



wwPDB EM Validation Summary Report ⓘ

Oct 21, 2024 – 11:43 PM EDT

PDB ID : 9CPB
EMDB ID : EMD-45801
Title : Atomic model of bovine Fallopian tube cilia doublet microtubule (48-nm periodicity)
Authors : Zeng, J.; Sun, C.; Zhang, R.
Deposited on : 2024-07-18
Resolution : 3.52 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:

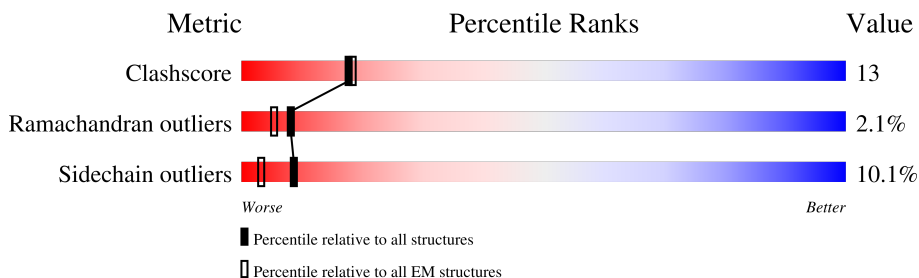
EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.52 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	1A	1044	
2	1D	687	
2	1E	687	
2	1F	687	
3	1H	547	
3	1I	547	
4	1K	196	
4	1L	196	

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Mol	Chain	Length	Quality of chain
5	1N	196	8% 51% 7% 42%
5	1O	196	7% 55% 41%
5	1P	196	8% 57% 40%
6	1R	101	35% 86% 10%
7	1T	321	17% 77% 21%
7	1U	321	16% 74% 5% 21%
8	1W	193	17% 42% 24% 30%
8	1X	193	17% 92% 5%
8	1Y	193	15% 91% 5% 5%
8	1Z	193	15% 92% 5% 5%
8	2A	193	18% 83% 10% 5%
8	2B	193	17% 92% 5%
9	2D	877	37% 45% 6% 49%
9	2E	877	11% 11% 88%
10	2F	170	9% 43% 54%
10	2G	170	15% 44% 54%
10	2H	170	16% 41% 5% 54%
11	2J	549	17% 28% 70%
11	2K	549	32% 49% 46%
11	2L	549	35% 46% 50%
11	2M	549	19% 32% 66%
12	2O	623	13% 95%
12	2P	623	17% 95%
12	2Q	623	15% 95%
13	2S	514	28% 51% 45%

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Mol	Chain	Length	Quality of chain
13	2T	514	
14	2V	284	
14	2W	284	
14	2X	284	
14	2Y	284	
15	3A	232	
16	3C	309	
16	3D	309	
17	3F	212	
18	3H	1410	
19	3J	640	
19	3K	640	
19	3L	640	
20	3N	733	
20	3O	733	
20	3P	733	
20	3Q	733	
21	3S	259	
21	3T	259	
21	3U	259	
21	3V	259	
22	3X	274	
22	3Y	274	
22	3Z	274	
22	4A	274	

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Mol	Chain	Length	Quality of chain
22	4B	274	
22	4C	274	
23	4D	135	
24	4F	495	
24	4G	495	
25	4I	377	
25	4J	377	
26	4K	621	
26	4L	621	
26	4M	621	
27	4O	257	
27	4P	257	
27	4Q	257	
27	4R	257	
27	4S	257	
27	4T	257	
28	4V	136	
28	4W	136	
29	4Y	120	
30	5A	377	
30	5B	377	
31	5D	169	
31	5E	169	
31	5F	169	
31	5G	169	

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Mol	Chain	Length	Quality of chain
31	5H	169	92% 80% 12% 7%
31	5I	169	91% 87% 6% 7%
31	5J	169	92% 73% 20% 7%
32	5L	418	22% 6% 72%
32	5M	418	15% 72% 22% 6%
32	5N	418	12% 77% 17% 6%
32	5O	418	11% 33% 25% 10% 30%
33	5Q	430	7% 20% 6% 75%
33	5R	430	9% 76% 16% 7%
33	5S	430	9% 61% 21% 9% 7%
33	5T	430	5% 32% 27% 10% 29%
33	5V	430	64% 45% 23% 28%
33	5W	430	85% 69% 25% 5%
33	5X	430	83% 71% 22% 5%
33	5Y	430	23% 19% 5% 75%
34	6A	490	38% 20% 25% 9% 44%
34	6B	490	53% 52% 22% 5% 20%
34	6C	490	50% 38% 28% 12% 20%
34	6D	490	17% 11% 9% 75%
34	6E	490	12% 5% 5% 88%
34	6F	490	72% 56% 16% 27%
34	6G	490	82% 68% 17% 15%
34	6H	490	74% 58% 16% 25%
34	6I	490	13% 12% 87%
34	6J	490	13% 10% 87%

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Mol	Chain	Length	Quality of chain
34	6K	490	75% 62% 14% 24%
34	6L	490	83% 66% 18% 15%
34	6M	490	72% 57% 16% 26%
34	6N	490	11% 8% 89%
35	6P	447	20% 36% 60%
35	6Q	447	28% 77% 14% 8%
35	6R	447	32% 70% 17% 8%
35	6S	447	21% 38% 15% 43%
35	6T	447	53% 41% 11% 47%
35	6U	447	92% 72% 21% 6%
35	6V	447	96% 67% 27%
35	6W	447	47% 33% 12% 52%
36	6Y	683	15% 25% 72%
36	6Z	683	12% 26% 72%
37	7C	254	28% 26% 19% 53%
37	7D	254	13% 24% 6% 69%
37	7E	254	22% 22% 11% 67%
37	7F	254	14% 17% 7% 74%
38	7H	274	24% 18% 11% 69%
38	7I	274	8% 8% 5% 88%
39	7K	147	31% 64% 9% 27%
39	7L	147	18% 25% 5% 69%
40	7N	484	13% 10% 87%
41	AB	445	18% 68% 30%
41	AD	445	12% 74% 23%

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Mol	Chain	Length	Quality of chain
41	AF	445	
41	AH	445	
41	AJ	445	
41	AL	445	
41	BB	445	
41	BD	445	
41	BF	445	
41	BH	445	
41	BJ	445	
41	BL	445	
41	CB	445	
41	CD	445	
41	CF	445	
41	CH	445	
41	CJ	445	
41	CL	445	
41	DB	445	
41	DD	445	
41	DF	445	
41	DH	445	
41	DJ	445	
41	DL	445	
41	ED	445	
41	EF	445	
41	EH	445	

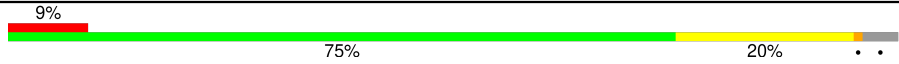
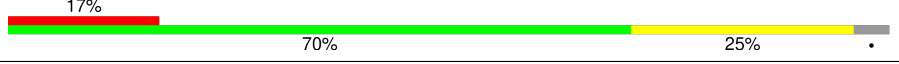
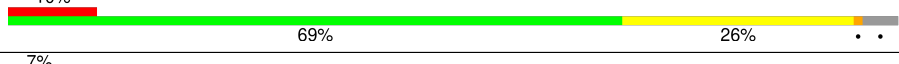
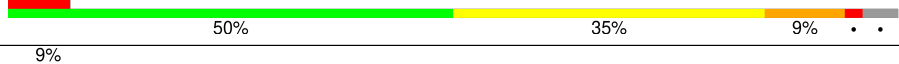

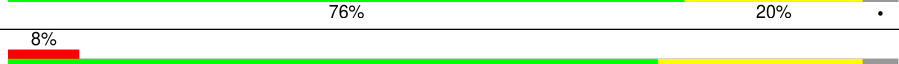
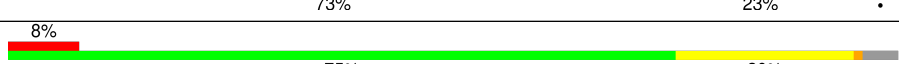
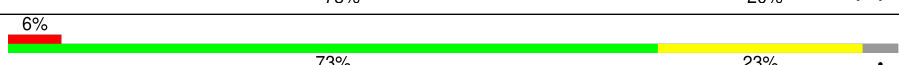
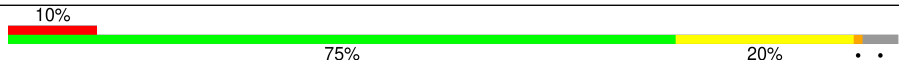


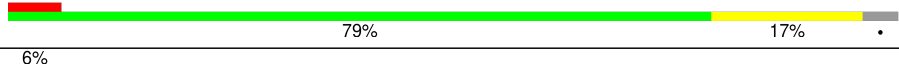
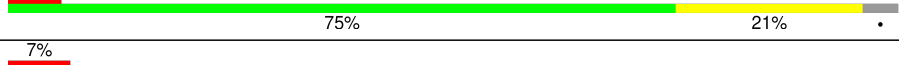

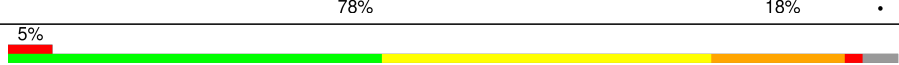
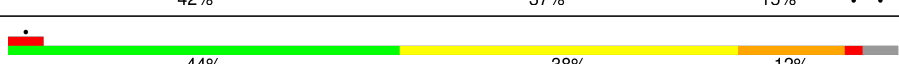









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Mol	Chain	Length	Quality of chain
41	EJ	445	
41	EL	445	
41	FD	445	
41	FF	445	
41	FH	445	
41	FJ	445	
41	FL	445	
41	GD	445	
41	GF	445	
41	GH	445	
41	GJ	445	
41	GL	445	
41	HB	445	
41	HD	445	
41	HF	445	
41	HH	445	
41	HJ	445	
41	HL	445	
41	ID	445	
41	IF	445	
41	IH	445	
41	IJ	445	
41	IL	445	
41	IN	445	
41	JD	445	


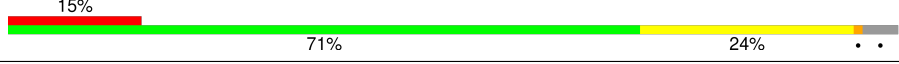
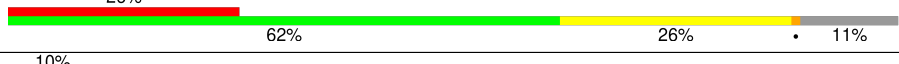
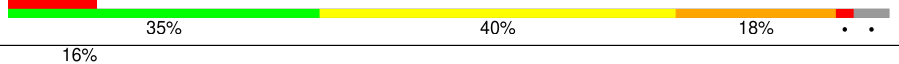


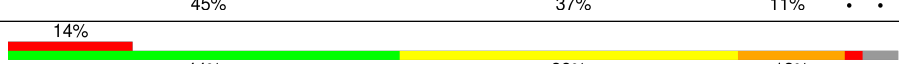
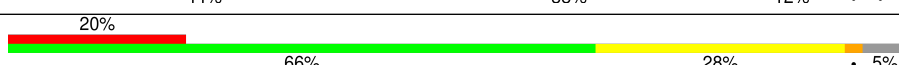
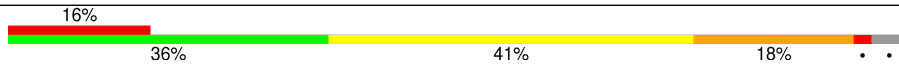

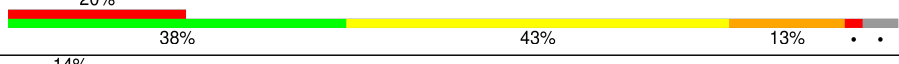
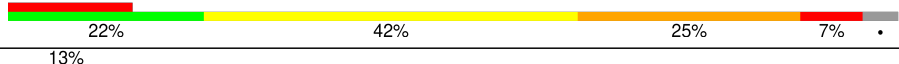
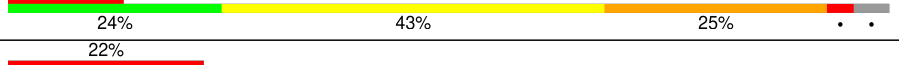
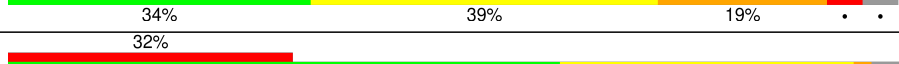
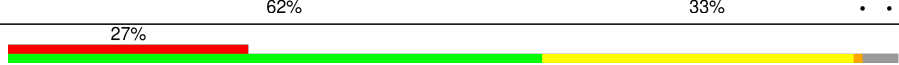

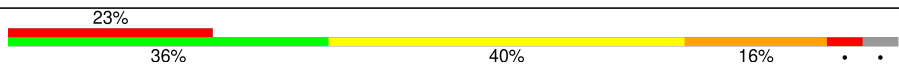
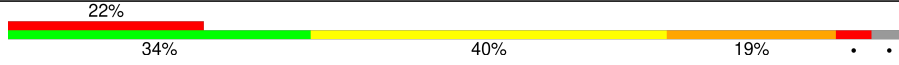
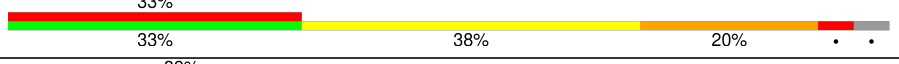


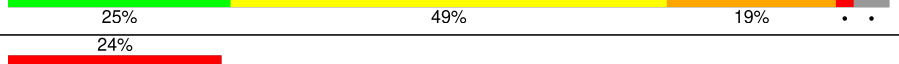



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Mol	Chain	Length	Quality of chain
41	JF	445	
41	JH	445	
41	JJ	445	
41	JL	445	
41	KD	445	
41	KF	445	
41	KH	445	
41	KJ	445	
41	KL	445	
41	KN	445	
41	LD	445	
41	LF	445	
41	LH	445	
41	LJ	445	
41	LL	445	
41	LN	445	
41	MD	445	
41	MF	445	
41	MH	445	
41	MJ	445	
41	ML	445	
41	MN	445	
41	NB	445	
41	ND	445	
41	NF	445	

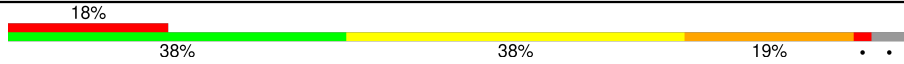
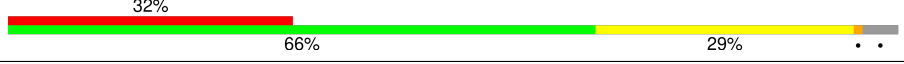
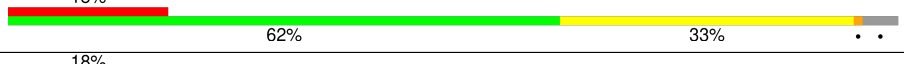
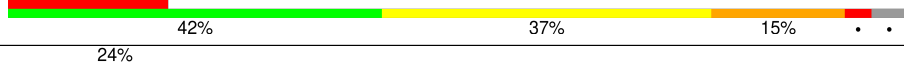


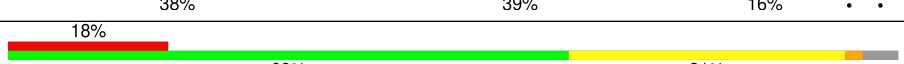
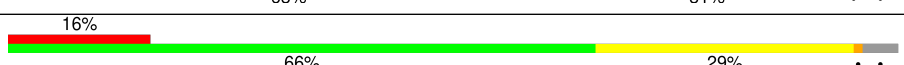
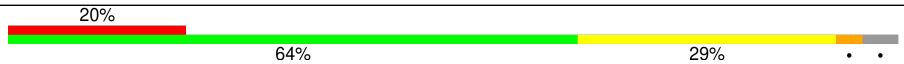


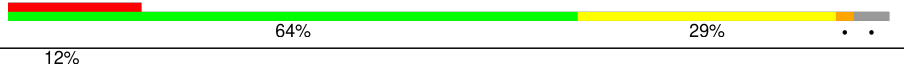
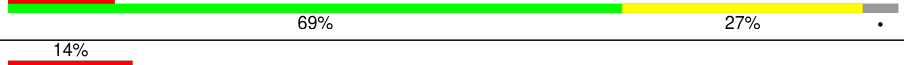

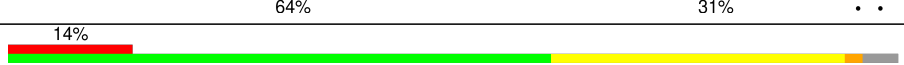










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Mol	Chain	Length	Quality of chain
41	NH	445	
41	NJ	445	
41	NL	445	
41	OB	445	
41	OD	445	
41	OF	445	
41	OH	445	
41	OJ	445	
41	OL	445	
41	PB	445	
41	PD	445	
41	PF	445	
41	PH	445	
41	PJ	445	
41	PL	445	
41	QB	445	
41	QD	445	
41	QF	445	
41	QH	445	
41	QJ	445	
41	QL	445	
41	RB	445	
41	RD	445	
41	RF	445	
41	RH	445	

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Mol	Chain	Length	Quality of chain
41	RJ	445	
41	RL	445	
41	SD	445	
41	SF	445	
41	SH	445	
41	SJ	445	
41	SL	445	
41	TD	445	
41	TF	445	
41	TH	445	
41	TJ	445	
41	TL	445	
41	UD	445	
41	UF	445	
41	UH	445	
41	UJ	445	
41	UL	445	
41	VD	445	
41	VF	445	
41	VH	445	
41	VJ	445	
41	VL	445	
41	WD	445	
41	WF	445	
41	WH	445	

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Mol	Chain	Length	Quality of chain
41	WJ	445	
41	WL	445	
41	WN	445	
42	AC	452	
42	AE	452	
42	AG	452	
42	AI	452	
42	AK	452	
42	BC	452	
42	BE	452	
42	BG	452	
42	BI	452	
42	BK	452	
42	CC	452	
42	CE	452	
42	CG	452	
42	CI	452	
42	CK	452	
42	CM	452	
42	DC	452	
42	DE	452	
42	DG	452	
42	DI	452	
42	DK	452	
42	DM	452	

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Mol	Chain	Length	Quality of chain
42	EC	452	
42	EE	452	
42	EG	452	
42	EI	452	
42	EK	452	
42	EM	452	
42	FC	452	
42	FE	452	
42	FG	452	
42	FI	452	
42	FK	452	
42	FM	452	
42	GC	452	
42	GE	452	
42	GG	452	
42	GI	452	
42	GK	452	
42	GM	452	
42	HC	452	
42	HE	452	
42	HG	452	
42	HI	452	
42	HK	452	
42	HM	452	
42	IC	452	

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Mol	Chain	Length	Quality of chain
42	IE	452	8% 50% 32% 12% . .
42	IG	452	13% 73% 23% . .
42	II	452	12% 71% 25% .
42	IK	452	17% 71% 26% . .
42	IM	452	13% 71% 24% 5%
42	JC	452	15% 71% 23% . .
42	JE	452	11% 70% 25% . 5%
42	JG	452	9% 73% 21% . 5%
42	JI	452	15% 72% 22% . 5%
42	JK	452	7% 40% 38% 17% . .
42	JM	452	6% 51% 30% 12% . 5%
42	KC	452	10% 82% 14% .
42	KE	452	8% 80% 15% 5%
42	KG	452	5% 75% 19% 5%
42	KI	452	5% 75% 20% 5%
42	KK	452	6% 75% 19% . 5%
42	KM	452	. 57% 30% 8% . .
42	LC	452	7% 78% 17% .
42	LE	452	9% 78% 19% .
42	LG	452	6% 79% 16% .
42	LI	452	8% 77% 19% .
42	LK	452	7% 79% 17% .
42	LM	452	8% 77% 17% . 5%
42	MC	452	8% 69% 27% . .
42	ME	452	9% 74% 21% 5%

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Mol	Chain	Length	Quality of chain
42	MG	452	5% 54% 33% 8% 5%
42	MI	452	9% 74% 21% 5%
42	MK	452	21% 62% 34% ..
42	MM	452	10% 62% 33% 5%
42	NA	452	11% 45% 33% 15% 5%
42	NC	452	8% 42% 36% 15% 5%
42	NE	452	13% 71% 23% 5%
42	NG	452	10% 49% 33% 11% ..
42	NI	452	11% 44% 35% 13% ..
42	NK	452	10% 43% 37% 14% 5%
42	OA	452	23% 66% 28% 5%
42	OC	452	14% 65% 28% 5%
42	OE	452	13% 63% 31% ..
42	OG	452	13% 48% 33% 13% ..
42	OI	452	12% 67% 27% ..
42	OK	452	14% 65% 29% 5%
42	PA	452	29% 29% 33% 16% 19%
42	PC	452	17% 37% 38% 19% ..
42	PE	452	12% 35% 40% 17% 5%
42	PG	452	12% 21% 46% 23% 6% 5%
42	PI	452	12% 23% 40% 26% 5% 6%
42	PK	452	17% 42% 36% 16% 5%
42	QC	452	27% 64% 29% 5%
42	QE	452	22% 63% 31% 5%
42	QG	452	27% 62% 31% 5%

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Mol	Chain	Length	Quality of chain
42	QI	452	17% 38% 38% 16% 5%
42	QK	452	24% 40% 39% 15% 5%
42	RC	452	30% 61% 34% ..
42	RE	452	19% 65% 29% 5%
42	RG	452	24% 60% 33% 5%
42	RI	452	20% 59% 35% 5%
42	RK	452	25% 61% 33% 5%
42	SC	452	25% 61% 34% 5%
42	SE	452	17% 42% 36% 15% 5%
42	SG	452	20% 66% 28% 5%
42	SI	452	14% 40% 35% 17% 6%
42	SK	452	21% 63% 31% ..
42	SM	452	57% 61% 33% 5%
42	TC	452	29% 63% 32% 5%
42	TE	452	18% 62% 33% ..
42	TG	452	25% 62% 31% 5%
42	TI	452	17% 41% 35% 17% 5%
42	TK	452	13% 43% 35% 14% ..
42	TM	452	40% 50% 43% 5%
42	UC	452	16% 44% 37% 12% ..
42	UE	452	15% 69% 26% ..
42	UG	452	12% 65% 27% ..
42	UI	452	16% 67% 27% ..
42	UK	452	14% 63% 31% ..
42	UM	452	19% 64% 30% 5%

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Mol	Chain	Length	Quality of chain
42	VC	452	 14% 75% 22% •
42	VE	452	 10% 72% 24% •
42	VG	452	 12% 72% 25% •
42	VI	452	 11% 71% 25% •
42	VK	452	 11% 51% 32% 13% • •
42	VM	452	 12% 68% 26% • 5%
42	WC	452	 10% 78% 19% •
42	WE	452	 5% 56% 30% 9% • 5%
42	WG	452	 10% 74% 23% • •
42	WI	452	 6% 53% 32% 10% • 5%
42	WK	452	 8% 72% 24% •
42	WM	452	 9% 70% 25% 5%

2 Entry composition [i](#)

There are 45 unique types of molecules in this entry. The entry contains 1132145 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 Armadillo repeat containing 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
1	1A	493	2437	1451	493	493	0	0

- Molecule 2 is a protein called Coiled-coil domain containing 114.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1D	134	1109	675	215	216	3	0	0
2	1E	187	1569	955	314	294	6	0	0
2	1F	83	698	424	145	125	4	0	0

- Molecule 3 is a protein called Coiled-coil domain containing 173.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	1H	83	685	426	121	136	2	0	0
3	1I	377	3234	2007	605	612	10	0	0

- Molecule 4 is a protein called Uncharacterized protein C1orf158 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	1K	159	1348	877	241	229	1	0	0
4	1L	32	269	170	48	51		0	0

- Molecule 5 is a protein called Protein Flattop.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	1N	114	Total	C	N	O	S	0	0
			894	569	162	161	2		
5	1O	116	Total	C	N	O	S	0	0
			910	580	165	163	2		
5	1P	118	Total	C	N	O	S	0	0
			928	590	169	167	2		

- Molecule 6 is a protein called CFAP141.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	1R	91	Total	C	N	O	S	0	0
			785	495	151	133	6		

- Molecule 7 is a protein called Cilia and flagella associated protein 161.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1T	255	Total	C	N	O	S	0	0
			2055	1302	369	373	11		
7	1U	255	Total	C	N	O	S	0	0
			2055	1302	369	373	11		

- Molecule 8 is a protein called Cilia- and flagella-associated protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	1W	136	Total	C	N	O	S	0	0
			1143	741	196	200	6		
8	1X	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		
8	1Y	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		
8	1Z	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		
8	2A	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		
8	2B	184	Total	C	N	O	S	0	0
			1532	984	268	273	7		

- Molecule 9 is a protein called EF-hand domain family member B.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	2D	451	Total	C	N	O	S	0	0
			3649	2326	650	660	13		

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Mol	Chain	Residues	Atoms					AltConf	Trace
9	2E	101	Total	C	N	O	S	0	0
			816	513	145	156	2		

- Molecule 10 is a protein called CFAP276.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	2F	79	Total	C	N	O	0	0
			631	395	116	120		
10	2G	79	Total	C	N	O	0	0
			631	395	116	120		
10	2H	79	Total	C	N	O	0	0
			631	395	116	120		

- Molecule 11 is a protein called Cilia and flagella associated protein 45.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	2J	162	Total	C	N	O	S	0	0
			1349	837	245	258	9		
11	2K	296	Total	C	N	O	S	0	0
			2554	1543	517	485	9		
11	2L	275	Total	C	N	O	S	0	0
			2330	1426	438	450	16		
11	2M	186	Total	C	N	O	S	0	0
			1589	961	327	299	2		

- Molecule 12 is a protein called Cilia and flagella associated protein 52.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	2O	609	Total	C	N	O	S	0	0
			4713	2985	822	874	32		
12	2P	609	Total	C	N	O	S	0	0
			4713	2985	822	874	32		
12	2Q	609	Total	C	N	O	S	0	0
			4713	2985	822	874	32		

- Molecule 13 is a protein called Methyl-CpG binding domain protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	2S	281	Total	C	N	O	S	0	0
			2081	1267	402	403	9		
13	2T	199	Total	C	N	O	S	0	0
			1694	1032	321	329	12		

- Molecule 14 is a protein called Cilia and flagella associated protein 77.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	2V	34	Total	C	N	O	S	0	0
			287	183	56	46	2		
14	2W	215	Total	C	N	O	S	0	0
			1756	1109	335	303	9		
14	2X	210	Total	C	N	O	S	0	0
			1711	1080	326	296	9		
14	2Y	165	Total	C	N	O	S	0	0
			1327	838	250	232	7		

- Molecule 15 is a protein called CFAP95.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	3A	183	Total	C	N	O	S	0	0
			1487	932	258	288	9		

- Molecule 16 is a protein called Cilia-and flagella-associated protein 96.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	3C	211	Total	C	N	O	S	0	0
			1693	1077	291	318	7		
16	3D	71	Total	C	N	O	S	0	0
			531	339	94	95	3		

- Molecule 17 is a protein called EF-hand calcium-binding domain-containing protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	3F	105	Total	C	N	O	0	0
			520	310	105	105		

- Molecule 18 is a protein called EF-hand calcium binding domain 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	3H	97	Total	C	N	O	0	0
			481	287	97	97		

- Molecule 19 is a protein called EF-hand domain containing 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	3J	431	Total	C	N	O	S	0	0
			3563	2303	597	649	14		

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Mol	Chain	Residues	Atoms					AltConf	Trace
19	3K	443	Total	C	N	O	S	0	0
			3652	2361	613	664	14		
19	3L	452	Total	C	N	O	S	0	0
			3726	2406	627	678	15		

- Molecule 20 is a protein called EFHC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	3N	286	Total	C	N	O	S	0	0
			2388	1534	406	438	10		
20	3O	579	Total	C	N	O	S	0	0
			4781	3067	810	878	26		
20	3P	581	Total	C	N	O	S	0	0
			4787	3070	808	884	25		
20	3Q	290	Total	C	N	O	S	0	0
			2409	1545	404	445	15		

- Molecule 21 is a protein called Enkurin, TRPC channel interacting protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	3S	70	Total	C	N	O	S	0	0
			563	356	95	110	2		
21	3T	235	Total	C	N	O	S	0	0
			1939	1242	336	354	7		
21	3U	235	Total	C	N	O	S	0	0
			1939	1242	336	354	7		
21	3V	205	Total	C	N	O	S	0	0
			1696	1087	295	307	7		

- Molecule 22 is a protein called Protein FAM166B.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	3X	129	Total	C	N	O	S	0	0
			1014	662	172	174	6		
22	3Y	142	Total	C	N	O	S	0	0
			1116	732	189	189	6		
22	3Z	135	Total	C	N	O	S	0	0
			1059	690	181	182	6		
22	4A	107	Total	C	N	O	S	0	0
			840	548	142	144	6		
22	4B	105	Total	C	N	O	S	0	0
			830	538	143	143	6		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	4C	85	667	433	111	118	5	0	0

- Molecule 23 is a protein called Cilia- and flagella-associated protein 144.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	4D	116	992	627	186	177	2	0	0

- Molecule 24 is a protein called Meiosis-specific nuclear structural protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	4F	151	1261	772	241	244	4	0	0
24	4G	335	2883	1786	528	553	16	0	0

- Molecule 25 is a protein called Nucleoside diphosphate kinase 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	4I	372	2533	1589	451	481	12	0	0
25	4J	372	2947	1880	499	546	22	0	0

- Molecule 26 is a protein called Outer dynein arm-docking complex subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	4K	132	1102	683	204	212	3	0	0
26	4L	228	1911	1190	353	364	4	0	0
26	4M	104	876	549	164	162	1	0	0

- Molecule 27 is a protein called PACRG protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	4O	219	1767	1144	298	316	9	0	0
27	4P	219	1767	1144	298	316	9	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
27	4Q	219	Total	C	N	O	S	0	0
			1767	1144	298	316	9		
27	4R	219	Total	C	N	O	S	0	0
			1767	1144	298	316	9		
27	4S	219	Total	C	N	O	S	0	0
			1767	1144	298	316	9		
27	4T	219	Total	C	N	O	S	0	0
			1767	1144	298	316	9		

- Molecule 28 is a protein called Pierce1.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	4V	37	Total	C	N	O	S	0	0
			304	191	52	58	3		
28	4W	79	Total	C	N	O	S	0	0
			654	415	118	119	2		

- Molecule 29 is a protein called Pierce2.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	4Y	96	Total	C	N	O	S	0	0
			775	496	130	142	7		

- Molecule 30 is a protein called RIB43A-like with coiled-coils protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	5A	350	Total	C	N	O	S	0	0
			2915	1775	574	553	13		
30	5B	16	Total	C	N	O		0	0
			133	81	24	28			

- Molecule 31 is a protein called Sperm acrosome associated 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	5D	157	Total	C	N	O	S	0	0
			1260	787	225	237	11		
31	5E	157	Total	C	N	O	S	0	0
			1254	784	222	237	11		
31	5F	159	Total	C	N	O	S	0	0
			1277	799	228	239	11		
31	5G	157	Total	C	N	O	S	0	0
			1260	787	225	237	11		

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Mol	Chain	Residues	Atoms					AltConf	Trace
31	5H	157	Total	C	N	O	S	0	0
			1260	787	225	237	11		
31	5I	157	Total	C	N	O	S	0	0
			1260	787	225	237	11		
31	5J	157	Total	C	N	O	S	0	0
			1260	787	225	237	11		

- Molecule 32 is a protein called Tektin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	5L	116	Total	C	N	O	S	0	0
			943	585	176	180	2		
32	5M	392	Total	C	N	O	S	0	0
			3231	2011	588	623	9		
32	5N	392	Total	C	N	O	S	0	0
			3231	2011	588	623	9		
32	5O	291	Total	C	N	O	S	0	0
			2414	1505	434	468	7		

- Molecule 33 is a protein called Tektin-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	5Q	109	Total	C	N	O	S	0	0
			901	548	176	175	2		
33	5R	399	Total	C	N	O	S	0	0
			3250	2002	602	632	14		
33	5S	399	Total	C	N	O	S	0	0
			3250	2002	602	632	14		
33	5T	306	Total	C	N	O	S	0	0
			2498	1546	453	486	13		
33	5V	308	Total	C	N	O	S	0	0
			2513	1560	453	487	13		
33	5W	408	Total	C	N	O	S	0	0
			3336	2055	618	649	14		
33	5X	408	Total	C	N	O	S	0	0
			3336	2055	618	649	14		
33	5Y	107	Total	C	N	O	S	0	0
			877	533	170	172	2		

- Molecule 34 is a protein called Tektin-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	6A	273	Total	C	N	O	S	0	0
			2240	1377	412	440	11		
34	6B	392	Total	C	N	O	S	0	0
			3189	1962	583	629	15		
34	6C	393	Total	C	N	O	S	0	0
			3200	1968	587	630	15		
34	6D	123	Total	C	N	O	S	0	0
			992	612	180	197	3		
34	6E	59	Total	C	N	O	S	0	0
			487	301	91	93	2		
34	6F	358	Total	C	N	O	S	0	0
			2896	1786	526	569	15		
34	6G	416	Total	C	N	O	S	0	0
			3386	2084	618	667	17		
34	6H	368	Total	C	N	O	S	0	0
			2989	1840	545	589	15		
34	6I	63	Total	C	N	O	S	0	0
			531	324	101	104	2		
34	6J	65	Total	C	N	O	S	0	0
			553	347	100	105	1		
34	6K	371	Total	C	N	O	S	0	0
			3022	1869	546	593	14		
34	6L	418	Total	C	N	O	S	0	0
			3411	2107	621	667	16		
34	6M	361	Total	C	N	O	S	0	0
			2923	1804	532	572	15		
34	6N	54	Total	C	N	O	S	0	0
			445	275	83	85	2		

- Molecule 35 is a protein called Tektin-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	6P	180	Total	C	N	O	S	0	0
			1491	915	272	298	6		
35	6Q	410	Total	C	N	O	S	0	0
			3364	2070	628	651	15		
35	6R	410	Total	C	N	O	S	0	0
			3364	2070	628	651	15		
35	6S	254	Total	C	N	O	S	0	0
			2057	1269	390	389	9		
35	6T	236	Total	C	N	O	S	0	0
			1917	1184	365	359	9		
35	6U	419	Total	C	N	O	S	0	0
			3413	2097	638	663	15		

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Mol	Chain	Residues	Atoms					AltConf	Trace
35	6V	437	Total	C	N	O	S	0	0
			3571	2201	666	688	16		
35	6W	215	Total	C	N	O	S	0	0
			1766	1088	324	347	7		

- Molecule 36 is a protein called TTC25 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	6Y	192	Total	C	N	O	S	0	0
			1300	812	232	249	7		
36	6Z	192	Total	C	N	O	S	0	0
			1300	812	232	249	7		

- Molecule 37 is a protein called Ciliary microtubule associated protein 1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	7C	119	Total	C	N	O	S	0	0
			898	571	159	163	5		
37	7D	80	Total	C	N	O	S	0	0
			618	404	113	99	2		
37	7E	85	Total	C	N	O	S	0	0
			625	398	111	113	3		
37	7F	67	Total	C	N	O	S	0	0
			519	338	89	91	1		

- Molecule 38 is a protein called Ciliary microtubule associated protein 1C.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	7H	85	Total	C	N	O	S	0	0
			637	409	108	114	6		
38	7I	34	Total	C	N	O	S	0	0
			238	151	43	42	2		

- Molecule 39 is a protein called Cilia and flagella associated protein 90.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	7K	107	Total	C	N	O	S	0	0
			878	543	174	160	1		
39	7L	46	Total	C	N	O	S	0	0
			382	249	65	67	1		

- Molecule 40 is a protein called Sperm associated antigen 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	7N	64	Total	C	N	O	S	0	0
			524	324	93	104	3		

- Molecule 41 is a protein called Tubulin beta-4B chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	AB	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	AD	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	AF	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	AH	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	AJ	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	AL	436	Total	C	N	O	S	0	0
			3424	2150	584	664	26		
41	BB	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	BD	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	BF	428	Total	C	N	O	S	0	0
			3361	2112	576	647	26		
41	BH	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	BJ	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	BL	425	Total	C	N	O	S	0	0
			3340	2100	573	642	25		
41	CB	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	CD	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	CF	428	Total	C	N	O	S	0	0
			3361	2112	576	647	26		
41	CH	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	CJ	428	Total	C	N	O	S	0	0
			3361	2112	576	647	26		
41	CL	425	Total	C	N	O	S	0	0
			3340	2100	573	642	25		
41	DB	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	DD	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	DF	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	DH	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	DJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	DL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	ED	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	EF	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	EH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	EJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	EL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	FD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	FF	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	FH	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	FJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	FL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	GD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	GF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	GH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	GJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	GL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	HB	426	Total 3348	C 2105	N 574	O 643	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	HD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	HF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	HH	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	HJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	HL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	ID	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	IF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	IH	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	IJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	IL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	IN	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	JD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	JF	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	JH	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	JJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	JL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	KD	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	KF	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	KH	429	Total 3368	C 2116	N 577	O 649	S 26	0	0
41	KJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	KL	429	Total 3368	C 2116	N 577	O 649	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	KN	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	LD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	LF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	LH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	LJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	LL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	LN	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	MD	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	MF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	MH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	MJ	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	ML	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	MN	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	NB	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	ND	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	NF	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	NH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	NJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	NL	396	Total 3118	C 1966	N 533	O 597	S 22	0	0
41	OB	425	Total 3339	C 2100	N 572	O 641	S 26	0	0
41	OD	424	Total 3327	C 2091	N 571	O 639	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	OF	425	Total 3339	C 2100	N 572	O 641	S 26	0	0
41	OH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	OJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	OL	424	Total 3327	C 2091	N 571	O 639	S 26	0	0
41	PB	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	PD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	PF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	PH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	PJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	PL	425	Total 3340	C 2100	N 573	O 642	S 25	0	0
41	QB	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	QD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	QF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	QH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	QJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	QL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	RB	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	RD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	RF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	RH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	RJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	RL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	SD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	SF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	SH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	SJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	SL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	TD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	TF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	TH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	TJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	TL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	UD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	UF	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	UH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	UJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	UL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0
41	VD	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	VF	427	Total 3356	C 2109	N 575	O 646	S 26	0	0
41	VH	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	VJ	428	Total 3361	C 2112	N 576	O 647	S 26	0	0
41	VL	426	Total 3348	C 2105	N 574	O 643	S 26	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	WD	427	Total	C	N	O	S	0	0
			3356	2109	575	646	26		
41	WF	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	WH	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	WJ	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	WL	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		
41	WN	426	Total	C	N	O	S	0	0
			3348	2105	574	643	26		

- Molecule 42 is a protein called Tubulin alpha-1D chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	AC	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	AE	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	AG	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	AI	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	AK	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	BC	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	BE	433	Total	C	N	O	S	0	0
			3396	2151	576	646	23		
42	BG	440	Total	C	N	O	S	0	0
			3437	2175	584	655	23		
42	BI	430	Total	C	N	O	S	0	0
			3374	2138	573	640	23		
42	BK	439	Total	C	N	O	S	0	0
			3430	2170	583	654	23		
42	CC	438	Total	C	N	O	S	0	0
			3424	2167	582	652	23		
42	CE	438	Total	C	N	O	S	0	0
			3424	2167	582	652	23		
42	CG	439	Total	C	N	O	S	0	0
			3430	2170	583	654	23		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	CI	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	CK	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	CM	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	DC	429	Total 3366	C 2134	N 572	O 637	S 23	0	0
42	DE	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	DG	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	DI	429	Total 3364	C 2133	N 572	O 636	S 23	0	0
42	DK	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	DM	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	EC	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	EE	441	Total 3446	C 2180	N 585	O 658	S 23	0	0
42	EG	434	Total 3404	C 2157	N 578	O 646	S 23	0	0
42	EI	436	Total 3408	C 2158	N 580	O 648	S 22	0	0
42	EK	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	EM	428	Total 3358	C 2130	N 571	O 634	S 23	0	0
42	FC	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	FE	425	Total 3339	C 2118	N 568	O 631	S 22	0	0
42	FG	426	Total 3346	C 2123	N 569	O 632	S 22	0	0
42	FI	427	Total 3347	C 2121	N 570	O 633	S 23	0	0
42	FK	424	Total 3326	C 2109	N 566	O 629	S 22	0	0
42	FM	429	Total 3365	C 2132	N 572	O 638	S 23	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	GC	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	GE	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	GG	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	GI	429	Total 3365	C 2135	N 572	O 635	S 23	0	0
42	GK	429	Total 3364	C 2133	N 572	O 636	S 23	0	0
42	GM	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	HC	427	Total 3350	C 2126	N 570	O 631	S 23	0	0
42	HE	430	Total 3374	C 2138	N 573	O 640	S 23	0	0
42	HG	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	HI	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	HK	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	HM	429	Total 3365	C 2132	N 572	O 638	S 23	0	0
42	IC	429	Total 3365	C 2135	N 572	O 635	S 23	0	0
42	IE	432	Total 3388	C 2147	N 575	O 643	S 23	0	0
42	IG	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	II	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	IK	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	IM	431	Total 3378	C 2140	N 574	O 641	S 23	0	0
42	JC	432	Total 3384	C 2143	N 575	O 643	S 23	0	0
42	JE	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	JG	428	Total 3358	C 2130	N 571	O 634	S 23	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	JI	429	Total 3366	C 2134	N 572	O 637	S 23	0	0
42	JK	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	JM	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	KC	432	Total 3384	C 2143	N 575	O 643	S 23	0	0
42	KE	431	Total 3380	C 2141	N 574	O 642	S 23	0	0
42	KG	430	Total 3370	C 2136	N 573	O 638	S 23	0	0
42	KI	428	Total 3358	C 2130	N 571	O 634	S 23	0	0
42	KK	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	KM	432	Total 3376	C 2138	N 575	O 641	S 22	0	0
42	LC	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	LE	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	LG	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	LI	434	Total 3397	C 2151	N 577	O 646	S 23	0	0
42	LK	435	Total 3401	C 2153	N 578	O 647	S 23	0	0
42	LM	431	Total 3378	C 2140	N 574	O 641	S 23	0	0
42	MC	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	ME	429	Total 3366	C 2134	N 572	O 637	S 23	0	0
42	MG	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	MI	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	MK	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	MM	431	Total 3376	C 2138	N 574	O 642	S 22	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	NA	430	Total 3372	C 2136	N 573	O 641	S 22	0	0
42	NC	429	Total 3365	C 2135	N 572	O 635	S 23	0	0
42	NE	430	Total 3374	C 2140	N 573	O 638	S 23	0	0
42	NG	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	NI	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	NK	430	Total 3374	C 2138	N 573	O 640	S 23	0	0
42	OA	428	Total 3358	C 2129	N 571	O 636	S 22	0	0
42	OC	429	Total 3366	C 2134	N 572	O 637	S 23	0	0
42	OE	433	Total 3396	C 2151	N 576	O 646	S 23	0	0
42	OG	433	Total 3391	C 2148	N 576	O 644	S 23	0	0
42	OI	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	OK	431	Total 3380	C 2141	N 574	O 642	S 23	0	0
42	PA	368	Total 2872	C 1820	N 487	O 545	S 20	0	0
42	PC	432	Total 3386	C 2144	N 575	O 644	S 23	0	0
42	PE	431	Total 3380	C 2143	N 574	O 640	S 23	0	0
42	PG	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	PI	427	Total 3349	C 2123	N 570	O 634	S 22	0	0
42	PK	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	QC	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	QE	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	QG	431	Total 3380	C 2141	N 574	O 642	S 23	0	0

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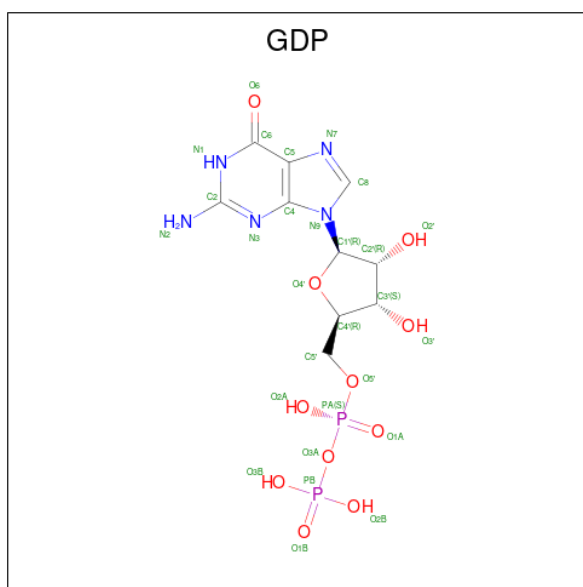
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	QI	429	Total 3366	C 2134	N 572	O 637	S 23	0	0
42	QK	431	Total 3380	C 2141	N 574	O 642	S 23	0	0
42	RC	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	RE	428	Total 3358	C 2130	N 571	O 634	S 23	0	0
42	RG	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	RI	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	RK	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	SC	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	SE	431	Total 3381	C 2142	N 574	O 642	S 23	0	0
42	SG	431	Total 3379	C 2142	N 574	O 640	S 23	0	0
42	SI	427	Total 3358	C 2129	N 569	O 637	S 23	0	0
42	SK	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	SM	431	Total 3378	C 2140	N 574	O 641	S 23	0	0
42	TC	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	TE	432	Total 3388	C 2147	N 575	O 643	S 23	0	0
42	TG	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	TI	430	Total 3371	C 2138	N 573	O 637	S 23	0	0
42	TK	432	Total 3387	C 2146	N 575	O 643	S 23	0	0
42	TM	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	UC	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	UE	432	Total 3388	C 2147	N 575	O 643	S 23	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	UG	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	UI	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	UK	433	Total 3391	C 2148	N 576	O 644	S 23	0	0
42	UM	431	Total 3378	C 2140	N 574	O 641	S 23	0	0
42	VC	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	VE	433	Total 3396	C 2151	N 576	O 646	S 23	0	0
42	VG	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	VI	433	Total 3393	C 2149	N 576	O 645	S 23	0	0
42	VK	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	VM	430	Total 3372	C 2137	N 573	O 639	S 23	0	0
42	WC	440	Total 3437	C 2175	N 584	O 655	S 23	0	0
42	WE	431	Total 3380	C 2141	N 574	O 642	S 23	0	0
42	WG	439	Total 3430	C 2170	N 583	O 654	S 23	0	0
42	WI	431	Total 3380	C 2141	N 574	O 642	S 23	0	0
42	WK	438	Total 3424	C 2167	N 582	O 652	S 23	0	0
42	WM	431	Total 3378	C 2140	N 574	O 641	S 23	0	0

- Molecule 43 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	AB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AD	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AF	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AH	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AJ	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BD	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BF	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BH	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BJ	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CD	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	CF	1	Total 28	C 10	N 5	O 11	P 2	0
43	CH	1	Total 28	C 10	N 5	O 11	P 2	0
43	CJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	CL	1	Total 28	C 10	N 5	O 11	P 2	0
43	DB	1	Total 28	C 10	N 5	O 11	P 2	0
43	DD	1	Total 28	C 10	N 5	O 11	P 2	0
43	DF	1	Total 28	C 10	N 5	O 11	P 2	0
43	DH	1	Total 28	C 10	N 5	O 11	P 2	0
43	DJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	DL	1	Total 28	C 10	N 5	O 11	P 2	0
43	ED	1	Total 28	C 10	N 5	O 11	P 2	0
43	EF	1	Total 28	C 10	N 5	O 11	P 2	0
43	EH	1	Total 28	C 10	N 5	O 11	P 2	0
43	EJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	EL	1	Total 28	C 10	N 5	O 11	P 2	0
43	FD	1	Total 28	C 10	N 5	O 11	P 2	0
43	FF	1	Total 28	C 10	N 5	O 11	P 2	0
43	FH	1	Total 28	C 10	N 5	O 11	P 2	0
43	FJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	FL	1	Total 28	C 10	N 5	O 11	P 2	0
43	GD	1	Total 28	C 10	N 5	O 11	P 2	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	GF	1	28	10	5	11	2	0
43	GH	1	28	10	5	11	2	0
43	GJ	1	28	10	5	11	2	0
43	GL	1	28	10	5	11	2	0
43	HB	1	28	10	5	11	2	0
43	HD	1	28	10	5	11	2	0
43	HF	1	28	10	5	11	2	0
43	HH	1	28	10	5	11	2	0
43	HJ	1	28	10	5	11	2	0
43	HL	1	28	10	5	11	2	0
43	ID	1	28	10	5	11	2	0
43	IF	1	28	10	5	11	2	0
43	IH	1	28	10	5	11	2	0
43	IJ	1	28	10	5	11	2	0
43	IL	1	28	10	5	11	2	0
43	IN	1	28	10	5	11	2	0
43	JD	1	28	10	5	11	2	0
43	JF	1	28	10	5	11	2	0
43	JH	1	28	10	5	11	2	0
43	JJ	1	28	10	5	11	2	0
43	JL	1	28	10	5	11	2	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	KD	1	Total 28	C 10	N 5	O 11	P 2	0
43	KF	1	Total 28	C 10	N 5	O 11	P 2	0
43	KG	1	Total 28	C 10	N 5	O 11	P 2	0
43	KJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	KL	1	Total 28	C 10	N 5	O 11	P 2	0
43	KN	1	Total 28	C 10	N 5	O 11	P 2	0
43	LD	1	Total 28	C 10	N 5	O 11	P 2	0
43	LF	1	Total 28	C 10	N 5	O 11	P 2	0
43	LH	1	Total 28	C 10	N 5	O 11	P 2	0
43	LJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	LL	1	Total 28	C 10	N 5	O 11	P 2	0
43	LN	1	Total 28	C 10	N 5	O 11	P 2	0
43	MD	1	Total 28	C 10	N 5	O 11	P 2	0
43	MF	1	Total 28	C 10	N 5	O 11	P 2	0
43	MH	1	Total 28	C 10	N 5	O 11	P 2	0
43	MJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	ML	1	Total 28	C 10	N 5	O 11	P 2	0
43	MN	1	Total 28	C 10	N 5	O 11	P 2	0
43	NB	1	Total 28	C 10	N 5	O 11	P 2	0
43	ND	1	Total 28	C 10	N 5	O 11	P 2	0
43	NF	1	Total 28	C 10	N 5	O 11	P 2	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	NH	1	28	10	5	11	2	0
43	NJ	1	28	10	5	11	2	0
43	NL	1	28	10	5	11	2	0
43	OB	1	28	10	5	11	2	0
43	OD	1	28	10	5	11	2	0
43	OF	1	28	10	5	11	2	0
43	OH	1	28	10	5	11	2	0
43	OJ	1	28	10	5	11	2	0
43	OL	1	28	10	5	11	2	0
43	PB	1	28	10	5	11	2	0
43	PD	1	28	10	5	11	2	0
43	PF	1	28	10	5	11	2	0
43	PH	1	28	10	5	11	2	0
43	PJ	1	28	10	5	11	2	0
43	PL	1	28	10	5	11	2	0
43	QB	1	28	10	5	11	2	0
43	QD	1	28	10	5	11	2	0
43	QF	1	28	10	5	11	2	0
43	QH	1	28	10	5	11	2	0
43	QJ	1	28	10	5	11	2	0
43	QL	1	28	10	5	11	2	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	RB	1	Total 28	C 10	N 5	O 11	P 2	0
43	RD	1	Total 28	C 10	N 5	O 11	P 2	0
43	RF	1	Total 28	C 10	N 5	O 11	P 2	0
43	RH	1	Total 28	C 10	N 5	O 11	P 2	0
43	RJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	RL	1	Total 28	C 10	N 5	O 11	P 2	0
43	SD	1	Total 28	C 10	N 5	O 11	P 2	0
43	SF	1	Total 28	C 10	N 5	O 11	P 2	0
43	SH	1	Total 28	C 10	N 5	O 11	P 2	0
43	SJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	SL	1	Total 28	C 10	N 5	O 11	P 2	0
43	TD	1	Total 28	C 10	N 5	O 11	P 2	0
43	TF	1	Total 28	C 10	N 5	O 11	P 2	0
43	TH	1	Total 28	C 10	N 5	O 11	P 2	0
43	TJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	TL	1	Total 28	C 10	N 5	O 11	P 2	0
43	UD	1	Total 28	C 10	N 5	O 11	P 2	0
43	UF	1	Total 28	C 10	N 5	O 11	P 2	0
43	UH	1	Total 28	C 10	N 5	O 11	P 2	0
43	UJ	1	Total 28	C 10	N 5	O 11	P 2	0
43	UL	1	Total 28	C 10	N 5	O 11	P 2	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
43	VD	1	28	10	5	11	2	0
43	VF	1	28	10	5	11	2	0
43	VH	1	28	10	5	11	2	0
43	VJ	1	28	10	5	11	2	0
43	VL	1	28	10	5	11	2	0
43	WD	1	28	10	5	11	2	0
43	WF	1	28	10	5	11	2	0
43	WH	1	28	10	5	11	2	0
43	WJ	1	28	10	5	11	2	0
43	WL	1	28	10	5	11	2	0
43	WN	1	28	10	5	11	2	0

- Molecule 44 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
44	AB	1	1	1	0
44	AE	1	1	1	0
44	AG	1	1	1	0
44	AI	1	1	1	0
44	AK	1	1	1	0
44	BC	1	1	1	0
44	BE	1	1	1	0
44	BG	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
44	BI	1	1	1	0
44	BK	1	1	1	0
44	CC	1	1	1	0
44	CE	1	1	1	0
44	CI	1	1	1	0
44	CK	1	1	1	0
44	CM	1	1	1	0
44	DM	1	1	1	0
44	EK	1	1	1	0
44	FC	1	1	1	0
44	FD	1	1	1	0
44	FG	1	1	1	0
44	FI	1	1	1	0
44	FK	1	1	1	0
44	FL	1	1	1	0
44	GC	1	1	1	0
44	GE	1	1	1	0
44	GG	1	1	1	0
44	GI	1	1	1	0
44	GK	1	1	1	0
44	GM	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
44	HC	1	1	1	0
44	HE	1	1	1	0
44	HG	1	1	1	0
44	HI	1	1	1	0
44	HK	1	1	1	0
44	HM	1	1	1	0
44	IC	1	1	1	0
44	IE	1	1	1	0
44	IG	1	1	1	0
44	IK	1	1	1	0
44	IL	1	1	1	0
44	JC	1	1	1	0
44	JE	1	1	1	0
44	JG	1	1	1	0
44	JI	1	1	1	0
44	JK	1	1	1	0
44	JM	1	1	1	0
44	KC	1	1	1	0
44	KE	1	1	1	0
44	KG	1	1	1	0
44	KI	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
44	KK	1	1	1	0
44	KM	1	1	1	0
44	LC	1	1	1	0
44	LD	1	1	1	0
44	LG	1	1	1	0
44	LI	1	1	1	0
44	LK	1	1	1	0
44	LM	1	1	1	0
44	MC	1	1	1	0
44	ME	1	1	1	0
44	MH	1	1	1	0
44	MK	1	1	1	0
44	MM	1	1	1	0
44	NA	1	1	1	0
44	NB	1	1	1	0
44	NE	1	1	1	0
44	NG	1	1	1	0
44	NI	1	1	1	0
44	NK	1	1	1	0
44	OA	1	1	1	0
44	OC	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
44	OE	1	1	1	0
44	OI	1	1	1	0
44	OK	1	1	1	0
44	PC	1	1	1	0
44	PE	1	1	1	0
44	PG	1	1	1	0
44	PI	1	1	1	0
44	SC	1	1	1	0
44	SD	1	1	1	0
44	SF	1	1	1	0
44	SH	1	1	1	0
44	SJ	1	1	1	0
44	TC	1	1	1	0
44	TD	1	1	1	0
44	TF	1	1	1	0
44	TI	1	1	1	0
44	TK	1	1	1	0
44	TL	1	1	1	0
44	UE	1	1	1	0
44	UG	1	1	1	0
44	UI	1	1	1	0

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Mol	Chain	Residues	Atoms		AltConf
44	UK	1	Total 1	Mg 1	0
44	UM	1	Total 1	Mg 1	0
44	VC	1	Total 1	Mg 1	0
44	VE	1	Total 1	Mg 1	0
44	VG	1	Total 1	Mg 1	0
44	VI	1	Total 1	Mg 1	0
44	VJ	1	Total 1	Mg 1	0
44	VM	1	Total 1	Mg 1	0
44	WC	1	Total 1	Mg 1	0
44	WD	1	Total 1	Mg 1	0
44	WG	1	Total 1	Mg 1	0
44	WI	1	Total 1	Mg 1	0
44	WK	1	Total 1	Mg 1	0
44	WM	1	Total 1	Mg 1	0

- Molecule 45 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	AC	1	Total 32	C 10	N 5	O 14	P 3	0
45	AE	1	Total 32	C 10	N 5	O 14	P 3	0
45	AF	1	Total 32	C 10	N 5	O 14	P 3	0
45	AI	1	Total 32	C 10	N 5	O 14	P 3	0
45	AK	1	Total 32	C 10	N 5	O 14	P 3	0
45	BC	1	Total 32	C 10	N 5	O 14	P 3	0
45	BE	1	Total 32	C 10	N 5	O 14	P 3	0
45	BG	1	Total 32	C 10	N 5	O 14	P 3	0
45	BI	1	Total 32	C 10	N 5	O 14	P 3	0
45	BK	1	Total 32	C 10	N 5	O 14	P 3	0
45	CC	1	Total 32	C 10	N 5	O 14	P 3	0
45	CE	1	Total 32	C 10	N 5	O 14	P 3	0
45	CG	1	Total 32	C 10	N 5	O 14	P 3	0
45	CI	1	Total 32	C 10	N 5	O 14	P 3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	CK	1	Total 32	C 10	N 5	O 14	P 3	0
45	CM	1	Total 32	C 10	N 5	O 14	P 3	0
45	DC	1	Total 32	C 10	N 5	O 14	P 3	0
45	DE	1	Total 32	C 10	N 5	O 14	P 3	0
45	DG	1	Total 32	C 10	N 5	O 14	P 3	0
45	DI	1	Total 32	C 10	N 5	O 14	P 3	0
45	DK	1	Total 32	C 10	N 5	O 14	P 3	0
45	DM	1	Total 32	C 10	N 5	O 14	P 3	0
45	EC	1	Total 32	C 10	N 5	O 14	P 3	0
45	EE	1	Total 32	C 10	N 5	O 14	P 3	0
45	EG	1	Total 32	C 10	N 5	O 14	P 3	0
45	EI	1	Total 32	C 10	N 5	O 14	P 3	0
45	EK	1	Total 32	C 10	N 5	O 14	P 3	0
45	EM	1	Total 32	C 10	N 5	O 14	P 3	0
45	FC	1	Total 32	C 10	N 5	O 14	P 3	0
45	FE	1	Total 32	C 10	N 5	O 14	P 3	0
45	FF	1	Total 32	C 10	N 5	O 14	P 3	0
45	FI	1	Total 32	C 10	N 5	O 14	P 3	0
45	FK	1	Total 32	C 10	N 5	O 14	P 3	0
45	FM	1	Total 32	C 10	N 5	O 14	P 3	0
45	GC	1	Total 32	C 10	N 5	O 14	P 3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	GE	1	Total 32	C 10	N 5	O 14	P 3	0
45	GF	1	Total 32	C 10	N 5	O 14	P 3	0
45	GI	1	Total 32	C 10	N 5	O 14	P 3	0
45	GK	1	Total 32	C 10	N 5	O 14	P 3	0
45	GM	1	Total 32	C 10	N 5	O 14	P 3	0
45	HC	1	Total 32	C 10	N 5	O 14	P 3	0
45	HE	1	Total 32	C 10	N 5	O 14	P 3	0
45	HG	1	Total 32	C 10	N 5	O 14	P 3	0
45	HI	1	Total 32	C 10	N 5	O 14	P 3	0
45	HK	1	Total 32	C 10	N 5	O 14	P 3	0
45	HM	1	Total 32	C 10	N 5	O 14	P 3	0
45	IC	1	Total 32	C 10	N 5	O 14	P 3	0
45	IE	1	Total 32	C 10	N 5	O 14	P 3	0
45	IG	1	Total 32	C 10	N 5	O 14	P 3	0
45	II	1	Total 32	C 10	N 5	O 14	P 3	0
45	IK	1	Total 32	C 10	N 5	O 14	P 3	0
45	IM	1	Total 32	C 10	N 5	O 14	P 3	0
45	JC	1	Total 32	C 10	N 5	O 14	P 3	0
45	JE	1	Total 32	C 10	N 5	O 14	P 3	0
45	JG	1	Total 32	C 10	N 5	O 14	P 3	0
45	JI	1	Total 32	C 10	N 5	O 14	P 3	0

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Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		P
45	JK	1	Total 32	C 10	N 5	O 14	P 3	0
45	JM	1	Total 32	C 10	N 5	O 14	P 3	0
45	KC	1	Total 32	C 10	N 5	O 14	P 3	0
45	KE	1	Total 32	C 10	N 5	O 14	P 3	0
45	KG	1	Total 32	C 10	N 5	O 14	P 3	0
45	KI	1	Total 32	C 10	N 5	O 14	P 3	0
45	KK	1	Total 32	C 10	N 5	O 14	P 3	0
45	KM	1	Total 32	C 10	N 5	O 14	P 3	0
45	LC	1	Total 32	C 10	N 5	O 14	P 3	0
45	LE	1	Total 32	C 10	N 5	O 14	P 3	0
45	LF	1	Total 32	C 10	N 5	O 14	P 3	0
45	LI	1	Total 32	C 10	N 5	O 14	P 3	0
45	LK	1	Total 32	C 10	N 5	O 14	P 3	0
45	LM	1	Total 32	C 10	N 5	O 14	P 3	0
45	MC	1	Total 32	C 10	N 5	O 14	P 3	0
45	ME	1	Total 32	C 10	N 5	O 14	P 3	0
45	MG	1	Total 32	C 10	N 5	O 14	P 3	0
45	MI	1	Total 32	C 10	N 5	O 14	P 3	0
45	MK	1	Total 32	C 10	N 5	O 14	P 3	0
45	MM	1	Total 32	C 10	N 5	O 14	P 3	0
45	NA	1	Total 32	C 10	N 5	O 14	P 3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	NC	1	Total 32	C 10	N 5	O 14	P 3	0
45	NE	1	Total 32	C 10	N 5	O 14	P 3	0
45	NG	1	Total 32	C 10	N 5	O 14	P 3	0
45	NI	1	Total 32	C 10	N 5	O 14	P 3	0
45	NK	1	Total 32	C 10	N 5	O 14	P 3	0
45	OA	1	Total 32	C 10	N 5	O 14	P 3	0
45	OC	1	Total 32	C 10	N 5	O 14	P 3	0
45	OE	1	Total 32	C 10	N 5	O 14	P 3	0
45	OG	1	Total 32	C 10	N 5	O 14	P 3	0
45	OI	1	Total 32	C 10	N 5	O 14	P 3	0
45	OK	1	Total 32	C 10	N 5	O 14	P 3	0
45	PA	1	Total 32	C 10	N 5	O 14	P 3	0
45	PC	1	Total 32	C 10	N 5	O 14	P 3	0
45	PE	1	Total 32	C 10	N 5	O 14	P 3	0
45	PG	1	Total 32	C 10	N 5	O 14	P 3	0
45	PI	1	Total 32	C 10	N 5	O 14	P 3	0
45	PK	1	Total 32	C 10	N 5	O 14	P 3	0
45	QC	1	Total 32	C 10	N 5	O 14	P 3	0
45	QE	1	Total 32	C 10	N 5	O 14	P 3	0
45	QG	1	Total 32	C 10	N 5	O 14	P 3	0
45	QI	1	Total 32	C 10	N 5	O 14	P 3	0

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Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	QK	1	Total 32	C 10	N 5	O 14	P 3	0
45	RC	1	Total 32	C 10	N 5	O 14	P 3	0
45	RE	1	Total 32	C 10	N 5	O 14	P 3	0
45	RG	1	Total 32	C 10	N 5	O 14	P 3	0
45	RI	1	Total 32	C 10	N 5	O 14	P 3	0
45	RK	1	Total 32	C 10	N 5	O 14	P 3	0
45	SC	1	Total 32	C 10	N 5	O 14	P 3	0
45	SE	1	Total 32	C 10	N 5	O 14	P 3	0
45	SG	1	Total 32	C 10	N 5	O 14	P 3	0
45	SI	1	Total 32	C 10	N 5	O 14	P 3	0
45	SK	1	Total 32	C 10	N 5	O 14	P 3	0
45	SM	1	Total 32	C 10	N 5	O 14	P 3	0
45	TC	1	Total 32	C 10	N 5	O 14	P 3	0
45	TE	1	Total 32	C 10	N 5	O 14	P 3	0
45	TG	1	Total 32	C 10	N 5	O 14	P 3	0
45	TI	1	Total 32	C 10	N 5	O 14	P 3	0
45	TK	1	Total 32	C 10	N 5	O 14	P 3	0
45	TM	1	Total 32	C 10	N 5	O 14	P 3	0
45	UC	1	Total 32	C 10	N 5	O 14	P 3	0
45	UE	1	Total 32	C 10	N 5	O 14	P 3	0
45	UG	1	Total 32	C 10	N 5	O 14	P 3	0

Continued on next page...

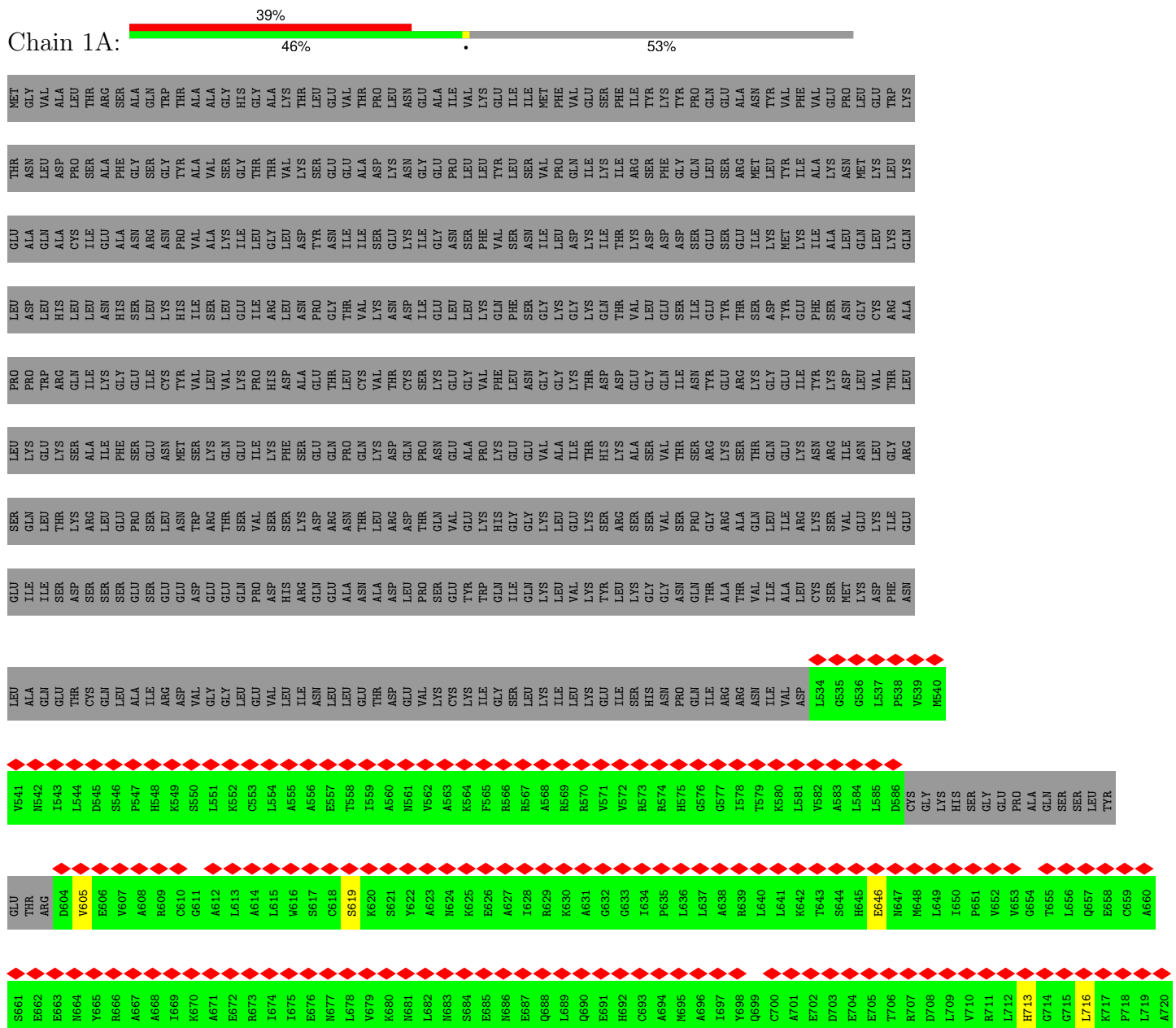
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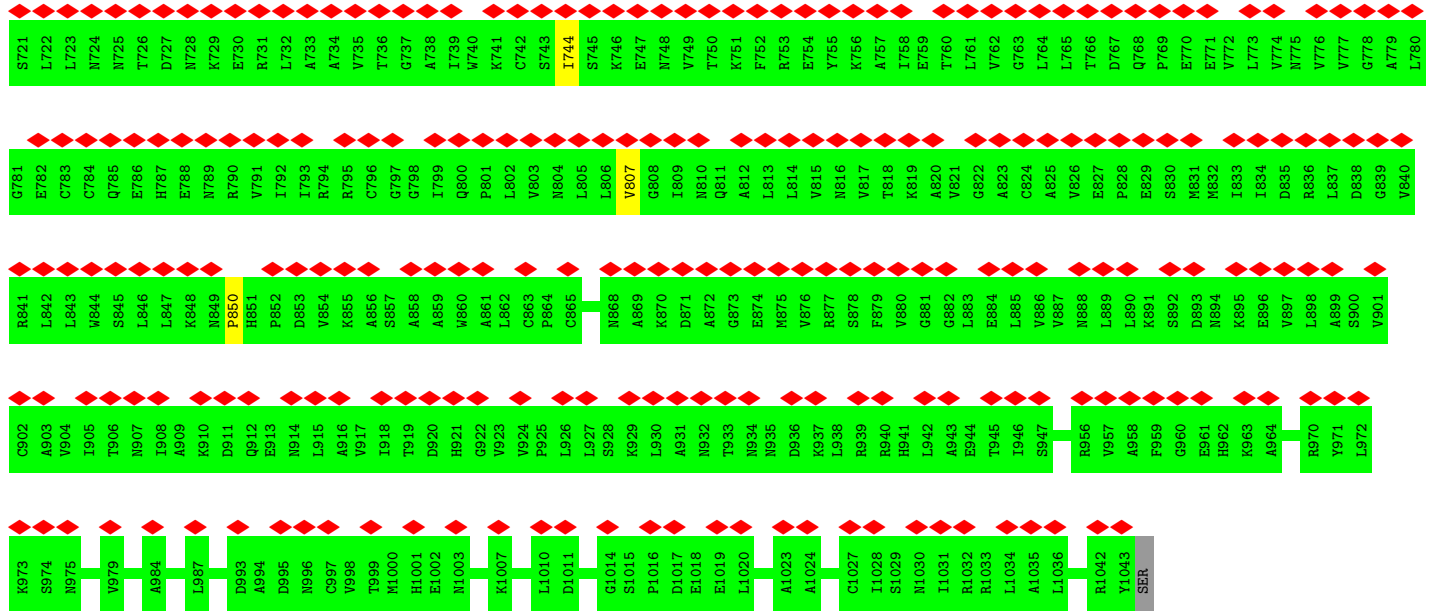
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
45	UI	1	Total 32	C 10	N 5	O 14	P 3	0
45	UK	1	Total 32	C 10	N 5	O 14	P 3	0
45	UM	1	Total 32	C 10	N 5	O 14	P 3	0
45	VC	1	Total 32	C 10	N 5	O 14	P 3	0
45	VE	1	Total 32	C 10	N 5	O 14	P 3	0
45	VG	1	Total 32	C 10	N 5	O 14	P 3	0
45	VI	1	Total 32	C 10	N 5	O 14	P 3	0
45	VK	1	Total 32	C 10	N 5	O 14	P 3	0
45	VM	1	Total 32	C 10	N 5	O 14	P 3	0
45	WC	1	Total 32	C 10	N 5	O 14	P 3	0
45	WE	1	Total 32	C 10	N 5	O 14	P 3	0
45	WG	1	Total 32	C 10	N 5	O 14	P 3	0
45	WI	1	Total 32	C 10	N 5	O 14	P 3	0
45	WK	1	Total 32	C 10	N 5	O 14	P 3	0
45	WM	1	Total 32	C 10	N 5	O 14	P 3	0

3 Residue-property plots

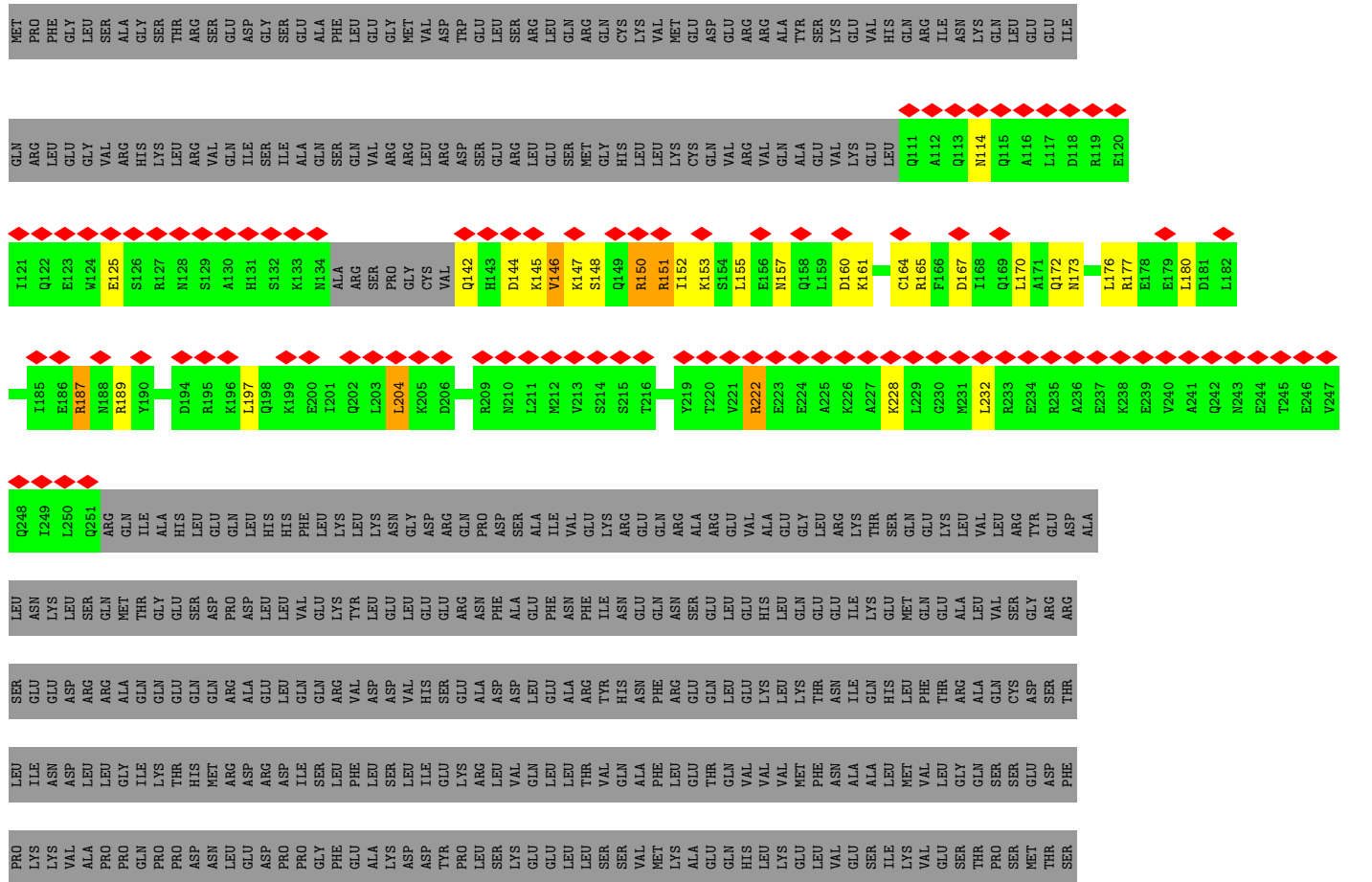
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

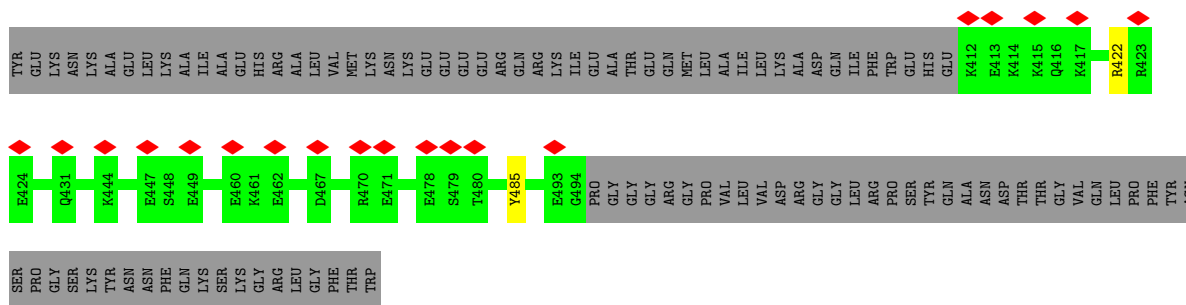
• Molecule 1: Armadillo repeat containing 4



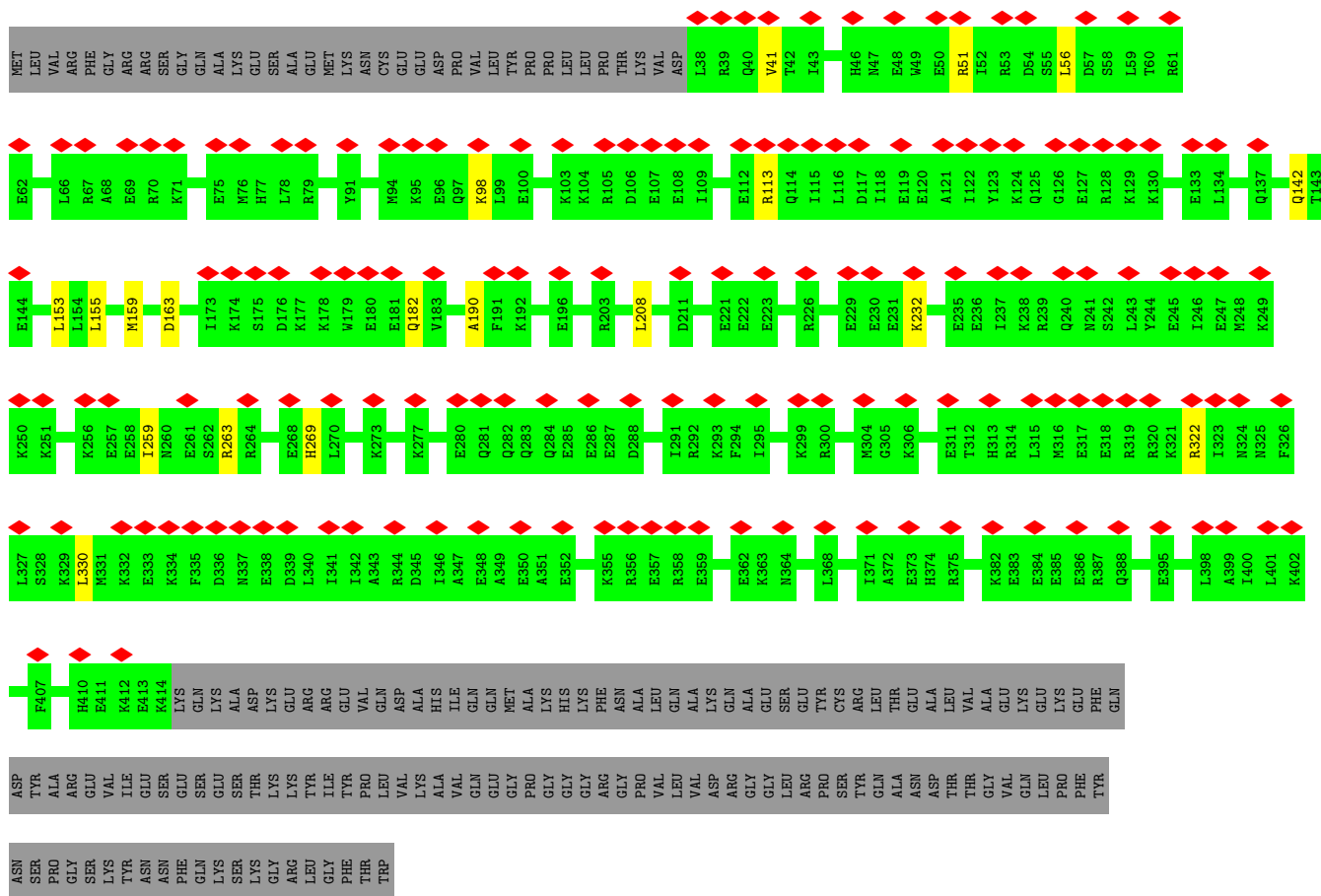


• Molecule 2: Coiled-coil domain containing 114

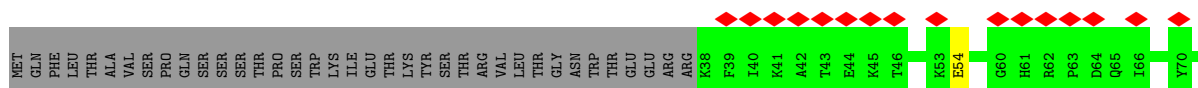
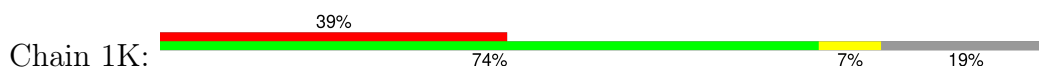


