:842:GLY:O	2.36	0.43
71:DE:292:TYR:HD1	71:DE:396:PRO:HG2	1.84	0.43
82:F1:471:ARG:O	82:F1:474:ARG:NH1	2.50	0.43
82:F1:752:PRO:HG3	82:F1:766:ILE:HD12	2.00	0.43
83:F4:232:ASP:OD1	83:F4:467:GLY:N	2.51	0.43
87:FH:351:PRO:HA	87:FH:354:VAL:HG12	1.99	0.43
8:CR:223:ARG:HG3	58:UO:28:UNK:HB2	2.00	0.43
24:F3:765:GLU:OE2	24:F3:768:ARG:NH1	2.52	0.43
27:F7:487:GLU:OE2	27:F7:500:TYR:OH	2.31	0.43
30:FA:242:SER:HB2	47:UB:206:UNK:HG1	2.00	0.43
37:FR:107:VAL:HA	37:FR:119:ALA:HB1	1.99	0.43
59:UY:377:UNK:HG3	59:UY:457:UNK:HB1	2.00	0.43
60:CA:341:A:H2	60:CA:342:A:H62	1.65	0.43
63:CJ:496:LEU:HD13	63:CJ:521:VAL:HG13	2.00	0.43
71:DE:645:THR:HA	71:DE:658:ASN:HD22	1.83	0.43
83:F4:692:PRO:HG2	88:FI:44:ARG:HH21	1.83	0.43
89:FK:149:LEU:HD12	89:FK:150:PRO:HD2	1.99	0.43
89:FK:361:MET:SD	89:FK:365:ARG:NH2	2.91	0.43
11:Cd:16:TYR:OH	11:Cd:36:ARG:NH1	2.52	0.43
17:DL:91:PHE:HB2	17:DL:109:VAL:HG11	2.01	0.43
23:F2:931:ARG:NH1	23:F2:936:TYR:OH	2.51	0.43
24:F3:169:ARG:NH2	60:CA:106:U:O2	2.52	0.43
29:F9:77:ALA:HB1	29:F9:182:GLU:HB2	2.00	0.43
31:FB:495:ILE:HD12	31:FB:511:VAL:HG22	2.00	0.43
59:UY:373:UNK:O	59:UY:376:UNK:HG3	2.19	0.43
60:CA:515:U:H2'	85:FF:434:ALA:HB1	2.00	0.43
68:Ck:287:GLU:OE1	68:Ck:293:ARG:NH1	2.43	0.43
69:DB:1077:ARG:NE	69:DB:1081:TYR:O	2.42	0.43
72:DF:286:ARG:HA	72:DF:286:ARG:HD3	1.89	0.43
4:CK:23:ASP:HB3	60:CA:524:A:H5'	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:CQ:46:TYR:HB2	7:CQ:59:TRP:HH2	1.83	0.43
9:Ca:580:ILE:HD12	9:Ca:580:ILE:HA	1.91	0.43
17:DL:139:ARG:NH2	23:F2:72:PHE:O	2.46	0.43
23:F2:983:LYS:HD2	23:F2:983:LYS:HA	1.82	0.43
27:F7:129:MET:HA	27:F7:132:LEU:HB2	1.99	0.43
28:F8:157:ALA:N	28:F8:391:CYS:O	2.52	0.43
32:FE:371:ILE:HD13	32:FE:379:LEU:HB2	2.01	0.43
35:FO:130:THR:HG23	35:FO:133:MET:HE3	2.00	0.43
46:UA:14:UNK:O	46:UA:18:UNK:HG3	2.18	0.43
62:CI:5:LEU:N	73:DG:567:GLU:OE2	2.44	0.43
70:DC:88:LEU:HD22	71:DE:162:LEU:HD23	2.00	0.43
70:DC:413:LEU:HD11	70:DC:449:VAL:HG13	2.00	0.43
71:DE:594:LEU:HD21	71:DE:640:ARG:HH21	1.83	0.43
81:DY:28:GLY:HA3	81:DY:29:PRO:HD3	1.90	0.43
86:FG:78:LYS:O	86:FG:82:LYS:NZ	2.52	0.43
3:CH:180:GLY:HA3	3:CH:262:ILE:HG13	2.01	0.43
25:F5:200:PHE:HB3	25:F5:626:VAL:HG11	2.00	0.43
25:F5:723:ARG:O	25:F5:727:GLY:N	2.47	0.43
27:F7:90:GLU:OE1	27:F7:91:LYS:NZ	2.42	0.43
27:F7:200:ILE:HD13	27:F7:237:ARG:HH21	1.83	0.43
62:CI:337:GLY:HA2	63:CJ:209:GLN:HA	2.01	0.43
63:CJ:226:ARG:HH22	63:CJ:813:GLU:HB3	1.82	0.43
63:CJ:457:THR:H	63:CJ:460:HIS:CD2	2.37	0.43
72:DF:490:ASN:HA	72:DF:493:MET:HG2	2.01	0.43
74:DH:491:ASP:OD1	74:DH:493:SER:OG	2.34	0.43
78:DV:48:HIS:O	78:DV:61:ARG:NH1	2.52	0.43
78:DV:133:THR:OG1	78:DV:141:SER:O	2.35	0.43
82:F1:86:ILE:HD11	82:F1:137:ALA:HB2	2.00	0.43
85:FF:242:LEU:O	85:FF:246:ASN:ND2	2.50	0.43
1:CE:395:THR:OG1	1:CE:396:LEU:N	2.51	0.43
9:Ca:76:GLN:HA	9:Ca:79:MET:HE3	2.00	0.43
15:DD:597:LEU:HD13	15:DD:620:ALA:HB1	2.01	0.43
27:F7:574:GLU:HB3	27:F7:597:ILE:HG21	2.00	0.43
31:FB:448:LEU:HD13	32:FE:140:ARG:HG3	2.01	0.43
59:UY:185:UNK:HA	59:UY:196:UNK:HA	2.01	0.43
60:CA:449:G:H5"	74:DH:538:ARG:HH22	1.83	0.43
63:CJ:141:ASP:O	63:CJ:145:THR:OG1	2.33	0.43
66:Cg:163:VAL:HG13	66:Cg:284:VAL:HG21	1.99	0.43
69:DB:1053:ALA:O	75:DJ:46:ARG:NH1	2.44	0.43
70:DC:157:ASN:HB3	84:FD:315:ARG:HB2	2.01	0.43
6:CP:81:PRO:HG2	36:FP:19:LYS:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:DD:216:LEU:HB3	15:DD:297:ARG:HB3	2.00	0.43
16:DI:218:ASP:N	16:DI:218:ASP:OD1	2.51	0.43
25:F5:188:ARG:HE	41:FZ:19:ASN:HB3	1.84	0.43
32:FE:106:ASP:OD1	32:FE:106:ASP:N	2.43	0.43
44:Fc:90:LYS:NZ	44:Fc:100:ASP:O	2.43	0.43
45:Fd:37:VAL:HG13	45:Fd:42:HIS:HD2	1.83	0.43
45:Fd:59:HIS:CD2	45:Fd:62:LEU:H	2.35	0.43
63:CJ:202:ASP:HB3	63:CJ:205:VAL:HG22	2.01	0.43
64:CN:68:GLN:O	64:CN:72:THR:OG1	2.32	0.43
66:Cg:306:ARG:HH21	66:Cg:308:LEU:HD21	1.84	0.43
68:Ck:184:LYS:HE3	68:Ck:184:LYS:HB3	1.85	0.43
74:DH:215:LEU:HA	74:DH:222:VAL:HG12	2.00	0.43
82:F1:103:ARG:HH11	82:F1:344:GLN:HE22	1.65	0.43
12:Cj:125:THR:HB	12:Cj:208:ALA:HB2	2.00	0.43
14:Cp:80:ASP:OD1	14:Cp:80:ASP:N	2.52	0.43
16:DI:61:ASN:HA	16:DI:64:GLU:HG3	2.00	0.43
16:DI:74:ASP:OD1	16:DI:74:ASP:N	2.49	0.43
16:DI:256:ARG:HB2	16:DI:270:ASP:HB3	2.01	0.43
21:DU:177:ASP:OD1	21:DU:177:ASP:N	2.45	0.43
22:DZ:69:HIS:HB3	22:DZ:72:LEU:HD23	2.01	0.43
24:F3:694:GLU:HA	24:F3:697:VAL:HG22	2.01	0.43
26:F6:213:PHE:HB2	26:F6:248:VAL:HG22	2.00	0.43
33:FJ:235:HIS:O	33:FJ:238:ASN:ND2	2.51	0.43
34:FM:322:ARG:O	34:FM:325:THR:OG1	2.28	0.43
37:FR:227:THR:HB	37:FS:226:VAL:HG13	2.01	0.43
60:CA:483:A:N6	77:DT:229:GLU:OE1	2.52	0.43
68:Ck:177:SER:O	68:Ck:182:ARG:NH1	2.52	0.43
72:DF:449:ASP:OD1	72:DF:449:ASP:N	2.52	0.43
76:DK:172:LEU:HD22	76:DK:177:LYS:HD2	2.01	0.43
84:FD:366:LEU:HD11	101:Uj:10:UNK:HG2	2.00	0.43
85:FF:283:ASP:N	85:FF:283:ASP:OD1	2.51	0.43
88:FI:368:ARG:NH1	88:FI:372:GLU:OE1	2.52	0.43
91:FV:107:PHE:HB3	91:FV:140:LEU:HD21	2.01	0.43
3:CH:264:ASP:OD1	3:CH:264:ASP:N	2.49	0.43
4:CK:254:LEU:HG	4:CK:258:LEU:HD23	2.01	0.43
9:Ca:241:LEU:HD11	41:FZ:46:VAL:HG13	2.01	0.43
9:Ca:354:THR:HB	60:CA:19:U:H5"	2.00	0.43
23:F2:83:LYS:HA	23:F2:86:GLU:HG2	2.01	0.43
23:F2:99:GLY:HA3	23:F2:224:ILE:HG23	2.01	0.43
24:F3:637:LEU:HD11	24:F3:656:VAL:HG21	2.01	0.43
26:F6:387:ARG:HA	26:F6:390:GLU:HG2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:FA:518:GLU:HG2	30:FA:520:ARG:HG2	2.00	0.43
34:FM:24:ARG:HA	34:FM:53:LEU:HD21	2.01	0.43
38:FW:15:ASN:OD1	38:FW:19:THR:OG1	2.31	0.43
40:FY:150:ASP:OD1	40:FY:150:ASP:N	2.44	0.43
59:UY:41:UNK:O	59:UY:45:UNK:HB1	2.18	0.43
59:UY:93:UNK:O	59:UY:135:UNK:N	2.52	0.43
61:CC:64:ASN:O	90:FL:293:ARG:NH2	2.51	0.43
64:CN:17:VAL:HG21	67:CI:108:PRO:HB3	2.01	0.43
64:CN:81:LEU:O	64:CN:83:LYS:NZ	2.49	0.43
76:DK:164:GLU:HG2	76:DK:222:LEU:HD11	2.01	0.43
79:DW:40:LYS:O	81:DY:145:ARG:NH2	2.52	0.43
82:F1:622:SER:OG	82:F1:634:LEU:O	2.30	0.43
83:F4:134:ASN:OD1	83:F4:134:ASN:N	2.35	0.43
85:FF:9:ARG:NH1	85:FF:216:GLU:OE1	2.52	0.43
85:FF:118:GLN:H	85:FF:118:GLN:HG3	1.57	0.43
86:FG:13:VAL:HG21	90:FL:334:TYR:CG	2.54	0.43
89:FK:181:CYS:SG	89:FK:184:ARG:NH1	2.92	0.43
1:CE:119:SER:OG	1:CE:120:ASN:N	2.52	0.42
4:CK:184:GLU:OE2	8:CR:179:TRP:N	2.46	0.42
9:Ca:89:ARG:HH11	50:UP:3:UNK:HB1	1.83	0.42
15:DD:716:SER:OG	60:CA:138:U:O4	2.32	0.42
21:DU:111:ILE:HB	21:DU:143:PRO:HA	2.00	0.42
25:F5:406:ILE:HA	25:F5:409:ARG:HD2	2.01	0.42
26:F6:344:LEU:HD21	26:F6:386:GLN:HA	2.01	0.42
31:FB:336:ARG:HA	31:FB:500:ARG:HA	2.01	0.42
66:Cg:367:ILE:O	78:DV:25:SER:OG	2.33	0.42
69:DB:983:LEU:HD11	73:DG:123:LEU:HD13	1.99	0.42
80:DX:130:GLN:H	80:DX:130:GLN:HG3	1.69	0.42
82:F1:483:GLU:OE2	109:F1:1102:SAH:O2'	2.33	0.42
85:FF:370:HIS:O	85:FF:411:LYS:NZ	2.51	0.42
87:FH:397:TYR:OH	89:FK:184:ARG:NH2	2.52	0.42
6:CP:27:PRO:HA	6:CP:48:GLU:O	2.19	0.42
6:CP:30:ARG:NH1	6:CP:48:GLU:OE2	2.47	0.42
9:Ca:116:LYS:HA	9:Ca:116:LYS:HD2	1.66	0.42
17:DL:139:ARG:O	17:DL:143:ASN:ND2	2.43	0.42
26:F6:213:PHE:HA	26:F6:248:VAL:H	1.84	0.42
30:FA:20:SER:O	30:FA:54:LYS:NZ	2.47	0.42
30:FA:452:LYS:NZ	30:FA:511:ASP:O	2.42	0.42
31:FC:572:GLN:HG2	31:FC:573:PHE:HD2	1.84	0.42
32:FE:134:TRP:HA	32:FE:138:LEU:HB2	2.00	0.42
34:FM:62:MET:HE2	34:FM:62:MET:HB3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:FP:36:ILE:HD12	36:FP:315:VAL:HG11	2.01	0.42
36:FP:252:ASP:CB	36:FP:255:THR:OG1	2.66	0.42
37:FU:166:ARG:O	37:FU:170:ARG:NE	2.53	0.42
38:FW:64:LYS:HD2	38:FW:64:LYS:HA	1.88	0.42
38:FW:169:GLU:H	38:FW:169:GLU:HG3	1.66	0.42
63:CJ:601:LEU:HD13	63:CJ:675:ALA:HB3	2.00	0.42
71:DE:50:GLU:HG3	71:DE:51:ARG:HD2	2.01	0.42
71:DE:587:MET:HE1	96:Ud:35:UNK:HG2	2.02	0.42
74:DH:128:ILE:O	74:DH:213:THR:OG1	2.35	0.42
75:DJ:196:ASP:OD1	75:DJ:199:GLN:N	2.52	0.42
77:DT:70:MET:HG2	77:DT:169:LEU:HD11	2.01	0.42
77:DT:93:MET:HE1	77:DT:102:TRP:HE1	1.84	0.42
78:DV:58:ALA:HA	78:DV:61:ARG:HD2	2.01	0.42
82:F1:698:ASP:N	82:F1:698:ASP:OD1	2.47	0.42
84:FD:240:GLN:HG2	84:FD:287:VAL:HB	2.00	0.42
87:FH:285:ALA:HB2	87:FH:294:ARG:HD2	2.02	0.42
87:FH:442:TRP:NE1	91:FV:133:VAL:O	2.47	0.42
17:DL:125:HIS:HA	17:DL:128:MET:HE3	2.01	0.42
23:F2:25:ARG:HB2	23:F2:29:ALA:HB2	2.01	0.42
26:F6:361:ILE:HD12	57:UL:16:UNK:HG1	2.01	0.42
26:F6:471:ASN:OD1	26:F6:471:ASN:N	2.47	0.42
35:FO:274:VAL:HA	35:FO:275:PRO:HD3	1.89	0.42
37:FT:82:ASN:OD1	37:FT:82:ASN:N	2.51	0.42
37:FU:129:VAL:HG11	37:FU:210:LEU:HD11	2.00	0.42
60:CA:393:U:H2'	60:CA:394:A:C8	2.55	0.42
63:CJ:152:GLN:NE2	63:CJ:209:GLN:O	2.52	0.42
73:DG:590:ARG:HH11	73:DG:592:THR:HB	1.83	0.42
74:DH:73:LEU:HD13	74:DH:97:LEU:HD11	2.01	0.42
81:DY:102:GLU:HA	81:DY:105:MET:HB2	2.01	0.42
88:FI:76:ARG:HD3	88:FI:76:ARG:HA	1.82	0.42
88:FI:174:GLN:HB2	88:FI:177:PHE:HB2	2.00	0.42
10:Cb:54:HIS:HB3	17:DL:147:ILE:HD13	2.01	0.42
15:DD:605:ARG:O	20:DR:227:ARG:NH2	2.52	0.42
15:DD:607:GLN:O	20:DR:227:ARG:NH2	2.52	0.42
23:F2:578:MET:HE2	23:F2:578:MET:HB3	1.92	0.42
26:F6:459:ILE:HG23	26:F6:466:LEU:HD13	2.01	0.42
27:F7:441:ILE:O	27:F7:445:HIS:HB2	2.19	0.42
30:FA:561:ASN:ND2	30:FA:632:GLU:OE2	2.52	0.42
31:FB:313:GLN:HA	31:FB:314:PRO:HD3	1.90	0.42
32:FE:71:ILE:HD12	32:FE:101:LEU:HD21	2.00	0.42
35:FO:16:LEU:HG	35:FO:31:PHE:HD2	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:FT:70:PHE:HB2	37:FT:76:LEU:HD13	2.01	0.42
46:UA:6:UNK:HA	46:UA:9:UNK:HG3	2.00	0.42
63:CJ:318:GLU:OE2	68:Ck:612:TRP:NE1	2.38	0.42
63:CJ:509:GLU:HG3	72:DF:463:LYS:HG3	2.00	0.42
63:CJ:731:MET:HB2	63:CJ:746:ALA:HA	2.01	0.42
67:Ci:51:GLY:O	67:Ci:54:GLN:NE2	2.48	0.42
71:DE:286:THR:HG23	71:DE:289:ALA:H	1.84	0.42
72:DF:425:ILE:HD12	74:DH:196:LEU:HD21	2.01	0.42
75:DJ:137:MET:HG2	75:DJ:168:TYR:HE2	1.84	0.42
77:DT:43:ASP:OD2	77:DT:44:ARG:NH2	2.52	0.42
94:Ub:36:UNK:HG3	94:Ub:37:UNK:HG2	2.01	0.42
12:Cj:125:THR:OG1	20:DR:268:HIS:O	2.29	0.42
21:DU:182:GLU:OE2	24:F3:531:HIS:ND1	2.44	0.42
26:F6:60:LEU:HD12	26:F6:60:LEU:HA	1.91	0.42
27:F7:459:LEU:HD13	27:F7:495:LEU:HD13	2.02	0.42
30:FA:93:GLY:HA3	30:FA:516:GLY:HA3	2.01	0.42
32:FE:219:PRO:O	82:F1:992:TRP:NE1	2.50	0.42
60:CA:398:U:O2'	60:CA:400:U:OP2	2.37	0.42
60:CA:465:U:OP2	62:CI:411:LYS:NZ	2.47	0.42
60:CA:469:A:H2'	60:CA:470:G:C8	2.55	0.42
68:Ck:416:ARG:HH21	73:DG:158:GLU:HB3	1.85	0.42
68:Ck:622:LEU:HD11	68:Ck:628:ALA:HB2	2.01	0.42
69:DB:748:HIS:ND1	69:DB:783:VAL:O	2.53	0.42
71:DE:196:ASP:OD1	71:DE:196:ASP:N	2.49	0.42
75:DJ:212:ASP:OD1	75:DJ:215:GLY:N	2.53	0.42
85:FF:193:PHE:HB2	85:FF:343:MET:HE3	2.00	0.42
86:FG:135:ASP:OD1	86:FG:135:ASP:N	2.43	0.42
90:FL:42:ARG:NH2	90:FL:187:GLU:OE2	2.52	0.42
1:CE:326:MET:HB2	1:CE:329:ARG:HG2	2.00	0.42
12:Cj:156:THR:HG21	12:Cj:190:PRO:HG2	2.01	0.42
16:DI:44:GLU:HG3	16:DI:209:HIS:HD2	1.85	0.42
17:DL:117:ASP:OD2	17:DL:159:GLN:NE2	2.53	0.42
17:DL:292:ARG:O	60:CA:534:A:O2'	2.29	0.42
23:F2:975:ARG:NH2	23:F2:979:GLN:OE1	2.53	0.42
31:FB:523:ASN:OD1	31:FB:523:ASN:N	2.53	0.42
32:FE:248:ARG:HH21	32:FE:277:ARG:HG3	1.84	0.42
34:FN:78:ILE:HD13	34:FN:99:LEU:HD22	2.01	0.42
35:FO:36:ARG:NH2	59:UY:447:UNK:O	2.46	0.42
35:FO:130:THR:H	35:FO:133:MET:HE3	1.85	0.42
37:FS:124:PRO:O	37:FS:219:TYR:OH	2.36	0.42
59:UY:458:UNK:HA	59:UY:461:UNK:HG3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:CI:60:ILE:HG22	62:CI:64:MET:HE3	2.02	0.42
63:CJ:437:ARG:HD3	68:Ck:674:LEU:HD12	2.00	0.42
66:Cg:33:TRP:HZ3	66:Cg:39:LEU:HD21	1.84	0.42
68:Ck:708:ARG:HG2	68:Ck:747:LYS:HG3	2.00	0.42
69:DB:1025:LEU:HD11	73:DG:13:ILE:HD13	2.01	0.42
71:DE:555:LYS:NZ	96:Ud:42:UNK:HB1	2.34	0.42
73:DG:445:LEU:HD13	73:DG:532:VAL:HA	2.02	0.42
74:DH:219:TYR:HA	74:DH:222:VAL:HG22	2.01	0.42
88:FI:123:MET:HB2	49:Uf:6:UNK:HG3	2.00	0.42
92:Fe:36:ASP:HA	92:Fe:39:ARG:HG2	2.01	0.42
99:Uh:131:UNK:HG3	99:Uh:323:UNK:HG2	2.01	0.42
7:CQ:122:GLN:HE21	27:F7:660:VAL:HG13	1.85	0.42
