



Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 07:53 pm GMT

PDB ID : 5OJQ
EMDB ID : EMD-3566
Title : The modeled structure of of wild type extended type VI secretion system sheath/tube complex in vibrio cholerae based on cryo-EM reconstruction of the non-contractile sheath/tube complex
Authors : Wang, J.; Brackmann, M.; Castano-Diez, D.; Kudryashev, M.; Goldie, K.; Maier, T.; Stahlberg, H.; Basler, M.
Deposited on : 2017-07-22
Resolution : 3.70 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:

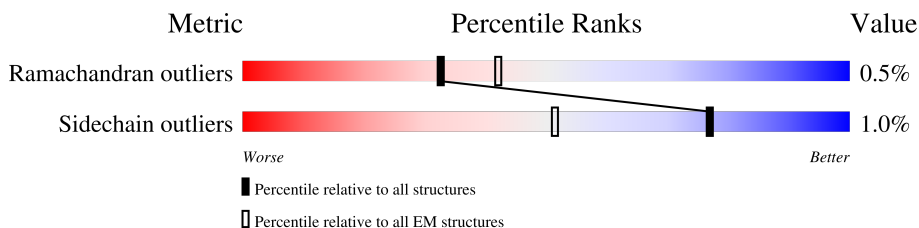
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.70 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	1	170	100%
			99%
1	2	170	100%
			99%
1	3	170	100%
			99%
1	4	170	100%
			99%
1	5	170	100%
			99%
1	6	170	100%
			99%
1	L	170	100%
			99%
1	M	170	100%
			99%
1	N	170	100%
			99%

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Mol	Chain	Length	Quality of chain
1	O	170	100%
1	P	170	100%
1	Q	170	100%
1	R	170	100%
1	S	170	100%
1	T	170	100%
1	U	170	100%
1	V	170	100%
1	W	170	100%
2	A	473	100%
2	B	473	100%
2	C	473	100%
2	D	473	100%
2	E	473	100%
2	F	473	100%
2	X	473	100%
2	Y	473	100%
2	Z	473	100%
2	b	473	100%
2	c	473	100%
2	d	473	100%
2	e	473	100%
2	f	473	100%
2	g	473	100%
2	h	473	100%

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Mol	Chain	Length	Quality of chain
2	i	473	100% 98%
2	j	473	100% 98%
3	G	155	100% 95% 5%
3	H	155	100% 95% 5%
3	I	155	100% 95% 5%
3	J	155	100% 95% 5%
3	K	155	100% 95% 5%
3	a	155	100% 95% 5%
3	k	155	100% 95% 5%
3	l	155	100% 95% 5%
3	m	155	100% 95% 5%
3	n	155	100% 95% 5%
3	o	155	100% 95% 5%
3	p	155	100% 95% 5%
3	q	155	100% 95% 5%
3	r	155	100% 95% 5%
3	s	155	100% 95% 5%
3	t	155	100% 95% 5%
3	u	155	100% 95% 5%
3	v	155	100% 95% 5%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 113346 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 Haemolysin co-regulated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	1	170	1326	833	224	263	6	0	0
1	2	170	1326	833	224	263	6	0	0
1	3	170	1326	833	224	263	6	0	0
1	4	170	1326	833	224	263	6	0	0
1	5	170	1326	833	224	263	6	0	0
1	6	170	1326	833	224	263	6	0	0
1	L	170	1326	833	224	263	6	0	0
1	N	170	1326	833	224	263	6	0	0
1	P	170	1326	833	224	263	6	0	0
1	R	170	1326	833	224	263	6	0	0
1	T	170	1326	833	224	263	6	0	0
1	V	170	1326	833	224	263	6	0	0
1	M	170	1326	833	224	263	6	0	0
1	O	170	1326	833	224	263	6	0	0
1	Q	170	1326	833	224	263	6	0	0
1	S	170	1326	833	224	263	6	0	0
1	U	170	1326	833	224	263	6	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	W	170	1326	833	224	263	6	0	0

- Molecule 2 is a protein called Type VI secretion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	473	3769	2403	640	710	16	0	0
2	B	473	3769	2403	640	710	16	0	0
2	C	473	3769	2403	640	710	16	0	0
2	D	473	3769	2403	640	710	16	0	0
2	E	473	3769	2403	640	710	16	0	0
2	F	473	3769	2403	640	710	16	0	0
2	X	473	3769	2403	640	710	16	0	0
2	Z	473	3769	2403	640	710	16	0	0
2	c	473	3769	2403	640	710	16	0	0
2	e	473	3769	2403	640	710	16	0	0
2	g	473	3769	2403	640	710	16	0	0
2	i	473	3769	2403	640	710	16	0	0
2	Y	473	3769	2403	640	710	16	0	0
2	b	473	3769	2403	640	710	16	0	0
2	d	473	3769	2403	640	710	16	0	0
2	f	473	3769	2403	640	710	16	0	0
2	h	473	3769	2403	640	710	16	0	0
2	j	473	3769	2403	640	710	16	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	29	CYS	ILE	conflict	UNP A0A085SGI6
B	29	CYS	ILE	conflict	UNP A0A085SGI6
C	29	CYS	ILE	conflict	UNP A0A085SGI6
D	29	CYS	ILE	conflict	UNP A0A085SGI6
E	29	CYS	ILE	conflict	UNP A0A085SGI6
F	29	CYS	ILE	conflict	UNP A0A085SGI6
X	29	CYS	ILE	conflict	UNP A0A085SGI6
Z	29	CYS	ILE	conflict	UNP A0A085SGI6
c	29	CYS	ILE	conflict	UNP A0A085SGI6
e	29	CYS	ILE	conflict	UNP A0A085SGI6
g	29	CYS	ILE	conflict	UNP A0A085SGI6
i	29	CYS	ILE	conflict	UNP A0A085SGI6
Y	29	CYS	ILE	conflict	UNP A0A085SGI6
b	29	CYS	ILE	conflict	UNP A0A085SGI6
d	29	CYS	ILE	conflict	UNP A0A085SGI6
f	29	CYS	ILE	conflict	UNP A0A085SGI6
h	29	CYS	ILE	conflict	UNP A0A085SGI6
j	29	CYS	ILE	conflict	UNP A0A085SGI6

- Molecule 3 is a protein called VipA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	a	155	1202	756	204	241	1	0	0
3	G	155	1202	756	204	241	1	0	0
3	H	155	1202	756	204	241	1	0	0
3	I	155	1202	756	204	241	1	0	0
3	J	155	1202	756	204	241	1	0	0
3	K	155	1202	756	204	241	1	0	0
3	u	155	1202	756	204	241	1	0	0
3	k	155	1202	756	204	241	1	0	0
3	m	155	1202	756	204	241	1	0	0
3	o	155	1202	756	204	241	1	0	0

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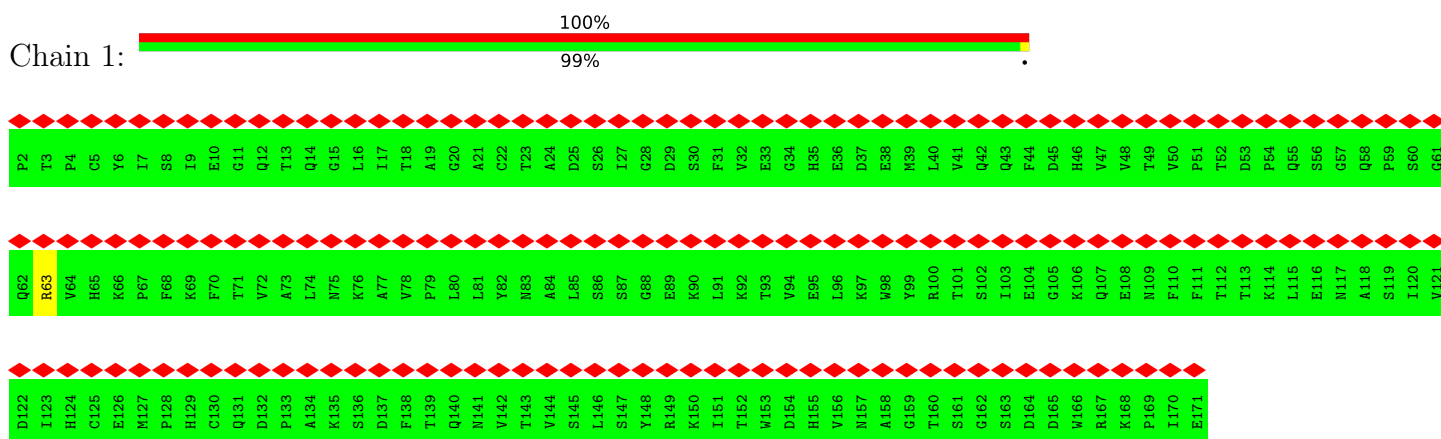
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Mol	Chain	Residues	Atoms					AltConf	Trace
3	q	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	s	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	v	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	l	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	n	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	p	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	r	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		
3	t	155	Total	C	N	O	S	0	0
			1202	756	204	241	1		

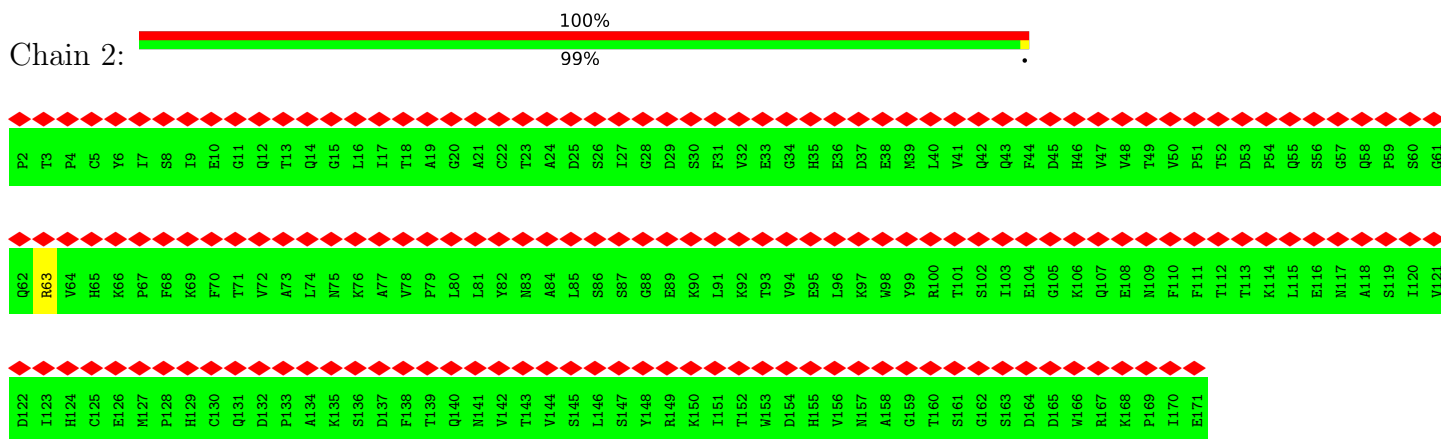
3 Residue-property plots

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.

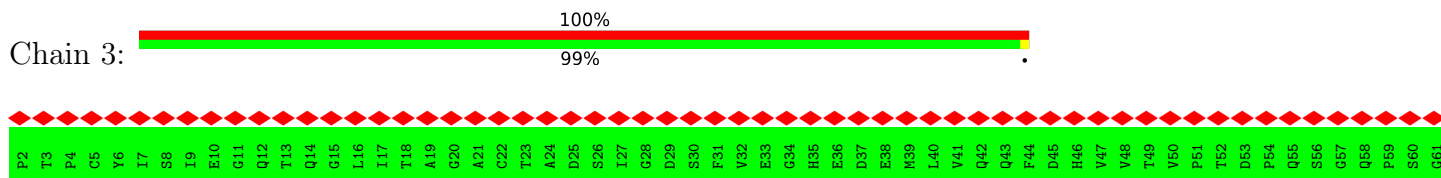
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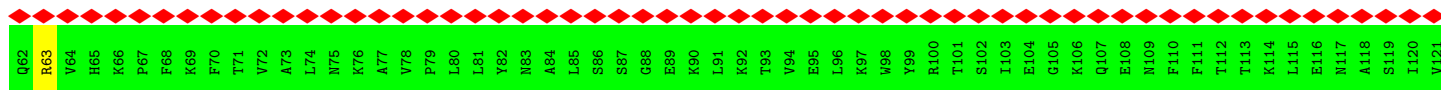


- Molecule 1: Haemolysin co-regulated protein

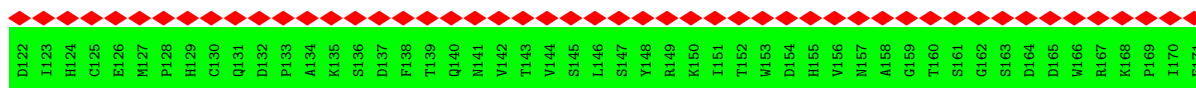
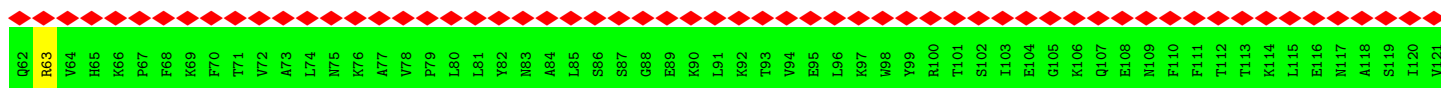
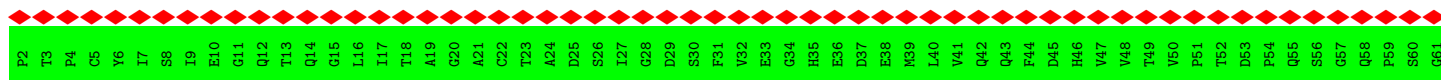


- Molecule 1: Haemolysin co-regulated protein

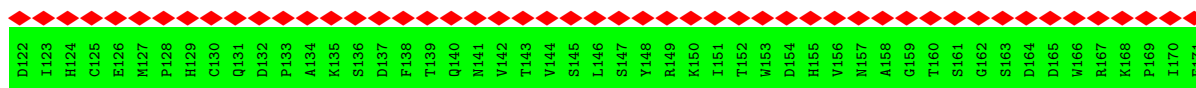
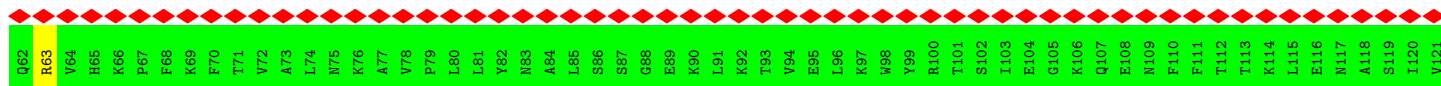
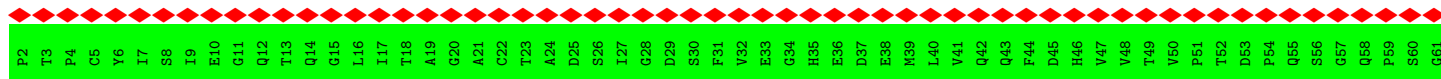




