wwPDB EM Validation Summary Report

Mar 18, 2026 – 04:52 pm GMT

PDB ID	:	9SWA / pdb_00009swa
EMDB ID	:	EMD-55303
Title	:	Adenovirus dodecahedron
Authors	:	Kabasakal, B.V.; Buzas, D.; Bufton, J.; Berger-Schaffitzel, C.; Berger, I.
Deposited on	:	2025-10-04
Resolution	:	2.20 Å(reported)

This is a wwPDB EM Validation Summary 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:

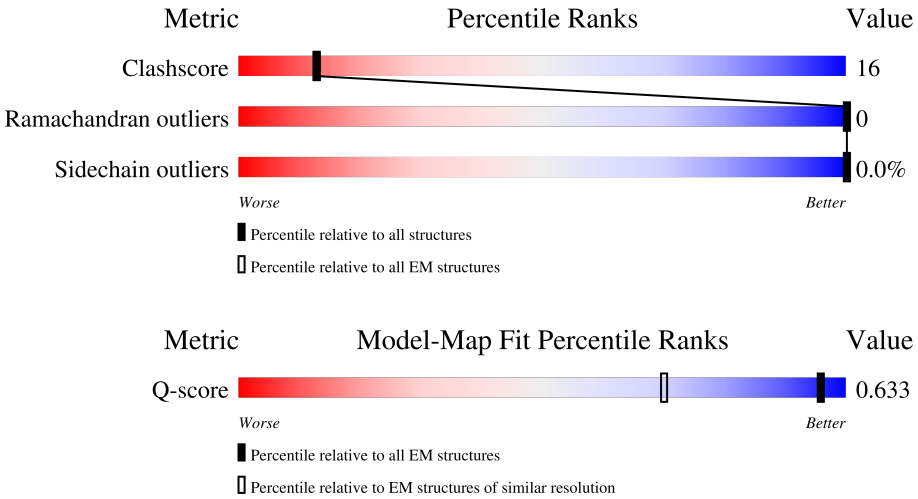
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

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 2.20 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	3184 (1.71 - 2.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	1	543	80% 64% 15% • 20%
1	2	543	80% 63% 16% • 20%
1	3	543	80% 64% 15% • 20%
1	4	543	80% 63% 16% • 20%

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Mol	Chain	Length	Quality of chain
1	5	543	80% 63% 16% 20%
1	6	543	80% 62% 16% 20%
1	7	543	80% 63% 16% 20%
1	8	543	80% 63% 16% 20%
1	9	543	80% 64% 15% 20%
1	A	543	80% 64% 15% 20%
1	B	543	80% 63% 15% 20%
1	C	543	80% 63% 16% 20%
1	D	543	80% 63% 16% 20%
1	E	543	80% 63% 16% 20%
1	F	543	80% 64% 15% 20%
1	G	543	80% 63% 16% 20%
1	H	543	80% 63% 15% 20%
1	I	543	80% 64% 15% 20%
1	J	543	80% 64% 15% 20%
1	K	543	80% 63% 16% 20%
1	L	543	80% 63% 16% 20%
1	M	543	80% 63% 16% 20%
1	N	543	80% 64% 15% 20%
1	O	543	80% 63% 16% 20%
1	P	543	80% 63% 15% 20%
1	Q	543	80% 63% 16% 20%
1	R	543	80% 63% 16% 20%
1	S	543	80% 63% 16% 20%
1	T	543	80% 63% 16% 20%

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Mol	Chain	Length	Quality of chain
1	V	543	80% 63% 16% 20%
1	W	543	80% 63% 16% 20%
1	X	543	80% 64% 15% 20%
1	Y	543	80% 63% 16% 20%
1	Z	543	80% 64% 15% 20%
1	a	543	80% 63% 15% 20%
1	b	543	80% 63% 16% 20%
1	c	543	80% 64% 15% 20%
1	d	543	80% 63% 16% 20%
1	e	543	80% 63% 16% 20%
1	f	543	80% 63% 16% 20%
1	g	543	80% 62% 16% 20%
1	h	543	80% 64% 15% 20%
1	i	543	80% 63% 16% 20%
1	j	543	80% 64% 15% 20%
1	k	543	80% 64% 15% 20%
1	l	543	80% 62% 17% 20%
1	m	543	80% 63% 16% 20%
1	n	543	80% 63% 16% 20%
1	o	543	80% 64% 15% 20%
1	p	543	80% 63% 15% 20%
1	q	543	80% 63% 16% 20%
1	r	543	80% 62% 17% 20%
1	s	543	80% 63% 16% 20%
1	t	543	80% 64% 15% 20%

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Mol	Chain	Length	Quality of chain
1	u	543	
1	v	543	
1	w	543	
1	x	543	
1	y	543	
1	z	543	

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 210432 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 Penton protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	2	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	3	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	4	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	5	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	6	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	7	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	8	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	9	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	A	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	B	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	C	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	D	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	E	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	F	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	G	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		
1	H	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	I	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	J	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	K	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	L	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	M	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	N	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	O	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	P	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	Q	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	R	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	S	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	T	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	V	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	W	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	X	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	Y	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	Z	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	a	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	b	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	c	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	d	435	Total 3507	C 2217	N 604	O 673	S 13	1	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	e	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	f	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	g	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	h	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	i	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	j	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	k	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	l	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	m	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	n	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	o	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	p	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	q	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	r	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	s	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	t	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	u	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	v	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	w	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	x	435	Total 3507	C 2217	N 604	O 673	S 13	1	0
1	y	435	Total 3507	C 2217	N 604	O 673	S 13	1	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
1	z	435	Total	C	N	O	S	1	0
			3507	2217	604	673	13		

There are 720 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	57	SER	ALA	conflict	UNP G9G849
1	153	GLU	-	insertion	UNP G9G849
1	154	PHE	-	insertion	UNP G9G849
1	161	PRO	-	insertion	UNP G9G849
1	162	GLY	-	insertion	UNP G9G849
1	310	ARG	-	insertion	UNP G9G849
1	322	ASP	-	insertion	UNP G9G849
1	323	VAL	-	insertion	UNP G9G849
1	334	GLU	-	insertion	UNP G9G849
1	335	LEU	-	insertion	UNP G9G849
1	347	SER	-	insertion	UNP G9G849
1	348	ARG	-	insertion	UNP G9G849
2	57	SER	ALA	conflict	UNP G9G849
2	153	GLU	-	insertion	UNP G9G849
2	154	PHE	-	insertion	UNP G9G849
2	161	PRO	-	insertion	UNP G9G849
2	162	GLY	-	insertion	UNP G9G849
2	310	ARG	-	insertion	UNP G9G849
2	322	ASP	-	insertion	UNP G9G849
2	323	VAL	-	insertion	UNP G9G849
2	334	GLU	-	insertion	UNP G9G849
2	335	LEU	-	insertion	UNP G9G849
2	347	SER	-	insertion	UNP G9G849
2	348	ARG	-	insertion	UNP G9G849
3	57	SER	ALA	conflict	UNP G9G849
3	153	GLU	-	insertion	UNP G9G849
3	154	PHE	-	insertion	UNP G9G849
3	161	PRO	-	insertion	UNP G9G849
3	162	GLY	-	insertion	UNP G9G849
3	310	ARG	-	insertion	UNP G9G849
3	322	ASP	-	insertion	UNP G9G849
3	323	VAL	-	insertion	UNP G9G849
3	334	GLU	-	insertion	UNP G9G849
3	335	LEU	-	insertion	UNP G9G849
3	347	SER	-	insertion	UNP G9G849
3	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
4	57	SER	ALA	conflict	UNP G9G849
4	153	GLU	-	insertion	UNP G9G849
4	154	PHE	-	insertion	UNP G9G849
4	161	PRO	-	insertion	UNP G9G849
4	162	GLY	-	insertion	UNP G9G849
4	310	ARG	-	insertion	UNP G9G849
4	322	ASP	-	insertion	UNP G9G849
4	323	VAL	-	insertion	UNP G9G849
4	334	GLU	-	insertion	UNP G9G849
4	335	LEU	-	insertion	UNP G9G849
4	347	SER	-	insertion	UNP G9G849
4	348	ARG	-	insertion	UNP G9G849
5	57	SER	ALA	conflict	UNP G9G849
5	153	GLU	-	insertion	UNP G9G849
5	154	PHE	-	insertion	UNP G9G849
5	161	PRO	-	insertion	UNP G9G849
5	162	GLY	-	insertion	UNP G9G849
5	310	ARG	-	insertion	UNP G9G849
5	322	ASP	-	insertion	UNP G9G849
5	323	VAL	-	insertion	UNP G9G849
5	334	GLU	-	insertion	UNP G9G849
5	335	LEU	-	insertion	UNP G9G849
5	347	SER	-	insertion	UNP G9G849
5	348	ARG	-	insertion	UNP G9G849
6	57	SER	ALA	conflict	UNP G9G849
6	153	GLU	-	insertion	UNP G9G849
6	154	PHE	-	insertion	UNP G9G849
6	161	PRO	-	insertion	UNP G9G849
6	162	GLY	-	insertion	UNP G9G849
6	310	ARG	-	insertion	UNP G9G849
6	322	ASP	-	insertion	UNP G9G849
6	323	VAL	-	insertion	UNP G9G849
6	334	GLU	-	insertion	UNP G9G849
6	335	LEU	-	insertion	UNP G9G849
6	347	SER	-	insertion	UNP G9G849
6	348	ARG	-	insertion	UNP G9G849
7	57	SER	ALA	conflict	UNP G9G849
7	153	GLU	-	insertion	UNP G9G849
7	154	PHE	-	insertion	UNP G9G849
7	161	PRO	-	insertion	UNP G9G849
7	162	GLY	-	insertion	UNP G9G849
7	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
7	322	ASP	-	insertion	UNP G9G849
7	323	VAL	-	insertion	UNP G9G849
7	334	GLU	-	insertion	UNP G9G849
7	335	LEU	-	insertion	UNP G9G849
7	347	SER	-	insertion	UNP G9G849
7	348	ARG	-	insertion	UNP G9G849
8	57	SER	ALA	conflict	UNP G9G849
8	153	GLU	-	insertion	UNP G9G849
8	154	PHE	-	insertion	UNP G9G849
8	161	PRO	-	insertion	UNP G9G849
8	162	GLY	-	insertion	UNP G9G849
8	310	ARG	-	insertion	UNP G9G849
8	322	ASP	-	insertion	UNP G9G849
8	323	VAL	-	insertion	UNP G9G849
8	334	GLU	-	insertion	UNP G9G849
8	335	LEU	-	insertion	UNP G9G849
8	347	SER	-	insertion	UNP G9G849
8	348	ARG	-	insertion	UNP G9G849
9	57	SER	ALA	conflict	UNP G9G849
9	153	GLU	-	insertion	UNP G9G849
9	154	PHE	-	insertion	UNP G9G849
9	161	PRO	-	insertion	UNP G9G849
9	162	GLY	-	insertion	UNP G9G849
9	310	ARG	-	insertion	UNP G9G849
9	322	ASP	-	insertion	UNP G9G849
9	323	VAL	-	insertion	UNP G9G849
9	334	GLU	-	insertion	UNP G9G849
9	335	LEU	-	insertion	UNP G9G849
9	347	SER	-	insertion	UNP G9G849
9	348	ARG	-	insertion	UNP G9G849
A	57	SER	ALA	conflict	UNP G9G849
A	153	GLU	-	insertion	UNP G9G849
A	154	PHE	-	insertion	UNP G9G849
A	161	PRO	-	insertion	UNP G9G849
A	162	GLY	-	insertion	UNP G9G849
A	310	ARG	-	insertion	UNP G9G849
A	322	ASP	-	insertion	UNP G9G849
A	323	VAL	-	insertion	UNP G9G849
A	334	GLU	-	insertion	UNP G9G849
A	335	LEU	-	insertion	UNP G9G849
A	347	SER	-	insertion	UNP G9G849
A	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
B	57	SER	ALA	conflict	UNP G9G849
B	153	GLU	-	insertion	UNP G9G849
B	154	PHE	-	insertion	UNP G9G849
B	161	PRO	-	insertion	UNP G9G849
B	162	GLY	-	insertion	UNP G9G849
B	310	ARG	-	insertion	UNP G9G849
B	322	ASP	-	insertion	UNP G9G849
B	323	VAL	-	insertion	UNP G9G849
B	334	GLU	-	insertion	UNP G9G849
B	335	LEU	-	insertion	UNP G9G849
B	347	SER	-	insertion	UNP G9G849
B	348	ARG	-	insertion	UNP G9G849
C	57	SER	ALA	conflict	UNP G9G849
C	153	GLU	-	insertion	UNP G9G849
C	154	PHE	-	insertion	UNP G9G849
C	161	PRO	-	insertion	UNP G9G849
C	162	GLY	-	insertion	UNP G9G849
C	310	ARG	-	insertion	UNP G9G849
C	322	ASP	-	insertion	UNP G9G849
C	323	VAL	-	insertion	UNP G9G849
C	334	GLU	-	insertion	UNP G9G849
C	335	LEU	-	insertion	UNP G9G849
C	347	SER	-	insertion	UNP G9G849
C	348	ARG	-	insertion	UNP G9G849
D	57	SER	ALA	conflict	UNP G9G849
D	153	GLU	-	insertion	UNP G9G849
D	154	PHE	-	insertion	UNP G9G849
D	161	PRO	-	insertion	UNP G9G849
D	162	GLY	-	insertion	UNP G9G849
D	310	ARG	-	insertion	UNP G9G849
D	322	ASP	-	insertion	UNP G9G849
D	323	VAL	-	insertion	UNP G9G849
D	334	GLU	-	insertion	UNP G9G849
D	335	LEU	-	insertion	UNP G9G849
D	347	SER	-	insertion	UNP G9G849
D	348	ARG	-	insertion	UNP G9G849
E	57	SER	ALA	conflict	UNP G9G849
E	153	GLU	-	insertion	UNP G9G849
E	154	PHE	-	insertion	UNP G9G849
E	161	PRO	-	insertion	UNP G9G849
E	162	GLY	-	insertion	UNP G9G849
E	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
E	322	ASP	-	insertion	UNP G9G849
E	323	VAL	-	insertion	UNP G9G849
E	334	GLU	-	insertion	UNP G9G849
E	335	LEU	-	insertion	UNP G9G849
E	347	SER	-	insertion	UNP G9G849
E	348	ARG	-	insertion	UNP G9G849
F	57	SER	ALA	conflict	UNP G9G849
F	153	GLU	-	insertion	UNP G9G849
F	154	PHE	-	insertion	UNP G9G849
F	161	PRO	-	insertion	UNP G9G849
F	162	GLY	-	insertion	UNP G9G849
F	310	ARG	-	insertion	UNP G9G849
F	322	ASP	-	insertion	UNP G9G849
F	323	VAL	-	insertion	UNP G9G849
F	334	GLU	-	insertion	UNP G9G849
F	335	LEU	-	insertion	UNP G9G849
F	347	SER	-	insertion	UNP G9G849
F	348	ARG	-	insertion	UNP G9G849
G	57	SER	ALA	conflict	UNP G9G849
G	153	GLU	-	insertion	UNP G9G849
G	154	PHE	-	insertion	UNP G9G849
G	161	PRO	-	insertion	UNP G9G849
G	162	GLY	-	insertion	UNP G9G849
G	310	ARG	-	insertion	UNP G9G849
G	322	ASP	-	insertion	UNP G9G849
G	323	VAL	-	insertion	UNP G9G849
G	334	GLU	-	insertion	UNP G9G849
G	335	LEU	-	insertion	UNP G9G849
G	347	SER	-	insertion	UNP G9G849
G	348	ARG	-	insertion	UNP G9G849
H	57	SER	ALA	conflict	UNP G9G849
H	153	GLU	-	insertion	UNP G9G849
H	154	PHE	-	insertion	UNP G9G849
H	161	PRO	-	insertion	UNP G9G849
H	162	GLY	-	insertion	UNP G9G849
H	310	ARG	-	insertion	UNP G9G849
H	322	ASP	-	insertion	UNP G9G849
H	323	VAL	-	insertion	UNP G9G849
H	334	GLU	-	insertion	UNP G9G849
H	335	LEU	-	insertion	UNP G9G849
H	347	SER	-	insertion	UNP G9G849
H	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
I	57	SER	ALA	conflict	UNP G9G849
I	153	GLU	-	insertion	UNP G9G849
I	154	PHE	-	insertion	UNP G9G849
I	161	PRO	-	insertion	UNP G9G849
I	162	GLY	-	insertion	UNP G9G849
I	310	ARG	-	insertion	UNP G9G849
I	322	ASP	-	insertion	UNP G9G849
I	323	VAL	-	insertion	UNP G9G849
I	334	GLU	-	insertion	UNP G9G849
I	335	LEU	-	insertion	UNP G9G849
I	347	SER	-	insertion	UNP G9G849
I	348	ARG	-	insertion	UNP G9G849
J	57	SER	ALA	conflict	UNP G9G849
J	153	GLU	-	insertion	UNP G9G849
J	154	PHE	-	insertion	UNP G9G849
J	161	PRO	-	insertion	UNP G9G849
J	162	GLY	-	insertion	UNP G9G849
J	310	ARG	-	insertion	UNP G9G849
J	322	ASP	-	insertion	UNP G9G849
J	323	VAL	-	insertion	UNP G9G849
J	334	GLU	-	insertion	UNP G9G849
J	335	LEU	-	insertion	UNP G9G849
J	347	SER	-	insertion	UNP G9G849
J	348	ARG	-	insertion	UNP G9G849
K	57	SER	ALA	conflict	UNP G9G849
K	153	GLU	-	insertion	UNP G9G849
K	154	PHE	-	insertion	UNP G9G849
K	161	PRO	-	insertion	UNP G9G849
K	162	GLY	-	insertion	UNP G9G849
K	310	ARG	-	insertion	UNP G9G849
K	322	ASP	-	insertion	UNP G9G849
K	323	VAL	-	insertion	UNP G9G849
K	334	GLU	-	insertion	UNP G9G849
K	335	LEU	-	insertion	UNP G9G849
K	347	SER	-	insertion	UNP G9G849
K	348	ARG	-	insertion	UNP G9G849
L	57	SER	ALA	conflict	UNP G9G849
L	153	GLU	-	insertion	UNP G9G849
L	154	PHE	-	insertion	UNP G9G849
L	161	PRO	-	insertion	UNP G9G849
L	162	GLY	-	insertion	UNP G9G849
L	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
L	322	ASP	-	insertion	UNP G9G849
L	323	VAL	-	insertion	UNP G9G849
L	334	GLU	-	insertion	UNP G9G849
L	335	LEU	-	insertion	UNP G9G849
L	347	SER	-	insertion	UNP G9G849
L	348	ARG	-	insertion	UNP G9G849
M	57	SER	ALA	conflict	UNP G9G849
M	153	GLU	-	insertion	UNP G9G849
M	154	PHE	-	insertion	UNP G9G849
M	161	PRO	-	insertion	UNP G9G849
M	162	GLY	-	insertion	UNP G9G849
M	310	ARG	-	insertion	UNP G9G849
M	322	ASP	-	insertion	UNP G9G849
M	323	VAL	-	insertion	UNP G9G849
M	334	GLU	-	insertion	UNP G9G849
M	335	LEU	-	insertion	UNP G9G849
M	347	SER	-	insertion	UNP G9G849
M	348	ARG	-	insertion	UNP G9G849
N	57	SER	ALA	conflict	UNP G9G849
N	153	GLU	-	insertion	UNP G9G849
N	154	PHE	-	insertion	UNP G9G849
N	161	PRO	-	insertion	UNP G9G849
N	162	GLY	-	insertion	UNP G9G849
N	310	ARG	-	insertion	UNP G9G849
N	322	ASP	-	insertion	UNP G9G849
N	323	VAL	-	insertion	UNP G9G849
N	334	GLU	-	insertion	UNP G9G849
N	335	LEU	-	insertion	UNP G9G849
N	347	SER	-	insertion	UNP G9G849
N	348	ARG	-	insertion	UNP G9G849
O	57	SER	ALA	conflict	UNP G9G849
O	153	GLU	-	insertion	UNP G9G849
O	154	PHE	-	insertion	UNP G9G849
O	161	PRO	-	insertion	UNP G9G849
O	162	GLY	-	insertion	UNP G9G849
O	310	ARG	-	insertion	UNP G9G849
O	322	ASP	-	insertion	UNP G9G849
O	323	VAL	-	insertion	UNP G9G849
O	334	GLU	-	insertion	UNP G9G849
O	335	LEU	-	insertion	UNP G9G849
O	347	SER	-	insertion	UNP G9G849
O	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
P	57	SER	ALA	conflict	UNP G9G849
P	153	GLU	-	insertion	UNP G9G849
P	154	PHE	-	insertion	UNP G9G849
P	161	PRO	-	insertion	UNP G9G849
P	162	GLY	-	insertion	UNP G9G849
P	310	ARG	-	insertion	UNP G9G849
P	322	ASP	-	insertion	UNP G9G849
P	323	VAL	-	insertion	UNP G9G849
P	334	GLU	-	insertion	UNP G9G849
P	335	LEU	-	insertion	UNP G9G849
P	347	SER	-	insertion	UNP G9G849
P	348	ARG	-	insertion	UNP G9G849
Q	57	SER	ALA	conflict	UNP G9G849
Q	153	GLU	-	insertion	UNP G9G849
Q	154	PHE	-	insertion	UNP G9G849
Q	161	PRO	-	insertion	UNP G9G849
Q	162	GLY	-	insertion	UNP G9G849
Q	310	ARG	-	insertion	UNP G9G849
Q	322	ASP	-	insertion	UNP G9G849
Q	323	VAL	-	insertion	UNP G9G849
Q	334	GLU	-	insertion	UNP G9G849
Q	335	LEU	-	insertion	UNP G9G849
Q	347	SER	-	insertion	UNP G9G849
Q	348	ARG	-	insertion	UNP G9G849
R	57	SER	ALA	conflict	UNP G9G849
R	153	GLU	-	insertion	UNP G9G849
R	154	PHE	-	insertion	UNP G9G849
R	161	PRO	-	insertion	UNP G9G849
R	162	GLY	-	insertion	UNP G9G849
R	310	ARG	-	insertion	UNP G9G849
R	322	ASP	-	insertion	UNP G9G849
R	323	VAL	-	insertion	UNP G9G849
R	334	GLU	-	insertion	UNP G9G849
R	335	LEU	-	insertion	UNP G9G849
R	347	SER	-	insertion	UNP G9G849
R	348	ARG	-	insertion	UNP G9G849
S	57	SER	ALA	conflict	UNP G9G849
S	153	GLU	-	insertion	UNP G9G849
S	154	PHE	-	insertion	UNP G9G849
S	161	PRO	-	insertion	UNP G9G849
S	162	GLY	-	insertion	UNP G9G849
S	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
S	322	ASP	-	insertion	UNP G9G849
S	323	VAL	-	insertion	UNP G9G849
S	334	GLU	-	insertion	UNP G9G849
S	335	LEU	-	insertion	UNP G9G849
S	347	SER	-	insertion	UNP G9G849
S	348	ARG	-	insertion	UNP G9G849
T	57	SER	ALA	conflict	UNP G9G849
T	153	GLU	-	insertion	UNP G9G849
T	154	PHE	-	insertion	UNP G9G849
T	161	PRO	-	insertion	UNP G9G849
T	162	GLY	-	insertion	UNP G9G849
T	310	ARG	-	insertion	UNP G9G849
T	322	ASP	-	insertion	UNP G9G849
T	323	VAL	-	insertion	UNP G9G849
T	334	GLU	-	insertion	UNP G9G849
T	335	LEU	-	insertion	UNP G9G849
T	347	SER	-	insertion	UNP G9G849
T	348	ARG	-	insertion	UNP G9G849
V	57	SER	ALA	conflict	UNP G9G849
V	153	GLU	-	insertion	UNP G9G849
V	154	PHE	-	insertion	UNP G9G849
V	161	PRO	-	insertion	UNP G9G849
V	162	GLY	-	insertion	UNP G9G849
V	310	ARG	-	insertion	UNP G9G849
V	322	ASP	-	insertion	UNP G9G849
V	323	VAL	-	insertion	UNP G9G849
V	334	GLU	-	insertion	UNP G9G849
V	335	LEU	-	insertion	UNP G9G849
V	347	SER	-	insertion	UNP G9G849
V	348	ARG	-	insertion	UNP G9G849
W	57	SER	ALA	conflict	UNP G9G849
W	153	GLU	-	insertion	UNP G9G849
W	154	PHE	-	insertion	UNP G9G849
W	161	PRO	-	insertion	UNP G9G849
W	162	GLY	-	insertion	UNP G9G849
W	310	ARG	-	insertion	UNP G9G849
W	322	ASP	-	insertion	UNP G9G849
W	323	VAL	-	insertion	UNP G9G849
W	334	GLU	-	insertion	UNP G9G849
W	335	LEU	-	insertion	UNP G9G849
W	347	SER	-	insertion	UNP G9G849
W	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
X	57	SER	ALA	conflict	UNP G9G849
X	153	GLU	-	insertion	UNP G9G849
X	154	PHE	-	insertion	UNP G9G849
X	161	PRO	-	insertion	UNP G9G849
X	162	GLY	-	insertion	UNP G9G849
X	310	ARG	-	insertion	UNP G9G849
X	322	ASP	-	insertion	UNP G9G849
X	323	VAL	-	insertion	UNP G9G849
X	334	GLU	-	insertion	UNP G9G849
X	335	LEU	-	insertion	UNP G9G849
X	347	SER	-	insertion	UNP G9G849
X	348	ARG	-	insertion	UNP G9G849
Y	57	SER	ALA	conflict	UNP G9G849
Y	153	GLU	-	insertion	UNP G9G849
Y	154	PHE	-	insertion	UNP G9G849
Y	161	PRO	-	insertion	UNP G9G849
Y	162	GLY	-	insertion	UNP G9G849
Y	310	ARG	-	insertion	UNP G9G849
Y	322	ASP	-	insertion	UNP G9G849
Y	323	VAL	-	insertion	UNP G9G849
Y	334	GLU	-	insertion	UNP G9G849
Y	335	LEU	-	insertion	UNP G9G849
Y	347	SER	-	insertion	UNP G9G849
Y	348	ARG	-	insertion	UNP G9G849
Z	57	SER	ALA	conflict	UNP G9G849
Z	153	GLU	-	insertion	UNP G9G849
Z	154	PHE	-	insertion	UNP G9G849
Z	161	PRO	-	insertion	UNP G9G849
Z	162	GLY	-	insertion	UNP G9G849
Z	310	ARG	-	insertion	UNP G9G849
Z	322	ASP	-	insertion	UNP G9G849
Z	323	VAL	-	insertion	UNP G9G849
Z	334	GLU	-	insertion	UNP G9G849
Z	335	LEU	-	insertion	UNP G9G849
Z	347	SER	-	insertion	UNP G9G849
Z	348	ARG	-	insertion	UNP G9G849
a	57	SER	ALA	conflict	UNP G9G849
a	153	GLU	-	insertion	UNP G9G849
a	154	PHE	-	insertion	UNP G9G849
a	161	PRO	-	insertion	UNP G9G849
a	162	GLY	-	insertion	UNP G9G849
a	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
a	322	ASP	-	insertion	UNP G9G849
a	323	VAL	-	insertion	UNP G9G849
a	334	GLU	-	insertion	UNP G9G849
a	335	LEU	-	insertion	UNP G9G849
a	347	SER	-	insertion	UNP G9G849
a	348	ARG	-	insertion	UNP G9G849
b	57	SER	ALA	conflict	UNP G9G849
b	153	GLU	-	insertion	UNP G9G849
b	154	PHE	-	insertion	UNP G9G849
b	161	PRO	-	insertion	UNP G9G849
b	162	GLY	-	insertion	UNP G9G849
b	310	ARG	-	insertion	UNP G9G849
b	322	ASP	-	insertion	UNP G9G849
b	323	VAL	-	insertion	UNP G9G849
b	334	GLU	-	insertion	UNP G9G849
b	335	LEU	-	insertion	UNP G9G849
b	347	SER	-	insertion	UNP G9G849
b	348	ARG	-	insertion	UNP G9G849
c	57	SER	ALA	conflict	UNP G9G849
c	153	GLU	-	insertion	UNP G9G849
c	154	PHE	-	insertion	UNP G9G849
c	161	PRO	-	insertion	UNP G9G849
c	162	GLY	-	insertion	UNP G9G849
c	310	ARG	-	insertion	UNP G9G849
c	322	ASP	-	insertion	UNP G9G849
c	323	VAL	-	insertion	UNP G9G849
c	334	GLU	-	insertion	UNP G9G849
c	335	LEU	-	insertion	UNP G9G849
c	347	SER	-	insertion	UNP G9G849
c	348	ARG	-	insertion	UNP G9G849
d	57	SER	ALA	conflict	UNP G9G849
d	153	GLU	-	insertion	UNP G9G849
d	154	PHE	-	insertion	UNP G9G849
d	161	PRO	-	insertion	UNP G9G849
d	162	GLY	-	insertion	UNP G9G849
d	310	ARG	-	insertion	UNP G9G849
d	322	ASP	-	insertion	UNP G9G849
d	323	VAL	-	insertion	UNP G9G849
d	334	GLU	-	insertion	UNP G9G849
d	335	LEU	-	insertion	UNP G9G849
d	347	SER	-	insertion	UNP G9G849
d	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
e	57	SER	ALA	conflict	UNP G9G849
e	153	GLU	-	insertion	UNP G9G849
e	154	PHE	-	insertion	UNP G9G849
e	161	PRO	-	insertion	UNP G9G849
e	162	GLY	-	insertion	UNP G9G849
e	310	ARG	-	insertion	UNP G9G849
e	322	ASP	-	insertion	UNP G9G849
e	323	VAL	-	insertion	UNP G9G849
e	334	GLU	-	insertion	UNP G9G849
e	335	LEU	-	insertion	UNP G9G849
e	347	SER	-	insertion	UNP G9G849
e	348	ARG	-	insertion	UNP G9G849
f	57	SER	ALA	conflict	UNP G9G849
f	153	GLU	-	insertion	UNP G9G849
f	154	PHE	-	insertion	UNP G9G849
f	161	PRO	-	insertion	UNP G9G849
f	162	GLY	-	insertion	UNP G9G849
f	310	ARG	-	insertion	UNP G9G849
f	322	ASP	-	insertion	UNP G9G849
f	323	VAL	-	insertion	UNP G9G849
f	334	GLU	-	insertion	UNP G9G849
f	335	LEU	-	insertion	UNP G9G849
f	347	SER	-	insertion	UNP G9G849
f	348	ARG	-	insertion	UNP G9G849
g	57	SER	ALA	conflict	UNP G9G849
g	153	GLU	-	insertion	UNP G9G849
g	154	PHE	-	insertion	UNP G9G849
g	161	PRO	-	insertion	UNP G9G849
g	162	GLY	-	insertion	UNP G9G849
g	310	ARG	-	insertion	UNP G9G849
g	322	ASP	-	insertion	UNP G9G849
g	323	VAL	-	insertion	UNP G9G849
g	334	GLU	-	insertion	UNP G9G849
g	335	LEU	-	insertion	UNP G9G849
g	347	SER	-	insertion	UNP G9G849
g	348	ARG	-	insertion	UNP G9G849
h	57	SER	ALA	conflict	UNP G9G849
h	153	GLU	-	insertion	UNP G9G849
h	154	PHE	-	insertion	UNP G9G849
h	161	PRO	-	insertion	UNP G9G849
h	162	GLY	-	insertion	UNP G9G849
h	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
h	322	ASP	-	insertion	UNP G9G849
h	323	VAL	-	insertion	UNP G9G849
h	334	GLU	-	insertion	UNP G9G849
h	335	LEU	-	insertion	UNP G9G849
h	347	SER	-	insertion	UNP G9G849
h	348	ARG	-	insertion	UNP G9G849
i	57	SER	ALA	conflict	UNP G9G849
i	153	GLU	-	insertion	UNP G9G849
i	154	PHE	-	insertion	UNP G9G849
i	161	PRO	-	insertion	UNP G9G849
i	162	GLY	-	insertion	UNP G9G849
i	310	ARG	-	insertion	UNP G9G849
i	322	ASP	-	insertion	UNP G9G849
i	323	VAL	-	insertion	UNP G9G849
i	334	GLU	-	insertion	UNP G9G849
i	335	LEU	-	insertion	UNP G9G849
i	347	SER	-	insertion	UNP G9G849
i	348	ARG	-	insertion	UNP G9G849
j	57	SER	ALA	conflict	UNP G9G849
j	153	GLU	-	insertion	UNP G9G849
j	154	PHE	-	insertion	UNP G9G849
j	161	PRO	-	insertion	UNP G9G849
j	162	GLY	-	insertion	UNP G9G849
j	310	ARG	-	insertion	UNP G9G849
j	322	ASP	-	insertion	UNP G9G849
j	323	VAL	-	insertion	UNP G9G849
j	334	GLU	-	insertion	UNP G9G849
j	335	LEU	-	insertion	UNP G9G849
j	347	SER	-	insertion	UNP G9G849
j	348	ARG	-	insertion	UNP G9G849
k	57	SER	ALA	conflict	UNP G9G849
k	153	GLU	-	insertion	UNP G9G849
k	154	PHE	-	insertion	UNP G9G849
k	161	PRO	-	insertion	UNP G9G849
k	162	GLY	-	insertion	UNP G9G849
k	310	ARG	-	insertion	UNP G9G849
k	322	ASP	-	insertion	UNP G9G849
k	323	VAL	-	insertion	UNP G9G849
k	334	GLU	-	insertion	UNP G9G849
k	335	LEU	-	insertion	UNP G9G849
k	347	SER	-	insertion	UNP G9G849
k	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
l	57	SER	ALA	conflict	UNP G9G849
l	153	GLU	-	insertion	UNP G9G849
l	154	PHE	-	insertion	UNP G9G849
l	161	PRO	-	insertion	UNP G9G849
l	162	GLY	-	insertion	UNP G9G849
l	310	ARG	-	insertion	UNP G9G849
l	322	ASP	-	insertion	UNP G9G849
l	323	VAL	-	insertion	UNP G9G849
l	334	GLU	-	insertion	UNP G9G849
l	335	LEU	-	insertion	UNP G9G849
l	347	SER	-	insertion	UNP G9G849
l	348	ARG	-	insertion	UNP G9G849
m	57	SER	ALA	conflict	UNP G9G849
m	153	GLU	-	insertion	UNP G9G849
m	154	PHE	-	insertion	UNP G9G849
m	161	PRO	-	insertion	UNP G9G849
m	162	GLY	-	insertion	UNP G9G849
m	310	ARG	-	insertion	UNP G9G849
m	322	ASP	-	insertion	UNP G9G849
m	323	VAL	-	insertion	UNP G9G849
m	334	GLU	-	insertion	UNP G9G849
m	335	LEU	-	insertion	UNP G9G849
m	347	SER	-	insertion	UNP G9G849
m	348	ARG	-	insertion	UNP G9G849
n	57	SER	ALA	conflict	UNP G9G849
n	153	GLU	-	insertion	UNP G9G849
n	154	PHE	-	insertion	UNP G9G849
n	161	PRO	-	insertion	UNP G9G849
n	162	GLY	-	insertion	UNP G9G849
n	310	ARG	-	insertion	UNP G9G849
n	322	ASP	-	insertion	UNP G9G849
n	323	VAL	-	insertion	UNP G9G849
n	334	GLU	-	insertion	UNP G9G849
n	335	LEU	-	insertion	UNP G9G849
n	347	SER	-	insertion	UNP G9G849
n	348	ARG	-	insertion	UNP G9G849
o	57	SER	ALA	conflict	UNP G9G849
o	153	GLU	-	insertion	UNP G9G849
o	154	PHE	-	insertion	UNP G9G849
o	161	PRO	-	insertion	UNP G9G849
o	162	GLY	-	insertion	UNP G9G849
o	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
o	322	ASP	-	insertion	UNP G9G849
o	323	VAL	-	insertion	UNP G9G849
o	334	GLU	-	insertion	UNP G9G849
o	335	LEU	-	insertion	UNP G9G849
o	347	SER	-	insertion	UNP G9G849
o	348	ARG	-	insertion	UNP G9G849
p	57	SER	ALA	conflict	UNP G9G849
p	153	GLU	-	insertion	UNP G9G849
p	154	PHE	-	insertion	UNP G9G849
p	161	PRO	-	insertion	UNP G9G849
p	162	GLY	-	insertion	UNP G9G849
p	310	ARG	-	insertion	UNP G9G849
p	322	ASP	-	insertion	UNP G9G849
p	323	VAL	-	insertion	UNP G9G849
p	334	GLU	-	insertion	UNP G9G849
p	335	LEU	-	insertion	UNP G9G849
p	347	SER	-	insertion	UNP G9G849
p	348	ARG	-	insertion	UNP G9G849
q	57	SER	ALA	conflict	UNP G9G849
q	153	GLU	-	insertion	UNP G9G849
q	154	PHE	-	insertion	UNP G9G849
q	161	PRO	-	insertion	UNP G9G849
q	162	GLY	-	insertion	UNP G9G849
q	310	ARG	-	insertion	UNP G9G849
q	322	ASP	-	insertion	UNP G9G849
q	323	VAL	-	insertion	UNP G9G849
q	334	GLU	-	insertion	UNP G9G849
q	335	LEU	-	insertion	UNP G9G849
q	347	SER	-	insertion	UNP G9G849
q	348	ARG	-	insertion	UNP G9G849
r	57	SER	ALA	conflict	UNP G9G849
r	153	GLU	-	insertion	UNP G9G849
r	154	PHE	-	insertion	UNP G9G849
r	161	PRO	-	insertion	UNP G9G849
r	162	GLY	-	insertion	UNP G9G849
r	310	ARG	-	insertion	UNP G9G849
r	322	ASP	-	insertion	UNP G9G849
r	323	VAL	-	insertion	UNP G9G849
r	334	GLU	-	insertion	UNP G9G849
r	335	LEU	-	insertion	UNP G9G849
r	347	SER	-	insertion	UNP G9G849
r	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
s	57	SER	ALA	conflict	UNP G9G849
s	153	GLU	-	insertion	UNP G9G849
s	154	PHE	-	insertion	UNP G9G849
s	161	PRO	-	insertion	UNP G9G849
s	162	GLY	-	insertion	UNP G9G849
s	310	ARG	-	insertion	UNP G9G849
s	322	ASP	-	insertion	UNP G9G849
s	323	VAL	-	insertion	UNP G9G849
s	334	GLU	-	insertion	UNP G9G849
s	335	LEU	-	insertion	UNP G9G849
s	347	SER	-	insertion	UNP G9G849
s	348	ARG	-	insertion	UNP G9G849
t	57	SER	ALA	conflict	UNP G9G849
t	153	GLU	-	insertion	UNP G9G849
t	154	PHE	-	insertion	UNP G9G849
t	161	PRO	-	insertion	UNP G9G849
t	162	GLY	-	insertion	UNP G9G849
t	310	ARG	-	insertion	UNP G9G849
t	322	ASP	-	insertion	UNP G9G849
t	323	VAL	-	insertion	UNP G9G849
t	334	GLU	-	insertion	UNP G9G849
t	335	LEU	-	insertion	UNP G9G849
t	347	SER	-	insertion	UNP G9G849
t	348	ARG	-	insertion	UNP G9G849
u	57	SER	ALA	conflict	UNP G9G849
u	153	GLU	-	insertion	UNP G9G849
u	154	PHE	-	insertion	UNP G9G849
u	161	PRO	-	insertion	UNP G9G849
u	162	GLY	-	insertion	UNP G9G849
u	310	ARG	-	insertion	UNP G9G849
u	322	ASP	-	insertion	UNP G9G849
u	323	VAL	-	insertion	UNP G9G849
u	334	GLU	-	insertion	UNP G9G849
u	335	LEU	-	insertion	UNP G9G849
u	347	SER	-	insertion	UNP G9G849
u	348	ARG	-	insertion	UNP G9G849
v	57	SER	ALA	conflict	UNP G9G849
v	153	GLU	-	insertion	UNP G9G849
v	154	PHE	-	insertion	UNP G9G849
v	161	PRO	-	insertion	UNP G9G849
v	162	GLY	-	insertion	UNP G9G849
v	310	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
v	322	ASP	-	insertion	UNP G9G849
v	323	VAL	-	insertion	UNP G9G849
v	334	GLU	-	insertion	UNP G9G849
v	335	LEU	-	insertion	UNP G9G849
v	347	SER	-	insertion	UNP G9G849
v	348	ARG	-	insertion	UNP G9G849
w	57	SER	ALA	conflict	UNP G9G849
w	153	GLU	-	insertion	UNP G9G849
w	154	PHE	-	insertion	UNP G9G849
w	161	PRO	-	insertion	UNP G9G849
w	162	GLY	-	insertion	UNP G9G849
w	310	ARG	-	insertion	UNP G9G849
w	322	ASP	-	insertion	UNP G9G849
w	323	VAL	-	insertion	UNP G9G849
w	334	GLU	-	insertion	UNP G9G849
w	335	LEU	-	insertion	UNP G9G849
w	347	SER	-	insertion	UNP G9G849
w	348	ARG	-	insertion	UNP G9G849
x	57	SER	ALA	conflict	UNP G9G849
x	153	GLU	-	insertion	UNP G9G849
x	154	PHE	-	insertion	UNP G9G849
x	161	PRO	-	insertion	UNP G9G849
x	162	GLY	-	insertion	UNP G9G849
x	310	ARG	-	insertion	UNP G9G849
x	322	ASP	-	insertion	UNP G9G849
x	323	VAL	-	insertion	UNP G9G849
x	334	GLU	-	insertion	UNP G9G849
x	335	LEU	-	insertion	UNP G9G849
x	347	SER	-	insertion	UNP G9G849
x	348	ARG	-	insertion	UNP G9G849
y	57	SER	ALA	conflict	UNP G9G849
y	153	GLU	-	insertion	UNP G9G849
y	154	PHE	-	insertion	UNP G9G849
y	161	PRO	-	insertion	UNP G9G849
y	162	GLY	-	insertion	UNP G9G849
y	310	ARG	-	insertion	UNP G9G849
y	322	ASP	-	insertion	UNP G9G849
y	323	VAL	-	insertion	UNP G9G849
y	334	GLU	-	insertion	UNP G9G849
y	335	LEU	-	insertion	UNP G9G849
y	347	SER	-	insertion	UNP G9G849
y	348	ARG	-	insertion	UNP G9G849

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Chain	Residue	Modelled	Actual	Comment	Reference
z	57	SER	ALA	conflict	UNP G9G849
z	153	GLU	-	insertion	UNP G9G849
z	154	PHE	-	insertion	UNP G9G849
z	161	PRO	-	insertion	UNP G9G849
z	162	GLY	-	insertion	UNP G9G849
z	310	ARG	-	insertion	UNP G9G849
z	322	ASP	-	insertion	UNP G9G849
z	323	VAL	-	insertion	UNP G9G849
z	334	GLU	-	insertion	UNP G9G849
z	335	LEU	-	insertion	UNP G9G849
z	347	SER	-	insertion	UNP G9G849
z	348	ARG	-	insertion	UNP G9G849

- Molecule 2 is POTASSIUM ION (CCD ID: K) (formula: K).