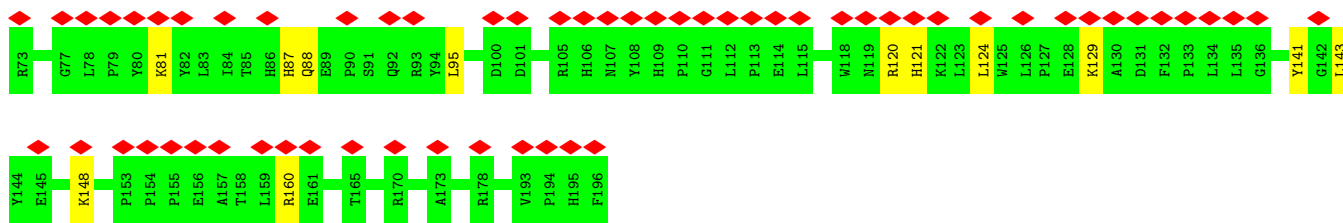


• Molecule 3: Coiled-coil domain containing 173

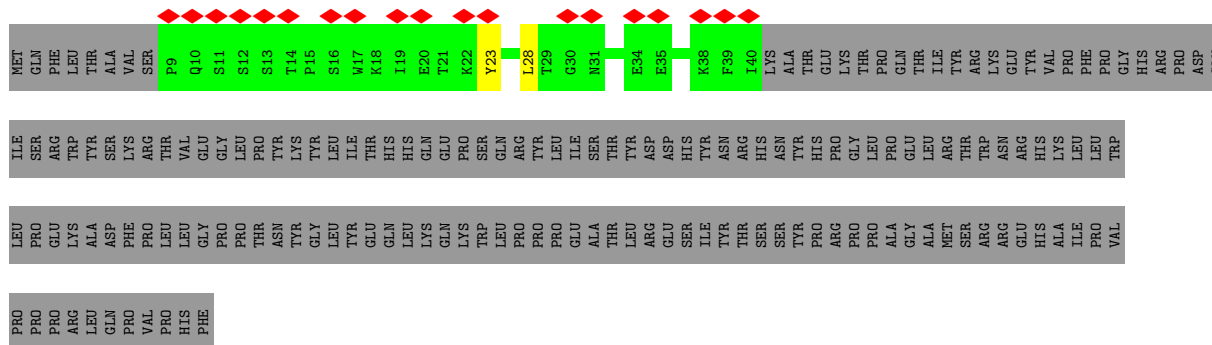


• Molecule 4: Uncharacterized protein C1orf158 homolog

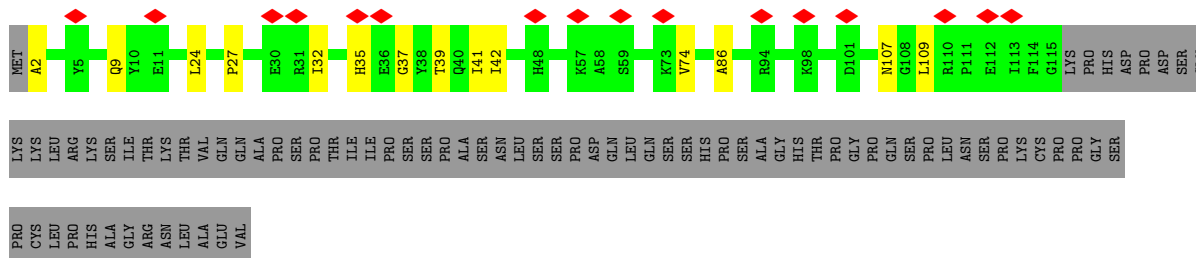




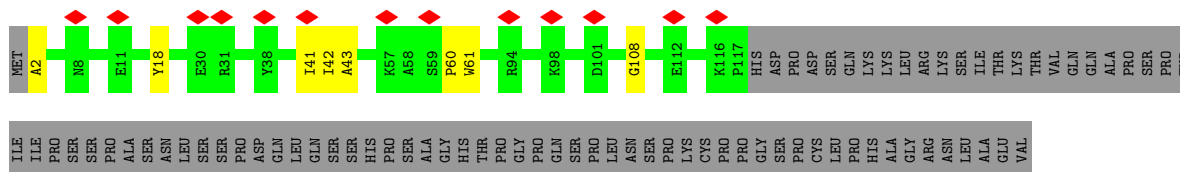
• Molecule 4: Uncharacterized protein C1orf158 homolog



• Molecule 5: Protein Flattop

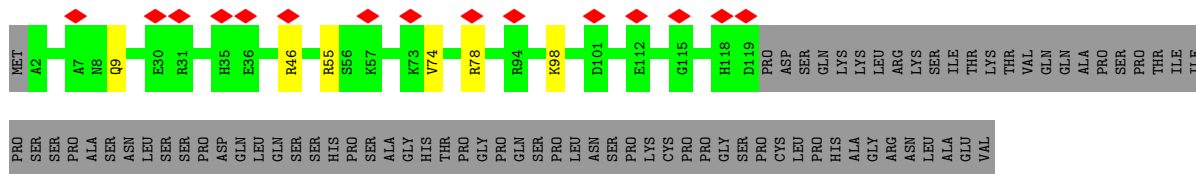


• Molecule 5: Protein Flattop

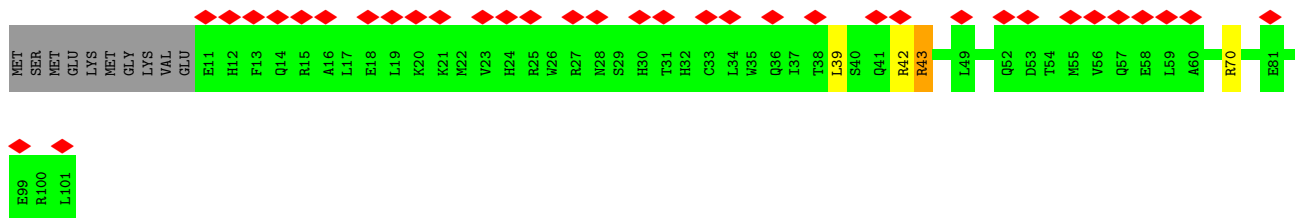
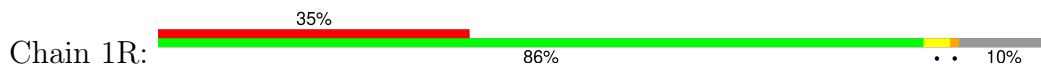


• Molecule 5: Protein Flattop

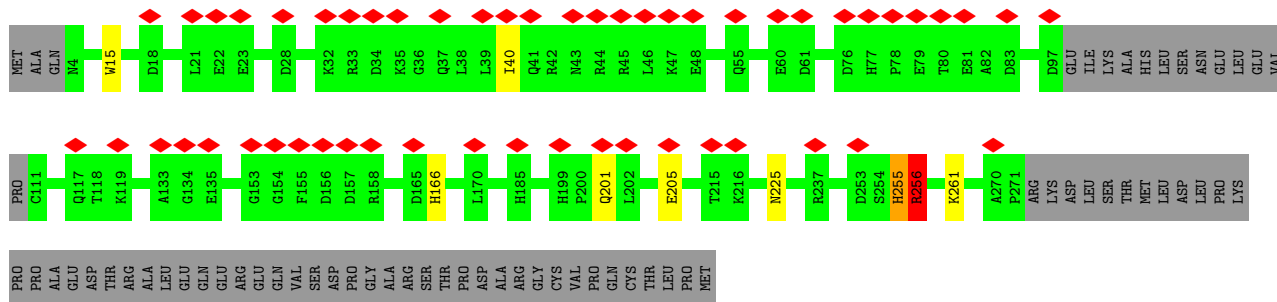
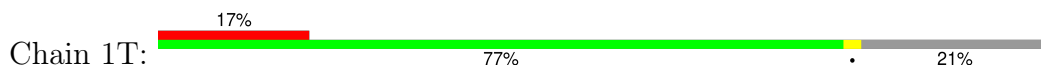




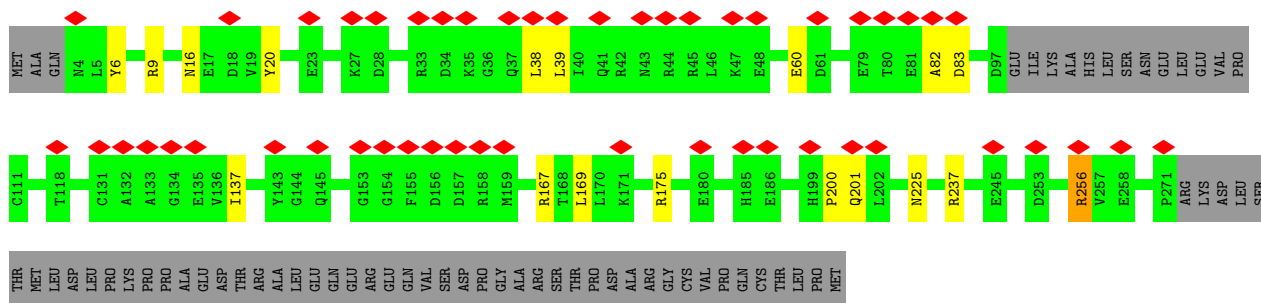
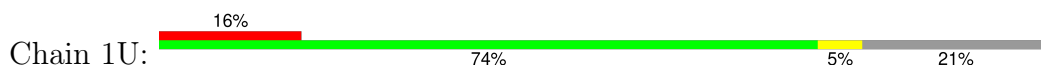
• Molecule 6: CFAP141



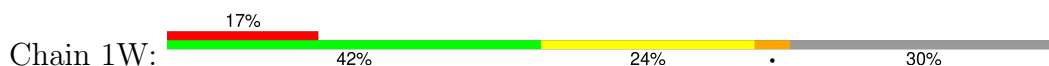
• Molecule 7: Cilia and flagella associated protein 161

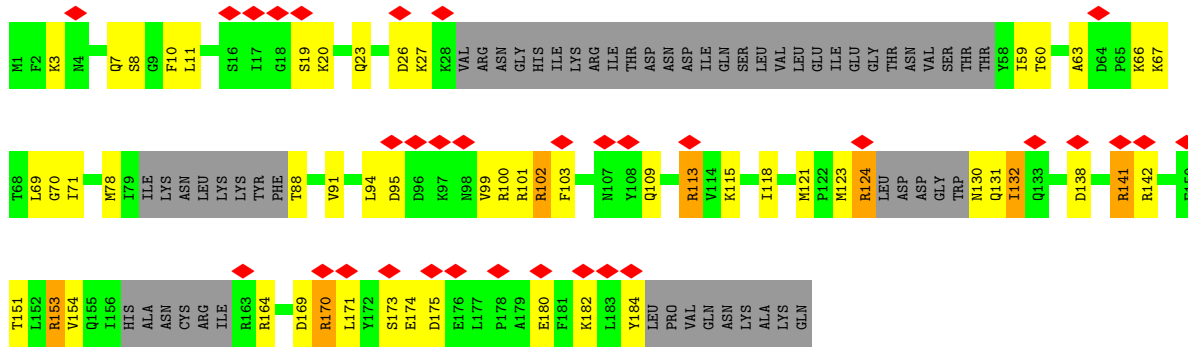


• Molecule 7: Cilia and flagella associated protein 161

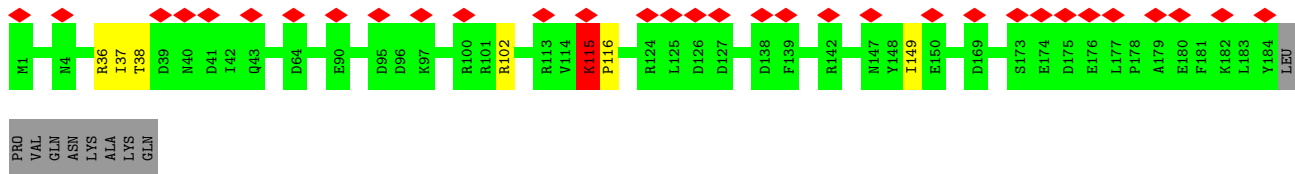


• Molecule 8: Cilia- and flagella-associated protein 20

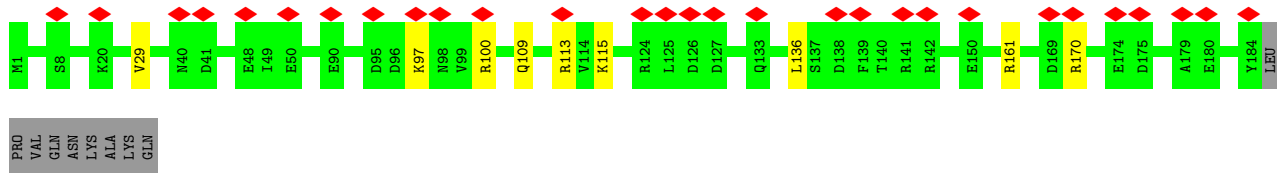
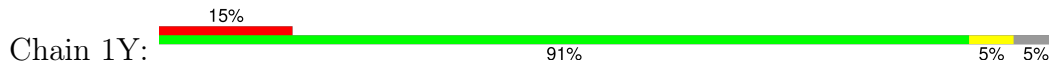




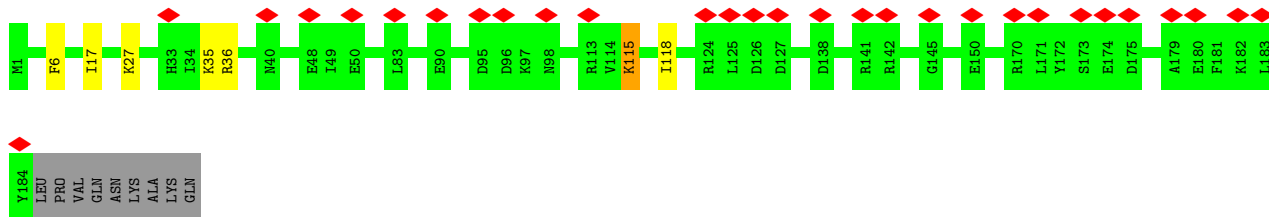
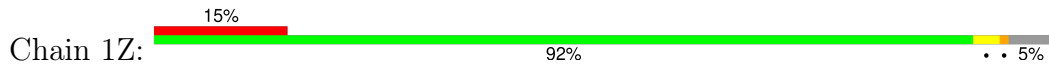
• Molecule 8: Cilia- and flagella-associated protein 20



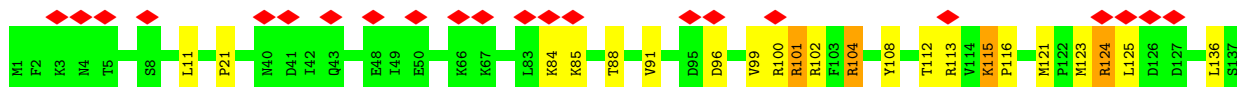
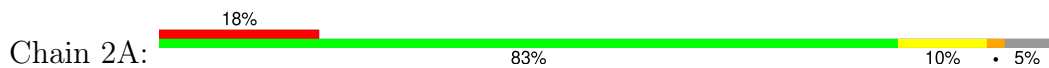
• Molecule 8: Cilia- and flagella-associated protein 20

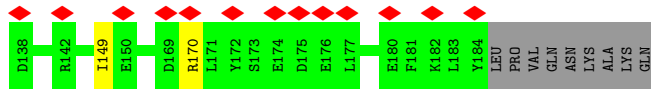


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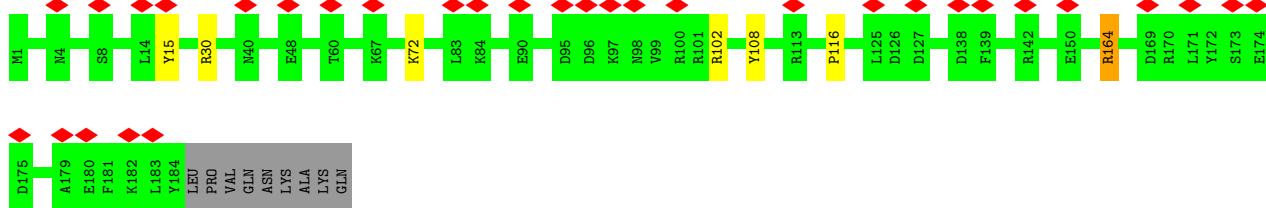


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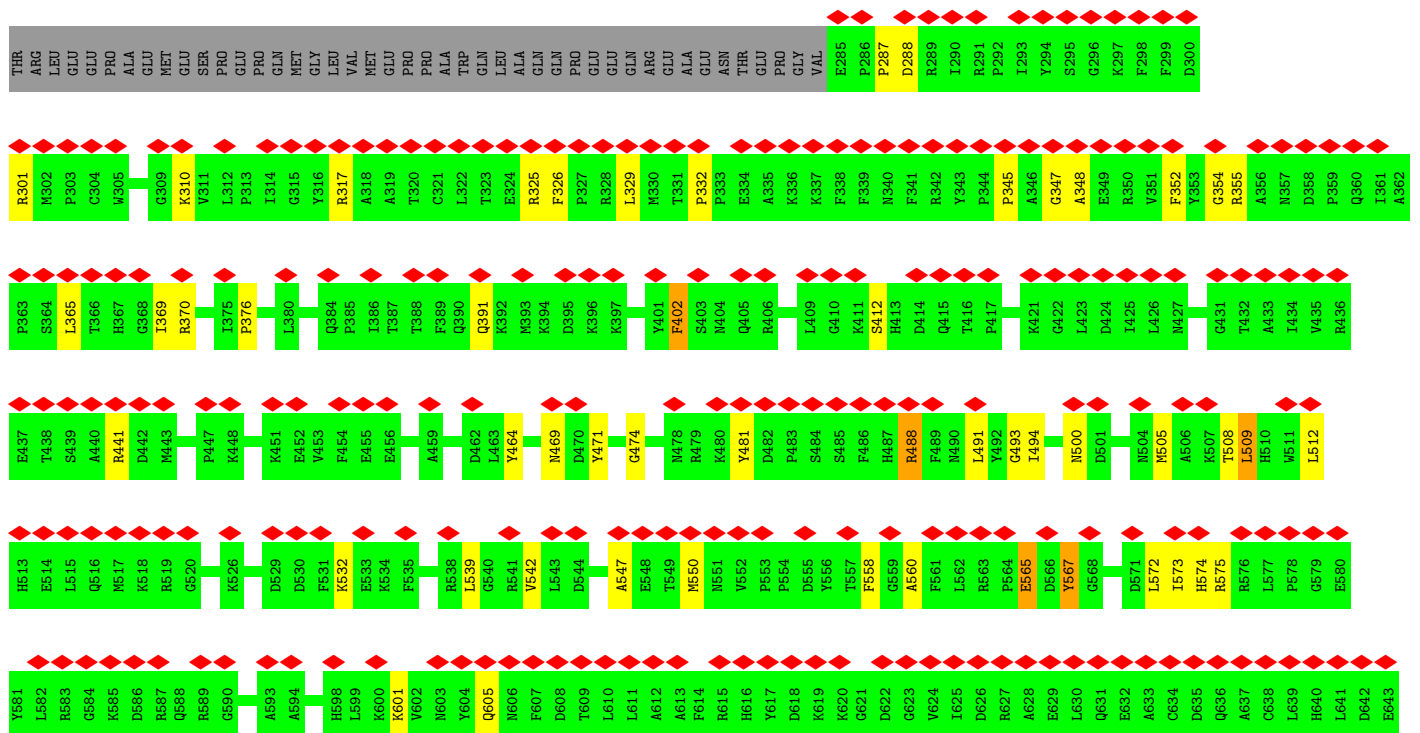
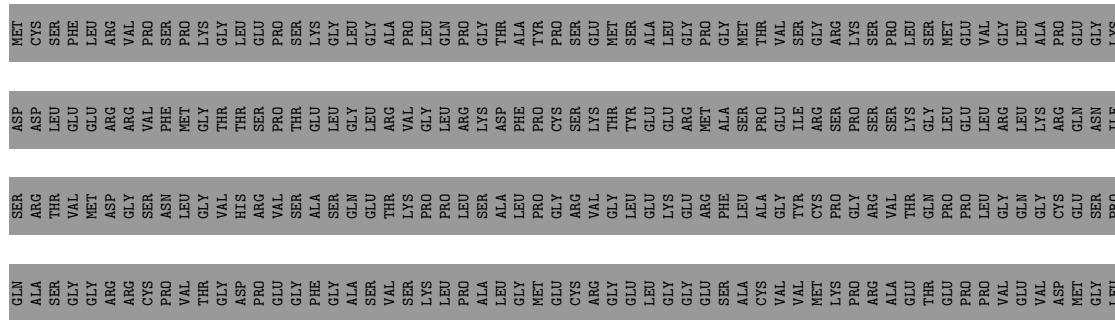




• Molecule 8: Cilia- and flagella-associated protein 20



• Molecule 9: EF-hand domain family member B



K644	L645	L646	D647	Q648	E651	C652	C653	D654	D655	D656	K657	D658	G659	L660	I661	N662	Y663	L664	E665	F666	A667	M668	F669	L670	T671	W672	K673	D674	K675	T676	P677	L678	K679	E680	Y681	E682	E683	R684	V685	L686	I687	G688	G689	R690	K691	A692	D693	C694	A695	N696	P697	A698	E699	A700	N701	V702	E703	E704
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S705	E706	P707	A708	L709	L710	L711	P712	K713	E714	D715	I716	V717	L718	K719	E720	P721	G722	S723	S724	E725	K726	T727	L728	R729	T730	L731	L732	R733	P734	S735	ASP	LYS	VAL	SER	ASN	HIS	TYR	THR	LYS	ASP	GLN	GLY	VAL	LEU	GLY	ASN	VAL	THR	TYR	SER	THR	GLU	VAL	ASN	VAL	ASN	VAL	ASP	GLY	THR	THR
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GLY	VAL	THR	PRO	ARG	SER	ASP	ILE	PRO	ALA	PRO	GLY	GLY	LEU	PHE	ILE	ARG	ASN	ASN	GLY	ASP	VAL	GLY	GLU	ASN	GLY	ASN	VAL	ALA	THR	TYR	TYR	SER	THR	GLU	GLY	ASN	VAL	VAL	ALA	ALA	VAL	VAL	THR	THR	GLY	LEU	GLY	GLY	ASP	GLY	THR	THR
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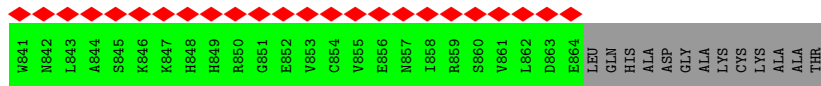
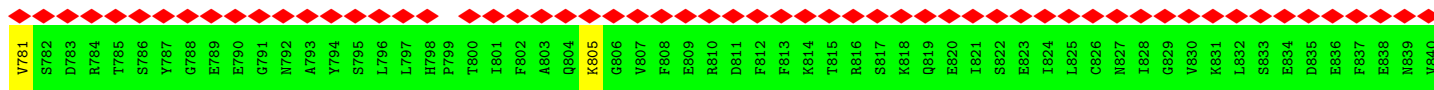
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● Molecule 9: EF-hand domain family member B

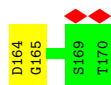
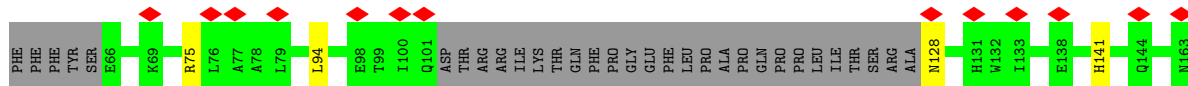
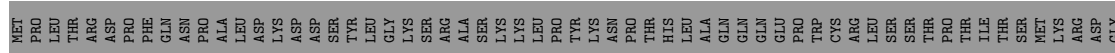


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ASP	ASP	LEU	GLU	GLU	TRP	LEU	ASP	GLY	VAL	PHE	PRO	THR	GLY	GLY	THR	GLY	GLY	GLY	LEU	GLY	THR	THR	THR	LEU	LEU	ASP	GLY	ASP	LYS	LYS	THR	THR	THR	TYR	TYR	VAL	PRO	PRO	GLY	PRO	PRO	GLY	GLY	GLY	GLY	GLY	THR	THR							
SER	ARG	THR	VAL	MET	ASP	GLY	ASN	SER	ASN	PHE	VAL	GLY	GLY	VAL	VAL	ARG	ALA	GLN	GLY	LEU	THR	THR	THR	GLY	ALA	ASP	LYS	VAL	VAL	VAL	VAL	VAL	TYR	TYR	GLY	VAL	GLY	VAL	GLY	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO						
GLN	ALA	SER	GLY	ARG	ARG	CYS	PRO	PHE	THR	VAL	GLY	PHE	GLY	ASP	ALA	SER	ALA	SER	GLY	LEU	THR	THR	THR	LEU	LEU	GLY	VAL	VAL	CYS	ARG	GLY	GLY	GLY	GLY	GLY	GLY	GLY	ALA	ALA	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL					
THR	ARG	LEU	GLY	GLU	THR	GLY	MET	GLY	VAL	GLY	GLY	PHE	GLY	VAL	THR	LEU	LEU	VAL	MET	GLY	THR	THR	THR	GLY	GLY	GLY	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR					
ARG	MET	PRO	CYS	TRP	LEU	ALA	GLY	THR	GLY	VAL	THR	THR	VAL	ALA	ALA	THR	THR	THR	PHE	PRO	PRO	GLY	THR	THR	PRO	PRO	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR				
ILE	ALA	PRO	SER	THR	HIS	GLY	ILE	THR	ILE	THR	ILE	THR	THR	ALA	ALA	VAL	VAL	VAL	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
LYS	GLY	LEU	ASP	ILE	LEU	ASN	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR			
TYR	ASP	PRO	SER	PHE	HIS	ARG	THR	THR	PHE	ASN	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
ARG	VAL	LEU	ASP	ILE	ALA	GLY	THR	THR	THR	ASN	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR		
LYS	VAL	ASN	TYR	THR	ASN	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	
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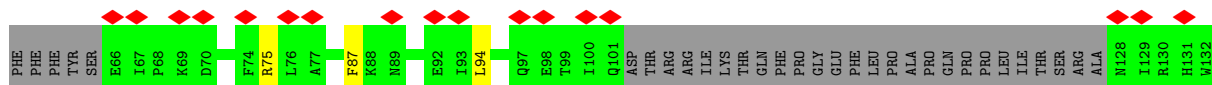
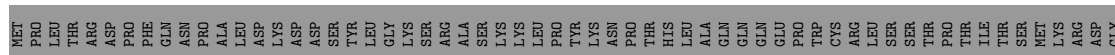
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Y764	G765	V766	P767	T768	I769	R770	S771	D772	I773	F774	A775	P776	L777	I778	R779	H780																																								



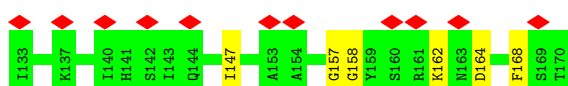
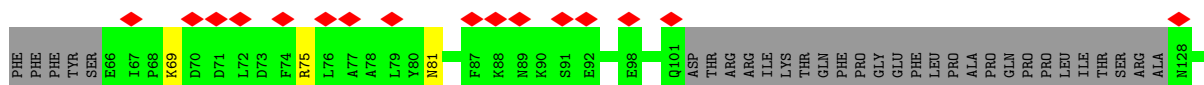
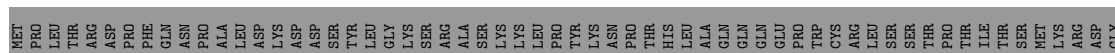
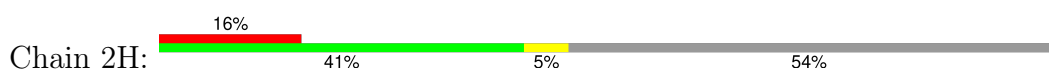
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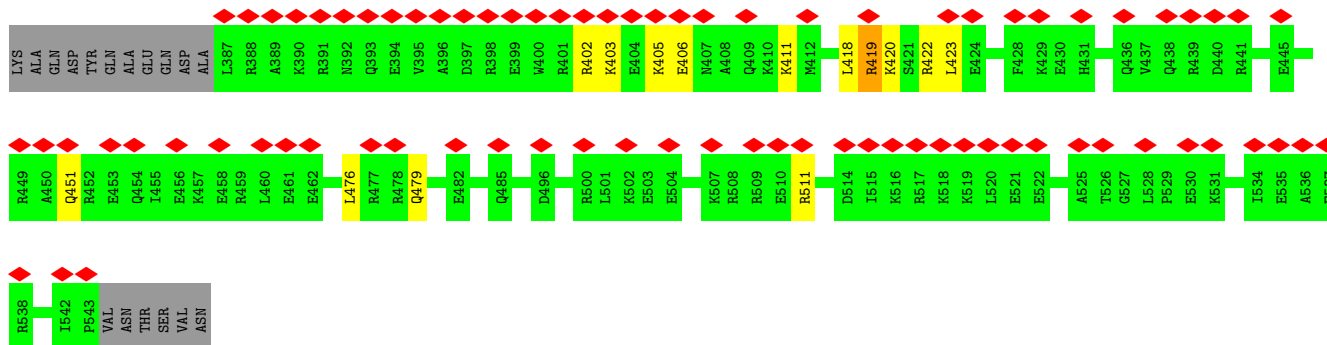
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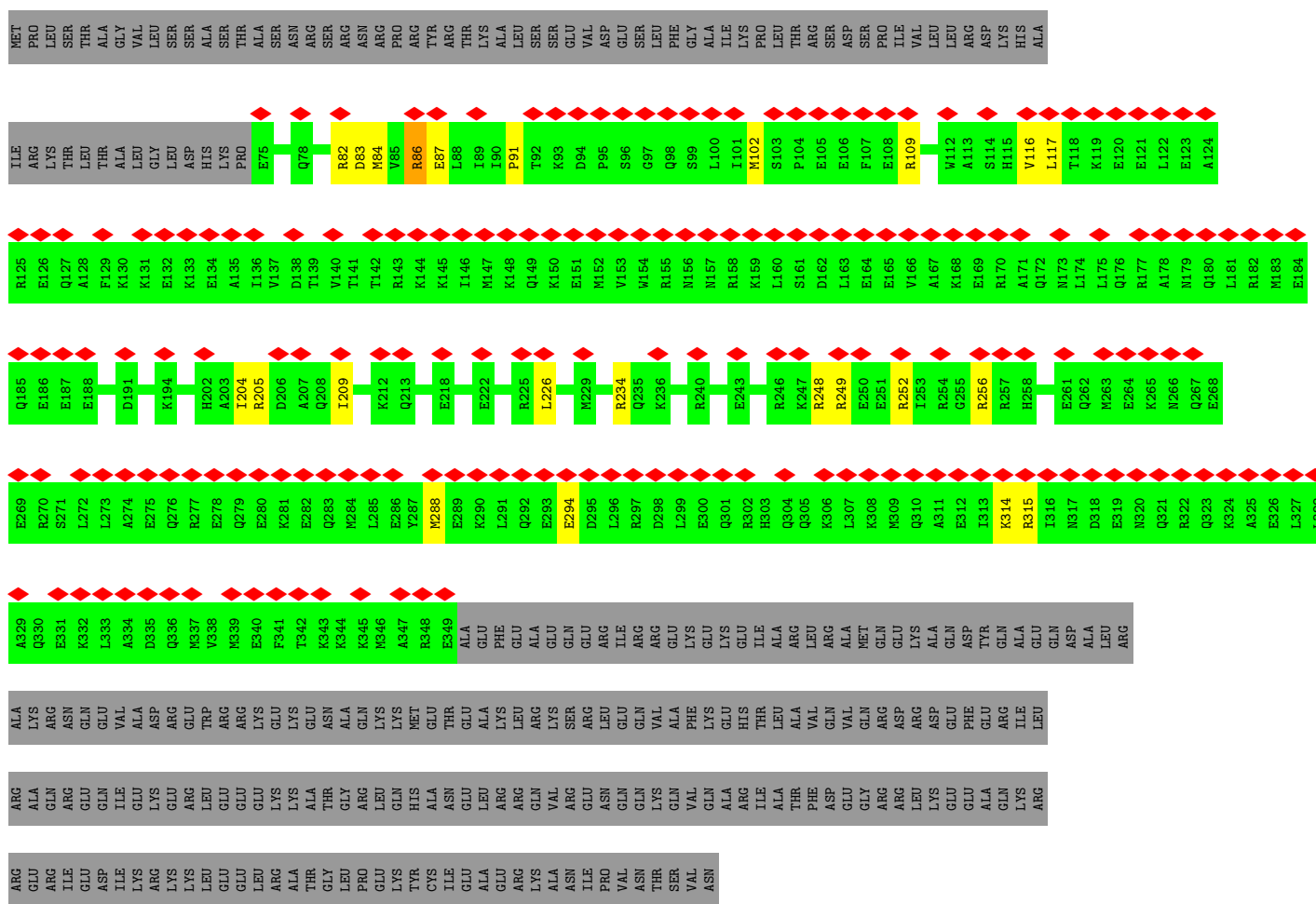
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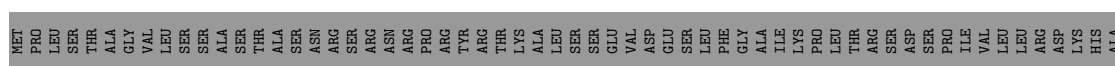
• Molecule 11: Cilia and flagella associated protein 45

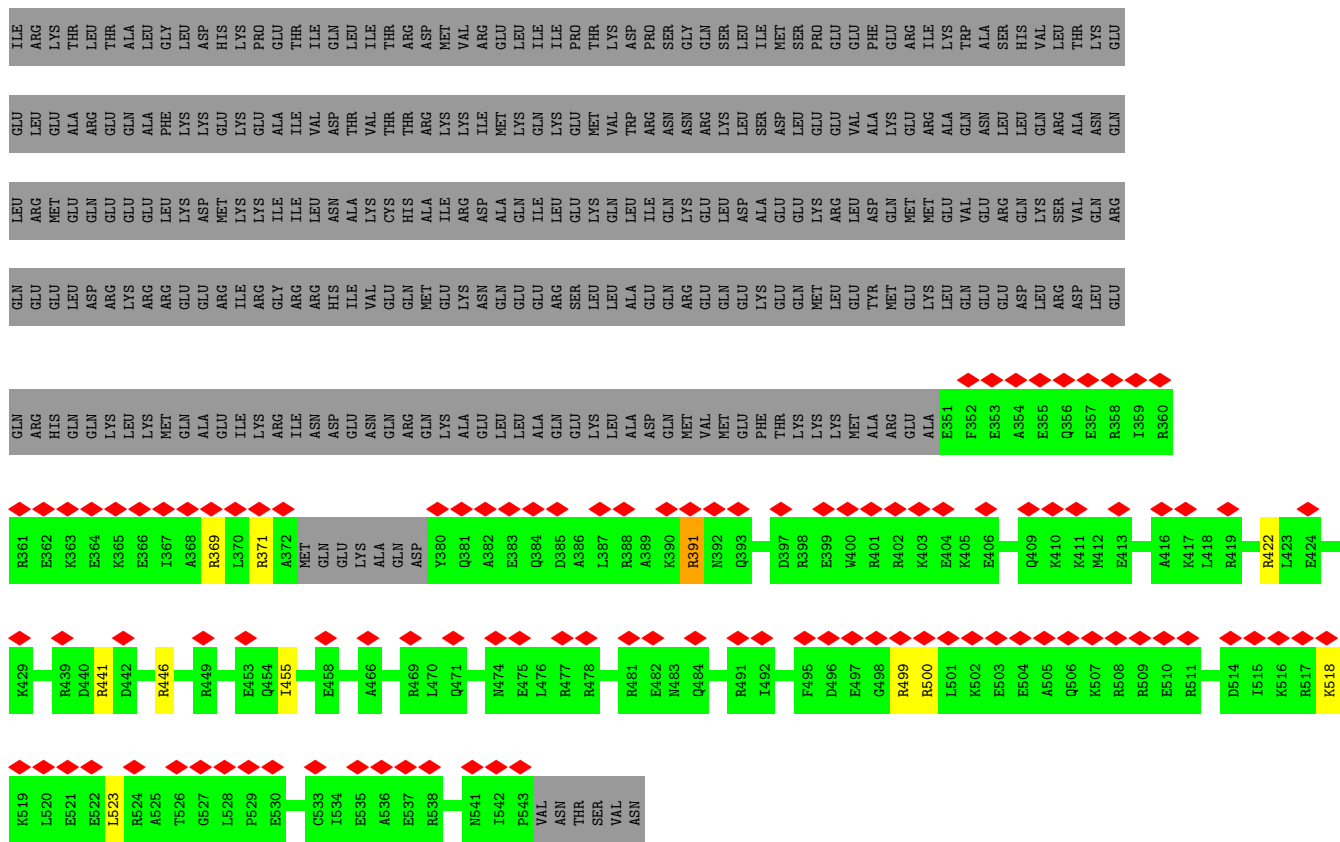


• Molecule 11: Cilia and flagella associated protein 45

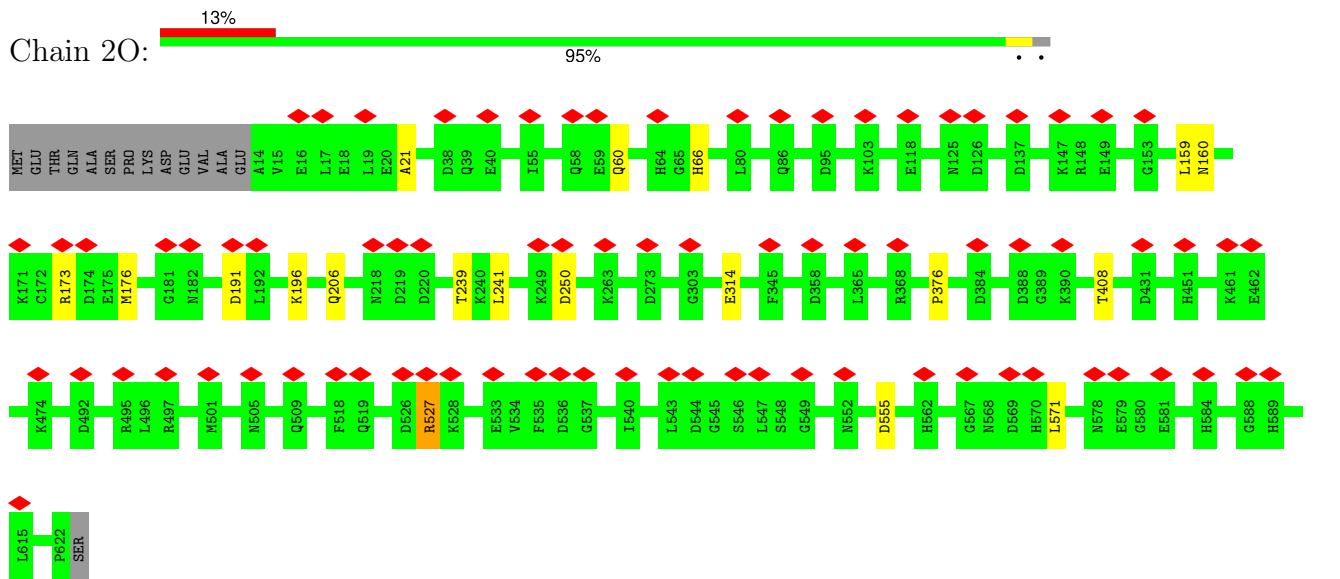


• Molecule 11: Cilia and flagella associated protein 45

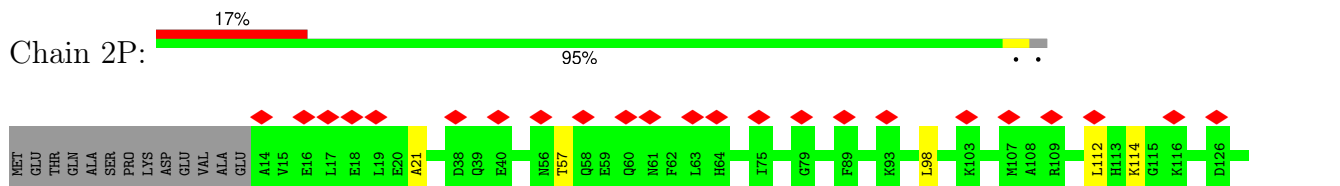


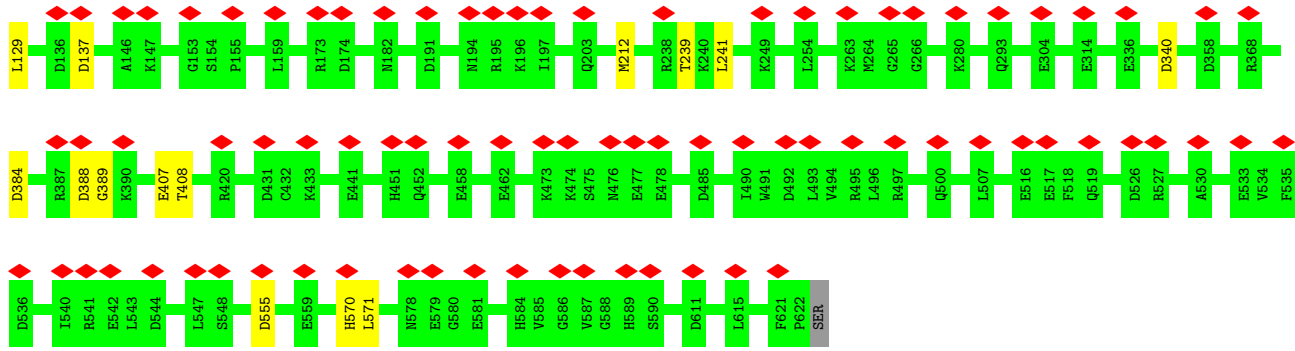


• Molecule 12: Cilia and flagella associated protein 52

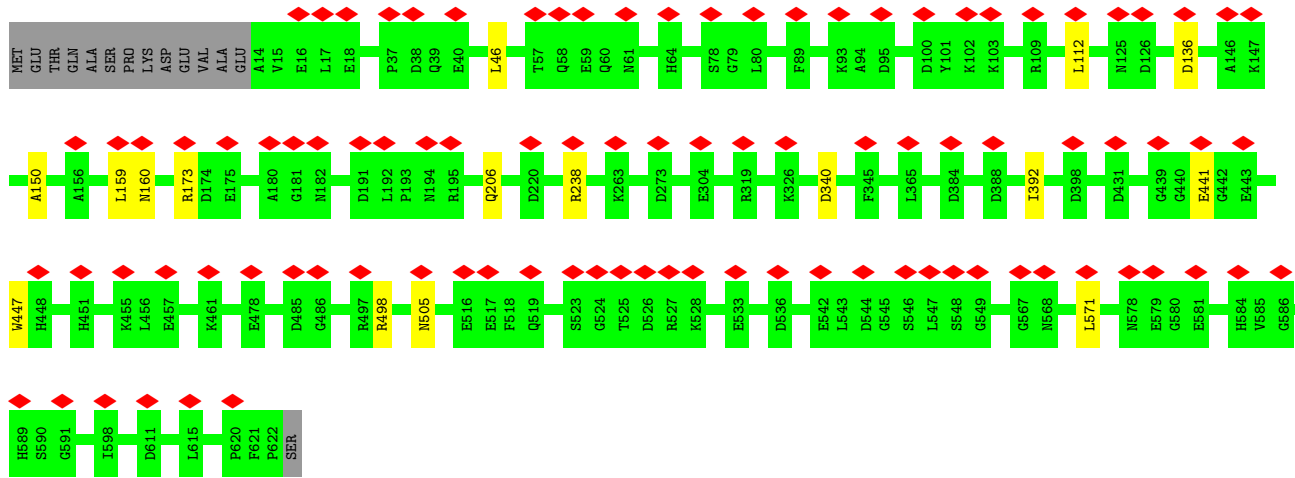


• Molecule 12: Cilia and flagella associated protein 52

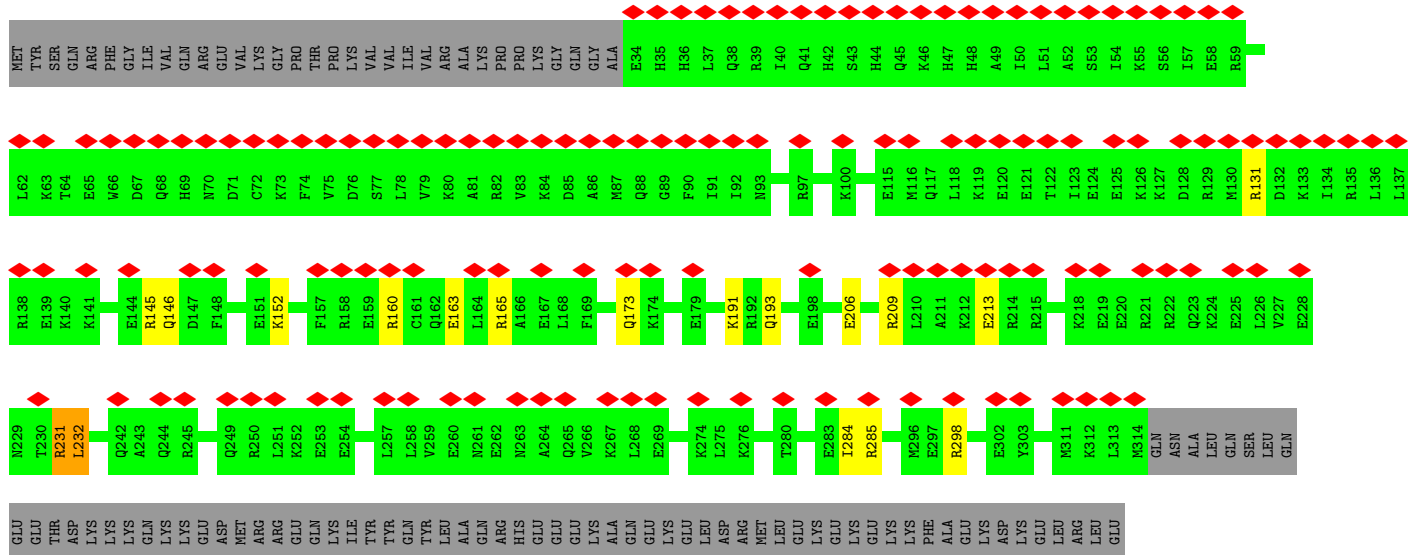




• Molecule 12: Cilia and flagella associated protein 52

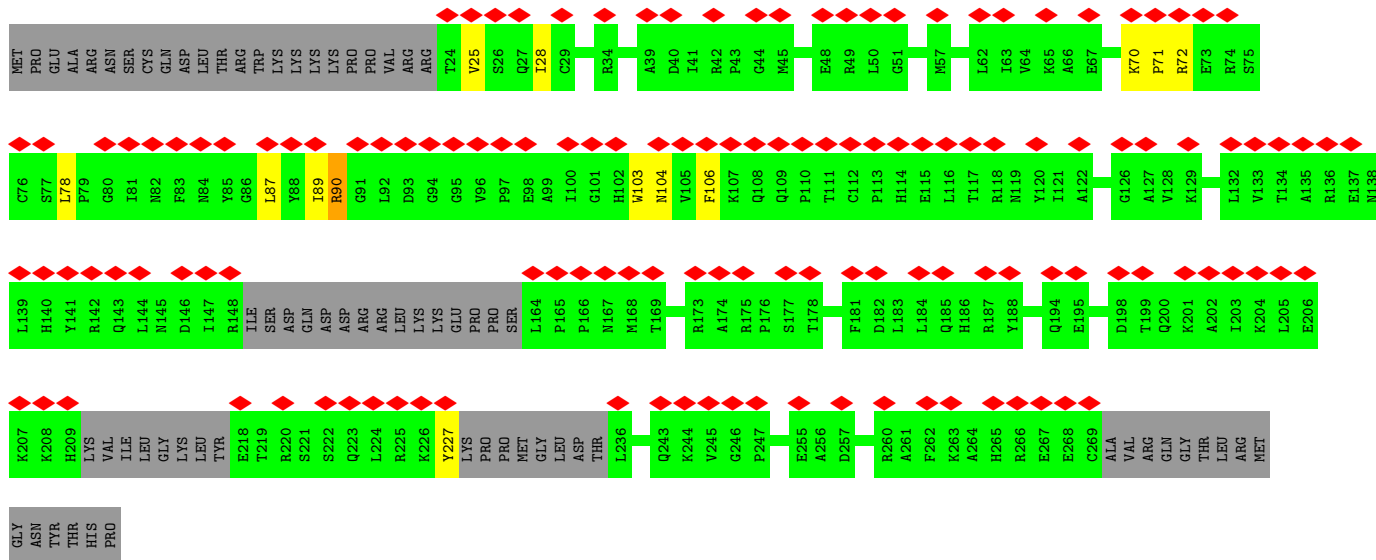
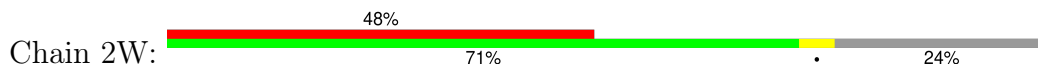


• Molecule 13: Methyl-CpG binding domain protein 1

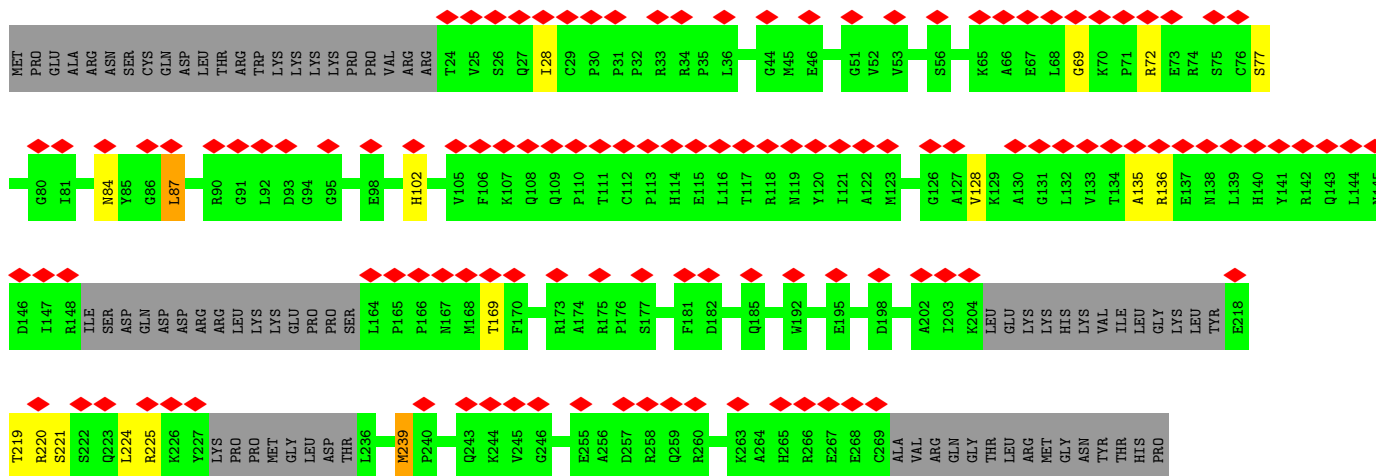
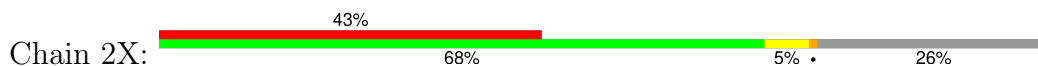




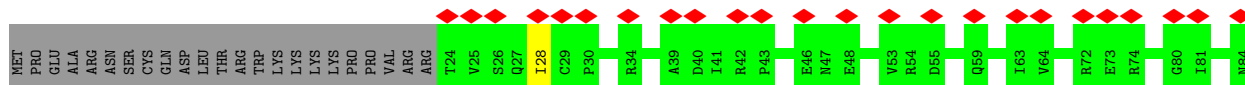
• Molecule 14: Cilia and flagella associated protein 77

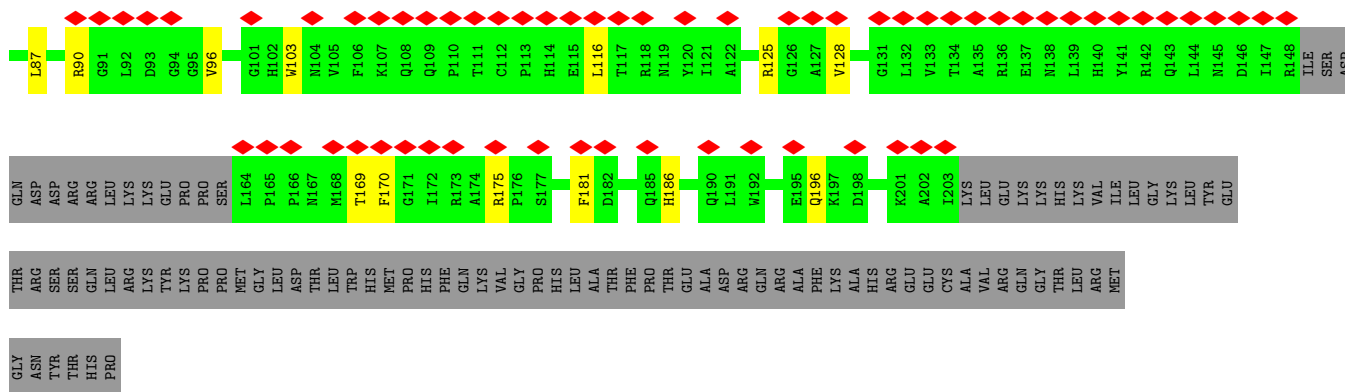


• Molecule 14: Cilia and flagella associated protein 77

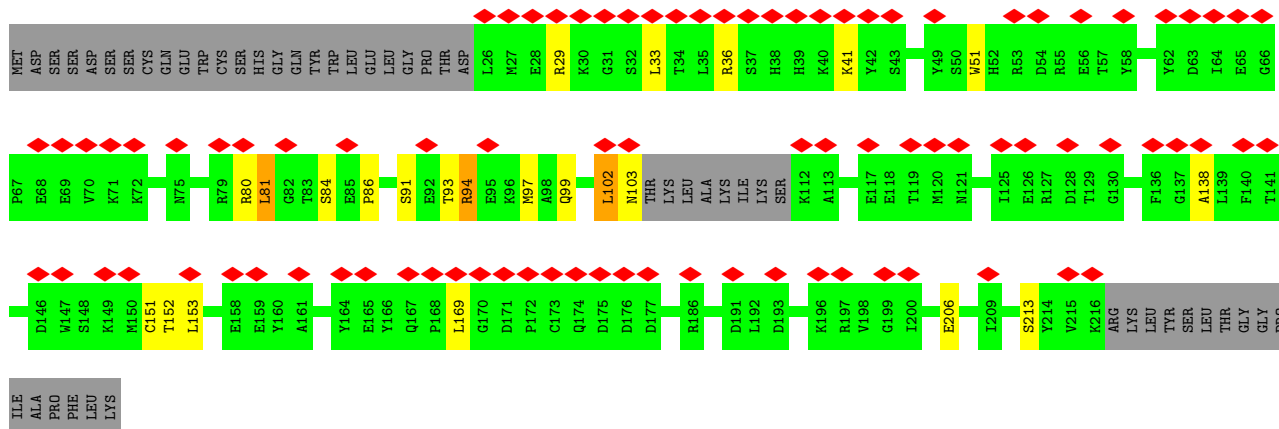
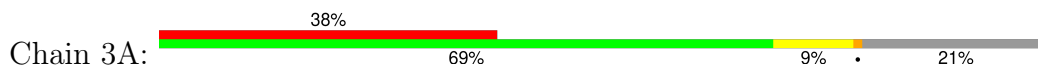


• Molecule 14: Cilia and flagella associated protein 77

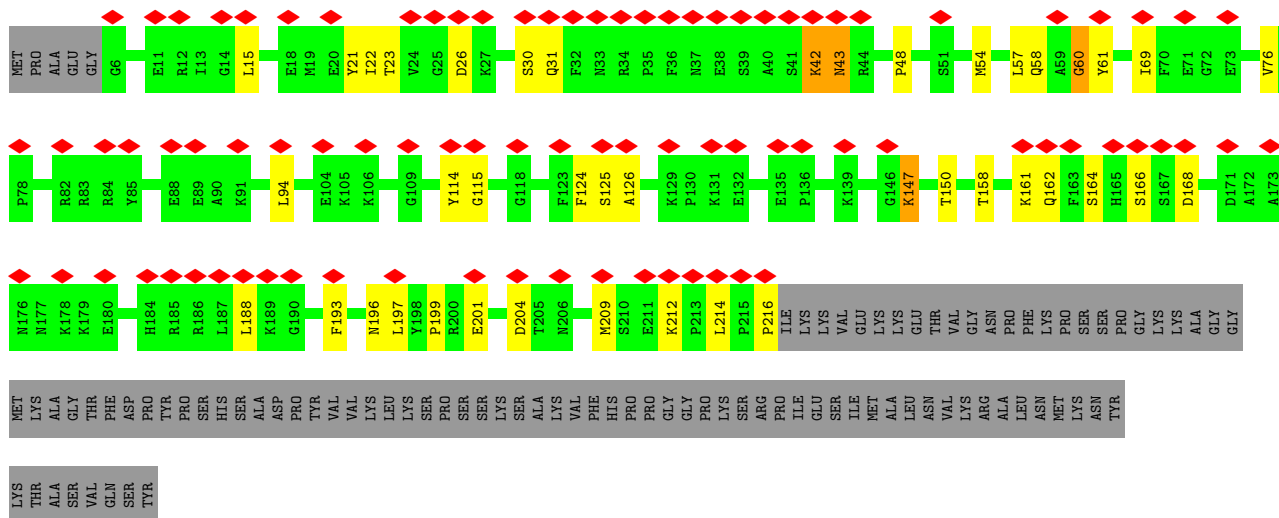




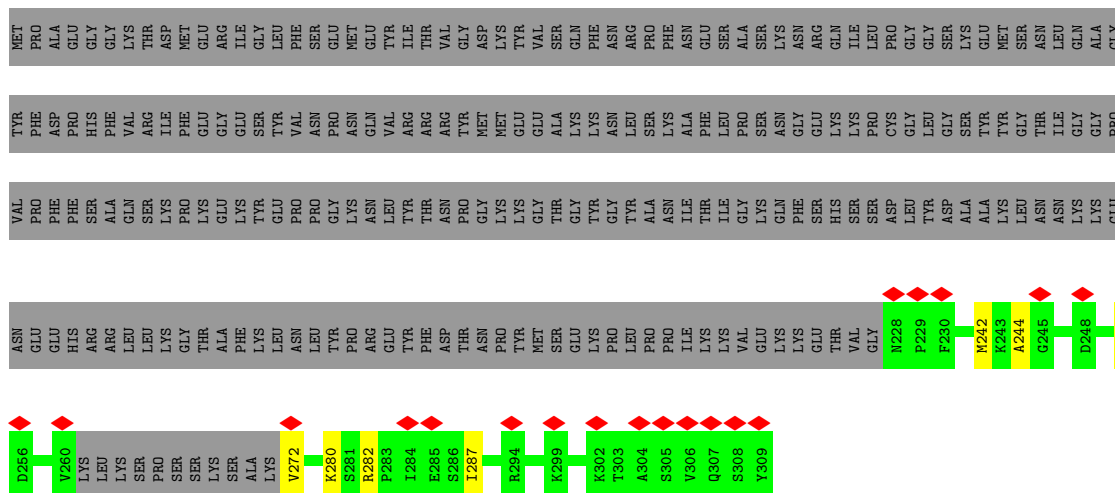
• Molecule 15: CFAP95



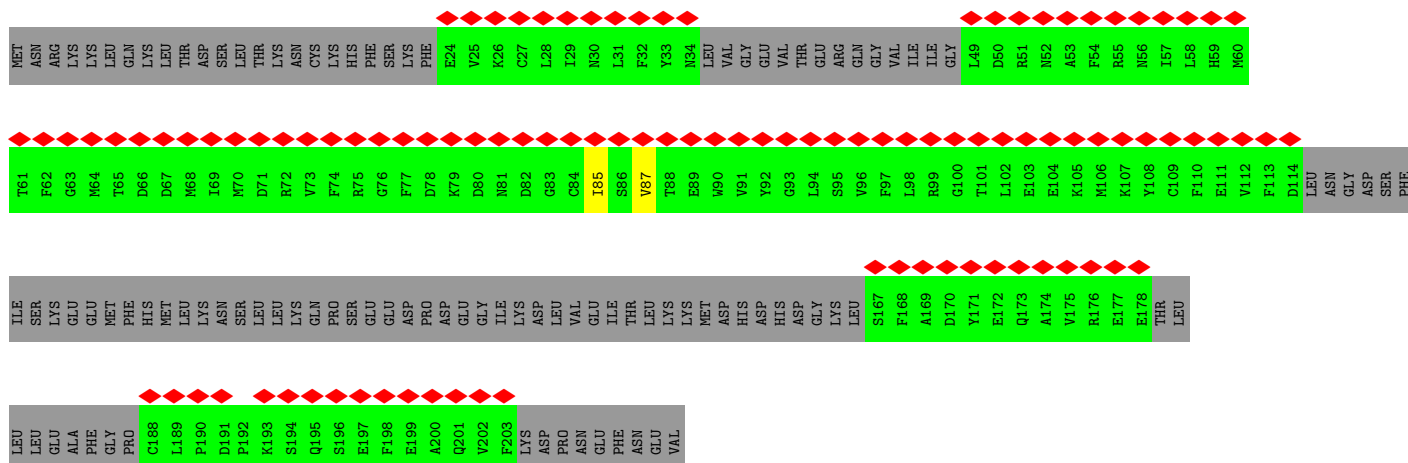
• Molecule 16: Cilia-and flagella-associated protein 96



• Molecule 16: Cilia-and flagella-associated protein 96

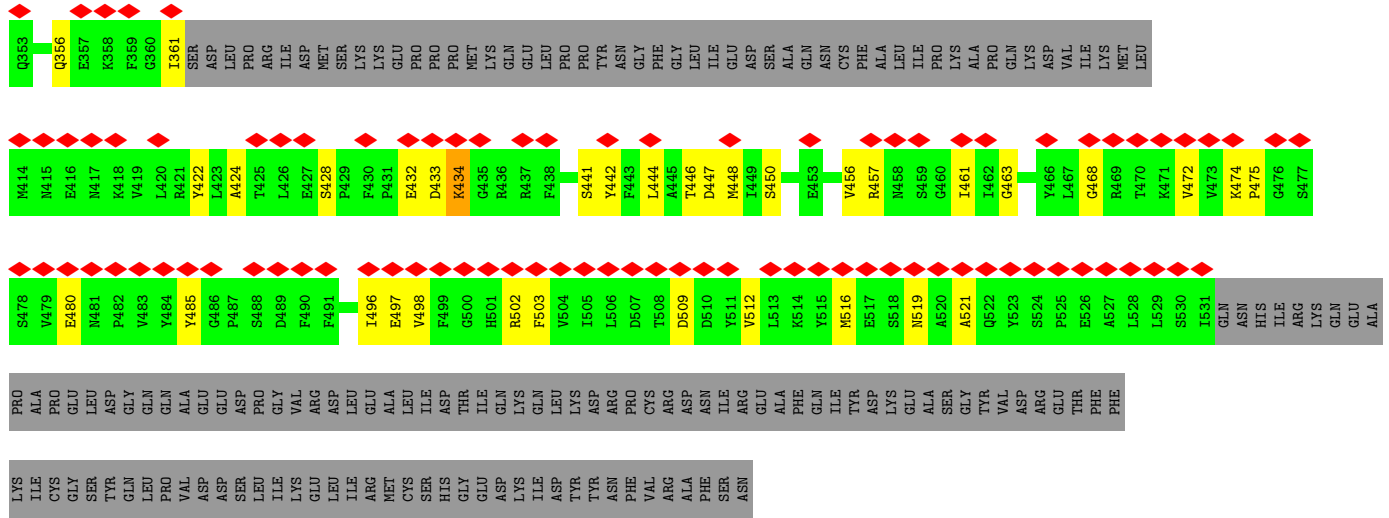


• Molecule 17: EF-hand calcium-binding domain-containing protein 1

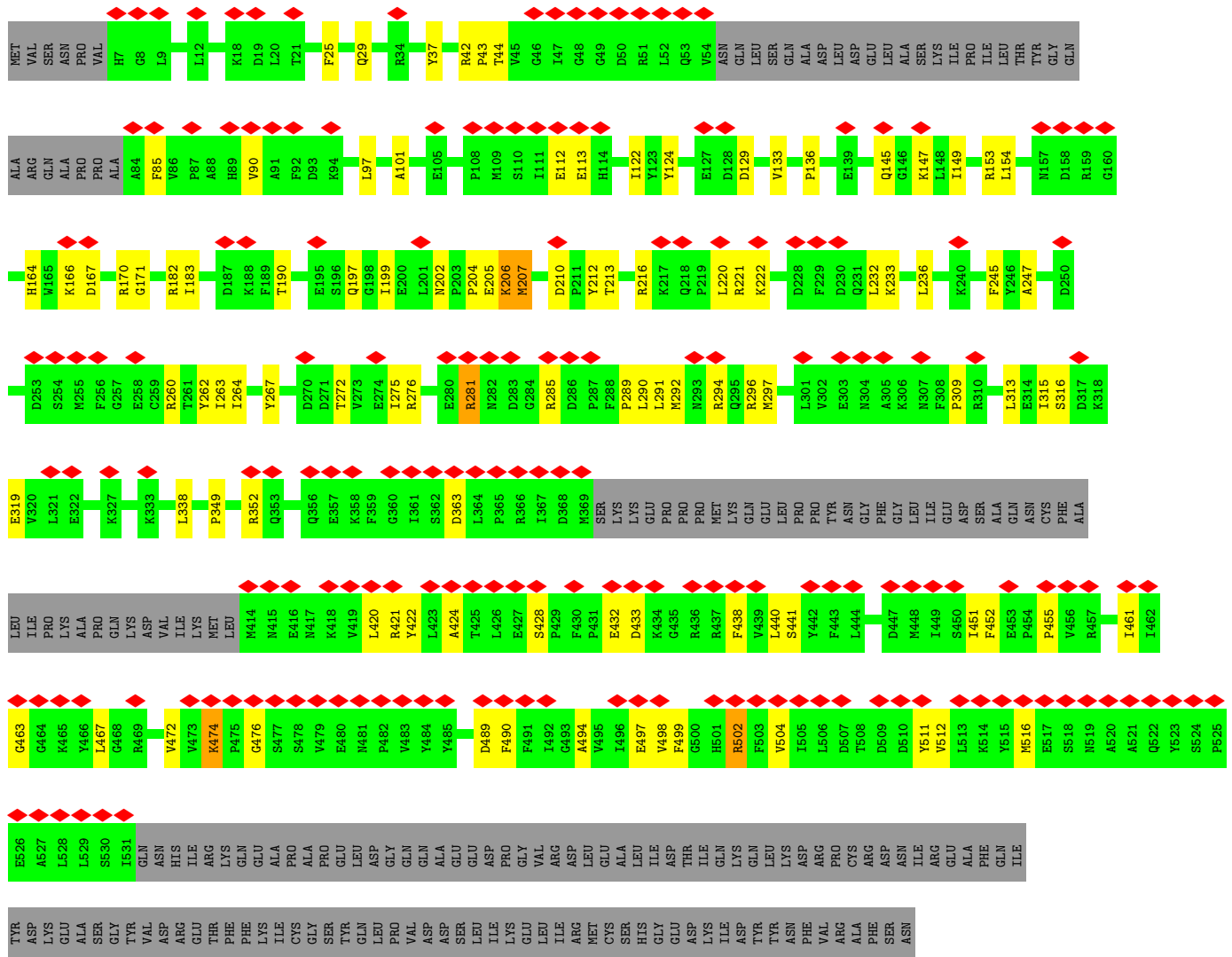


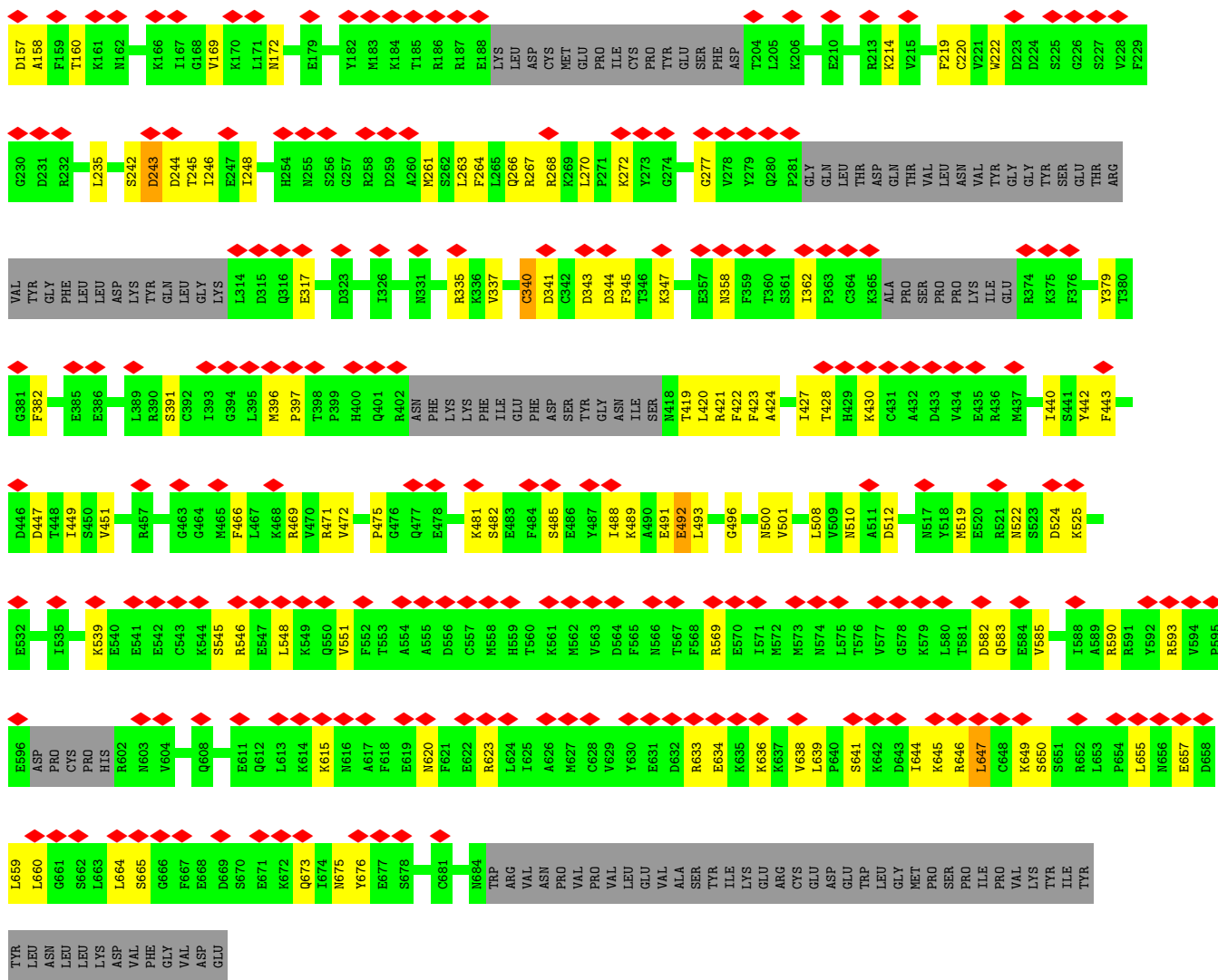
• Molecule 18: EF-hand calcium binding domain 6



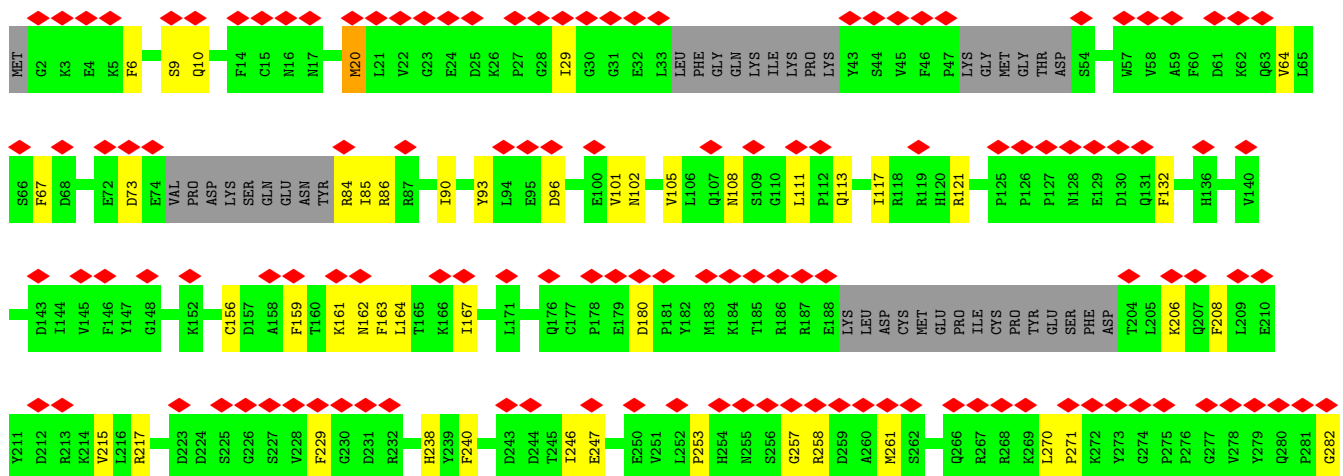


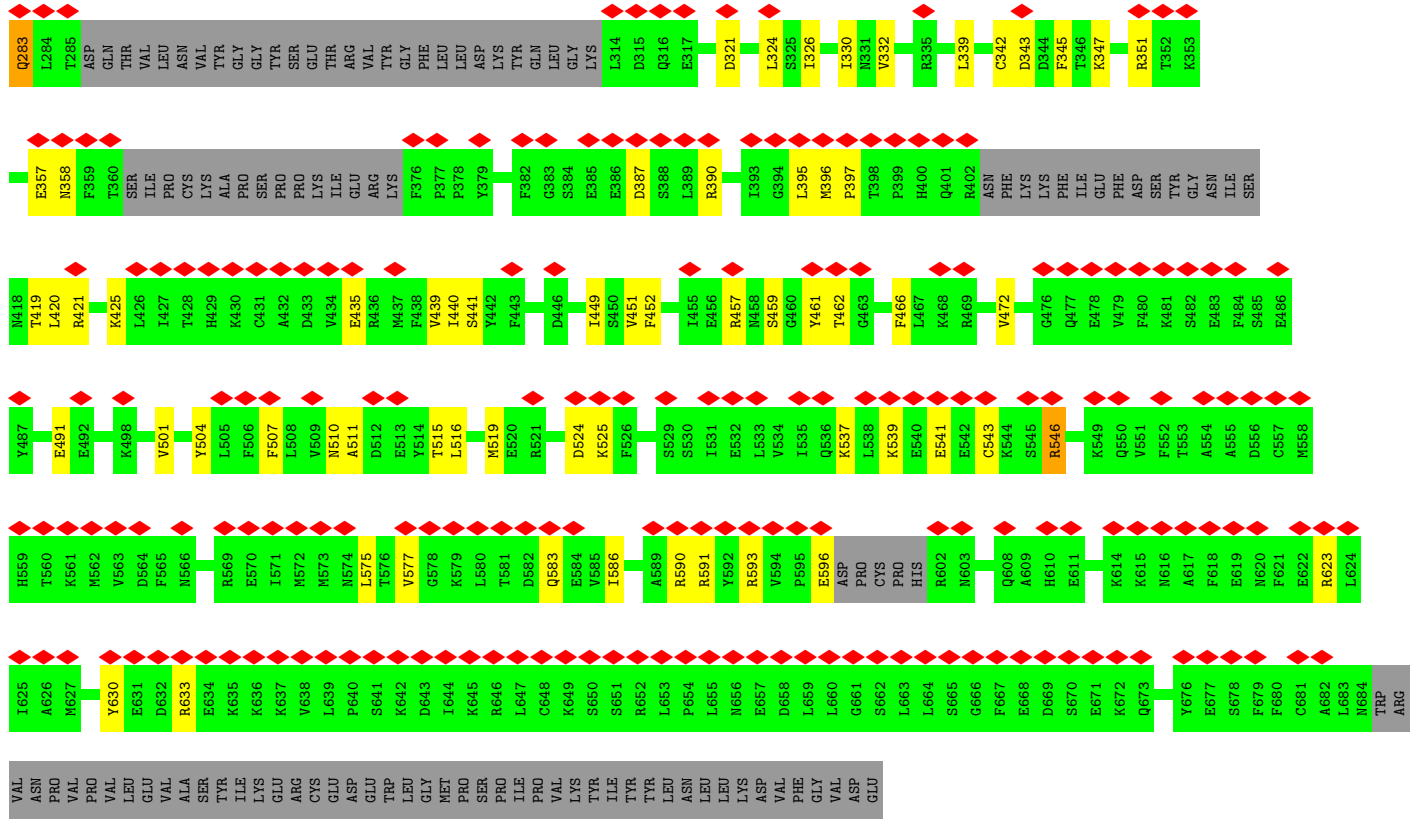
• Molecule 19: EF-hand domain containing 1



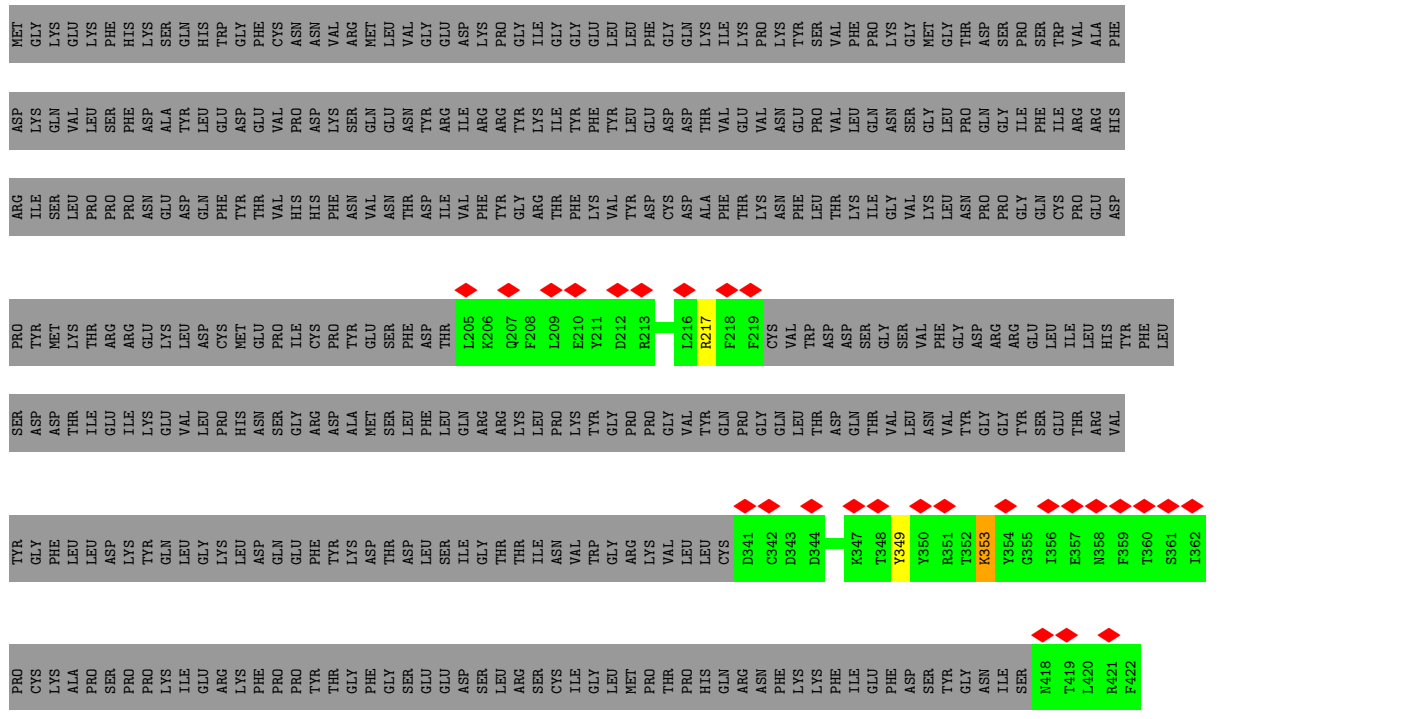
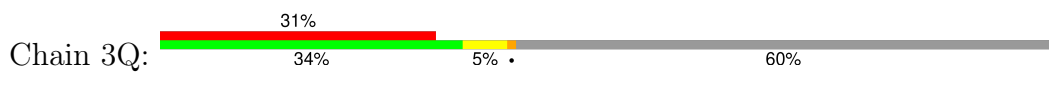