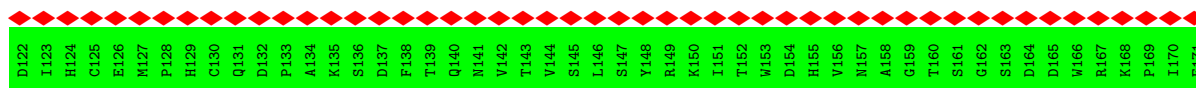
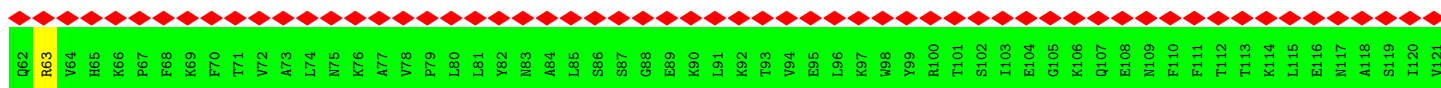
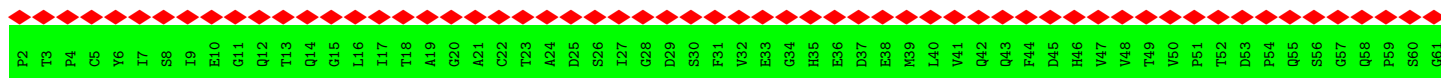
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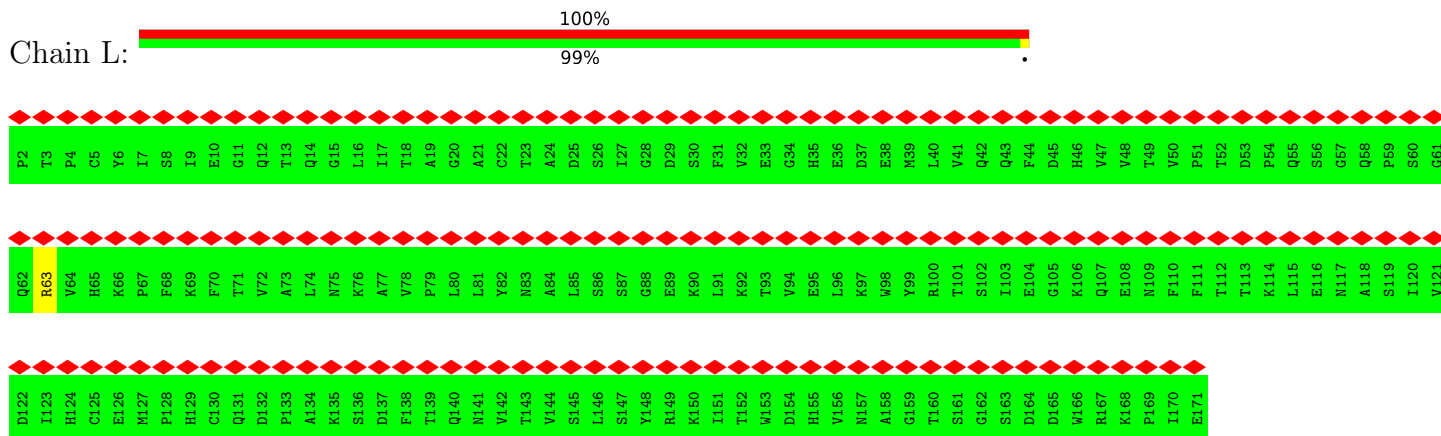
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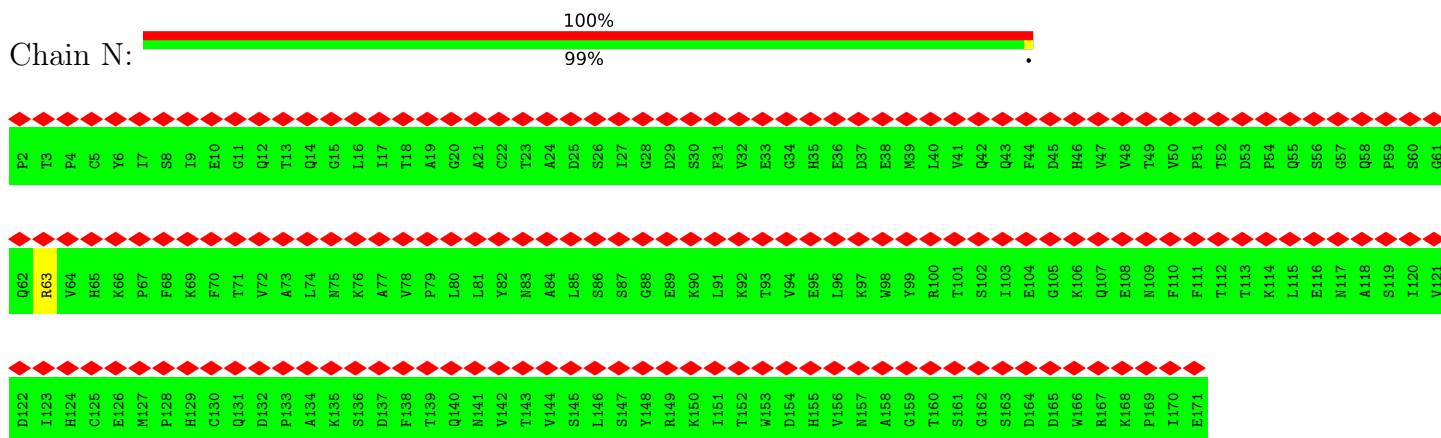
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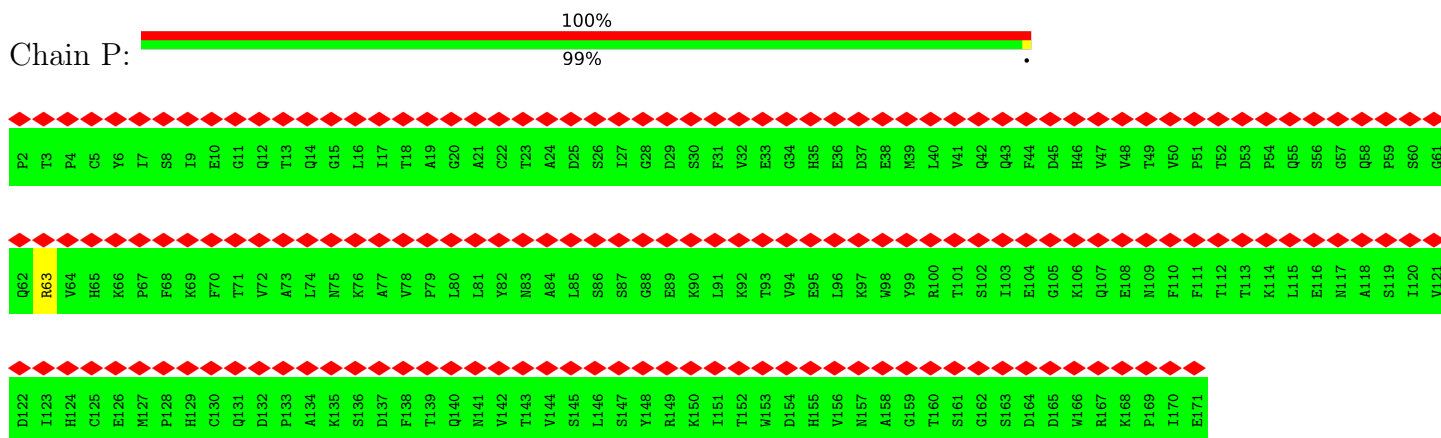
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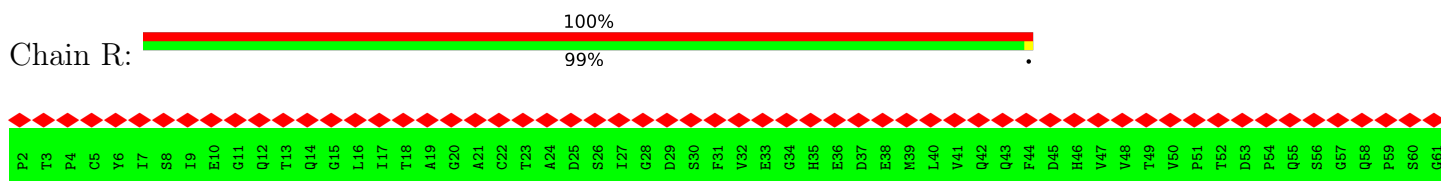
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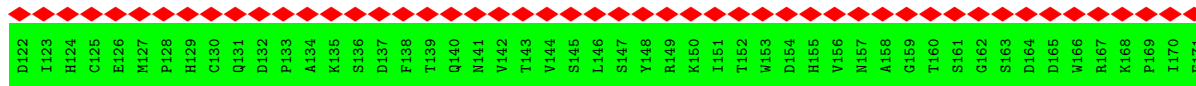
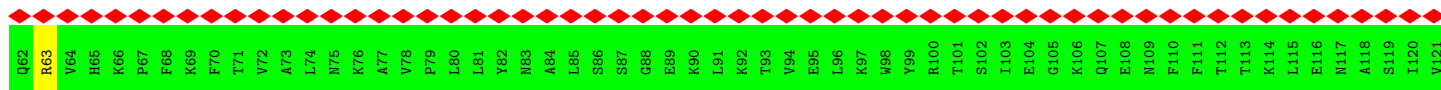


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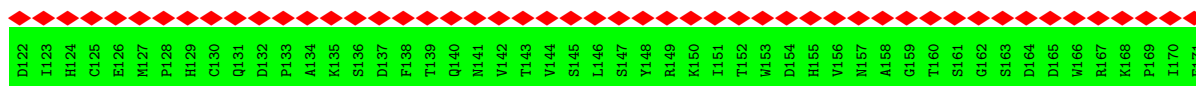
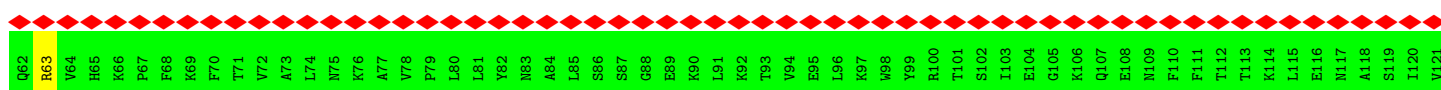
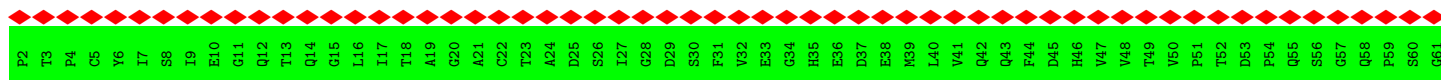


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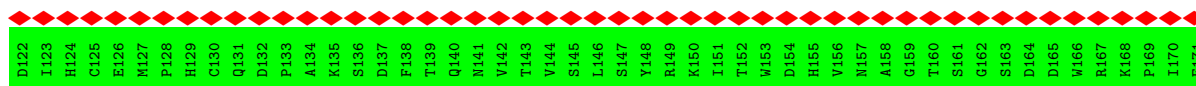
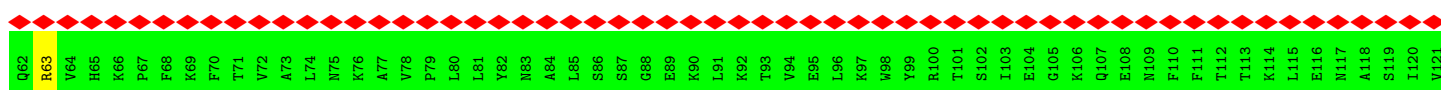
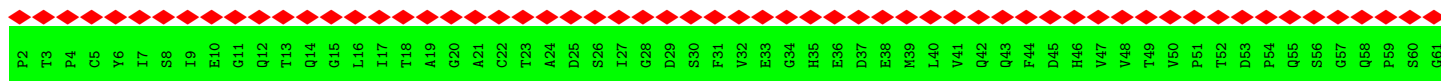




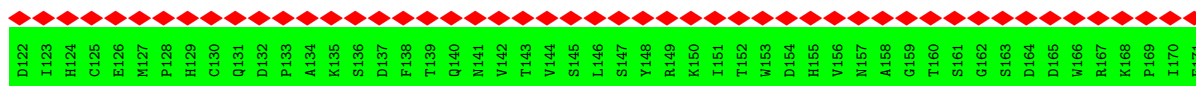
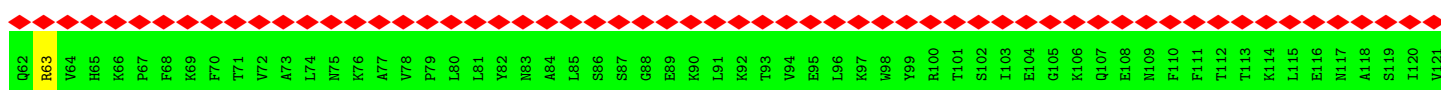
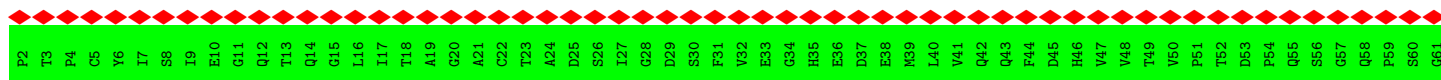
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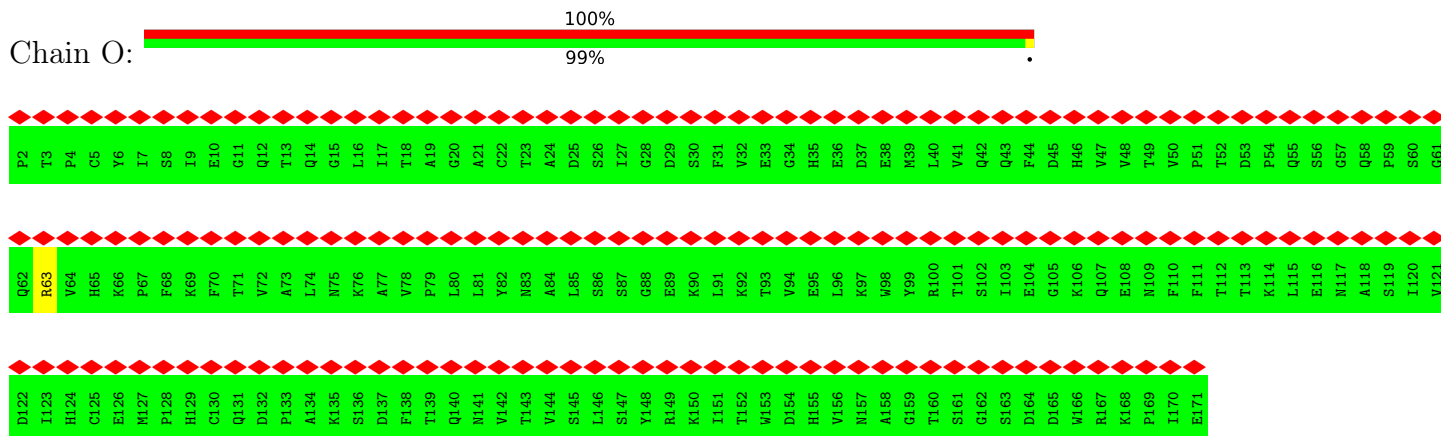
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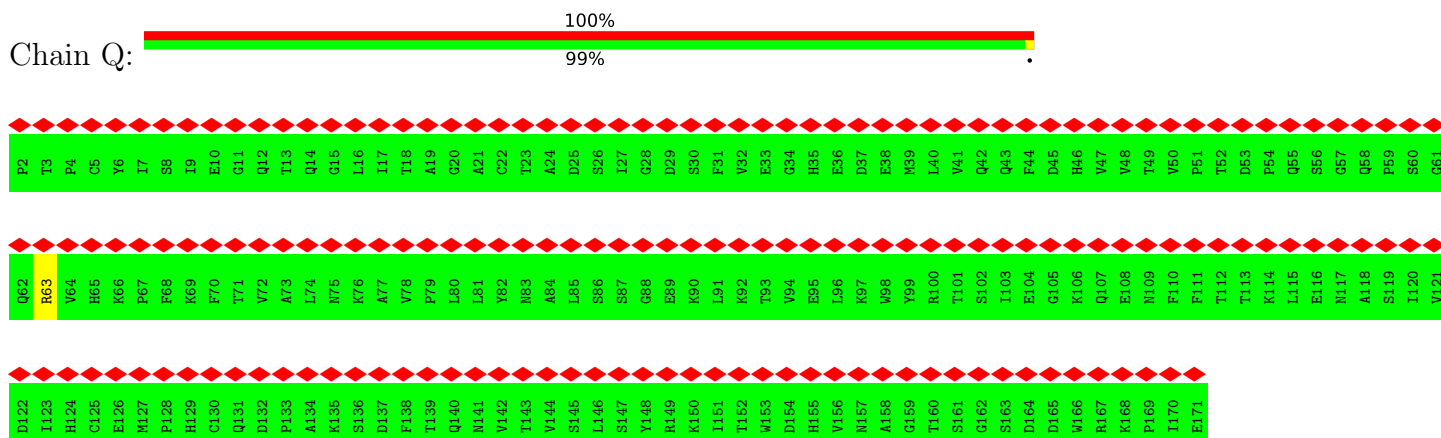
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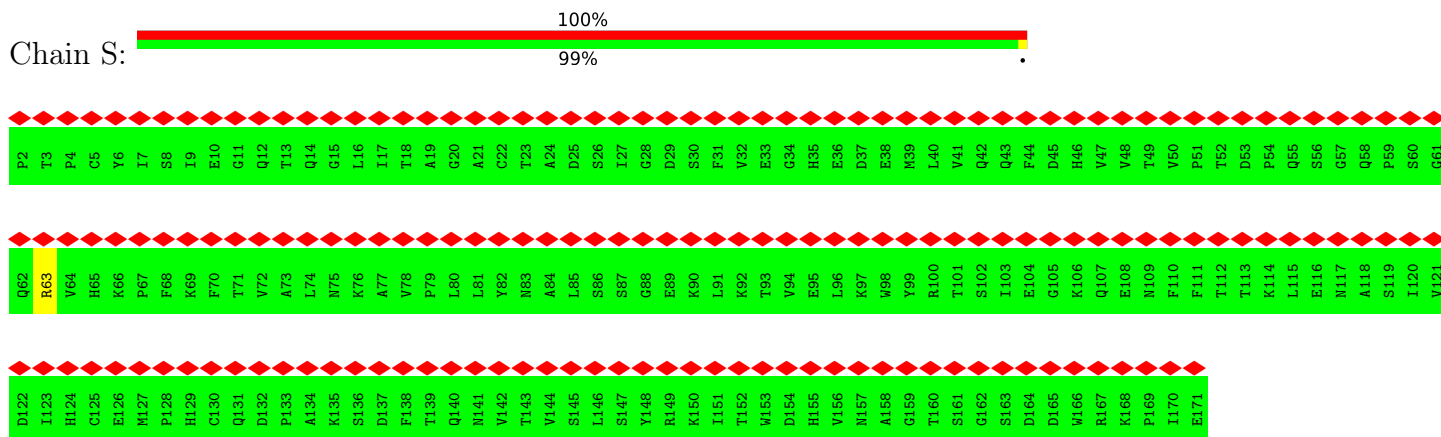
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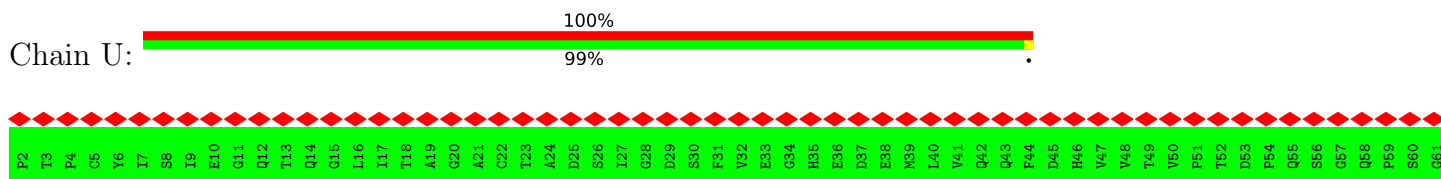
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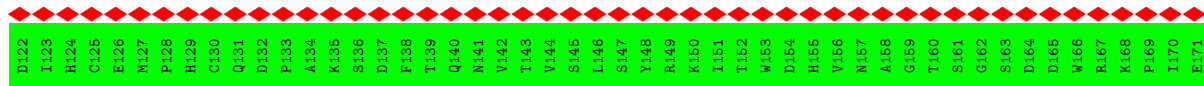
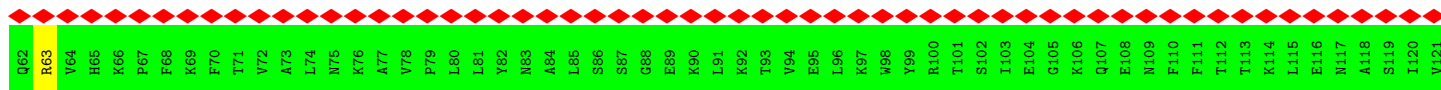