18:DO:65:GLU:OE1	18:DO:97:TYR:OH	2.34	0.42
24:F3:820:ILE:HD12	24:F3:820:ILE:HA	1.89	0.42
25:F5:188:ARG:O	25:F5:191:ASN:HB3	2.19	0.42
31:FC:267:ARG:HD3	31:FC:267:ARG:HA	1.95	0.42
35:FO:96:TRP:CE2	35:FO:101:ARG:HD3	2.54	0.42
52:UG:12:UNK:HG2	52:UG:14:UNK:HB2	2.00	0.42
62:CI:9:THR:HG22	62:CI:12:HIS:HD2	1.84	0.42
71:DE:215:SER:O	71:DE:528:SER:OG	2.34	0.42
72:DF:349:ASP:N	72:DF:349:ASP:OD1	2.53	0.42
75:DJ:122:ALA:O	75:DJ:164:SER:OG	2.36	0.42
77:DT:15:ARG:HH21	87:FH:428:CYS:HB2	1.84	0.42
84:FD:75:ASN:OD1	47:Uk:16:UNK:HB2	2.19	0.42
86:FG:94:LYS:NZ	86:FG:153:TRP:O	2.50	0.42
2:CF:55:ASP:OD1	2:CF:55:ASP:N	2.49	0.42
23:F2:729:SER:O	23:F2:732:GLN:NE2	2.53	0.42
24:F3:700:GLY:HA2	24:F3:707:LEU:HD11	2.02	0.42
24:F3:712:THR:HG22	24:F3:755:LEU:HD11	2.00	0.42
25:F5:638:GLU:OE2	25:F5:641:ARG:NH1	2.52	0.42
26:F6:437:ILE:HG21	26:F6:474:GLY:HA3	2.00	0.42
28:F8:219:HIS:CD2	28:F8:221:GLY:H	2.38	0.42
30:FA:392:LEU:HD23	30:FA:408:ILE:HG12	2.00	0.42
31:FC:375:ALA:O	31:FC:380:LYS:NZ	2.40	0.42
59:UY:101:UNK:HB2	59:UY:128:UNK:HG3	2.00	0.42
63:CJ:118:MET:HE1	63:CJ:208:PHE:HZ	1.85	0.42
64:CN:48:ILE:HG23	64:CN:71:VAL:HG11	2.00	0.42
66:Cg:15:MET:HE2	66:Cg:15:MET:HB3	1.92	0.42
68:Ck:283:GLU:OE2	69:DB:887:SER:N	2.52	0.42
69:DB:1036:MET:SD	94:Ub:14:UNK:HB2	2.59	0.42
83:F4:685:HIS:HB3	90:FL:293:ARG:HE	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
90:FL:268:ARG:HB3	90:FL:308:THR:HA	2.02	0.42
2:CF:141:GLN:HG3	10:Cb:104:LEU:HD13	2.02	0.42
9:Ca:335:ARG:HG3	15:DD:779:MET:HG2	2.01	0.42
15:DD:561:ASP:OD1	15:DD:561:ASP:N	2.52	0.42
16:DI:82:GLU:OE2	16:DI:221:TYR:OH	2.36	0.42
26:F6:475:ASP:OD1	26:F6:475:ASP:N	2.52	0.42
27:F7:115:ARG:NH1	60:CA:326:U:O2'	2.51	0.42
28:F8:614:ARG:NH2	28:F8:680:ASP:OD1	2.50	0.42
32:FE:211:GLN:HG2	82:F1:1006:HIS:CG	2.55	0.42
33:FJ:287:ALA:HB2	82:F1:631:HIS:HB2	2.02	0.42
44:Fc:133:SER:OG	44:Fc:134:ILE:N	2.53	0.42
59:UY:100:UNK:HG1	59:UY:435:UNK:HG2	2.02	0.42
62:CI:112:GLU:HG2	73:DG:111:ARG:HH22	1.85	0.42
63:CJ:140:ARG:HD2	63:CJ:215:TRP:CD1	2.55	0.42
66:Cg:175:TYR:HA	66:Cg:284:VAL:HG23	2.01	0.42
66:Cg:191:SER:O	68:Ck:837:TRP:NE1	2.47	0.42
68:Ck:339:GLU:HG3	68:Ck:342:LYS:HD2	2.02	0.42
68:Ck:724:PHE:O	68:Ck:778:GLN:NE2	2.52	0.42
70:DC:1013:GLU:HB3	71:DE:618:ARG:HH22	1.85	0.42
73:DG:561:PRO:O	73:DG:622:ARG:NH2	2.42	0.42
74:DH:321:LEU:HD23	74:DH:324:ILE:HD12	2.01	0.42
82:F1:489:MET:O	82:F1:493:THR:OG1	2.33	0.42
83:F4:691:THR:HG22	51:Um:7:UNK:HB1	2.01	0.42
85:FF:369:ASP:O	85:FF:408:TYR:OH	2.36	0.42
89:FK:260:VAL:HB	91:FV:253:TRP:HZ2	1.83	0.42
98:Ug:132:UNK:O	98:Ug:135:UNK:HG3	2.18	0.42
99:Uh:57:UNK:HA	99:Uh:60:UNK:HG3	2.02	0.42
1:CE:309:ARG:HA	1:CE:309:ARG:HD2	1.87	0.42
26:F6:45:PHE:HD2	26:F6:122:VAL:HG11	1.84	0.42
30:FA:395:ARG:HD2	30:FA:395:ARG:HA	1.88	0.42
32:FE:311:LEU:HD12	32:FE:359:LEU:HD12	2.02	0.42
33:FJ:163:GLU:O	33:FJ:171:ARG:NE	2.53	0.42
33:FJ:298:LYS:HE3	82:F1:168:GLU:HB3	2.01	0.42
63:CJ:719:PRO:HG2	66:Cg:321:TYR:CZ	2.55	0.42
65:CS:69:PRO:HB2	69:DB:1133:PRO:HD3	2.01	0.42
70:DC:78:PRO:O	70:DC:82:THR:OG1	2.33	0.42
87:FH:421:ASP:HA	87:FH:424:CYS:HB3	2.01	0.42
89:FK:97:ASP:OD1	89:FK:97:ASP:N	2.41	0.42
92:Fe:56:TYR:OH	92:Fe:101:GLN:NE2	2.52	0.42
14:Cp:26:ASP:OD2	14:Cp:28:ARG:NE	2.45	0.41
23:F2:499:MET:HE1	23:F2:546:GLN:HG2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:F2:992:LYS:HD2	23:F2:992:LYS:HA	1.88	0.41
27:F7:127:ARG:HH21	59:UY:300:UNK:HG2	1.84	0.41
34:FN:292:ARG:HD3	34:FN:320:GLU:HB2	2.01	0.41
37:FQ:225:TYR:CZ	37:FR:226:VAL:HB	2.55	0.41
37:FS:307:ASP:OD1	37:FS:307:ASP:N	2.53	0.41
37:FU:67:ILE:HD12	37:FU:93:MET:HE3	2.01	0.41
37:FU:227:THR:HG23	37:FU:241:ILE:HB	2.01	0.41
39:FX:93:ASP:N	39:FX:93:ASP:OD1	2.52	0.41
40:FY:143:LEU:HA	40:FY:144:PRO:HA	1.84	0.41
62:CI:276:ASP:OD1	62:CI:276:ASP:N	2.52	0.41
66:Cg:232:PRO:HB2	68:Ck:825:LYS:HD2	2.02	0.41
69:DB:876:LEU:HD12	69:DB:877:PRO:HD2	2.01	0.41
69:DB:1010:LYS:O	73:DG:38:ARG:NH2	2.53	0.41
73:DG:479:MET:HE1	73:DG:547:MET:HG3	2.01	0.41
73:DG:496:ARG:NH2	73:DG:522:THR:OG1	2.53	0.41
78:DV:43:ASN:HB3	81:DY:31:TRP:CD1	2.55	0.41
83:F4:336:VAL:HG23	83:F4:370:VAL:HG13	2.00	0.41
83:F4:580:LYS:HG2	83:F4:632:ILE:HD12	2.02	0.41
99:Uh:278:UNK:HB2	99:Uh:321:UNK:HB2	2.02	0.41
100:Ui:15:UNK:O	100:Ui:19:UNK:HG3	2.19	0.41
1:CE:335:LEU:HD12	1:CE:336:PRO:HD2	2.02	0.41
6:CP:140:PHE:O	12:Cj:216:ASN:ND2	2.48	0.41
9:Ca:81:MET:O	9:Ca:86:LYS:NZ	2.53	0.41
18:DO:127:LEU:H	18:DO:127:LEU:HG	1.65	0.41
23:F2:722:LEU:HD23	23:F2:725:MET:HE3	2.02	0.41
26:F6:402:HIS:CD2	26:F6:432:LYS:HG2	2.55	0.41
28:F8:89:GLY:HA2	28:F8:115:TYR:HE1	1.84	0.41
31:FC:548:PRO:HB3	93:Ua:19:UNK:HG1	2.02	0.41
33:FJ:150:GLU:HA	33:FJ:153:ILE:HD11	2.01	0.41
37:FR:76:LEU:HD23	37:FR:76:LEU:HA	1.94	0.41
38:FW:50:LEU:HD22	38:FW:222:GLU:HG3	2.02	0.41
43:Fb:137:LYS:HA	43:Fb:140:MET:HG2	2.02	0.41
47:UB:205:UNK:HG2	47:UB:206:UNK:HG3	2.02	0.41
59:UY:160:UNK:HG3	59:UY:450:UNK:HG2	2.02	0.41
59:UY:456:UNK:O	59:UY:459:UNK:HG3	2.20	0.41
60:CA:107:U:O2	60:CA:121:A:O2'	2.36	0.41
62:CI:157:LEU:HD22	62:CI:172:LEU:HD13	2.02	0.41
62:CI:245:ARG:HH12	73:DG:50:LEU:HD13	1.85	0.41
62:CI:346:ASN:OD1	66:Cg:458:HIS:NE2	2.50	0.41
65:CS:72:TRP:NE1	69:DB:1128:PRO:O	2.53	0.41
72:DF:557:PRO:HG3	72:DF:568:LEU:HD22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:F1:647:ALA:HB1	82:F1:651:LEU:HD12	2.02	0.41
82:F1:857:ASN:OD1	82:F1:857:ASN:N	2.53	0.41
84:FD:218:LEU:HD21	84:FD:282:ALA:HB2	2.02	0.41
5:CO:333:SER:OG	5:CO:334:ARG:N	2.53	0.41
8:CR:173:ARG:HD2	40:FY:137:THR:HG21	2.00	0.41
11:Cd:18:LEU:HD12	11:Cd:19:PRO:HD2	2.03	0.41
14:Cp:66:HIS:HB3	14:Cp:69:ARG:HB2	2.02	0.41
24:F3:546:ARG:O	24:F3:550:THR:OG1	2.37	0.41
31:FC:344:LEU:HD21	31:FC:346:ARG:HE	1.85	0.41
31:FC:384:TYR:HA	31:FC:546:ARG:HH21	1.85	0.41
32:FE:198:LEU:HD22	32:FE:202:ASP:HB3	2.01	0.41
34:FN:225:LEU:HB3	34:FN:235:LEU:HD21	2.02	0.41
37:FS:266:SER:OG	85:FF:1:MET:O	2.38	0.41
44:Fc:146:MET:SD	44:Fc:146:MET:N	2.87	0.41
62:CI:237:ARG:NH1	62:CI:239:PHE:O	2.53	0.41
68:Ck:737:ALA:HB1	68:Ck:740:ARG:HB2	2.02	0.41
69:DB:718:ALA:HB2	69:DB:823:PRO:HG2	2.02	0.41
69:DB:748:HIS:CD2	69:DB:751:THR:H	2.33	0.41
73:DG:83:MET:HB2	73:DG:83:MET:HE3	1.83	0.41
74:DH:369:ARG:H	74:DH:369:ARG:HG2	1.71	0.41
76:DK:139:SER:HB2	76:DK:142:LEU:HD12	2.02	0.41
77:DT:145:GLU:OE1	77:DT:161:ASN:ND2	2.54	0.41
78:DV:134:ASP:OD1	78:DV:134:ASP:N	2.53	0.41
84:FD:423:ALA:HB2	101:Uj:16:UNK:HB1	2.01	0.41
85:FF:24:LYS:HA	85:FF:24:LYS:HD3	1.87	0.41
89:FK:103:LEU:HD23	89:FK:370:VAL:HG11	2.02	0.41
2:CF:51:PHE:HB2	2:CF:90:LEU:HD13	2.02	0.41
9:Ca:251:LYS:HB2	23:F2:809:SER:HB3	2.02	0.41
24:F3:533:SER:HB3	24:F3:574:VAL:HG22	2.02	0.41
25:F5:612:GLU:HA	25:F5:615:THR:HG22	2.02	0.41
28:F8:416:GLU:OE2	28:F8:427:LYS:N	2.50	0.41
30:FA:282:THR:HA	30:FA:285:LYS:HG2	2.03	0.41
33:FJ:293:ARG:NH1	82:F1:156:ARG:O	2.53	0.41
34:FM:13:VAL:HB	34:FM:80:LEU:HG	2.02	0.41
37:FQ:14:ILE:HG23	37:FQ:21:PHE:HB2	2.02	0.41
60:CA:457:U:H2'	60:CA:458:U:C6	2.54	0.41
70:DC:888:LEU:O	70:DC:894:HIS:NE2	2.43	0.41
77:DT:20:VAL:O	86:FG:67:ARG:NE	2.50	0.41
80:DX:74:SER:HB2	80:DX:76:ARG:HH22	1.85	0.41
83:F4:140:ASP:OD1	83:F4:140:ASP:N	2.49	0.41
84:FD:371:ASP:OD1	84:FD:371:ASP:N	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:FF:18:HIS:CD2	109:FF:501:SAH:HB1	2.55	0.41
88:FI:74:ARG:HA	88:FI:77:VAL:HG12	2.02	0.41
1:CE:329:ARG:NH2	23:F2:564:ASP:OD2	2.54	0.41
3:CH:175:THR:H	3:CH:178:THR:HB	1.85	0.41
11:CD:81:ASN:HA	11:CD:84:LYS:HG2	2.02	0.41
12:Cj:119:LYS:HB2	12:Cj:172:TYR:HE2	1.86	0.41
15:DD:96:ASN:O	15:DD:805:LYS:HA	2.19	0.41
15:DD:597:LEU:HA	15:DD:600:LEU:HB2	2.02	0.41
31:FB:540:HIS:NE2	60:CA:231:U:OP2	2.41	0.41
31:FC:201:TRP:HH2	31:FC:253:LEU:HD12	1.86	0.41
31:FC:354:ALA:HB3	83:F4:408:ARG:HA	2.02	0.41
35:FO:102:ILE:HG13	35:FO:288:VAL:HG13	2.02	0.41
40:FY:95:ARG:NH2	85:FF:28:GLN:OE1	2.53	0.41
59:UY:398:UNK:HG3	59:UY:411:UNK:HB1	2.00	0.41
71:DE:221:ILE:HD12	71:DE:405:ILE:HG12	2.02	0.41
71:DE:724:PHE:HA	71:DE:725:PRO:HD3	1.95	0.41
73:DG:464:VAL:O	73:DG:467:THR:OG1	2.35	0.41
79:DW:70:LEU:HD13	81:DY:113:VAL:HG13	2.01	0.41
83:F4:441:PRO:HB2	83:F4:468:ARG:HA	2.03	0.41
87:FH:376:MET:HA	87:FH:379:ASP:HB2	2.02	0.41
91:FV:261:MET:HE2	91:FV:261:MET:HB3	1.91	0.41
5:CO:251:VAL:O	5:CO:255:THR:OG1	2.31	0.41
15:DD:94:LYS:HG3	60:CA:144:A:H5"	2.03	0.41
15:DD:390:VAL:HG13	15:DD:457:LEU:HD22	2.01	0.41
26:F6:374:TRP:HZ3	57:UL:19:UNK:HG1	1.85	0.41
28:F8:175:VAL:HG21	28:F8:309:ALA:HB3	2.01	0.41
31:FC:379:THR:HB	31:FC:480:THR:HG22	2.02	0.41
35:FO:26:GLN:HB3	49:UD:4:UNK:HG1	2.03	0.41
35:FO:181:ASN:O	49:UM:9:UNK:HG2	2.20	0.41
59:UY:148:UNK:O	59:UY:152:UNK:HB1	2.21	0.41
61:CC:21:LYS:HA	61:CC:21:LYS:HD3	1.90	0.41
68:Ck:307:MET:HE1	69:DB:893:ILE:HD11	2.01	0.41
68:Ck:572:MET:HE3	68:Ck:575:LEU:H	1.85	0.41
70:DC:77:ASP:H	70:DC:81:HIS:CD2	2.37	0.41
79:DW:164:ASN:OD1	79:DW:164:ASN:N	2.53	0.41
85:FF:134:THR:O	85:FF:134:THR:OG1	2.38	0.41
88:FI:391:ILE:HD11	47:Uk:6:UNK:HA	2.01	0.41
91:FV:35:ASN:OD1	91:FV:35:ASN:N	2.53	0.41
3:CH:29:HIS:CD2	5:CO:265:ARG:HH11	2.39	0.41
14:Cp:182:GLN:HA	14:Cp:185:LYS:HG2	2.03	0.41
15:DD:693:ASP:OD1	15:DD:693:ASP:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:F2:86:GLU:OE2	23:F2:87:ARG:NH2	2.54	0.41
24:F3:412:TYR:HA	24:F3:416:GLU:HB3	2.01	0.41
33:FJ:88:LEU:HD13	33:FJ:88:LEU:HA	1.93	0.41
37:FQ:226:VAL:HG21	37:FT:243:ASN:HB3	2.02	0.41
40:FY:57:GLU:OE1	40:FY:60:ARG:NH1	2.53	0.41
59:UY:83:UNK:HA	59:UY:86:UNK:HG3	2.02	0.41
59:UY:168:UNK:HG1	59:UY:176:UNK:HA	2.01	0.41
59:UY:235:UNK:HG2	59:UY:241:UNK:HB1	2.03	0.41
59:UY:251:UNK:CG	59:UY:330:UNK:HG1	2.50	0.41
62:CI:9:THR:HA	73:DG:339:TYR:HB3	2.02	0.41
69:DB:559:GLU:OE2	69:DB:567:ARG:NE	2.41	0.41
69:DB:610:SER:OG	69:DB:639:ASP:OD2	2.36	0.41
69:DB:879:ARG:NH1	69:DB:897:PRO:O	2.54	0.41
70:DC:602:LYS:HD2	70:DC:602:LYS:HA	1.89	0.41
71:DE:88:LYS:HE2	71:DE:88:LYS:HB3	1.91	0.41
74:DH:107:THR:HA	74:DH:110:VAL:HG12	2.03	0.41
75:DJ:304:ILE:HD13	75:DJ:304:ILE:HA	1.95	0.41
77:DT:47:PHE:HB3	77:DT:50:GLU:HG2	2.02	0.41
3:CH:53:ARG:HD2	11:Cd:119:HIS:CD2	2.56	0.41
6:CP:56:SER:HB3	6:CP:58:ILE:H	1.85	0.41
9:Ca:71:MET:HE3	9:Ca:71:MET:HB2	1.88	0.41
9:Ca:104:LEU:HA	9:Ca:108:LEU:HB2	2.02	0.41
23:F2:735:ASP:OD1	23:F2:735:ASP:N	2.52	0.41
24:F3:704:TYR:HB3	24:F3:707:LEU:HG	2.02	0.41
27:F7:127:ARG:NH2	59:UY:300:UNK:HG2	2.36	0.41
31:FC:306:MET:HA	31:FC:309:GLU:HG2	2.01	0.41
37:FS:63:VAL:HG13	37:FS:89:VAL:HG22	2.03	0.41
59:UY:192:UNK:C	59:UY:278:UNK:HB1	2.50	0.41
63:CJ:783:ILE:HD13	67:CI:53:TRP:HZ3	1.85	0.41
65:CS:83:PHE:HA	69:DB:1117:THR:HA	2.02	0.41
67:CI:88:ILE:HG23	67:CI:91:LYS:HE3	2.02	0.41
70:DC:493:TYR:HA	70:DC:496:LYS:HG2	2.02	0.41
73:DG:199:LEU:HD12	73:DG:206:LEU:HD12	2.03	0.41
77:DT:31:ASN:OD1	77:DT:31:ASN:N	2.47	0.41
83:F4:691:THR:HG22	88:FI:44:ARG:HH22	1.84	0.41
1:CE:400:LEU:O	1:CE:404:GLY:N	2.54	0.41
2:CF:30:TYR:OH	11:Cd:151:VAL:O	2.27	0.41
4:CK:54:LEU:HD13	73:DG:190:GLU:HG3	2.03	0.41
9:Ca:102:TRP:CD1	9:Ca:106:ASN:HD21	2.39	0.41
9:Ca:131:MET:HA	9:Ca:134:LEU:HG	2.02	0.41
9:Ca:187:ASP:OD1	9:Ca:187:ASP:N	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:Ca:503:TRP:HD1	9:Ca:506:GLN:HG3	1.86	0.41
10:Cb:191:HIS:CE1	46:UA:12:UNK:HG2	2.55	0.41
10:Cb:192:LYS:HD3	10:Cb:192:LYS:HA	1.84	0.41
15:DD:80:SER:OG	60:CA:17:G:N2	2.54	0.41
15:DD:206:TRP:HE3	16:DI:61:ASN:HB3	1.86	0.41
18:DO:161:PHE:O	18:DO:164:THR:OG1	2.39	0.41
23:F2:115:LYS:HE2	23:F2:115:LYS:HB2	1.92	0.41
23:F2:584:GLU:OE2	23:F2:590:ARG:NH2	2.54	0.41
23:F2:846:PHE:HD2	23:F2:850:GLN:HB2	1.86	0.41
24:F3:762:LEU:HA	24:F3:762:LEU:HD23	1.89	0.41
25:F5:204:VAL:HG13	41:FZ:70:VAL:HG11	2.03	0.41