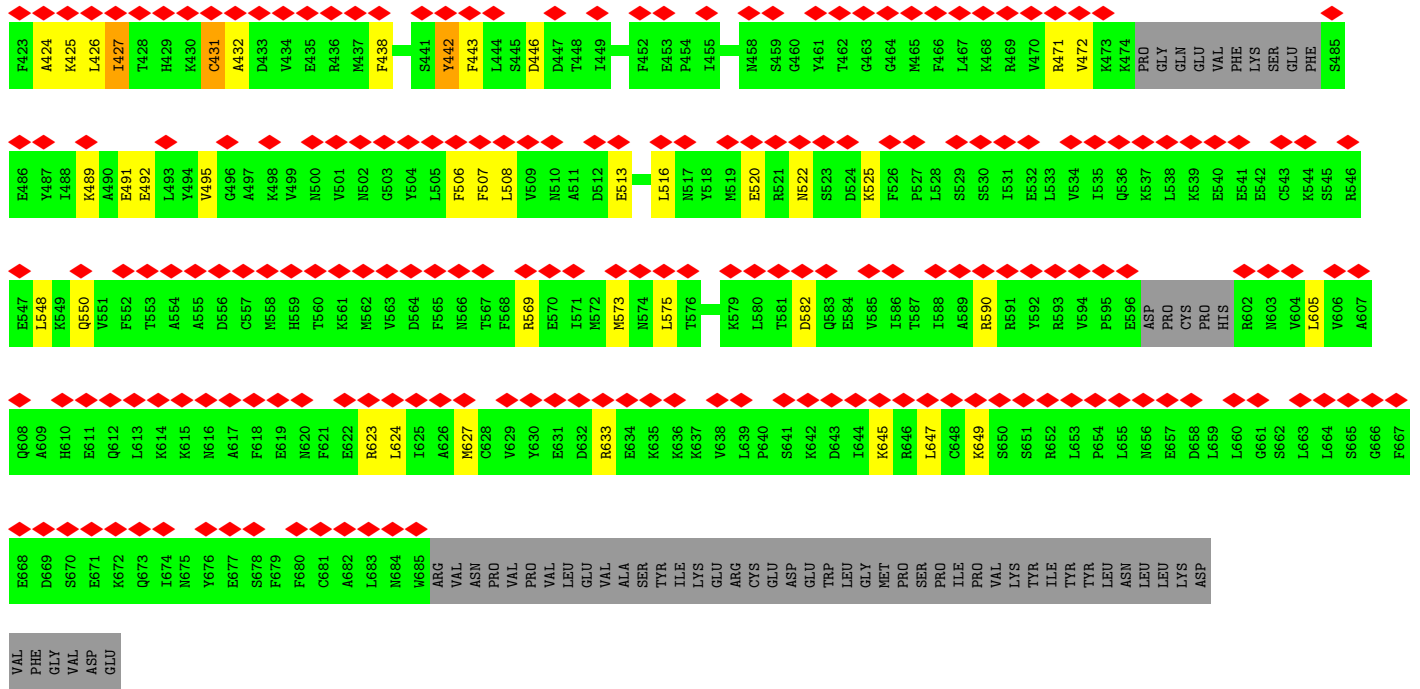
• Molecule 20: EFHC2



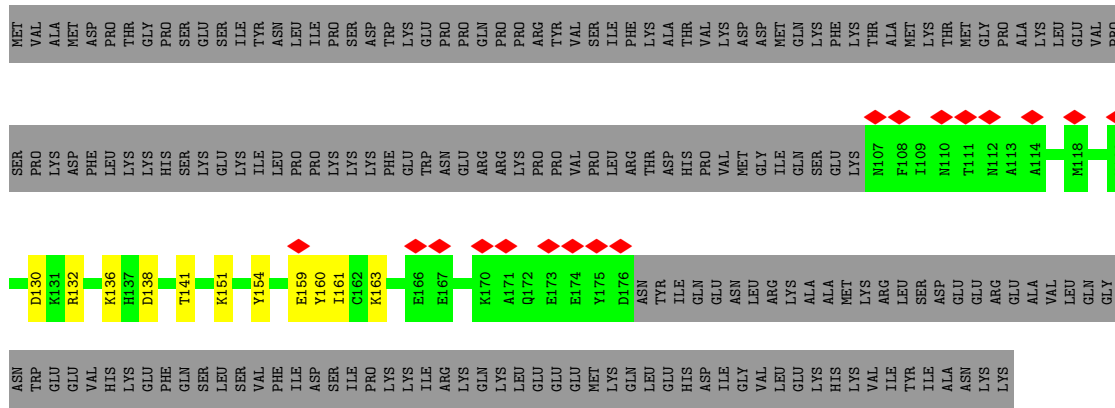


• Molecule 20: EFHC2

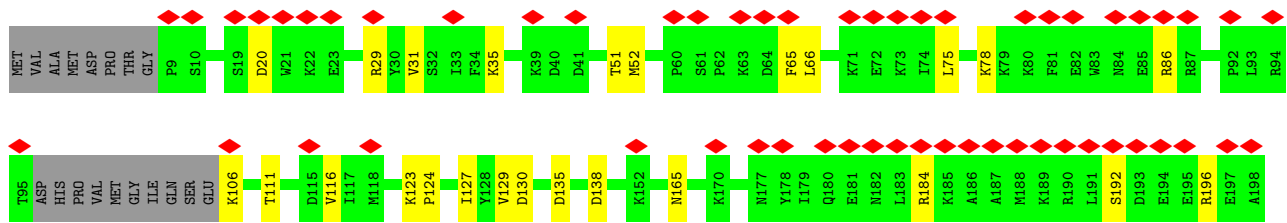
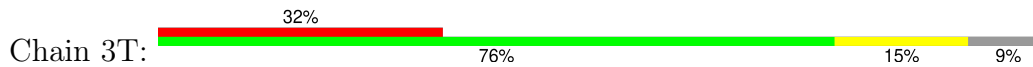


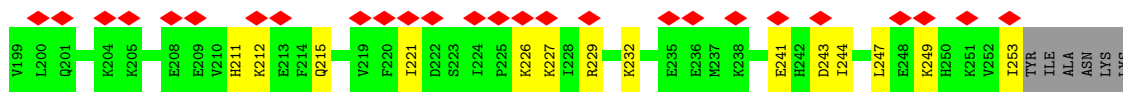


• Molecule 21: Enkurin, TRPC channel interacting protein

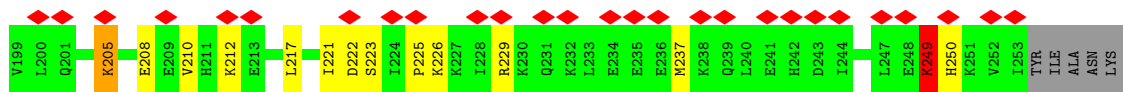
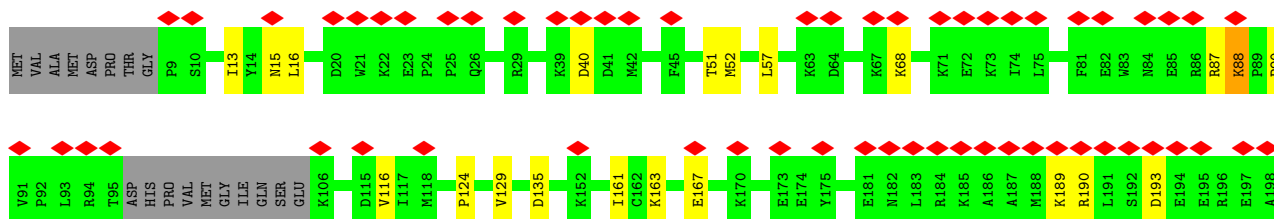
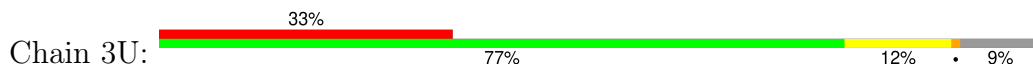


• Molecule 21: Enkurin, TRPC channel interacting protein

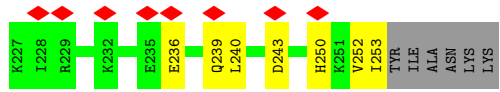
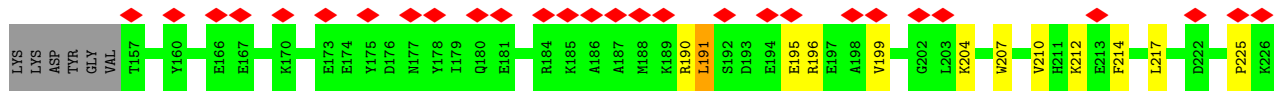
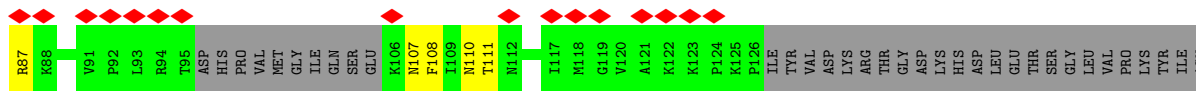
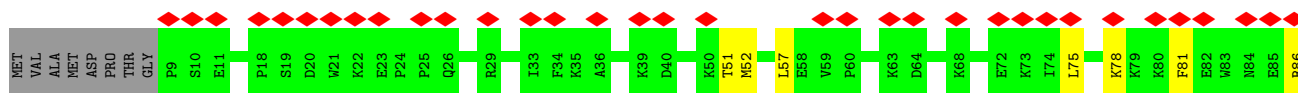




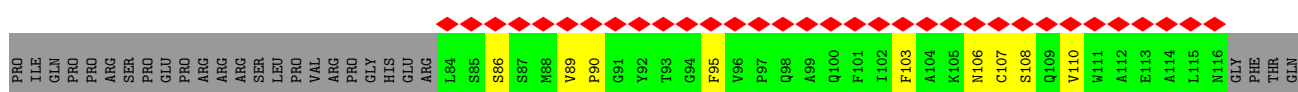
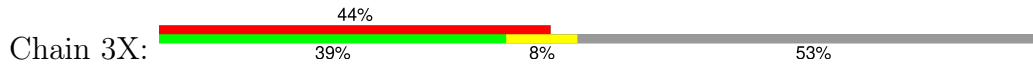
• Molecule 21: Enkurin, TRPC channel interacting protein

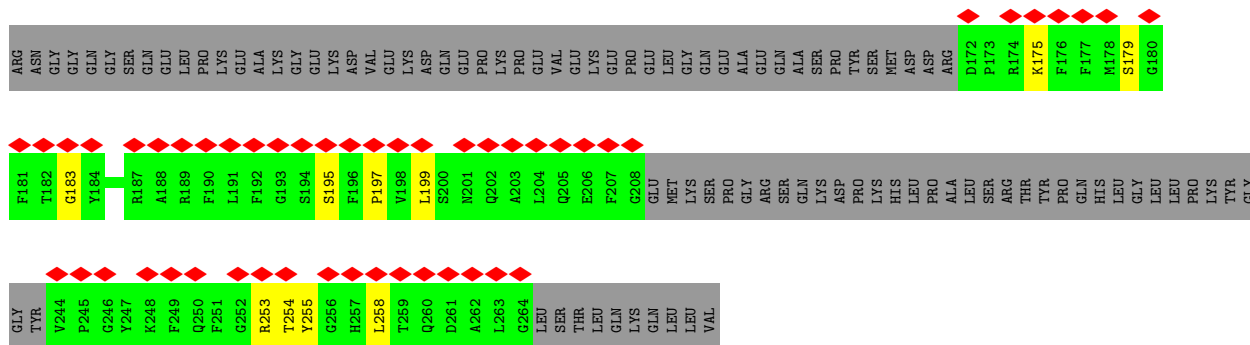


• Molecule 21: Enkurin, TRPC channel interacting protein

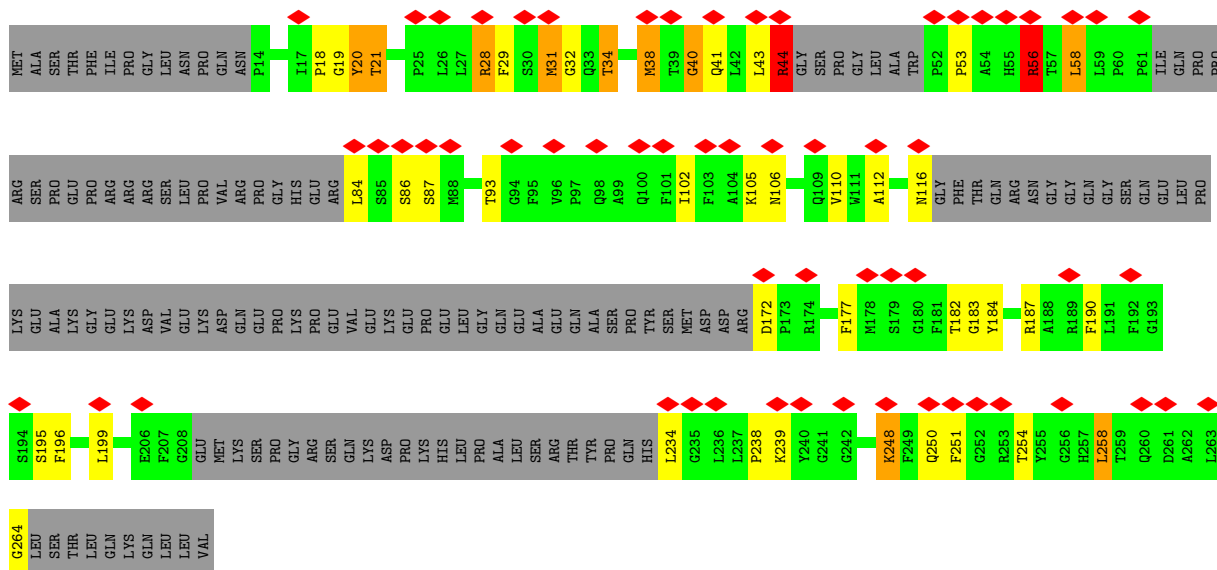
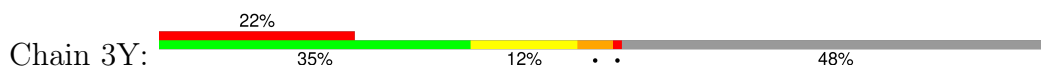


• Molecule 22: Protein FAM166B

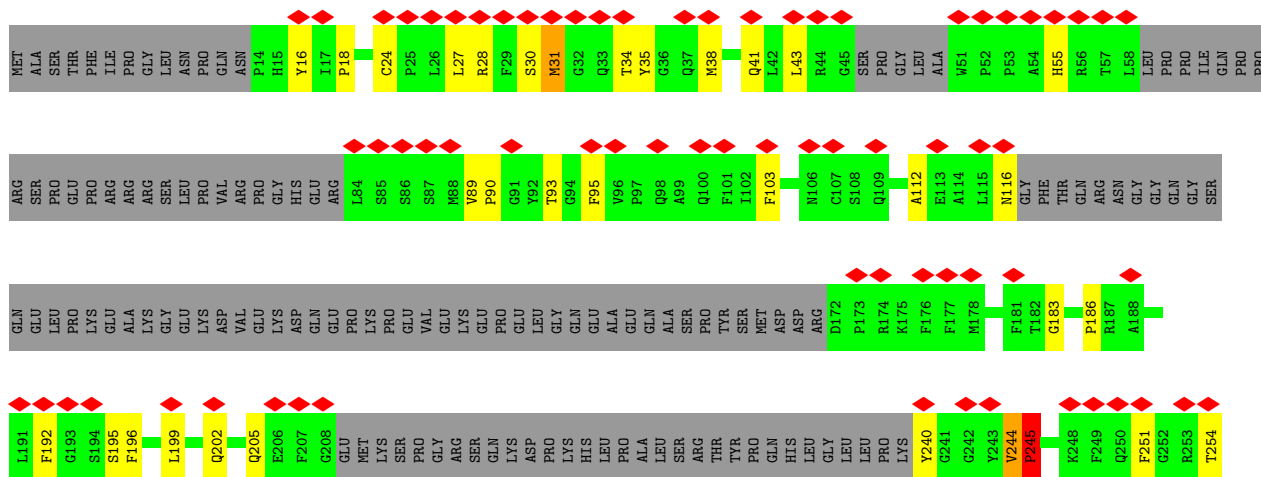
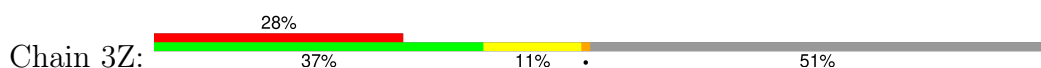


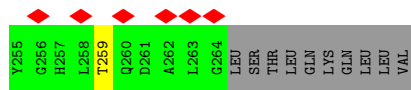


• Molecule 22: Protein FAM166B

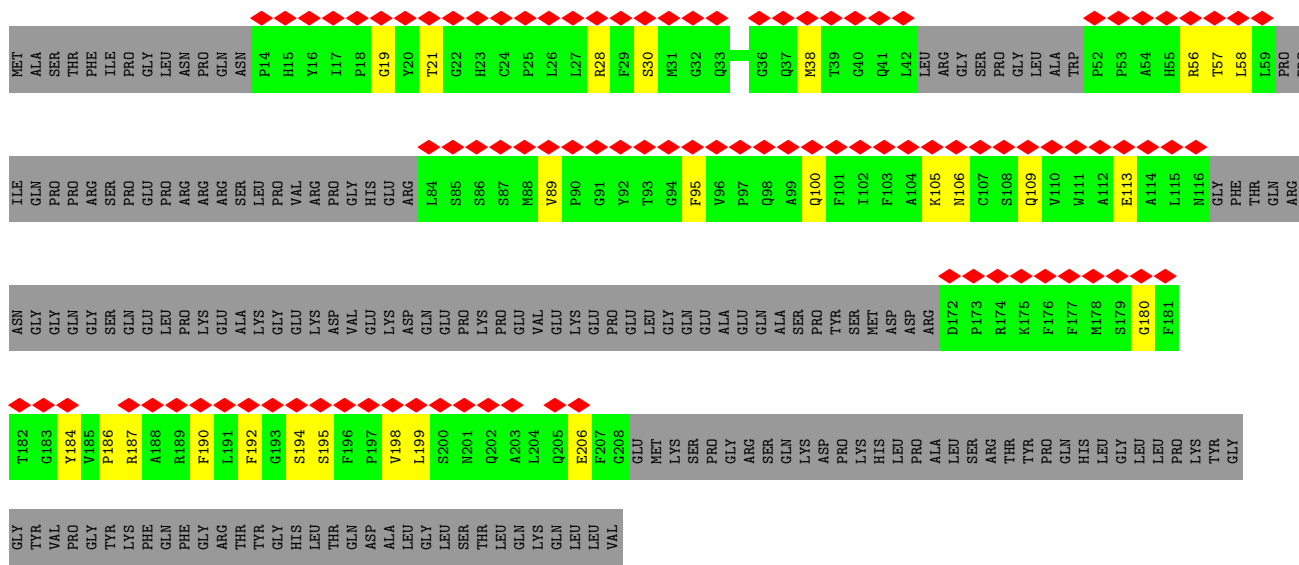


• Molecule 22: Protein FAM166B

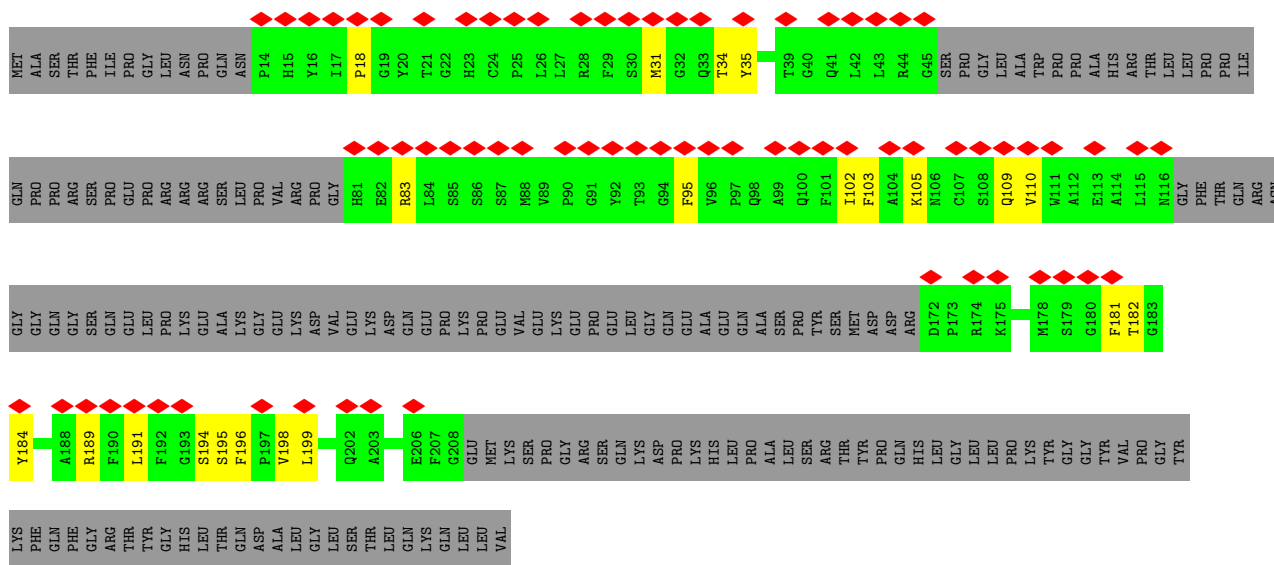




• Molecule 22: Protein FAM166B



• Molecule 22: Protein FAM166B



• Molecule 22: Protein FAM166B



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

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

● Molecule 24: Meiosis-specific nuclear structural protein 1



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

GLN ASP
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PHE PHE
LEU LEU
ASP ASP
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LYS LYS
HIS HIS
GLN GLN
LYS LYS
ALA ALA
GLU GLU
GLU GLU
VAL VAL
ASP ASP
ASN ASN
LYS LYS
ARG ARG
ASN ASN
TYR TYR
VAL VAL
PHE PHE
LYS LYS
ASN ASN
LEU LEU
LEU LEU
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VAL VAL
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GLU GLU
ALA ALA
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LEU LEU
LYS LYS
GLN GLN
PHE PHE
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LYS LYS
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ARG ARG
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GLU GLU
TRP TRP
GLN GLN
ARG ARG
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GLY GLY
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ALA ALA
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LEU LEU

LEU ARG
GLU LEU
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GLU LEU
LYS LYS
LEU LEU
LEU LEU
ALA ALA
ALA ALA
TVR TVR
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SER SER
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LEU LEU

Q182
Q186
Y187
S188
H189
D190
L191
E192
K193
Q194
L195
E196
L197
Q198
K202
Q203
E204
A205
Y206
E207
Q208
L209
L210
K211
E212
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N215
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D217
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E225
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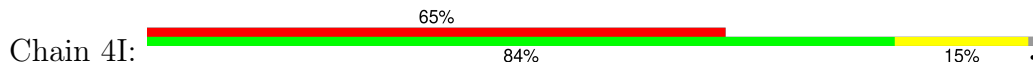
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F273
A274
K275
L276
Q277
Q278
Q279
R280
E281
E282
D283
R284
R285
A286
K287
V288
Q289
E290
K291
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R296
L297
Q298
L299
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T304
Q305
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R312

Q313
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R426
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E447

E448
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E455
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L478
G479
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GLU
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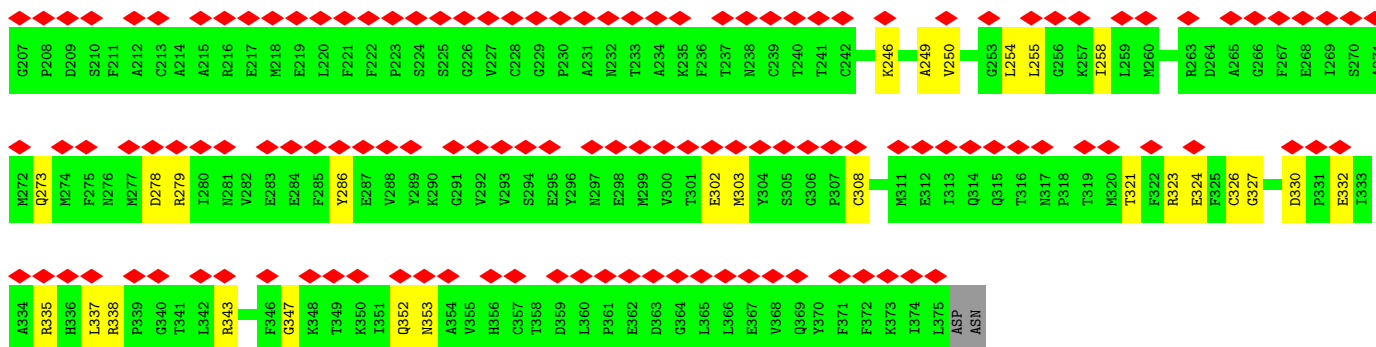
● Molecule 25: Nucleoside diphosphate kinase 7



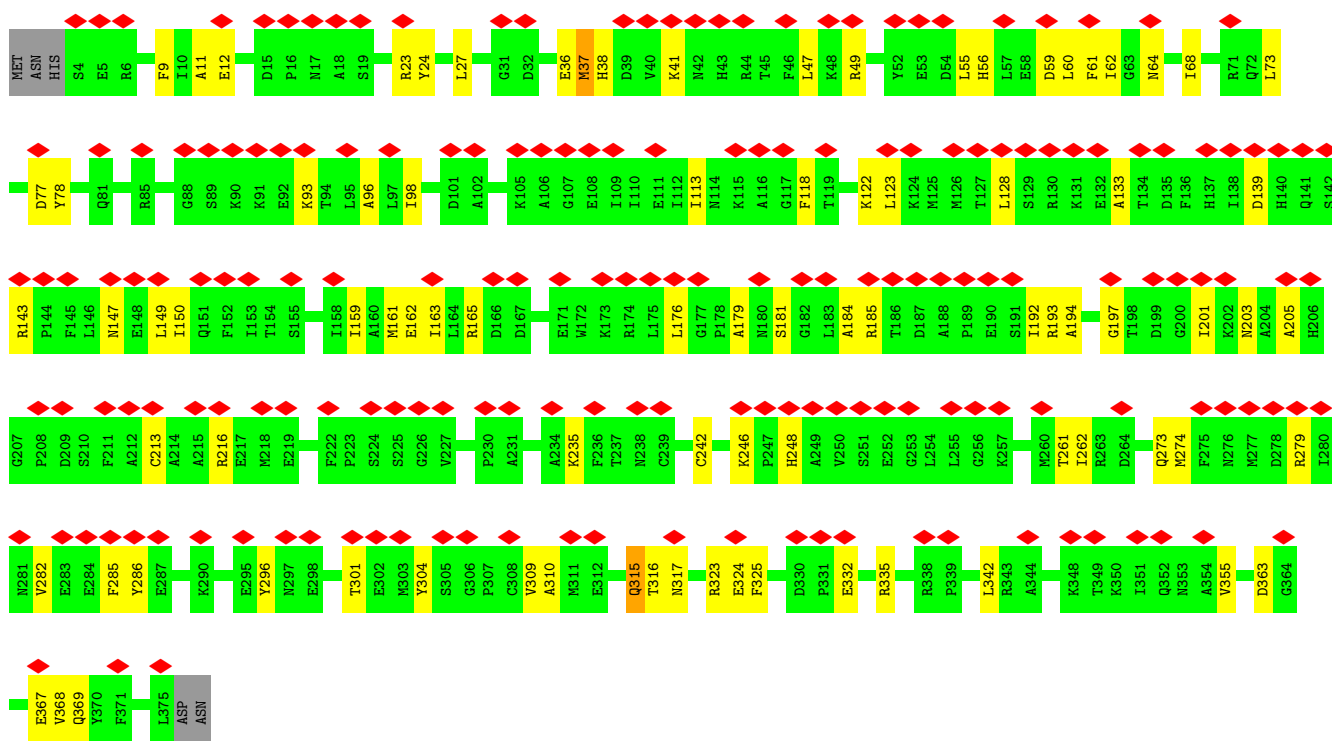
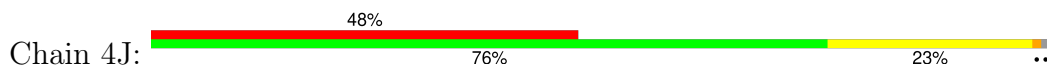
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S19 S19
L20 L20
F21 F21
R22 R22
R23 R23
L26 L26
L27 L27
F28 F28
Y29 Y29
F30 F30
G31 G31
D32 D32
G33 G33
S34 S34
Y35 Y35
E36 E36
K37 K37
H38 H38
D39 D39
V40 V40
R41 R41
N42 N42
H43 H43
R44 R44
T45 T45
F46 F46
L47 L47
K48 K48
R49 R49
Y52 Y52
E53 E53
D54 D54
L55 L55
H56 H56
L57 L57
E58 E58
D59 D59
L60 L60
F61 F61
T62 T62
G63 G63
M64 M64

M67
Q72
L76
G79
D80
Q81
Y82
T83
A84
S85
Q86
L87
G88
S89
K90
K91
E92
K93
D94
L95
A96
Y99
L97
I98
G99
A102
V103
S104
I105
I109
A116
K122
L123
K124
M125
M126
T127
L128
S129
R130
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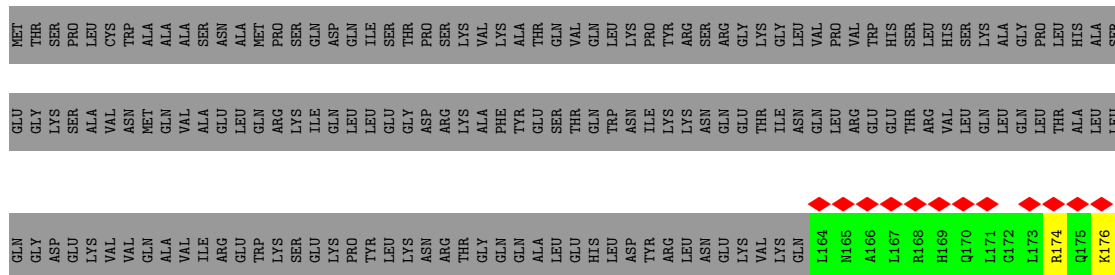
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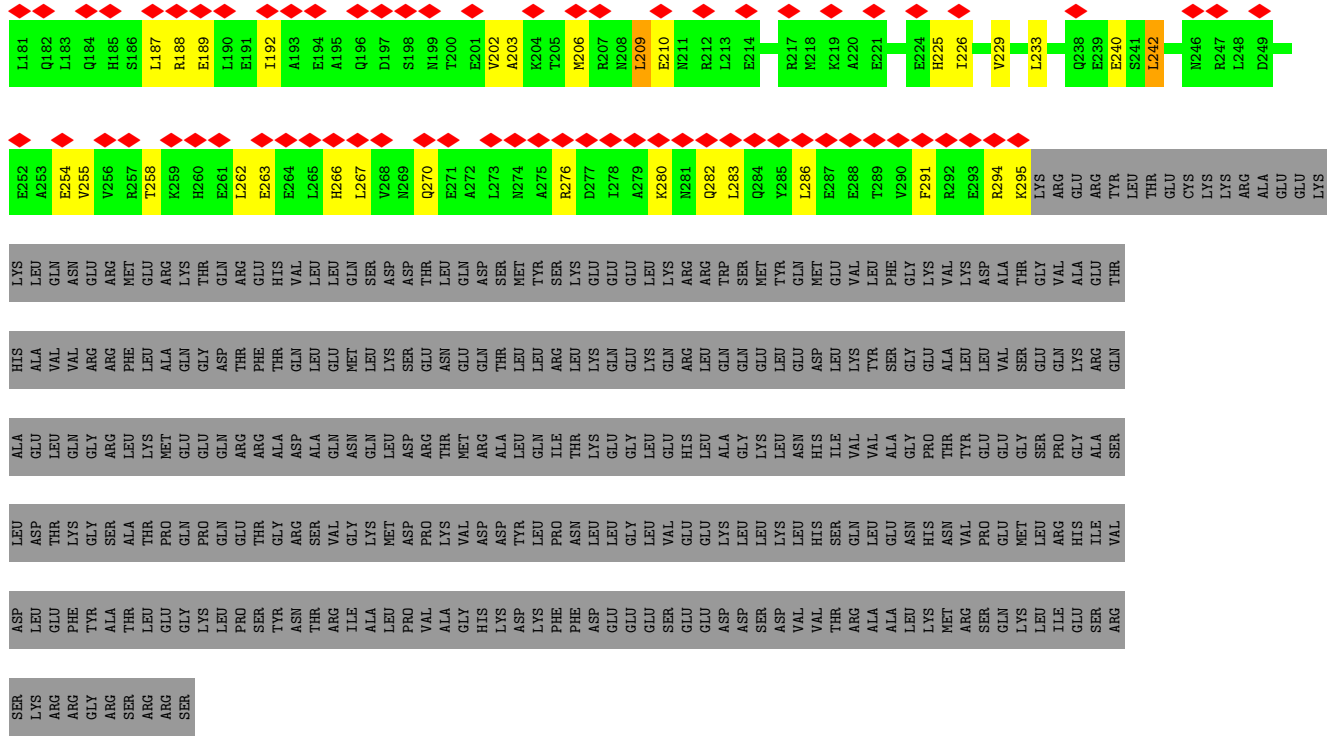


• Molecule 25: Nucleoside diphosphate kinase 7

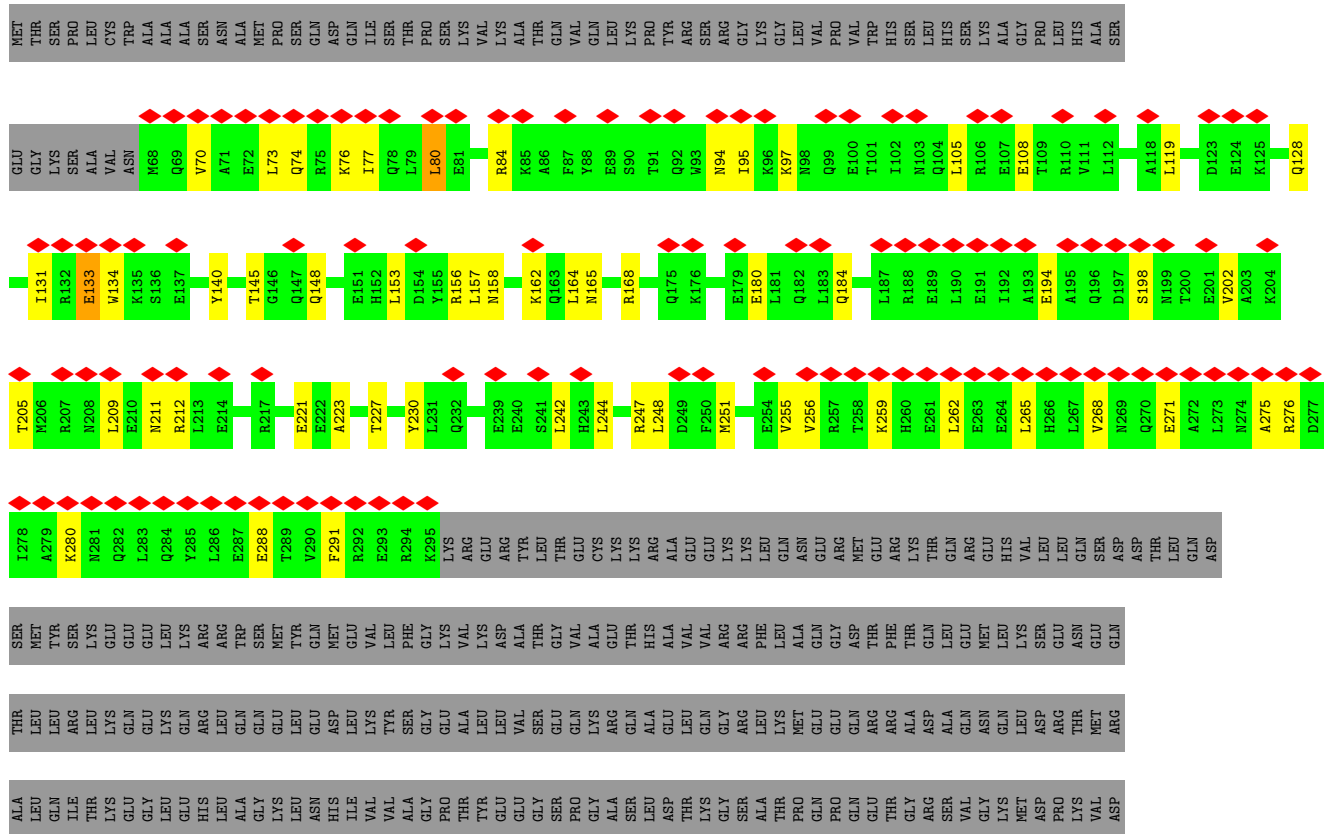


• Molecule 26: Outer dynein arm-docking complex subunit 3



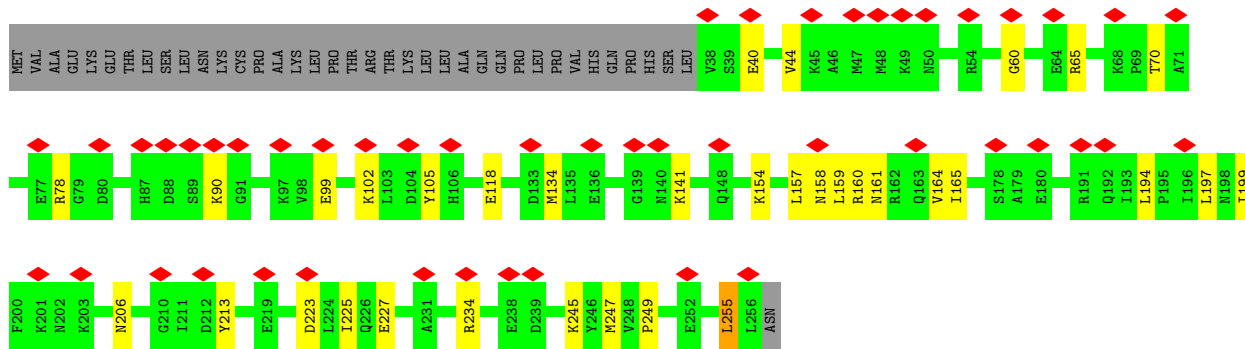
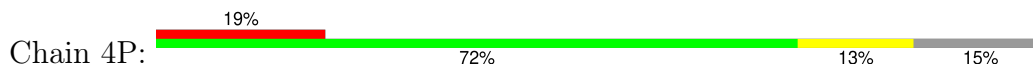


● Molecule 26: Outer dynein arm-docking complex subunit 3

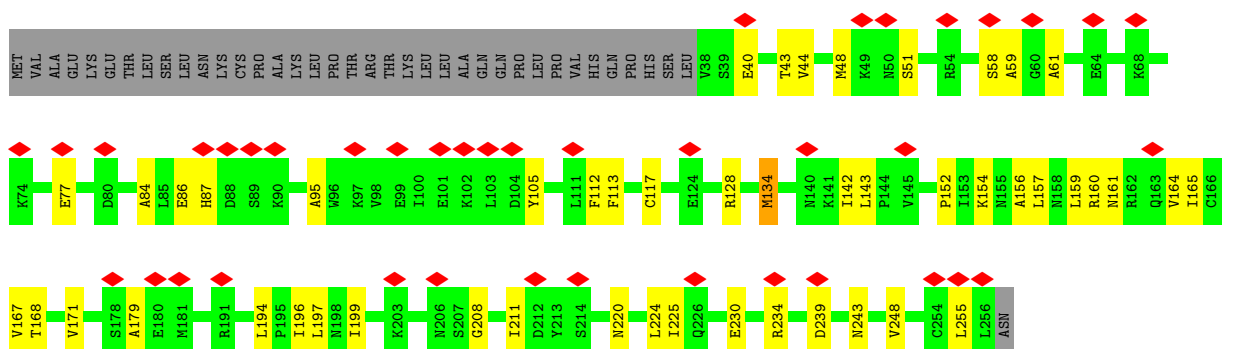




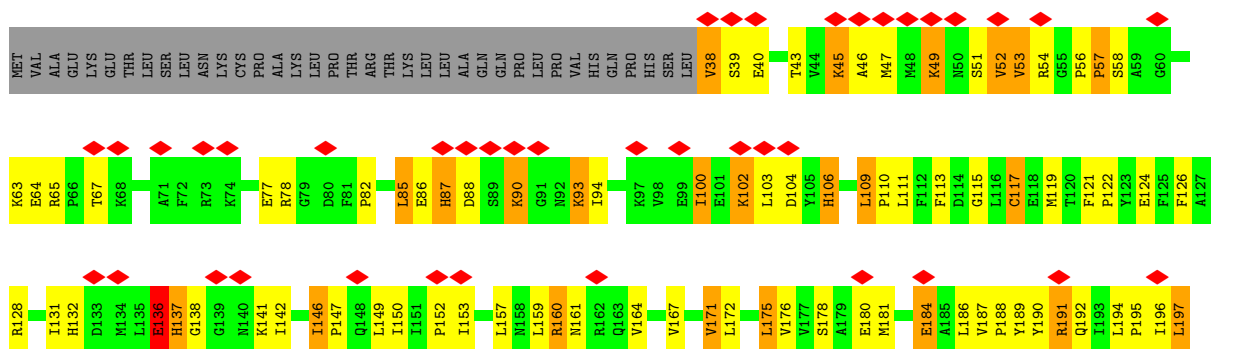
• Molecule 27: PACRG protein

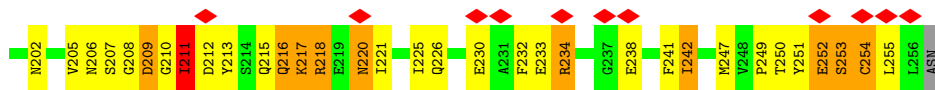


• Molecule 27: PACRG protein

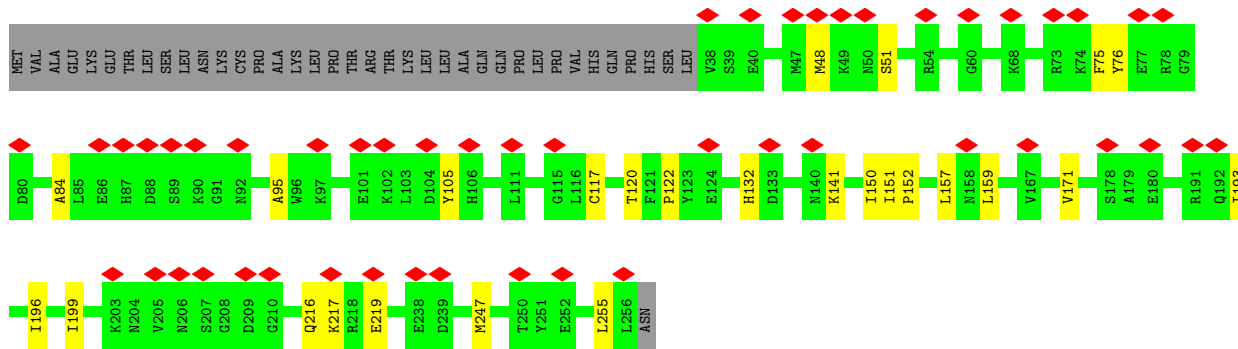
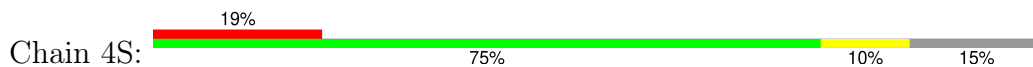


• Molecule 27: PACRG protein

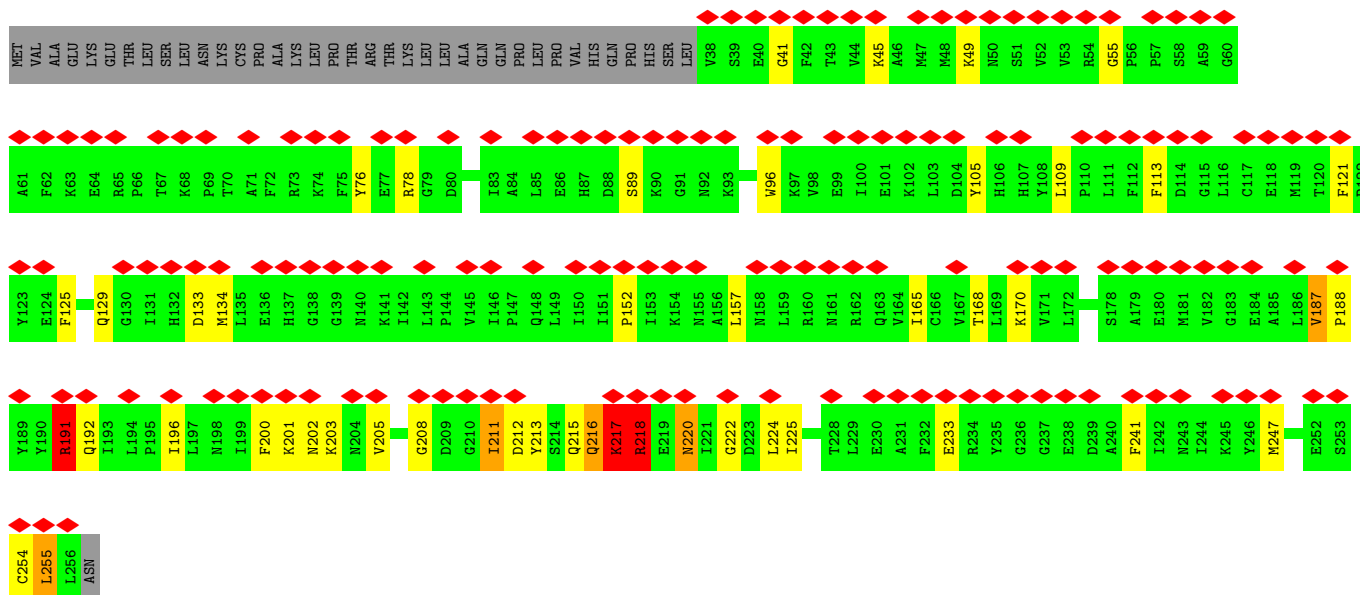




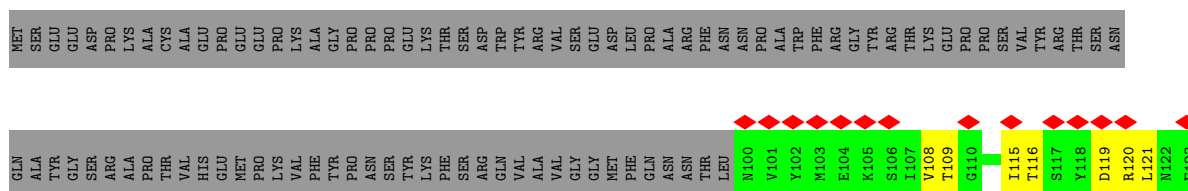
• Molecule 27: PACRG protein



• Molecule 27: PACRG protein

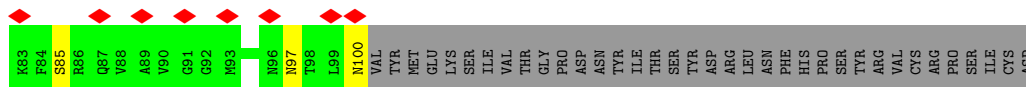
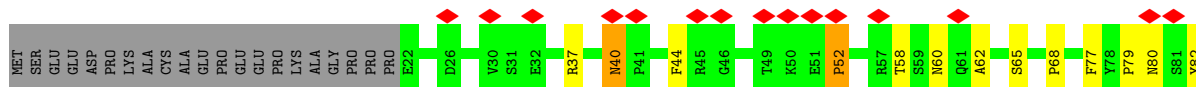


• Molecule 28: Pierce1

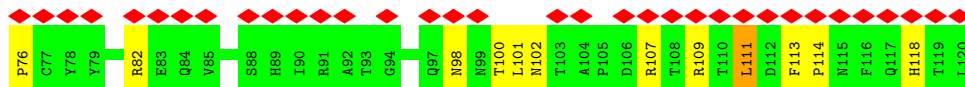
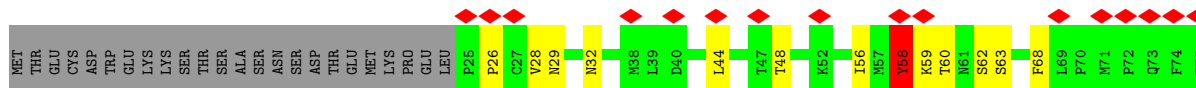
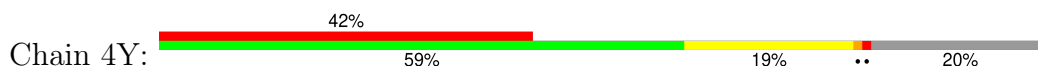




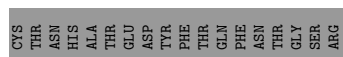
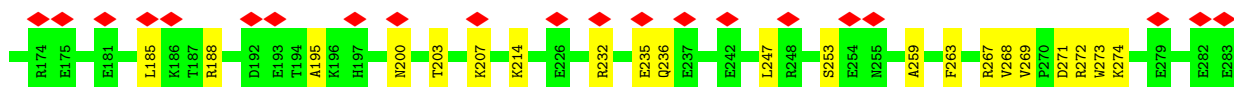
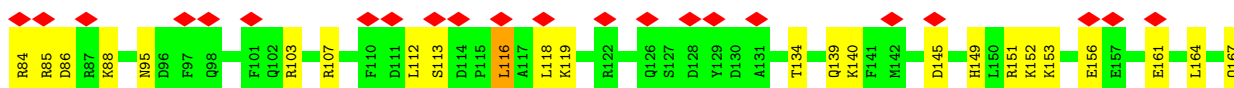
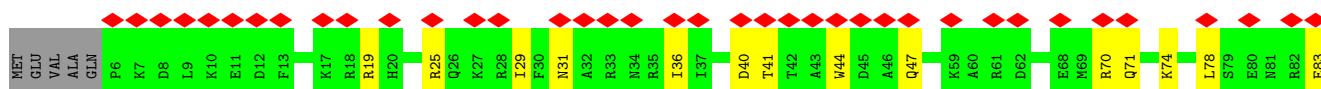
• Molecule 28: Pierce1



• Molecule 29: Pierce2



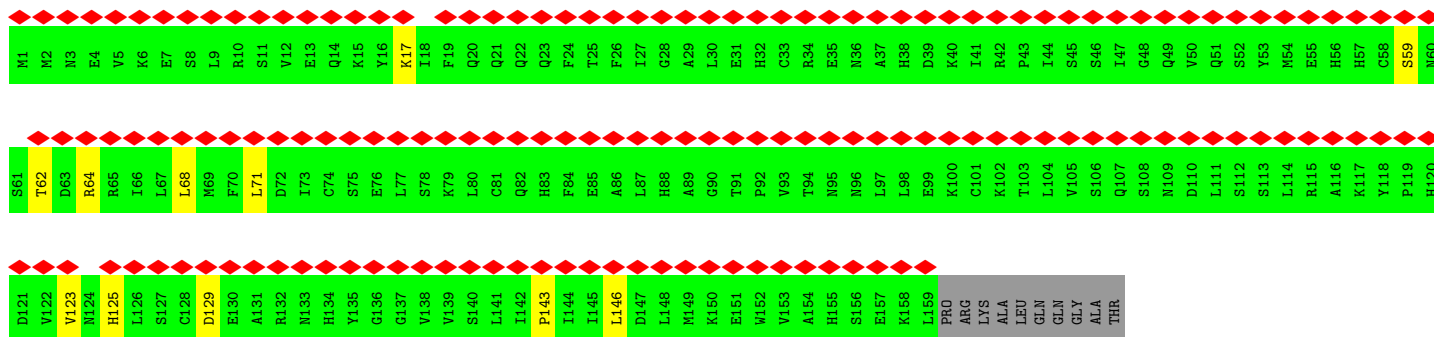
• Molecule 30: RIB43A-like with coiled-coils protein 2



• Molecule 30: RIB43A-like with coiled-coils protein 2



Chain 5F:



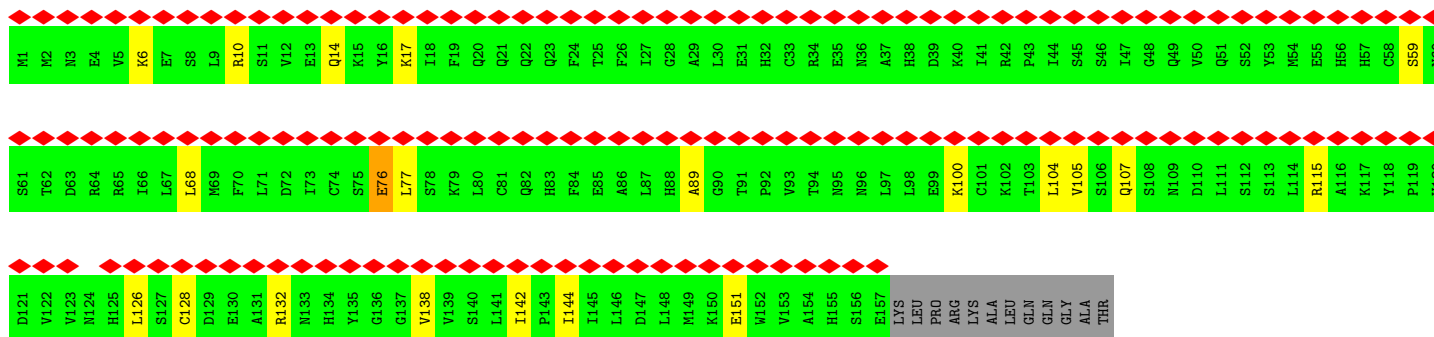
• Molecule 31: Sperm acrosome associated 9

Chain 5G:



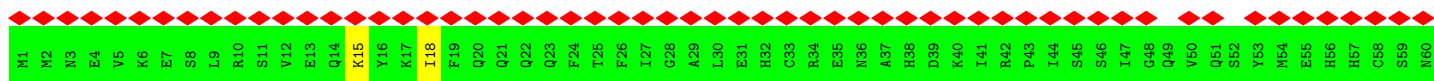
• Molecule 31: Sperm acrosome associated 9

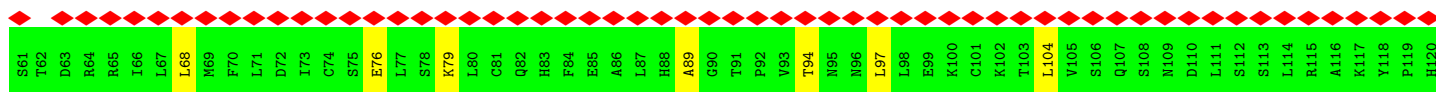
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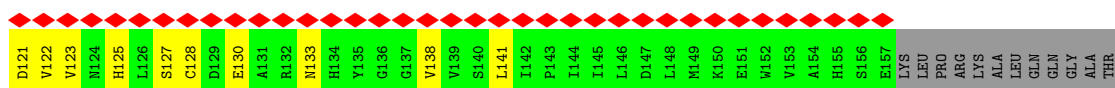
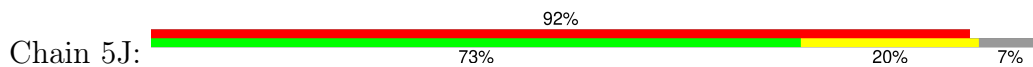
• Molecule 31: Sperm acrosome associated 9

Chain 5I:

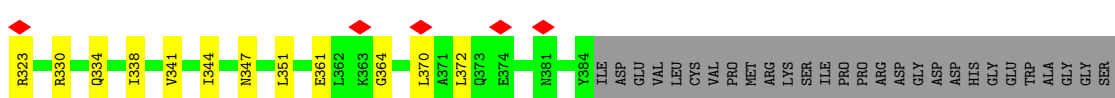
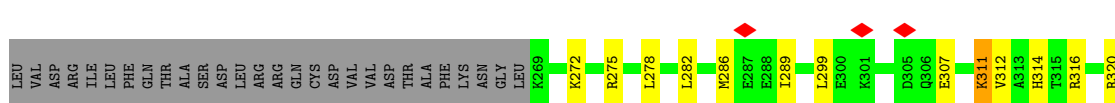
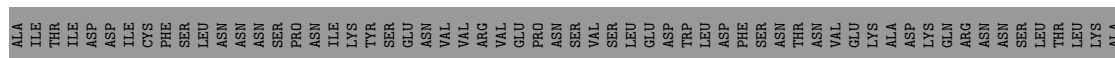
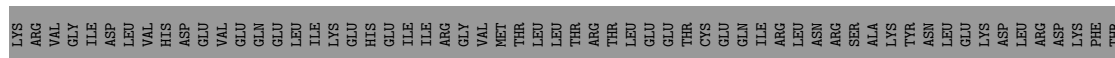
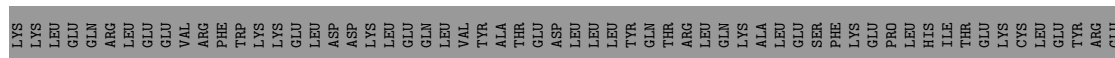




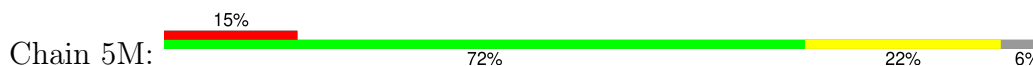
• Molecule 31: Sperm acrosome associated 9

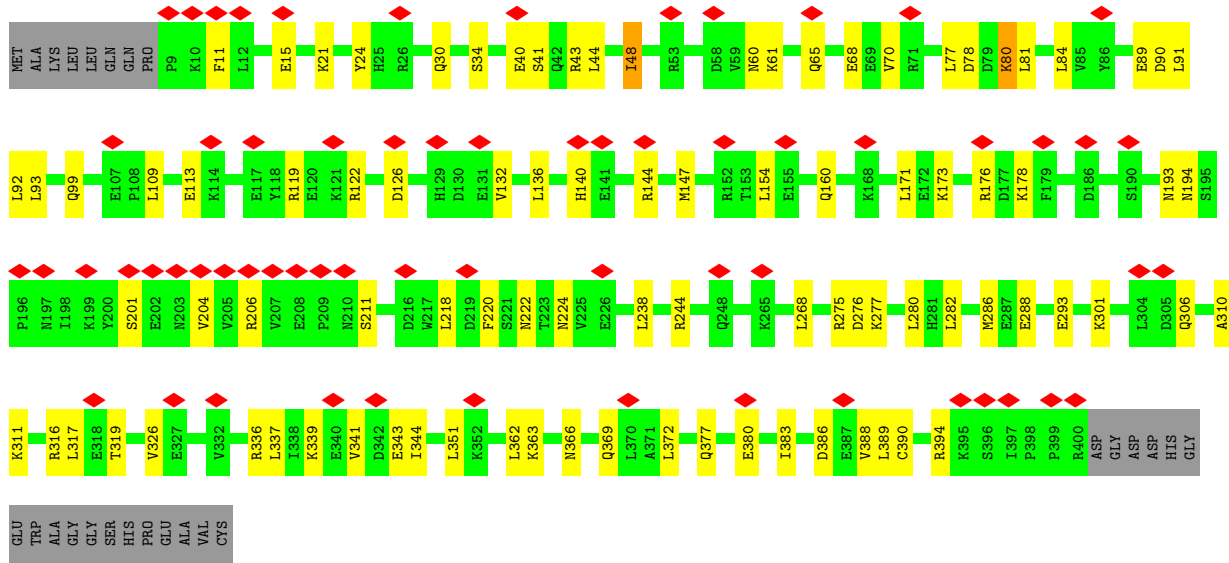


• Molecule 32: Tektin-1

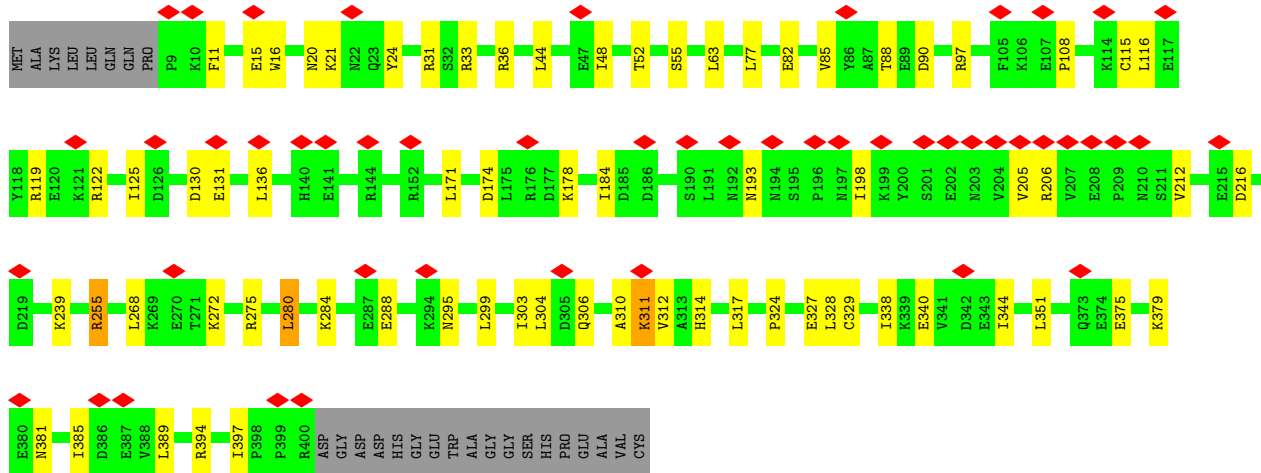
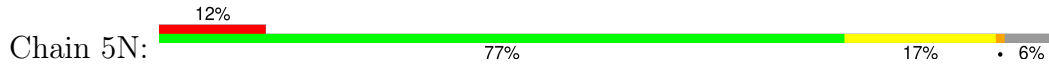


• Molecule 32: Tektin-1

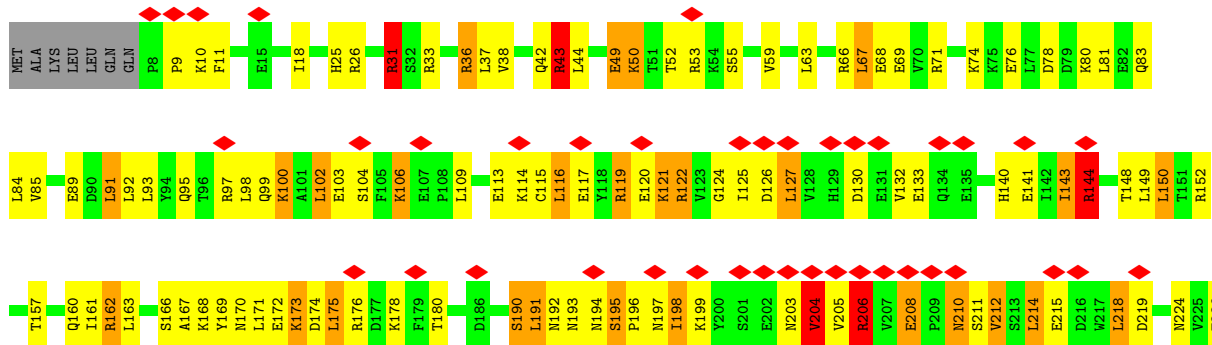
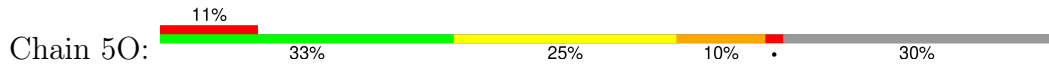


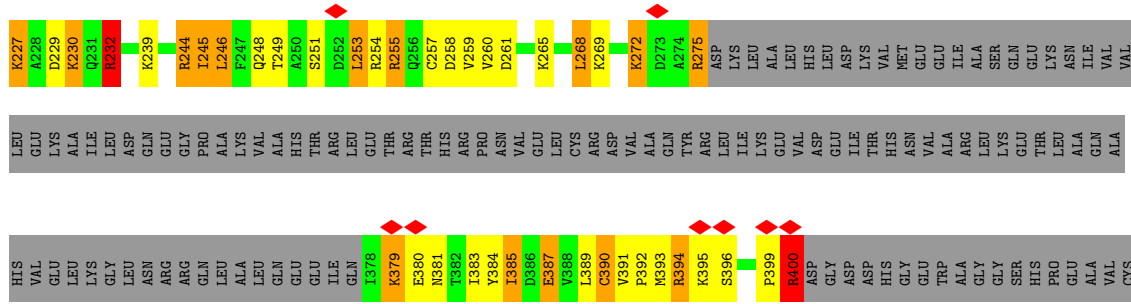


• Molecule 32: Tektin-1

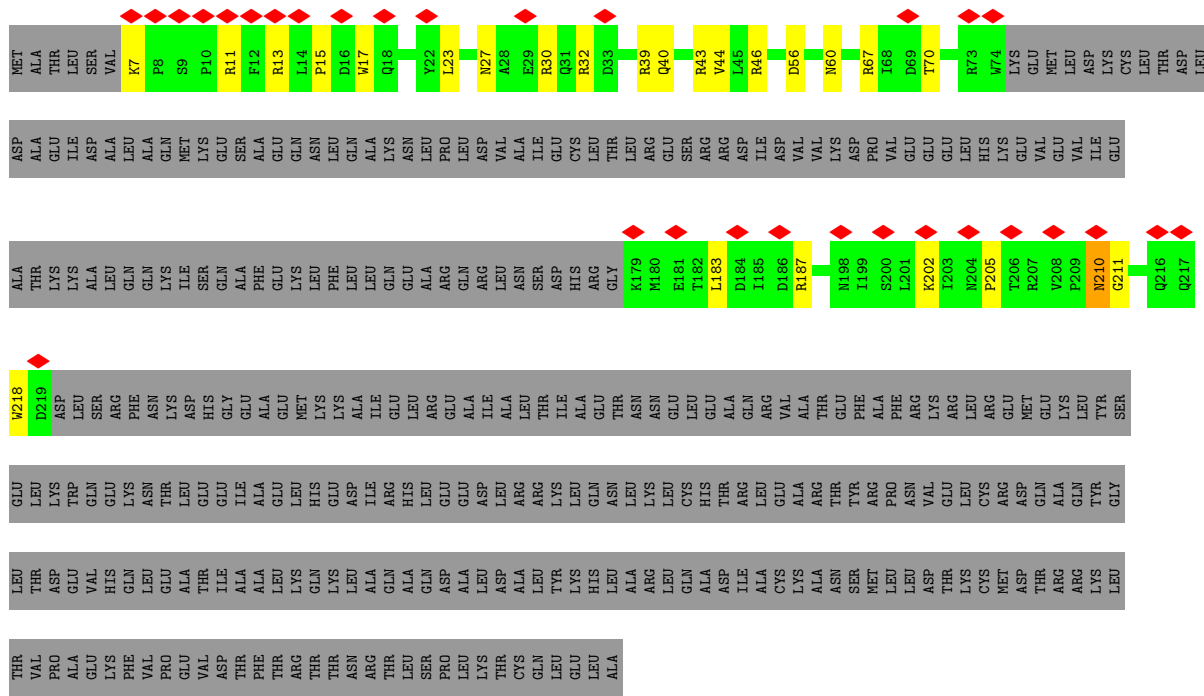


• Molecule 32: Tektin-1

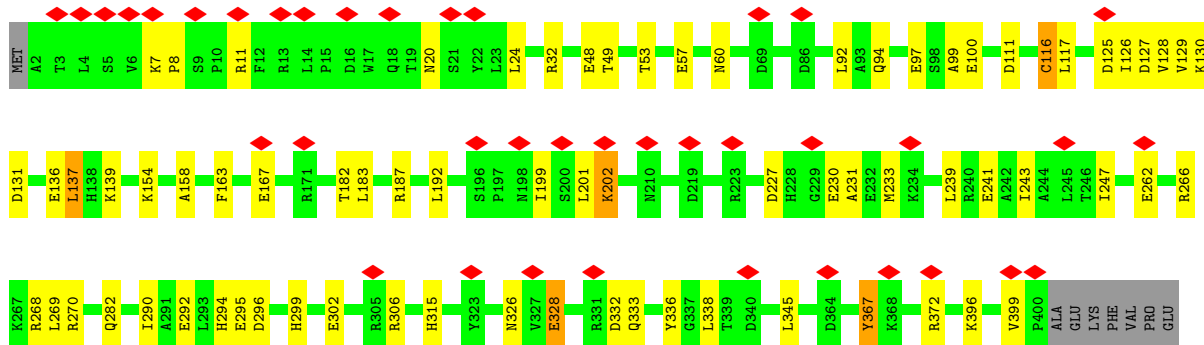
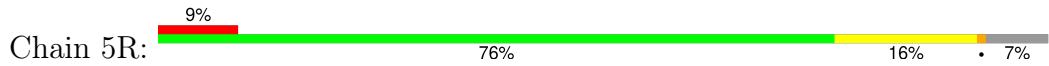




• Molecule 33: Tektin-2

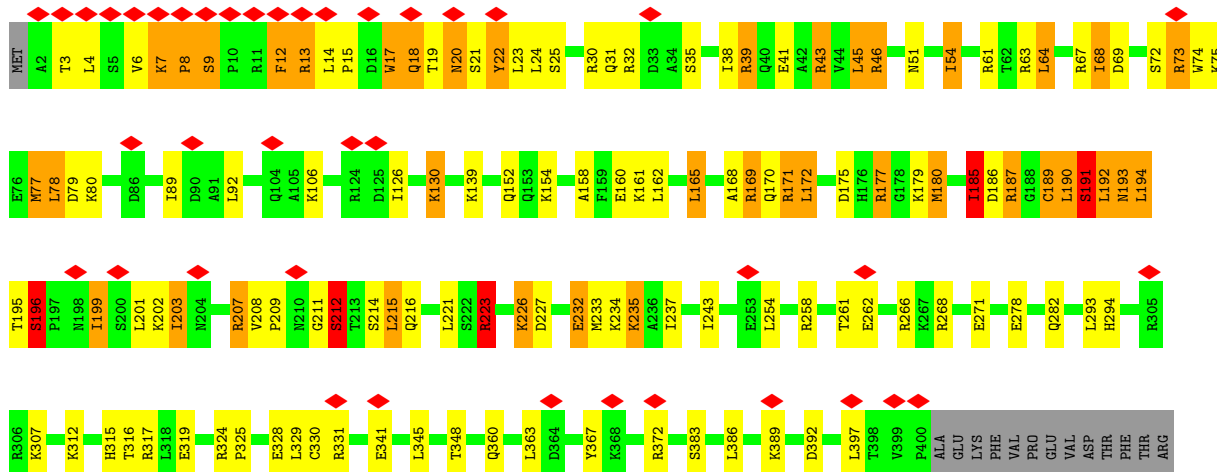


• Molecule 33: Tektin-2

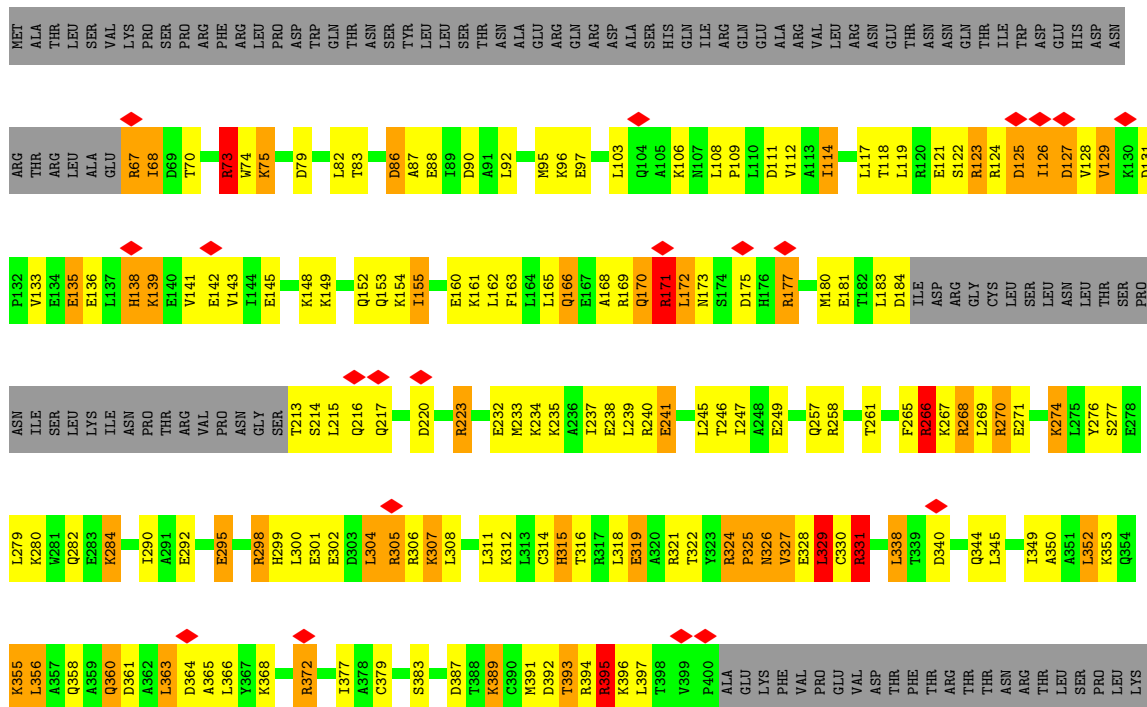
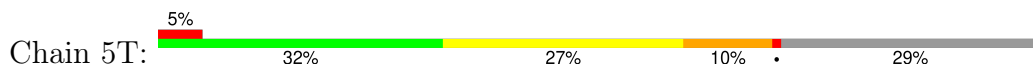


VAL
ASP
THR
PHE
THR
THR
THR
ARG
THR
THR
ASN
ARG
THR
THR
LEU
LEU
SER
PRO
LEU
LYS
LYS
THR
THR
CYS
GLN
LEU
LEU
LEU
ALA

• Molecule 33: Tektin-2



• Molecule 33: Tektin-2

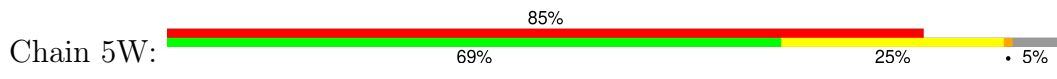


• Molecule 33: Tektin-2



MET	ALA	THR	LEU	SER	VAL	LYS	PRO	SER	PRO	ARG	PHE	ARG	LEU	LEU	PRO	PRO	TRP	ASP	ASP	GLN	THR	THR	ASN	SER	TYR	LEU	LEU	LEU	LEU	THR	THR	ASN	ALA	ALA	GLU	ARG	GLN	ARG	ARG	ASP	ALA	ALA	HIS	GLN	ILE	ARG	GLN	GLN	GLU	GLU	GLU	ALA	VAL	VAL	LEU	LEU	ARG	ARG	ASN	GLU	THR	THR	ASN	ASP	HIS	ASP	ASN
ARG	THR	ARG	LEU	ALA	GLU	ARG	ILE	ASP	THR	THR	SER	R73	W74	R75	K76	E76	M77	L78	D79	K80	C81	L82	T83	D84	L85	D86	A87	E88	I89	D90	A91	L92	A93	Q94	M95	K96	E97	S98	A99	E100	Q101	M102	L103	Q104	A105	K106	M107	L108	P109	L110	D111	L112	A113	I114	C115	L117	T118	L119	R120								
E121	S122	R123	R124	L245	D126	D127	V128	V129	K130	D131	P132	V133	E134	E135	E136	L137	H138	K139	E140	V141	E142	V143	I144	E145	A146	T147	K148	A149	A150	L151	Q152	Q153	K154	L155	S156	A157	A158	F159	E160	K161	L162	F163	L164	L165	Q166	E167	A168	R169	Q170	A171	L172	L173	M174	S174	D175	H176	R177	G178	K179	M180							
GLU	THR	LEU	ASP	ILE	ASP	ARG	GLY	CYS	LEU	SER	LEU	ASN	LEU	THR	SER	PRO	ASN	ILE	LYS	LEU	ILE	PRO	THR	ARG	VAL	PRO	GLY	SER	THR	SER	LEU	GLN	Q217	W218	D219	D220	L221	S222	R223	F224	N225	K226	D227	H228	G229	E230	A231	E232	N233	K234	K235	A236	I237	E238	L239	R240											
E241	A242	T243	A244	L245	T246	A247	E248	E249	N251	N252	E253	L254	E255	A256	Q257	R258	V259	A260	T261	E262	F263	A264	F265	R266	K267	R268	L269	R270	E271	M272	L273	K274	L275	Y276	S277	E278	L279	K280	W281	Q282	E283	K284	N285	T286	L287	E288	E289	I290	A291	E292	L293	H294	E295	D296	R298	H299	L300										
E301	E302	D303	L304	R305	R306	K307	L308	G309	N310	L311	K312	L313	E314	H315	T316	R317	L318	E319	A320	R321	T322	Y323	R324	P325	N326	V327	E328	L329	C330	R331	D332	K333	A334	Q335	Y336	G337	L338	T339	D340	E341	K403	V342	H343	L345	E346	A347	D409	T410	F411	A350	K353	Q354	K355	L356	A357	Q358	A359	D361									
A362	L363	D364	A365	L366	Y367	K368	H369	L370	A371	R372	L373	Q374	A375	D376	I377	A378	C379	K380	A381	N382	S383	M384	L385	L386	D387	T388	K389	C390	M391	D392	T393	R394	R395	H396	K397	T398	V399	P400	A401	E402	K403	F404	V405	P406	E407	V408	T409	T410	F411	T412	R413	T414	T415	N416	ARG	THR	LEU	SER	PRO								
LEU	LYS	THR	GLN	LEU	GLU	LEU	ALA																																																												

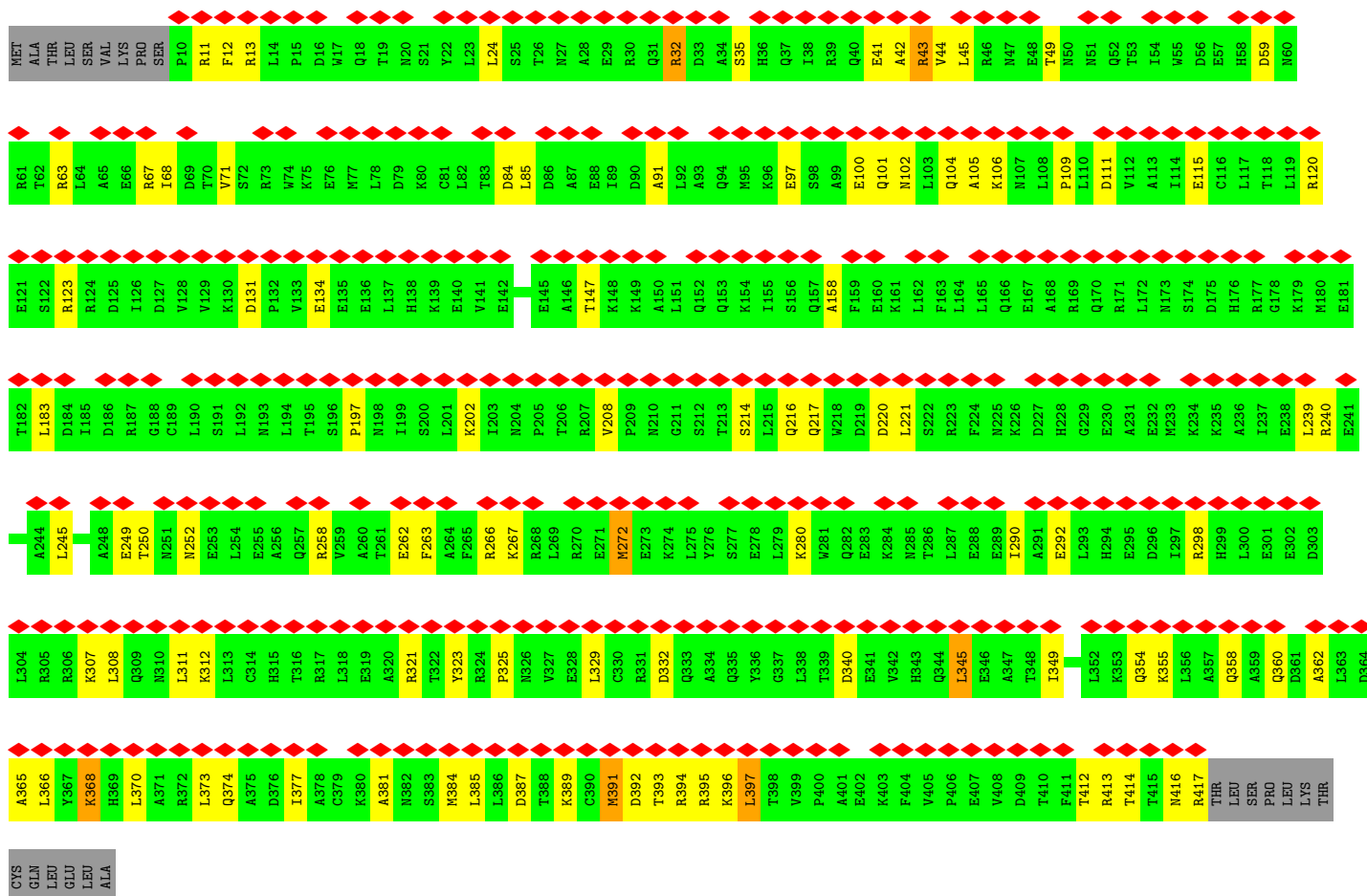
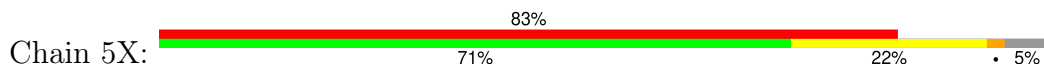
• Molecule 33: Tektin-2



MET	ALA	THR	LEU	SER	VAL	LYS	PRO	SER	P10	R11	F12	R13	L14	P15	D16	W17	Q18	T19	N20	S21	Y22	L23	L24	S25	T26	N27	A28	E29	R30	Q31	R32	D33	A34	S35	S36	E37	S38	Q37	I38	R39	Q40	E41	A42	R43	V44	L45	R46	M47	T49											
R61	T62	R63	L64	A65	E66	R67	I68	D69	R73	W74	K75	E76	M77	L78	D79	K80	C81	L82	T83	D84	L85	D86	A87	E88	I89	D90	A91	L92	A93	Q94	M95	K96	E97	S98	A99	E100	Q101	N102	L103	Q104	A105	K106	N107	L108	P109	L110	D111	V112	A113	I114	E115	C116	L117	T118	L119	R120	H121	S122		
R123	R124	D125	I126	A128	E128	V129	K130	D131	P132	V133	E134	E135	E136	L137	H138	K139	E140	V141	E142	V143	I144	E145	A146	K148	A149	A150	L151	Q152	Q153	K154	I155	K156	Q157	A158	F159	E160	K161	L162	F163	L164	L165	Q166	E167	A168	R169	Q170	R171	L172	N173	S174	D175	H176	R177	G178	K179	M180	E181	T182		
L183	D184	I185	D186	R187	G188	C189	L190	S191	L192	H193	L194	T195	S196	P197	H198	I199	S200	L201	K202	I203	N204	P205	T206	R207	V208	P209	N210	L211	G211	S212	T213	S214	L215	Q216	Q217	W218	D219	D220	L221	S222	R223	F224	N225	K226	D227	H228	G229	E230	A231	E232	M233	K234	K235	A236	I237	E238	L239	R240	E241	A242

