



## Full wwPDB EM Validation Report ⓘ

Nov 6, 2022 – 03:25 PM EST

PDB ID : 6B43  
EMDB ID : EMD-7047  
Title : CryoEM structure and atomic model of the Kaposi's sarcoma-associated herpesvirus capsid  
Authors : Dai, X.H.; Gong, D.Y.; Sun, R.; Zhou, Z.H.  
Deposited on : 2017-09-25  
Resolution : 4.20 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](mailto: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>.

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

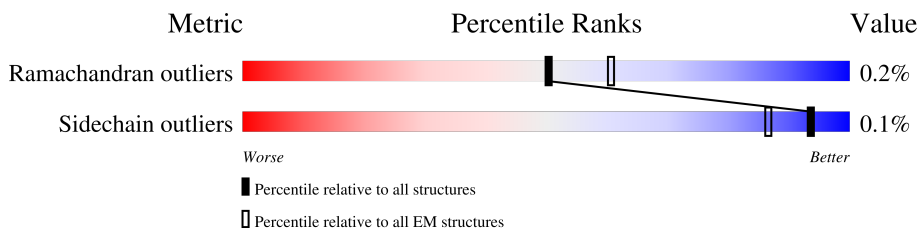
EMDB validation analysis : 0.0.1.dev43  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

# 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 4.20 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  $\geq 3$ , 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	4	1376	
1	A	1376	
1	B	1376	
1	C	1376	
1	D	1376	
1	E	1376	
1	F	1376	
1	M	1376	
1	N	1376	

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Mol	Chain	Length	Quality of chain
1	O	1376	9% 97% ..
1	S	1376	19% 92% 7%
1	T	1376	14% 98% ..
1	U	1376	12% 98% ..
1	V	1376	13% 97% ..
1	W	1376	16% 98% ..
1	X	1376	20% 97% ..
2	0	170	22% 46% 54%
2	1	170	20% 46% 54%
2	2	170	28% 46% 54%
2	3	170	29% 46% 54%
2	G	170	16% 46% 54%
2	H	170	26% 46% 54%
2	I	170	14% 46% 54%
2	J	170	18% 46% 54%
2	K	170	15% 46% 54%
2	L	170	13% 46% 54%
2	P	170	15% 46% 54%
2	Q	170	20% 46% 54%
2	R	170	15% 46% 54%
2	Y	170	28% 46% 54%
2	Z	170	31% 46% 54%
3	5	331	59% 95% ..
3	8	331	11% 97% .
3	b	331	12% 97% .

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Mol	Chain	Length	Quality of chain
3	e	331	14% 96% .
3	h	331	13% 96% ..
4	6	305	55% 96% .
4	7	305	81% 98% ..
4	9	305	12% 95% ..
4	a	305	11% 97% ..
4	c	305	7% 95% ..
4	d	305	9% 98% .
4	f	305	22% 96% ..
4	g	305	17% 97% ..
4	i	305	9% 96% .
4	j	305	11% 97% ..

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 214334 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	A	1363	10682	6786	1854	1969	73	0	0
1	B	1355	10627	6751	1843	1960	73	0	0
1	C	1354	10621	6748	1842	1959	72	0	0
1	D	1355	10627	6751	1843	1960	73	0	0
1	E	1363	10682	6786	1854	1969	73	0	0
1	F	1356	10638	6757	1847	1961	73	0	0
1	M	1355	10627	6751	1843	1960	73	0	0
1	N	1363	10682	6786	1854	1969	73	0	0
1	O	1355	10627	6751	1843	1960	73	0	0
1	S	1281	10060	6397	1737	1855	71	0	0
1	T	1360	10666	6776	1851	1966	73	0	0
1	U	1355	10627	6751	1843	1960	73	0	0
1	V	1352	10604	6739	1839	1954	72	0	0
1	W	1354	10621	6748	1842	1959	72	0	0
1	X	1345	10548	6701	1829	1946	72	0	0
1	4	1216	9586	6102	1665	1748	71	0	0

- Molecule 2 is a protein called Small capsomere-interacting protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	H	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	I	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	J	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	K	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	L	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	P	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	Q	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	R	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	Y	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	Z	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	0	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	1	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	2	78	Total 666	C 418	N 130	O 115	S 3	0	0
2	3	78	Total 666	C 418	N 130	O 115	S 3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	5	319	Total 2463	C 1578	N 421	O 449	S 15	0	0
3	8	321	Total 2477	C 1586	N 424	O 452	S 15	0	0
3	b	321	Total 2477	C 1586	N 424	O 452	S 15	0	0
3	e	319	Total 2460	C 1575	N 422	O 448	S 15	0	0
3	h	321	Total 2477	C 1586	N 424	O 452	S 15	0	0

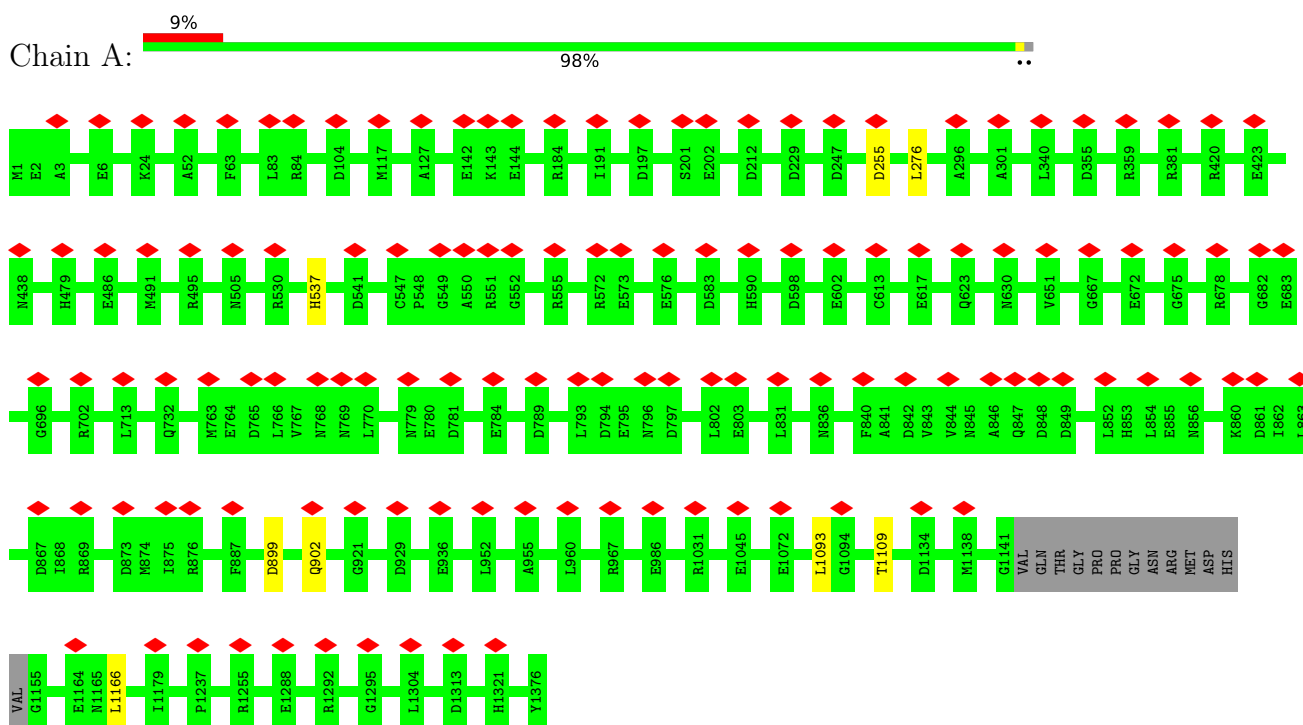
- Molecule 4 is a protein called Triplex capsid protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	6	294	Total	C	N	O	S	0	0
			2329	1485	397	433	14		
4	7	300	Total	C	N	O	S	0	0
			2364	1505	401	443	15		
4	9	294	Total	C	N	O	S	0	0
			2329	1485	397	433	14		
4	a	300	Total	C	N	O	S	0	0
			2364	1505	401	443	15		
4	c	294	Total	C	N	O	S	0	0
			2329	1485	397	433	14		
4	d	300	Total	C	N	O	S	0	0
			2364	1505	401	443	15		
4	f	294	Total	C	N	O	S	0	0
			2329	1485	397	433	14		
4	g	300	Total	C	N	O	S	0	0
			2364	1505	401	443	15		
4	i	294	Total	C	N	O	S	0	0
			2329	1485	397	433	14		
4	j	300	Total	C	N	O	S	0	0
			2364	1505	401	443	15		

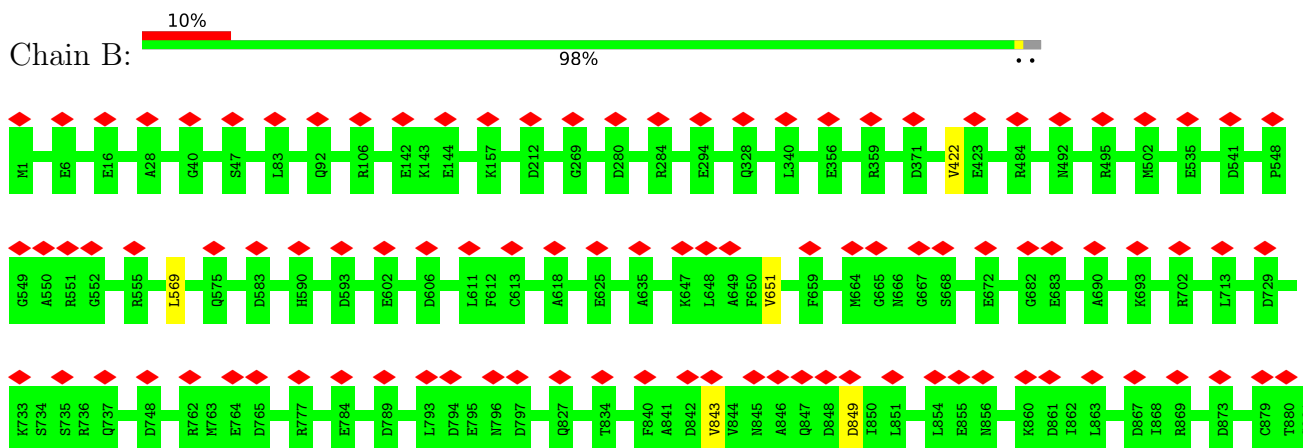
### 3 Residue-property plots [i](#)

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

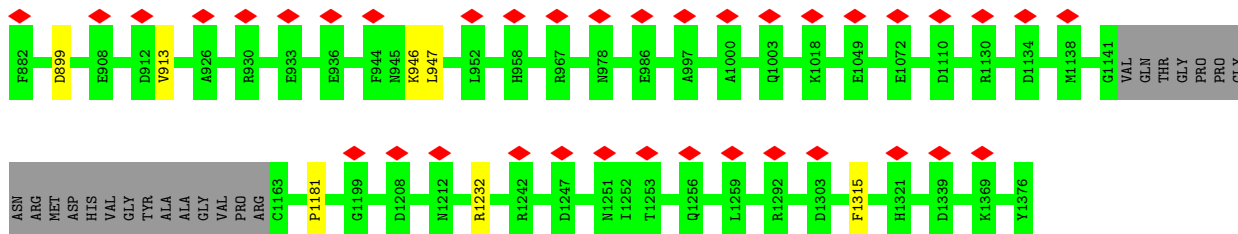
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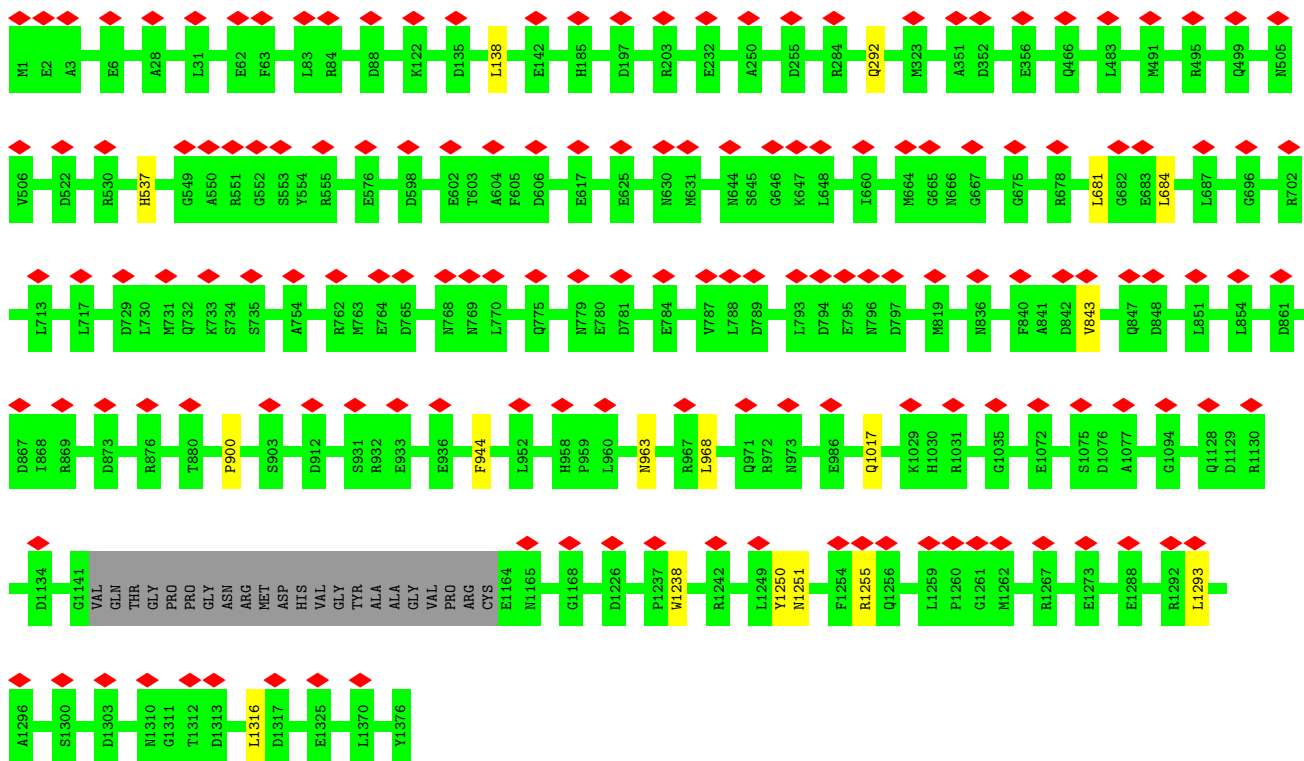
- Molecule 1: Major capsid protein



