



Full wwPDB EM Validation Report ⓘ

Nov 23, 2022 – 12:06 PM JST

PDB ID : 7FJ3
EMDB ID : EMD-31612
Title : Cryo-EM structure of PRV A-capid
Authors : Zheng, Q.; Li, S.; Zha, Z.; Sun, H.
Deposited on : 2021-08-02
Resolution : 4.53 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

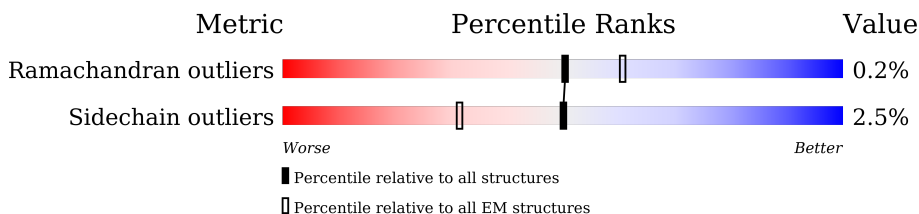
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

1 Overall quality at a glance

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

The reported resolution of this entry is 4.53 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	0	1330	
1	A	1330	
1	S	1330	
1	U	1330	
1	a	1330	
1	e	1330	
1	f	1330	
1	g	1330	
1	l	1330	

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Mol	Chain	Length	Quality of chain
1	m	1330	50% 99%
1	n	1330	50% 98%
1	p	1330	53% 98%
1	q	1330	52% 99%
1	u	1330	52% 98%
1	w	1330	52% 98%
1	y	1330	52% 98%
2	1	296	54% 94% 6%
2	2	296	54% 93% 6%
2	3	296	53% 94% 6%
2	j	296	79% 90% 10%
2	k	296	80% 94% 6%
2	o	296	56% 100%
2	s	296	50% 94% 6%
2	v	296	55% 97% ..
2	x	296	60% 100%
2	z	296	62% 100%
3	B	368	94%
3	C	368	94%
3	D	368	94%
3	T	368	51% 75% 14% 11%
3	W	368	94%
3	d	368	96%
3	h	368	48% 75% 14% 11%
3	i	368	76% 75% 14% 11%

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Mol	Chain	Length	Quality of chain
3	r	368	46% 75% 13% 11%
3	t	368	49% 75% 14% 11%
4	E	103	56% 74% 15% 12%
4	F	103	49% 74% 15% 12%
4	G	103	48% 74% 15% 12%
4	H	103	40% 74% 15% 12%
4	I	103	50% 74% 15% 12%
4	J	103	59% 74% 15% 12%
4	K	103	53% 74% 15% 12%
4	L	103	49% 74% 15% 12%
4	M	103	45% 74% 15% 12%
4	N	103	51% 74% 15% 12%
4	O	103	37% 74% 15% 12%
4	P	103	47% 74% 15% 12%
4	Q	103	50% 74% 15% 12%
4	R	103	53% 74% 15% 12%
4	V	103	59% 74% 15% 12%

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 205888 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 Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	1311	10129	6403	1824	1841	61	0	0
1	A	1308	10112	6393	1820	1837	62	0	0
1	S	1289	9975	6307	1797	1812	59	0	0
1	U	1311	10129	6403	1824	1841	61	0	0
1	a	1289	9974	6311	1797	1805	61	0	0
1	e	1126	8722	5528	1561	1579	54	0	0
1	f	1311	10129	6403	1824	1841	61	0	0
1	g	1310	10125	6401	1823	1840	61	0	0
1	l	1311	10129	6403	1824	1841	61	0	0
1	m	1311	10129	6403	1824	1841	61	0	0
1	n	1311	10129	6403	1824	1841	61	0	0
1	p	1311	10129	6403	1824	1841	61	0	0
1	q	1311	10129	6403	1824	1841	61	0	0
1	u	1311	10129	6403	1824	1841	61	0	0
1	w	1311	10129	6403	1824	1841	61	0	0
1	y	1311	10129	6403	1824	1841	61	0	0

- Molecule 2 is a protein called Triplex capsid protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	277	Total	C	N	O	S	0	0
			2088	1318	382	377	11		
2	2	277	Total	C	N	O	S	0	0
			2088	1318	382	377	11		
2	3	277	Total	C	N	O	S	0	0
			2088	1318	382	377	11		
2	j	267	Total	C	N	O	S	0	0
			2009	1269	365	364	11		
2	k	277	Total	C	N	O	S	0	0
			2088	1318	382	377	11		
2	o	296	Total	C	N	O	S	0	0
			2229	1403	414	401	11		
2	s	277	Total	C	N	O	S	0	0
			2088	1318	382	377	11		
2	v	289	Total	C	N	O	S	0	0
			2189	1380	404	394	11		
2	x	296	Total	C	N	O	S	0	0
			2229	1403	414	401	11		
2	z	296	Total	C	N	O	S	0	0
			2229	1403	414	401	11		

- Molecule 3 is a protein called Triplex capsid protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	B	23	Total	C	N	O	S	0	0
			152	96	25	29	2		
3	C	23	Total	C	N	O	S	0	0
			152	96	25	29	2		
3	D	23	Total	C	N	O	S	0	0
			152	96	25	29	2		
3	T	327	Total	C	N	O	S	0	0
			2538	1582	494	450	12		
3	W	23	Total	C	N	O	S	0	0
			152	96	25	29	2		
3	d	16	Total	C	N	O	S	0	0
			108	69	18	19	2		
3	h	327	Total	C	N	O	S	0	0
			2538	1582	494	450	12		
3	i	327	Total	C	N	O	S	0	0
			2538	1582	494	450	12		
3	r	327	Total	C	N	O	S	0	0
			2538	1582	494	450	12		
3	t	327	Total	C	N	O	S	0	0
			2538	1582	494	450	12		

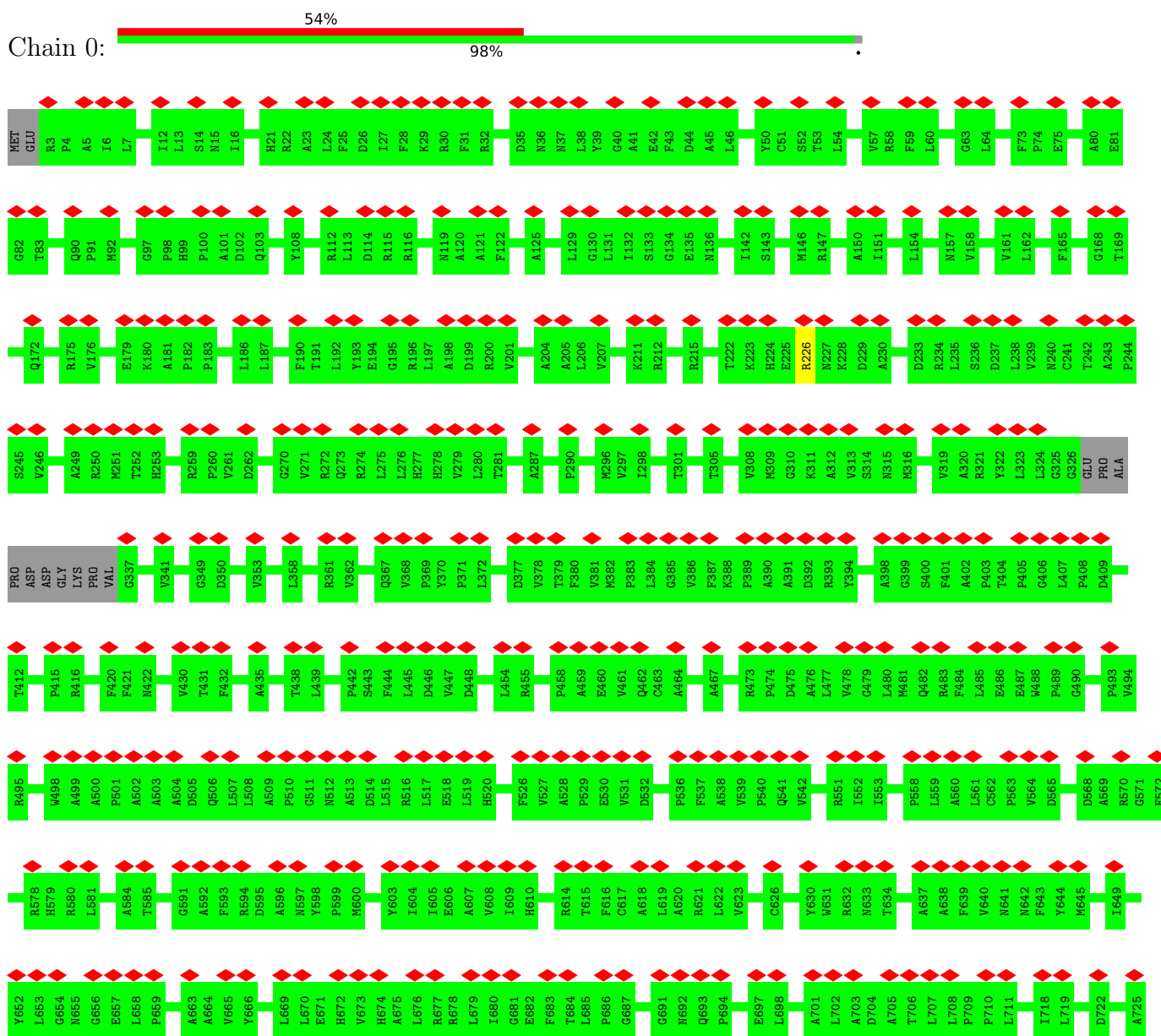
- Molecule 4 is a protein called Small capsomere-interacting protein.

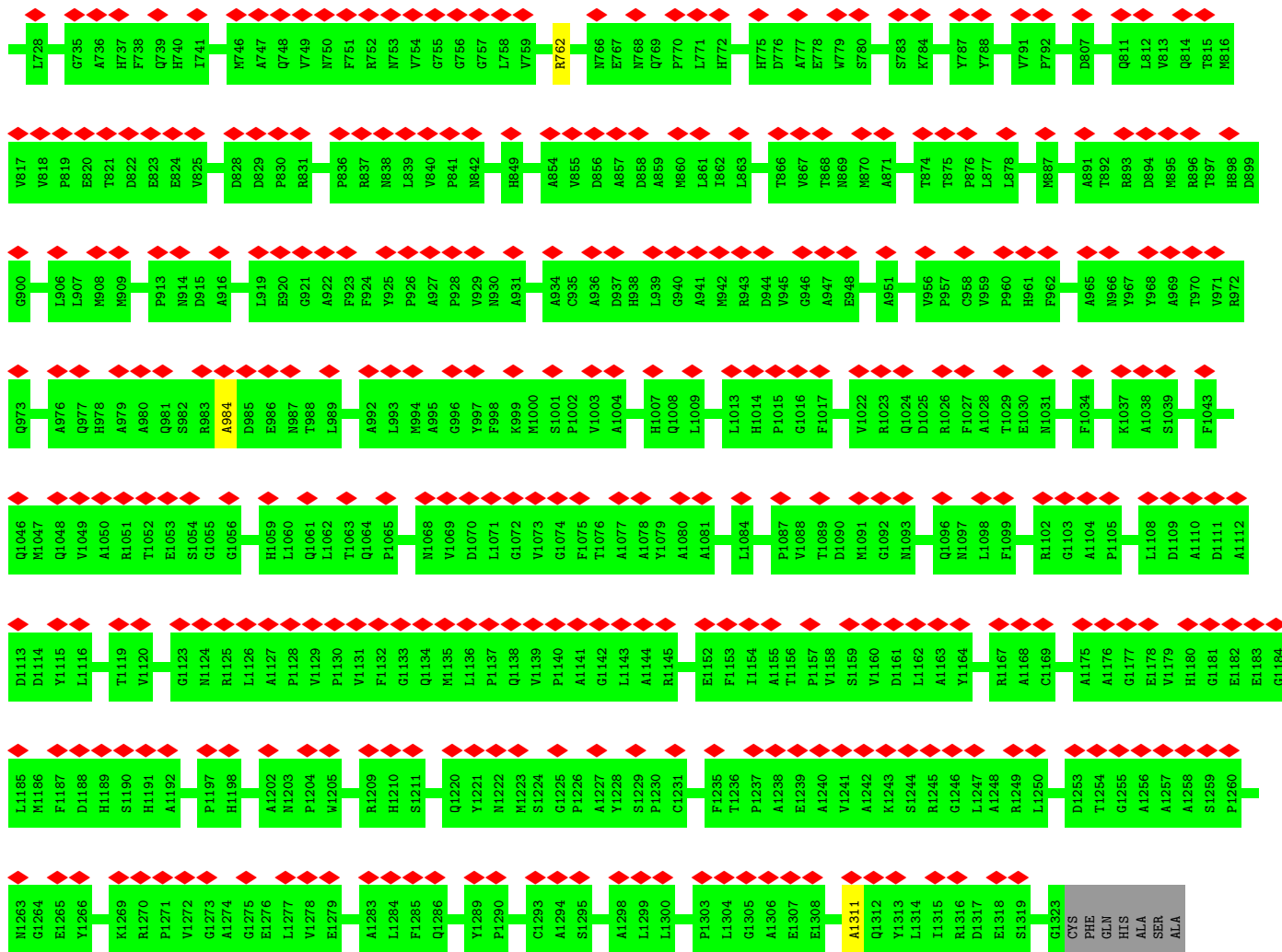
Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	F	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	G	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	H	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	I	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	J	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	K	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	L	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	M	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	N	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	O	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	P	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	Q	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	R	91	Total	C	N	O	S	0	0
			722	453	139	128	2		
4	V	91	Total	C	N	O	S	0	0
			722	453	139	128	2		

3 Residue-property plots

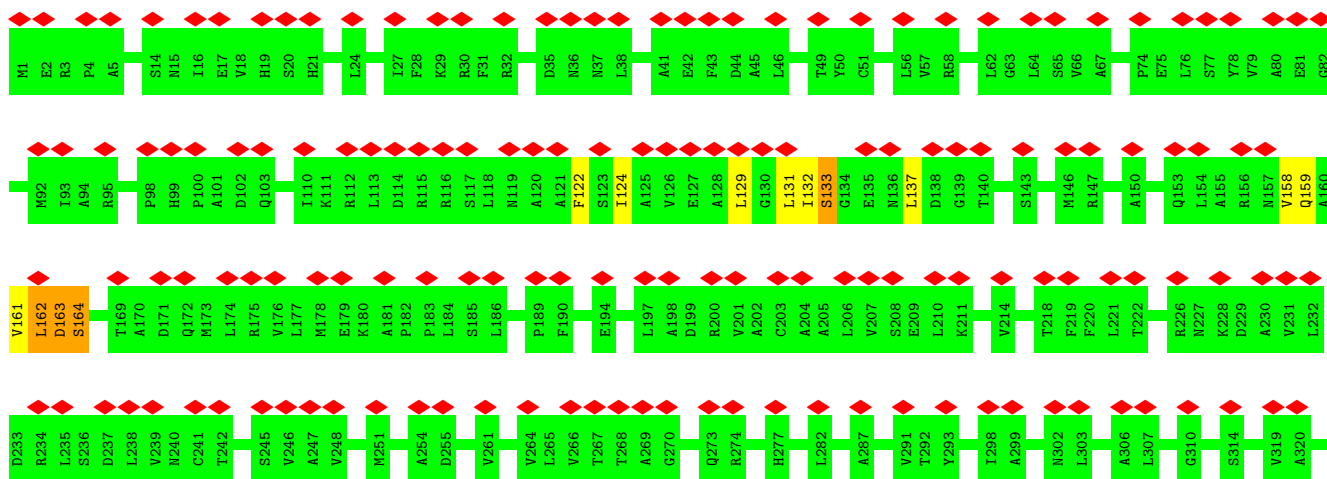
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