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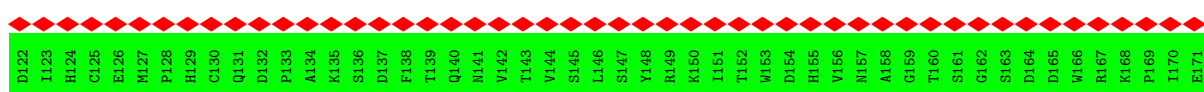
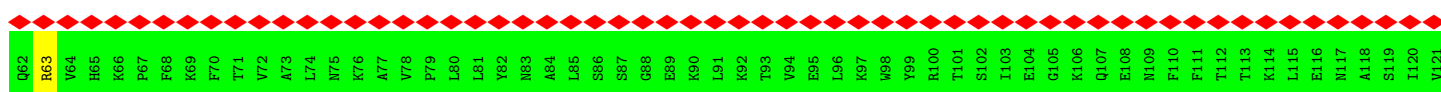
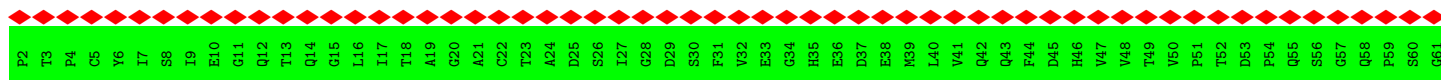


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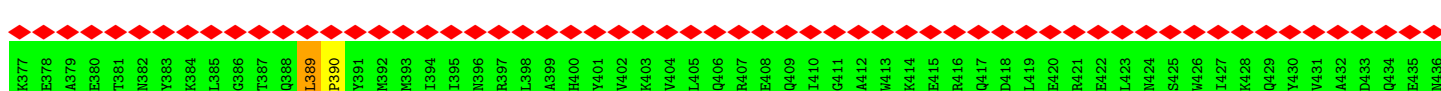
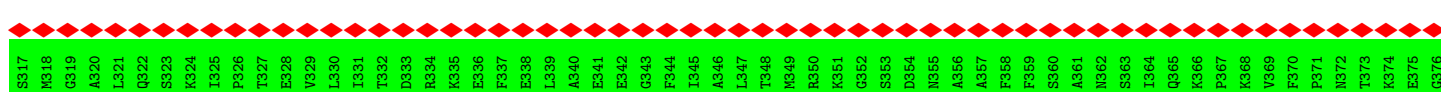
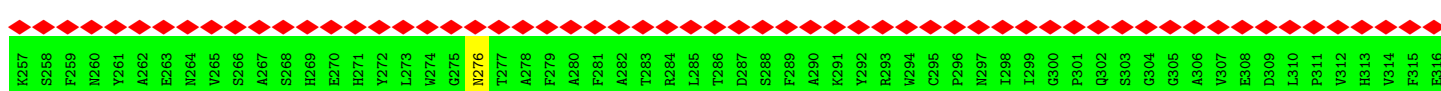
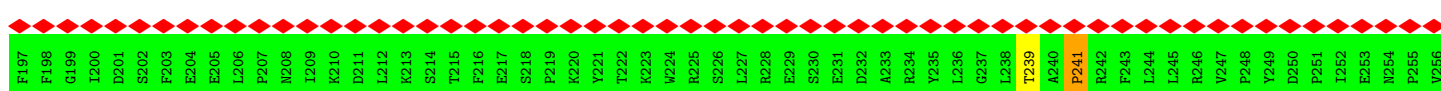
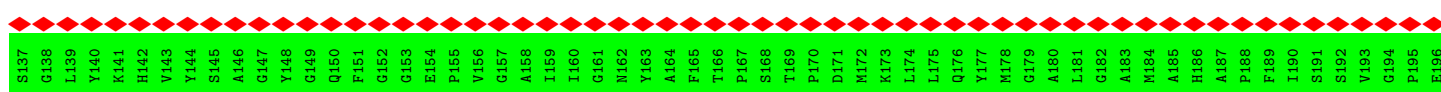
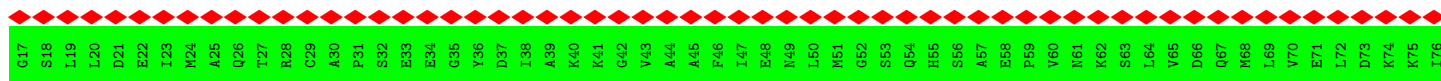


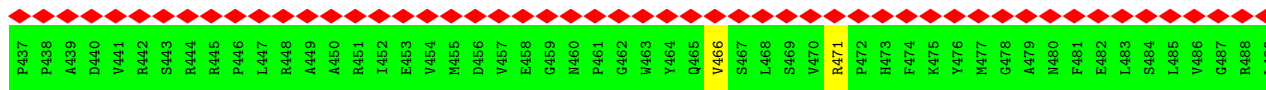


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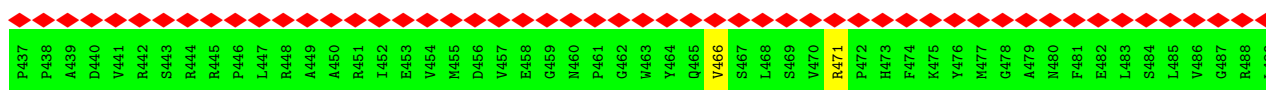
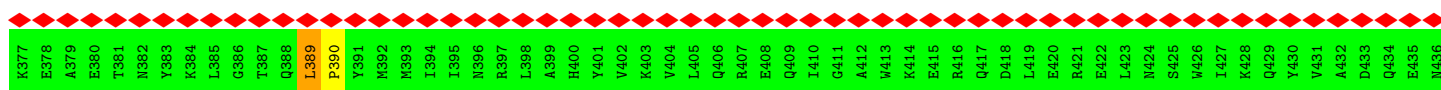
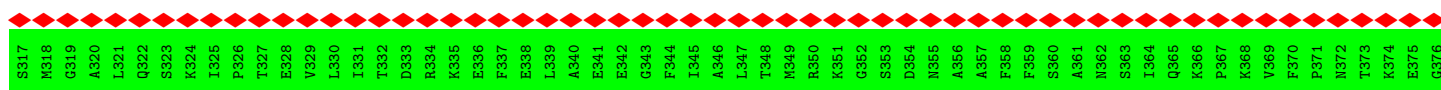
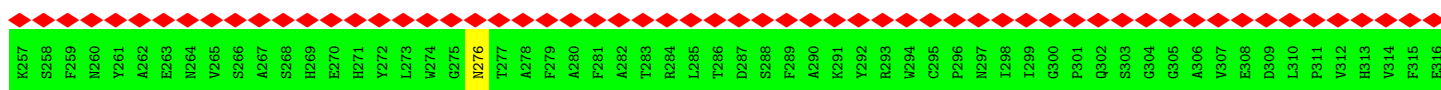
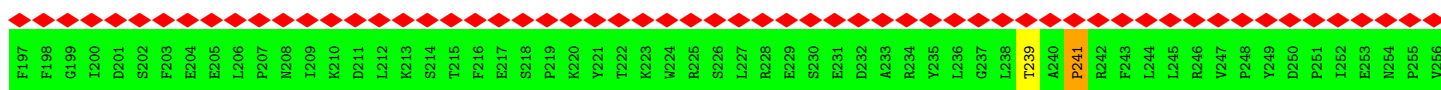
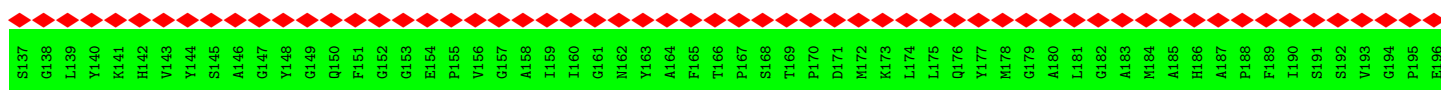
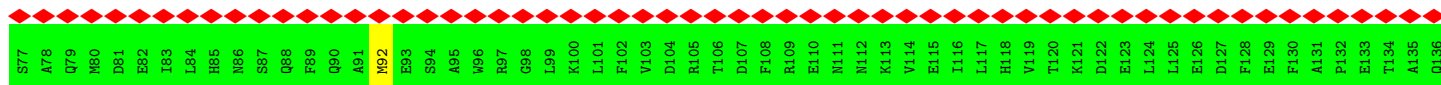
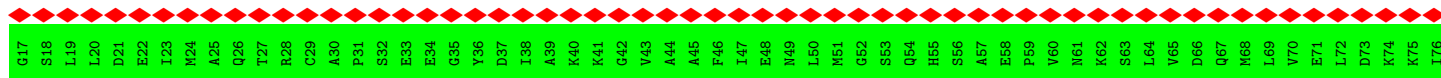


• Molecule 2: Type VI secretion protein

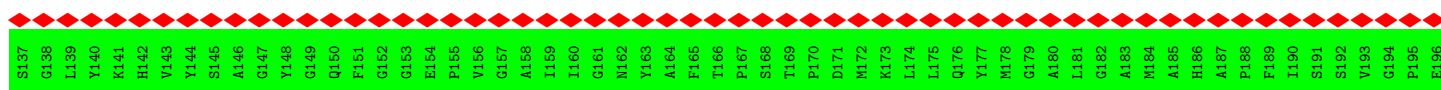
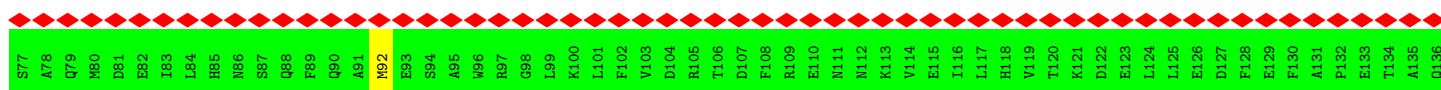




• Molecule 2: Type VI secretion protein



• Molecule 2: Type VI secretion protein



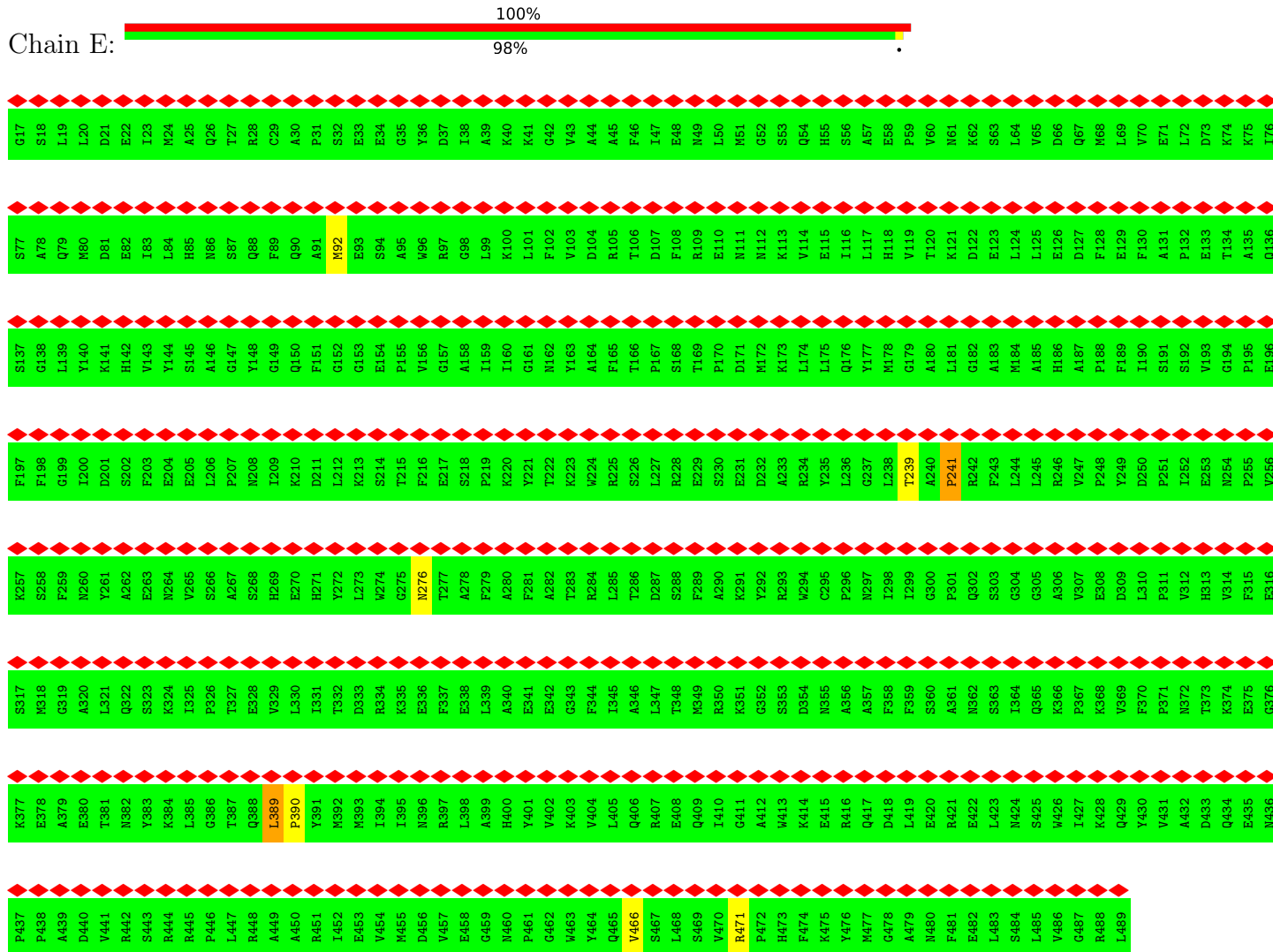
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• Molecule 2: Type VI secretion protein

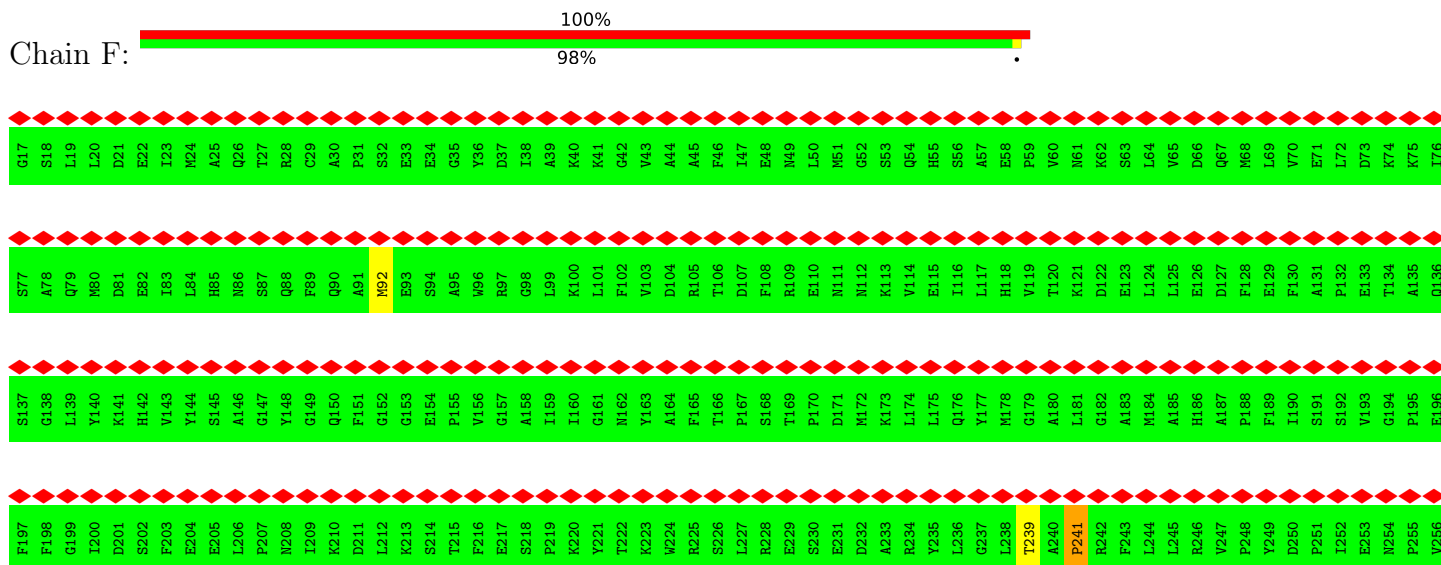


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• Molecule 2: Type VI secretion protein



• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



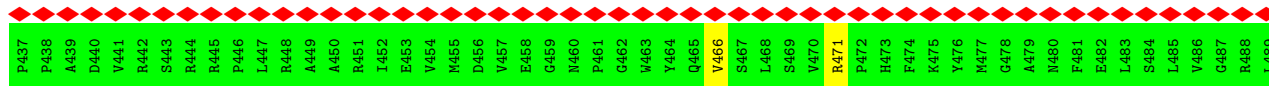
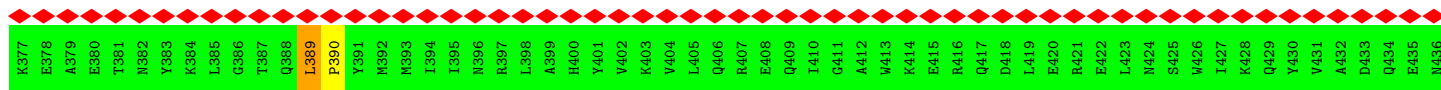
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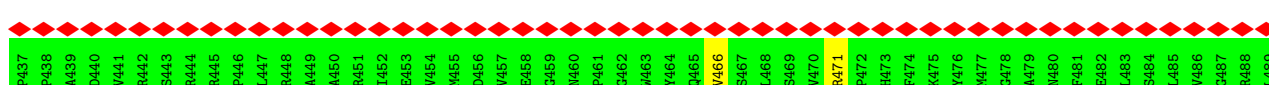
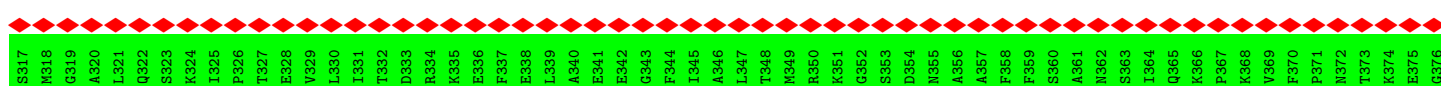
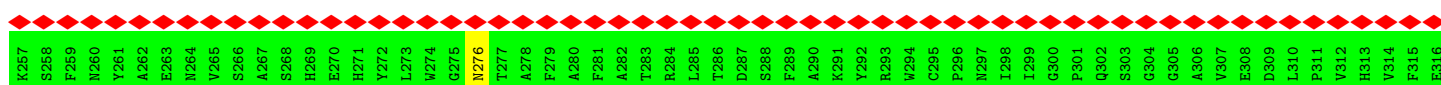
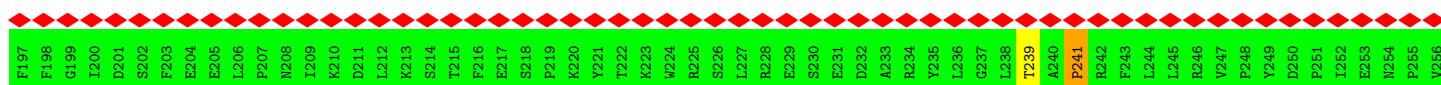
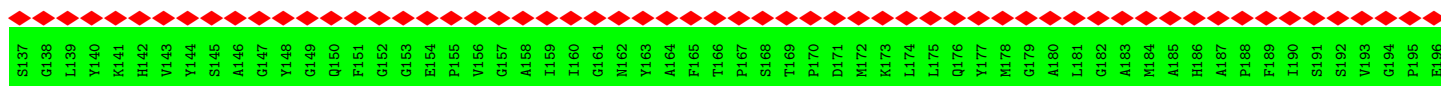
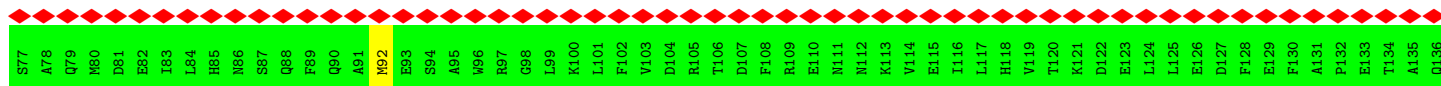
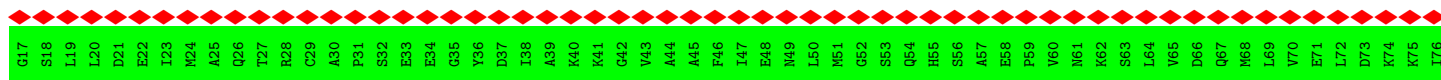
• Molecule 2: Type VI secretion protein