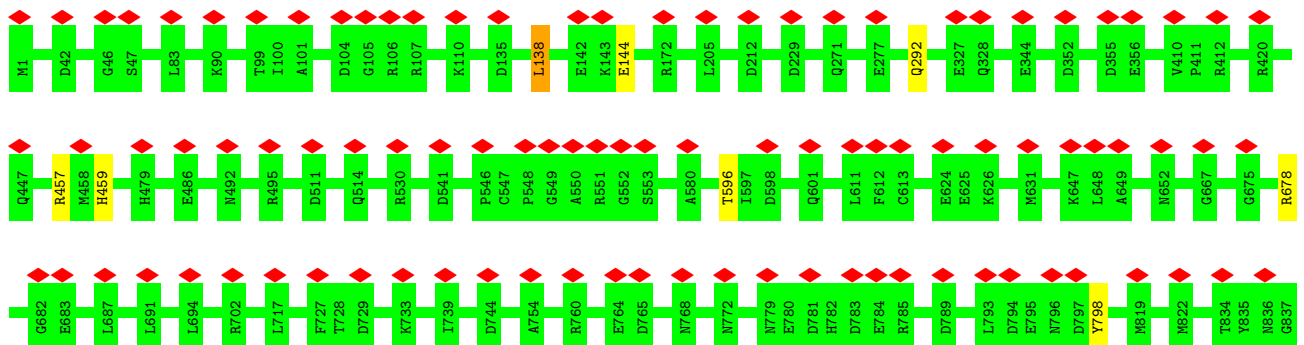


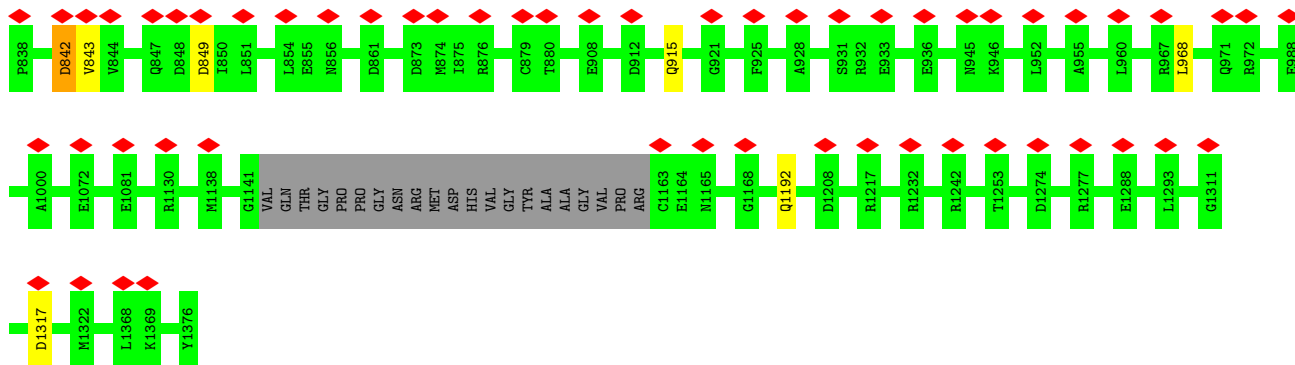


• Molecule 1: Major capsid protein

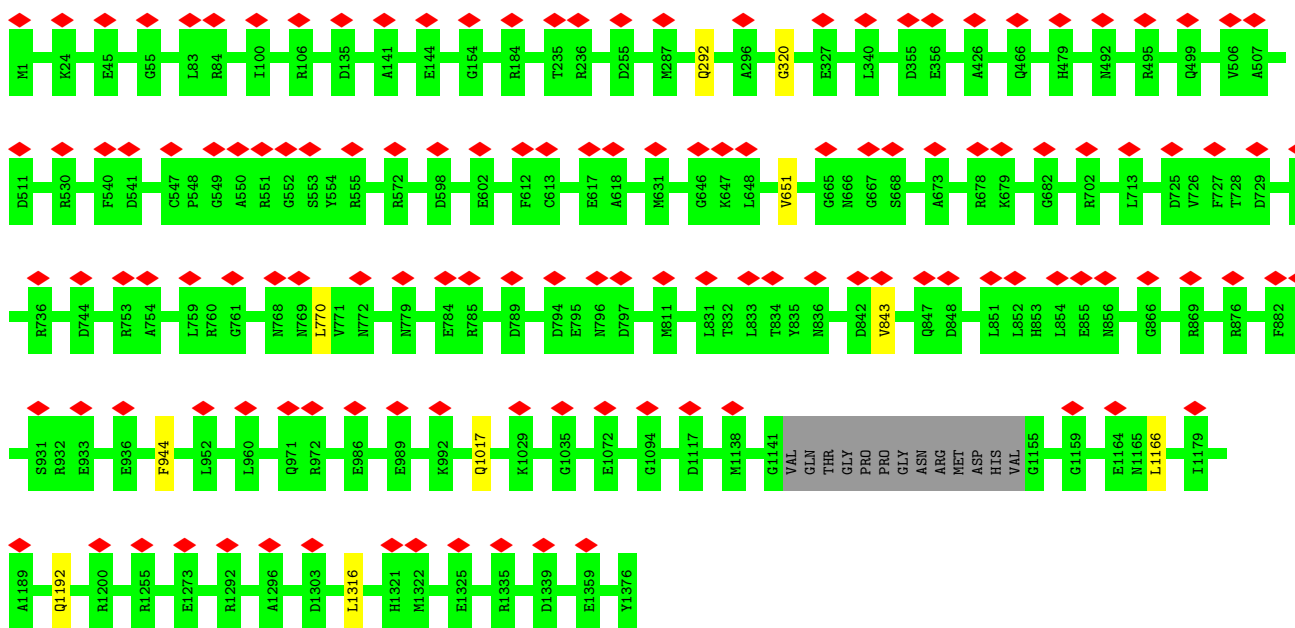


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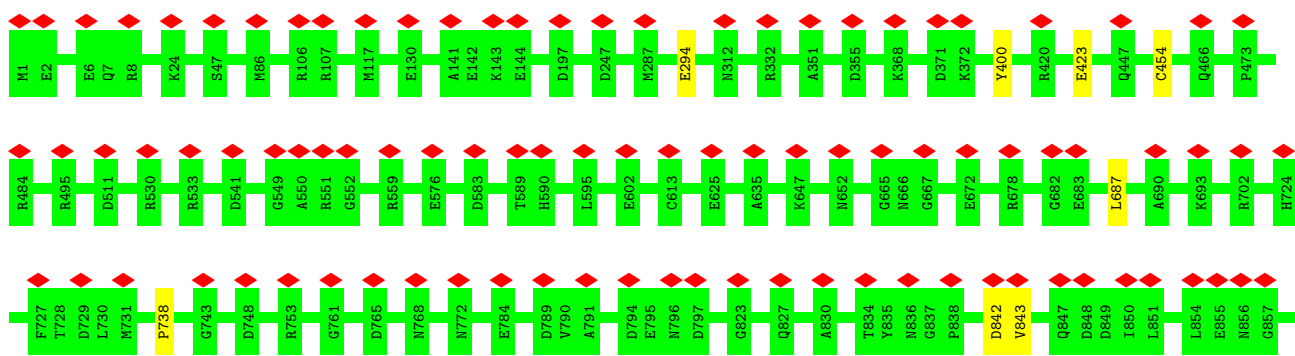


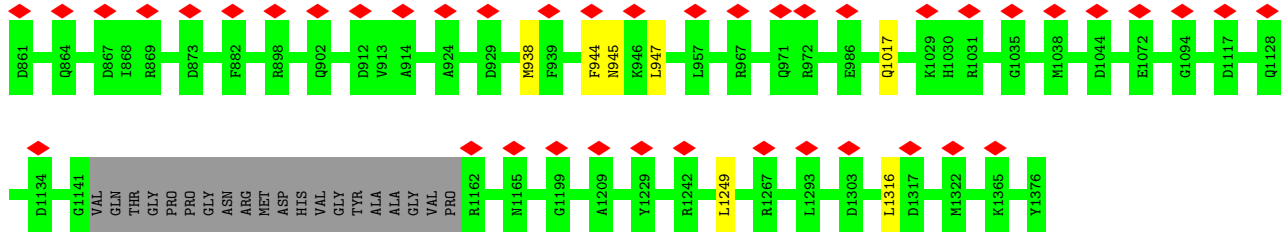


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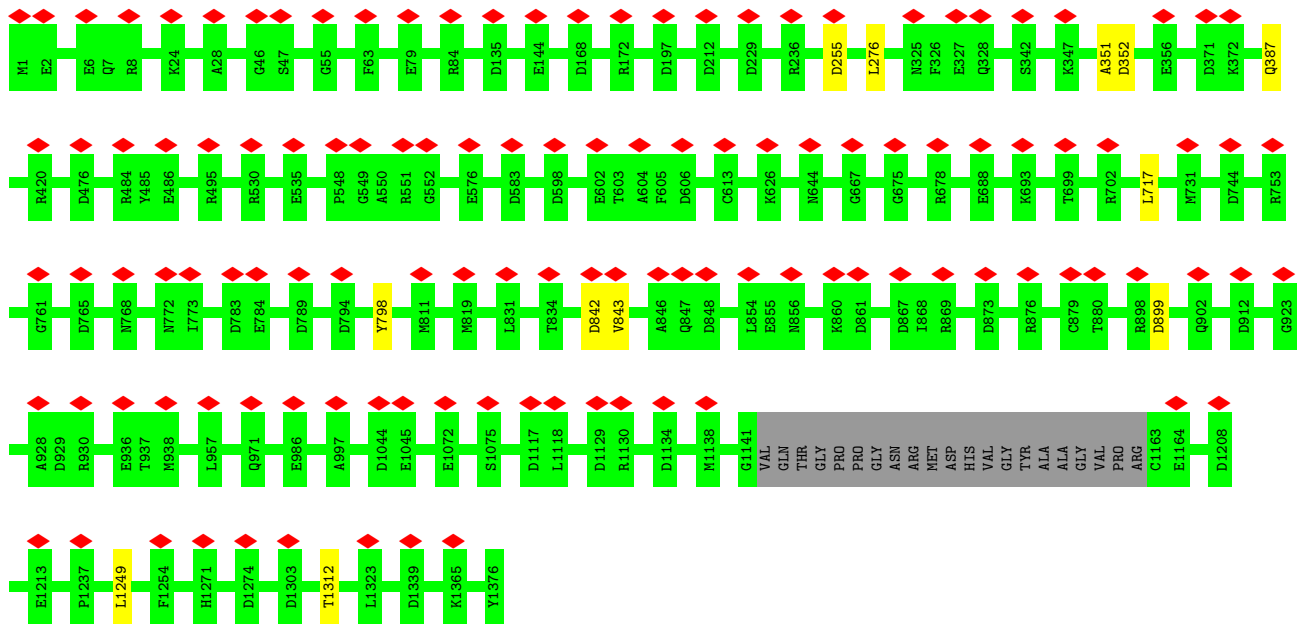


• Molecule 1: Major capsid protein

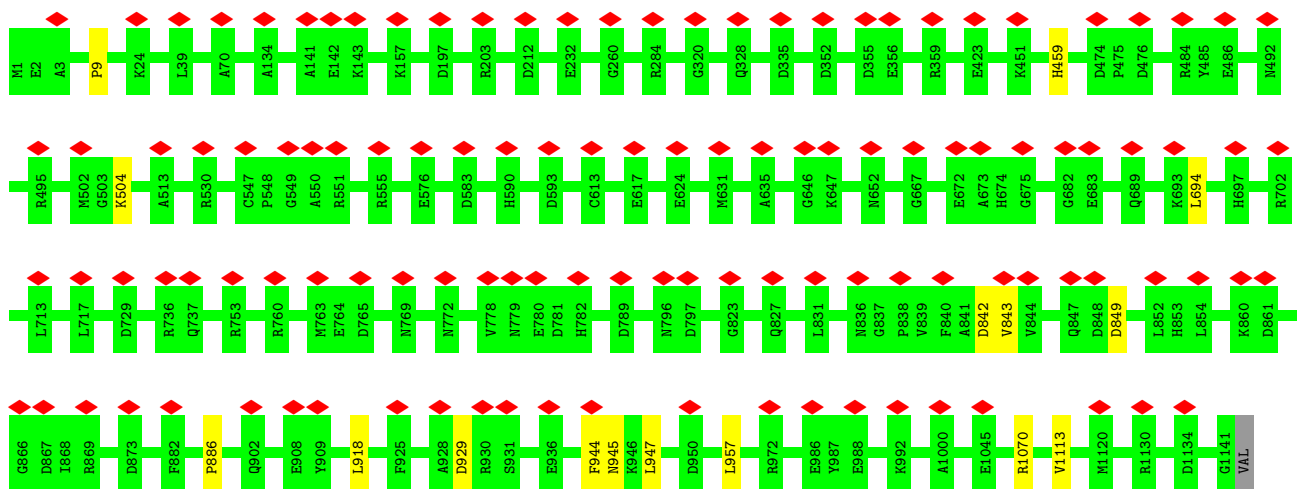


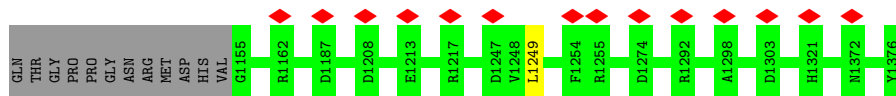


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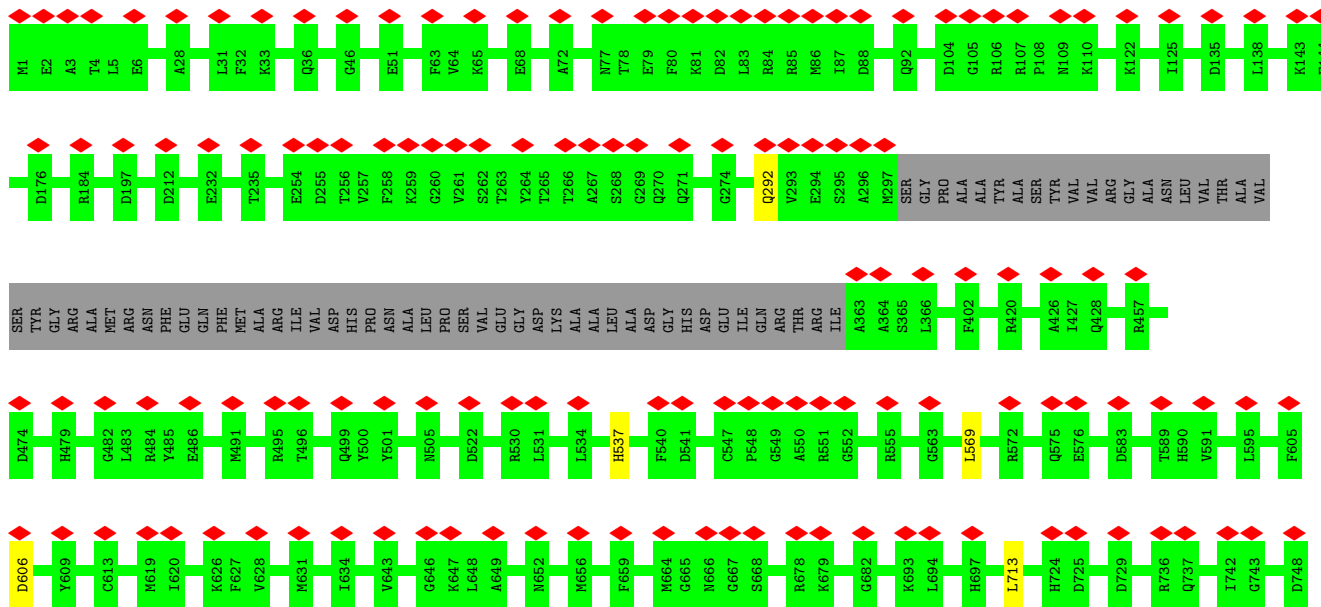
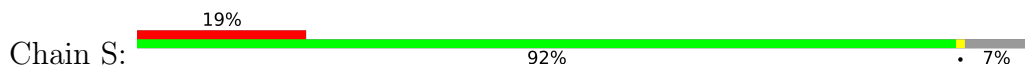


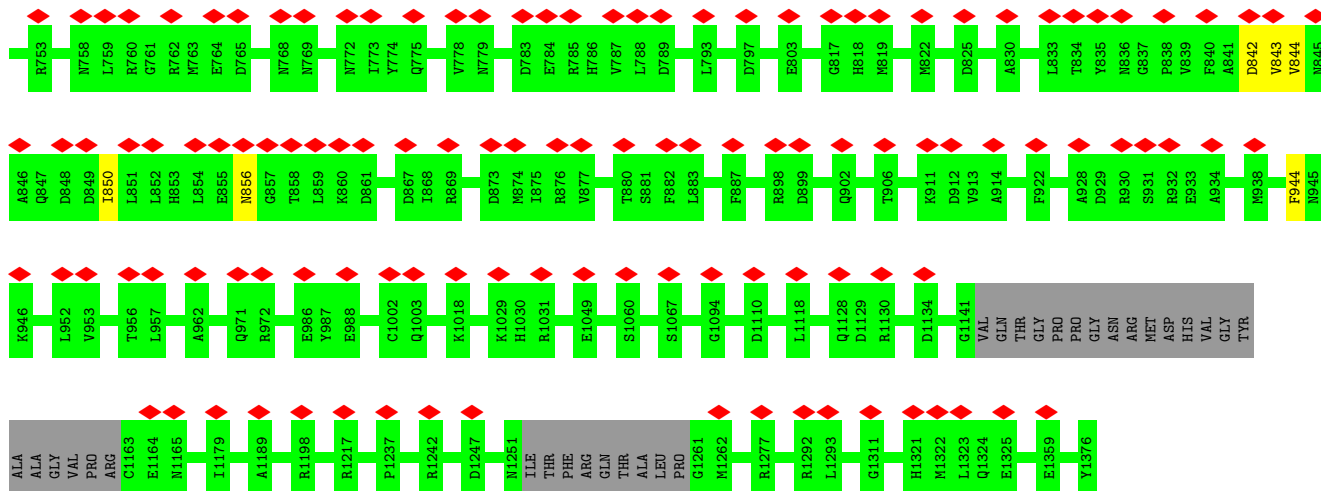


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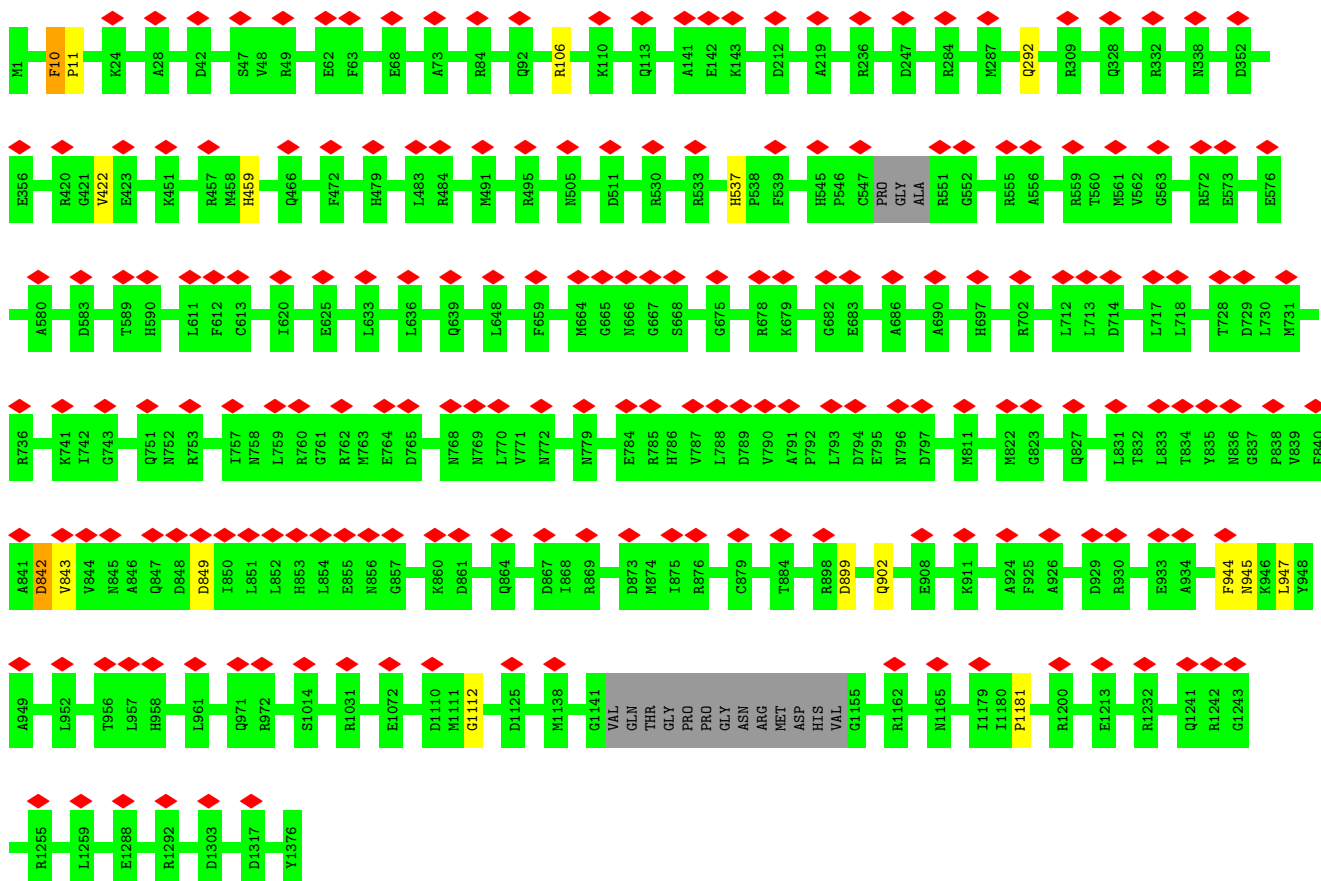