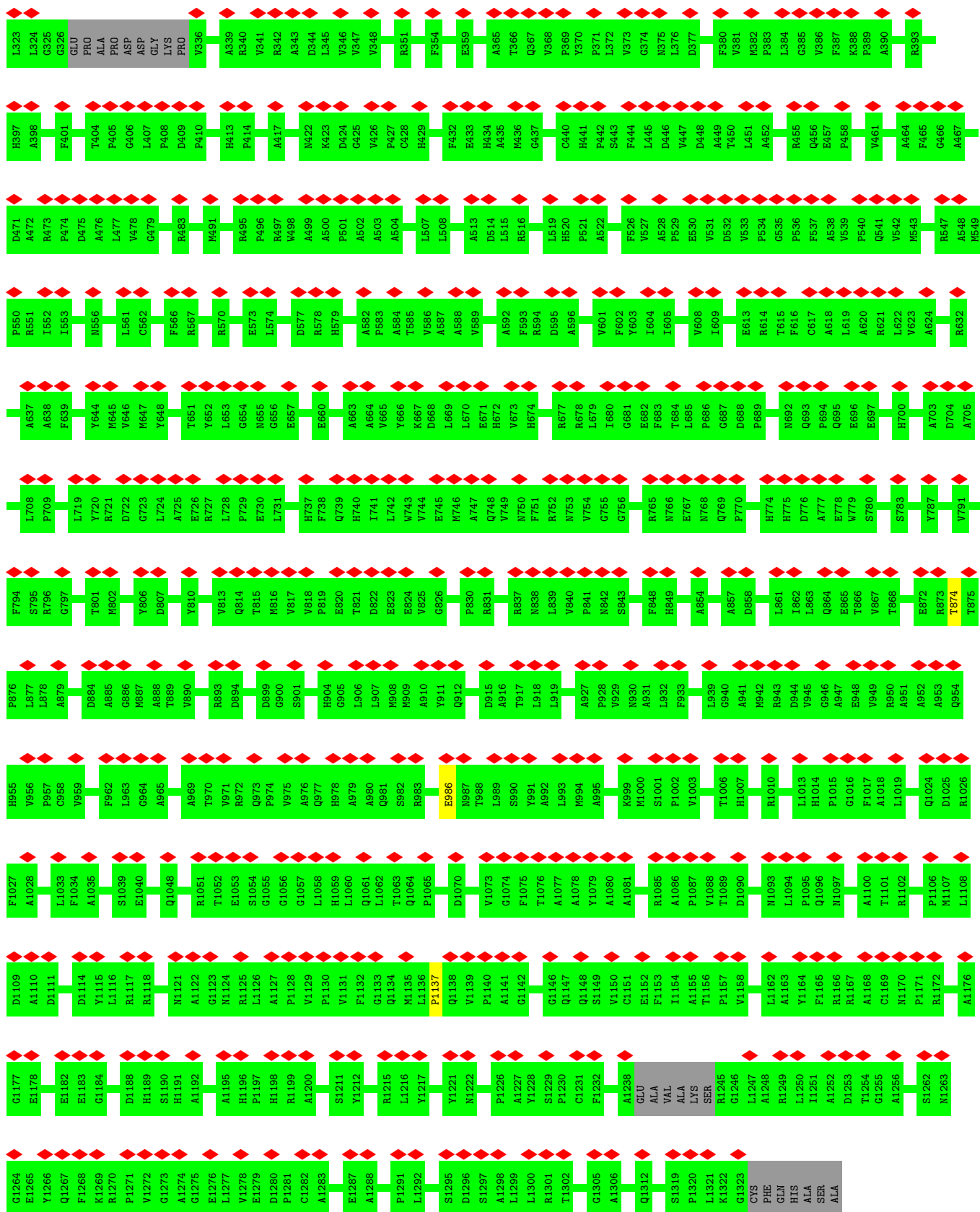
- Molecule 1: Major capsid protein





• Molecule 1: Major capsid protein

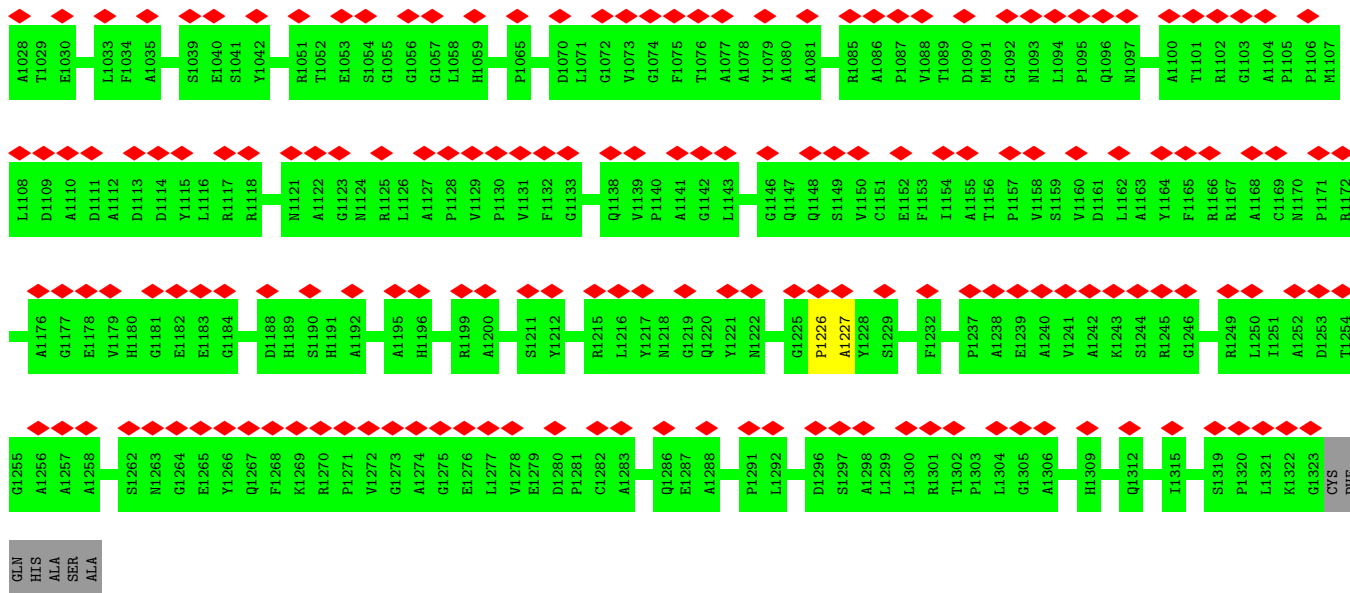




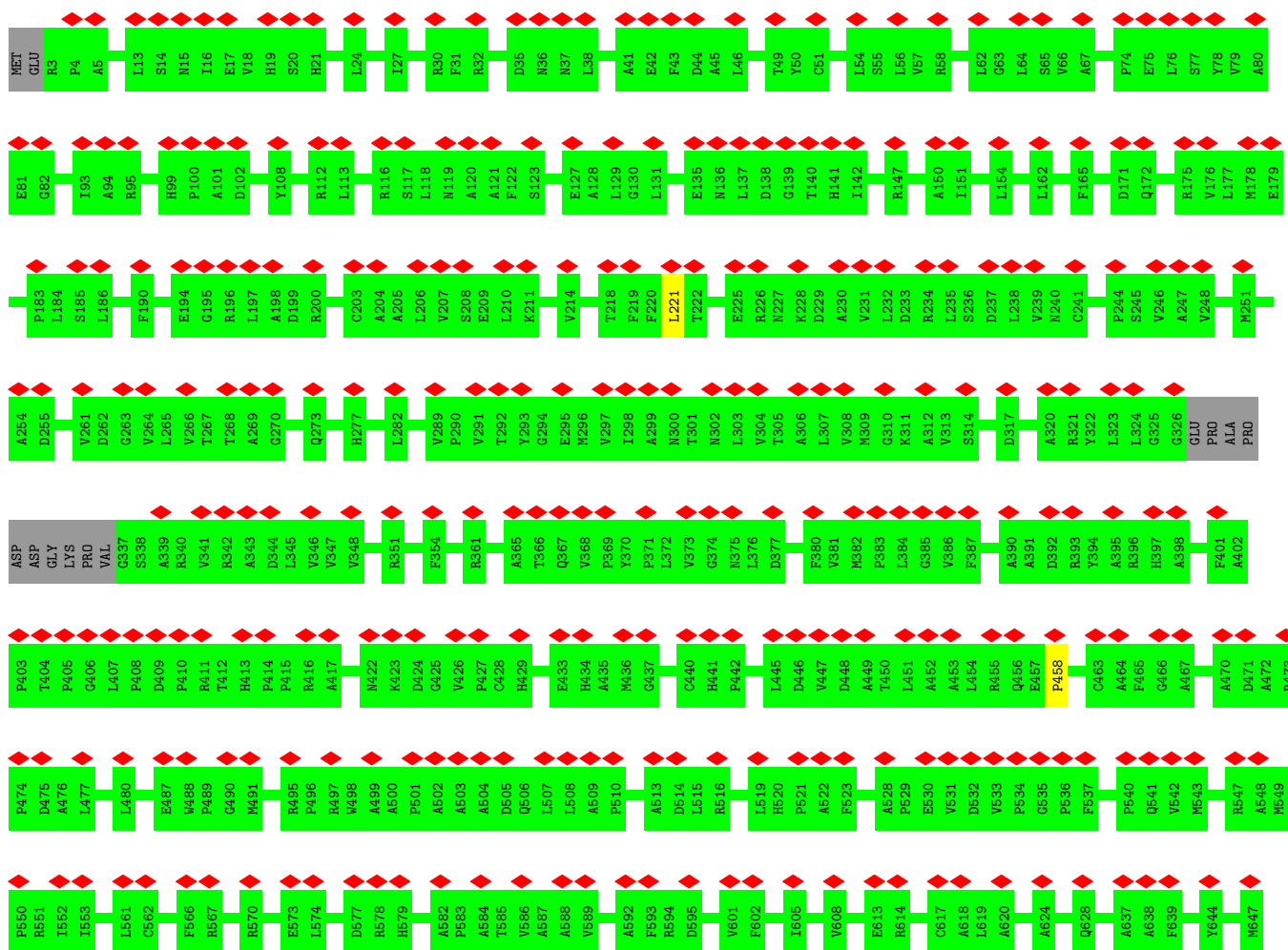
• Molecule 1: Major capsid protein

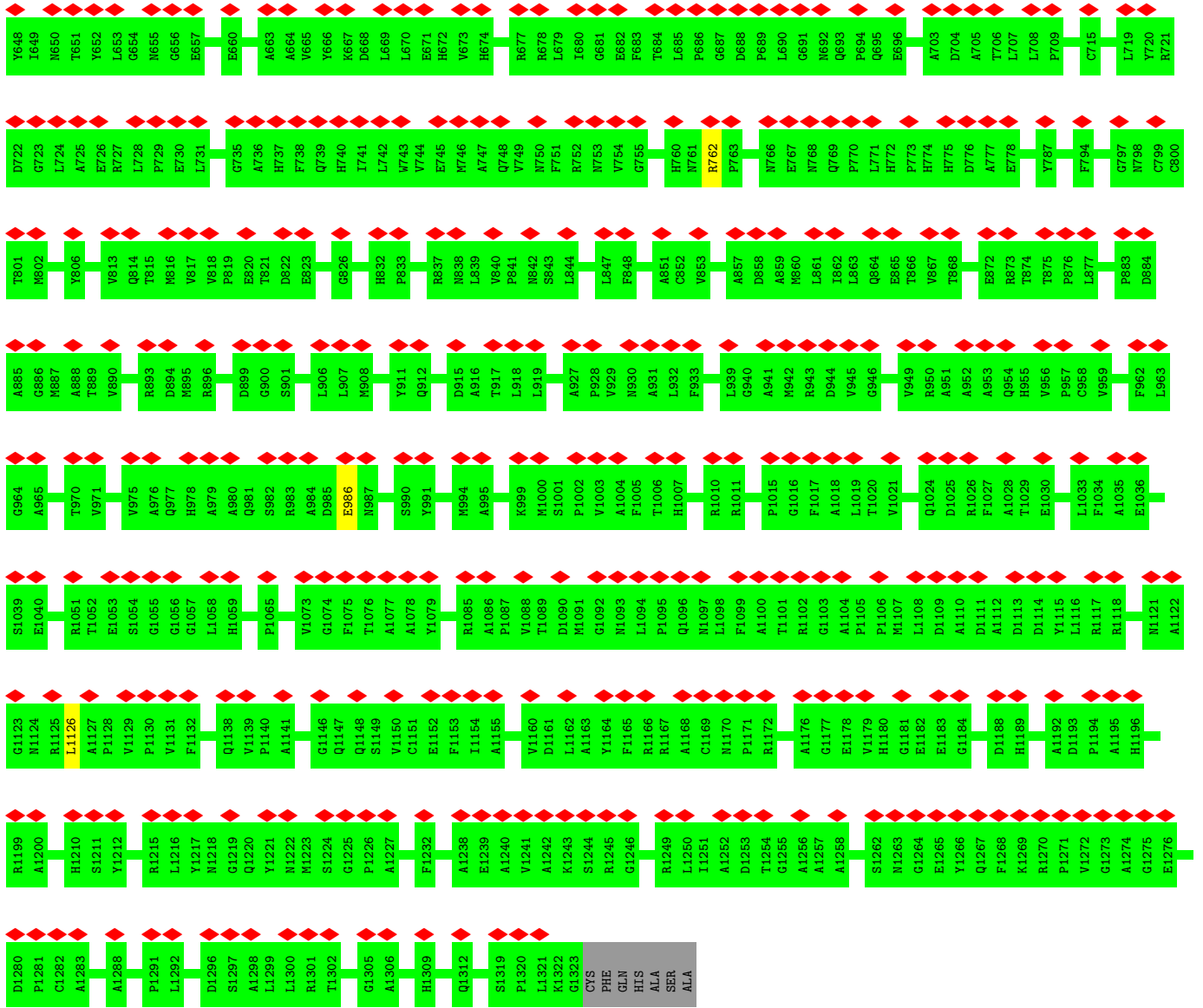


MET	GLU	R3	P4	A5	S14	M15	I16	E17	V18	H19	S20	H21	L24	F25	D26	K29	R30	F31	R32	N36	N37	L38	A41	E42	F43	D44	A45	L46	T49	L54	S55	L56	L62	G63	L64	S65	V66	A67	C68	K72	F73	F74	E75	L76	S77	Y78	W79	A80	E81	C82		
T83	I84	V88	Q89	Q90	P91	M92	I93	A94	E95	D96	G97	P98	H99	P100	D102	Q103	P104	V105	H106	I110	K111	R112	L113	D114	R115	R116	S117	L118	N119	A120	A121	F122	S123	E127	A128	L129	G130	L131	E135	N136	D137	D138	G139	T140	H141	M146	R147	A150	Q153	L154		
A160	V161	D171	Q172	R175	V176	L177	M178	E179	P182	P183	L184	S185	L186	F190	E194	L197	A198	D199	R200	C203	A204	A205	L206	V207	S208	E209	L210	K211	V214	T218	F219	F220	L221	T222	K223	E225	R226	N227	K228	D229	A230	V231	L232	D233	SER	R234	L235	S236	D237	L238		
V239	N240	C241	T242	A243	P244	S245	V246	A247	V248	A249	R250	M251	A254	D255	V261	D262	G263	V264	L265	V266	T267	T268	A269	G270	Q273	R274	H277	L282	V289	P290	V291	T292	Y293	V297	I298	A299	N300	T301	T305	ALA	LEU	VAL	MET	GLY	LYS	ALA	VAL	SER	ASN	MET	ASP	
ASP	VAL	ALA	ARG	TYR	LEU	GLY	GLU	PRO	ALA	PRO	ASP	ASP	GLY	LYS	PRO	VAL	GLY	S338	A339	R340	V341	R342	A343	D344	L345	V346	V347	V348	R351	F354	E359	K360	Q364	A365	T366	Q367	V368	P369	Y370	P371	L372	V373	G374	N375	L376	D377	F380	V381	M382	P383	L384	G385
V386	F387	K388	P389	A390	R393	R396	H397	A398	F401	A402	P403	T404	P405	G406	P408	D409	P410	H413	P414	P415	R416	A417	M422	K423	D424	G425	V426	P427	C428	H429	E433	H434	A435	M436	G437	C440	H441	P442	L445	D446	V447	D448	A449	T450	L451	A452	A453	L454	R455	Q456		
E457	P458	V461	Q462	F465	G466	A467	A470	D471	A472	R473	P474	D475	A476	L477	R483	E487	G490	M491	R495	P496	R497	P501	A502	A503	A504	D505	Q506	L507	L508	A509	P510	A513	D514	L515	R516	L519	H520	P521	A522	F523	A528	P529	M382	P383	T450	L451	A452	A453	L454	R455	Q456	
P536	P540	Q541	V542	M543	R547	A548	M549	P550	I552	I553	L561	C562	F566	R567	D568	A569	R570	E573	L574	S575	V576	D577	R578	H579	A582	P583	A584	T585	V586	A587	A588	V589	A592	F593	R594	D595	V601	F602	I605	V608	I609	H610	P689	L690	G691	N692	Q693	P694	Q695	E696		
A624	Q628	R632	N636	A637	A638	F639	V640	F643	Y644	M647	Y648	T651	Y652	L653	G654	G655	E657	A663	A664	K667	D668	L669	H670	E671	H672	V673	H674	A675	R677	R678	L679	I680	G681	E682	F683	T684	L685	P686	G687	D688	P689	L690	G691	N692	Q693	P694	Q695	E696				
H700	A703	D704	A705	T706	L707	L708	P709	C715	L719	Y720	R721	D722	L724	A725	E726	R727	L728	P729	E730	L731	G735	A736	H737	F738	Q739	H740	I741	L742	W743	V744	E745	W746	A747	Q748	W749	N750	N753	V754	G755	H760	R765	N766	E767	L662	L663	Q664	E665	T666	T668			
A777	E778	Y787	F794	G797	N798	C799	C800	T801	D807	Y810	V813	Q814	T815	M816	V817	W818	P819	E820	T821	E823	E824	W825	R831	H832	P833	R837	W840	P841	M842	S843	L844	F848	A851	A854	A857	D858	A859	L862	L863	Q864	E865	T866	T868									
E872	R873	T874	T875	F876	L877	D884	A885	G886	H887	A888	T889	V890	R893	D894	D899	A980	Q900	S901	L906	L907	H908	A910	Y911	D912	D915	A916	T917	L918	L919	A927	F928	Y929	N930	A931	L932	F933	L939	G940	A941	H942	R943	D944	Y945	L1019	T1020	A947	E948	Y949	R950	A951	A952	A953
Q954	P957	C958	V959	F962	L963	G964	A965	T970	V971	V975	A976	Q977	H978	A979	D989	Q981	S982	E986	H987	S990	Y991	A992	L993	M994	A995	K999	M1000	S1001	L1002	V1003	A1004	F1005	T1006	N1007	R1010	R1011	Q1012	L1013	H1014	P1015	G1016	F1017	Y945	L1019	T1020	A947	E948	Y949	R950	A951	A952	A953



• Molecule 1: Major capsid protein

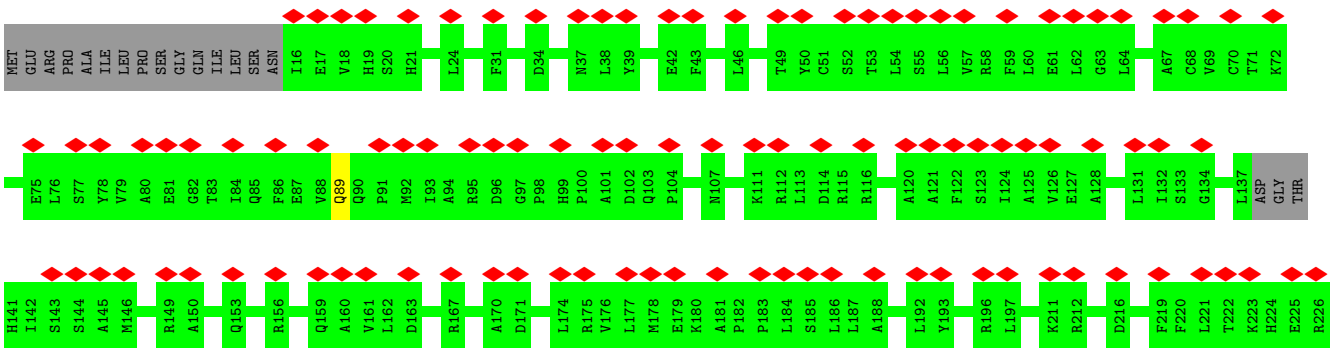


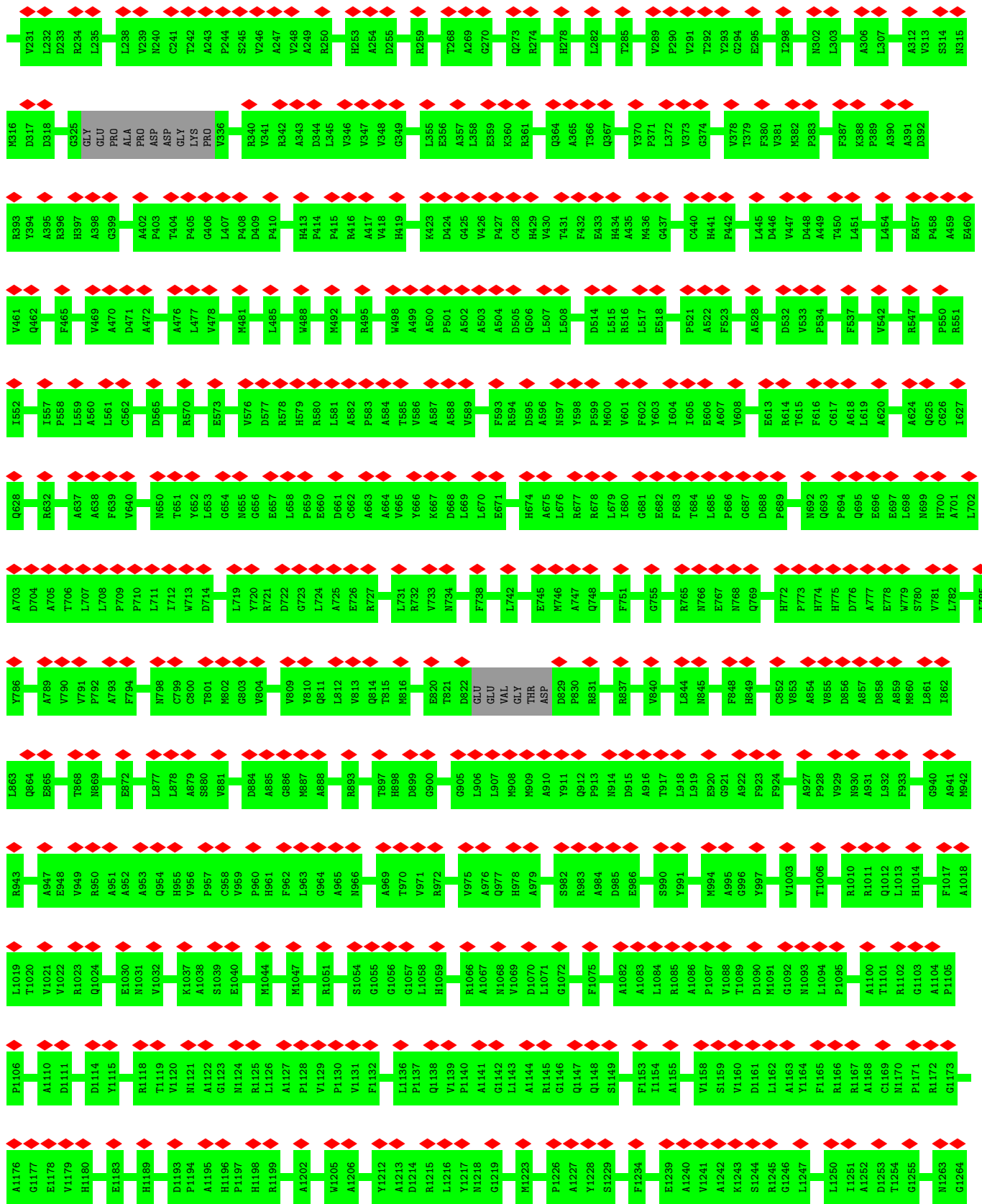


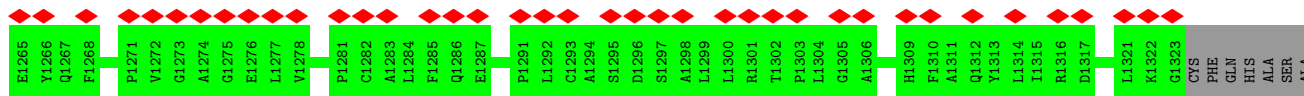
Molecule 1: Major capsid protein



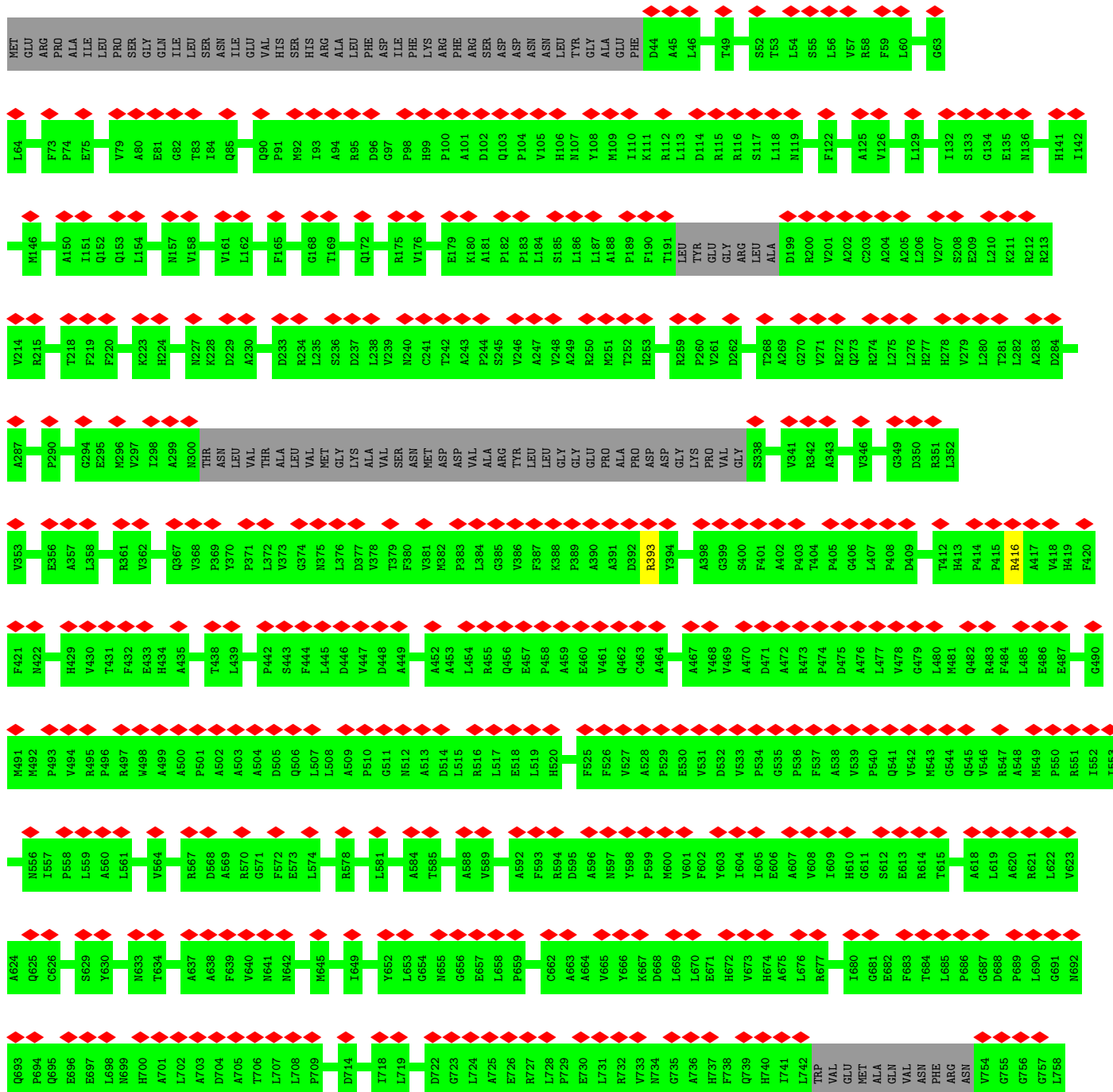
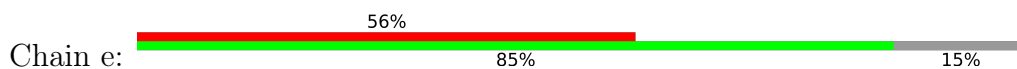
Chain a:

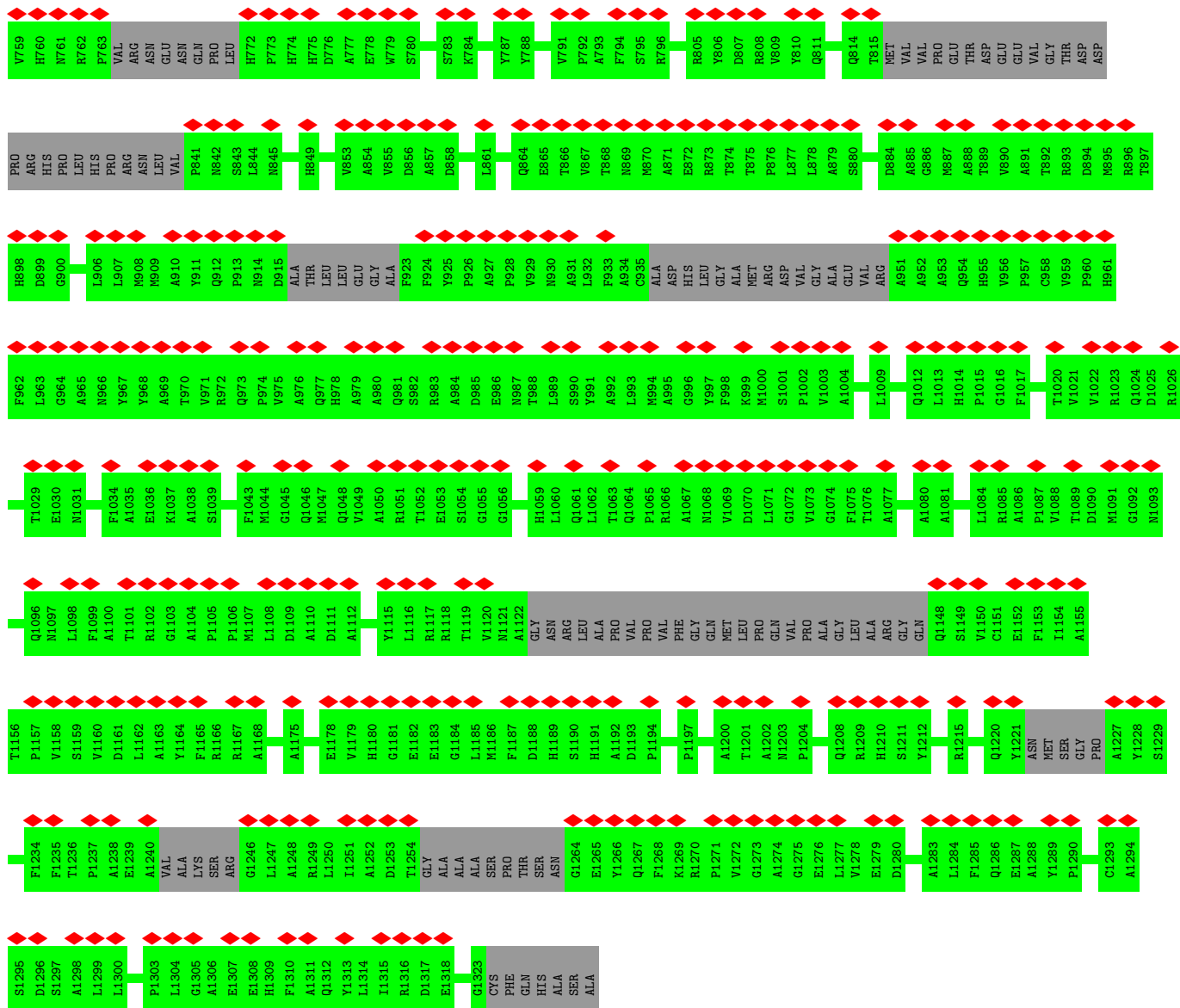




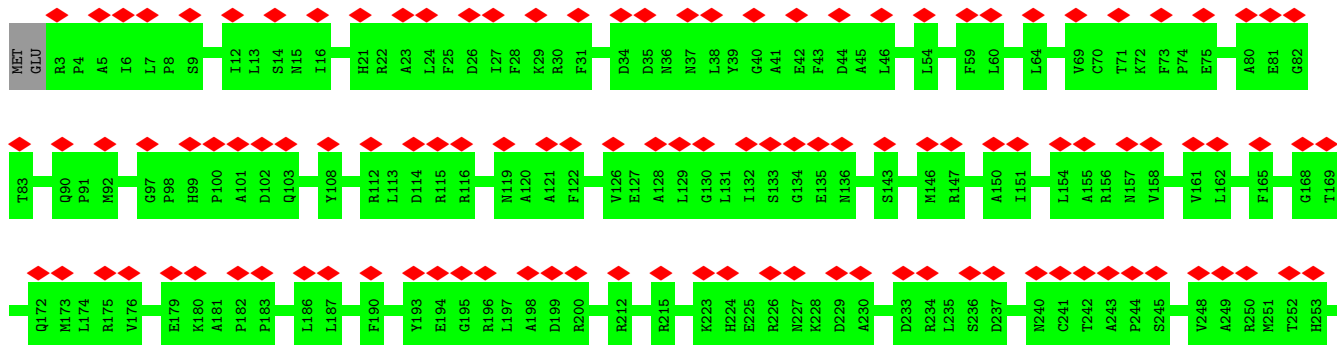


• Molecule 1: Major capsid protein

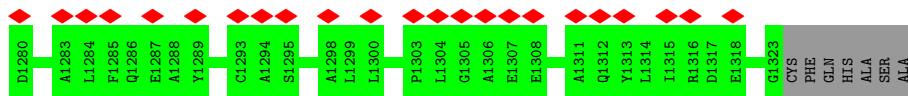




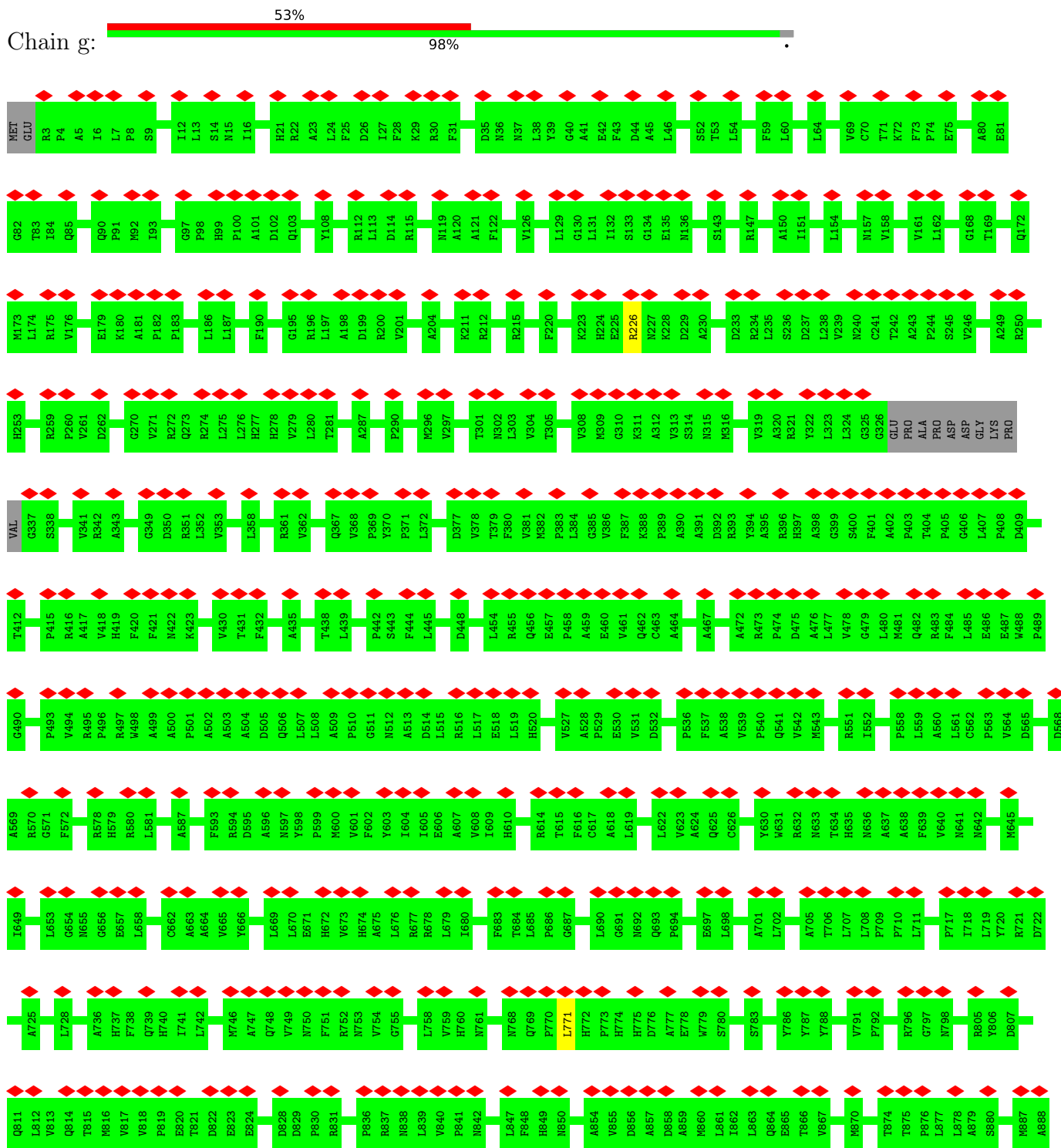
• Molecule 1: Major capsid protein

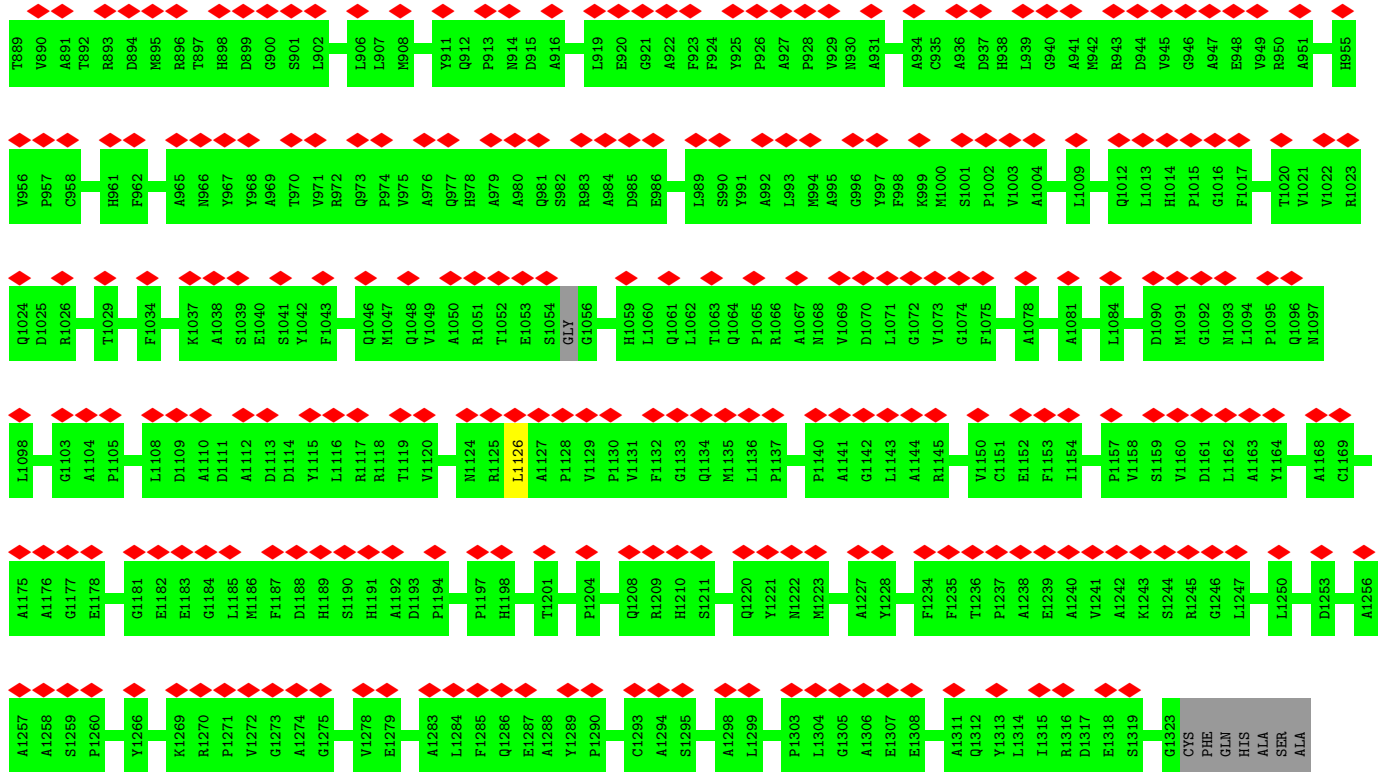


D1198	P1194	P1197	H1198	T1201	P1204	Q1208	R1209	H1210	Q1220	Y1221	M1222	M1223	A1227	Y1228	S1228	F1234	F1235	T1236	P1237	A1238	E1239	V1240	V1241	A1242	K1243	S1244	R1245	G1246	L1247	L1250	D1253	A1256	A1257	A1258	S1259	P1260	Y1266	K1269	R1270	P1271	V1272	G1273	A1274	G1275	V1276	E1279								
M1124	R1125	L1126	A1127	P1128	P1130	V1131	F1132	G1133	Q1134	M1135	L1136	P1137	Q1138	V1139	P1140	A1141	G1142	L1143	A1144	R1145	V1150	C1151	E1152	F1153	I1154	P1157	V1158	S1159	V1160	D1161	L1162	A1163	Y1164	R1167	A1168	G1169	A1175	A1176	G1177	E1178	V1179	H1180	G1181	E1182	E1183	G1184	L1185	M1186	F1187	D1188	H1189	S1190	H1191	A1192
R1051	T1052	E1053	S1054	G1055	H1059	L1060	Q1061	L1062	T1063	Q1064	P1065	R1066	A1067	M1068	V1069	D1070	L1071	G1072	V1073	G1074	F1075	A1078	Y1079	A1080	A1081	A1082	A1083	L1084	T1089	D1090	M1091	G1092	M1093	L1094	P1095	Q1096	M1097	L1098	G1103	A1104	P1105	L1106	D1109	A1110	D1111	A1112	Y1115	L1116	R1117	R1118	T1119	V1120		
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H816	V817	H818	P819	E820	T821	D822	E823	E824	P830	B831	P836	R837	R838	L839	V840	P841	R842	L847	F848	H849	A854	H855	D856	A857	D858	A859	H860	L861	T862	L863	E864	E865	T866	H870	A871	E872	R873	T874	T875	F876	L877	A879	S880	H887	V890	A891	T892	H893	D894	H895				
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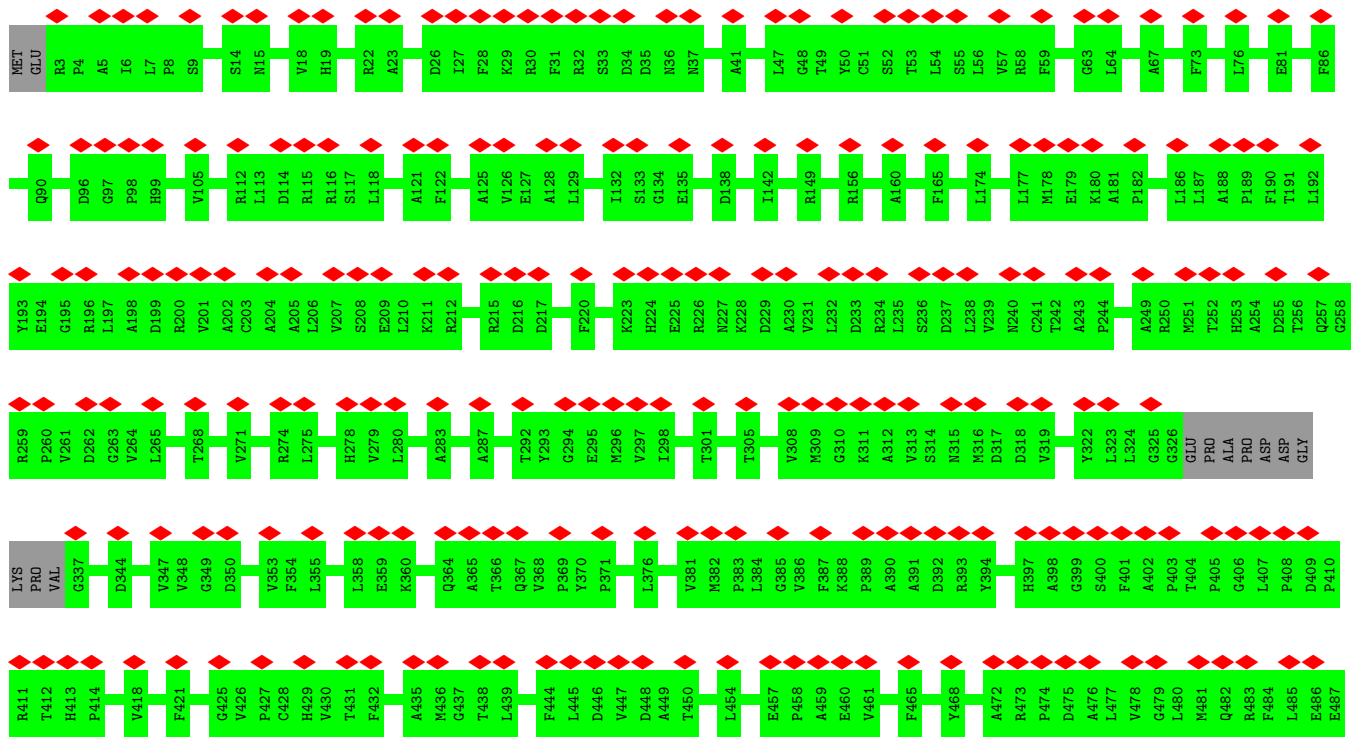


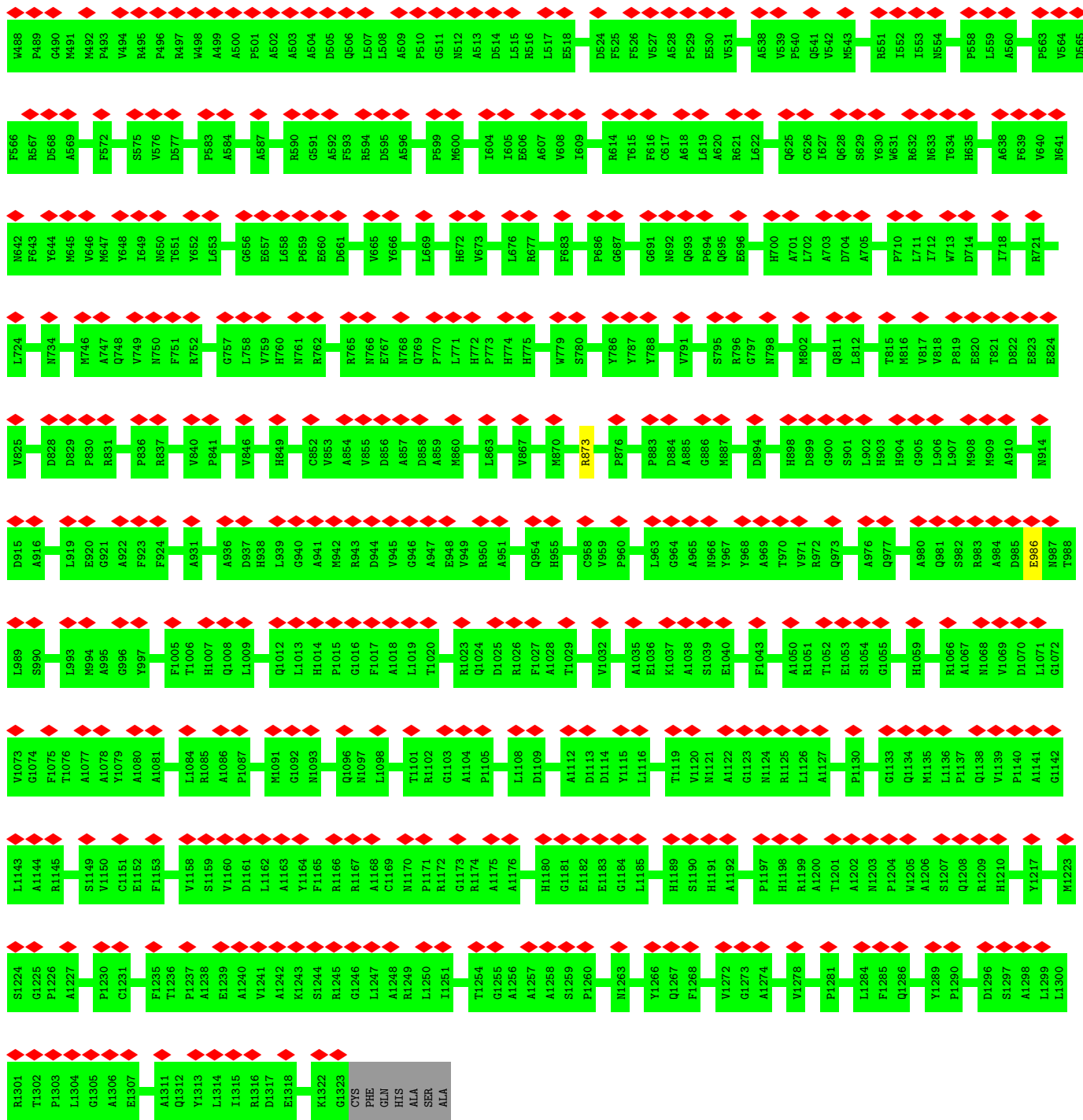
• Molecule 1: Major capsid protein





● Molecule 1: Major capsid protein

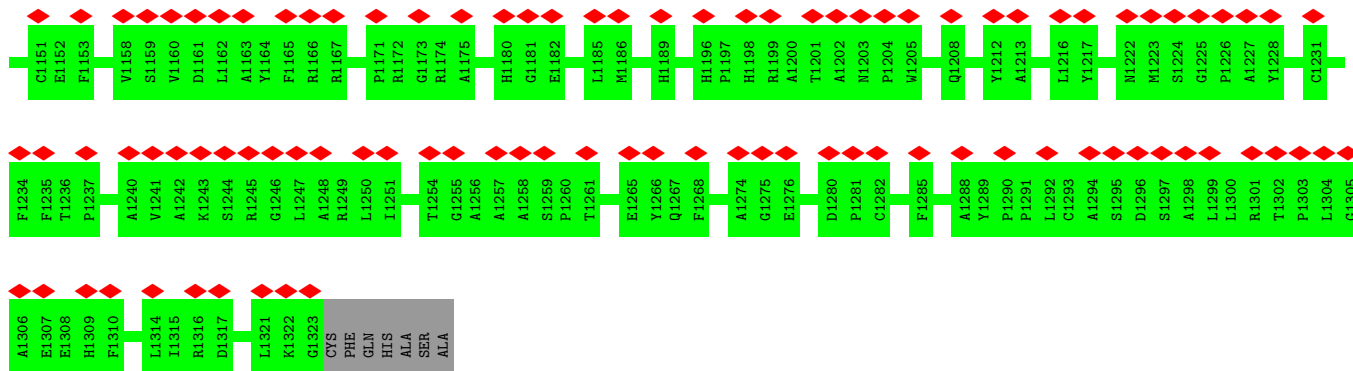




• Molecule 1: Major capsid protein

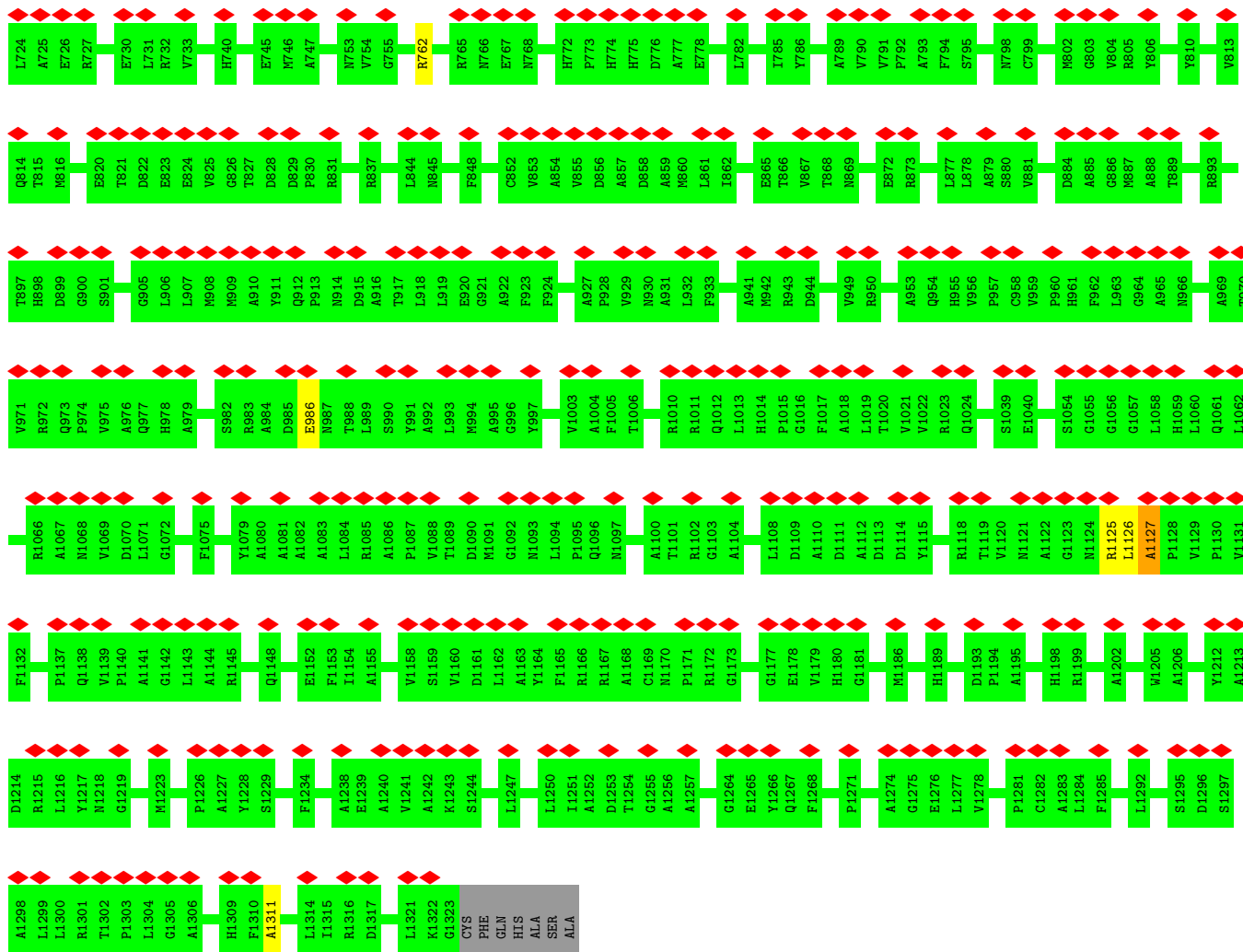


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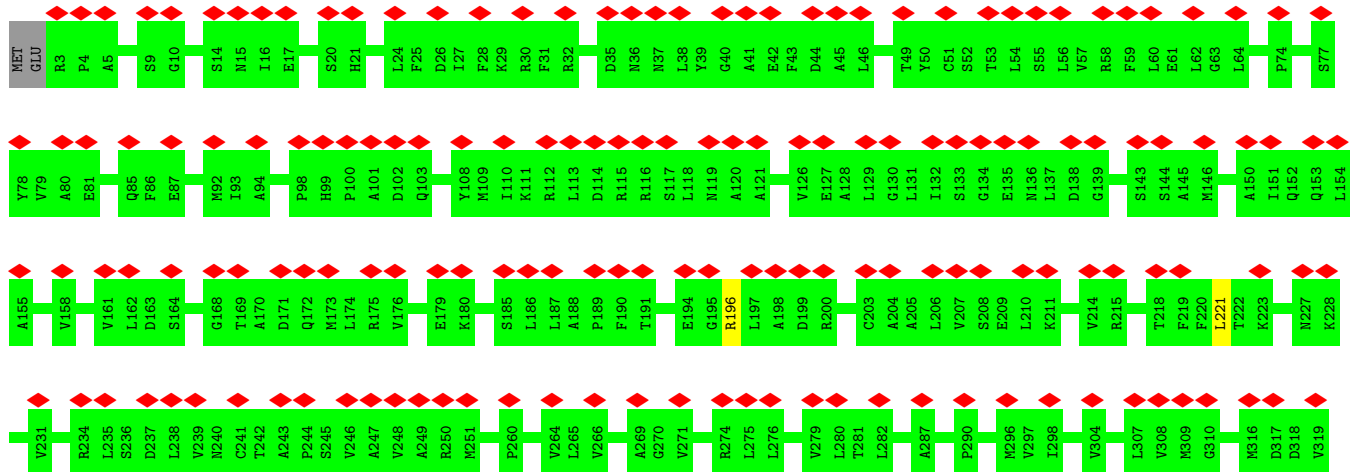