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• Molecule 2: Type VI secretion protein



• Molecule 2: Type VI secretion protein

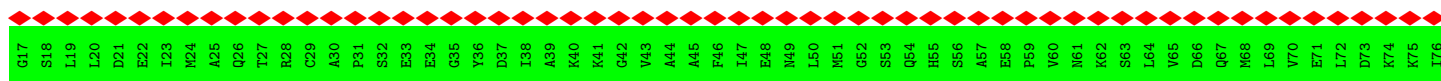
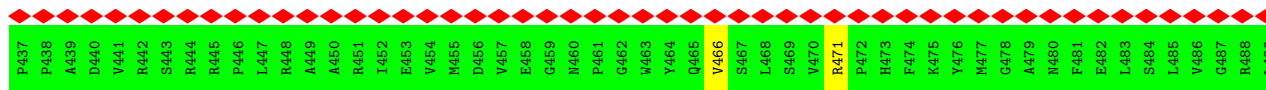


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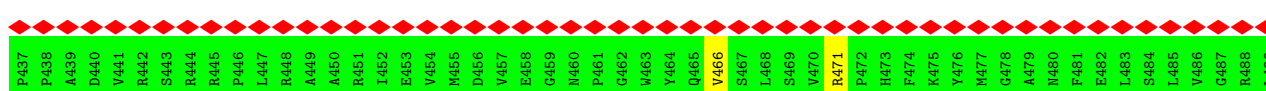
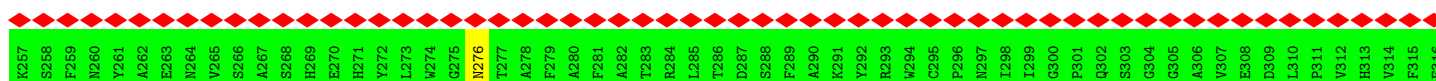
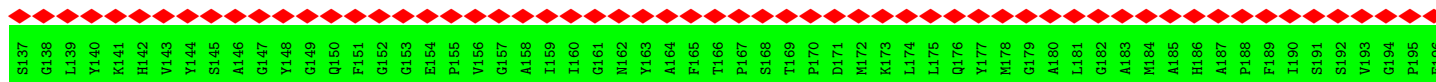
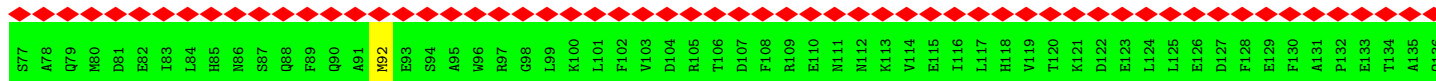
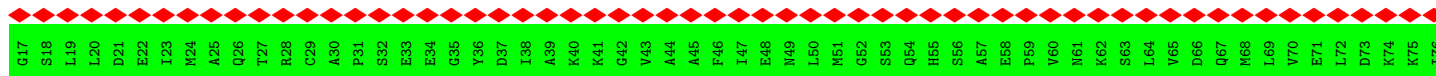
Molecule 2: Type VI secretion protein



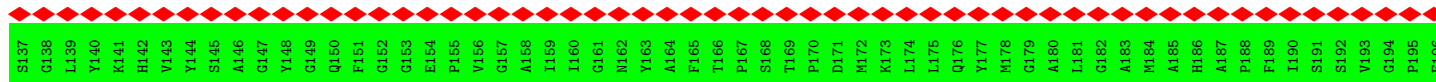
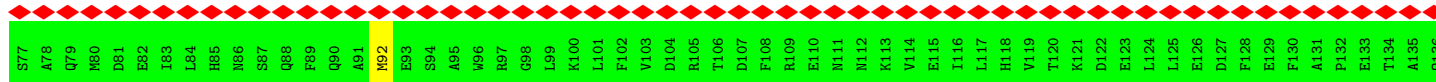
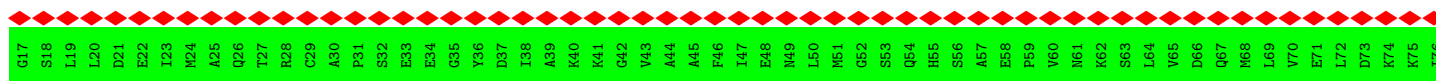
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• Molecule 2: Type VI secretion protein



• Molecule 2: Type VI secretion protein



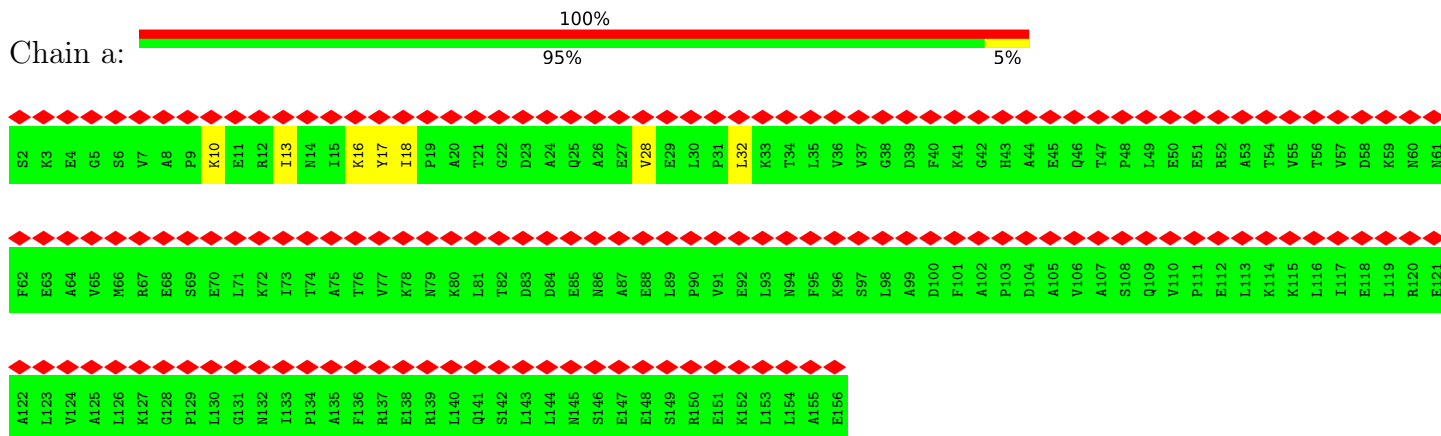
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P437	P438	A439	D440	V441	R442	S443	R444	R445	P446	L447	R448	A449	A450	R451	I452	E453	V454	M455	D456	V457	E458	G459	M460	P461	G462	W463	V464	Q465	V466	S467	L468	S469	V470	R471	P472	H473	F474	K475	Y476	M477	G478	A479	N480	F481	E482	L483	S484	L485	V486	G487	R488	L489																					

• Molecule 2: Type VI secretion protein

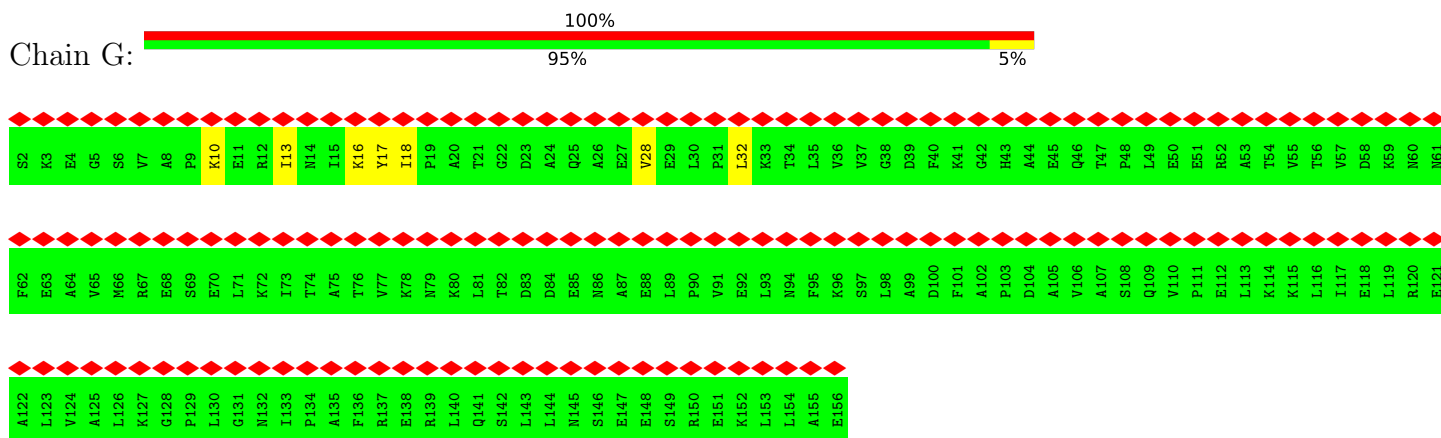


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S77	A78	Q79	M80	D81	E82	I83	L84	H85	N86	S87	Q88	F89	Q90	A91	M92	E93	S94	A95	W96	R97	G98	L99	K100	I101	L102	V103	D104	R105	T106	D107	F108	R109	P110	E111	M112	K113	V114	E115	I116	Y117	L118	V119	T120	K121	D122	E123	L124	L125	H126	D127	F128	E129	M130	A131	P132	V133	T134	A135	Q136													
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K377	E378	A379	E380	T381	N382	Y383	K384	L385	G386	T387	Q388	L389	P390	Y391	M392	M393	I394	I395	N396	R397	L398	A399	H400	Y401	V402	K403	V404	L405	Q406	R407	E408	Q409	I410	G411	A412	W413	K414	E415	R416	Q417	D418	L419	E420	R421	L422	N424	S425	W426	I427	K428	Q429	V430	W431	A432	D433	Q434	E435	N436														
P437	P438	A439	D440	V441	R442	S443	R444	R445	P446	L447	R448	A449	A450	R451	I452	E453	V454	M455	D456	V457	E458	G459	M460	P461	G462	W463	V464	Q465	V466	S467	L468	S469	V470	R471	P472	H473	F474	K475	Y476	M477	G478	A479	N480	F481	E482	L483	S484	L485	V486	G487	R488	L489																				

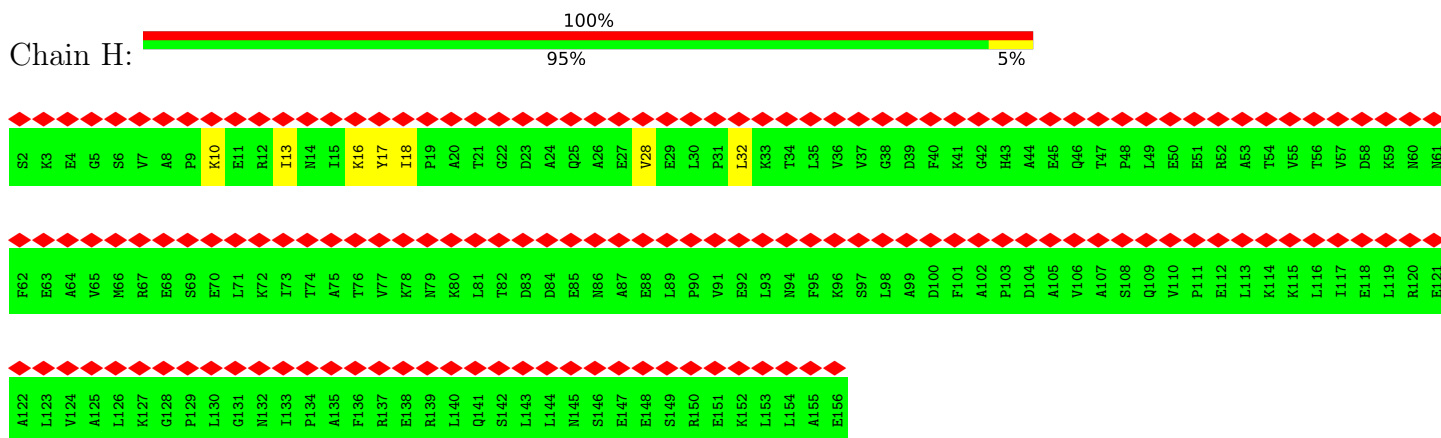
• Molecule 3: VipA



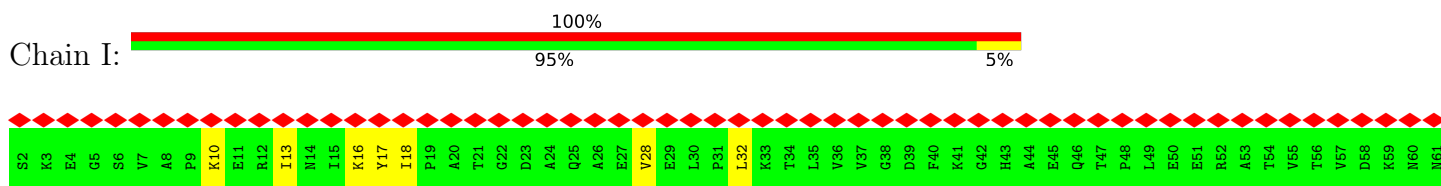
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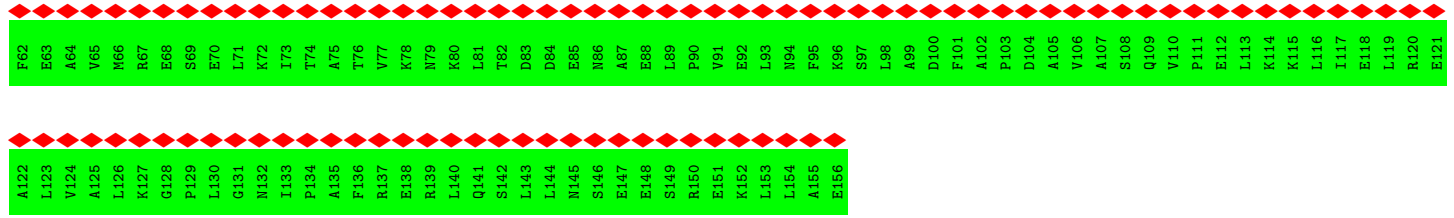


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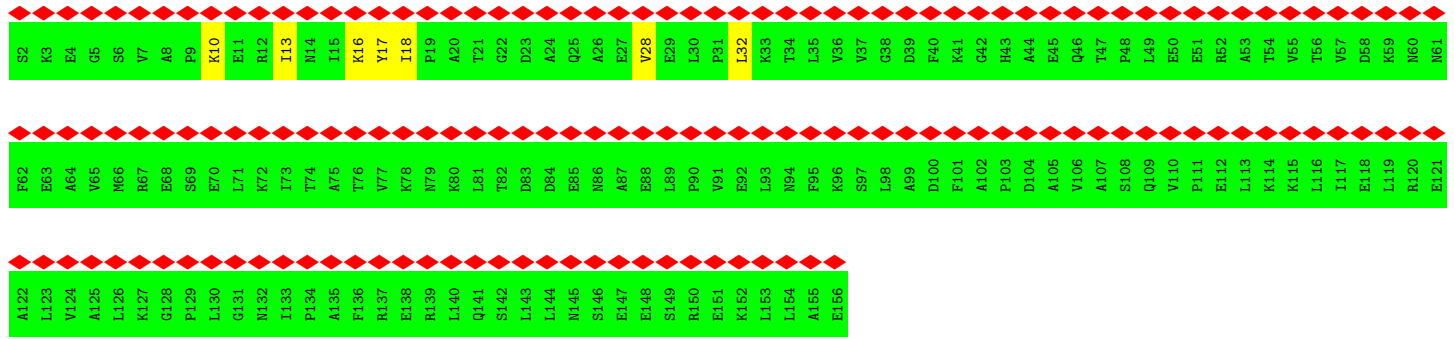
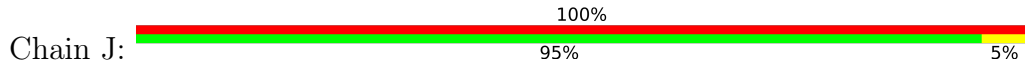