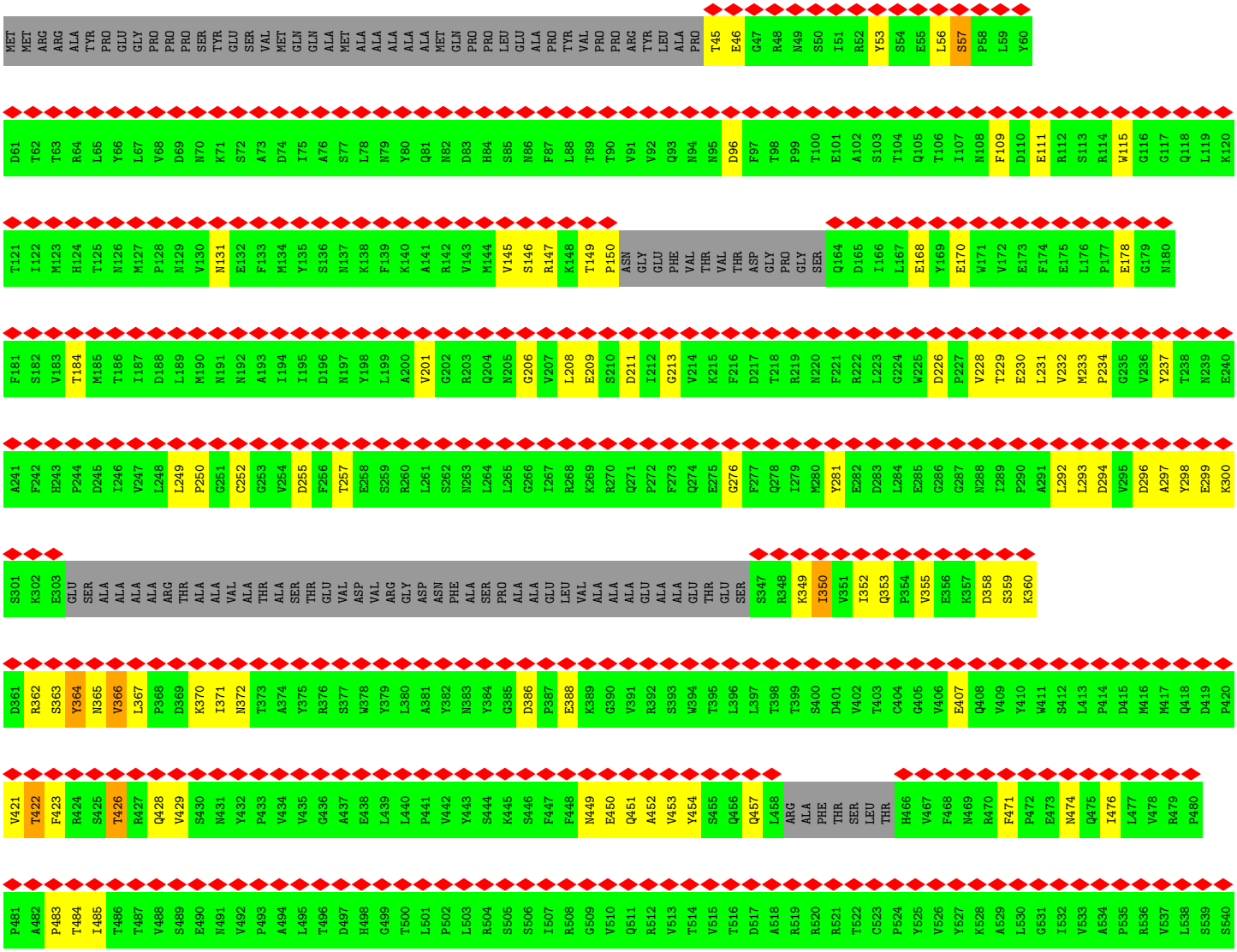
Mol	Chain	Residues	Atoms	AltConf
2	1	1	Total K 1 1	0
2	2	1	Total K 1 1	0
2	3	1	Total K 1 1	0
2	4	1	Total K 1 1	0
2	5	1	Total K 1 1	0
2	6	1	Total K 1 1	0
2	7	1	Total K 1 1	0
2	8	1	Total K 1 1	0
2	9	1	Total K 1 1	0
2	B	1	Total K 1 1	0
2	I	1	Total K 1 1	0
2	R	1	Total K 1 1	0

3 Residue-property plots (i)

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

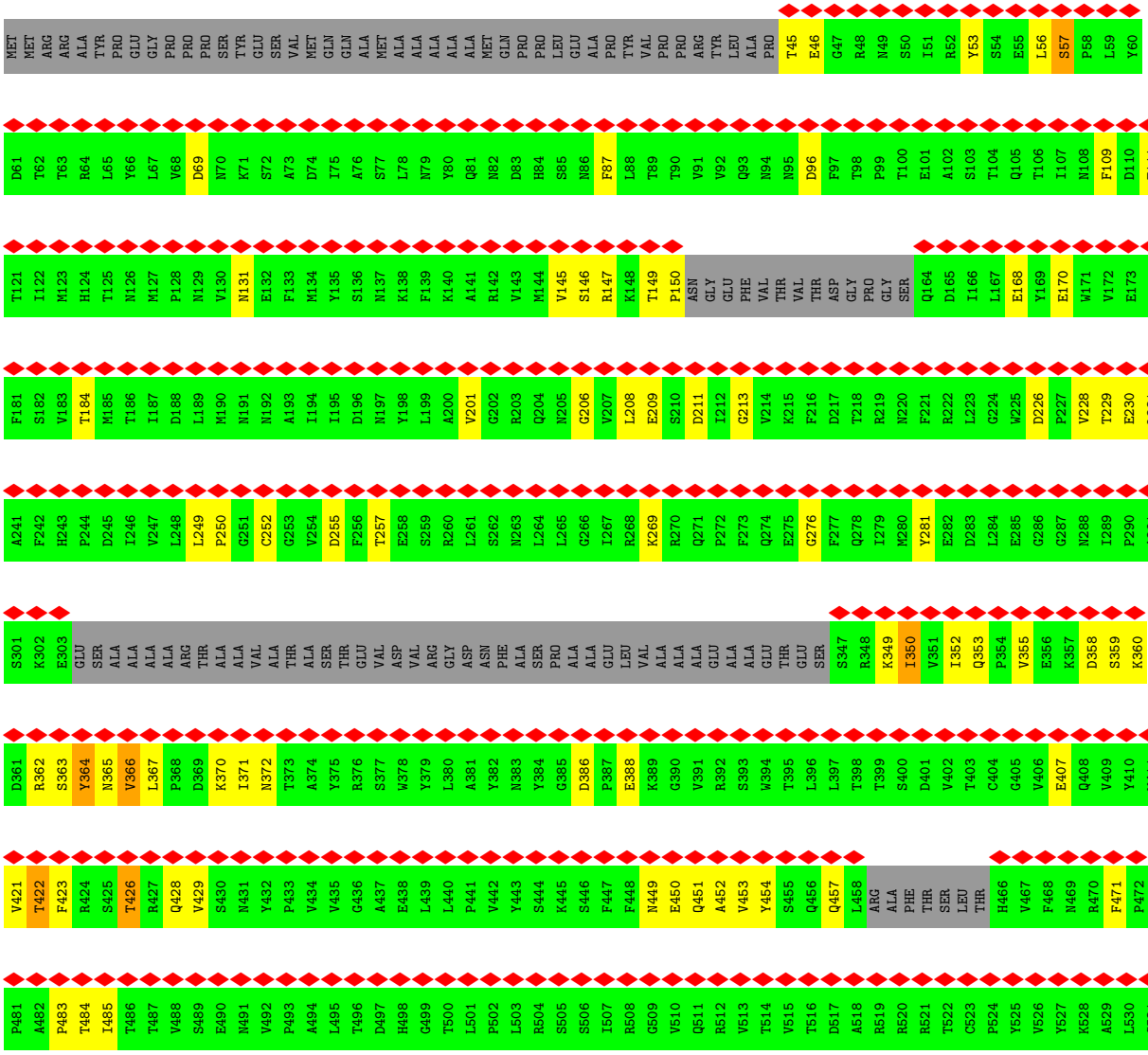
- Molecule 1: Penton protein

Chain 1:



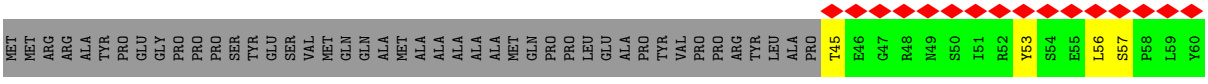
• Molecule 1: Penton protein

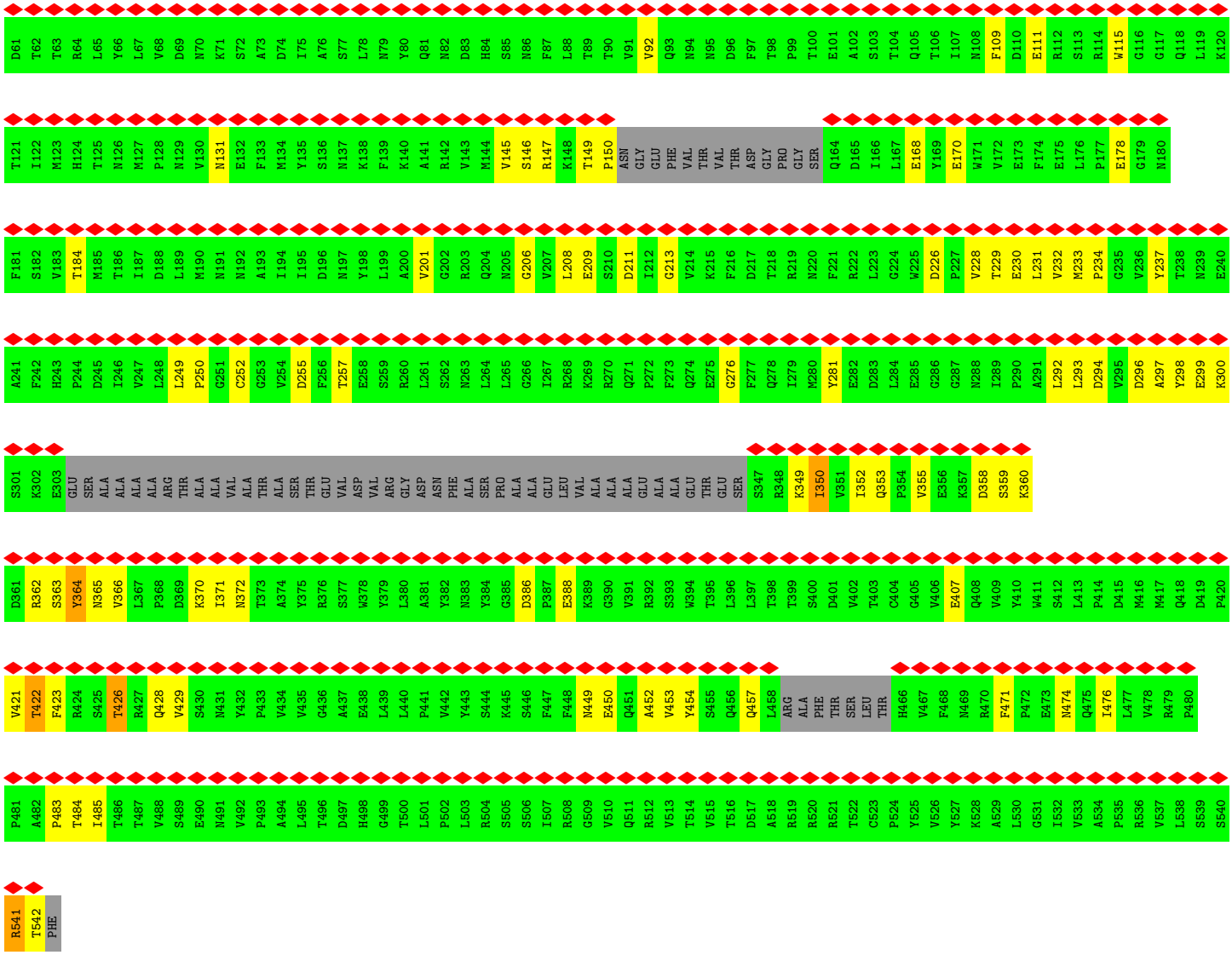
Chain 2:



• Molecule 1: Penton protein

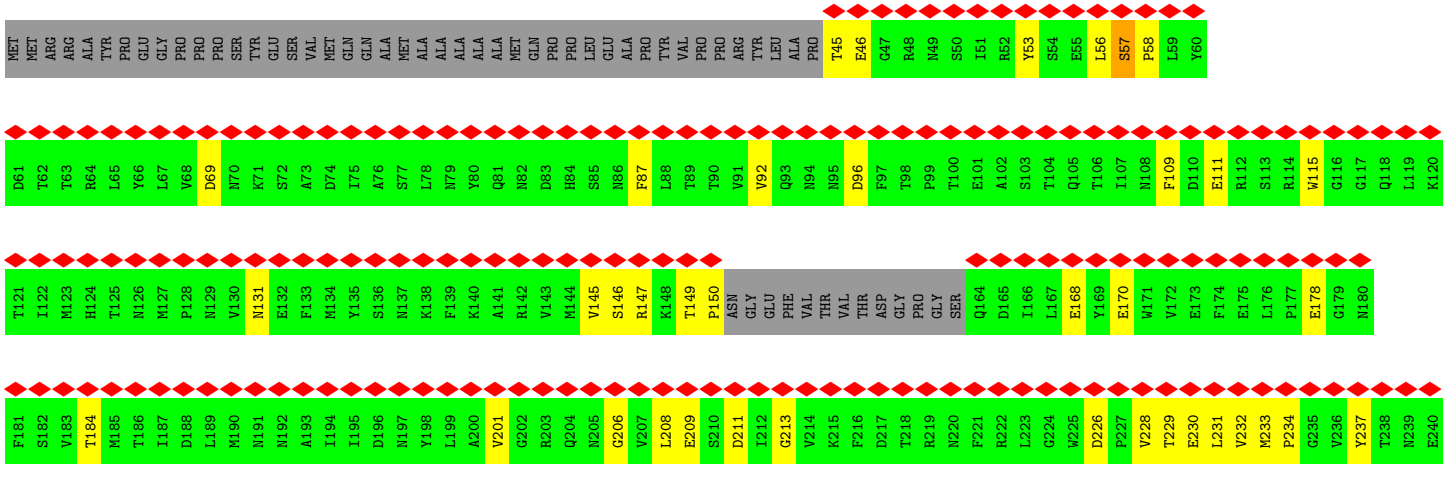
Chain 3:

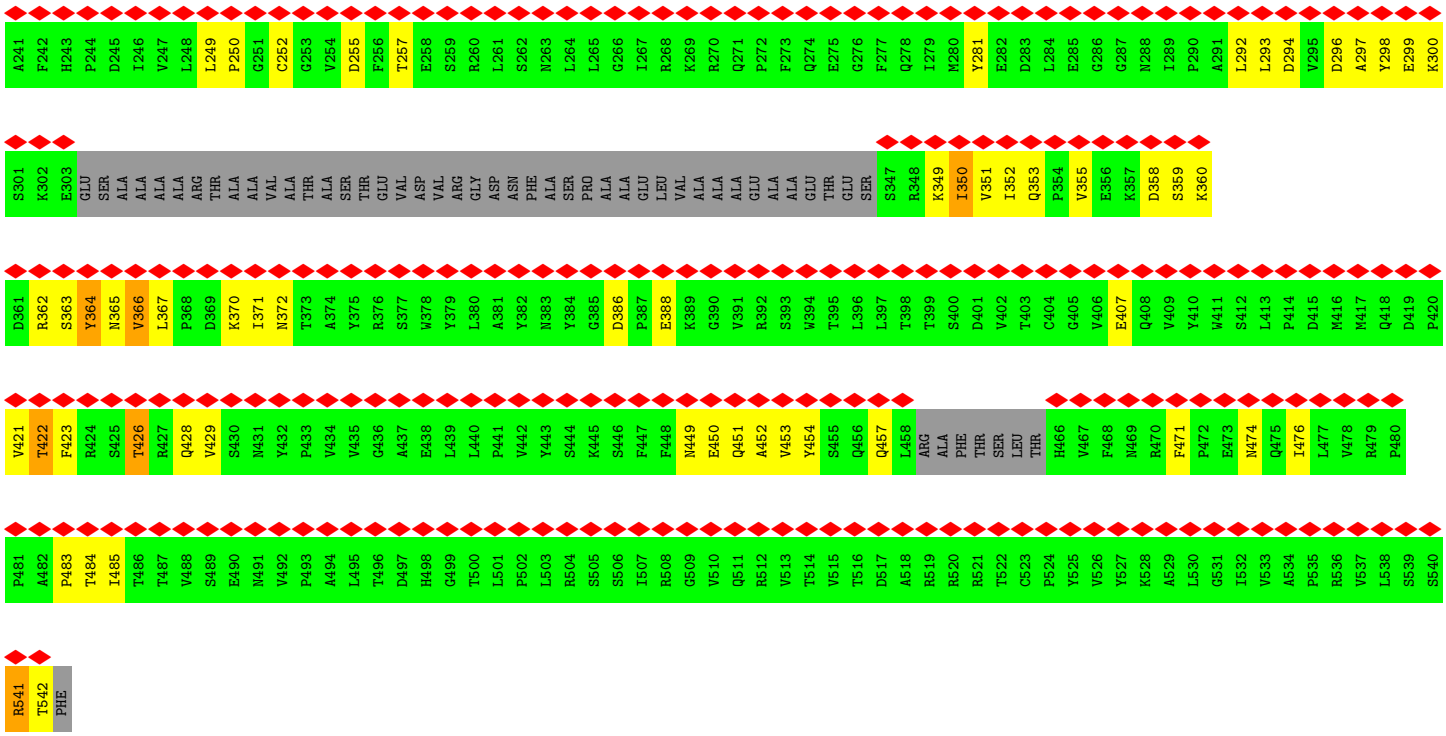




• Molecule 1: Penton protein

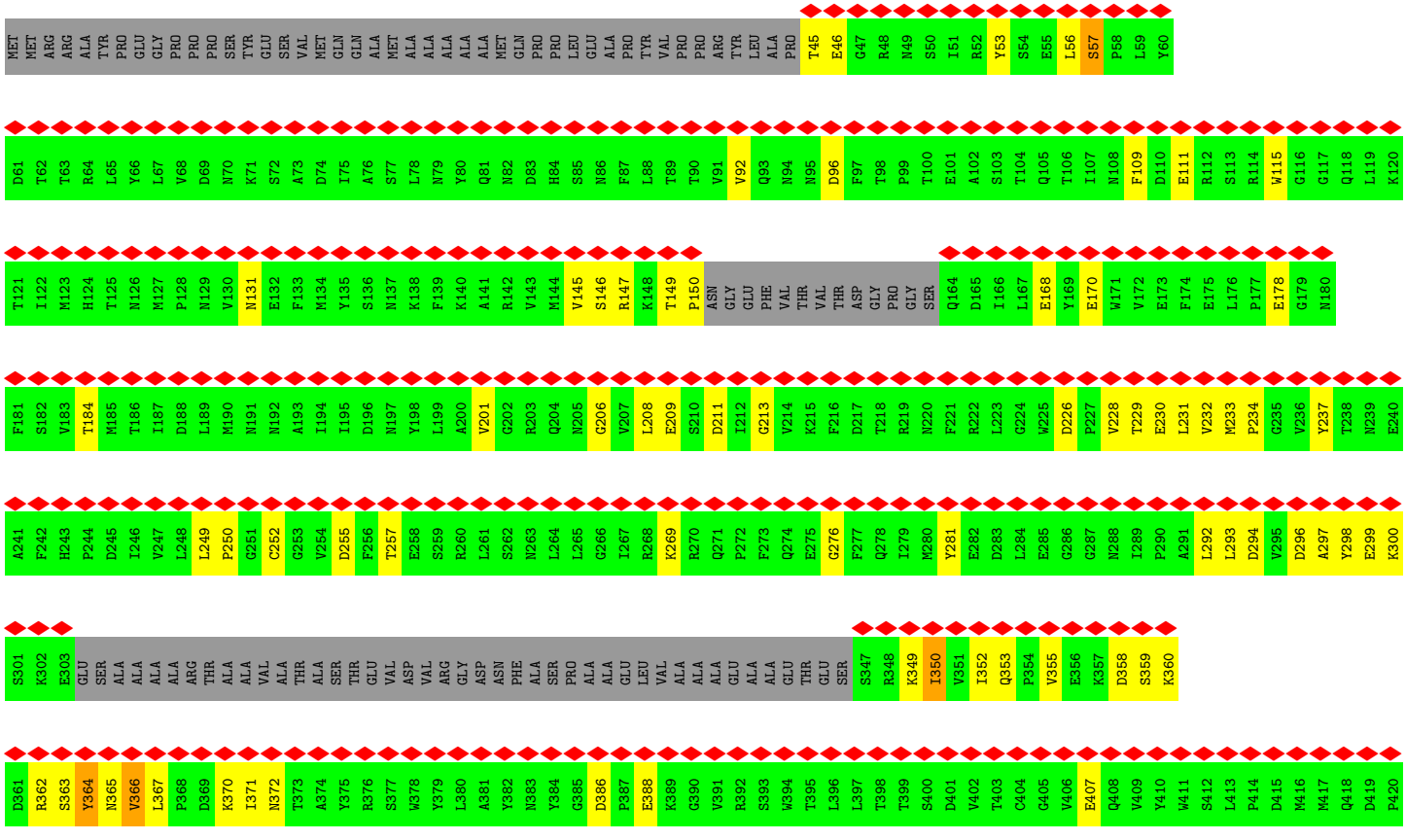
Chain 4:

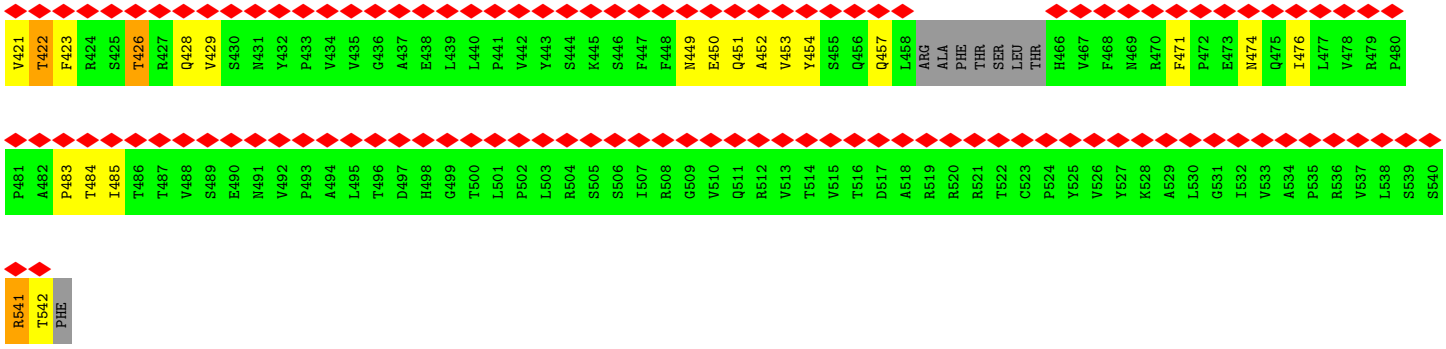




• Molecule 1: Penton protein

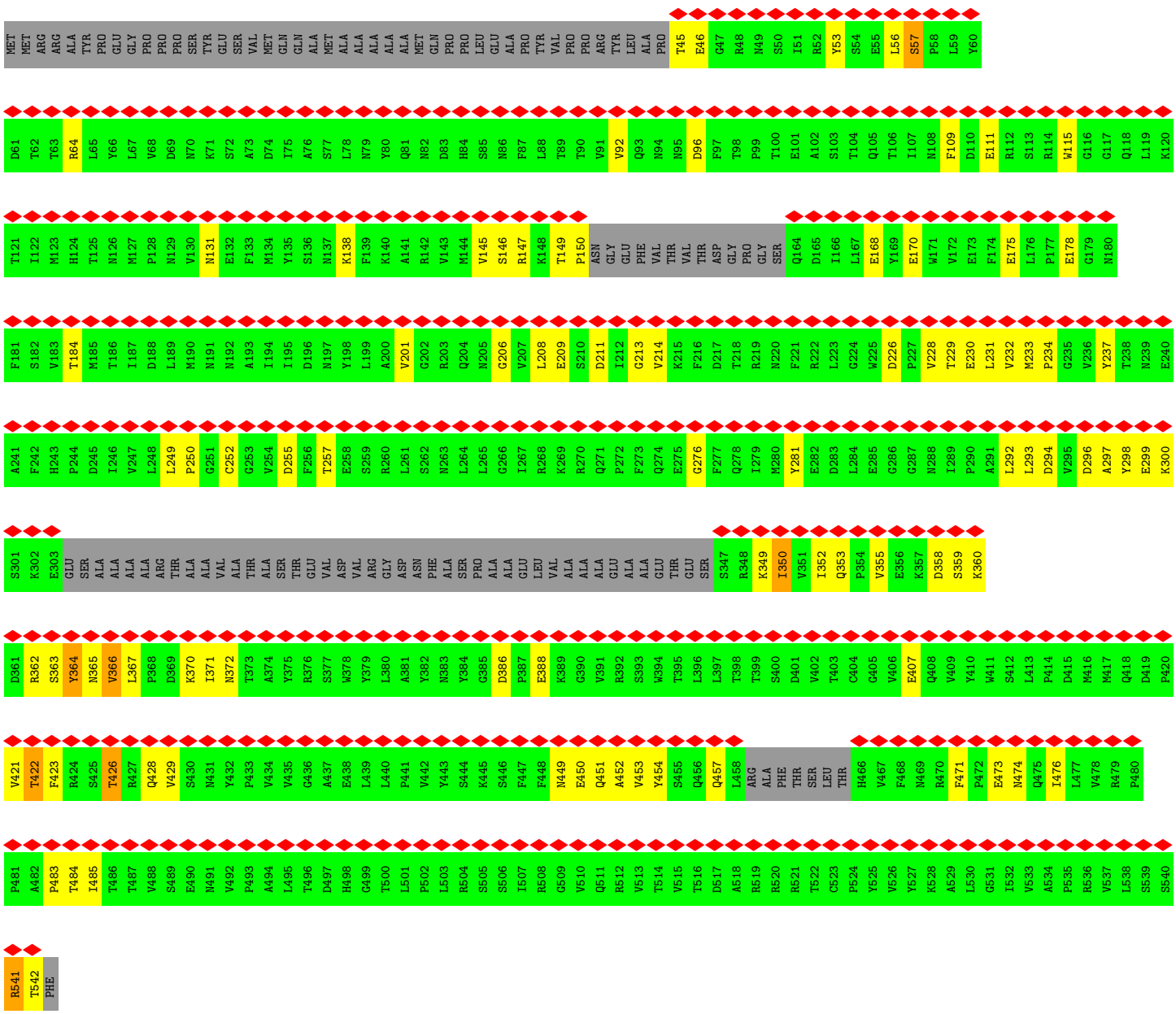
Chain 5:





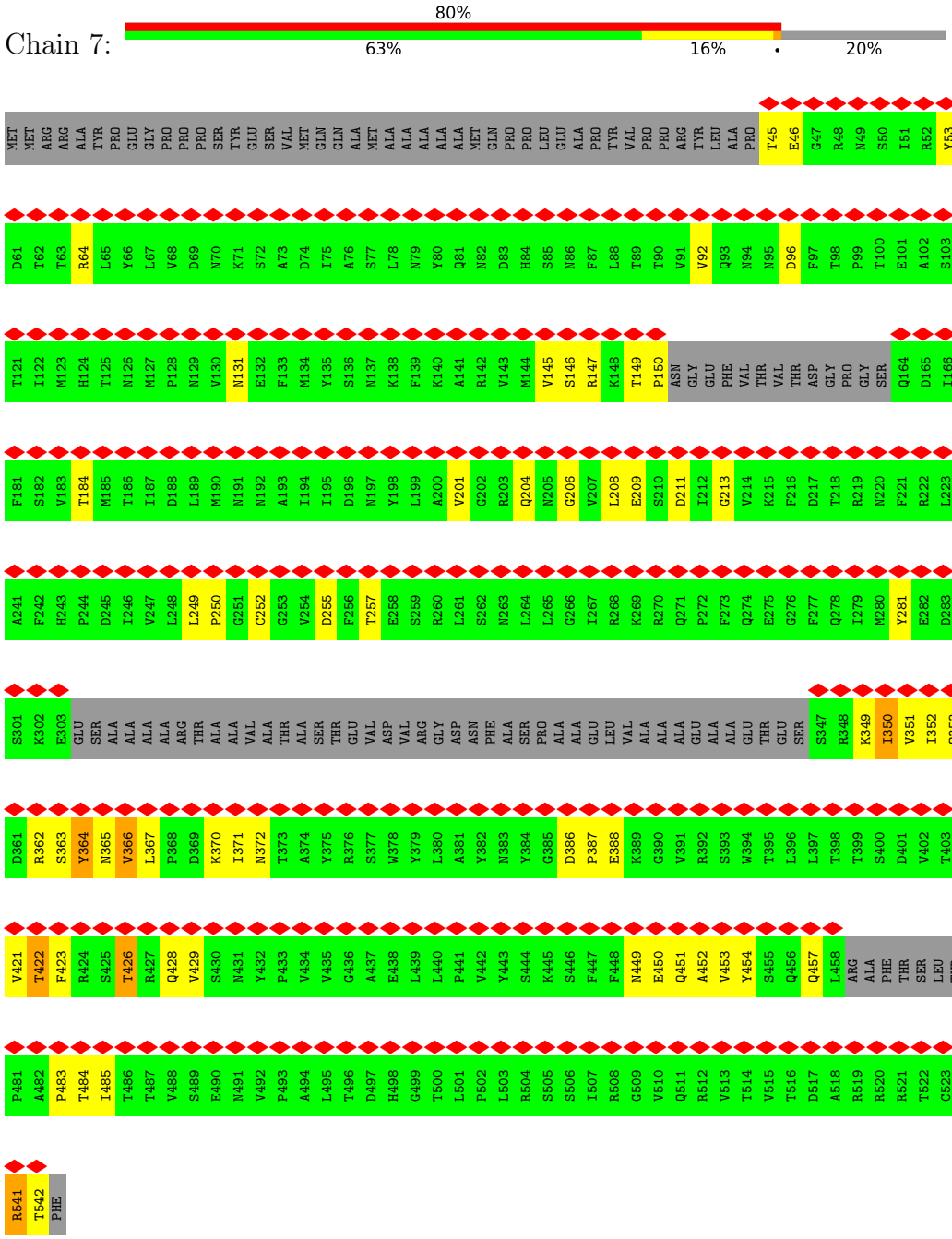
• Molecule 1: Penton protein

Chain 6:



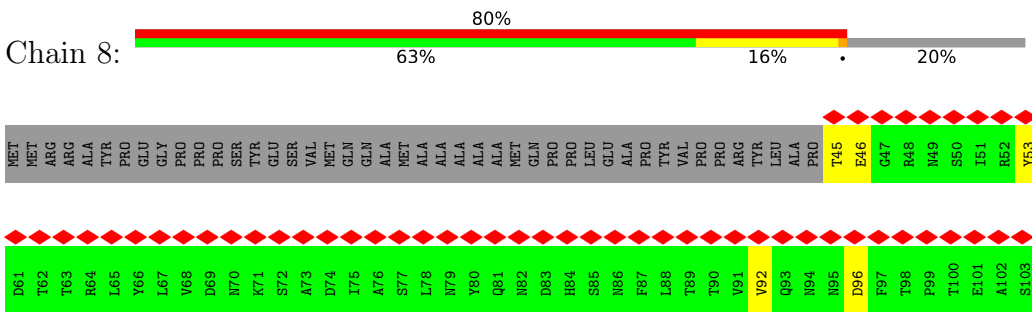
• Molecule 1: Penton protein

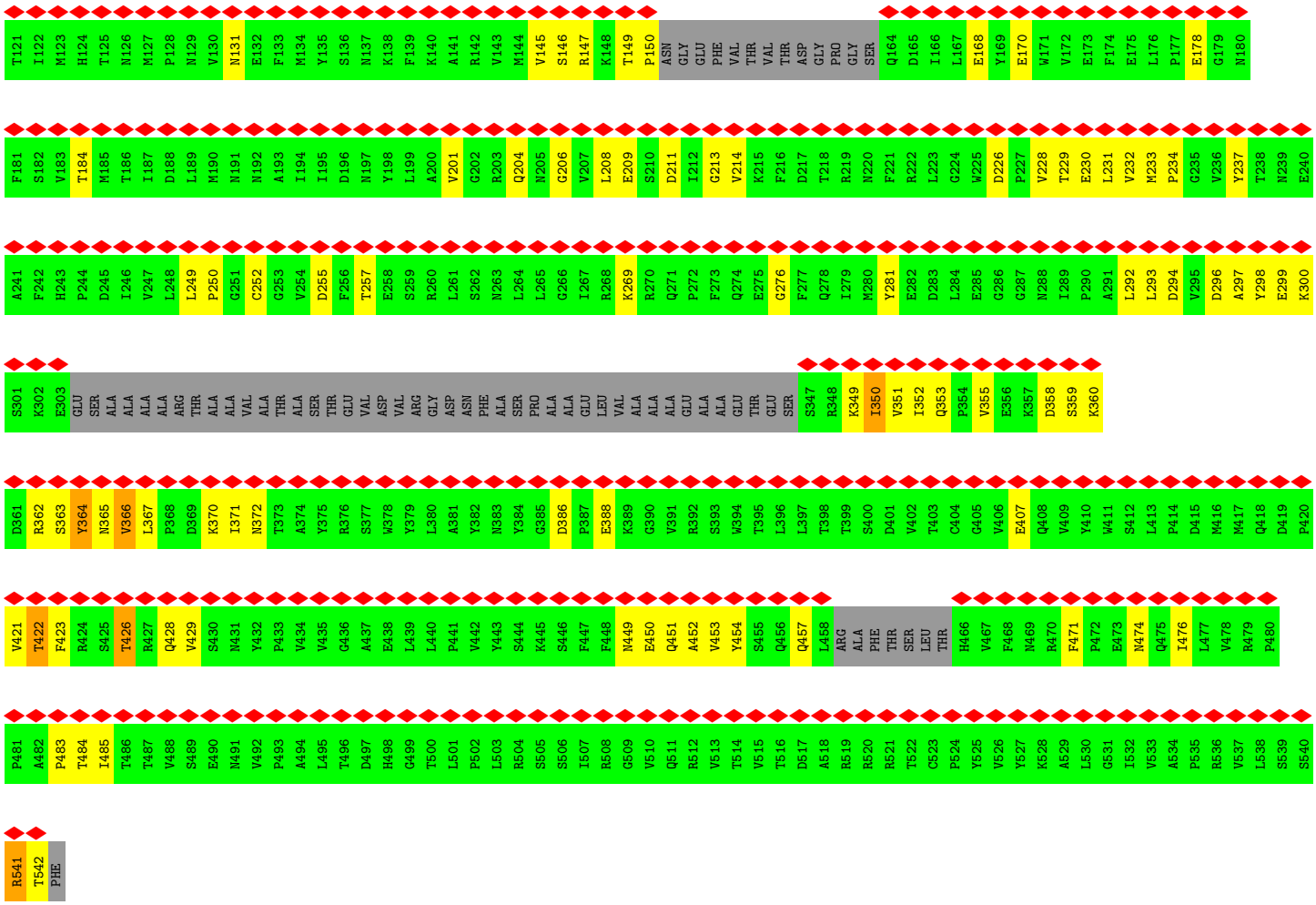
Chain 7:



• Molecule 1: Penton protein

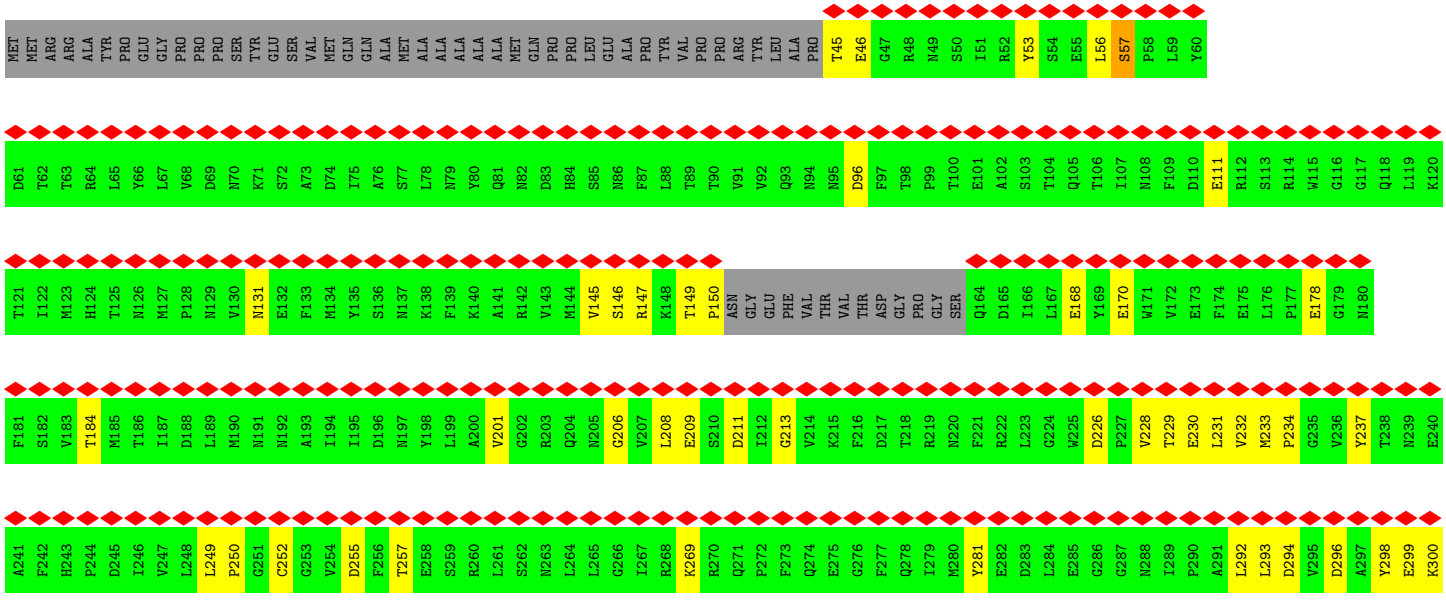
Chain 8:

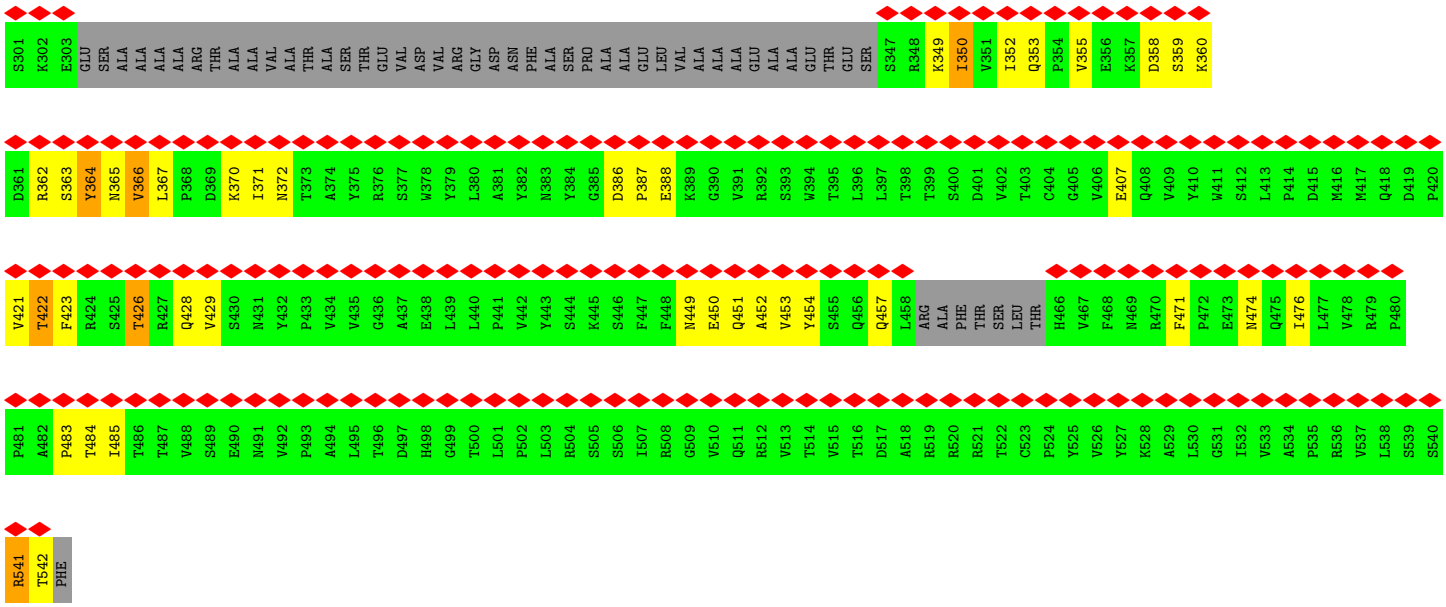




• Molecule 1: Penton protein

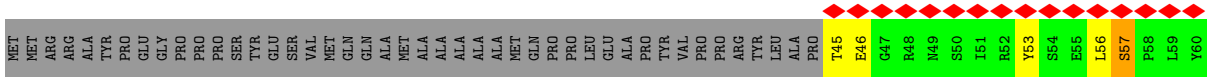
Chain 9:

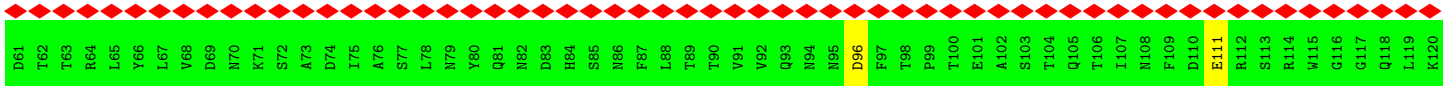


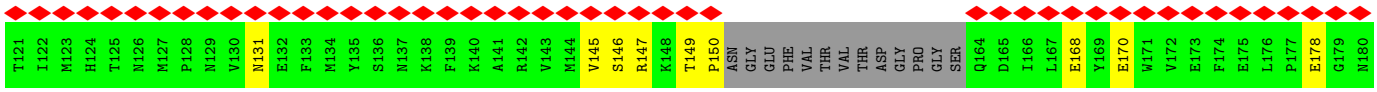


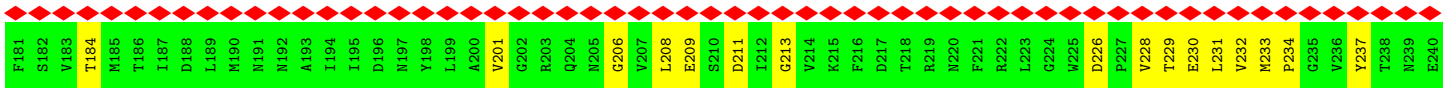
• Molecule 1: Penton protein

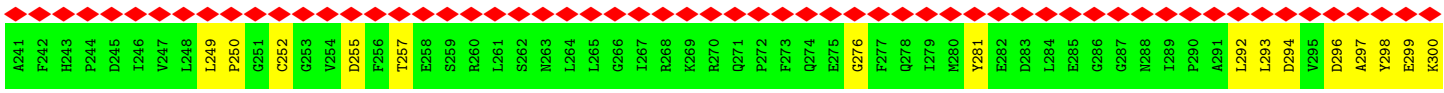
Chain A:

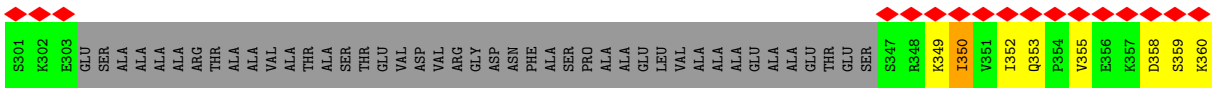


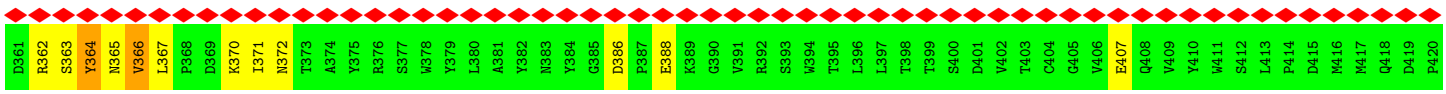


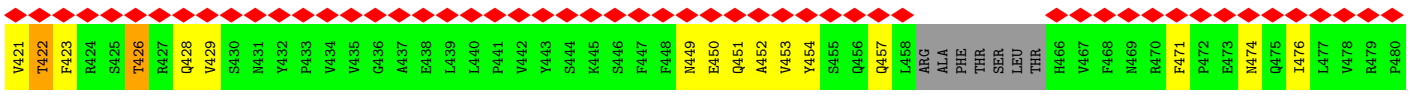


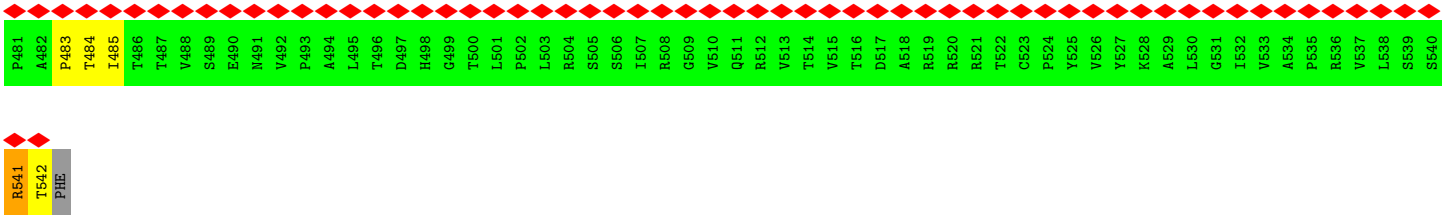






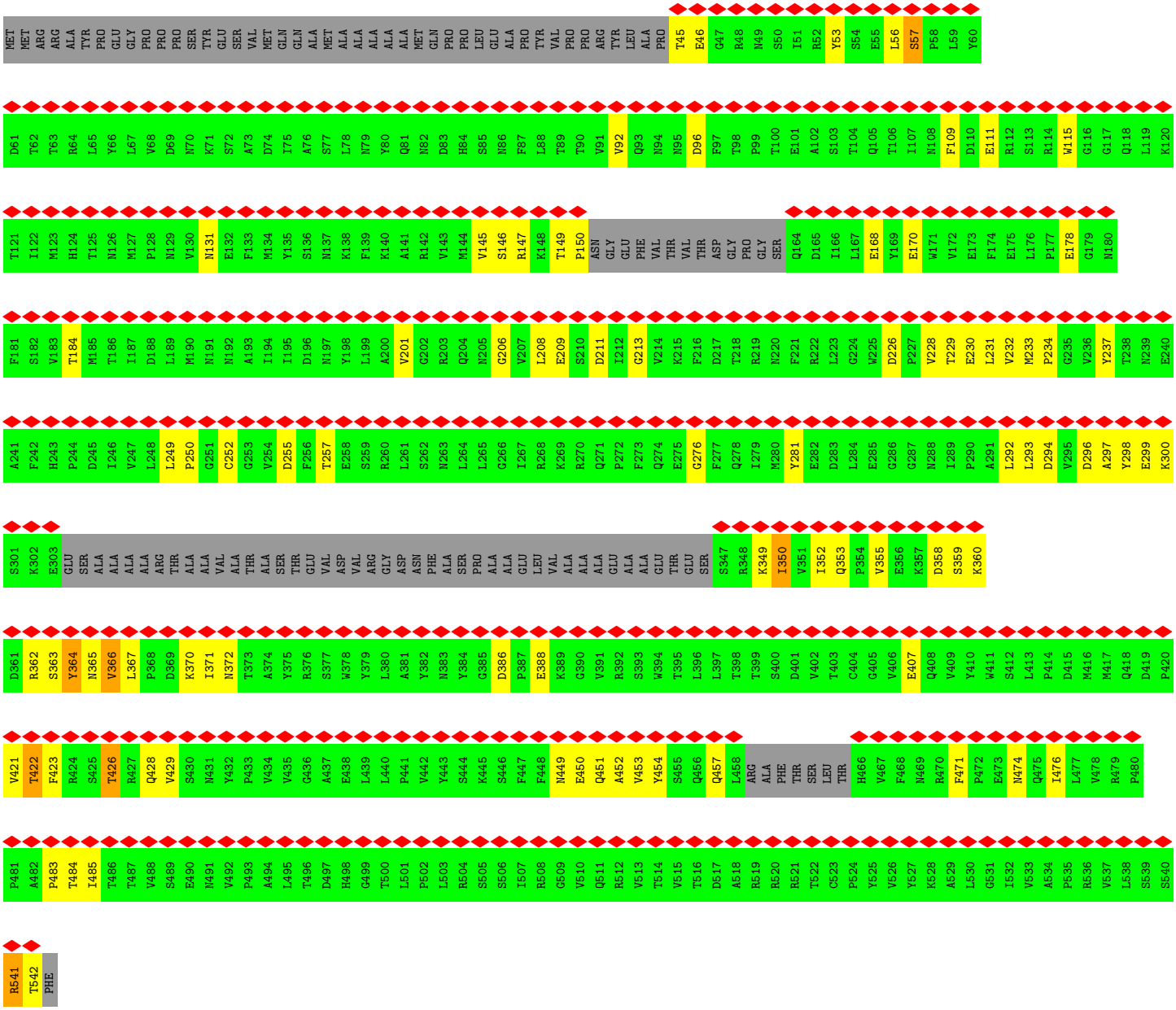






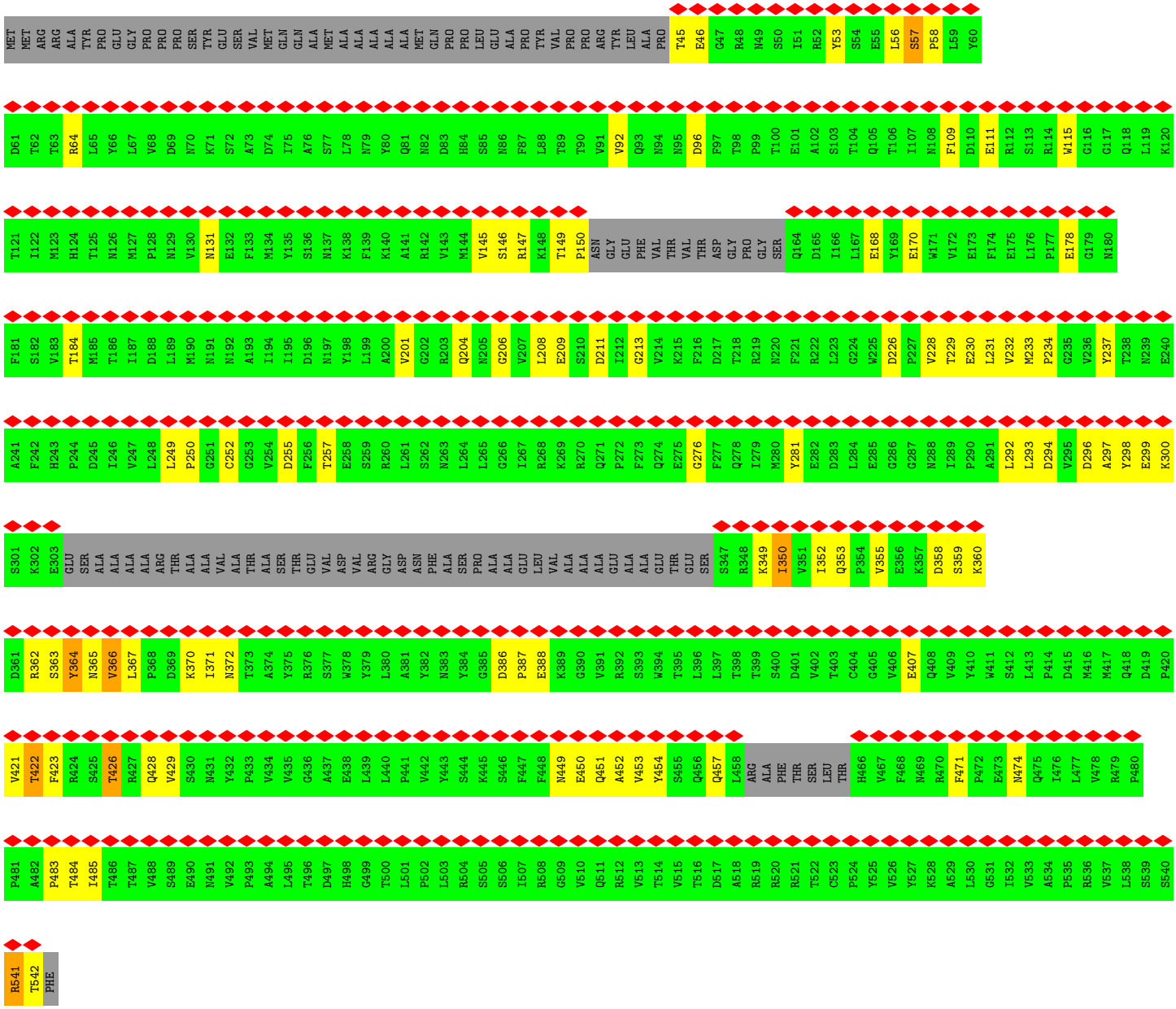
• Molecule 1: Penton protein

Chain B:



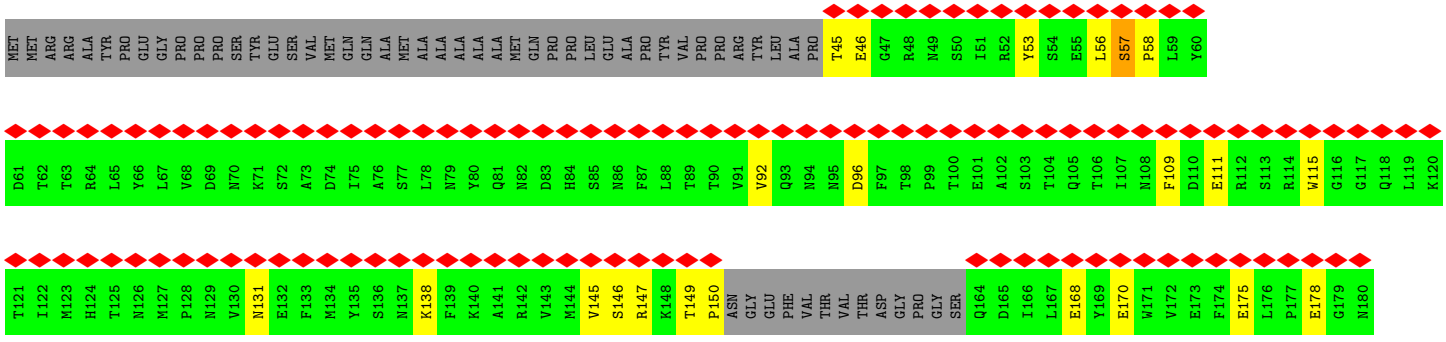
• Molecule 1: Penton protein

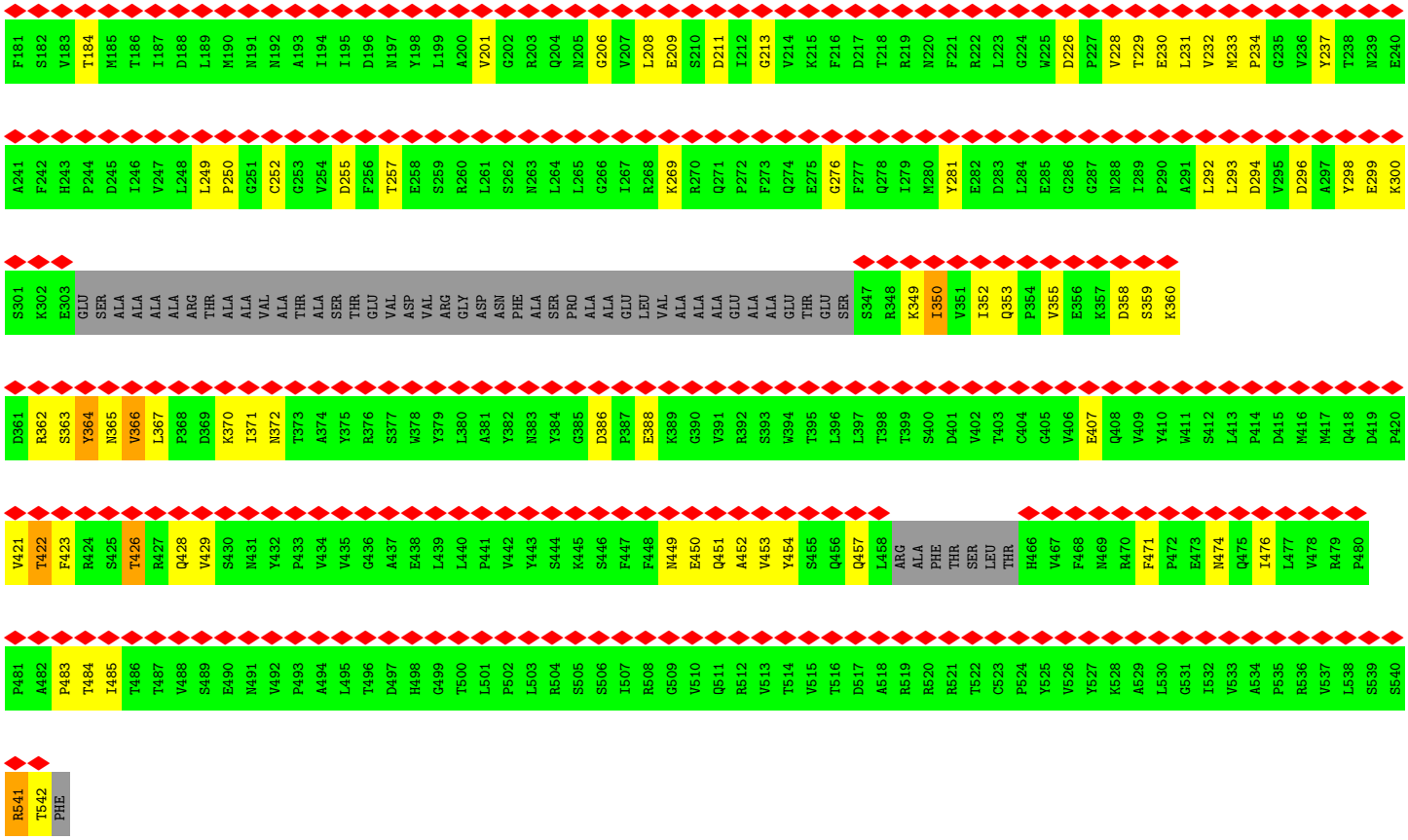
Chain C:



• Molecule 1: Penton protein

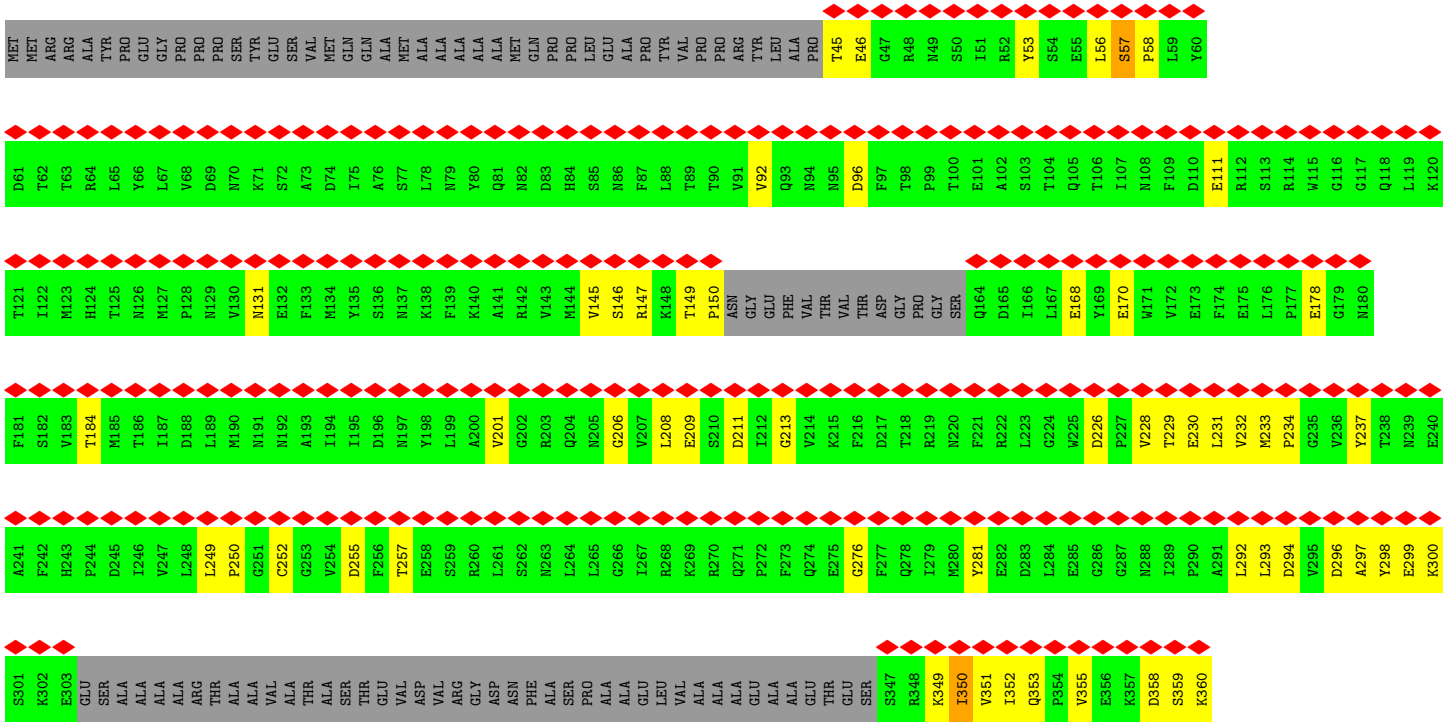
Chain D:

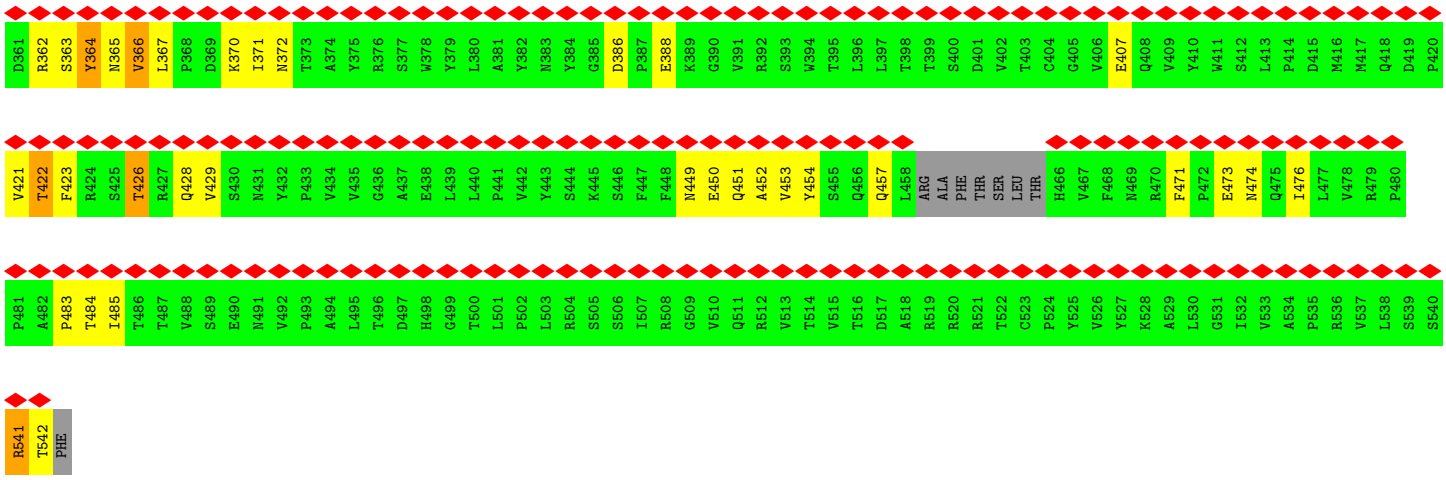




• Molecule 1: Penton protein

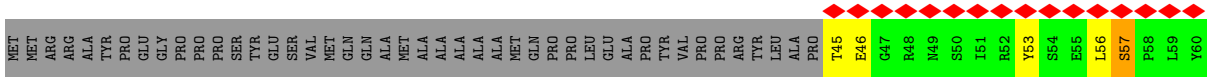
Chain E:

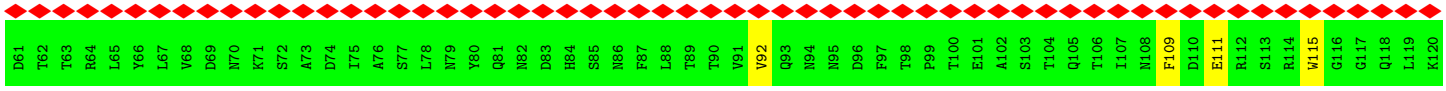


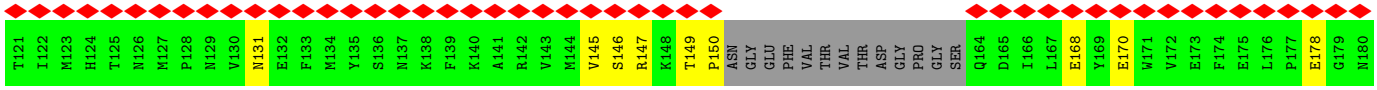


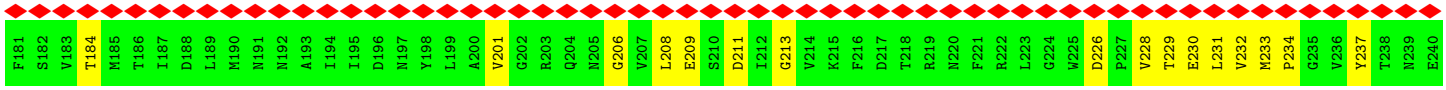
• Molecule 1: Penton protein

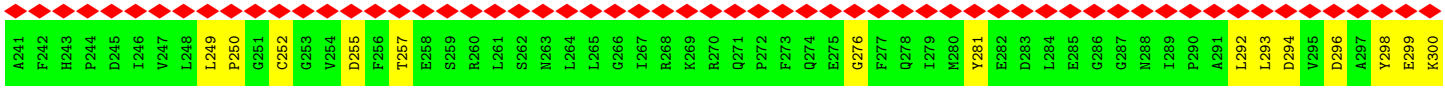
Chain F:

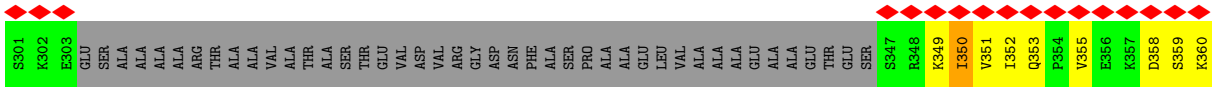


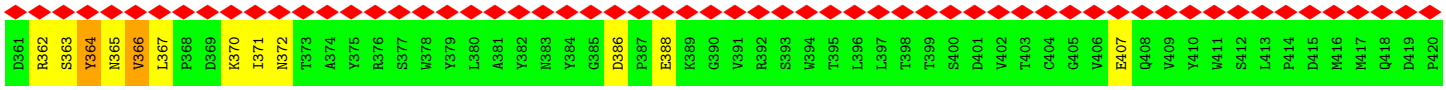


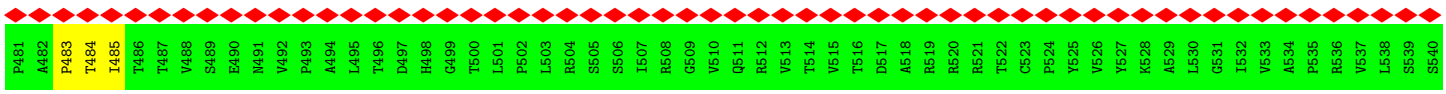






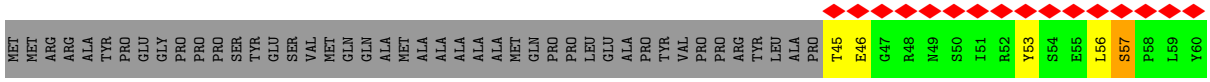


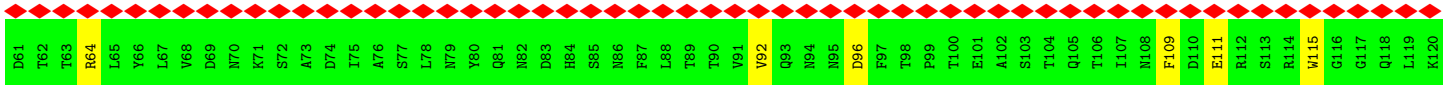


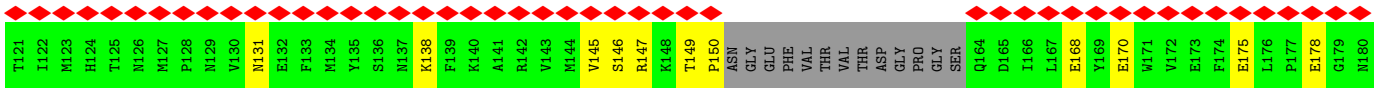


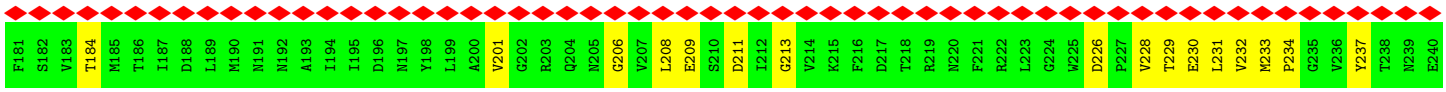
• Molecule 1: Penton protein

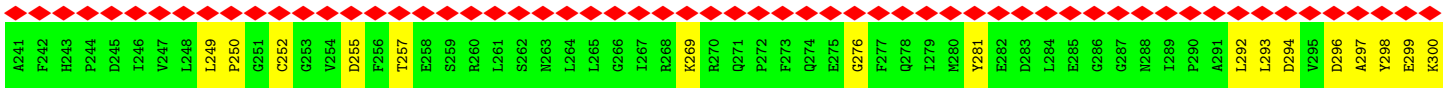
Chain G:

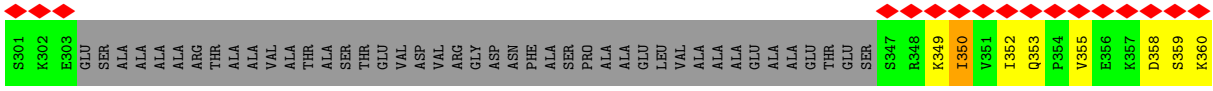


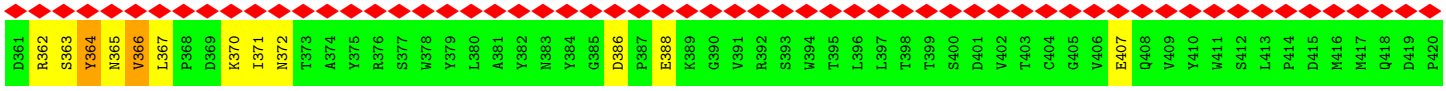


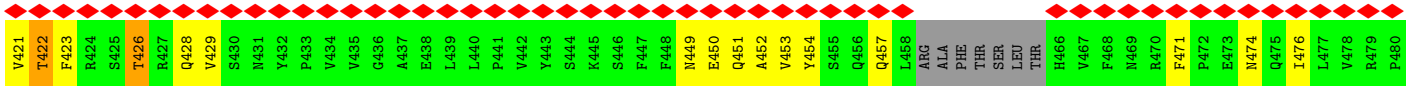


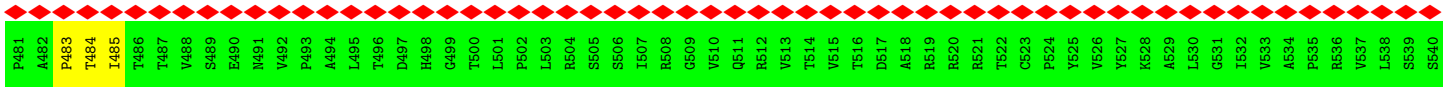






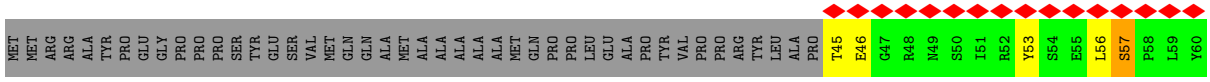


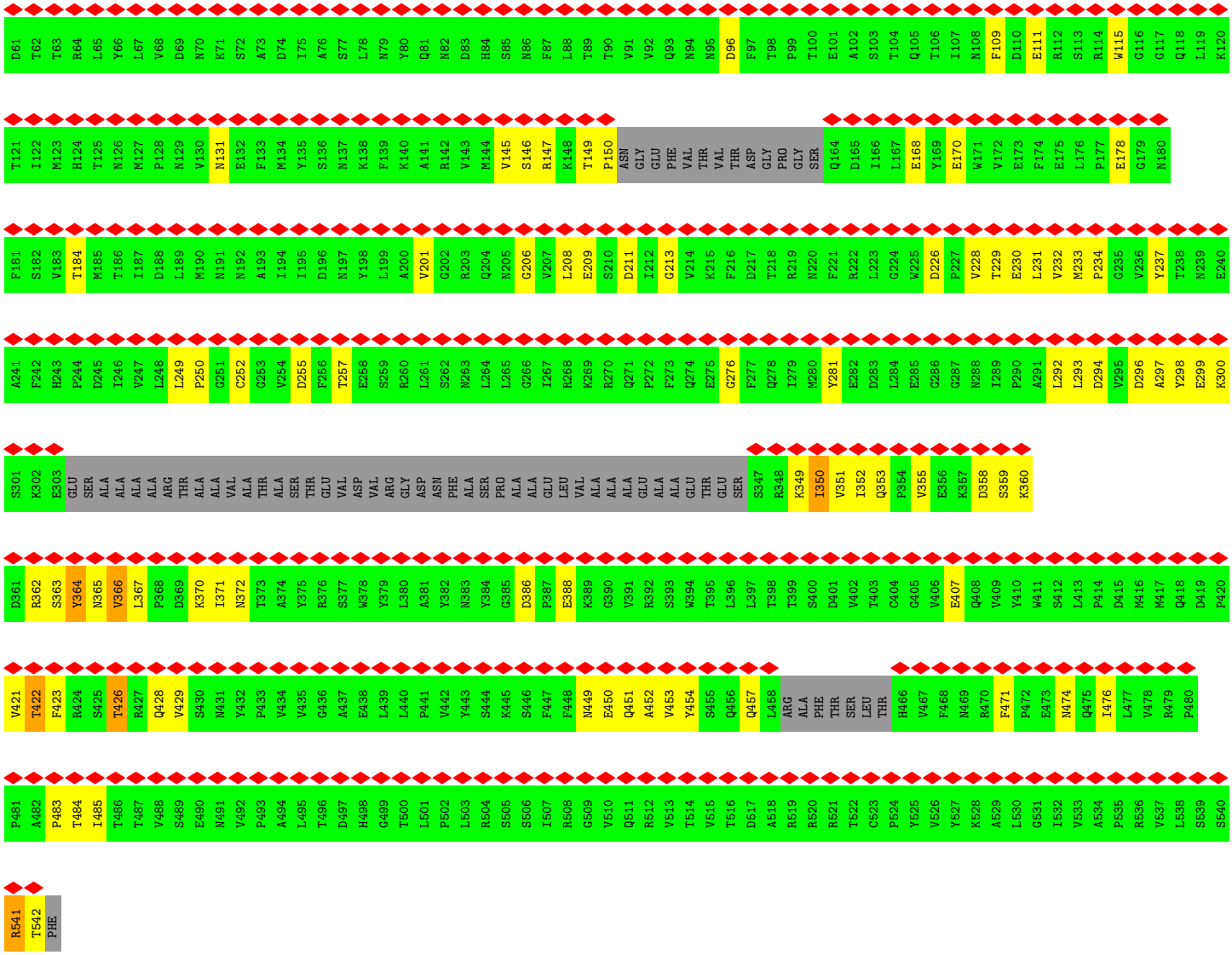




• Molecule 1: Penton protein

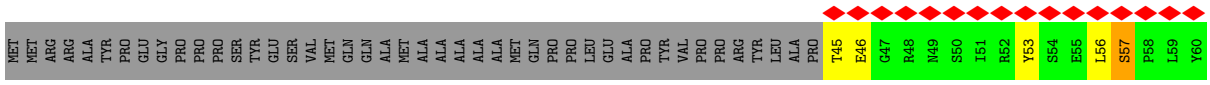
Chain H:

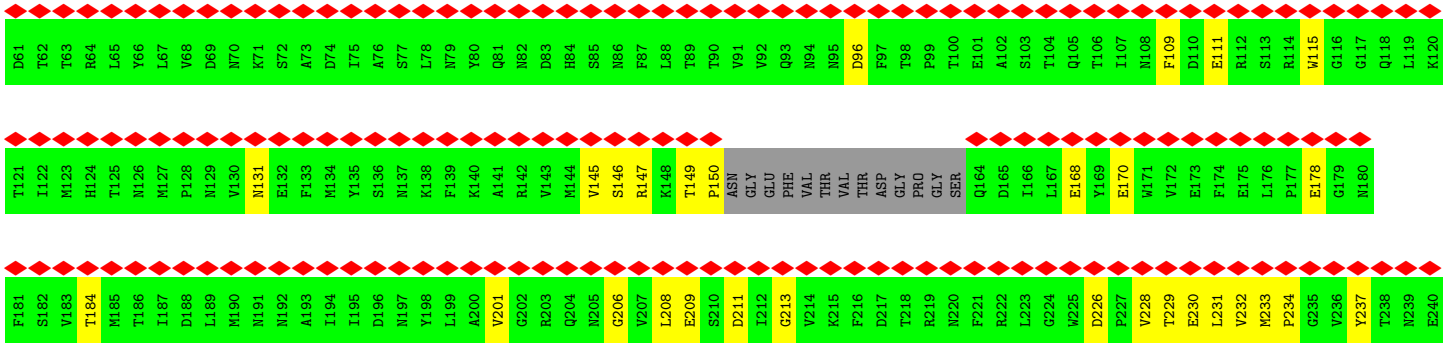


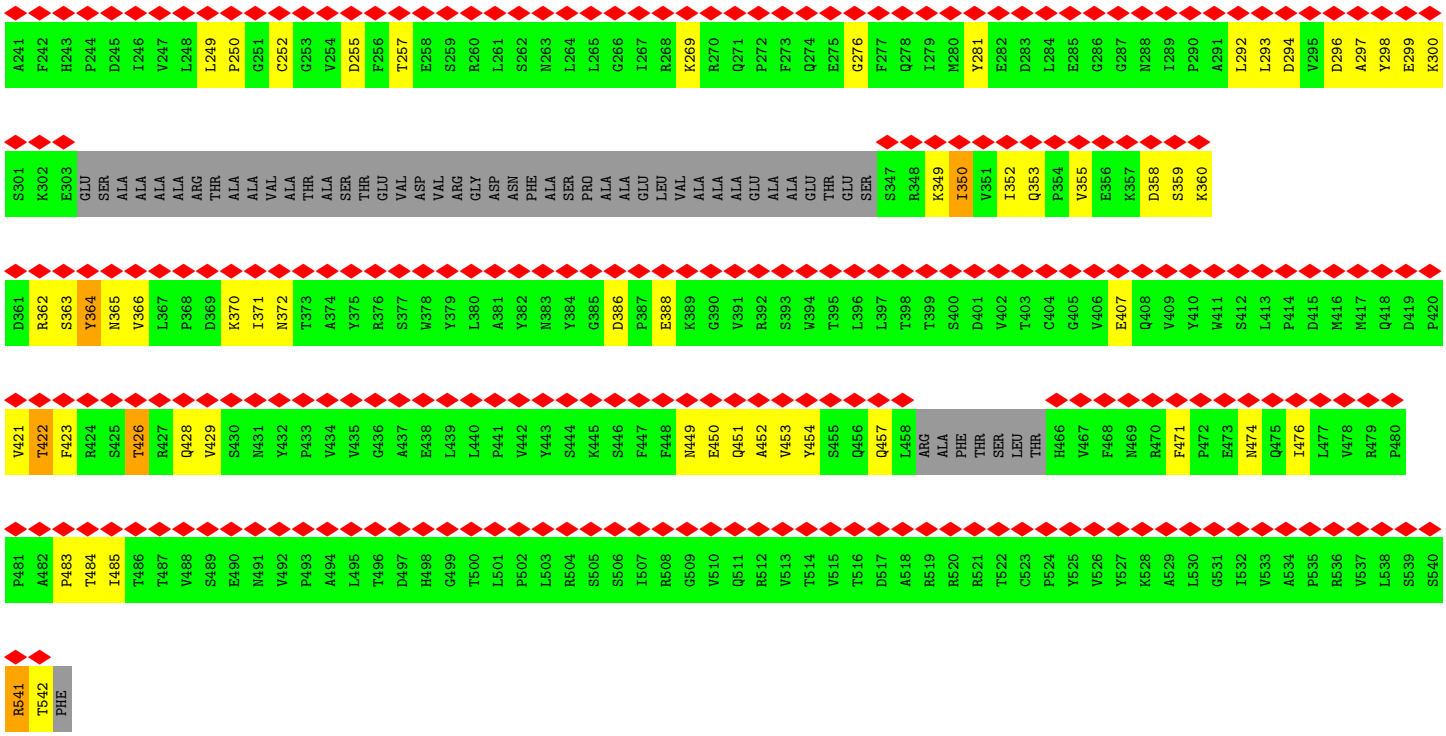


- Molecule 1: Penton protein

Chain I:

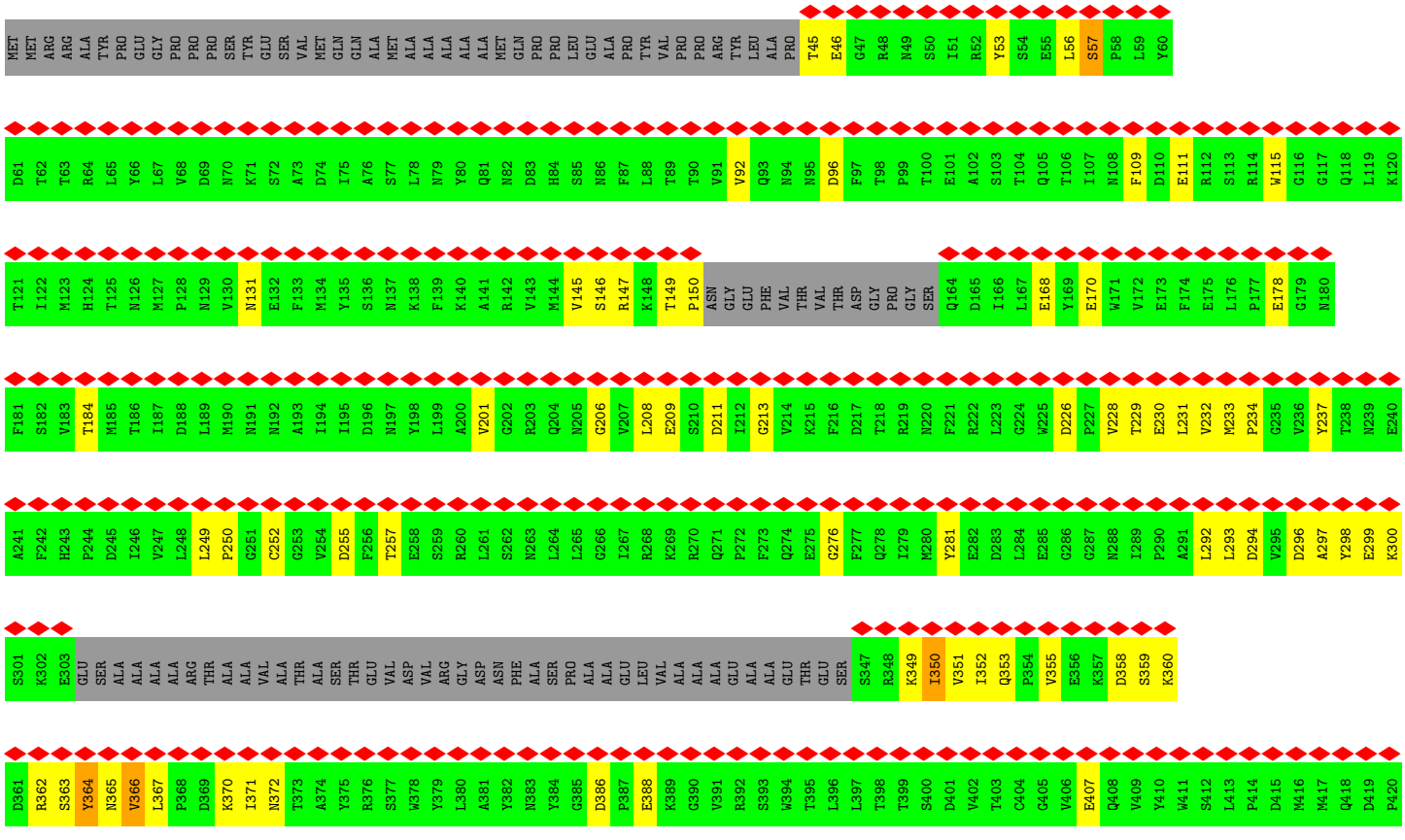


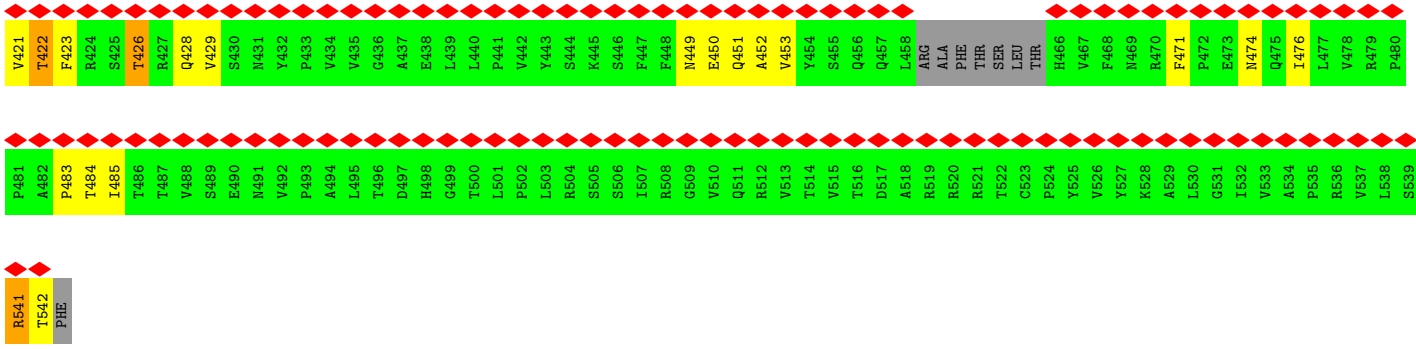




• Molecule 1: Penton protein

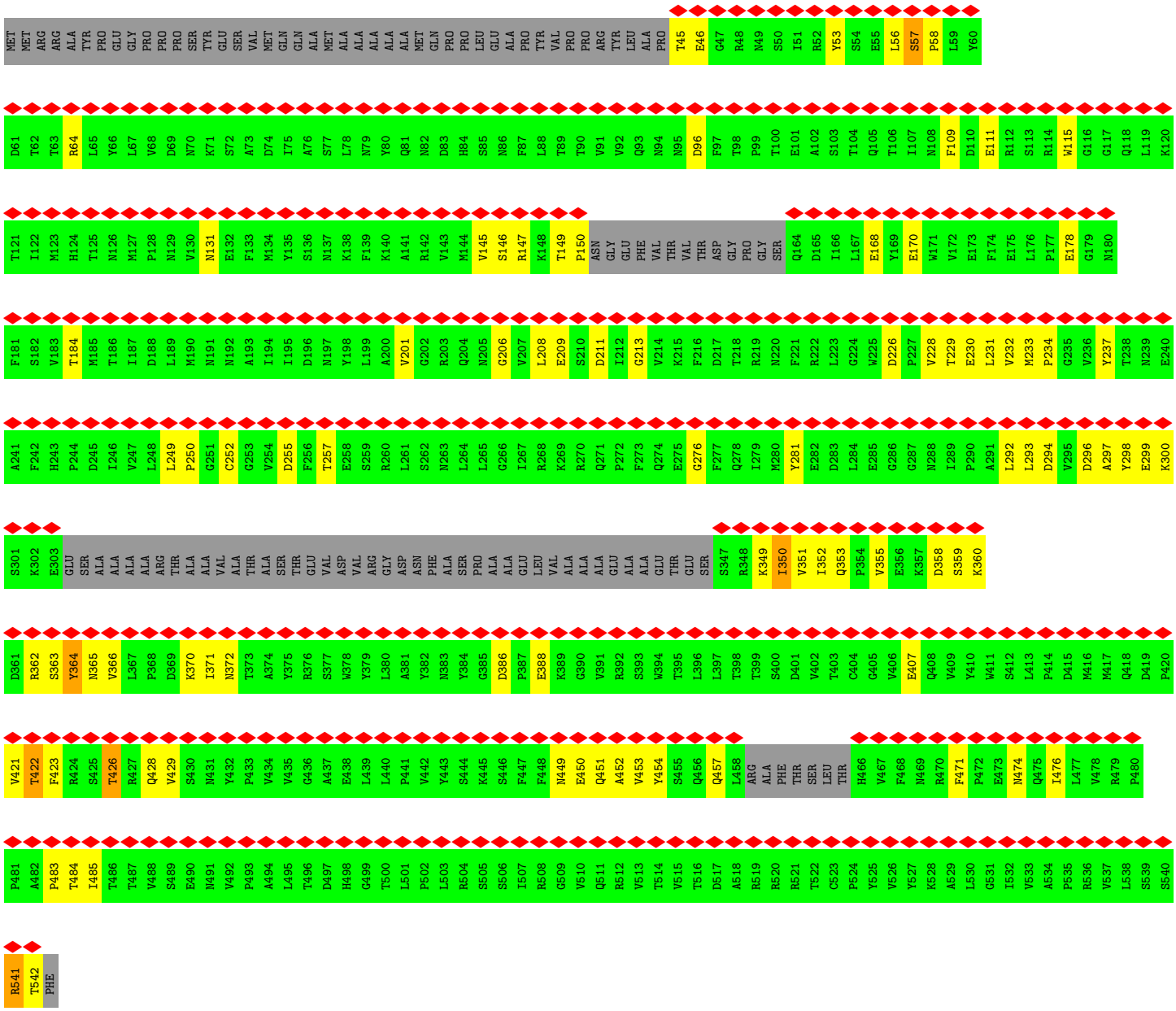
Chain J:





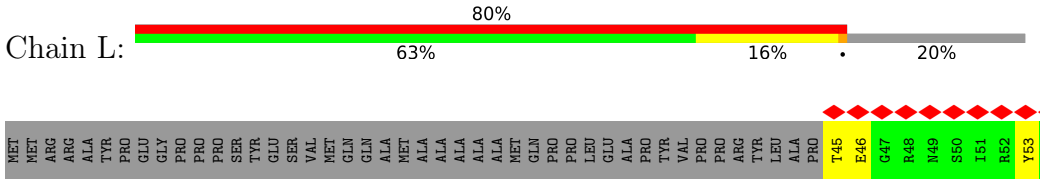
• Molecule 1: Penton protein

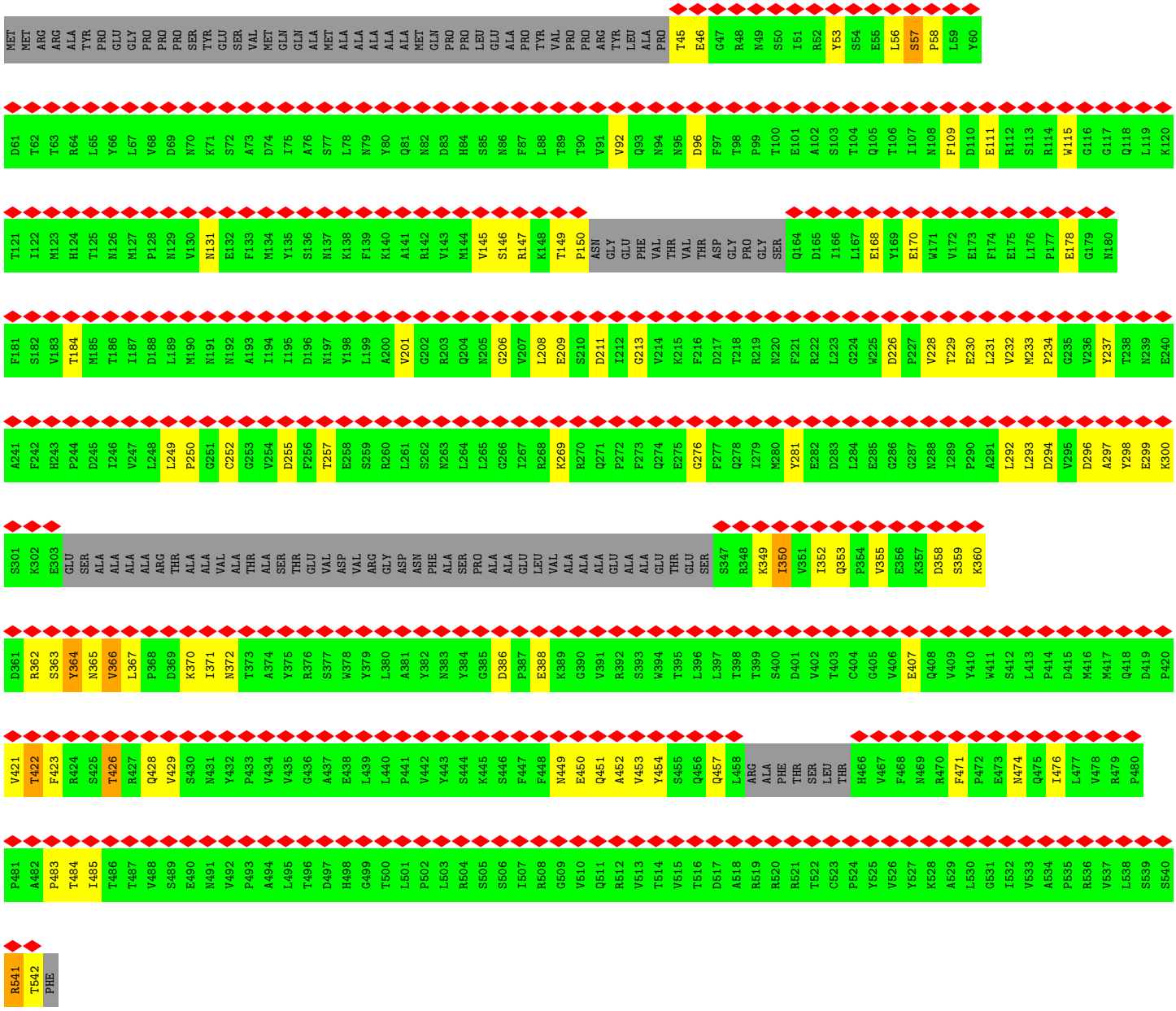
Chain K:



• Molecule 1: Penton protein

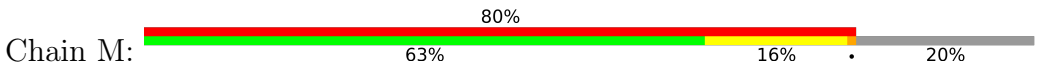
Chain L:

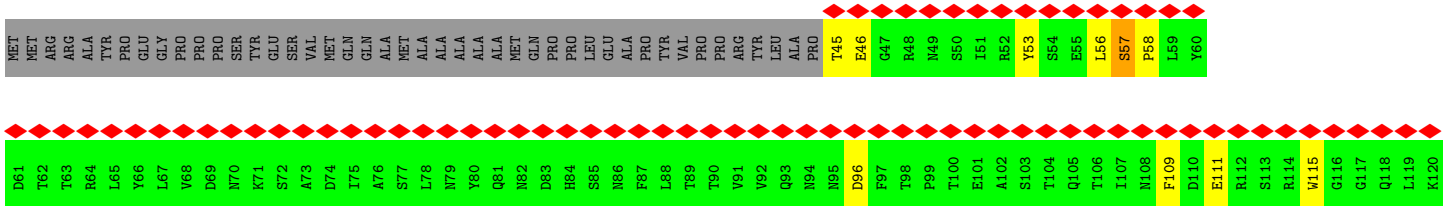


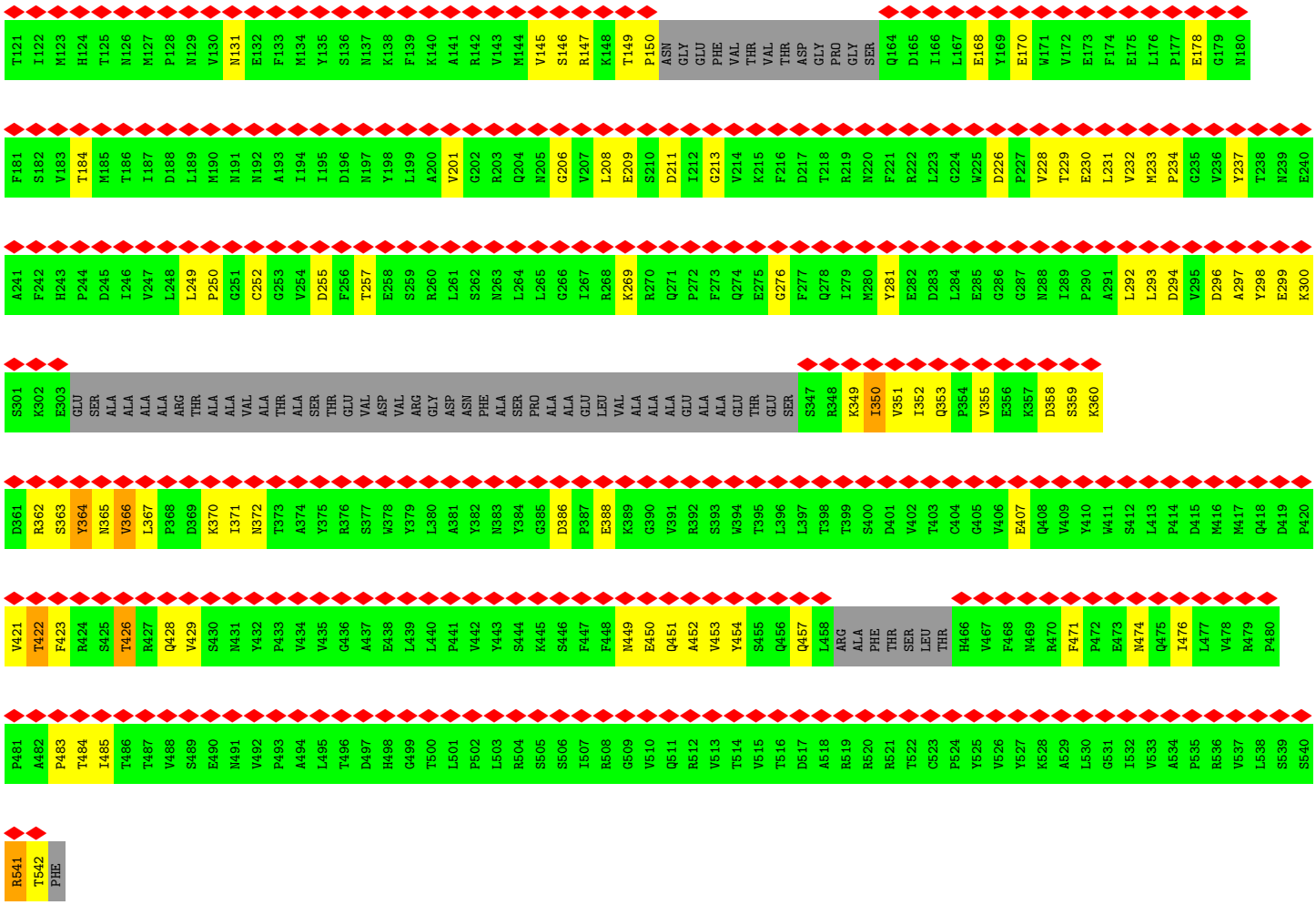


• Molecule 1: Penton protein

Chain M:

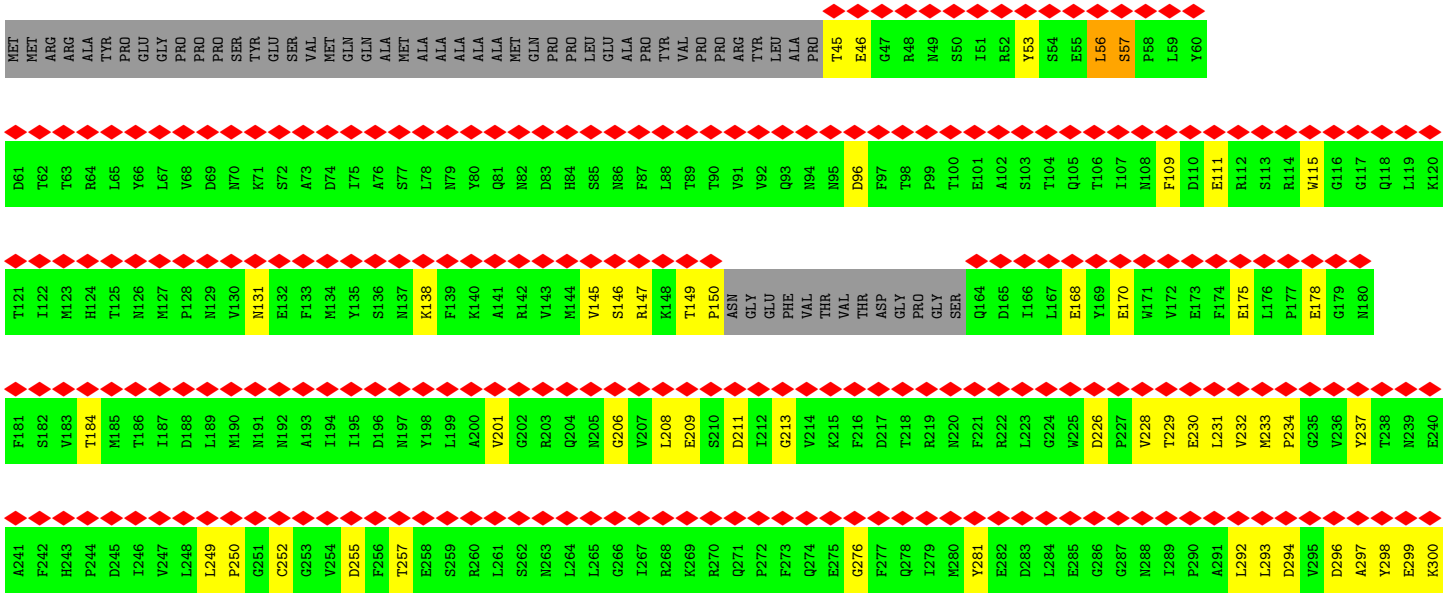


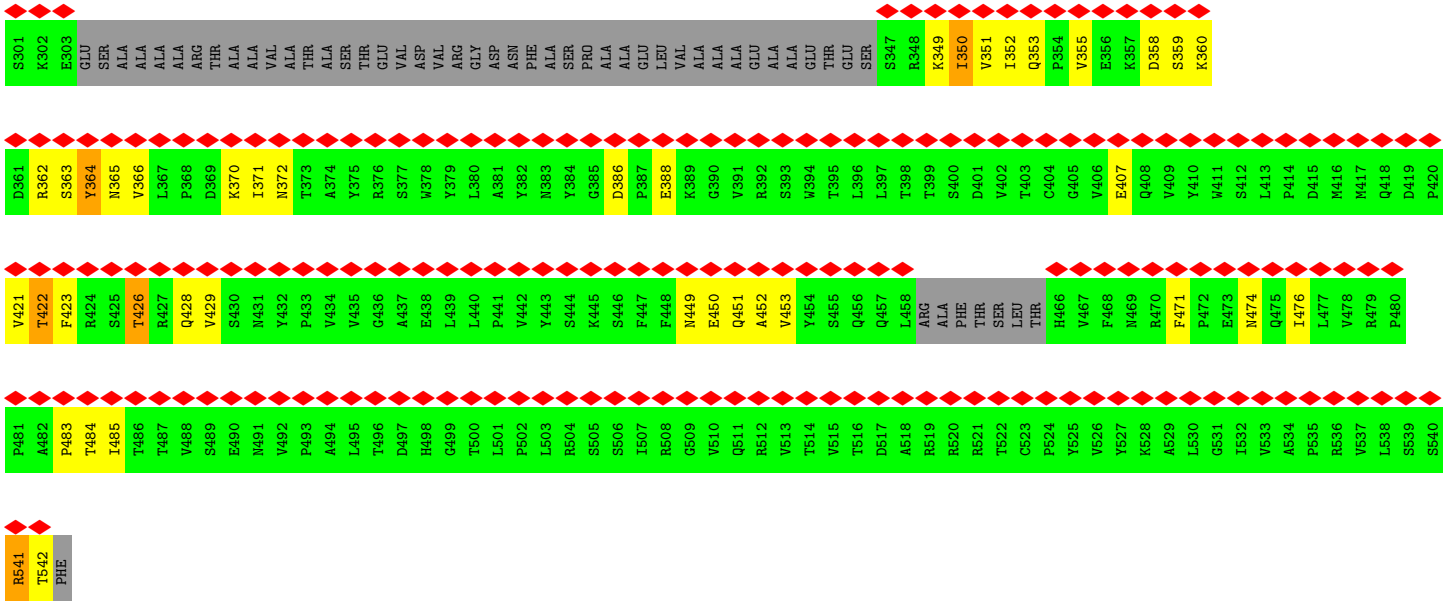




• Molecule 1: Penton protein

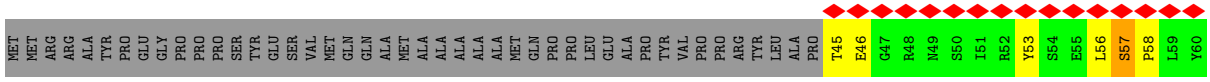
Chain N:

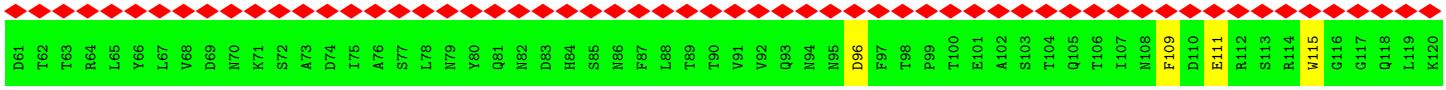


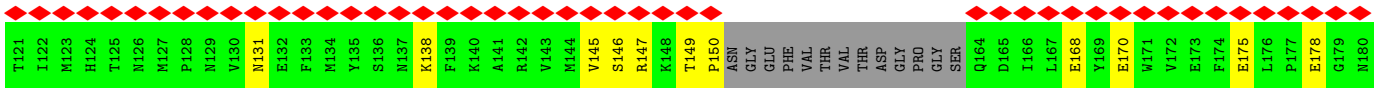


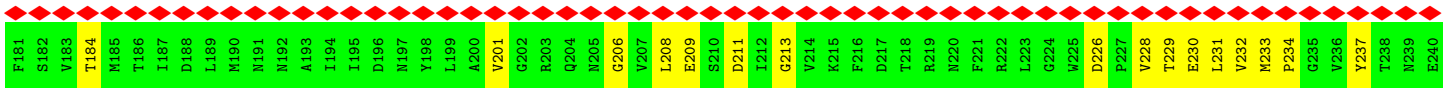
• Molecule 1: Penton protein

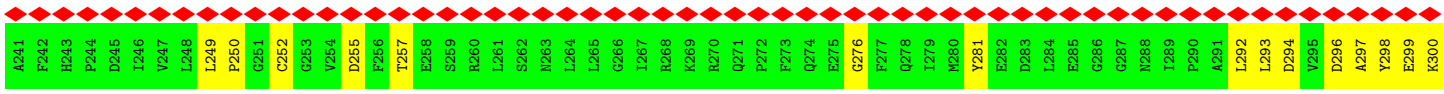
Chain O:

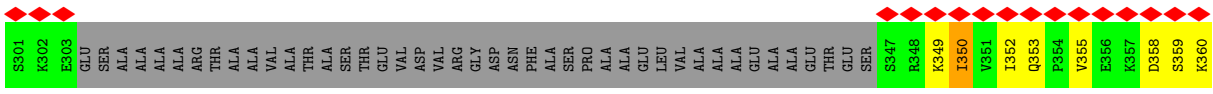


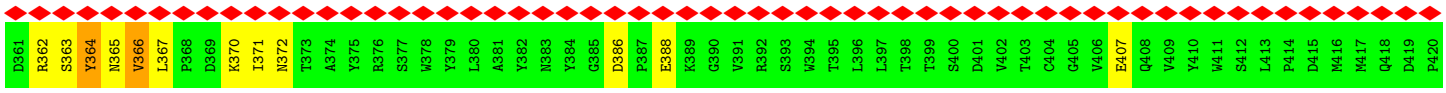


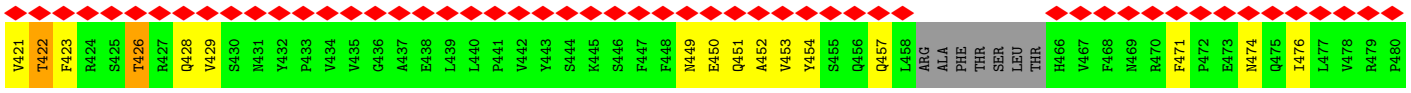


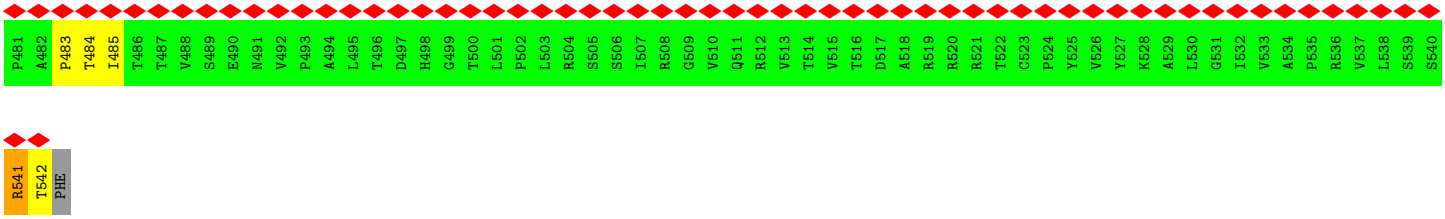






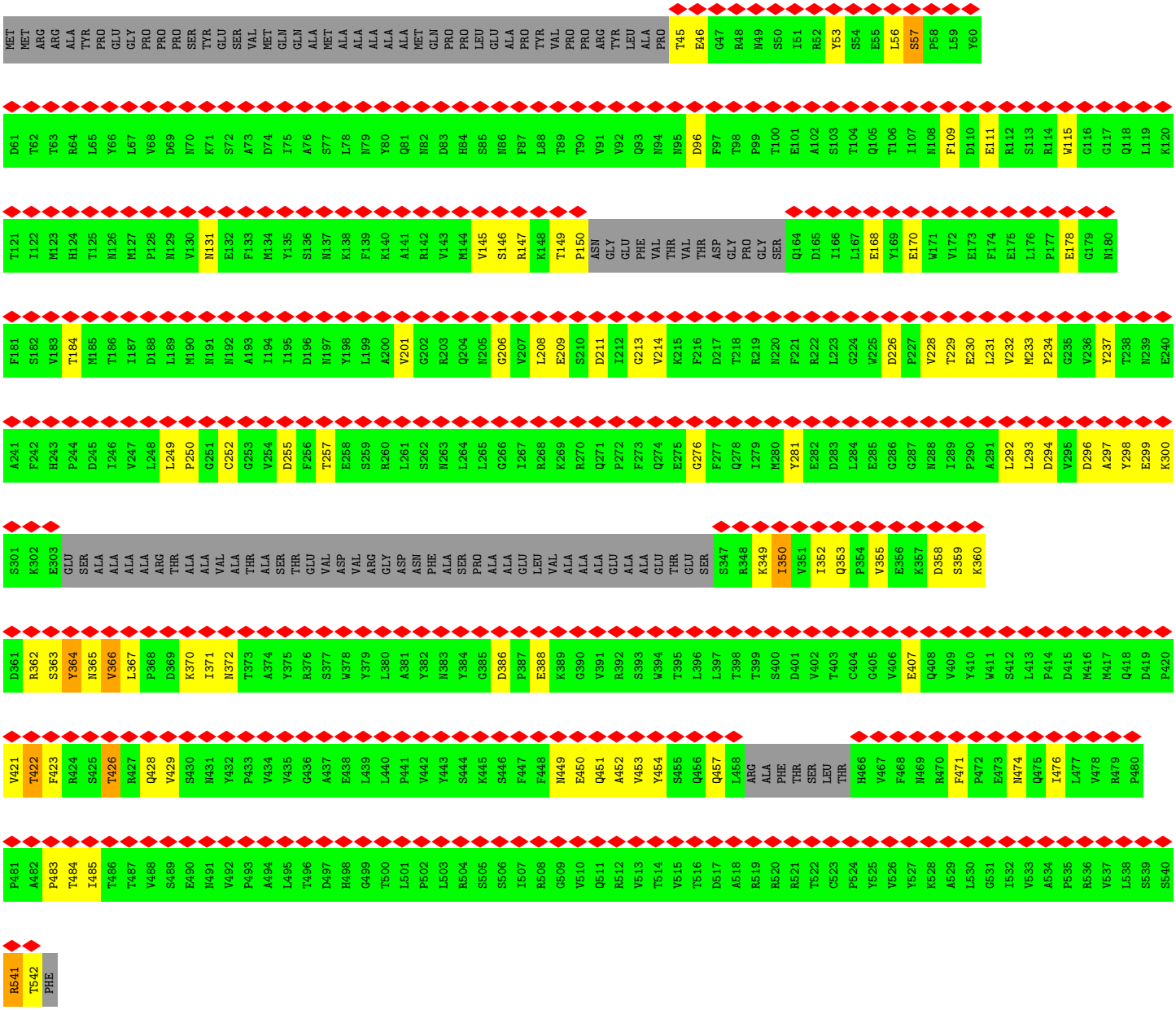






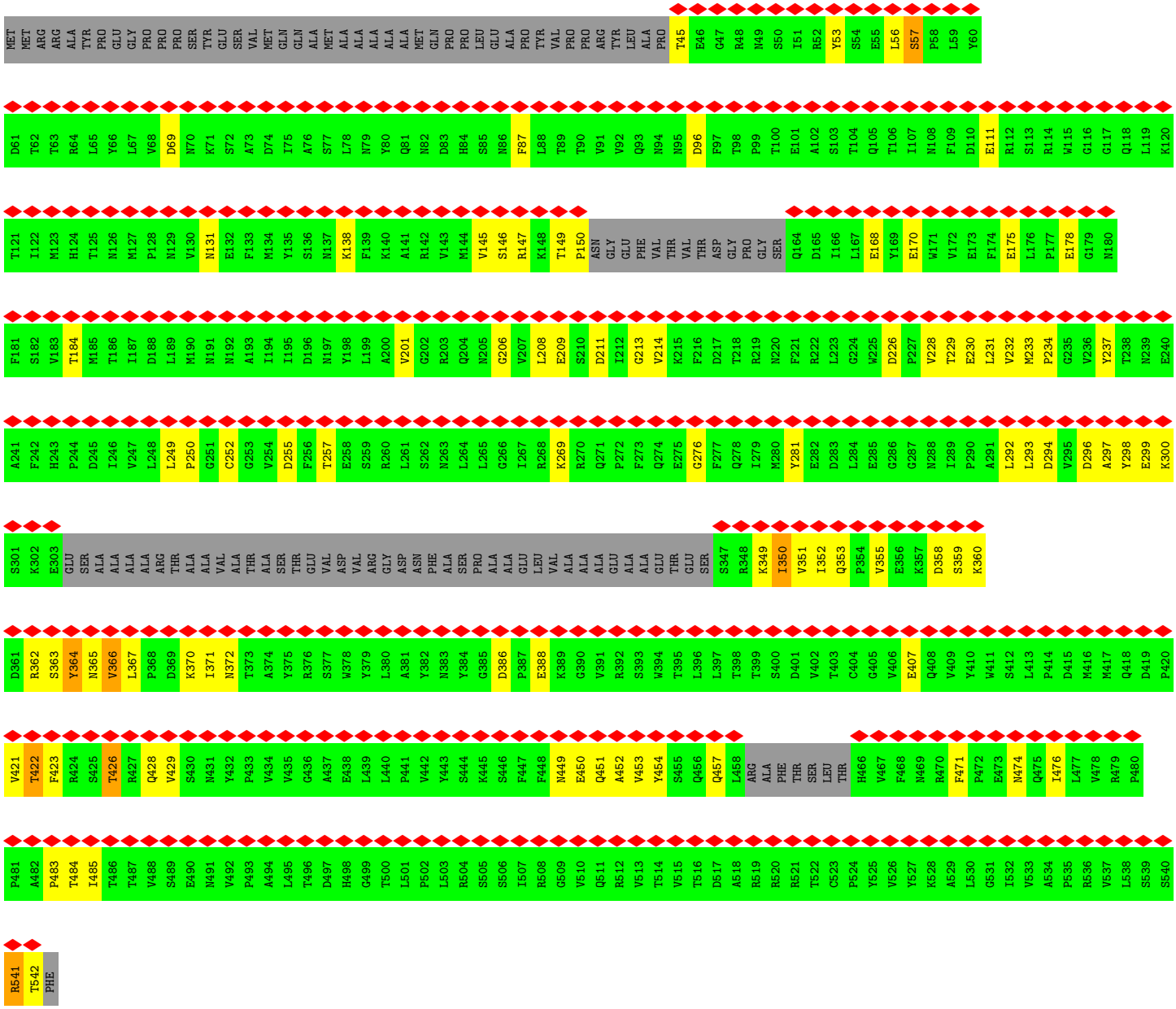
• Molecule 1: Penton protein

Chain P:



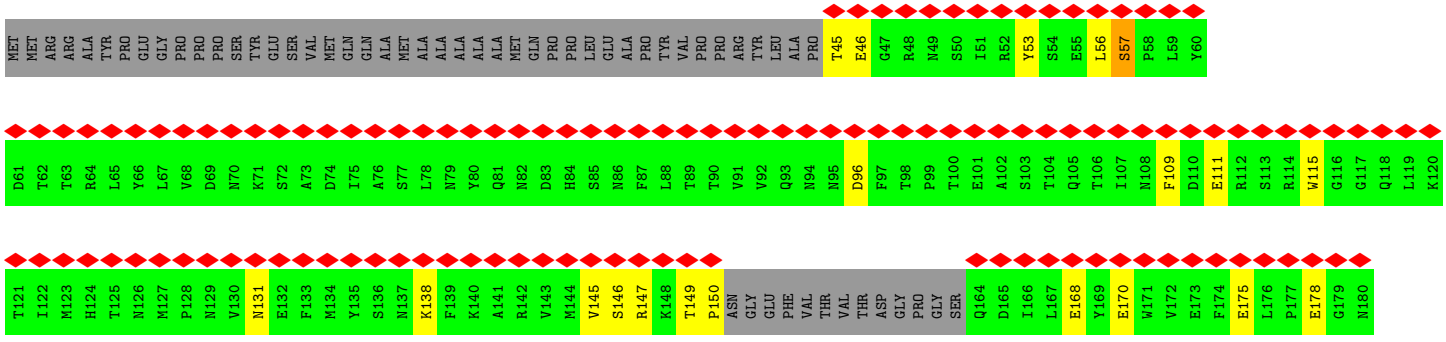
• Molecule 1: Penton protein

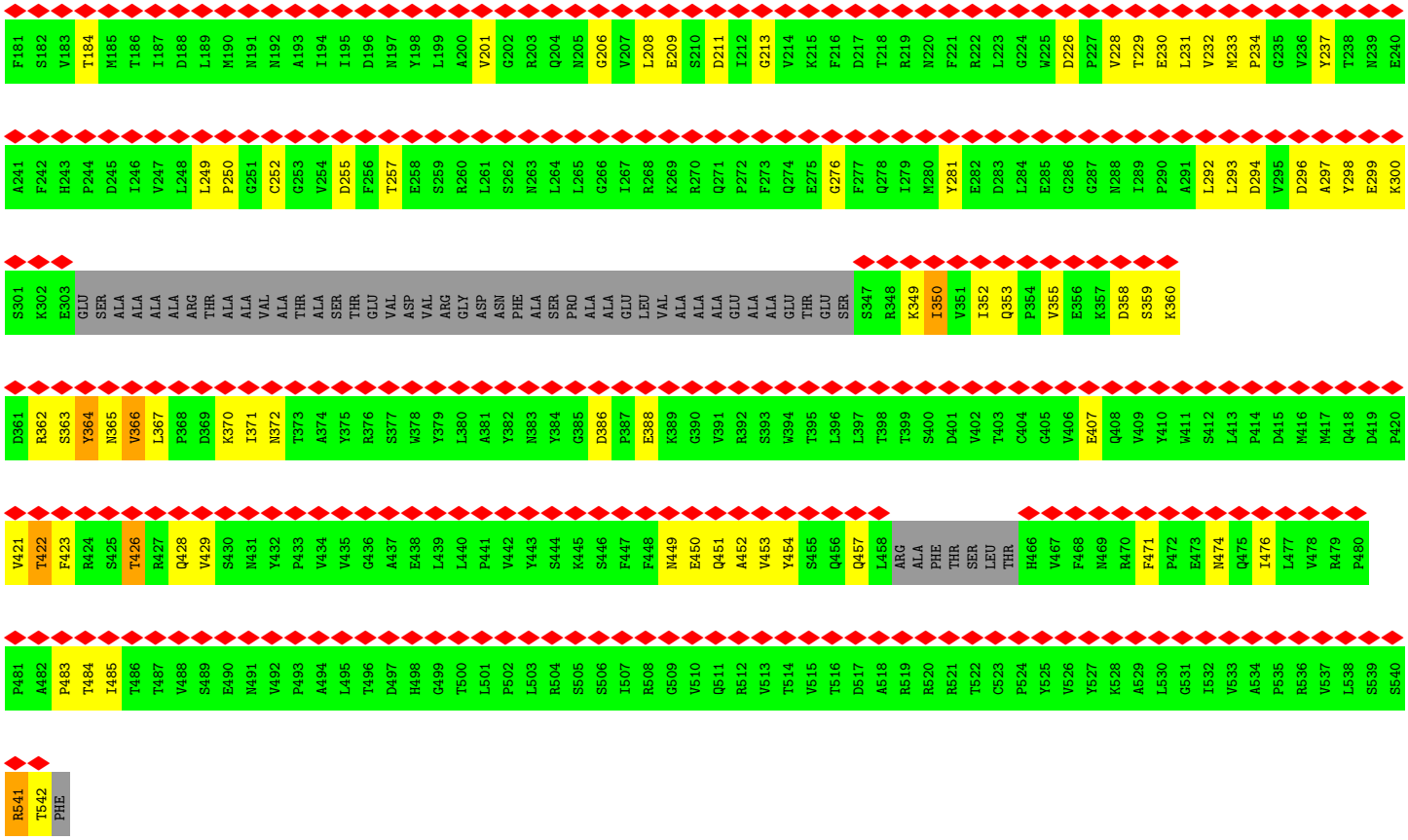
Chain Q:



• Molecule 1: Penton protein

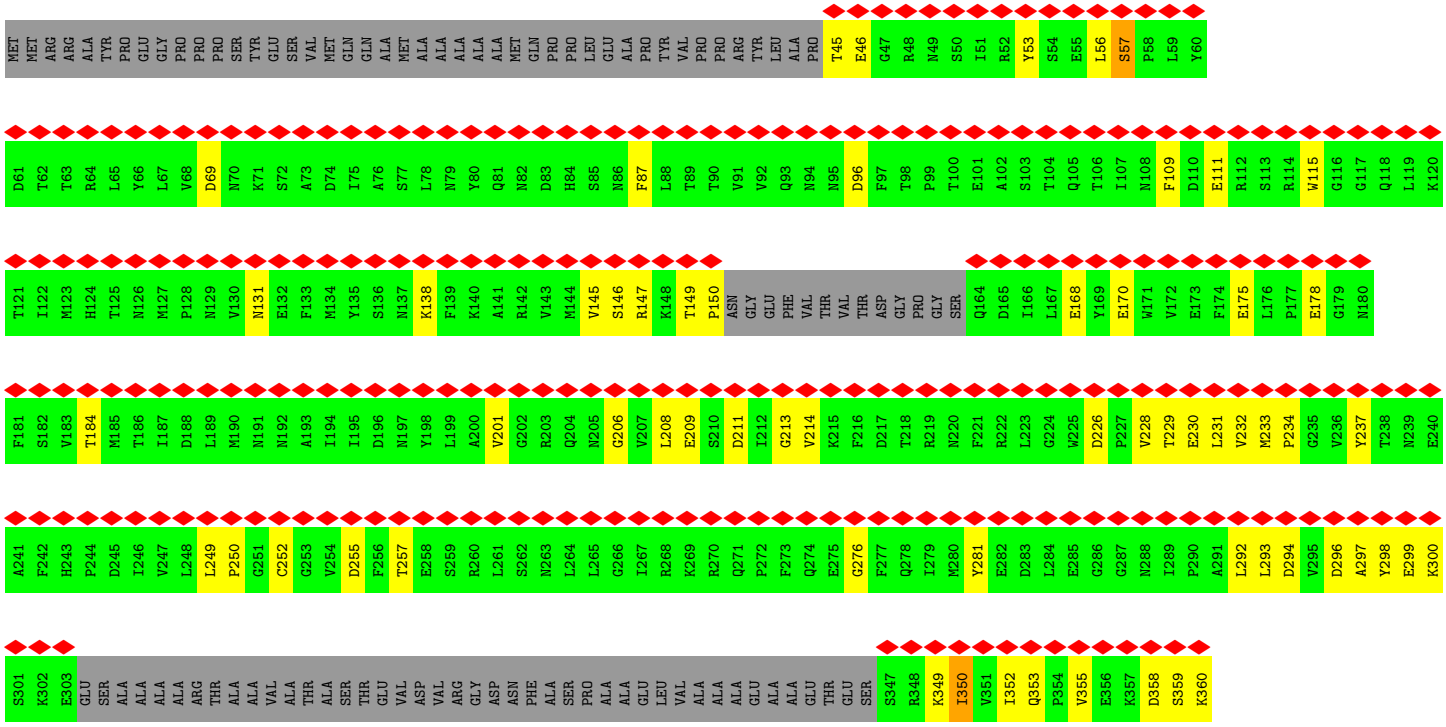
Chain R:

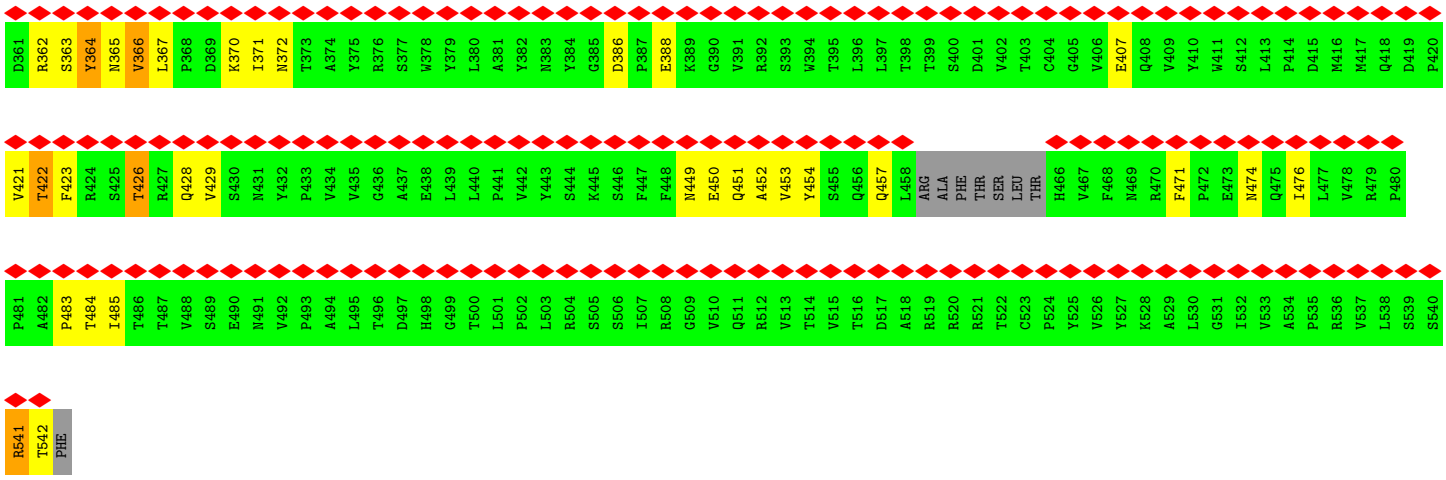




• Molecule 1: Penton protein

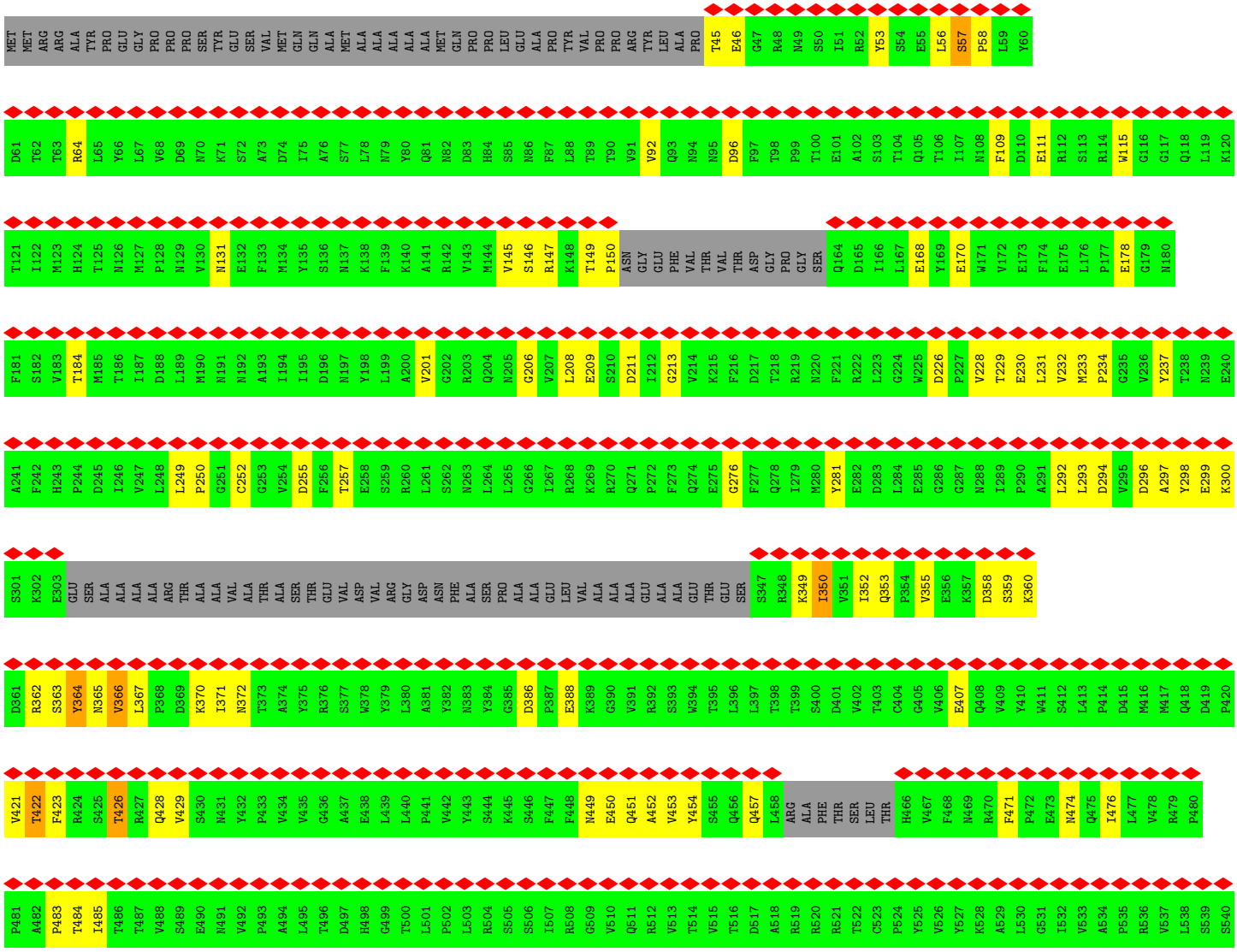
Chain S:





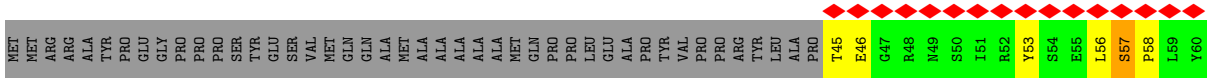
- Molecule 1: Penton protein

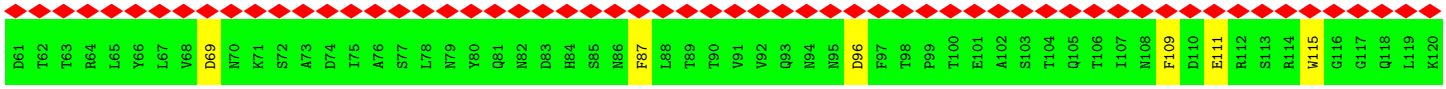
Chain T:

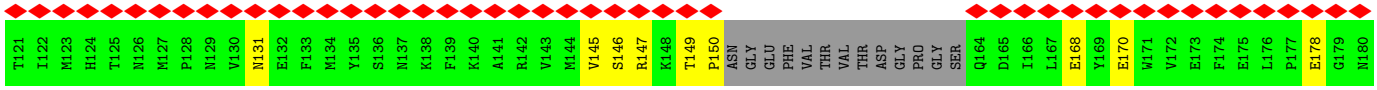


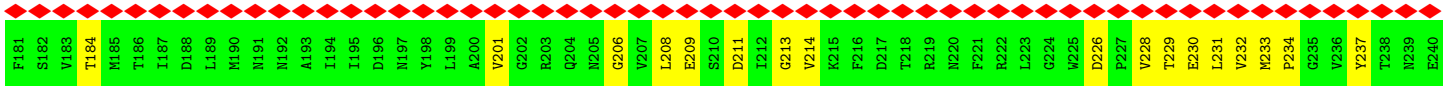
• Molecule 1: Penton protein

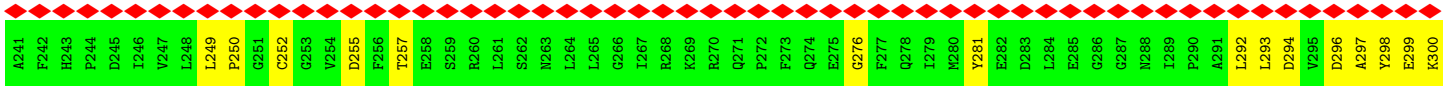
Chain V:

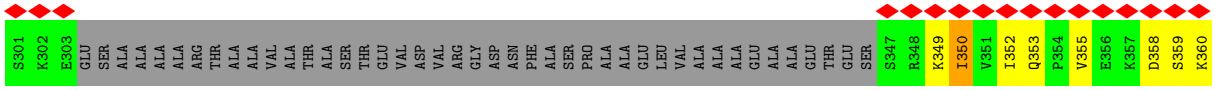


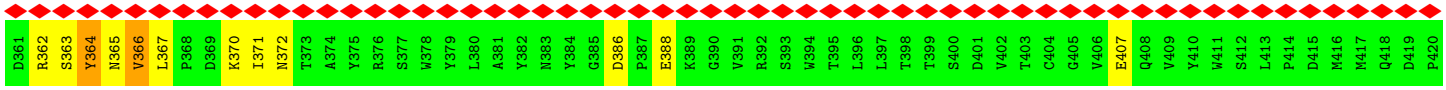


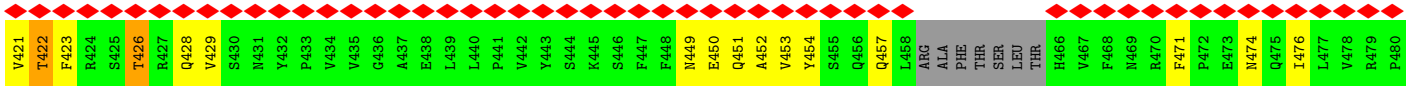


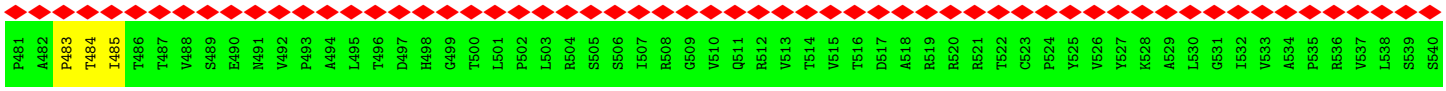






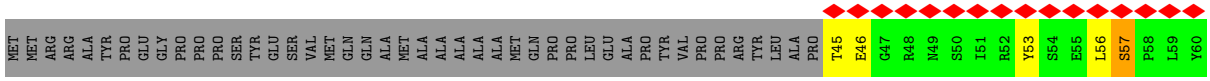


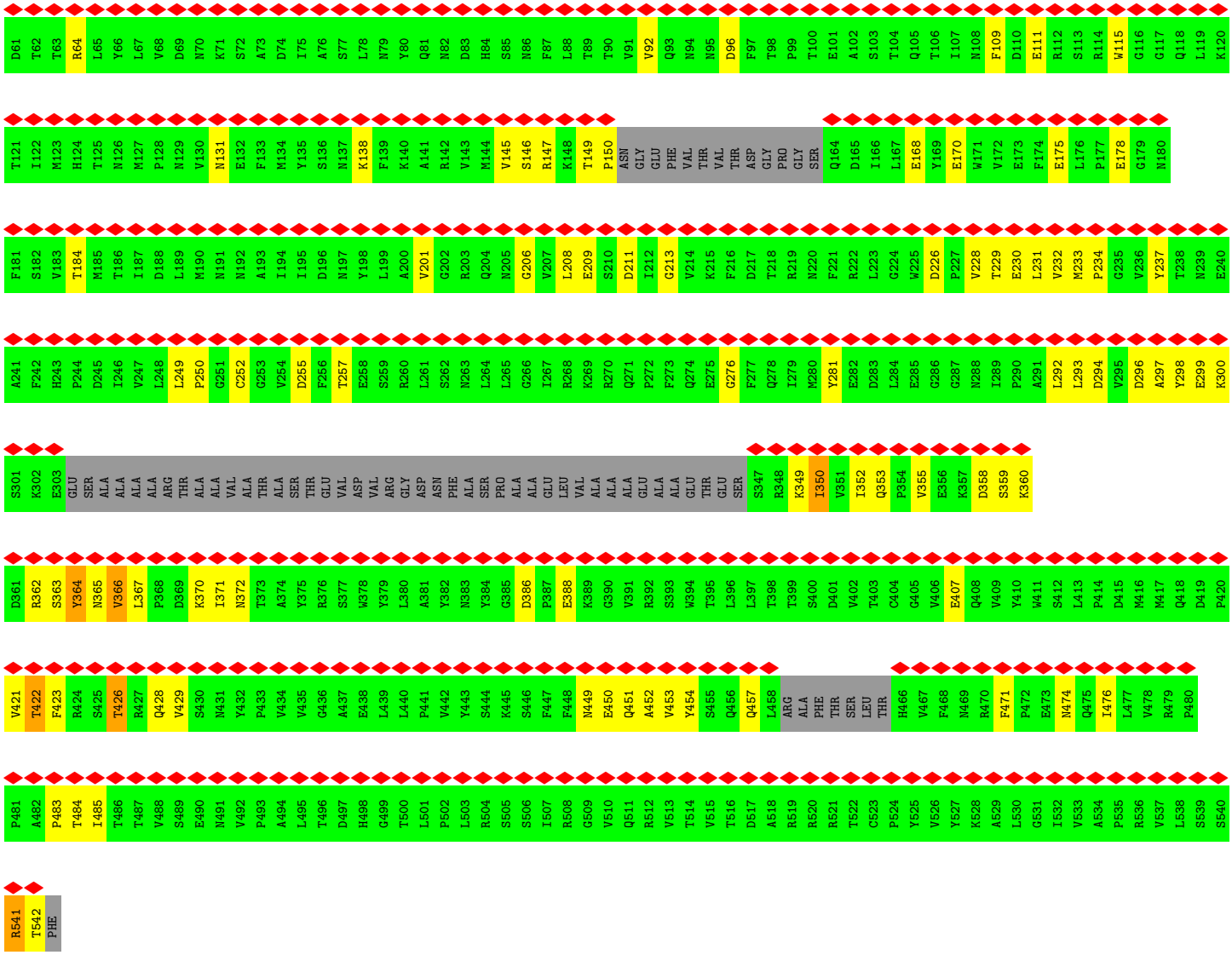




• Molecule 1: Penton protein

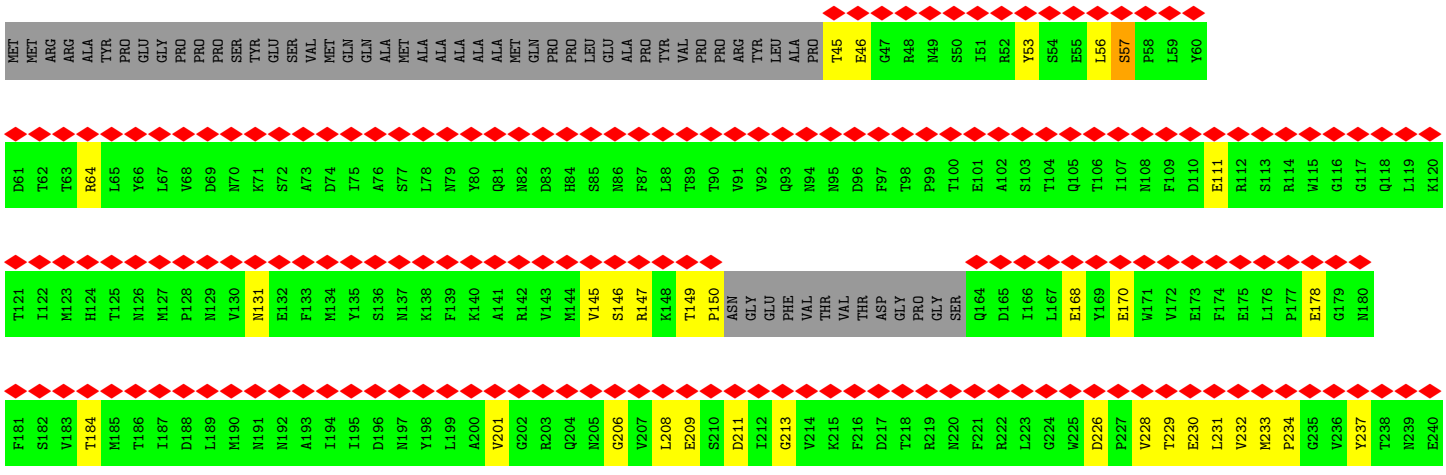
Chain W:

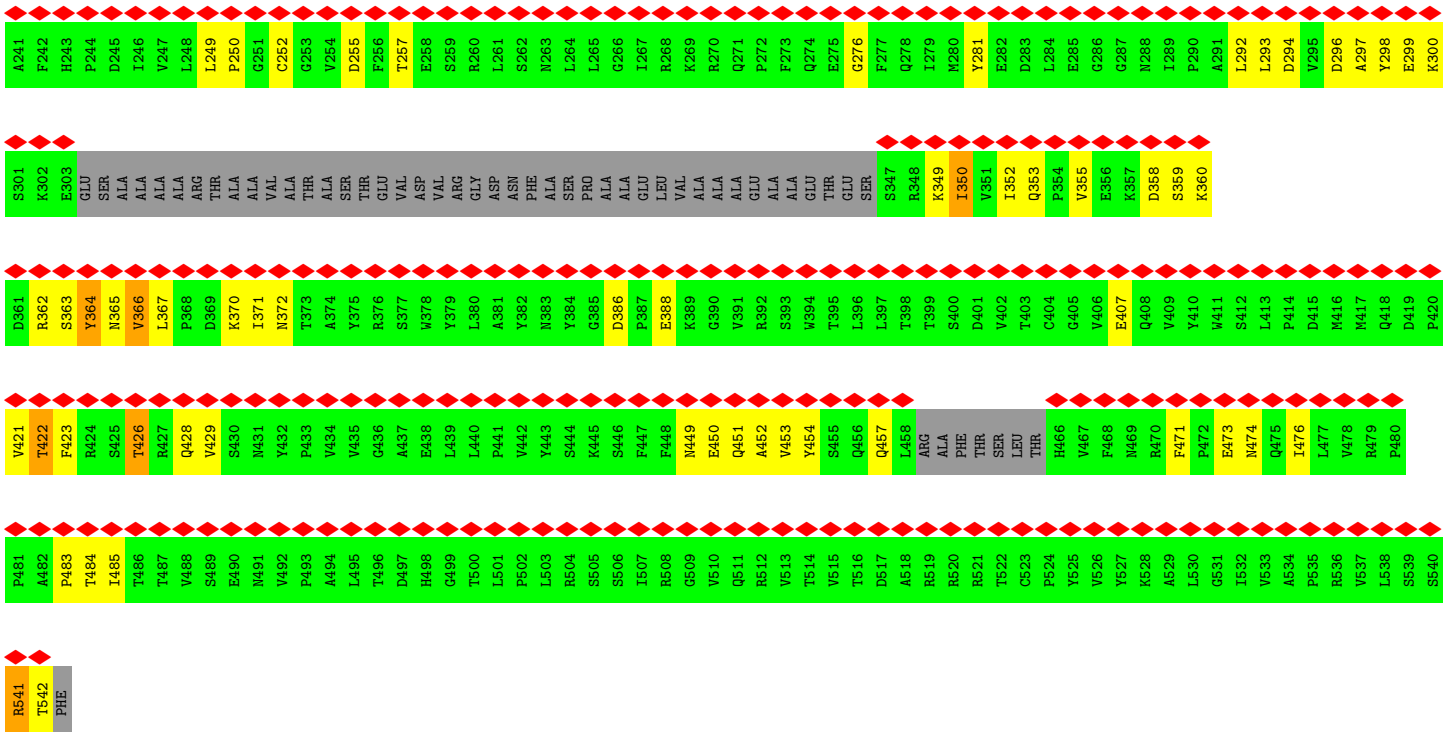




- Molecule 1: Penton protein

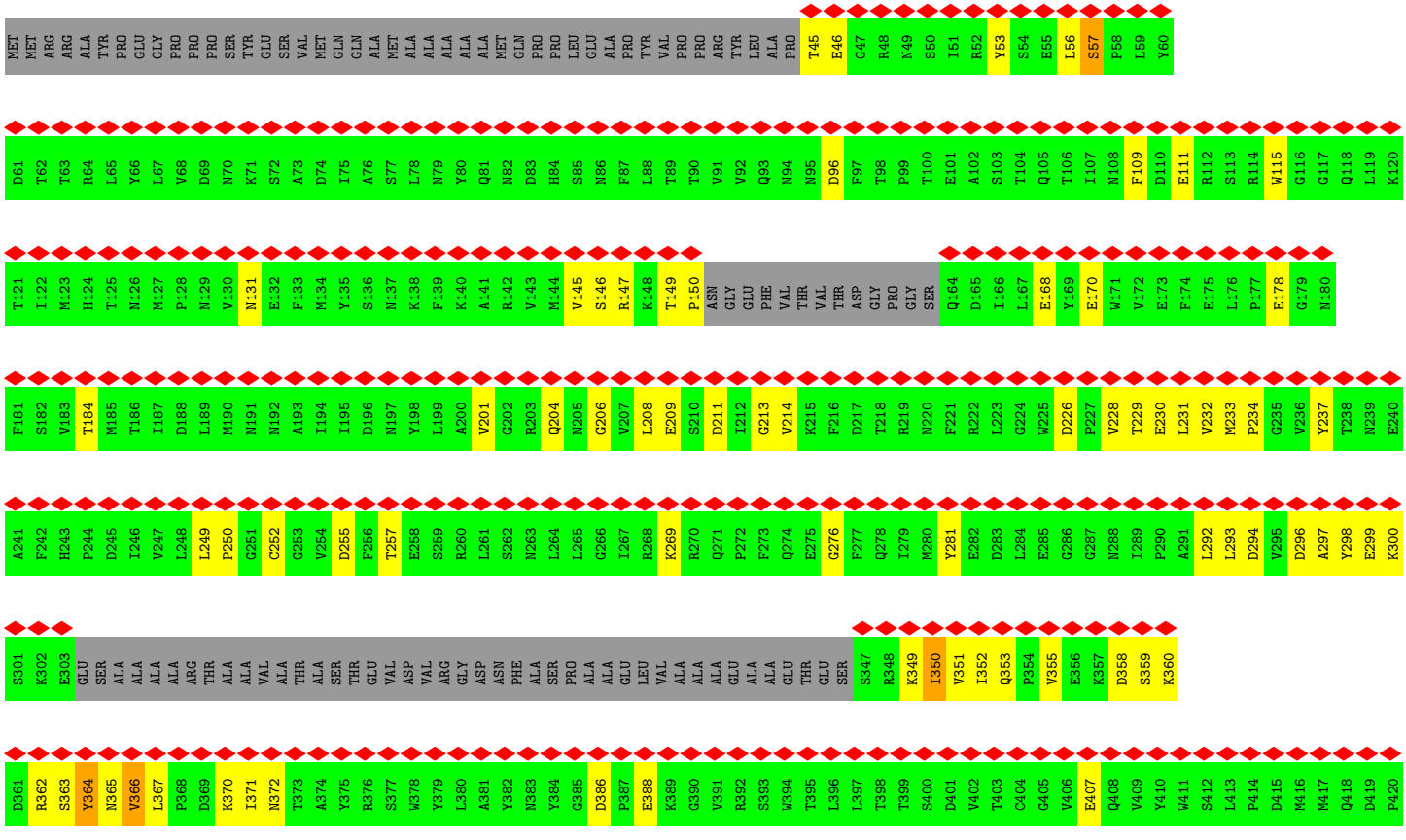
Chain X:

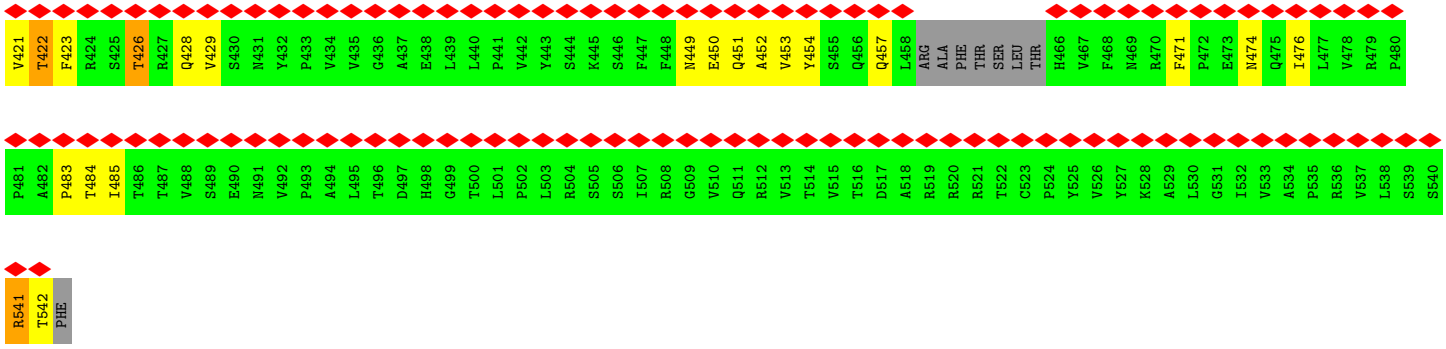




• Molecule 1: Penton protein

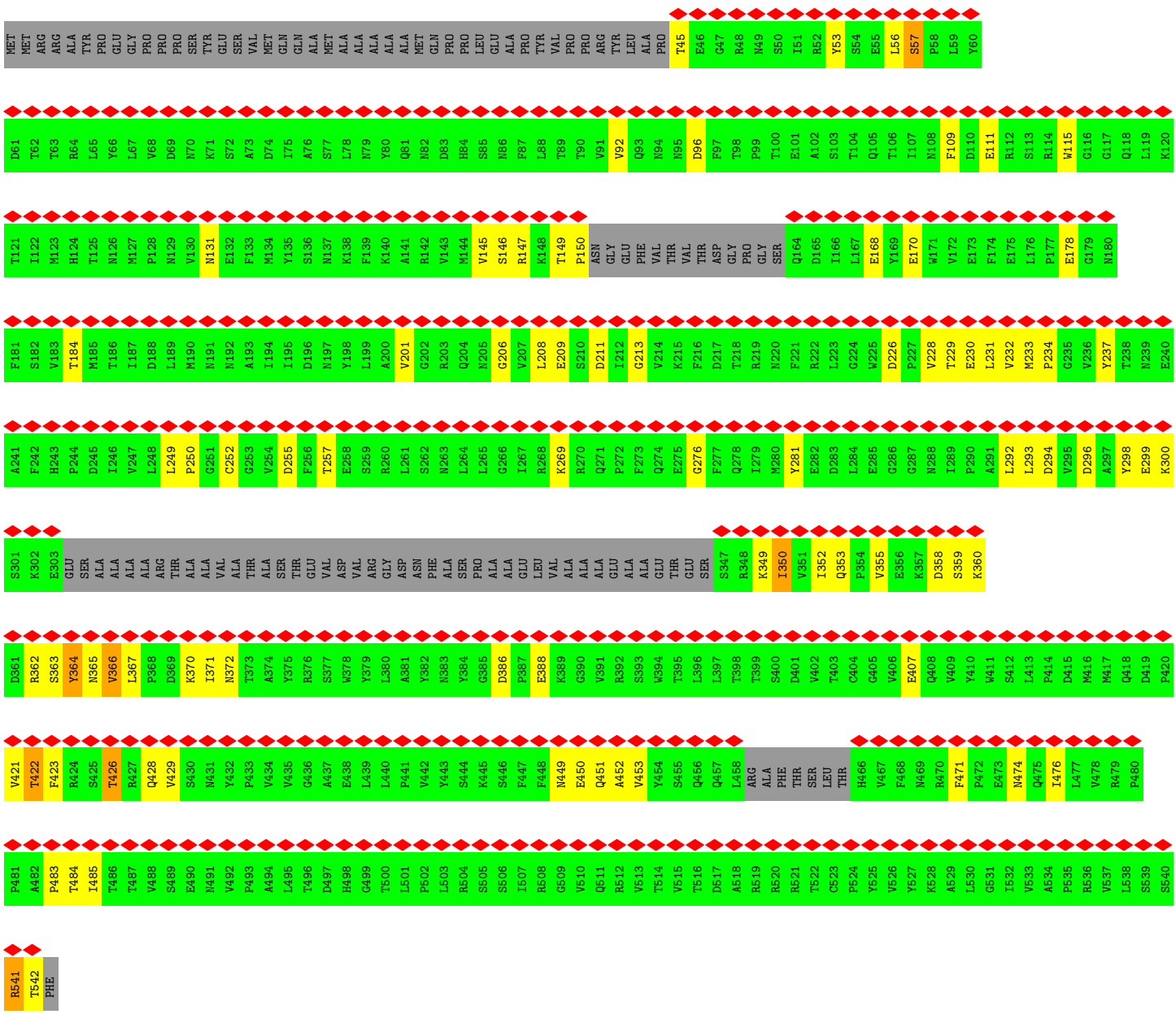
Chain Y:





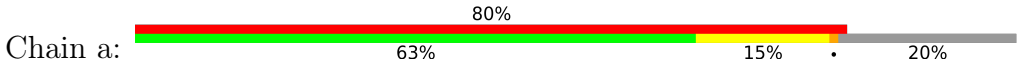
• Molecule 1: Penton protein

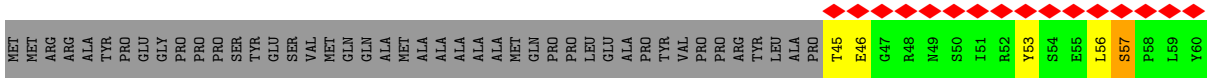
Chain Z:

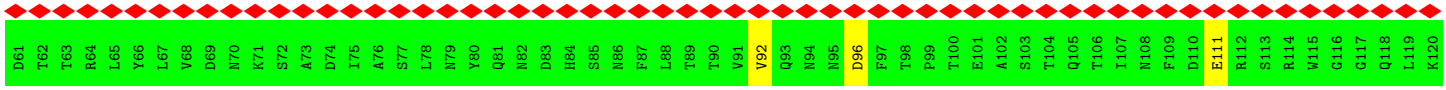


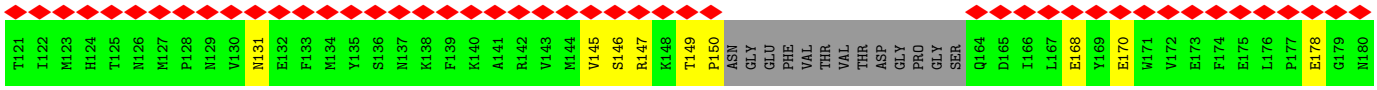
• Molecule 1: Penton protein

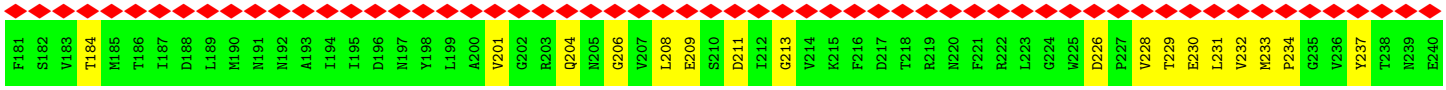
Chain a:

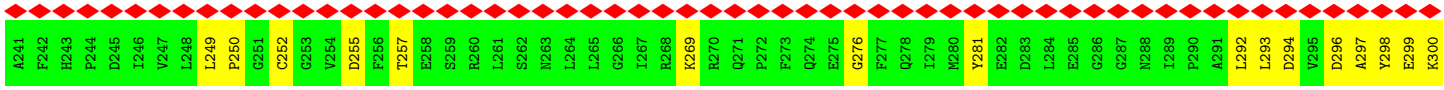


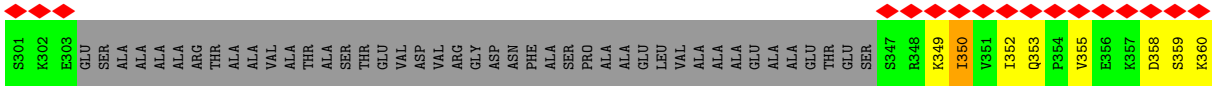


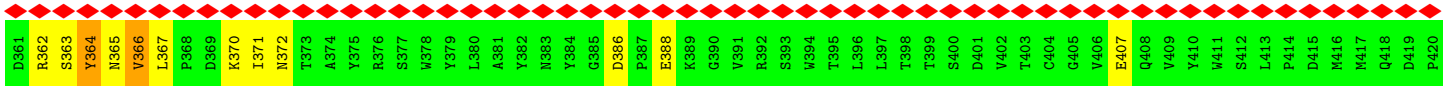


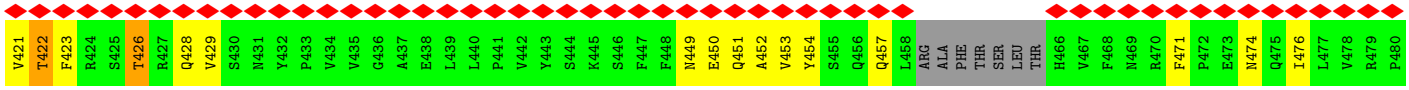


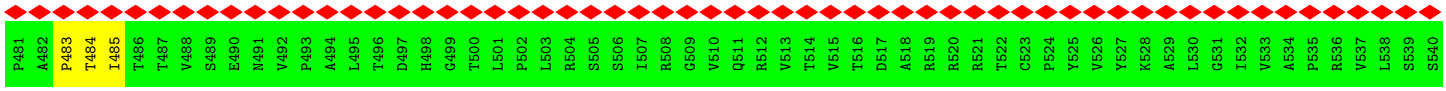






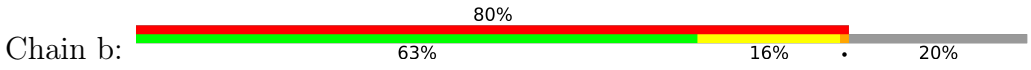


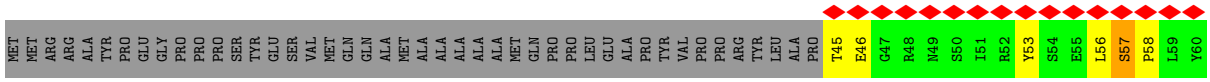


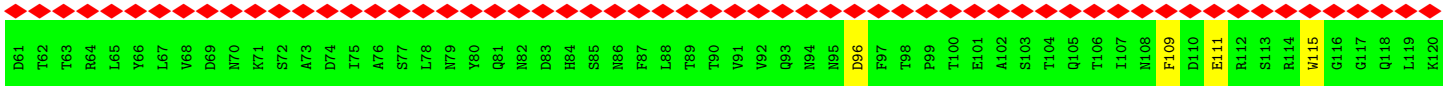


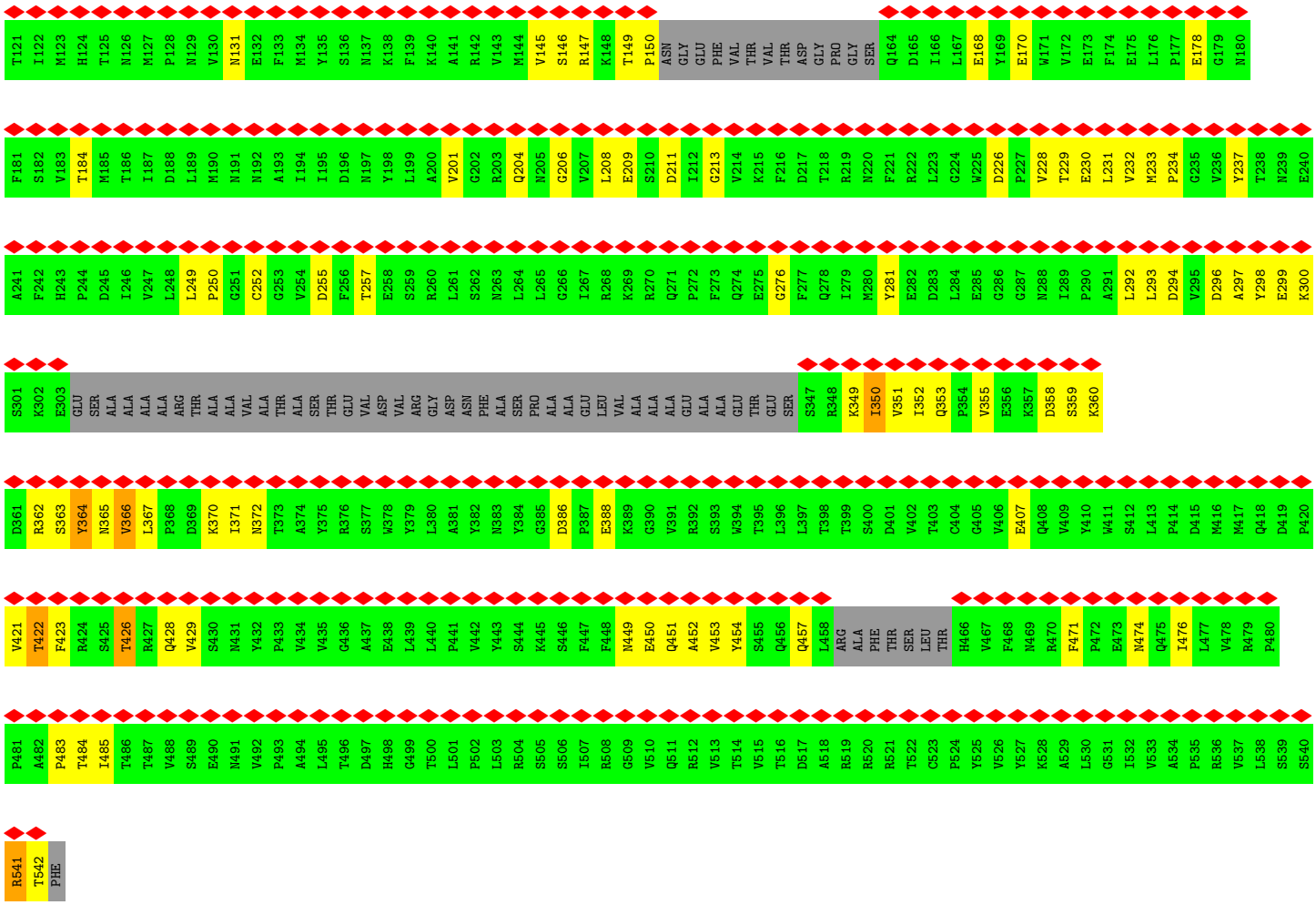
• Molecule 1: Penton protein

Chain b:



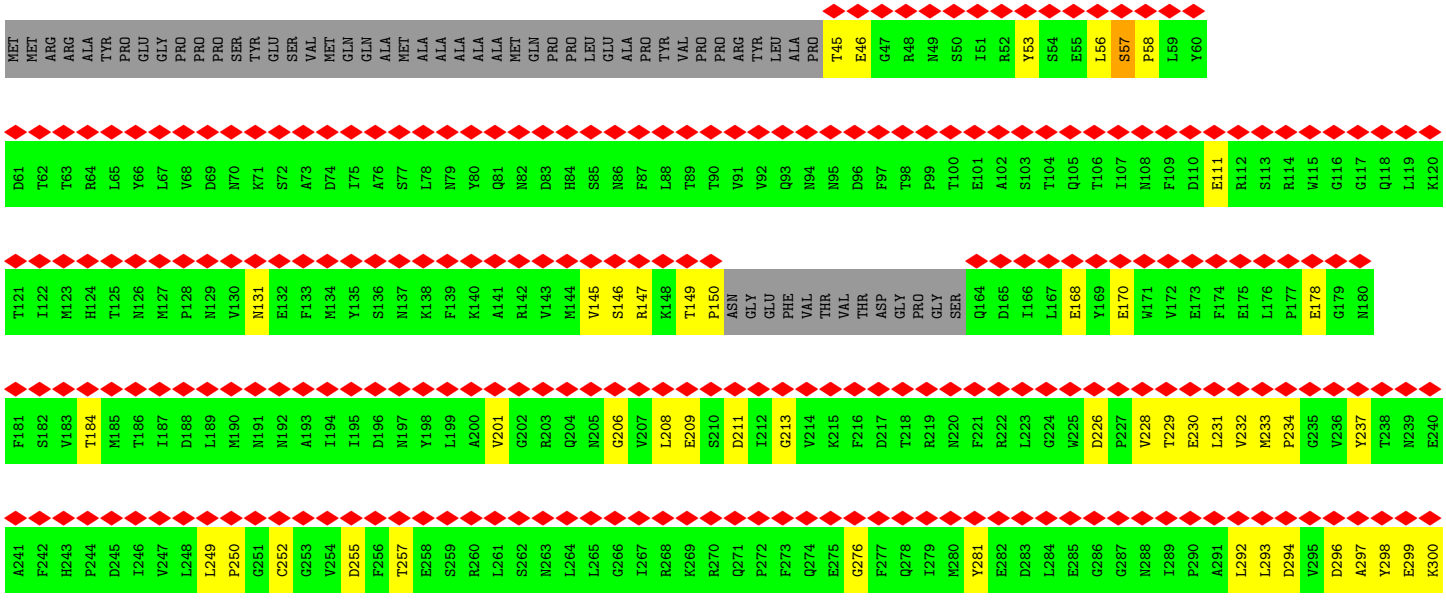


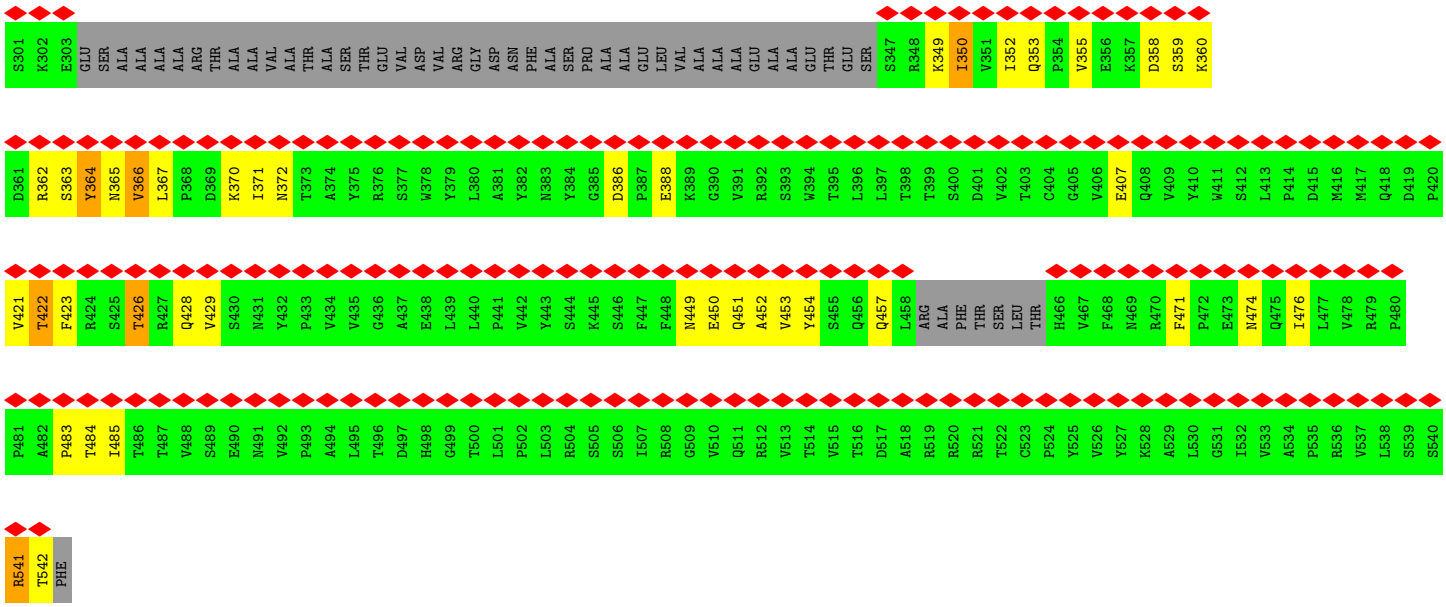




• Molecule 1: Penton protein

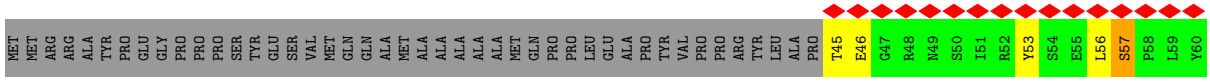
Chain c:

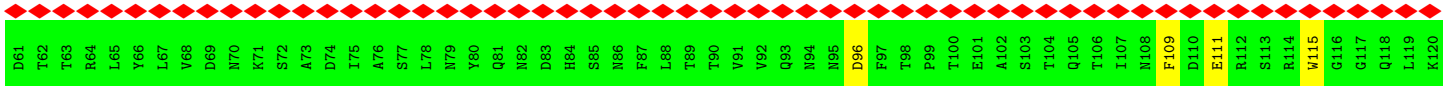


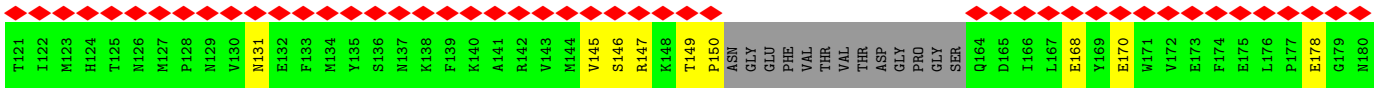


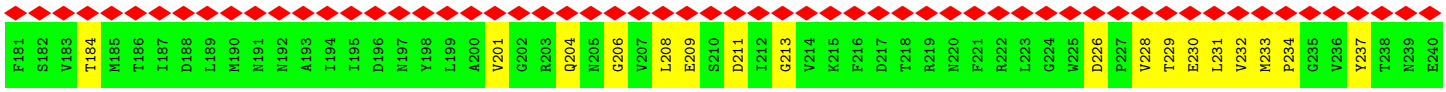
• Molecule 1: Penton protein

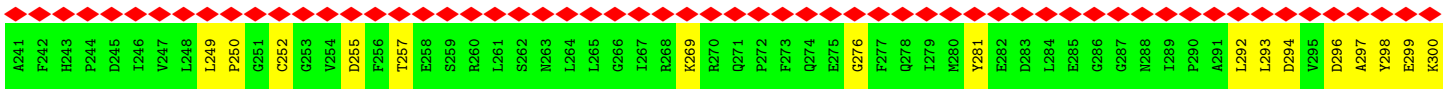
Chain d:

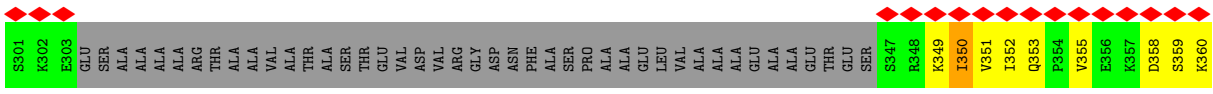


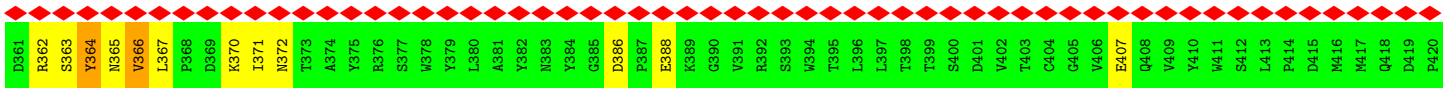


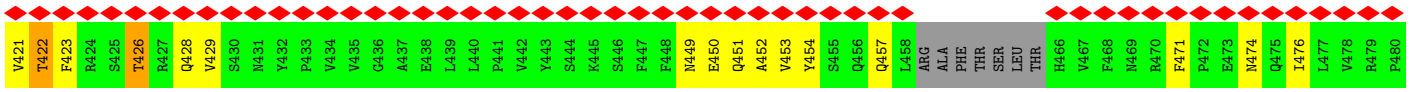


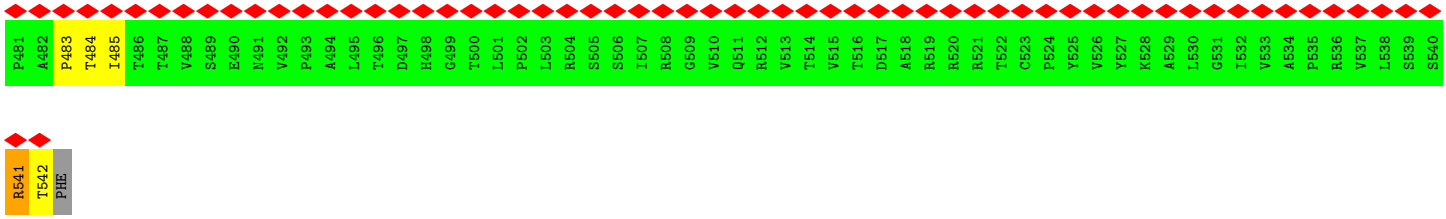






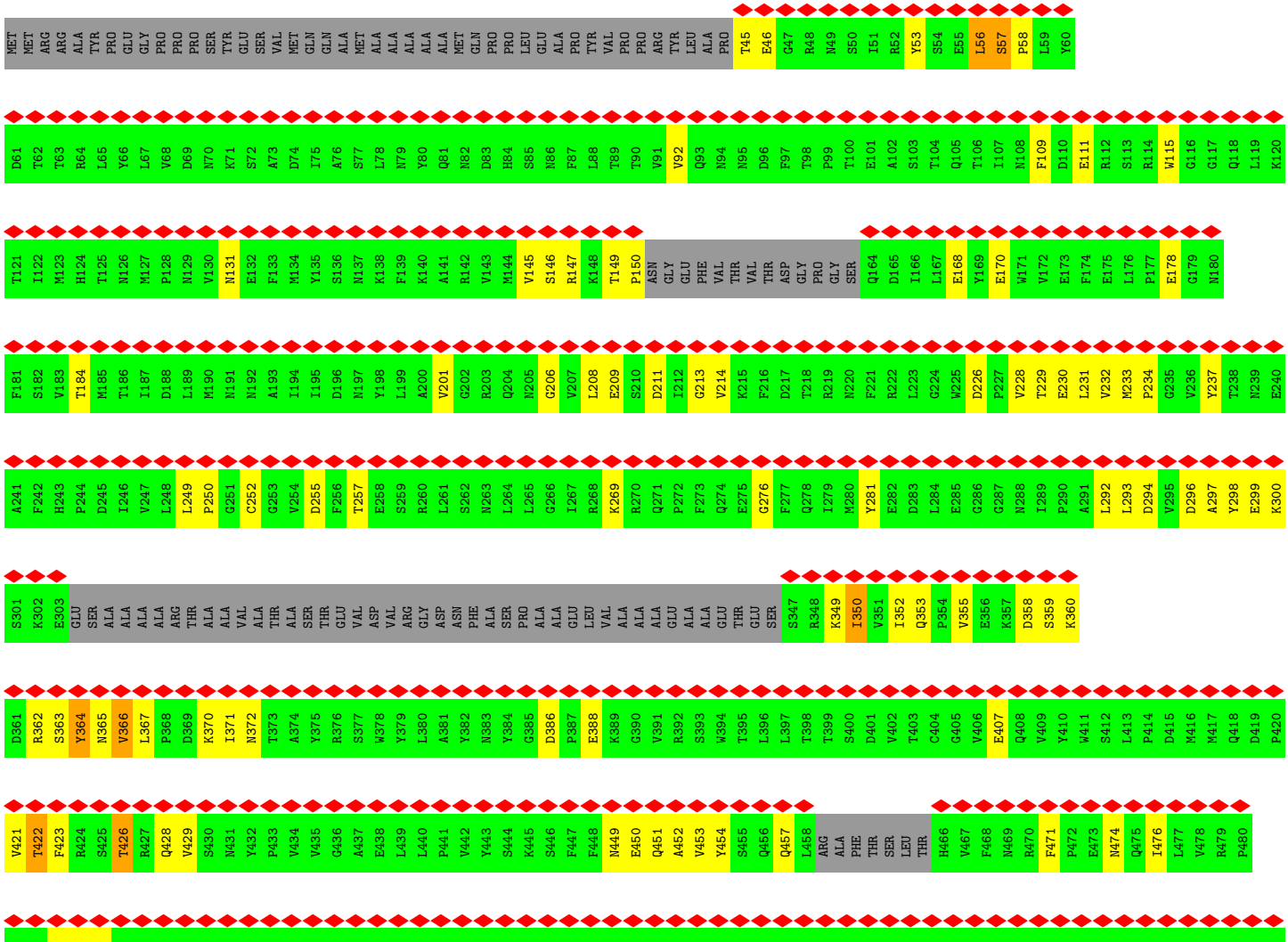






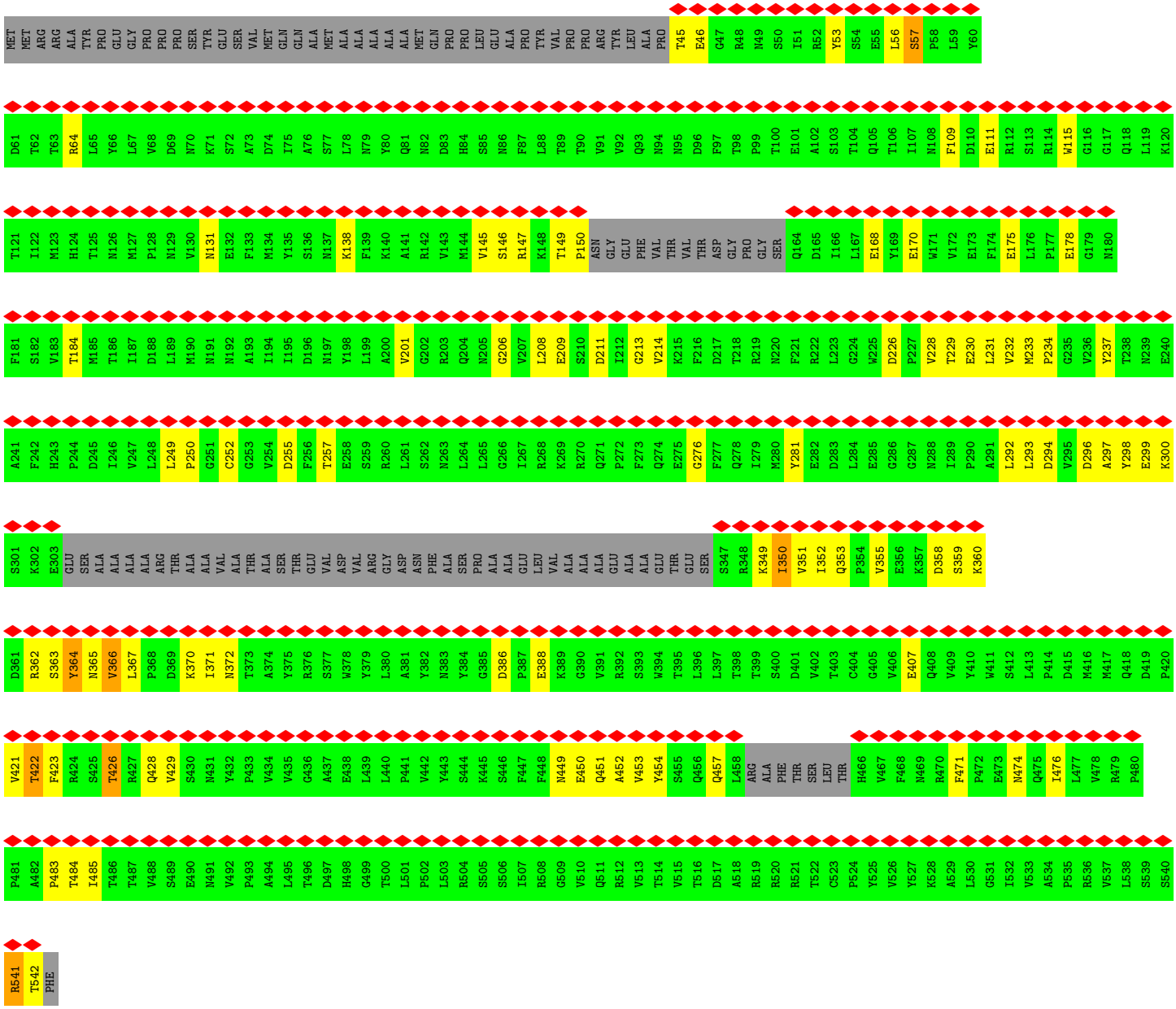
• Molecule 1: Penton protein

Chain e:



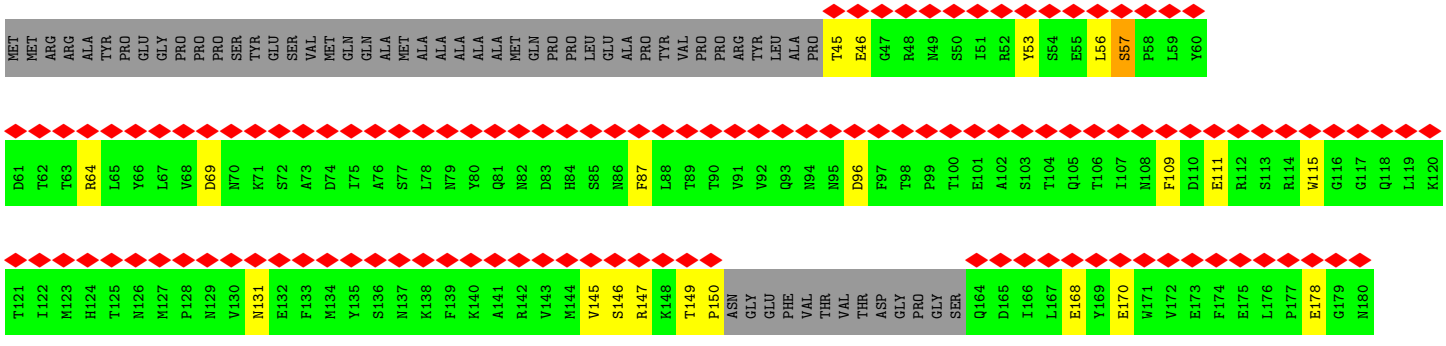
• Molecule 1: Penton protein

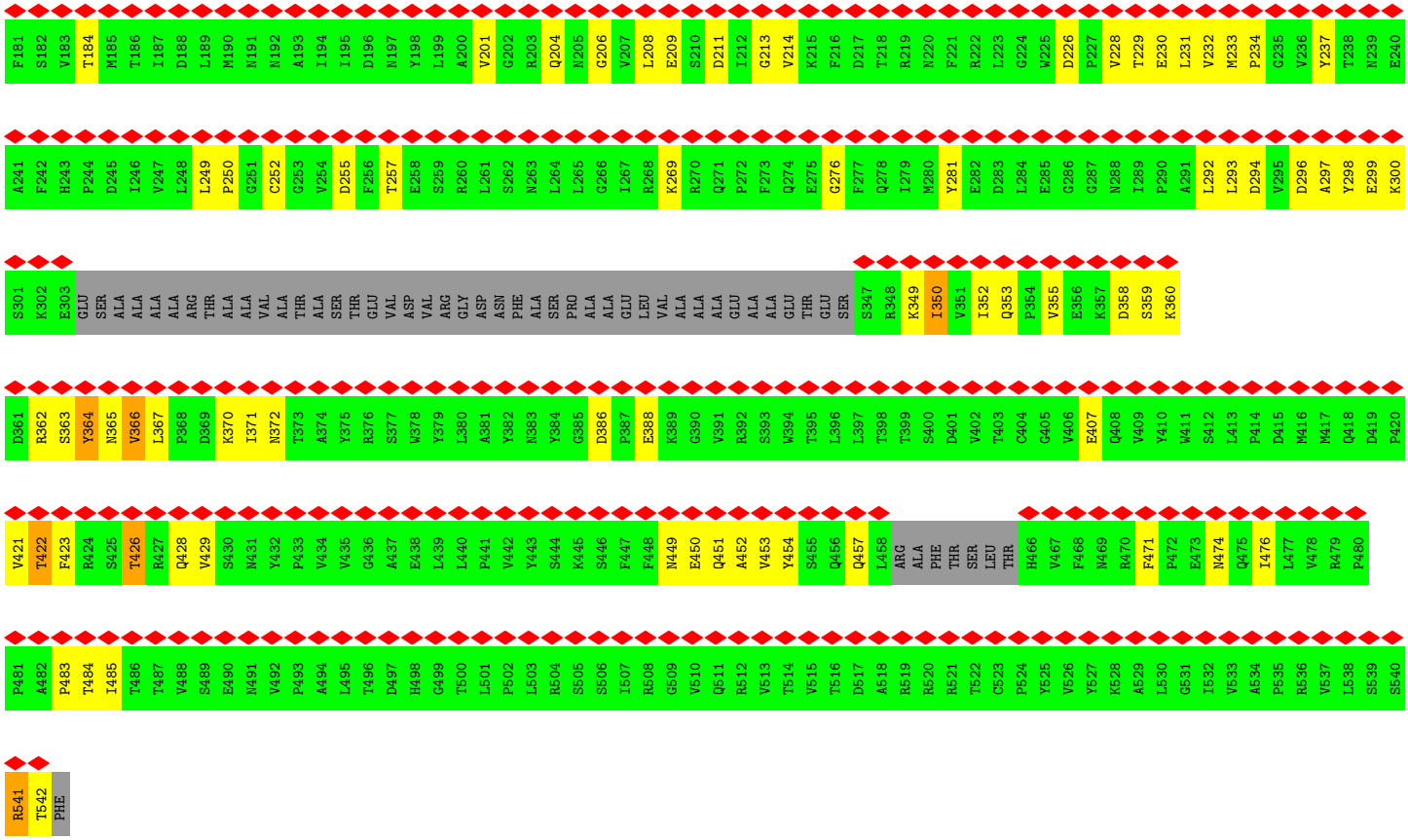
Chain f:



• Molecule 1: Penton protein

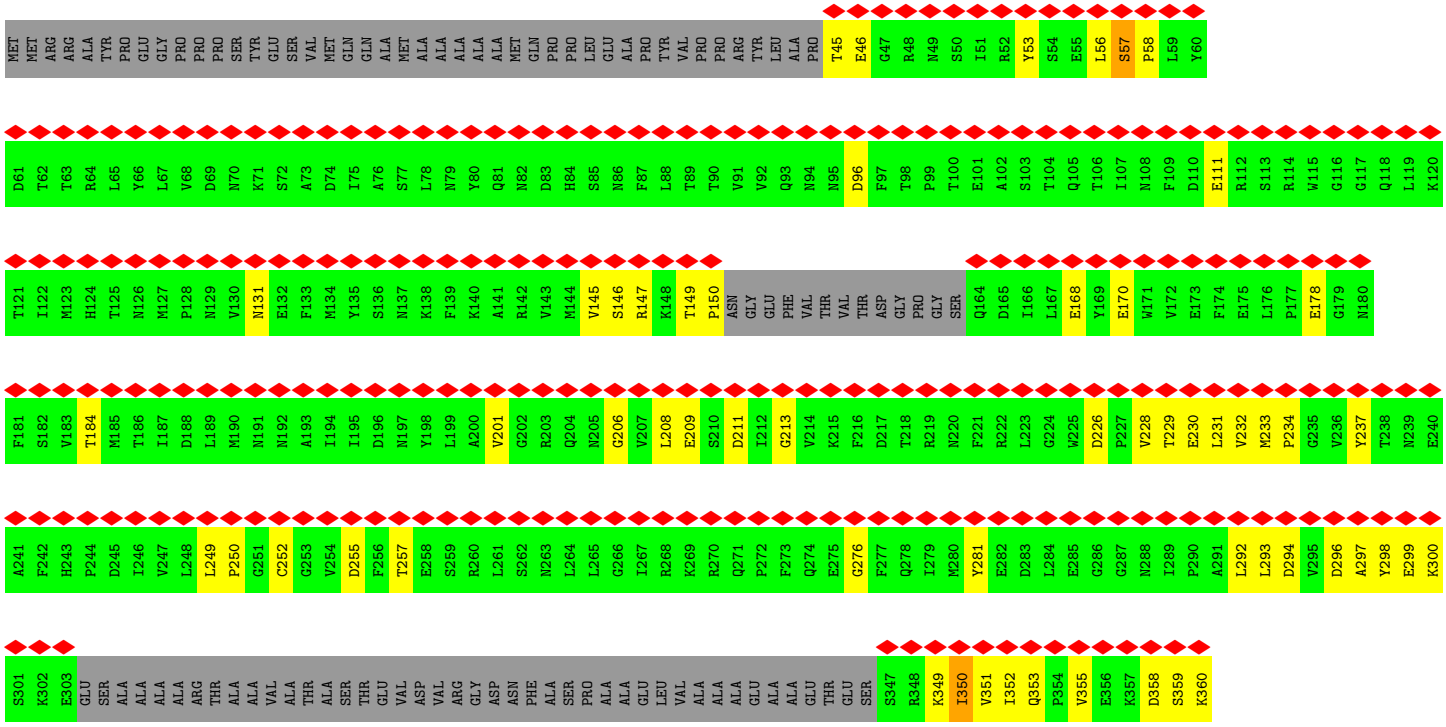
Chain g:

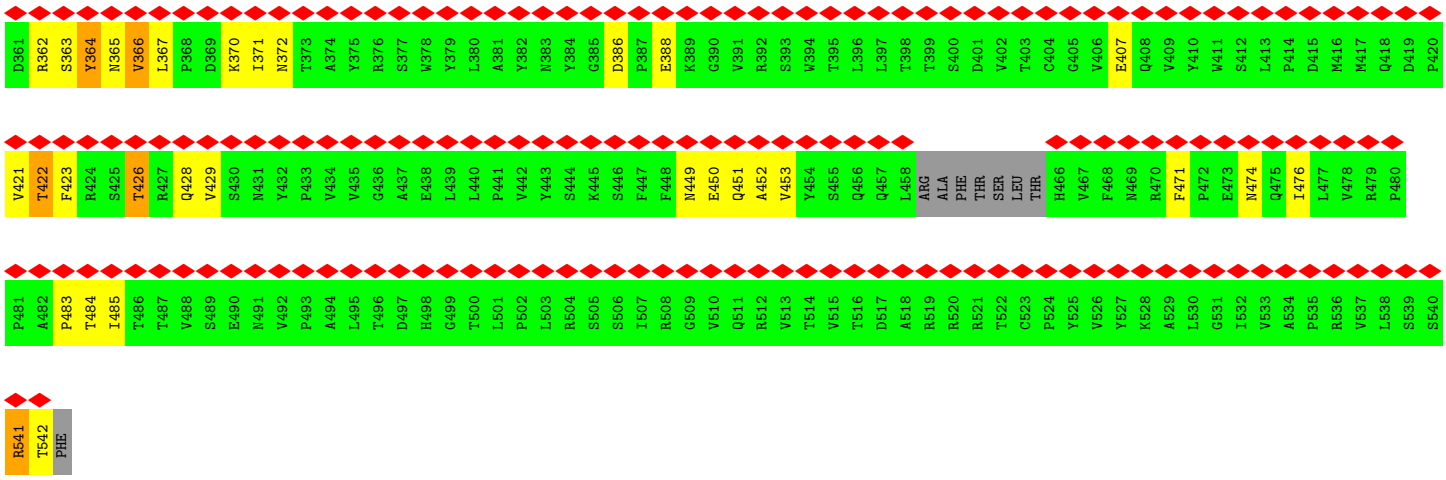




• Molecule 1: Penton protein

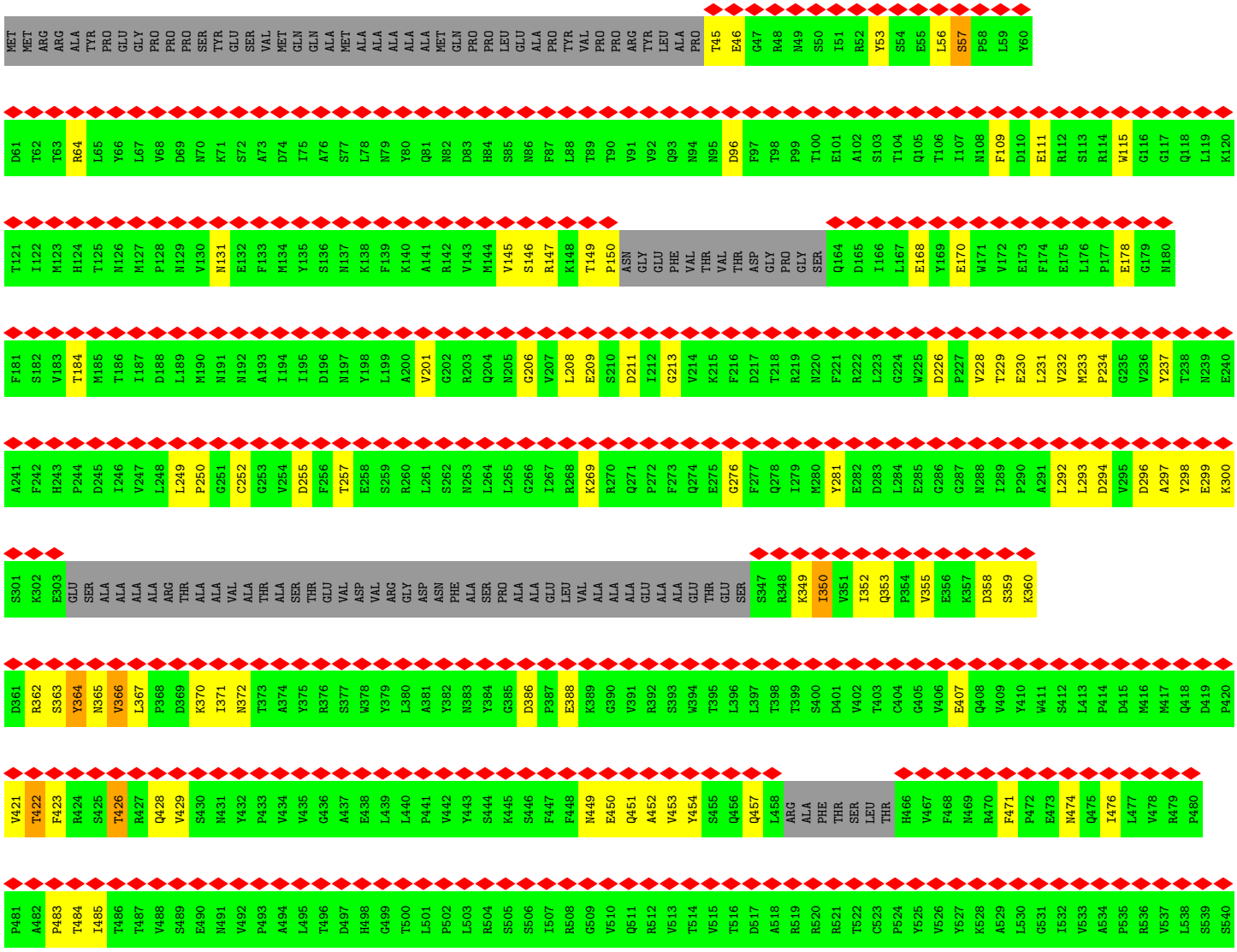
Chain h:





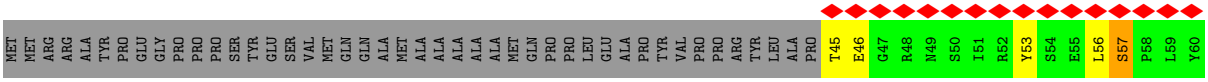
- Molecule 1: Penton protein

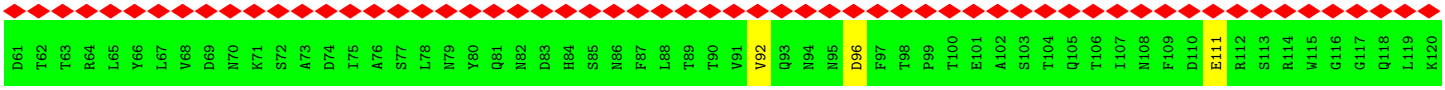
Chain i:

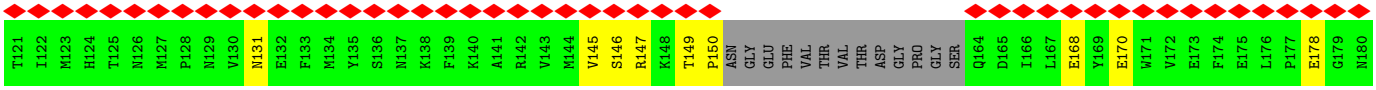


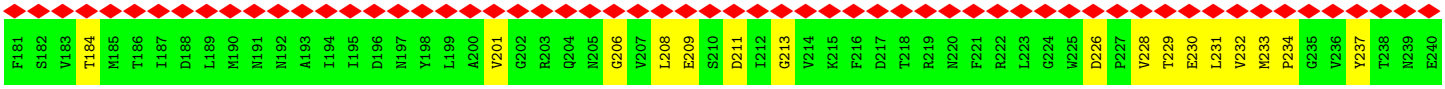
• Molecule 1: Penton protein

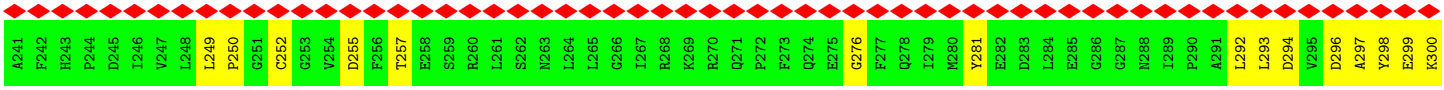
Chain j:

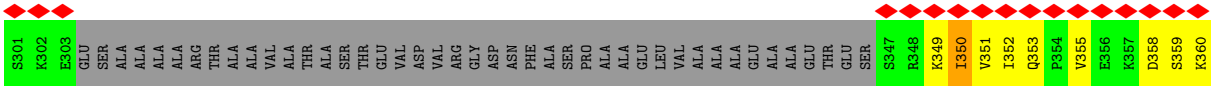


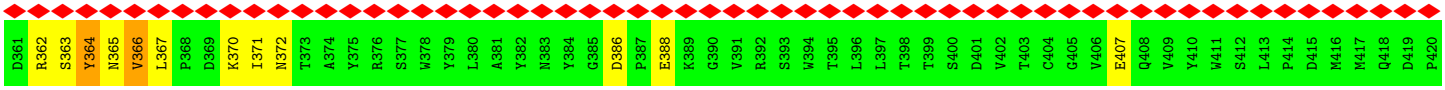


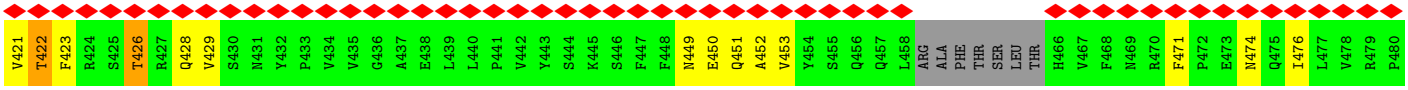


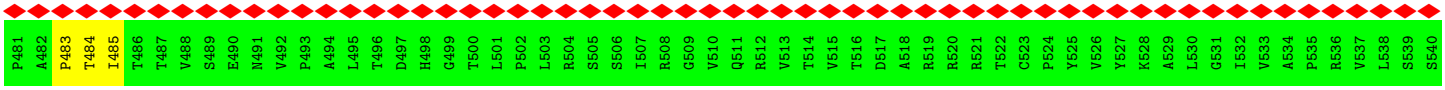






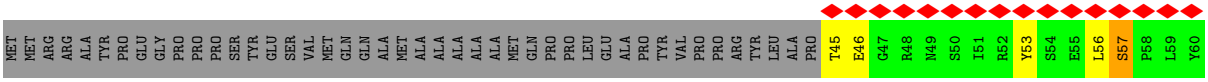


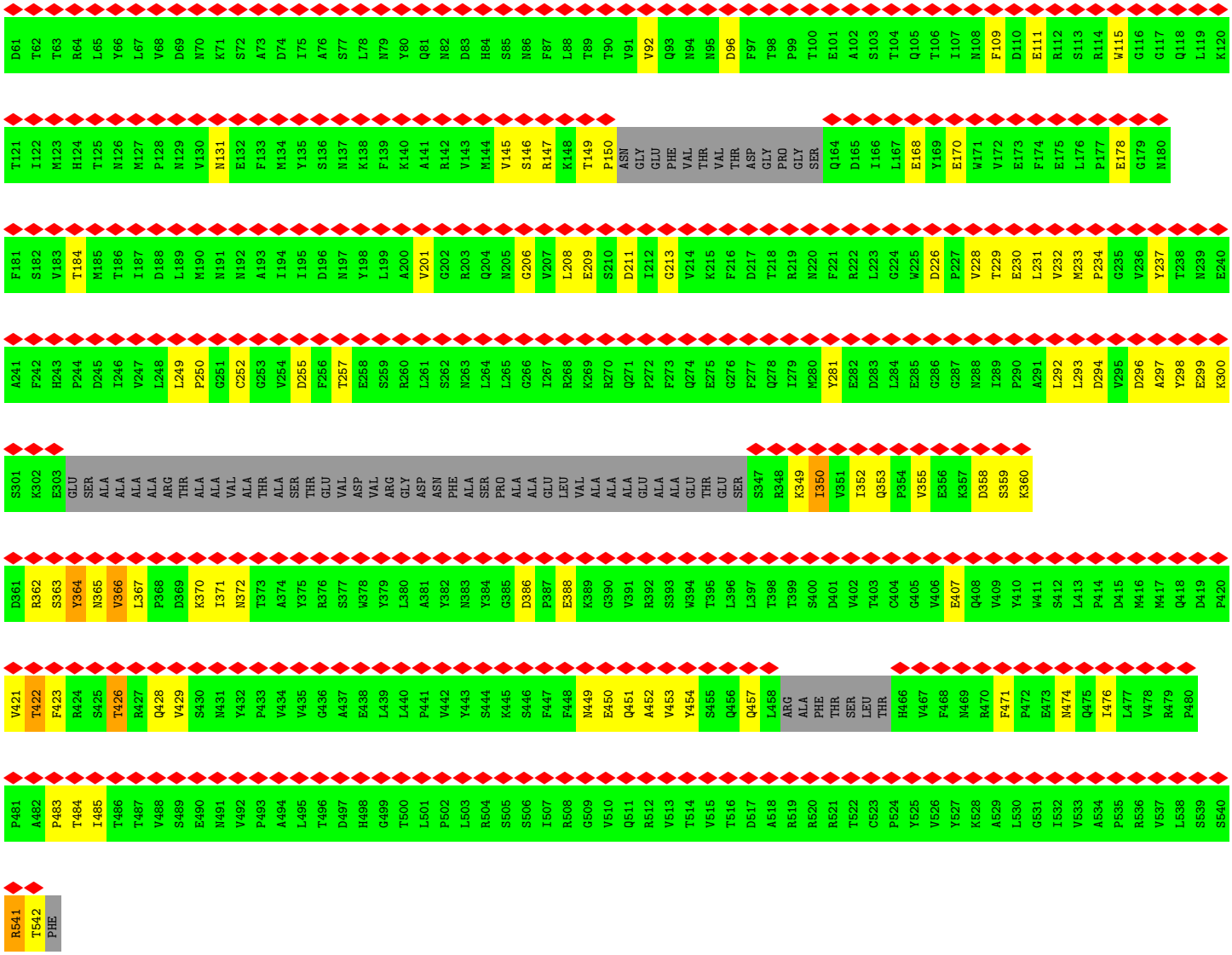




• Molecule 1: Penton protein

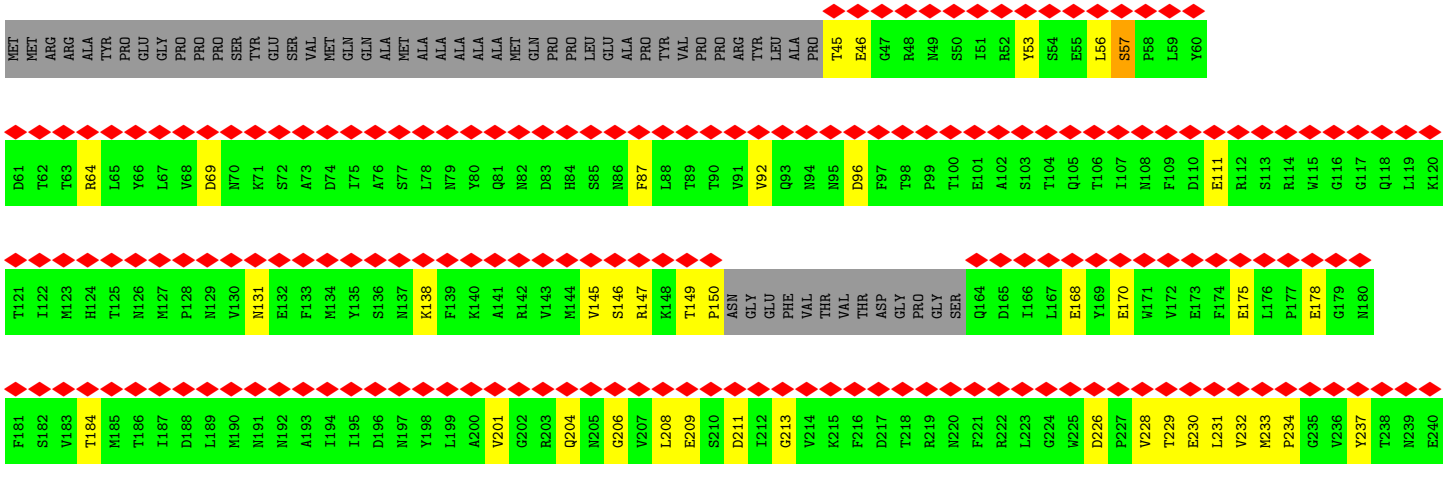
Chain k:

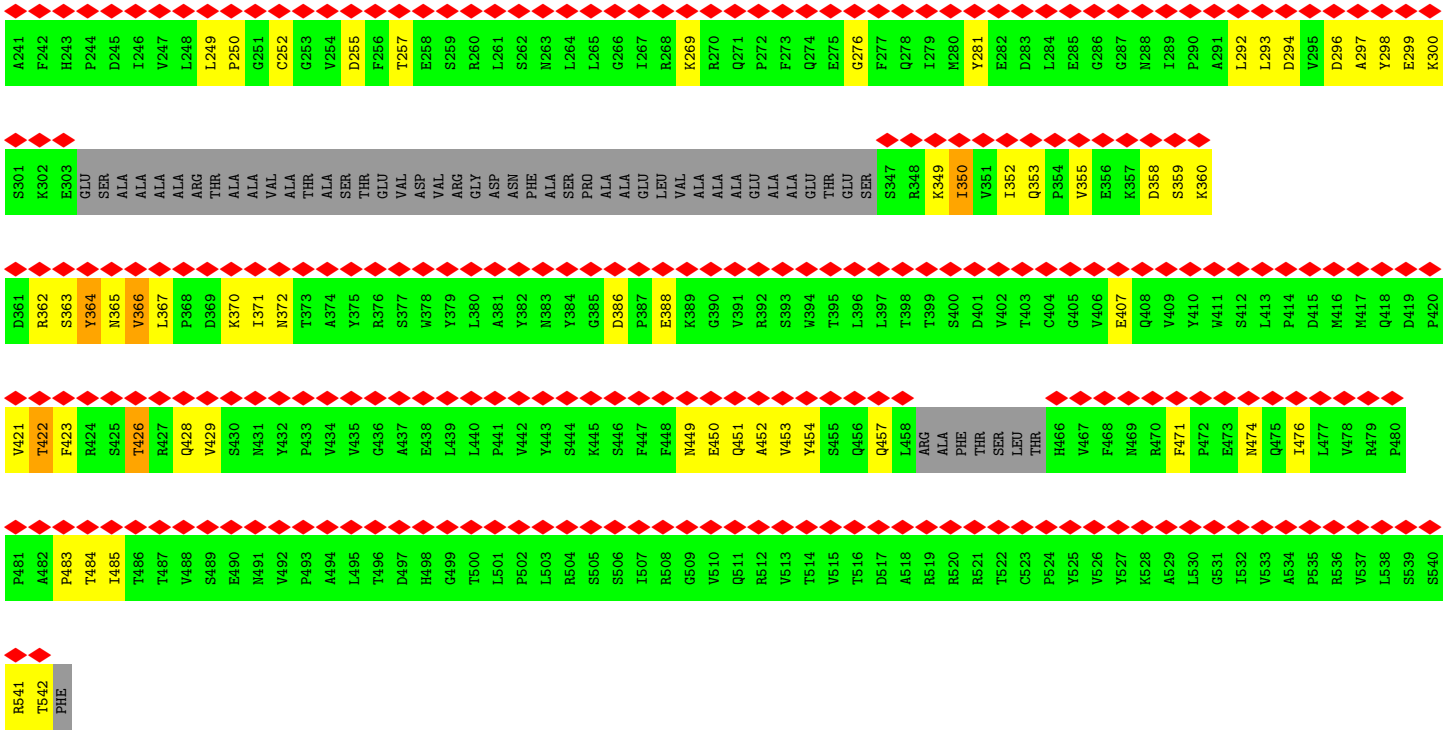




- Molecule 1: Penton protein

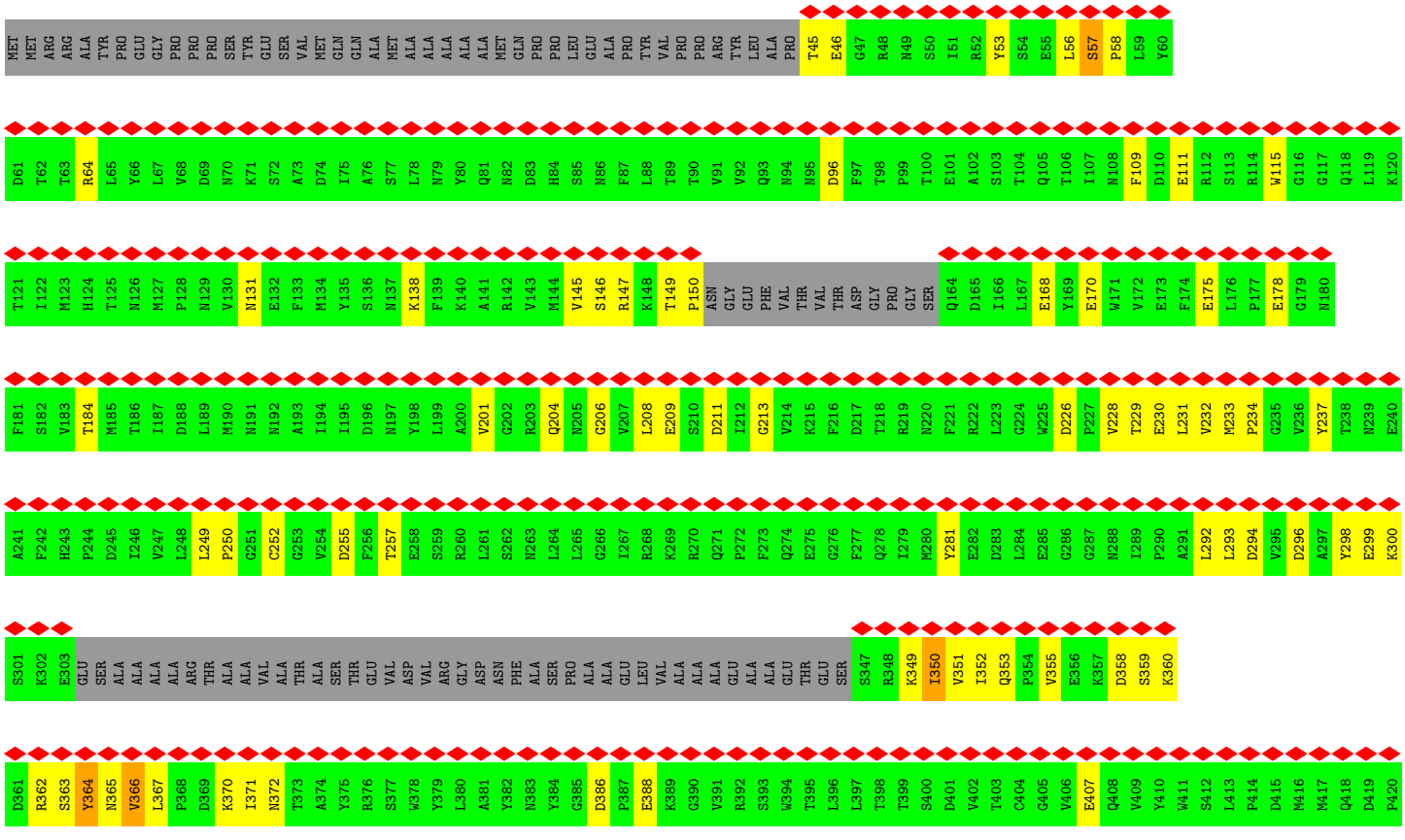
Chain l:

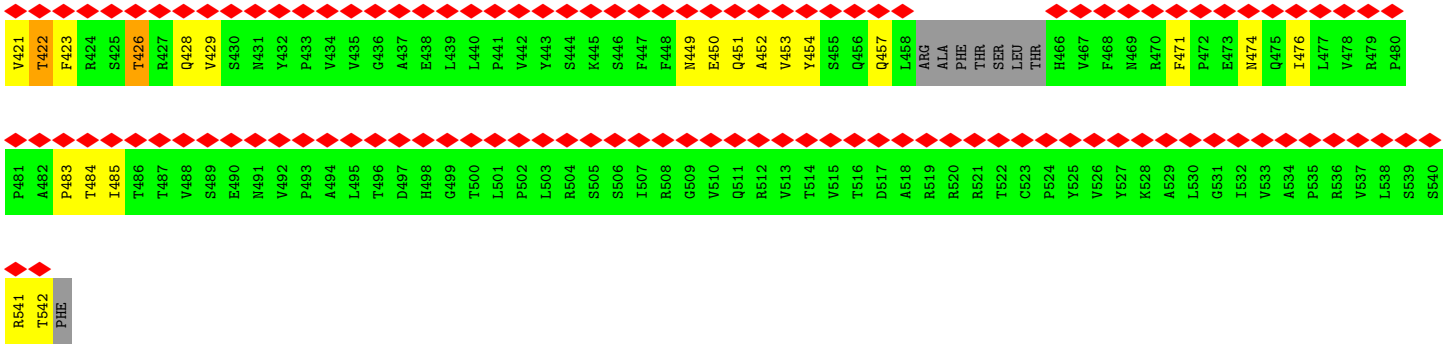




• Molecule 1: Penton protein

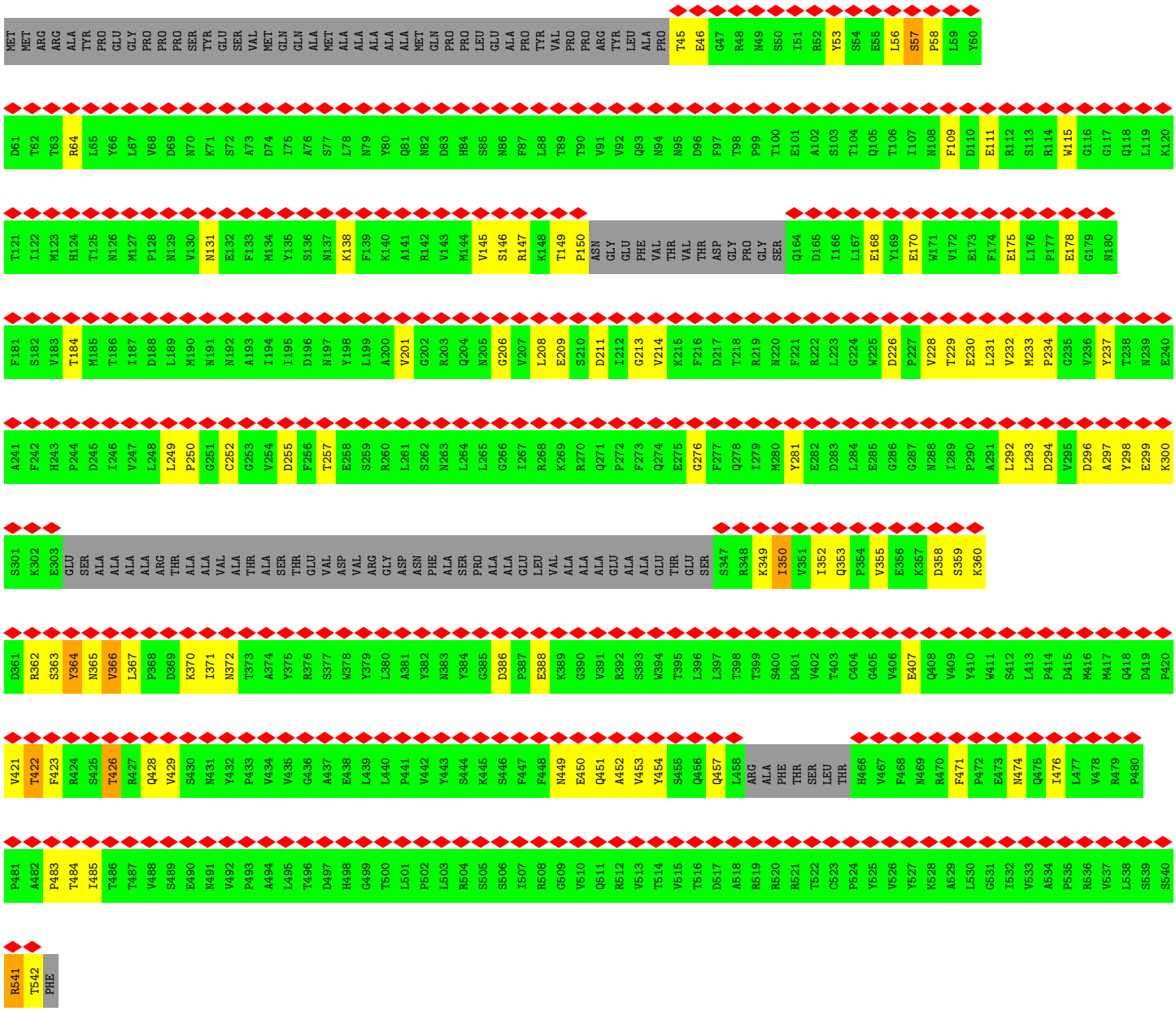
Chain m:





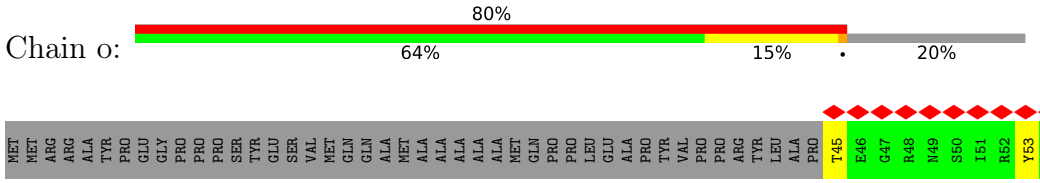
• Molecule 1: Penton protein

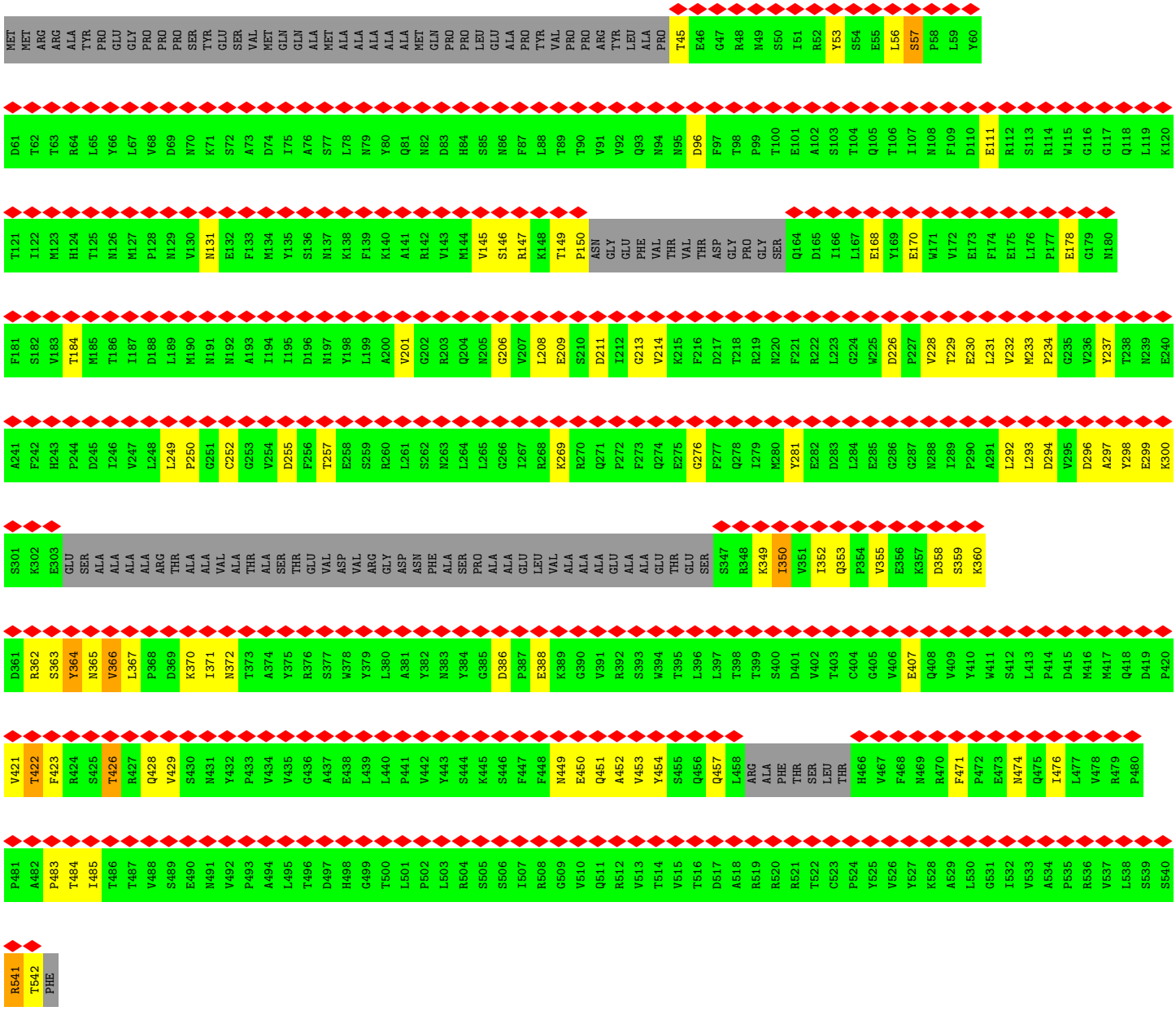
Chain n:



• Molecule 1: Penton protein

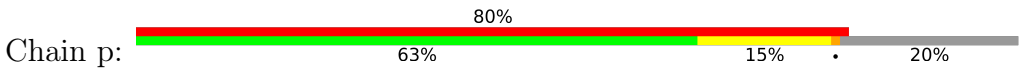
Chain o:

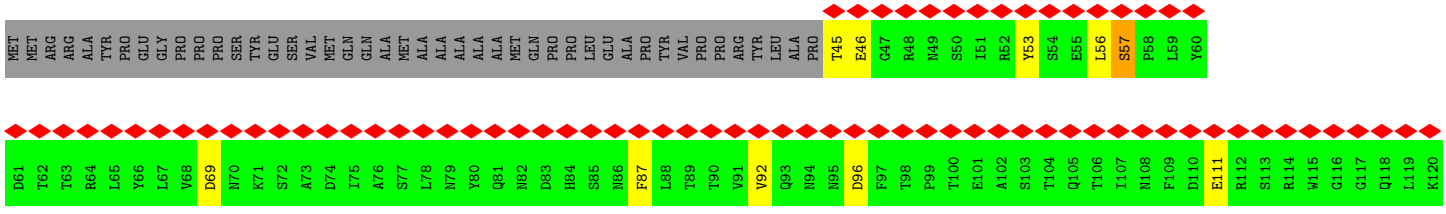


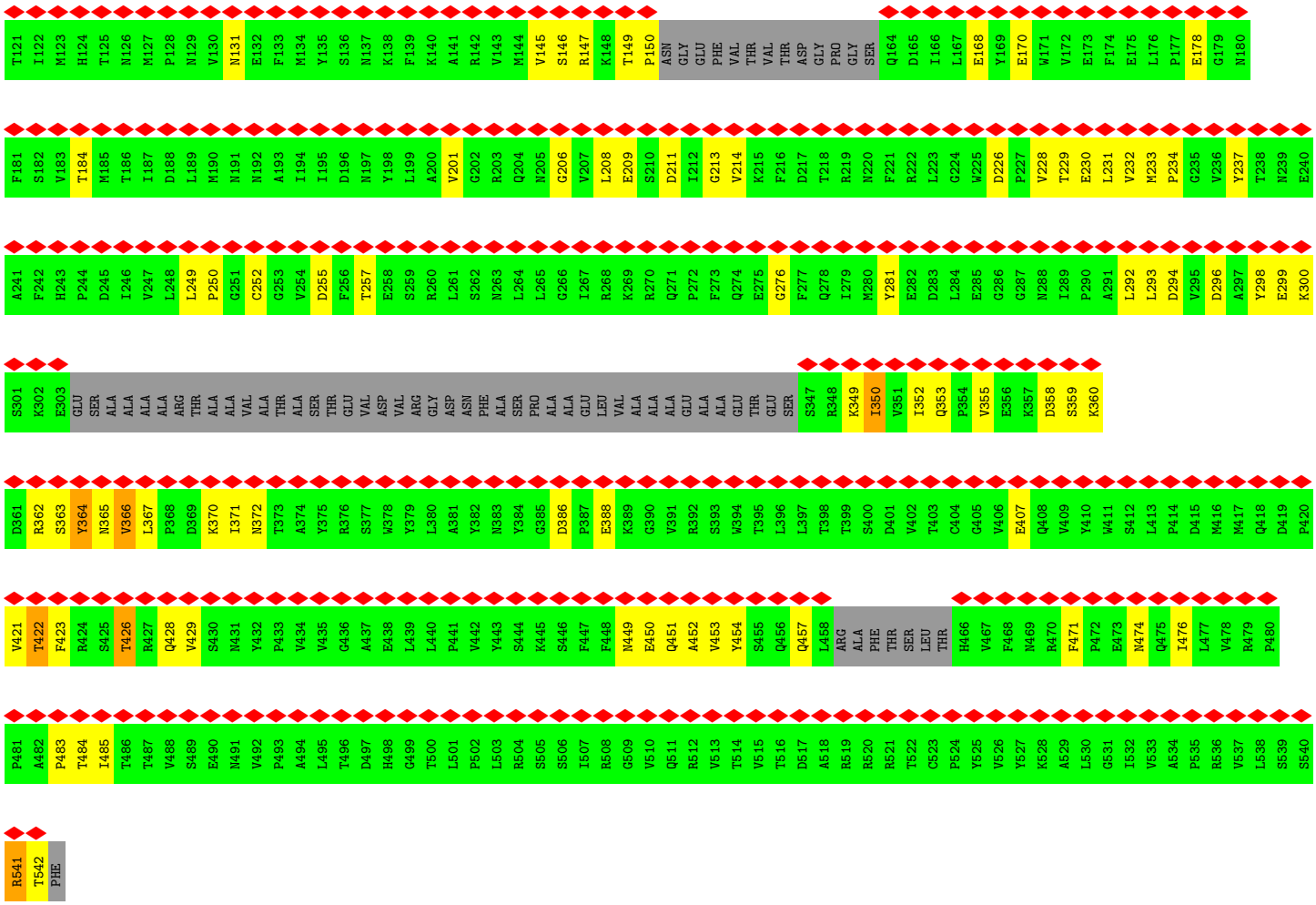


• Molecule 1: Penton protein

Chain p:

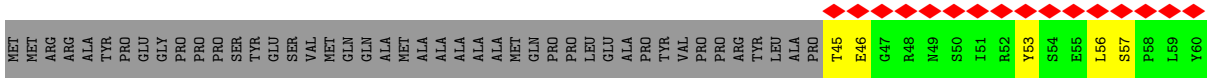


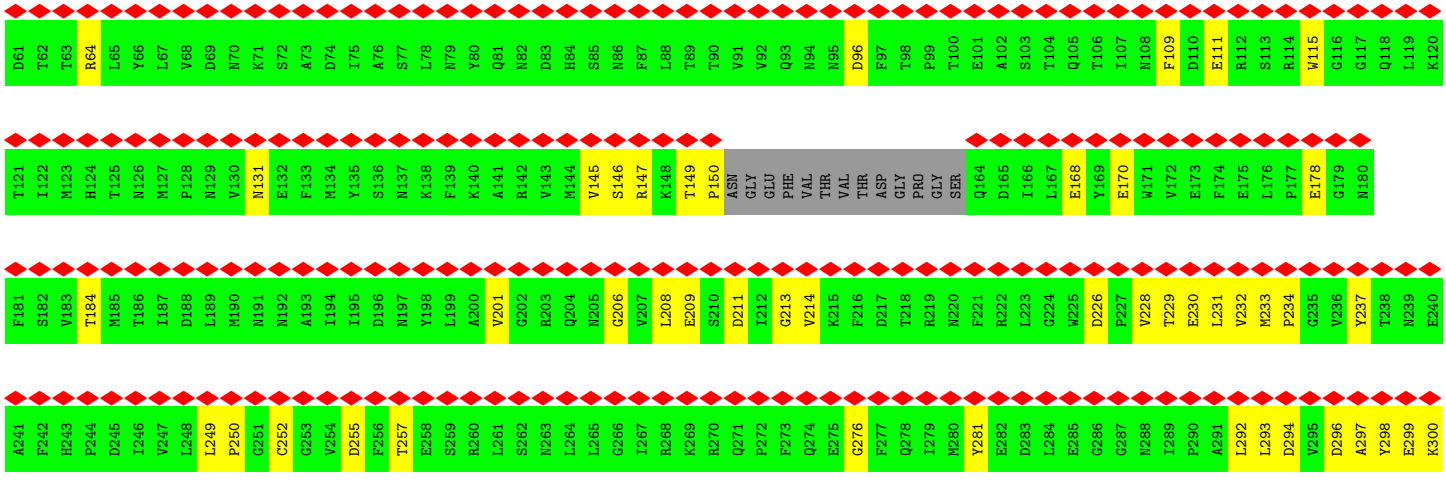


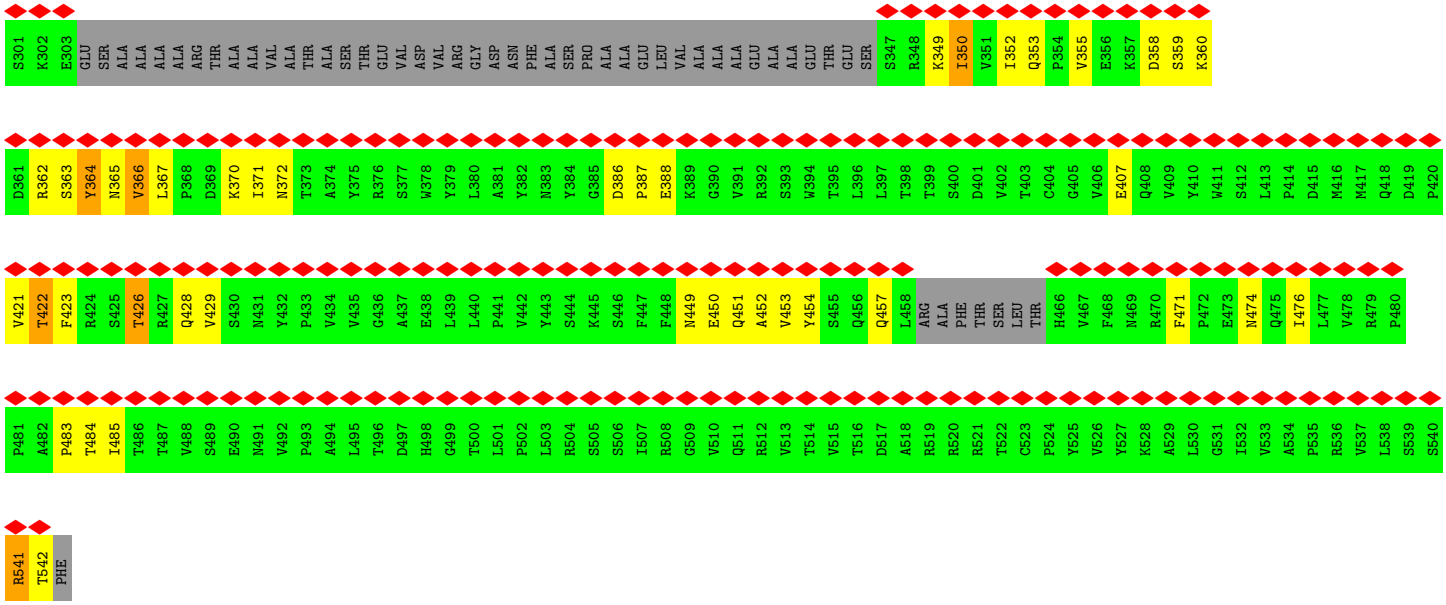


• Molecule 1: Penton protein

Chain q:

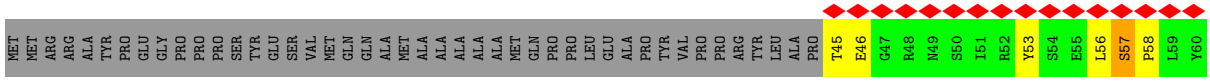


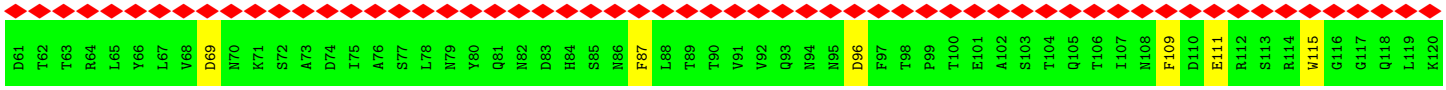


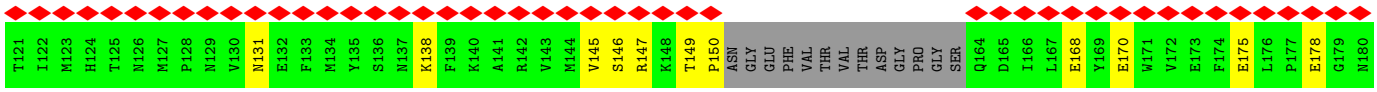


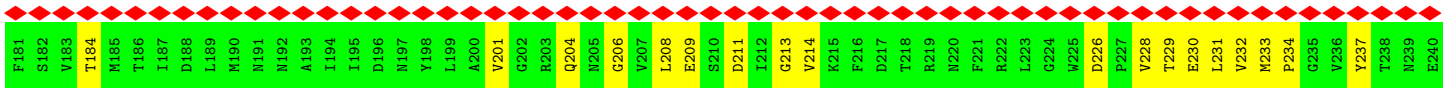
• Molecule 1: Penton protein

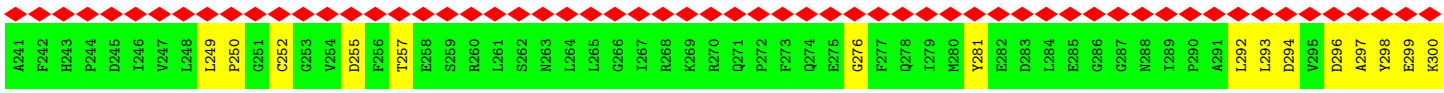
Chain r:

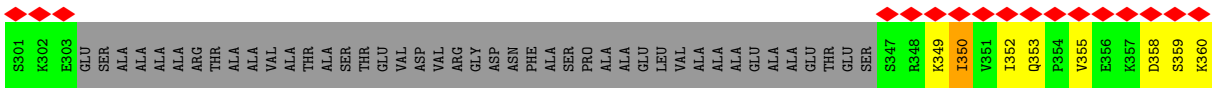


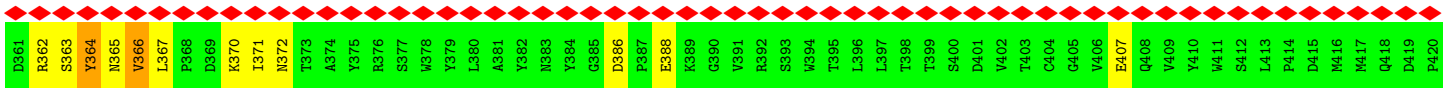


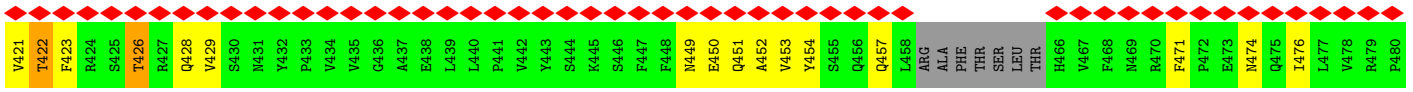


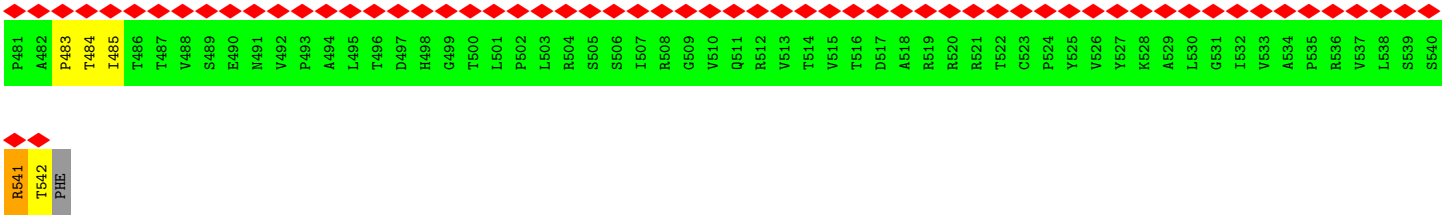




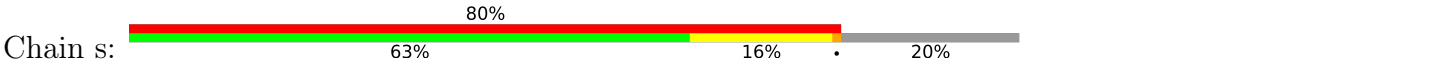


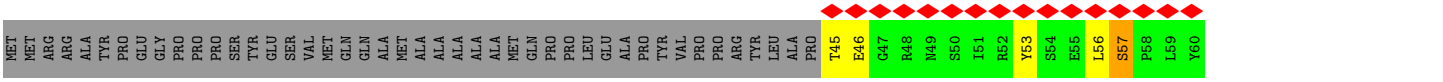


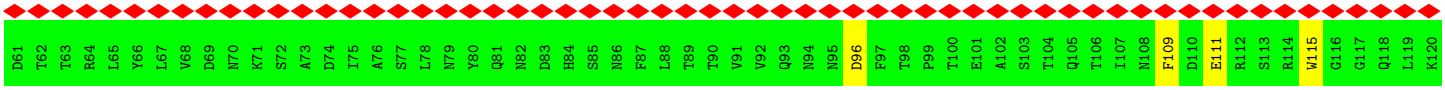


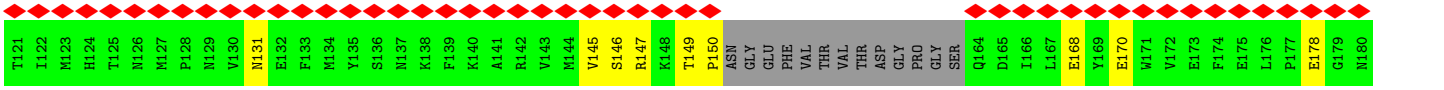


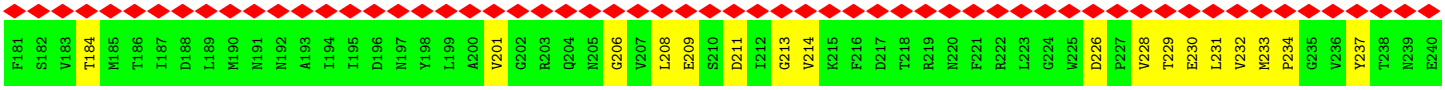
• Molecule 1: Penton protein

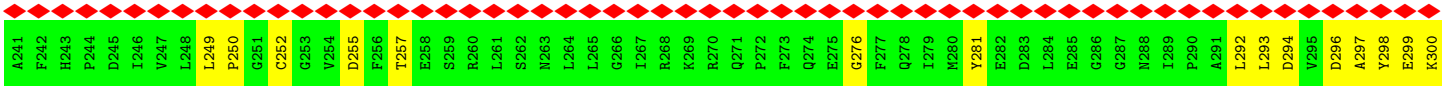


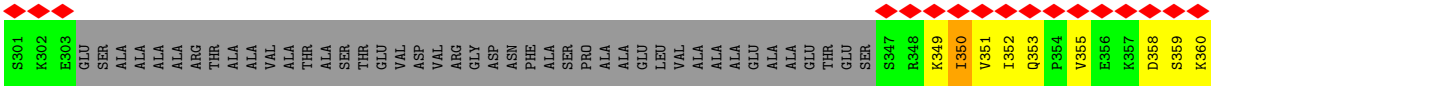


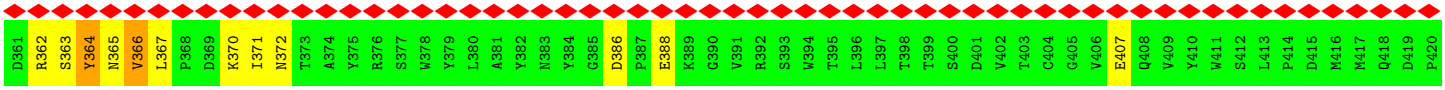


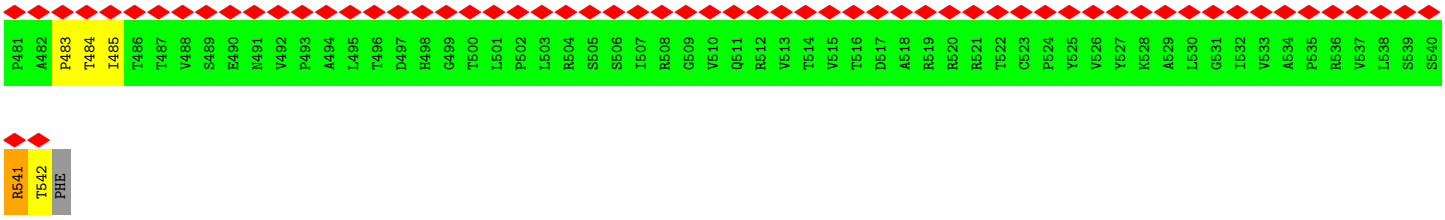




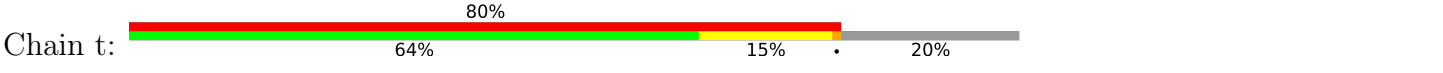


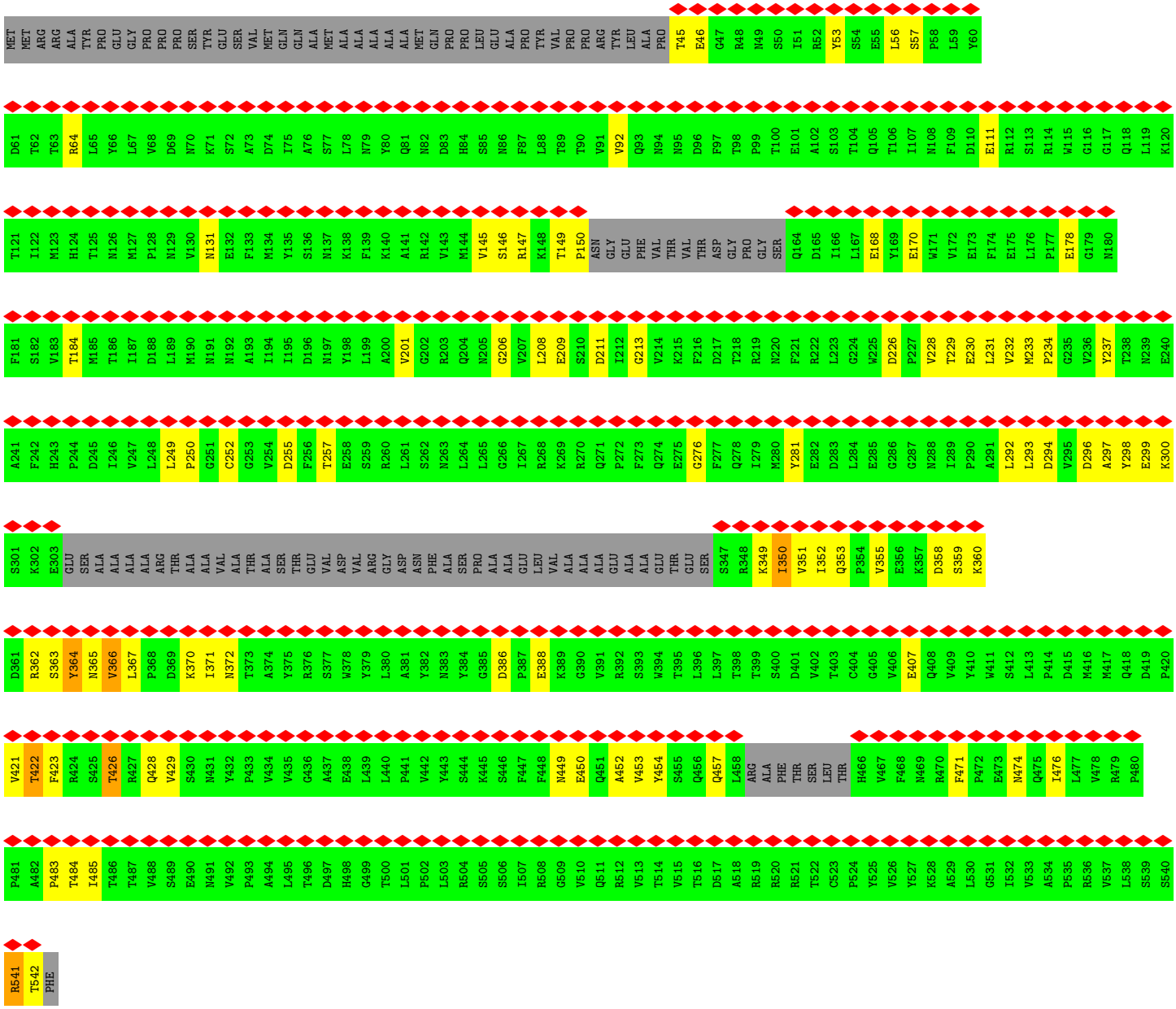






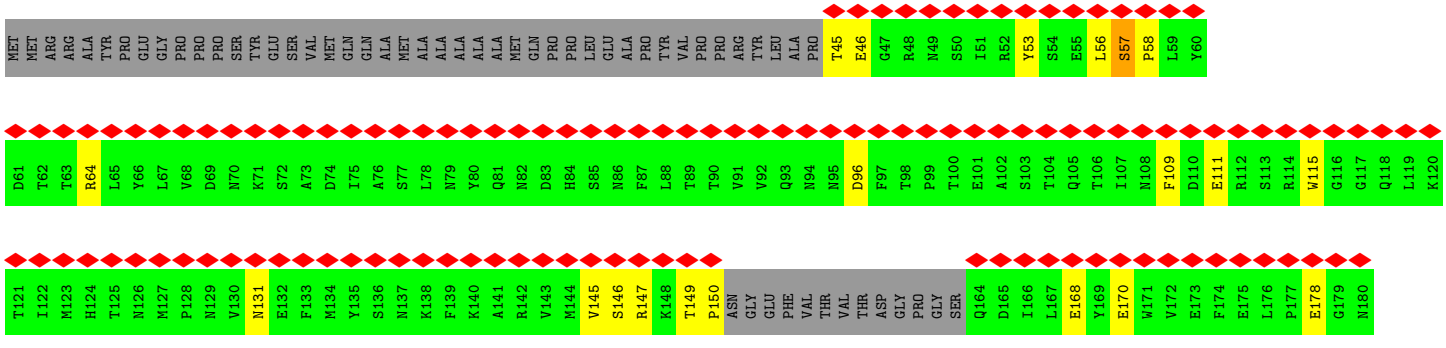
• Molecule 1: Penton protein

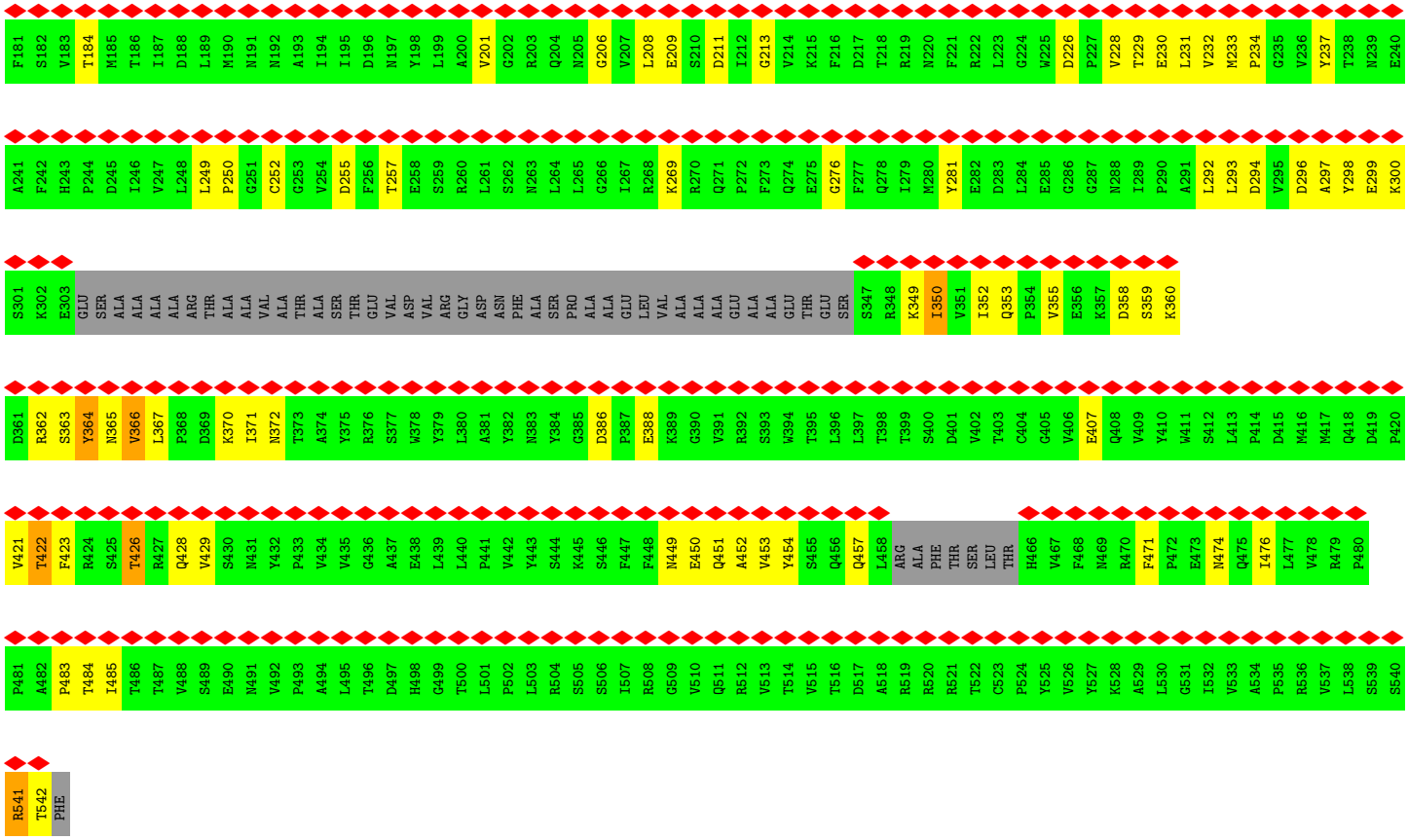




• Molecule 1: Penton protein

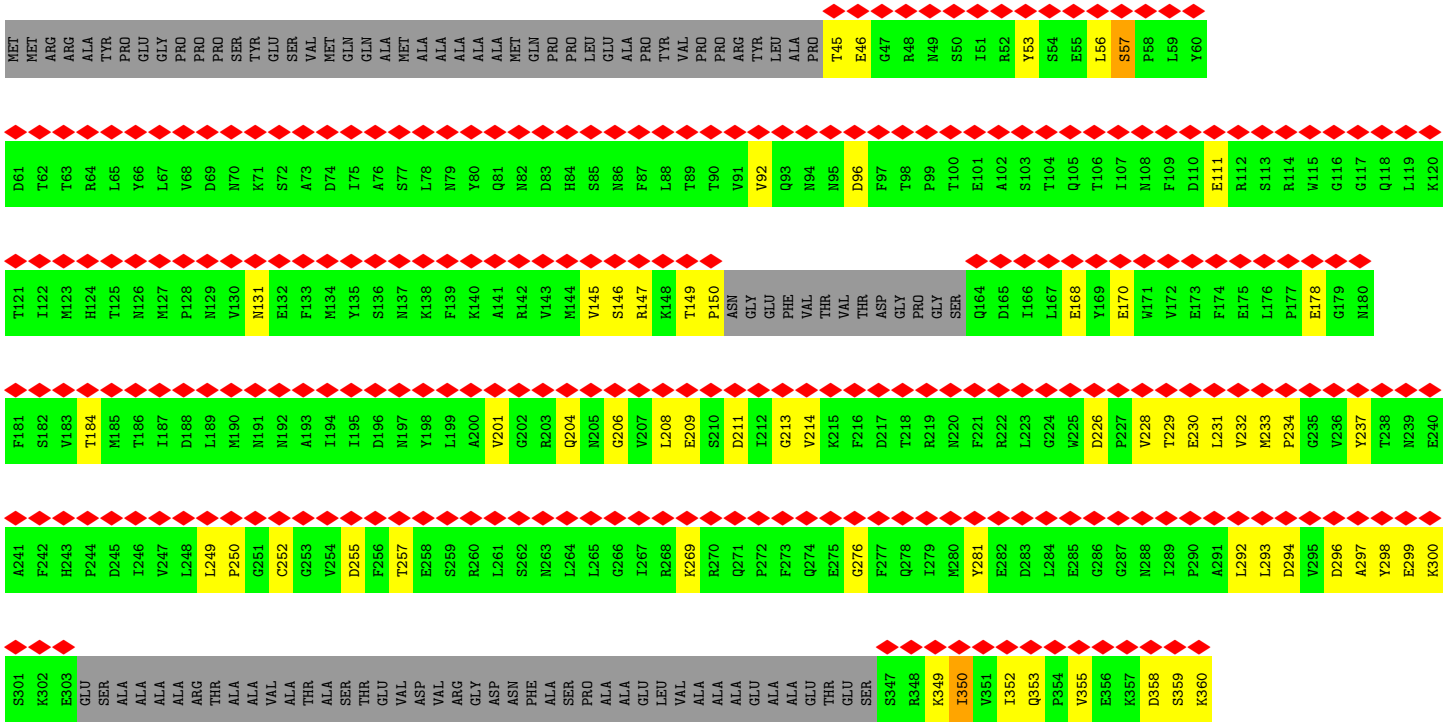
Chain u:

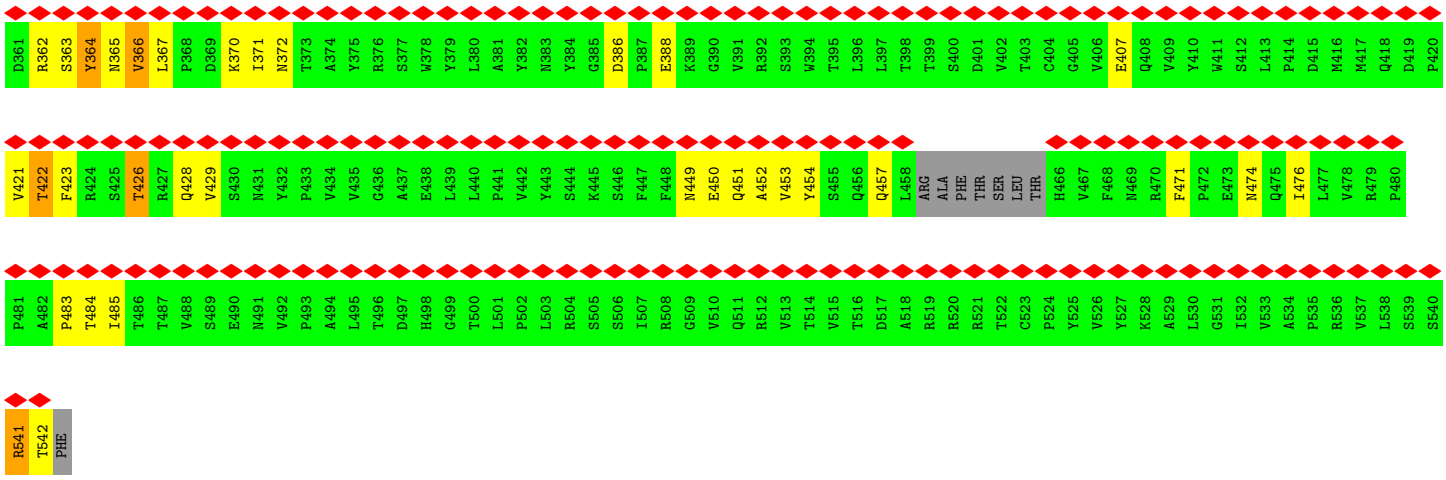




• Molecule 1: Penton protein

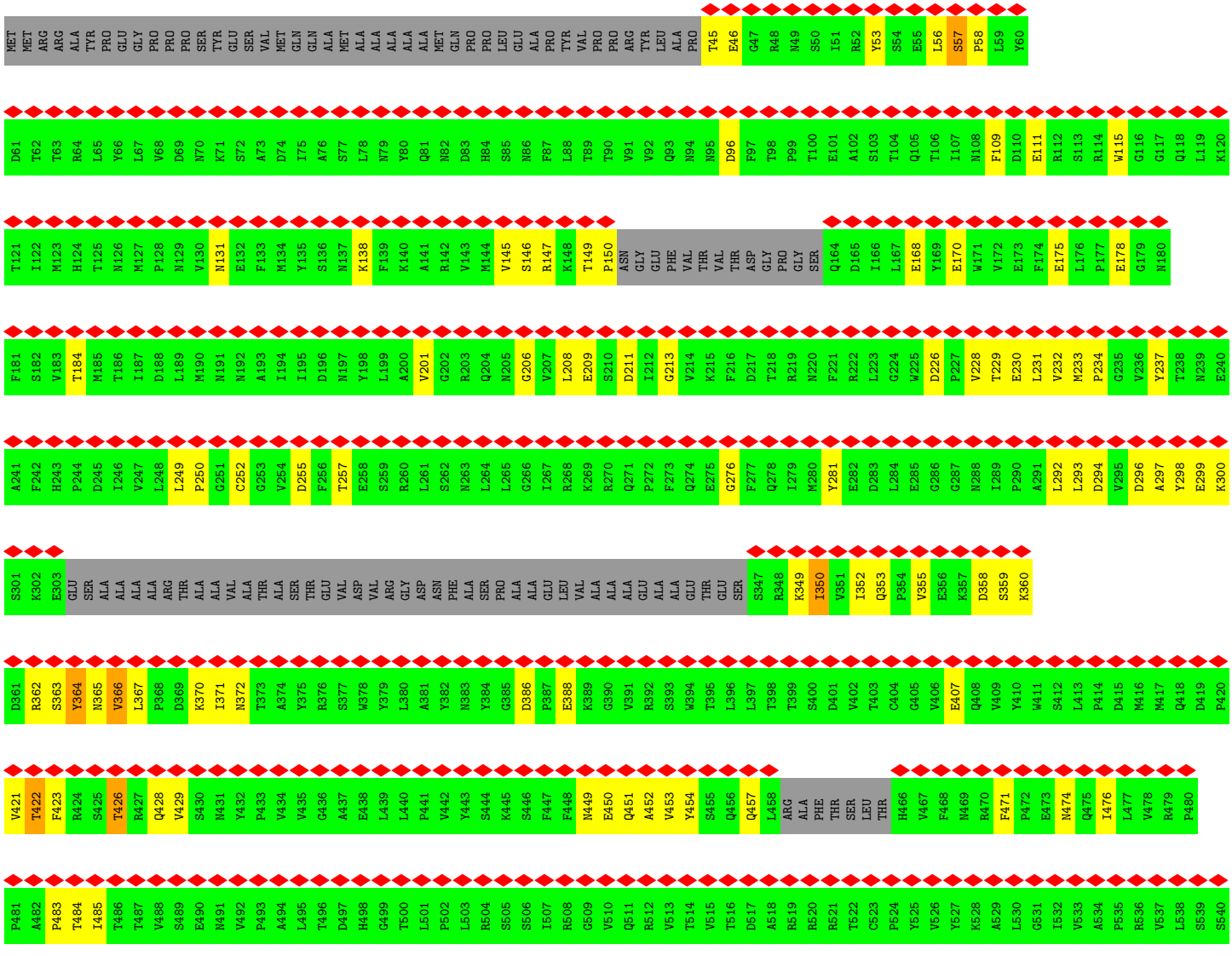
Chain v:





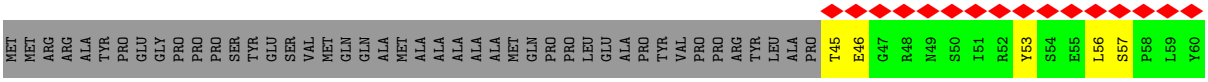
- Molecule 1: Penton protein

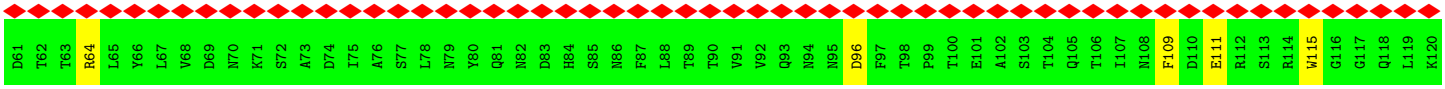
Chain w:

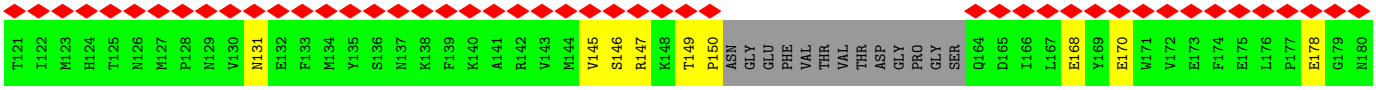


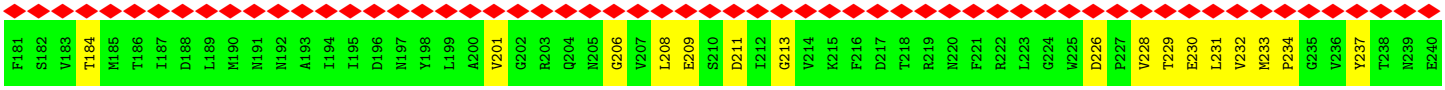
• Molecule 1: Penton protein

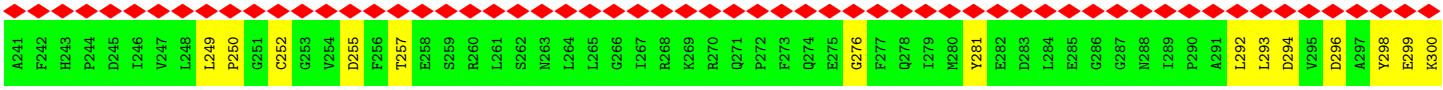
Chain x:

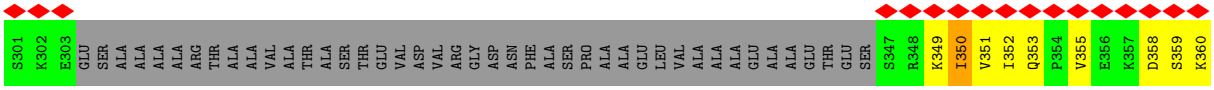


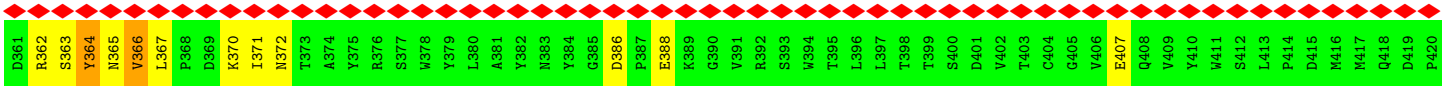


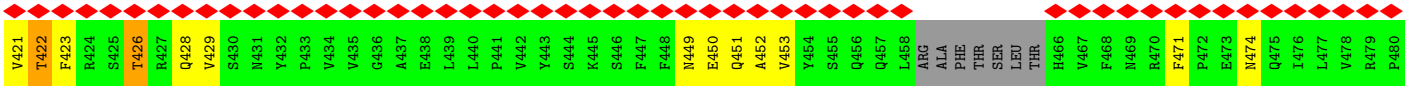


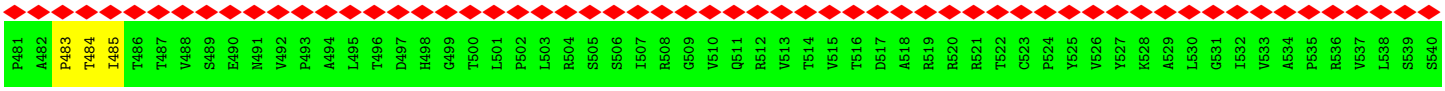






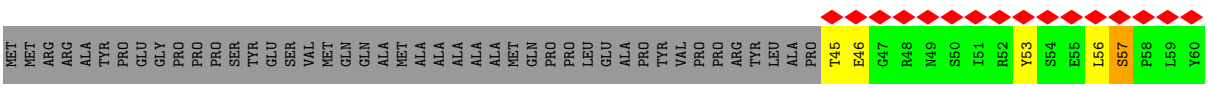


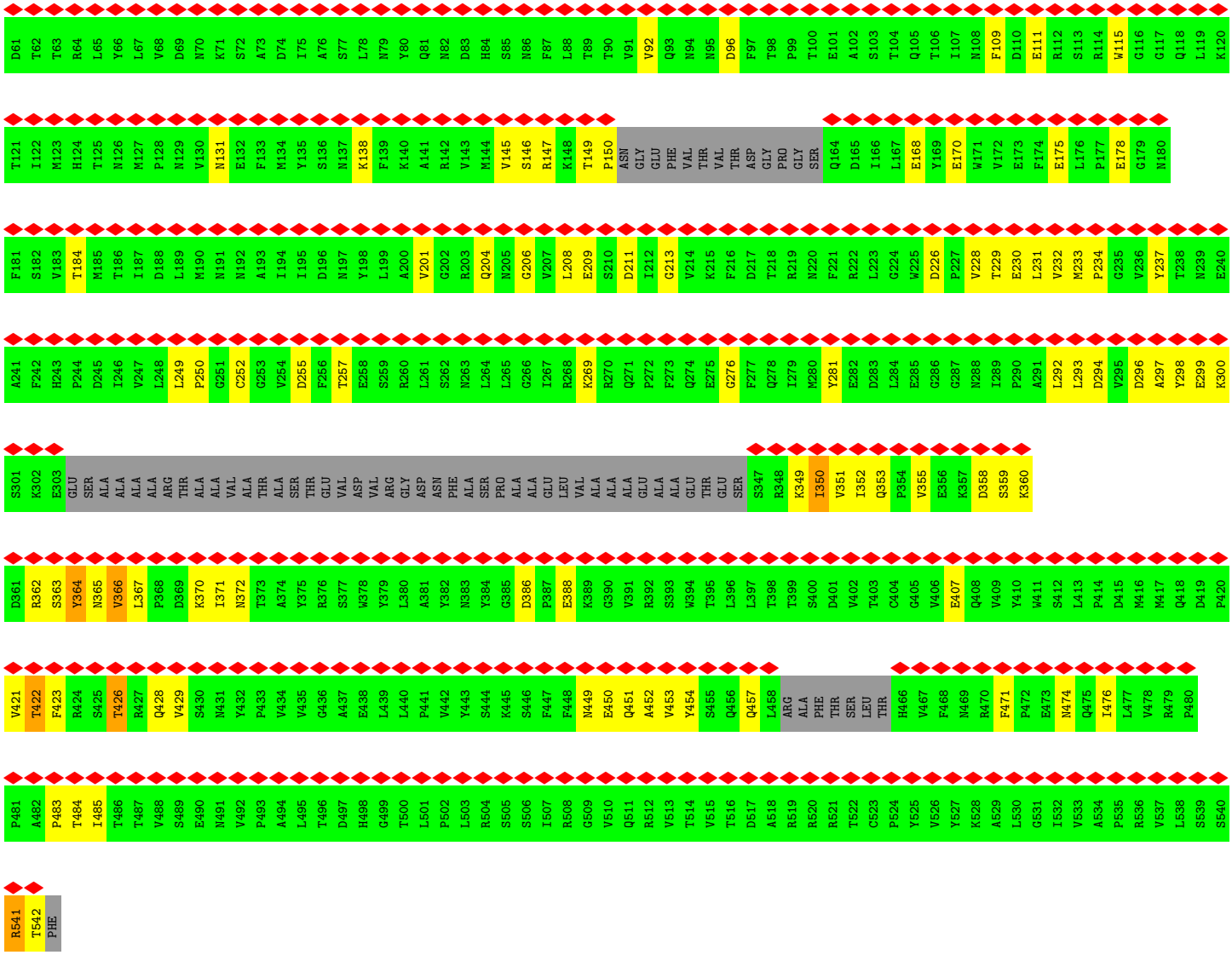




• Molecule 1: Penton protein

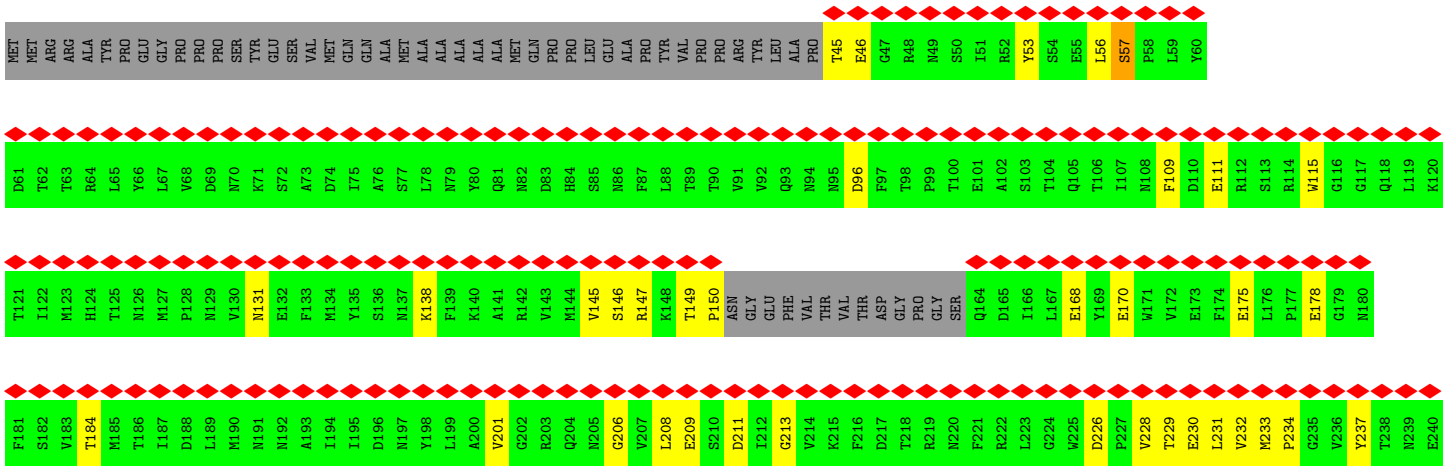
Chain y:

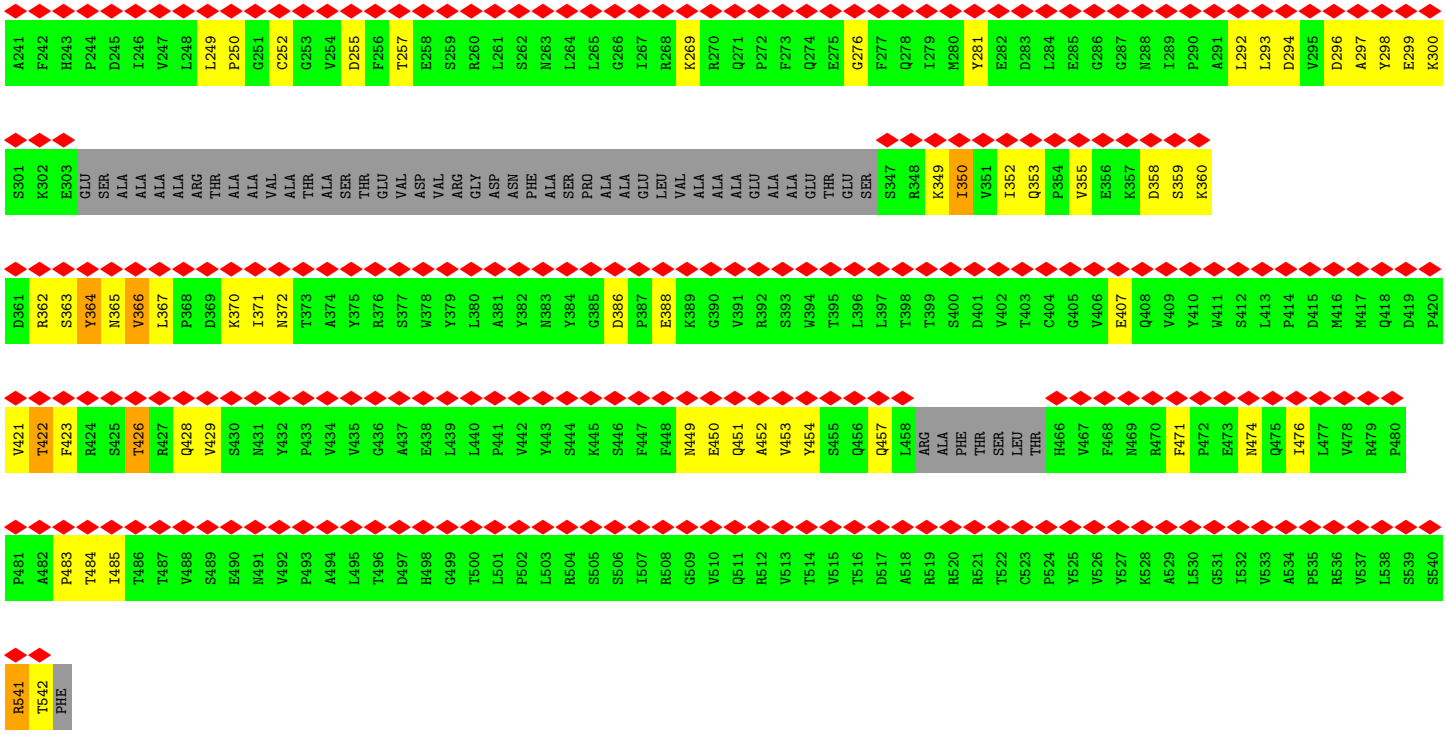




- Molecule 1: Penton protein

Chain z:




A241 F242 H243 P244 D245 I246 V247 L248 L249 P250 G251 C252 G253 V254 D255 F256 T257 E258 S259 R260 L261 S262 N263 L264 L265 G266 I267 R268 K269 R270 Q271 P272 F273 Q274 E275 G276 F277 Q278 I279 M280 Y281 E282 D283 L284 E285 G286 G287 N288 I289 P290 A291 L292 L293 D294 V295 D296 A297 Y298 E299 K300
S301 K302 E303 GLU SER ALA ALA ALA ALA ARG THR ALA ALA VAL ALA THR ALA SER THR GLU VAL ASP VAL ARG GLY ASP ASN PHE ALA SER PRO ALA ALA GLU LEU VAL ALA ALA ALA GLU ALA ALA GLU THR GLU SER S347 R348 K349 T350 V351 I352 Q353 P354 V355 E356 K357 D358 S359 K360
D361 R362 S363 Y364 N365 V366 L367 P368 D369 K370 I371 N372 T373 A374 Y375 R376 S377 W378 Y379 L380 A381 Y382 N383 Y384 G385 D386 P387 E388 K389 G390 V391 R392 S393 W394 T395 L396 L397 T398 T399 S400 D401 V402 T403 C404 G405 V406 E407 Q408 V409 Y410 W411 S412 L413 P414 D415 M416 M417 Q418 D419 P420
V421 T422 F423 R424 S425 T426 R427 Q428 V429 S430 N431 Y432 P433 V434 V435 G436 A437 E438 L439 L440 P441 V442 Y443 S444 K445 S446 F447 F448 N449 E450 Q451 A452 V453 Y454 S455 Q456 Q457 L458 ARG ALA PHE THR SER LEU THR H466 V467 P468 M469 R470 F471 P472 E473 N474 Q475 I476 L477 V478 R479 P480
P481 A482 P483 T484 I485 T486 T487 V488 S489 E490 N491 V492 P493 A494 L495 T496 D497 H498 G499 T500 L501 P502 L503 R504 S505 S506 I507 R508 G509 V510 Q511 R512 V513 T514 V515 T516 D517 A518 R519 R520 R521 T522 C523 P524 Y525 V526 Y527 K528 A529 L530 G531 I532 V533 A534 P535 R536 V537 L538 S539 S540
R541 T542 PHE

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	147098	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	44.01	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.270	Depositor
Minimum map value	-0.143	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	419.99997, 419.99997, 419.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: K

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	0.30	0/3588	0.69	14/4880 (0.3%)
1	2	0.30	0/3588	0.68	14/4880 (0.3%)
1	3	0.30	0/3588	0.68	14/4880 (0.3%)
1	4	0.30	1/3588 (0.0%)	0.69	14/4880 (0.3%)
1	5	0.30	0/3588	0.68	14/4880 (0.3%)
1	6	0.30	0/3588	0.69	15/4880 (0.3%)
1	7	0.30	0/3588	0.69	14/4880 (0.3%)
1	8	0.30	0/3588	0.69	15/4880 (0.3%)
1	9	0.30	0/3588	0.69	14/4880 (0.3%)
1	A	0.30	0/3588	0.69	14/4880 (0.3%)
1	B	0.30	0/3588	0.69	14/4880 (0.3%)
1	C	0.30	0/3588	0.69	14/4880 (0.3%)
1	D	0.30	0/3588	0.68	14/4880 (0.3%)
1	E	0.30	0/3588	0.69	14/4880 (0.3%)
1	F	0.30	0/3588	0.68	14/4880 (0.3%)
1	G	0.30	0/3588	0.68	14/4880 (0.3%)
1	H	0.30	0/3588	0.69	14/4880 (0.3%)
1	I	0.30	0/3588	0.68	14/4880 (0.3%)
1	J	0.30	0/3588	0.69	14/4880 (0.3%)
1	K	0.30	0/3588	0.68	14/4880 (0.3%)
1	L	0.30	0/3588	0.69	14/4880 (0.3%)
1	M	0.30	0/3588	0.69	14/4880 (0.3%)
1	N	0.30	0/3588	0.69	14/4880 (0.3%)
1	O	0.30	0/3588	0.69	14/4880 (0.3%)
1	P	0.30	0/3588	0.69	15/4880 (0.3%)
1	Q	0.30	0/3588	0.68	15/4880 (0.3%)
1	R	0.30	0/3588	0.69	14/4880 (0.3%)
1	S	0.30	0/3588	0.69	15/4880 (0.3%)
1	T	0.30	0/3588	0.69	14/4880 (0.3%)
1	V	0.30	0/3588	0.69	15/4880 (0.3%)
1	W	0.30	0/3588	0.69	14/4880 (0.3%)
1	X	0.30	0/3588	0.69	14/4880 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
1	Y	0.30	0/3588	0.69	15/4880 (0.3%)
1	Z	0.30	0/3588	0.69	14/4880 (0.3%)
1	a	0.30	0/3588	0.68	14/4880 (0.3%)
1	b	0.30	0/3588	0.68	14/4880 (0.3%)
1	c	0.30	0/3588	0.68	14/4880 (0.3%)
1	d	0.30	0/3588	0.69	14/4880 (0.3%)
1	e	0.30	0/3588	0.69	15/4880 (0.3%)
1	f	0.30	0/3588	0.68	15/4880 (0.3%)
1	g	0.30	0/3588	0.69	15/4880 (0.3%)
1	h	0.30	0/3588	0.69	14/4880 (0.3%)
1	i	0.30	0/3588	0.69	14/4880 (0.3%)
1	j	0.30	0/3588	0.69	14/4880 (0.3%)
1	k	0.30	0/3588	0.69	14/4880 (0.3%)
1	l	0.30	0/3588	0.69	14/4880 (0.3%)
1	m	0.30	0/3588	0.69	14/4880 (0.3%)
1	n	0.30	0/3588	0.69	15/4880 (0.3%)
1	o	0.30	0/3588	0.69	15/4880 (0.3%)
1	p	0.30	0/3588	0.68	15/4880 (0.3%)
1	q	0.30	0/3588	0.69	15/4880 (0.3%)
1	r	0.30	0/3588	0.69	15/4880 (0.3%)
1	s	0.30	0/3588	0.69	15/4880 (0.3%)
1	t	0.30	0/3588	0.69	14/4880 (0.3%)
1	u	0.30	0/3588	0.69	14/4880 (0.3%)
1	v	0.30	0/3588	0.69	15/4880 (0.3%)
1	w	0.30	0/3588	0.69	14/4880 (0.3%)
1	x	0.30	0/3588	0.69	14/4880 (0.3%)
1	y	0.30	0/3588	0.69	14/4880 (0.3%)
1	z	0.30	0/3588	0.69	14/4880 (0.3%)
All	All	0.30	1/215280 (0.0%)	0.69	857/292800 (0.3%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	4	366	VAL	CA-CB	-5.00	1.47	1.53

The worst 5 of 857 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	u	426	THR	N-CA-C	8.32	124.25	113.18
1	E	426	THR	N-CA-C	8.32	124.24	113.18
1	o	426	THR	N-CA-C	8.32	124.24	113.18
1	z	426	THR	N-CA-C	8.32	124.24	113.18

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	w	426	THR	N-CA-C	8.31	124.24	113.18

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	3507	0	3435	115	0
1	2	3507	0	3435	121	0
1	3	3507	0	3435	114	0
1	4	3507	0	3435	126	0
1	5	3507	0	3435	119	0
1	6	3507	0	3435	127	0
1	7	3507	0	3435	126	0
1	8	3507	0	3435	125	0
1	9	3507	0	3435	119	0
1	A	3507	0	3435	120	0
1	B	3507	0	3435	125	0
1	C	3507	0	3435	130	0
1	D	3507	0	3435	119	0
1	E	3507	0	3435	127	0
1	F	3507	0	3435	121	0
1	G	3507	0	3435	126	0
1	H	3507	0	3435	120	0
1	I	3507	0	3435	118	0
1	J	3507	0	3435	124	0
1	K	3507	0	3435	121	0
1	L	3507	0	3435	126	0
1	M	3507	0	3435	122	0
1	N	3507	0	3435	121	0
1	O	3507	0	3435	119	0
1	P	3507	0	3435	124	0
1	Q	3507	0	3435	121	0
1	R	3507	0	3435	124	0
1	S	3507	0	3435	119	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	T	3507	0	3435	126	0
1	V	3507	0	3435	124	0
1	W	3507	0	3435	121	0
1	X	3507	0	3435	122	0
1	Y	3507	0	3435	124	0
1	Z	3507	0	3435	120	0
1	a	3507	0	3435	120	0
1	b	3507	0	3435	124	0
1	c	3507	0	3435	119	0
1	d	3507	0	3435	120	0
1	e	3507	0	3435	124	0
1	f	3507	0	3435	122	0
1	g	3507	0	3435	122	0
1	h	3507	0	3435	124	0
1	i	3507	0	3435	125	0
1	j	3507	0	3435	123	0
1	k	3507	0	3435	120	0
1	l	3507	0	3435	122	0
1	m	3507	0	3435	123	0
1	n	3507	0	3435	117	0
1	o	3507	0	3435	122	0
1	p	3507	0	3435	117	0
1	q	3507	0	3435	124	0
1	r	3507	0	3435	127	0
1	s	3507	0	3435	118	0
1	t	3507	0	3435	120	0
1	u	3507	0	3435	124	0
1	v	3507	0	3435	124	0
1	w	3507	0	3435	122	0
1	x	3507	0	3435	119	0
1	y	3507	0	3435	124	0
1	z	3507	0	3435	122	0
2	1	1	0	0	0	0
2	2	1	0	0	0	0
2	3	1	0	0	0	0
2	4	1	0	0	0	0
2	5	1	0	0	0	0
2	6	1	0	0	0	0
2	7	1	0	0	0	0
2	8	1	0	0	0	0
2	9	1	0	0	0	0
2	B	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	I	1	0	0	0	0
2	R	1	0	0	0	0
All	All	210432	0	206100	6784	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 16.