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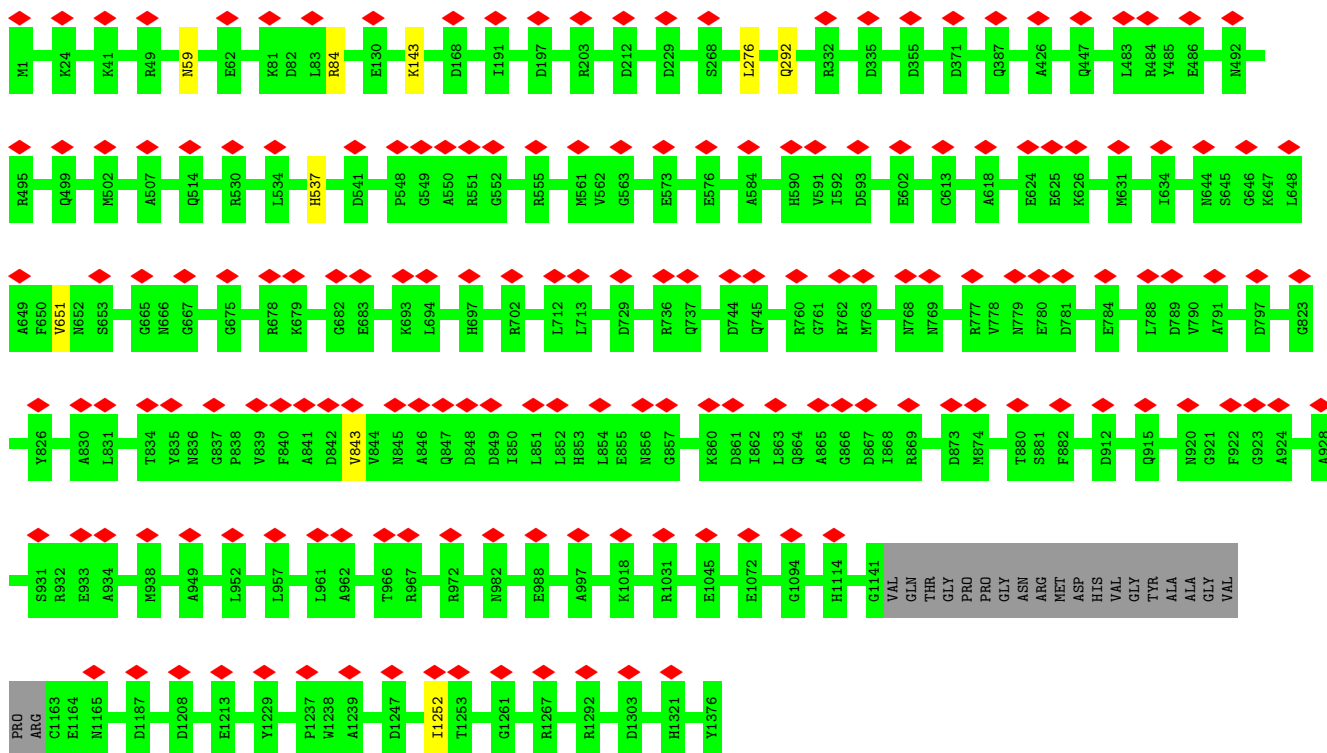


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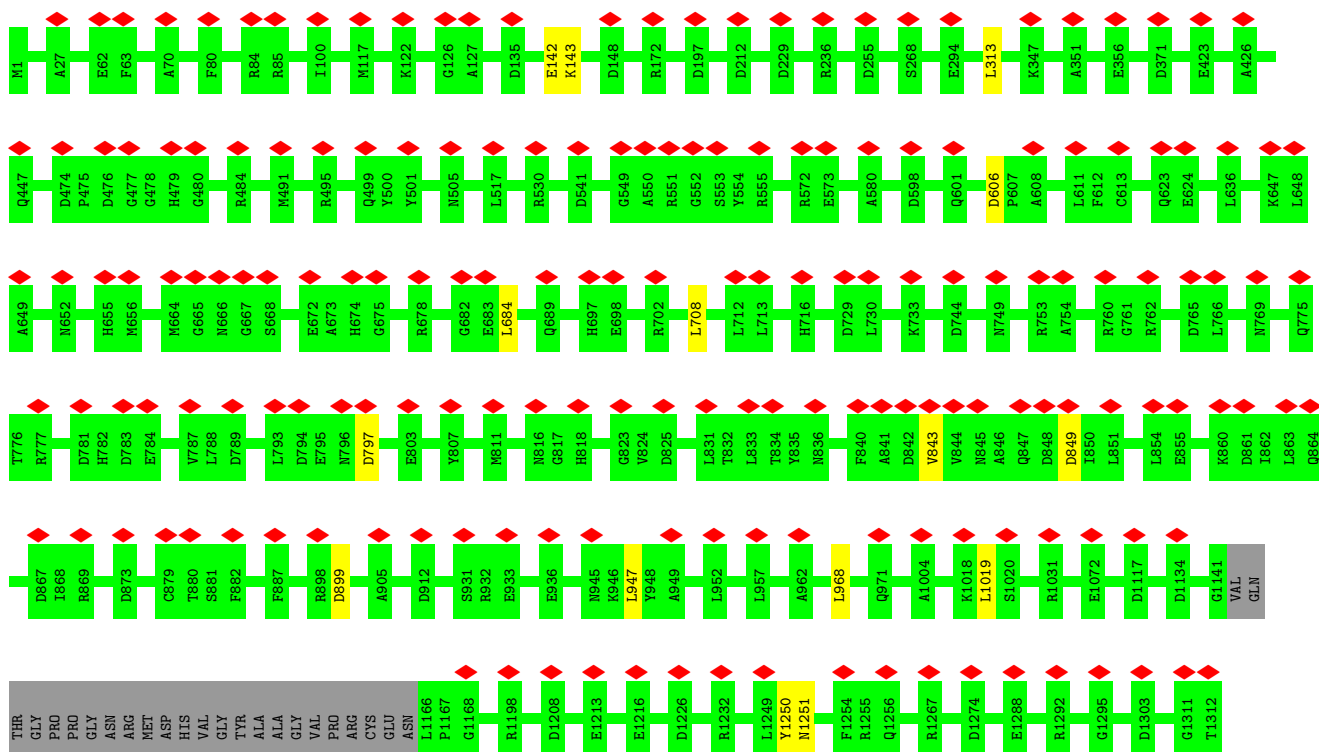


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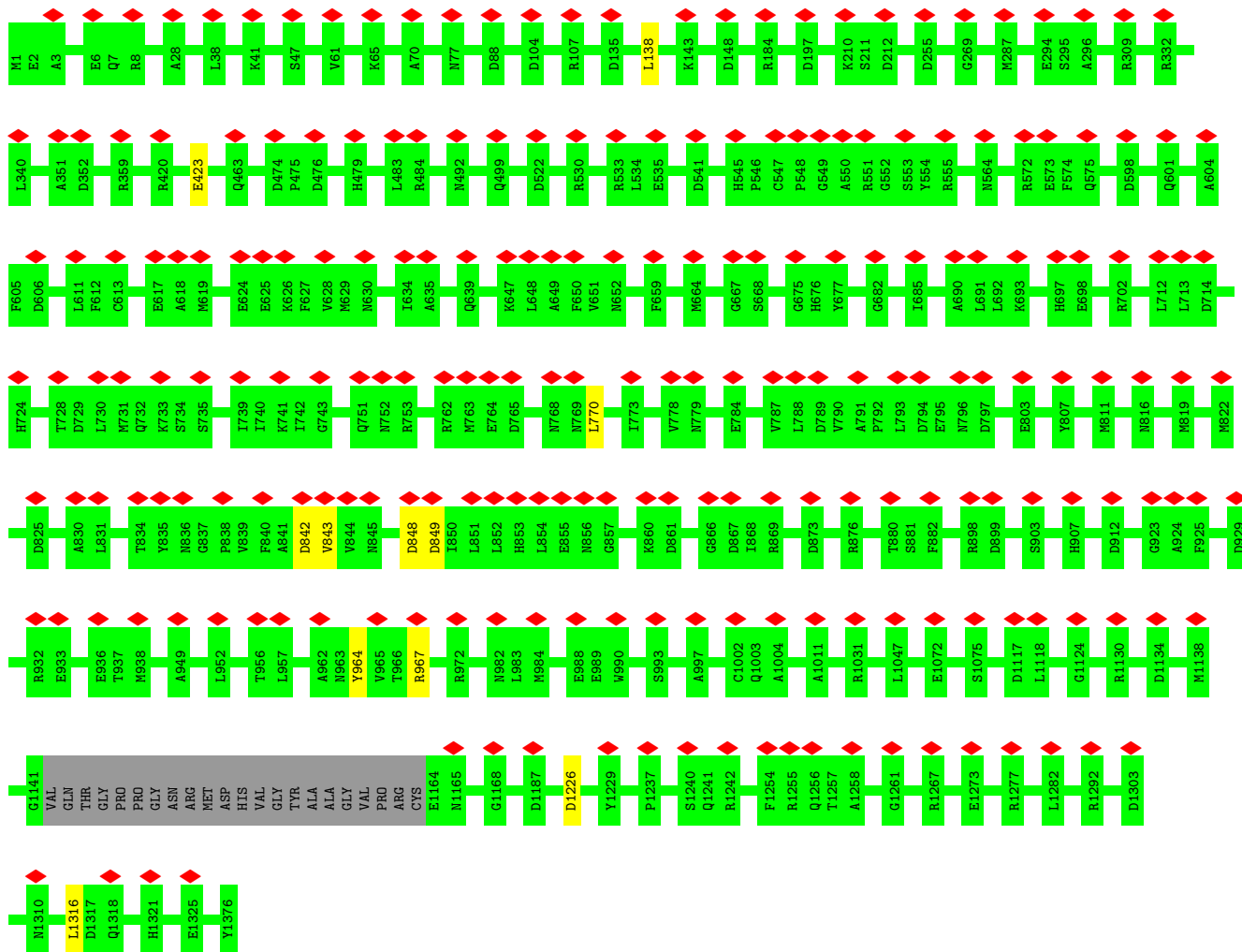


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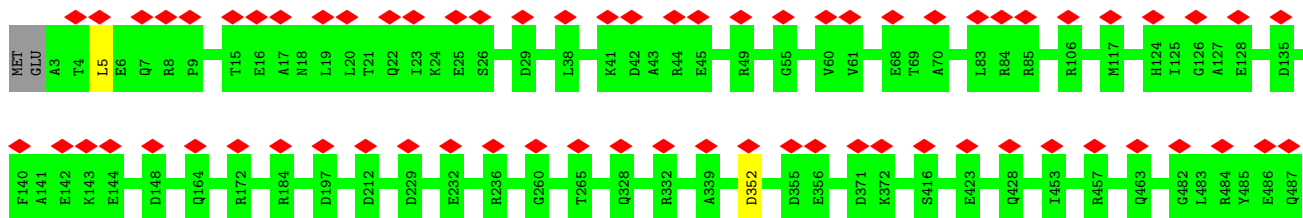


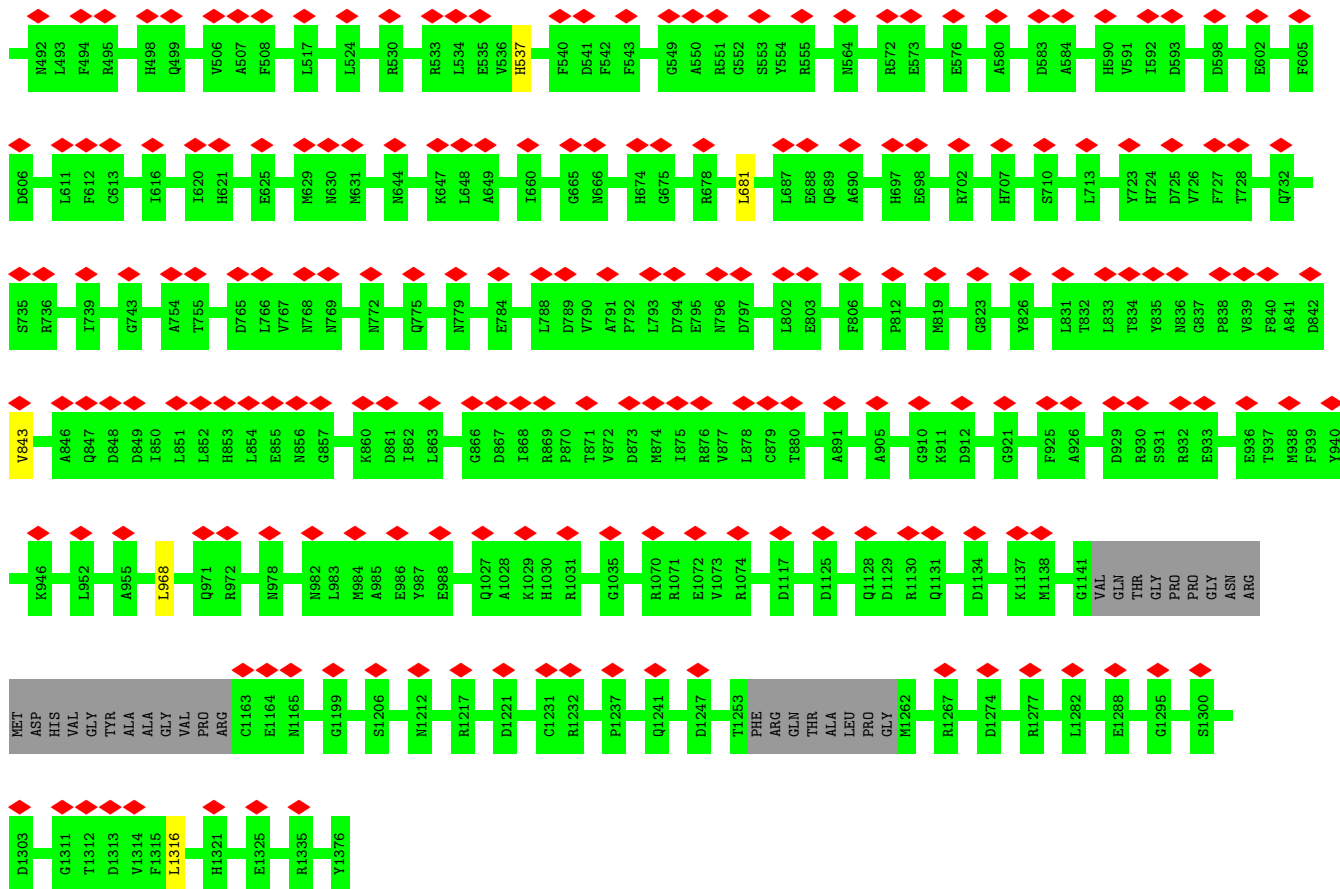


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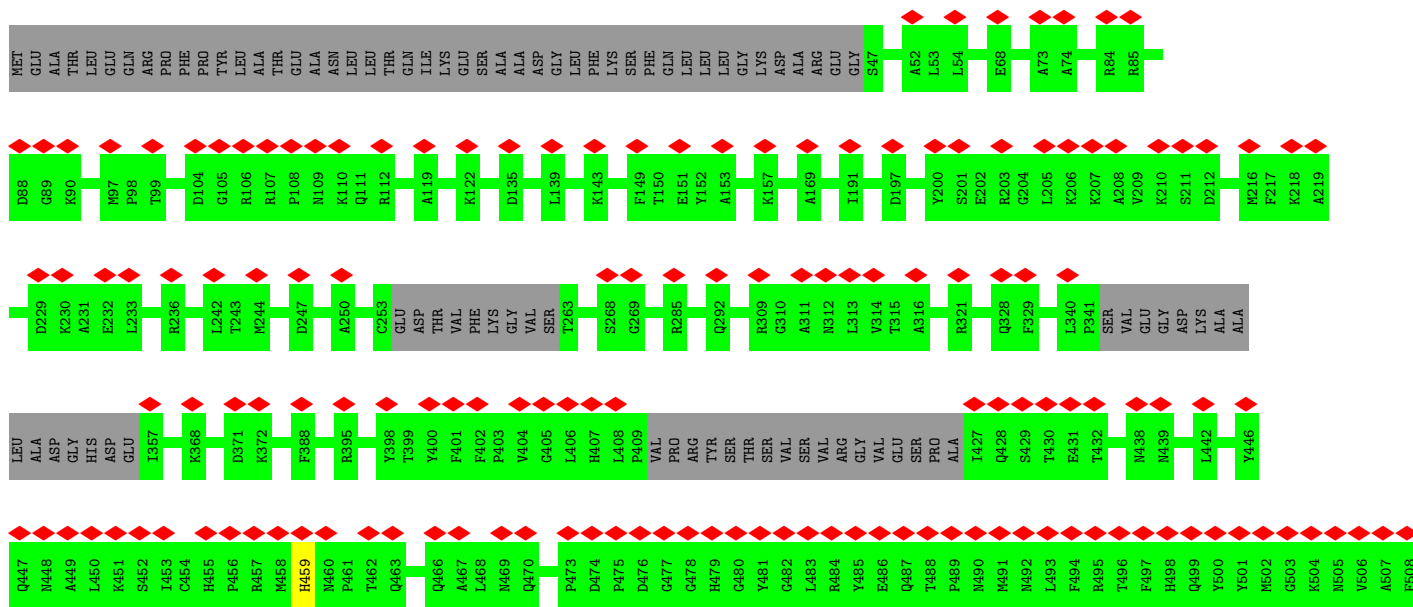
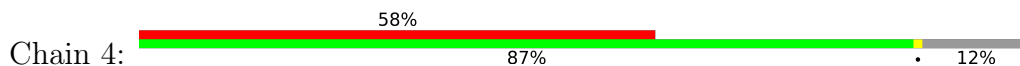