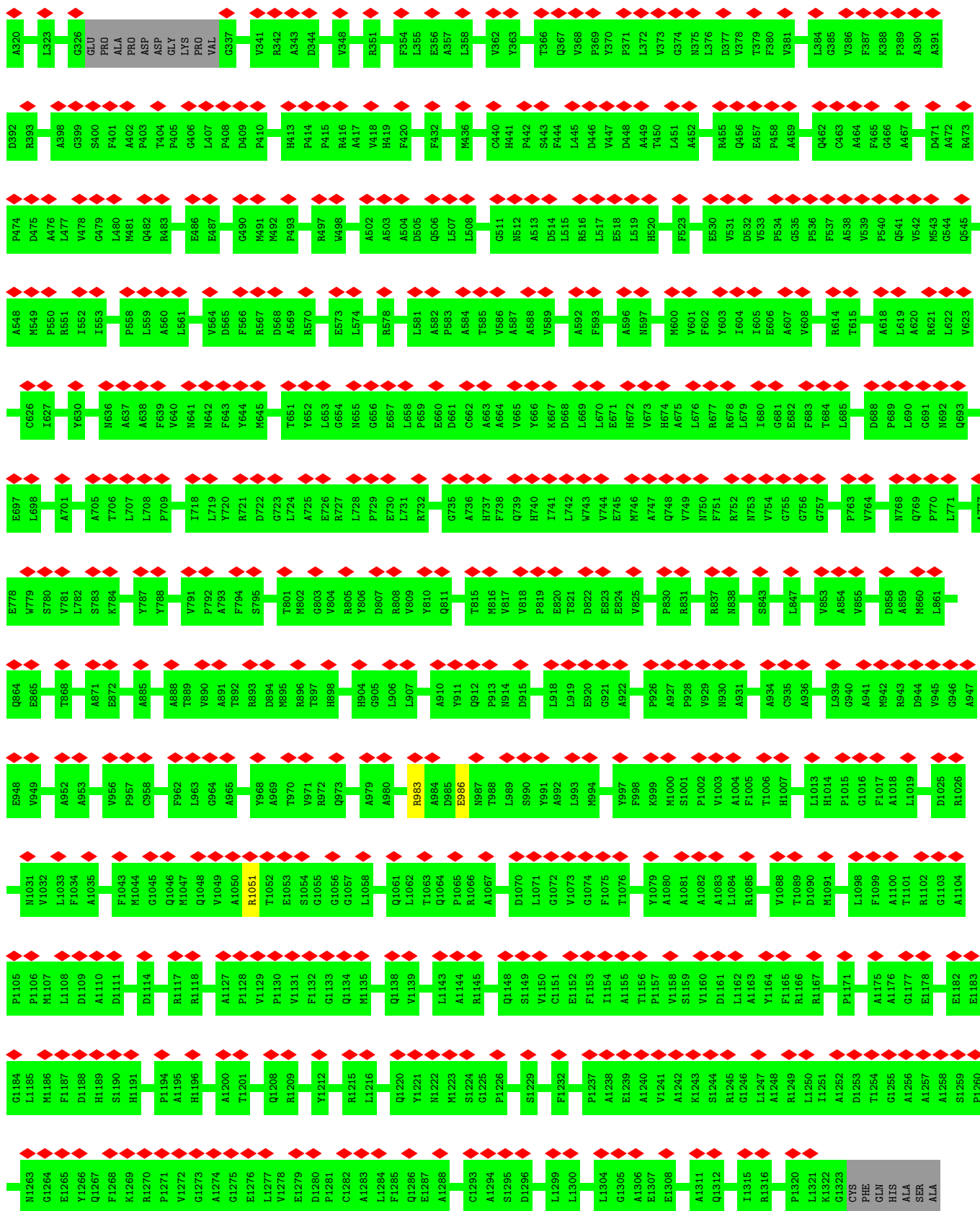
• Molecule 1: Major capsid protein



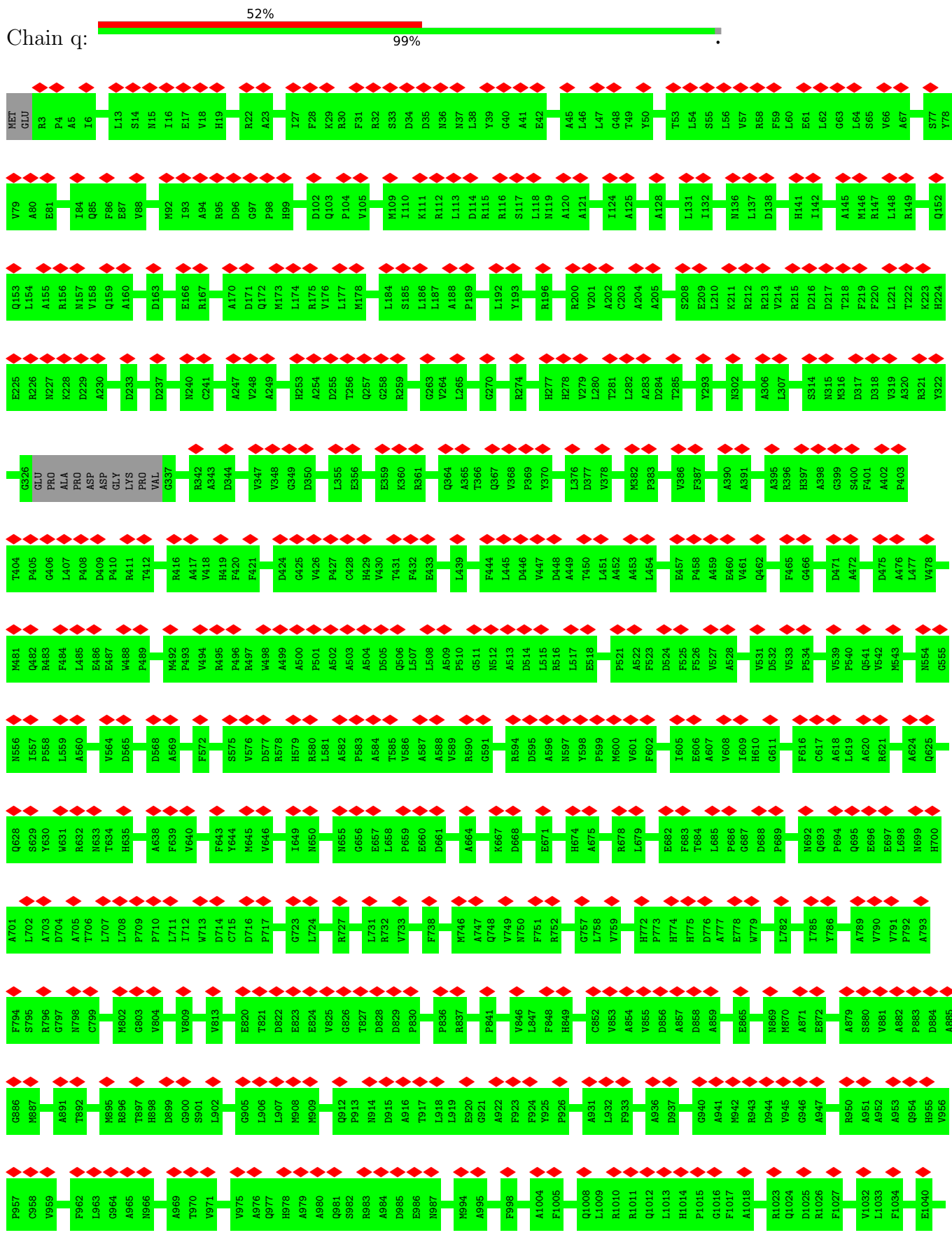


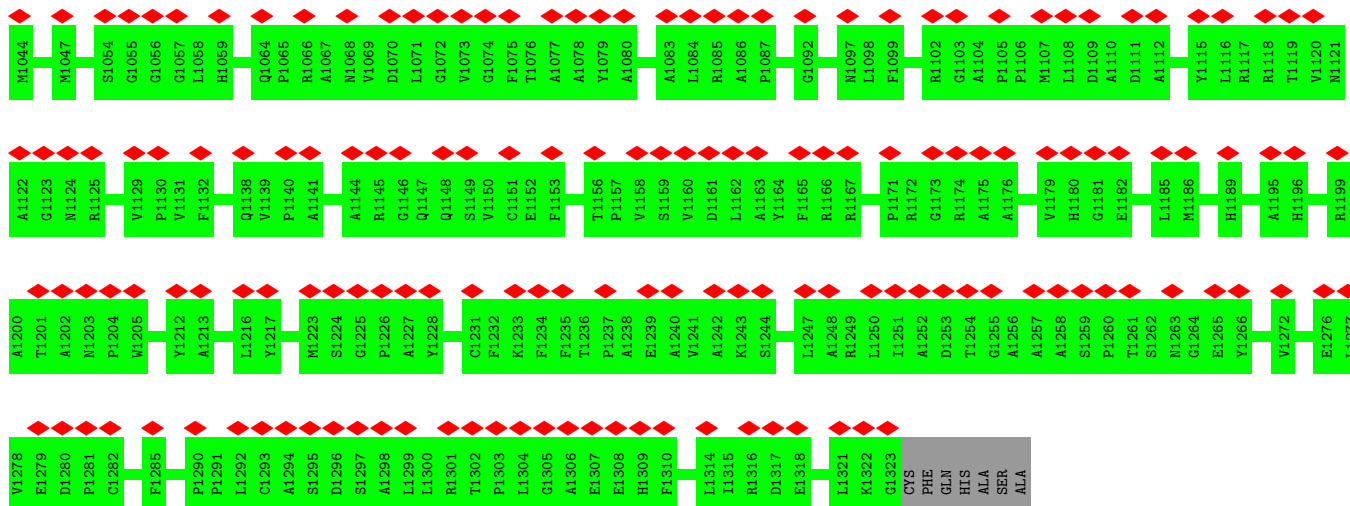
● Molecule 1: Major capsid protein





- Molecule 1: Major capsid protein

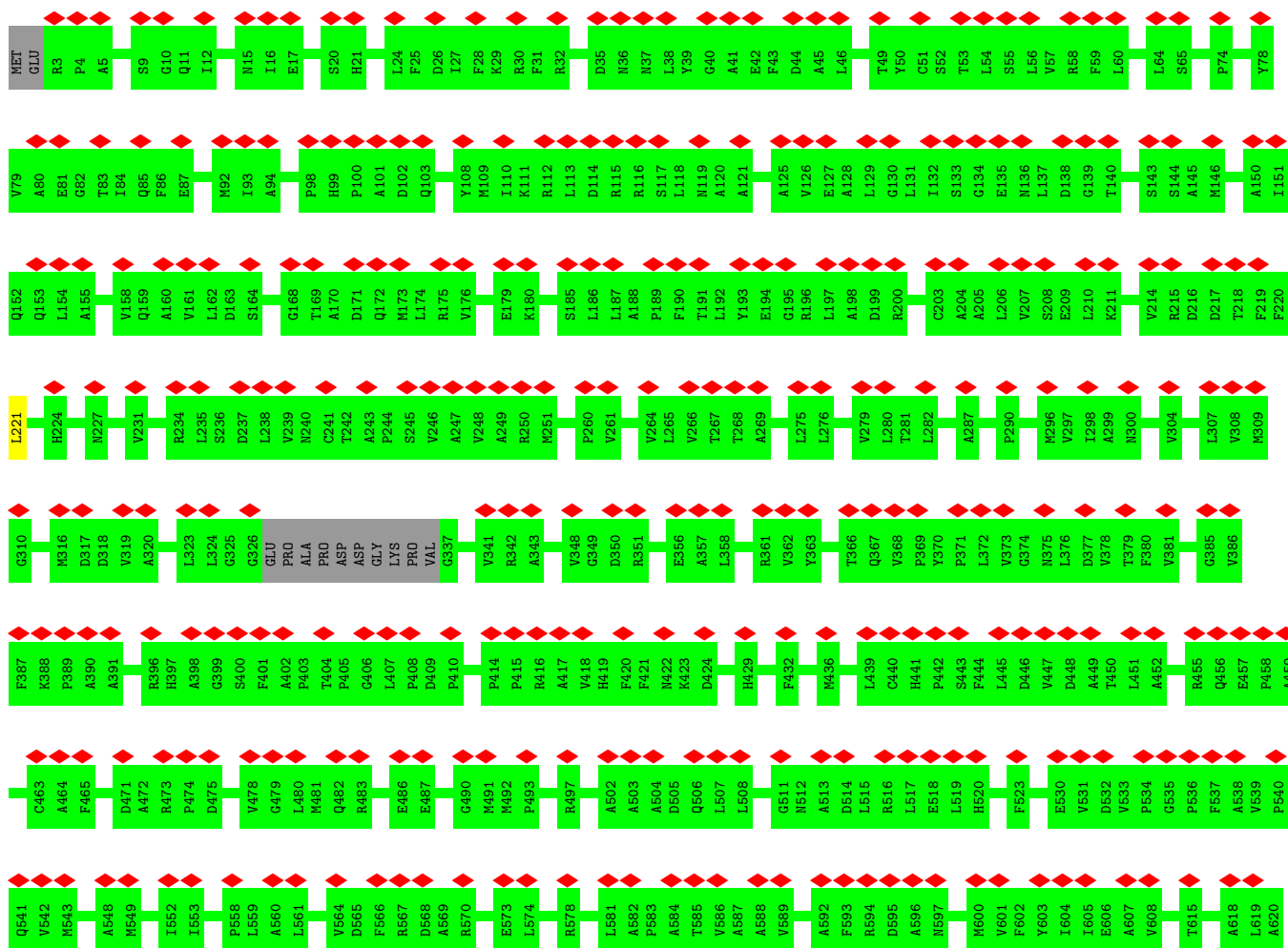


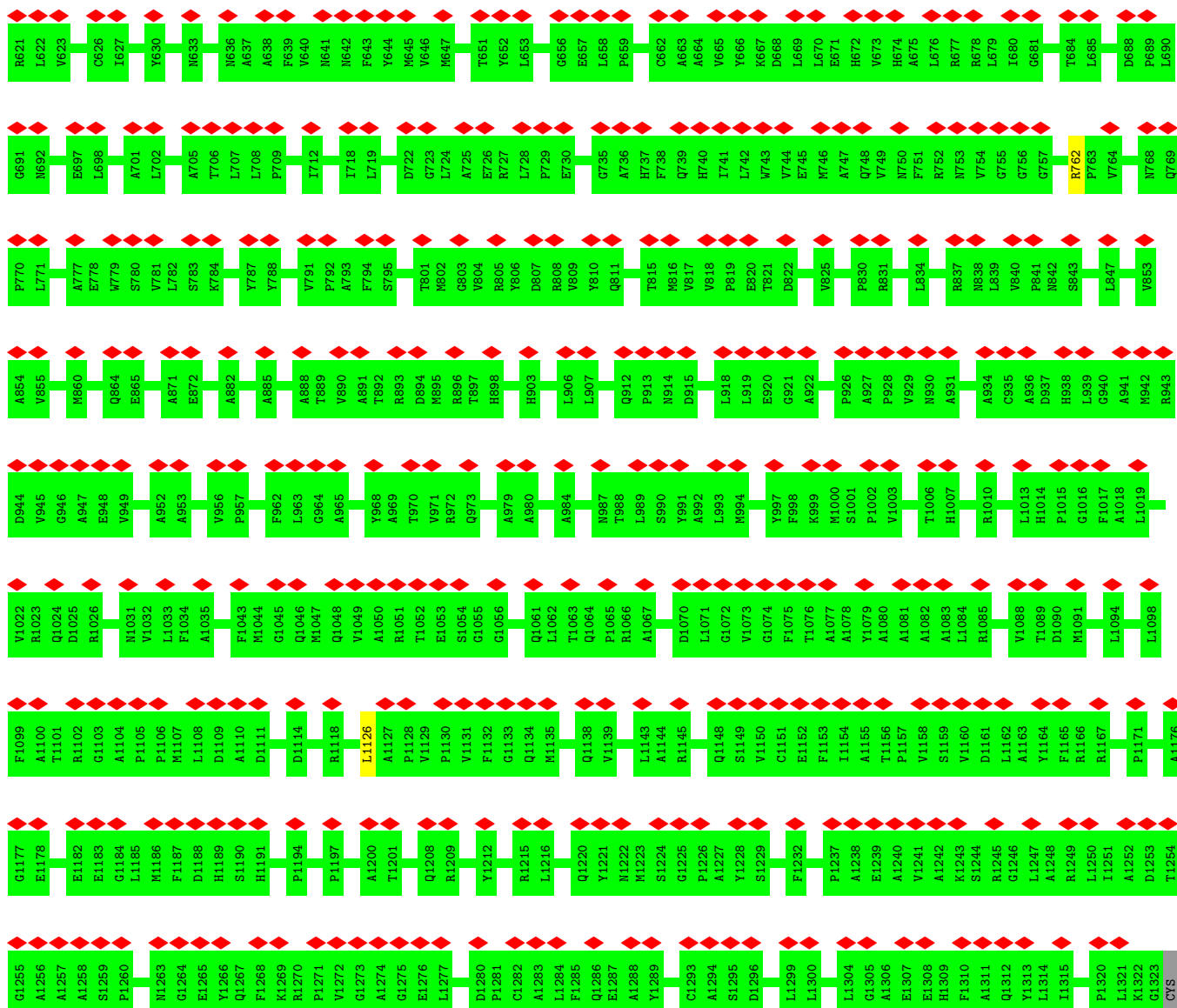


• Molecule 1: Major capsid protein



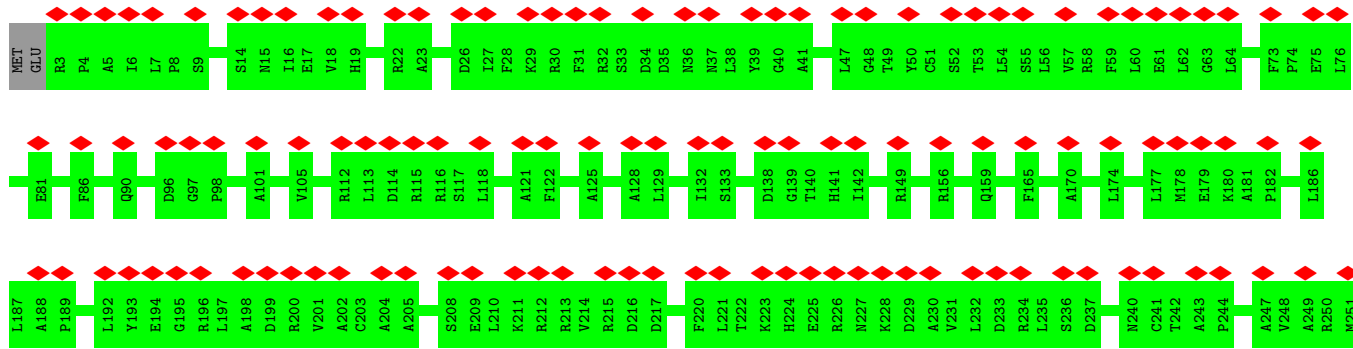
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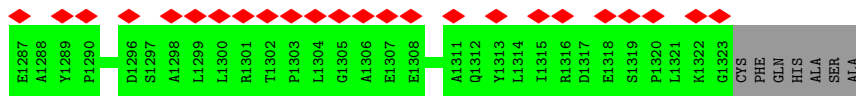


PHE
GLN
HIS
ALA
SER
ALA

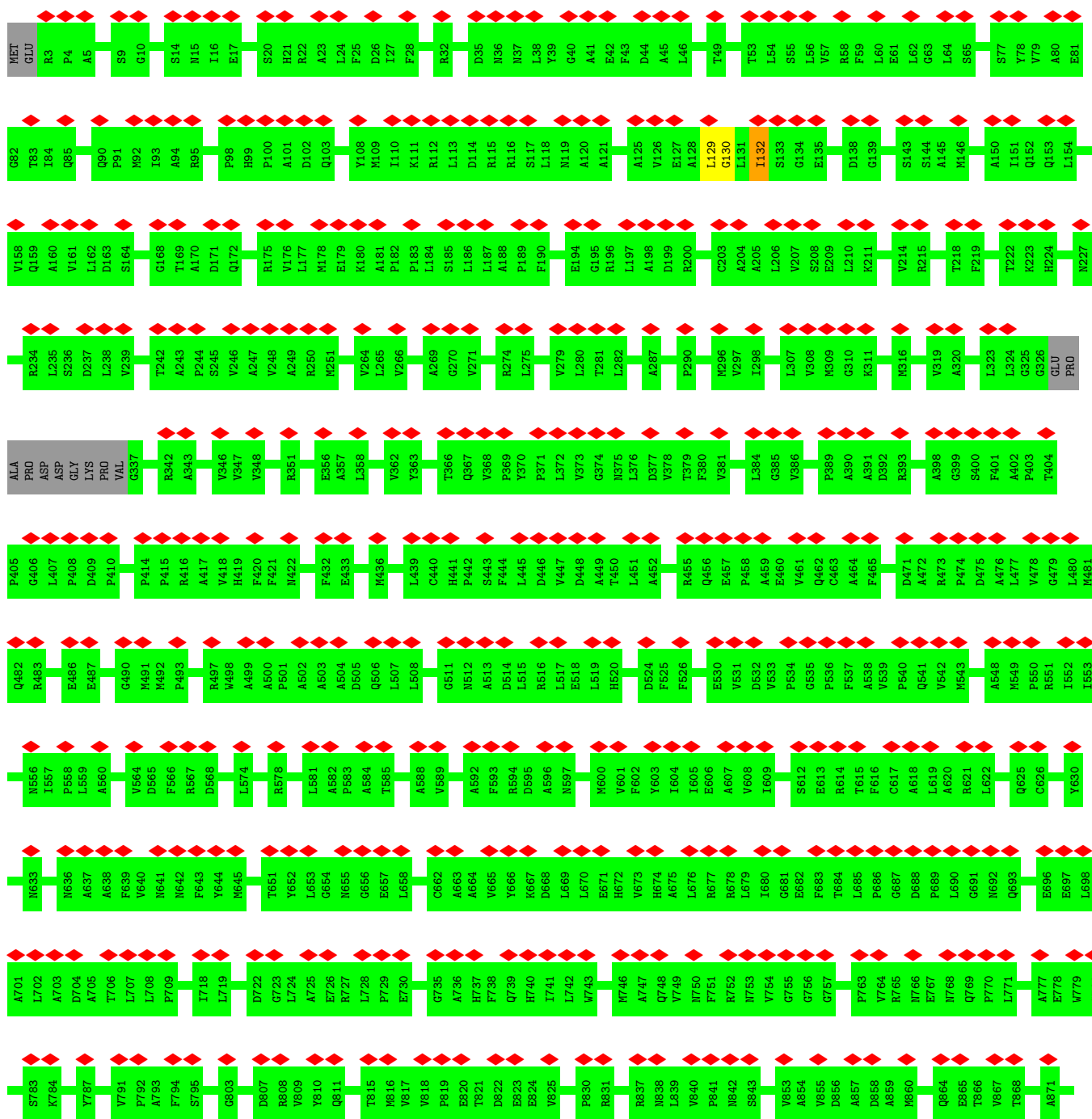
• Molecule 1: Major capsid protein

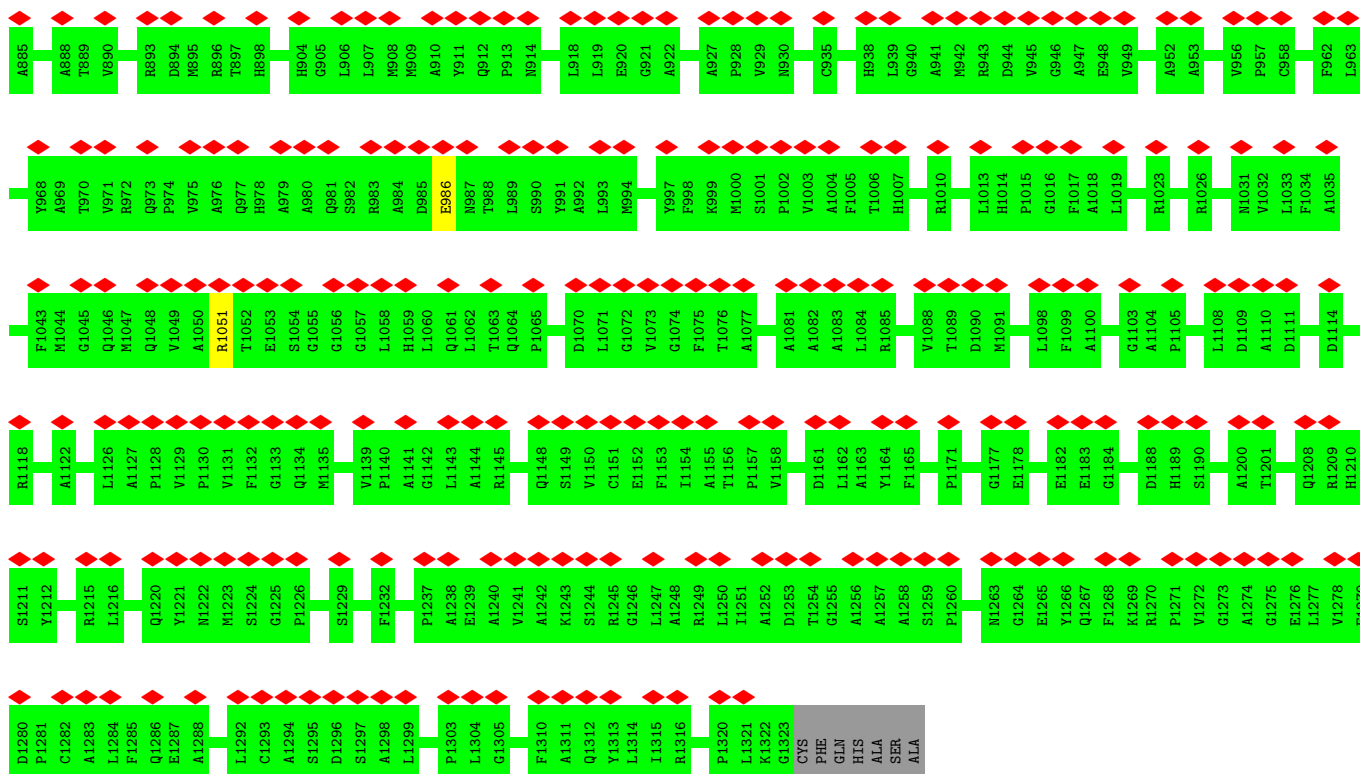


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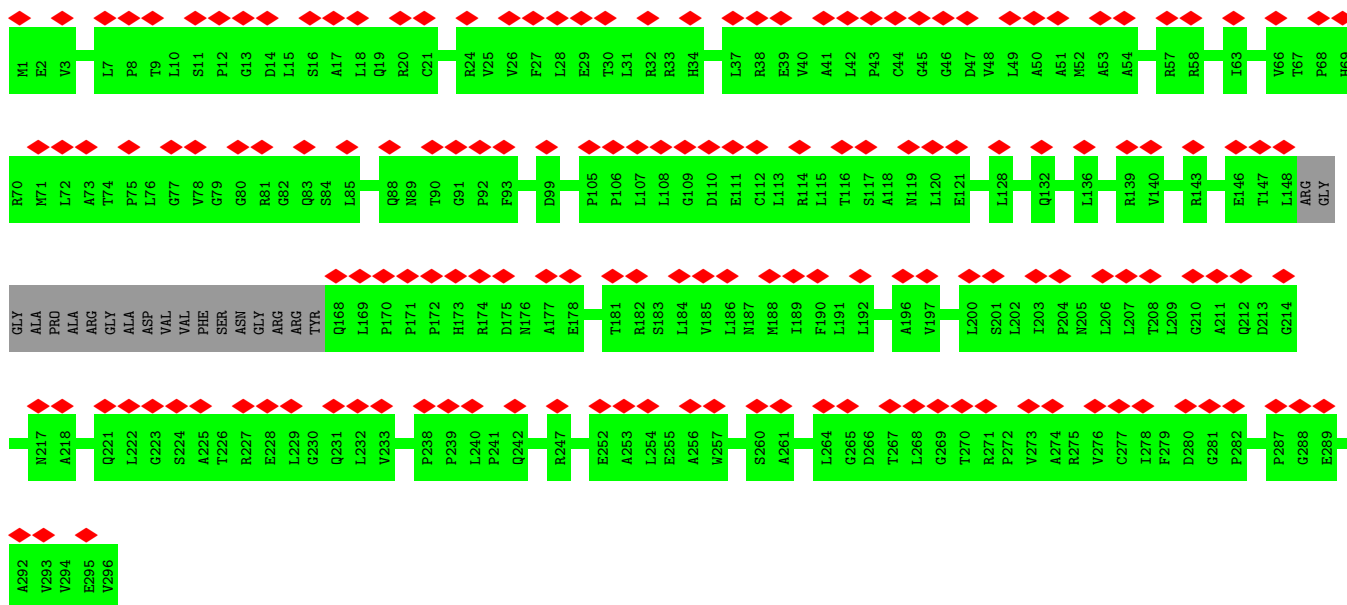


• Molecule 1: Major capsid protein

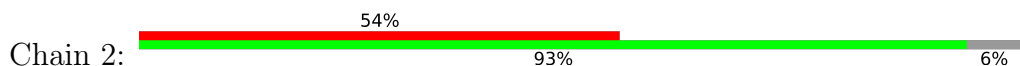




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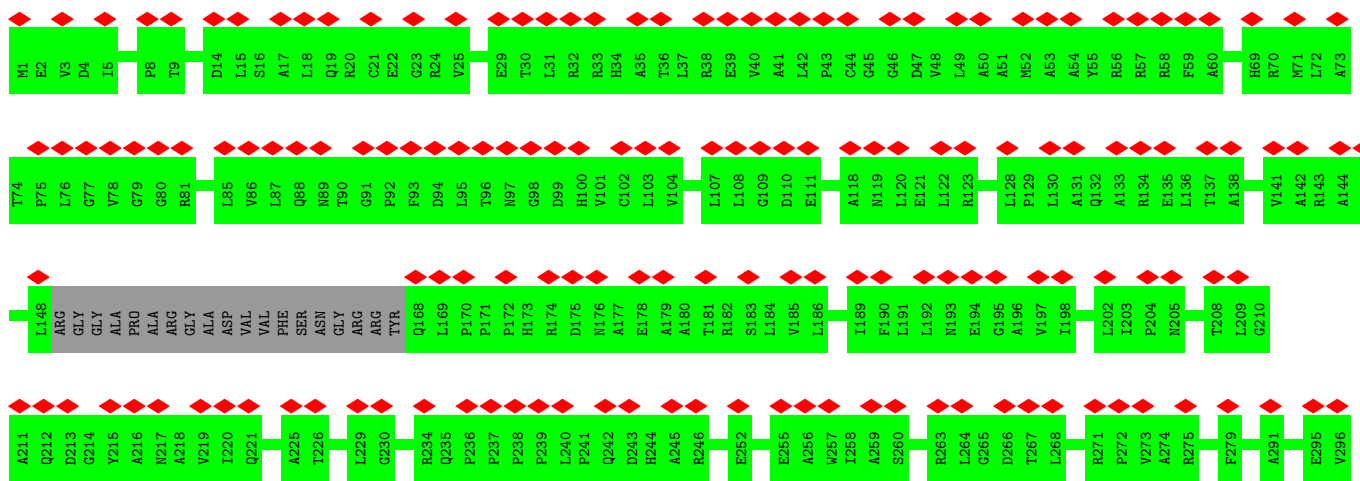
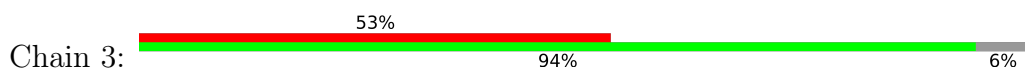


• Molecule 2: Triplex capsid protein 2

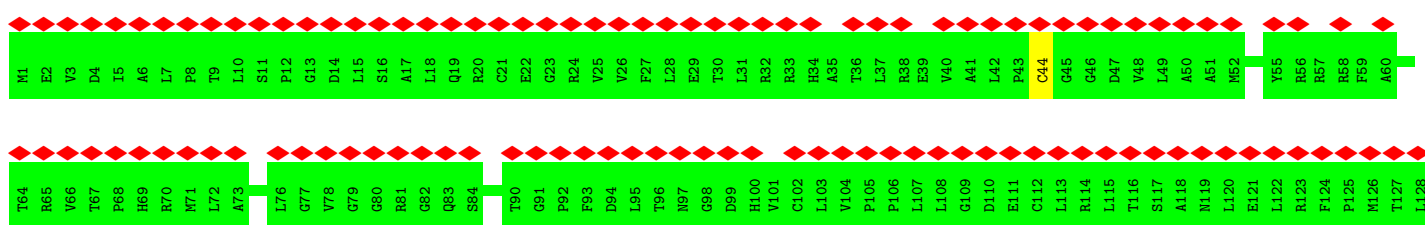
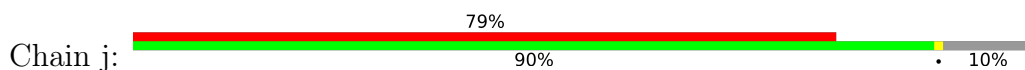


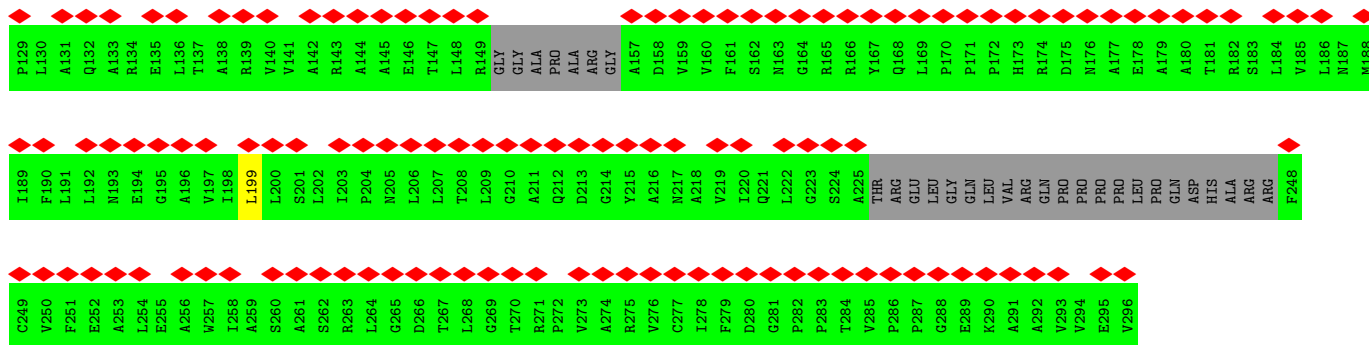


• Molecule 2: Triplex capsid protein 2



• Molecule 2: Triplex capsid protein 2





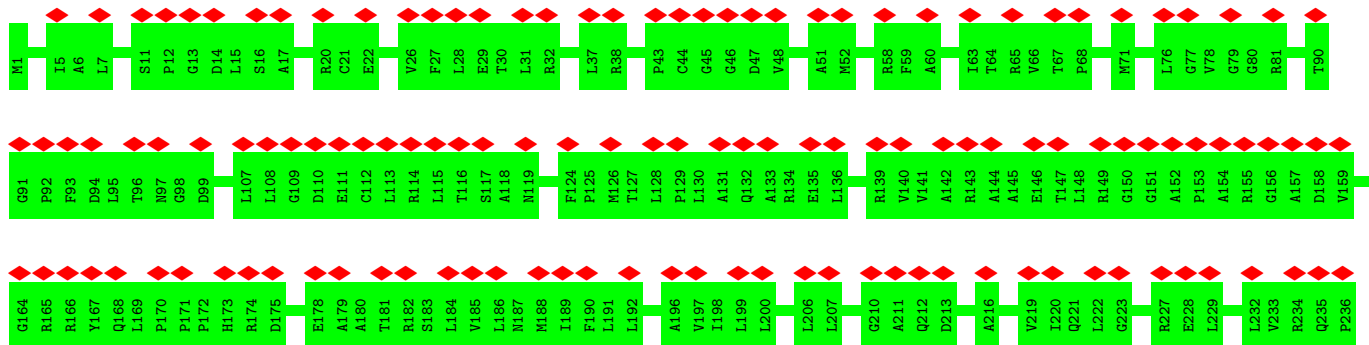
• Molecule 2: Triplex capsid protein 2

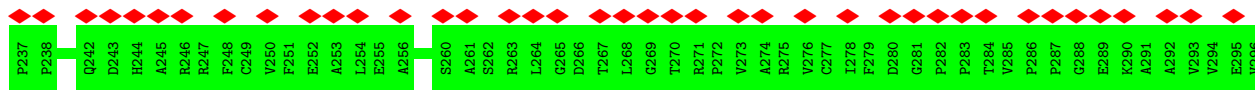
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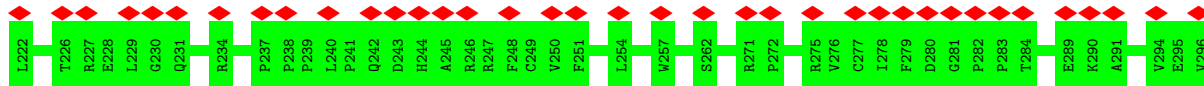
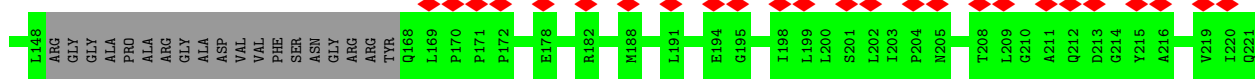
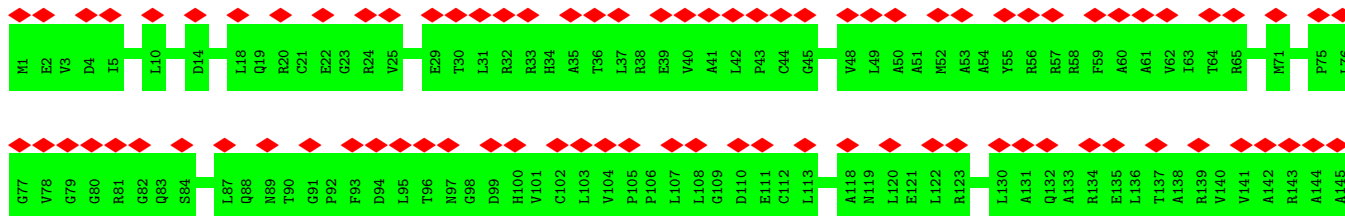
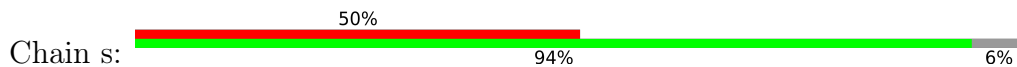
• Molecule 2: Triplex capsid protein 2

Chain o:

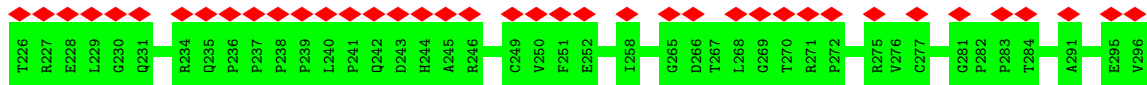
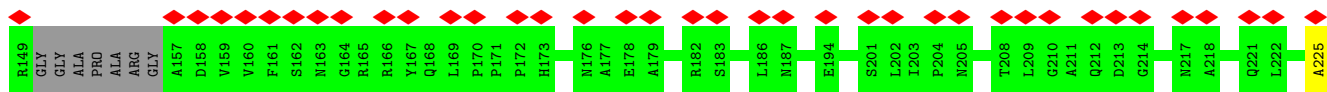
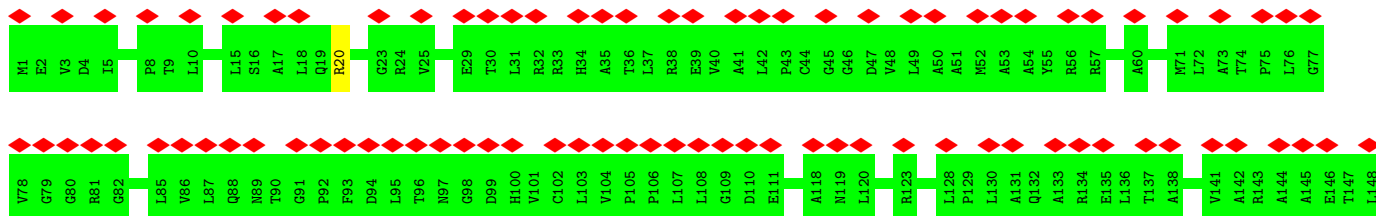




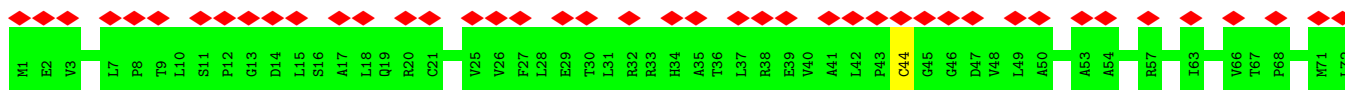
• Molecule 2: Triplex capsid protein 2



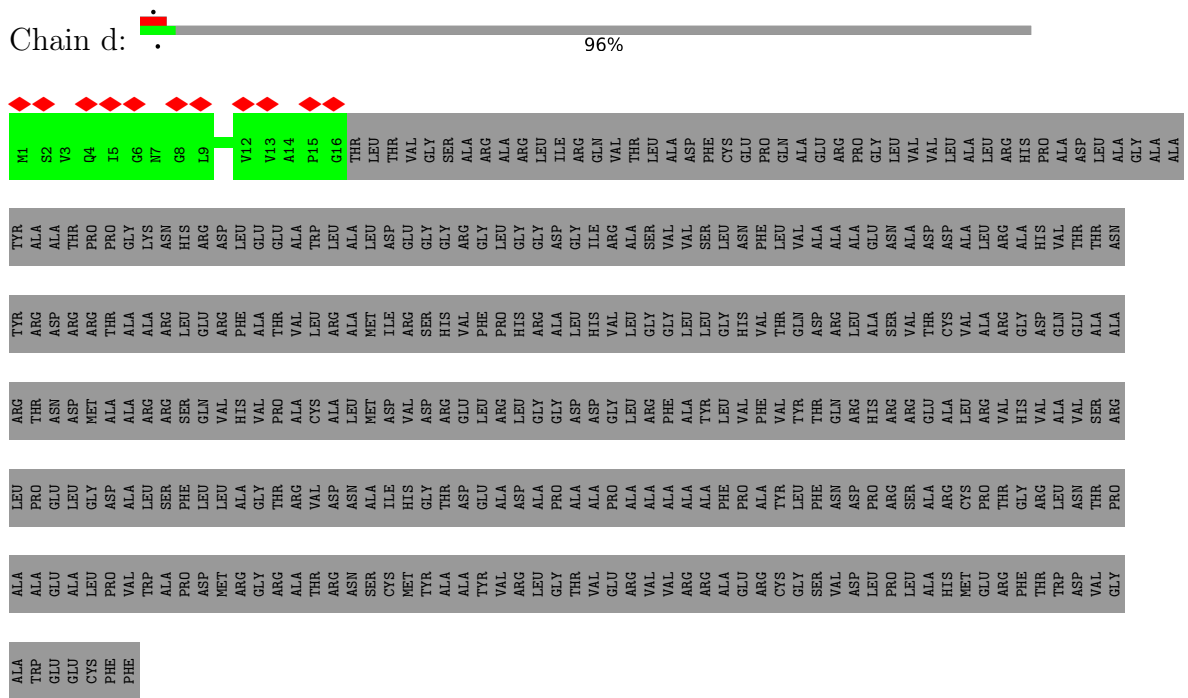
• Molecule 2: Triplex capsid protein 2



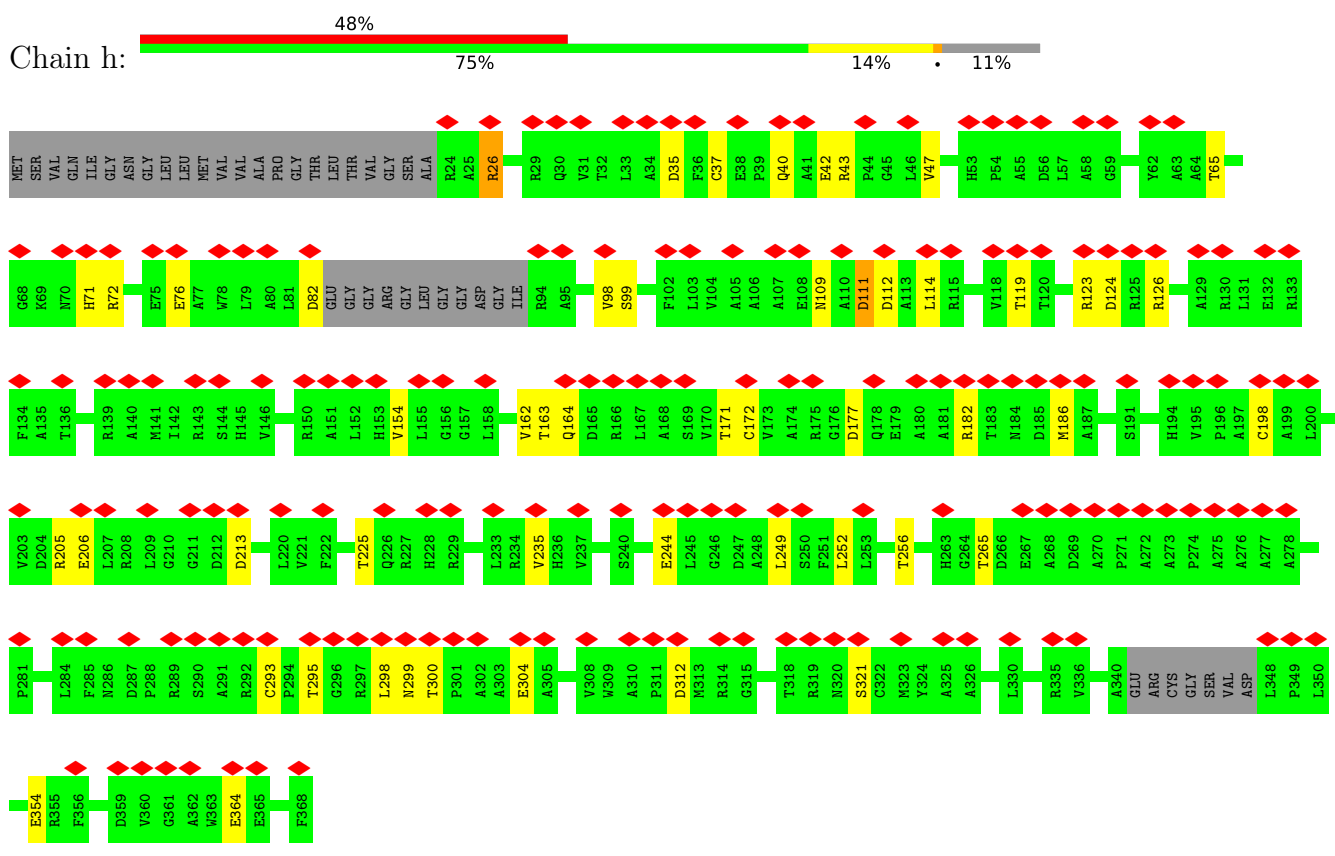
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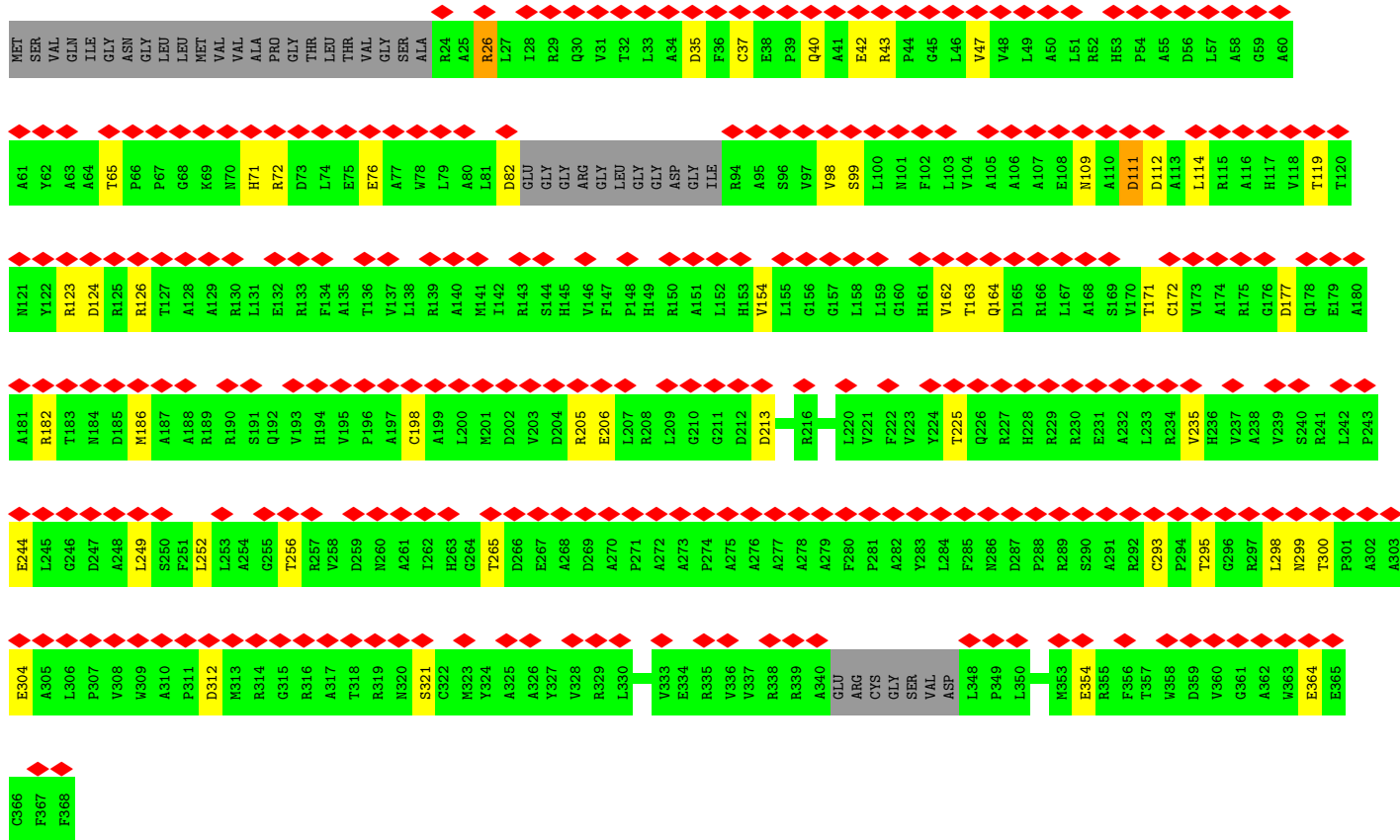
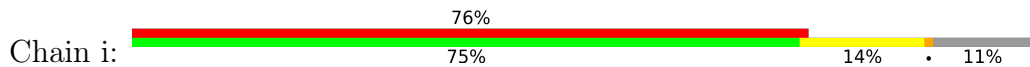
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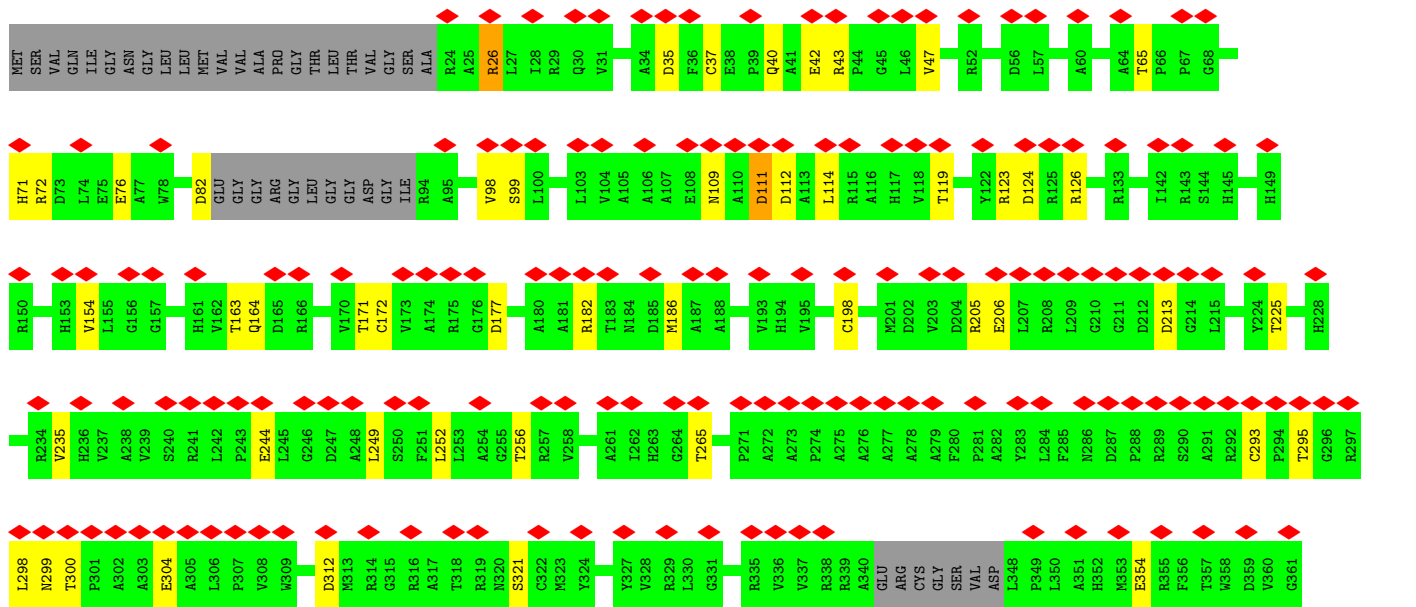
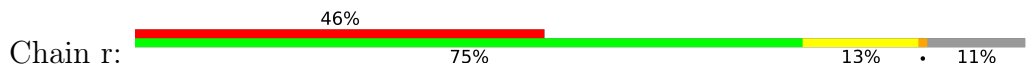
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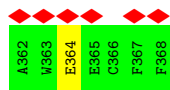


• Molecule 3: Triplex capsid protein 1

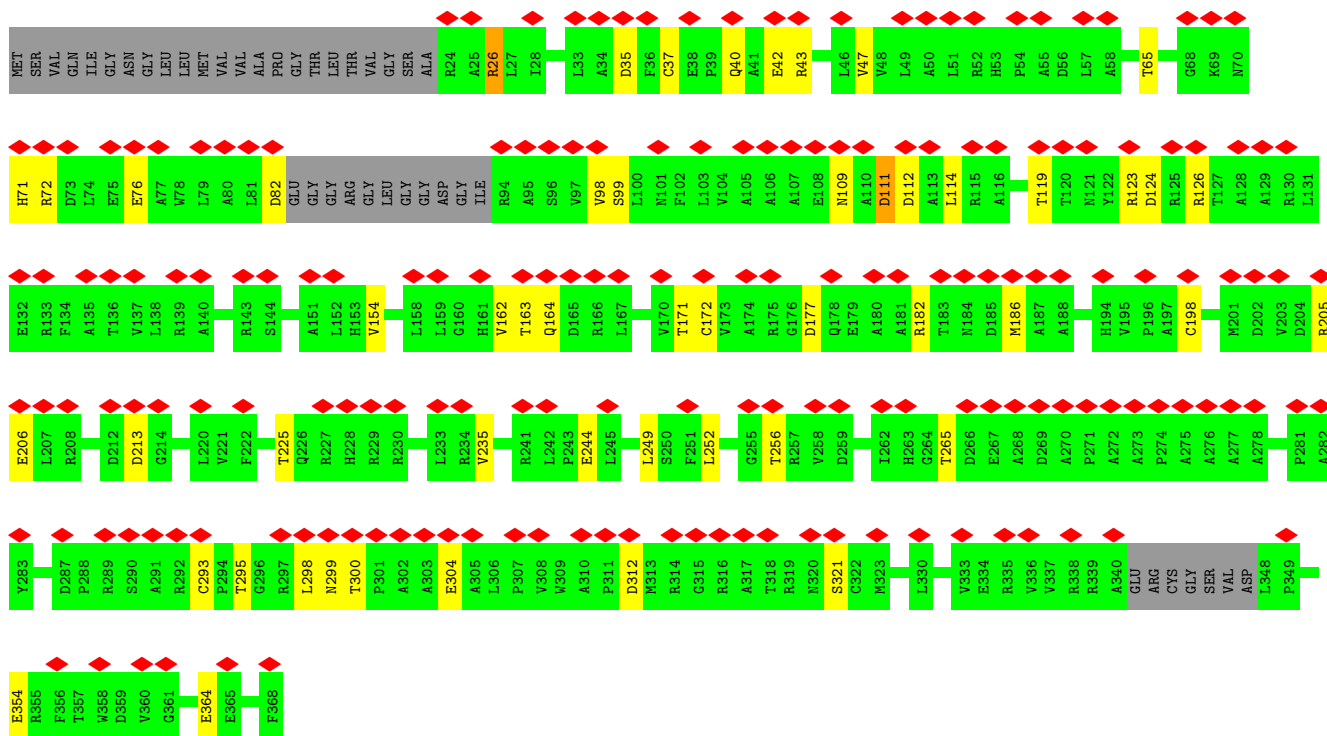
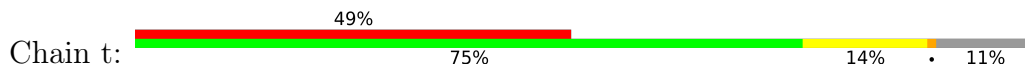


• Molecule 3: Triplex capsid protein 1

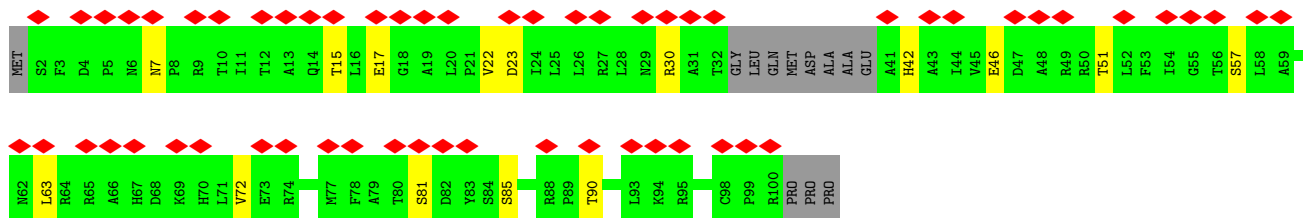
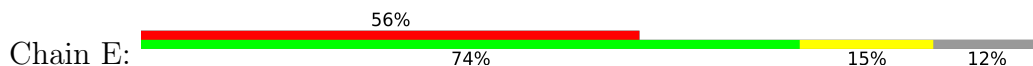




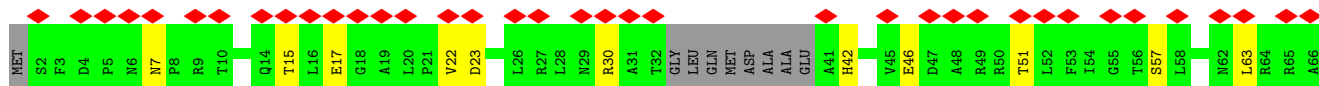
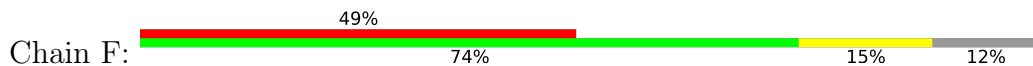
• Molecule 3: Triplex capsid protein 1

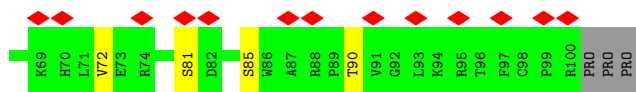


• Molecule 4: Small capsomere-interacting protein

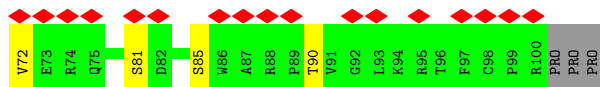
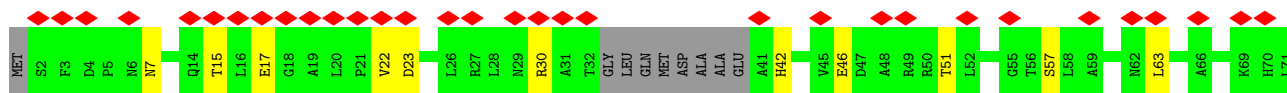
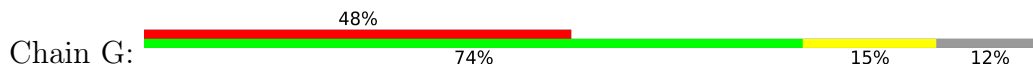


• Molecule 4: Small capsomere-interacting protein

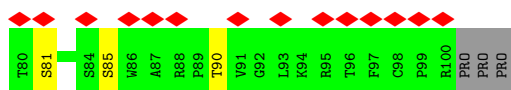
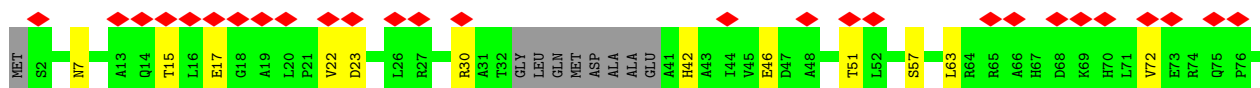
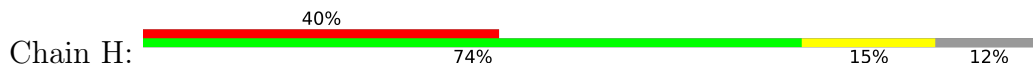




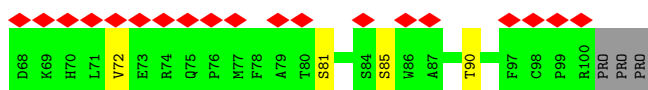
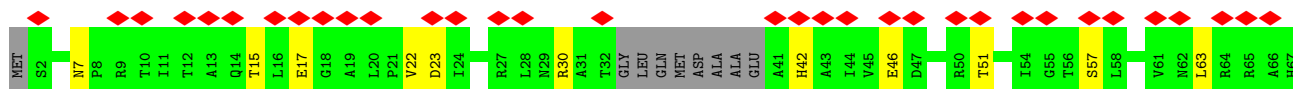
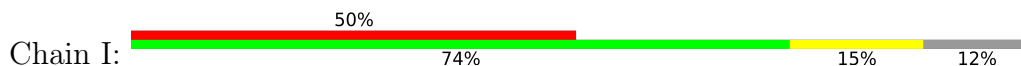
• Molecule 4: Small capsomere-interacting protein



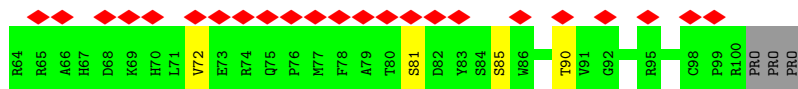
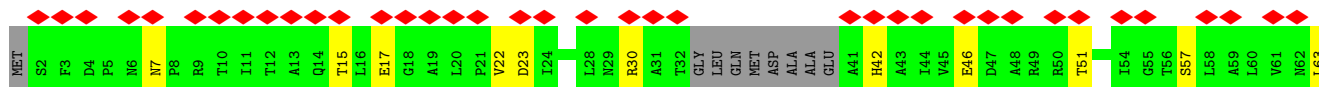
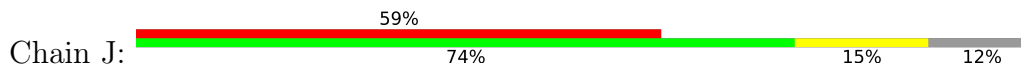
• Molecule 4: Small capsomere-interacting protein



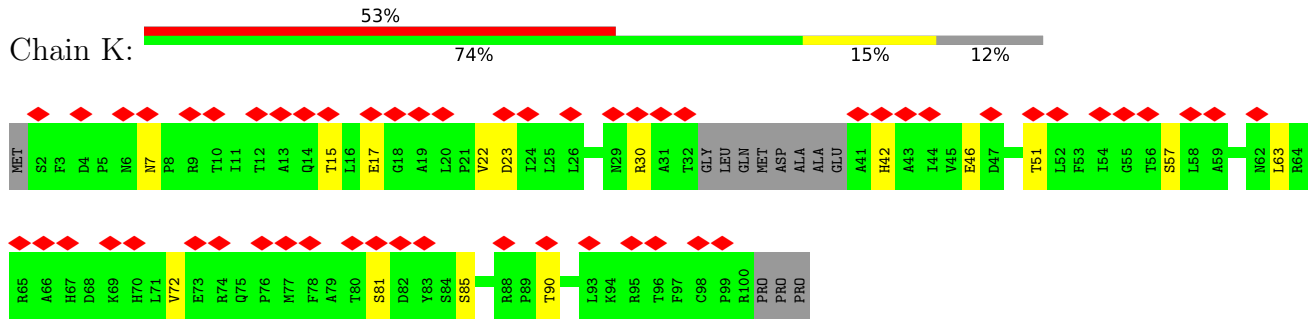
• Molecule 4: Small capsomere-interacting protein



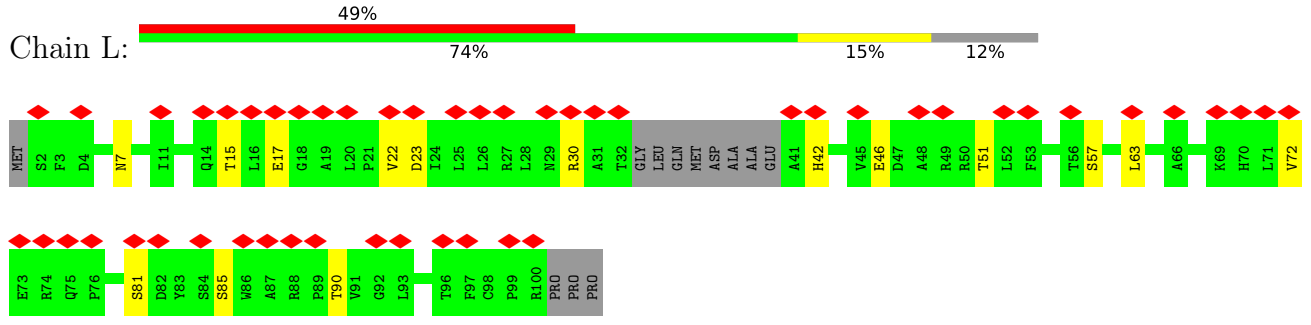
• Molecule 4: Small capsomere-interacting protein