25:F5:373:LYS:HE3	25:F5:373:LYS:HB3	1.95	0.41
25:F5:742:GLY:O	50:UP:10:UNK:N	2.53	0.41
27:F7:629:GLN:OE1	27:F7:631:ARG:NH1	2.52	0.41
28:F8:424:LEU:O	31:FB:371:ARG:NH1	2.53	0.41
31:FC:339:TYR:HB3	31:FC:555:LEU:HD11	2.03	0.41
31:FC:508:ARG:NH1	83:F4:419:ASP:OD2	2.52	0.41
37:FT:230:PRO:HB3	37:FT:238:ARG:HD3	2.02	0.41
37:FU:133:ASP:HB3	37:FU:240:LEU:HB2	2.03	0.41
42:Fa:129:LEU:HD23	42:Fa:132:ALA:HB3	2.02	0.41
43:Fb:36:LEU:HD21	43:Fb:84:VAL:HG13	2.03	0.41
58:UO:5:UNK:O	58:UO:8:UNK:HG3	2.20	0.41
59:UY:223:UNK:HG2	59:UY:292:UNK:HG1	2.03	0.41
59:UY:284:UNK:HB2	59:UY:329:UNK:HG1	2.03	0.41
62:CI:11:ARG:HG3	73:DG:296:ASP:HA	2.03	0.41
63:CJ:672:ARG:HH22	63:CJ:680:LEU:HD11	1.85	0.41
66:Cg:167:ARG:NE	66:Cg:173:THR:OG1	2.39	0.41
68:Ck:688:TYR:HB2	68:Ck:690:TRP:NE1	2.35	0.41
68:Ck:707:LEU:HD23	68:Ck:748:LEU:HD12	2.02	0.41
69:DB:475:ILE:HD11	73:DG:20:PRO:HB3	2.03	0.41
70:DC:626:ALA:HB3	70:DC:629:VAL:HG23	2.03	0.41
70:DC:752:VAL:HG23	70:DC:780:LEU:HD21	2.03	0.41
72:DF:149:ASN:HB2	99:Uh:268:UNK:HG1	2.02	0.41
80:DX:83:ARG:NH1	81:DY:135:TYR:OH	2.49	0.41
82:F1:798:MET:HE2	82:F1:798:MET:HB3	1.86	0.41
84:FD:162:LEU:HD22	84:FD:190:MET:HE3	2.01	0.41
87:FH:330:ARG:HA	87:FH:330:ARG:HD2	1.90	0.41
92:Fe:23:ARG:HG2	92:Fe:84:ARG:HB2	2.02	0.41
99:Uh:118:UNK:HG3	99:Uh:119:UNK:HG3	2.03	0.41
103:Ux:79:UNK:HG3	103:Ux:86:UNK:HG2	2.03	0.41
5:CO:296:ARG:NH2	60:CA:124:U:OP2	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Cb:116:PHE:O	10:Cb:157:LYS:NZ	2.42	0.41
23:F2:675:PRO:HG3	34:FM:8:LEU:HD23	2.03	0.41
27:F7:147:PRO:HA	27:F7:150:LEU:HB2	2.03	0.41
31:FB:381:ASP:HB2	37:FU:233:VAL:HG21	2.03	0.41
31:FC:564:ASP:HA	31:FC:567:ARG:HB2	2.01	0.41
37:FS:60:THR:HA	37:FS:61:PRO:HD3	1.97	0.41
37:FT:235:THR:O	37:FT:238:ARG:NH1	2.40	0.41
40:FY:40:LYS:HE3	40:FY:42:THR:HB	2.03	0.41
60:CA:427:U:H3'	75:DJ:232:ARG:HD3	2.03	0.41
62:CI:94:TYR:HA	62:CI:95:PRO:HA	1.90	0.41
67:CI:129:LEU:HD23	67:CI:129:LEU:HA	1.93	0.41
70:DC:155:VAL:HG23	70:DC:168:PHE:HE1	1.86	0.41
72:DF:200:ALA:HB1	99:Uh:302:UNK:HA	2.03	0.41
80:DX:136:ARG:HD3	81:DY:11:THR:HG22	2.03	0.41
84:FD:278:ASP:OD1	84:FD:278:ASP:N	2.54	0.41
90:FL:138:LYS:HA	90:FL:138:LYS:HD3	1.86	0.41
15:DD:209:THR:OG1	15:DD:290:ARG:NH1	2.46	0.40
21:DU:10:LYS:HD3	60:CA:320:A:H4'	2.02	0.40
23:F2:52:ARG:NH1	23:F2:60:ASP:OD2	2.54	0.40
23:F2:987:SER:HA	23:F2:990:GLU:HG2	2.04	0.40
25:F5:707:VAL:HG11	44:Fc:85:LYS:HG3	2.03	0.40
26:F6:449:MET:HE2	26:F6:466:LEU:HB2	2.03	0.40
30:FA:584:GLU:HG2	30:FA:585:LEU:HG	2.02	0.40
31:FB:423:HIS:NE2	82:F1:574:GLU:O	2.45	0.40
31:FC:340:VAL:HG12	31:FC:558:TRP:HB2	2.03	0.40
35:FO:214:ARG:HD2	35:FO:242:MET:HG3	2.02	0.40
36:FP:95:THR:OG1	36:FP:136:GLU:OE1	2.38	0.40
42:Fa:18:LYS:HB3	42:Fa:18:LYS:HE2	1.86	0.40
59:UY:165:UNK:HG2	59:UY:166:UNK:O	2.21	0.40
66:Cg:390:PRO:O	66:Cg:394:SER:OG	2.32	0.40
68:Ck:122:MET:H	68:Ck:122:MET:HG3	1.78	0.40
68:Ck:378:LYS:HD3	68:Ck:378:LYS:HA	1.90	0.40
69:DB:1098:ASP:HA	99:Uh:26:UNK:HG1	2.03	0.40
84:FD:239:MET:HE3	84:FD:284:GLY:HA3	2.02	0.40
89:FK:361:MET:HB3	89:FK:361:MET:HE2	1.75	0.40
90:FL:45:ARG:HD2	90:FL:45:ARG:HA	1.86	0.40
1:CE:328:ASP:OD1	1:CE:328:ASP:N	2.49	0.40
5:CO:70:HIS:HB2	23:F2:169:LEU:HD22	2.03	0.40
5:CO:421:TRP:CD1	60:CA:105:G:H5'	2.56	0.40
23:F2:768:LEU:H	23:F2:768:LEU:HG	1.63	0.40
24:F3:777:ARG:O	24:F3:781:CYS:HB3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:F6:216:ASP:HA	58:UO:19:UNK:HG3	2.03	0.40
27:F7:302:GLY:HA2	27:F7:305:MET:HE2	2.03	0.40
27:F7:658:LEU:HD12	27:F7:658:LEU:HA	1.92	0.40
28:F8:64:LYS:HB3	28:F8:320:VAL:HG12	2.04	0.40
33:FJ:10:VAL:HB	33:FJ:14:THR:HB	2.03	0.40
34:FN:36:LEU:HD23	34:FN:62:MET:HE2	2.03	0.40
35:FO:183:ARG:NH1	49:UM:8:UNK:CG	2.85	0.40
37:FQ:238:ARG:NH2	37:FT:230:PRO:O	2.54	0.40
60:CA:495:U:OP1	65:CS:102:LYS:NZ	2.50	0.40
64:CN:48:ILE:HG13	64:CN:55:LEU:HD21	2.01	0.40
68:Ck:312:VAL:HB	69:DB:893:ILE:HG12	2.03	0.40
69:DB:808:ASP:OD1	69:DB:808:ASP:N	2.42	0.40
71:DE:76:THR:HG23	71:DE:191:PRO:HD3	2.03	0.40
73:DG:186:ARG:NH2	73:DG:190:GLU:OE1	2.51	0.40
82:F1:763:ASN:HD21	82:F1:892:TYR:HD2	1.69	0.40
86:FG:79:HIS:NE2	86:FG:115:GLU:OE1	2.53	0.40
88:FI:444:ARG:HD3	88:FI:444:ARG:HA	1.92	0.40
3:CH:125:LYS:HG3	3:CH:173:PRO:HB3	2.03	0.40
5:CO:320:ASP:O	5:CO:345:TYR:OH	2.37	0.40
9:Ca:424:MET:HE1	11:Cd:57:LEU:HD11	2.04	0.40
23:F2:774:GLY:O	56:UK:9:UNK:HG2	2.21	0.40
24:F3:68:PHE:HA	37:FQ:105:PRO:HD3	2.03	0.40
24:F3:625:MET:O	24:F3:659:ARG:NH2	2.54	0.40
25:F5:203:TYR:O	25:F5:207:LYS:N	2.54	0.40
25:F5:459:LEU:HD23	25:F5:462:LEU:HD13	2.03	0.40
26:F6:128:LYS:HA	26:F6:131:ARG:HG2	2.03	0.40
26:F6:326:MET:HB2	26:F6:326:MET:HE3	1.87	0.40
32:FE:356:TYR:OH	32:FE:415:GLU:OE1	2.37	0.40
37:FT:230:PRO:HA	37:FT:238:ARG:HA	2.03	0.40
37:FU:247:ARG:HD2	37:FU:247:ARG:HA	1.92	0.40
40:FY:156:ARG:NH2	40:FY:178:ALA:O	2.55	0.40
45:Fd:35:MET:HE2	45:Fd:35:MET:HB3	1.90	0.40
59:UY:339:UNK:HG2	59:UY:411:UNK:HG2	2.03	0.40
62:CI:98:TYR:HB2	63:CJ:186:VAL:HG11	2.04	0.40
62:CI:247:MET:HE2	62:CI:277:PHE:HB2	2.03	0.40
63:CJ:154:THR:HA	63:CJ:155:PRO:HD3	1.82	0.40
70:DC:1034:LEU:HD21	76:DK:103:LEU:HD11	2.03	0.40
71:DE:546:LEU:HD23	71:DE:549:LYS:HZ1	1.86	0.40
77:DT:208:ARG:HH11	84:FD:148:GLN:HB3	1.87	0.40
84:FD:236:PHE:HZ	84:FD:283:HIS:HD2	1.69	0.40
90:FL:259:HIS:CE1	90:FL:274:ASP:H	2.38	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:CF:159:ARG:NH2	26:F6:315:VAL:O	2.55	0.40
4:CK:194:PHE:HD1	4:CK:278:VAL:HB	1.86	0.40
9:Ca:60:ASP:OD1	9:Ca:60:ASP:N	2.53	0.40
31:FC:502:PHE:O	52:UG:10:UNK:HG3	2.22	0.40
37:FQ:172:LEU:HD12	37:FQ:172:LEU:HA	1.97	0.40
62:CI:40:TRP:NE1	63:CJ:159:LEU:O	2.51	0.40
63:CJ:478:LEU:HD21	72:DF:214:HIS:HD2	1.87	0.40
71:DE:54:ARG:NH1	71:DE:95:ASP:OD2	2.54	0.40
71:DE:220:MET:HE2	71:DE:220:MET:HB2	2.01	0.40
71:DE:232:LEU:HD13	71:DE:246:ILE:HD12	2.04	0.40
75:DJ:157:PRO:O	75:DJ:191:TYR:OH	2.35	0.40
79:DW:107:ASP:OD1	79:DW:111:LYS:NZ	2.46	0.40
79:DW:158:PRO:HA	79:DW:161:TYR:HD2	1.85	0.40
82:F1:146:LYS:HB3	82:F1:151:ILE:HG13	2.03	0.40
84:FD:218:LEU:HD22	84:FD:310:VAL:HG21	2.02	0.40
85:FF:212:LEU:HD23	85:FF:219:PHE:HB3	2.04	0.40
2:CF:35:LEU:HD21	5:CO:187:LYS:HD3	2.03	0.40
9:Ca:541:ARG:NH1	9:Ca:545:TRP:HE1	2.19	0.40
11:Cd:44:GLU:OE2	20:DR:250:ARG:NH2	2.43	0.40
19:DP:35:ILE:HD13	19:DP:35:ILE:HA	1.96	0.40
24:F3:101:LEU:HD22	35:FO:61:LEU:HG	2.03	0.40
27:F7:386:PHE:HA	27:F7:389:LEU:HB2	2.04	0.40
27:F7:566:LYS:HD3	27:F7:566:LYS:HA	1.75	0.40
28:F8:356:LEU:HD12	28:F8:356:LEU:HA	1.98	0.40
31:FB:202:TRP:HB2	31:FB:250:ARG:HD2	2.04	0.40
31:FC:253:LEU:HD23	31:FC:253:LEU:HA	1.91	0.40
32:FE:179:LEU:HB2	32:FE:183:LEU:HD23	2.04	0.40
32:FE:405:PRO:HD2	32:FE:408:MET:HE3	2.03	0.40
37:FT:23:THR:OG1	37:FT:24:LEU:N	2.55	0.40
60:CA:422:G:C8	72:DF:181:ARG:HG3	2.57	0.40
64:CN:14:GLY:HA3	64:CN:15:GLN:HA	1.94	0.40
66:Cg:102:PRO:HG2	66:Cg:105:HIS:HB2	2.03	0.40
70:DC:411:LYS:HE3	70:DC:411:LYS:HB3	1.96	0.40
70:DC:651:LYS:HE3	70:DC:651:LYS:HB3	1.81	0.40
71:DE:293:TYR:HH	71:DE:402:TYR:HH	1.62	0.40
71:DE:591:LEU:HA	96:Ud:28:UNK:HB2	2.04	0.40
71:DE:598:VAL:HG12	71:DE:602:LYS:HE2	2.03	0.40
73:DG:401:CYS:HB2	73:DG:458:LEU:HB2	2.03	0.40
75:DJ:95:THR:O	75:DJ:127:HIS:NE2	2.46	0.40
83:F4:470:HIS:HD2	83:F4:472:HIS:HB2	1.87	0.40
87:FH:252:VAL:HG13	87:FH:280:MET:HB3	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
99:Uh:273:UNK:HG1	99:Uh:338:UNK:HB1	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	CE	390/435 (90%)	375 (96%)	13 (3%)	2 (0%)	25	56
2	CF	157/160 (98%)	151 (96%)	6 (4%)	0	100	100
3	CH	216/282 (77%)	211 (98%)	5 (2%)	0	100	100
4	CK	205/326 (63%)	190 (93%)	15 (7%)	0	100	100
5	CO	354/429 (82%)	345 (98%)	9 (2%)	0	100	100
6	CP	178/188 (95%)	170 (96%)	8 (4%)	0	100	100
7	CQ	217/336 (65%)	209 (96%)	8 (4%)	0	100	100
8	CR	149/320 (47%)	141 (95%)	8 (5%)	0	100	100
9	Ca	508/602 (84%)	490 (96%)	18 (4%)	0	100	100
10	Cb	149/311 (48%)	145 (97%)	4 (3%)	0	100	100
11	Cd	183/440 (42%)	182 (100%)	1 (0%)	0	100	100
12	Cj	224/257 (87%)	219 (98%)	5 (2%)	0	100	100
13	Cn	25/250 (10%)	23 (92%)	2 (8%)	0	100	100
14	Cp	176/187 (94%)	171 (97%)	5 (3%)	0	100	100
15	DD	782/812 (96%)	756 (97%)	26 (3%)	0	100	100
16	DI	388/407 (95%)	378 (97%)	10 (3%)	0	100	100
17	DL	199/307 (65%)	192 (96%)	7 (4%)	0	100	100
18	DO	202/282 (72%)	200 (99%)	2 (1%)	0	100	100
19	DP	210/274 (77%)	206 (98%)	4 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	DR	250/270 (93%)	241 (96%)	9 (4%)	0	100	100
21	DU	217/228 (95%)	203 (94%)	14 (6%)	0	100	100
22	DZ	28/94 (30%)	27 (96%)	1 (4%)	0	100	100
23	F2	909/1024 (89%)	886 (98%)	23 (2%)	0	100	100
24	F3	882/966 (91%)	857 (97%)	25 (3%)	0	100	100
25	F5	474/754 (63%)	461 (97%)	12 (2%)	1 (0%)	44	71
26	F6	450/676 (67%)	436 (97%)	14 (3%)	0	100	100
27	F7	658/679 (97%)	615 (94%)	41 (6%)	2 (0%)	37	66
28	F8	493/726 (68%)	475 (96%)	18 (4%)	0	100	100
29	F9	214/608 (35%)	213 (100%)	1 (0%)	0	100	100
30	FA	573/642 (89%)	553 (96%)	20 (4%)	0	100	100
31	FB	373/579 (64%)	363 (97%)	10 (3%)	0	100	100
31	FC	305/579 (53%)	294 (96%)	11 (4%)	0	100	100
32	FE	432/553 (78%)	416 (96%)	16 (4%)	0	100	100
33	FJ	351/362 (97%)	333 (95%)	18 (5%)	0	100	100
34	FM	324/370 (88%)	320 (99%)	4 (1%)	0	100	100
34	FN	317/370 (86%)	311 (98%)	6 (2%)	0	100	100
35	FO	320/334 (96%)	306 (96%)	14 (4%)	0	100	100
36	FP	346/349 (99%)	332 (96%)	13 (4%)	1 (0%)	37	66
37	FQ	255/307 (83%)	250 (98%)	5 (2%)	0	100	100
37	FR	239/307 (78%)	234 (98%)	5 (2%)	0	100	100
37	FS	271/307 (88%)	261 (96%)	10 (4%)	0	100	100
37	FT	229/307 (75%)	224 (98%)	5 (2%)	0	100	100
37	FU	266/307 (87%)	258 (97%)	8 (3%)	0	100	100
38	FW	243/263 (92%)	237 (98%)	6 (2%)	0	100	100
39	FX	218/239 (91%)	211 (97%)	7 (3%)	0	100	100
40	FY	156/188 (83%)	145 (93%)	11 (7%)	0	100	100
41	FZ	129/178 (72%)	125 (97%)	4 (3%)	0	100	100
42	Fa	161/171 (94%)	158 (98%)	3 (2%)	0	100	100
43	Fb	127/151 (84%)	124 (98%)	3 (2%)	0	100	100
44	Fc	82/148 (55%)	82 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	Fd	94/143 (66%)	93 (99%)	1 (1%)	0	100	100
61	CC	72/74 (97%)	70 (97%)	2 (3%)	0	100	100
62	CI	421/443 (95%)	409 (97%)	12 (3%)	0	100	100
63	CJ	695/817 (85%)	659 (95%)	33 (5%)	3 (0%)	30	61
64	CN	151/166 (91%)	149 (99%)	2 (1%)	0	100	100
65	CS	79/244 (32%)	77 (98%)	2 (2%)	0	100	100
66	Cg	482/498 (97%)	461 (96%)	21 (4%)	0	100	100
67	Ci	145/181 (80%)	143 (99%)	2 (1%)	0	100	100
68	Ck	634/874 (72%)	606 (96%)	28 (4%)	0	100	100
69	DB	671/1181 (57%)	651 (97%)	20 (3%)	0	100	100
70	DC	1020/1165 (88%)	997 (98%)	23 (2%)	0	100	100
71	DE	582/747 (78%)	566 (97%)	14 (2%)	2 (0%)	37	66
72	DF	485/666 (73%)	466 (96%)	19 (4%)	0	100	100
73	DG	558/631 (88%)	546 (98%)	12 (2%)	0	100	100
74	DH	466/581 (80%)	447 (96%)	19 (4%)	0	100	100
75	DJ	304/396 (77%)	298 (98%)	6 (2%)	0	100	100
76	DK	239/324 (74%)	229 (96%)	10 (4%)	0	100	100
77	DT	219/247 (89%)	211 (96%)	8 (4%)	0	100	100
78	DV	153/183 (84%)	147 (96%)	6 (4%)	0	100	100
79	DW	131/179 (73%)	120 (92%)	11 (8%)	0	100	100
80	DX	113/169 (67%)	106 (94%)	7 (6%)	0	100	100
81	DY	152/163 (93%)	149 (98%)	3 (2%)	0	100	100
82	F1	881/1041 (85%)	849 (96%)	32 (4%)	0	100	100
83	F4	521/811 (64%)	497 (95%)	24 (5%)	0	100	100
84	FD	392/579 (68%)	384 (98%)	8 (2%)	0	100	100
85	FF	404/474 (85%)	388 (96%)	15 (4%)	1 (0%)	44	71
86	FG	167/463 (36%)	162 (97%)	5 (3%)	0	100	100
87	FH	313/457 (68%)	303 (97%)	10 (3%)	0	100	100
88	FI	342/445 (77%)	333 (97%)	9 (3%)	0	100	100
89	FK	202/372 (54%)	202 (100%)	0	0	100	100
90	FL	314/353 (89%)	299 (95%)	15 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
91	FV	206/264 (78%)	198 (96%)	8 (4%)	0	100	100
92	Fe	120/123 (98%)	113 (94%)	7 (6%)	0	100	100
All	All	26932/35095 (77%)	26033 (97%)	887 (3%)	12 (0%)	100	100