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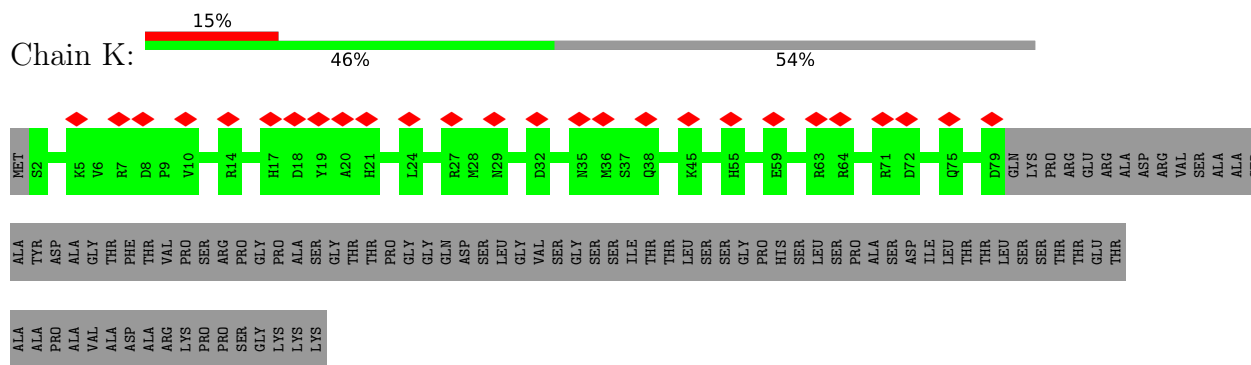




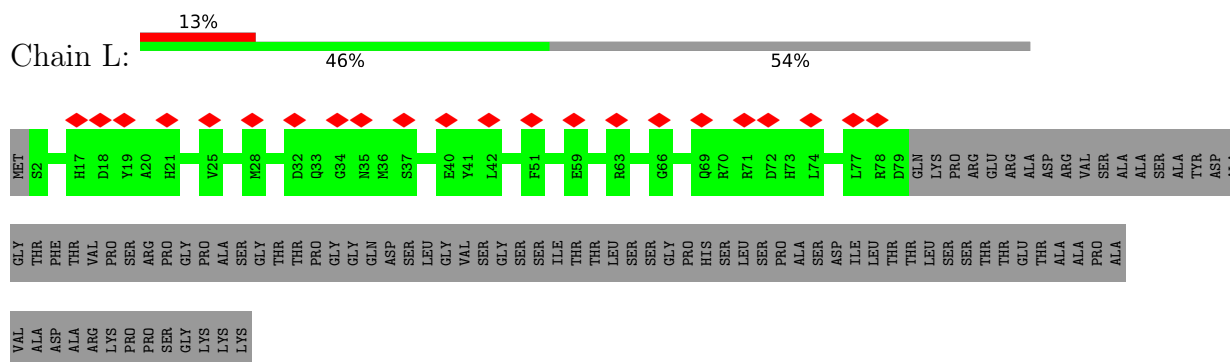
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LYS	SER	T1234	PRO	W990	L810	P750	A690	M630	A570	P610
VAL	THR	M1235	LEU	H991	M811	Q751	A690	M631	P571	D511
TYR	THR	N1236	LEU	K992	P812	N752	L692	P632	E572	V612
	ASP	M1237	LEU	S993	V813	R753	K693	L633	E573	A513
	HIS	P1238	GLY	P994	C814	A754	L694	I634	F574	Q614
	GLY	M1239	LEU	V995	S815	R755	A695	A635	Q575	K515
	GLN	A1240	LEU	A996	N816	F756	G696	L636	E576	A616
	LEU	Q1241	VAL	A997	H817	I757	H697	V637	S577	L517
	VAL	R1242	VAL	Y998	G818	N758	E698	I638	R578	V618
	ASN	G1243	LEU	F999	M819	L759	T699	Q639	G579	T519
	THR	S1244	LEU	A1000	C820	R760	V700	T640	A580	T520
	ASP	L1245	LEU	S881	G821	G761	G701	Y641	Q581	E521
	V1314	G1246	VAL	F882	M822	R762	R702	W642	F582	D522
F1315	V1184	D1247	M1120	L883	G823	M763	T703	V643	D583	L523
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D1317	S1186	L1249	F944	C885	D825	D765	I705	S645	V585	H525
H1321	D1187	P1250	N945	P886	Y826	L766	T706	G646	T586	P526
E1325	Y1190	G1251	L947	F887	Q827	V767	H707	K647	N587	T527
A1331	F1191	D1125	Y948	V688	N828	N768	L708	L648	M588	S528
A1332	Q1192	A1126	A949	T689	V829	N769	V709	A649	T589	H529
S1333	S1195	Y1127	D950	Q890	A830	L770	S710	F650	H590	R530
H1334	N1196	Q1128	P951	A691	L831	V771	A711	V651	V591	L531
R1335	P1197	D1129	L952	A892	T832	N772	L712	N652	I592	L532
V1336	R1130	R1130	Y953	R693	L833	I773	L713	S653	D593	R533
V1336	Q1131	Q1131	A954	V694	T834	V774	D714	Y654	Q594	L534
M1337	L1132	L1132	A955	I695	Y835	Q775	P715	H555	L595	E535
E1340	D1134	D1134	T956	T696	N836	T776	H716	M656	T596	V536
Y1341	Y1135	Y1135	L957	K697	G837	R777	L717	V657	I597	H537
M1344	L1136	L1136	H958	R698	P838	V778	L718	R658	D598	P538
LYS	K1137	K1137	P959	D899	V839	N779	P719	F659	V599	F539
GLN	M1138	M1138	L960	P900	F940	E780	P720	I660	I600	F540
THR	G1141	G1141	L961	A901	A841	H781	F721	C661	Q601	D541
THR	VAL	VAL	A962	Q902	D842	H782	A722	T662	E602	F542
GLY	THR	THR	N963	S903	V843	D783	T723	H663	T603	F543
PRO	GLN	GLY	Y964	F904	V844	E784	H724	M664	A604	V444
PRO	PRO	PRO	V965	A905	N845	R785	V725	G665	F605	H545
GLY	GLY	GLY	T966	T906	A846	H786	V726	N666	D606	P546
ASN	ASN	ASN	R967	H907	Q847	V787	T727	G667	P607	C547
ARG	ASN	ASN	L968	E908	D848	L788	T728	S668	A608	P548
MET	ARG	ARG	P969	Y909	D849	D789	D729	I669	V609	G549
ASP	ASP	ASP	N970	G910	I850	V790	L730	P670	P610	A550
VAL	HIS	VAL	Q871	K911	L851	A791	M731	K671	L611	E551
VAL	VAL	VAL	R972	D912	L852	P792	Q732	E672	F612	G552
TYR	GLY	GLY	N973	V913	H853	L793	K733	A673	C613	S553
ALA	ALA	ALA	A974	A914	L854	D794	S734	H674	Y614	Y554
ALA	ALA	ALA	V975	Q915	E855	E795	R735	G675	V615	A555
GLY	GLY	GLY	V976	T916	N856	N796	Q737	H676	I616	A556
VAL	M1038	VAL	F977	V917	G857	D797	P738	Y677	E617	T557
PRO	R1042	PRO	N978	L918	T858	V798	I739	R678	A618	H558
ARG	T1043	ARG	V979	V919	L859	N799	I740	K679	M619	R559
CYS	D1044	CYS	P980	K960	I861	P900	I741	I680	I620	T560
GLU	E1045	GLU	S981	D862	T862	V801	V801	L681	H621	M561
ASN	L1065	ASN	N982	I863	D863	L802	I742	I682	I622	V562
			L983	Q823	G823	E803	D743	E683	G623	G563
			M984	A924	Q864	K904	G744	L684	Q624	N564
			A985	F925	A665	L805	Q745	I685	E625	I565
			E986	A926	G666	N746	Q746	A686	K626	P566
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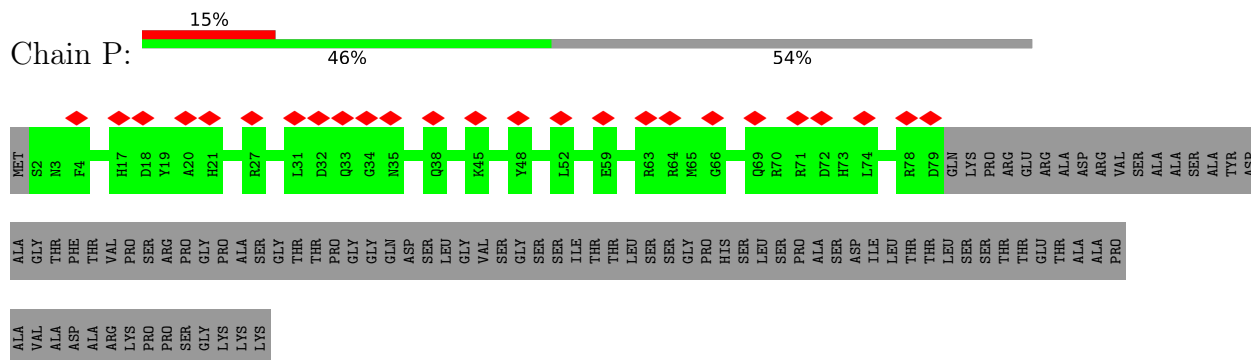
- Molecule 2: Small capsomere-interacting protein



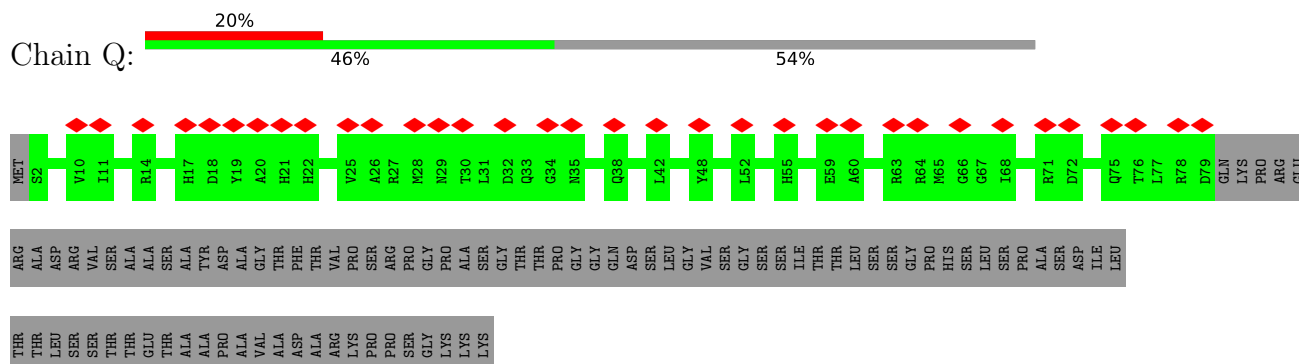
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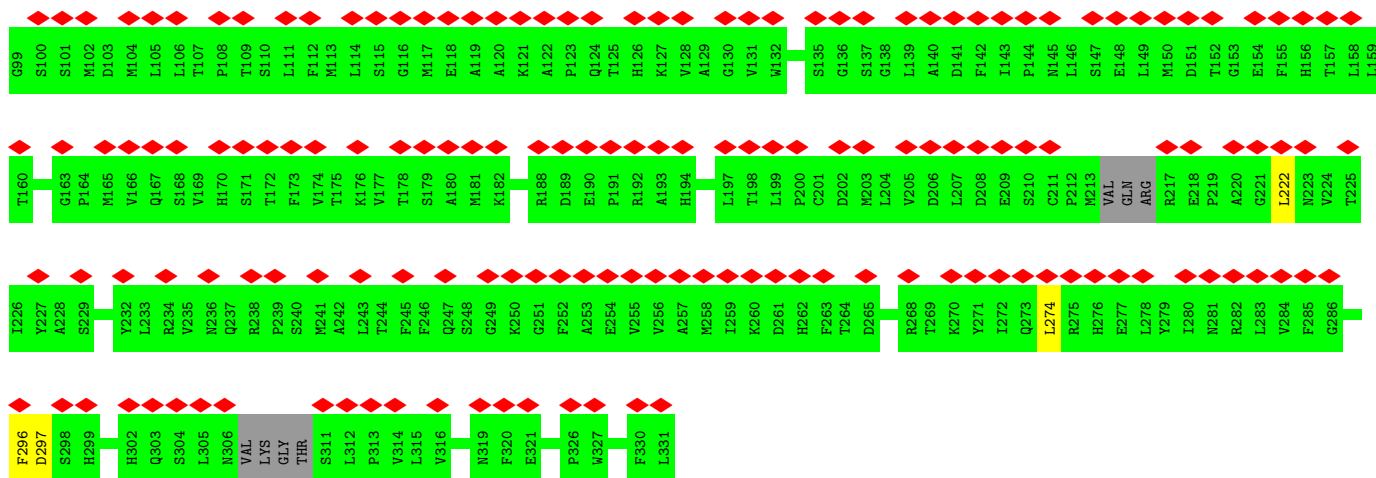


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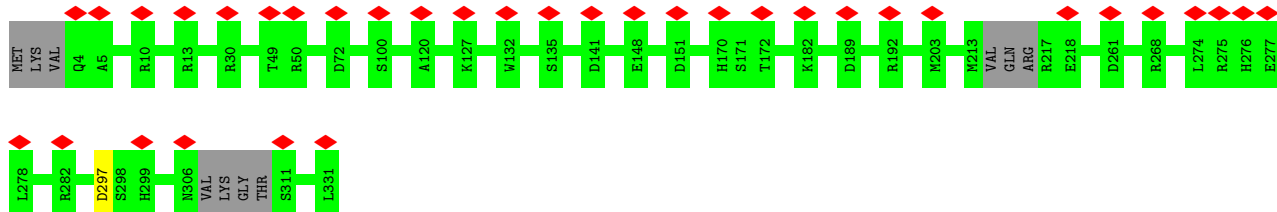




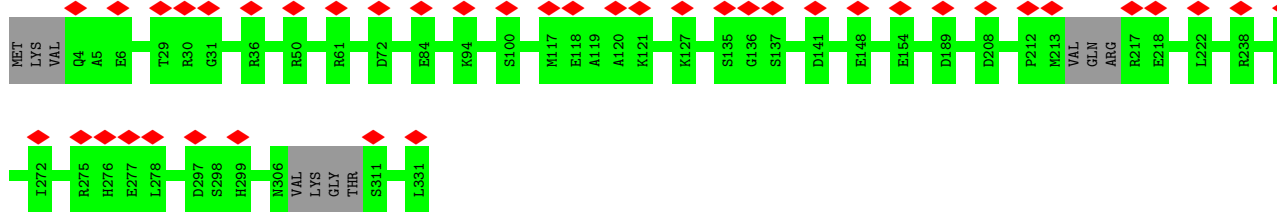




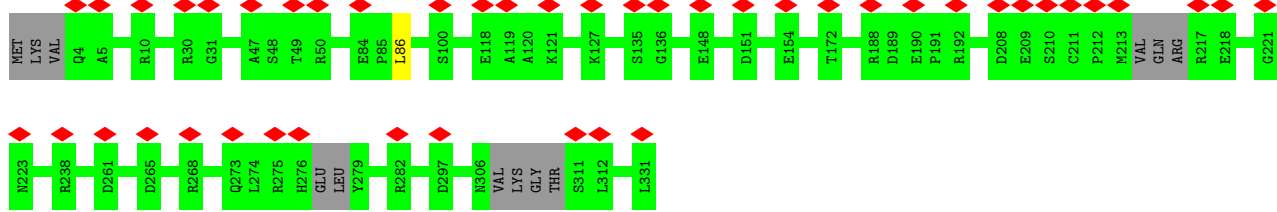
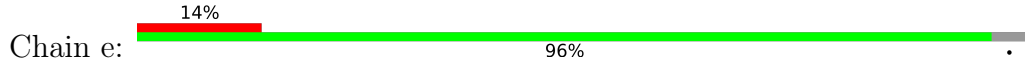
• Molecule 3: Triplex capsid protein 1