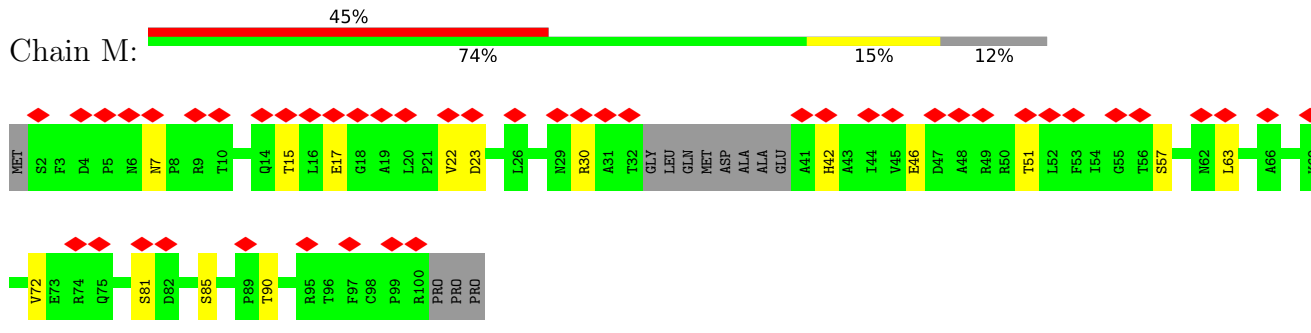
• Molecule 4: Small capsomere-interacting protein



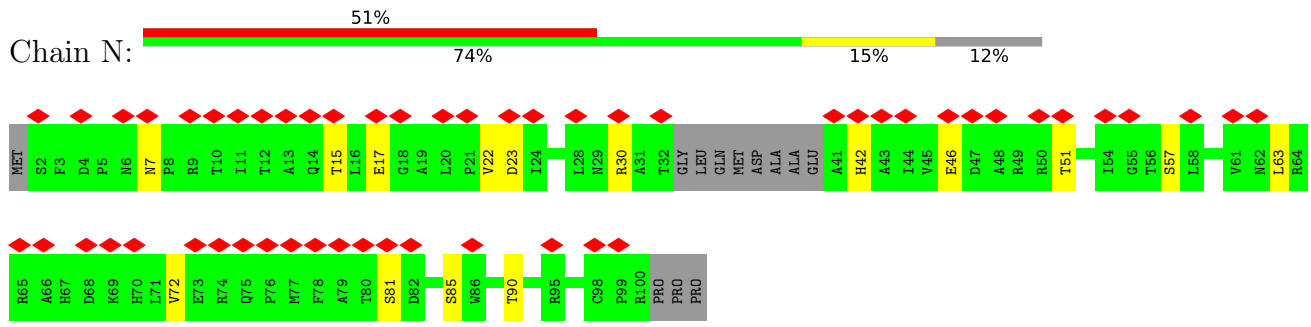
• Molecule 4: Small capsomere-interacting protein



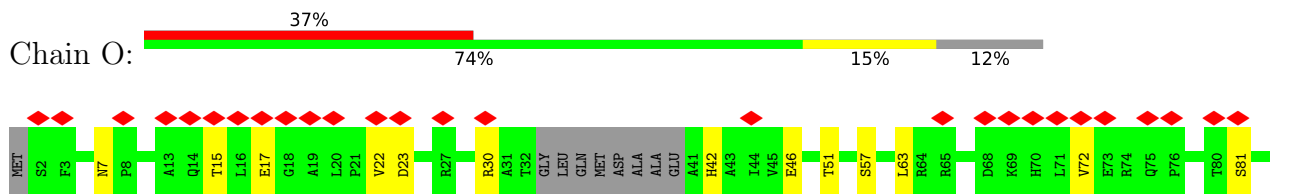
• Molecule 4: Small capsomere-interacting protein

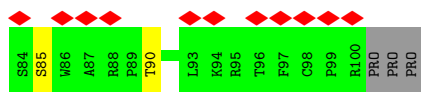


• Molecule 4: Small capsomere-interacting protein

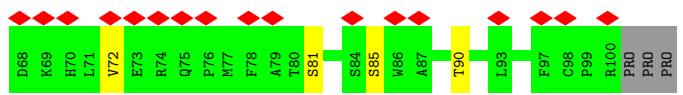
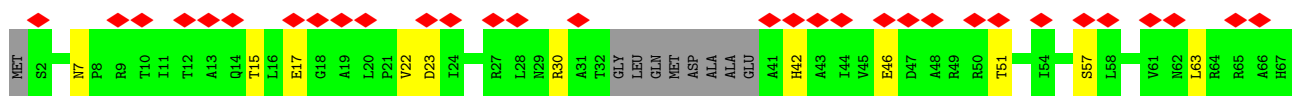
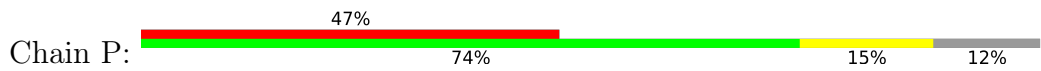


• Molecule 4: Small capsomere-interacting protein

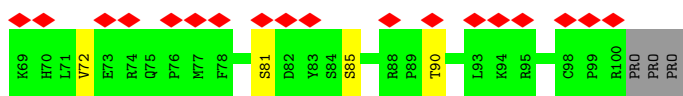
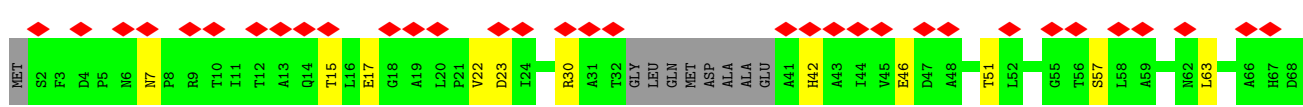
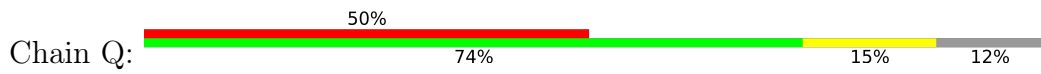




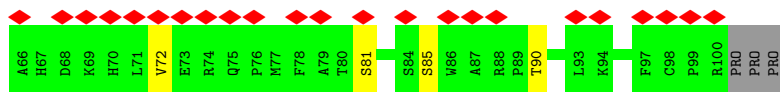
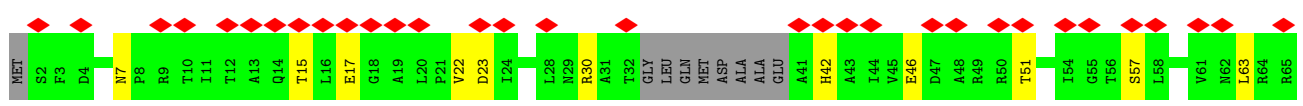
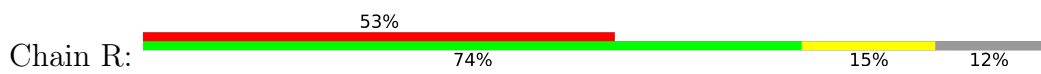
• Molecule 4: Small capsomere-interacting protein



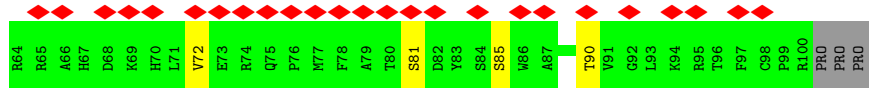
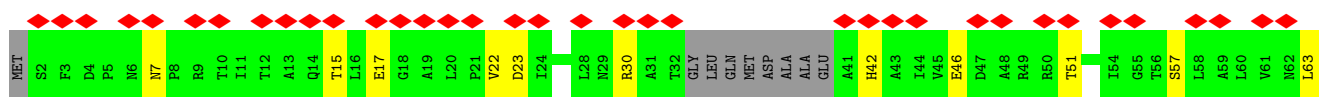
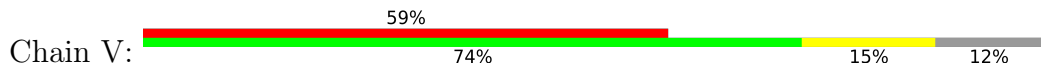
• Molecule 4: Small capsomere-interacting protein



• Molecule 4: Small capsomere-interacting protein



• Molecule 4: Small capsomere-interacting protein



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	8899	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	9.650	Depositor
Minimum map value	-5.599	Depositor
Average map value	-0.004	Depositor
Map value standard deviation	0.860	Depositor
Recommended contour level	2.0	Depositor
Map size (Å)	1429.76, 1429.76, 1429.76	wwPDB
Map dimensions	1280, 1280, 1280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.117, 1.117, 1.117	Depositor

5 Model quality i

5.1 Standard geometry i

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	0	0.34	0/10384	0.47	0/14158
1	A	0.37	1/10366 (0.0%)	0.57	13/14132 (0.1%)
1	S	0.32	0/10229	0.47	0/13950
1	U	0.37	0/10384	0.48	2/14158 (0.0%)
1	a	0.33	0/10225	0.48	1/13938 (0.0%)
1	e	0.28	0/8938	0.50	0/12175
1	f	0.37	0/10384	0.48	1/14158 (0.0%)
1	g	0.36	0/10379	0.49	2/14150 (0.0%)
1	l	0.35	0/10384	0.48	0/14158
1	m	0.36	0/10384	0.48	0/14158
1	n	0.35	0/10384	0.48	1/14158 (0.0%)
1	p	0.34	0/10384	0.48	1/14158 (0.0%)
1	q	0.34	0/10384	0.47	0/14158
1	u	0.36	0/10384	0.48	1/14158 (0.0%)
1	w	0.36	0/10384	0.48	0/14158
1	y	0.35	0/10384	0.49	4/14158 (0.0%)
2	1	0.30	0/2127	0.50	0/2903
2	2	0.29	0/2127	0.51	0/2903
2	3	0.30	0/2127	0.50	0/2903
2	j	0.31	0/2043	0.54	1/2783 (0.0%)
2	k	0.28	0/2127	0.49	0/2903
2	o	0.32	0/2272	0.50	0/3099
2	s	0.33	0/2127	0.49	0/2903
2	v	0.31	0/2230	0.48	0/3041
2	x	0.30	0/2272	0.53	0/3099
2	z	0.29	0/2272	0.50	0/3099
3	B	1.95	6/152 (3.9%)	2.52	15/206 (7.3%)
3	C	1.95	6/152 (3.9%)	2.53	15/206 (7.3%)
3	D	1.95	6/152 (3.9%)	2.53	15/206 (7.3%)
3	T	0.33	0/2591	0.62	2/3521 (0.1%)
3	W	1.95	7/152 (4.6%)	2.52	15/206 (7.3%)
3	d	0.27	0/108	0.51	0/145
3	h	0.33	0/2591	0.62	2/3521 (0.1%)
3	i	0.33	0/2591	0.61	2/3521 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
3	r	0.33	0/2591	0.62	2/3521 (0.1%)
3	t	0.33	0/2591	0.61	2/3521 (0.1%)
4	E	0.28	0/736	0.50	0/999
4	F	0.28	0/736	0.50	0/999
4	G	0.28	0/736	0.50	0/999
4	H	0.28	0/736	0.50	0/999
4	I	0.28	0/736	0.50	0/999
4	J	0.28	0/736	0.50	0/999
4	K	0.28	0/736	0.50	0/999
4	L	0.28	0/736	0.50	0/999
4	M	0.28	0/736	0.50	0/999
4	N	0.28	0/736	0.50	0/999
4	O	0.28	0/736	0.50	0/999
4	P	0.28	0/736	0.50	0/999
4	Q	0.28	0/736	0.50	0/999
4	R	0.28	0/736	0.50	0/999
4	V	0.28	0/736	0.50	0/999
All	All	0.36	26/210796 (0.0%)	0.51	97/287278 (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
1	0	0	2
1	A	0	1
1	U	0	1
1	n	0	3
1	u	0	1
1	y	0	1
2	v	0	1
3	B	0	6
3	C	0	6
3	D	0	6
3	W	0	6
All	All	0	34

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	8	GLY	N-CA	8.82	1.59	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	8	GLY	N-CA	8.80	1.59	1.46
3	W	8	GLY	N-CA	8.78	1.59	1.46
3	B	8	GLY	N-CA	8.73	1.59	1.46
3	B	16	GLY	N-CA	7.64	1.57	1.46
3	C	16	GLY	N-CA	7.61	1.57	1.46
3	D	16	GLY	N-CA	7.61	1.57	1.46
3	W	16	GLY	N-CA	7.61	1.57	1.46
3	W	16	GLY	CA-C	7.56	1.64	1.51
3	B	16	GLY	CA-C	7.55	1.64	1.51
3	D	16	GLY	CA-C	7.54	1.64	1.51
3	C	16	GLY	CA-C	7.53	1.63	1.51
3	D	7	ASN	C-N	7.35	1.46	1.33
3	B	7	ASN	C-N	7.30	1.46	1.33
3	W	7	ASN	C-N	7.29	1.46	1.33
3	C	7	ASN	C-N	7.25	1.46	1.33
3	B	16	GLY	C-N	6.27	1.48	1.34
3	W	16	GLY	C-N	6.25	1.48	1.34
3	C	16	GLY	C-N	6.23	1.48	1.34
3	D	16	GLY	C-N	6.22	1.48	1.34
3	D	14	ALA	C-N	5.68	1.45	1.34
3	B	14	ALA	C-N	5.67	1.45	1.34
3	C	14	ALA	C-N	5.63	1.45	1.34
3	W	14	ALA	C-N	5.59	1.44	1.34
1	A	161	VAL	CB-CG2	-5.42	1.41	1.52
3	W	8	GLY	CA-C	5.00	1.59	1.51

All (97) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	162	LEU	CB-CG-CD2	-21.90	73.78	111.00
3	W	17	THR	CA-CB-CG2	12.04	129.25	112.40
3	D	17	THR	CA-CB-CG2	12.03	129.24	112.40
3	B	17	THR	CA-CB-CG2	12.00	129.21	112.40
3	C	17	THR	CA-CB-CG2	12.00	129.20	112.40
1	A	163	ASP	CB-CG-OD2	-11.10	108.31	118.30
1	A	163	ASP	CB-CG-OD1	10.62	127.86	118.30
3	C	17	THR	N-CA-CB	10.56	130.37	110.30
3	B	17	THR	N-CA-CB	10.55	130.34	110.30
3	D	17	THR	N-CA-CB	10.54	130.33	110.30
3	W	17	THR	N-CA-CB	10.53	130.30	110.30
3	B	18	LEU	CB-CG-CD2	-8.99	95.72	111.00
3	D	18	LEU	CB-CG-CD2	-8.97	95.75	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	W	18	LEU	CB-CG-CD2	-8.96	95.76	111.00
3	C	18	LEU	CB-CG-CD2	-8.93	95.82	111.00
1	A	162	LEU	CD1-CG-CD2	-8.66	84.51	110.50
1	y	132	ILE	CG1-CB-CG2	-7.60	94.69	111.40
3	D	10	LEU	CB-CG-CD2	-7.50	98.25	111.00
3	C	10	LEU	CB-CG-CD2	-7.50	98.26	111.00
3	B	10	LEU	CB-CG-CD2	-7.47	98.29	111.00
1	f	768	ASN	C-N-CA	7.47	140.38	121.70
3	W	10	LEU	CB-CG-CD2	-7.43	98.36	111.00
3	C	4	GLN	CA-CB-CG	7.43	129.74	113.40
3	B	4	GLN	CA-CB-CG	7.42	129.72	113.40
3	W	4	GLN	CA-CB-CG	7.41	129.69	113.40
3	D	4	GLN	CA-CB-CG	7.37	129.62	113.40
3	T	111	ASP	CB-CG-OD1	-7.30	111.73	118.30
3	h	111	ASP	CB-CG-OD1	-7.28	111.75	118.30
3	i	111	ASP	CB-CG-OD1	-7.27	111.76	118.30
3	r	111	ASP	CB-CG-OD1	-7.26	111.77	118.30
3	W	17	THR	CB-CA-C	-7.17	92.23	111.60
3	C	17	THR	CB-CA-C	-7.17	92.25	111.60
3	t	111	ASP	CB-CG-OD1	-7.16	111.86	118.30
3	B	17	THR	CB-CA-C	-7.15	92.29	111.60
3	D	17	THR	CB-CA-C	-7.15	92.30	111.60
3	i	26	ARG	NE-CZ-NH1	7.11	123.85	120.30
3	C	16	GLY	CA-C-O	-7.09	107.84	120.60
3	D	16	GLY	CA-C-O	-7.08	107.85	120.60
3	W	16	GLY	CA-C-O	-7.08	107.85	120.60
3	B	16	GLY	CA-C-O	-7.07	107.88	120.60
3	r	26	ARG	NE-CZ-NH1	7.03	123.82	120.30
3	T	26	ARG	NE-CZ-NH1	7.00	123.80	120.30
3	h	26	ARG	NE-CZ-NH1	6.97	123.79	120.30
3	t	26	ARG	NE-CZ-NH1	6.93	123.77	120.30
1	A	131	LEU	CB-CG-CD1	-6.71	99.58	111.00
1	A	874	THR	C-N-CA	-6.46	105.55	121.70
1	y	129	LEU	CB-CG-CD1	-6.43	100.07	111.00
1	a	89	GLN	C-N-CA	-6.37	105.77	121.70
3	C	3	VAL	C-N-CA	6.33	137.53	121.70
3	B	3	VAL	C-N-CA	6.32	137.49	121.70
3	D	3	VAL	C-N-CA	6.29	137.44	121.70
3	W	3	VAL	C-N-CA	6.29	137.42	121.70
1	A	162	LEU	CB-CG-CD1	6.18	121.50	111.00
3	W	9	LEU	CB-CG-CD2	6.15	121.45	111.00
3	B	9	LEU	CB-CG-CD2	6.13	121.43	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	9	LEU	CB-CG-CD2	6.12	121.40	111.00
3	C	9	LEU	CB-CG-CD2	6.11	121.39	111.00
1	A	131	LEU	CB-CG-CD2	-6.11	100.62	111.00
3	C	17	THR	C-N-CA	-5.78	107.25	121.70
3	D	17	THR	C-N-CA	-5.78	107.26	121.70
3	W	17	THR	C-N-CA	-5.77	107.27	121.70
3	B	17	THR	C-N-CA	-5.77	107.28	121.70
1	y	129	LEU	CB-CG-CD2	5.75	120.77	111.00
3	C	10	LEU	CB-CG-CD1	-5.74	101.24	111.00
3	W	10	LEU	CB-CG-CD1	-5.73	101.26	111.00
3	D	10	LEU	CB-CG-CD1	-5.73	101.26	111.00
3	B	10	LEU	CB-CG-CD1	-5.69	101.33	111.00
1	U	221	LEU	CA-CB-CG	5.67	128.33	115.30
3	B	15	PRO	C-N-CA	5.64	134.15	122.30
3	D	15	PRO	C-N-CA	5.64	134.14	122.30
3	C	15	PRO	C-N-CA	5.63	134.12	122.30
3	W	15	PRO	C-N-CA	5.62	134.11	122.30
3	D	16	GLY	CA-C-N	5.56	129.44	117.20
1	g	771	LEU	CA-CB-CG	5.55	128.07	115.30
3	C	16	GLY	CA-C-N	5.55	129.41	117.20
3	B	16	GLY	CA-C-N	5.54	129.39	117.20
3	C	10	LEU	C-N-CA	-5.53	107.87	121.70
3	W	16	GLY	CA-C-N	5.52	129.35	117.20
1	A	133	SER	C-N-CA	-5.52	110.71	122.30
3	B	10	LEU	C-N-CA	-5.52	107.90	121.70
3	D	10	LEU	C-N-CA	-5.51	107.92	121.70
3	W	10	LEU	C-N-CA	-5.50	107.95	121.70
1	n	221	LEU	CA-CB-CG	5.46	127.85	115.30
3	C	11	MET	C-N-CA	-5.44	108.10	121.70
3	D	11	MET	C-N-CA	-5.44	108.10	121.70
3	B	11	MET	C-N-CA	-5.42	108.14	121.70
3	W	11	MET	C-N-CA	-5.41	108.18	121.70
1	A	137	LEU	CA-CB-CG	5.39	127.69	115.30
1	u	221	LEU	CA-CB-CG	5.36	127.63	115.30
1	A	132	ILE	CG1-CB-CG2	-5.29	99.75	111.40
1	y	1051	ARG	NE-CZ-NH1	-5.28	117.66	120.30
1	A	163	ASP	N-CA-CB	5.27	120.09	110.60
1	g	1126	LEU	CA-CB-CG	5.23	127.33	115.30
1	p	221	LEU	CA-CB-CG	5.23	127.32	115.30
1	U	1126	LEU	CA-CB-CG	5.15	127.14	115.30
1	A	162	LEU	CA-CB-CG	5.09	127.02	115.30
2	j	199	LEU	CA-CB-CG	-5.03	103.73	115.30

There are no chirality outliers.

All (34) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	762	ARG	Peptide
1	0	984	ALA	Peptide
1	A	163	ASP	Peptide
3	B	12	VAL	Peptide
3	B	15	PRO	Peptide
3	B	19	THR	Peptide
3	B	5	ILE	Peptide
3	B	6	GLY	Peptide
3	B	7	ASN	Peptide
3	C	12	VAL	Peptide
3	C	15	PRO	Peptide
3	C	19	THR	Peptide
3	C	5	ILE	Peptide
3	C	6	GLY	Peptide
3	C	7	ASN	Peptide
3	D	12	VAL	Peptide
3	D	15	PRO	Peptide
3	D	19	THR	Peptide
3	D	5	ILE	Peptide
3	D	6	GLY	Peptide
3	D	7	ASN	Peptide
1	U	762	ARG	Peptide
3	W	12	VAL	Peptide
3	W	15	PRO	Peptide
3	W	19	THR	Peptide
3	W	5	ILE	Peptide
3	W	6	GLY	Peptide
3	W	7	ASN	Peptide
1	n	1125	ARG	Peptide
1	n	1127	ALA	Peptide
1	n	762	ARG	Peptide
1	u	762	ARG	Peptide
2	v	225	ALA	Peptide
1	y	130	GLY	Peptide

5.2 Too-close contacts [\(i\)](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	1307/1330 (98%)	1171 (90%)	135 (10%)	1 (0%)	51	85
1	A	1302/1330 (98%)	1159 (89%)	138 (11%)	5 (0%)	34	72
1	S	1285/1330 (97%)	1146 (89%)	136 (11%)	3 (0%)	47	81
1	U	1307/1330 (98%)	1168 (89%)	137 (10%)	2 (0%)	47	81
1	a	1281/1330 (96%)	1137 (89%)	144 (11%)	0	100	100
1	e	1102/1330 (83%)	987 (90%)	114 (10%)	1 (0%)	51	85
1	f	1307/1330 (98%)	1162 (89%)	142 (11%)	3 (0%)	47	81
1	g	1304/1330 (98%)	1158 (89%)	146 (11%)	0	100	100
1	l	1307/1330 (98%)	1168 (89%)	138 (11%)	1 (0%)	51	85
1	m	1307/1330 (98%)	1163 (89%)	144 (11%)	0	100	100
1	n	1307/1330 (98%)	1163 (89%)	140 (11%)	4 (0%)	41	76
1	p	1307/1330 (98%)	1167 (89%)	139 (11%)	1 (0%)	51	85
1	q	1307/1330 (98%)	1183 (90%)	124 (10%)	0	100	100
1	u	1307/1330 (98%)	1156 (88%)	150 (12%)	1 (0%)	51	85
1	w	1307/1330 (98%)	1174 (90%)	132 (10%)	1 (0%)	51	85
1	y	1307/1330 (98%)	1168 (89%)	138 (11%)	1 (0%)	51	85
2	1	273/296 (92%)	252 (92%)	21 (8%)	0	100	100
2	2	273/296 (92%)	252 (92%)	21 (8%)	0	100	100
2	3	273/296 (92%)	250 (92%)	23 (8%)	0	100	100
2	j	261/296 (88%)	236 (90%)	25 (10%)	0	100	100
2	k	273/296 (92%)	252 (92%)	21 (8%)	0	100	100
2	o	294/296 (99%)	263 (90%)	31 (10%)	0	100	100
2	s	273/296 (92%)	248 (91%)	25 (9%)	0	100	100
2	v	285/296 (96%)	257 (90%)	28 (10%)	0	100	100
2	x	294/296 (99%)	258 (88%)	36 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	z	294/296 (99%)	262 (89%)	32 (11%)	0	100	100
3	B	21/368 (6%)	11 (52%)	6 (29%)	4 (19%)	0	2
3	C	21/368 (6%)	11 (52%)	6 (29%)	4 (19%)	0	2
3	D	21/368 (6%)	11 (52%)	6 (29%)	4 (19%)	0	2
3	T	321/368 (87%)	293 (91%)	28 (9%)	0	100	100
3	W	21/368 (6%)	11 (52%)	6 (29%)	4 (19%)	0	2
3	d	14/368 (4%)	12 (86%)	2 (14%)	0	100	100
3	h	321/368 (87%)	292 (91%)	29 (9%)	0	100	100
3	i	321/368 (87%)	292 (91%)	29 (9%)	0	100	100
3	r	321/368 (87%)	293 (91%)	28 (9%)	0	100	100
3	t	321/368 (87%)	293 (91%)	28 (9%)	0	100	100
4	E	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	F	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	G	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	H	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	I	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	J	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	K	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	L	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	M	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	N	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	O	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	P	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	Q	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	R	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
4	V	87/103 (84%)	81 (93%)	6 (7%)	0	100	100
All	All	26452/29465 (90%)	23694 (90%)	2718 (10%)	40 (0%)	50	81

All (40) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	164	SER
3	B	13	VAL

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Mol	Chain	Res	Type
3	B	16	GLY
3	B	20	VAL
3	C	13	VAL
3	C	16	GLY
3	C	20	VAL
3	D	13	VAL
3	D	16	GLY
3	D	20	VAL
3	W	13	VAL
3	W	16	GLY
3	W	20	VAL
1	A	158	VAL
1	U	986	GLU
1	f	986	GLU
1	n	1126	LEU
1	y	986	GLU
1	A	986	GLU
1	l	986	GLU
1	n	986	GLU
1	n	1311	ALA
1	u	1126	LEU
1	0	1311	ALA
1	A	159	GLN
3	B	8	GLY
3	C	8	GLY
3	D	8	GLY
1	S	1227	ALA
3	W	8	GLY
1	e	393	ARG
1	f	1127	ALA
1	p	986	GLU
1	A	1137	PRO
1	S	735	GLY
1	S	1226	PRO
1	U	458	PRO
1	f	1128	PRO
1	n	1127	ALA
1	w	1128	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	1057/1072 (99%)	1056 (100%)	1 (0%)	93	96
1	A	1056/1072 (98%)	1050 (99%)	6 (1%)	86	92
1	S	1042/1072 (97%)	1042 (100%)	0	100	100
1	U	1057/1072 (99%)	1057 (100%)	0	100	100
1	a	1040/1072 (97%)	1040 (100%)	0	100	100
1	e	909/1072 (85%)	908 (100%)	1 (0%)	93	96
1	f	1057/1072 (99%)	1056 (100%)	1 (0%)	93	96
1	g	1057/1072 (99%)	1056 (100%)	1 (0%)	93	96
1	l	1057/1072 (99%)	1056 (100%)	1 (0%)	93	96
1	m	1057/1072 (99%)	1057 (100%)	0	100	100
1	n	1057/1072 (99%)	1057 (100%)	0	100	100
1	p	1057/1072 (99%)	1054 (100%)	3 (0%)	92	95
1	q	1057/1072 (99%)	1057 (100%)	0	100	100
1	u	1057/1072 (99%)	1057 (100%)	0	100	100
1	w	1057/1072 (99%)	1057 (100%)	0	100	100
1	y	1057/1072 (99%)	1056 (100%)	1 (0%)	93	96
2	1	223/235 (95%)	223 (100%)	0	100	100
2	2	223/235 (95%)	222 (100%)	1 (0%)	91	94
2	3	223/235 (95%)	223 (100%)	0	100	100
2	j	213/235 (91%)	212 (100%)	1 (0%)	88	93
2	k	223/235 (95%)	223 (100%)	0	100	100
2	o	235/235 (100%)	235 (100%)	0	100	100
2	s	223/235 (95%)	223 (100%)	0	100	100
2	v	233/235 (99%)	232 (100%)	1 (0%)	91	94
2	x	235/235 (100%)	234 (100%)	1 (0%)	91	94
2	z	235/235 (100%)	235 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	B	17/279 (6%)	8 (47%)	9 (53%)	0	0
3	C	17/279 (6%)	7 (41%)	10 (59%)	0	0
3	D	17/279 (6%)	7 (41%)	10 (59%)	0	0
3	T	251/279 (90%)	199 (79%)	52 (21%)	1	7
3	W	17/279 (6%)	7 (41%)	10 (59%)	0	0
3	d	12/279 (4%)	12 (100%)	0	100	100
3	h	251/279 (90%)	199 (79%)	52 (21%)	1	7
3	i	251/279 (90%)	199 (79%)	52 (21%)	1	7
3	r	251/279 (90%)	200 (80%)	51 (20%)	1	8
3	t	251/279 (90%)	199 (79%)	52 (21%)	1	7
4	E	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	F	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	G	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	H	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	I	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	J	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	K	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	L	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	M	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	N	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	O	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	P	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	Q	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	R	78/87 (90%)	63 (81%)	15 (19%)	1	9
4	V	78/87 (90%)	63 (81%)	15 (19%)	1	9
All	All	21502/23597 (91%)	20960 (98%)	542 (2%)	50	68