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	CE	385	PRO
36	FP	85	LYS
63	CJ	592	SER
71	DE	521	PRO
1	CE	384	ALA
27	F7	565	LEU
63	CJ	236	ASP
25	F5	495	MET
71	DE	476	PRO
27	F7	383	ILE
63	CJ	237	GLY
85	FF	126	VAL

5.3.2 Protein sidechains ⓘ

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	CE	325/372 (87%)	315 (97%)	10 (3%)	35	61
2	CF	143/144 (99%)	141 (99%)	2 (1%)	62	78
3	CH	195/246 (79%)	191 (98%)	4 (2%)	48	70
4	CK	184/284 (65%)	177 (96%)	7 (4%)	28	56
5	CO	314/377 (83%)	306 (98%)	8 (2%)	42	67
6	CP	160/168 (95%)	156 (98%)	4 (2%)	42	67
7	CQ	194/297 (65%)	187 (96%)	7 (4%)	30	57
8	CR	130/279 (47%)	124 (95%)	6 (5%)	23	52

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	Ca	449/543 (83%)	438 (98%)	11 (2%)	44	68
10	Cb	132/267 (49%)	123 (93%)	9 (7%)	13	38
11	Cd	168/381 (44%)	167 (99%)	1 (1%)	84	90
12	Cj	193/219 (88%)	187 (97%)	6 (3%)	35	61
13	Cn	22/210 (10%)	22 (100%)	0	100	100
14	Cp	166/175 (95%)	161 (97%)	5 (3%)	36	62
15	DD	691/711 (97%)	686 (99%)	5 (1%)	81	88
16	DI	350/365 (96%)	343 (98%)	7 (2%)	50	71
17	DL	173/263 (66%)	171 (99%)	2 (1%)	67	80
18	DO	170/229 (74%)	166 (98%)	4 (2%)	44	68
19	DP	191/239 (80%)	188 (98%)	3 (2%)	58	76
20	DR	221/235 (94%)	213 (96%)	8 (4%)	30	57
21	DU	179/201 (89%)	176 (98%)	3 (2%)	56	74
22	DZ	25/84 (30%)	23 (92%)	2 (8%)	10	32
23	F2	763/867 (88%)	740 (97%)	23 (3%)	36	62
24	F3	748/809 (92%)	719 (96%)	29 (4%)	27	55
25	F5	293/642 (46%)	278 (95%)	15 (5%)	20	48
26	F6	401/590 (68%)	387 (96%)	14 (4%)	31	58
27	F7	554/577 (96%)	540 (98%)	14 (2%)	42	67
28	F8	410/561 (73%)	399 (97%)	11 (3%)	40	65
29	F9	175/504 (35%)	171 (98%)	4 (2%)	45	68
30	FA	477/526 (91%)	453 (95%)	24 (5%)	20	48
31	FB	322/483 (67%)	309 (96%)	13 (4%)	27	55
31	FC	272/483 (56%)	260 (96%)	12 (4%)	24	52
32	FE	386/486 (79%)	378 (98%)	8 (2%)	48	70
33	FJ	314/323 (97%)	303 (96%)	11 (4%)	31	58
34	FM	257/292 (88%)	249 (97%)	8 (3%)	35	61
34	FN	251/292 (86%)	238 (95%)	13 (5%)	19	47
35	FO	281/290 (97%)	273 (97%)	8 (3%)	38	64
36	FP	270/286 (94%)	266 (98%)	4 (2%)	60	77
37	FQ	211/264 (80%)	203 (96%)	8 (4%)	28	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	FR	206/264 (78%)	198 (96%)	8 (4%)	27	55
37	FS	238/264 (90%)	227 (95%)	11 (5%)	23	52
37	FT	200/264 (76%)	190 (95%)	10 (5%)	20	48
37	FU	222/264 (84%)	210 (95%)	12 (5%)	18	46
38	FW	223/234 (95%)	219 (98%)	4 (2%)	54	74
39	FX	178/195 (91%)	178 (100%)	0	100	100
40	FY	141/163 (86%)	136 (96%)	5 (4%)	31	58
41	FZ	86/156 (55%)	84 (98%)	2 (2%)	45	68
42	Fa	141/149 (95%)	136 (96%)	5 (4%)	31	58
43	Fb	117/135 (87%)	114 (97%)	3 (3%)	41	66
44	Fc	78/127 (61%)	74 (95%)	4 (5%)	20	48
45	Fd	79/119 (66%)	77 (98%)	2 (2%)	42	67
61	CC	73/73 (100%)	69 (94%)	4 (6%)	18	45
62	CI	355/371 (96%)	349 (98%)	6 (2%)	56	74
63	CJ	619/723 (86%)	601 (97%)	18 (3%)	37	63
64	CN	138/150 (92%)	129 (94%)	9 (6%)	14	40
65	CS	76/220 (34%)	74 (97%)	2 (3%)	41	66
66	Cg	426/437 (98%)	414 (97%)	12 (3%)	38	64
67	Ci	130/160 (81%)	128 (98%)	2 (2%)	60	77
68	Ck	557/747 (75%)	537 (96%)	20 (4%)	30	57
69	DB	613/1030 (60%)	588 (96%)	25 (4%)	26	54
70	DC	867/985 (88%)	836 (96%)	31 (4%)	30	57
71	DE	464/644 (72%)	443 (96%)	21 (4%)	23	52
72	DF	417/560 (74%)	403 (97%)	14 (3%)	32	59
73	DG	490/543 (90%)	472 (96%)	18 (4%)	29	56
74	DH	413/504 (82%)	401 (97%)	12 (3%)	37	63
75	DJ	267/347 (77%)	261 (98%)	6 (2%)	47	69
76	DK	203/261 (78%)	194 (96%)	9 (4%)	24	52
77	DT	205/228 (90%)	199 (97%)	6 (3%)	37	63
78	DV	142/165 (86%)	137 (96%)	5 (4%)	31	58
79	DW	124/163 (76%)	113 (91%)	11 (9%)	8	28

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
80	DX	102/149 (68%)	102 (100%)	0	100	100
81	DY	137/146 (94%)	135 (98%)	2 (2%)	60	77
82	F1	764/895 (85%)	724 (95%)	40 (5%)	19	47
83	F4	479/703 (68%)	459 (96%)	20 (4%)	25	53
84	FD	338/494 (68%)	331 (98%)	7 (2%)	48	70
85	FF	348/400 (87%)	338 (97%)	10 (3%)	37	63
86	FG	147/414 (36%)	143 (97%)	4 (3%)	40	65
87	FH	270/390 (69%)	261 (97%)	9 (3%)	33	60
88	FI	297/380 (78%)	287 (97%)	10 (3%)	32	59
89	FK	181/308 (59%)	175 (97%)	6 (3%)	33	60
90	FL	279/309 (90%)	271 (97%)	8 (3%)	37	63
91	FV	184/231 (80%)	175 (95%)	9 (5%)	21	49
92	Fe	114/115 (99%)	104 (91%)	10 (9%)	8	28
All	All	23288/30143 (77%)	22523 (97%)	765 (3%)	35	60

All (765) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	CE	55	THR
1	CE	112	THR
1	CE	204	VAL
1	CE	217	VAL
1	CE	222	VAL
1	CE	224	VAL
1	CE	225	LEU
1	CE	268	THR
1	CE	305	GLU
1	CE	396	LEU
2	CF	39	ILE
2	CF	111	LEU
3	CH	86	THR
3	CH	115	ASP
3	CH	128	VAL
3	CH	150	THR
4	CK	193	VAL
4	CK	207	VAL
4	CK	217	LEU

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Mol	Chain	Res	Type
4	CK	221	THR
4	CK	258	LEU
4	CK	281	VAL
4	CK	310	ILE
5	CO	90	MET
5	CO	116	GLU
5	CO	122	VAL
5	CO	127	THR
5	CO	139	LEU
5	CO	162	THR
5	CO	283	VAL
5	CO	419	VAL
6	CP	82	VAL
6	CP	172	VAL
6	CP	181	GLU
6	CP	188	LEU
7	CQ	34	THR
7	CQ	61	VAL
7	CQ	64	THR
7	CQ	95	ILE
7	CQ	104	LEU
7	CQ	115	VAL
7	CQ	198	LEU
8	CR	69	HIS
8	CR	131	THR
8	CR	139	THR
8	CR	151	ASN
8	CR	198	THR
8	CR	228	VAL
9	Ca	106	ASN
9	Ca	116	LYS
9	Ca	171	THR
9	Ca	231	LEU
9	Ca	289	LYS
9	Ca	379	MET
9	Ca	391	ASP
9	Ca	449	VAL
9	Ca	456	LEU
9	Ca	472	VAL
9	Ca	574	VAL
10	Cb	28	TYR
10	Cb	47	ILE

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Mol	Chain	Res	Type
10	Cb	114	ASN
10	Cb	118	VAL
10	Cb	125	MET
10	Cb	126	GLU
10	Cb	137	VAL
10	Cb	175	ILE
10	Cb	182	VAL
11	Cd	33	THR
12	Cj	47	VAL
12	Cj	145	THR
12	Cj	161	VAL
12	Cj	167	ASP
12	Cj	168	VAL
12	Cj	234	THR
14	Cp	12	THR
14	Cp	35	THR
14	Cp	42	VAL
14	Cp	53	VAL
14	Cp	145	GLU
15	DD	89	SER
15	DD	586	VAL
15	DD	673	VAL
15	DD	743	LEU
15	DD	754	THR
16	DI	20	THR
16	DI	24	VAL
16	DI	113	VAL
16	DI	187	THR
16	DI	279	VAL
16	DI	363	VAL
16	DI	390	VAL
17	DL	83	THR
17	DL	170	VAL
18	DO	62	LEU
18	DO	109	VAL
18	DO	122	LEU
18	DO	127	LEU
19	DP	59	THR
19	DP	88	THR
19	DP	122	VAL
20	DR	33	VAL
20	DR	44	VAL

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Mol	Chain	Res	Type
20	DR	60	VAL
20	DR	117	ILE
20	DR	118	VAL
20	DR	190	LEU
20	DR	254	VAL
20	DR	268	HIS
21	DU	146	THR
21	DU	188	VAL
21	DU	191	SER
22	DZ	67	GLU
22	DZ	68	LYS
23	F2	38	GLU
23	F2	46	THR
23	F2	110	GLU
23	F2	273	THR
23	F2	313	VAL
23	F2	377	LEU
23	F2	387	VAL
23	F2	470	GLU
23	F2	478	VAL
23	F2	588	THR
23	F2	645	GLU
23	F2	664	ASP
23	F2	693	GLU
23	F2	733	THR
23	F2	768	LEU
23	F2	805	VAL
23	F2	810	THR
23	F2	831	THR
23	F2	861	VAL
23	F2	878	SER
23	F2	948	THR
23	F2	951	VAL
23	F2	974	VAL
24	F3	112	VAL
24	F3	122	LEU
24	F3	152	THR
24	F3	163	ASP
24	F3	180	ILE
24	F3	194	ASP
24	F3	298	SER
24	F3	306	VAL

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Mol	Chain	Res	Type
24	F3	374	VAL
24	F3	418	ASP
24	F3	550	THR
24	F3	608	VAL
24	F3	642	THR
24	F3	646	THR
24	F3	660	VAL
24	F3	695	LEU
24	F3	720	ILE
24	F3	744	LEU
24	F3	781	CYS
24	F3	787	VAL
24	F3	791	ILE
24	F3	803	LEU
24	F3	810	THR
24	F3	861	VAL
24	F3	868	VAL
24	F3	870	ILE
24	F3	874	LEU
24	F3	940	VAL
24	F3	946	LEU
25	F5	189	LEU
25	F5	337	THR
25	F5	343	LEU
25	F5	348	GLU
25	F5	353	LEU
25	F5	360	THR
25	F5	363	THR
25	F5	379	VAL
25	F5	444	VAL
25	F5	603	LEU
25	F5	649	GLU
25	F5	654	VAL
25	F5	688	LEU
25	F5	729	LEU
25	F5	745	LEU
26	F6	105	THR
26	F6	144	THR
26	F6	182	LEU
26	F6	184	ASP
26	F6	192	VAL
26	F6	218	SER

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Mol	Chain	Res	Type
26	F6	220	LEU
26	F6	248	VAL
26	F6	263	ILE
26	F6	268	THR
26	F6	323	LEU
26	F6	345	THR
26	F6	354	THR
26	F6	457	VAL
27	F7	59	GLU
27	F7	202	THR
27	F7	204	ILE
27	F7	247	GLU
27	F7	284	LEU
27	F7	299	SER
27	F7	406	VAL
27	F7	497	SER
27	F7	532	THR
27	F7	564	LEU
27	F7	579	LEU
27	F7	604	ASP
27	F7	627	LEU
27	F7	660	VAL
28	F8	16	THR
28	F8	34	ASP
28	F8	170	SER
28	F8	233	VAL
28	F8	267	VAL
28	F8	305	VAL
28	F8	538	VAL
28	F8	541	GLU
28	F8	611	SER
28	F8	612	VAL
28	F8	679	VAL
29	F9	132	GLN
29	F9	192	LEU
29	F9	201	VAL
29	F9	207	VAL
30	FA	46	VAL
30	FA	51	THR
30	FA	87	VAL
30	FA	90	CYS
30	FA	196	VAL

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Mol	Chain	Res	Type
30	FA	231	VAL
30	FA	235	VAL
30	FA	242	SER
30	FA	260	ARG
30	FA	291	VAL
30	FA	335	LEU
30	FA	364	LEU
30	FA	440	ASP
30	FA	447	VAL
30	FA	449	SER
30	FA	503	ILE
30	FA	533	VAL
30	FA	540	VAL
30	FA	546	THR
30	FA	555	LEU
30	FA	572	LEU
30	FA	592	LEU
30	FA	605	GLU
30	FA	607	ILE
31	FB	263	VAL
31	FB	266	VAL
31	FB	275	GLU
31	FB	278	VAL
31	FB	288	ASP
31	FB	335	LEU
31	FB	410	THR
31	FB	413	ASN
31	FB	450	THR
31	FB	459	VAL
31	FB	471	VAL
31	FB	571	VAL
31	FB	582	VAL
31	FC	191	VAL
31	FC	253	LEU
31	FC	259	VAL
31	FC	266	VAL
31	FC	285	CYS
31	FC	366	VAL
31	FC	379	THR
31	FC	486	VAL
31	FC	495	ILE
31	FC	549	THR

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Mol	Chain	Res	Type
31	FC	560	VAL
31	FC	561	GLU
32	FE	241	LEU
32	FE	284	ASP
32	FE	299	ILE
32	FE	301	VAL
32	FE	353	THR
32	FE	355	VAL
32	FE	396	THR
32	FE	438	GLN
33	FJ	88	LEU
33	FJ	114	GLU
33	FJ	115	THR
33	FJ	153	ILE
33	FJ	159	LEU
33	FJ	185	LEU
33	FJ	217	ILE
33	FJ	259	THR
33	FJ	279	LEU
33	FJ	290	LEU
33	FJ	303	MET
34	FM	20	VAL
34	FM	84	ASP
34	FM	114	THR
34	FM	207	LEU
34	FM	241	LEU
34	FM	309	SER
34	FM	321	LEU
34	FM	327	VAL
34	FN	12	VAL
34	FN	20	VAL
34	FN	59	THR
34	FN	79	VAL
34	FN	82	LEU
34	FN	85	VAL
34	FN	114	THR
34	FN	116	ASP
34	FN	140	SER
34	FN	181	GLU
34	FN	255	THR
34	FN	258	VAL
34	FN	286	VAL