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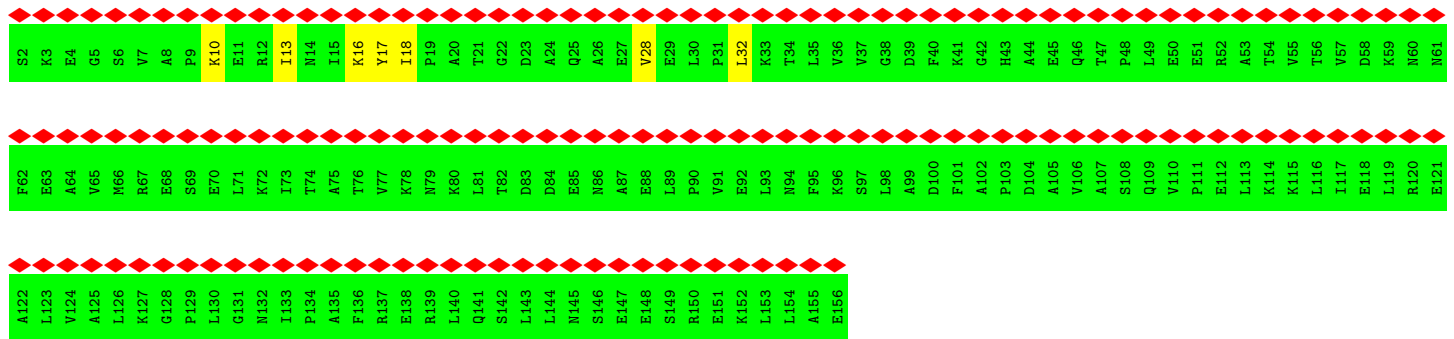




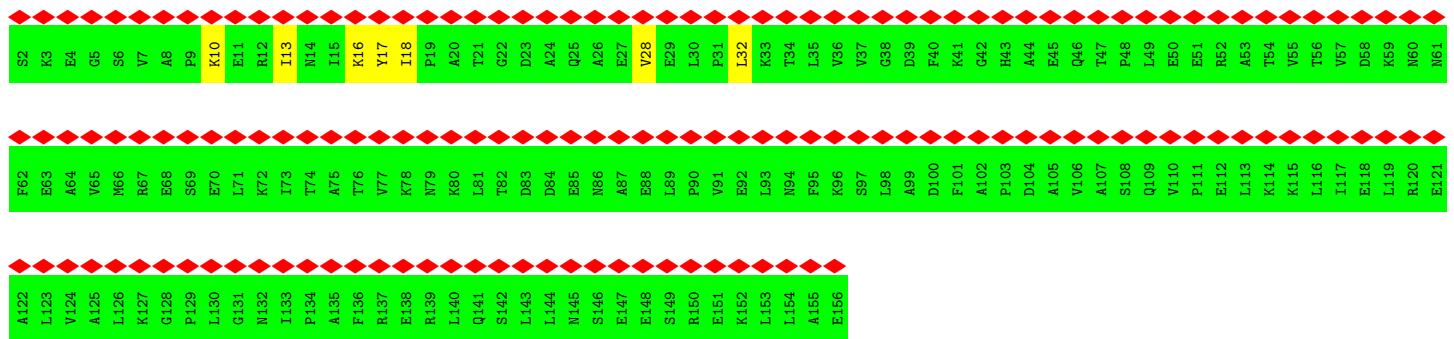
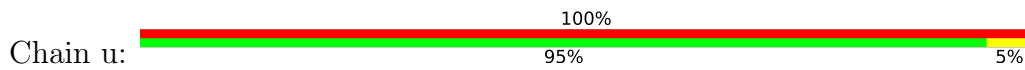
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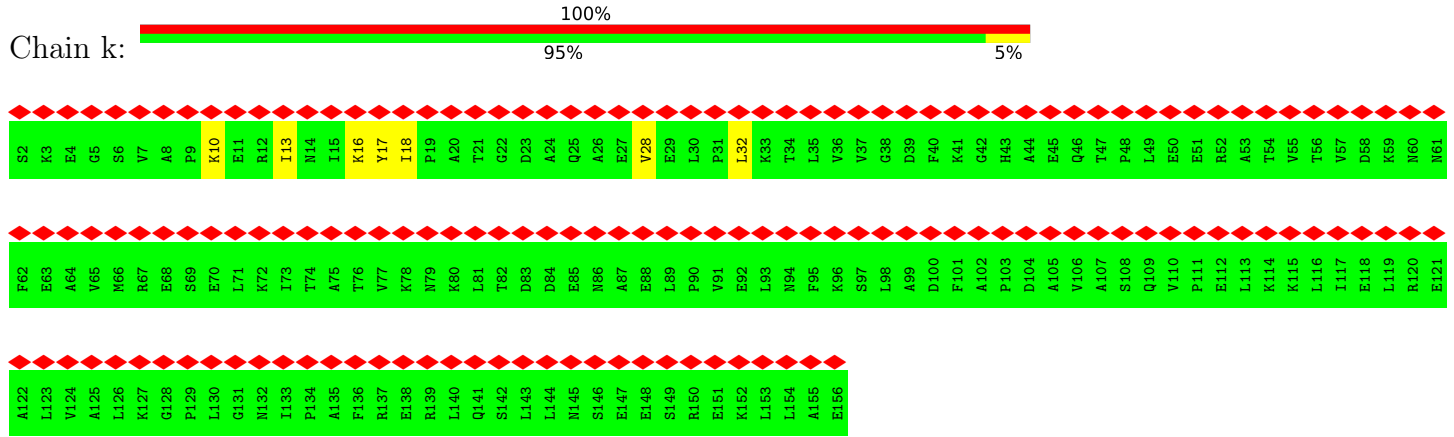
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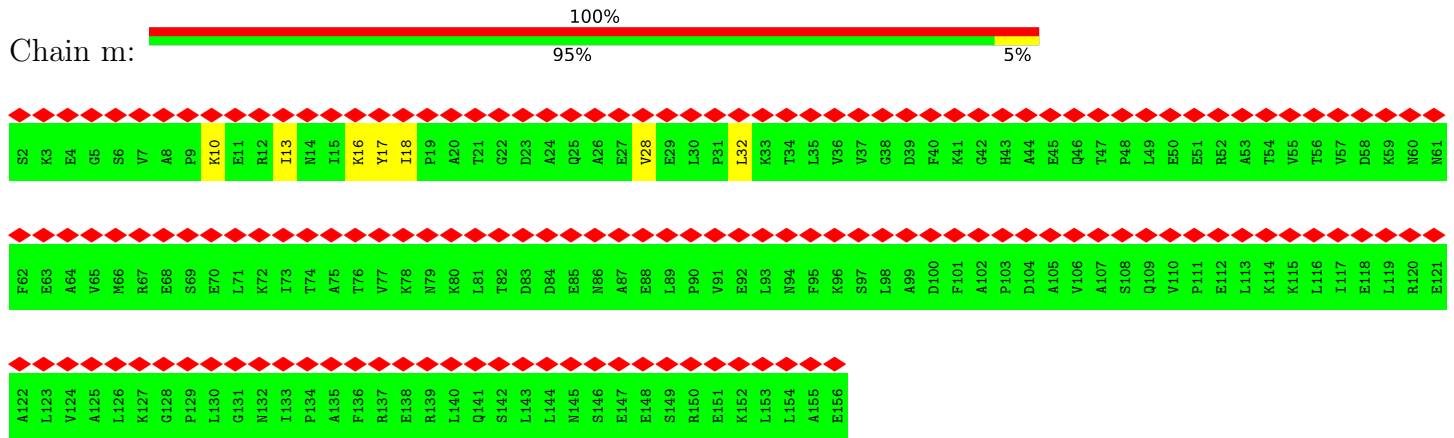
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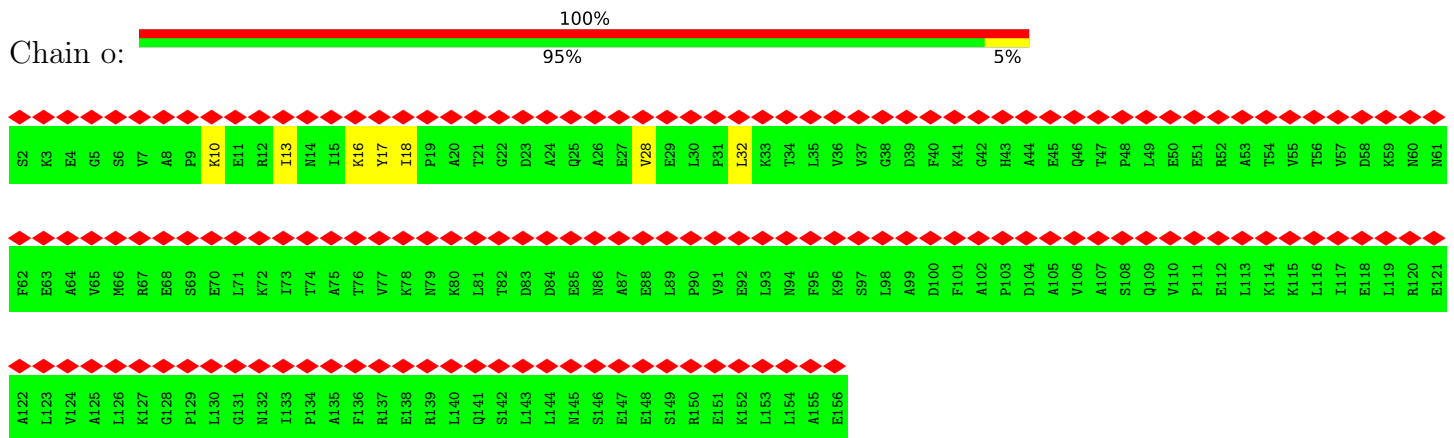
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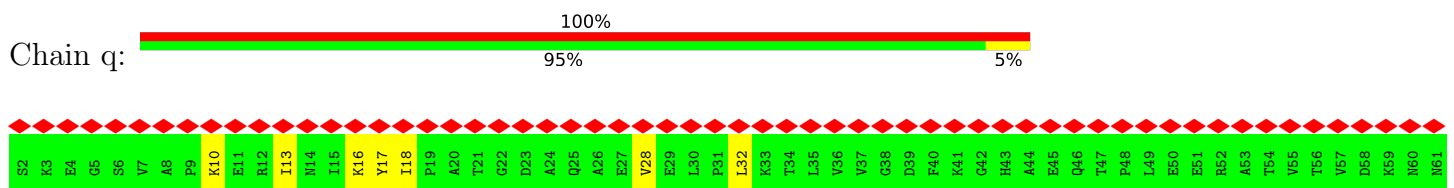
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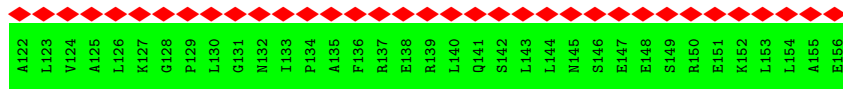
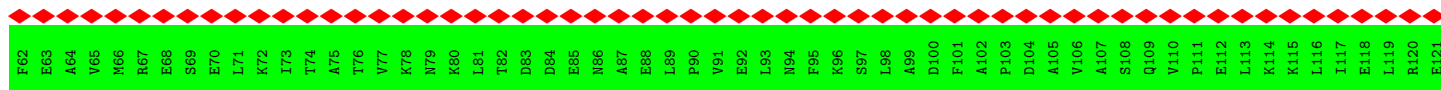


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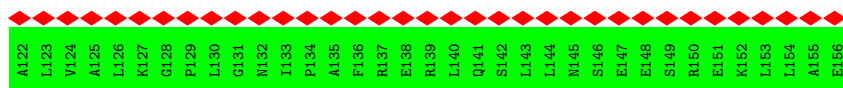
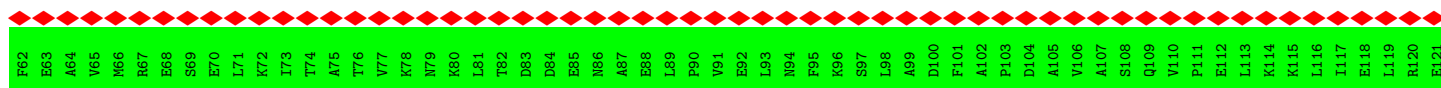
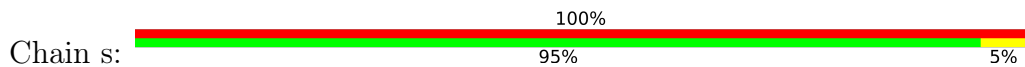


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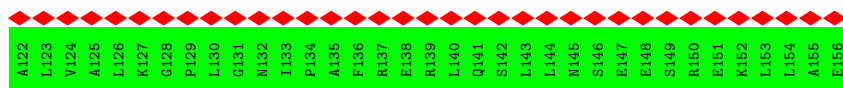
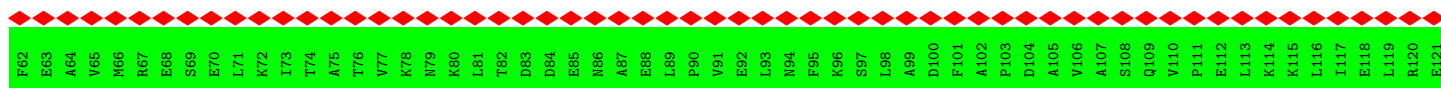




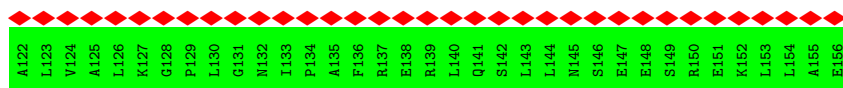
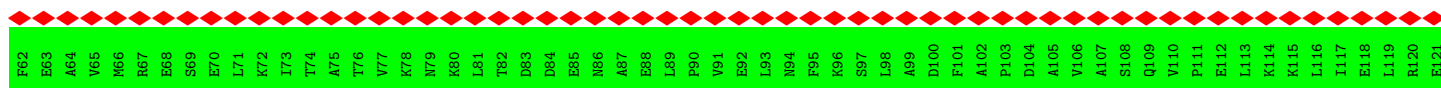
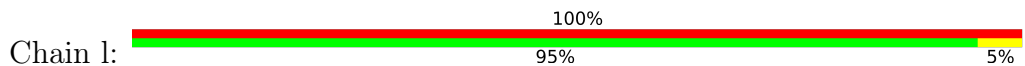
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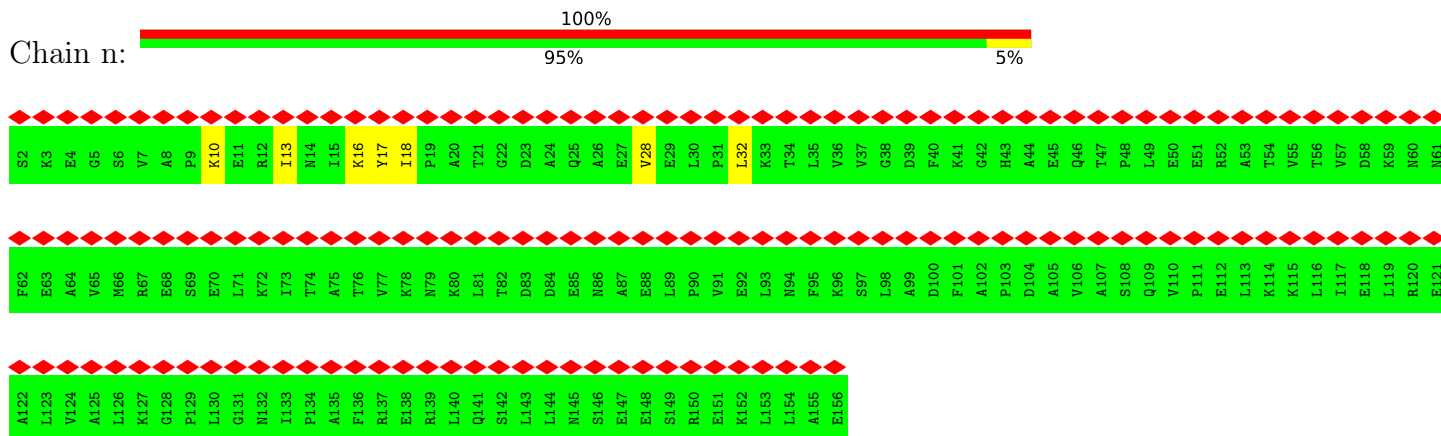
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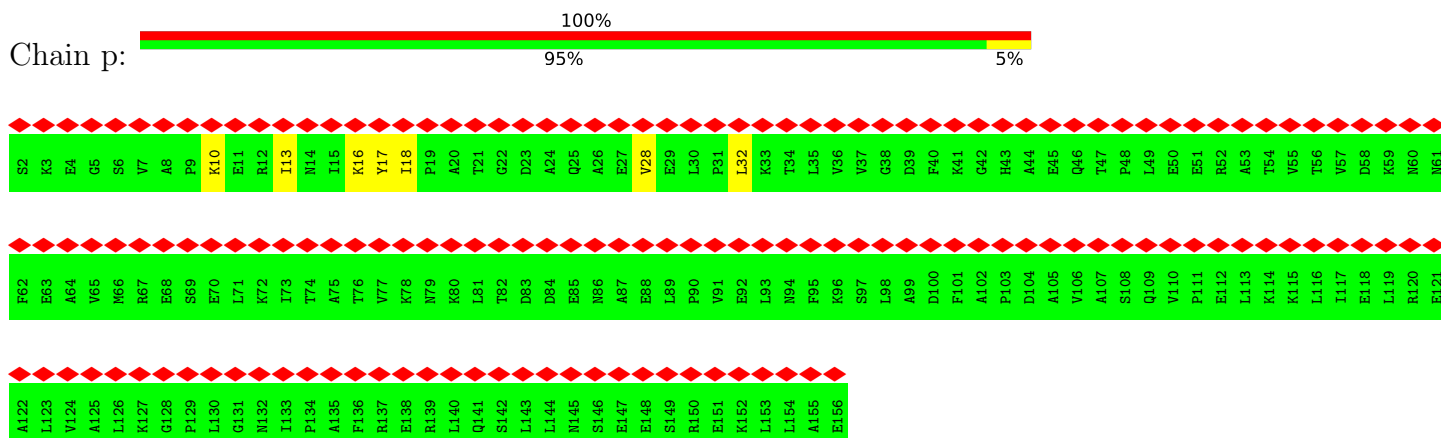
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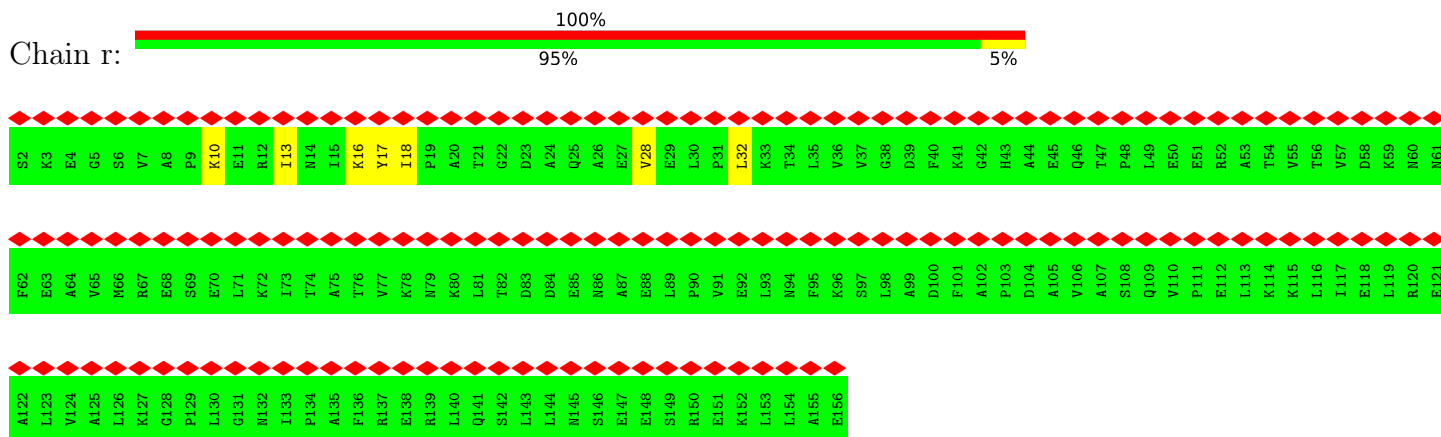
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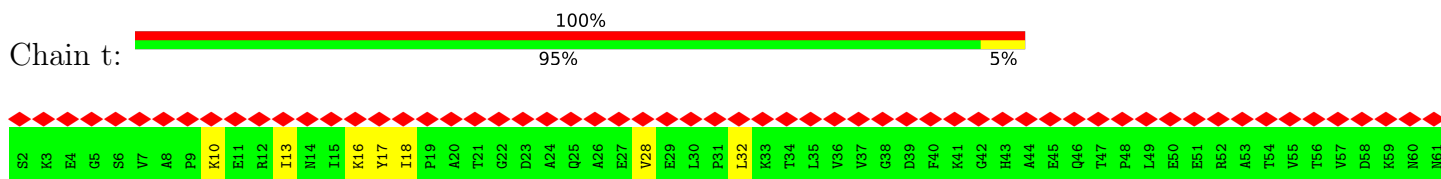
• Molecule 3: VipA