All (542) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	226	ARG
2	2	271	ARG
1	A	122	PHE

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Mol	Chain	Res	Type
1	A	124	ILE
1	A	129	LEU
1	A	133	SER
1	A	162	LEU
1	A	164	SER
3	B	2	SER
3	B	5	ILE
3	B	9	LEU
3	B	10	LEU
3	B	11	MET
3	B	17	THR
3	B	18	LEU
3	B	20	VAL
3	B	22	SER
3	C	2	SER
3	C	3	VAL
3	C	5	ILE
3	C	9	LEU
3	C	10	LEU
3	C	11	MET
3	C	17	THR
3	C	18	LEU
3	C	20	VAL
3	C	22	SER
3	D	2	SER
3	D	3	VAL
3	D	5	ILE
3	D	9	LEU
3	D	10	LEU
3	D	11	MET
3	D	17	THR
3	D	18	LEU
3	D	20	VAL
3	D	22	SER
4	E	7	ASN
4	E	15	THR
4	E	17	GLU
4	E	22	VAL
4	E	23	ASP
4	E	30	ARG
4	E	42	HIS
4	E	46	GLU

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Mol	Chain	Res	Type
4	E	51	THR
4	E	57	SER
4	E	63	LEU
4	E	72	VAL
4	E	81	SER
4	E	85	SER
4	E	90	THR
4	F	7	ASN
4	F	15	THR
4	F	17	GLU
4	F	22	VAL
4	F	23	ASP
4	F	30	ARG
4	F	42	HIS
4	F	46	GLU
4	F	51	THR
4	F	57	SER
4	F	63	LEU
4	F	72	VAL
4	F	81	SER
4	F	85	SER
4	F	90	THR
4	G	7	ASN
4	G	15	THR
4	G	17	GLU
4	G	22	VAL
4	G	23	ASP
4	G	30	ARG
4	G	42	HIS
4	G	46	GLU
4	G	51	THR
4	G	57	SER
4	G	63	LEU
4	G	72	VAL
4	G	81	SER
4	G	85	SER
4	G	90	THR
4	H	7	ASN
4	H	15	THR
4	H	17	GLU
4	H	22	VAL
4	H	23	ASP

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Mol	Chain	Res	Type
4	H	30	ARG
4	H	42	HIS
4	H	46	GLU
4	H	51	THR
4	H	57	SER
4	H	63	LEU
4	H	72	VAL
4	H	81	SER
4	H	85	SER
4	H	90	THR
4	I	7	ASN
4	I	15	THR
4	I	17	GLU
4	I	22	VAL
4	I	23	ASP
4	I	30	ARG
4	I	42	HIS
4	I	46	GLU
4	I	51	THR
4	I	57	SER
4	I	63	LEU
4	I	72	VAL
4	I	81	SER
4	I	85	SER
4	I	90	THR
4	J	7	ASN
4	J	15	THR
4	J	17	GLU
4	J	22	VAL
4	J	23	ASP
4	J	30	ARG
4	J	42	HIS
4	J	46	GLU
4	J	51	THR
4	J	57	SER
4	J	63	LEU
4	J	72	VAL
4	J	81	SER
4	J	85	SER
4	J	90	THR
4	K	7	ASN
4	K	15	THR

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Mol	Chain	Res	Type
4	K	17	GLU
4	K	22	VAL
4	K	23	ASP
4	K	30	ARG
4	K	42	HIS
4	K	46	GLU
4	K	51	THR
4	K	57	SER
4	K	63	LEU
4	K	72	VAL
4	K	81	SER
4	K	85	SER
4	K	90	THR
4	L	7	ASN
4	L	15	THR
4	L	17	GLU
4	L	22	VAL
4	L	23	ASP
4	L	30	ARG
4	L	42	HIS
4	L	46	GLU
4	L	51	THR
4	L	57	SER
4	L	63	LEU
4	L	72	VAL
4	L	81	SER
4	L	85	SER
4	L	90	THR
4	M	7	ASN
4	M	15	THR
4	M	17	GLU
4	M	22	VAL
4	M	23	ASP
4	M	30	ARG
4	M	42	HIS
4	M	46	GLU
4	M	51	THR
4	M	57	SER
4	M	63	LEU
4	M	72	VAL
4	M	81	SER
4	M	85	SER

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Mol	Chain	Res	Type
4	M	90	THR
4	N	7	ASN
4	N	15	THR
4	N	17	GLU
4	N	22	VAL
4	N	23	ASP
4	N	30	ARG
4	N	42	HIS
4	N	46	GLU
4	N	51	THR
4	N	57	SER
4	N	63	LEU
4	N	72	VAL
4	N	81	SER
4	N	85	SER
4	N	90	THR
4	O	7	ASN
4	O	15	THR
4	O	17	GLU
4	O	22	VAL
4	O	23	ASP
4	O	30	ARG
4	O	42	HIS
4	O	46	GLU
4	O	51	THR
4	O	57	SER
4	O	63	LEU
4	O	72	VAL
4	O	81	SER
4	O	85	SER
4	O	90	THR
4	P	7	ASN
4	P	15	THR
4	P	17	GLU
4	P	22	VAL
4	P	23	ASP
4	P	30	ARG
4	P	42	HIS
4	P	46	GLU
4	P	51	THR
4	P	57	SER
4	P	63	LEU

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Mol	Chain	Res	Type
4	P	72	VAL
4	P	81	SER
4	P	85	SER
4	P	90	THR
4	Q	7	ASN
4	Q	15	THR
4	Q	17	GLU
4	Q	22	VAL
4	Q	23	ASP
4	Q	30	ARG
4	Q	42	HIS
4	Q	46	GLU
4	Q	51	THR
4	Q	57	SER
4	Q	63	LEU
4	Q	72	VAL
4	Q	81	SER
4	Q	85	SER
4	Q	90	THR
4	R	7	ASN
4	R	15	THR
4	R	17	GLU
4	R	22	VAL
4	R	23	ASP
4	R	30	ARG
4	R	42	HIS
4	R	46	GLU
4	R	51	THR
4	R	57	SER
4	R	63	LEU
4	R	72	VAL
4	R	81	SER
4	R	85	SER
4	R	90	THR
3	T	26	ARG
3	T	35	ASP
3	T	37	CYS
3	T	40	GLN
3	T	42	GLU
3	T	43	ARG
3	T	47	VAL
3	T	65	THR

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Mol	Chain	Res	Type
3	T	71	HIS
3	T	72	ARG
3	T	76	GLU
3	T	82	ASP
3	T	98	VAL
3	T	99	SER
3	T	109	ASN
3	T	111	ASP
3	T	112	ASP
3	T	114	LEU
3	T	119	THR
3	T	123	ARG
3	T	124	ASP
3	T	126	ARG
3	T	154	VAL
3	T	162	VAL
3	T	163	THR
3	T	164	GLN
3	T	171	THR
3	T	172	CYS
3	T	177	ASP
3	T	182	ARG
3	T	186	MET
3	T	198	CYS
3	T	205	ARG
3	T	206	GLU
3	T	213	ASP
3	T	225	THR
3	T	235	VAL
3	T	244	GLU
3	T	249	LEU
3	T	252	LEU
3	T	256	THR
3	T	265	THR
3	T	293	CYS
3	T	295	THR
3	T	298	LEU
3	T	299	ASN
3	T	300	THR
3	T	304	GLU
3	T	312	ASP
3	T	321	SER

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Mol	Chain	Res	Type
3	T	354	GLU
3	T	364	GLU
4	V	7	ASN
4	V	15	THR
4	V	17	GLU
4	V	22	VAL
4	V	23	ASP
4	V	30	ARG
4	V	42	HIS
4	V	46	GLU
4	V	51	THR
4	V	57	SER
4	V	63	LEU
4	V	72	VAL
4	V	81	SER
4	V	85	SER
4	V	90	THR
3	W	2	SER
3	W	3	VAL
3	W	5	ILE
3	W	9	LEU
3	W	10	LEU
3	W	11	MET
3	W	17	THR
3	W	18	LEU
3	W	20	VAL
3	W	22	SER
1	e	416	ARG
1	f	808	ARG
1	g	226	ARG
3	h	26	ARG
3	h	35	ASP
3	h	37	CYS
3	h	40	GLN
3	h	42	GLU
3	h	43	ARG
3	h	47	VAL
3	h	65	THR
3	h	71	HIS
3	h	72	ARG
3	h	76	GLU
3	h	82	ASP

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Mol	Chain	Res	Type
3	h	98	VAL
3	h	99	SER
3	h	109	ASN
3	h	111	ASP
3	h	112	ASP
3	h	114	LEU
3	h	119	THR
3	h	123	ARG
3	h	124	ASP
3	h	126	ARG
3	h	154	VAL
3	h	162	VAL
3	h	163	THR
3	h	164	GLN
3	h	171	THR
3	h	172	CYS
3	h	177	ASP
3	h	182	ARG
3	h	186	MET
3	h	198	CYS
3	h	205	ARG
3	h	206	GLU
3	h	213	ASP
3	h	225	THR
3	h	235	VAL
3	h	244	GLU
3	h	249	LEU
3	h	252	LEU
3	h	256	THR
3	h	265	THR
3	h	293	CYS
3	h	295	THR
3	h	298	LEU
3	h	299	ASN
3	h	300	THR
3	h	304	GLU
3	h	312	ASP
3	h	321	SER
3	h	354	GLU
3	h	364	GLU
3	i	26	ARG
3	i	35	ASP

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Mol	Chain	Res	Type
3	i	37	CYS
3	i	40	GLN
3	i	42	GLU
3	i	43	ARG
3	i	47	VAL
3	i	65	THR
3	i	71	HIS
3	i	72	ARG
3	i	76	GLU
3	i	82	ASP
3	i	98	VAL
3	i	99	SER
3	i	109	ASN
3	i	111	ASP
3	i	112	ASP
3	i	114	LEU
3	i	119	THR
3	i	123	ARG
3	i	124	ASP
3	i	126	ARG
3	i	154	VAL
3	i	162	VAL
3	i	163	THR
3	i	164	GLN
3	i	171	THR
3	i	172	CYS
3	i	177	ASP
3	i	182	ARG
3	i	186	MET
3	i	198	CYS
3	i	205	ARG
3	i	206	GLU
3	i	213	ASP
3	i	225	THR
3	i	235	VAL
3	i	244	GLU
3	i	249	LEU
3	i	252	LEU
3	i	256	THR
3	i	265	THR
3	i	293	CYS
3	i	295	THR

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Mol	Chain	Res	Type
3	i	298	LEU
3	i	299	ASN
3	i	300	THR
3	i	304	GLU
3	i	312	ASP
3	i	321	SER
3	i	354	GLU
3	i	364	GLU
2	j	44	CYS
1	l	873	ARG
1	p	196	ARG
1	p	983	ARG
1	p	1051	ARG
3	r	26	ARG
3	r	35	ASP
3	r	37	CYS
3	r	40	GLN
3	r	42	GLU
3	r	43	ARG
3	r	47	VAL
3	r	65	THR
3	r	71	HIS
3	r	72	ARG
3	r	76	GLU
3	r	82	ASP
3	r	98	VAL
3	r	99	SER
3	r	109	ASN
3	r	111	ASP
3	r	112	ASP
3	r	114	LEU
3	r	119	THR
3	r	123	ARG
3	r	124	ASP
3	r	126	ARG
3	r	154	VAL
3	r	163	THR
3	r	164	GLN
3	r	171	THR
3	r	172	CYS
3	r	177	ASP
3	r	182	ARG

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Mol	Chain	Res	Type
3	r	186	MET
3	r	198	CYS
3	r	205	ARG
3	r	206	GLU
3	r	213	ASP
3	r	225	THR
3	r	235	VAL
3	r	244	GLU
3	r	249	LEU
3	r	252	LEU
3	r	256	THR
3	r	265	THR
3	r	293	CYS
3	r	295	THR
3	r	298	LEU
3	r	299	ASN
3	r	300	THR
3	r	304	GLU
3	r	312	ASP
3	r	321	SER
3	r	354	GLU
3	r	364	GLU
3	t	26	ARG
3	t	35	ASP
3	t	37	CYS
3	t	40	GLN
3	t	42	GLU
3	t	43	ARG
3	t	47	VAL
3	t	65	THR
3	t	71	HIS
3	t	72	ARG
3	t	76	GLU
3	t	82	ASP
3	t	98	VAL
3	t	99	SER
3	t	109	ASN
3	t	111	ASP
3	t	112	ASP
3	t	114	LEU
3	t	119	THR
3	t	123	ARG

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Mol	Chain	Res	Type
3	t	124	ASP
3	t	126	ARG
3	t	154	VAL
3	t	162	VAL
3	t	163	THR
3	t	164	GLN
3	t	171	THR
3	t	172	CYS
3	t	177	ASP
3	t	182	ARG
3	t	186	MET
3	t	198	CYS
3	t	205	ARG
3	t	206	GLU
3	t	213	ASP
3	t	225	THR
3	t	235	VAL
3	t	244	GLU
3	t	249	LEU
3	t	252	LEU
3	t	256	THR
3	t	265	THR
3	t	293	CYS
3	t	295	THR
3	t	298	LEU
3	t	299	ASN
3	t	300	THR
3	t	304	GLU
3	t	312	ASP
3	t	321	SER
3	t	354	GLU
3	t	364	GLU
2	v	20	ARG
2	x	44	CYS
1	y	132	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (432) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	136	ASN
1	0	286	HIS
1	0	397	HIS

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Mol	Chain	Res	Type
1	0	434	HIS
1	0	441	HIS
1	0	556	ASN
1	0	633	ASN
1	0	692	ASN
1	0	693	GLN
1	0	699	ASN
1	0	761	ASN
1	0	769	GLN
1	0	835	HIS
1	0	850	ASN
1	0	954	GLN
1	0	978	HIS
1	0	987	ASN
1	0	1008	GLN
1	0	1014	HIS
1	0	1097	ASN
1	0	1124	ASN
1	0	1189	HIS
1	0	1203	ASN
1	0	1267	GLN
1	0	1309	HIS
2	1	88	GLN
2	1	176	ASN
2	1	187	ASN
2	2	19	GLN
2	2	34	HIS
2	2	205	ASN
2	2	217	ASN
2	3	89	ASN
2	3	176	ASN
2	3	205	ASN
2	3	235	GLN
2	3	242	GLN
1	A	21	HIS
1	A	37	ASN
1	A	89	GLN
1	A	103	GLN
1	A	278	HIS
1	A	286	HIS
1	A	375	ASN
1	A	413	HIS

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Mol	Chain	Res	Type
1	A	434	HIS
1	A	441	HIS
1	A	635	HIS
1	A	700	HIS
1	A	775	HIS
1	A	835	HIS
1	A	903	HIS
1	A	904	HIS
1	A	912	GLN
1	A	961	HIS
1	A	978	HIS
1	A	987	ASN
1	A	1014	HIS
1	A	1096	GLN
1	A	1124	ASN
1	A	1191	HIS
1	A	1208	GLN
1	A	1222	ASN
4	F	67	HIS
4	G	29	ASN
4	H	29	ASN
4	N	29	ASN
4	R	29	ASN
1	S	278	HIS
1	S	434	HIS
1	S	441	HIS
1	S	579	HIS
1	S	636	ASN
1	S	692	ASN
1	S	734	ASN
1	S	739	GLN
1	S	740	HIS
1	S	761	ASN
1	S	775	HIS
1	S	835	HIS
1	S	838	ASN
1	S	869	ASN
1	S	904	HIS
1	S	912	GLN
1	S	914	ASN
1	S	930	ASN
1	S	938	HIS

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Mol	Chain	Res	Type
1	S	1031	ASN
1	S	1046	GLN
1	S	1061	GLN
1	S	1064	GLN
1	S	1147	GLN
1	S	1148	GLN
1	S	1210	HIS
3	T	53	HIS
3	T	194	HIS
3	T	260	ASN
3	T	263	HIS
1	U	119	ASN
1	U	172	GLN
1	U	253	HIS
1	U	434	HIS
1	U	441	HIS
1	U	740	HIS
1	U	832	HIS
1	U	835	HIS
1	U	845	ASN
1	U	869	ASN
1	U	904	HIS
1	U	966	ASN
1	U	1014	HIS
1	U	1061	GLN
1	U	1068	ASN
1	U	1121	ASN
1	U	1203	ASN
4	V	29	ASN
1	a	172	GLN
1	a	253	HIS
1	a	277	HIS
1	a	375	ASN
1	a	434	HIS
1	a	441	HIS
1	a	579	HIS
1	a	628	GLN
1	a	672	HIS
1	a	700	HIS
1	a	772	HIS
1	a	775	HIS
1	a	842	ASN

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Mol	Chain	Res	Type
1	a	869	ASN
1	a	978	HIS
1	a	987	ASN
1	a	1031	ASN
1	a	1093	ASN
1	a	1124	ASN
1	a	1191	HIS
1	a	1198	HIS
1	a	1312	GLN
1	e	227	ASN
1	e	240	ASN
1	e	253	HIS
1	e	364	GLN
1	e	413	HIS
1	e	434	HIS
1	e	462	GLN
1	e	633	ASN
1	e	635	HIS
1	e	672	HIS
1	e	692	ASN
1	e	760	HIS
1	e	761	ASN
1	e	775	HIS
1	e	864	GLN
1	e	904	HIS
1	e	930	ASN
1	e	973	GLN
1	e	978	HIS
1	e	1061	GLN
1	e	1267	GLN
1	f	106	HIS
1	f	253	HIS
1	f	302	ASN
1	f	434	HIS
1	f	441	HIS
1	f	693	GLN
1	f	769	GLN
1	f	898	HIS
1	f	904	HIS
1	f	912	GLN
1	f	938	HIS
1	f	955	HIS

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Mol	Chain	Res	Type
1	f	966	ASN
1	f	978	HIS
1	f	1007	HIS
1	f	1008	GLN
1	f	1189	HIS
1	f	1203	ASN
1	f	1309	HIS
1	g	19	HIS
1	g	159	GLN
1	g	240	ASN
1	g	278	HIS
1	g	419	HIS
1	g	434	HIS
1	g	441	HIS
1	g	462	GLN
1	g	545	GLN
1	g	556	ASN
1	g	579	HIS
1	g	610	HIS
1	g	628	GLN
1	g	633	ASN
1	g	700	HIS
1	g	740	HIS
1	g	832	HIS
1	g	930	ASN
1	g	1014	HIS
1	g	1203	ASN
1	g	1210	HIS
1	g	1309	HIS
3	h	53	HIS
3	h	194	HIS
3	h	260	ASN
3	h	263	HIS
3	i	53	HIS
3	i	194	HIS
3	i	260	ASN
3	i	263	HIS
2	j	69	HIS
2	j	97	ASN
2	k	88	GLN
2	k	168	GLN
2	k	231	GLN

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Mol	Chain	Res	Type
1	l	172	GLN
1	l	253	HIS
1	l	434	HIS
1	l	441	HIS
1	l	462	GLN
1	l	556	ASN
1	l	579	HIS
1	l	597	ASN
1	l	693	GLN
1	l	700	HIS
1	l	737	HIS
1	l	740	HIS
1	l	774	HIS
1	l	811	GLN
1	l	835	HIS
1	l	869	ASN
1	l	904	HIS
1	l	914	ASN
1	l	938	HIS
1	l	961	HIS
1	l	966	ASN
1	l	978	HIS
1	l	987	ASN
1	l	1031	ASN
1	l	1068	ASN
1	l	1121	ASN
1	l	1124	ASN
1	l	1180	HIS
1	l	1309	HIS
1	l	1312	GLN
1	m	21	HIS
1	m	85	GLN
1	m	90	GLN
1	m	253	HIS
1	m	302	ASN
1	m	434	HIS
1	m	556	ASN
1	m	610	HIS
1	m	650	ASN
1	m	700	HIS
1	m	740	HIS
1	m	811	GLN

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Mol	Chain	Res	Type
1	m	814	GLN
1	m	835	HIS
1	m	904	HIS
1	m	914	ASN
1	m	938	HIS
1	m	966	ASN
1	m	1121	ASN
1	m	1203	ASN
1	m	1309	HIS
1	m	1312	GLN
1	n	273	GLN
1	n	277	HIS
1	n	302	ASN
1	n	419	HIS
1	n	434	HIS
1	n	482	GLN
1	n	633	ASN
1	n	693	GLN
1	n	740	HIS
1	n	750	ASN
1	n	811	GLN
1	n	835	HIS
1	n	845	ASN
1	n	850	ASN
1	n	904	HIS
1	n	977	GLN
1	n	978	HIS
1	n	1121	ASN
1	n	1124	ASN
1	n	1198	HIS
1	n	1312	GLN
2	o	163	ASN
1	p	21	HIS
1	p	36	ASN
1	p	99	HIS
1	p	253	HIS
1	p	273	GLN
1	p	302	ASN
1	p	441	HIS
1	p	556	ASN
1	p	579	HIS
1	p	628	GLN

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Mol	Chain	Res	Type
1	p	700	HIS
1	p	760	HIS
1	p	798	ASN
1	p	811	GLN
1	p	835	HIS
1	p	850	ASN
1	p	898	HIS
1	p	904	HIS
1	p	961	HIS
1	p	978	HIS
1	p	987	ASN
1	p	1121	ASN
1	p	1189	HIS
1	p	1203	ASN
1	p	1309	HIS
1	q	253	HIS
1	q	434	HIS
1	q	441	HIS
1	q	579	HIS
1	q	699	ASN
1	q	700	HIS
1	q	740	HIS
1	q	775	HIS
1	q	835	HIS
1	q	842	ASN
1	q	904	HIS
1	q	938	HIS
1	q	966	ASN
1	q	1007	HIS
1	q	1064	GLN
1	q	1121	ASN
1	q	1220	GLN
1	q	1222	ASN
1	q	1309	HIS
3	r	53	HIS
3	r	194	HIS
3	r	260	ASN
3	r	263	HIS
2	s	34	HIS
2	s	88	GLN
2	s	242	GLN
3	t	53	HIS

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Mol	Chain	Res	Type
3	t	109	ASN
3	t	194	HIS
3	t	260	ASN
3	t	263	HIS
1	u	11	GLN
1	u	136	ASN
1	u	159	GLN
1	u	273	GLN
1	u	300	ASN
1	u	419	HIS
1	u	441	HIS
1	u	506	GLN
1	u	579	HIS
1	u	610	HIS
1	u	693	GLN
1	u	798	ASN
1	u	835	HIS
1	u	850	ASN
1	u	904	HIS
1	u	914	ASN
1	u	955	HIS
1	u	1014	HIS
1	u	1121	ASN
1	u	1134	GLN
1	u	1208	GLN
2	v	69	HIS
2	v	231	GLN
1	w	172	GLN
1	w	277	HIS
1	w	397	HIS
1	w	434	HIS
1	w	441	HIS
1	w	610	HIS
1	w	628	GLN
1	w	635	HIS
1	w	642	ASN
1	w	655	ASN
1	w	672	HIS
1	w	693	GLN
1	w	700	HIS
1	w	740	HIS
1	w	761	ASN

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Mol	Chain	Res	Type
1	w	835	HIS
1	w	898	HIS
1	w	904	HIS
1	w	938	HIS
1	w	1014	HIS
1	w	1031	ASN
1	w	1121	ASN
1	w	1134	GLN
1	w	1309	HIS
1	w	1312	GLN
2	x	69	HIS
2	x	97	ASN
2	x	119	ASN
2	x	193	ASN
2	x	231	GLN
1	y	19	HIS
1	y	89	GLN
1	y	152	GLN
1	y	172	GLN
1	y	253	HIS
1	y	413	HIS
1	y	434	HIS
1	y	441	HIS
1	y	462	GLN
1	y	541	GLN
1	y	674	HIS
1	y	734	ASN
1	y	737	HIS
1	y	740	HIS
1	y	768	ASN
1	y	798	ASN
1	y	814	GLN
1	y	835	HIS
1	y	850	ASN
1	y	898	HIS
1	y	938	HIS
1	y	978	HIS
1	y	987	ASN
1	y	1093	ASN
1	y	1121	ASN
1	y	1124	ASN
1	y	1198	HIS

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Mol	Chain	Res	Type
1	y	1203	ASN
1	y	1210	HIS
1	y	1222	ASN
1	y	1309	HIS
2	z	119	ASN
2	z	132	GLN
2	z	193	ASN
2	z	231	GLN
2	z	242	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

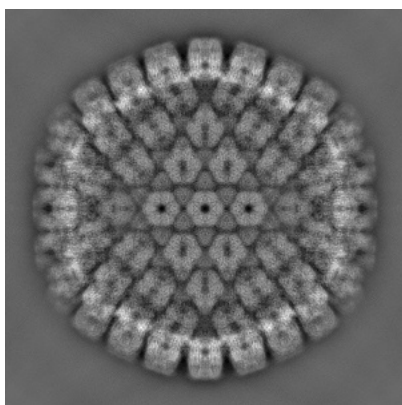
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-31612. These allow visual inspection of the internal detail of the map and identification of artifacts.