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Mol	Chain	Res	Type
35	FO	67	VAL
35	FO	93	ASP
35	FO	142	VAL
35	FO	272	VAL
35	FO	274	VAL
35	FO	293	VAL
35	FO	304	ILE
35	FO	326	THR
36	FP	85	LYS
36	FP	182	VAL
36	FP	298	VAL
36	FP	303	LEU
37	FQ	23	THR
37	FQ	28	LEU
37	FQ	99	LEU
37	FQ	128	VAL
37	FQ	190	VAL
37	FQ	198	THR
37	FQ	214	THR
37	FQ	252	VAL
37	FR	42	LEU
37	FR	83	LEU
37	FR	120	VAL
37	FR	169	GLU
37	FR	190	VAL
37	FR	214	THR
37	FR	215	GLU
37	FR	226	VAL
37	FS	60	THR
37	FS	73	THR
37	FS	98	LEU
37	FS	147	THR
37	FS	190	VAL
37	FS	198	THR
37	FS	214	THR
37	FS	227	THR
37	FS	232	VAL
37	FS	277	THR
37	FS	288	ASN
37	FT	13	VAL
37	FT	24	LEU
37	FT	42	LEU

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Mol	Chain	Res	Type
37	FT	120	VAL
37	FT	129	VAL
37	FT	141	VAL
37	FT	190	VAL
37	FT	192	THR
37	FT	226	VAL
37	FT	227	THR
37	FU	42	LEU
37	FU	59	VAL
37	FU	73	THR
37	FU	128	VAL
37	FU	138	ASP
37	FU	184	GLU
37	FU	190	VAL
37	FU	198	THR
37	FU	207	THR
37	FU	227	THR
37	FU	233	VAL
37	FU	240	LEU
38	FW	82	VAL
38	FW	89	SER
38	FW	169	GLU
38	FW	215	VAL
40	FY	71	VAL
40	FY	88	LEU
40	FY	132	ASP
40	FY	135	GLU
40	FY	177	ILE
41	FZ	46	VAL
41	FZ	155	ILE
42	Fa	7	THR
42	Fa	27	VAL
42	Fa	61	VAL
42	Fa	63	VAL
42	Fa	162	LEU
43	Fb	75	LYS
43	Fb	94	THR
43	Fb	133	LYS
44	Fc	73	LEU
44	Fc	91	VAL
44	Fc	121	LEU
44	Fc	136	ASP

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Mol	Chain	Res	Type
45	Fd	77	VAL
45	Fd	110	VAL
61	CC	18	PHE
61	CC	25	LEU
61	CC	28	ASP
61	CC	60	ILE
62	CI	99	VAL
62	CI	145	VAL
62	CI	184	VAL
62	CI	200	VAL
62	CI	219	LEU
62	CI	399	LEU
63	CJ	154	THR
63	CJ	158	THR
63	CJ	177	LEU
63	CJ	186	VAL
63	CJ	257	VAL
63	CJ	345	VAL
63	CJ	349	THR
63	CJ	368	VAL
63	CJ	375	THR
63	CJ	448	THR
63	CJ	518	VAL
63	CJ	523	VAL
63	CJ	524	THR
63	CJ	554	THR
63	CJ	594	VAL
63	CJ	598	VAL
63	CJ	625	VAL
63	CJ	727	THR
64	CN	17	VAL
64	CN	59	VAL
64	CN	60	VAL
64	CN	101	VAL
64	CN	106	GLU
64	CN	128	LEU
64	CN	132	VAL
64	CN	139	THR
64	CN	140	ASP
65	CS	76	THR
65	CS	105	VAL
66	Cg	19	VAL

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Mol	Chain	Res	Type
66	Cg	65	THR
66	Cg	80	VAL
66	Cg	143	THR
66	Cg	163	VAL
66	Cg	172	VAL
66	Cg	284	VAL
66	Cg	296	HIS
66	Cg	305	LEU
66	Cg	314	SER
66	Cg	325	LEU
66	Cg	336	VAL
67	Ci	22	THR
67	Ci	127	THR
68	Ck	129	THR
68	Ck	136	ASP
68	Ck	152	ASP
68	Ck	156	LEU
68	Ck	170	VAL
68	Ck	171	VAL
68	Ck	228	LEU
68	Ck	262	VAL
68	Ck	316	ASP
68	Ck	318	THR
68	Ck	356	VAL
68	Ck	367	LEU
68	Ck	408	VAL
68	Ck	552	LEU
68	Ck	558	VAL
68	Ck	573	THR
68	Ck	577	THR
68	Ck	620	THR
68	Ck	831	VAL
68	Ck	840	VAL
69	DB	521	LEU
69	DB	522	MET
69	DB	556	VAL
69	DB	560	THR
69	DB	587	VAL
69	DB	594	VAL
69	DB	712	LEU
69	DB	754	VAL
69	DB	756	THR

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Mol	Chain	Res	Type
69	DB	757	VAL
69	DB	777	ILE
69	DB	779	VAL
69	DB	783	VAL
69	DB	795	VAL
69	DB	801	LEU
69	DB	831	ASN
69	DB	918	VAL
69	DB	949	THR
69	DB	966	VAL
69	DB	976	THR
69	DB	989	LYS
69	DB	993	ASP
69	DB	1089	ILE
69	DB	1141	THR
69	DB	1142	VAL
70	DC	58	VAL
70	DC	61	ILE
70	DC	64	VAL
70	DC	88	LEU
70	DC	154	THR
70	DC	167	VAL
70	DC	280	VAL
70	DC	316	THR
70	DC	402	VAL
70	DC	441	VAL
70	DC	580	VAL
70	DC	593	LEU
70	DC	602	LYS
70	DC	620	VAL
70	DC	665	LEU
70	DC	667	VAL
70	DC	695	VAL
70	DC	699	VAL
70	DC	701	SER
70	DC	712	LEU
70	DC	720	VAL
70	DC	768	LEU
70	DC	788	LEU
70	DC	839	VAL
70	DC	863	LEU
70	DC	903	THR

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Mol	Chain	Res	Type
70	DC	941	MET
70	DC	1009	THR
70	DC	1019	THR
70	DC	1027	THR
70	DC	1059	LEU
71	DE	83	LEU
71	DE	99	VAL
71	DE	171	LEU
71	DE	195	ILE
71	DE	217	ASP
71	DE	226	LEU
71	DE	241	THR
71	DE	280	LEU
71	DE	418	LEU
71	DE	430	VAL
71	DE	432	GLU
71	DE	447	ARG
71	DE	451	THR
71	DE	504	ASP
71	DE	505	ILE
71	DE	556	LEU
71	DE	572	VAL
71	DE	583	ARG
71	DE	611	LEU
71	DE	688	THR
71	DE	694	LEU
72	DF	95	ILE
72	DF	103	VAL
72	DF	118	THR
72	DF	147	ASP
72	DF	189	ASP
72	DF	194	THR
72	DF	231	VAL
72	DF	233	VAL
72	DF	409	GLU
72	DF	485	LEU
72	DF	523	LEU
72	DF	533	LEU
72	DF	536	GLU
72	DF	562	GLN
73	DG	122	LEU
73	DG	164	LEU

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Mol	Chain	Res	Type
73	DG	218	THR
73	DG	228	VAL
73	DG	248	LEU
73	DG	255	VAL
73	DG	337	VAL
73	DG	342	ASN
73	DG	407	VAL
73	DG	444	THR
73	DG	464	VAL
73	DG	466	VAL
73	DG	491	THR
73	DG	522	THR
73	DG	553	ASP
73	DG	555	THR
73	DG	558	CYS
73	DG	628	LEU
74	DH	54	GLU
74	DH	107	THR
74	DH	278	VAL
74	DH	384	THR
74	DH	396	VAL
74	DH	408	ASN
74	DH	481	ILE
74	DH	489	LEU
74	DH	500	VAL
74	DH	503	THR
74	DH	521	ILE
74	DH	527	VAL
75	DJ	107	LEU
75	DJ	111	VAL
75	DJ	192	THR
75	DJ	194	LEU
75	DJ	226	VAL
75	DJ	233	VAL
76	DK	48	VAL
76	DK	54	THR
76	DK	58	VAL
76	DK	111	LEU
76	DK	149	ASP
76	DK	151	ASN
76	DK	246	THR
76	DK	260	VAL

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Mol	Chain	Res	Type
76	DK	285	GLU
77	DT	20	VAL
77	DT	97	VAL
77	DT	117	ASP
77	DT	182	VAL
77	DT	209	THR
77	DT	228	LEU
78	DV	24	VAL
78	DV	41	THR
78	DV	45	THR
78	DV	114	VAL
78	DV	121	VAL
79	DW	43	ASP
79	DW	48	TYR
79	DW	56	LEU
79	DW	107	ASP
79	DW	109	GLU
79	DW	116	LEU
79	DW	149	VAL
79	DW	151	THR
79	DW	153	LEU
79	DW	164	ASN
79	DW	169	VAL
81	DY	19	THR
81	DY	119	VAL
82	F1	64	THR
82	F1	65	THR
82	F1	71	THR
82	F1	128	VAL
82	F1	229	LEU
82	F1	283	VAL
82	F1	286	THR
82	F1	374	GLU
82	F1	380	ILE
82	F1	425	THR
82	F1	433	ASP
82	F1	457	LEU
82	F1	503	VAL
82	F1	575	GLU
82	F1	634	LEU
82	F1	636	VAL
82	F1	652	VAL

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Mol	Chain	Res	Type
82	F1	683	GLU
82	F1	690	ASP
82	F1	713	THR
82	F1	715	ILE
82	F1	726	THR
82	F1	731	LEU
82	F1	736	ASP
82	F1	739	THR
82	F1	760	THR
82	F1	769	LEU
82	F1	783	VAL
82	F1	794	THR
82	F1	812	VAL
82	F1	813	MET
82	F1	837	CYS
82	F1	894	VAL
82	F1	895	THR
82	F1	905	THR
82	F1	914	VAL
82	F1	986	GLU
82	F1	1003	THR
82	F1	1026	VAL
82	F1	1031	VAL
83	F4	122	LEU
83	F4	134	ASN
83	F4	135	VAL
83	F4	177	GLU
83	F4	182	SER
83	F4	233	THR
83	F4	264	ILE
83	F4	265	ASP
83	F4	310	LEU
83	F4	341	VAL
83	F4	437	LEU
83	F4	478	LEU
83	F4	523	VAL
83	F4	527	LEU
83	F4	557	LEU
83	F4	566	VAL
83	F4	589	LEU
83	F4	775	THR
83	F4	786	GLU

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Mol	Chain	Res	Type
83	F4	811	ASP
84	FD	35	THR
84	FD	90	THR
84	FD	219	THR
84	FD	254	VAL
84	FD	267	LEU
84	FD	296	VAL
84	FD	419	LEU
85	FF	6	VAL
85	FF	21	LEU
85	FF	117	LEU
85	FF	126	VAL
85	FF	134	THR
85	FF	247	THR
85	FF	282	VAL
85	FF	352	VAL
85	FF	378	VAL
85	FF	456	VAL
86	FG	13	VAL
86	FG	37	VAL
86	FG	142	VAL
86	FG	155	CYS
87	FH	139	ARG
87	FH	230	VAL
87	FH	240	VAL
87	FH	252	VAL
87	FH	256	VAL
87	FH	265	LEU
87	FH	282	VAL
87	FH	339	ASP
87	FH	354	VAL
88	FI	23	THR
88	FI	52	VAL
88	FI	87	SER
88	FI	206	ASP
88	FI	217	LEU
88	FI	231	LEU
88	FI	381	THR
88	FI	417	LEU
88	FI	424	VAL
88	FI	436	ILE
89	FK	141	VAL

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Mol	Chain	Res	Type
89	FK	160	THR
89	FK	326	VAL
89	FK	327	LEU
89	FK	339	VAL
89	FK	340	ASP
90	FL	78	LEU
90	FL	83	THR
90	FL	191	VAL
90	FL	205	LEU
90	FL	206	VAL
90	FL	286	LEU
90	FL	301	LEU
90	FL	310	VAL
91	FV	53	VAL
91	FV	58	VAL
91	FV	108	VAL
91	FV	130	VAL
91	FV	179	THR
91	FV	208	VAL
91	FV	212	THR
91	FV	230	VAL
91	FV	234	LEU
92	Fe	30	LEU
92	Fe	34	MET
92	Fe	67	VAL
92	Fe	68	THR
92	Fe	74	VAL
92	Fe	81	LEU
92	Fe	88	ASP
92	Fe	90	ASP
92	Fe	91	TYR
92	Fe	114	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (475) such sidechains are listed below:

Mol	Chain	Res	Type
1	CE	105	GLN
1	CE	120	ASN
1	CE	317	HIS
1	CE	333	ASN
2	CF	86	HIS
3	CH	29	HIS

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Mol	Chain	Res	Type
3	CH	54	GLN
3	CH	111	GLN
3	CH	112	HIS
3	CH	198	HIS
3	CH	247	HIS
3	CH	282	HIS
4	CK	43	ASN
4	CK	61	ASN
4	CK	244	HIS
4	CK	252	ASN
4	CK	289	GLN
5	CO	92	GLN
5	CO	98	ASN
5	CO	111	GLN
5	CO	135	GLN
5	CO	246	ASN
5	CO	291	ASN
5	CO	297	GLN
5	CO	325	ASN
5	CO	350	HIS
6	CP	19	GLN
6	CP	34	HIS
7	CQ	20	GLN
7	CQ	36	ASN
7	CQ	90	GLN
7	CQ	122	GLN
7	CQ	146	HIS
7	CQ	219	GLN
8	CR	69	HIS
8	CR	151	ASN
8	CR	183	GLN
8	CR	193	ASN
9	Ca	106	ASN
9	Ca	177	GLN
9	Ca	390	GLN
11	Cd	72	ASN
11	Cd	98	GLN
11	Cd	113	GLN
11	Cd	119	HIS
11	Cd	144	ASN
11	Cd	155	GLN
11	Cd	159	HIS

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Mol	Chain	Res	Type
13	Cn	149	GLN
14	Cp	37	GLN
14	Cp	113	GLN
14	Cp	153	HIS
14	Cp	169	ASN
14	Cp	182	GLN
15	DD	64	HIS
15	DD	79	GLN
15	DD	144	ASN
15	DD	156	GLN
15	DD	273	HIS
15	DD	300	GLN
15	DD	353	HIS
15	DD	387	GLN
15	DD	402	GLN
15	DD	453	ASN
15	DD	499	ASN
15	DD	675	ASN
15	DD	732	HIS
15	DD	733	GLN
15	DD	798	HIS
16	DI	18	HIS
16	DI	30	GLN
16	DI	175	GLN
16	DI	370	GLN
16	DI	372	ASN
16	DI	382	ASN
17	DL	99	GLN
17	DL	132	ASN
17	DL	182	GLN
18	DO	148	ASN
18	DO	159	HIS
18	DO	210	ASN
18	DO	251	ASN
19	DP	116	HIS
19	DP	143	ASN
20	DR	62	HIS
20	DR	68	HIS
20	DR	179	HIS
21	DU	19	GLN
23	F2	56	GLN
23	F2	88	ASN

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Mol	Chain	Res	Type
23	F2	100	ASN
23	F2	301	ASN
23	F2	307	ASN
23	F2	337	GLN
23	F2	379	HIS
23	F2	840	ASN
24	F3	265	HIS
24	F3	404	GLN
24	F3	405	ASN
24	F3	432	GLN
24	F3	475	ASN
24	F3	530	HIS
24	F3	534	HIS
24	F3	588	HIS
24	F3	626	HIS
24	F3	650	GLN
24	F3	654	GLN
24	F3	691	GLN
24	F3	747	HIS
24	F3	849	GLN
24	F3	860	ASN
24	F3	905	HIS
24	F3	920	GLN
24	F3	953	GLN
25	F5	320	GLN
25	F5	401	GLN
25	F5	607	HIS
25	F5	609	GLN
26	F6	7	HIS
26	F6	19	HIS
26	F6	193	GLN
26	F6	203	GLN
26	F6	210	GLN
26	F6	319	HIS
26	F6	352	HIS
26	F6	363	ASN
26	F6	385	GLN
27	F7	93	HIS
27	F7	103	HIS
27	F7	109	ASN
27	F7	157	GLN
27	F7	186	HIS

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Mol	Chain	Res	Type
27	F7	232	ASN
27	F7	445	HIS
27	F7	467	ASN
27	F7	625	HIS
28	F8	68	HIS
28	F8	219	HIS
28	F8	228	ASN
28	F8	499	GLN
28	F8	696	GLN
29	F9	51	ASN
29	F9	132	GLN
29	F9	210	GLN
30	FA	83	HIS
30	FA	114	ASN
30	FA	147	ASN
30	FA	179	HIS
30	FA	181	GLN
30	FA	208	HIS
30	FA	326	ASN
30	FA	337	GLN
30	FA	385	HIS
30	FA	609	GLN
31	FB	192	GLN
31	FB	194	GLN
31	FB	248	HIS
31	FB	264	ASN
31	FB	357	GLN
31	FB	392	ASN
31	FB	441	ASN
31	FB	464	HIS
31	FB	528	GLN
31	FB	532	GLN
31	FB	566	HIS
31	FC	177	GLN
31	FC	326	GLN
31	FC	345	ASN
31	FC	474	ASN
31	FC	540	HIS
31	FC	566	HIS
32	FE	119	ASN
32	FE	126	ASN
32	FE	136	GLN

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Mol	Chain	Res	Type
32	FE	165	GLN
32	FE	215	ASN
32	FE	242	ASN
32	FE	293	ASN
32	FE	401	HIS
33	FJ	35	GLN
33	FJ	41	HIS
33	FJ	89	GLN
33	FJ	195	HIS
33	FJ	235	HIS
33	FJ	238	ASN
33	FJ	359	GLN
34	FM	102	ASN
34	FM	125	HIS
34	FM	150	GLN
34	FM	200	ASN
34	FM	243	GLN
34	FM	248	ASN
34	FM	269	HIS
34	FN	17	ASN
34	FN	25	ASN
34	FN	102	ASN
34	FN	312	HIS
34	FN	323	ASN
35	FO	46	HIS
35	FO	48	ASN
35	FO	94	HIS
35	FO	111	HIS
35	FO	135	ASN
35	FO	147	ASN
35	FO	151	GLN
35	FO	157	GLN
35	FO	181	ASN
35	FO	247	GLN
35	FO	265	ASN
35	FO	303	HIS
35	FO	318	GLN
36	FP	15	ASN
36	FP	31	GLN
36	FP	101	GLN
36	FP	116	GLN
36	FP	120	ASN

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Mol	Chain	Res	Type
36	FP	293	HIS
37	FQ	15	ASN
37	FQ	74	ASN
37	FQ	139	GLN
37	FQ	178	GLN
37	FQ	209	GLN
37	FQ	234	HIS
37	FR	75	GLN
37	FR	171	GLN
37	FR	213	HIS
37	FS	15	ASN
37	FS	38	GLN
37	FS	134	HIS
37	FS	178	GLN
37	FS	181	GLN
37	FS	213	HIS
37	FS	234	HIS
37	FS	243	ASN
37	FS	279	HIS
37	FS	288	ASN
37	FT	38	GLN
37	FT	62	HIS
37	FT	74	ASN
37	FT	136	GLN
37	FT	243	ASN
37	FU	29	HIS
37	FU	171	GLN
37	FU	183	ASN
37	FU	213	HIS
38	FW	77	GLN
38	FW	178	HIS
38	FW	191	GLN
38	FW	221	HIS
38	FW	246	HIS
39	FX	38	ASN
39	FX	68	GLN
39	FX	89	ASN
39	FX	154	GLN
40	FY	80	HIS
40	FY	166	HIS
41	FZ	19	ASN
41	FZ	45	ASN