• Molecule 3: VipA



• Molecule 3: VipA



F62 E63 A64 V65 M66 R67 E68 S69 E70 L71 K72 I73 T74 A75 T76 V77 K78 N79 K80 L81 T82 D83 D84 E85 E86 N87 E88 L89 P90 V91 E92 L93 N94 F95 K96 S97 L98 A99 D100 F101 A102 P103 D104 A105 V106 A107 S108 Q109 V110 P111 E112 L113 K114 K115 L116 I117 E118 L119 R120 E121

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4 Experimental information

Property	Value	Source
EM reconstruction method	HELICAL	Depositor
Imposed symmetry	HELICAL, twist=23.5°, rise=37.8 Å, axial sym=C6	Depositor
Number of segments used	10000	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 ($e^-/\text{Å}^2$)	1	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.168	Depositor
Minimum map value	-0.111	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	265.984, 265.984, 265.984	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.039, 1.039, 1.039	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	1	0.57	0/1358	0.61	0/1846
1	2	0.57	0/1358	0.61	0/1846
1	3	0.57	0/1358	0.61	0/1846
1	4	0.57	0/1358	0.61	0/1846
1	5	0.57	0/1358	0.61	0/1846
1	6	0.57	0/1358	0.61	0/1846
1	L	0.57	0/1358	0.61	0/1846
1	M	0.57	0/1358	0.61	0/1846
1	N	0.57	0/1358	0.61	0/1846
1	O	0.57	0/1358	0.61	0/1846
1	P	0.57	0/1358	0.61	0/1846
1	Q	0.57	0/1358	0.61	0/1846
1	R	0.57	0/1358	0.61	0/1846
1	S	0.57	0/1358	0.61	0/1846
1	T	0.57	0/1358	0.61	0/1846
1	U	0.57	0/1358	0.61	0/1846
1	V	0.57	0/1358	0.61	0/1846
1	W	0.57	0/1358	0.61	0/1846
2	A	0.38	0/3862	0.56	2/5225 (0.0%)
2	B	0.38	0/3862	0.56	2/5225 (0.0%)
2	C	0.38	0/3862	0.56	2/5225 (0.0%)
2	D	0.38	0/3862	0.56	2/5225 (0.0%)
2	E	0.38	0/3862	0.56	2/5225 (0.0%)
2	F	0.38	0/3862	0.56	2/5225 (0.0%)
2	X	0.38	0/3862	0.56	2/5225 (0.0%)
2	Y	0.38	0/3862	0.56	2/5225 (0.0%)
2	Z	0.38	0/3862	0.56	2/5225 (0.0%)
2	b	0.38	0/3862	0.56	2/5225 (0.0%)
2	c	0.38	0/3862	0.56	2/5225 (0.0%)
2	d	0.38	0/3862	0.56	2/5225 (0.0%)
2	e	0.38	0/3862	0.56	2/5225 (0.0%)
2	f	0.38	0/3862	0.56	2/5225 (0.0%)
2	g	0.38	0/3862	0.56	2/5225 (0.0%)
2	h	0.38	0/3862	0.56	2/5225 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
2	i	0.38	0/3862	0.56	2/5225 (0.0%)
2	j	0.38	0/3862	0.56	2/5225 (0.0%)
3	G	0.41	0/1217	0.70	2/1644 (0.1%)
3	H	0.42	0/1217	0.70	2/1644 (0.1%)
3	I	0.41	0/1217	0.70	2/1644 (0.1%)
3	J	0.41	0/1217	0.70	2/1644 (0.1%)
3	K	0.41	0/1217	0.70	2/1644 (0.1%)
3	a	0.41	0/1217	0.70	2/1644 (0.1%)
3	k	0.42	0/1217	0.70	2/1644 (0.1%)
3	l	0.41	0/1217	0.70	2/1644 (0.1%)
3	m	0.41	0/1217	0.70	2/1644 (0.1%)
3	n	0.41	0/1217	0.70	2/1644 (0.1%)
3	o	0.42	0/1217	0.70	2/1644 (0.1%)
3	p	0.42	0/1217	0.70	2/1644 (0.1%)
3	q	0.41	0/1217	0.70	2/1644 (0.1%)
3	r	0.41	0/1217	0.70	2/1644 (0.1%)
3	s	0.42	0/1217	0.70	2/1644 (0.1%)
3	t	0.41	0/1217	0.70	2/1644 (0.1%)
3	u	0.41	0/1217	0.70	2/1644 (0.1%)
3	v	0.41	0/1217	0.70	2/1644 (0.1%)
All	All	0.44	0/115866	0.60	72/156870 (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
2	A	0	1
2	B	0	1
2	C	0	1
2	D	0	1
2	E	0	1
2	F	0	1
2	X	0	1
2	Y	0	1
2	Z	0	1
2	b	0	1
2	c	0	1
2	d	0	1
2	e	0	1
2	f	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	g	0	1
2	h	0	1
2	i	0	1
2	j	0	1
3	G	0	2
3	H	0	2
3	I	0	2
3	J	0	2
3	K	0	2
3	a	0	2
3	k	0	2
3	l	0	2
3	m	0	2
3	n	0	2
3	o	0	2
3	p	0	2
3	q	0	2
3	r	0	2
3	s	0	2
3	t	0	2
3	u	0	2
3	v	0	2
All	All	0	54

There are no bond length outliers.

All (72) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	s	18	ILE	CB-CA-C	7.12	125.83	111.60
3	k	18	ILE	CB-CA-C	7.11	125.82	111.60
3	q	18	ILE	CB-CA-C	7.11	125.82	111.60
3	m	18	ILE	CB-CA-C	7.11	125.82	111.60
3	a	18	ILE	CB-CA-C	7.10	125.80	111.60
3	I	18	ILE	CB-CA-C	7.10	125.80	111.60
3	r	18	ILE	CB-CA-C	7.10	125.80	111.60
3	o	18	ILE	CB-CA-C	7.10	125.79	111.60
3	l	18	ILE	CB-CA-C	7.09	125.79	111.60
3	J	18	ILE	CB-CA-C	7.09	125.78	111.60
3	v	18	ILE	CB-CA-C	7.09	125.78	111.60
3	t	18	ILE	CB-CA-C	7.09	125.78	111.60
3	n	18	ILE	CB-CA-C	7.08	125.76	111.60
3	p	18	ILE	CB-CA-C	7.08	125.76	111.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	u	18	ILE	CB-CA-C	7.07	125.74	111.60
3	H	18	ILE	CB-CA-C	7.07	125.74	111.60
3	K	18	ILE	CB-CA-C	7.07	125.74	111.60
3	G	18	ILE	CB-CA-C	7.07	125.73	111.60
2	c	389	LEU	CA-CB-CG	5.75	128.52	115.30
2	i	389	LEU	CA-CB-CG	5.75	128.52	115.30
2	d	389	LEU	CA-CB-CG	5.74	128.50	115.30
2	F	389	LEU	CA-CB-CG	5.74	128.50	115.30
2	C	389	LEU	CA-CB-CG	5.73	128.48	115.30
2	b	389	LEU	CA-CB-CG	5.73	128.48	115.30
2	D	389	LEU	CA-CB-CG	5.73	128.48	115.30
2	j	389	LEU	CA-CB-CG	5.73	128.47	115.30
2	e	389	LEU	CA-CB-CG	5.73	128.47	115.30
2	B	389	LEU	CA-CB-CG	5.72	128.46	115.30
2	f	389	LEU	CA-CB-CG	5.72	128.46	115.30
2	h	389	LEU	CA-CB-CG	5.72	128.46	115.30
2	A	389	LEU	CA-CB-CG	5.71	128.44	115.30
2	X	389	LEU	CA-CB-CG	5.71	128.44	115.30
2	Z	389	LEU	CA-CB-CG	5.71	128.43	115.30
2	Y	239	THR	C-N-CA	5.71	135.96	121.70
2	Y	389	LEU	CA-CB-CG	5.70	128.42	115.30
2	E	389	LEU	CA-CB-CG	5.70	128.41	115.30
2	g	389	LEU	CA-CB-CG	5.70	128.41	115.30
2	f	239	THR	C-N-CA	5.69	135.94	121.70
2	A	239	THR	C-N-CA	5.69	135.93	121.70
2	d	239	THR	C-N-CA	5.69	135.92	121.70
2	j	239	THR	C-N-CA	5.68	135.91	121.70
2	h	239	THR	C-N-CA	5.68	135.90	121.70
2	E	239	THR	C-N-CA	5.68	135.89	121.70
2	C	239	THR	C-N-CA	5.67	135.89	121.70
2	B	239	THR	C-N-CA	5.67	135.88	121.70
2	F	239	THR	C-N-CA	5.67	135.88	121.70
2	X	239	THR	C-N-CA	5.67	135.88	121.70
2	D	239	THR	C-N-CA	5.67	135.88	121.70
2	b	239	THR	C-N-CA	5.67	135.88	121.70
2	g	239	THR	C-N-CA	5.66	135.86	121.70
2	e	239	THR	C-N-CA	5.66	135.86	121.70
2	c	239	THR	C-N-CA	5.66	135.85	121.70
2	Z	239	THR	C-N-CA	5.66	135.84	121.70
2	i	239	THR	C-N-CA	5.65	135.83	121.70
3	o	13	ILE	CG1-CB-CG2	-5.53	99.23	111.40
3	s	13	ILE	CG1-CB-CG2	-5.53	99.24	111.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	13	ILE	CG1-CB-CG2	-5.52	99.25	111.40
3	n	13	ILE	CG1-CB-CG2	-5.52	99.25	111.40
3	u	13	ILE	CG1-CB-CG2	-5.52	99.25	111.40
3	H	13	ILE	CG1-CB-CG2	-5.52	99.26	111.40
3	K	13	ILE	CG1-CB-CG2	-5.52	99.26	111.40
3	q	13	ILE	CG1-CB-CG2	-5.52	99.26	111.40
3	I	13	ILE	CG1-CB-CG2	-5.52	99.26	111.40
3	t	13	ILE	CG1-CB-CG2	-5.52	99.26	111.40
3	m	13	ILE	CG1-CB-CG2	-5.51	99.27	111.40
3	v	13	ILE	CG1-CB-CG2	-5.51	99.27	111.40
3	k	13	ILE	CG1-CB-CG2	-5.51	99.28	111.40
3	l	13	ILE	CG1-CB-CG2	-5.51	99.27	111.40
3	a	13	ILE	CG1-CB-CG2	-5.51	99.28	111.40
3	r	13	ILE	CG1-CB-CG2	-5.50	99.29	111.40
3	p	13	ILE	CG1-CB-CG2	-5.50	99.30	111.40
3	G	13	ILE	CG1-CB-CG2	-5.50	99.30	111.40

There are no chirality outliers.

All (54) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	389	LEU	Peptide
2	B	389	LEU	Peptide
2	C	389	LEU	Peptide
2	D	389	LEU	Peptide
2	E	389	LEU	Peptide
2	F	389	LEU	Peptide
3	G	16	LYS	Mainchain
3	G	17	TYR	Mainchain
3	H	16	LYS	Mainchain
3	H	17	TYR	Mainchain
3	I	16	LYS	Mainchain
3	I	17	TYR	Mainchain
3	J	16	LYS	Mainchain
3	J	17	TYR	Mainchain
3	K	16	LYS	Mainchain
3	K	17	TYR	Mainchain
2	X	389	LEU	Peptide
2	Y	389	LEU	Peptide
2	Z	389	LEU	Peptide
3	a	16	LYS	Mainchain
3	a	17	TYR	Mainchain

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Mol	Chain	Res	Type	Group
2	b	389	LEU	Peptide
2	c	389	LEU	Peptide
2	d	389	LEU	Peptide
2	e	389	LEU	Peptide
2	f	389	LEU	Peptide
2	g	389	LEU	Peptide
2	h	389	LEU	Peptide
2	i	389	LEU	Peptide
2	j	389	LEU	Peptide
3	k	16	LYS	Mainchain
3	k	17	TYR	Mainchain
3	l	16	LYS	Mainchain
3	l	17	TYR	Mainchain
3	m	16	LYS	Mainchain
3	m	17	TYR	Mainchain
3	n	16	LYS	Mainchain
3	n	17	TYR	Mainchain
3	o	16	LYS	Mainchain
3	o	17	TYR	Mainchain
3	p	16	LYS	Mainchain
3	p	17	TYR	Mainchain
3	q	16	LYS	Mainchain
3	q	17	TYR	Mainchain
3	r	16	LYS	Mainchain
3	r	17	TYR	Mainchain
3	s	16	LYS	Mainchain
3	s	17	TYR	Mainchain
3	t	16	LYS	Mainchain
3	t	17	TYR	Mainchain
3	u	16	LYS	Mainchain
3	u	17	TYR	Mainchain
3	v	16	LYS	Mainchain
3	v	17	TYR	Mainchain

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

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	2	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	3	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	4	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	5	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	6	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	L	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	M	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	N	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	O	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	P	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	Q	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	R	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	S	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	T	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	U	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	V	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
1	W	168/170 (99%)	154 (92%)	14 (8%)	0	100	100
2	A	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	B	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	C	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	D	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	E	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	F	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	X	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	Y	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	Z	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	b	471/473 (100%)	436 (93%)	33 (7%)	2 (0%)	34	69
2	c	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	d	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	e	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	f	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	g	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	h	471/473 (100%)	439 (93%)	30 (6%)	2 (0%)	34	69
2	i	471/473 (100%)	437 (93%)	32 (7%)	2 (0%)	34	69
2	j	471/473 (100%)	436 (93%)	33 (7%)	2 (0%)	34	69
3	G	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	H	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	I	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	J	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	K	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	a	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	k	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	l	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	m	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	n	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	o	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	p	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	q	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	r	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	s	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	t	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	u	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
3	v	153/155 (99%)	141 (92%)	10 (6%)	2 (1%)	12	47
All	All	14256/14364 (99%)	13176 (92%)	1008 (7%)	72 (0%)	32	66

All (72) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	a	32	LEU
3	G	32	LEU
3	H	32	LEU
3	I	32	LEU
3	J	32	LEU
3	K	32	LEU
3	u	32	LEU
3	k	32	LEU
3	m	32	LEU
3	o	32	LEU
3	q	32	LEU
3	s	32	LEU
3	v	32	LEU
3	l	32	LEU
3	n	32	LEU
3	p	32	LEU
3	r	32	LEU
3	t	32	LEU
2	A	241	PRO
2	B	241	PRO
2	C	241	PRO
2	D	241	PRO
2	E	241	PRO
2	F	241	PRO
2	X	241	PRO
2	Z	241	PRO
2	c	241	PRO
2	e	241	PRO
2	g	241	PRO
2	i	241	PRO
2	Y	241	PRO
2	b	241	PRO
2	d	241	PRO
2	f	241	PRO
2	h	241	PRO
2	j	241	PRO
2	A	390	PRO
2	B	390	PRO
2	C	390	PRO
2	D	390	PRO
2	E	390	PRO
2	F	390	PRO
2	X	390	PRO

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Mol	Chain	Res	Type
2	Z	390	PRO
2	c	390	PRO
2	e	390	PRO
2	g	390	PRO
2	i	390	PRO
2	Y	390	PRO
2	b	390	PRO
2	d	390	PRO
2	f	390	PRO
2	h	390	PRO
2	j	390	PRO
3	a	28	VAL
3	G	28	VAL
3	H	28	VAL
3	I	28	VAL
3	J	28	VAL
3	K	28	VAL
3	u	28	VAL
3	k	28	VAL
3	m	28	VAL
3	o	28	VAL
3	q	28	VAL
3	s	28	VAL
3	v	28	VAL
3	l	28	VAL
3	n	28	VAL
3	p	28	VAL
3	r	28	VAL
3	t	28	VAL

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	1	150/150 (100%)	149 (99%)	1 (1%)	84 91
1	2	150/150 (100%)	149 (99%)	1 (1%)	84 91

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	3	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	4	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	5	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	6	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	L	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	M	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	N	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	O	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	P	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	Q	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	R	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	S	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	T	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	U	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	V	150/150 (100%)	149 (99%)	1 (1%)	84	91
1	W	150/150 (100%)	149 (99%)	1 (1%)	84	91
2	A	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	B	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	C	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	D	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	E	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	F	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	X	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	Y	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	Z	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	b	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	c	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	d	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	e	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	f	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	g	401/401 (100%)	396 (99%)	5 (1%)	71	84