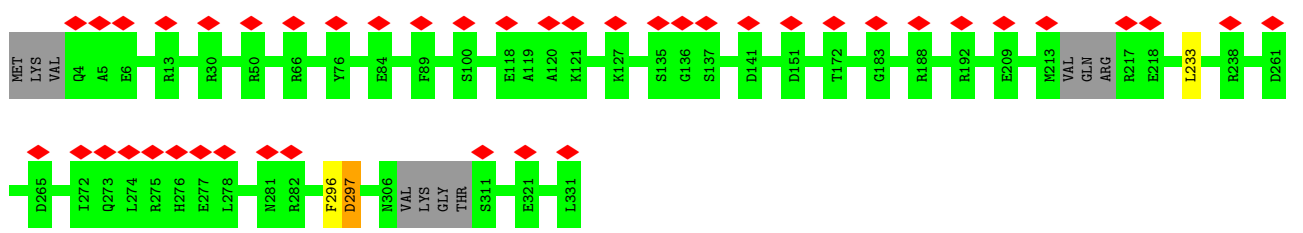
• Molecule 3: Triplex capsid protein 1



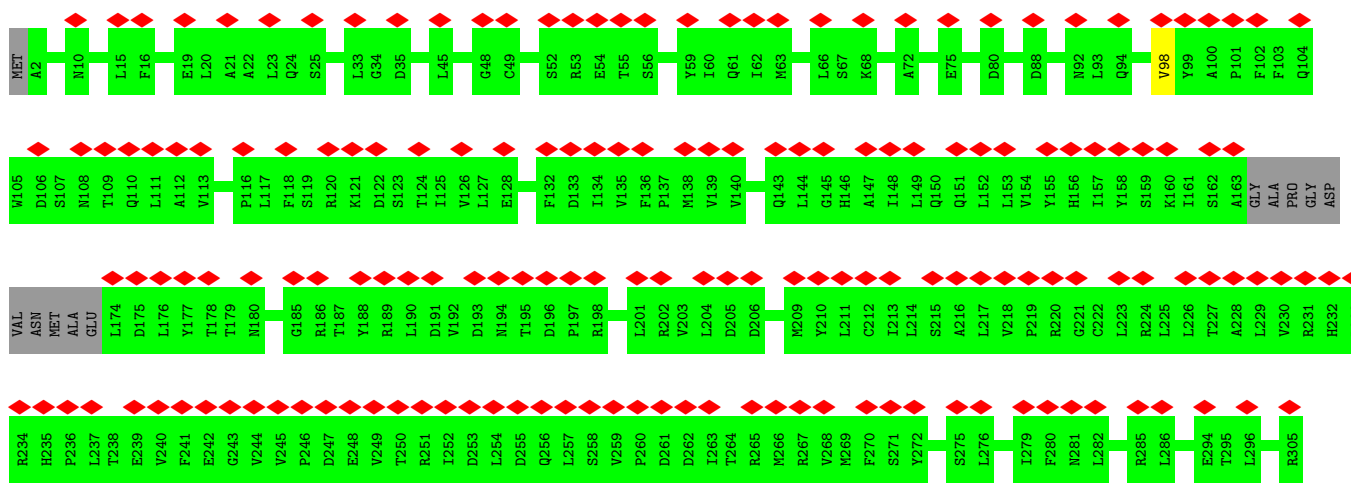
• Molecule 3: Triplex capsid protein 1



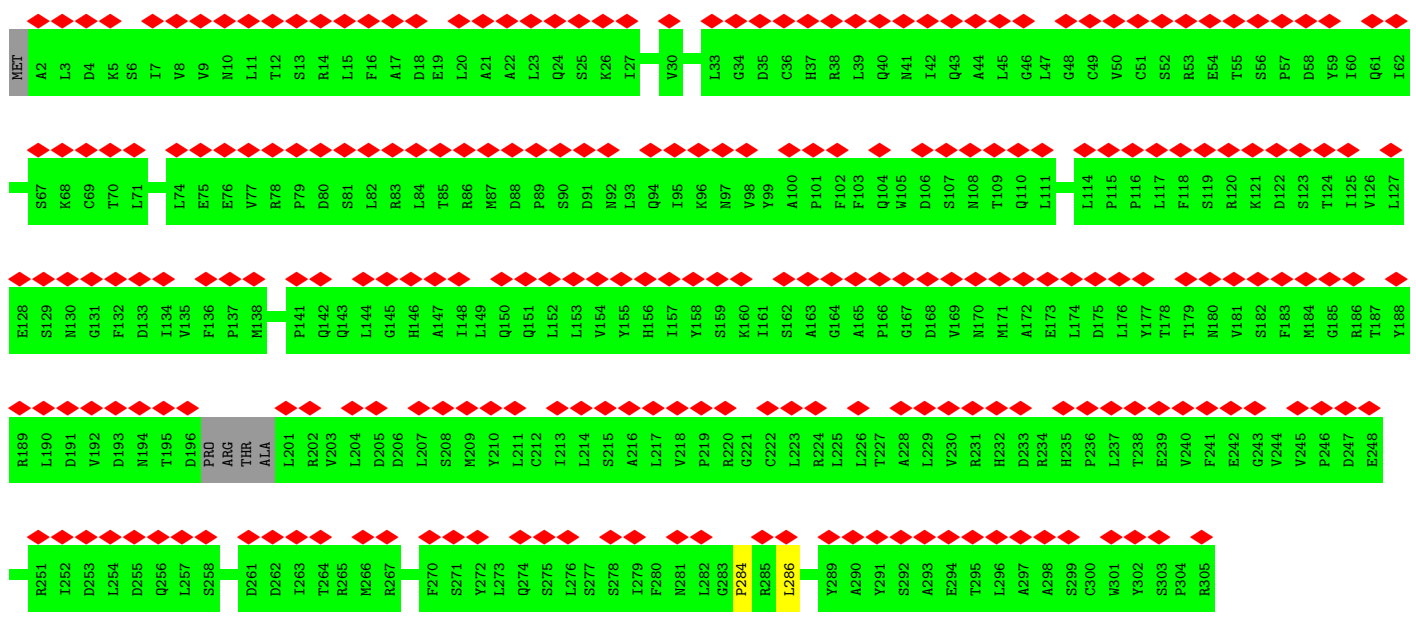
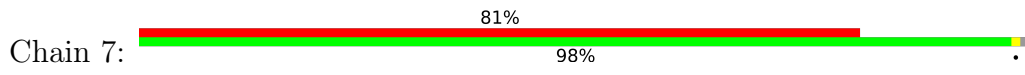
• Molecule 3: Triplex capsid protein 1



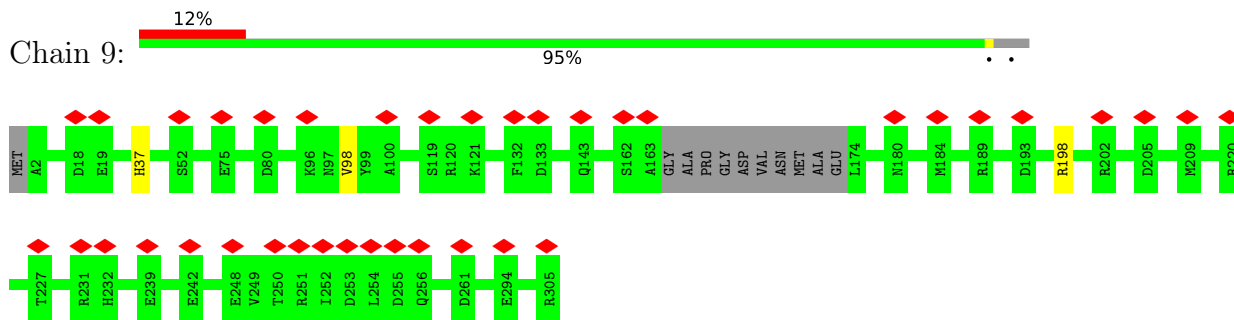
• Molecule 4: Triplex capsid protein 2



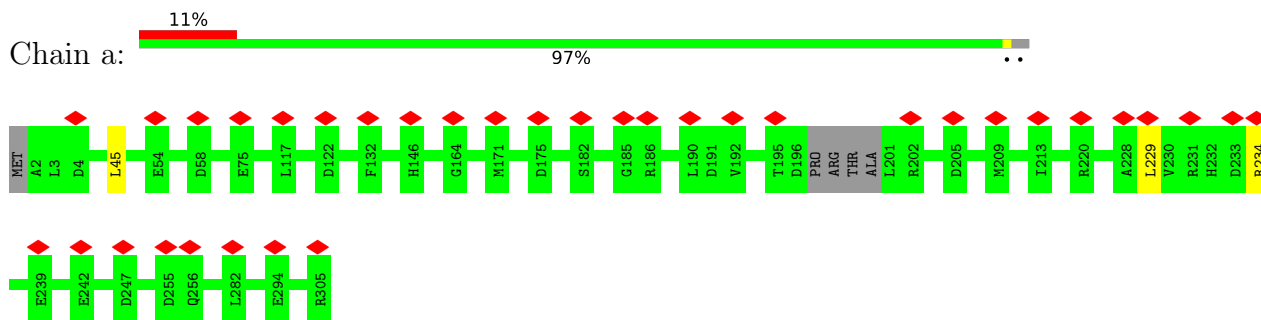
• Molecule 4: Triplex capsid protein 2



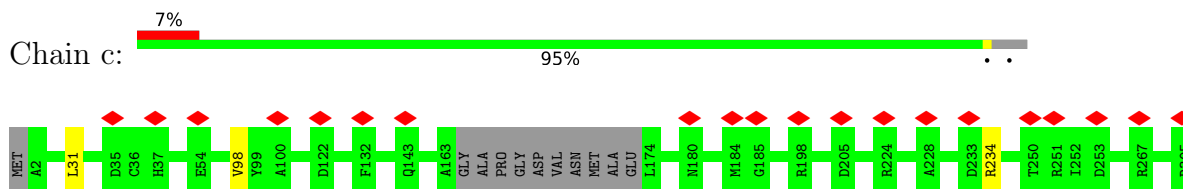
• Molecule 4: Triplex capsid protein 2



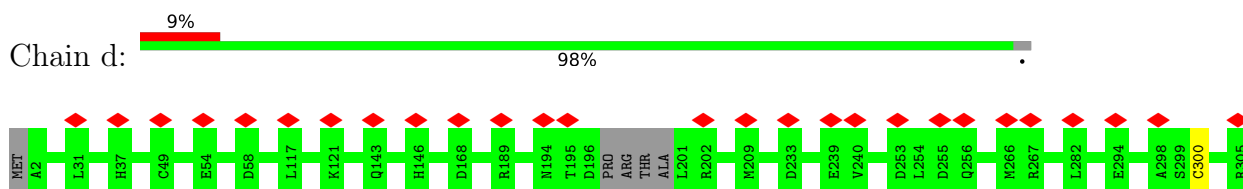
• Molecule 4: Triplex capsid protein 2



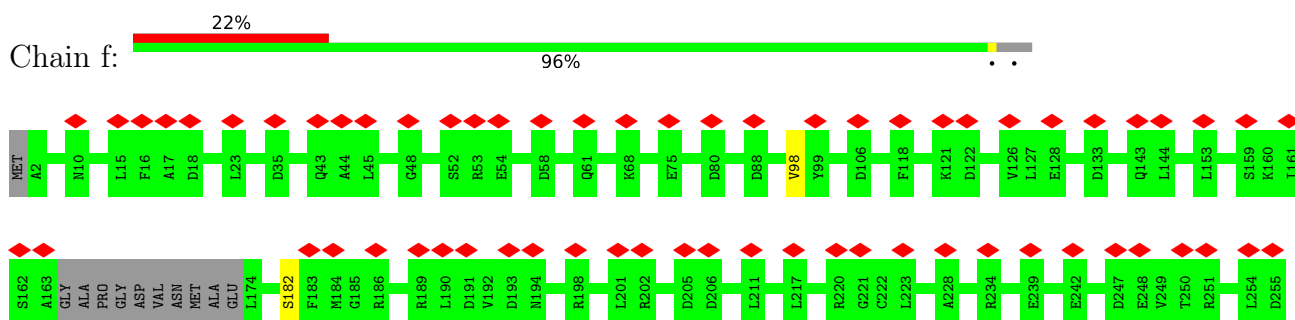
• Molecule 4: Triplex capsid protein 2



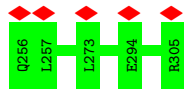
• Molecule 4: Triplex capsid protein 2



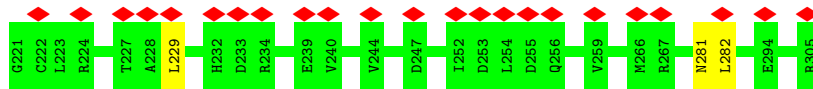
• Molecule 4: Triplex capsid protein 2



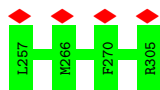
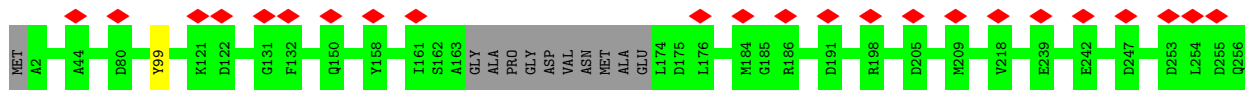
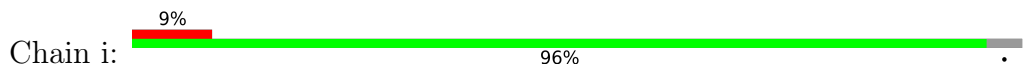




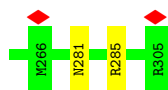
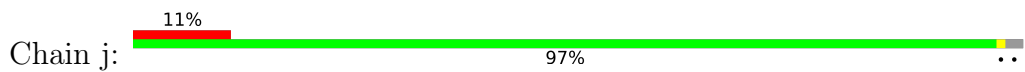
• Molecule 4: Triplex capsid protein 2



• Molecule 4: Triplex capsid protein 2



• Molecule 4: Triplex capsid protein 2



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	25315	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	25	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	24271	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	15.720	Depositor
Minimum map value	-11.596	Depositor
Average map value	0.008	Depositor
Map value standard deviation	1.070	Depositor
Recommended contour level	2.5	Depositor
Map size ( $\text{\AA}$ )	1318.3999, 1318.3999, 1318.3999	wwPDB
Map dimensions	1280, 1280, 1280	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.03, 1.03, 1.03	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	4	0.34	0/9812	0.62	3/13326 (0.0%)
1	A	0.42	0/10936	0.64	4/14866 (0.0%)
1	B	0.44	0/10879	0.67	4/14788 (0.0%)
1	C	0.43	0/10873	0.64	7/14780 (0.0%)
1	D	0.43	1/10879 (0.0%)	0.66	4/14788 (0.0%)
1	E	0.45	1/10936 (0.0%)	0.66	3/14866 (0.0%)
1	F	0.44	1/10890 (0.0%)	0.66	4/14802 (0.0%)
1	M	0.44	0/10879	0.66	3/14788 (0.0%)
1	N	0.45	1/10936 (0.0%)	0.67	5/14866 (0.0%)
1	O	0.44	0/10879	0.66	3/14788 (0.0%)
1	S	0.40	0/10298	0.64	3/13995 (0.0%)
1	T	0.42	0/10918	0.65	2/14839 (0.0%)
1	U	0.44	0/10879	0.65	1/14788 (0.0%)
1	V	0.43	0/10856	0.66	5/14757 (0.0%)
1	W	0.43	3/10873 (0.0%)	0.65	7/14780 (0.0%)
1	X	0.40	0/10797	0.64	5/14676 (0.0%)
2	0	0.37	0/682	0.52	0/919
2	1	0.38	0/682	0.52	0/919
2	2	0.37	0/682	0.52	0/919
2	3	0.37	0/682	0.52	0/919
2	G	0.38	0/682	0.52	0/919
2	H	0.37	0/682	0.52	0/919
2	I	0.37	0/682	0.52	0/919
2	J	0.37	0/682	0.52	0/919
2	K	0.38	0/682	0.52	0/919
2	L	0.37	0/682	0.52	0/919
2	P	0.37	0/682	0.52	0/919
2	Q	0.37	0/682	0.52	0/919
2	R	0.38	0/682	0.52	0/919
2	Y	0.37	0/682	0.52	0/919
2	Z	0.37	0/682	0.52	0/919
3	5	0.33	0/2525	0.62	4/3433 (0.1%)
3	8	0.41	0/2539	0.63	1/3452 (0.0%)
3	b	0.41	0/2539	0.63	0/3452

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
3	e	0.40	0/2521	0.62	1/3426 (0.0%)
3	h	0.41	0/2539	0.64	2/3452 (0.1%)
4	6	0.34	0/2375	0.65	0/3234
4	7	0.33	0/2410	0.61	1/3281 (0.0%)
4	9	0.43	0/2375	0.66	0/3234
4	a	0.45	1/2410 (0.0%)	0.65	1/3281 (0.0%)
4	c	0.43	0/2375	0.67	1/3234 (0.0%)
4	d	0.44	0/2410	0.64	0/3281
4	f	0.38	0/2375	0.65	0/3234
4	g	0.41	0/2410	0.66	2/3281 (0.1%)
4	i	0.42	0/2375	0.65	0/3234
4	j	0.43	0/2410	0.66	2/3281 (0.1%)
All	All	0.42	8/219338 (0.0%)	0.65	78/298068 (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	4	0	9
1	A	0	4
1	B	0	7
1	C	0	8
1	D	0	10
1	E	0	5
1	F	0	4
1	M	0	6
1	N	0	7
1	O	0	6
1	S	0	6
1	T	0	11
1	U	0	4
1	V	0	6
1	W	0	2
1	X	0	1
3	h	0	1
4	6	0	1
4	7	0	1
4	9	0	2
4	a	0	1
4	c	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
4	d	0	1
4	f	0	2
4	g	0	2
4	i	0	1
4	j	0	2
All	All	0	111

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	454	CYS	C-N	-7.03	1.17	1.34
4	a	234	ARG	CZ-NH2	-6.59	1.24	1.33
1	W	964	TYR	CD1-CE1	-6.35	1.29	1.39
1	N	9	PRO	C-N	-6.01	1.20	1.34
1	E	1192	GLN	C-N	-5.61	1.21	1.34
1	D	1192	GLN	C-N	-5.37	1.21	1.34
1	W	1226	ASP	CB-CG	-5.30	1.40	1.51
1	W	967	ARG	CD-NE	-5.18	1.37	1.46