The worst 5 of 6784 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:j:426:THR:CG2	1:j:428:GLN:HG2	1.56	1.36
1:E:426:THR:CG2	1:E:428:GLN:HG2	1.56	1.36
1:t:426:THR:CG2	1:t:428:GLN:HG2	1.56	1.36
1:x:426:THR:CG2	1:x:428:GLN:HG2	1.56	1.36
1:f:426:THR:CG2	1:f:428:GLN:HG2	1.56	1.36

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	2	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	3	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	4	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	5	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	6	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	7	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	8	428/543 (79%)	388 (91%)	40 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	9	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	A	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	B	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	C	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	D	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	E	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	F	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	G	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	H	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	I	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	J	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	K	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	L	428/543 (79%)	387 (90%)	41 (10%)	0	100	100
1	M	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	N	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	O	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	P	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	Q	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	R	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	S	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	T	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	V	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	W	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	X	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	Y	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	Z	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	a	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	b	428/543 (79%)	387 (90%)	41 (10%)	0	100	100
1	c	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	d	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	e	428/543 (79%)	388 (91%)	40 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	f	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	g	428/543 (79%)	387 (90%)	41 (10%)	0	100	100
1	h	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	i	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	j	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	k	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	l	428/543 (79%)	387 (90%)	41 (10%)	0	100	100
1	m	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	n	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	o	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	p	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	q	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	r	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	s	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	t	428/543 (79%)	387 (90%)	41 (10%)	0	100	100
1	u	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	v	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	w	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	x	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	y	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
1	z	428/543 (79%)	388 (91%)	40 (9%)	0	100	100
All	All	25680/32580 (79%)	23275 (91%)	2405 (9%)	0	100	100

There are no Ramachandran outliers to report.

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	396/472 (84%)	396 (100%)	0	100	100
1	2	396/472 (84%)	396 (100%)	0	100	100
1	3	396/472 (84%)	396 (100%)	0	100	100
1	4	396/472 (84%)	396 (100%)	0	100	100
1	5	396/472 (84%)	396 (100%)	0	100	100
1	6	396/472 (84%)	395 (100%)	1 (0%)	91	96
1	7	396/472 (84%)	396 (100%)	0	100	100
1	8	396/472 (84%)	396 (100%)	0	100	100
1	9	396/472 (84%)	396 (100%)	0	100	100
1	A	396/472 (84%)	396 (100%)	0	100	100
1	B	396/472 (84%)	396 (100%)	0	100	100
1	C	396/472 (84%)	396 (100%)	0	100	100
1	D	396/472 (84%)	396 (100%)	0	100	100
1	E	396/472 (84%)	395 (100%)	1 (0%)	91	96
1	F	396/472 (84%)	396 (100%)	0	100	100
1	G	396/472 (84%)	396 (100%)	0	100	100
1	H	396/472 (84%)	396 (100%)	0	100	100
1	I	396/472 (84%)	396 (100%)	0	100	100
1	J	396/472 (84%)	396 (100%)	0	100	100
1	K	396/472 (84%)	396 (100%)	0	100	100
1	L	396/472 (84%)	396 (100%)	0	100	100
1	M	396/472 (84%)	396 (100%)	0	100	100
1	N	396/472 (84%)	396 (100%)	0	100	100
1	O	396/472 (84%)	396 (100%)	0	100	100
1	P	396/472 (84%)	396 (100%)	0	100	100
1	Q	396/472 (84%)	396 (100%)	0	100	100
1	R	396/472 (84%)	396 (100%)	0	100	100
1	S	396/472 (84%)	396 (100%)	0	100	100
1	T	396/472 (84%)	396 (100%)	0	100	100
1	V	396/472 (84%)	396 (100%)	0	100	100
1	W	396/472 (84%)	396 (100%)	0	100	100
1	X	396/472 (84%)	395 (100%)	1 (0%)	91	96

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Y	396/472 (84%)	396 (100%)	0	100	100
1	Z	396/472 (84%)	396 (100%)	0	100	100
1	a	396/472 (84%)	396 (100%)	0	100	100
1	b	396/472 (84%)	396 (100%)	0	100	100
1	c	396/472 (84%)	396 (100%)	0	100	100
1	d	396/472 (84%)	396 (100%)	0	100	100
1	e	396/472 (84%)	396 (100%)	0	100	100
1	f	396/472 (84%)	396 (100%)	0	100	100
1	g	396/472 (84%)	396 (100%)	0	100	100
1	h	396/472 (84%)	396 (100%)	0	100	100
1	i	396/472 (84%)	396 (100%)	0	100	100
1	j	396/472 (84%)	396 (100%)	0	100	100
1	k	396/472 (84%)	396 (100%)	0	100	100
1	l	396/472 (84%)	396 (100%)	0	100	100
1	m	396/472 (84%)	396 (100%)	0	100	100
1	n	396/472 (84%)	396 (100%)	0	100	100
1	o	396/472 (84%)	396 (100%)	0	100	100
1	p	396/472 (84%)	396 (100%)	0	100	100
1	q	396/472 (84%)	396 (100%)	0	100	100
1	r	396/472 (84%)	396 (100%)	0	100	100
1	s	396/472 (84%)	396 (100%)	0	100	100
1	t	396/472 (84%)	396 (100%)	0	100	100
1	u	396/472 (84%)	396 (100%)	0	100	100
1	v	396/472 (84%)	396 (100%)	0	100	100
1	w	396/472 (84%)	396 (100%)	0	100	100
1	x	396/472 (84%)	396 (100%)	0	100	100
1	y	396/472 (84%)	396 (100%)	0	100	100
1	z	396/472 (84%)	396 (100%)	0	100	100
All	All	23760/28320 (84%)	23757 (100%)	3 (0%)	100	100

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	6	473	GLU
1	E	473	GLU
1	X	473	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 173 such sidechains are listed below:

Mol	Chain	Res	Type
1	h	239	ASN
1	r	118	GLN
1	i	372	ASN
1	m	372	ASN
1	s	475	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 12 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

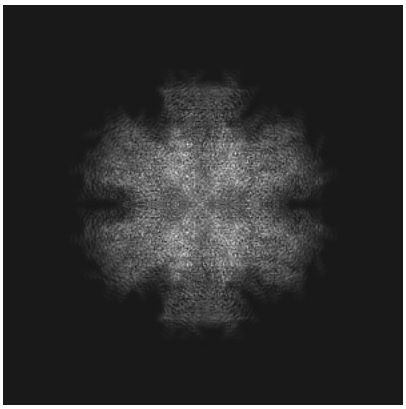
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-55303. These allow visual inspection of the internal detail of the map and identification of artifacts.

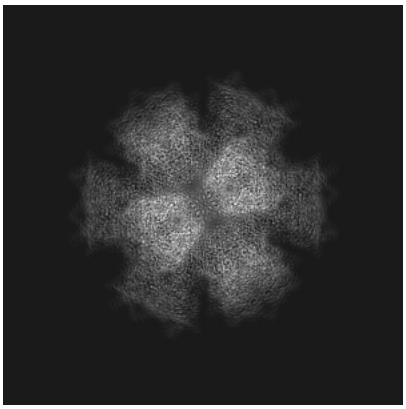
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

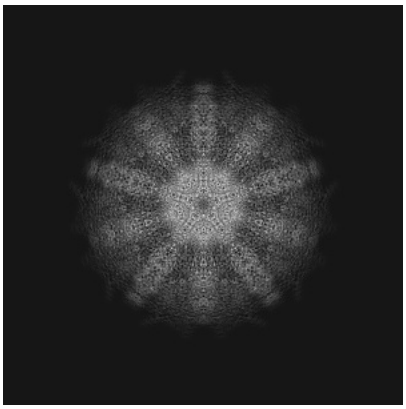
6.1.1 Primary map



X

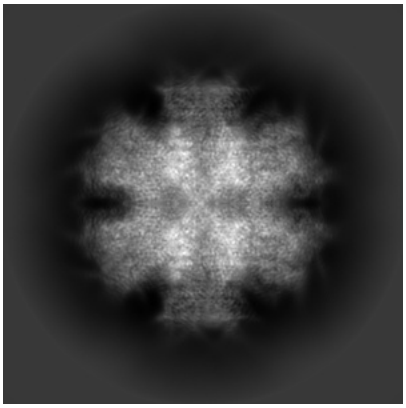


Y

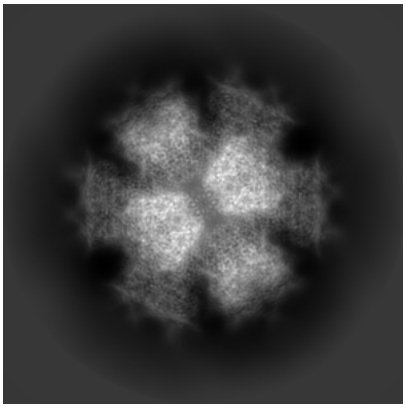


Z

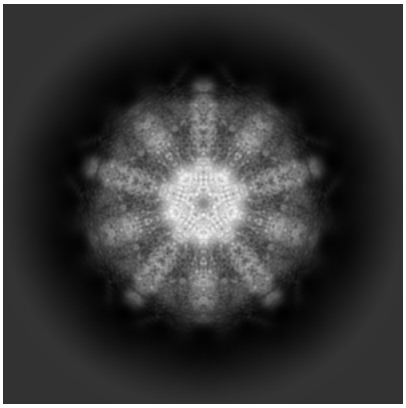
6.1.2 Raw map



X



Y

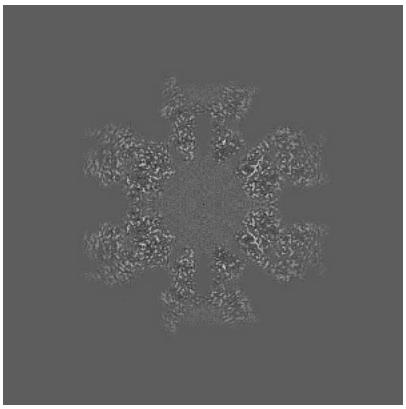


Z

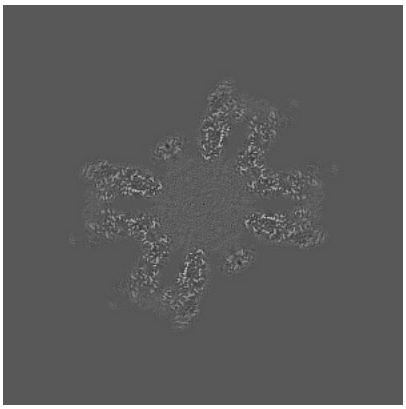
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

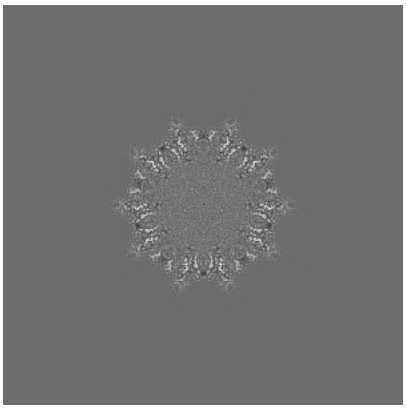
6.2.1 Primary map



X Index: 200

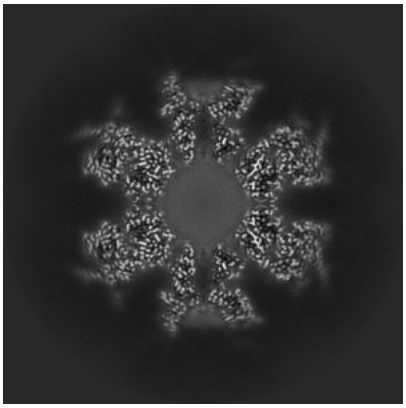


Y Index: 200

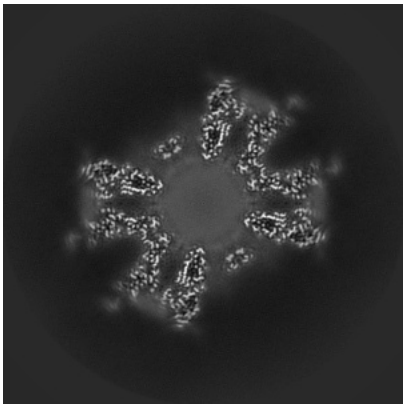


Z Index: 200

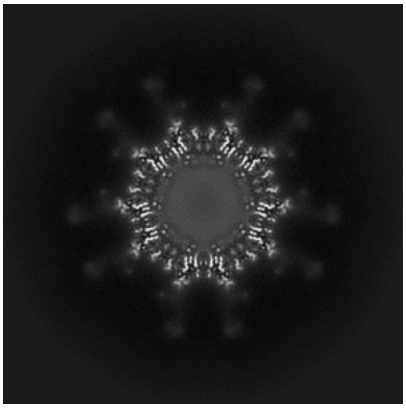
6.2.2 Raw map



X Index: 200



Y Index: 200

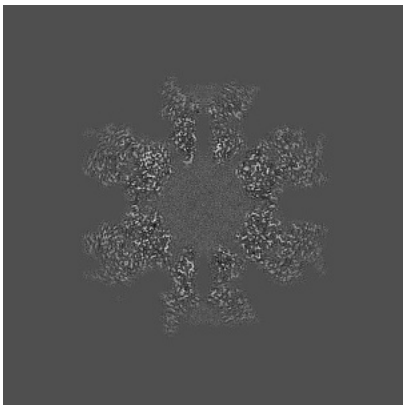


Z Index: 200

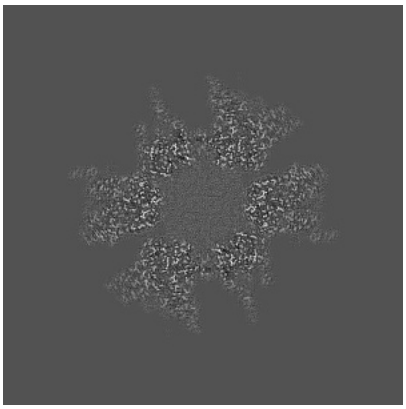
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

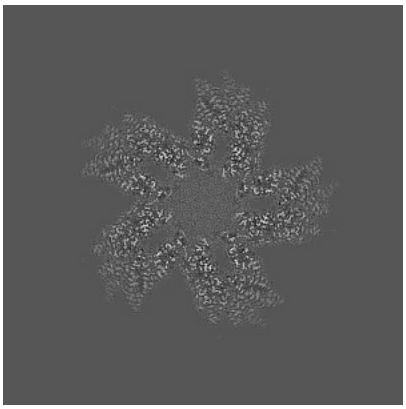
6.3.1 Primary map



X Index: 199

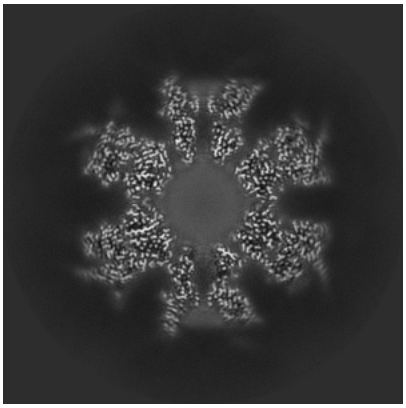


Y Index: 184

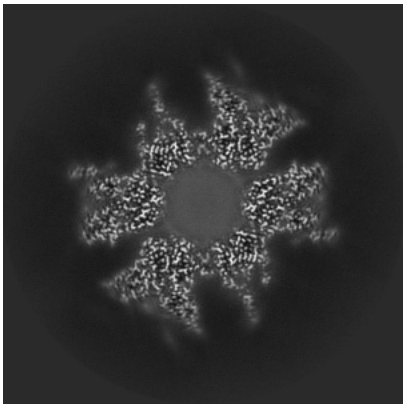


Z Index: 227

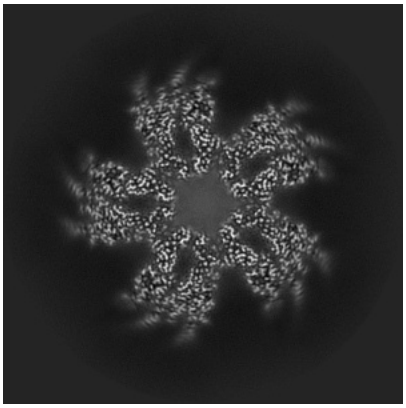
6.3.2 Raw map



X Index: 198



Y Index: 184

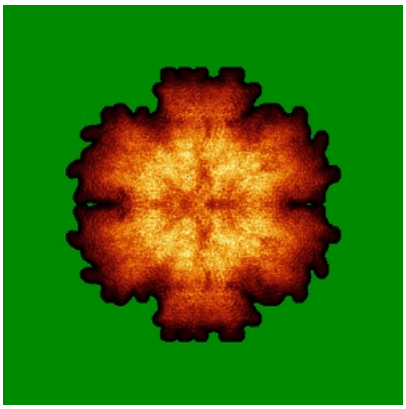


Z Index: 169

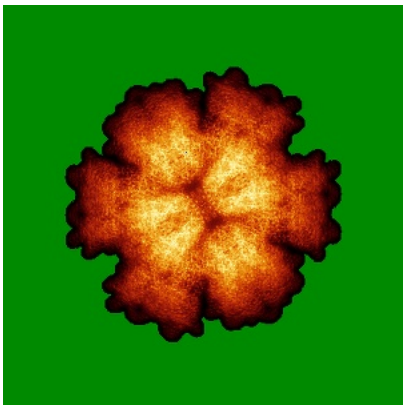
The images above show the largest variance slices of the map in three orthogonal directions.

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

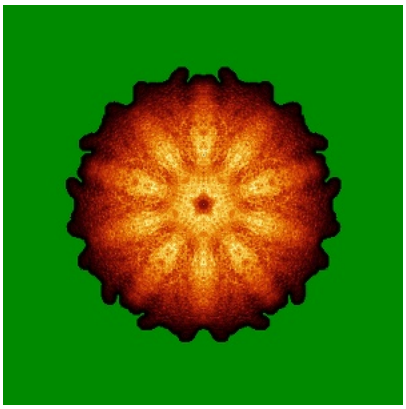
6.4.1 Primary map



X

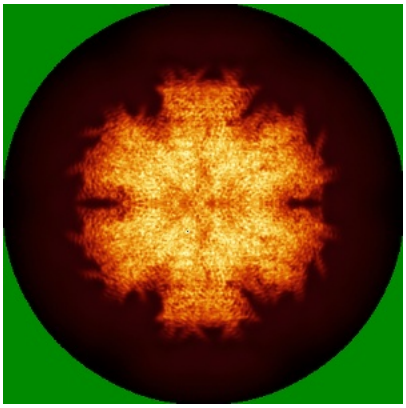


Y

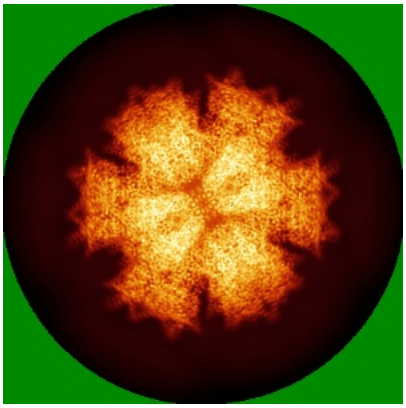


Z

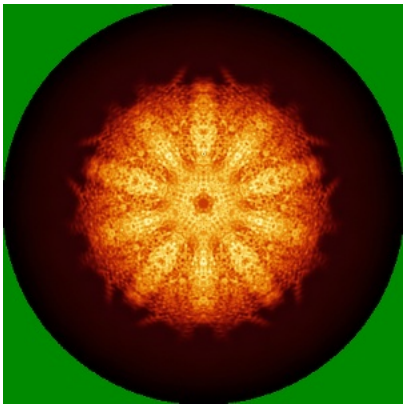
6.4.2 Raw map



X



Y



Z

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

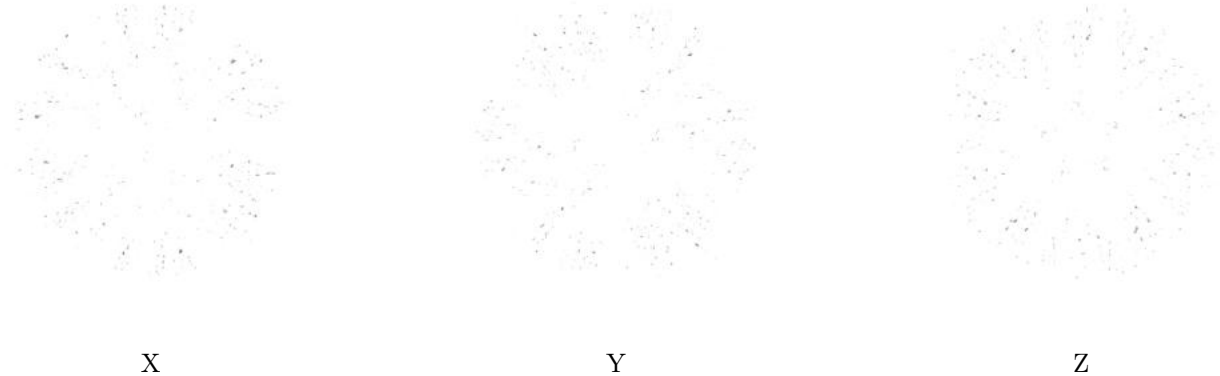
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

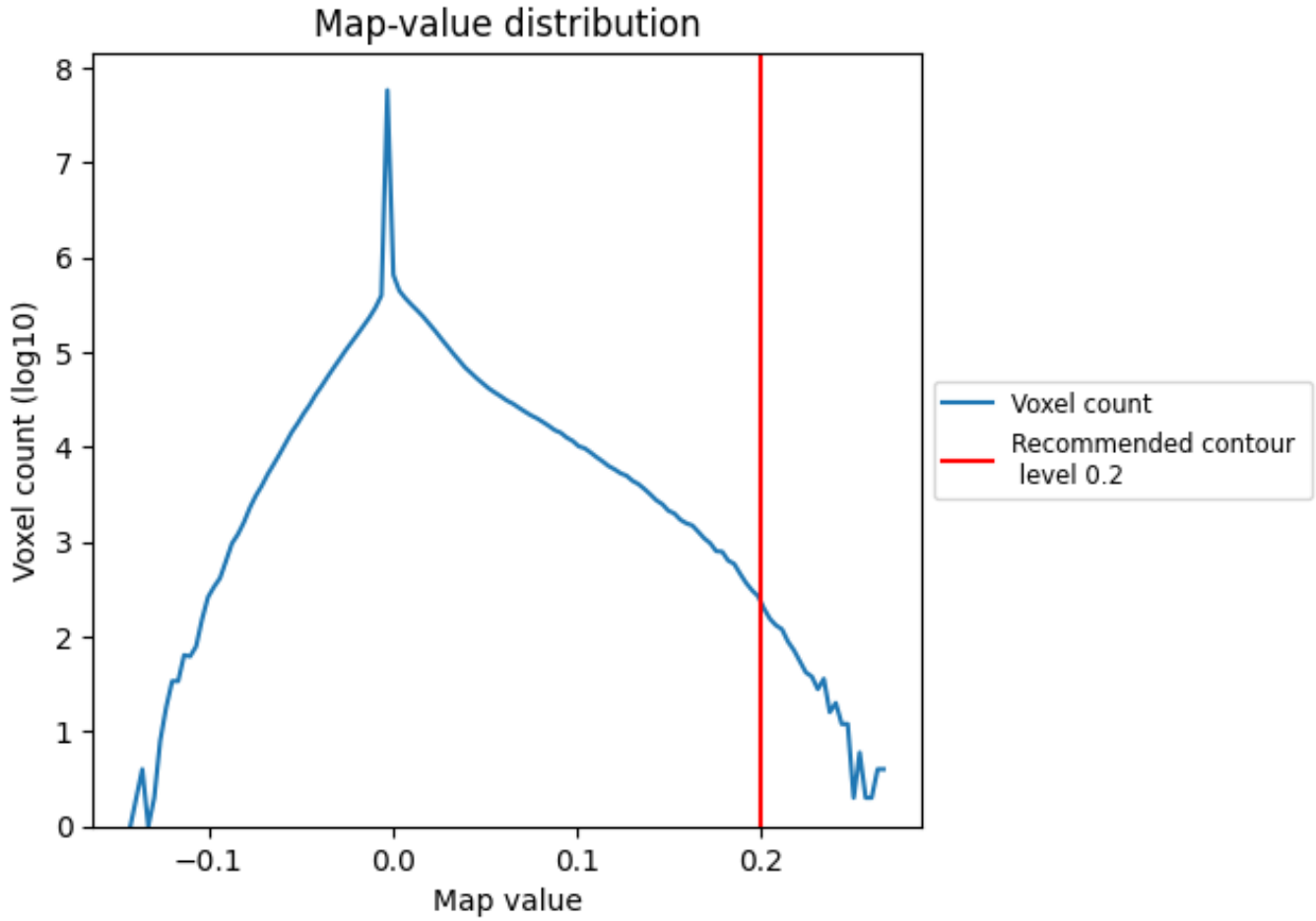
6.6 Mask visualisation (i)

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

7 Map analysis

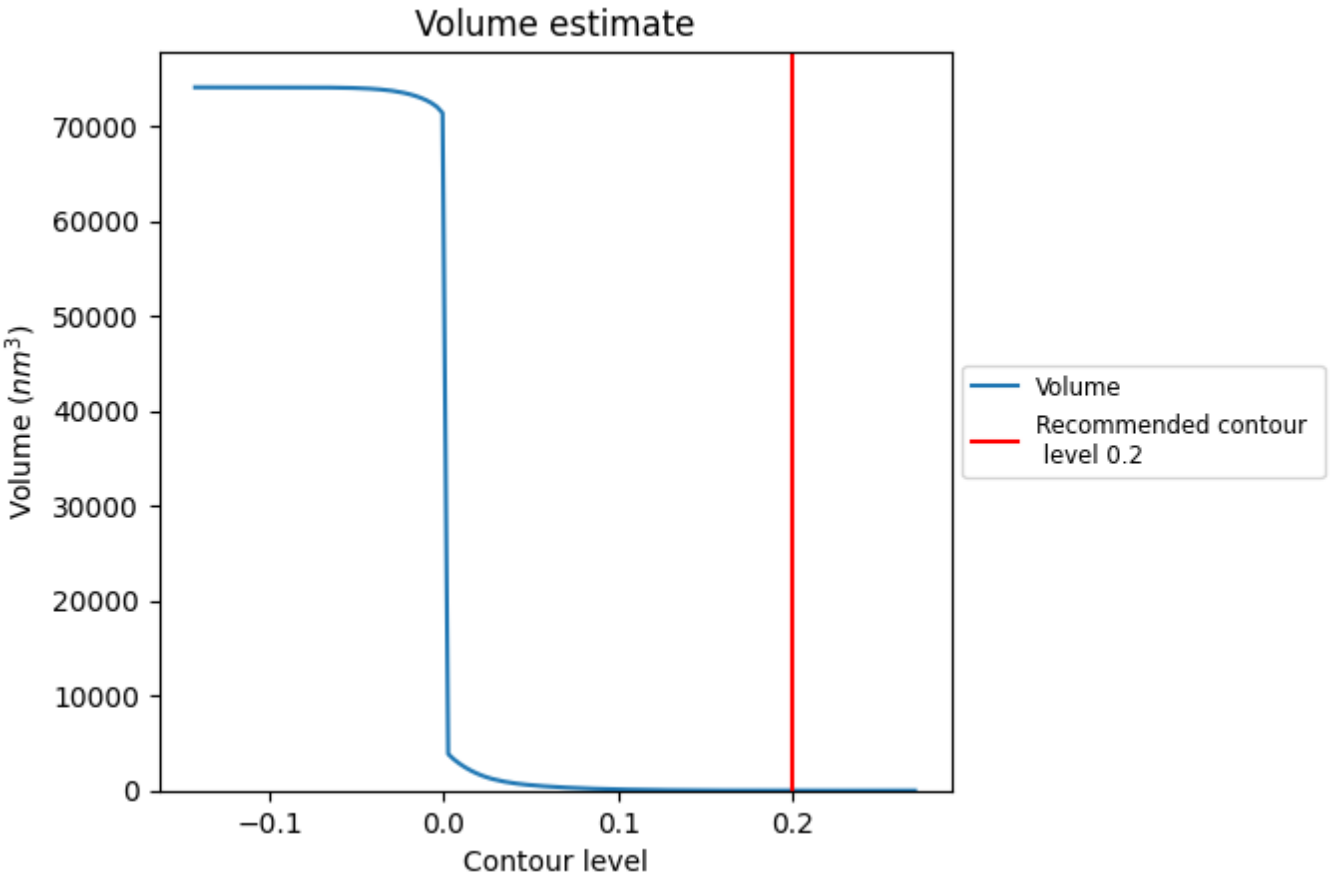
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

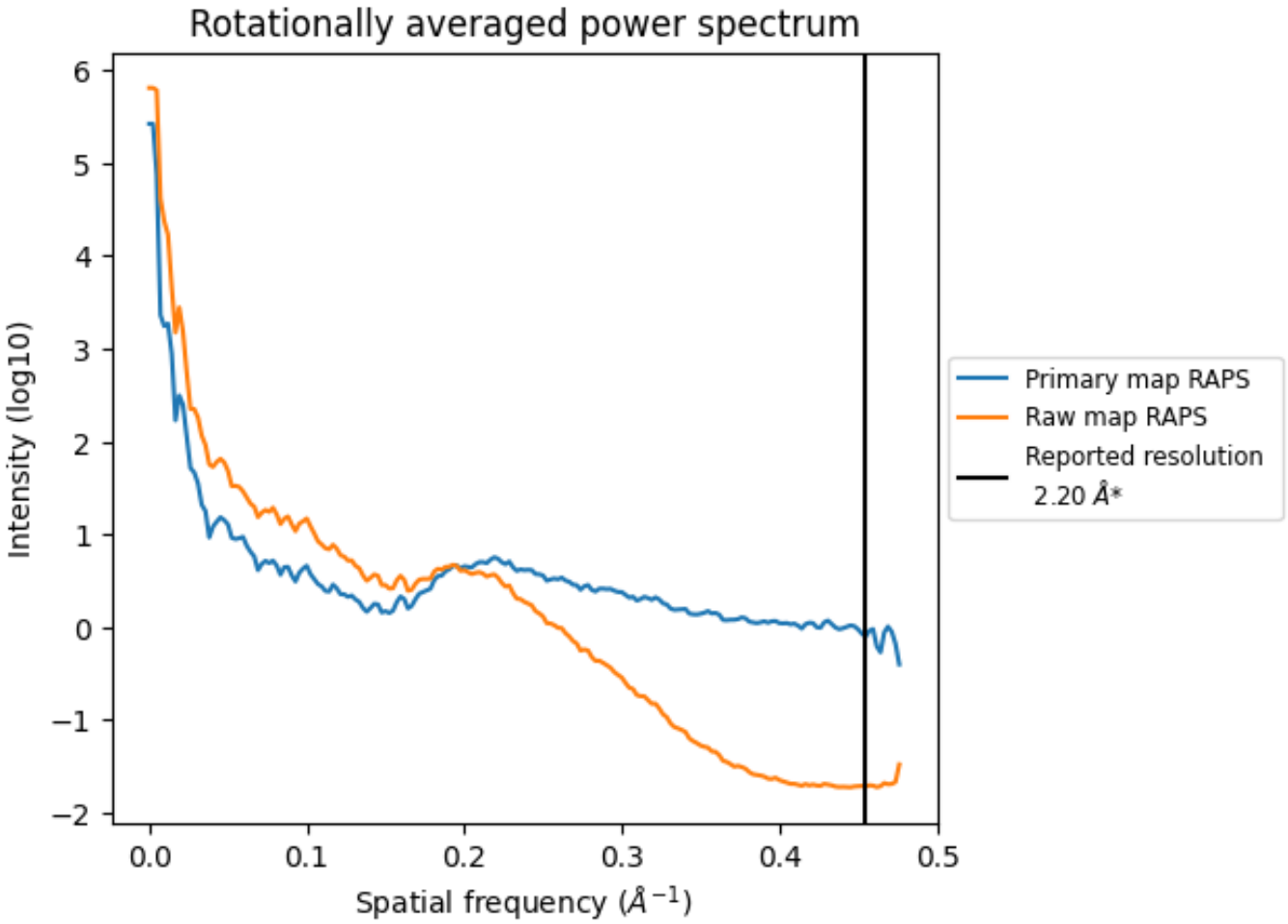
7.2 Volume estimate (i)



The volume at the recommended contour level is 1 nm^3; this corresponds to an approximate mass of 1 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)

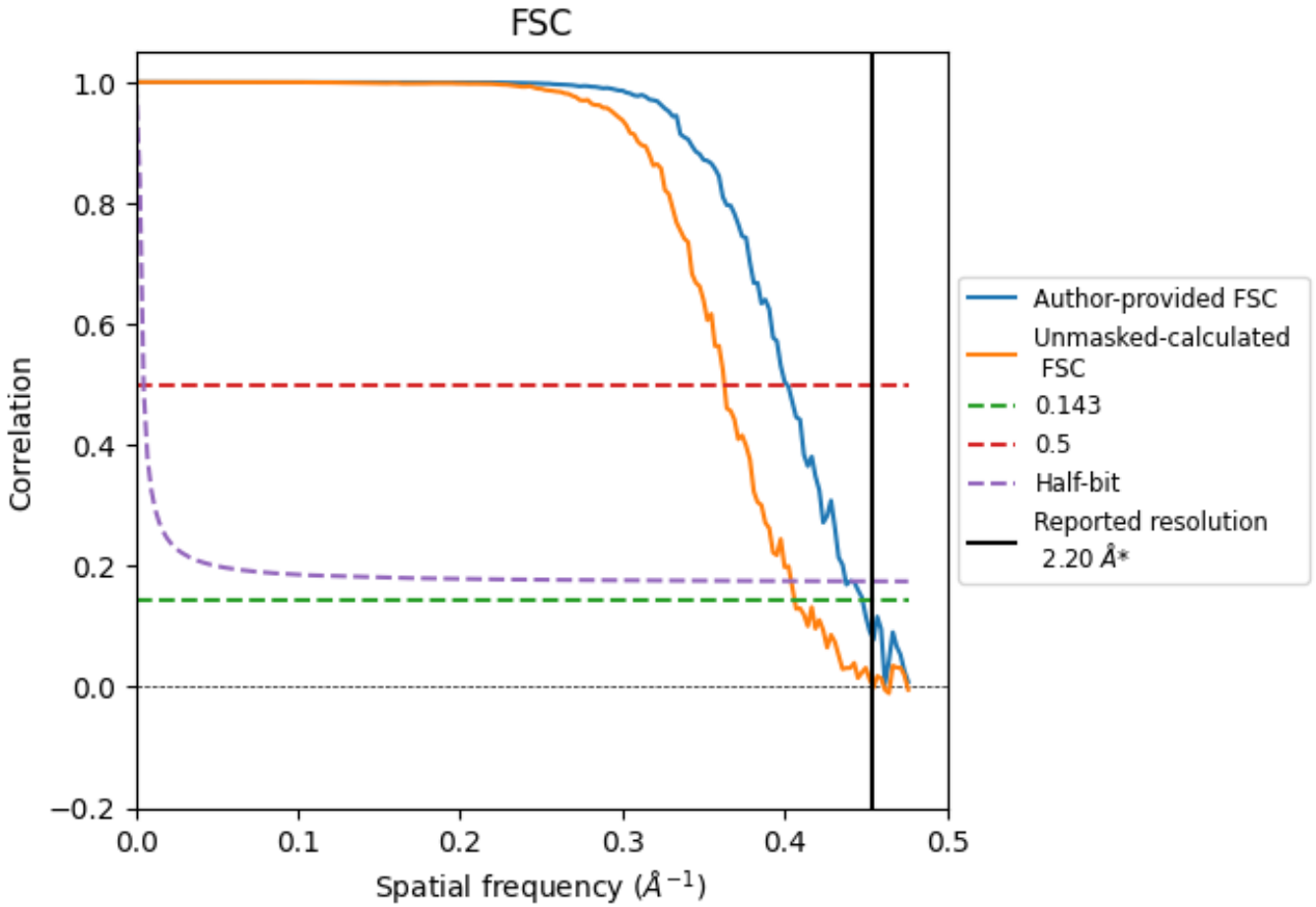


*Reported resolution corresponds to spatial frequency of 0.455 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.455 Å^{-1}

8.2 Resolution estimates (i)

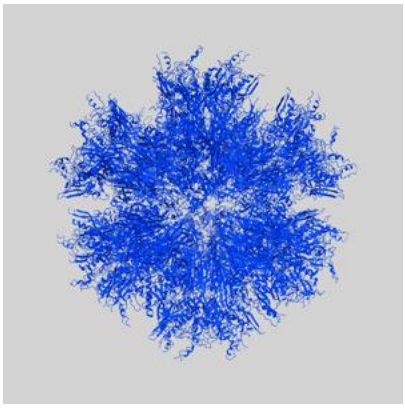
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.20	-	-
Author-provided FSC curve	2.23	2.49	2.28
Unmasked-calculated*	2.46	2.76	2.48

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 2.46 differs from the reported value 2.2 by more than 10 %

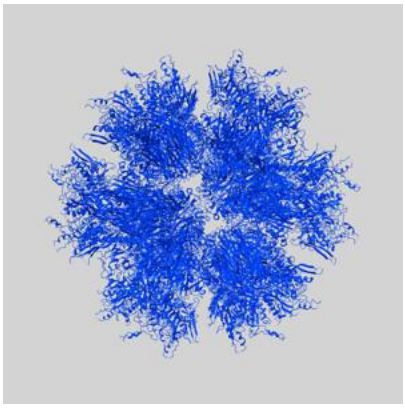
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-55303 and PDB model 9SWA. Per-residue inclusion information can be found in section 3 on page 27.

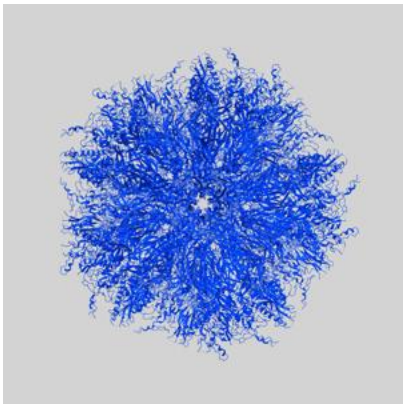
9.1 Map-model overlay



X



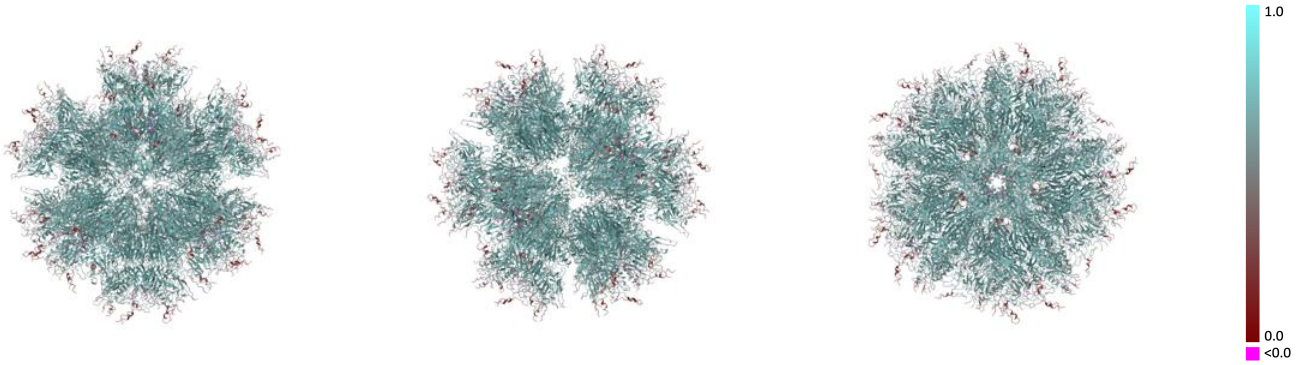
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.2 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.

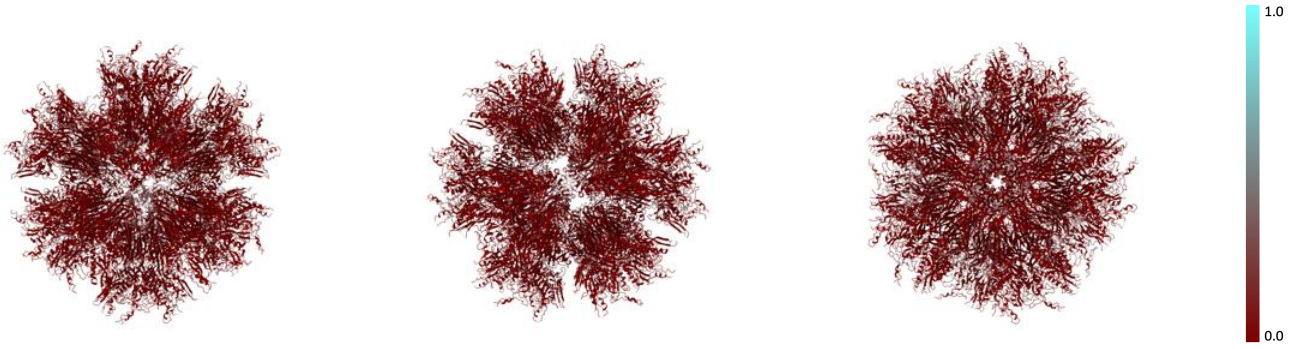
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

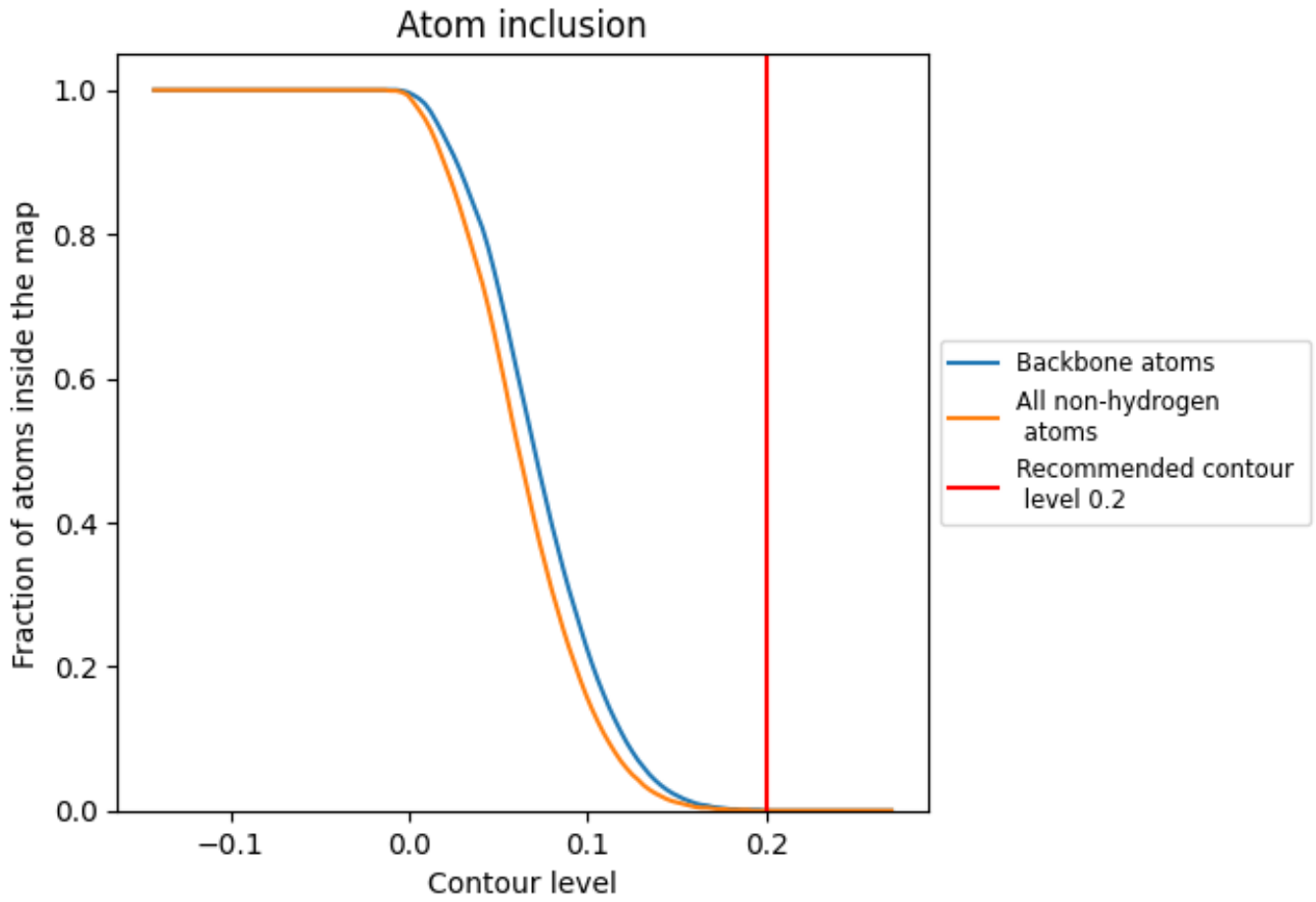
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.2).

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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.0000	0.6330
1	0.0000	0.6350
2	0.0010	0.6330
3	0.0000	0.6310
4	0.0000	0.6310
5	0.0000	0.6340
6	0.0010	0.6340
7	0.0000	0.6330
8	0.0000	0.6320
9	0.0000	0.6360
A	0.0000	0.6300
B	0.0000	0.6330
C	0.0000	0.6320
D	0.0000	0.6330
E	0.0000	0.6320
F	0.0000	0.6380
G	0.0000	0.6340
H	0.0000	0.6350
I	0.0000	0.6350
J	0.0010	0.6320
K	0.0000	0.6350
L	0.0000	0.6380
M	0.0000	0.6290
N	0.0000	0.6320
O	0.0000	0.6310
P	0.0000	0.6360
Q	0.0000	0.6310
R	0.0000	0.6330
S	0.0000	0.6360
T	0.0000	0.6330
V	0.0000	0.6330
W	0.0000	0.6340
X	0.0000	0.6310
Y	0.0000	0.6330
Z	0.0000	0.6330

Continued on next page...

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Chain	Atom inclusion	Q-score
a	0.0000	0.6350
b	0.0000	0.6300
c	0.0000	0.6360
d	0.0000	0.6310
e	0.0000	0.6340
f	0.0000	0.6310
g	0.0000	0.6320
h	0.0010	0.6310
i	0.0000	0.6330
j	0.0000	0.6320
k	0.0000	0.6340
l	0.0000	0.6320
m	0.0000	0.6310
n	0.0000	0.6340
o	0.0000	0.6310
p	0.0000	0.6330
q	0.0000	0.6330
r	0.0000	0.6370
s	0.0000	0.6350
t	0.0000	0.6350
u	0.0000	0.6310
v	0.0000	0.6370
w	0.0000	0.6320
x	0.0000	0.6340
y	0.0000	0.6320
z	0.0000	0.6320