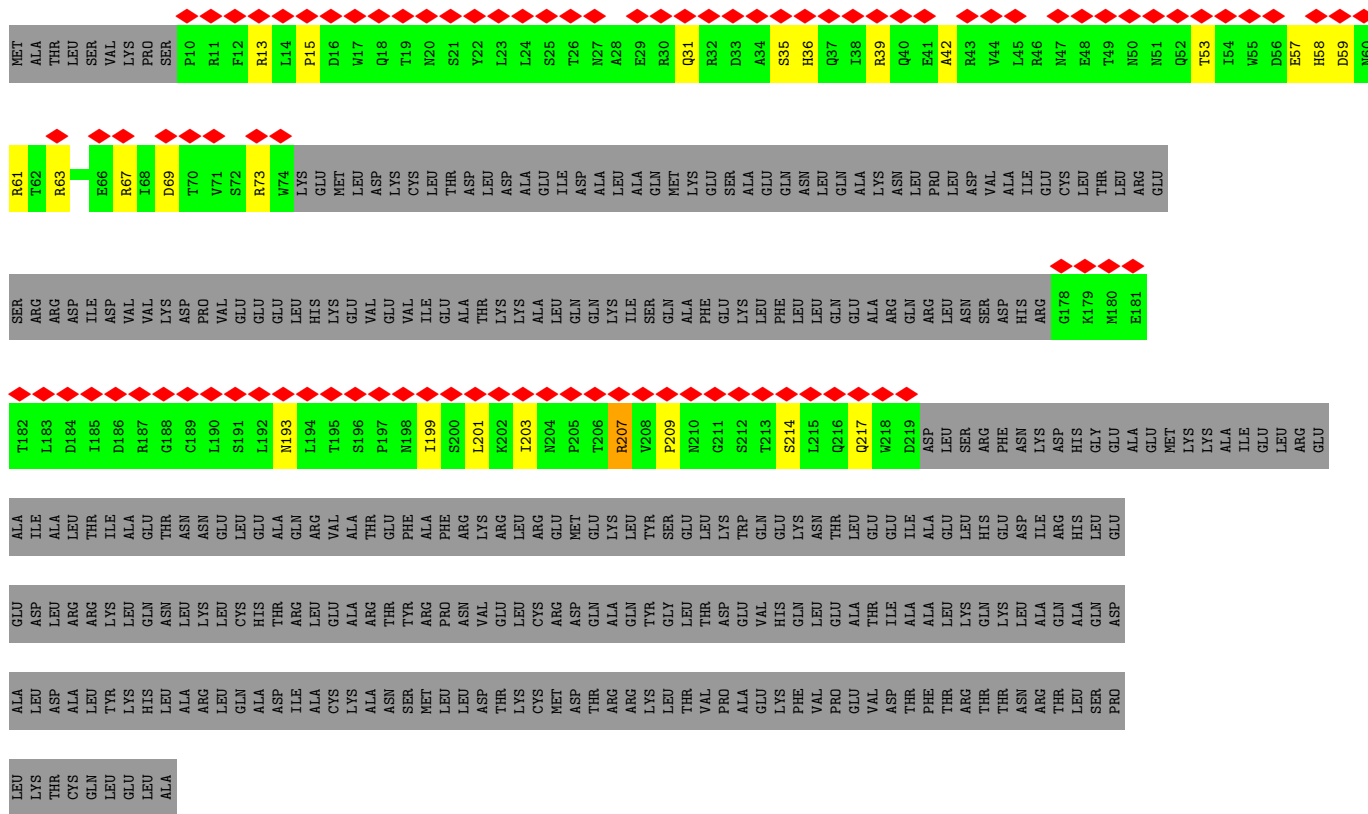


• Molecule 33: Tektin-2

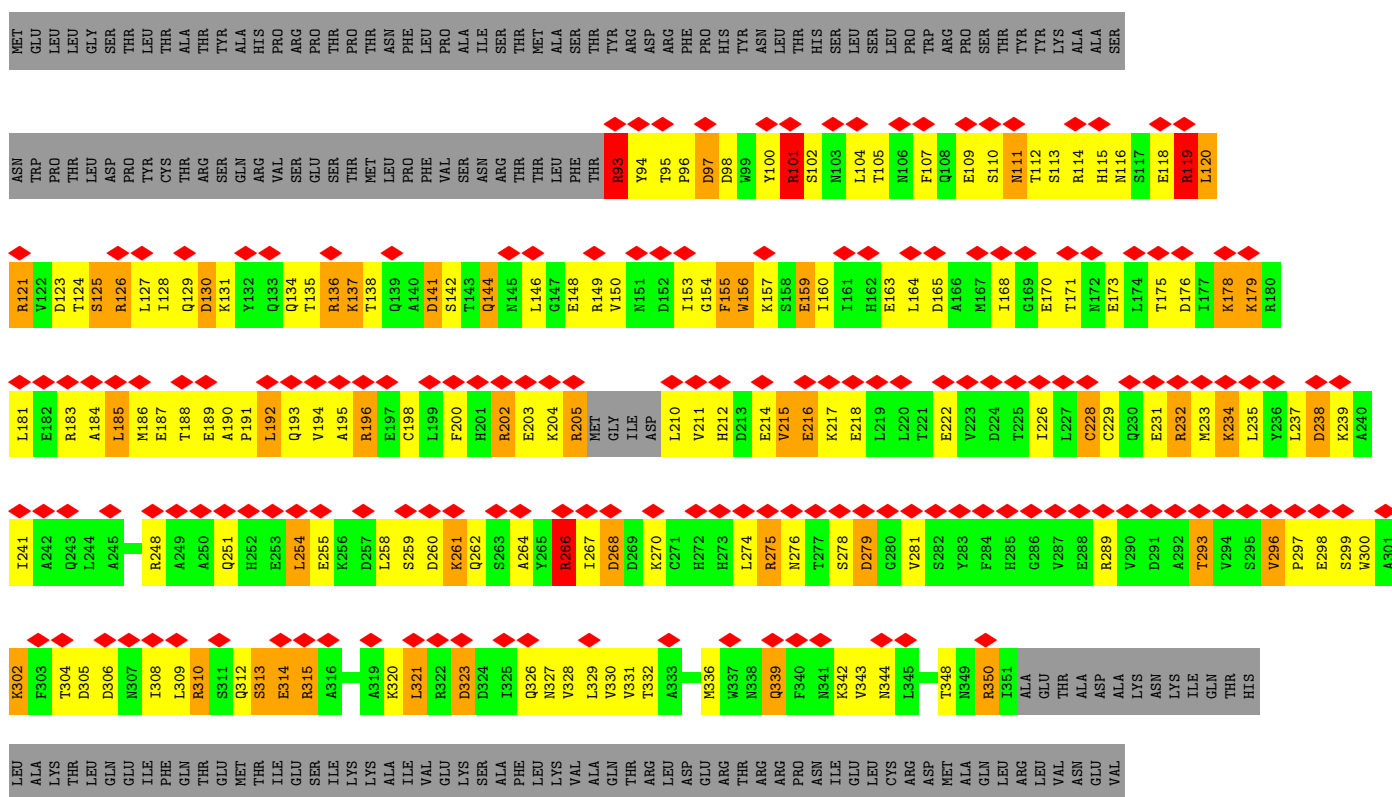


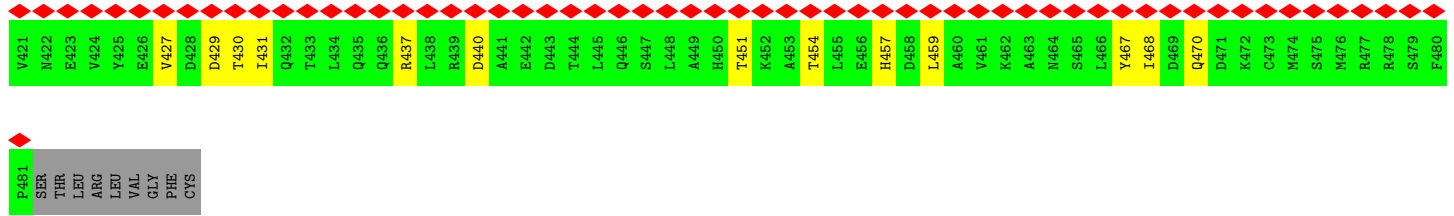
• Molecule 33: Tektin-2



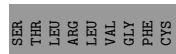
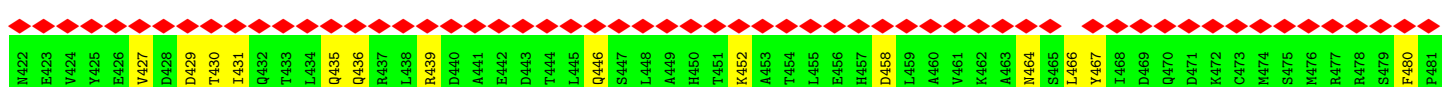
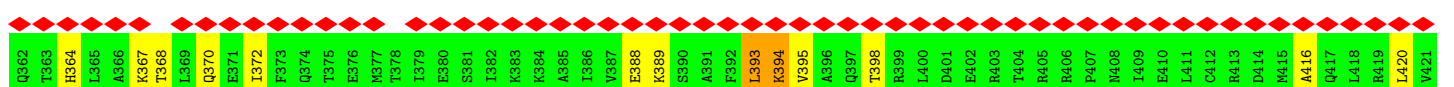
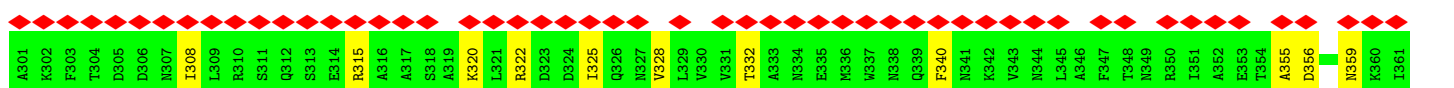
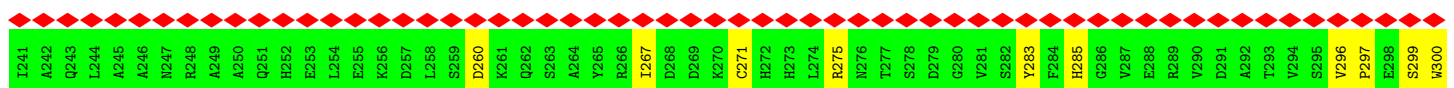
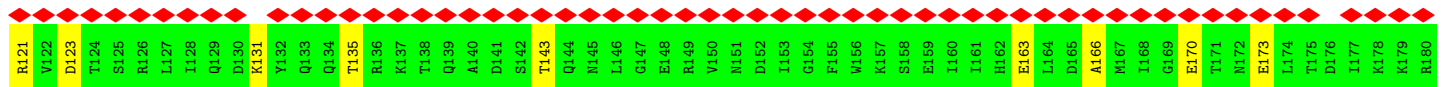
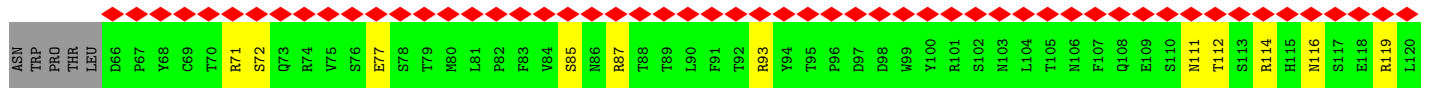
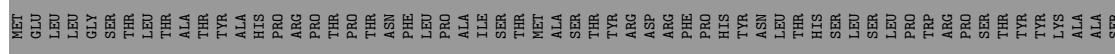
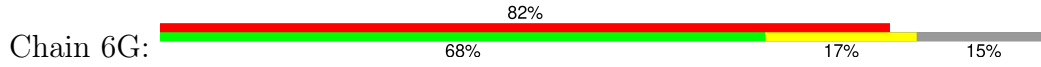


• Molecule 34: Tektin-3

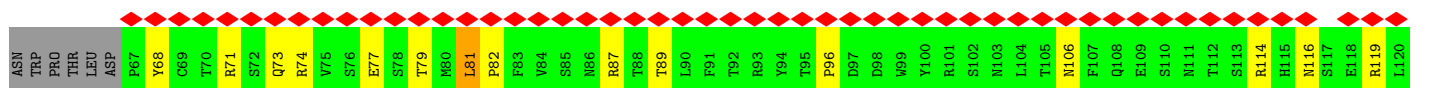
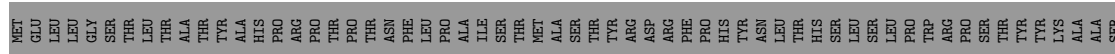
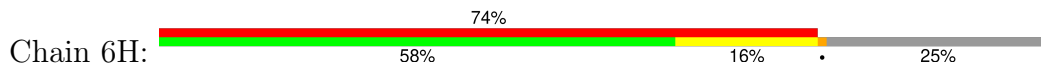


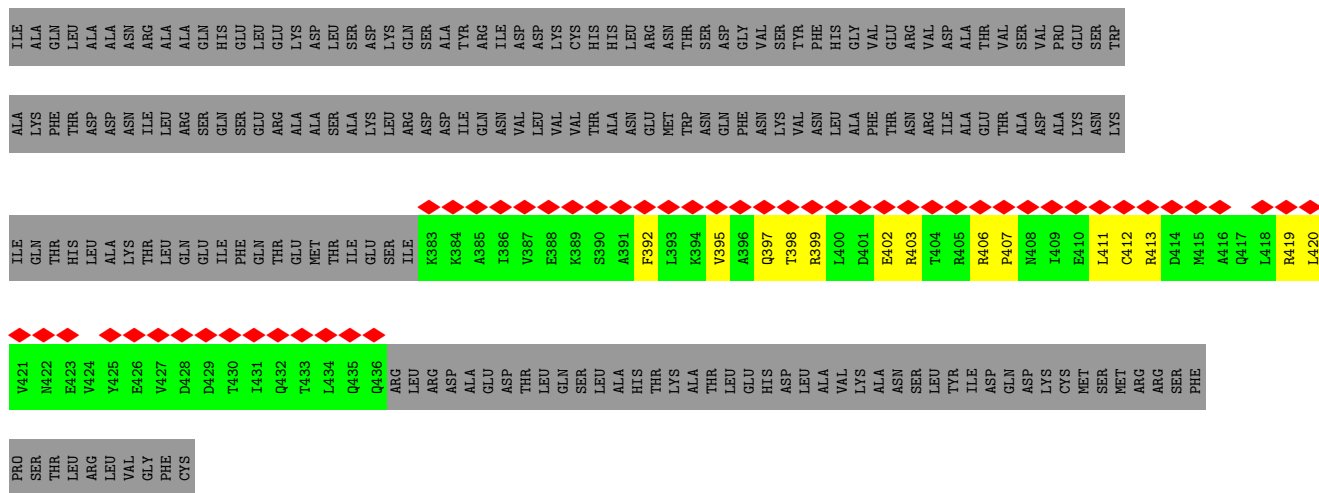


• Molecule 34: Tektin-3

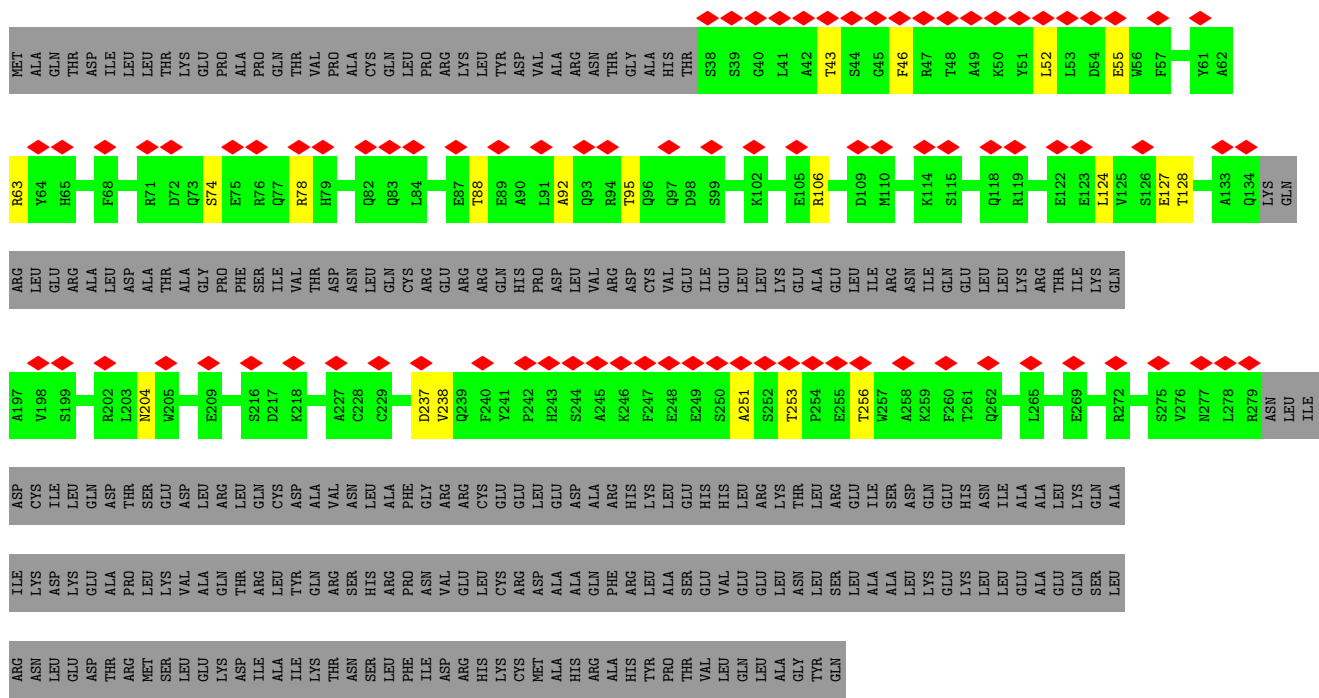


• Molecule 34: Tektin-3

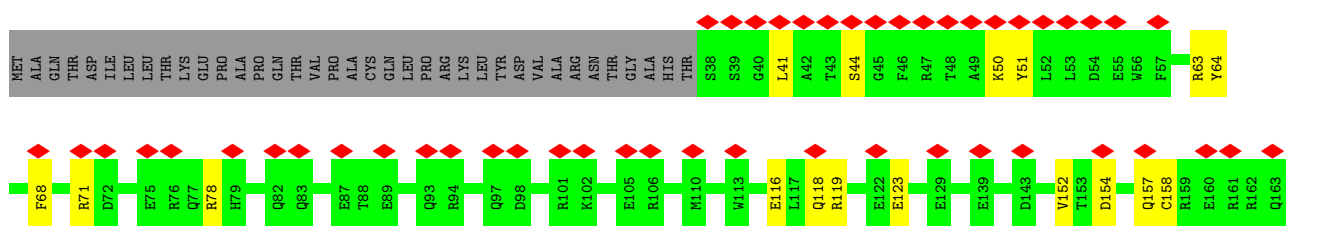
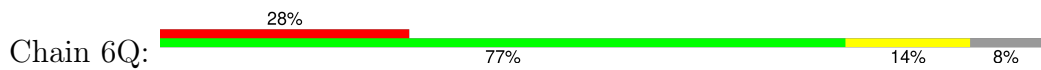


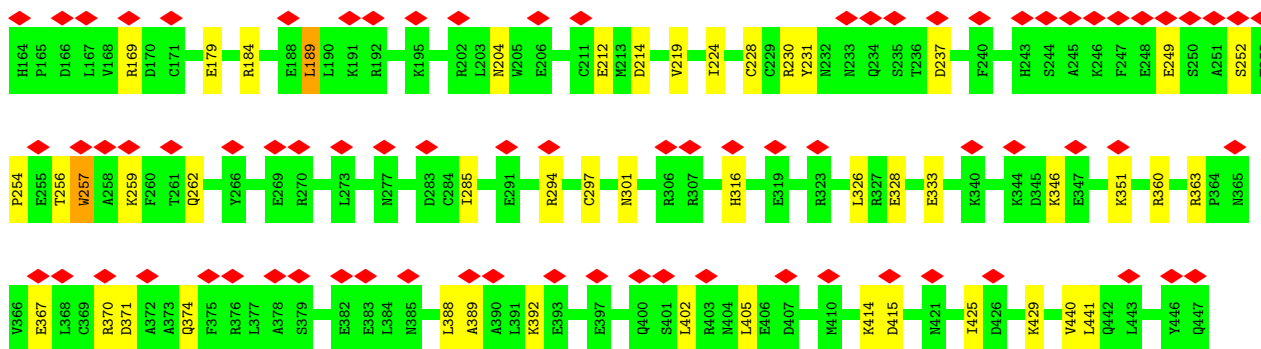


• Molecule 35: Tektin-4

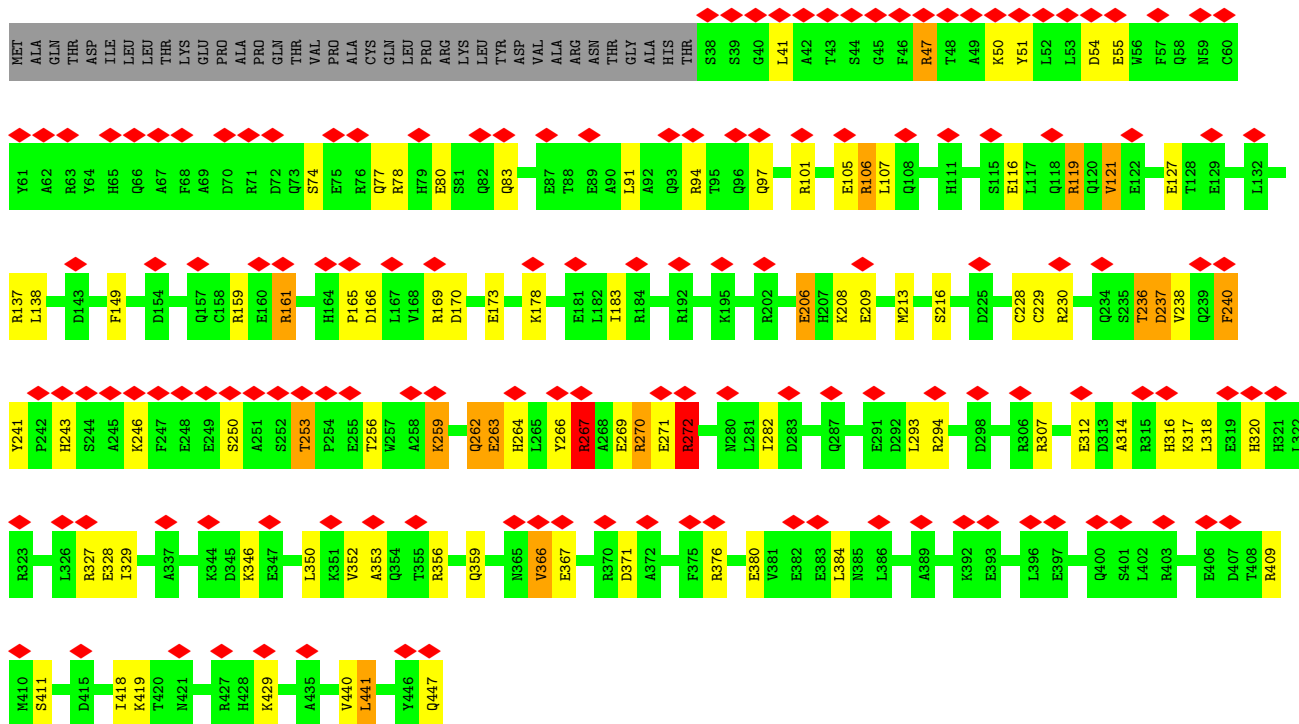


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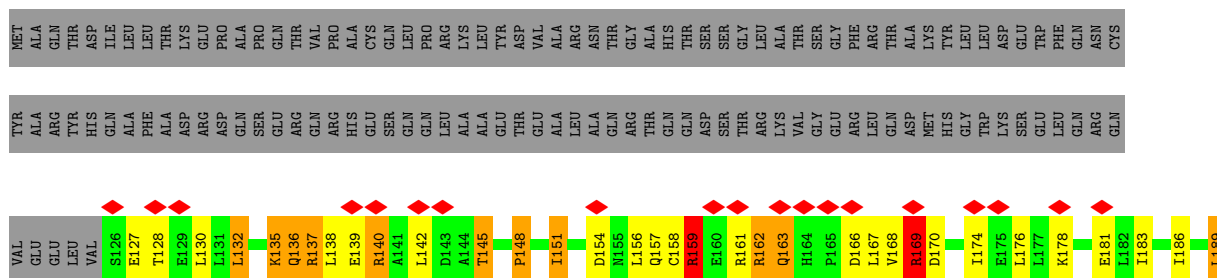
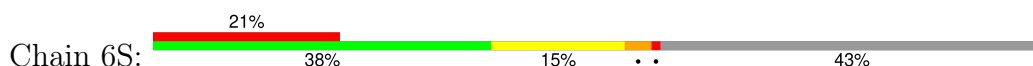


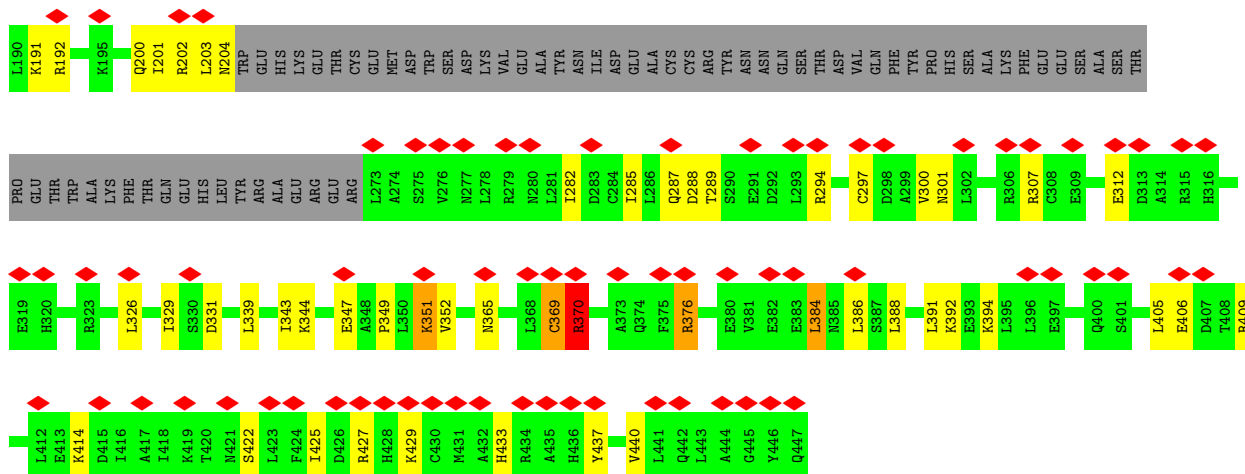


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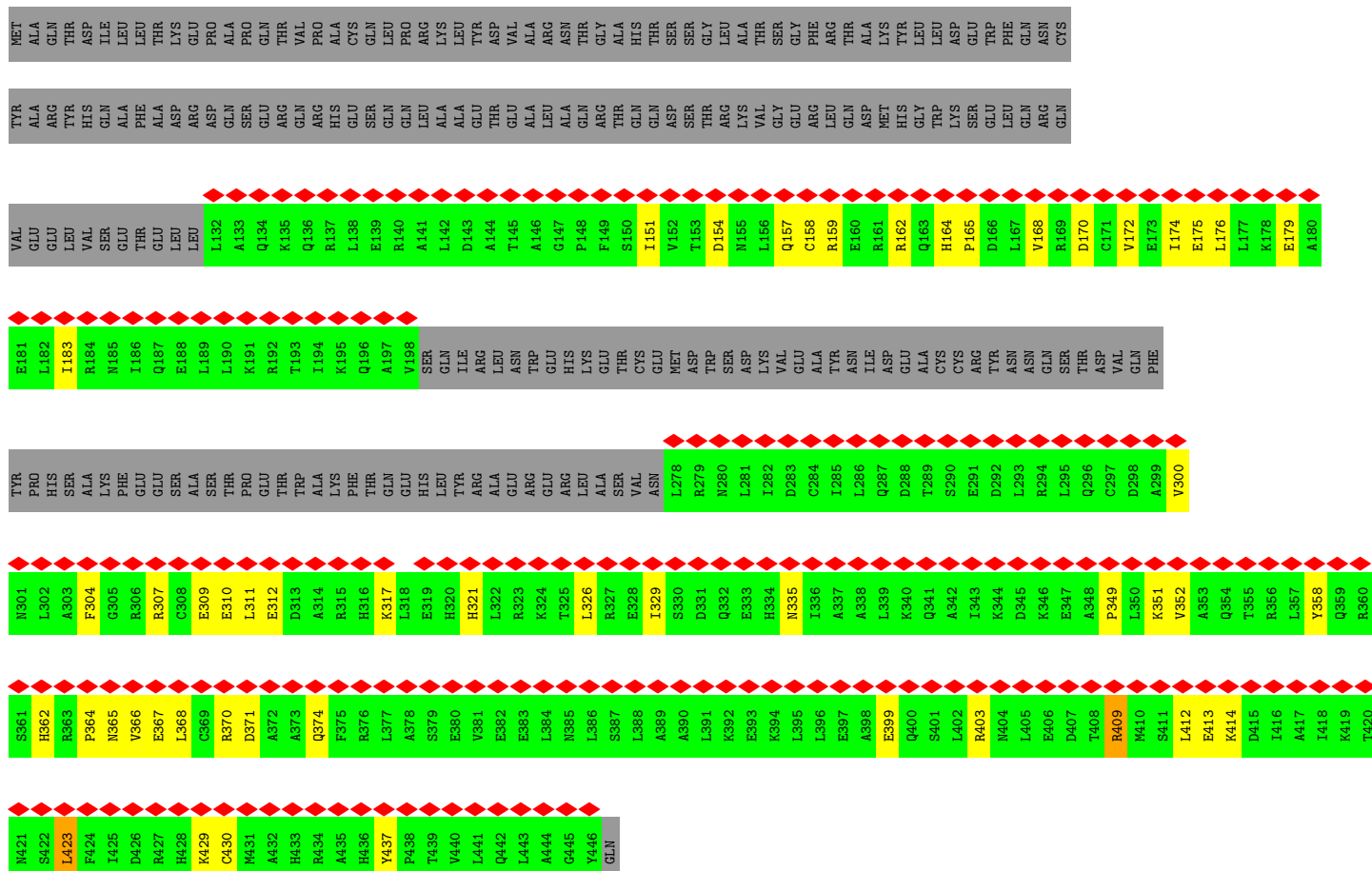
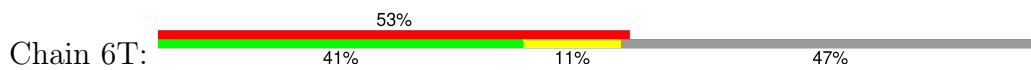


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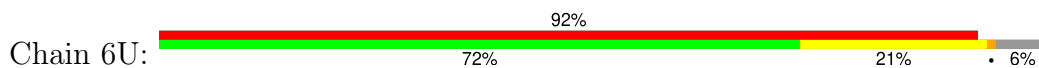




• Molecule 35: Tektin-4



• Molecule 35: Tektin-4

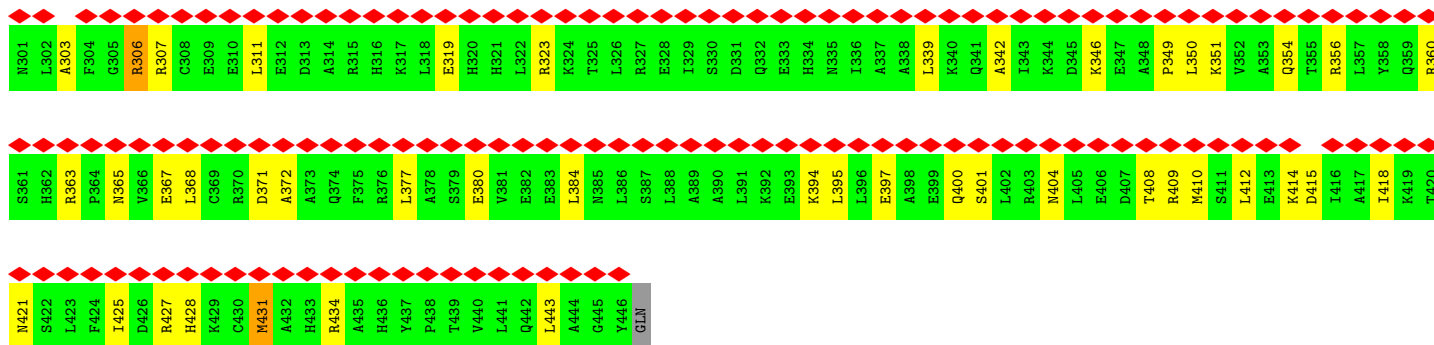


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Y61	A62	R63	Y64	H65	Q66	A67	F68	A69	D70	R71	D72	Q73	S74	E75	R76	Q77	R78	H79	E80	S81	L82	Q83	D84	L85	A86	E87	T88	E89	A90	L91	A92	Q93	D94	N95	Q96	Q97	D98	S99	T100	R101	K102	V103	G104	E105	L106	L107	Q108	D109	M110	H111	G112	W113	K114	S115	E116	L117	Q118	R119	D120
V121	E122	E123	L124	S125	S126	E127	T128	E129	L130	L131	L132	A133	Q134	K135	Q136	L137	L138	E139	R140	A141	D142	D143	L144	T145	A146	G147	F148	F149	T150	I151	V152	T153	D154	N155	Q156	Q157	D158	S159	E160	R161	R162	Q163	G164	P165	D166	L167	V168	R169	D170	C171	W172	E173	I174	E175	L176	L177	K178	E179	A180
E181	L182	I183	R184	M185	I186	Q187	E188	L189	L190	K191	R192	T193	I194	K195	Q196	A197	V198	S199	Q200	I201	R202	L203	N204	A205	E206	H207	K208	E209	T210	C211	E212	H213	D214	W215	S216	D217	K218	V219	E220	A221	N222	N223	I224	D225	E226	A227	C228	C229	R230	Y231	N232	N233	I234	R235	L236	T237	D238	Q239	F240
Y241	P242	H243	S244	A245	K246	F247	E248	E249	S250	A251	S252	T253	P254	E255	T256	W257	A258	K259	F260	T261	Q262	E263	N264	L265	Y266	R267	A268	E269	R270	E271	R272	L273	A274	S275	V276	N277	L278	R279	N280	L281	D282	C283	G284	I285	L286	Q287	D288	T289	S290	E291	D292	L293	R294	L295	Q296	C297	D298	A299	V300
N301	L302	A303	F304	G305	R306	R307	C308	E309	E310	L311	E312	D313	A314	R315	H316	K317	L318	E319	H320	H321	L322	R323	K324	T325	L326	R327	E328	I329	S330	D331	Q332	E333	H334	N335	I336	A337	A338	L339	K340	Q341	A342	I343	K344	D345	K346	E347	A348	P349	L350	K351	V352	A353	Q354	T355	R356	L357	Y358	Q359	R360
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M421	S422	L423	F424	I425	D426	R427	H428	K429	C430	M431	A432	H433	R434	A435	H436	Y437	A438	T439	V440	L441	Q442	L443	A444	G445	Y446	GLN																																	

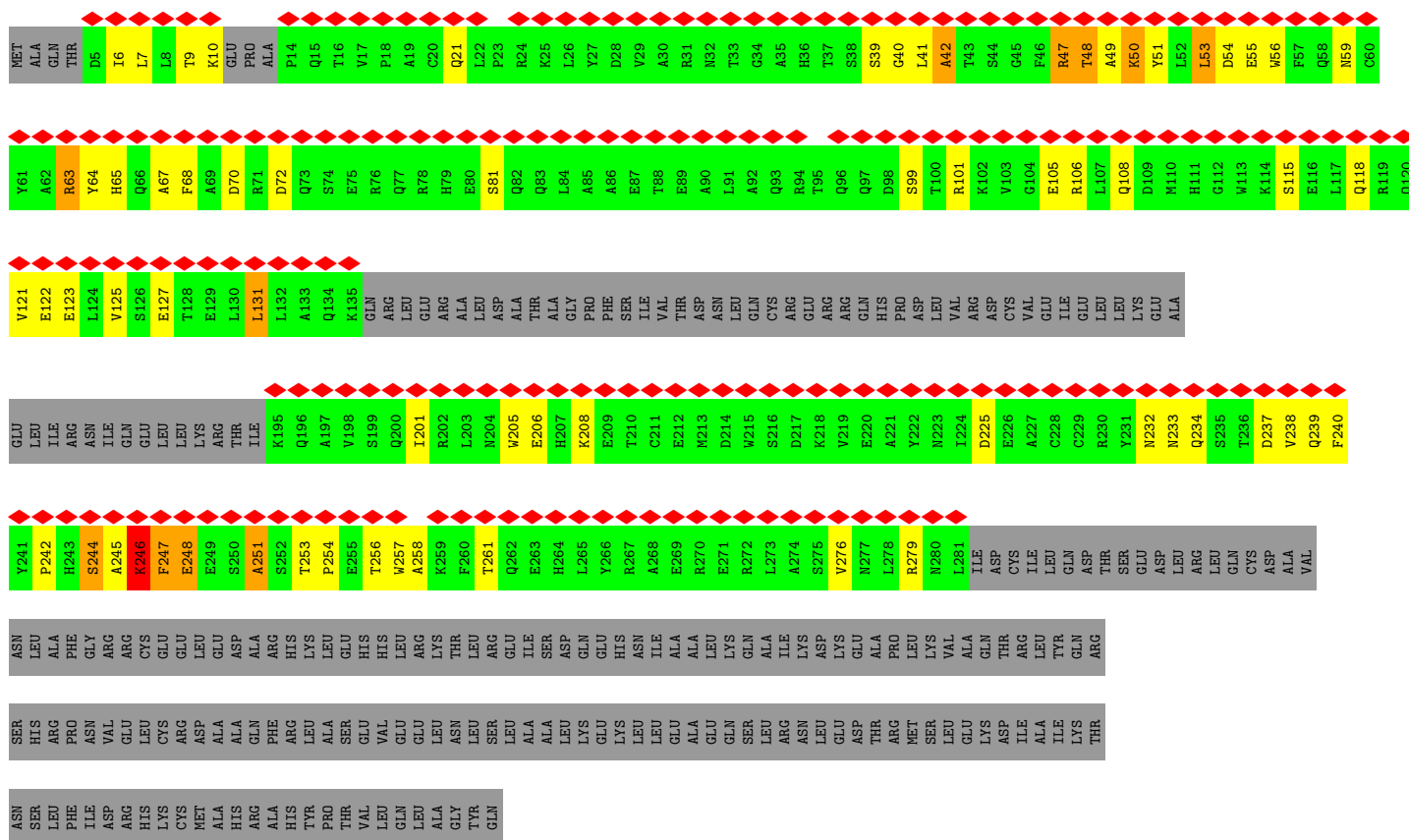
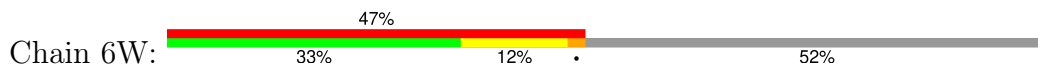
• Molecule 35: Tektin-4



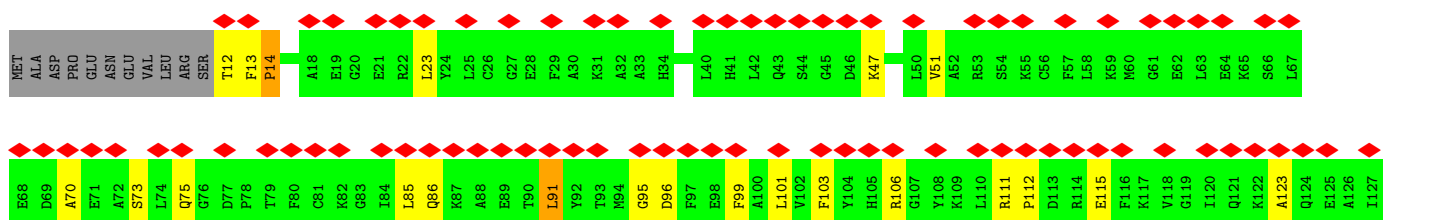
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Y61	A62	R63	Y64	H65	Q66	A67	F68	A69	D70	R71	D72	Q73	S74	E75	R76	Q77	R78	H79	E80	S81	L82	Q83	D84	L85	A86	E87	T88	E89	A90	L91	A92	Q93	D94	N95	Q96	Q97	D98	S99	T100	R101	K102	V103	G104	E105	L106	L107	Q108	D109	M110	H111	G112	W113	K114	S115	E116	L117	Q118	R119	D120
V121	E122	E123	L124	S125	S126	E127	T128	E129	L130	L131	L132	A133	Q134	K135	Q136	L137	L138	E139	R140	A141	D142	D143	L144	T145	A146	G147	F148	F149	T150	I151	V152	T153	D154	N155	Q156	Q157	D158	S159	E160	R161	R162	Q163	G164	P165	D166	L167	V168	R169	D170	C171	W172	E173	I174	E175	L176	L177	K178	E179	A180
E181	L182	I183	R184	M185	I186	Q187	E188	L189	L190	K191	R192	T193	I194	K195	Q196	A197	V198	S199	Q200	I201	R202	L203	N204	A205	E206	H207	K208	E209	T210	C211	E212	H213	D214	W215	S216	D217	K218	V219	E220	A221	N222	N223	I224	D225	E226	A227	C228	C229	R230	Y231	N232	N233	I234	R235	L236	T237	D238	Q239	F240
Y241	P242	H243	S244	A245	K246	F247	E248	E249	S250	A251	S252	T253	P254	E255	T256	W257	A258	K259	F260	T261	Q262	E263	N264	L265	Y266	R267	A268	E269	R270	E271	R272	L273	A274	S275	V276	N277	L278	R279	N280	L281	I282	D283	C284	I285	L286	Q287	D288	T289	S290	E291	D292	L293	R294	L295	Q296	C297	D298	A299	V300



• Molecule 35: Tektin-4

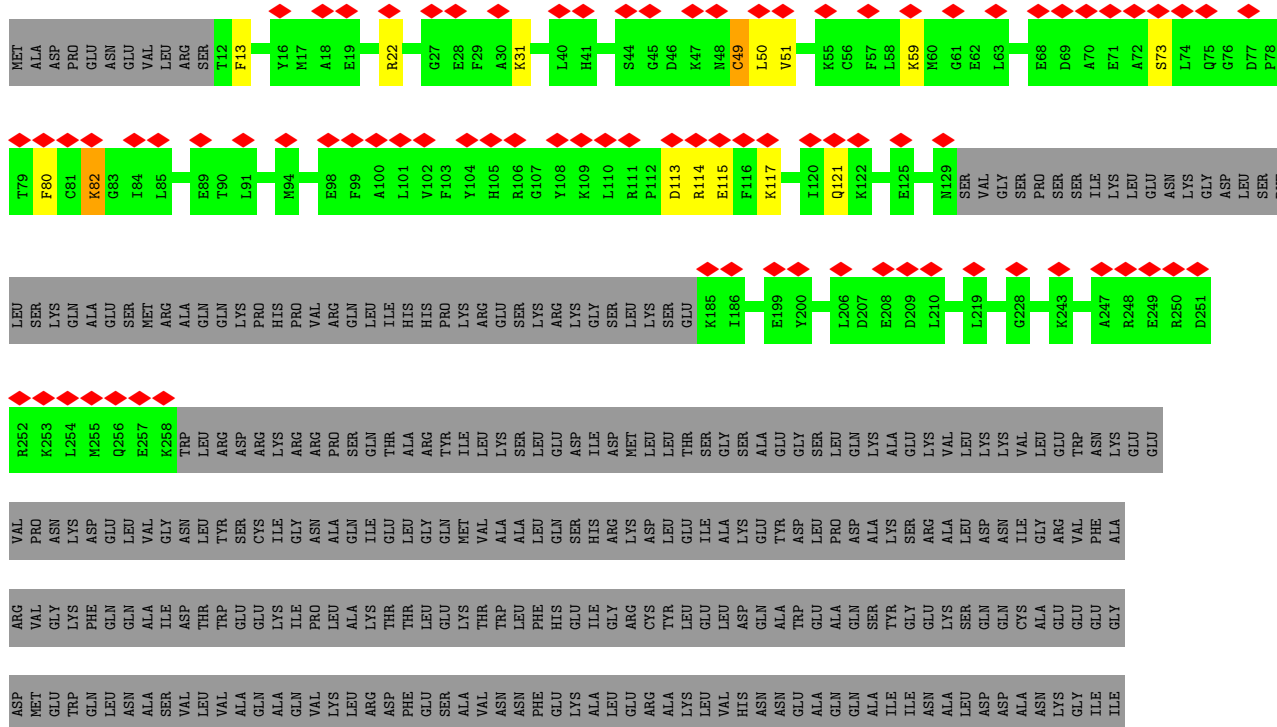


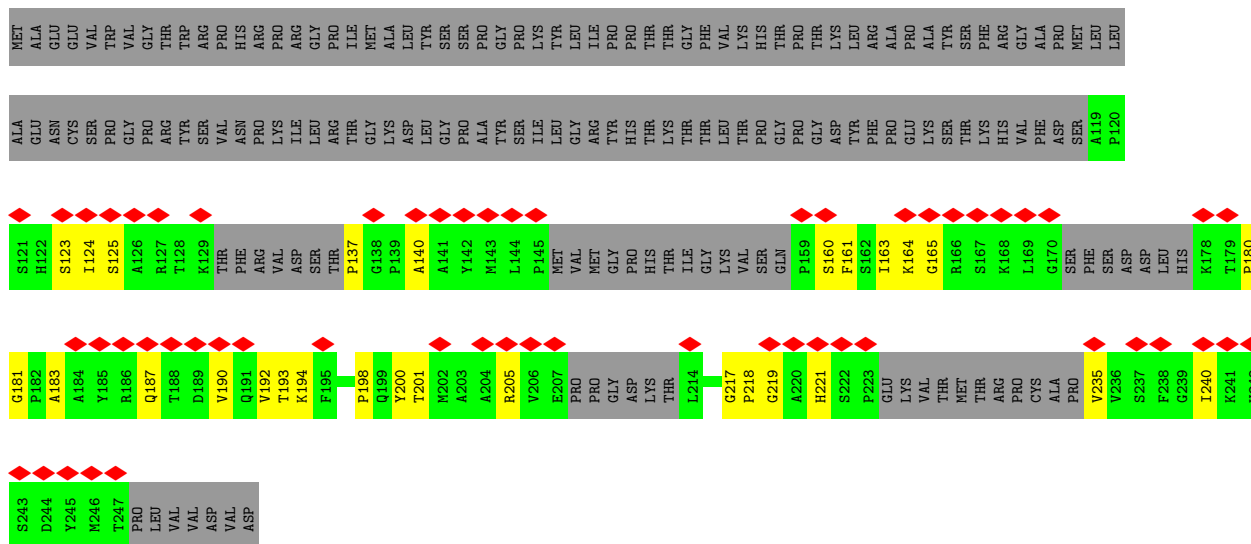
• Molecule 36: TTC25 protein



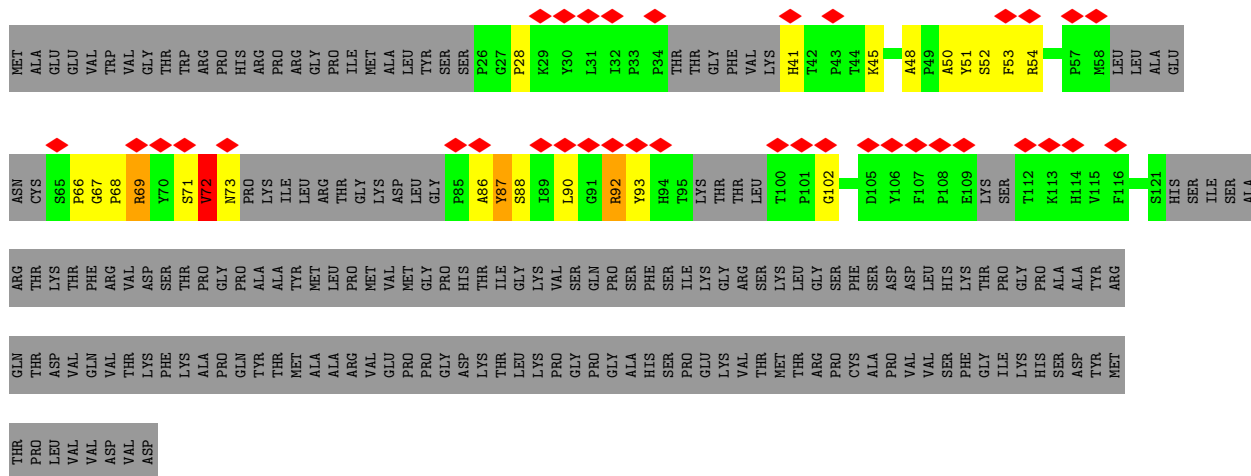


• Molecule 36: TTC25 protein

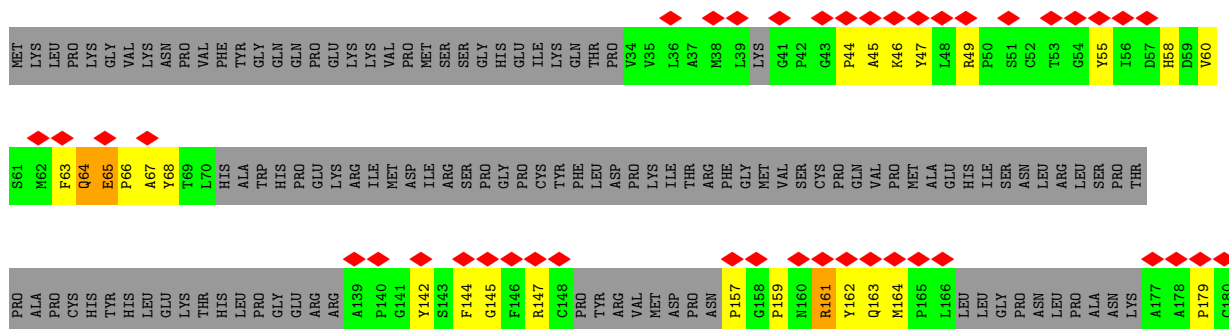


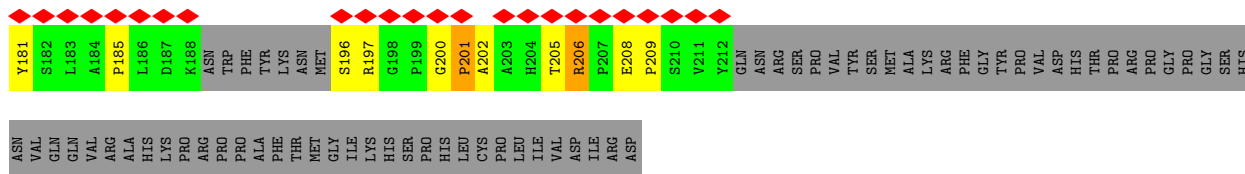


• Molecule 37: Ciliary microtubule associated protein 1A

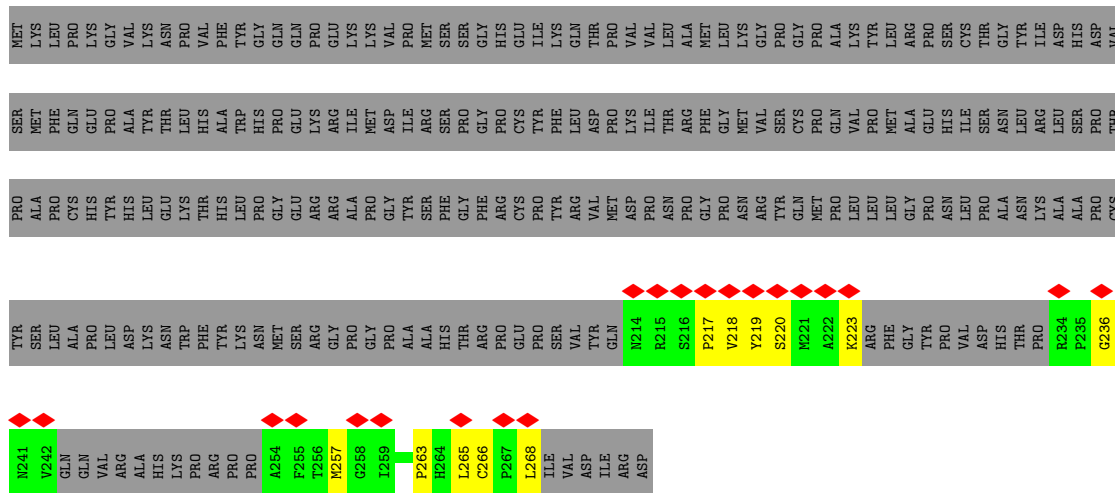


• Molecule 38: Ciliary microtubule associated protein 1C

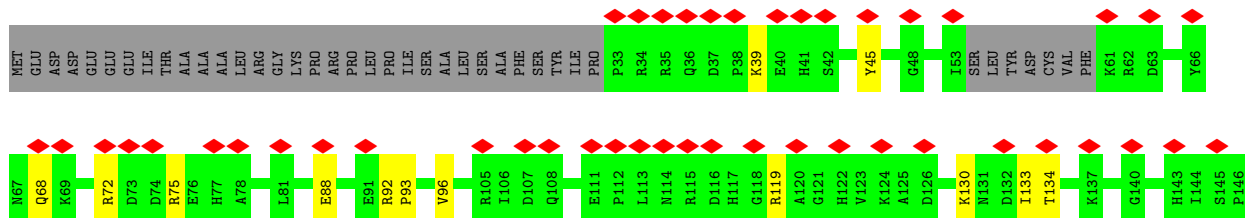




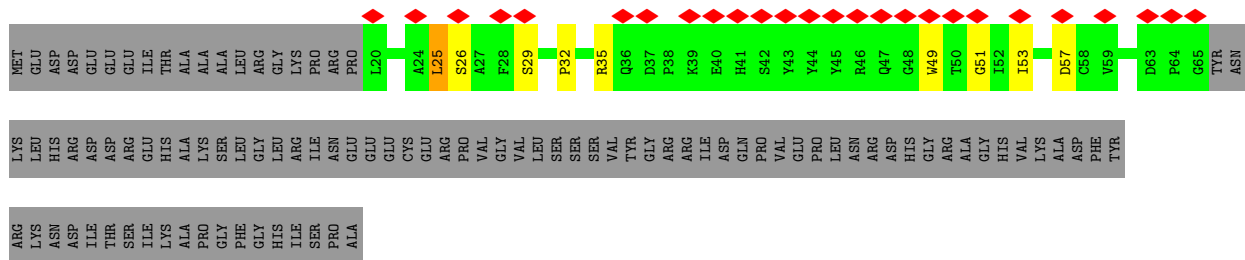
• Molecule 38: Ciliary microtubule associated protein 1C



• Molecule 39: Cilia and flagella associated protein 90

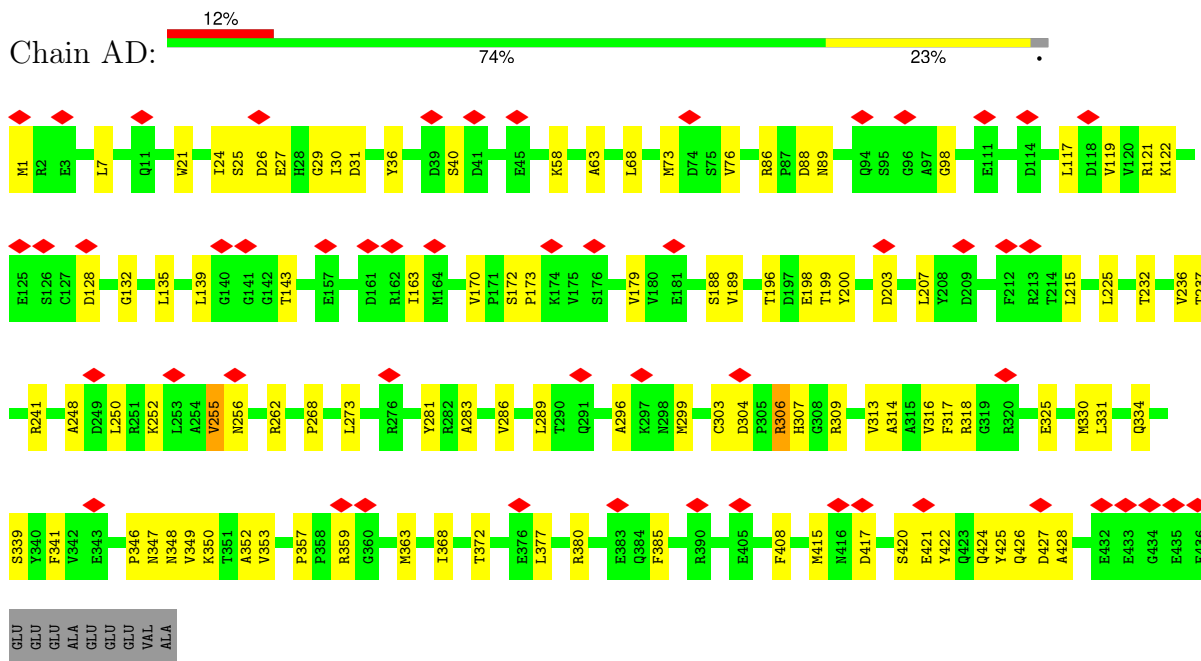


• Molecule 39: Cilia and flagella associated protein 90

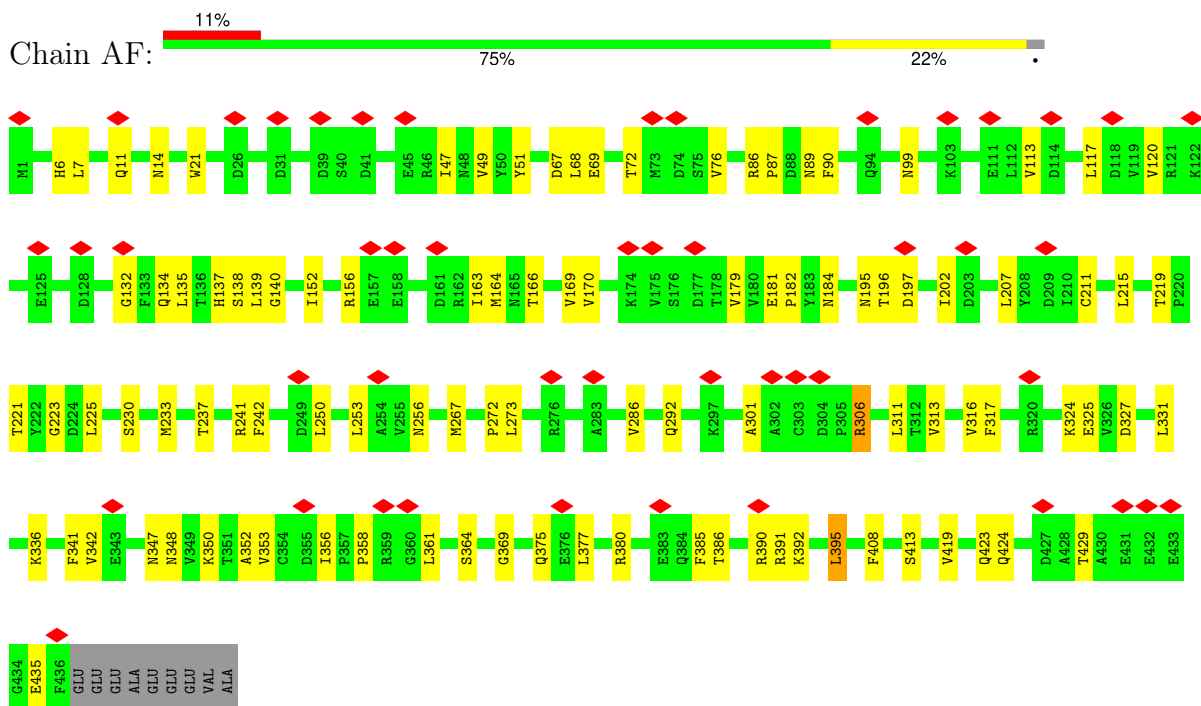


• Molecule 40: Sperm associated antigen 8

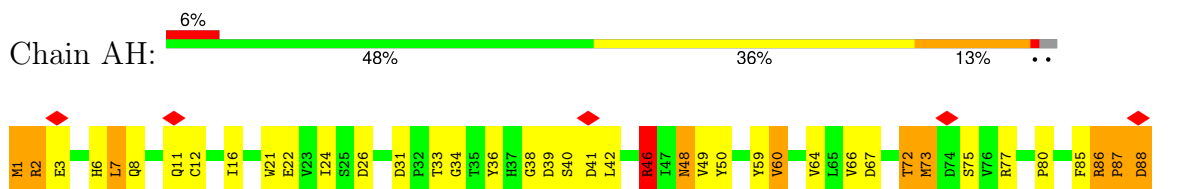
• Molecule 41: Tubulin beta-4B chain

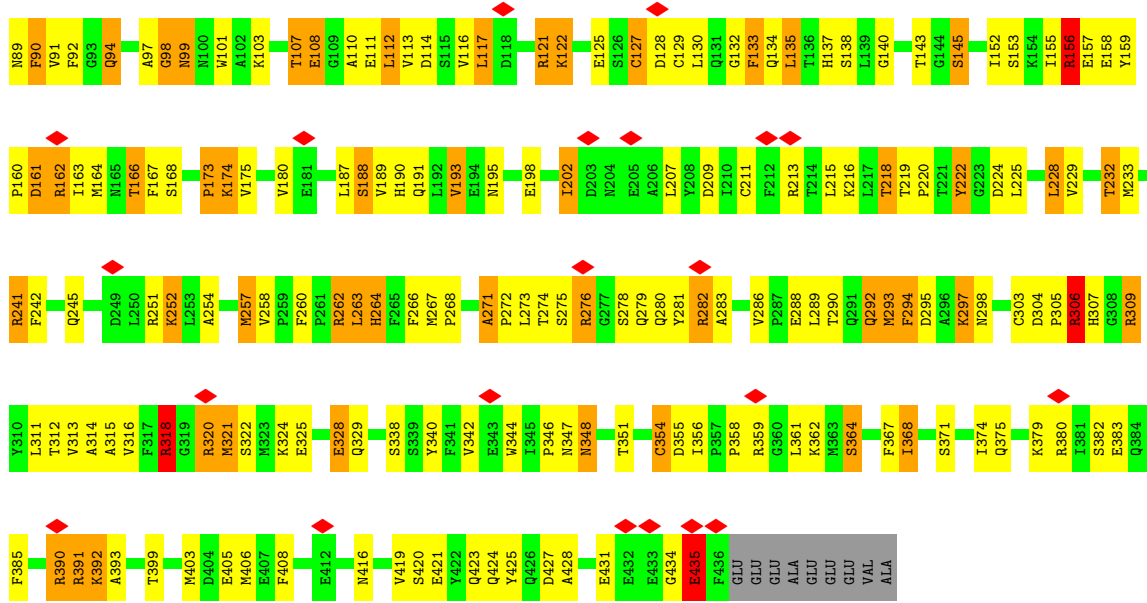


• Molecule 41: Tubulin beta-4B chain

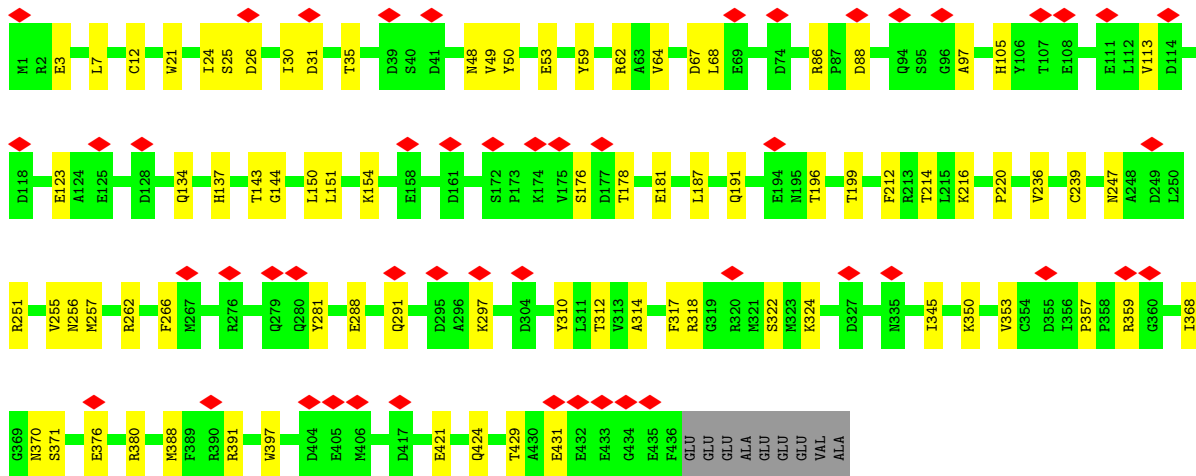
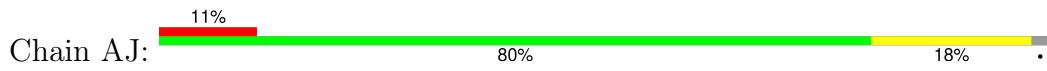


• Molecule 41: Tubulin beta-4B chain

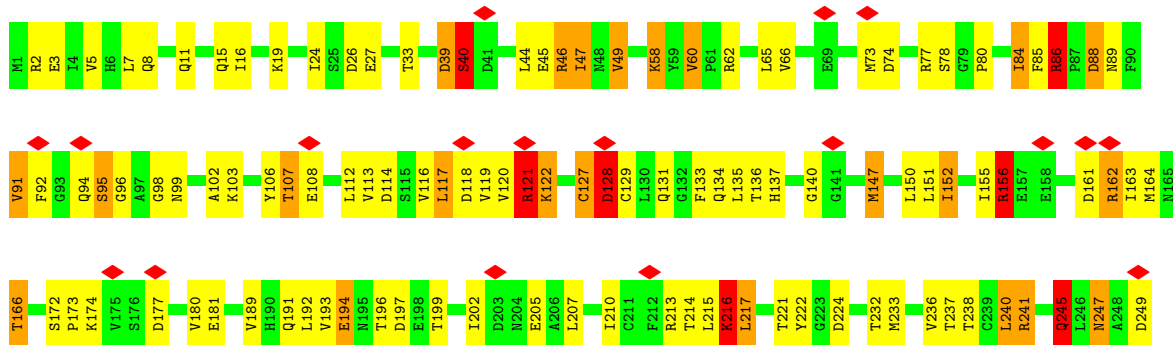


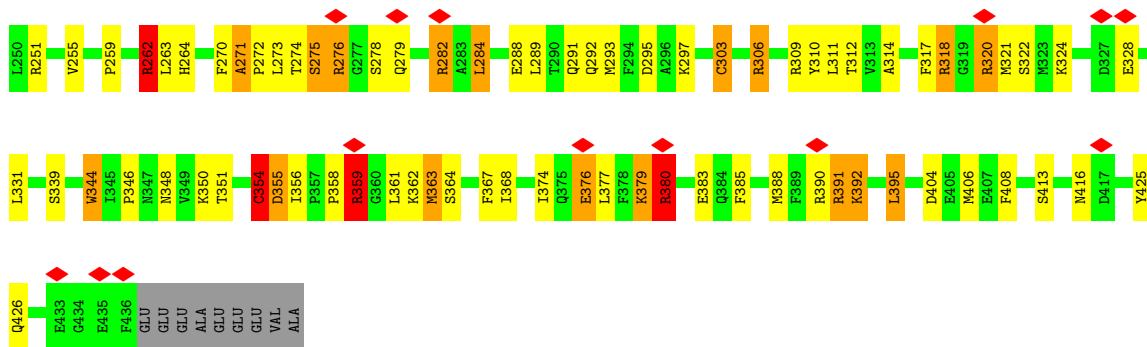


• Molecule 41: Tubulin beta-4B chain

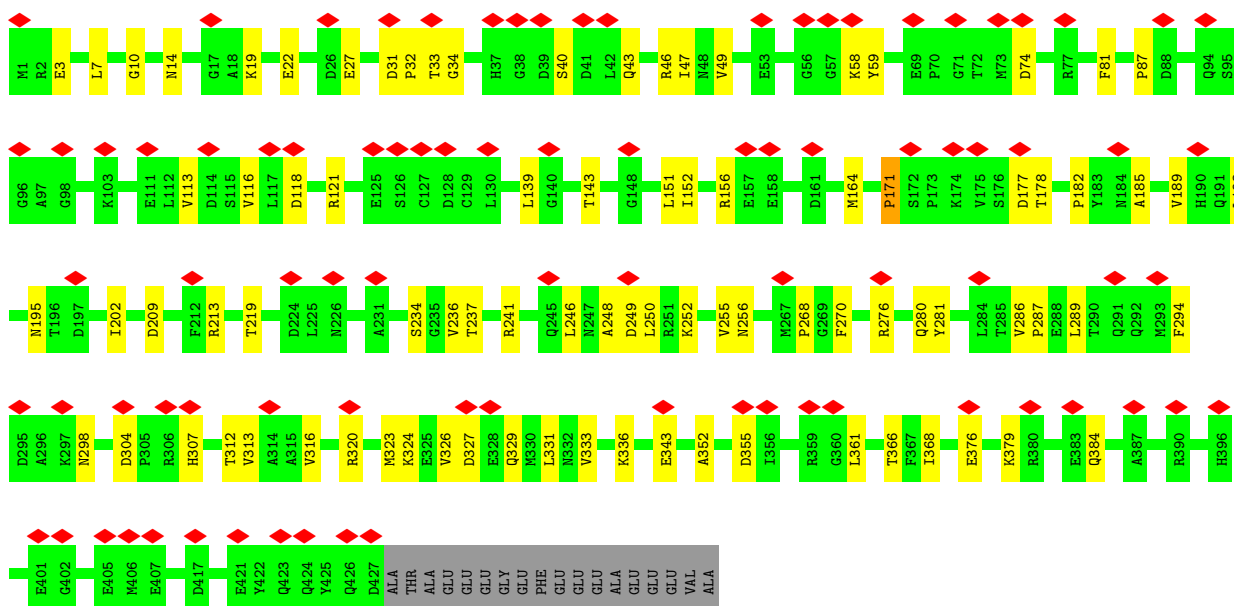
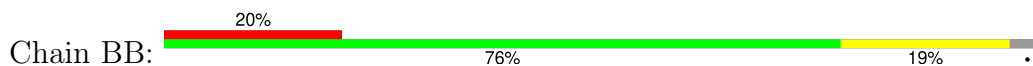


• Molecule 41: Tubulin beta-4B chain

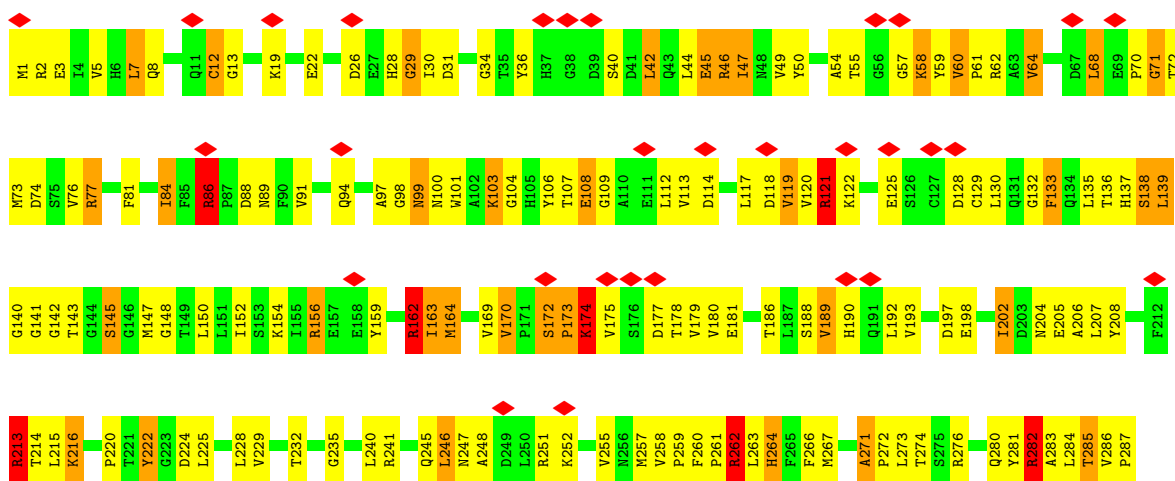
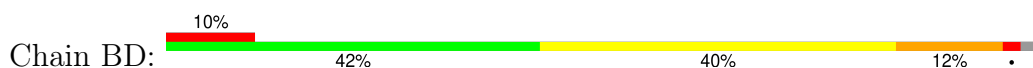


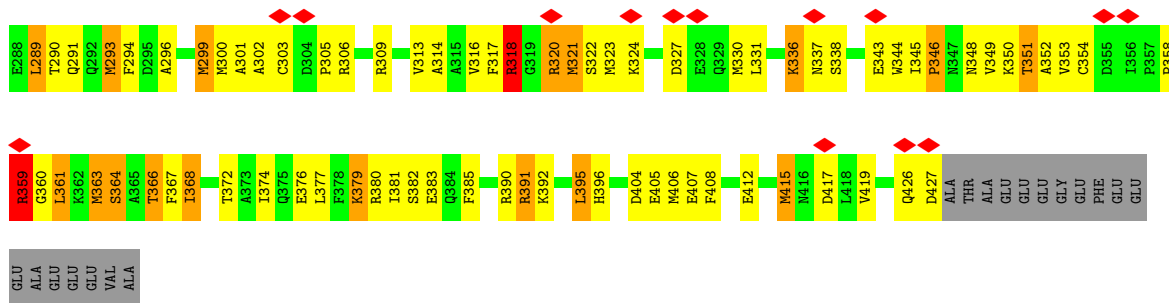


• Molecule 41: Tubulin beta-4B chain

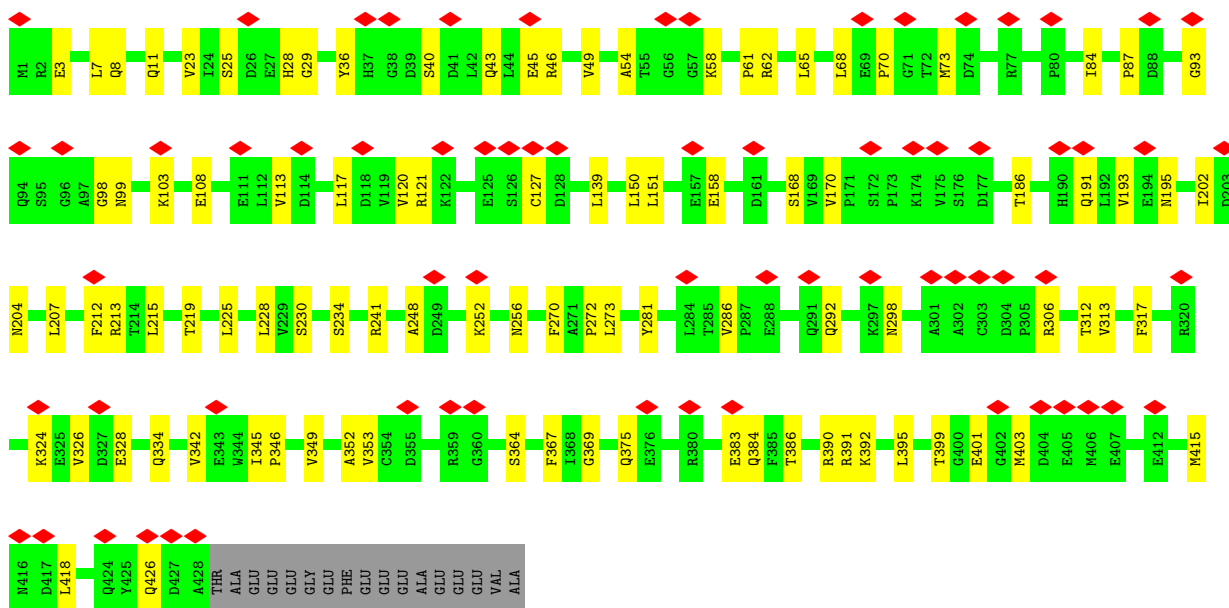
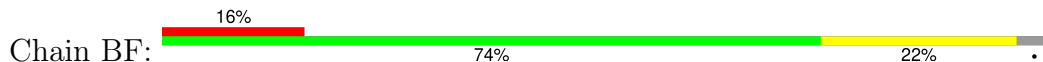


• Molecule 41: Tubulin beta-4B chain

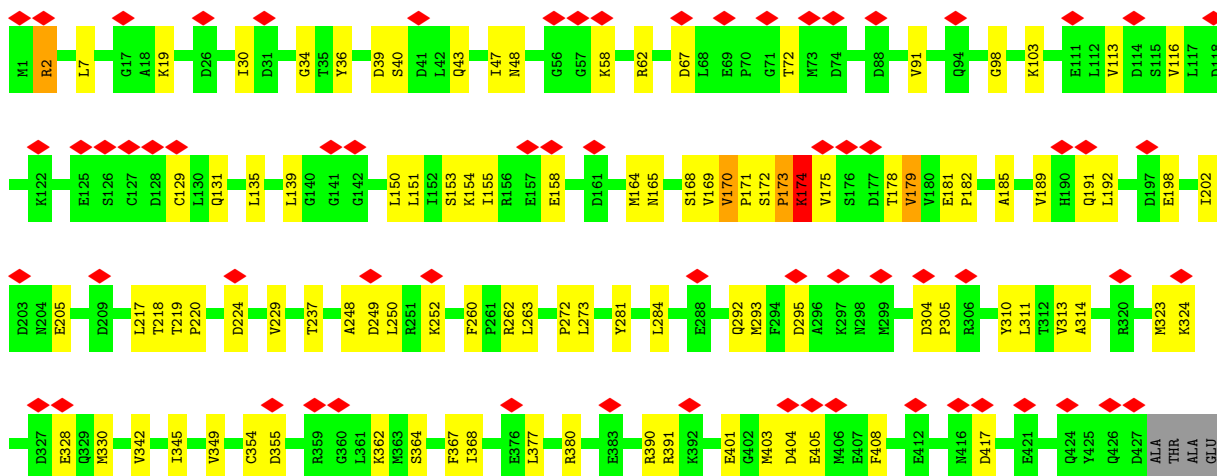
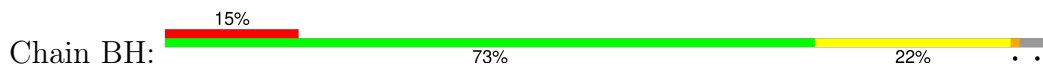