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Mol	Chain	Res	Type
41	FZ	53	HIS
42	Fa	124	ASN
43	Fb	134	GLN
44	Fc	96	HIS
45	Fd	42	HIS
45	Fd	76	HIS
45	Fd	78	GLN
61	CC	31	ASN
61	CC	45	ASN
62	CI	77	ASN
62	CI	120	GLN
62	CI	136	GLN
62	CI	165	ASN
62	CI	174	GLN
62	CI	229	HIS
62	CI	397	ASN
63	CJ	170	HIS
63	CJ	424	HIS
63	CJ	438	ASN
63	CJ	441	HIS
63	CJ	450	HIS
63	CJ	460	HIS
63	CJ	571	GLN
63	CJ	632	GLN
63	CJ	728	GLN
63	CJ	761	GLN
63	CJ	762	GLN
63	CJ	804	ASN
64	CN	99	GLN
64	CN	112	ASN
65	CS	65	ASN
65	CS	88	ASN
65	CS	104	GLN
66	Cg	47	ASN
66	Cg	87	GLN
66	Cg	242	ASN
66	Cg	474	GLN
67	Ci	42	GLN
67	Ci	136	HIS
68	Ck	97	GLN
68	Ck	134	HIS
68	Ck	288	ASN

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Mol	Chain	Res	Type
68	Ck	390	ASN
68	Ck	611	ASN
68	Ck	644	HIS
68	Ck	679	GLN
68	Ck	695	GLN
68	Ck	728	GLN
68	Ck	807	ASN
69	DB	467	ASN
69	DB	476	GLN
69	DB	524	GLN
69	DB	539	GLN
69	DB	643	HIS
69	DB	729	GLN
69	DB	737	HIS
69	DB	748	HIS
69	DB	789	ASN
69	DB	940	GLN
69	DB	1064	GLN
69	DB	1076	ASN
69	DB	1101	GLN
69	DB	1113	GLN
70	DC	81	HIS
70	DC	227	GLN
70	DC	228	GLN
70	DC	303	HIS
70	DC	357	GLN
70	DC	473	GLN
70	DC	539	ASN
70	DC	548	HIS
70	DC	628	ASN
70	DC	657	GLN
70	DC	676	GLN
70	DC	682	ASN
70	DC	691	GLN
70	DC	706	HIS
70	DC	799	ASN
70	DC	821	GLN
70	DC	841	HIS
70	DC	871	GLN
70	DC	920	HIS
70	DC	1026	ASN
70	DC	1062	GLN

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Mol	Chain	Res	Type
71	DE	84	HIS
71	DE	202	HIS
71	DE	315	HIS
71	DE	345	ASN
71	DE	414	ASN
71	DE	596	HIS
71	DE	650	HIS
71	DE	658	ASN
71	DE	703	GLN
72	DF	175	GLN
72	DF	178	ASN
72	DF	272	HIS
72	DF	572	HIS
72	DF	587	GLN
73	DG	26	ASN
73	DG	71	ASN
73	DG	116	GLN
73	DG	143	HIS
73	DG	170	ASN
73	DG	182	HIS
73	DG	191	GLN
73	DG	200	GLN
73	DG	230	ASN
73	DG	405	GLN
73	DG	475	GLN
73	DG	476	GLN
73	DG	477	GLN
73	DG	554	HIS
73	DG	557	GLN
74	DH	146	GLN
74	DH	160	ASN
74	DH	191	HIS
74	DH	356	GLN
74	DH	524	HIS
74	DH	526	ASN
75	DJ	29	HIS
75	DJ	42	HIS
75	DJ	174	ASN
75	DJ	190	ASN
75	DJ	301	HIS
76	DK	132	HIS
76	DK	163	HIS

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Mol	Chain	Res	Type
76	DK	171	GLN
77	DT	23	GLN
77	DT	56	GLN
77	DT	72	HIS
77	DT	91	GLN
77	DT	99	HIS
77	DT	139	HIS
77	DT	192	GLN
77	DT	219	GLN
78	DV	40	HIS
78	DV	51	ASN
78	DV	71	GLN
78	DV	145	ASN
78	DV	170	GLN
79	DW	69	GLN
79	DW	71	GLN
79	DW	93	HIS
79	DW	154	HIS
81	DY	41	GLN
81	DY	99	GLN
81	DY	106	GLN
82	F1	74	GLN
82	F1	239	ASN
82	F1	331	HIS
82	F1	332	GLN
82	F1	344	GLN
82	F1	462	ASN
82	F1	517	GLN
82	F1	702	HIS
82	F1	762	HIS
82	F1	763	ASN
82	F1	776	HIS
82	F1	1006	HIS
82	F1	1009	ASN
82	F1	1025	GLN
83	F4	75	GLN
83	F4	250	GLN
83	F4	266	ASN
83	F4	320	HIS
83	F4	348	ASN
83	F4	470	HIS
83	F4	530	ASN

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Mol	Chain	Res	Type
83	F4	625	ASN
83	F4	627	GLN
83	F4	686	HIS
84	FD	46	HIS
84	FD	65	ASN
84	FD	192	GLN
84	FD	195	GLN
84	FD	240	GLN
84	FD	382	GLN
85	FF	18	HIS
85	FF	122	GLN
85	FF	335	GLN
85	FF	370	HIS
86	FG	64	HIS
86	FG	133	GLN
87	FH	134	ASN
87	FH	315	ASN
87	FH	352	GLN
87	FH	436	GLN
87	FH	448	HIS
87	FH	451	ASN
88	FI	15	GLN
88	FI	50	GLN
88	FI	65	HIS
88	FI	97	HIS
88	FI	120	GLN
88	FI	153	GLN
88	FI	162	ASN
88	FI	219	ASN
88	FI	228	GLN
88	FI	387	GLN
89	FK	169	GLN
89	FK	195	GLN
89	FK	312	ASN
89	FK	318	ASN
90	FL	69	ASN
90	FL	70	ASN
90	FL	80	ASN
90	FL	137	GLN
90	FL	224	ASN
90	FL	263	HIS
90	FL	335	GLN

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Mol	Chain	Res	Type
90	FL	349	ASN
91	FV	76	GLN
91	FV	186	GLN
91	FV	194	HIS
91	FV	207	HIS
92	Fe	42	ASN
92	Fe	101	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
60	CA	606/620 (97%)	241 (39%)	7 (1%)

All (241) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
60	CA	3	A
60	CA	4	A
60	CA	5	U
60	CA	6	U
60	CA	7	A
60	CA	10	G
60	CA	17	G
60	CA	21	G
60	CA	22	U
60	CA	26	C
60	CA	27	A
60	CA	29	A
60	CA	30	U
60	CA	35	U
60	CA	36	U
60	CA	37	U
60	CA	39	U
60	CA	44	U
60	CA	46	U
60	CA	49	U
60	CA	50	A
60	CA	53	A
60	CA	58	A
60	CA	60	A
60	CA	67	U

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Mol	Chain	Res	Type
60	CA	72	U
60	CA	73	U
60	CA	74	G
60	CA	78	G
60	CA	79	A
60	CA	80	U
60	CA	81	U
60	CA	82	U
60	CA	84	U
60	CA	85	U
60	CA	86	G
60	CA	87	U
60	CA	88	A
60	CA	90	A
60	CA	95	U
60	CA	97	U
60	CA	98	A
60	CA	100	G
60	CA	102	A
60	CA	105	G
60	CA	106	U
60	CA	111	A
60	CA	112	A
60	CA	115	A
60	CA	127	G
60	CA	135	U
60	CA	136	G
60	CA	137	U
60	CA	138	U
60	CA	139	U
60	CA	140	U
60	CA	152	U
60	CA	153	A
60	CA	154	G
60	CA	155	A
60	CA	157	G
60	CA	159	G
60	CA	160	U
60	CA	161	G
60	CA	167	A
60	CA	169	A
60	CA	170	U

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Mol	Chain	Res	Type
60	CA	172	A
60	CA	173	A
60	CA	174	A
60	CA	178	A
60	CA	179	U
60	CA	181	A
60	CA	182	U
60	CA	185	A
60	CA	190	U
60	CA	191	A
60	CA	192	U
60	CA	195	A
60	CA	196	U
60	CA	197	A
60	CA	198	A
60	CA	205	A
60	CA	207	A
60	CA	208	U
60	CA	214	U
60	CA	217	U
60	CA	218	A
60	CA	219	G
60	CA	220	U
60	CA	221	C
60	CA	223	G
60	CA	227	U
60	CA	228	G
60	CA	232	G
60	CA	236	G
60	CA	238	C
60	CA	239	G
60	CA	240	U
60	CA	241	U
60	CA	242	G
60	CA	247	A
60	CA	249	U
60	CA	253	U
60	CA	256	G
60	CA	257	C
60	CA	258	U
60	CA	259	U
60	CA	260	U

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Mol	Chain	Res	Type
60	CA	261	U
60	CA	262	A
60	CA	267	U
60	CA	268	U
60	CA	269	A
60	CA	270	U
60	CA	271	A
60	CA	272	C
60	CA	278	U
60	CA	281	U
60	CA	282	A
60	CA	283	U
60	CA	284	U
60	CA	285	A
60	CA	286	A
60	CA	291	U
60	CA	292	U
60	CA	293	A
60	CA	296	U
60	CA	297	G
60	CA	298	C
60	CA	299	U
60	CA	304	U
60	CA	306	A
60	CA	318	A
60	CA	320	A
60	CA	321	A
60	CA	322	A
60	CA	323	U
60	CA	324	A
60	CA	327	U
60	CA	330	U
60	CA	337	U
60	CA	338	U
60	CA	339	U
60	CA	340	U
60	CA	341	A
60	CA	347	C
60	CA	350	U
60	CA	351	A
60	CA	352	G
60	CA	353	G

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Mol	Chain	Res	Type
60	CA	355	A
60	CA	357	A
60	CA	359	G
60	CA	366	U
60	CA	367	A
60	CA	368	A
60	CA	370	A
60	CA	375	A
60	CA	377	U
60	CA	378	A
60	CA	381	U
60	CA	388	U
60	CA	389	A
60	CA	390	U
60	CA	397	U
60	CA	398	U
60	CA	399	A
60	CA	400	U
60	CA	413	A
60	CA	417	A
60	CA	418	A
60	CA	421	G
60	CA	422	G
60	CA	425	A
60	CA	429	U
60	CA	430	U
60	CA	432	G
60	CA	433	U
60	CA	435	G
60	CA	438	U
60	CA	439	U
60	CA	443	U
60	CA	444	A
60	CA	445	C
60	CA	446	C
60	CA	447	A
60	CA	448	U
60	CA	454	G
60	CA	455	G
60	CA	459	A
60	CA	460	U
60	CA	461	A

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Mol	Chain	Res	Type
60	CA	470	G
60	CA	471	U
60	CA	473	U
60	CA	480	C
60	CA	481	A
60	CA	482	U
60	CA	484	A
60	CA	489	A
60	CA	498	U
60	CA	503	A
60	CA	509	U
60	CA	513	U
60	CA	515	U
60	CA	516	G
60	CA	520	A
60	CA	525	A
60	CA	527	A
60	CA	528	U
60	CA	529	A
60	CA	530	A
60	CA	532	A
60	CA	533	A
60	CA	534	A
60	CA	538	A
60	CA	539	A
60	CA	540	A
60	CA	557	C
60	CA	558	A
60	CA	559	A
60	CA	560	U
60	CA	565	A
60	CA	576	A
60	CA	577	A
60	CA	579	G
60	CA	581	G
60	CA	582	C
60	CA	585	U
60	CA	587	A
60	CA	590	A
60	CA	599	A
60	CA	600	U
60	CA	601	A

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Mol	Chain	Res	Type
60	CA	602	A
60	CA	603	A
60	CA	613	U
60	CA	616	U
60	CA	617	U
60	CA	619	U

All (7) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
60	CA	78	G
60	CA	160	U
60	CA	173	A
60	CA	285	A
60	CA	296	U
60	CA	349	U
60	CA	483	A

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
60	UBD	CA	620	-	23,25,26	0.63	0	31,37,40	0.62	1 (3%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	UBD	CA	620	-	-	2/12/30/31	0/2/2/2

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	CA	620	UBD	O4P-P2-O5P	2.35	119.86	110.68

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	CA	620	UBD	O4'-C4'-C5'-O5'
60	CA	620	UBD	C3'-O3'-P2-O4P

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 11 are monoatomic - leaving 5 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
106	PM8	Fc	201	44	25,31,31	0.76	1 (4%)	30,38,38	0.91	1 (3%)
109	SAH	F1	1102	-	24,28,28	1.21	3 (12%)	25,40,40	1.73	5 (20%)
109	SAH	FF	501	-	24,28,28	1.20	3 (12%)	25,40,40	1.78	5 (20%)
108	GTP	Cg	501	104	26,34,34	1.13	2 (7%)	32,54,54	1.60	7 (21%)
105	PO4	FW	301	-	4,4,4	0.99	0	6,6,6	0.45	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
109	SAH	F1	1102	-	-	3/11/31/31	0/3/3/3
108	GTP	Cg	501	104	-	5/18/38/38	0/3/3/3
109	SAH	FF	501	-	-	1/11/31/31	0/3/3/3
106	PM8	Fc	201	44	-	2/36/38/38	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
108	Cg	501	GTP	C5-C6	-4.12	1.39	1.47
109	F1	1102	SAH	C2-N3	3.91	1.38	1.32
109	FF	501	SAH	C2-N3	3.91	1.38	1.32
106	Fc	201	PM8	C2-C1	2.58	1.53	1.50
109	F1	1102	SAH	C2-N1	2.43	1.38	1.33
109	FF	501	SAH	C2-N1	2.39	1.38	1.33
109	F1	1102	SAH	OXT-C	-2.21	1.23	1.30
109	FF	501	SAH	OXT-C	-2.12	1.23	1.30
108	Cg	501	GTP	C2-N3	2.02	1.38	1.33

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
109	F1	1102	SAH	N3-C2-N1	-5.48	120.11	128.68
109	FF	501	SAH	N3-C2-N1	-5.47	120.13	128.68
109	FF	501	SAH	C5'-SD-CG	-4.45	88.92	102.27
109	F1	1102	SAH	C5'-SD-CG	-3.99	90.28	102.27
108	Cg	501	GTP	PA-O3A-PB	-3.95	119.28	132.83
108	Cg	501	GTP	C3'-C2'-C1'	3.47	106.20	100.98
108	Cg	501	GTP	C5-C6-N1	3.18	119.56	113.95
108	Cg	501	GTP	PB-O3B-PG	-3.02	122.45	132.83
108	Cg	501	GTP	C8-N7-C5	2.86	108.44	102.99
108	Cg	501	GTP	C2-N1-C6	-2.79	119.96	125.10
109	F1	1102	SAH	C3'-C2'-C1'	2.69	105.02	100.98
109	FF	501	SAH	OXT-C-O	-2.68	117.99	124.09
109	F1	1102	SAH	OXT-C-O	-2.66	118.06	124.09
109	FF	501	SAH	C3'-C2'-C1'	2.63	104.93	100.98
106	Fc	201	PM8	O1-C1-C2	-2.25	121.33	123.99
109	FF	501	SAH	OXT-C-CA	2.24	121.02	113.38
109	F1	1102	SAH	OXT-C-CA	2.20	120.88	113.38
108	Cg	501	GTP	O6-C6-C5	-2.18	120.12	124.37

There are no chirality outliers.

All (11) torsion outliers are listed below:

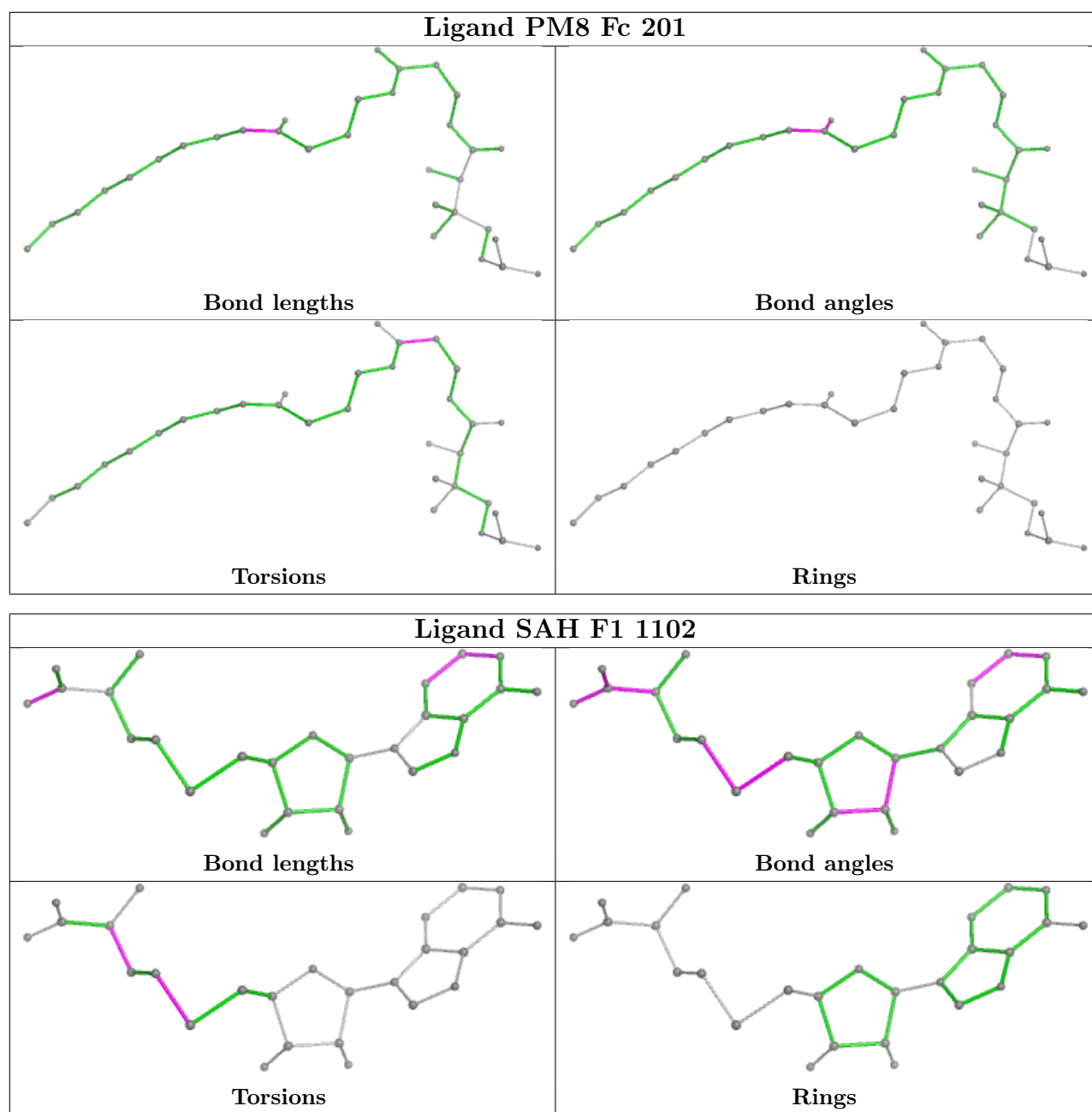
Mol	Chain	Res	Type	Atoms
108	Cg	501	GTP	C5'-O5'-PA-O3A
108	Cg	501	GTP	C5'-O5'-PA-O1A
108	Cg	501	GTP	C5'-O5'-PA-O2A
108	Cg	501	GTP	C3'-C4'-C5'-O5'
106	Fc	201	PM8	C37-C38-C39-O40
108	Cg	501	GTP	O4'-C4'-C5'-O5'
109	F1	1102	SAH	C-CA-CB-CG
106	Fc	201	PM8	C37-C38-C39-N41
109	F1	1102	SAH	CB-CG-SD-C5'
109	FF	501	SAH	CB-CG-SD-C5'
109	F1	1102	SAH	N-CA-CB-CG