All (78) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1181	PRO	C-N-CA	10.87	148.86	121.70
1	B	1232	ARG	NE-CZ-NH1	9.29	124.94	120.30
1	X	5	LEU	CA-CB-CG	8.38	134.58	115.30
1	B	1232	ARG	NE-CZ-NH2	-8.22	116.19	120.30
1	F	454	CYS	C-N-CA	8.04	141.80	121.70
1	4	1370	LEU	CA-CB-CG	7.74	133.11	115.30
3	h	233	LEU	CA-CB-CG	6.54	130.34	115.30
3	e	86	LEU	CA-CB-CG	6.53	130.32	115.30
1	C	681	LEU	CA-CB-CG	6.51	130.27	115.30
1	O	1316	LEU	CA-CB-CG	6.44	130.11	115.30
1	M	717	LEU	CA-CB-CG	6.39	130.00	115.30
4	g	229	LEU	CA-CB-CG	6.31	129.81	115.30
1	W	1316	LEU	CA-CB-CG	6.24	129.64	115.30
1	X	968	LEU	CA-CB-CG	6.22	129.60	115.30
3	5	222	LEU	CA-CB-CG	6.19	129.54	115.30
4	7	286	LEU	CA-CB-CG	6.05	129.21	115.30
4	a	45	LEU	CA-CB-CG	6.02	129.15	115.30
1	S	569	LEU	CA-CB-CG	-5.93	101.67	115.30
3	5	297	ASP	CB-CG-OD1	5.92	123.63	118.30
3	5	274	LEU	CA-CB-CG	5.87	128.80	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	V	684	LEU	CA-CB-CG	5.79	128.63	115.30
1	D	678	ARG	NE-CZ-NH2	-5.78	117.41	120.30
1	E	1316	LEU	CA-CB-CG	5.70	128.40	115.30
1	B	569	LEU	CA-CB-CG	-5.65	102.30	115.30
1	A	276	LEU	CA-CB-CG	5.64	128.27	115.30
1	W	967	ARG	NE-CZ-NH1	5.63	123.12	120.30
1	4	459	HIS	C-N-CA	-5.63	107.63	121.70
4	j	285	ARG	NE-CZ-NH1	-5.62	117.49	120.30
1	X	1316	LEU	CA-CB-CG	5.60	128.19	115.30
1	D	138	LEU	CA-CB-CG	5.58	128.13	115.30
1	T	902	GLN	CA-CB-CG	5.58	125.67	113.40
3	h	297	ASP	CB-CG-OD1	5.57	123.31	118.30
1	N	504	LYS	C-N-CA	5.54	135.56	121.70
1	X	681	LEU	CA-CB-CG	5.53	128.03	115.30
1	W	770	LEU	CA-CB-CG	5.51	127.97	115.30
1	E	1166	LEU	CA-CB-CG	5.50	127.96	115.30
1	S	713	LEU	CA-CB-CG	5.50	127.95	115.30
1	A	1166	LEU	CA-CB-CG	5.49	127.92	115.30
4	j	45	LEU	CA-CB-CG	5.49	127.92	115.30
1	N	957	LEU	CA-CB-CG	-5.46	102.74	115.30
1	W	138	LEU	CA-CB-CG	5.46	127.86	115.30
1	C	968	LEU	CA-CB-CG	5.44	127.81	115.30
1	C	1316	LEU	CA-CB-CG	5.38	127.68	115.30
1	O	1293	LEU	CA-CB-CG	5.37	127.66	115.30
1	W	1226	ASP	CB-CG-OD1	5.37	123.13	118.30
4	g	45	LEU	CA-CB-CG	5.36	127.63	115.30
1	D	968	LEU	CA-CB-CG	5.33	127.57	115.30
1	N	1249	LEU	CA-CB-CG	5.32	127.54	115.30
1	O	1250	TYR	CB-CG-CD2	-5.29	117.83	121.00
1	S	856	ASN	CA-C-N	5.28	126.76	116.20
1	A	1093	LEU	CA-CB-CG	5.23	127.32	115.30
1	V	968	LEU	CA-CB-CG	5.20	127.26	115.30
1	F	687	LEU	CA-CB-CG	5.18	127.22	115.30
1	V	313	LEU	CA-CB-CG	5.17	127.19	115.30
4	c	31	LEU	CA-CB-CG	5.17	127.19	115.30
1	M	1249	LEU	CA-CB-CG	5.16	127.16	115.30
1	C	1238	TRP	CA-CB-CG	-5.13	103.95	113.70
1	E	770	LEU	CA-CB-CG	5.12	127.08	115.30
1	F	1249	LEU	CA-CB-CG	5.11	127.06	115.30
1	X	352	ASP	CB-CG-OD1	5.11	122.90	118.30
1	C	684	LEU	CA-CB-CG	5.10	127.02	115.30
1	4	831	LEU	CA-CB-CG	5.10	127.03	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	138	LEU	CA-CB-CG	5.09	127.01	115.30
1	W	1226	ASP	CB-CG-OD2	5.09	122.88	118.30
1	W	1226	ASP	OD1-CG-OD2	-5.09	113.63	123.30
1	N	694	LEU	CA-CB-CG	5.08	126.99	115.30
1	F	400	TYR	CZ-CE2-CD2	5.07	124.36	119.80
1	A	902	GLN	CA-CB-CG	5.06	124.53	113.40
1	U	276	LEU	CA-CB-CG	5.04	126.89	115.30
3	5	296	PHE	C-N-CA	5.04	134.29	121.70
1	M	276	LEU	CA-CB-CG	5.03	126.88	115.30
1	V	708	LEU	CA-CB-CG	5.03	126.87	115.30
1	D	1317	ASP	C-N-CA	-5.03	109.14	121.70
1	N	459	HIS	C-N-CA	-5.03	109.14	121.70
1	V	1019	LEU	CA-CB-CG	5.03	126.86	115.30
1	T	459	HIS	C-N-CA	-5.02	109.15	121.70
1	C	1293	LEU	CA-CB-CG	5.01	126.82	115.30
3	8	297	ASP	CB-CG-OD1	5.01	122.81	118.30

There are no chirality outliers.

All (111) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	4	1016	HIS	Peptide
1	4	1084	HIS	Peptide
1	4	1334	HIS	Peptide
1	4	735	SER	Peptide
1	4	842	ASP	Peptide
1	4	844	VAL	Peptide
1	4	848	ASP	Peptide
1	4	850	ILE	Peptide
1	4	899	ASP	Peptide
4	6	98	VAL	Peptide
4	7	284	PRO	Peptide
4	9	37	HIS	Peptide
4	9	98	VAL	Peptide
1	A	1109	THR	Peptide
1	A	255	ASP	Peptide
1	A	537	HIS	Peptide
1	A	899	ASP	Peptide
1	B	1315	PHE	Peptide
1	B	422	VAL	Peptide
1	B	651	VAL	Peptide
1	B	849	ASP	Peptide

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>Group</b>
1	B	899	ASP	Peptide
1	B	913	VAL	Peptide
1	B	946	LYS	Peptide
1	C	1017	GLN	Peptide
1	C	1250	TYR	Peptide
1	C	1255	ARG	Peptide
1	C	292	GLN	Peptide
1	C	537	HIS	Peptide
1	C	900	PRO	Peptide
1	C	944	PHE	Peptide
1	C	963	ASN	Peptide
1	D	138	LEU	Peptide
1	D	144	GLU	Peptide
1	D	292	GLN	Peptide
1	D	457	ARG	Peptide
1	D	459	HIS	Peptide
1	D	596	THR	Peptide
1	D	798	TYR	Peptide
1	D	842	ASP	Peptide
1	D	849	ASP	Peptide
1	D	915	GLN	Peptide
1	E	1017	GLN	Peptide
1	E	292	GLN	Peptide
1	E	320	GLY	Peptide
1	E	651	VAL	Peptide
1	E	944	PHE	Peptide
1	F	1017	GLN	Peptide
1	F	1316	LEU	Peptide
1	F	938	MET	Peptide
1	F	944	PHE	Peptide
1	M	1312	THR	Peptide
1	M	255	ASP	Peptide
1	M	351	ALA	Peptide
1	M	387	GLN	Peptide
1	M	798	TYR	Peptide
1	M	899	ASP	Peptide
1	N	1113	VAL	Peptide
1	N	842	ASP	Peptide
1	N	849	ASP	Peptide
1	N	886	PRO	Peptide
1	N	918	LEU	Peptide
1	N	929	ASP	Peptide

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>Group</b>
1	N	944	PHE	Peptide
1	O	1042	ARG	Peptide
1	O	1252	ILE	Peptide
1	O	293	VAL	Peptide
1	O	536	VAL	Peptide
1	O	537	HIS	Peptide
1	O	842	ASP	Peptide
1	S	292	GLN	Peptide
1	S	537	HIS	Peptide
1	S	606	ASP	Peptide
1	S	844	VAL	Peptide
1	S	850	ILE	Peptide
1	S	944	PHE	Peptide
1	T	10	PHE	Peptide
1	T	106	ARG	Peptide
1	T	1112	GLY	Peptide
1	T	1181	PRO	Peptide
1	T	292	GLN	Peptide
1	T	422	VAL	Peptide
1	T	537	HIS	Peptide
1	T	842	ASP	Peptide
1	T	849	ASP	Peptide
1	T	899	ASP	Peptide
1	T	944	PHE	Peptide
1	U	292	GLN	Peptide
1	U	537	HIS	Peptide
1	U	59	ASN	Peptide
1	U	651	VAL	Peptide
1	V	1250	TYR	Peptide
1	V	142	GLU	Peptide
1	V	606	ASP	Peptide
1	V	797	ASP	Peptide
1	V	849	ASP	Peptide
1	V	899	ASP	Peptide
1	W	848	ASP	Peptide
1	W	849	ASP	Peptide
1	X	537	HIS	Peptide
4	a	229	LEU	Peptide
4	c	98	VAL	Peptide
4	d	300	CYS	Peptide
4	f	182	SER	Peptide
4	f	98	VAL	Peptide

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Mol	Chain	Res	Type	Group
4	g	282	LEU	Peptide
4	g	97	ASN	Peptide
3	h	296	PHE	Peptide
4	i	99	TYR	Peptide
4	j	281	ASN	Peptide
4	j	59	TYR	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	4	1200/1376 (87%)	1061 (88%)	136 (11%)	3 (0%)	41	76
1	A	1359/1376 (99%)	1204 (89%)	155 (11%)	0	100	100
1	B	1351/1376 (98%)	1192 (88%)	158 (12%)	1 (0%)	51	85
1	C	1350/1376 (98%)	1200 (89%)	148 (11%)	2 (0%)	51	85
1	D	1351/1376 (98%)	1186 (88%)	163 (12%)	2 (0%)	51	85
1	E	1359/1376 (99%)	1203 (88%)	155 (11%)	1 (0%)	51	85
1	F	1352/1376 (98%)	1197 (88%)	149 (11%)	6 (0%)	34	72
1	M	1351/1376 (98%)	1185 (88%)	163 (12%)	3 (0%)	47	80
1	N	1359/1376 (99%)	1189 (88%)	168 (12%)	2 (0%)	51	85
1	O	1351/1376 (98%)	1191 (88%)	155 (12%)	5 (0%)	34	72
1	S	1273/1376 (92%)	1126 (88%)	145 (11%)	2 (0%)	47	80
1	T	1354/1376 (98%)	1195 (88%)	154 (11%)	5 (0%)	34	72
1	U	1351/1376 (98%)	1199 (89%)	150 (11%)	2 (0%)	51	85
1	V	1348/1376 (98%)	1200 (89%)	146 (11%)	2 (0%)	51	85

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	W	1350/1376 (98%)	1211 (90%)	136 (10%)	3 (0%)	47	80
1	X	1339/1376 (97%)	1198 (90%)	140 (10%)	1 (0%)	51	85
2	0	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	1	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	2	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	3	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	G	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	H	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	I	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	J	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	K	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	L	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	P	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	Q	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	R	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	Y	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
2	Z	76/170 (45%)	73 (96%)	3 (4%)	0	100	100
3	5	313/331 (95%)	279 (89%)	34 (11%)	0	100	100
3	8	315/331 (95%)	293 (93%)	22 (7%)	0	100	100
3	b	315/331 (95%)	288 (91%)	27 (9%)	0	100	100
3	e	311/331 (94%)	288 (93%)	23 (7%)	0	100	100
3	h	315/331 (95%)	288 (91%)	26 (8%)	1 (0%)	41	76
4	6	290/305 (95%)	263 (91%)	27 (9%)	0	100	100
4	7	296/305 (97%)	261 (88%)	35 (12%)	0	100	100
4	9	290/305 (95%)	264 (91%)	26 (9%)	0	100	100
4	a	296/305 (97%)	270 (91%)	26 (9%)	0	100	100
4	c	290/305 (95%)	265 (91%)	25 (9%)	0	100	100
4	d	296/305 (97%)	277 (94%)	19 (6%)	0	100	100
4	f	290/305 (95%)	263 (91%)	27 (9%)	0	100	100
4	g	296/305 (97%)	269 (91%)	27 (9%)	0	100	100
4	i	290/305 (95%)	264 (91%)	26 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	j	296/305 (97%)	272 (92%)	24 (8%)	0	100	100
All	All	27037/29271 (92%)	24136 (89%)	2860 (11%)	41 (0%)	50	80

All (41) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	1251	ASN
1	O	144	GLU
1	T	10	PHE
1	V	1251	ASN
1	B	843	VAL
1	D	843	VAL
1	E	843	VAL
1	F	843	VAL
1	M	843	VAL
1	O	294	GLU
1	O	843	VAL
1	O	1251	ASN
1	S	843	VAL
1	T	843	VAL
1	T	945	ASN
1	U	843	VAL
1	V	843	VAL
1	W	423	GLU
1	W	843	VAL
1	X	843	VAL
1	D	842	ASP
1	F	294	GLU
1	F	423	GLU
1	M	352	ASP
1	O	279	THR
1	U	1252	ILE
1	C	843	VAL
1	F	945	ASN
1	M	842	ASP
1	N	843	VAL
1	N	945	ASN
1	W	842	ASP
1	4	842	ASP
1	4	843	VAL
1	F	842	ASP
1	S	842	ASP

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Mol	Chain	Res	Type
1	T	842	ASP
1	4	849	ASP
1	T	11	PRO
3	h	297	ASP
1	F	738	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	4	1039/1166 (89%)	1038 (100%)	1 (0%)	93 97
1	A	1155/1166 (99%)	1155 (100%)	0	100 100
1	B	1151/1166 (99%)	1150 (100%)	1 (0%)	93 97
1	C	1150/1166 (99%)	1150 (100%)	0	100 100
1	D	1151/1166 (99%)	1151 (100%)	0	100 100
1	E	1155/1166 (99%)	1155 (100%)	0	100 100
1	F	1152/1166 (99%)	1151 (100%)	1 (0%)	93 97
1	M	1151/1166 (99%)	1151 (100%)	0	100 100
1	N	1155/1166 (99%)	1153 (100%)	2 (0%)	93 96
1	O	1151/1166 (99%)	1149 (100%)	2 (0%)	93 96
1	S	1094/1166 (94%)	1094 (100%)	0	100 100
1	T	1154/1166 (99%)	1153 (100%)	1 (0%)	93 97
1	U	1151/1166 (99%)	1149 (100%)	2 (0%)	93 96
1	V	1148/1166 (98%)	1146 (100%)	2 (0%)	93 96
1	W	1150/1166 (99%)	1150 (100%)	0	100 100
1	X	1143/1166 (98%)	1143 (100%)	0	100 100
2	0	70/141 (50%)	70 (100%)	0	100 100
2	1	70/141 (50%)	70 (100%)	0	100 100
2	2	70/141 (50%)	70 (100%)	0	100 100
2	3	70/141 (50%)	70 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	G	70/141 (50%)	70 (100%)	0	100	100
2	H	70/141 (50%)	70 (100%)	0	100	100
2	I	70/141 (50%)	70 (100%)	0	100	100
2	J	70/141 (50%)	70 (100%)	0	100	100
2	K	70/141 (50%)	70 (100%)	0	100	100
2	L	70/141 (50%)	70 (100%)	0	100	100
2	P	70/141 (50%)	70 (100%)	0	100	100
2	Q	70/141 (50%)	70 (100%)	0	100	100
2	R	70/141 (50%)	70 (100%)	0	100	100
2	Y	70/141 (50%)	70 (100%)	0	100	100
2	Z	70/141 (50%)	70 (100%)	0	100	100
3	5	271/281 (96%)	271 (100%)	0	100	100
3	8	272/281 (97%)	272 (100%)	0	100	100
3	b	272/281 (97%)	272 (100%)	0	100	100
3	e	270/281 (96%)	270 (100%)	0	100	100
3	h	272/281 (97%)	272 (100%)	0	100	100
4	6	267/274 (97%)	267 (100%)	0	100	100
4	7	270/274 (98%)	270 (100%)	0	100	100
4	9	267/274 (97%)	266 (100%)	1 (0%)	91	94
4	a	270/274 (98%)	270 (100%)	0	100	100
4	c	267/274 (97%)	266 (100%)	1 (0%)	91	94
4	d	270/274 (98%)	270 (100%)	0	100	100
4	f	267/274 (97%)	267 (100%)	0	100	100
4	g	270/274 (98%)	269 (100%)	1 (0%)	91	94
4	i	267/274 (97%)	267 (100%)	0	100	100
4	j	270/274 (98%)	270 (100%)	0	100	100
All	All	23342/24916 (94%)	23327 (100%)	15 (0%)	93	97