• Molecule 41: Tubulin beta-4B chain



• Molecule 41: Tubulin beta-4B chain

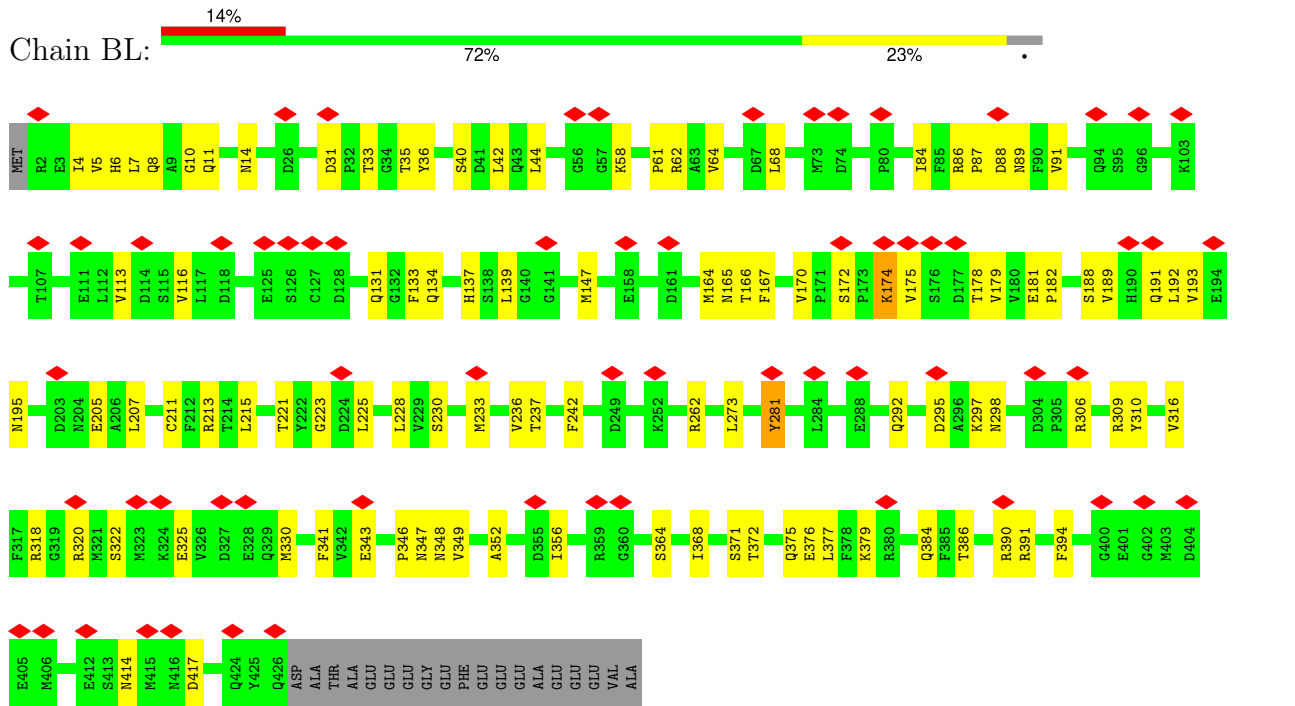


GLU
GLU
GLY
GLU
PHE
GLU
GLU
GLU
GLU
GLU
VAL
ALA

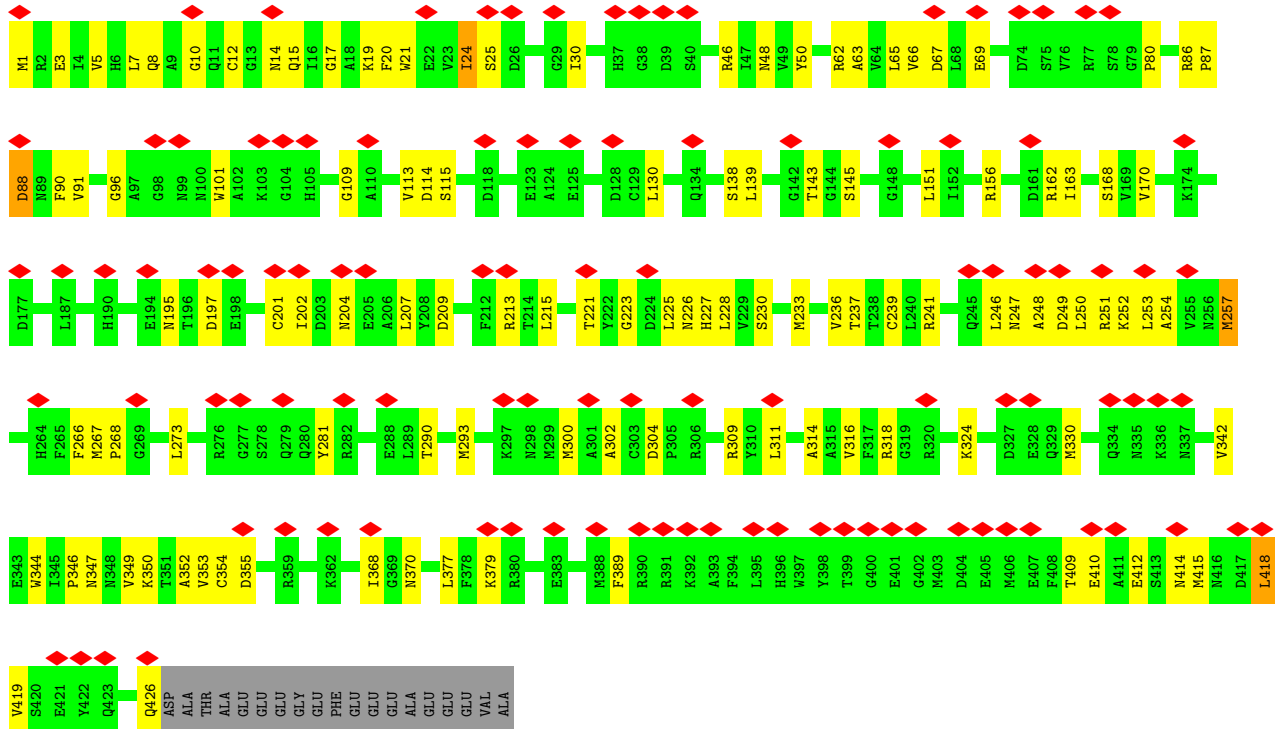
• Molecule 41: Tubulin beta-4B chain



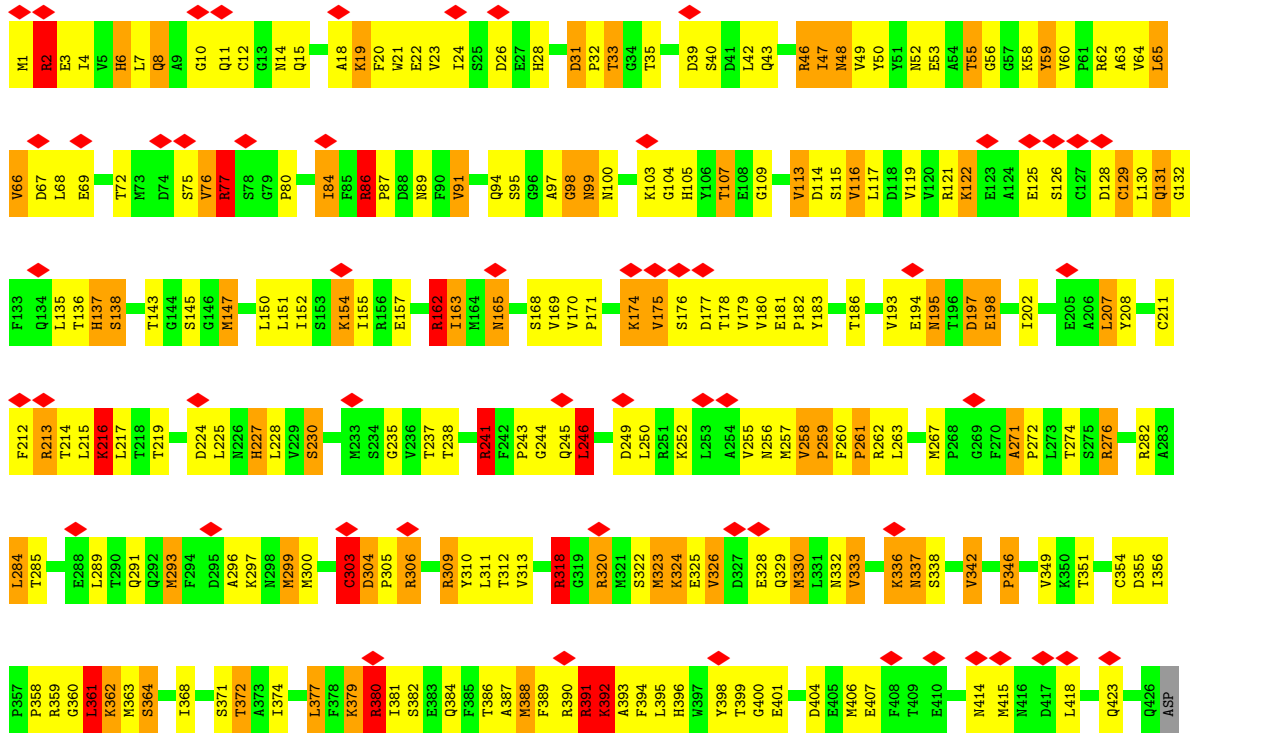
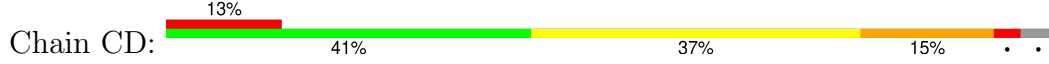
• Molecule 41: Tubulin beta-4B chain



• Molecule 41: Tubulin beta-4B chain

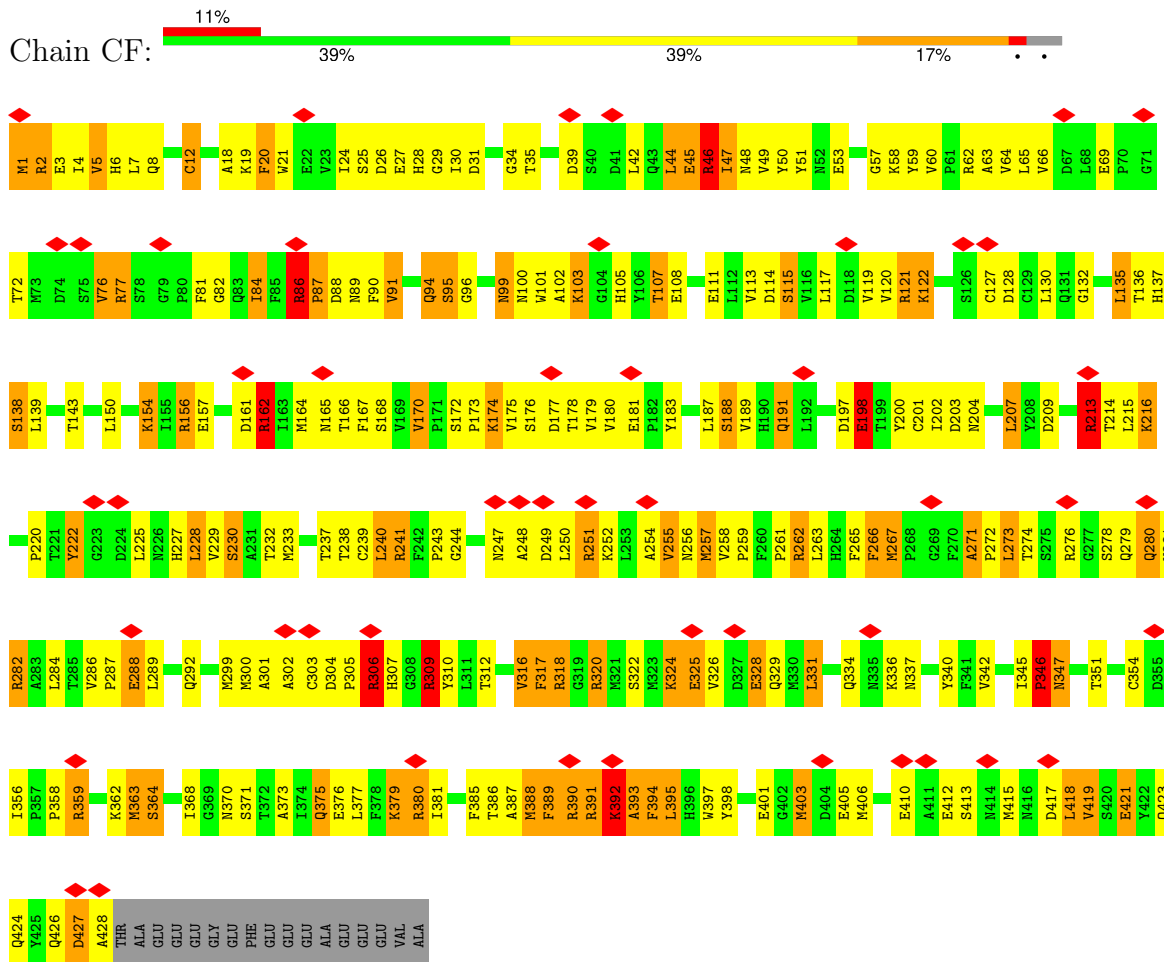


• Molecule 41: Tubulin beta-4B chain

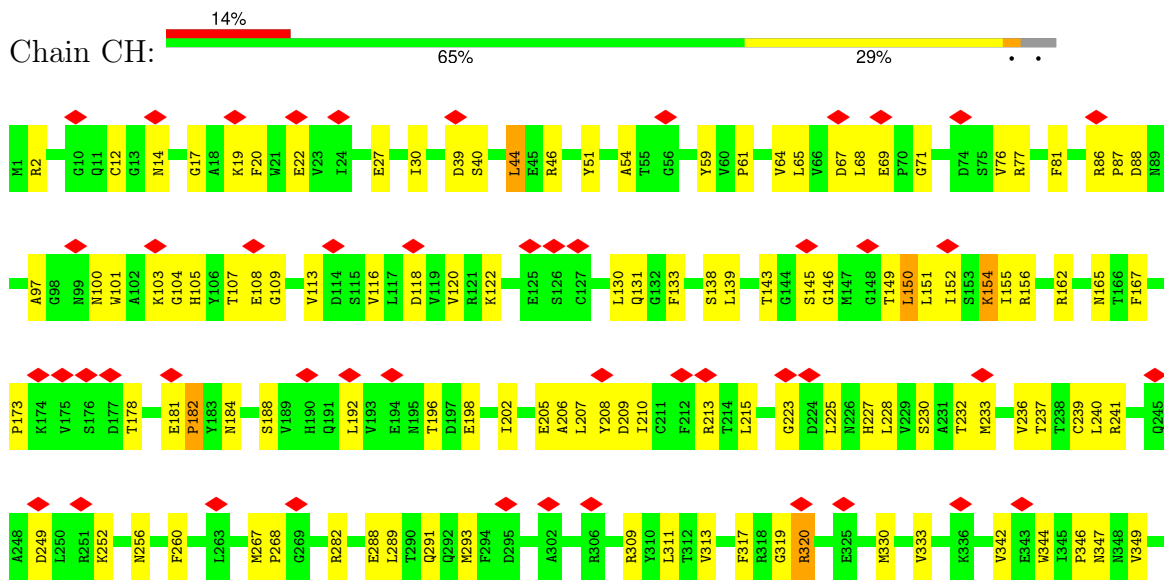


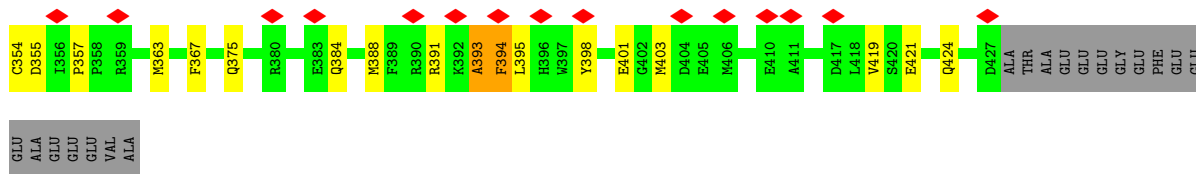
ALA
THR
ALA
GLU
GLU
GLU
GLU
GLY
GLY
PHE
GLU
GLU
GLU
GLU
GLU
VAL
ALA

• Molecule 41: Tubulin beta-4B chain

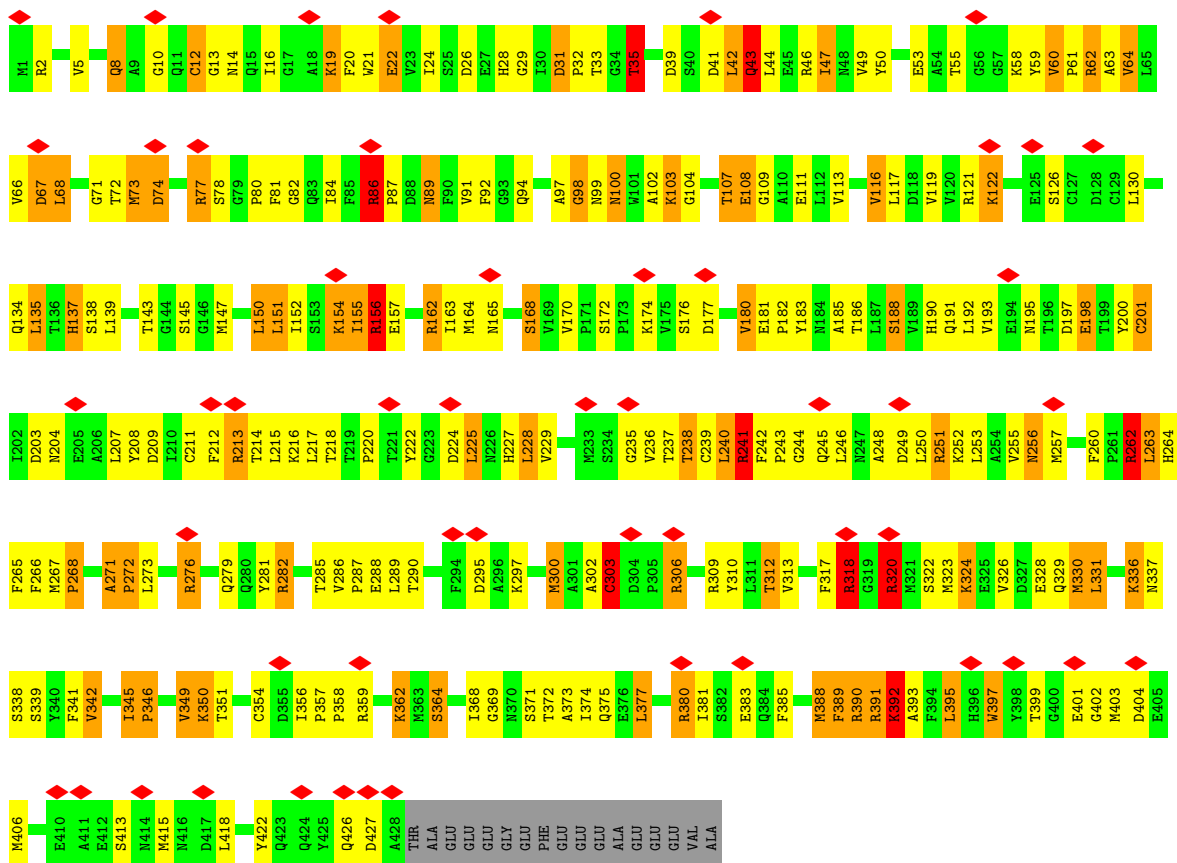


• Molecule 41: Tubulin beta-4B chain

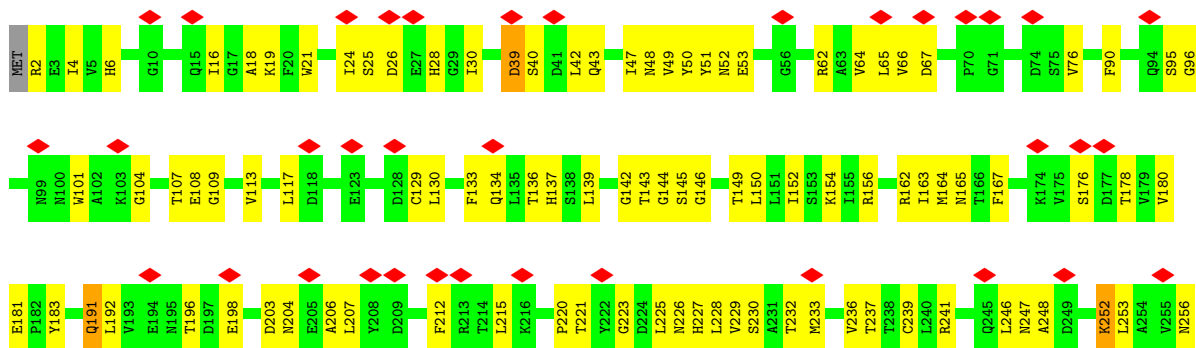


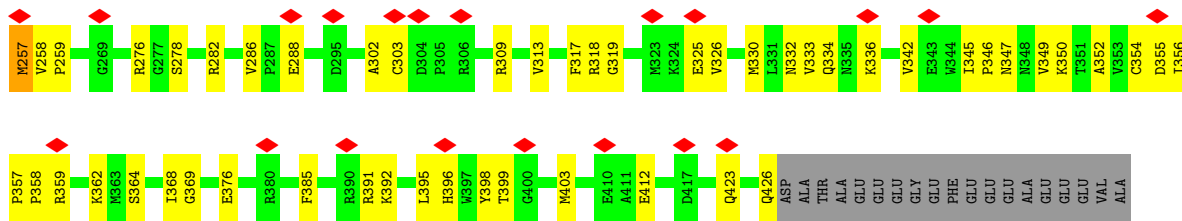


• Molecule 41: Tubulin beta-4B chain

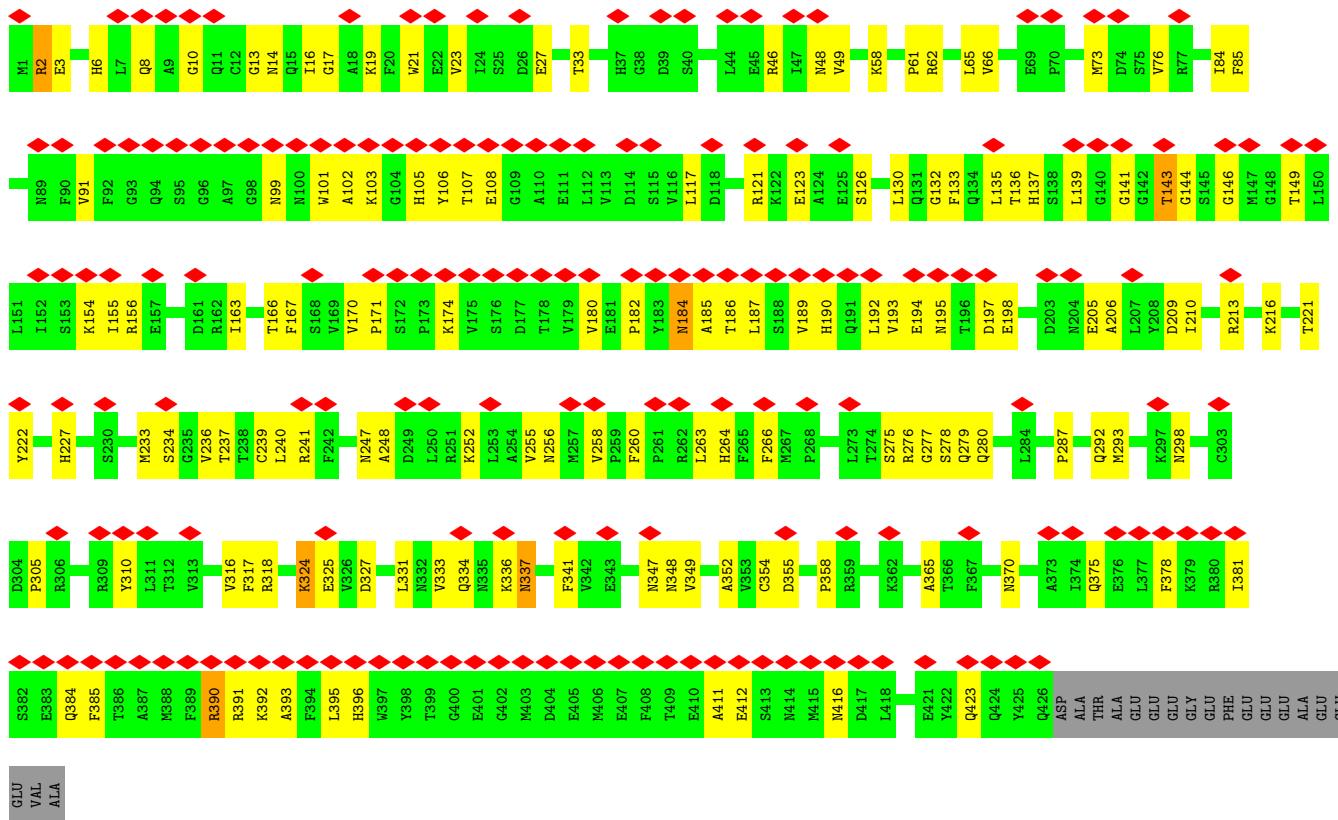
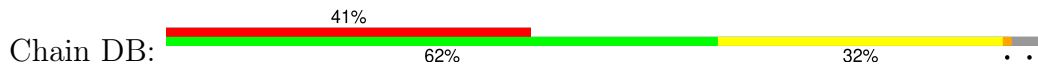


• Molecule 41: Tubulin beta-4B chain

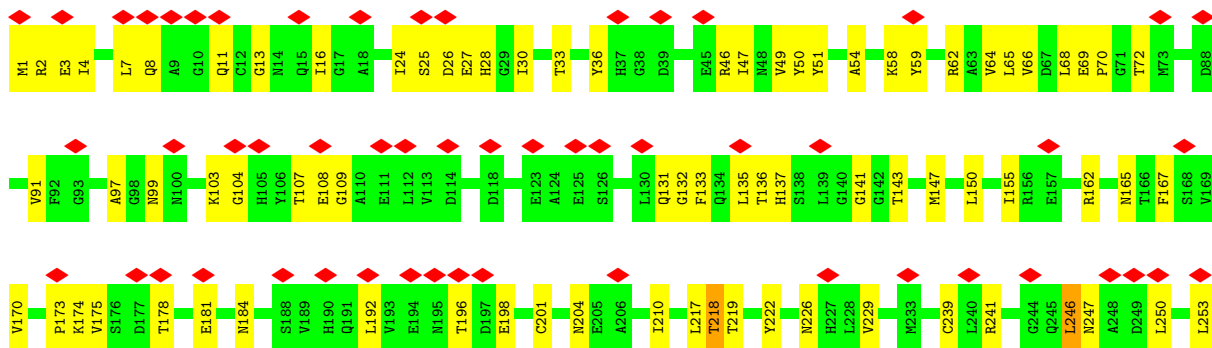


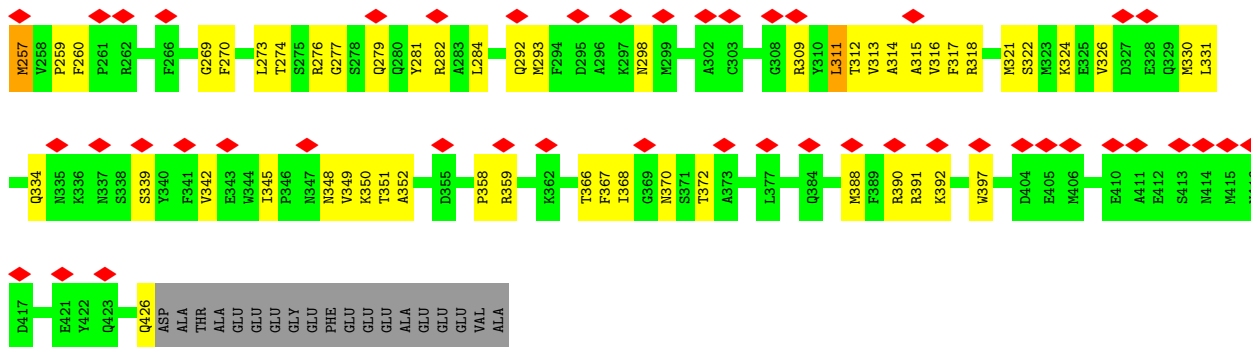


• Molecule 41: Tubulin beta-4B chain

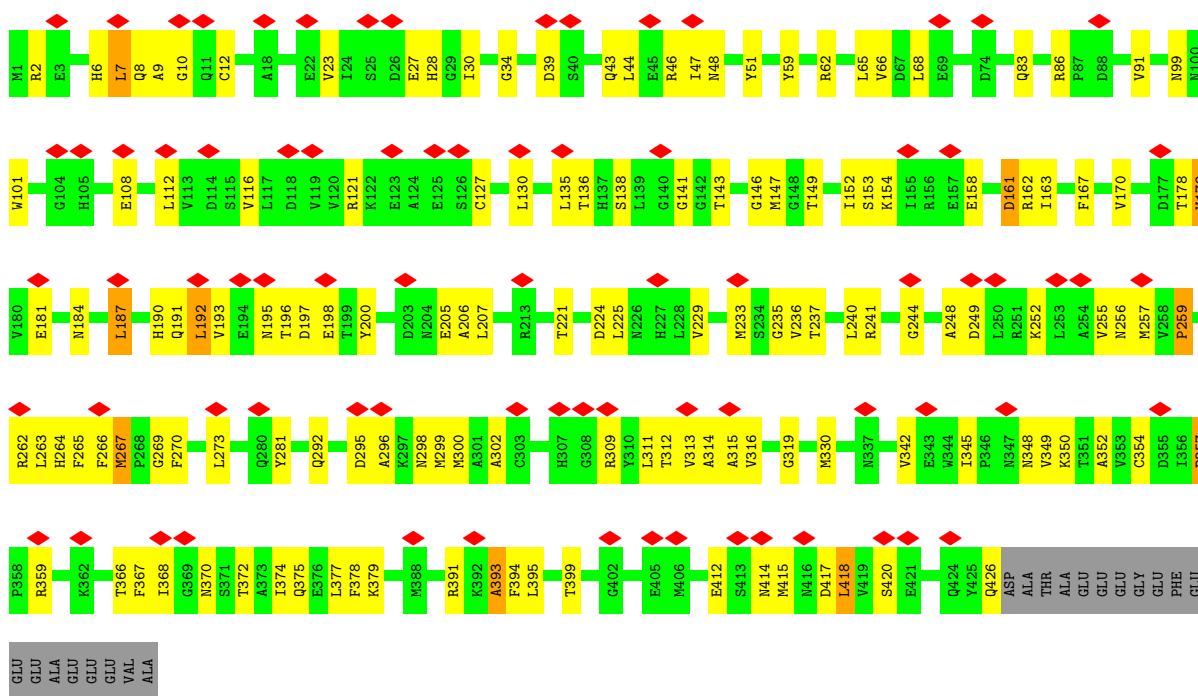


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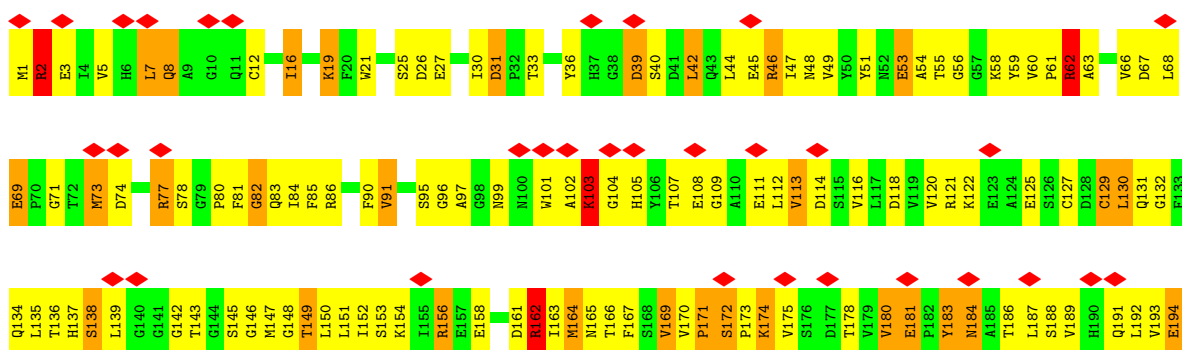


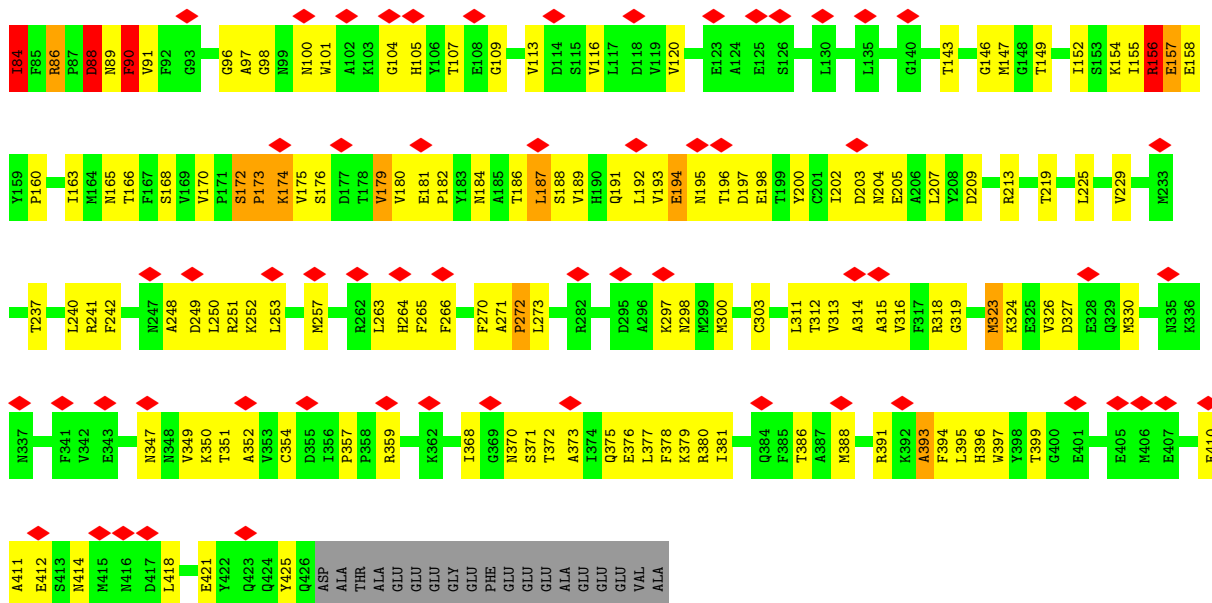


• Molecule 41: Tubulin beta-4B chain

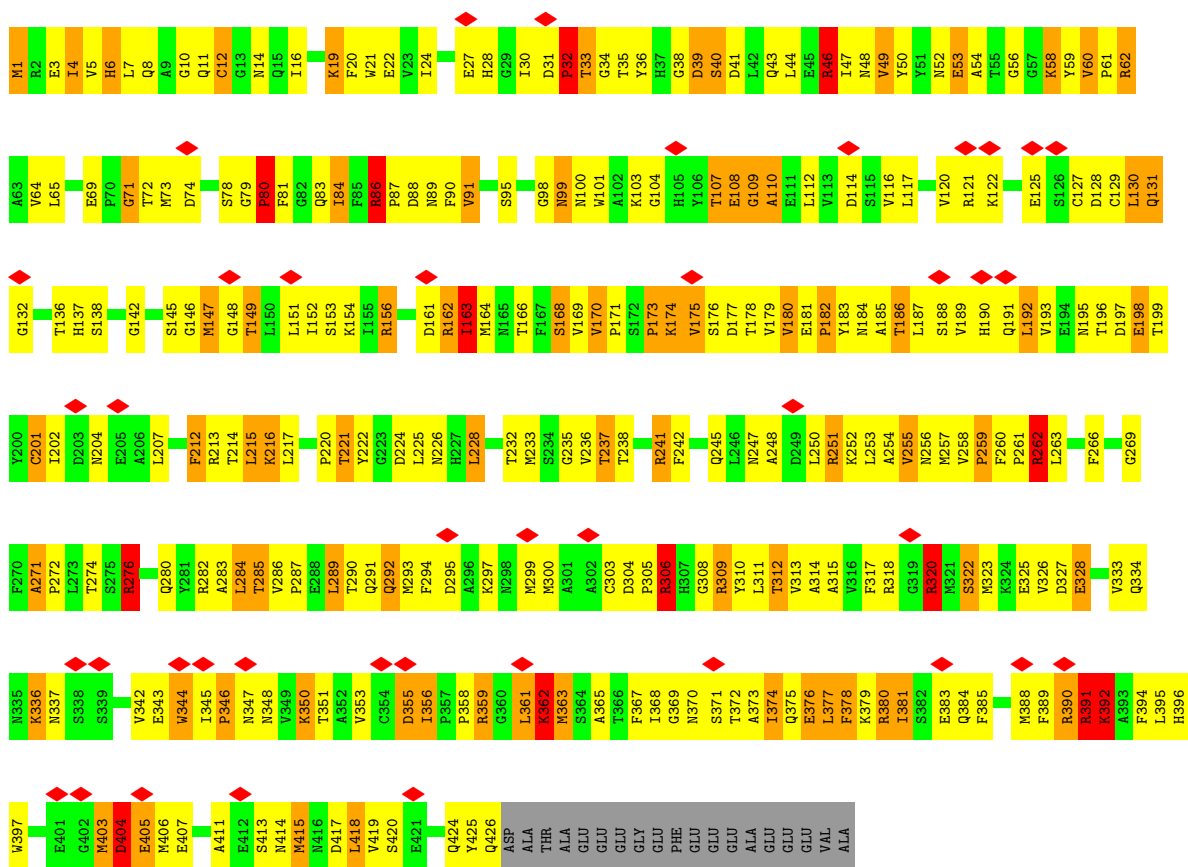


• Molecule 41: Tubulin beta-4B chain



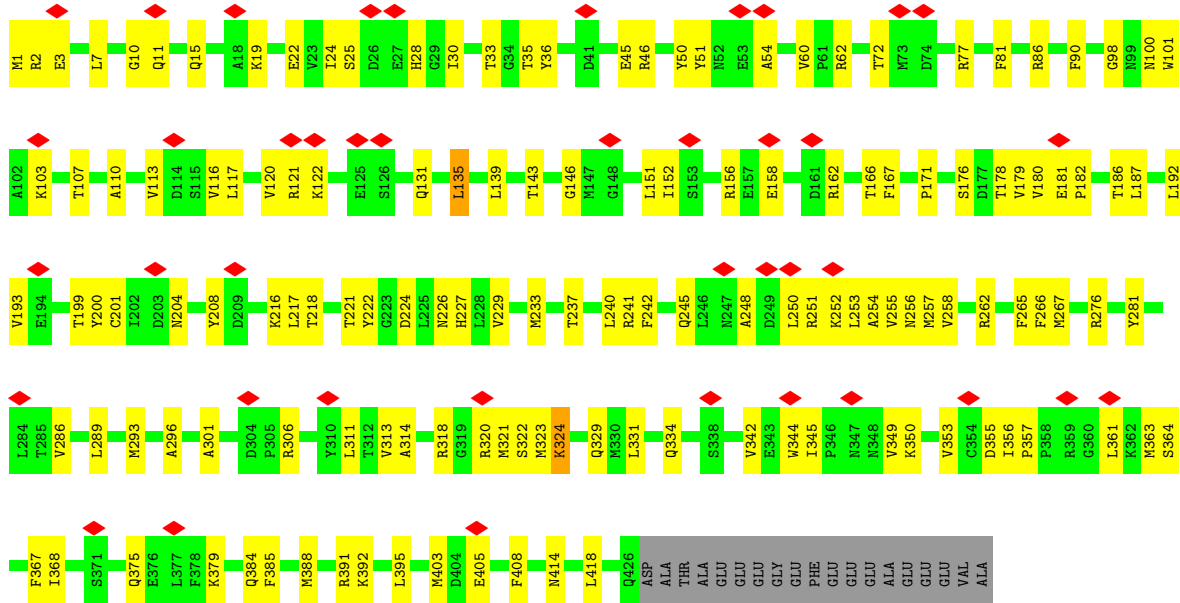


• Molecule 41: Tubulin beta-4B chain

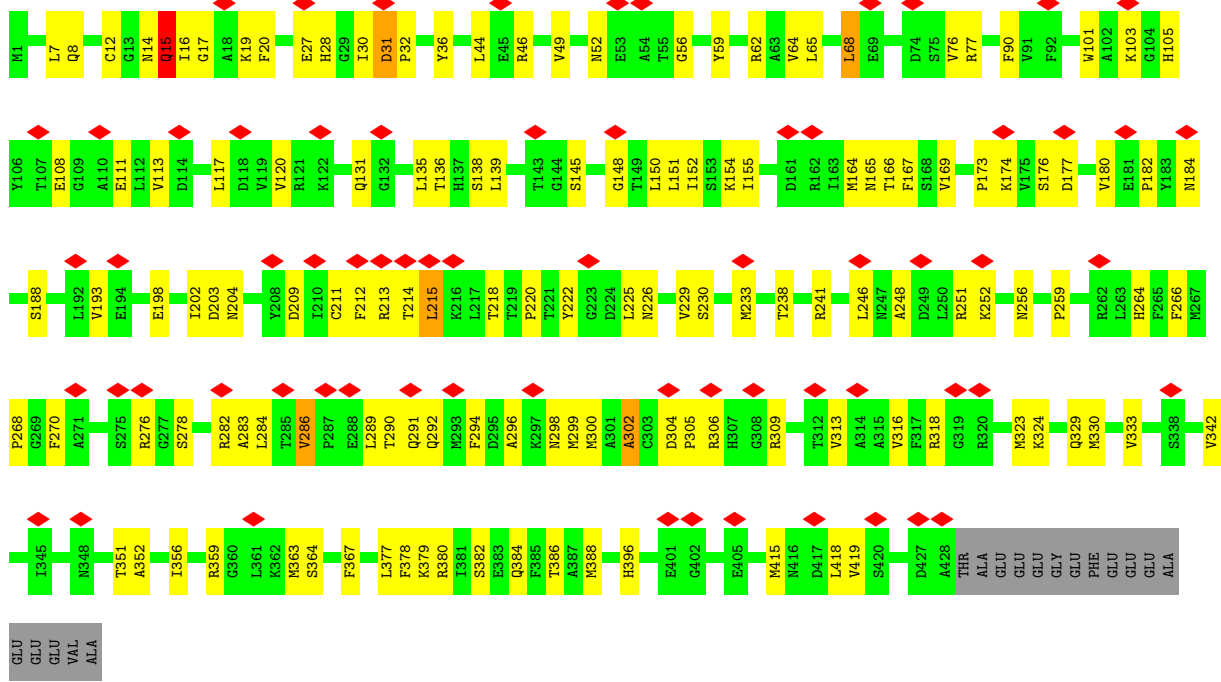


• Molecule 41: Tubulin beta-4B chain

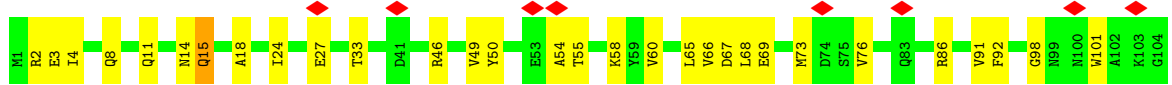


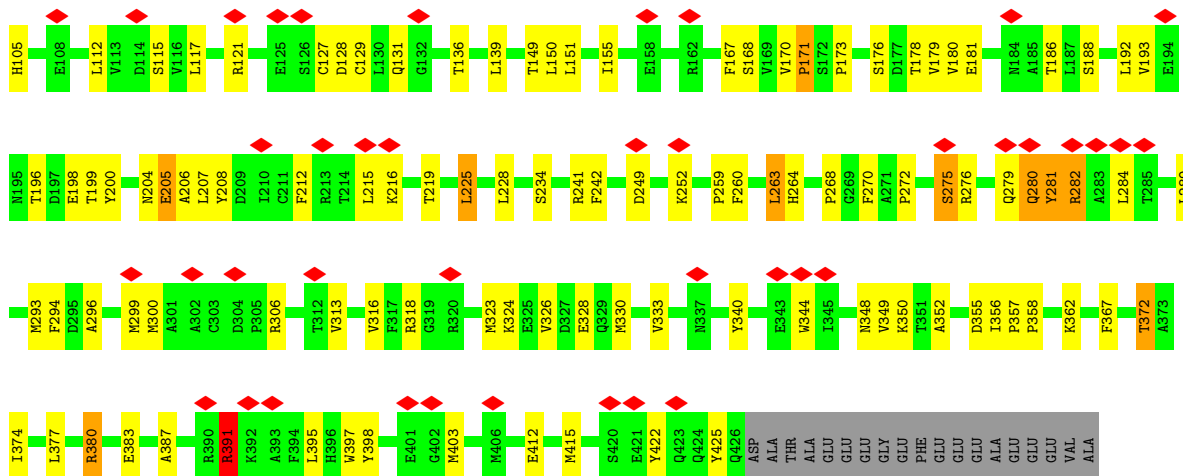


• Molecule 41: Tubulin beta-4B chain

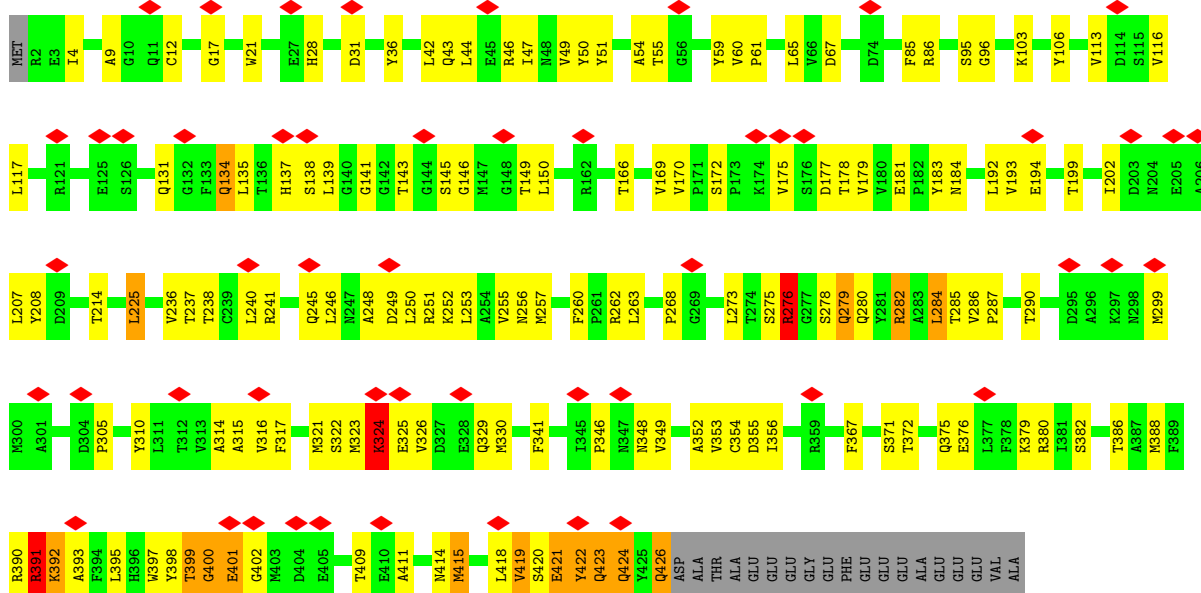


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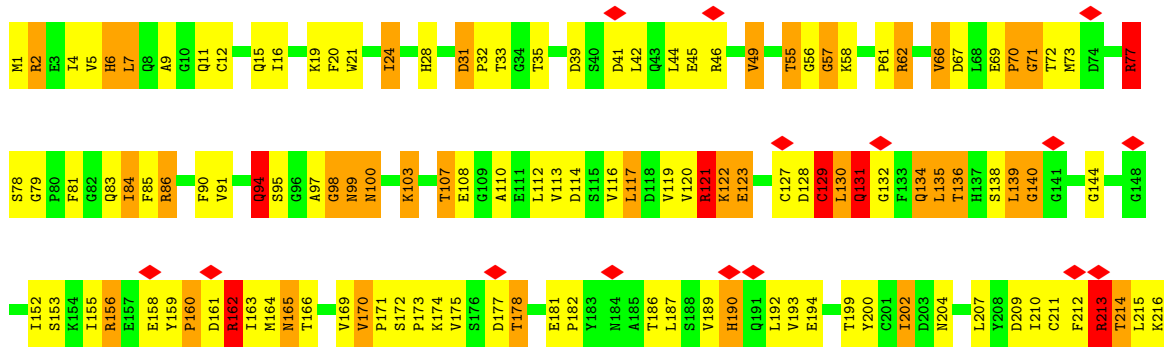


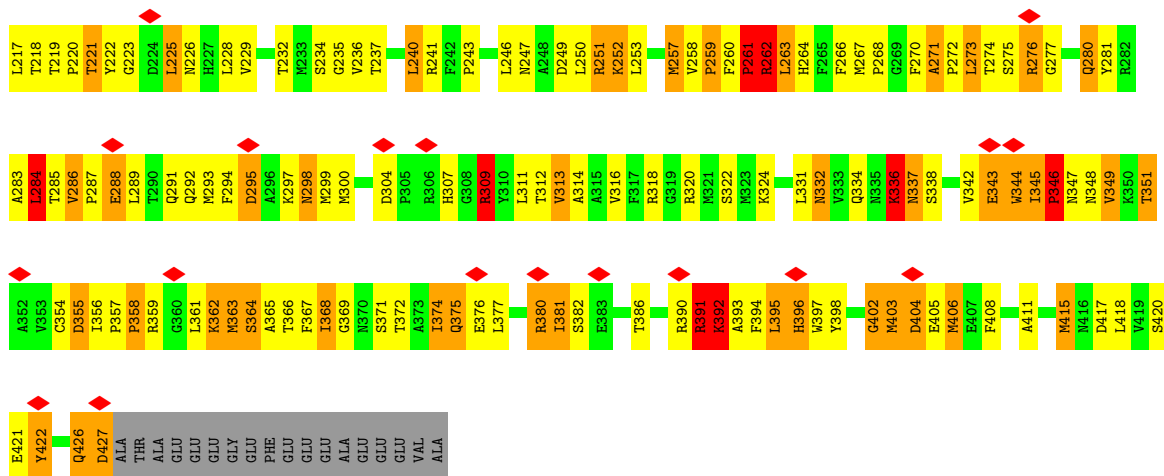


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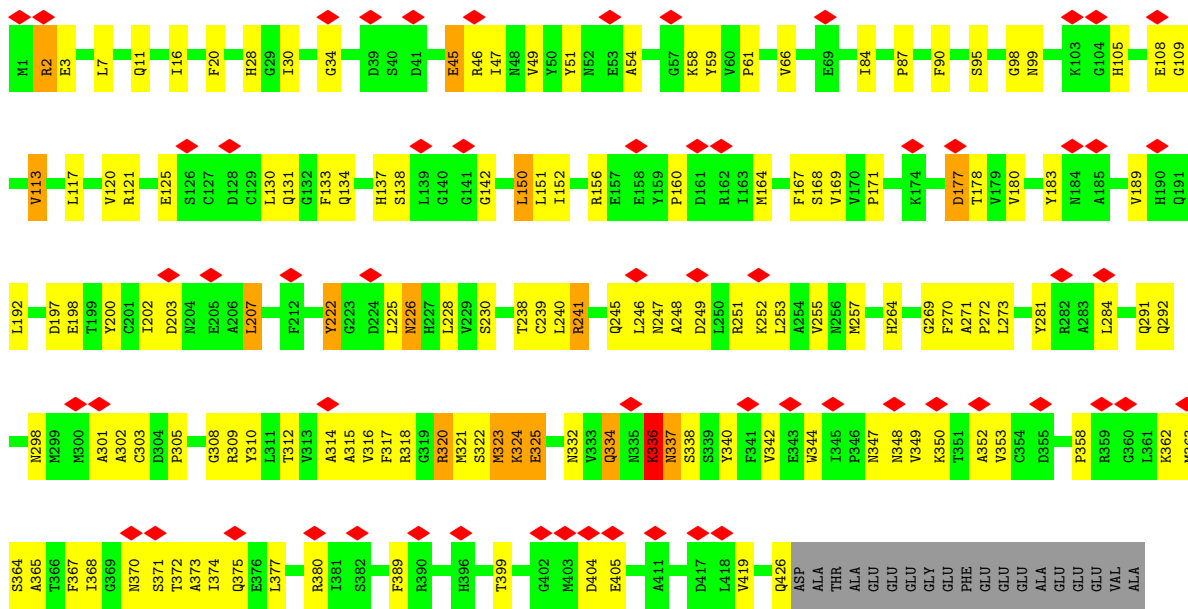


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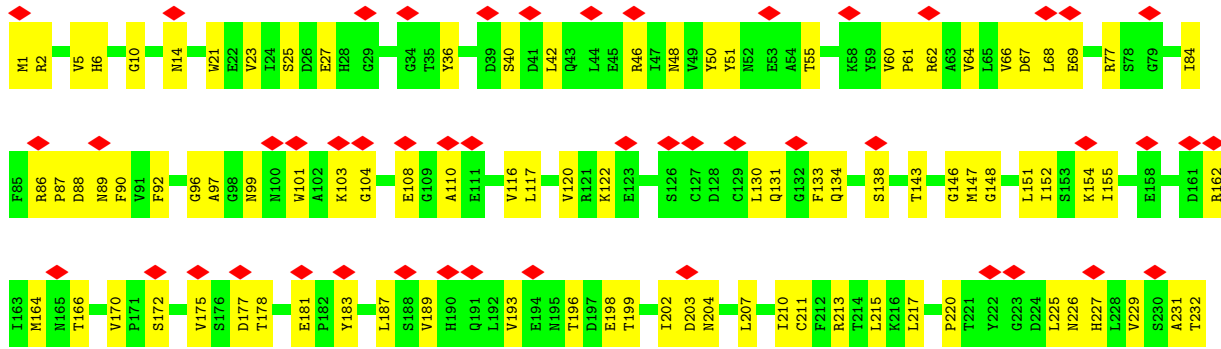


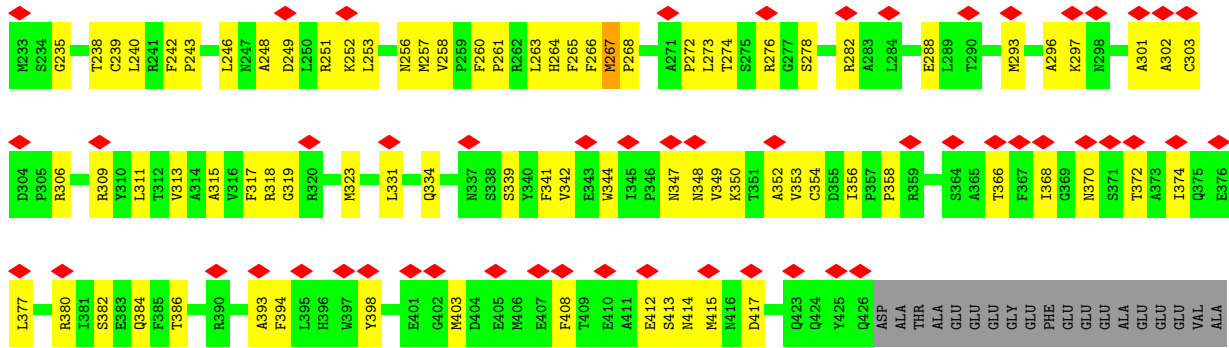


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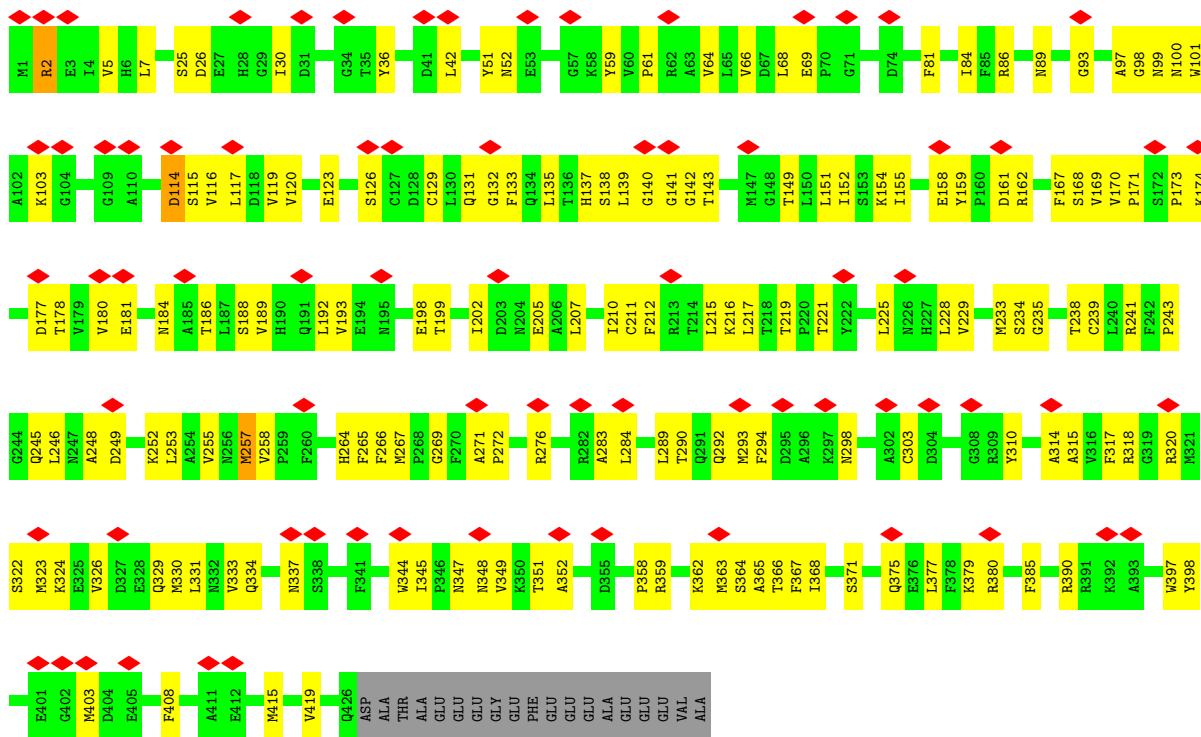


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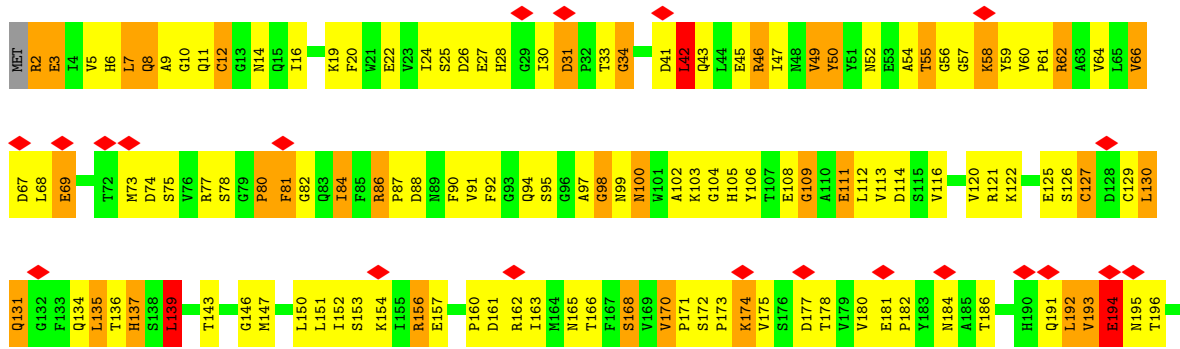


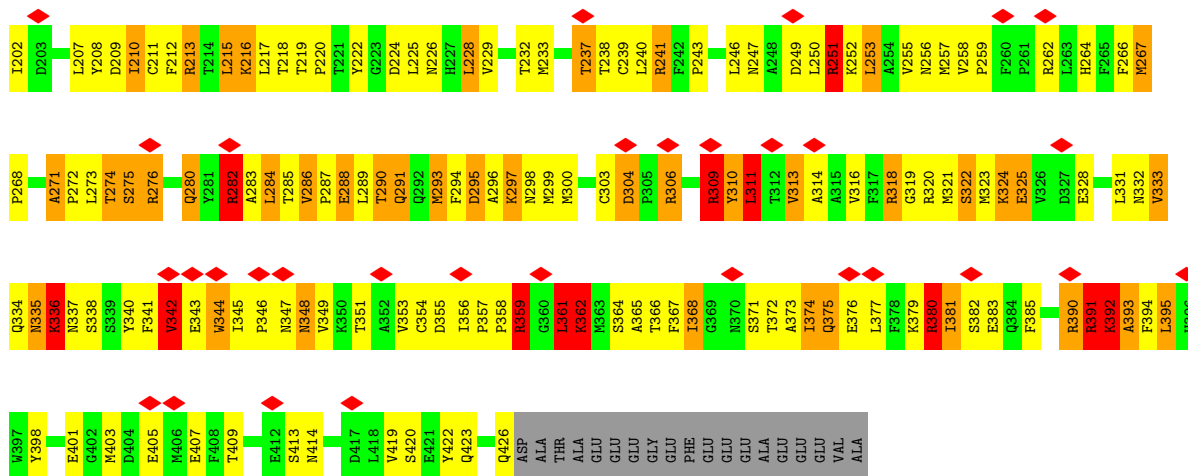


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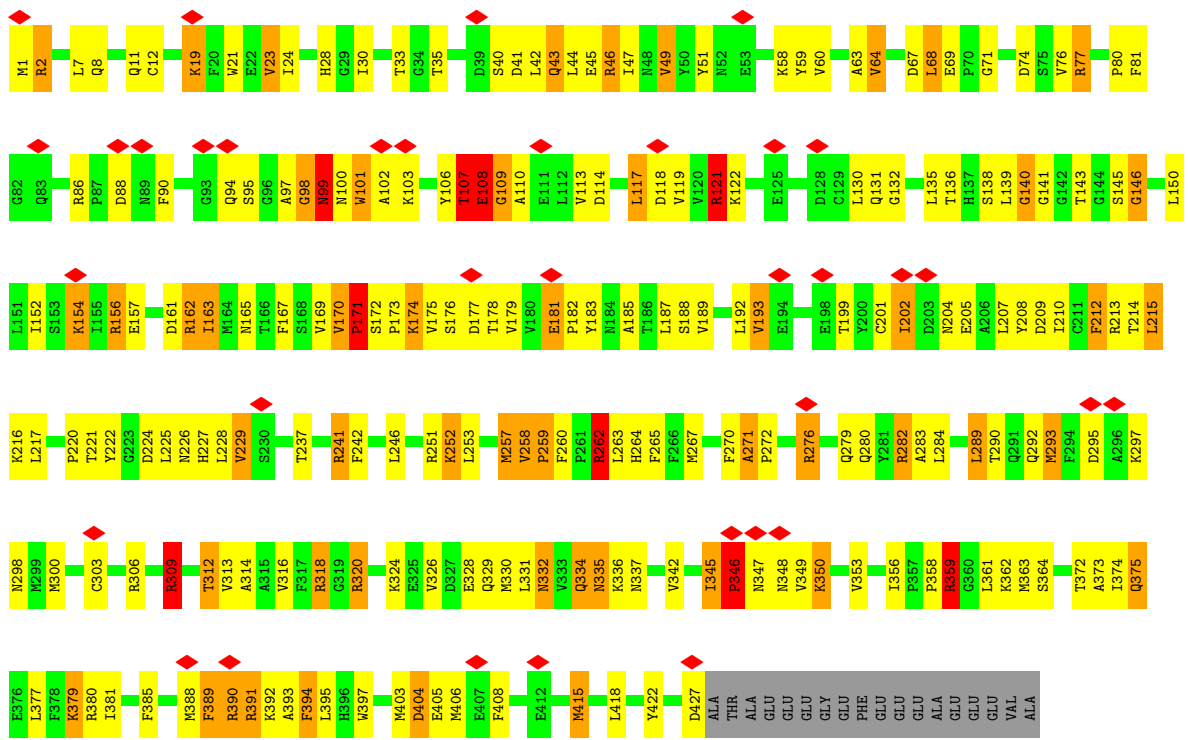


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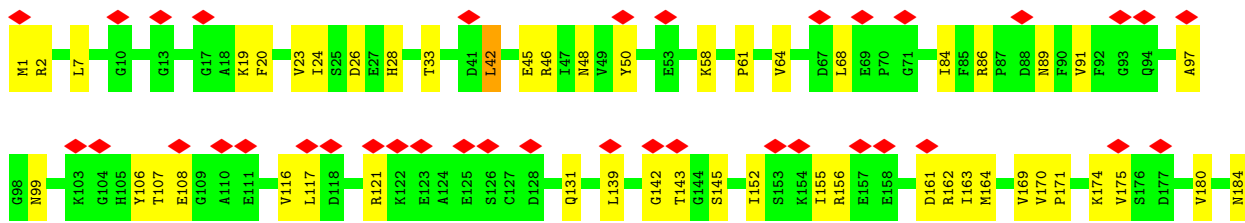


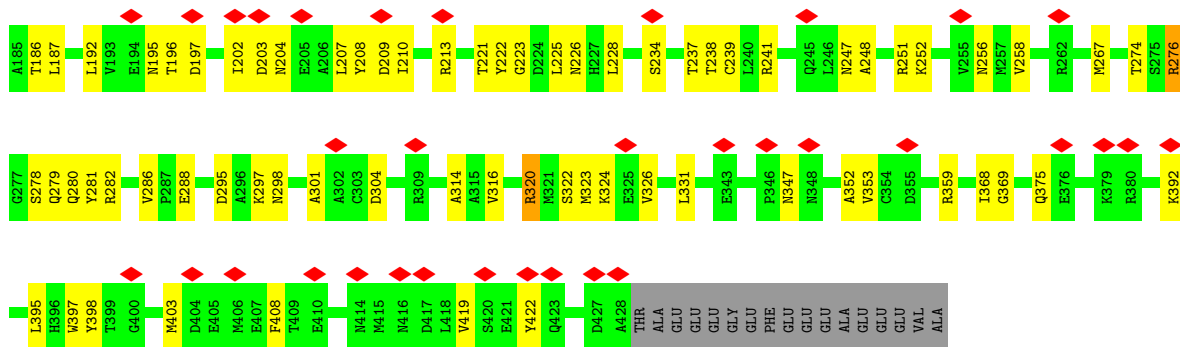


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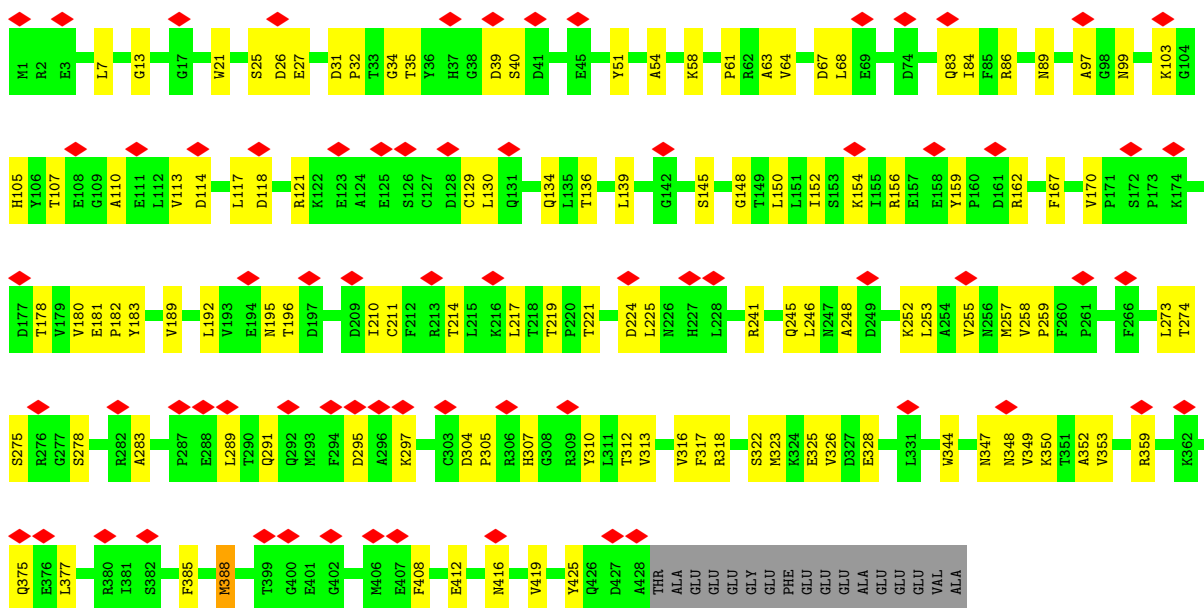


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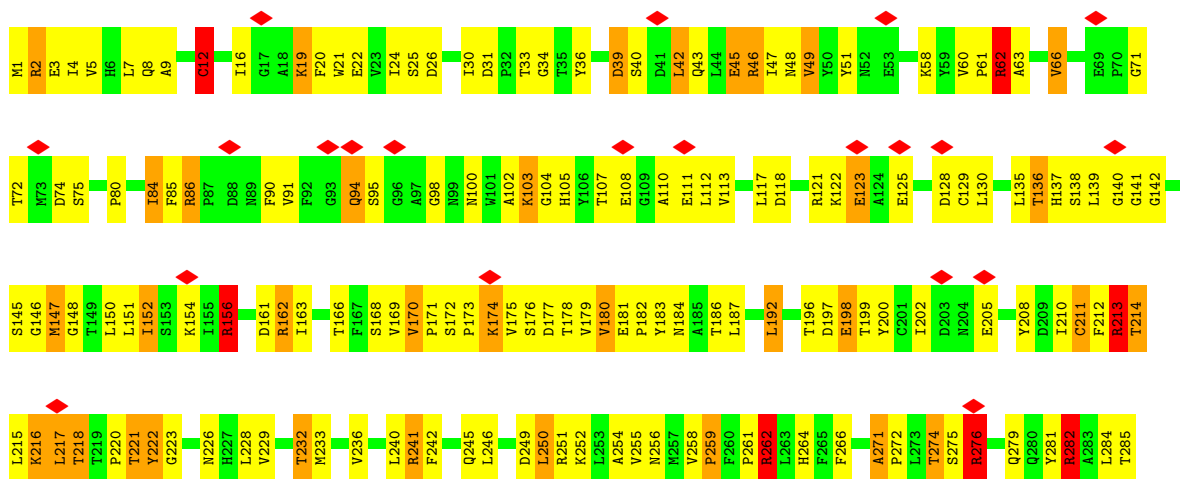


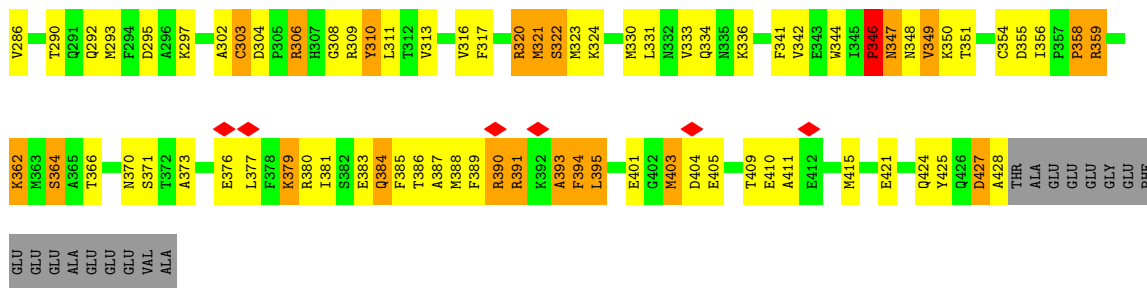


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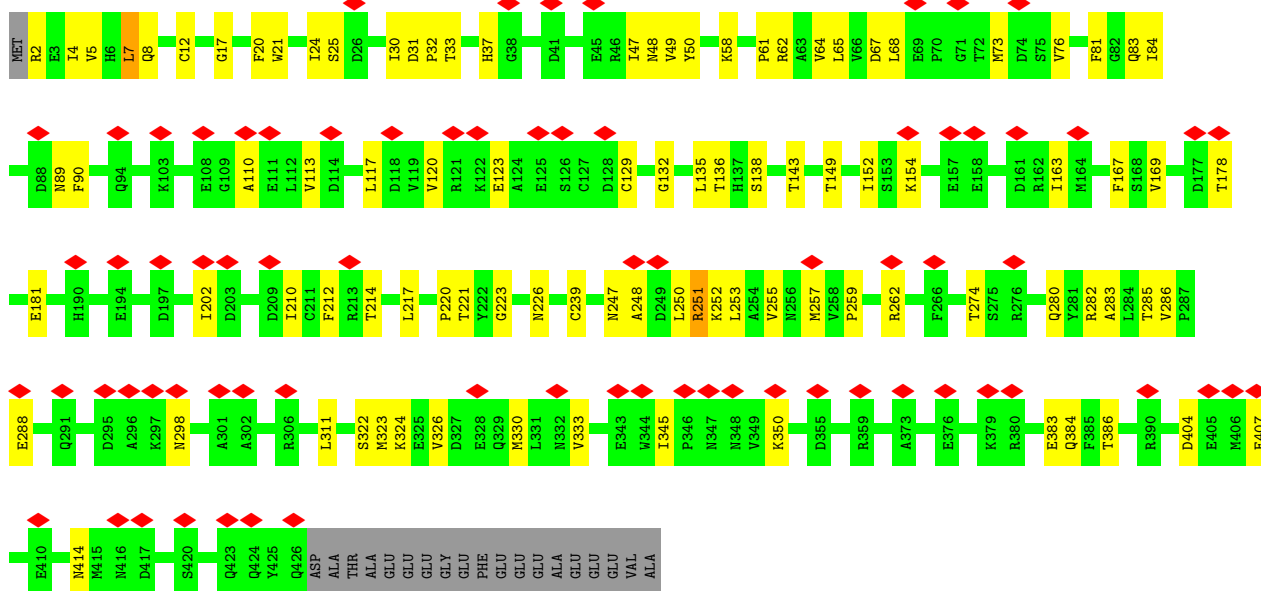
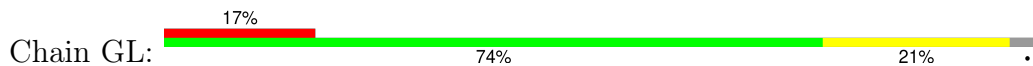


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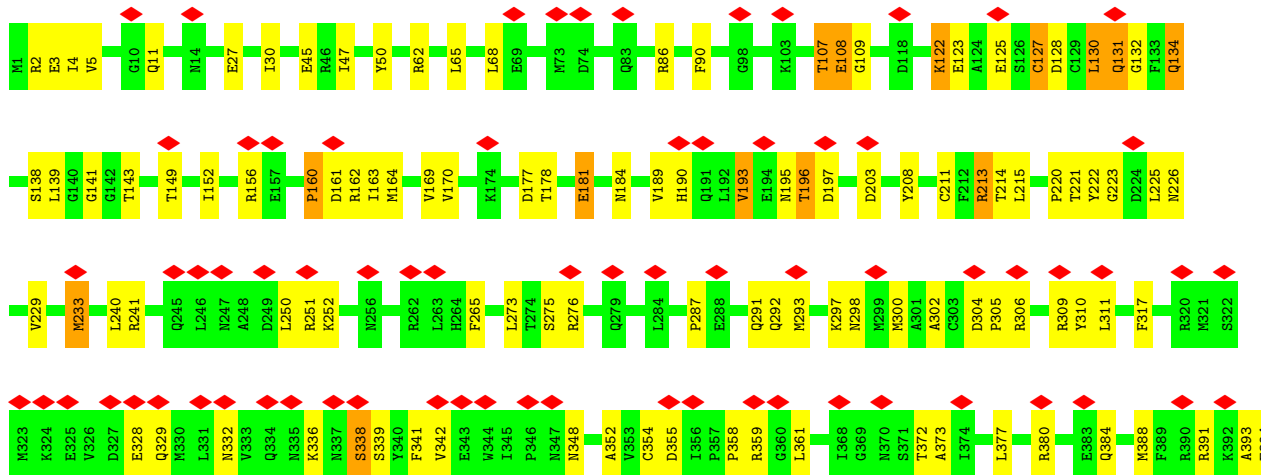
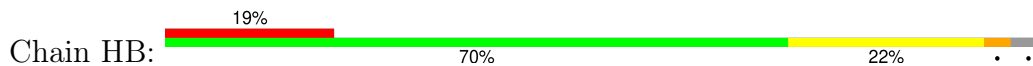


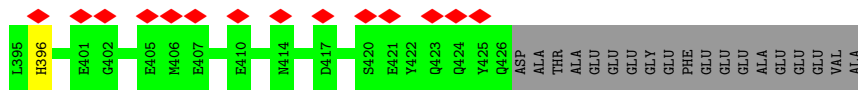


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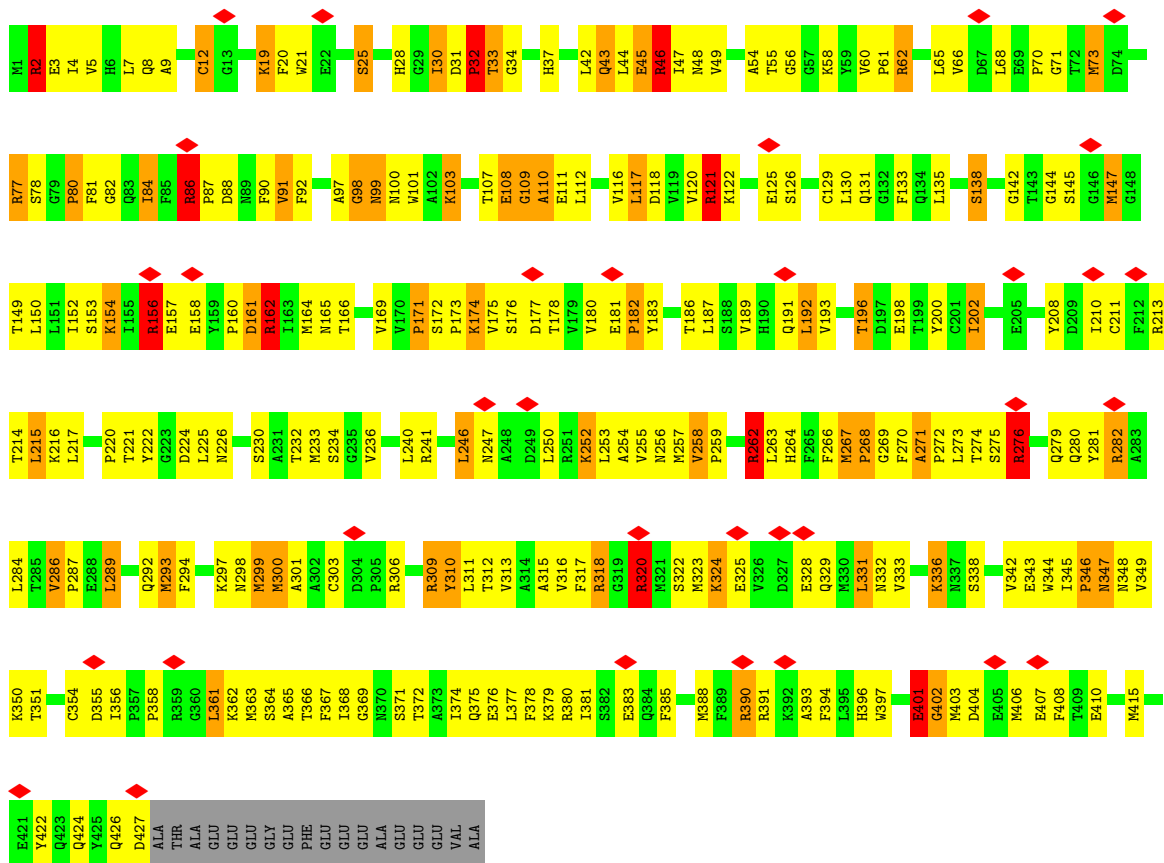


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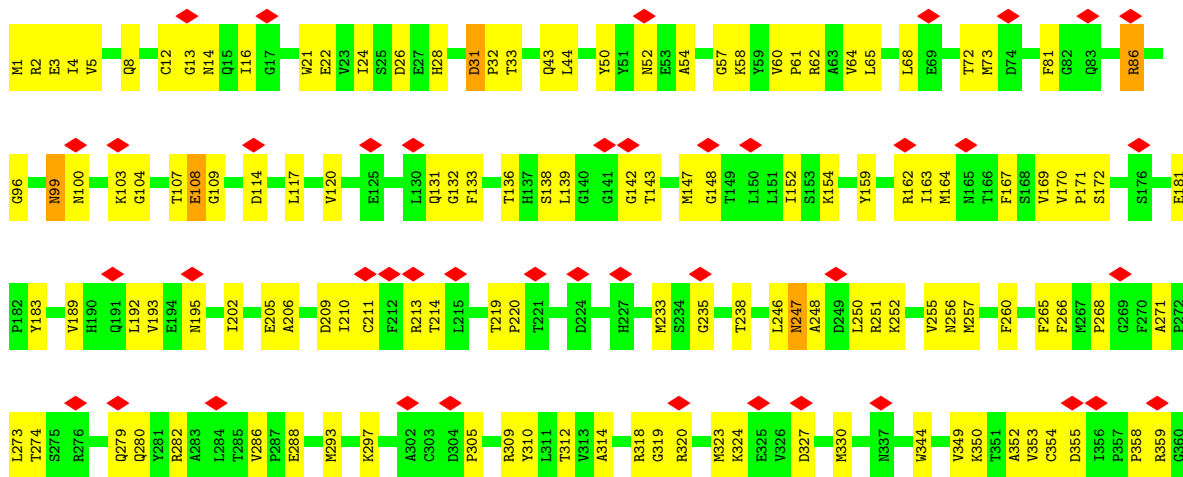


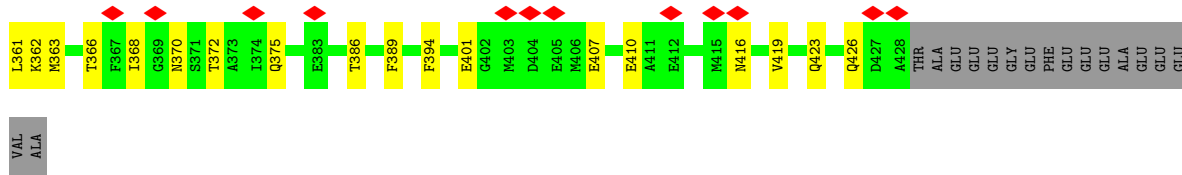


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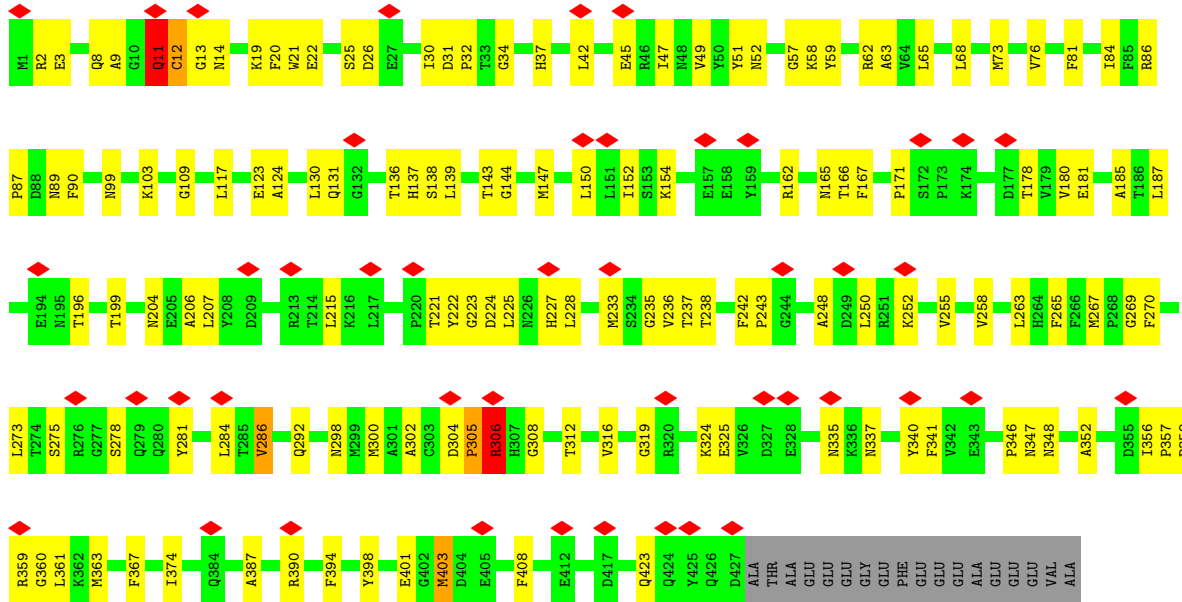


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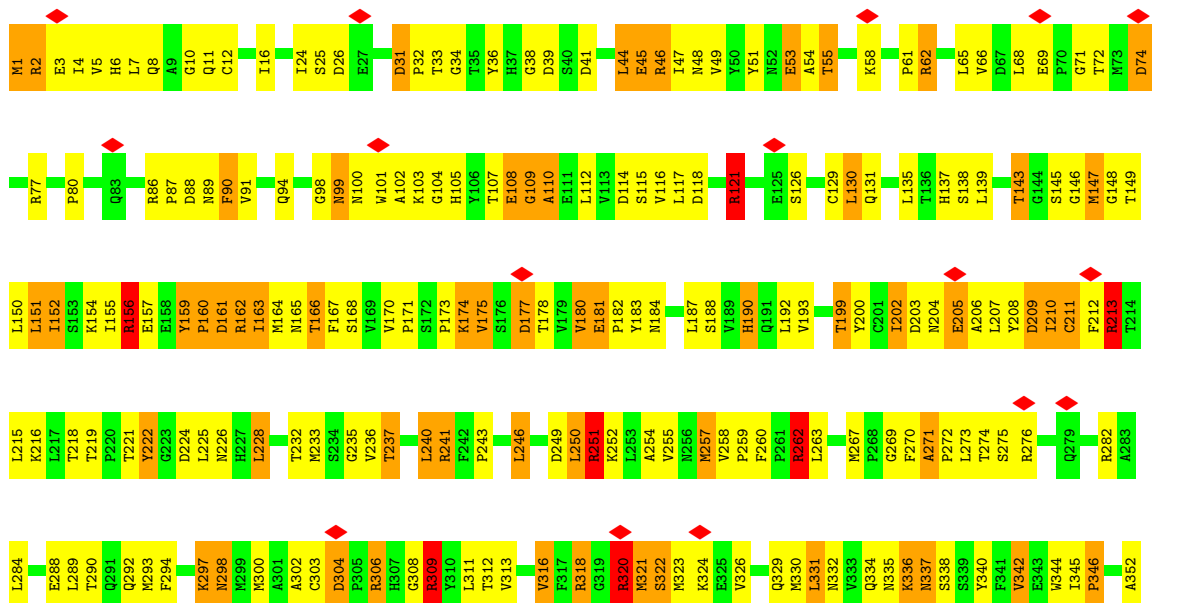