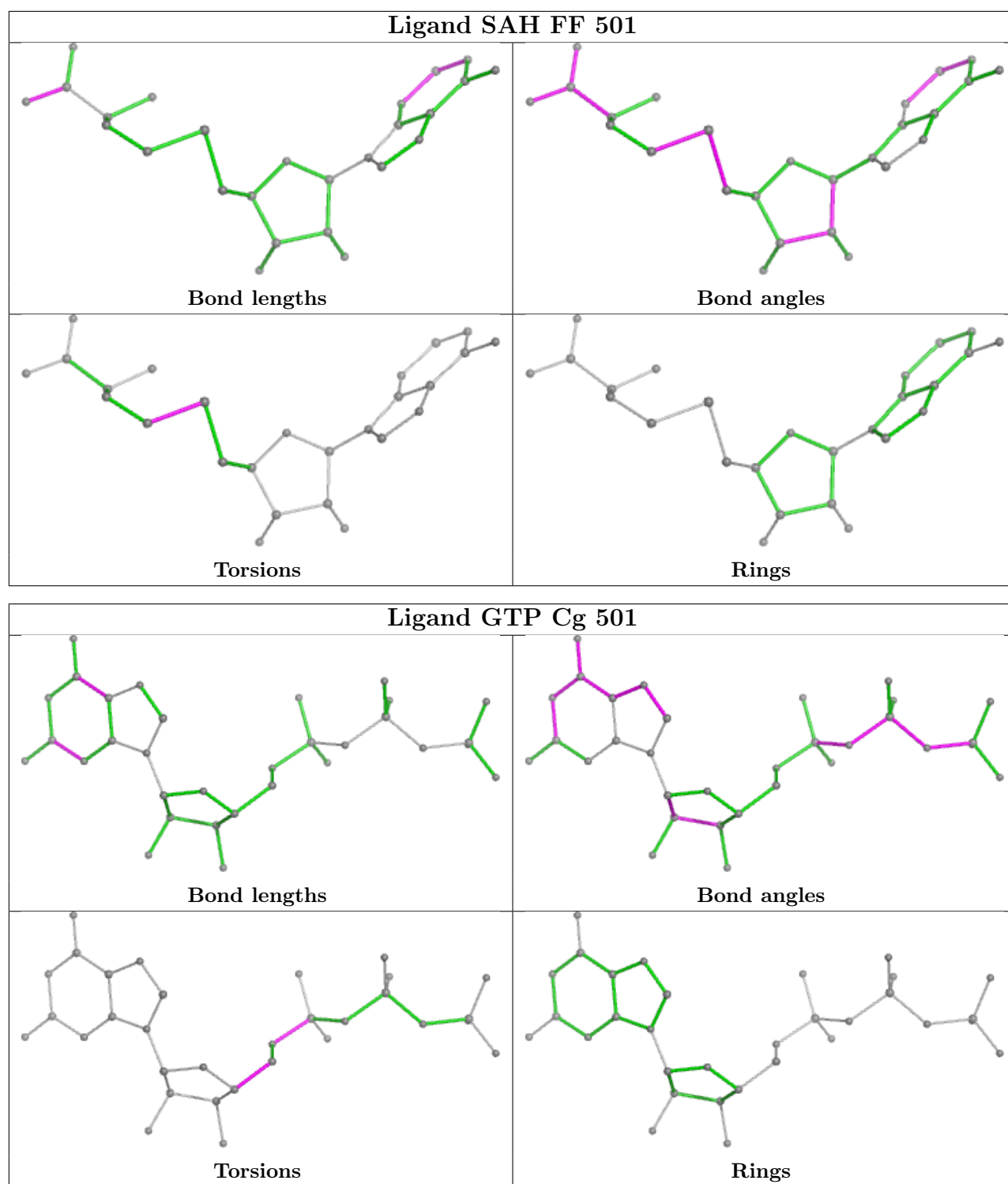
There are no ring outliers.

5 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
106	Fc	201	PM8	1	0
109	F1	1102	SAH	2	0
109	FF	501	SAH	2	0
108	Cg	501	GTP	3	0
105	FW	301	PO4	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 than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
59	UY	13
99	Uh	11
98	Ug	10
103	Ux	3
47	UB	2
60	CA	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	UY	347:UNK	C	348:UNK	N	76.88
1	UY	439:UNK	C	440:UNK	N	65.92
1	Uh	219:UNK	C	267:UNK	N	52.49
1	Uh	13:UNK	C	14:UNK	N	49.20
1	UB	10:UNK	C	101:UNK	N	45.40
1	Uh	88:UNK	C	98:UNK	N	42.20
1	UY	338:UNK	C	339:UNK	N	40.51
1	Uh	124:UNK	C	125:UNK	N	38.95
1	Uh	199:UNK	C	200:UNK	N	38.08
1	Ug	129:UNK	C	130:UNK	N	36.01
1	Uh	145:UNK	C	184:UNK	N	35.40
1	UY	411:UNK	C	412:UNK	N	35.07
1	Ug	102:UNK	C	103:UNK	N	29.64
1	UB	110:UNK	C	201:UNK	N	25.53
1	Uh	39:UNK	C	40:UNK	N	25.18
1	Ug	83:UNK	C	84:UNK	N	24.10
1	Uh	68:UNK	C	69:UNK	N	21.48
1	UY	455:UNK	C	456:UNK	N	20.24
1	Uh	134:UNK	C	135:UNK	N	17.12
1	Uh	280:UNK	C	281:UNK	N	15.79
1	UY	394:UNK	C	395:UNK	N	15.52
1	Ux	15:UNK	C	28:UNK	N	14.65
1	Ug	52:UNK	C	53:UNK	N	12.65
1	Ug	70:UNK	C	71:UNK	N	12.57
1	Ux	66:UNK	C	74:UNK	N	12.41
1	Ux	47:UNK	C	49:UNK	N	12.23
1	UY	430:UNK	C	431:UNK	N	11.78
1	Ug	39:UNK	C	40:UNK	N	11.09
1	Ug	26:UNK	C	27:UNK	N	8.34
1	Uh	323:UNK	C	324:UNK	N	7.01

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	UY	245:UNK	C	246:UNK	N	6.90
1	Ug	46:UNK	C	47:UNK	N	6.90
1	UY	403:UNK	C	405:UNK	N	6.75
1	UY	125:UNK	C	126:UNK	N	5.67
1	UY	117:UNK	C	118:UNK	N	5.53
1	Ug	33:UNK	C	34:UNK	N	4.79
1	Ug	145:UNK	C	146:UNK	N	4.56
1	UY	426:UNK	C	427:UNK	N	4.10
1	UY	56:UNK	C	57:UNK	N	3.43
1	CA	529:A	O3'	530:A	P	3.34

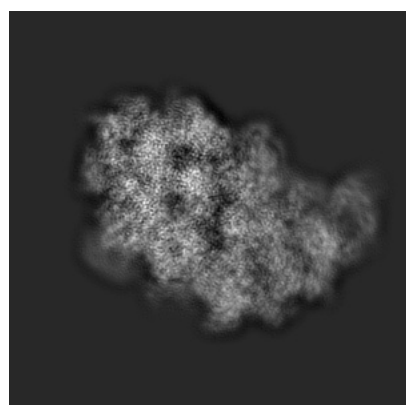
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-10180. These allow visual inspection of the internal detail of the map and identification of artifacts.

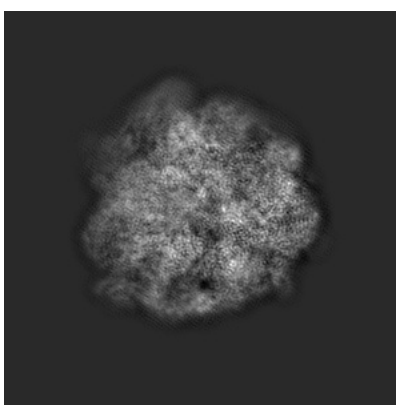
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

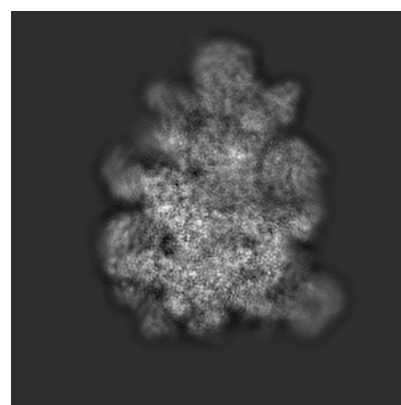
6.1.1 Primary map



X



Y

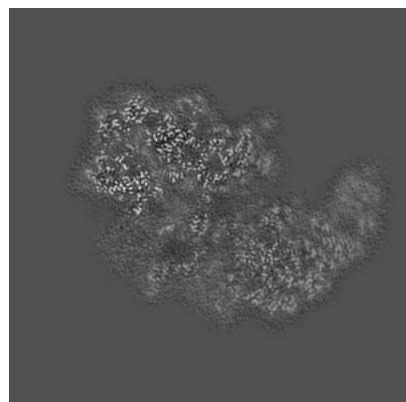


Z

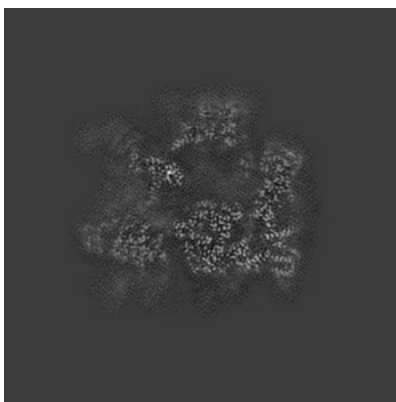
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

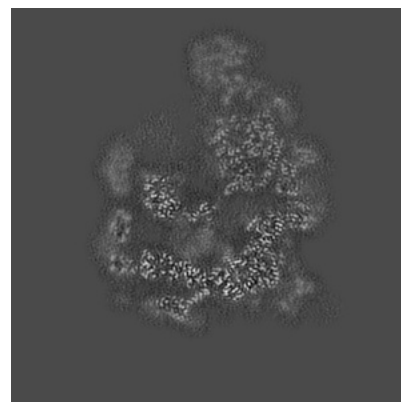
6.2.1 Primary map



X Index: 160



Y Index: 160

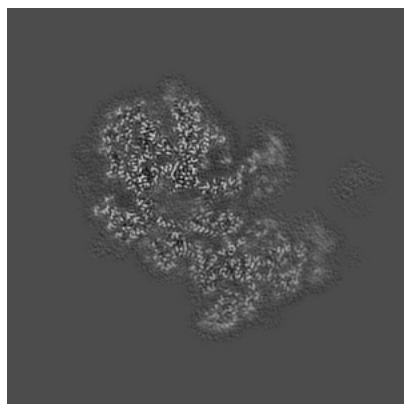


Z Index: 160

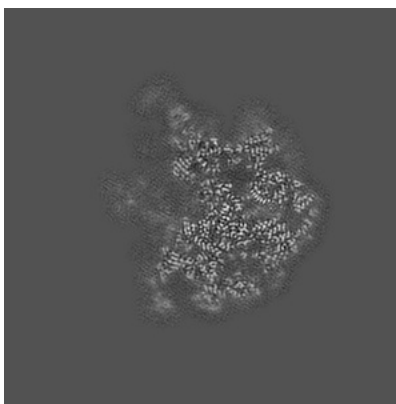
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

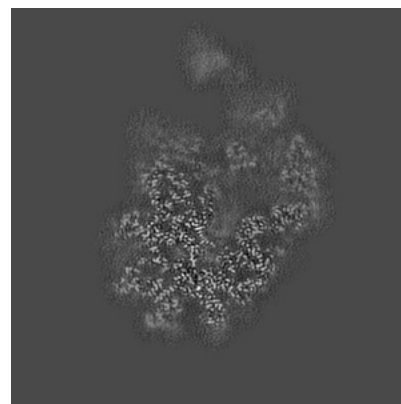
6.3.1 Primary map



X Index: 137



Y Index: 109

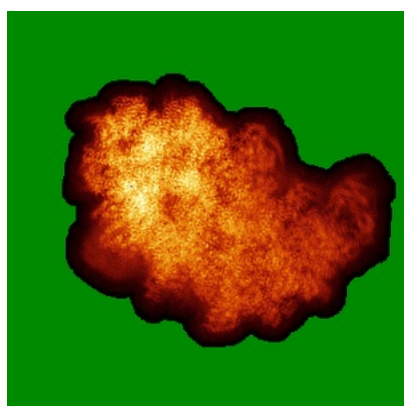


Z Index: 181

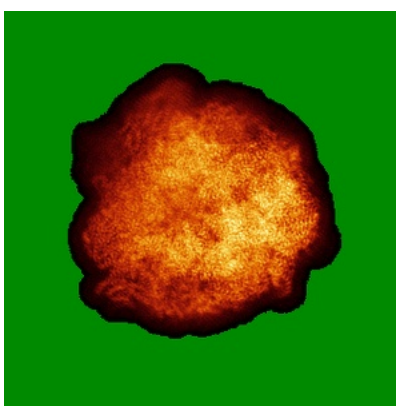
The images above show the largest variance slices of the map in three orthogonal directions.

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

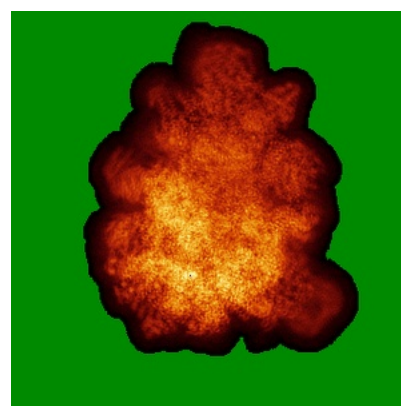
6.4.1 Primary map



X



Y

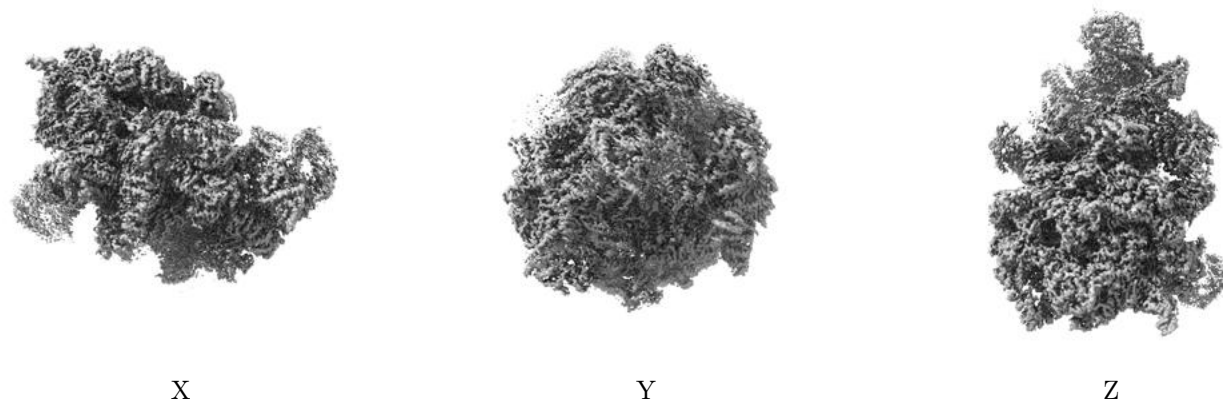


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.09. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

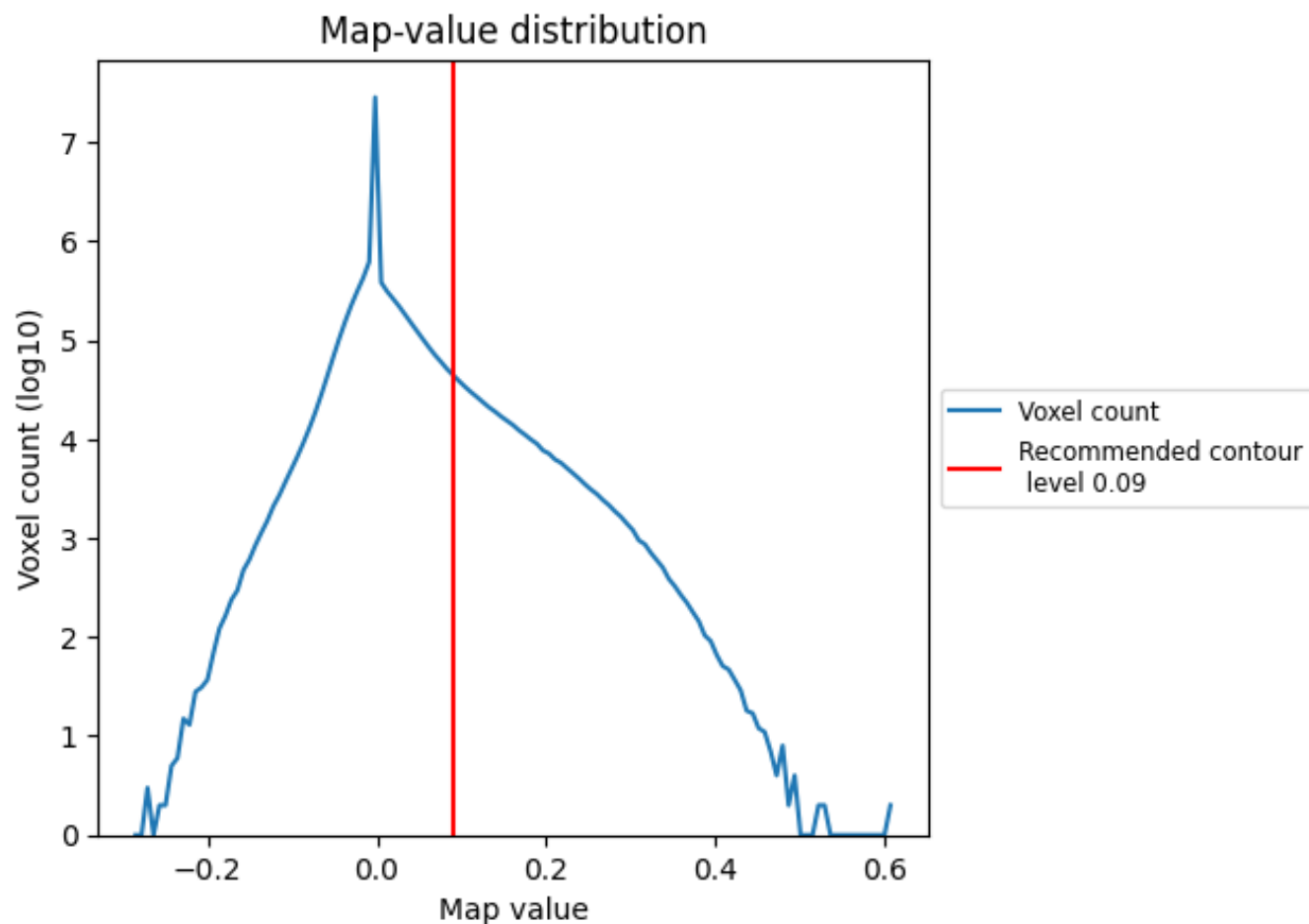
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