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	947	LEU
1	F	947	LEU

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Mol	Chain	Res	Type
1	N	947	LEU
1	N	1070	ARG
1	O	1251	ASN
1	O	1255	ARG
1	T	947	LEU
1	U	84	ARG
1	U	143	LYS
1	V	143	LYS
1	V	947	LEU
1	4	947	LEU
4	9	198	ARG
4	c	234	ARG
4	g	281	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (354) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	92	GLN
1	A	224	HIS
1	A	380	GLN
1	A	438	ASN
1	A	545	HIS
1	A	587	ASN
1	A	746	ASN
1	A	786	HIS
1	A	902	GLN
1	A	1003	GLN
1	A	1030	HIS
1	A	1103	HIS
1	A	1116	GLN
1	A	1131	GLN
1	A	1173	GLN
1	A	1222	HIS
1	A	1241	GLN
1	A	1251	ASN
1	A	1268	GLN
1	A	1334	HIS
1	A	1344	ASN
1	B	92	GLN
1	B	113	GLN
1	B	224	HIS
1	B	288	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	312	ASN
1	B	380	GLN
1	B	567	GLN
1	B	587	ASN
1	B	674	HIS
1	B	724	HIS
1	B	752	ASN
1	B	915	GLN
1	B	1003	GLN
1	B	1133	HIS
1	B	1171	HIS
1	B	1241	GLN
1	B	1344	ASN
1	C	113	GLN
1	C	224	HIS
1	C	463	GLN
1	C	498	HIS
1	C	630	ASN
1	C	746	ASN
1	C	978	ASN
1	C	1003	GLN
1	C	1171	HIS
1	C	1196	ASN
1	C	1241	GLN
1	C	1321	HIS
1	C	1334	HIS
1	C	1344	ASN
1	D	22	GLN
1	D	224	HIS
1	D	384	ASN
1	D	387	GLN
1	D	428	GLN
1	D	438	ASN
1	D	498	HIS
1	D	567	GLN
1	D	575	GLN
1	D	746	ASN
1	D	816	ASN
1	D	1027	GLN
1	D	1103	HIS
1	D	1171	HIS
1	D	1196	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	1279	ASN
1	D	1334	HIS
1	E	102	HIS
1	E	224	HIS
1	E	354	HIS
1	E	428	GLN
1	E	448	ASN
1	E	463	GLN
1	E	697	HIS
1	E	716	HIS
1	E	752	ASN
1	E	786	HIS
1	E	902	GLN
1	E	971	GLN
1	E	1003	GLN
1	E	1171	HIS
1	E	1241	GLN
1	E	1251	ASN
1	E	1348	HIS
1	F	92	GLN
1	F	224	HIS
1	F	312	ASN
1	F	448	ASN
1	F	459	HIS
1	F	587	ASN
1	F	674	HIS
1	F	786	HIS
1	F	902	GLN
1	F	945	ASN
1	F	1171	HIS
1	F	1241	GLN
1	F	1279	ASN
1	F	1344	ASN
2	G	12	GLN
2	J	22	HIS
2	K	12	GLN
2	K	73	HIS
2	L	12	GLN
1	M	224	HIS
1	M	312	ASN
1	M	354	HIS
1	M	380	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	M	460	ASN
1	M	498	HIS
1	M	558	HIS
1	M	587	ASN
1	M	674	HIS
1	M	978	ASN
1	M	1033	HIS
1	M	1103	HIS
1	M	1131	GLN
1	M	1171	HIS
1	M	1241	GLN
1	N	113	GLN
1	N	224	HIS
1	N	312	ASN
1	N	397	GLN
1	N	448	ASN
1	N	492	ASN
1	N	545	HIS
1	N	587	ASN
1	N	674	HIS
1	N	856	ASN
1	N	902	GLN
1	N	907	HIS
1	N	915	GLN
1	N	978	ASN
1	N	1003	GLN
1	N	1017	GLN
1	N	1133	HIS
1	N	1171	HIS
1	N	1173	GLN
1	O	92	GLN
1	O	113	GLN
1	O	224	HIS
1	O	312	ASN
1	O	428	GLN
1	O	438	ASN
1	O	558	HIS
1	O	567	GLN
1	O	716	HIS
1	O	724	HIS
1	O	782	HIS
1	O	816	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	O	978	ASN
1	O	1003	GLN
1	O	1196	ASN
1	O	1241	GLN
1	O	1251	ASN
1	O	1318	GLN
1	O	1321	HIS
2	P	12	GLN
2	P	73	HIS
1	S	224	HIS
1	S	438	ASN
1	S	447	GLN
1	S	558	HIS
1	S	587	ASN
1	S	782	HIS
1	S	816	ASN
1	S	907	HIS
1	S	1003	GLN
1	S	1268	GLN
1	S	1279	ASN
1	S	1334	HIS
1	S	1344	ASN
1	T	59	ASN
1	T	92	GLN
1	T	224	HIS
1	T	537	HIS
1	T	567	GLN
1	T	587	ASN
1	T	724	HIS
1	T	786	HIS
1	T	978	ASN
1	T	1003	GLN
1	T	1171	HIS
1	T	1196	ASN
1	T	1344	ASN
1	U	92	GLN
1	U	113	GLN
1	U	124	HIS
1	U	312	ASN
1	U	384	ASN
1	U	428	GLN
1	U	438	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	U	545	HIS
1	U	564	ASN
1	U	666	ASN
1	U	716	HIS
1	U	746	ASN
1	U	818	HIS
1	U	970	ASN
1	U	978	ASN
1	U	1003	GLN
1	U	1128	GLN
1	U	1131	GLN
1	U	1133	HIS
1	U	1241	GLN
1	U	1256	GLN
1	U	1321	HIS
1	U	1334	HIS
1	U	1344	ASN
1	U	1355	GLN
1	V	59	ASN
1	V	102	HIS
1	V	224	HIS
1	V	288	ASN
1	V	312	ASN
1	V	397	GLN
1	V	428	GLN
1	V	438	ASN
1	V	525	HIS
1	V	746	ASN
1	V	786	HIS
1	V	818	HIS
1	V	978	ASN
1	V	1003	GLN
1	V	1171	HIS
1	V	1196	ASN
1	V	1222	HIS
1	V	1241	GLN
1	V	1334	HIS
1	W	92	GLN
1	W	102	HIS
1	W	113	GLN
1	W	123	HIS
1	W	224	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	W	428	GLN
1	W	438	ASN
1	W	463	GLN
1	W	498	HIS
1	W	558	HIS
1	W	587	ASN
1	W	724	HIS
1	W	746	ASN
1	W	786	HIS
1	W	818	HIS
1	W	902	GLN
1	W	970	ASN
1	W	978	ASN
1	W	1003	GLN
1	W	1033	HIS
1	W	1103	HIS
1	W	1131	GLN
1	W	1196	ASN
1	W	1251	ASN
1	W	1344	ASN
1	X	18	ASN
1	X	113	GLN
1	X	224	HIS
1	X	288	ASN
1	X	312	ASN
1	X	354	HIS
1	X	380	GLN
1	X	387	GLN
1	X	428	GLN
1	X	438	ASN
1	X	499	GLN
1	X	567	GLN
1	X	587	ASN
1	X	630	ASN
1	X	666	ASN
1	X	907	HIS
1	X	1003	GLN
1	X	1050	HIS
1	X	1084	HIS
1	X	1131	GLN
1	X	1268	GLN
1	X	1318	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	X	1321	HIS
1	X	1334	HIS
1	X	1344	ASN
2	Y	47	HIS
2	Z	12	GLN
2	0	12	GLN
2	1	12	GLN
2	1	55	HIS
2	1	73	HIS
2	2	73	HIS
2	3	55	HIS
1	4	380	GLN
1	4	397	GLN
1	4	498	HIS
1	4	514	GLN
1	4	567	GLN
1	4	581	GLN
1	4	590	HIS
1	4	630	ASN
1	4	674	HIS
1	4	689	GLN
1	4	786	HIS
1	4	907	HIS
1	4	920	ASN
1	4	978	ASN
1	4	1033	HIS
1	4	1084	HIS
3	5	262	HIS
4	6	37	HIS
4	6	110	GLN
4	6	146	HIS
4	7	94	GLN
4	7	150	GLN
3	8	262	HIS
3	8	299	HIS
4	9	37	HIS
4	9	41	ASN
4	9	104	GLN
4	9	130	ASN
4	9	150	GLN
4	a	146	HIS
3	b	262	HIS

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Mol	Chain	Res	Type
4	c	40	GLN
4	c	110	GLN
4	c	130	ASN
4	c	146	HIS
4	c	150	GLN
4	c	151	GLN
4	c	281	ASN
4	d	41	ASN
4	d	104	GLN
4	d	146	HIS
4	d	156	HIS
4	d	232	HIS
3	e	98	ASN
3	e	262	HIS
4	f	37	HIS
4	f	40	GLN
4	f	104	GLN
4	f	110	GLN
4	f	130	ASN
4	f	150	GLN
4	f	151	GLN
4	f	281	ASN
4	g	37	HIS
4	g	150	GLN
4	g	156	HIS
4	g	256	GLN
4	g	281	ASN
4	i	40	GLN
4	i	104	GLN
4	i	110	GLN
4	i	130	ASN
4	i	146	HIS
4	i	150	GLN
4	i	281	ASN
4	j	150	GLN

### 5.3.3 RNA ⓘ

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](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	N	1
1	F	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	N	9:PRO	C	10:PHE	N	1.20
1	F	454:CYS	C	455:HIS	N	1.17



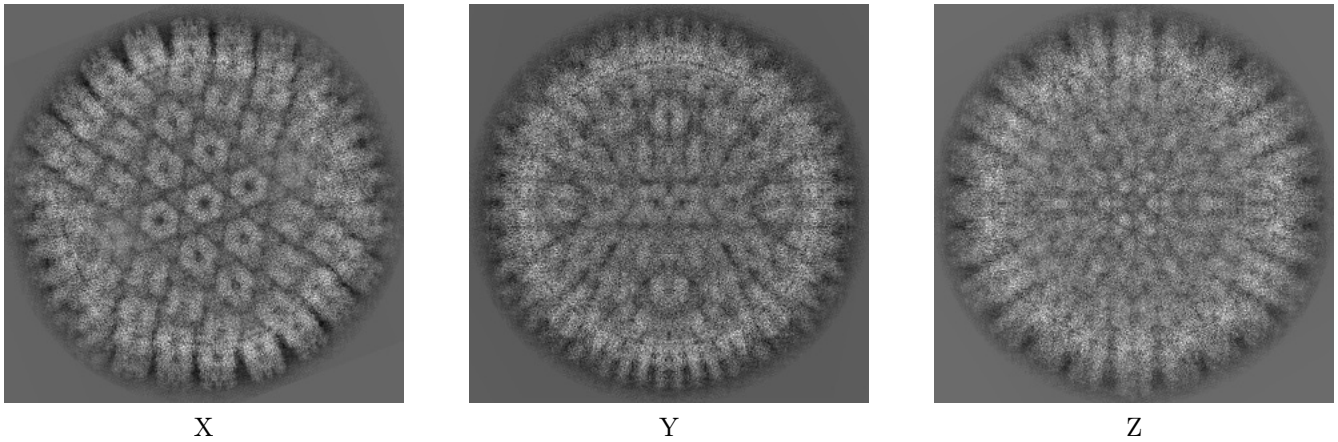
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-7047. 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](#)

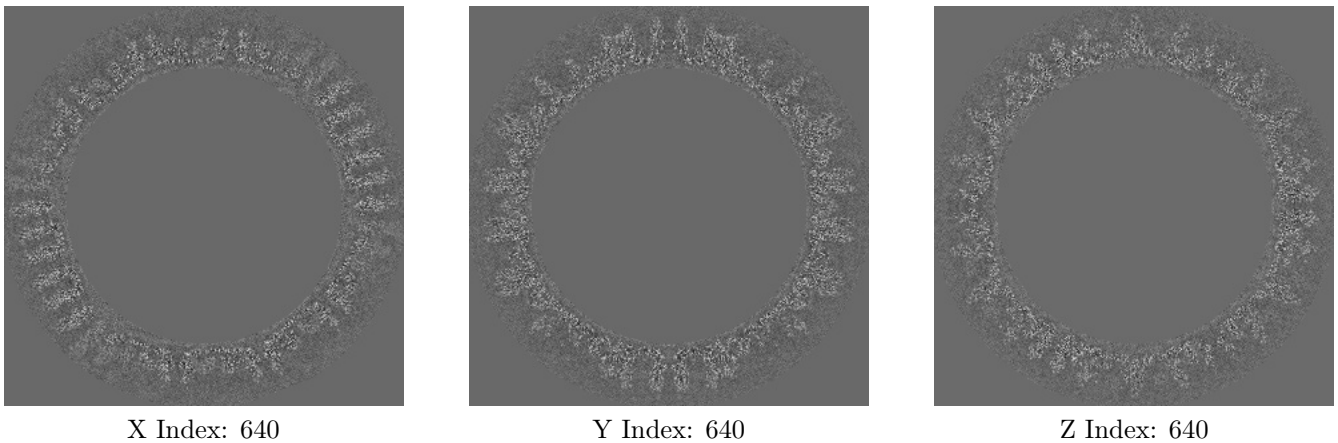
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

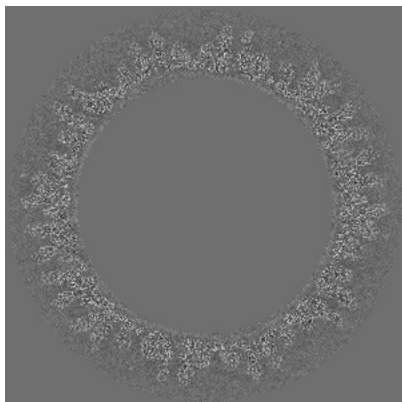
#### 6.2.1 Primary map



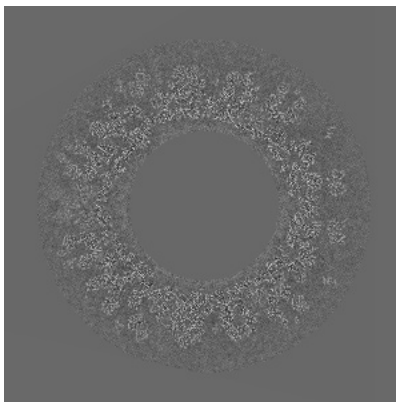
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

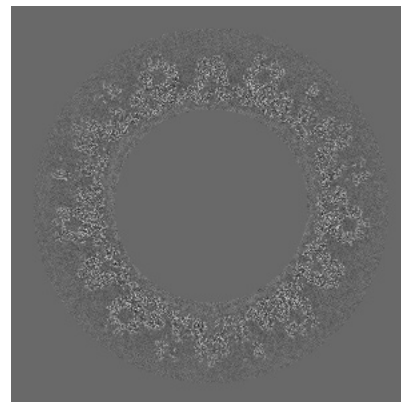
### 6.3.1 Primary map



X Index: 475



Y Index: 270



Z Index: 326

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

## 6.4 Orthogonal surface views [i](#)

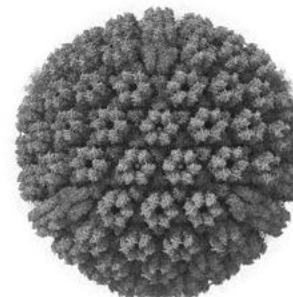
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

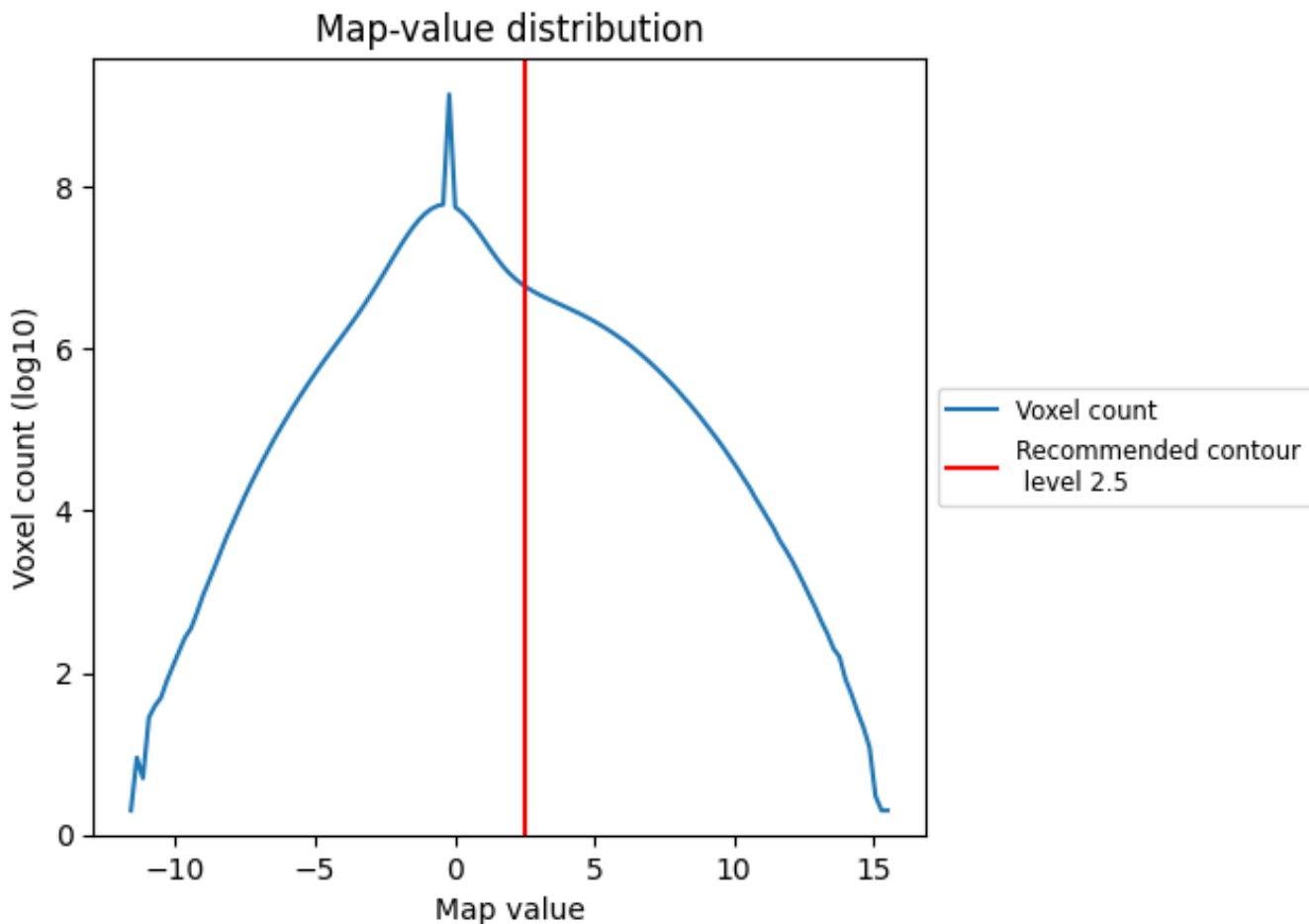
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

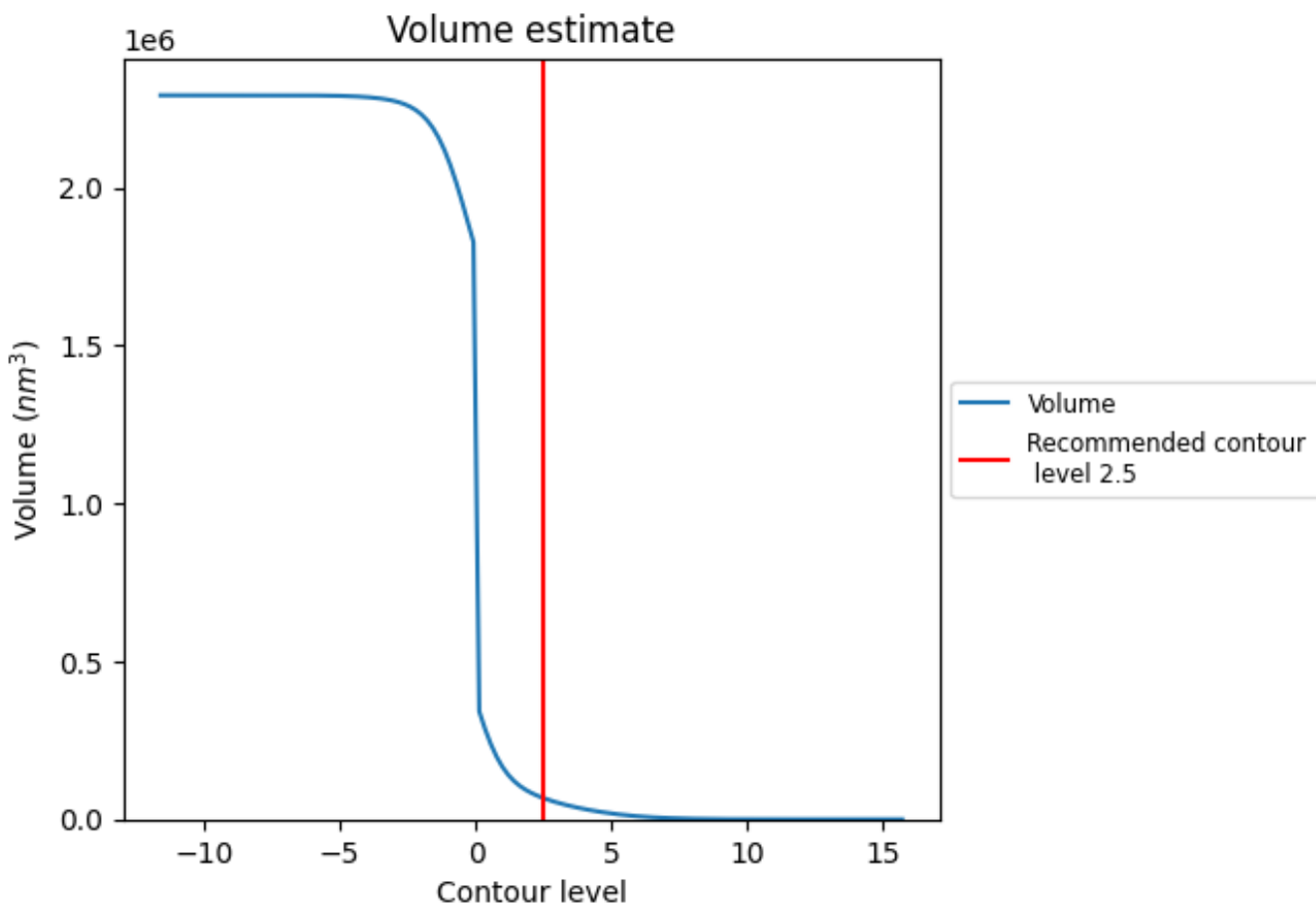
This section contains the results of statistical analysis of the map.