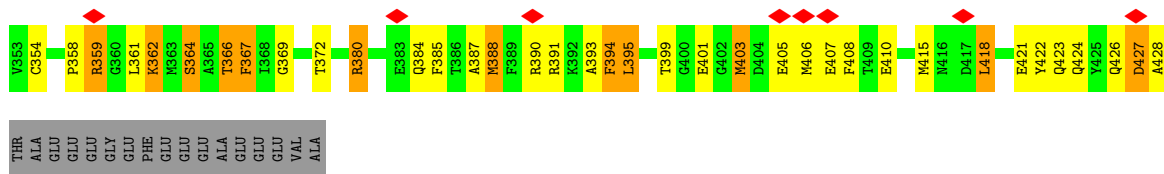


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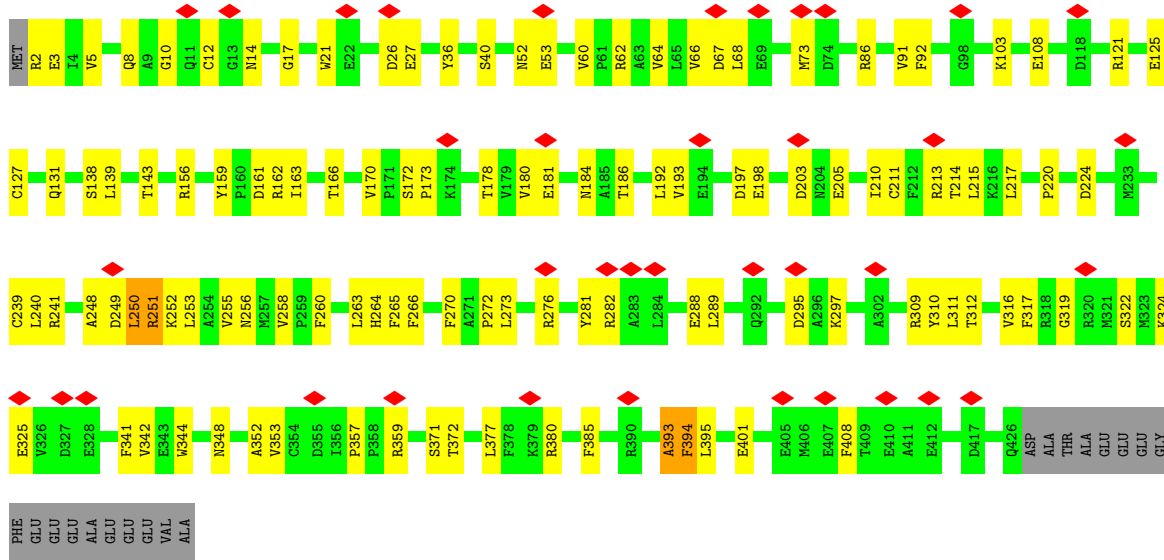


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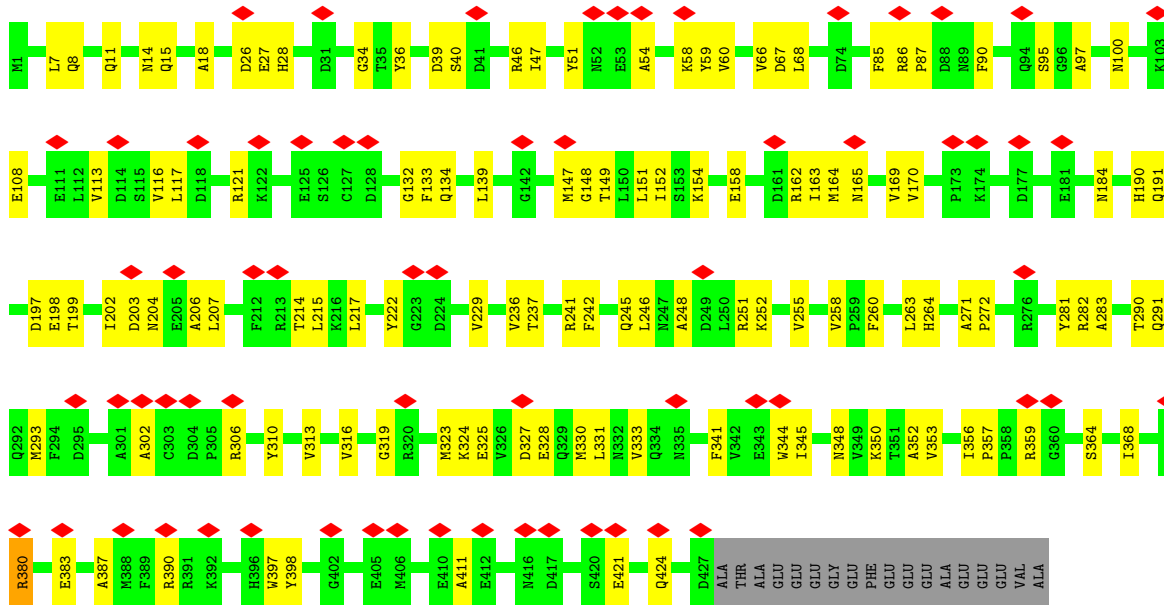




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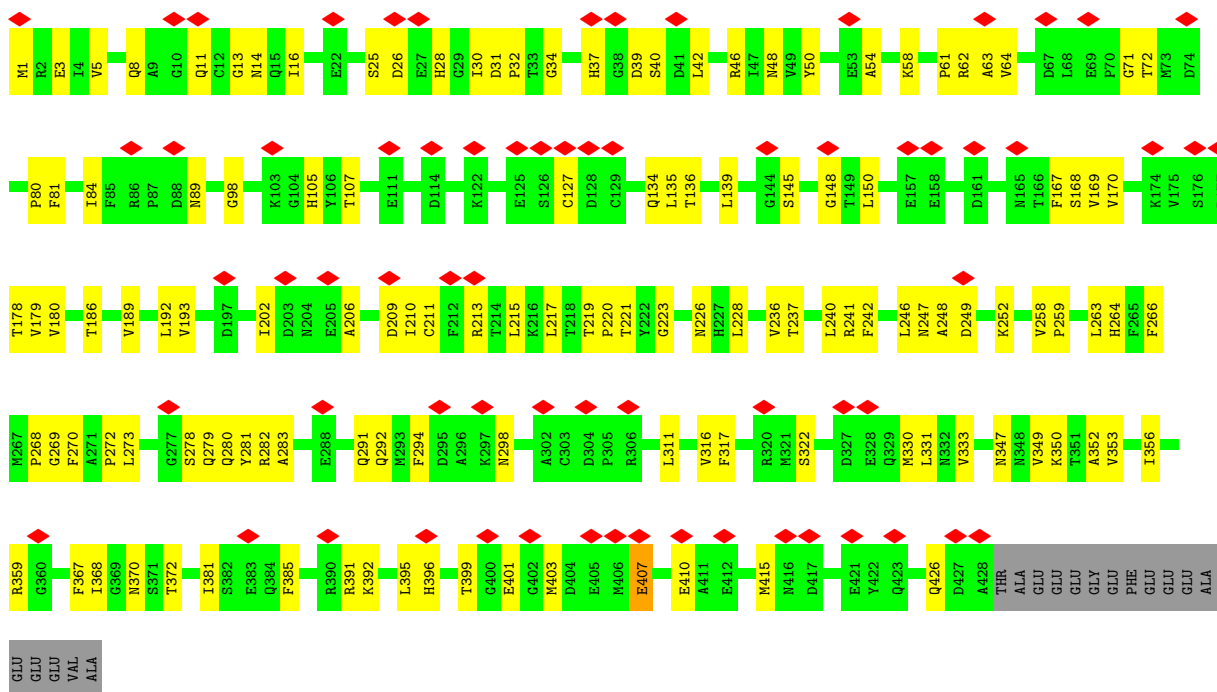


• Molecule 41: Tubulin beta-4B chain



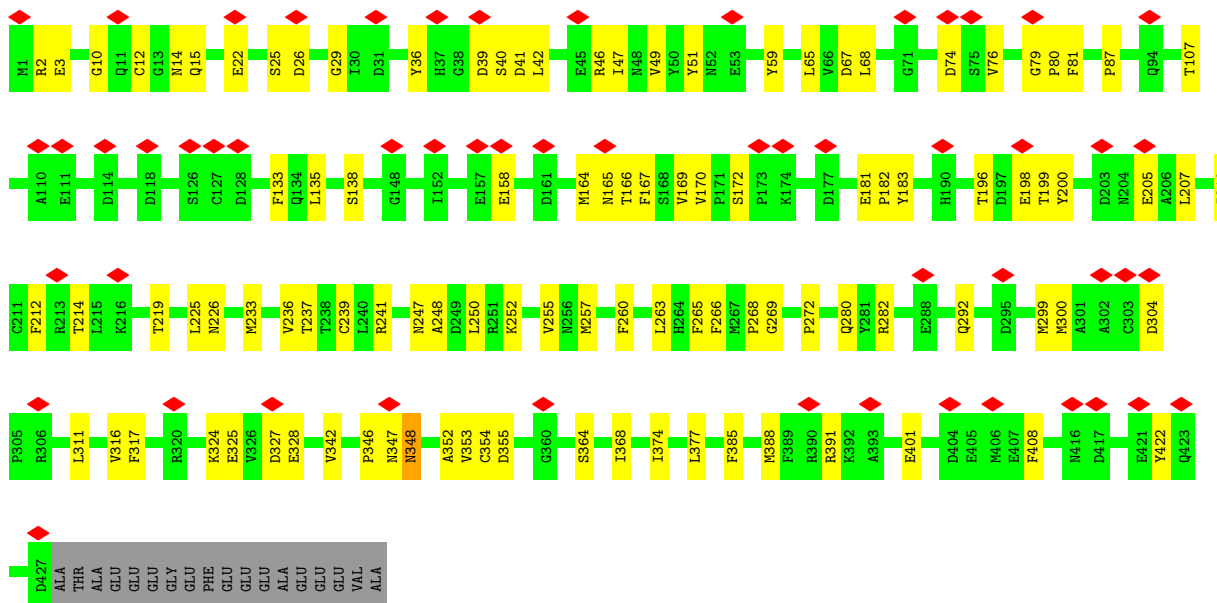
• Molecule 41: Tubulin beta-4B chain

Chain IF: 15% 67% 29%



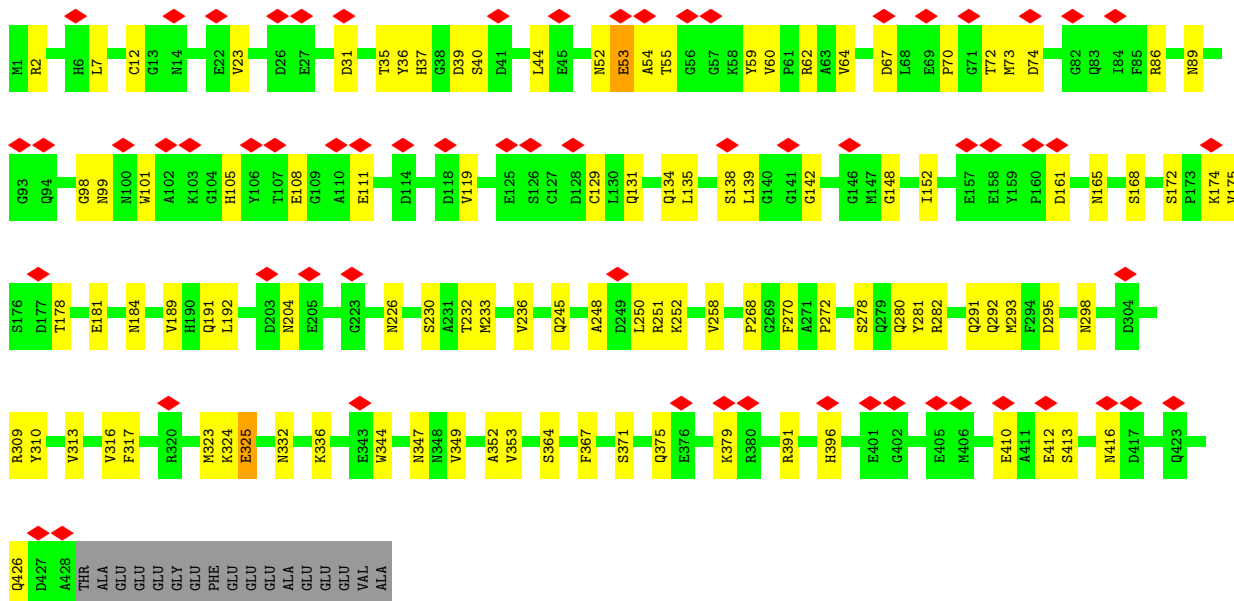
Molecule 41: Tubulin beta-4B chain

Chain IH: 12% 72% 23%

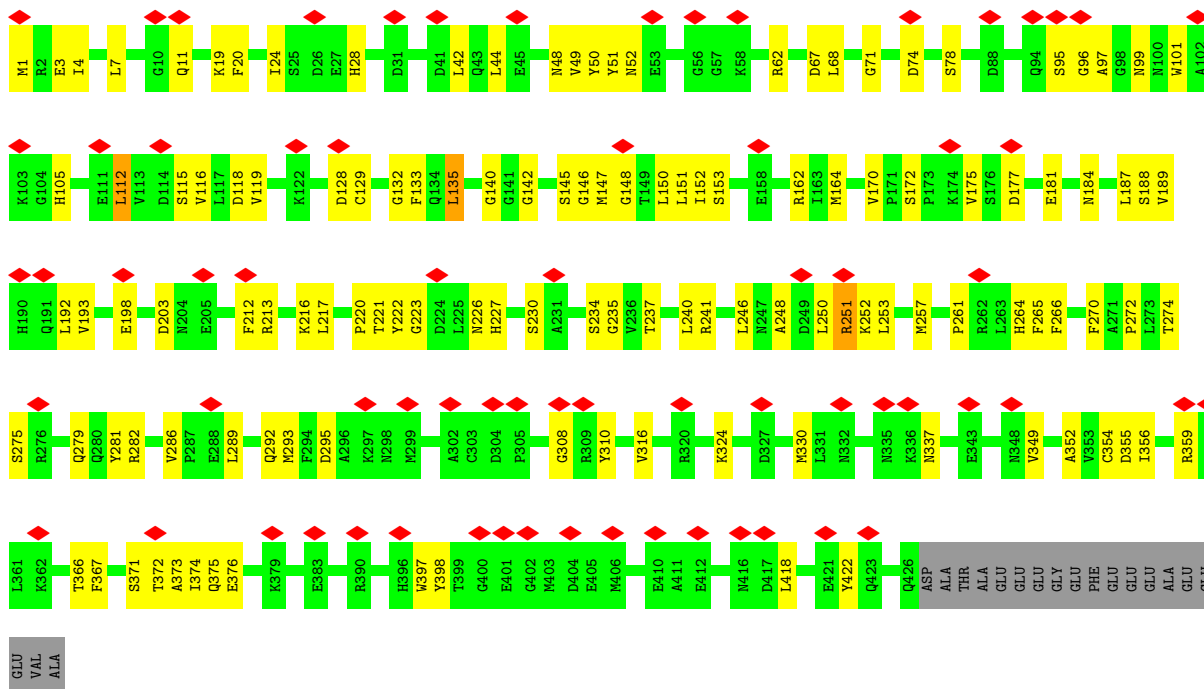


Molecule 41: Tubulin beta-4B chain

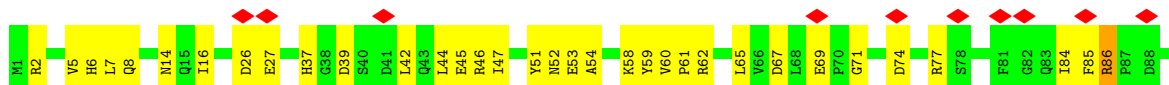
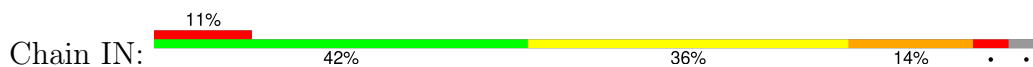
Chain IJ: 14% 73% 23%

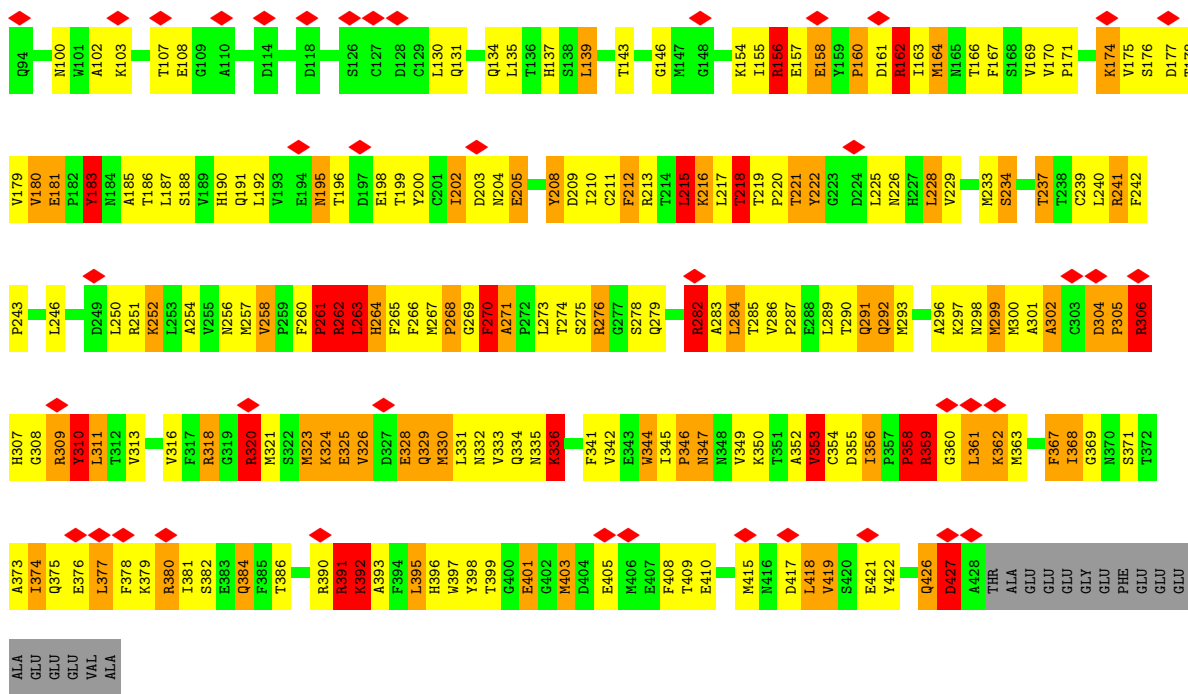


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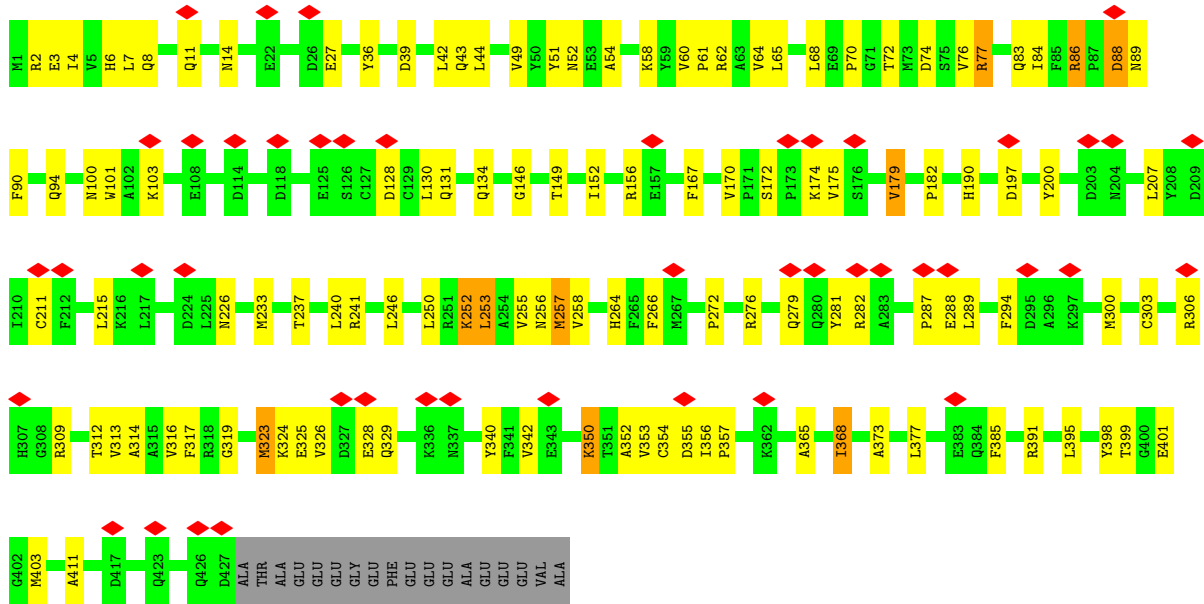


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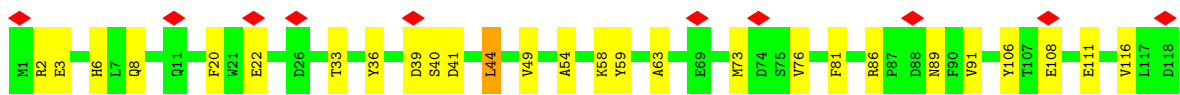
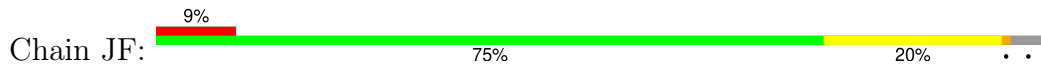


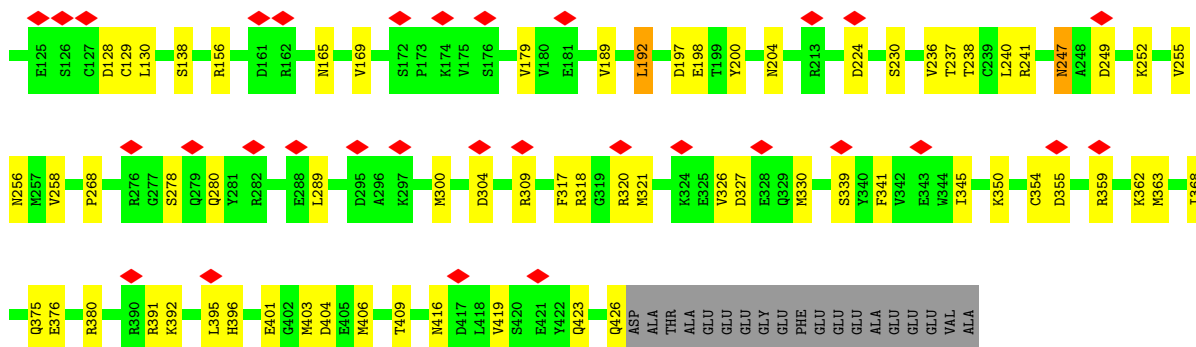


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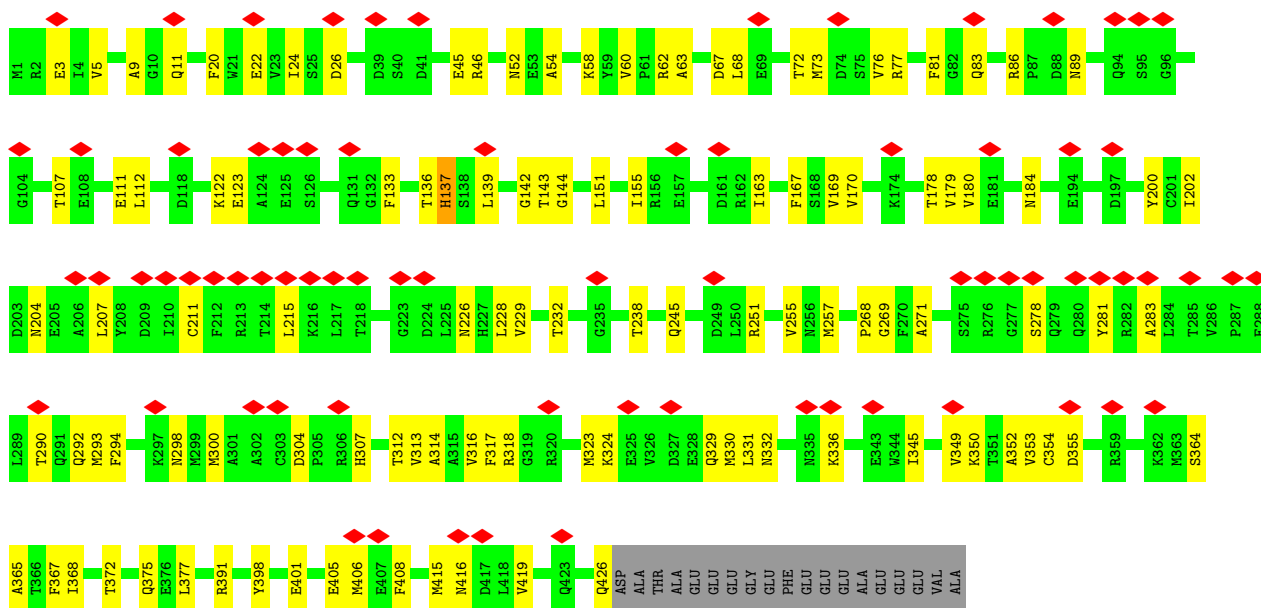


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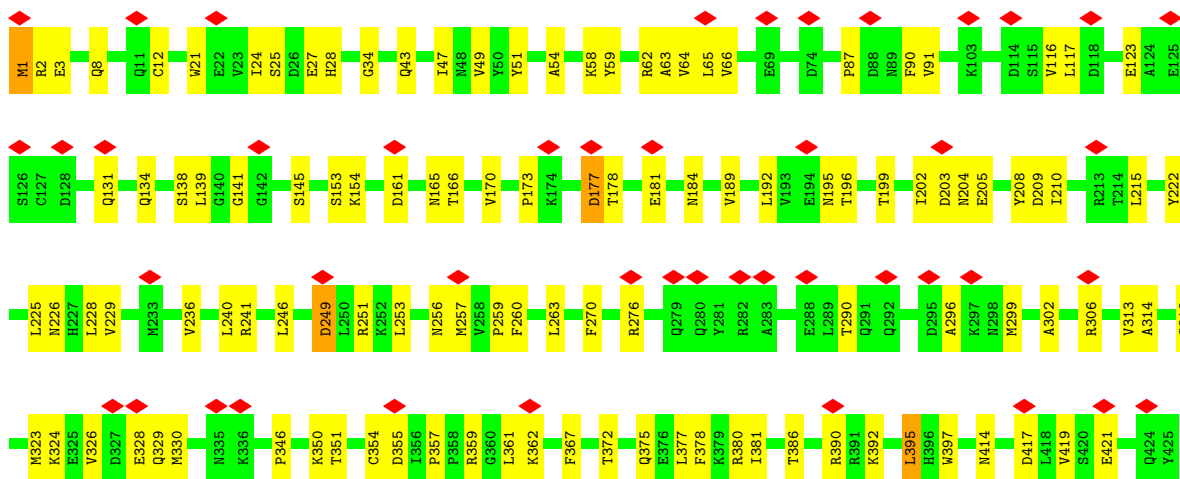




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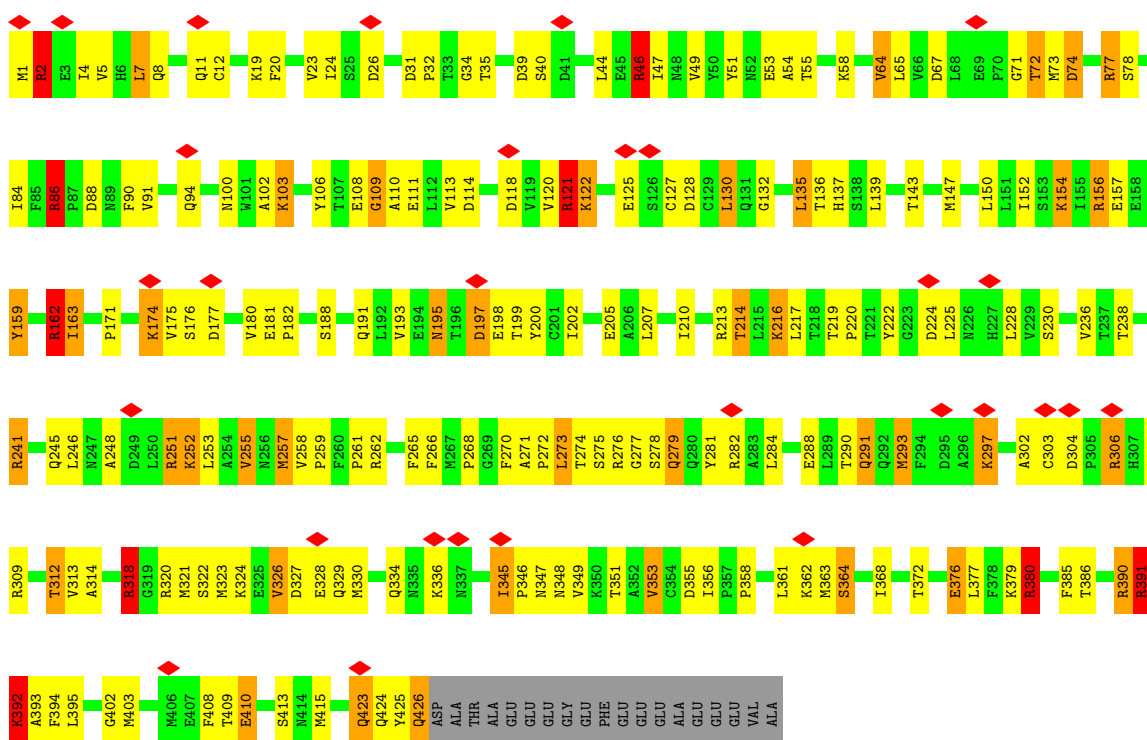


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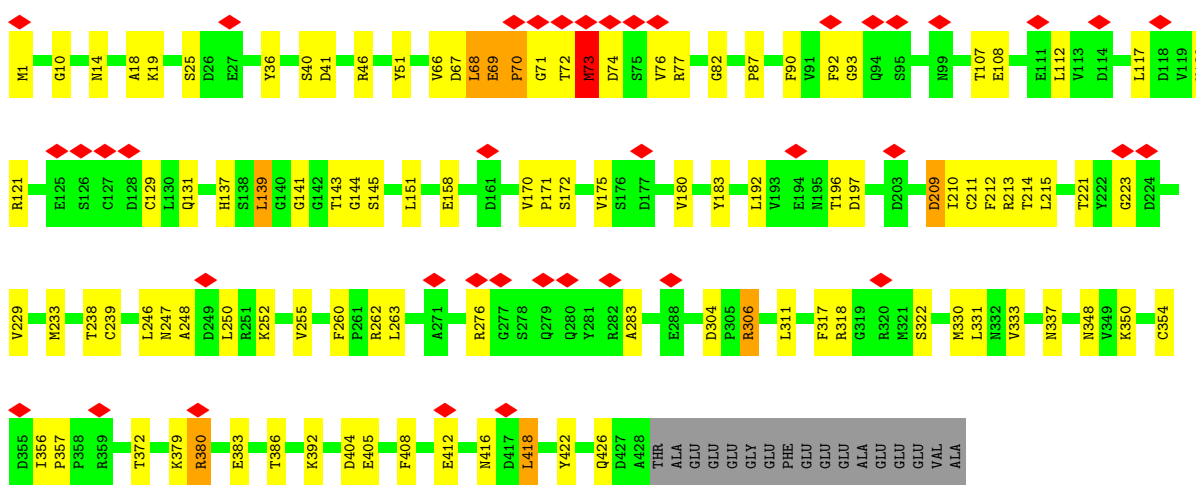
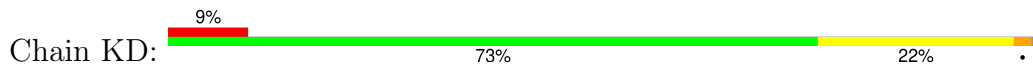


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THR
ALA
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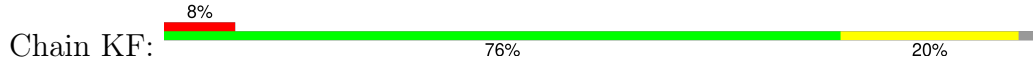
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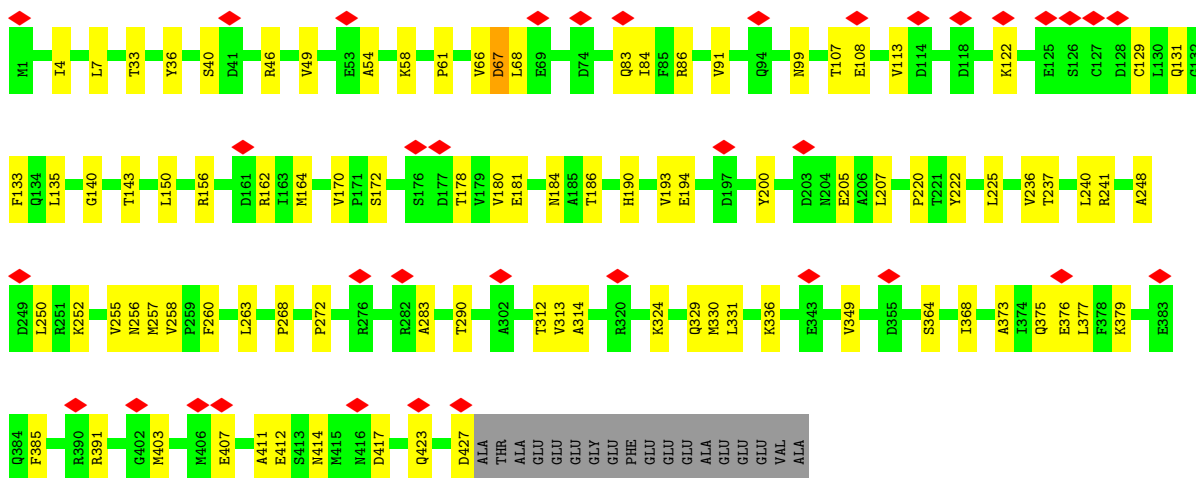


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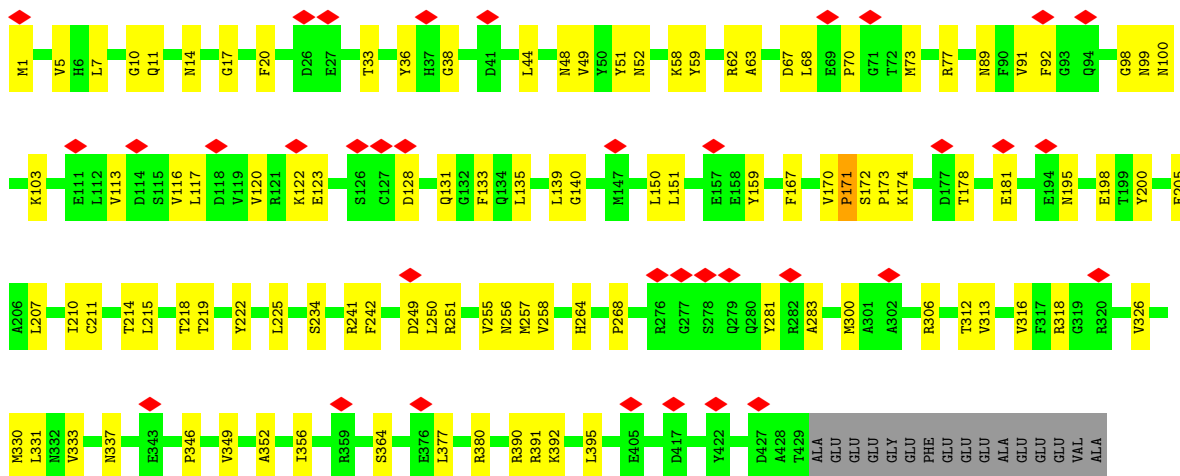
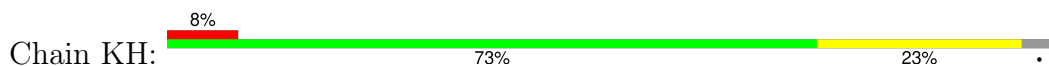


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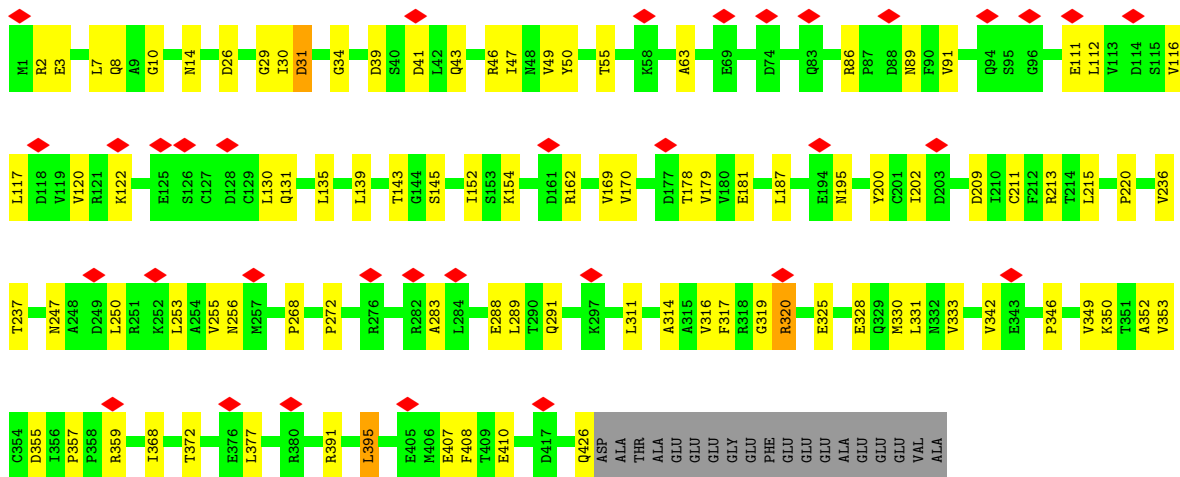
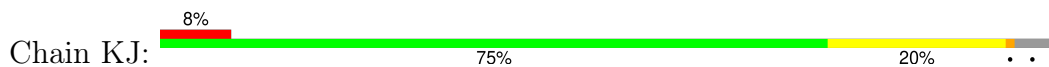




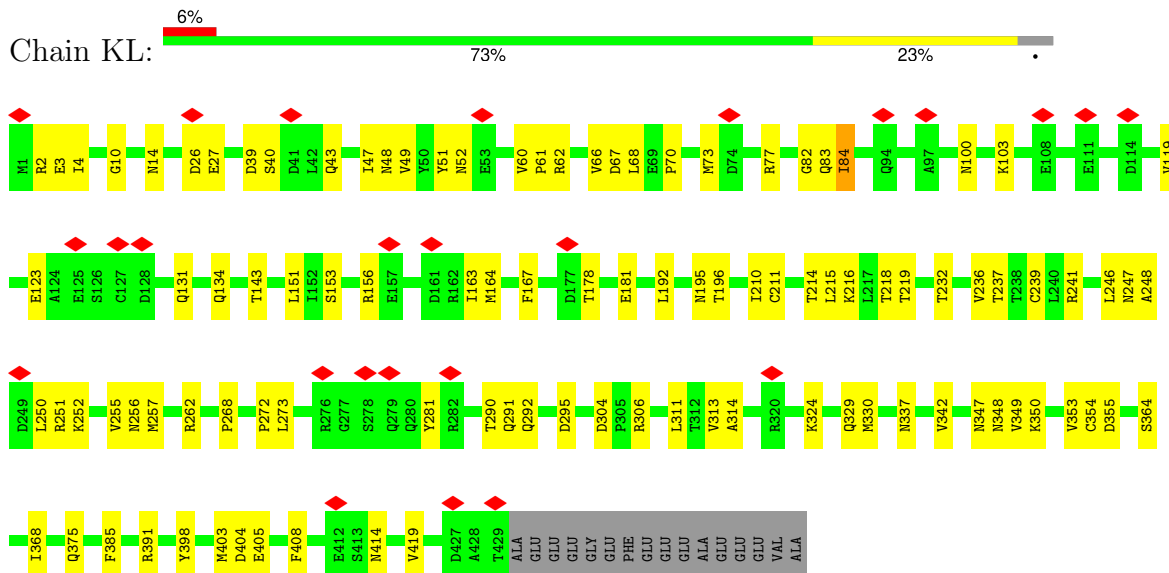
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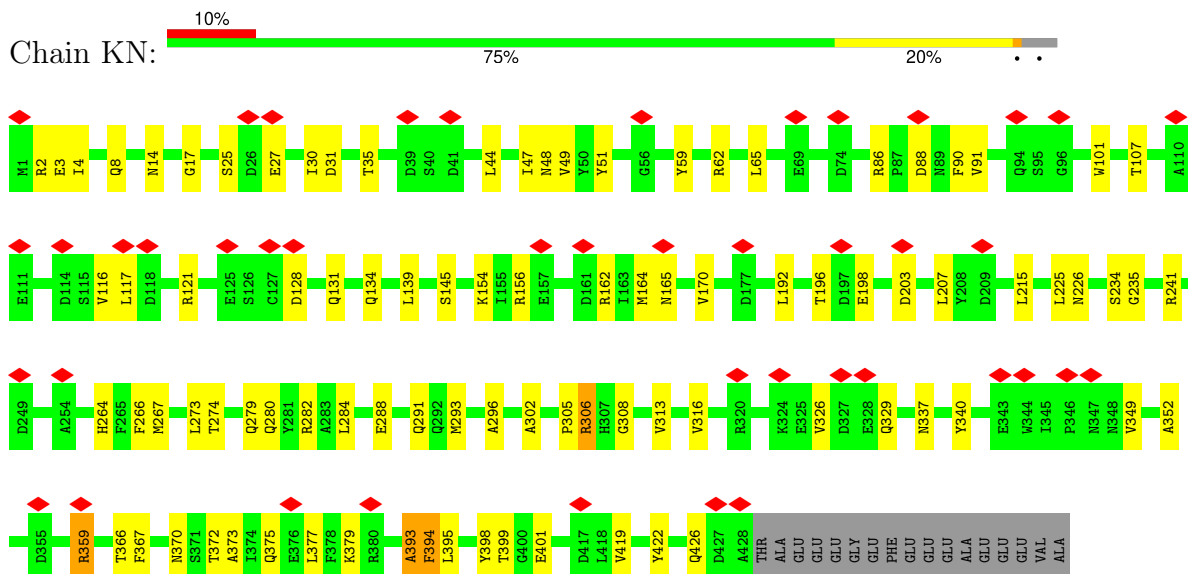
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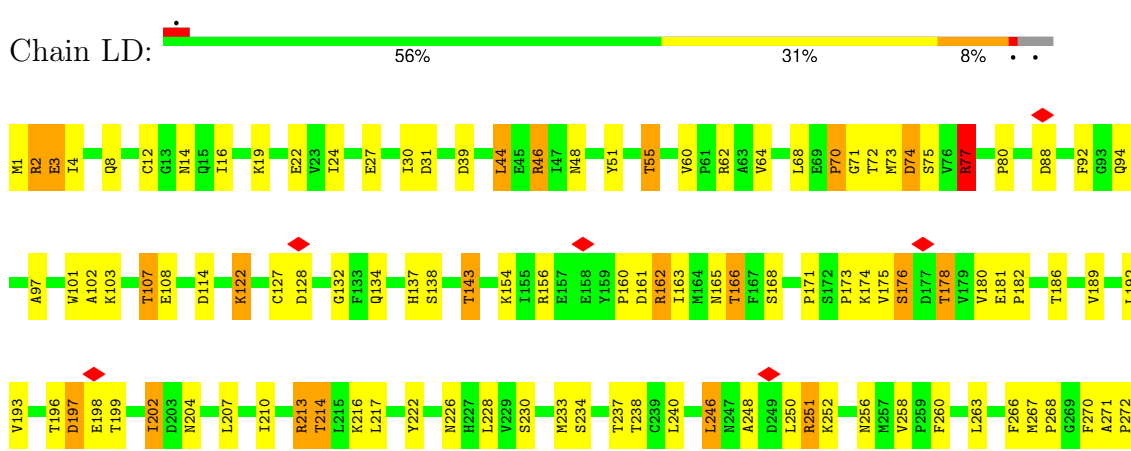
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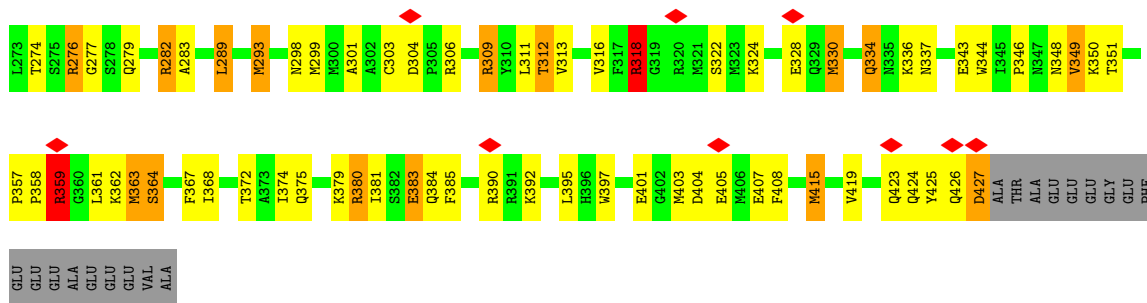


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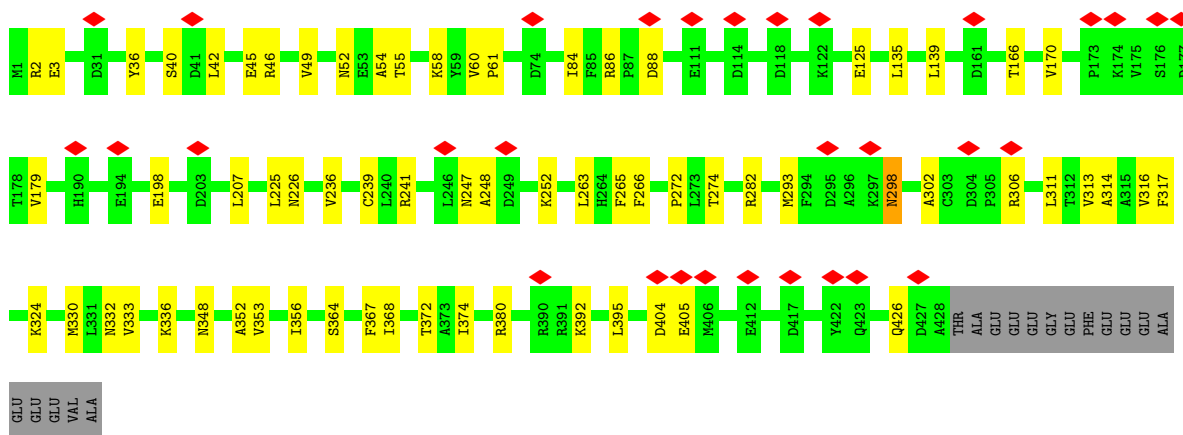
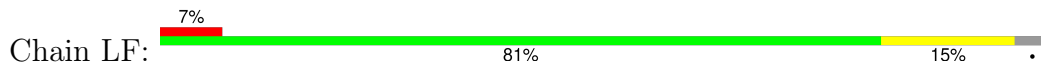


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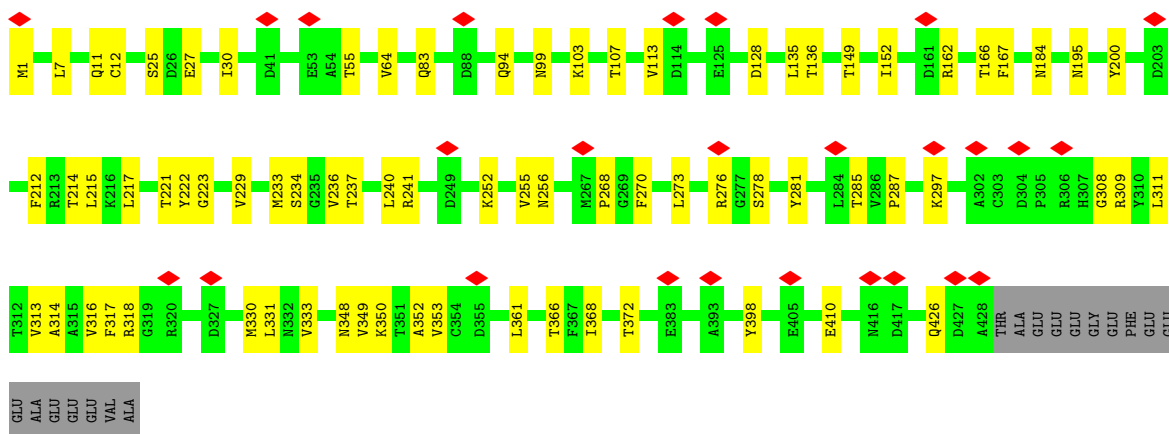
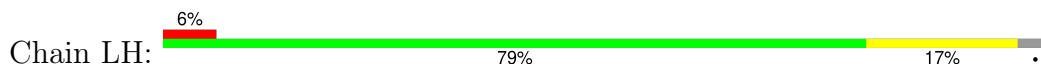




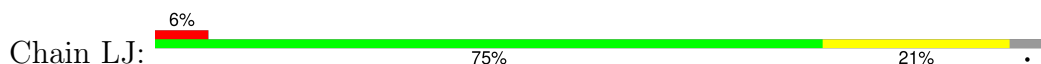
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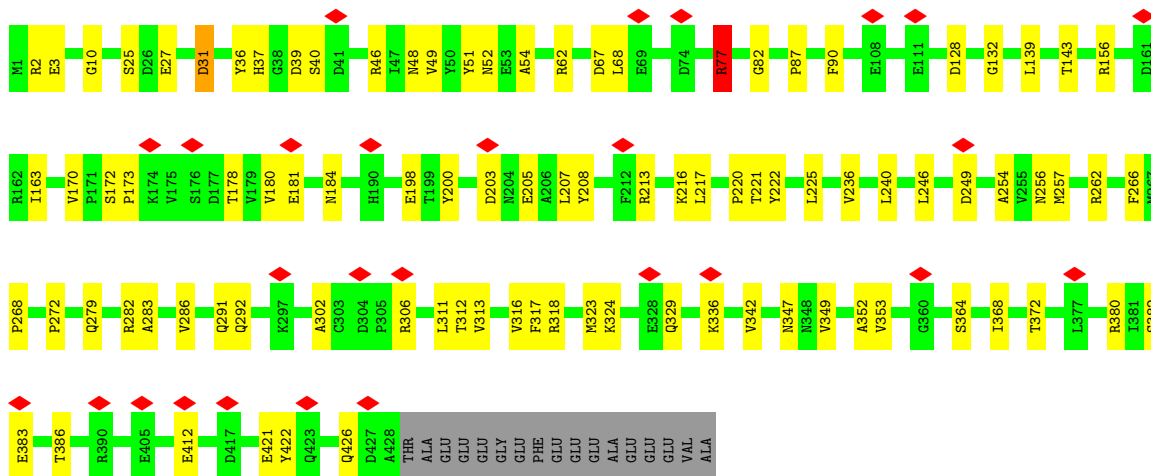


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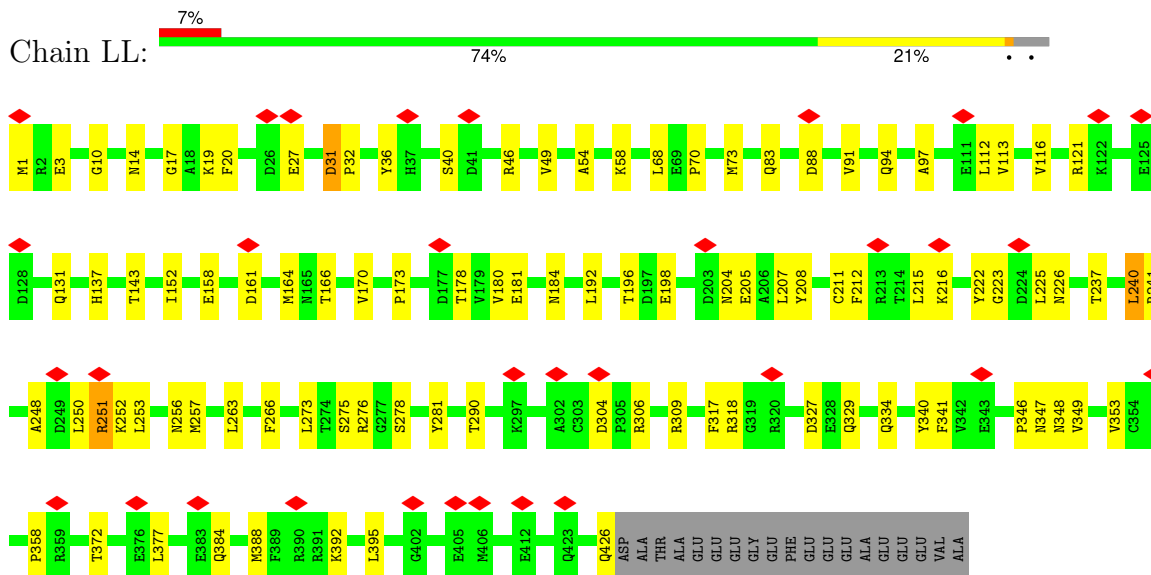


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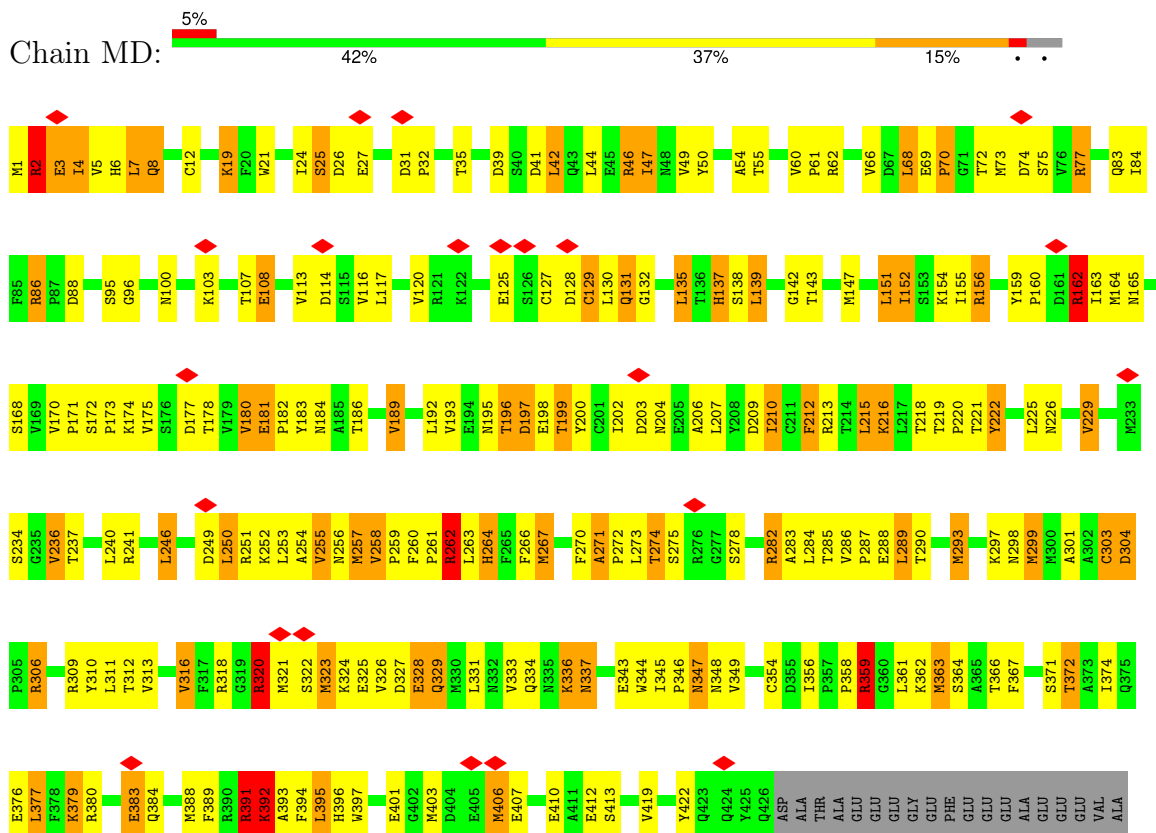




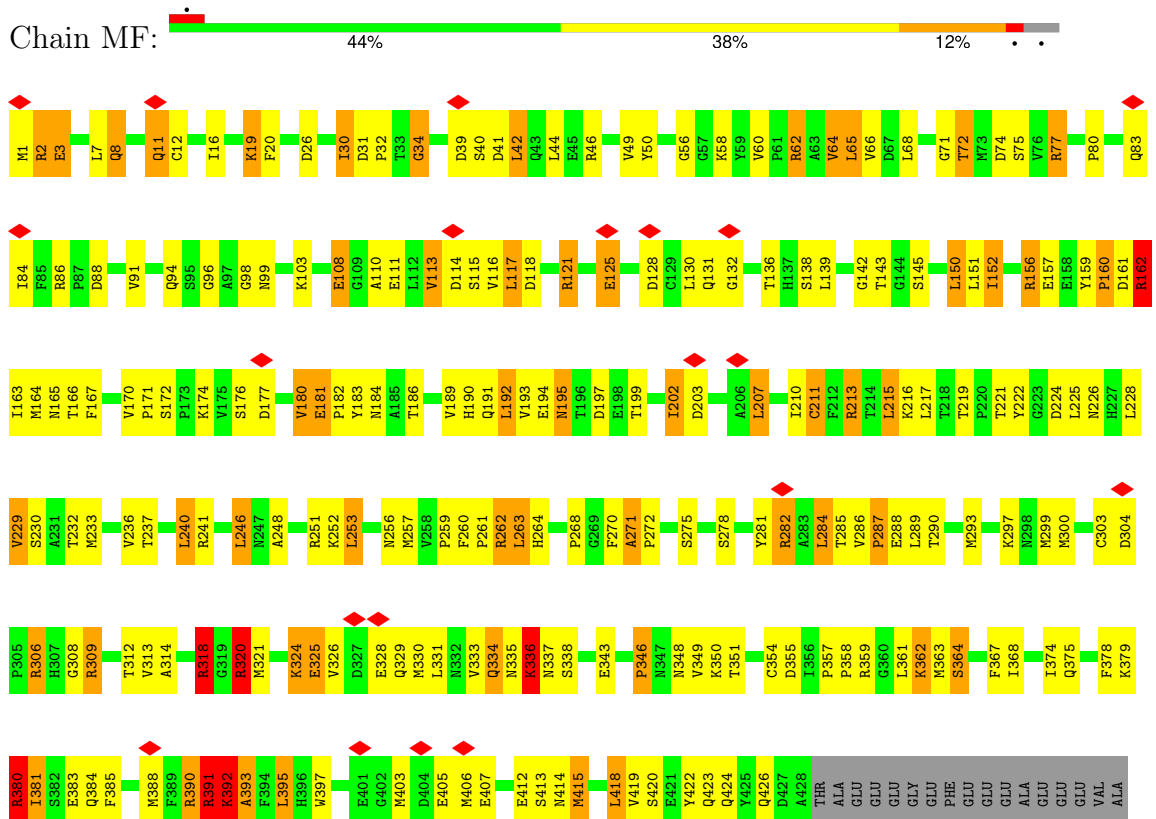
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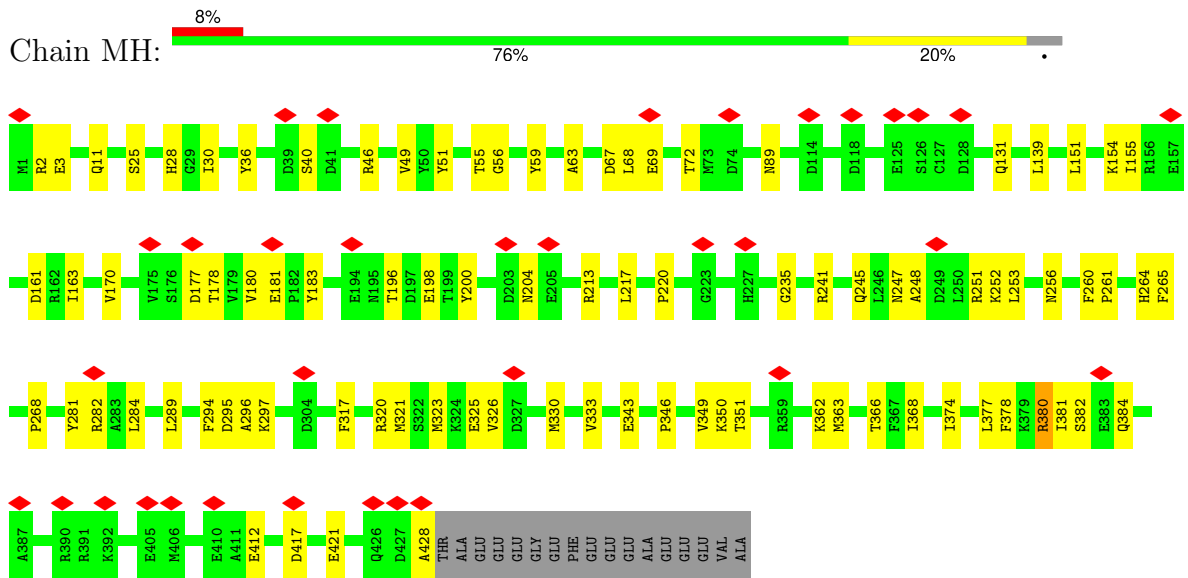
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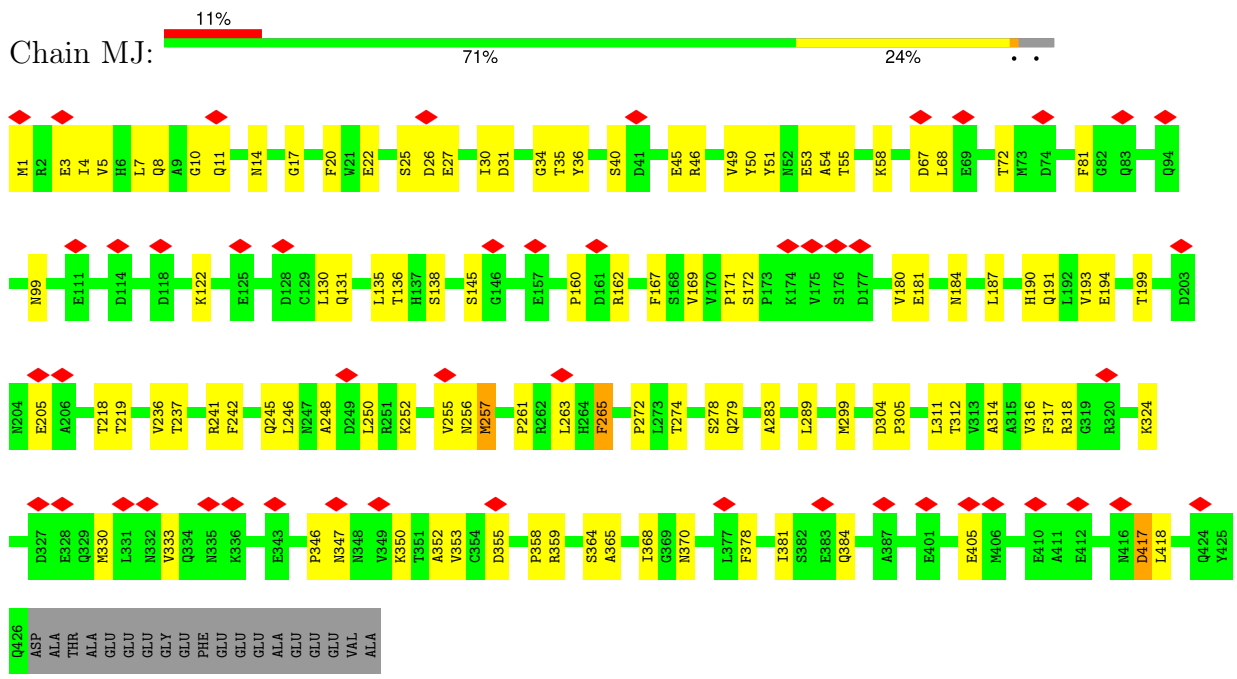
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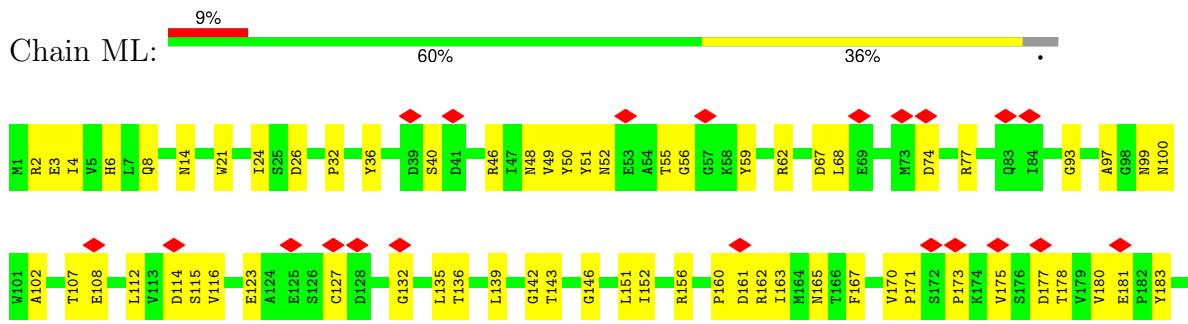
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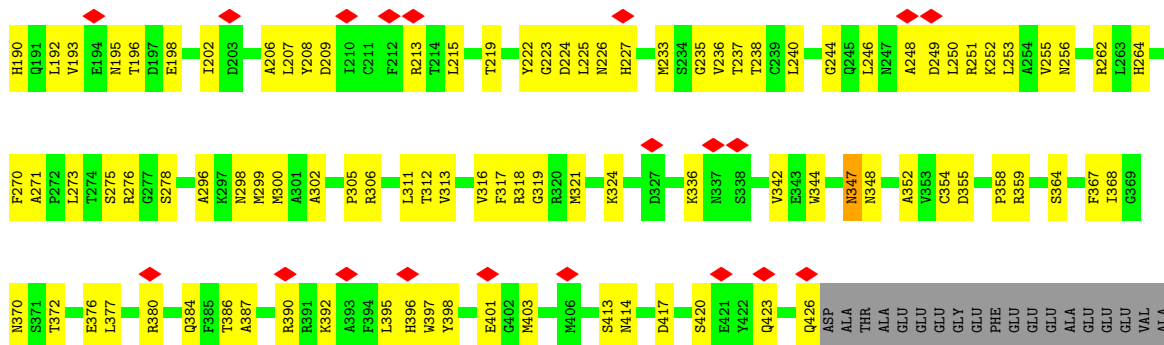


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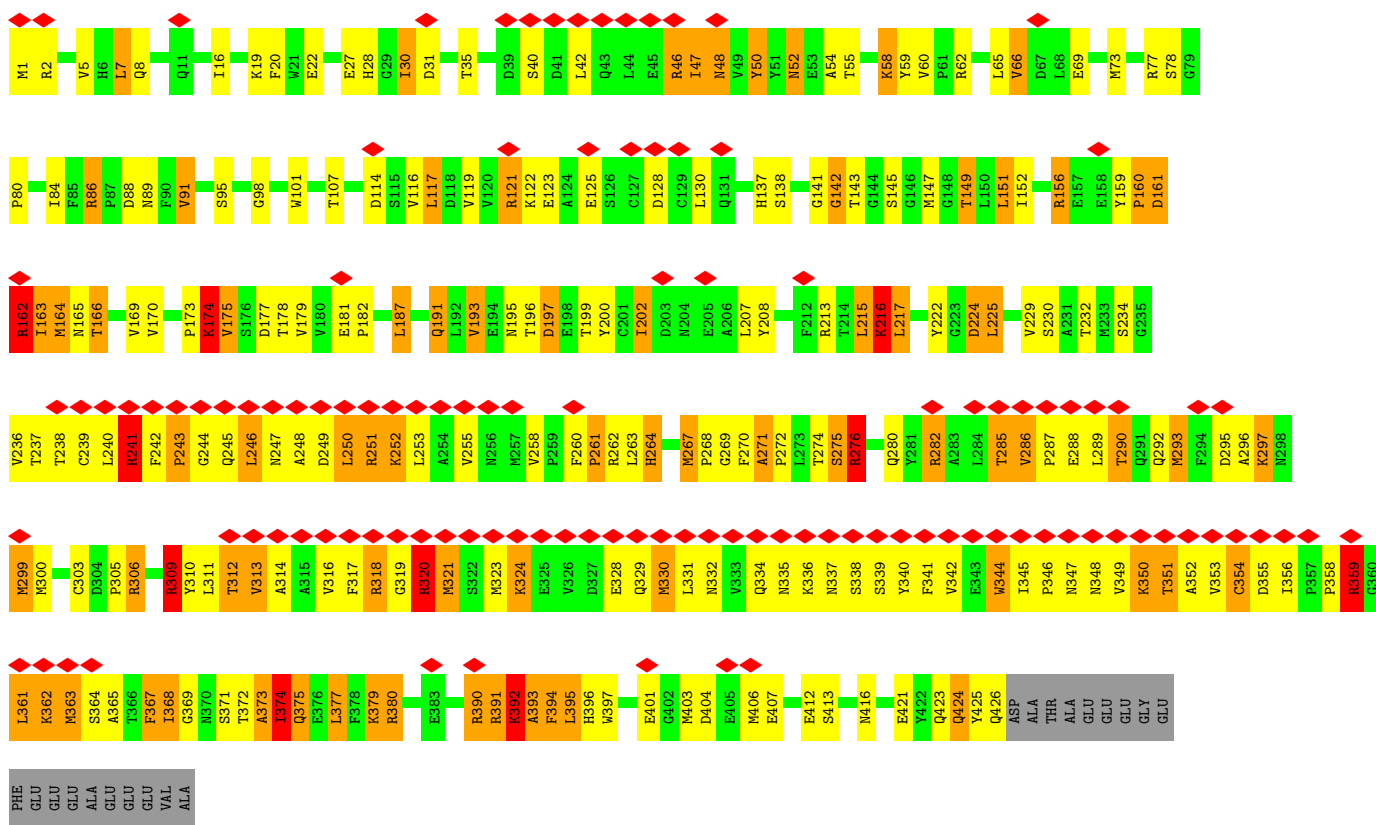
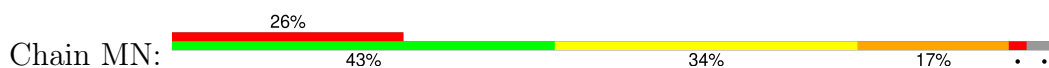


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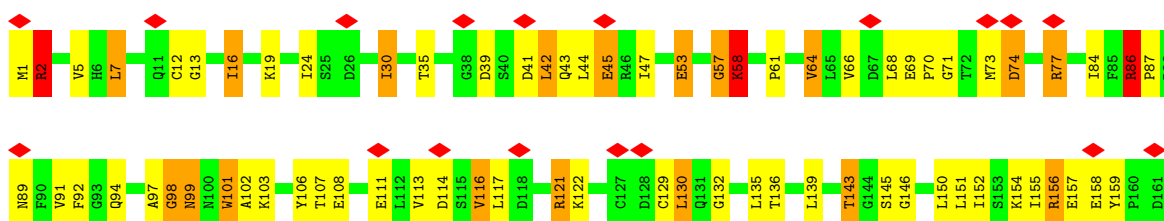


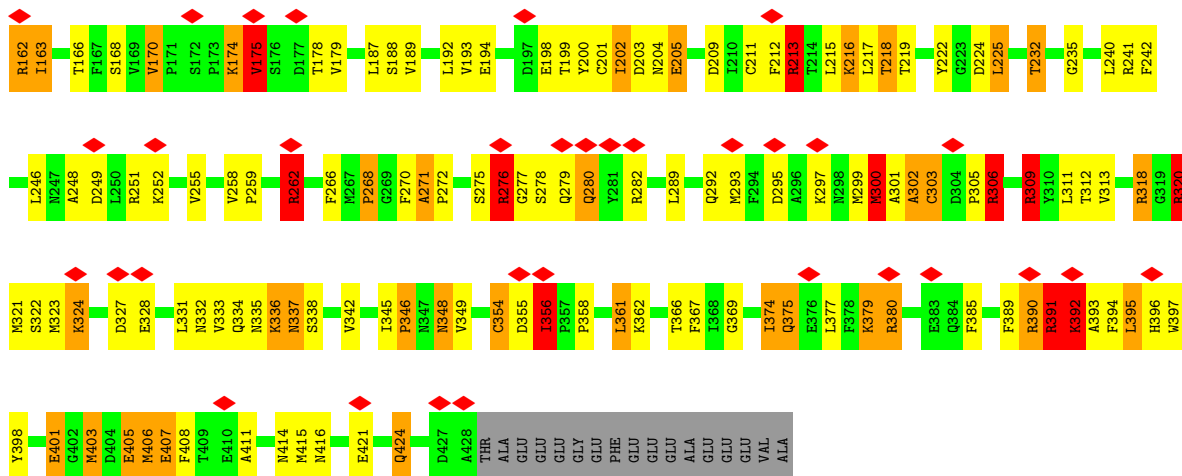


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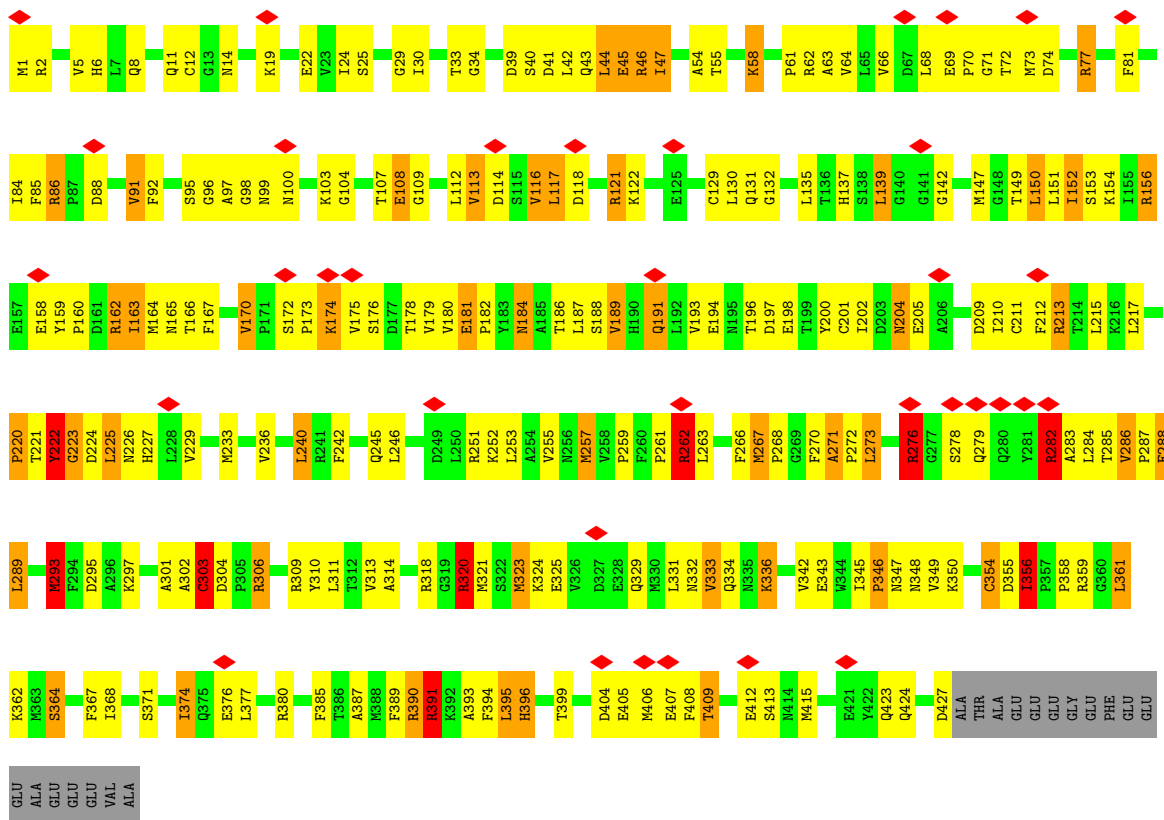


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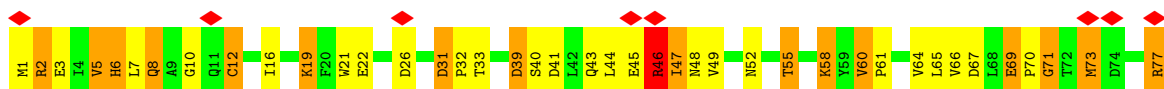


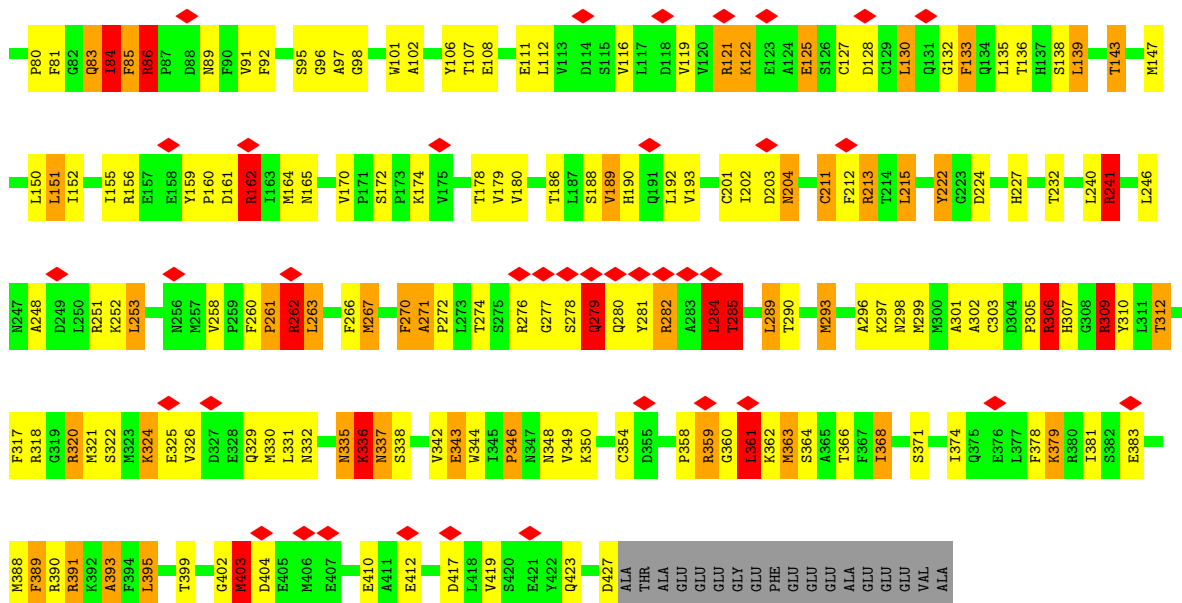


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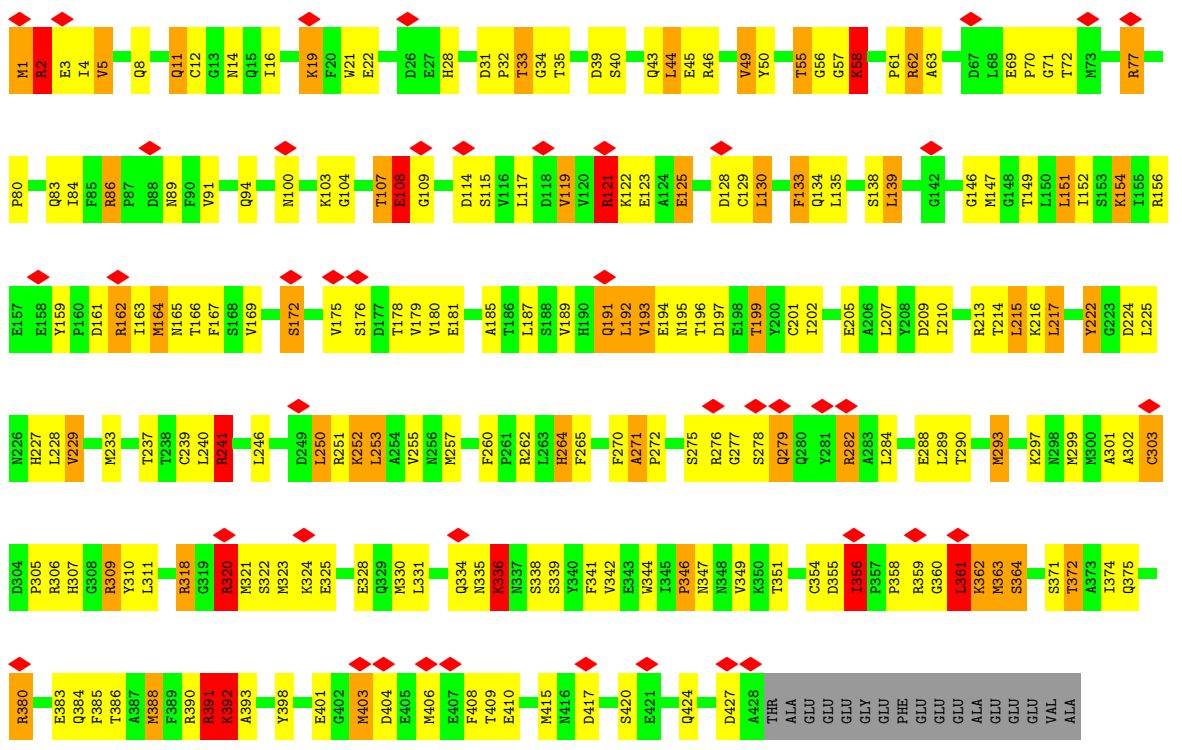


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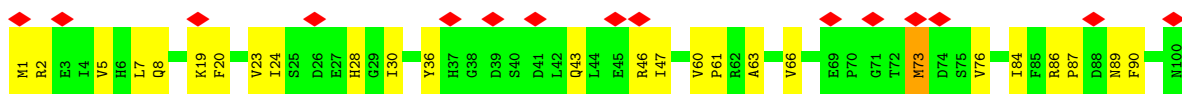