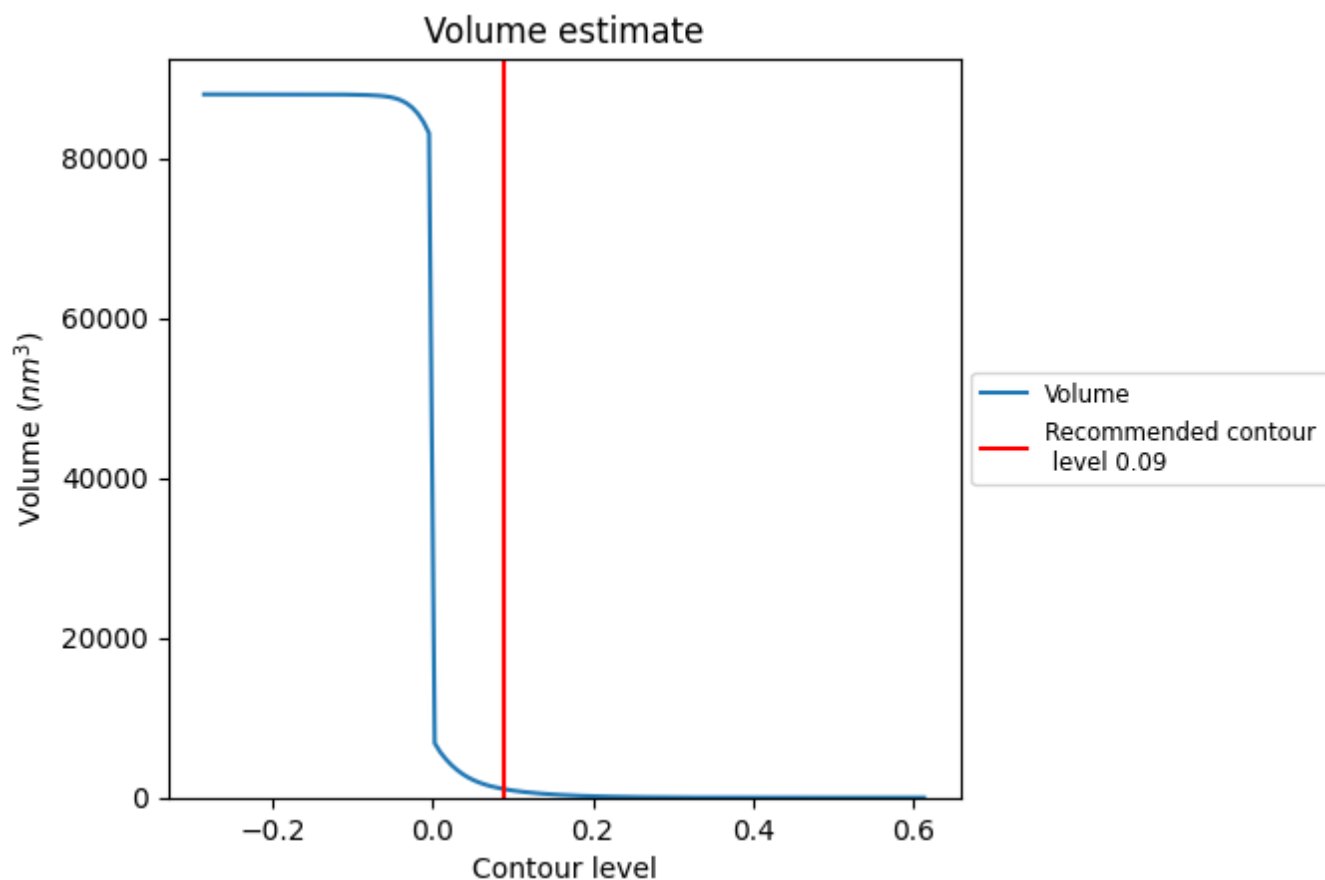
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

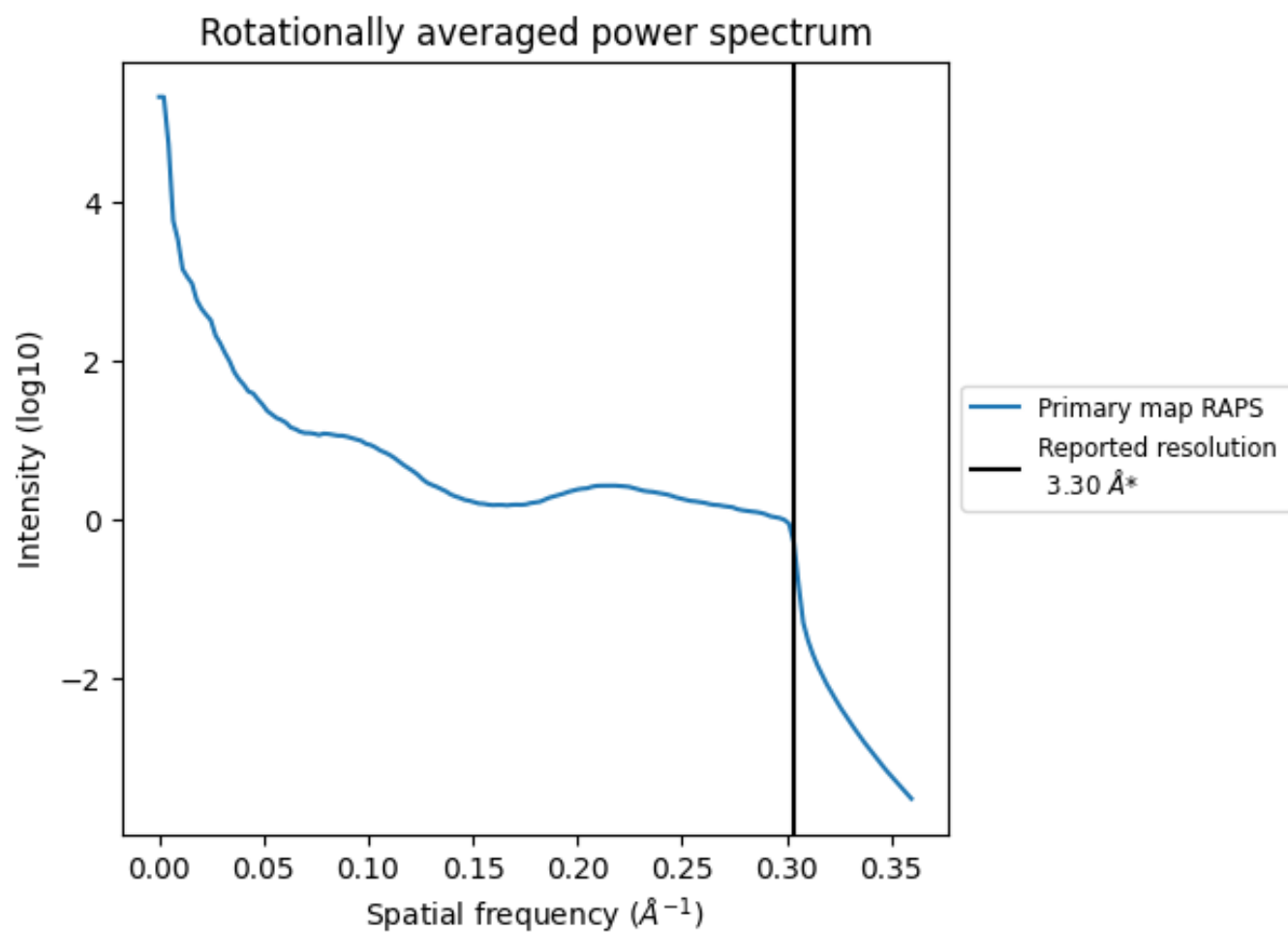
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1051 nm³; this corresponds to an approximate mass of 949 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

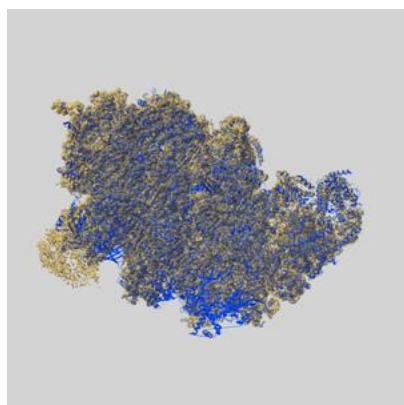
8 Fourier-Shell correlation

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

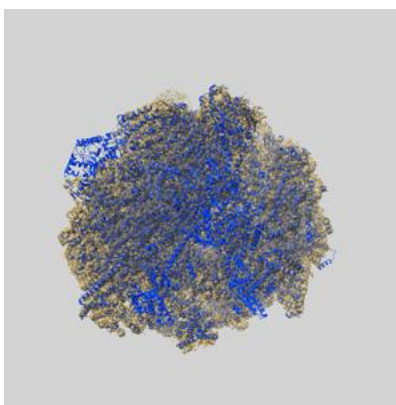
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-10180 and PDB model 6SGB. Per-residue inclusion information can be found in section 3 on page 29.

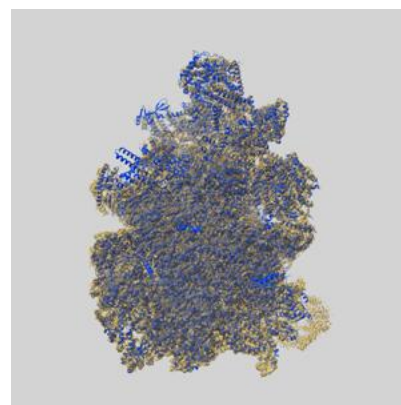
9.1 Map-model overlay [i](#)



X



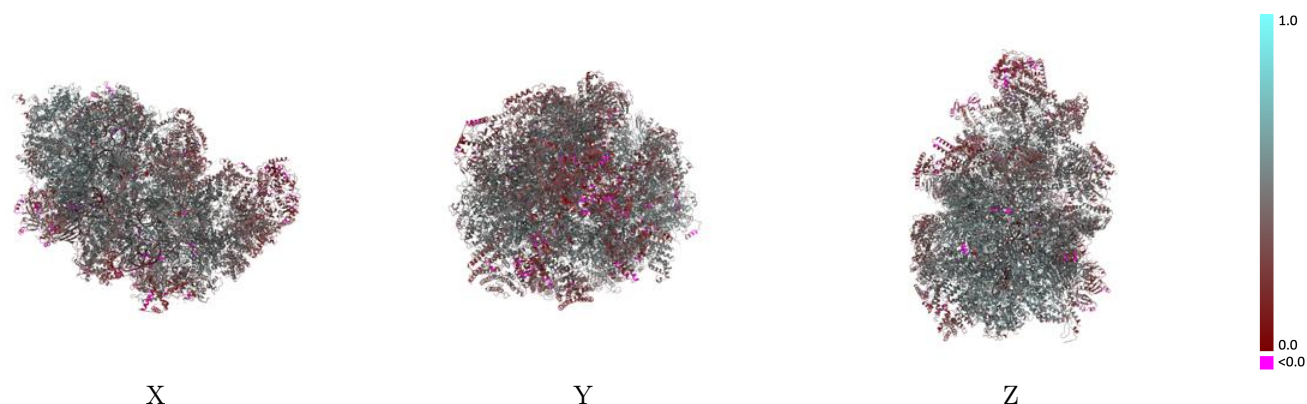
Y



Z

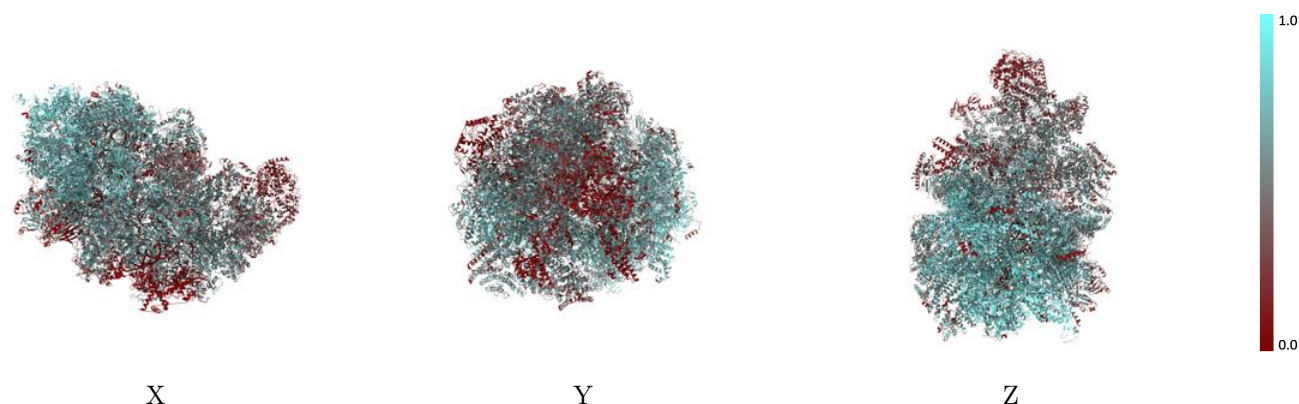
The images above show the 3D surface view of the map at the recommended contour level 0.09 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



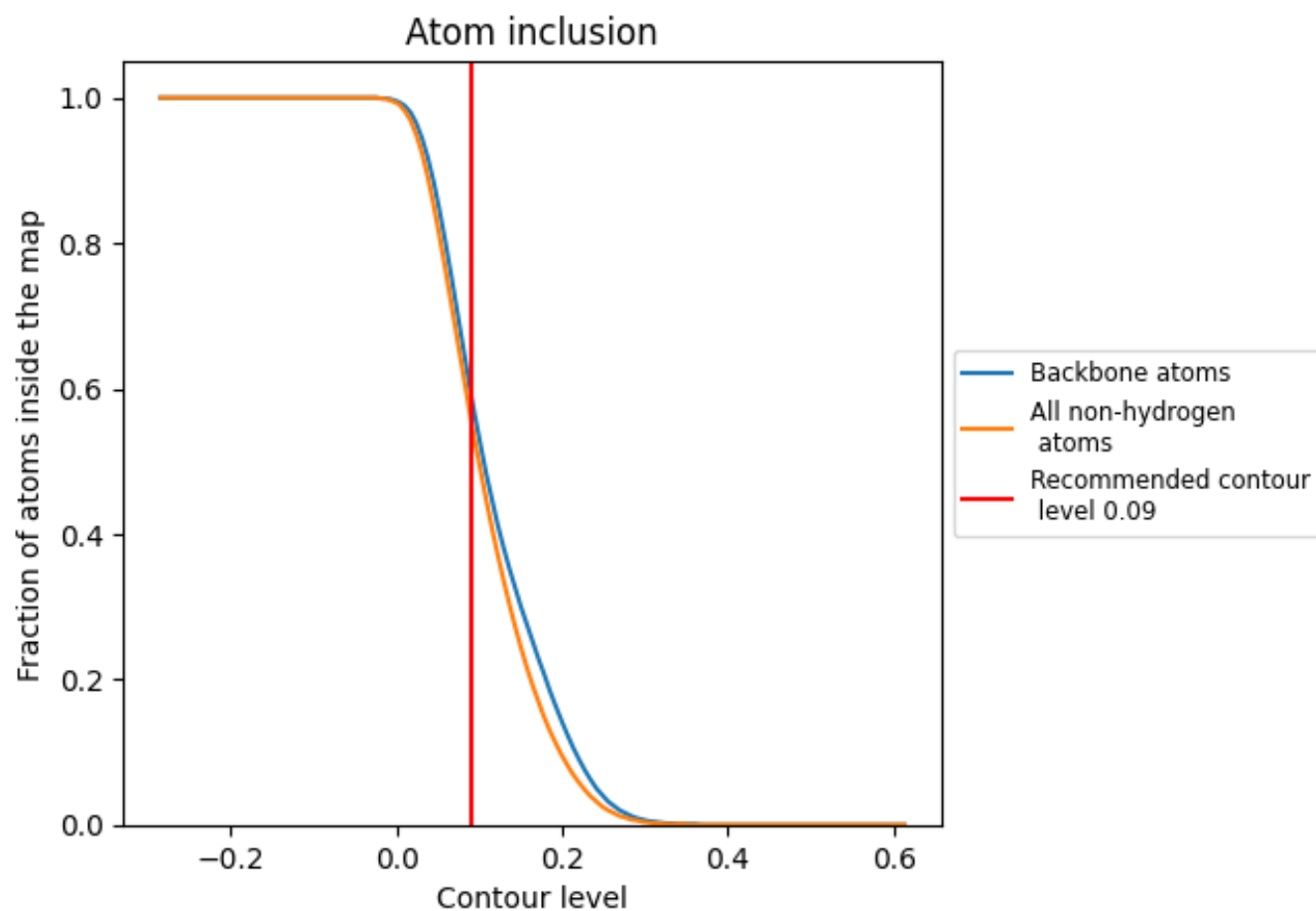
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.09).

9.4 Atom inclusion [i](#)



At the recommended contour level, 59% of all backbone atoms, 56% 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 (0.09) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5570	 0.4390
CA	 0.5680	 0.3950
CC	 0.4030	 0.4580
CE	 0.6660	 0.5010
CF	 0.7270	 0.5020
CH	 0.7430	 0.5320
CI	 0.6270	 0.4750
CJ	 0.5470	 0.4650
CK	 0.5810	 0.4280
CN	 0.2610	 0.4540
CO	 0.7470	 0.5240
CP	 0.7950	 0.5350
CQ	 0.7050	 0.5330
CR	 0.5780	 0.4330
CS	 0.0090	 0.3310
Ca	 0.6690	 0.4820
Cb	 0.5570	 0.4100
Cd	 0.7920	 0.5140
Cg	 0.6230	 0.4630
Ci	 0.5060	 0.4880
Cj	 0.8280	 0.5330
Ck	 0.4810	 0.3990
Cn	 0.3710	 0.4230
Cp	 0.7320	 0.5110
DB	 0.3630	 0.3750
DC	 0.3520	 0.3270
DD	 0.7860	 0.5270
DE	 0.2110	 0.2450
DF	 0.5020	 0.4460
DG	 0.5740	 0.4040
DH	 0.5160	 0.4690
DI	 0.7380	 0.4930
DJ	 0.5580	 0.4450
DK	 0.4150	 0.4110
DL	 0.6590	 0.5020



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Chain	Atom inclusion	Q-score
DO	 0.6010	 0.4040
DP	 0.8120	 0.4880
DR	 0.8120	 0.5200
DT	 0.5780	 0.4970
DU	 0.6660	 0.4940
DV	 0.5120	 0.4570
DW	 0.5020	 0.4300
DX	 0.1750	 0.3900
DY	 0.4940	 0.4530
DZ	 0.5020	 0.4430
F1	 0.5610	 0.4700
F2	 0.7170	 0.4830
F3	 0.6660	 0.4390
F4	 0.4000	 0.3780
F5	 0.3750	 0.3270
F6	 0.5400	 0.3490
F7	 0.7250	 0.4830
F8	 0.6430	 0.4750
F9	 0.6180	 0.4850
FA	 0.4950	 0.4040
FB	 0.7010	 0.5080
FC	 0.6290	 0.4310
FD	 0.5060	 0.4300
FE	 0.6910	 0.5100
FF	 0.5670	 0.4750
FG	 0.6250	 0.4950
FH	 0.5390	 0.4560
FI	 0.5050	 0.4660
FJ	 0.5850	 0.4700
FK	 0.5560	 0.4710
FL	 0.6010	 0.5180
FM	 0.6810	 0.4770
FN	 0.5260	 0.3790
FO	 0.7810	 0.5300
FP	 0.7500	 0.4830
FQ	 0.6330	 0.4440
FR	 0.5860	 0.4360
FS	 0.5320	 0.4180
FT	 0.6010	 0.4180
FU	 0.5180	 0.3810
FV	 0.5880	 0.4660
FW	 0.7340	 0.5020

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Chain	Atom inclusion	Q-score
FX	 0.7800	 0.4820
FY	 0.4670	 0.3860
FZ	 0.1280	 0.3860
Fa	 0.6370	 0.5130
Fb	 0.5360	 0.3440
Fc	 0.5160	 0.3280
Fd	 0.7300	 0.4900
Fe	 0.4810	 0.4460
UA	 0.3180	 0.2380
UB	 0.2040	 0.3200
UC	 0.7330	 0.4270
UD	 0.8520	 0.5070
UE	 0.2930	 0.2610
UF	 0.5610	 0.4540
UG	 0.7260	 0.4700
UH	 0.4000	 0.4990
UI	 0.6250	 0.4210
UJ	 0.3540	 0.3170
UK	 0.2430	 0.3550
UL	 0.5230	 0.3640
UM	 0.5740	 0.4650
UN	 0.5210	 0.3820
UO	 0.4440	 0.2880
UP	 0.2890	 0.2850
UQ	 0.4440	 0.3130
UY	 0.0030	 0.2760
Ua	 0.4430	 0.4270
Ub	 0.2540	 0.4040
Uc	 0.2780	 0.4630
Ud	 0.2820	 0.3520
Ue	 0.2760	 0.3380
Uf	 0.4810	 0.5010
Ug	 0.3720	 0.2800
Uh	 0.0200	 0.2690
Ui	 0.2290	 0.2920
Uj	 0.2980	 0.3120
Uk	 0.4010	 0.4570
Ul	 0.1790	 0.2220
Um	 0.3940	 0.4370
Ux	 0.0110	 0.2830