### 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.

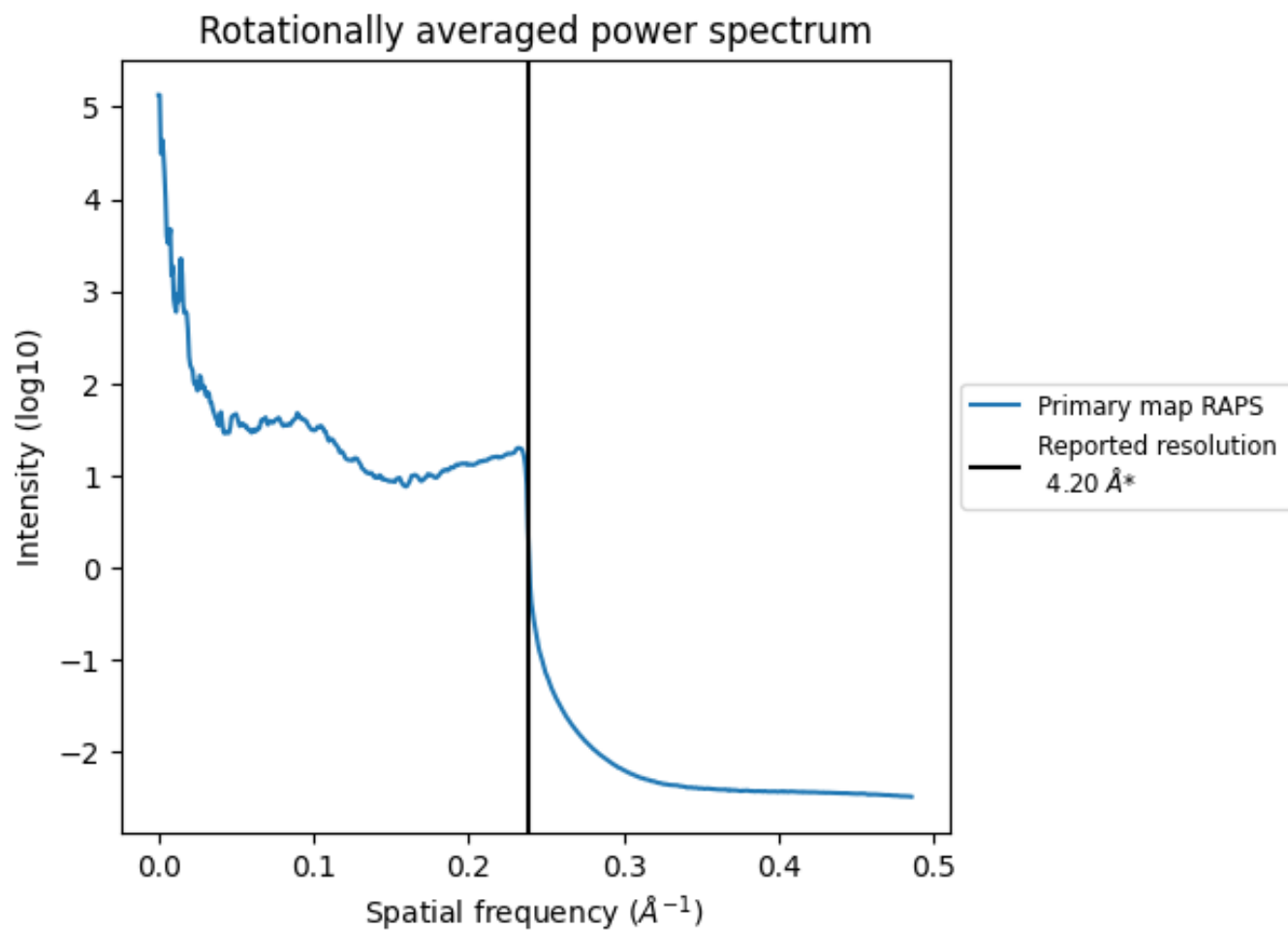
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is  $67318 \text{ nm}^3$ ; this corresponds to an approximate mass of 60810 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 0.238 Å<sup>-1</sup>

## 8 Fourier-Shell correlation

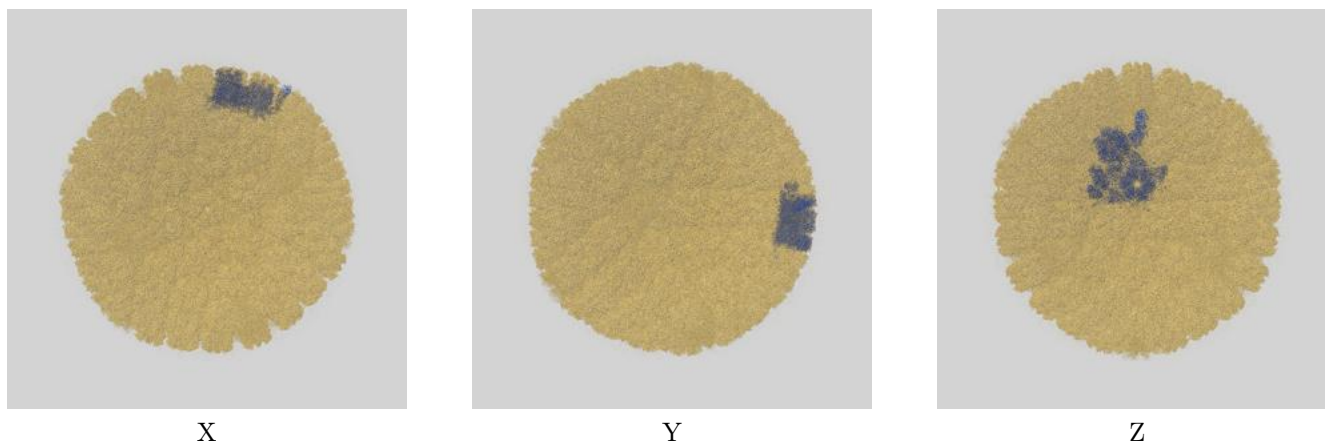
This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit [i](#)

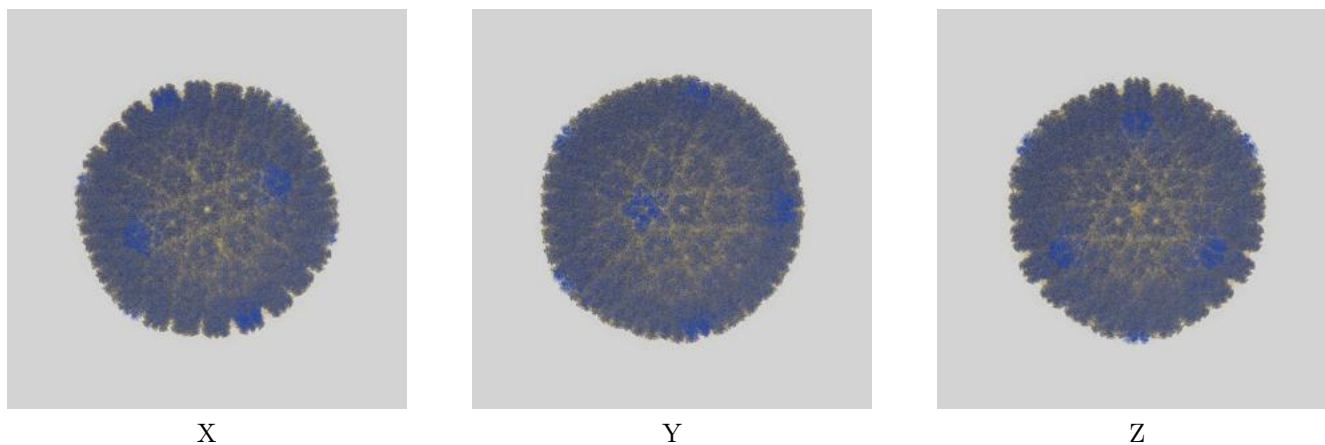
This section contains information regarding the fit between EMDB map EMD-7047 and PDB model 6B43. Per-residue inclusion information can be found in section 3 on page 8.

### 9.1 Map-model overlays

#### 9.1.1 Map-model overlay [i](#)



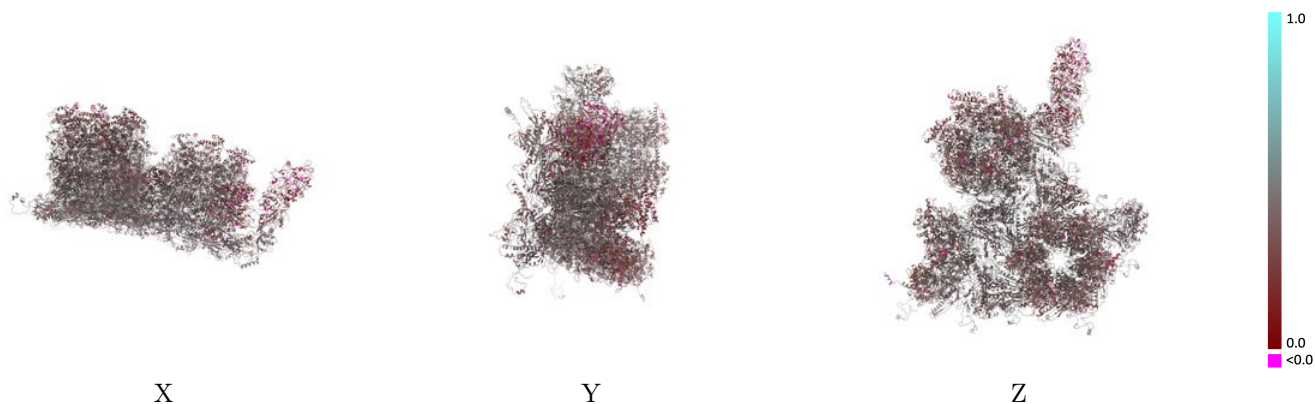
#### 9.1.2 Map-model assembly overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 2.5 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.

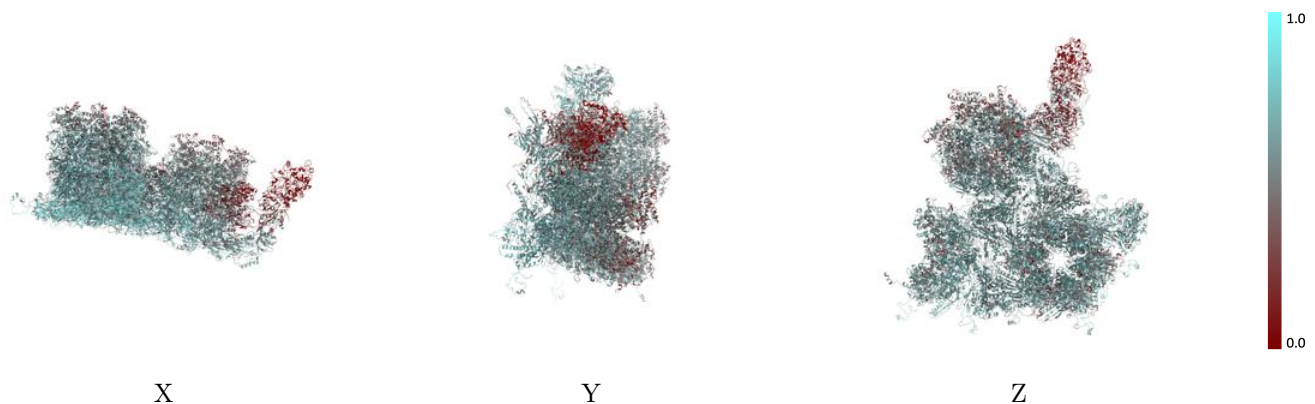


## 9.2 Q-score mapped to coordinate model [i](#)



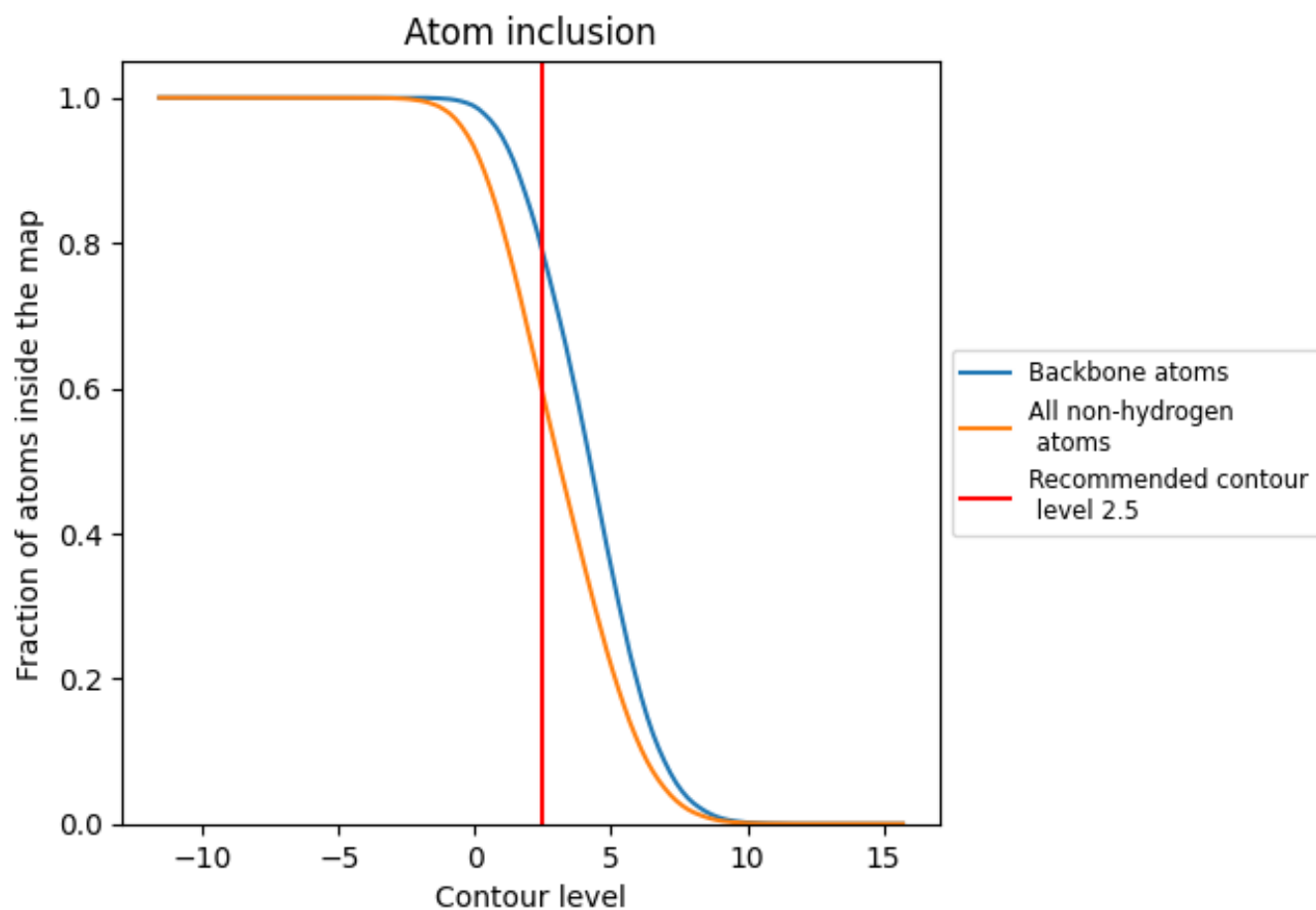
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (2.5).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 59% 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 (2.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5906	 0.3760
0	 0.4377	 0.2910
1	 0.4517	 0.3070
2	 0.3660	 0.2610
3	 0.3598	 0.2470
4	 0.2802	 0.2860
5	 0.3307	 0.3130
6	 0.3455	 0.2850
7	 0.1933	 0.2500
8	 0.6515	 0.3990
9	 0.6273	 0.3870
A	 0.6422	 0.3980
B	 0.6386	 0.3880
C	 0.6270	 0.3870
D	 0.6327	 0.3840
E	 0.6453	 0.3990
F	 0.6419	 0.3960
G	 0.4829	 0.3050
H	 0.4019	 0.2270
I	 0.5031	 0.3280
J	 0.4735	 0.2980
K	 0.4829	 0.2990
L	 0.4844	 0.3170
M	 0.6514	 0.3990
N	 0.6495	 0.3980
O	 0.6498	 0.3960
P	 0.5000	 0.3220
Q	 0.4844	 0.2840
R	 0.4953	 0.2980
S	 0.5690	 0.3780
T	 0.6079	 0.3870
U	 0.6238	 0.3890
V	 0.6213	 0.3830
W	 0.5952	 0.3780
X	 0.5732	 0.3720



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Chain	Atom inclusion	Q-score
Y	 0.3894	 0.2760
Z	 0.3520	 0.2410
a	 0.6354	 0.3950
b	 0.6457	 0.4070
c	 0.6563	 0.3980
d	 0.6505	 0.3980
e	 0.6142	 0.3910
f	 0.5618	 0.3680
g	 0.5926	 0.3790
h	 0.6379	 0.3950
i	 0.6422	 0.3950
j	 0.6410	 0.3940