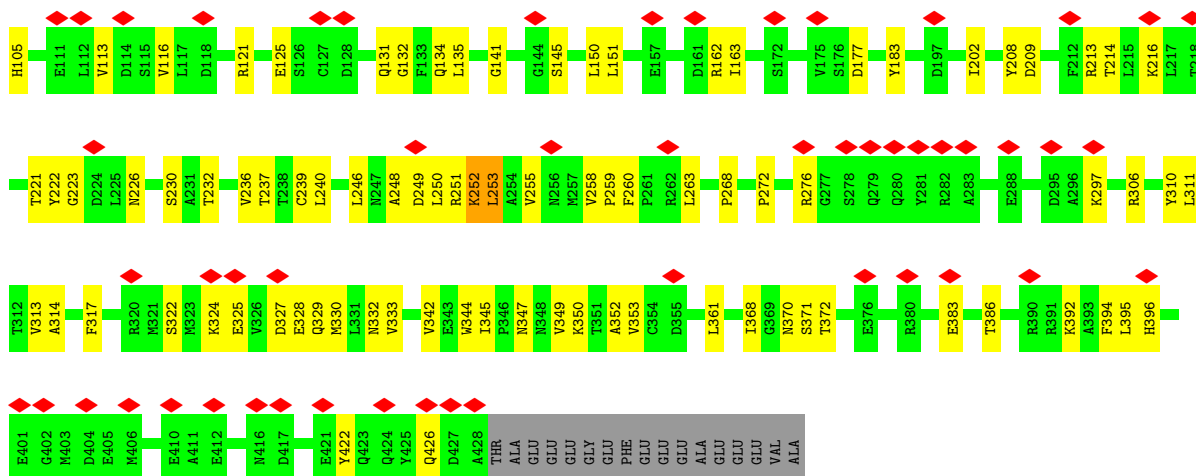


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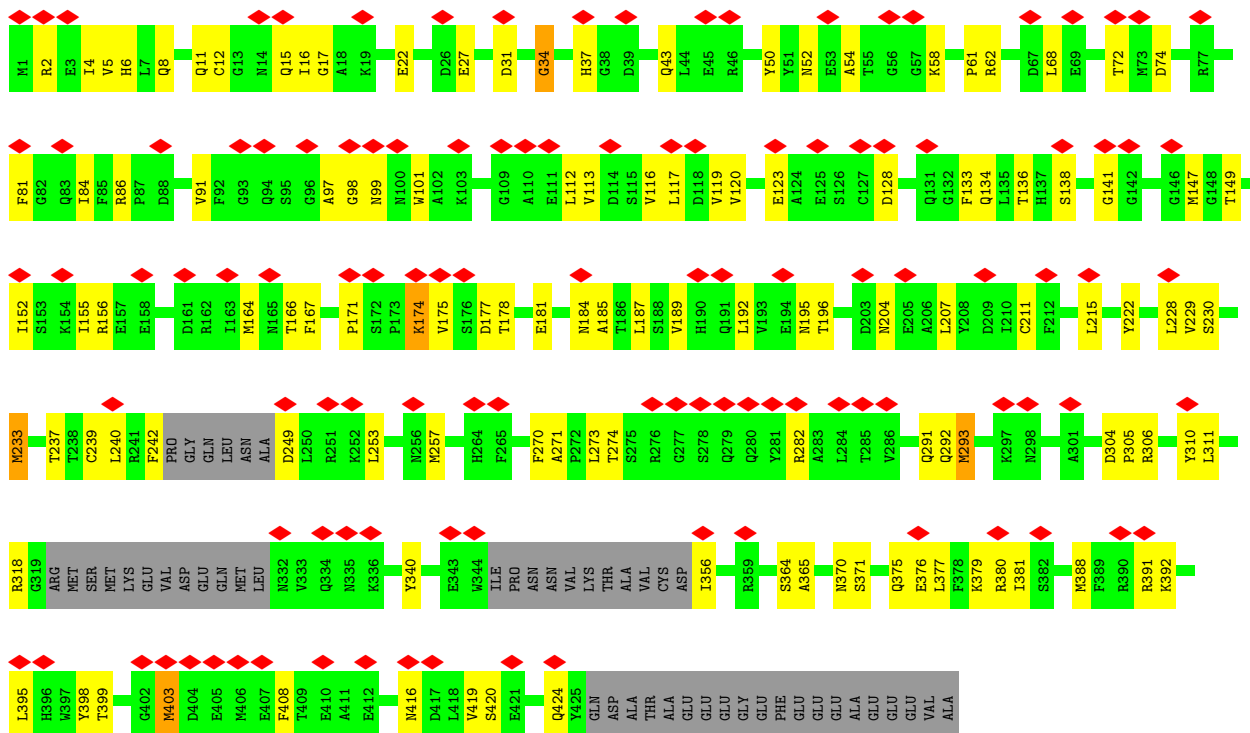


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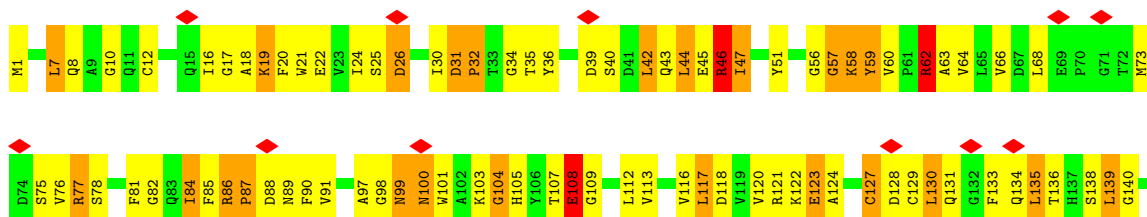


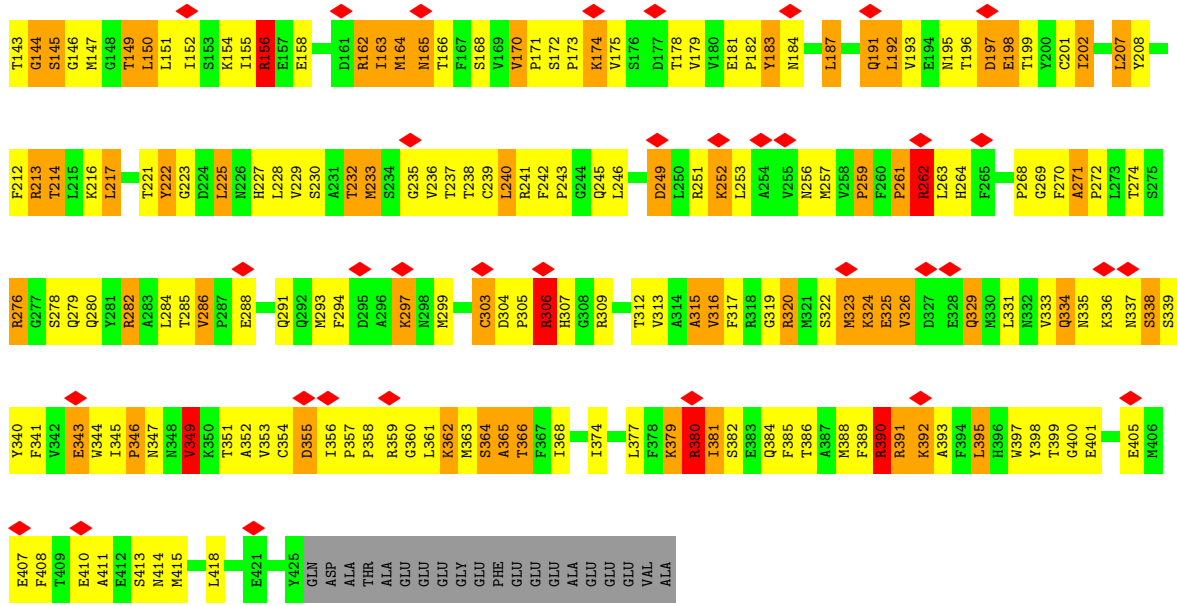


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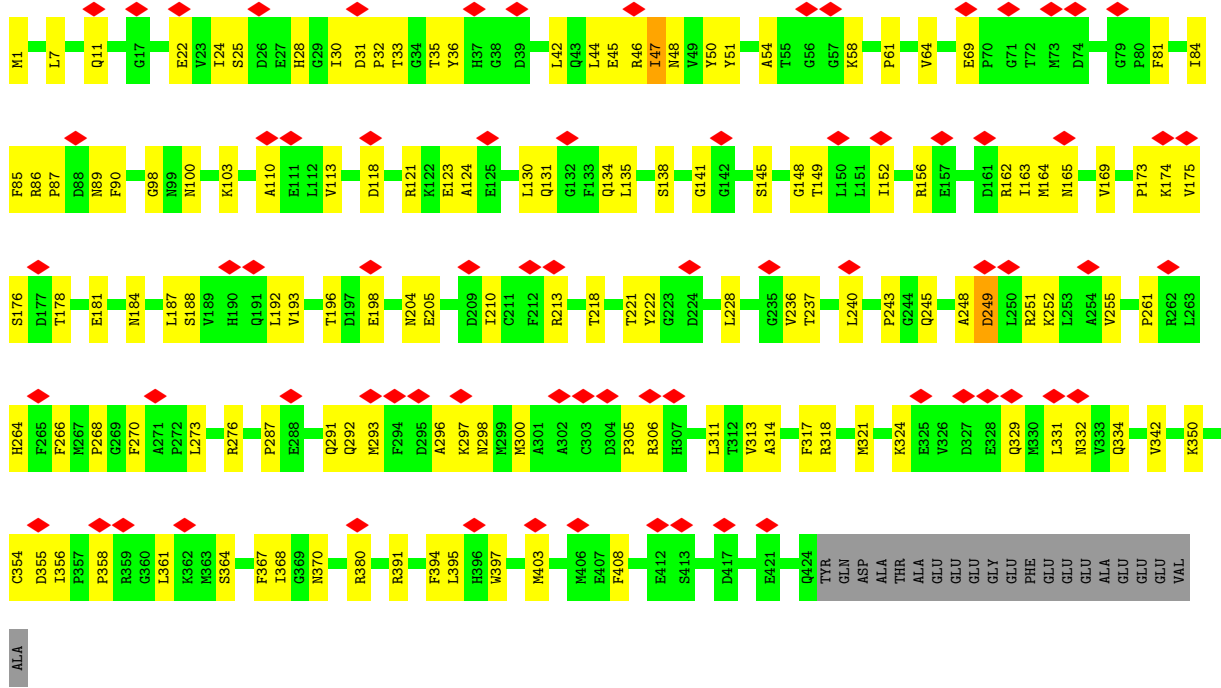


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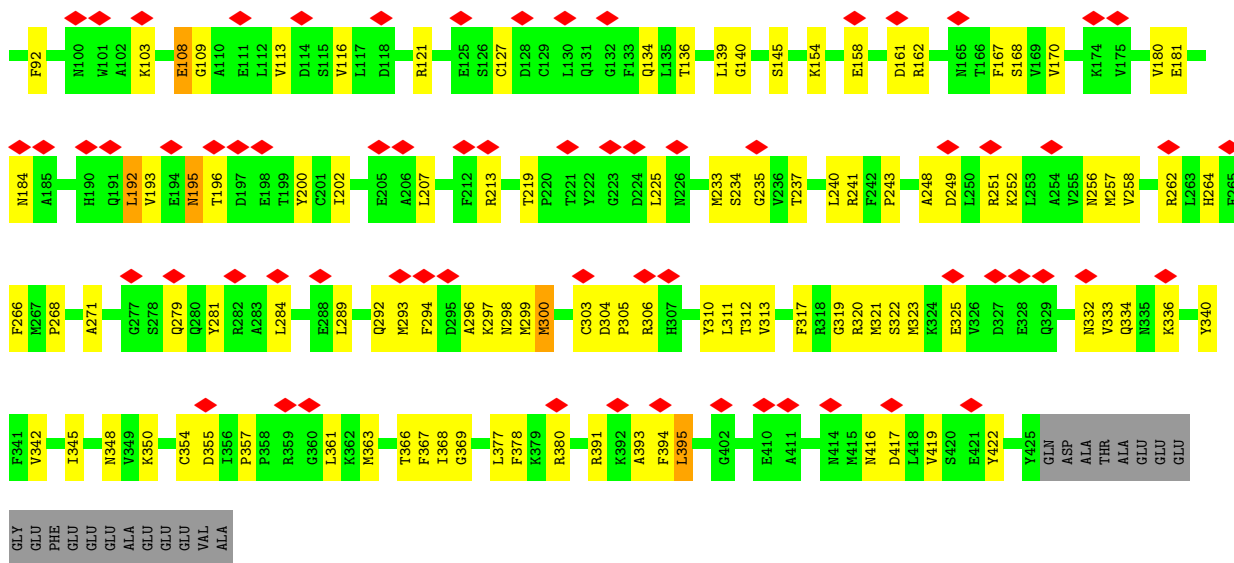


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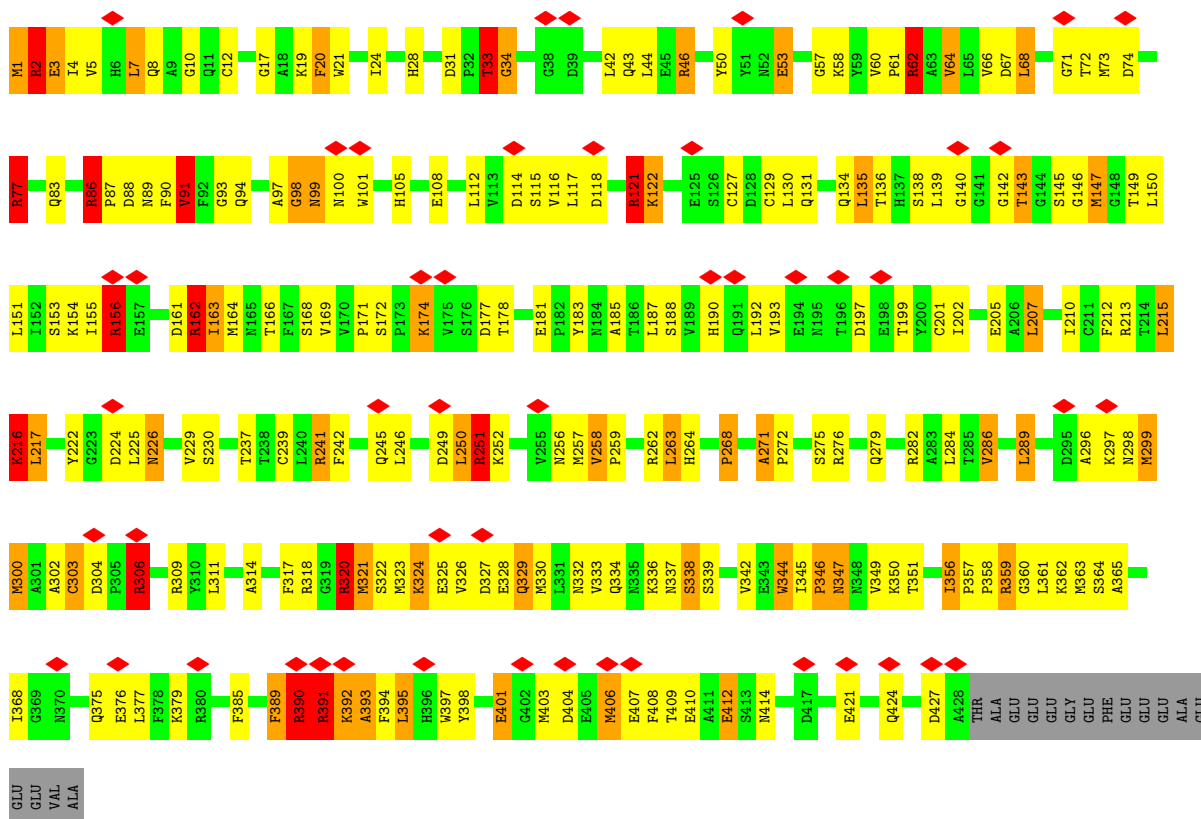


• Molecule 41: Tubulin beta-4B chain

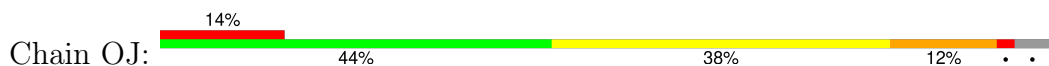


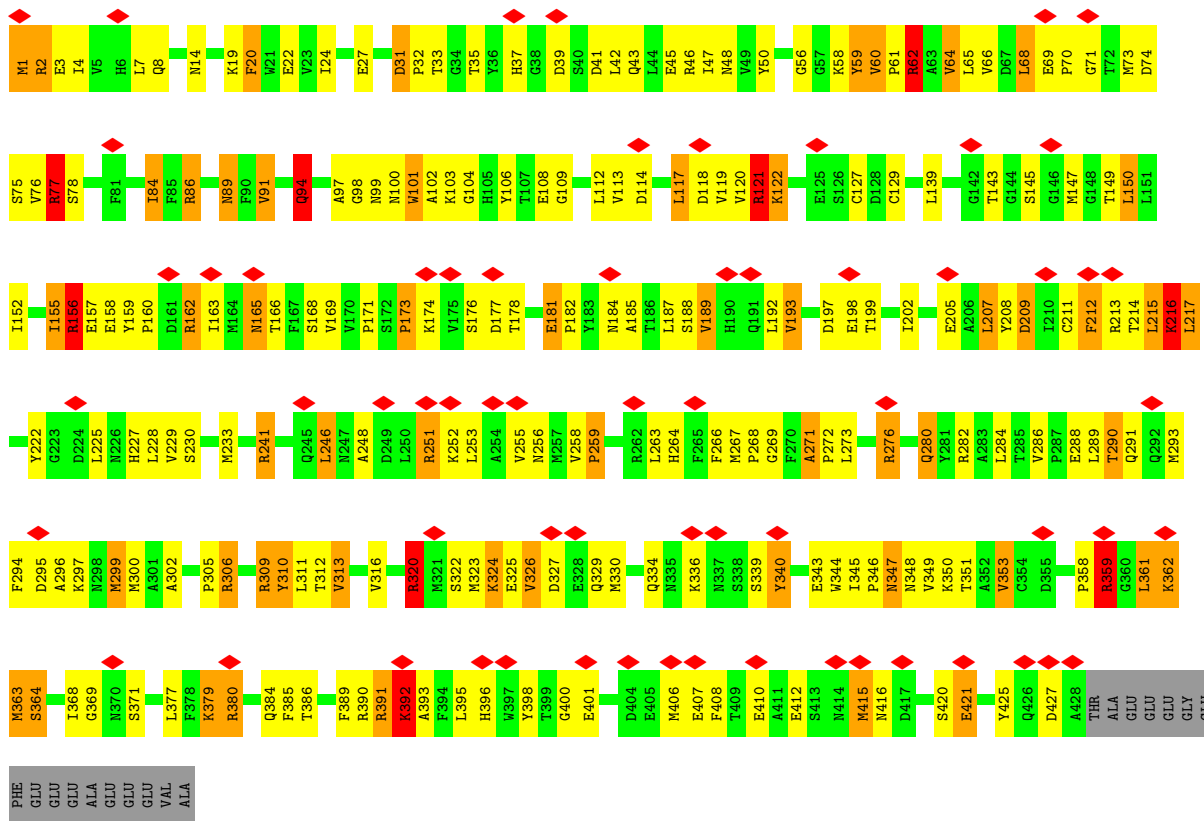


• Molecule 41: Tubulin beta-4B chain

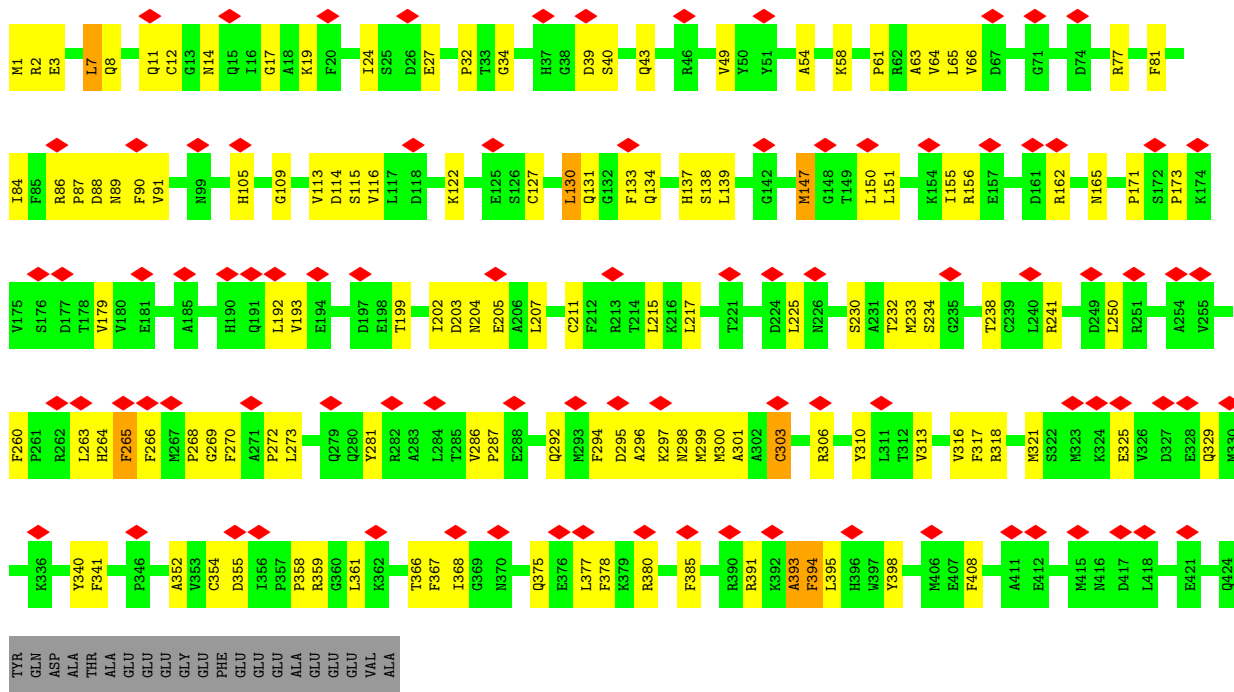


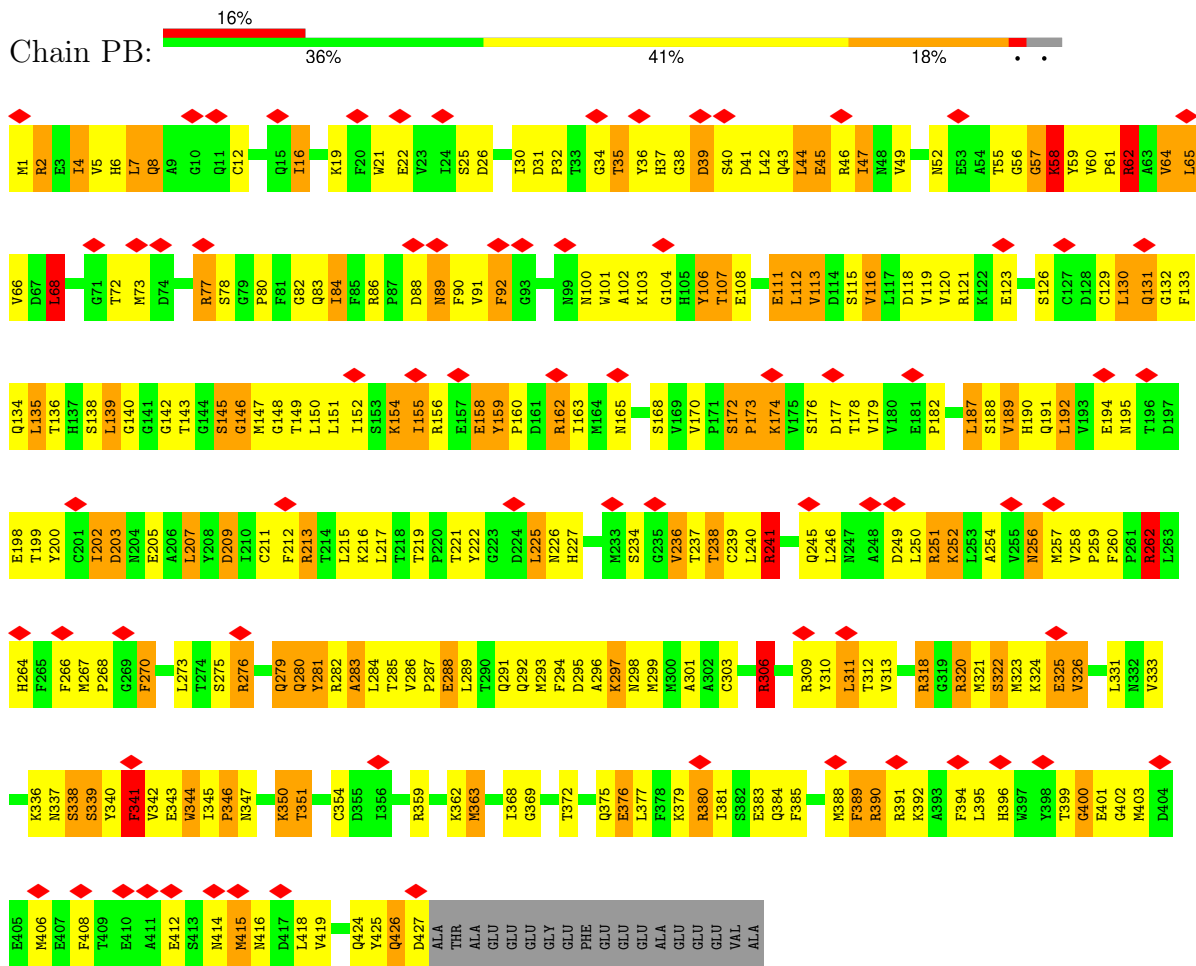
• Molecule 41: Tubulin beta-4B chain



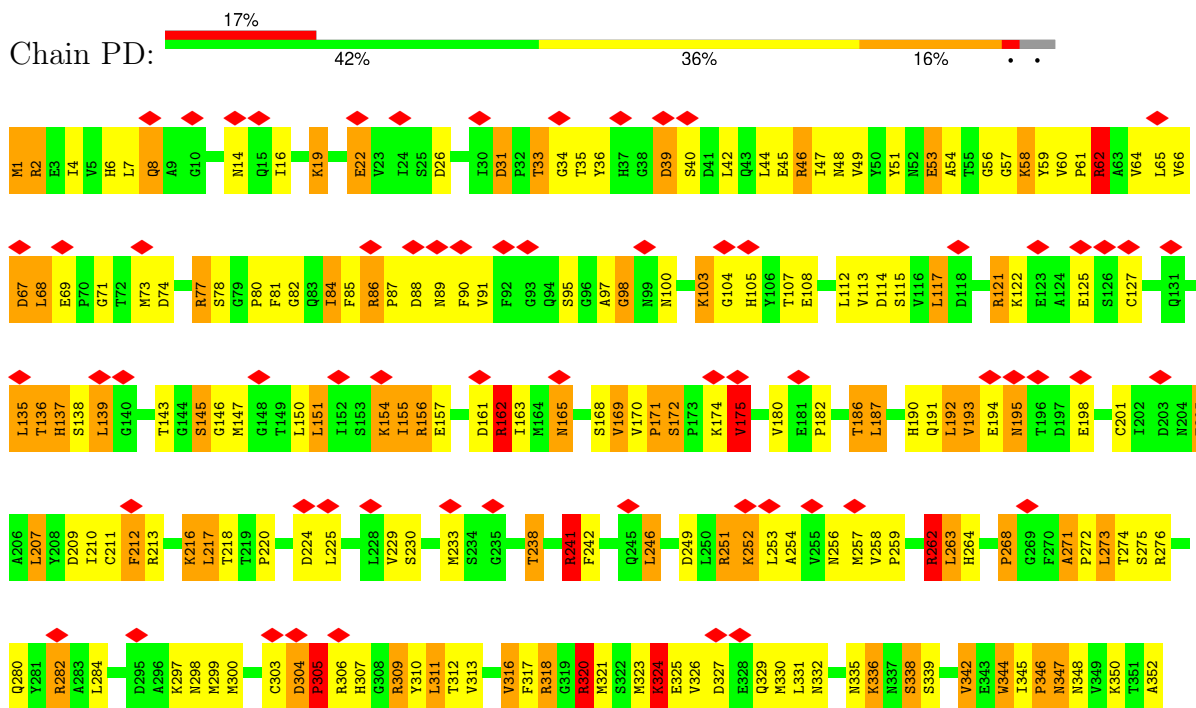


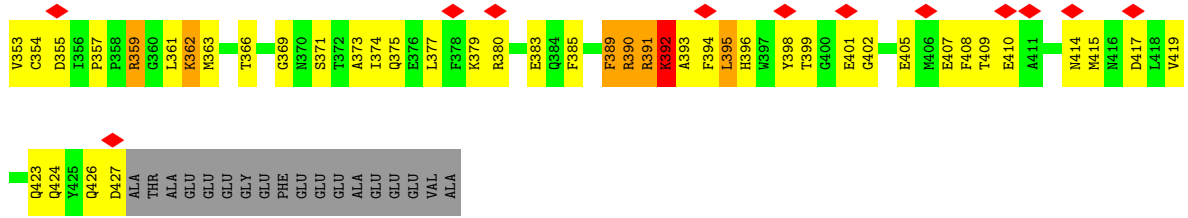
• Molecule 41: Tubulin beta-4B chain



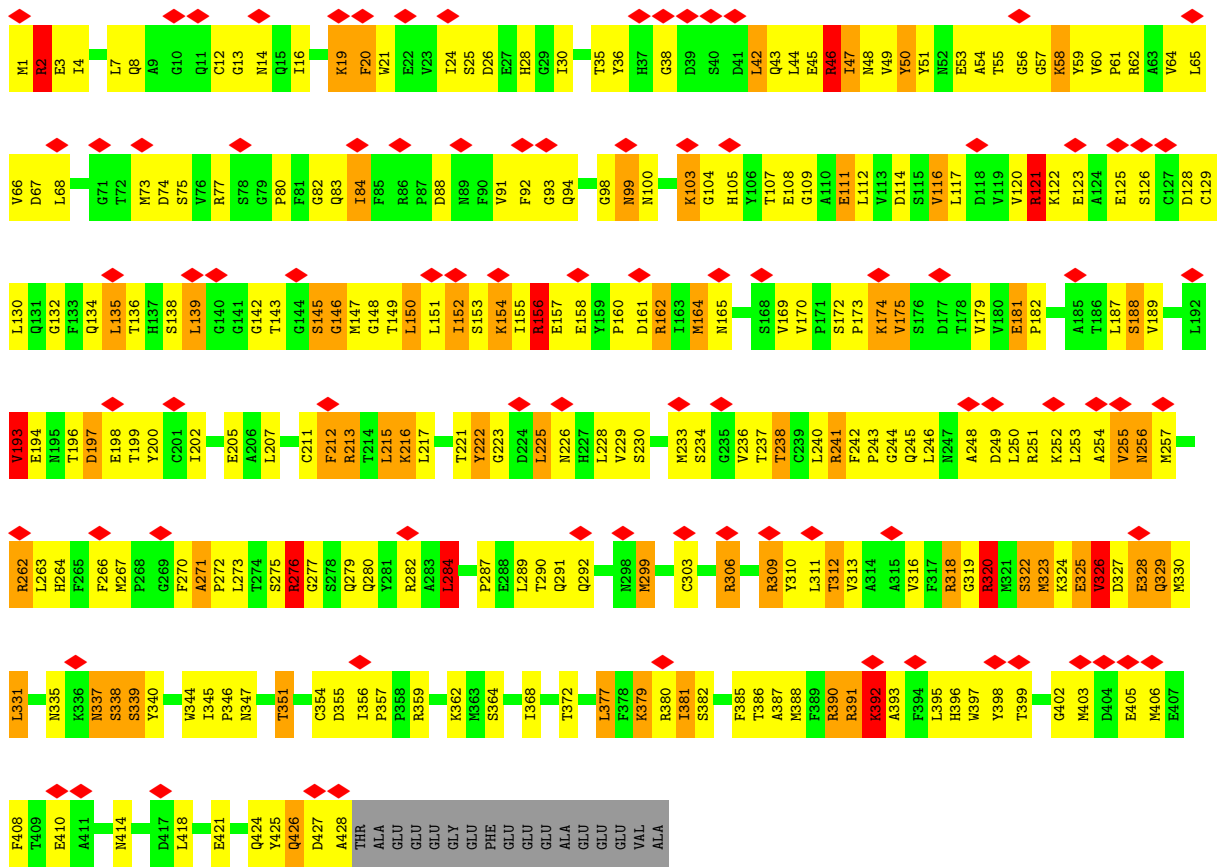


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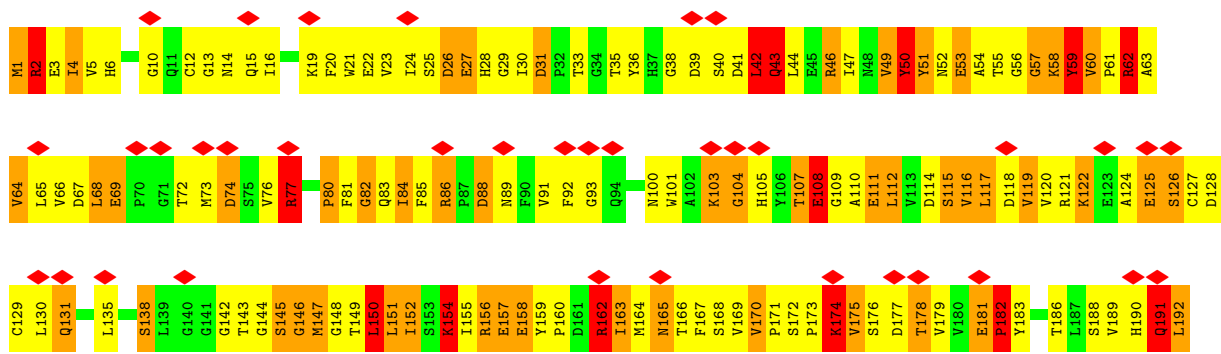
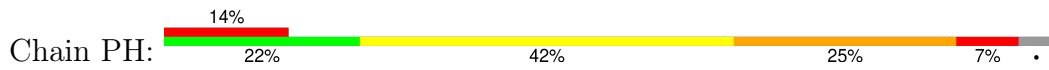


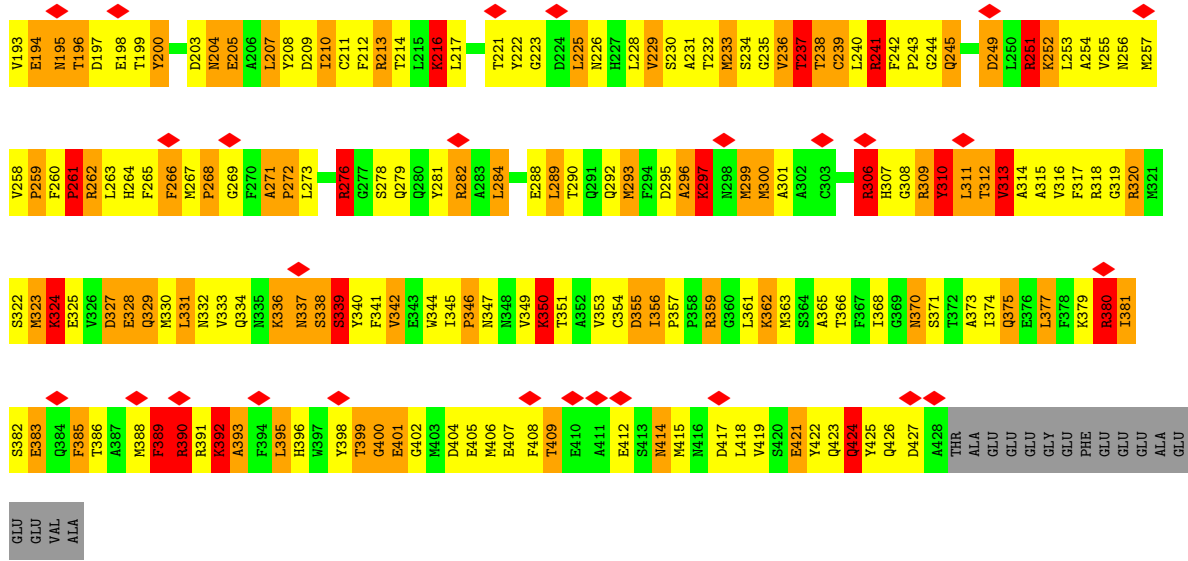


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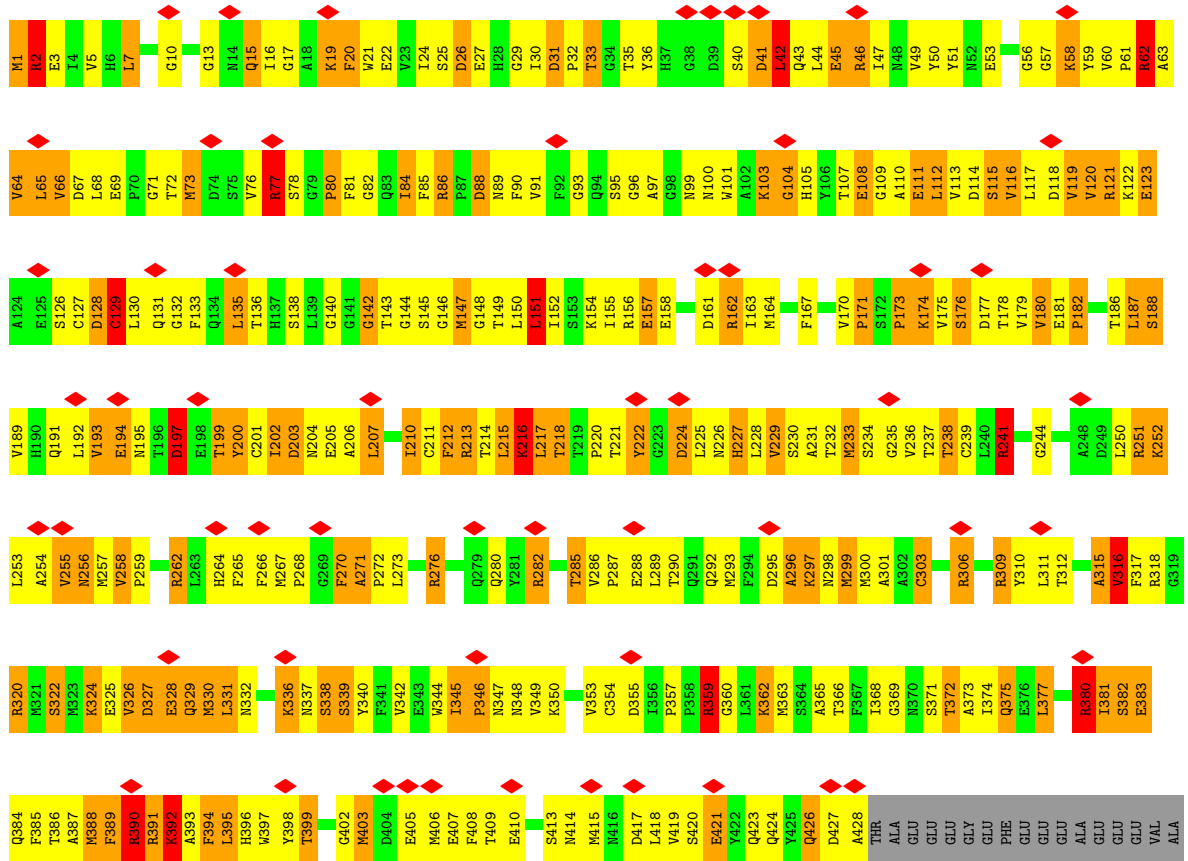


• Molecule 41: Tubulin beta-4B chain



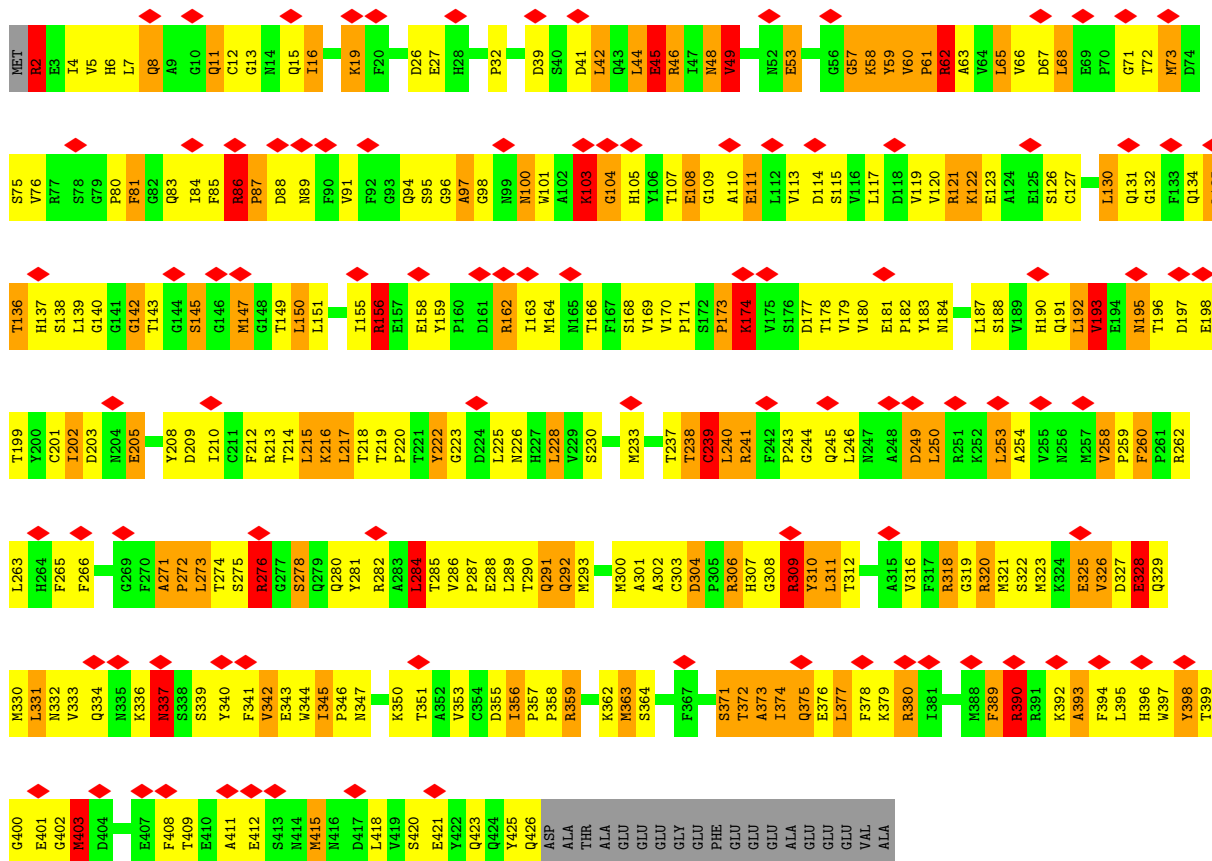


• Molecule 41: Tubulin beta-4B chain



• Molecule 41: Tubulin beta-4B chain

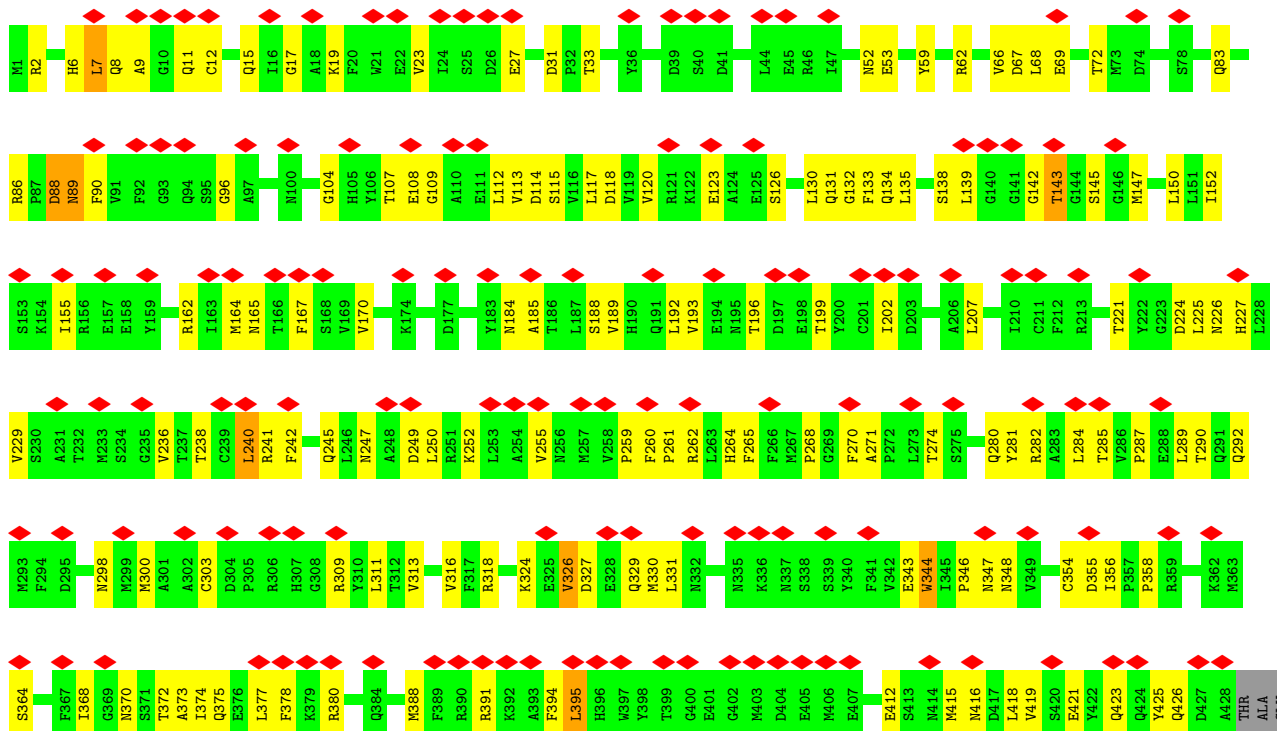




● Molecule 41: Tubulin beta-4B chain

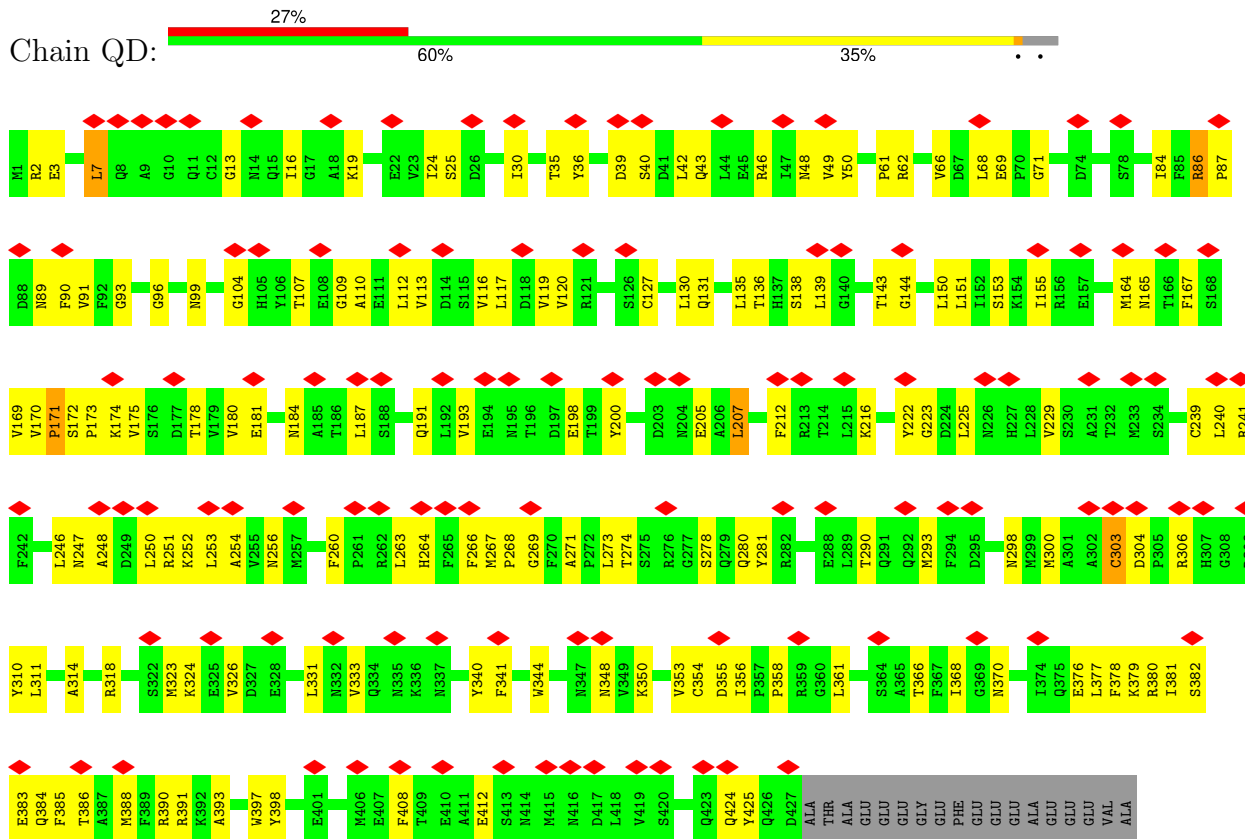


Chain QB:

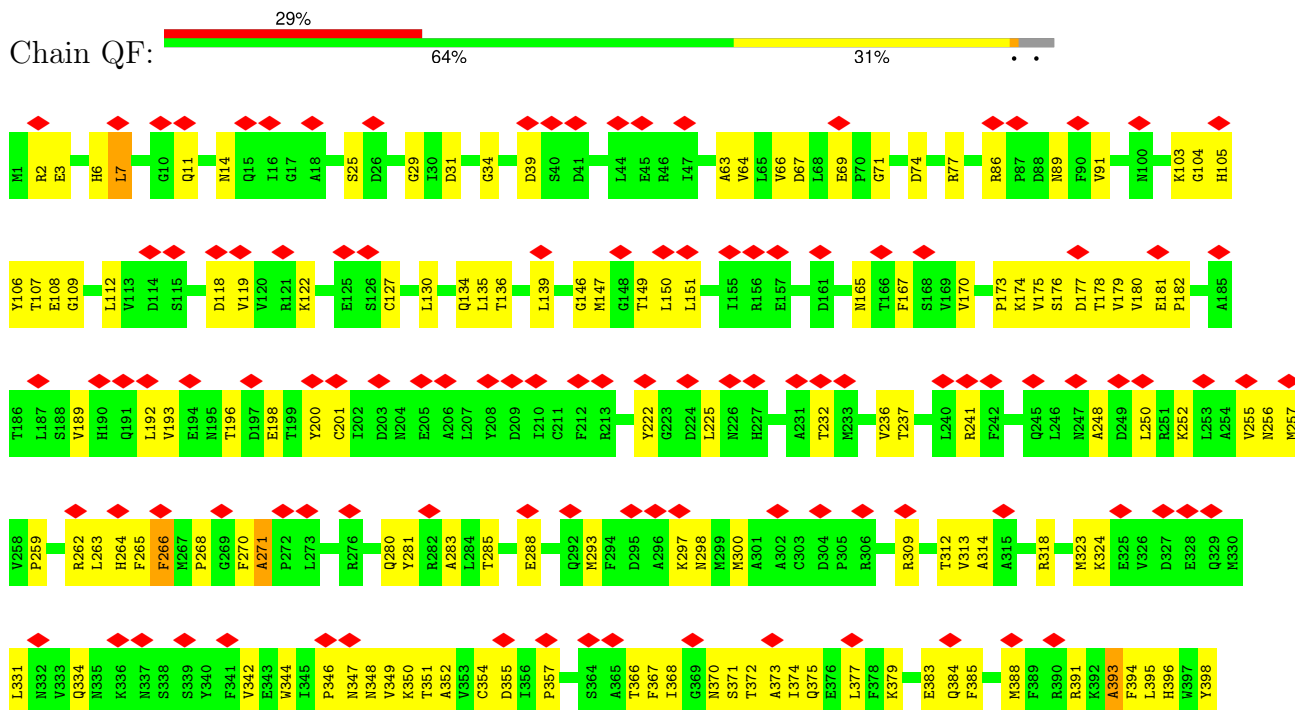


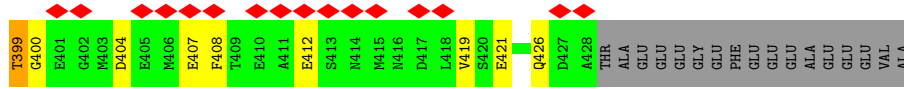
GLU
GLU
GLY
GLU
PHE
GLU
GLU
GLU
ALA
GLU
GLU
VAL
ALA

● Molecule 41: Tubulin beta-4B chain

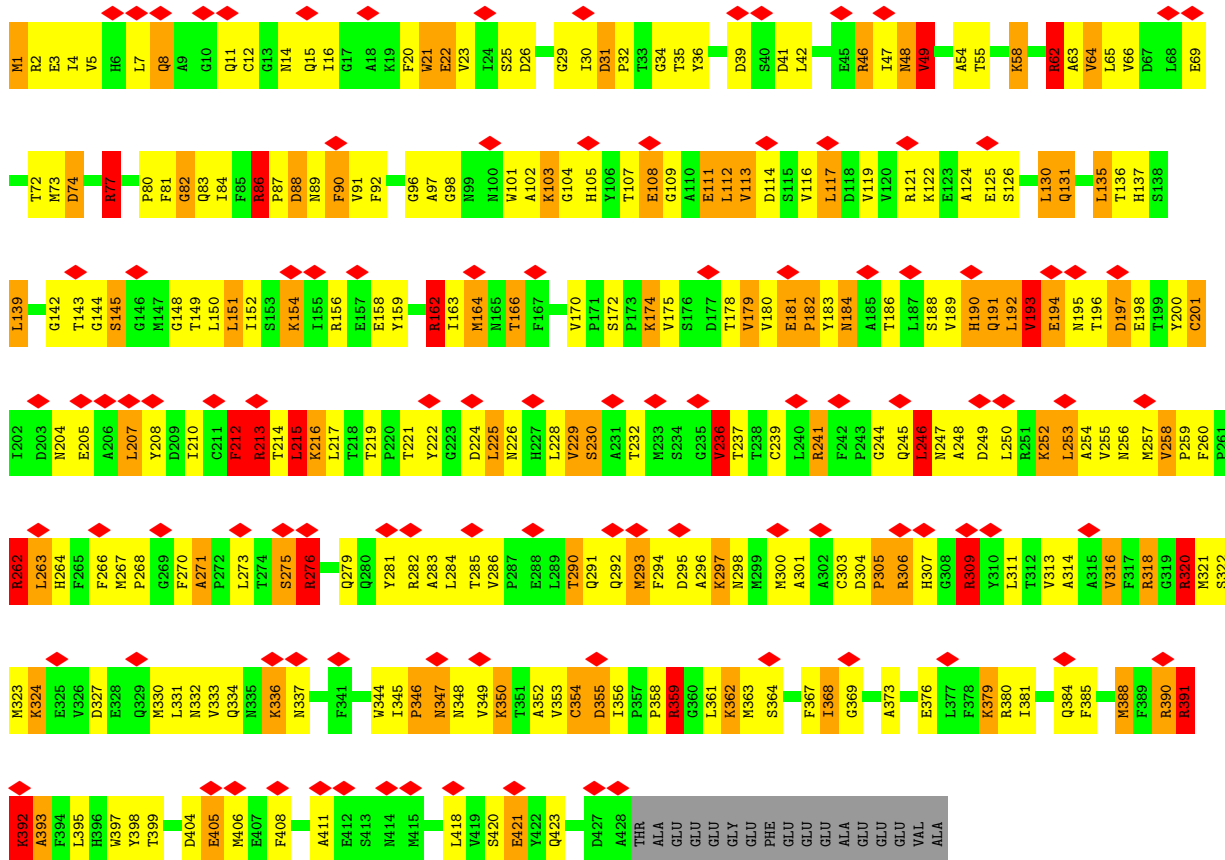


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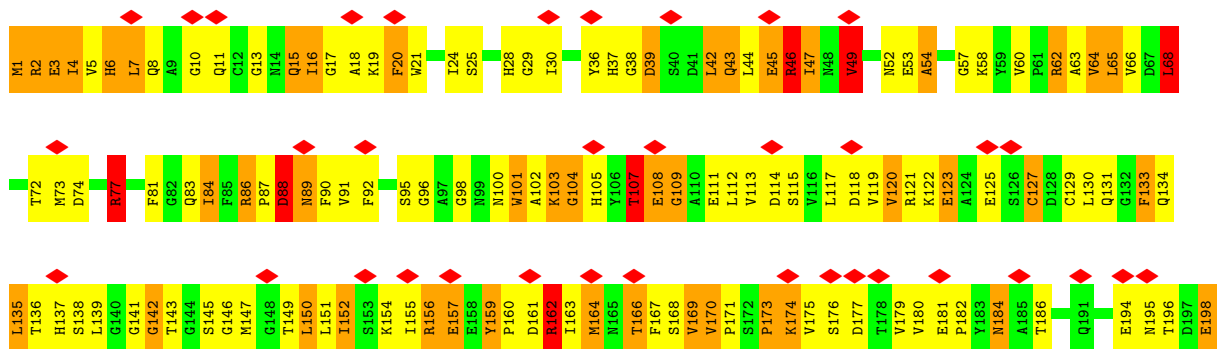


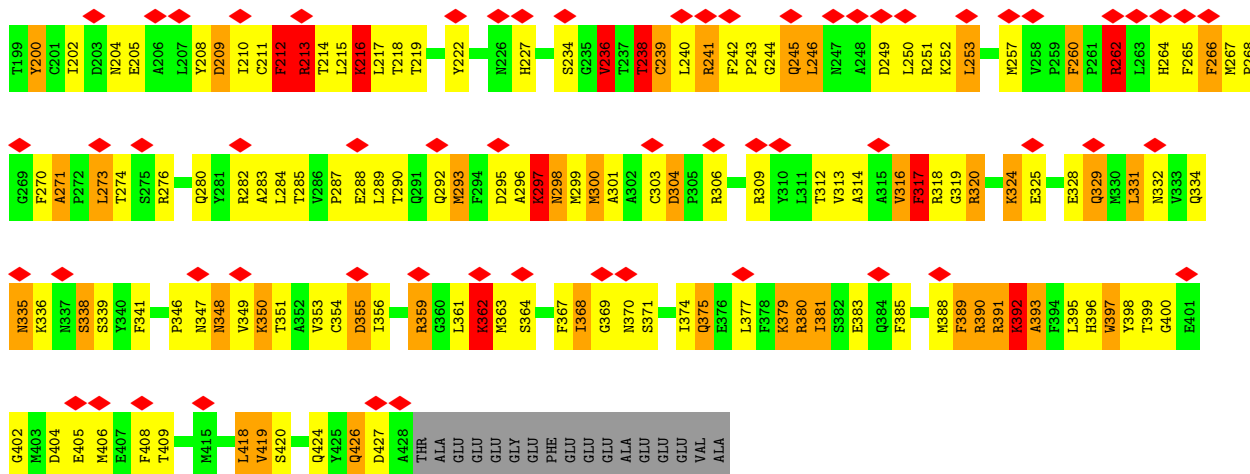


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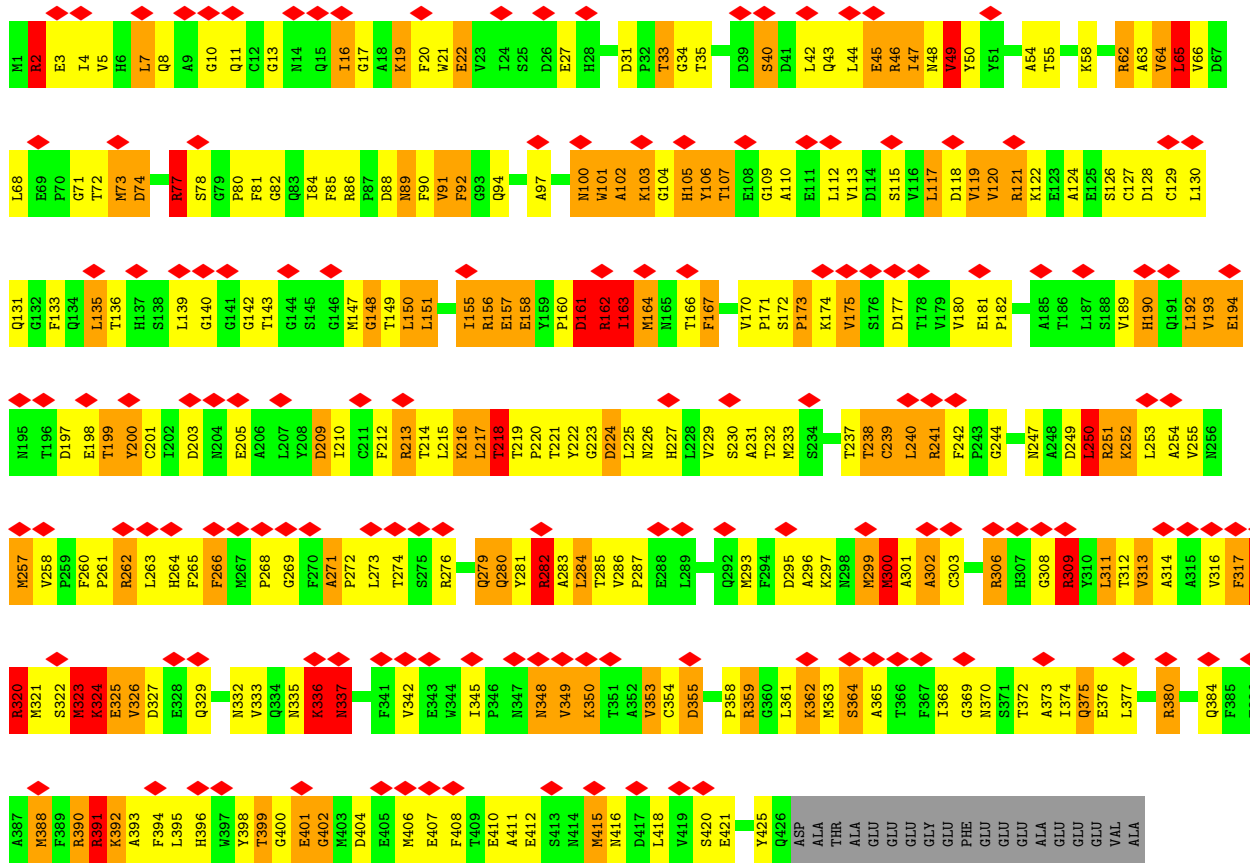


• Molecule 41: Tubulin beta-4B chain



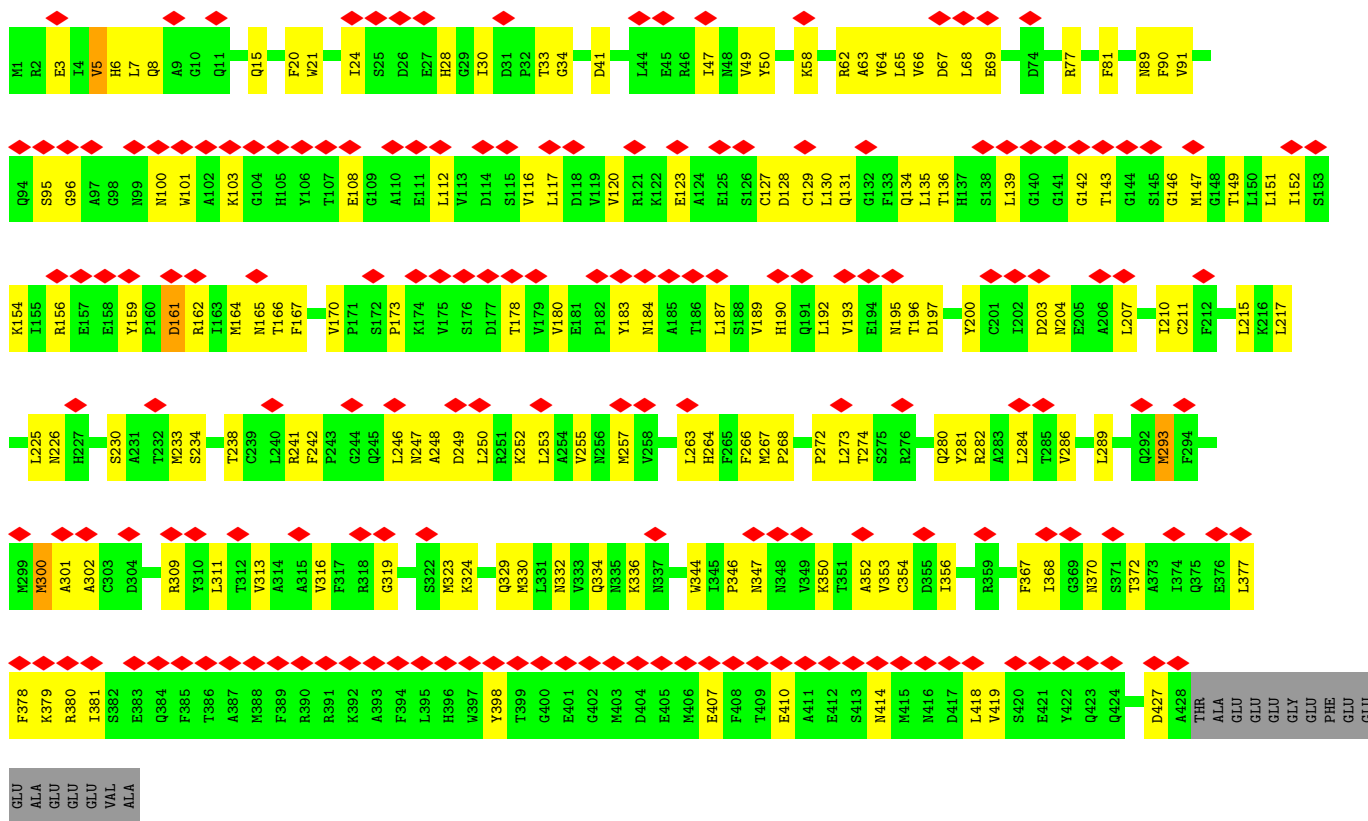


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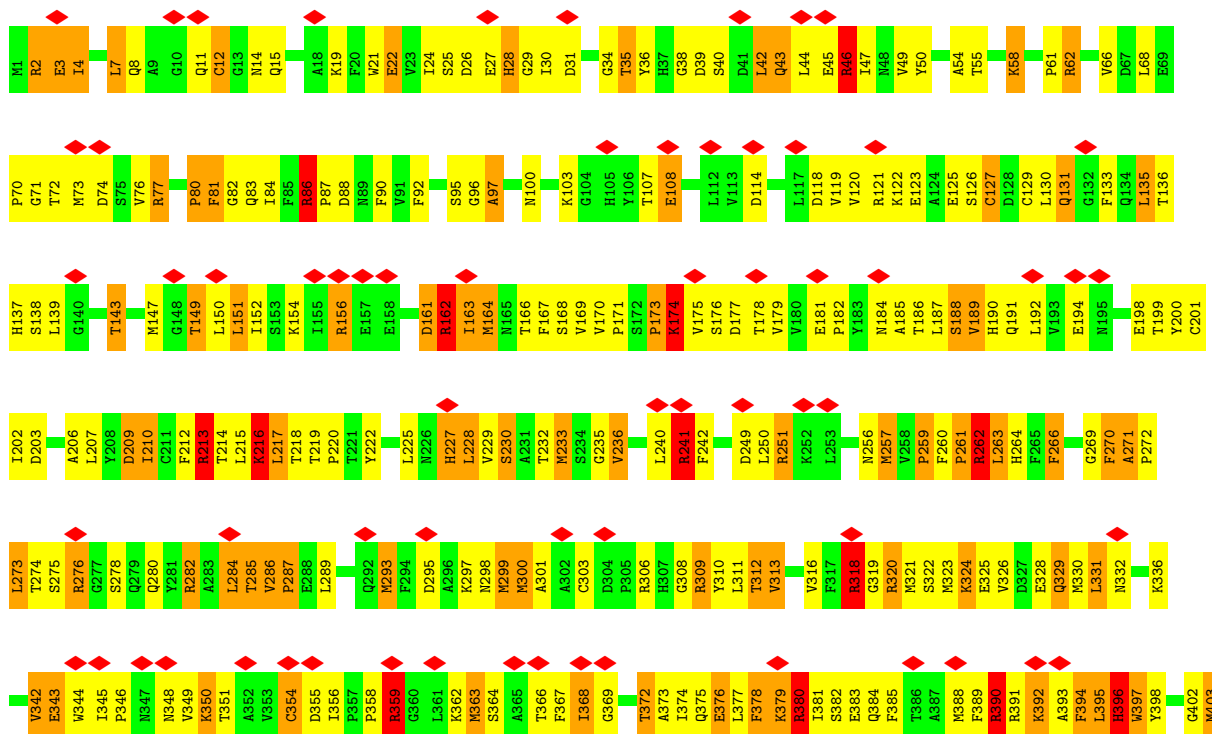


• Molecule 41: Tubulin beta-4B chain



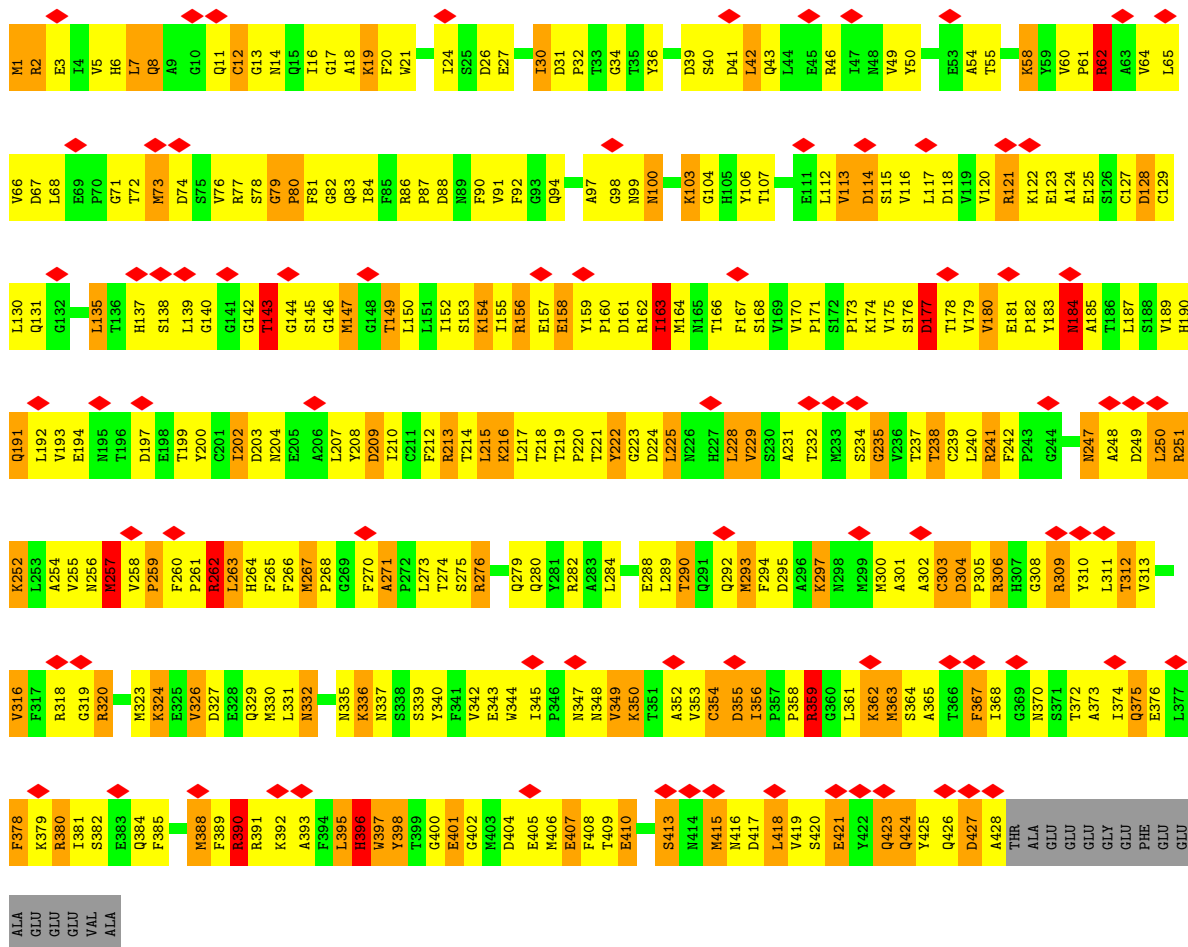


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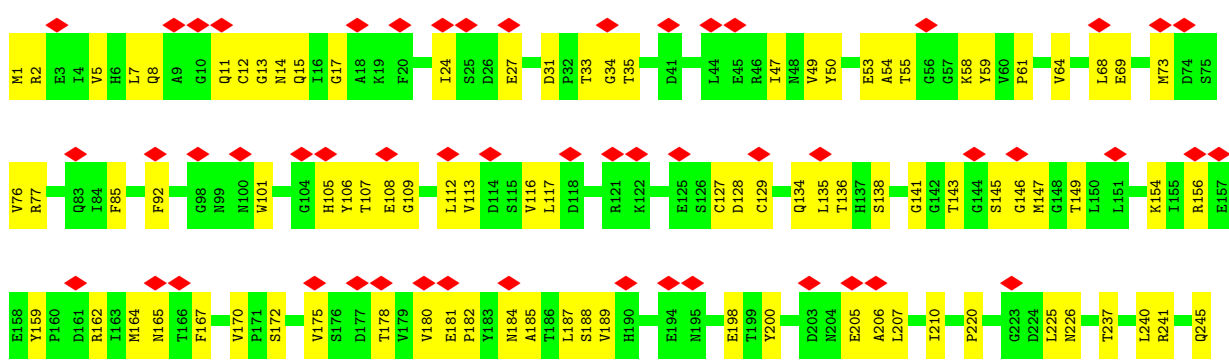


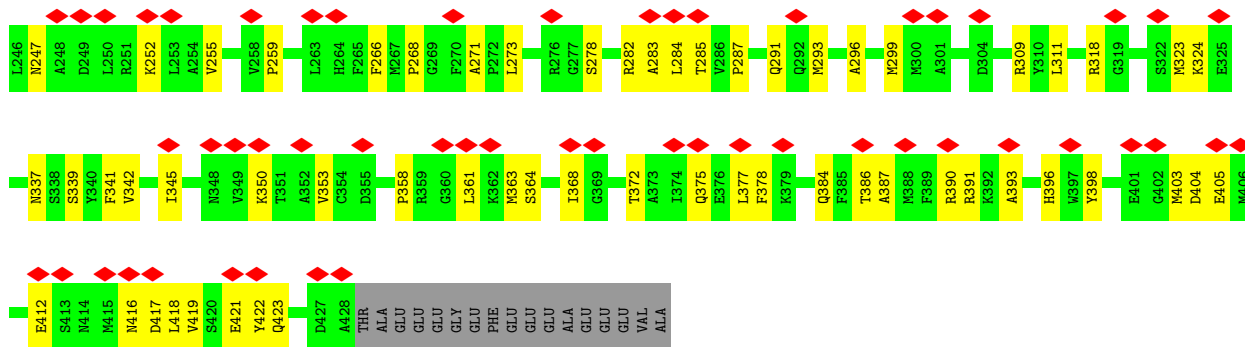


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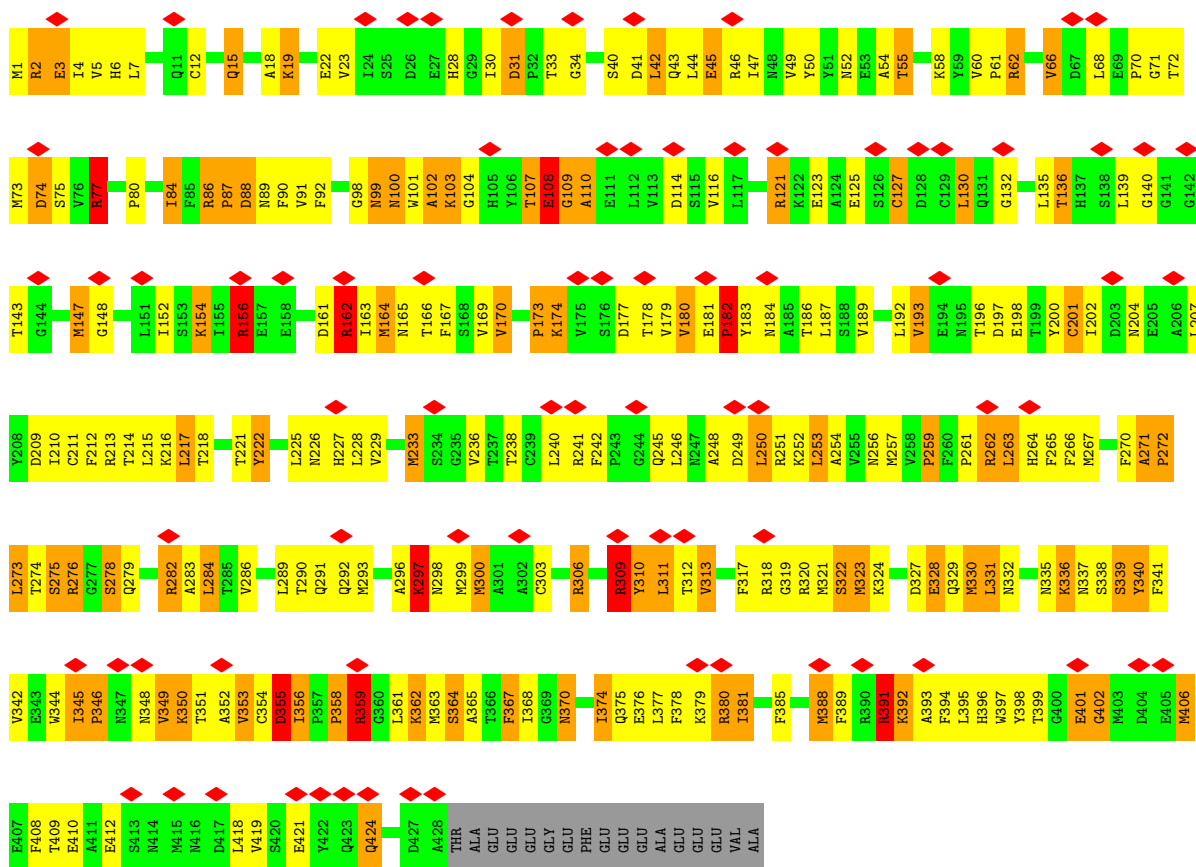


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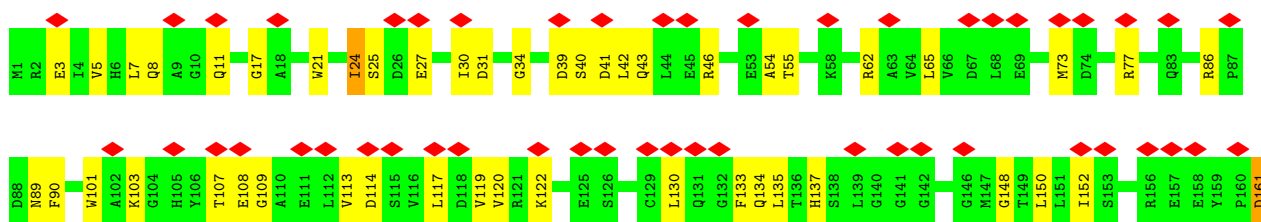


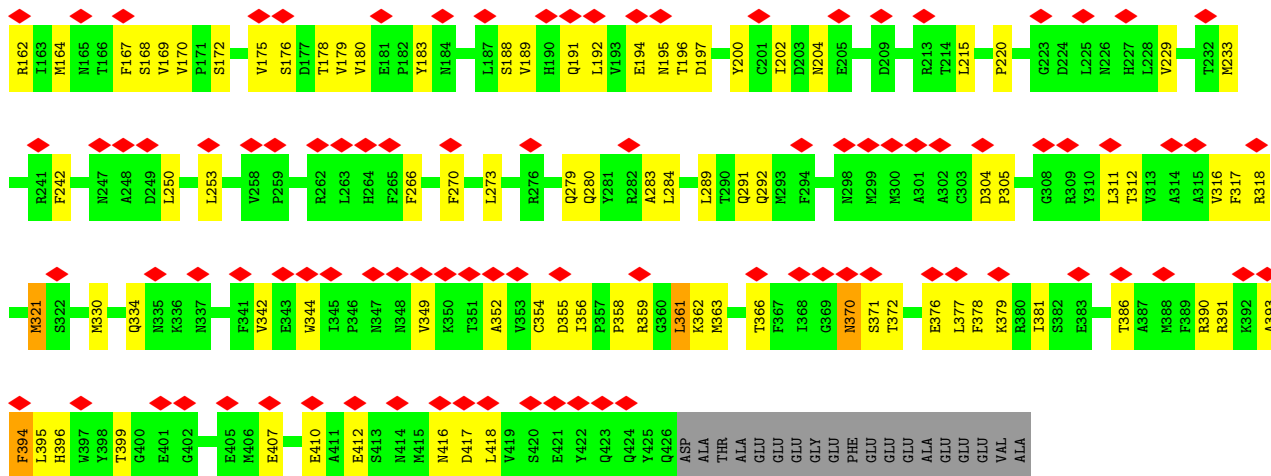


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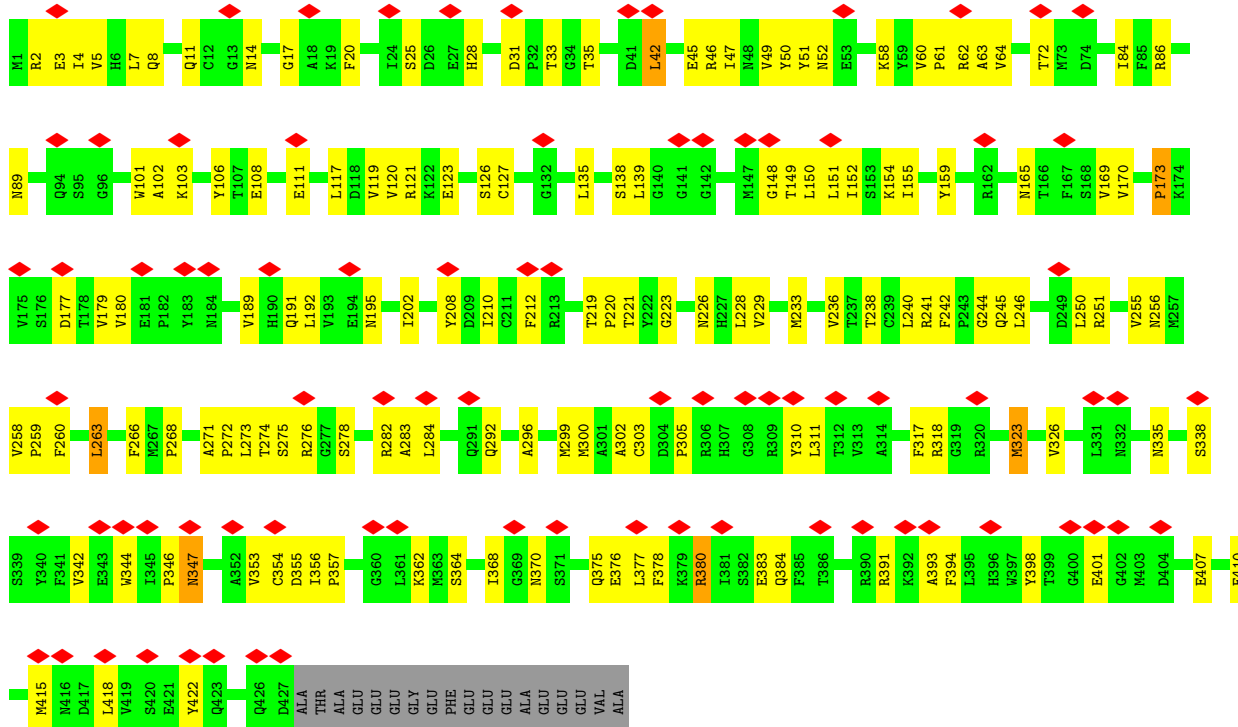