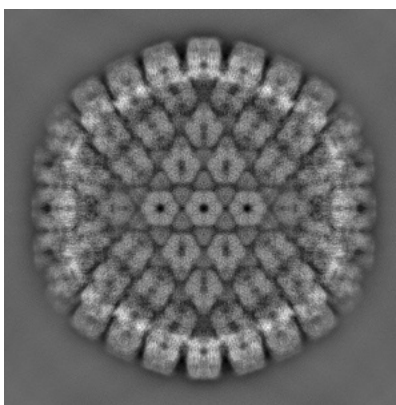
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

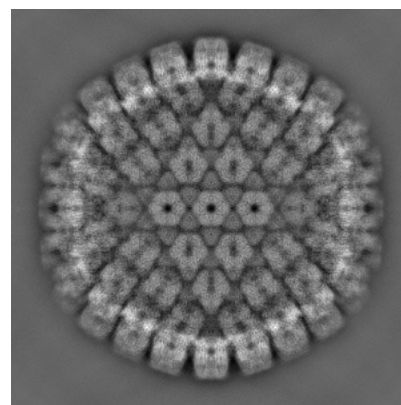
6.1.1 Primary map



X



Y

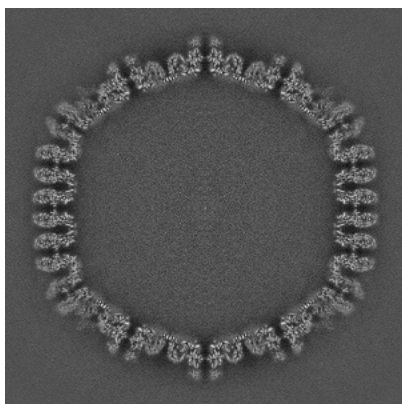


Z

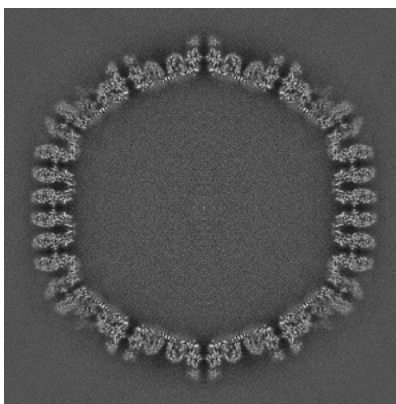
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

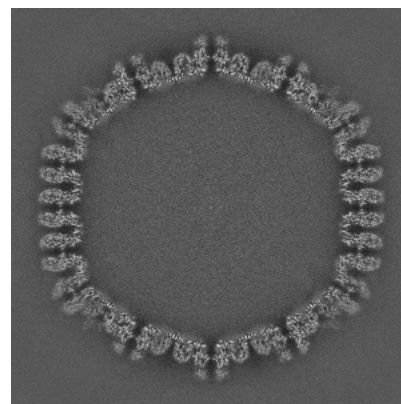
6.2.1 Primary map



X Index: 640



Y Index: 640

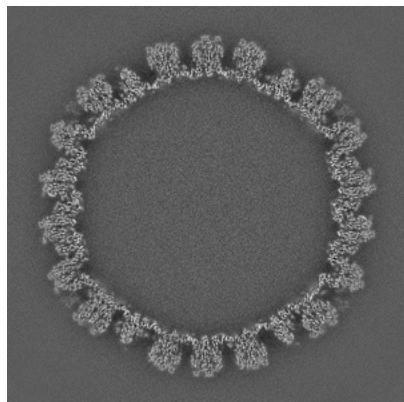


Z Index: 640

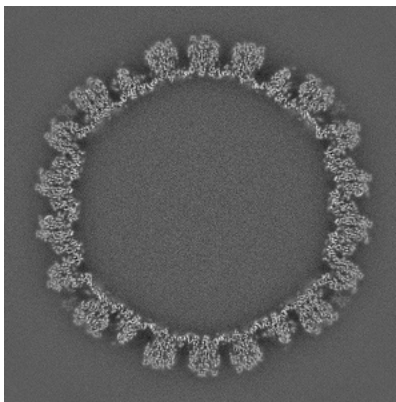
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

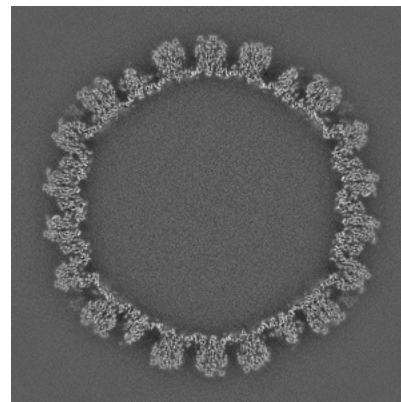
6.3.1 Primary map



X Index: 746



Y Index: 534

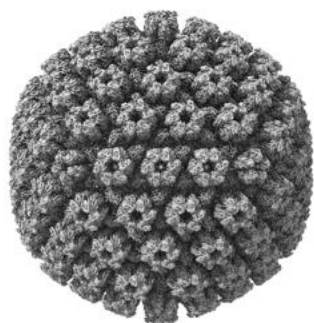


Z Index: 533

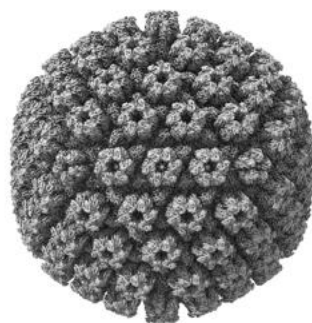
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

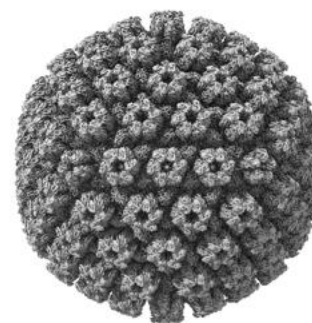
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

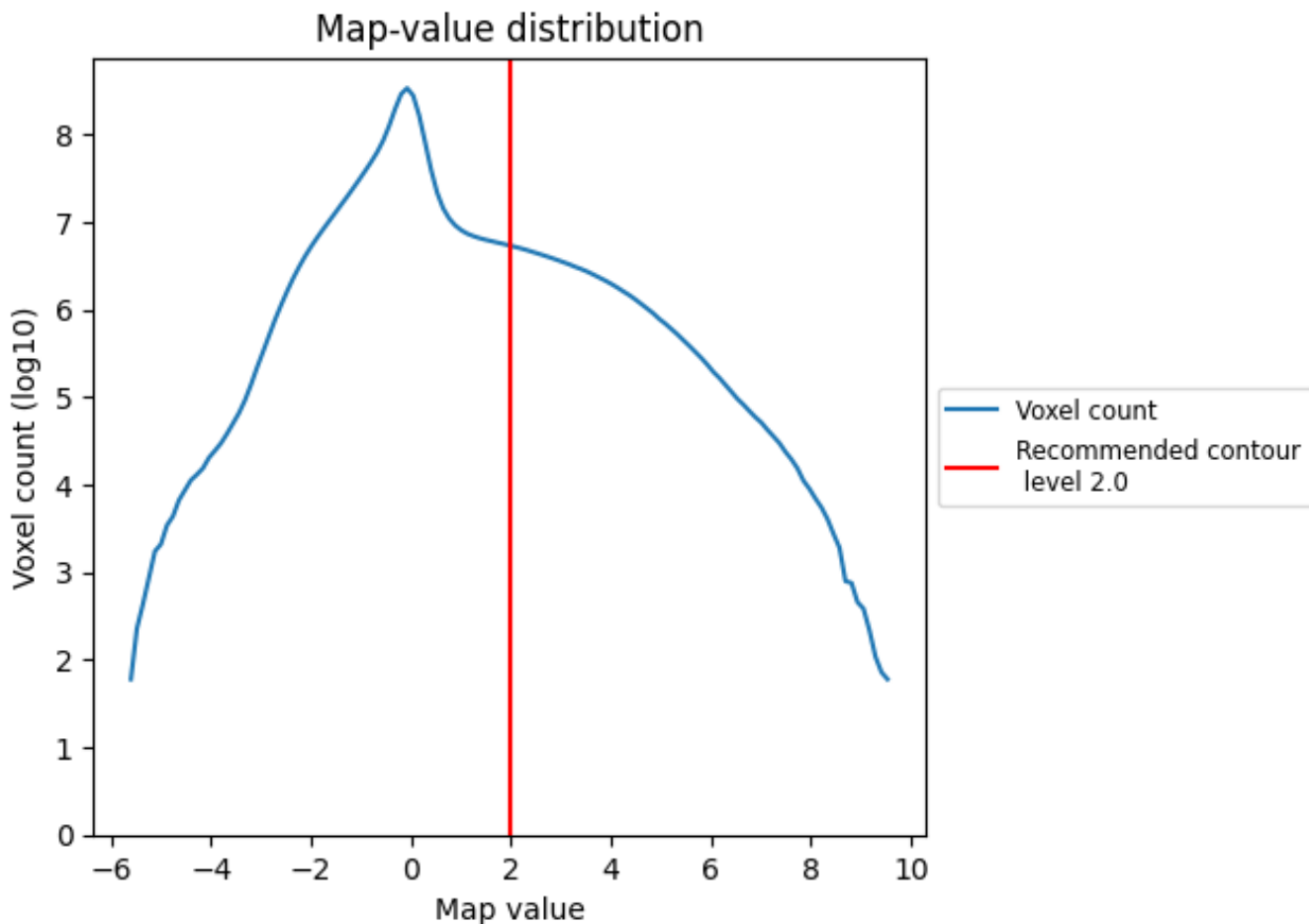
6.5 Mask visualisation

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

7 Map analysis [i](#)

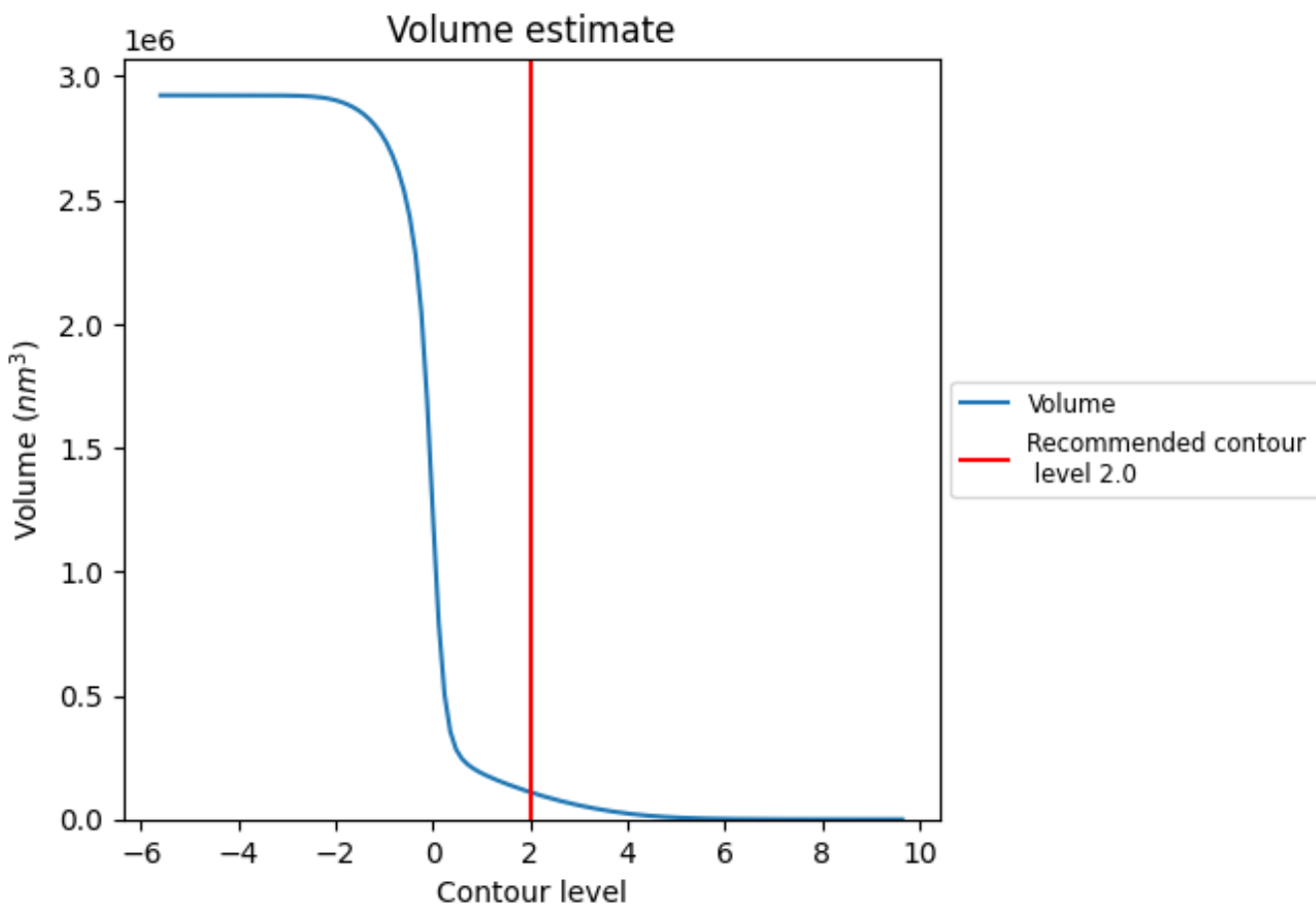
This section contains the results of statistical analysis of the map.

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.

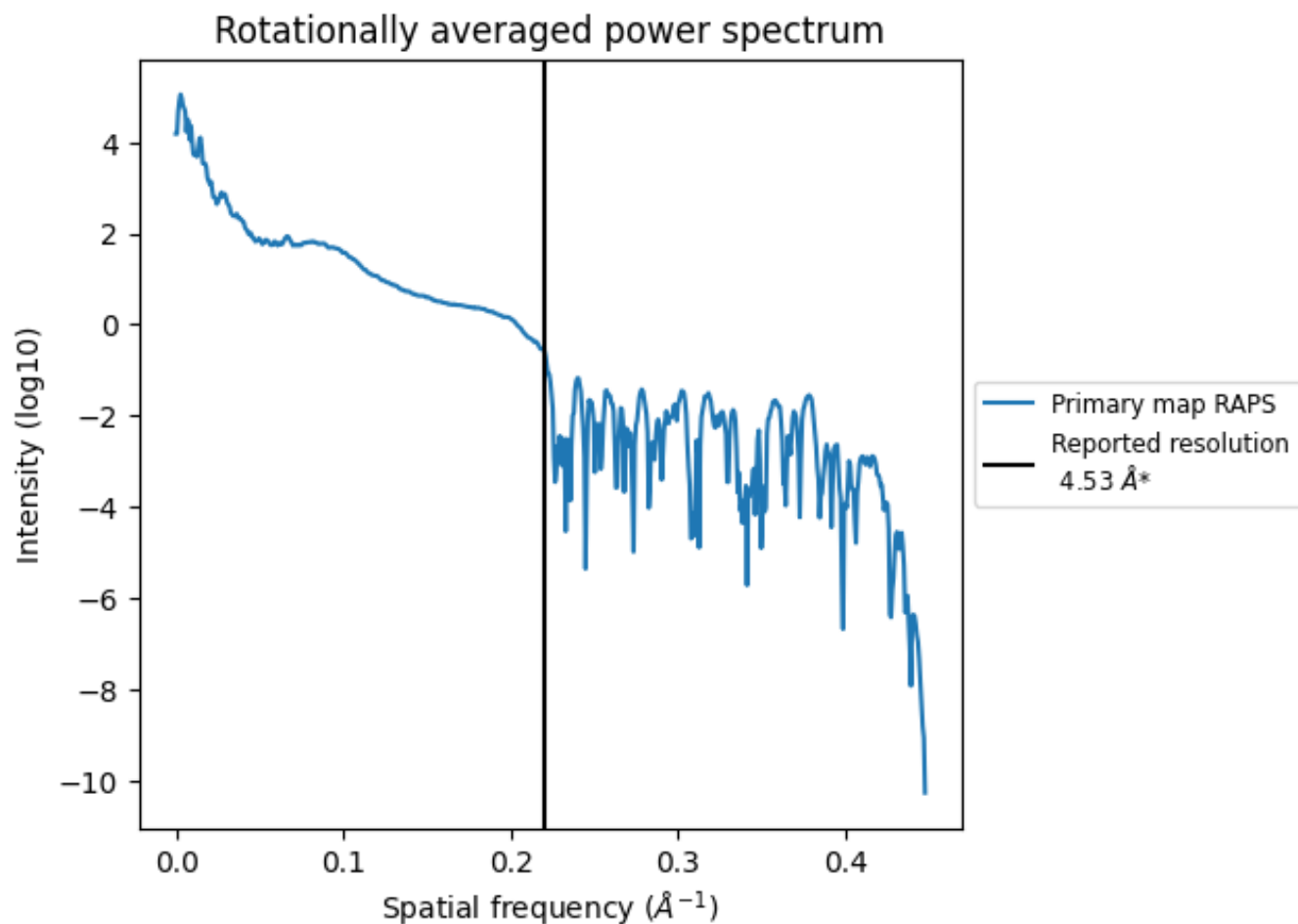
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 109801 nm³; this corresponds to an approximate mass of 99186 kDa.

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

7.3 Rotationally averaged power spectrum i



*Reported resolution corresponds to spatial frequency of 0.221 \AA^{-1}

8 Fourier-Shell correlation

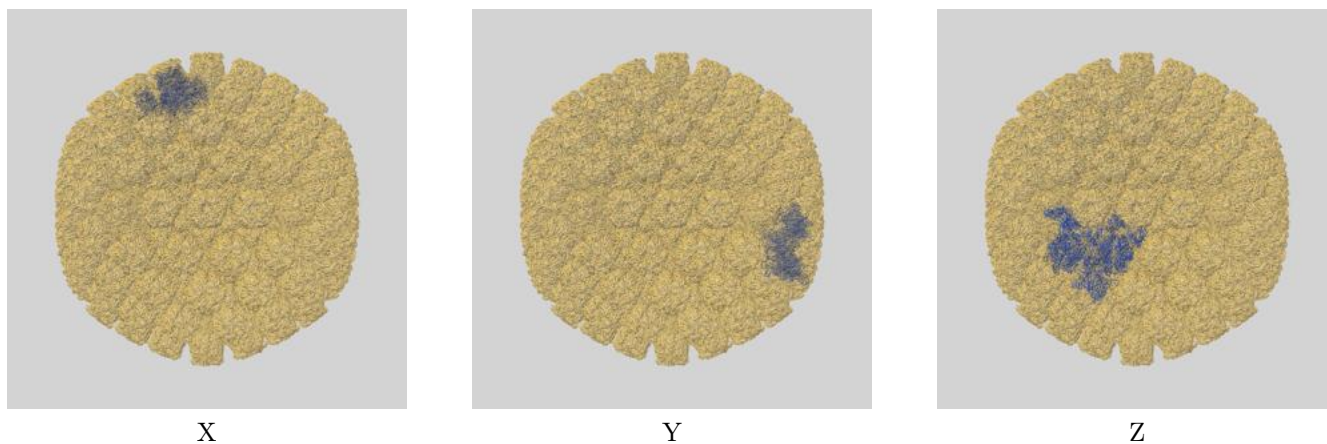
This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

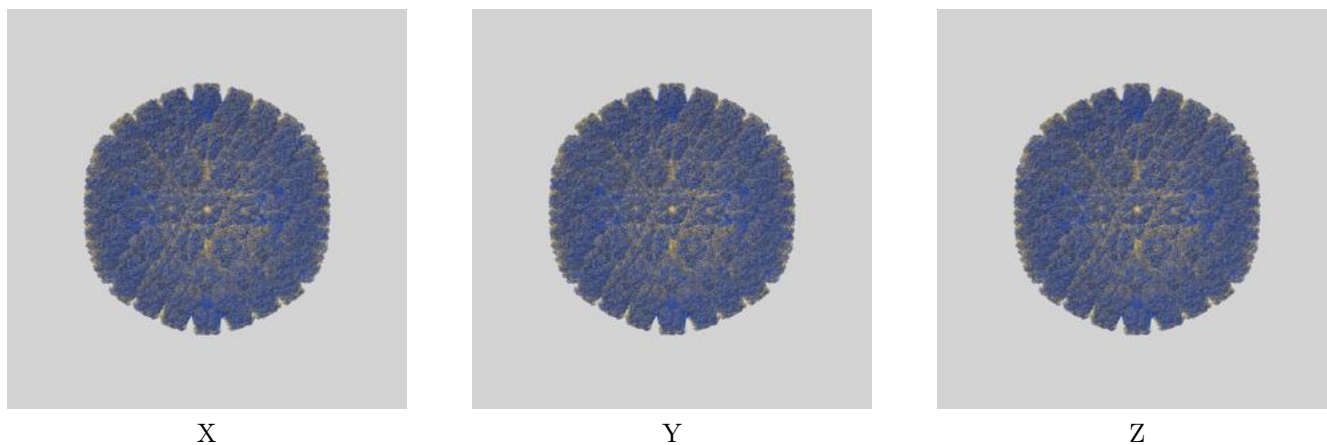
This section contains information regarding the fit between EMDB map EMD-31612 and PDB model 7FJ3. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlays

9.1.1 Map-model overlay [i](#)

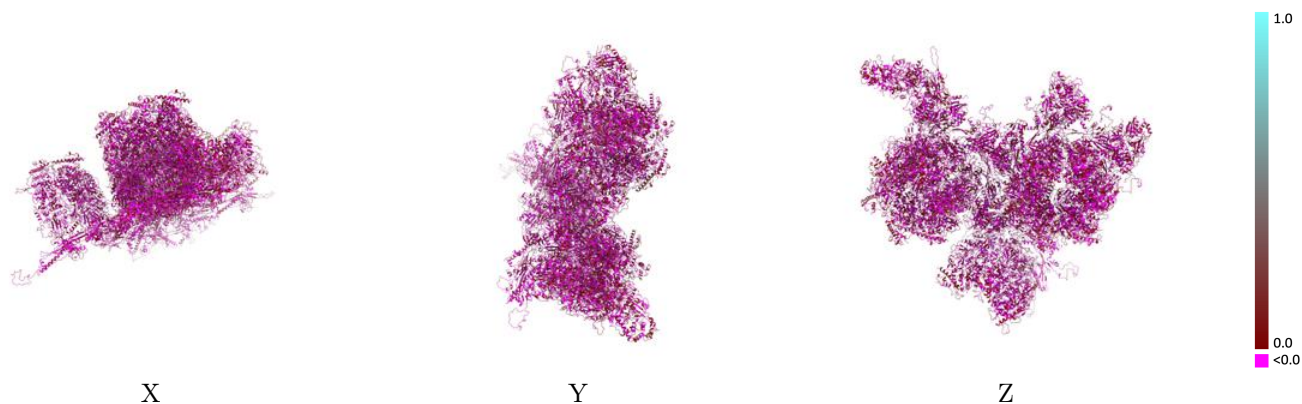


9.1.2 Map-model assembly overlay [i](#)



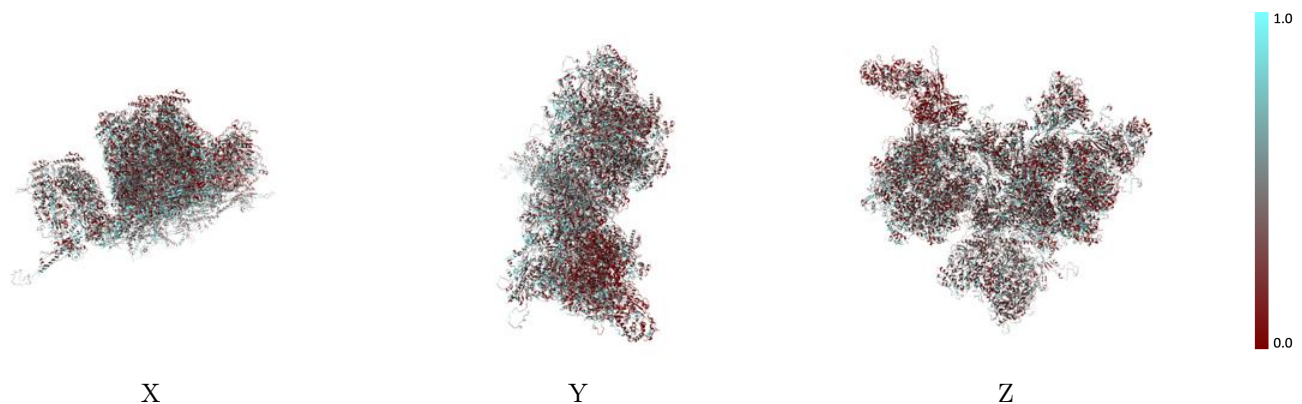
The images above show the 3D surface view of the map at the recommended contour level 2.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



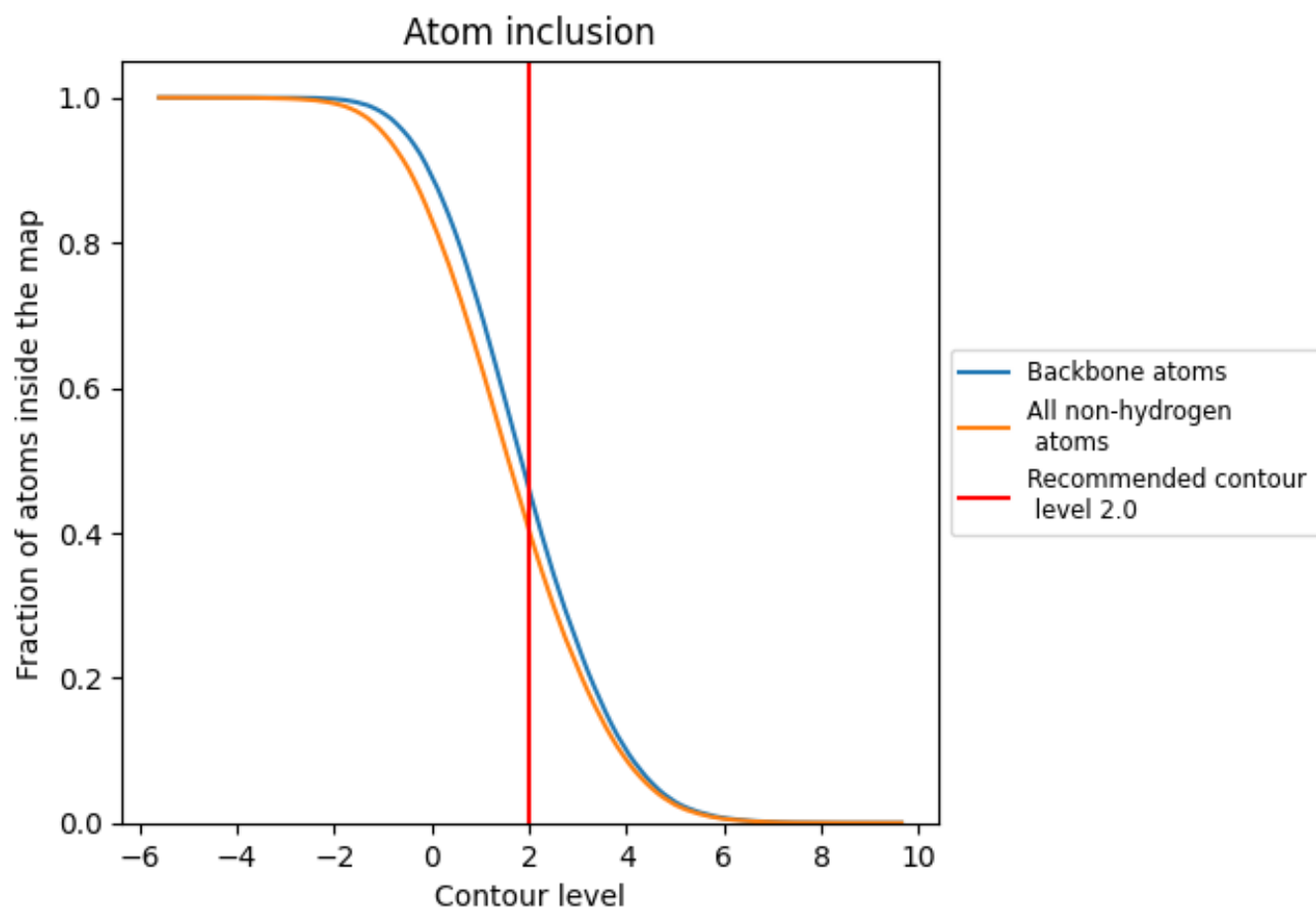
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (2.0).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 46% of all backbone atoms, 40% 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 (2.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4033	 0.0230
0	 0.4090	 0.0140
1	 0.3838	 0.0330
2	 0.3887	 0.0420
3	 0.3971	 0.0420
A	 0.4311	 0.0220
B	 0.2961	 0.0130
C	 0.3158	 -0.0010
D	 0.3750	 0.0430
E	 0.3424	 0.0280
F	 0.4083	 0.0500
G	 0.4069	 0.0350
H	 0.4470	 0.0910
I	 0.3639	 0.0840
J	 0.3266	 0.0600
K	 0.3768	 0.0520
L	 0.4126	 0.0710
M	 0.4556	 0.0680
N	 0.3926	 0.0720
O	 0.4456	 0.0890
P	 0.4384	 0.0900
Q	 0.4413	 0.0580
R	 0.3696	 0.0540
S	 0.4085	 0.0250
T	 0.3853	 0.0280
U	 0.4244	 0.0160
V	 0.3295	 0.0490
W	 0.3618	 0.0350
a	 0.4183	 0.0160
d	 0.3241	 -0.0070
e	 0.3037	 0.0320
f	 0.4239	 0.0070
g	 0.4178	 0.0140
h	 0.4188	 0.0120
i	 0.1374	 0.0220



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Chain	Atom inclusion	Q-score
j	 0.1262	 0.0550
k	 0.1263	 0.0370
l	 0.4355	 0.0180
m	 0.4402	 0.0200
n	 0.4270	 0.0180
o	 0.3913	 0.0380
p	 0.4216	 0.0190
q	 0.4198	 0.0180
r	 0.4225	 0.0480
s	 0.3941	 0.0200
t	 0.4008	 0.0480
u	 0.4317	 0.0120
v	 0.3899	 0.0260
w	 0.4226	 0.0170
x	 0.3733	 0.0540
y	 0.4205	 0.0150
z	 0.3623	 0.0320