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	h	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	i	401/401 (100%)	396 (99%)	5 (1%)	71	84
2	j	401/401 (100%)	396 (99%)	5 (1%)	71	84
3	G	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	H	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	I	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	J	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	K	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	a	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	k	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	l	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	m	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	n	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	o	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	p	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	q	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	r	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	s	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	t	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	u	132/132 (100%)	131 (99%)	1 (1%)	81	89
3	v	132/132 (100%)	131 (99%)	1 (1%)	81	89
All	All	12294/12294 (100%)	12168 (99%)	126 (1%)	77	86

All (126) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	63	ARG
2	A	92	MET
2	A	241	PRO
2	A	276	ASN
2	A	466	VAL
2	A	471	ARG
1	2	63	ARG
2	B	92	MET
2	B	241	PRO

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Mol	Chain	Res	Type
2	B	276	ASN
2	B	466	VAL
2	B	471	ARG
1	3	63	ARG
2	C	92	MET
2	C	241	PRO
2	C	276	ASN
2	C	466	VAL
2	C	471	ARG
1	4	63	ARG
2	D	92	MET
2	D	241	PRO
2	D	276	ASN
2	D	466	VAL
2	D	471	ARG
1	5	63	ARG
2	E	92	MET
2	E	241	PRO
2	E	276	ASN
2	E	466	VAL
2	E	471	ARG
1	6	63	ARG
2	F	92	MET
2	F	241	PRO
2	F	276	ASN
2	F	466	VAL
2	F	471	ARG
3	a	10	LYS
3	G	10	LYS
3	H	10	LYS
3	I	10	LYS
3	J	10	LYS
3	K	10	LYS
1	L	63	ARG
2	X	92	MET
2	X	241	PRO
2	X	276	ASN
2	X	466	VAL
2	X	471	ARG
1	N	63	ARG
2	Z	92	MET
2	Z	241	PRO

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Mol	Chain	Res	Type
2	Z	276	ASN
2	Z	466	VAL
2	Z	471	ARG
1	P	63	ARG
2	c	92	MET
2	c	241	PRO
2	c	276	ASN
2	c	466	VAL
2	c	471	ARG
1	R	63	ARG
2	e	92	MET
2	e	241	PRO
2	e	276	ASN
2	e	466	VAL
2	e	471	ARG
1	T	63	ARG
2	g	92	MET
2	g	241	PRO
2	g	276	ASN
2	g	466	VAL
2	g	471	ARG
1	V	63	ARG
2	i	92	MET
2	i	241	PRO
2	i	276	ASN
2	i	466	VAL
2	i	471	ARG
3	u	10	LYS
3	k	10	LYS
3	m	10	LYS
3	o	10	LYS
3	q	10	LYS
3	s	10	LYS
1	M	63	ARG
2	Y	92	MET
2	Y	241	PRO
2	Y	276	ASN
2	Y	466	VAL
2	Y	471	ARG
1	O	63	ARG
2	b	92	MET
2	b	241	PRO

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Mol	Chain	Res	Type
2	b	276	ASN
2	b	466	VAL
2	b	471	ARG
1	Q	63	ARG
2	d	92	MET
2	d	241	PRO
2	d	276	ASN
2	d	466	VAL
2	d	471	ARG
1	S	63	ARG
2	f	92	MET
2	f	241	PRO
2	f	276	ASN
2	f	466	VAL
2	f	471	ARG
1	U	63	ARG
2	h	92	MET
2	h	241	PRO
2	h	276	ASN
2	h	466	VAL
2	h	471	ARG
1	W	63	ARG
2	j	92	MET
2	j	241	PRO
2	j	276	ASN
2	j	466	VAL
2	j	471	ARG
3	v	10	LYS
3	l	10	LYS
3	n	10	LYS
3	p	10	LYS
3	r	10	LYS
3	t	10	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (153) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	35	HIS
1	1	129	HIS
2	A	26	GLN
2	A	271	HIS
2	A	276	ASN

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Mol	Chain	Res	Type
2	A	365	GLN
1	2	14	GLN
1	2	35	HIS
1	2	129	HIS
2	B	26	GLN
2	B	271	HIS
2	B	276	ASN
2	B	365	GLN
1	3	14	GLN
1	3	35	HIS
1	3	129	HIS
2	C	26	GLN
2	C	271	HIS
2	C	276	ASN
2	C	365	GLN
1	4	14	GLN
1	4	35	HIS
1	4	129	HIS
2	D	26	GLN
2	D	271	HIS
2	D	276	ASN
2	D	365	GLN
1	5	14	GLN
1	5	35	HIS
1	5	129	HIS
2	E	26	GLN
2	E	271	HIS
2	E	276	ASN
2	E	365	GLN
1	6	35	HIS
1	6	129	HIS
2	F	26	GLN
2	F	271	HIS
2	F	276	ASN
2	F	365	GLN
3	a	132	ASN
3	G	132	ASN
3	H	132	ASN
3	I	132	ASN
3	J	132	ASN
3	K	132	ASN
1	L	14	GLN

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Mol	Chain	Res	Type
1	L	35	HIS
1	L	129	HIS
1	L	131	GLN
2	X	26	GLN
2	X	271	HIS
2	X	276	ASN
2	X	365	GLN
1	N	35	HIS
1	N	129	HIS
1	N	131	GLN
2	Z	26	GLN
2	Z	271	HIS
2	Z	276	ASN
2	Z	365	GLN
1	P	14	GLN
1	P	35	HIS
1	P	129	HIS
1	P	131	GLN
2	c	26	GLN
2	c	271	HIS
2	c	276	ASN
2	c	365	GLN
1	R	14	GLN
1	R	35	HIS
1	R	129	HIS
1	R	131	GLN
2	e	26	GLN
2	e	271	HIS
2	e	276	ASN
2	e	365	GLN
1	T	14	GLN
1	T	35	HIS
1	T	129	HIS
1	T	131	GLN
2	g	26	GLN
2	g	271	HIS
2	g	276	ASN
2	g	365	GLN
1	V	14	GLN
1	V	35	HIS
1	V	129	HIS
1	V	131	GLN

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Mol	Chain	Res	Type
2	i	26	GLN
2	i	271	HIS
2	i	276	ASN
2	i	365	GLN
3	u	132	ASN
3	k	132	ASN
3	m	132	ASN
3	o	132	ASN
3	q	132	ASN
3	s	132	ASN
1	M	14	GLN
1	M	35	HIS
1	M	129	HIS
1	M	131	GLN
2	Y	26	GLN
2	Y	271	HIS
2	Y	276	ASN
2	Y	365	GLN
1	O	14	GLN
1	O	35	HIS
1	O	129	HIS
1	O	131	GLN
2	b	26	GLN
2	b	271	HIS
2	b	276	ASN
2	b	365	GLN
1	Q	14	GLN
1	Q	35	HIS
1	Q	129	HIS
1	Q	131	GLN
2	d	26	GLN
2	d	271	HIS
2	d	276	ASN
2	d	365	GLN
1	S	14	GLN
1	S	35	HIS
1	S	129	HIS
1	S	131	GLN
2	f	26	GLN
2	f	271	HIS
2	f	276	ASN
2	f	365	GLN

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Mol	Chain	Res	Type
1	U	14	GLN
1	U	35	HIS
1	U	129	HIS
1	U	131	GLN
2	h	26	GLN
2	h	271	HIS
2	h	276	ASN
2	h	365	GLN
1	W	14	GLN
1	W	35	HIS
1	W	129	HIS
1	W	131	GLN
2	j	26	GLN
2	j	271	HIS
2	j	276	ASN
2	j	365	GLN
3	v	132	ASN
3	l	132	ASN
3	n	132	ASN
3	p	132	ASN
3	r	132	ASN
3	t	132	ASN

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.

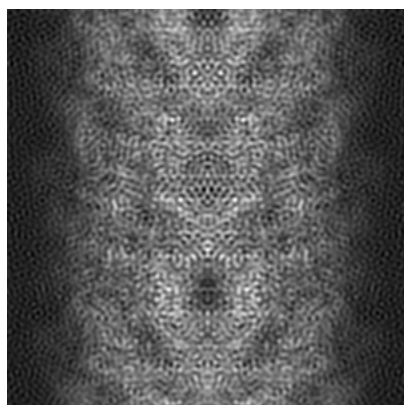
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3566. These allow visual inspection of the internal detail of the map and identification of artifacts.

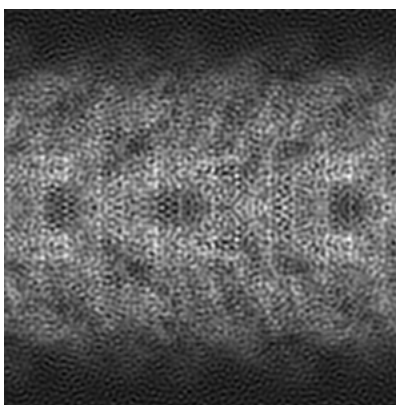
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

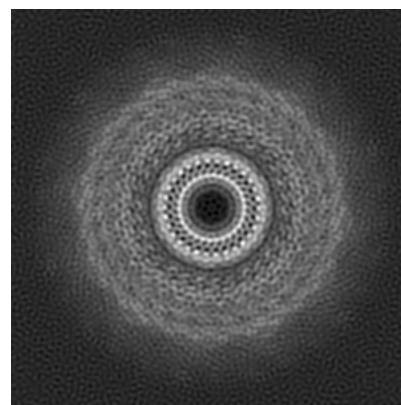
6.1.1 Primary map



X



Y

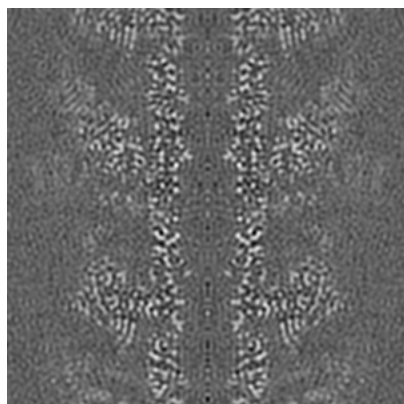


Z

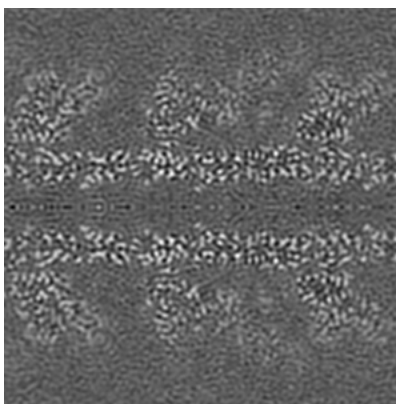
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

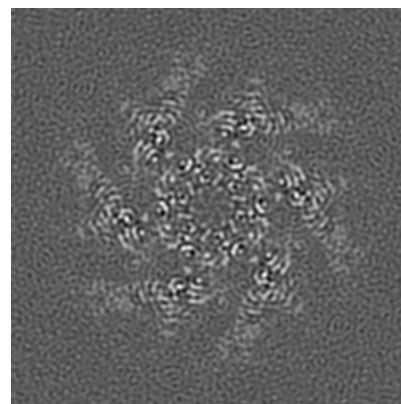
6.2.1 Primary map



X Index: 128



Y Index: 128

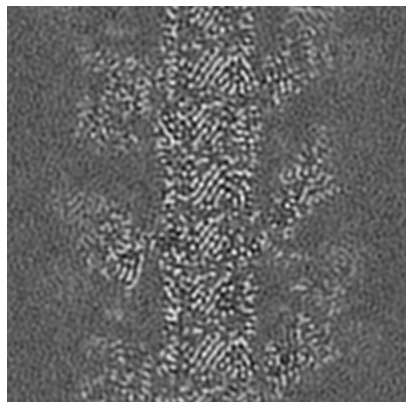


Z Index: 128

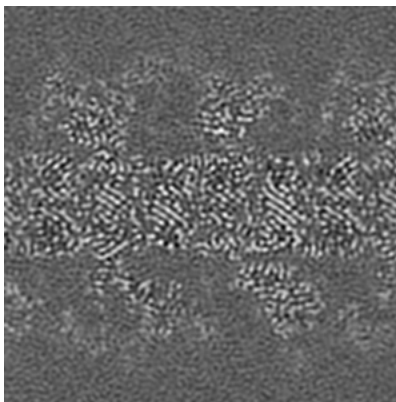
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

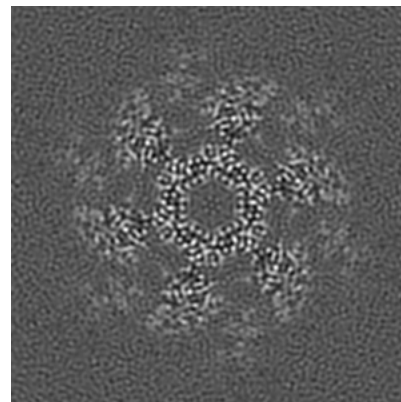
6.3.1 Primary map



X Index: 148



Y Index: 147

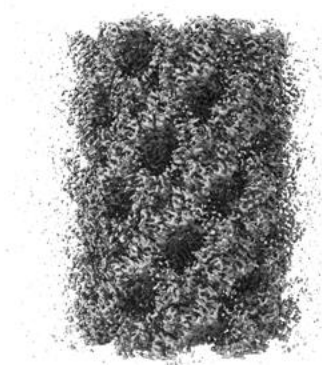


Z Index: 134

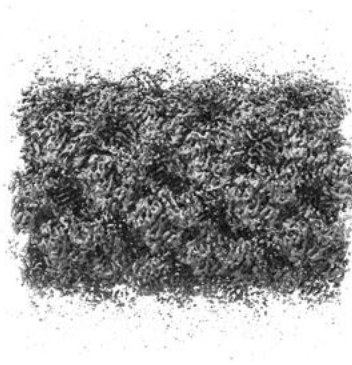
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

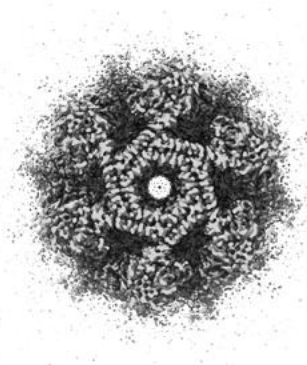
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

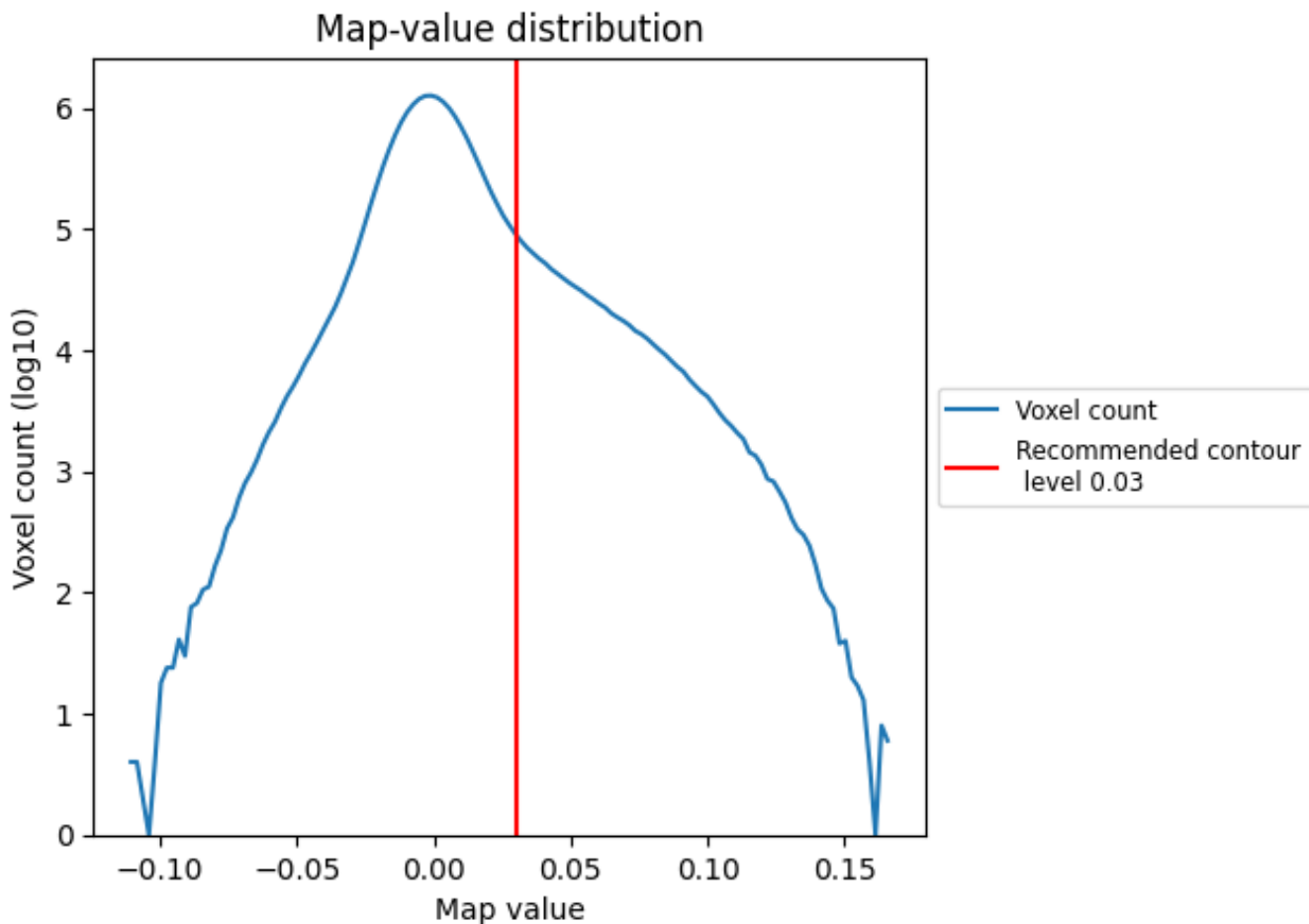
6.5 Mask visualisation

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

7 Map analysis [i](#)

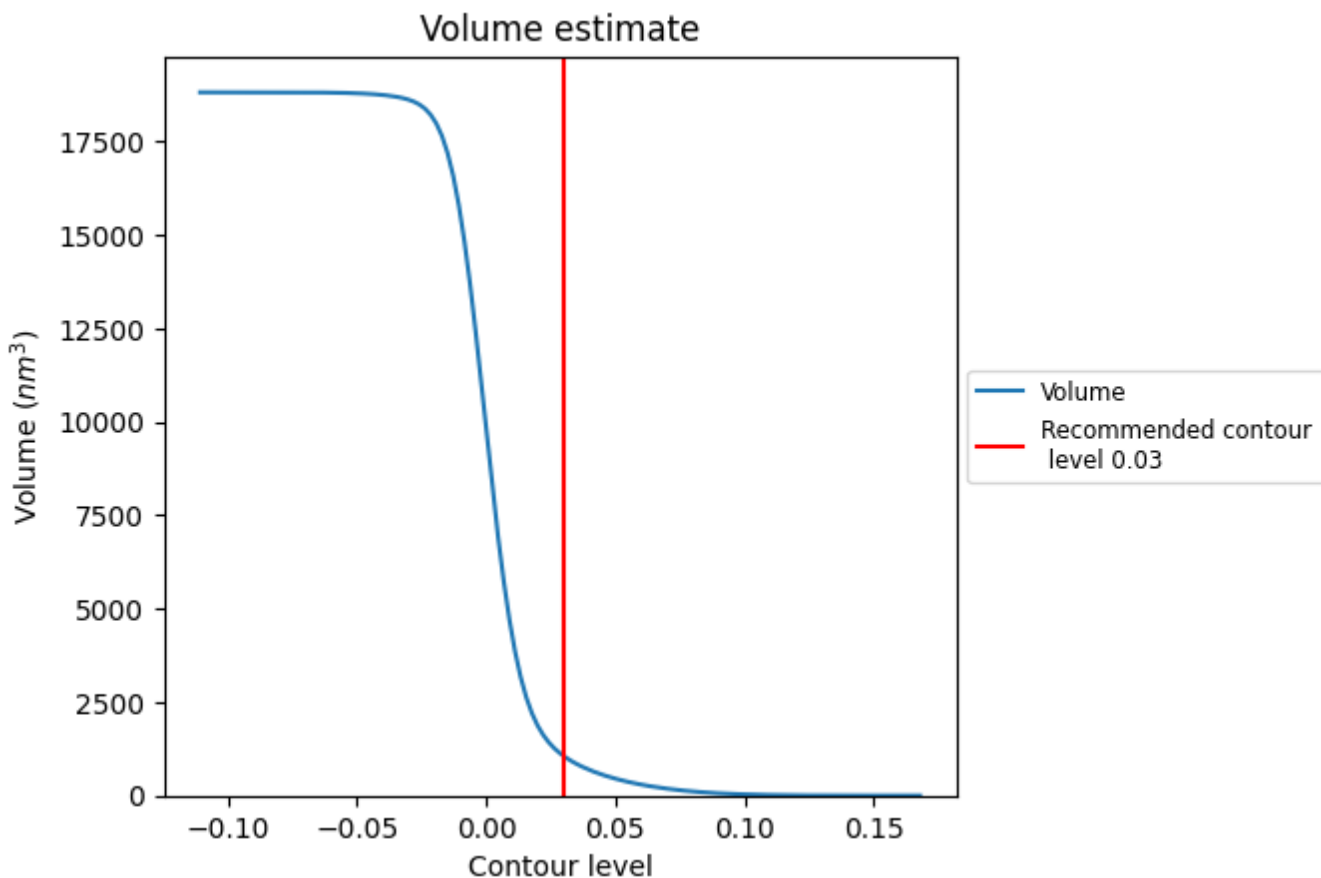
This section contains the results of statistical analysis of the map.

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.

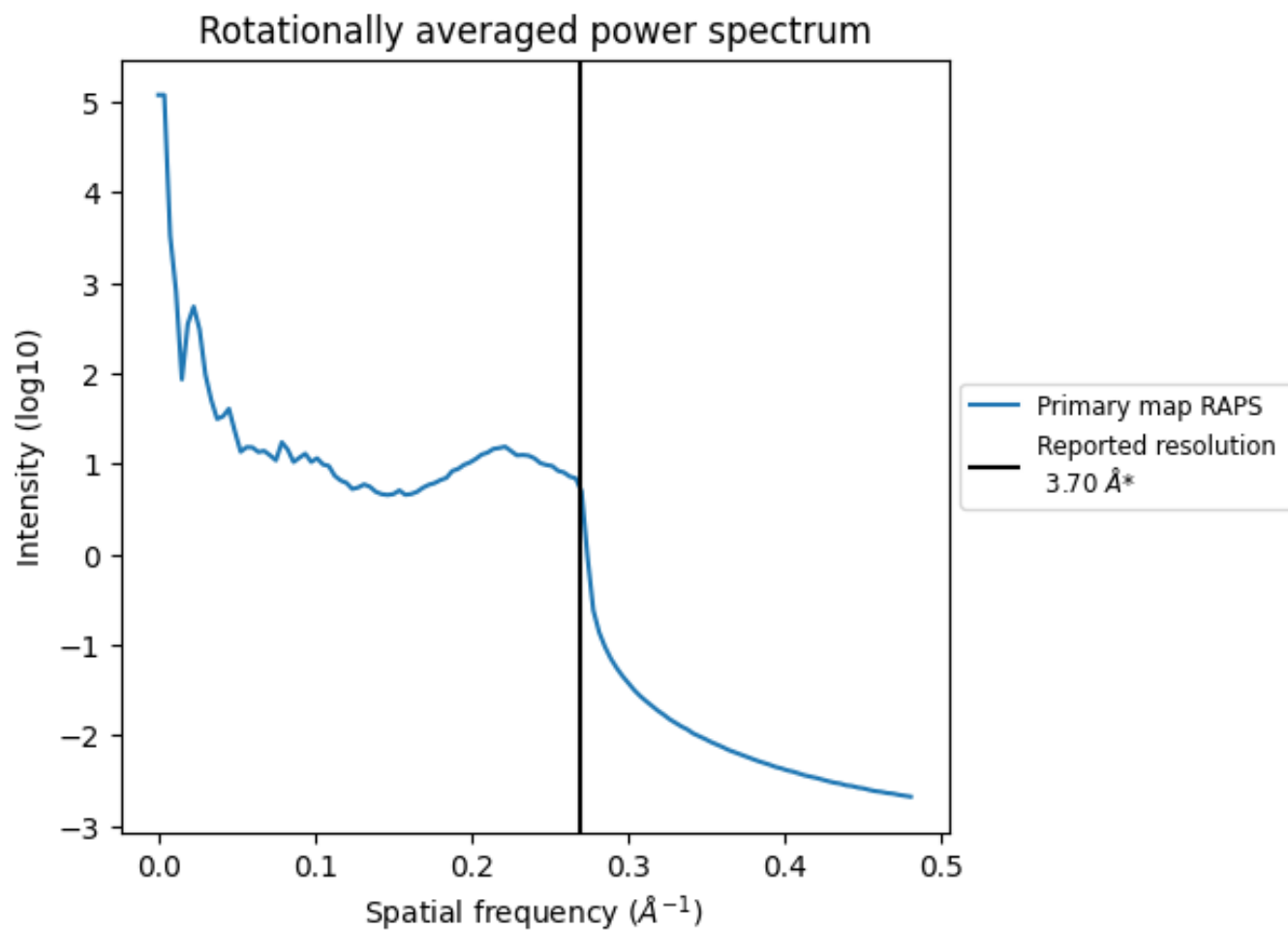
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1060 nm³; this corresponds to an approximate mass of 957 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 0.270\AA^{-1}

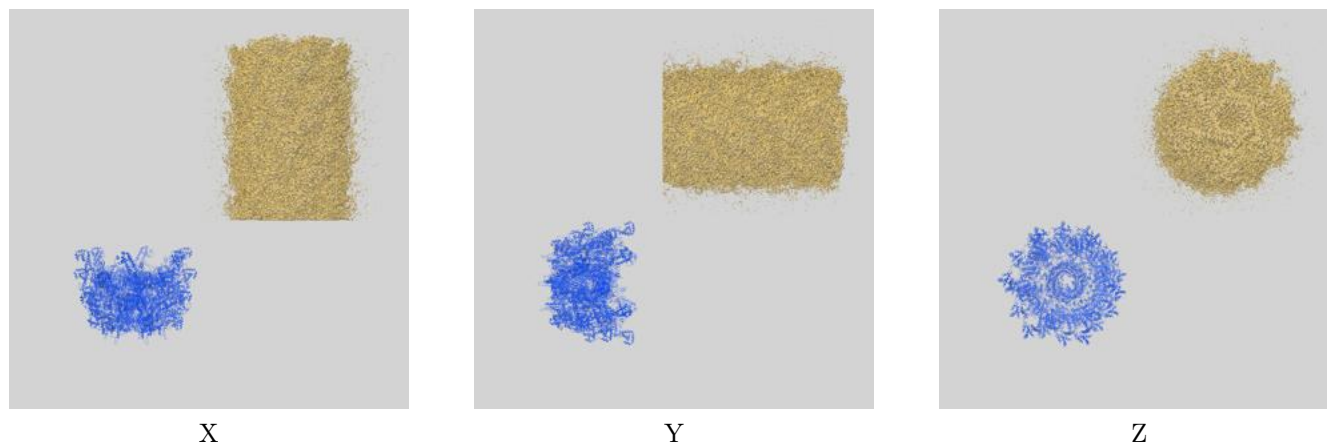
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

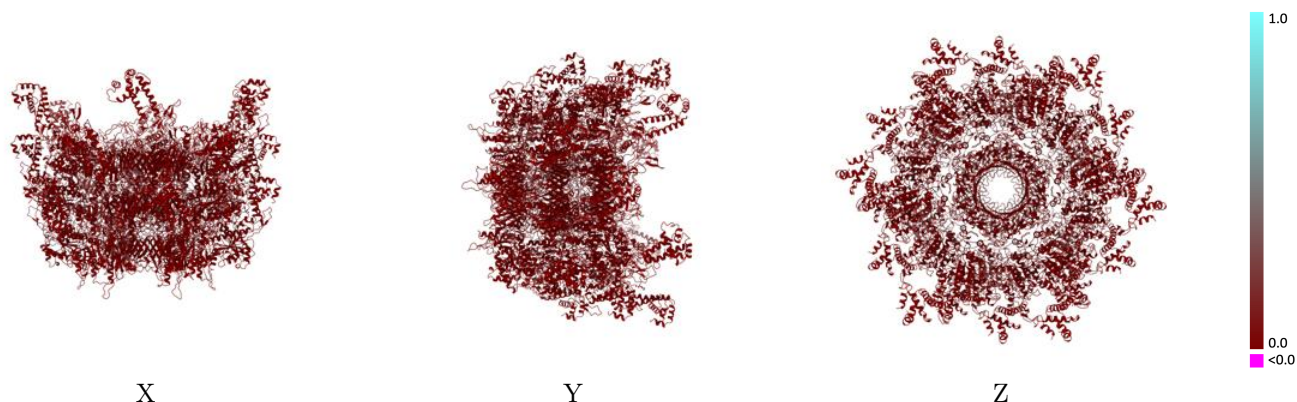
This section contains information regarding the fit between EMDB map EMD-3566 and PDB model 5OJQ. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



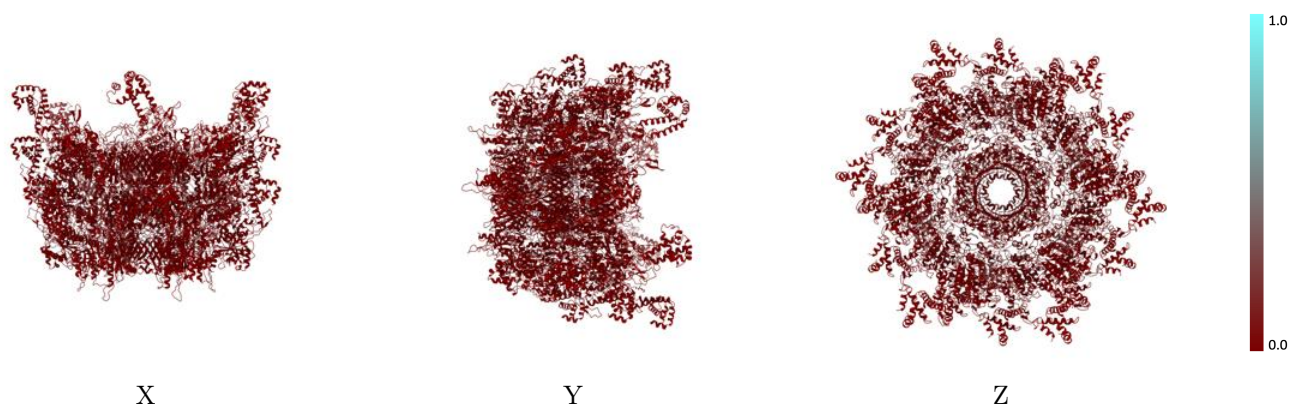
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



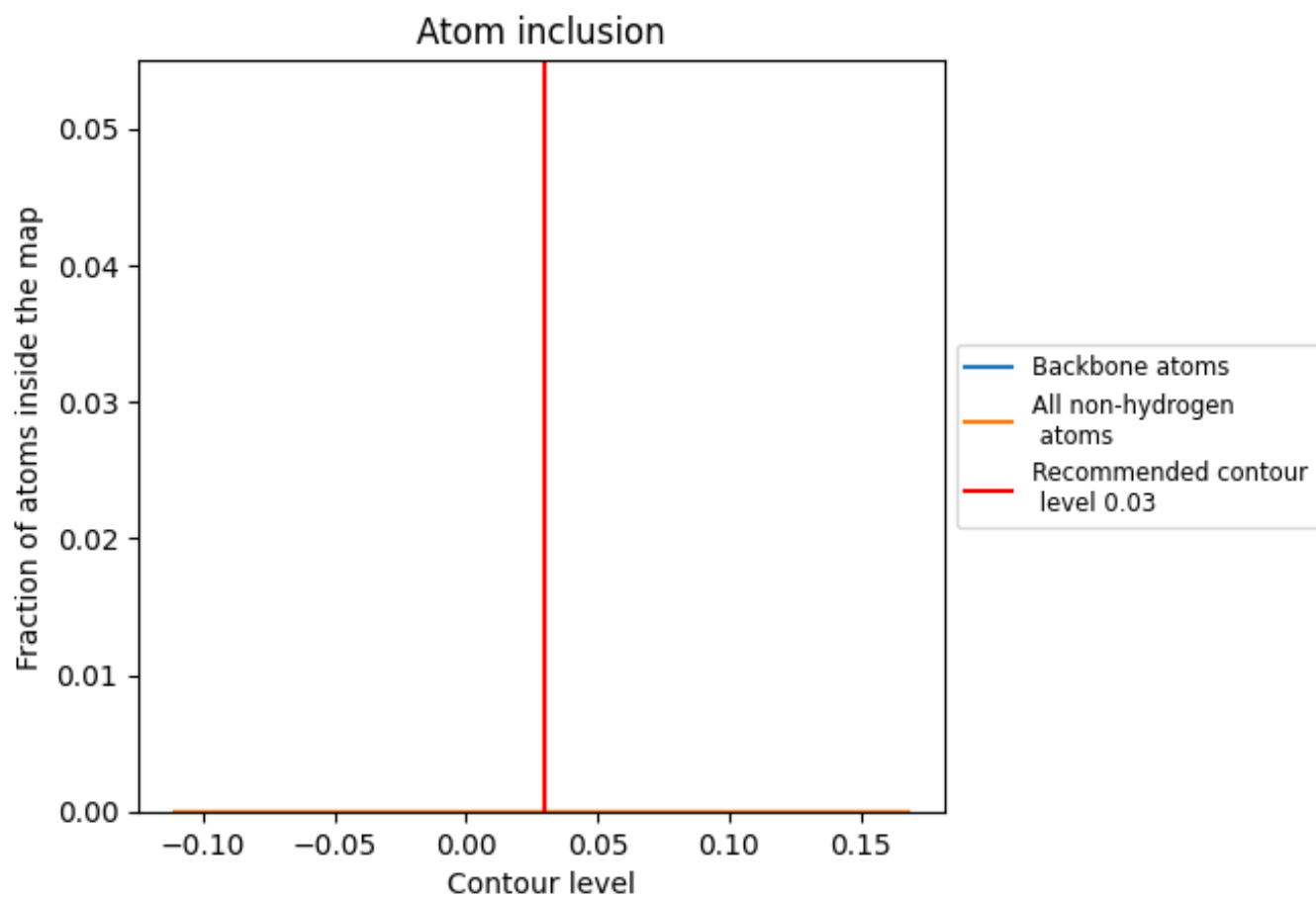
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.03).

9.4 Atom inclusion [i](#)



At the recommended contour level, 0% of all backbone atoms, 0% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.0000	0.0000
1	0.0000	0.0000
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
A	0.0000	0.0000
B	0.0000	0.0000
C	0.0000	0.0000
D	0.0000	0.0000
E	0.0000	0.0000
F	0.0000	0.0000
G	0.0000	0.0000
H	0.0000	0.0000
I	0.0000	0.0000
J	0.0000	0.0000
K	0.0000	0.0000
L	0.0000	0.0000
M	0.0000	0.0000
N	0.0000	0.0000
O	0.0000	0.0000
P	0.0000	0.0000
Q	0.0000	0.0000
R	0.0000	0.0000
S	0.0000	0.0000
T	0.0000	0.0000
U	0.0000	0.0000
V	0.0000	0.0000
W	0.0000	0.0000
X	0.0000	0.0000
Y	0.0000	0.0000
Z	0.0000	0.0000
a	0.0000	0.0000
b	0.0000	0.0000



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Chain	Atom inclusion	Q-score
c	■ 0.0000	■ 0.0000
d	■ 0.0000	■ 0.0000
e	■ 0.0000	■ 0.0000
f	■ 0.0000	■ 0.0000
g	■ 0.0000	■ 0.0000
h	■ 0.0000	■ 0.0000
i	■ 0.0000	■ 0.0000
j	■ 0.0000	■ 0.0000
k	■ 0.0000	■ 0.0000
l	■ 0.0000	■ 0.0000
m	■ 0.0000	■ 0.0000
n	■ 0.0000	■ 0.0000
o	■ 0.0000	■ 0.0000
p	■ 0.0000	■ 0.0000
q	■ 0.0000	■ 0.0000
r	■ 0.0000	■ 0.0000
s	■ 0.0000	■ 0.0000
t	■ 0.0000	■ 0.0000
u	■ 0.0000	■ 0.0000
v	■ 0.0000	■ 0.0000