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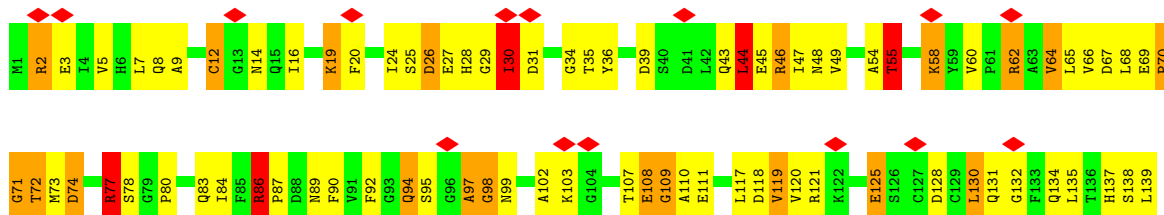


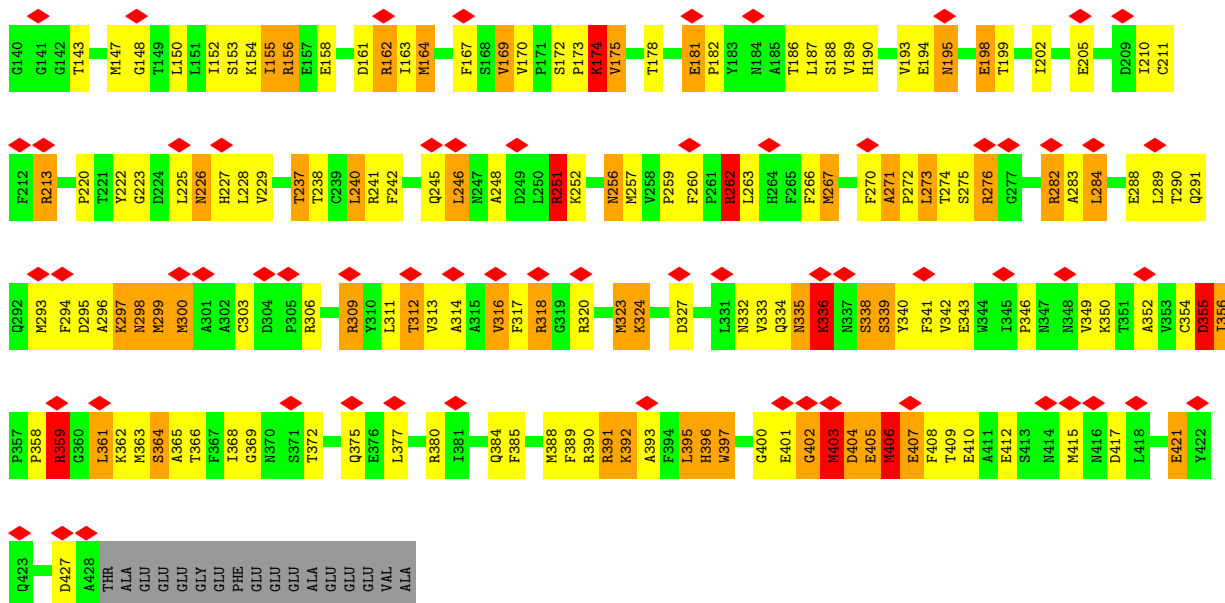


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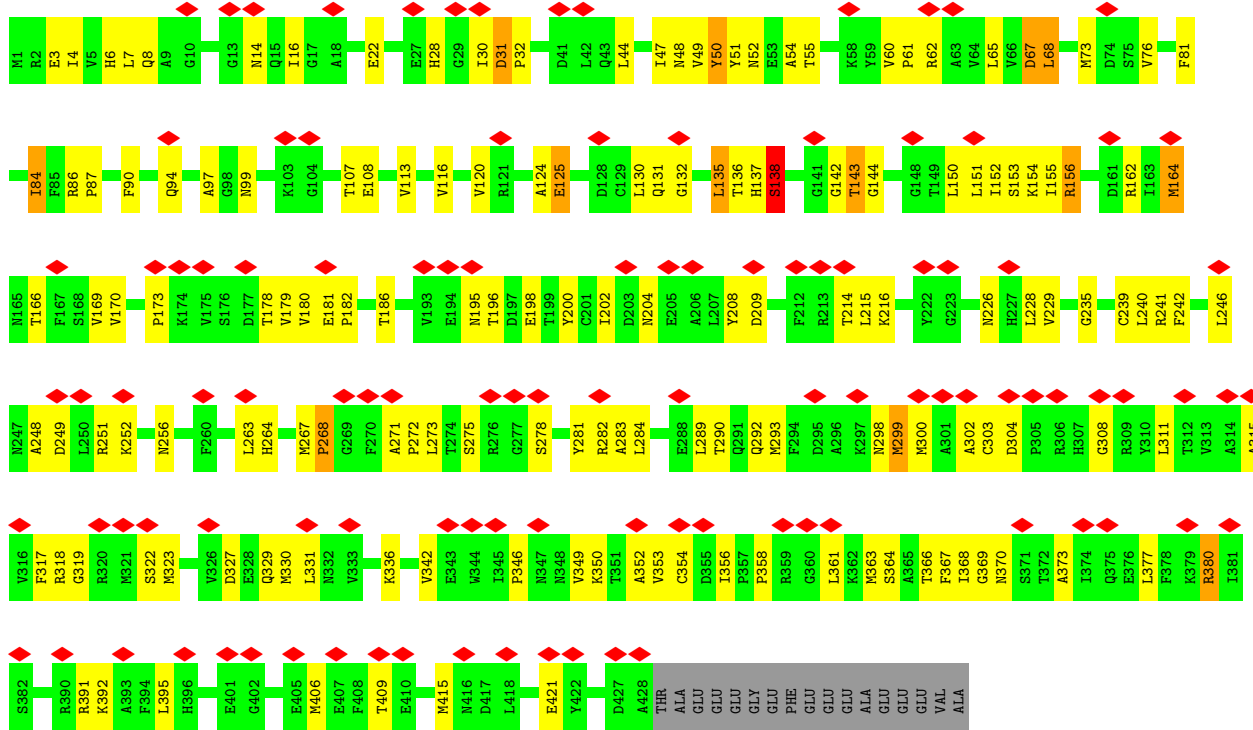


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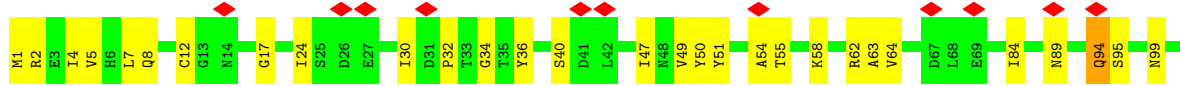


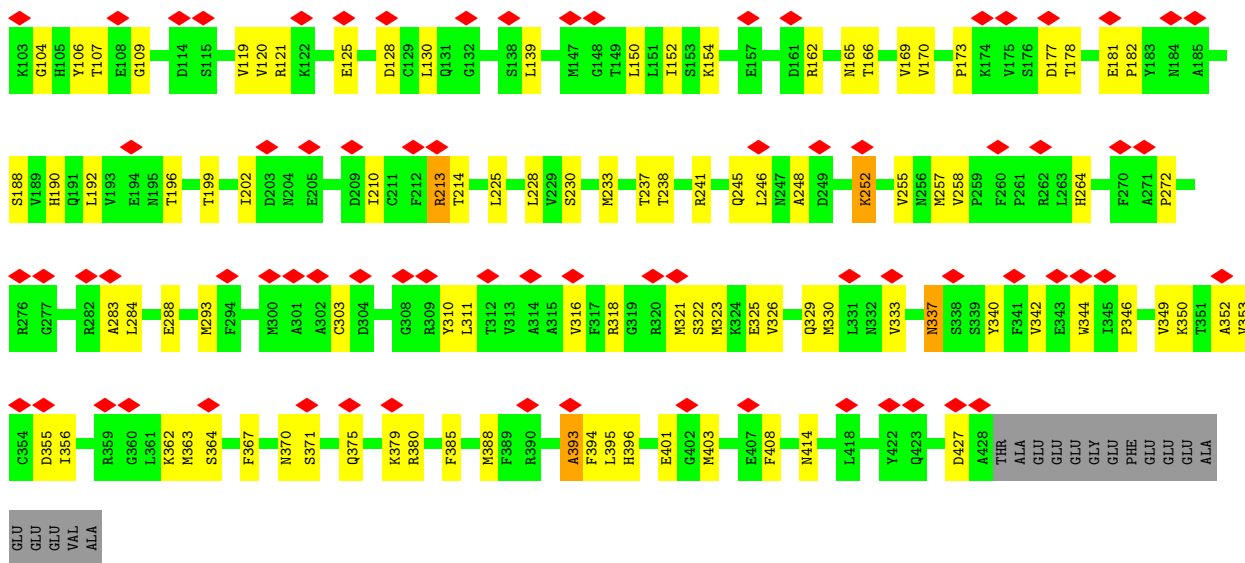


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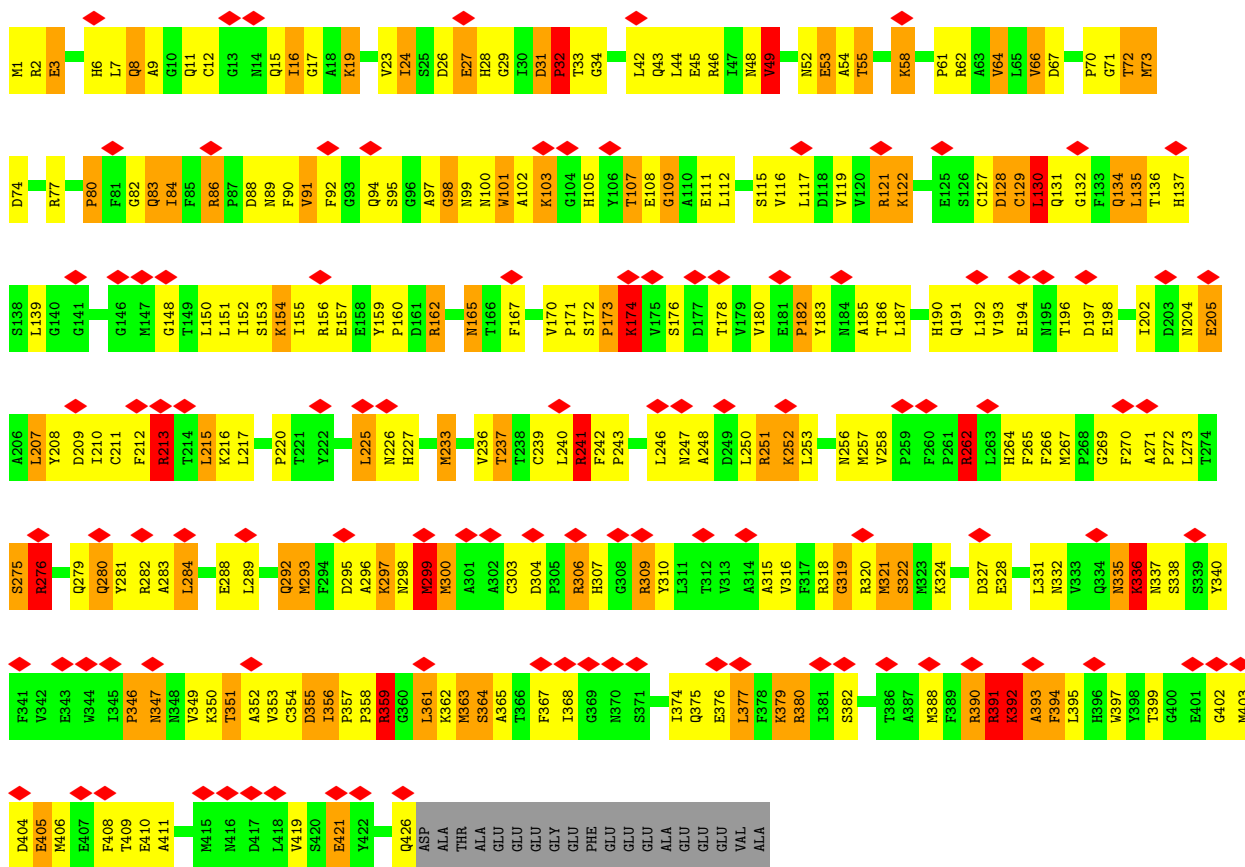


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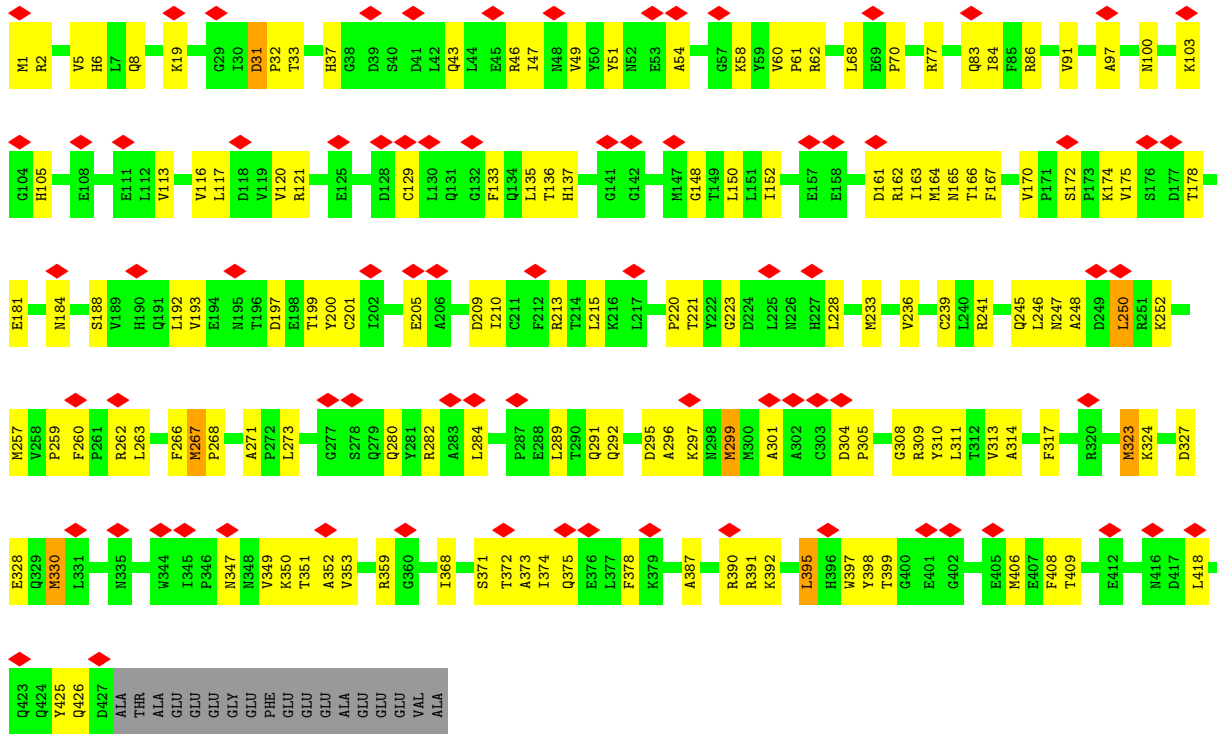


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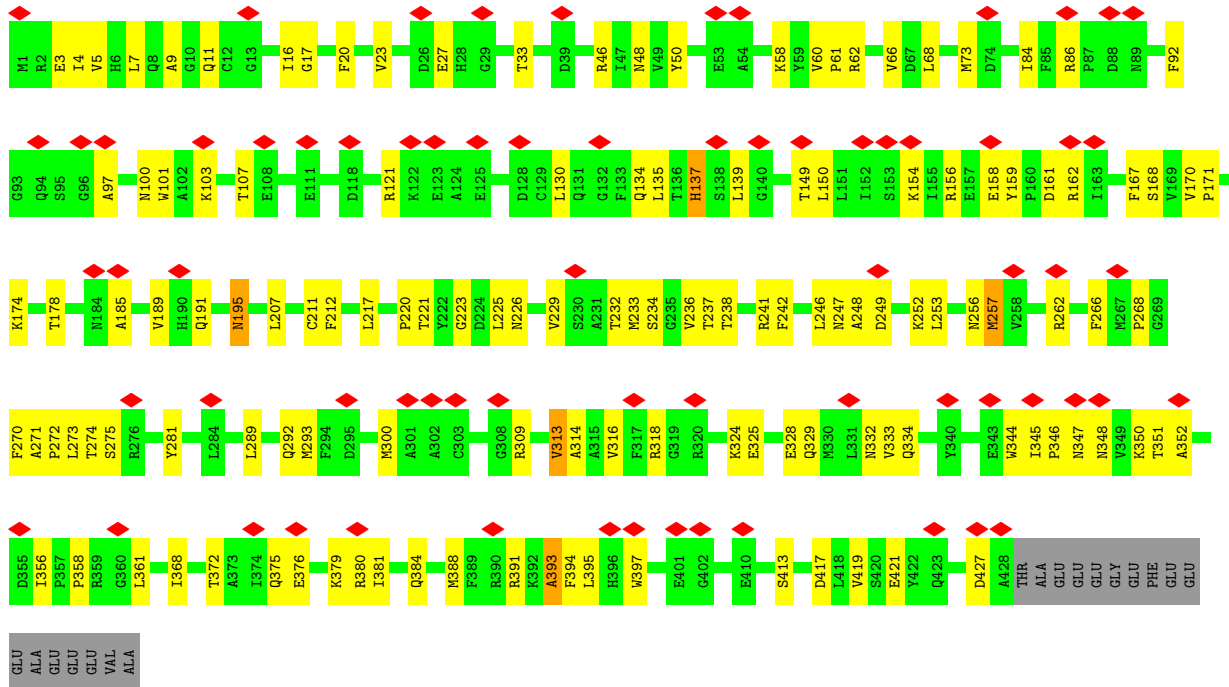


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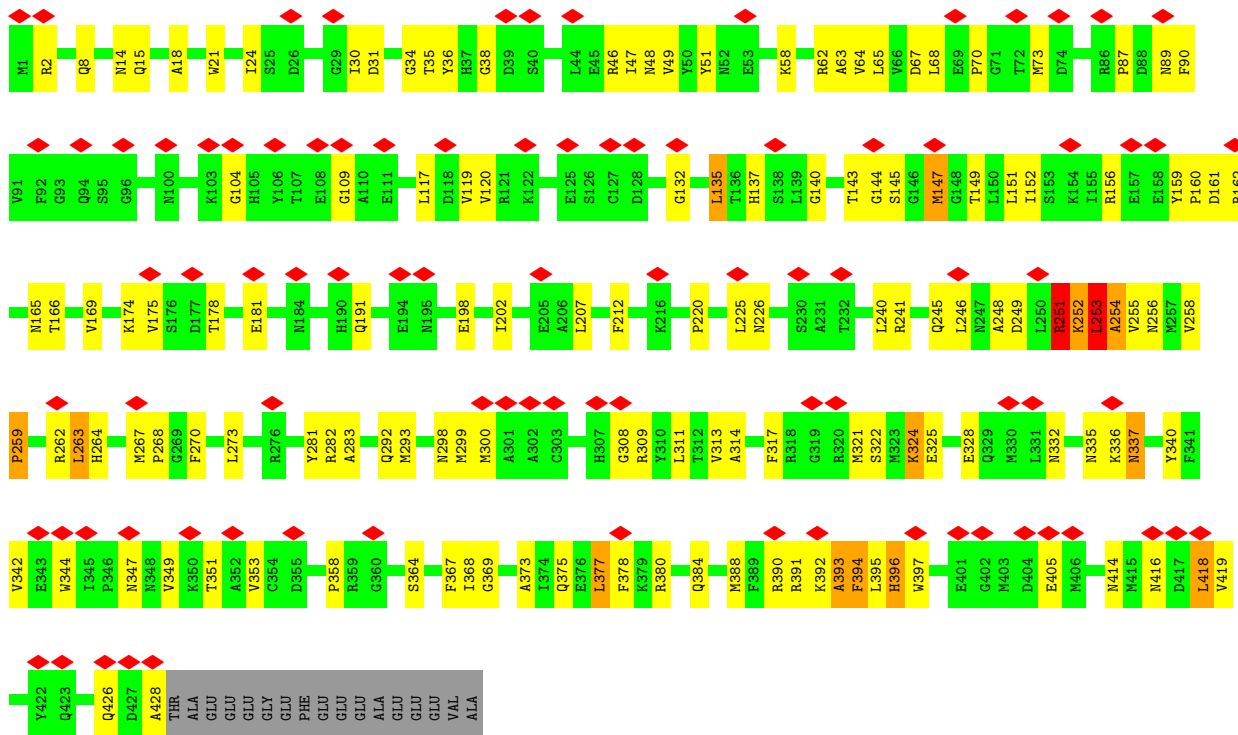


• Molecule 41: Tubulin beta-4B chain



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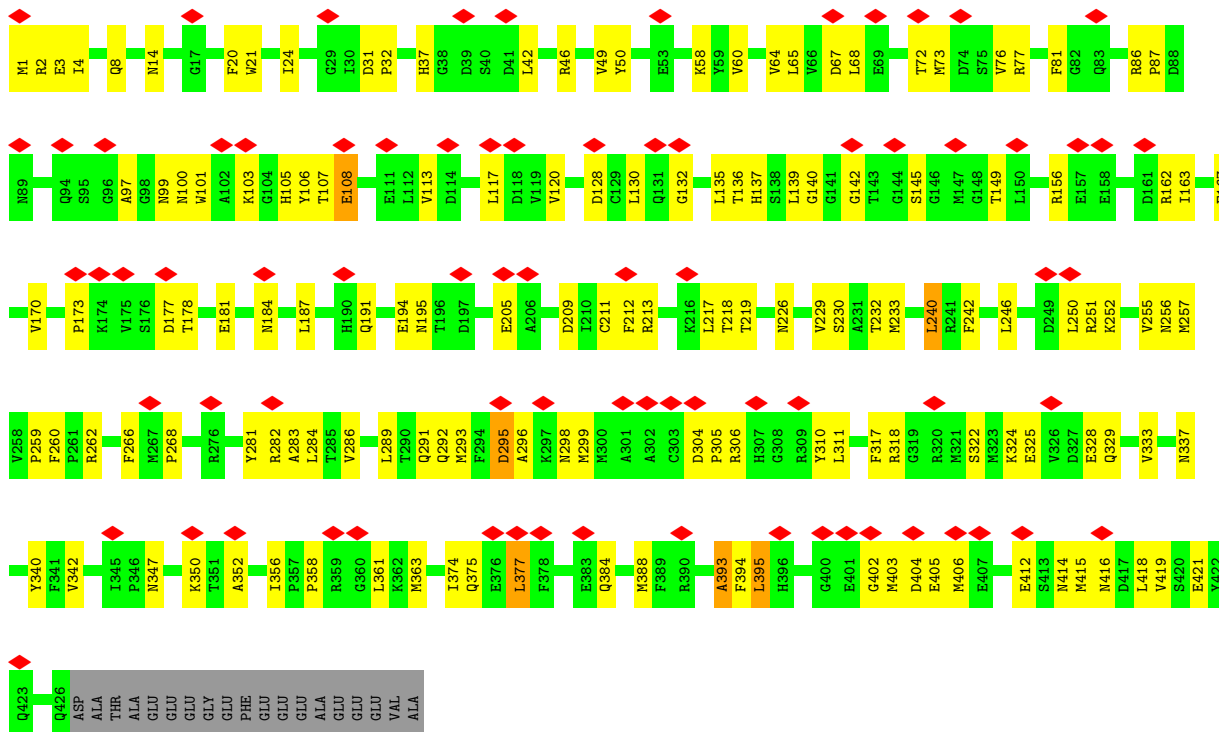


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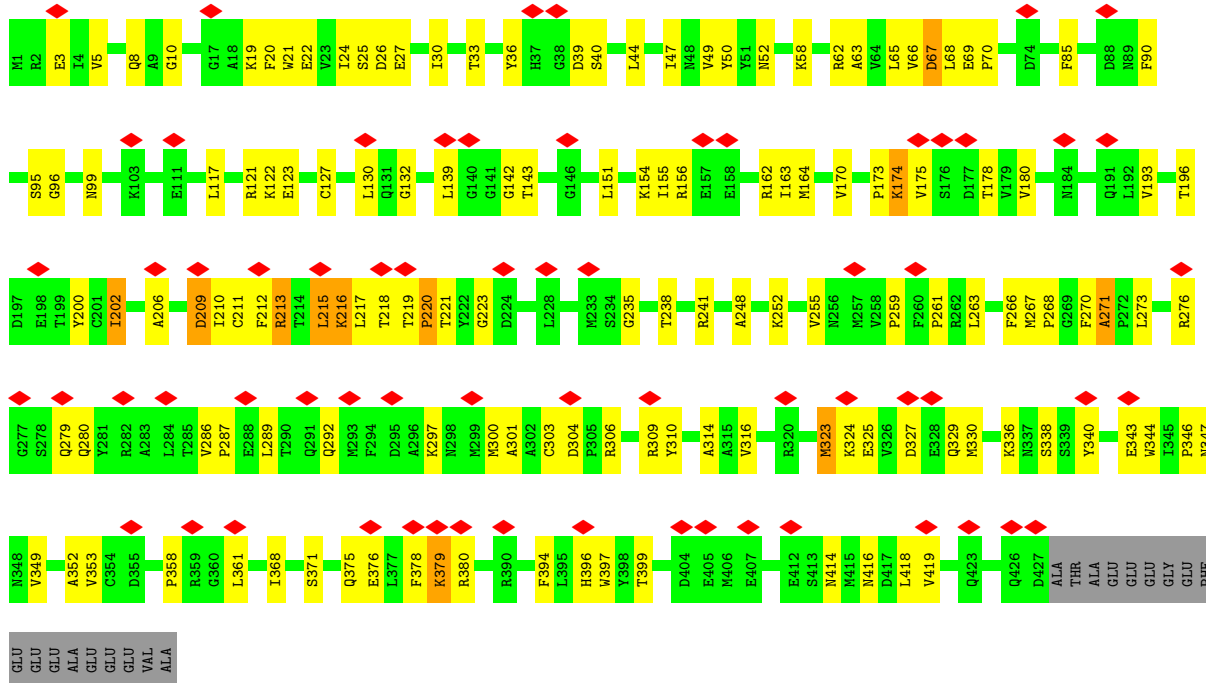


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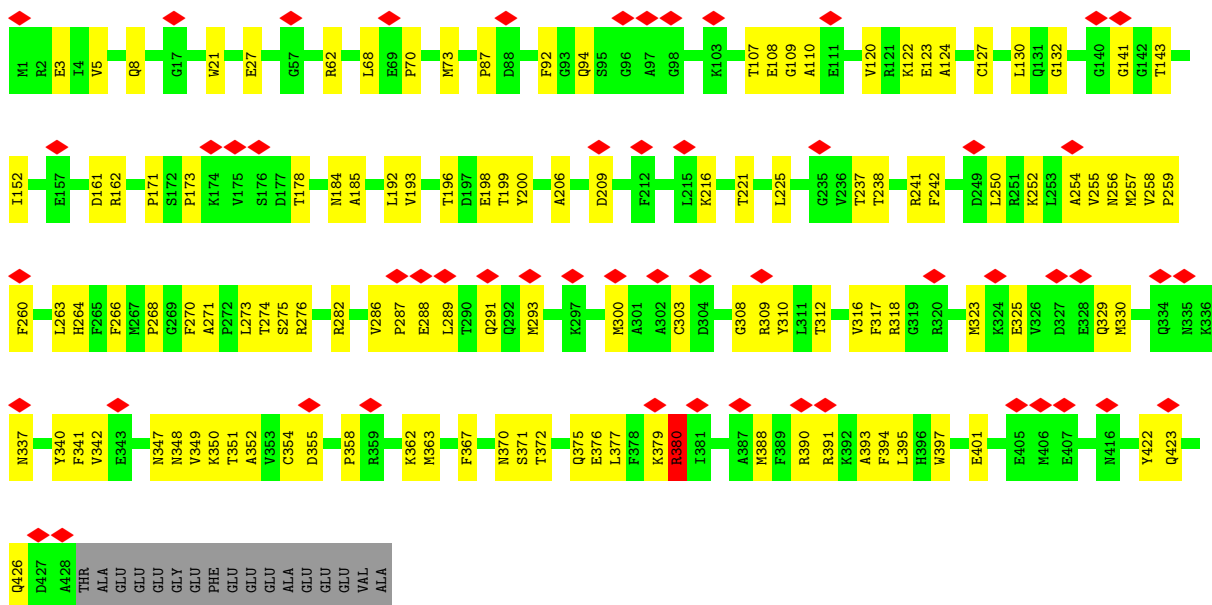


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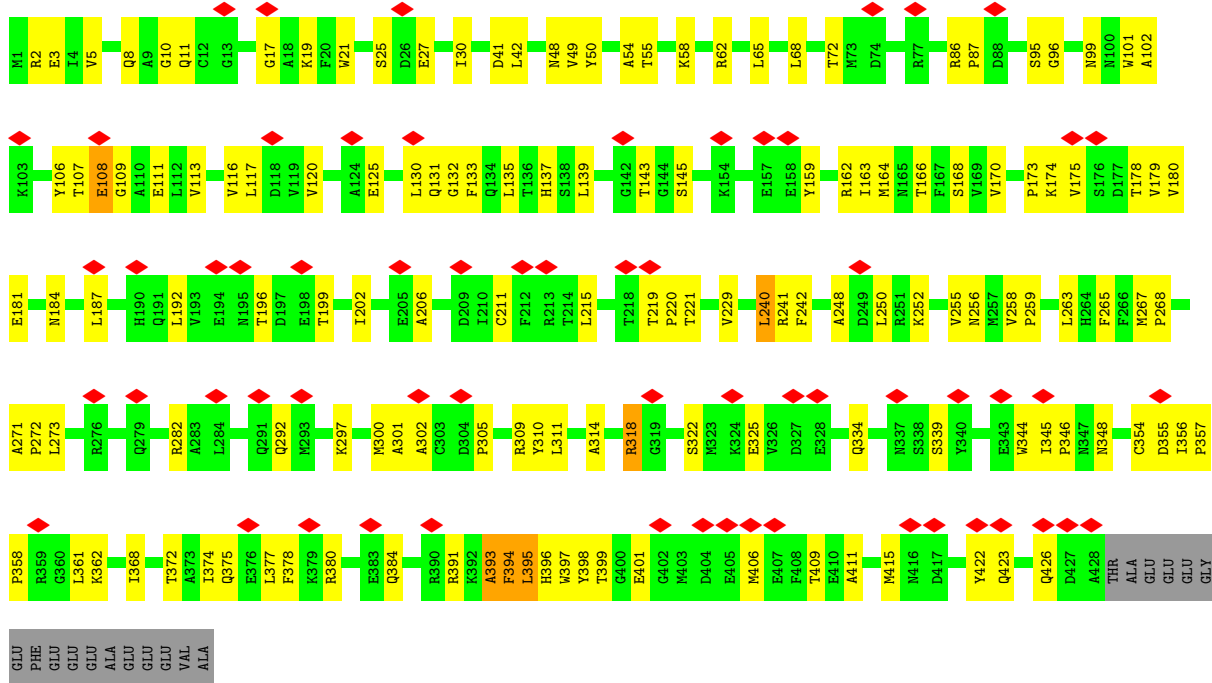


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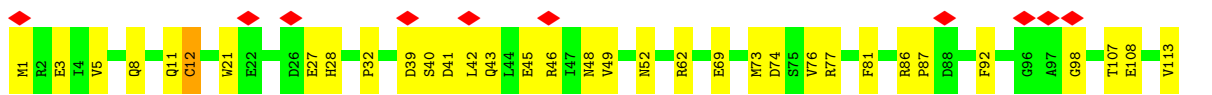


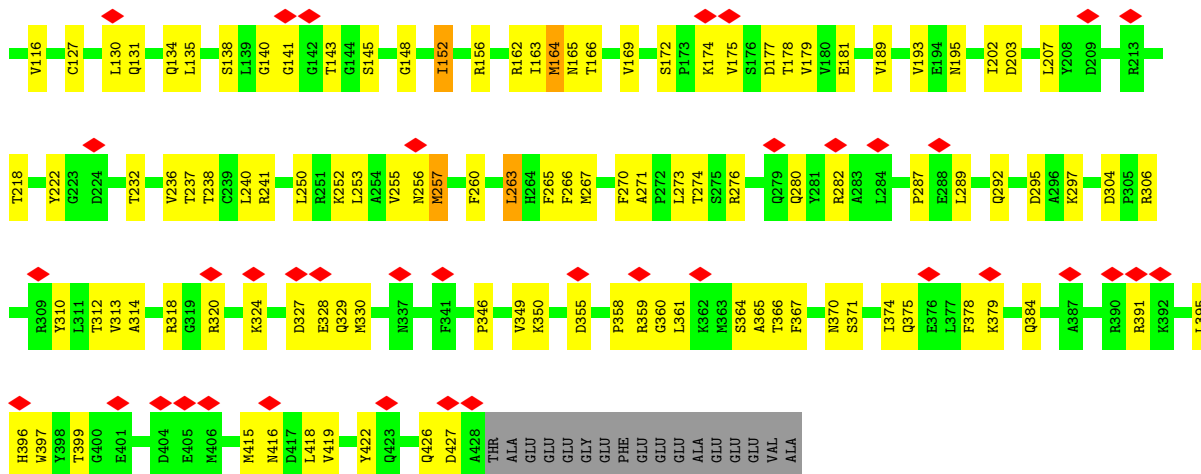


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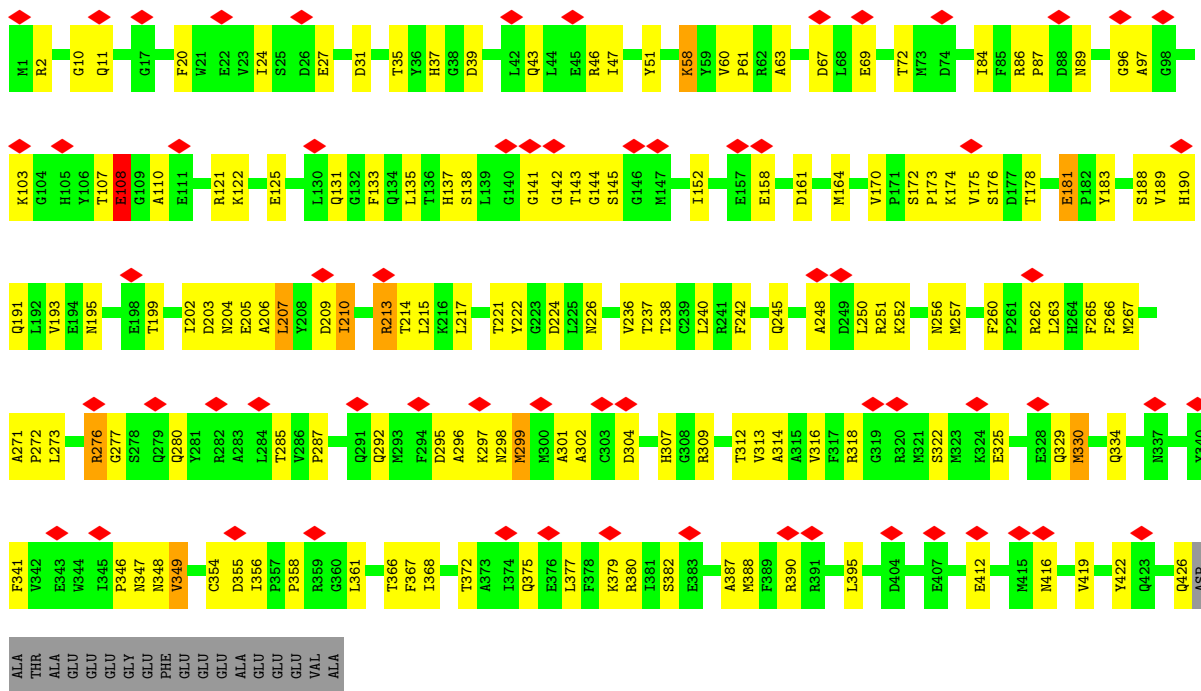


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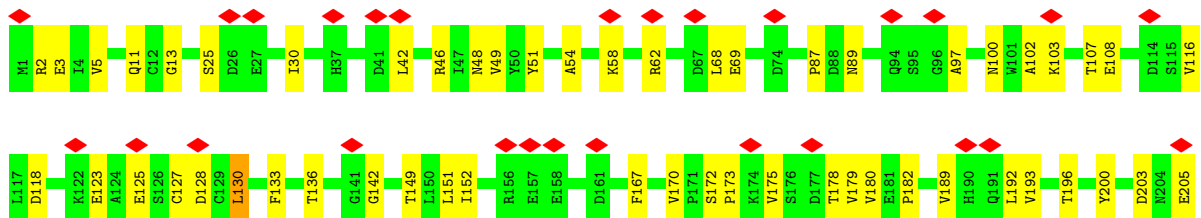


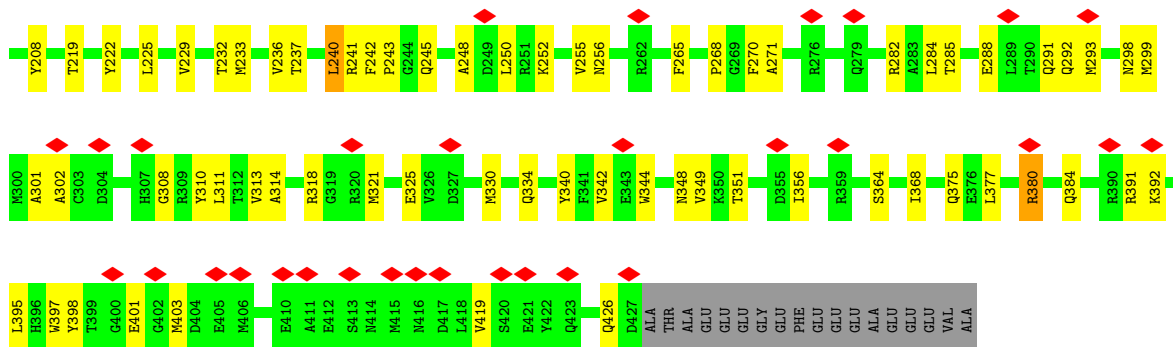


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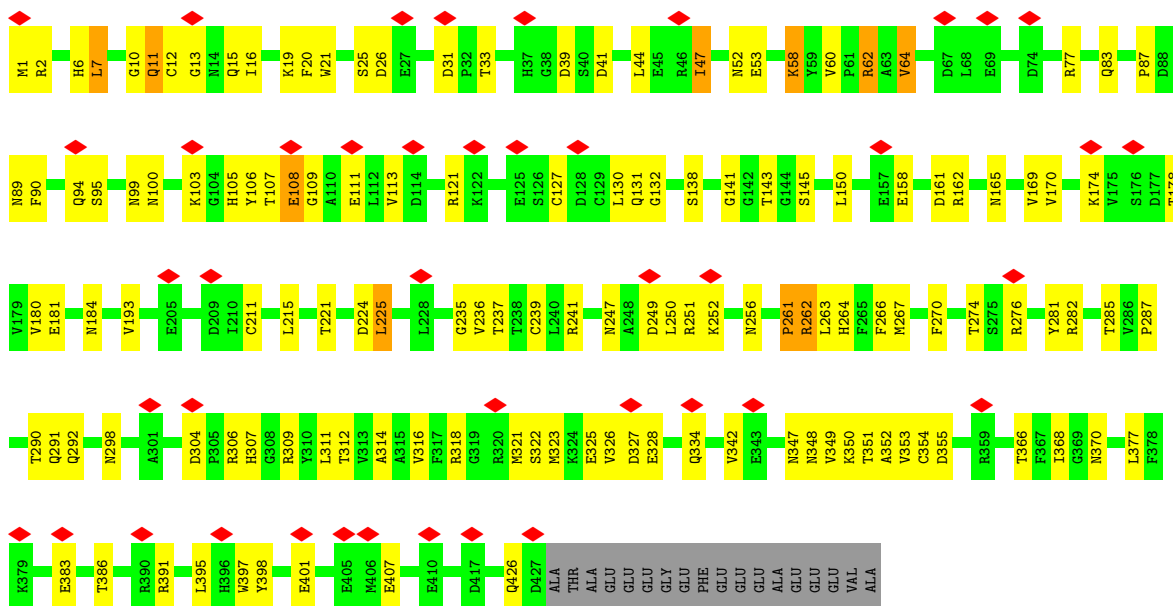


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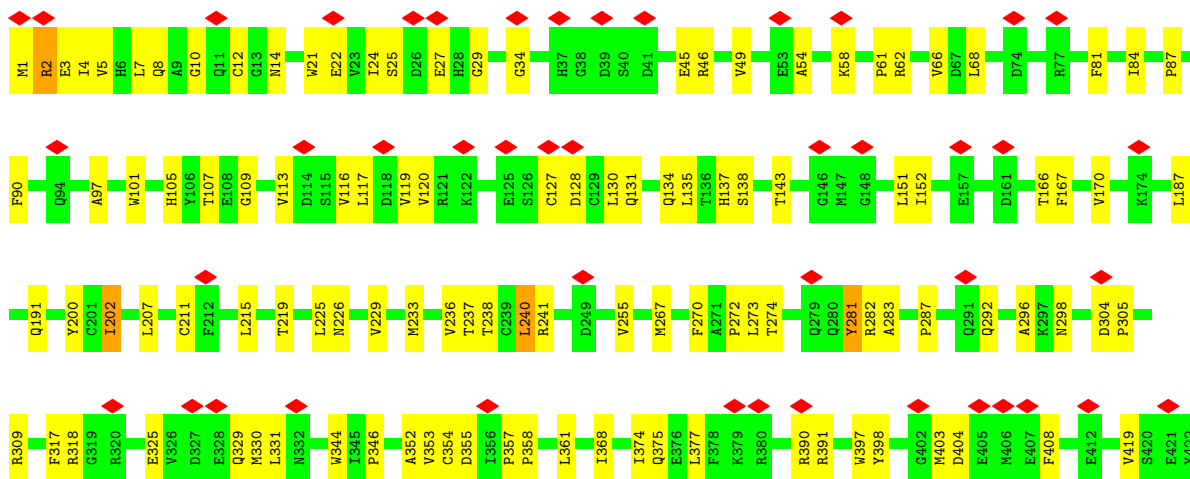


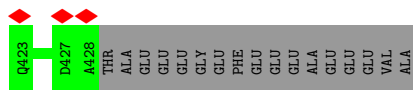


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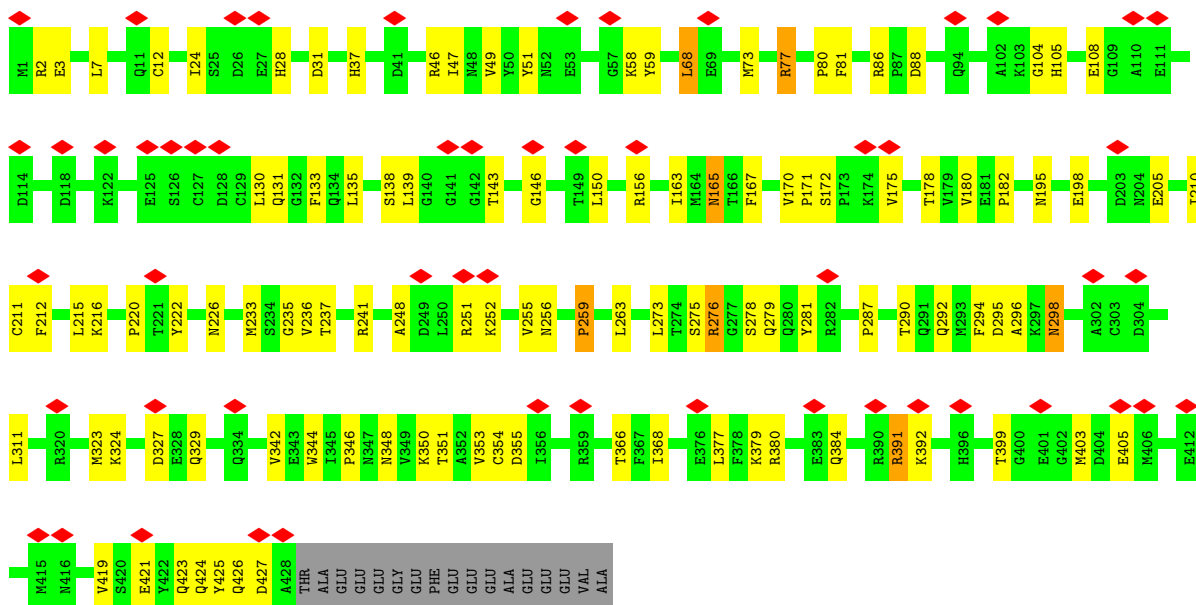


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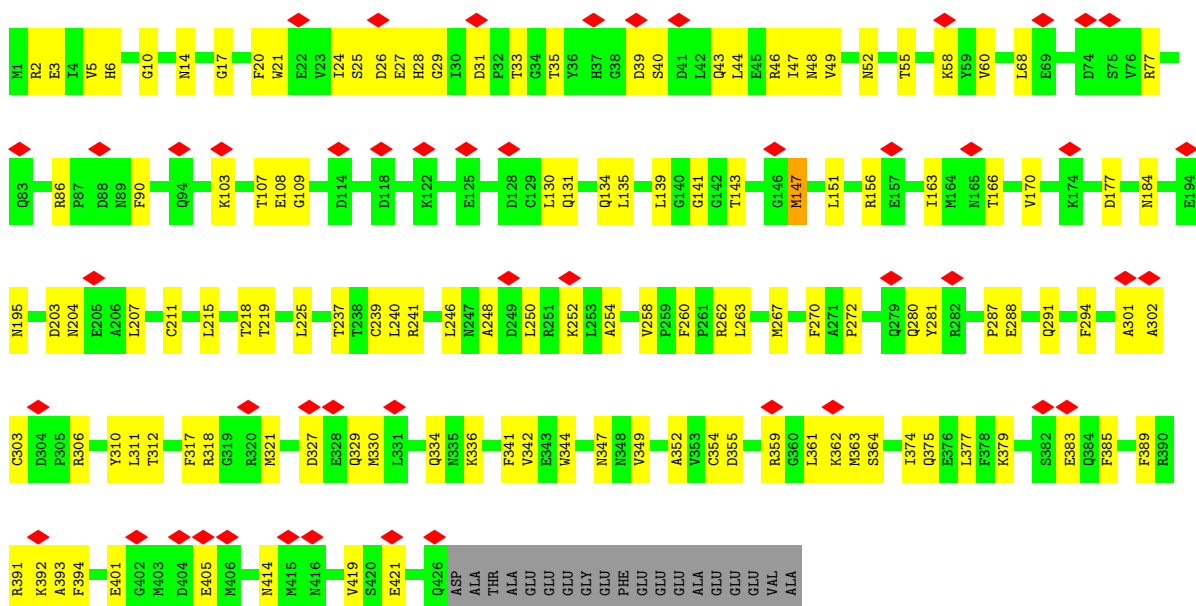




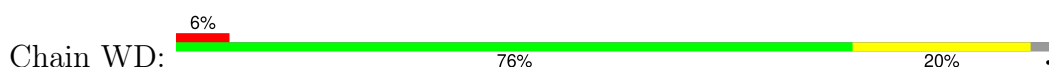
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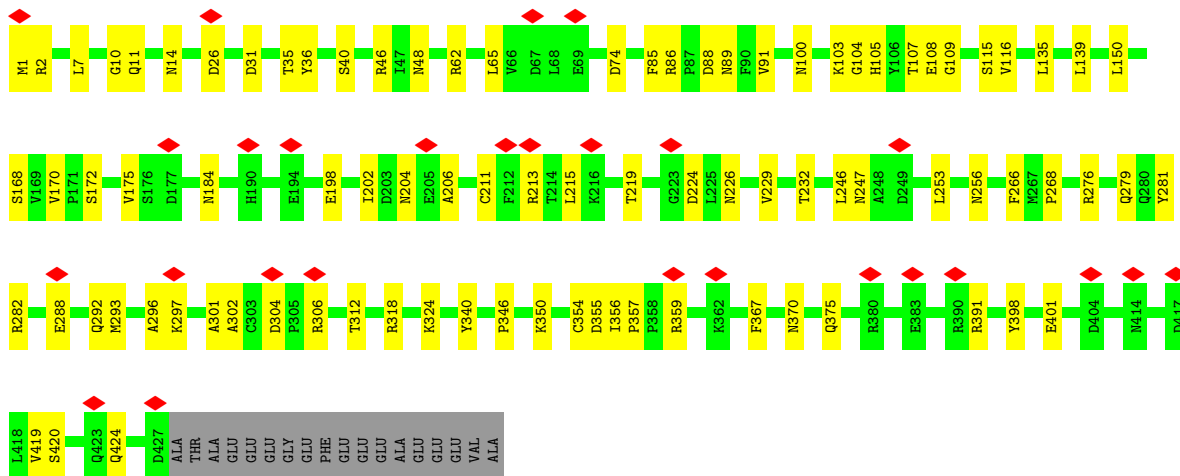


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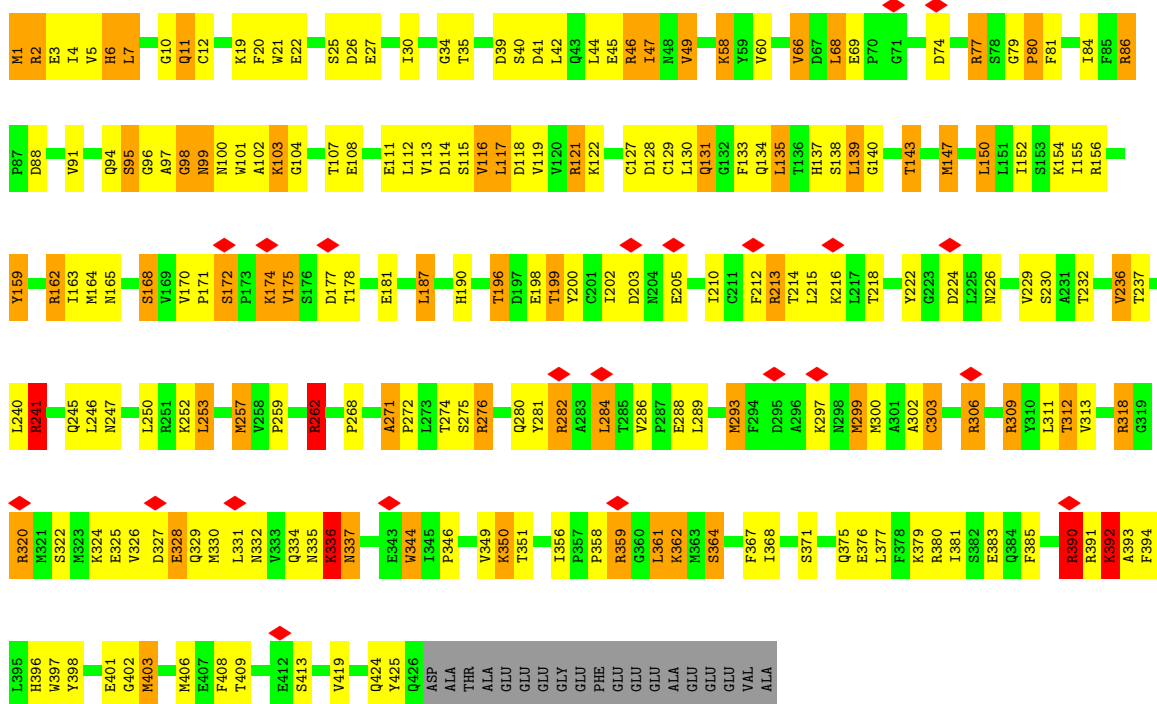


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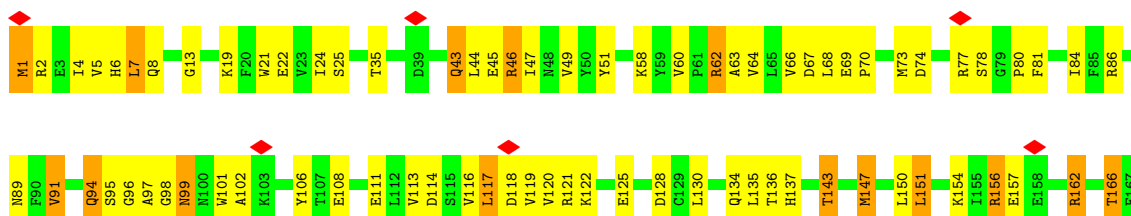


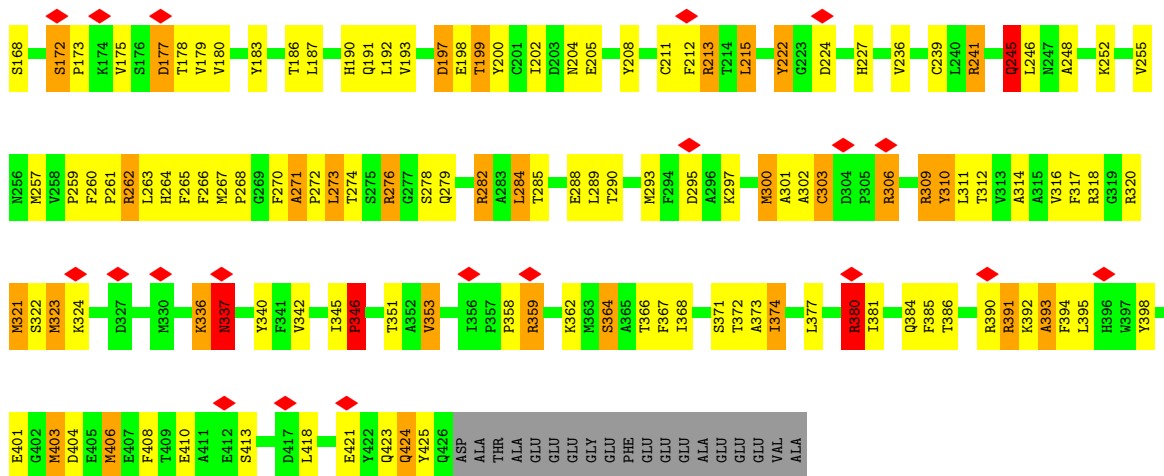


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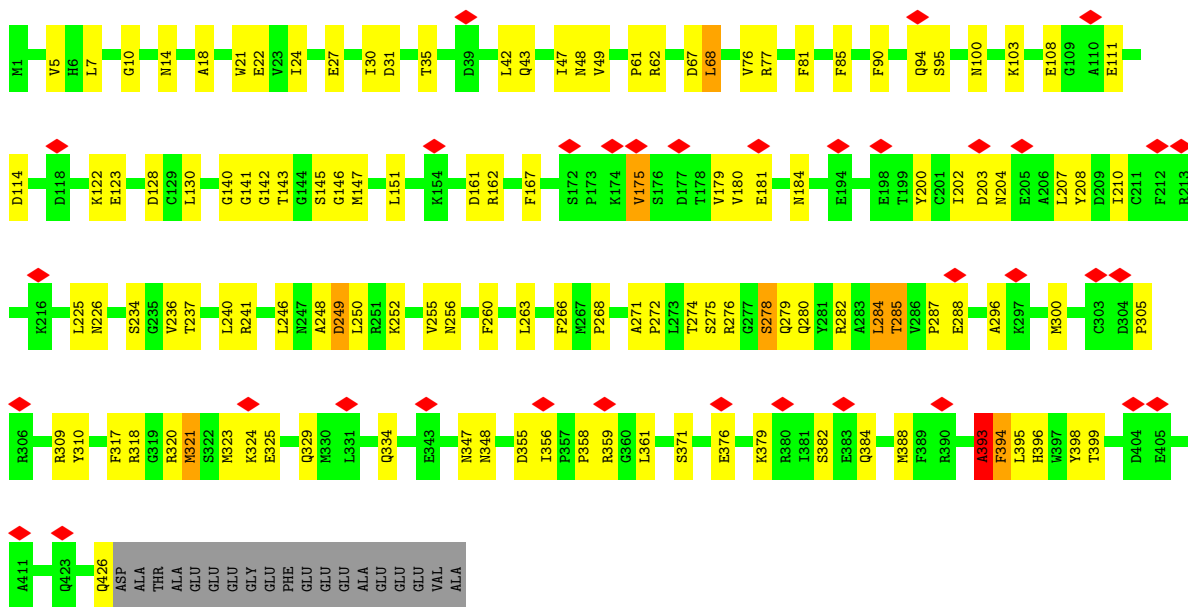


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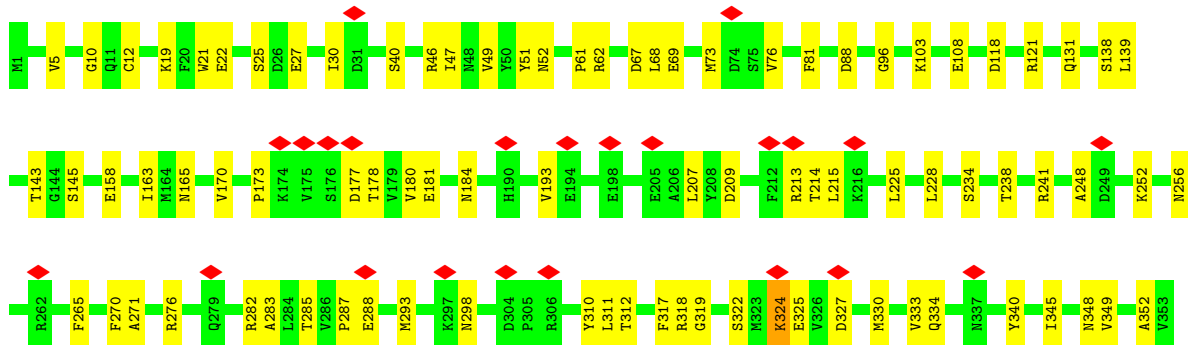
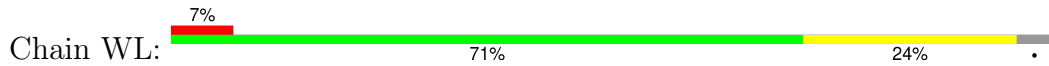


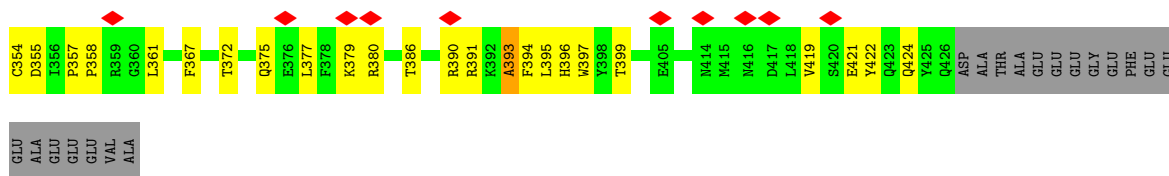


• Molecule 41: Tubulin beta-4B chain

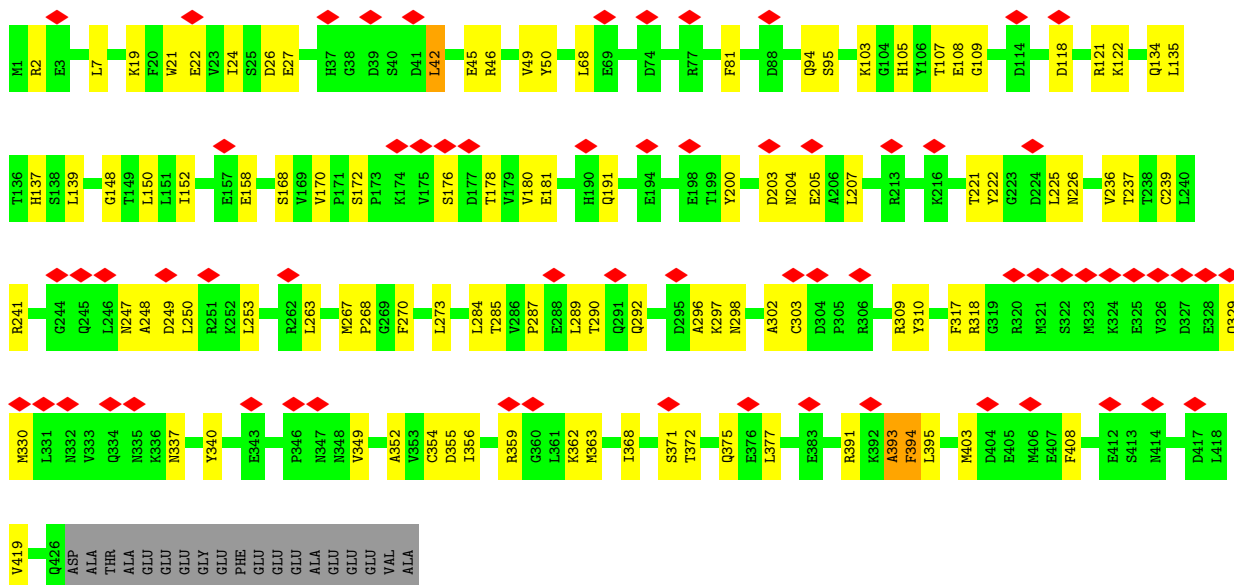
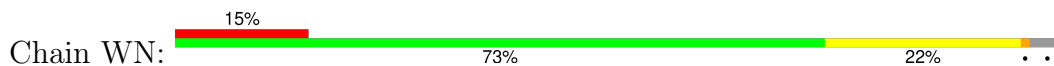


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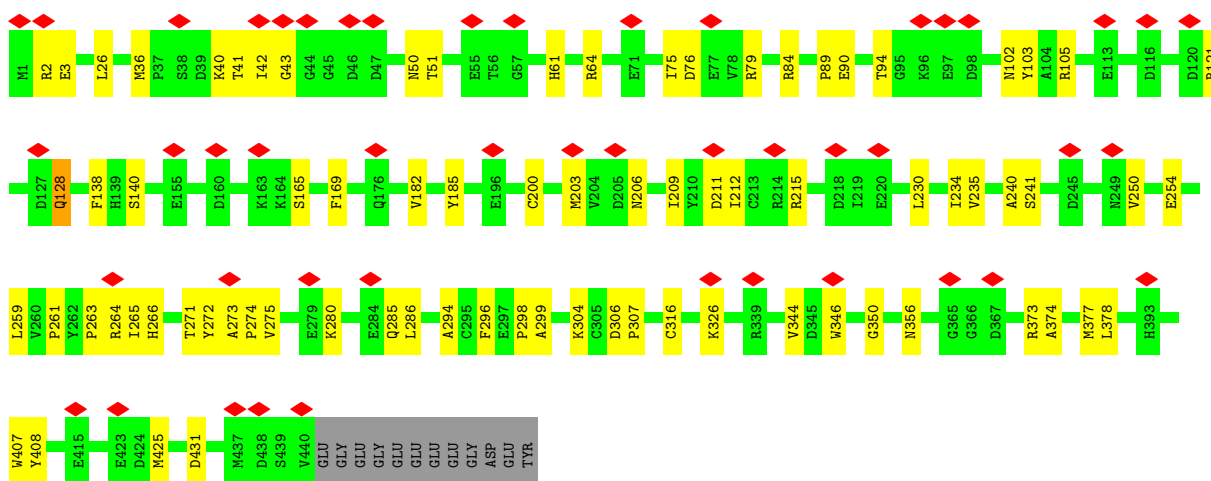
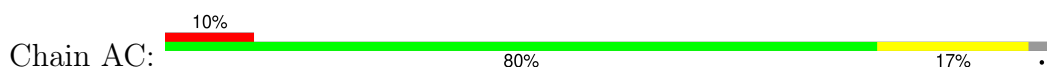




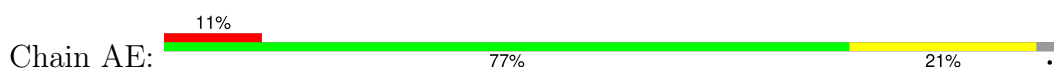
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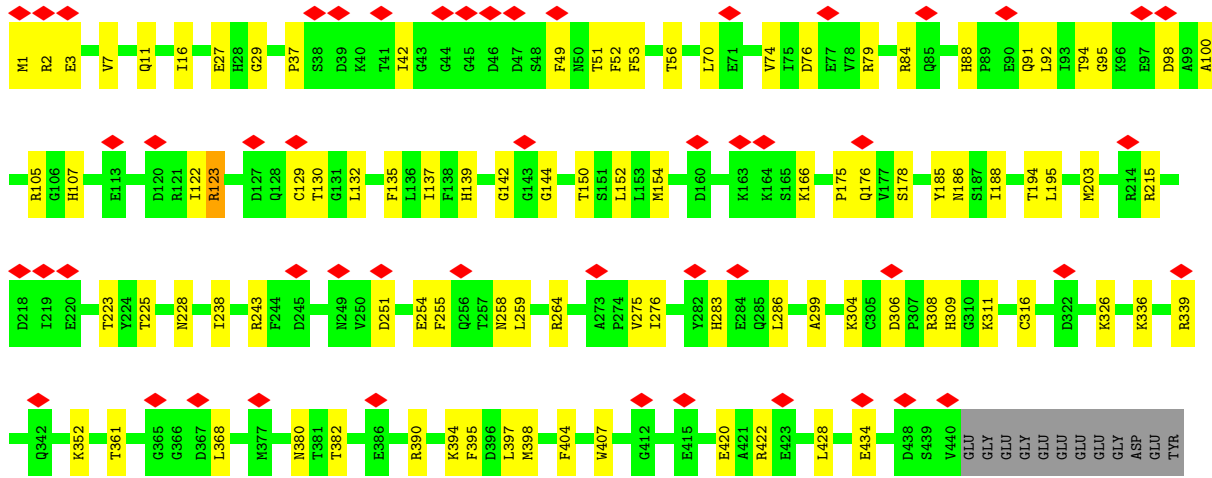


• Molecule 42: Tubulin alpha-1D chain

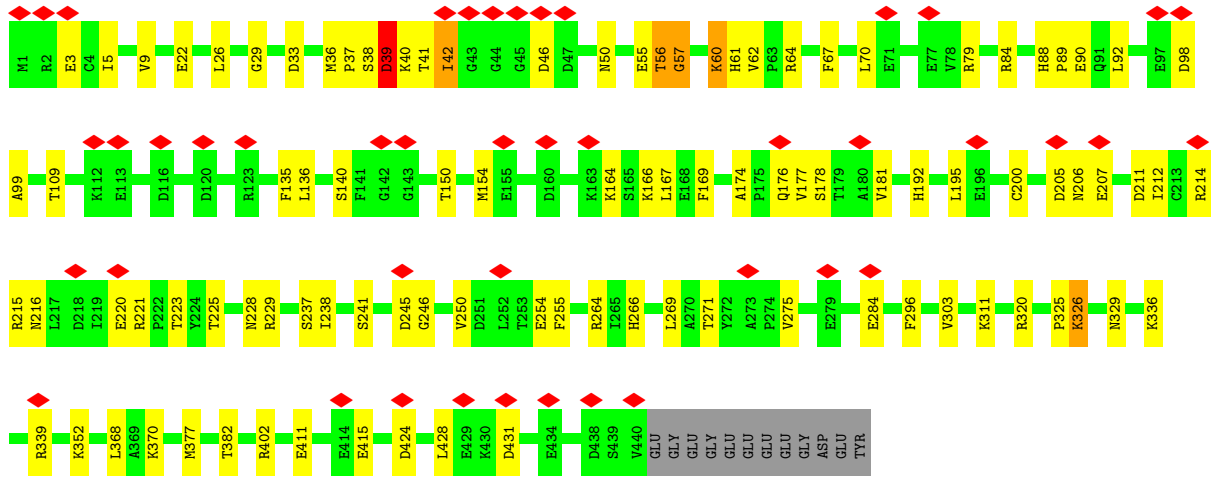
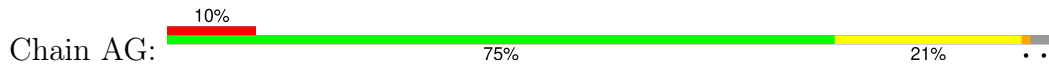


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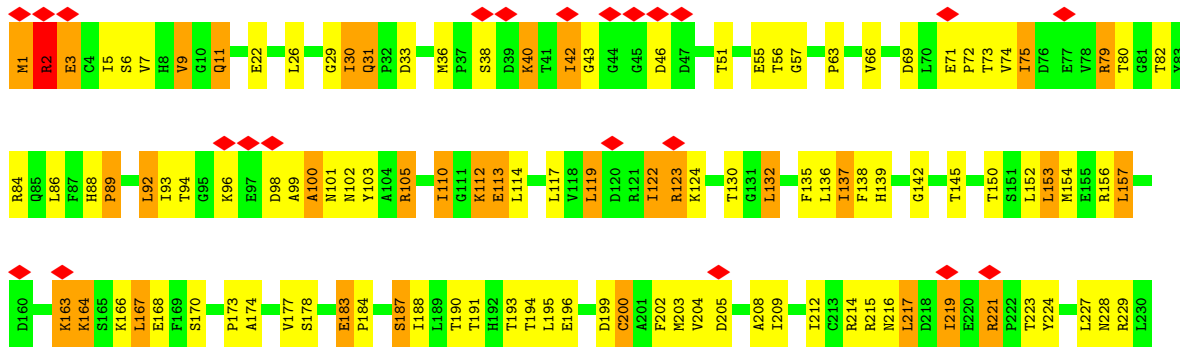


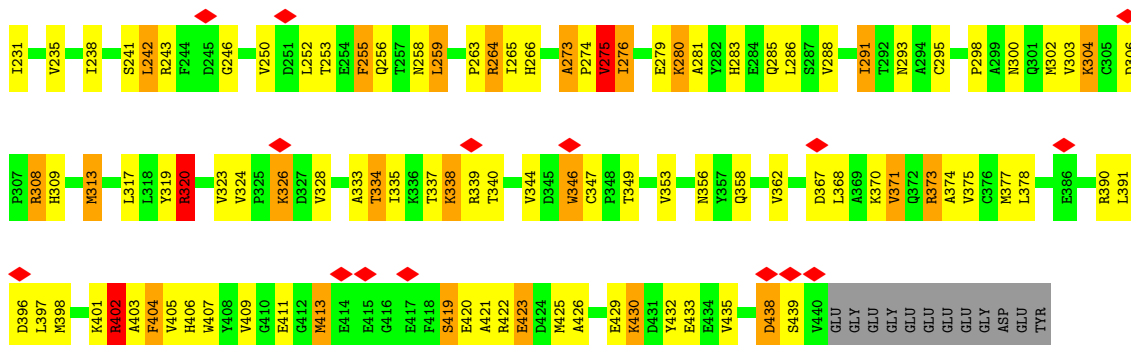


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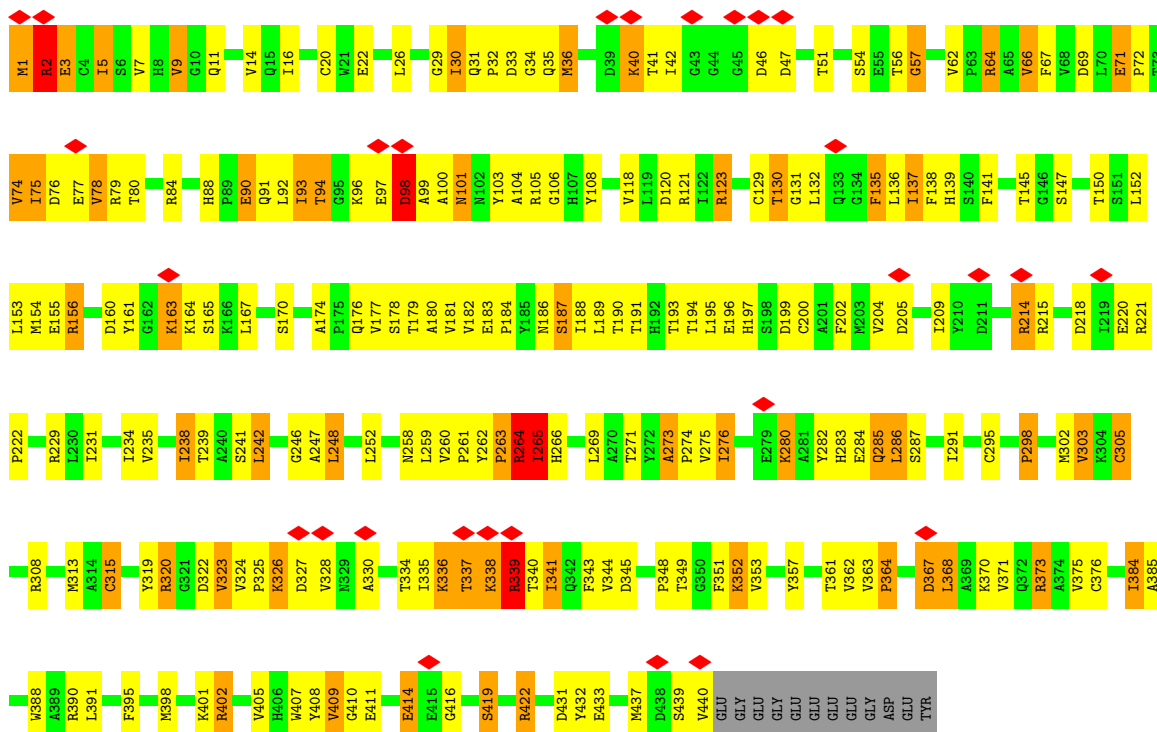


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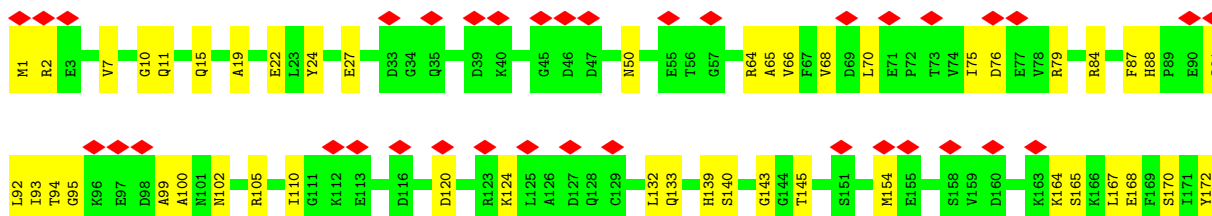


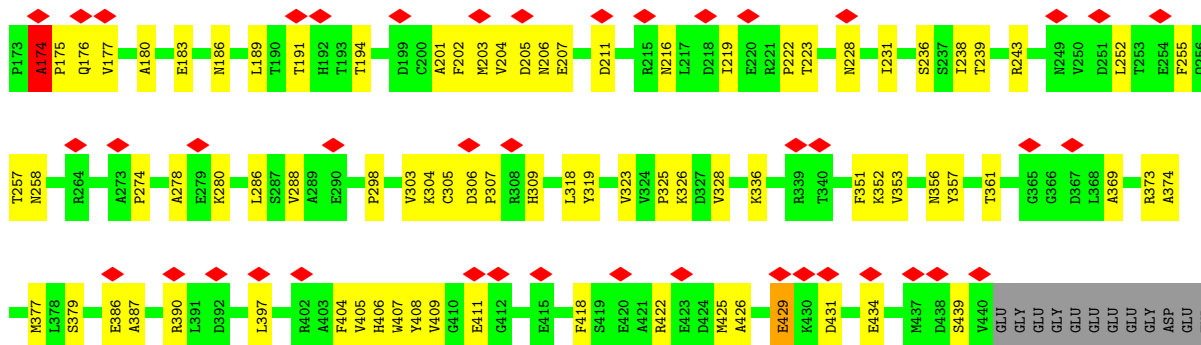


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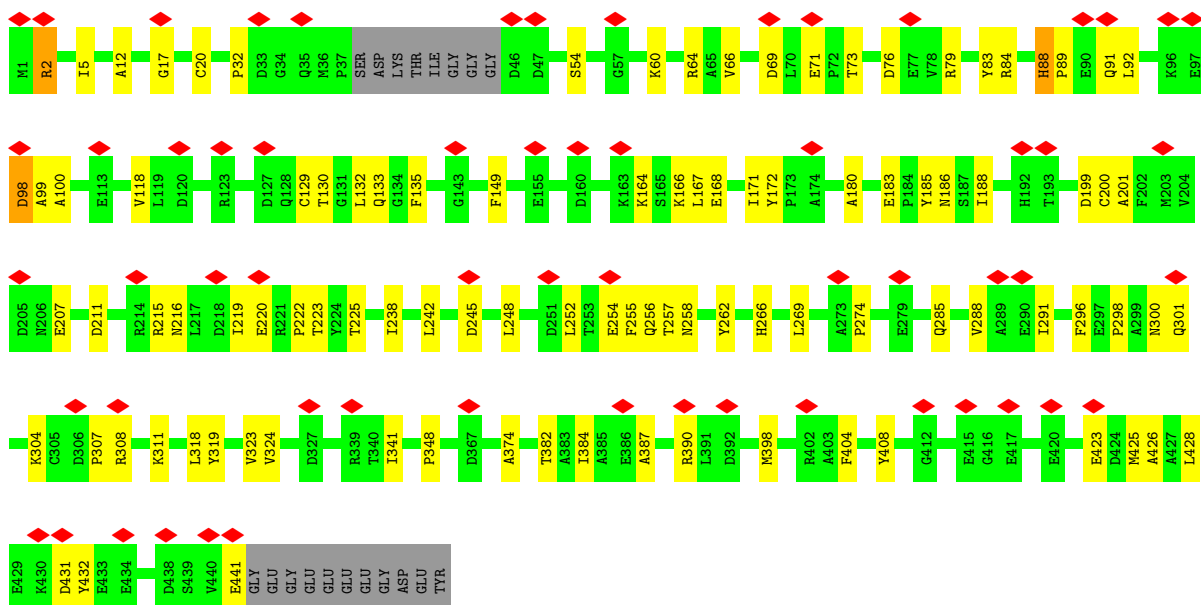
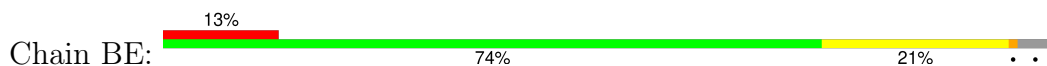


• Molecule 42: Tubulin alpha-1D chain

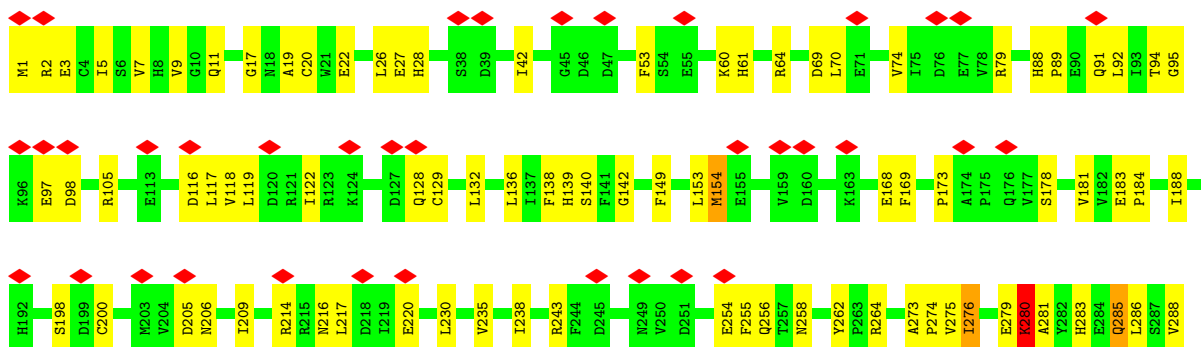
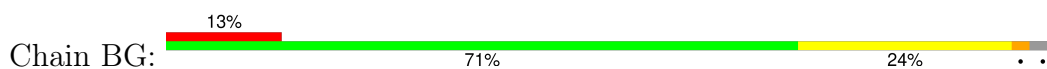


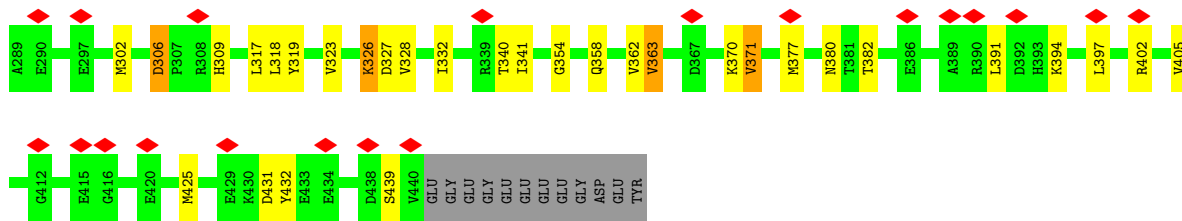


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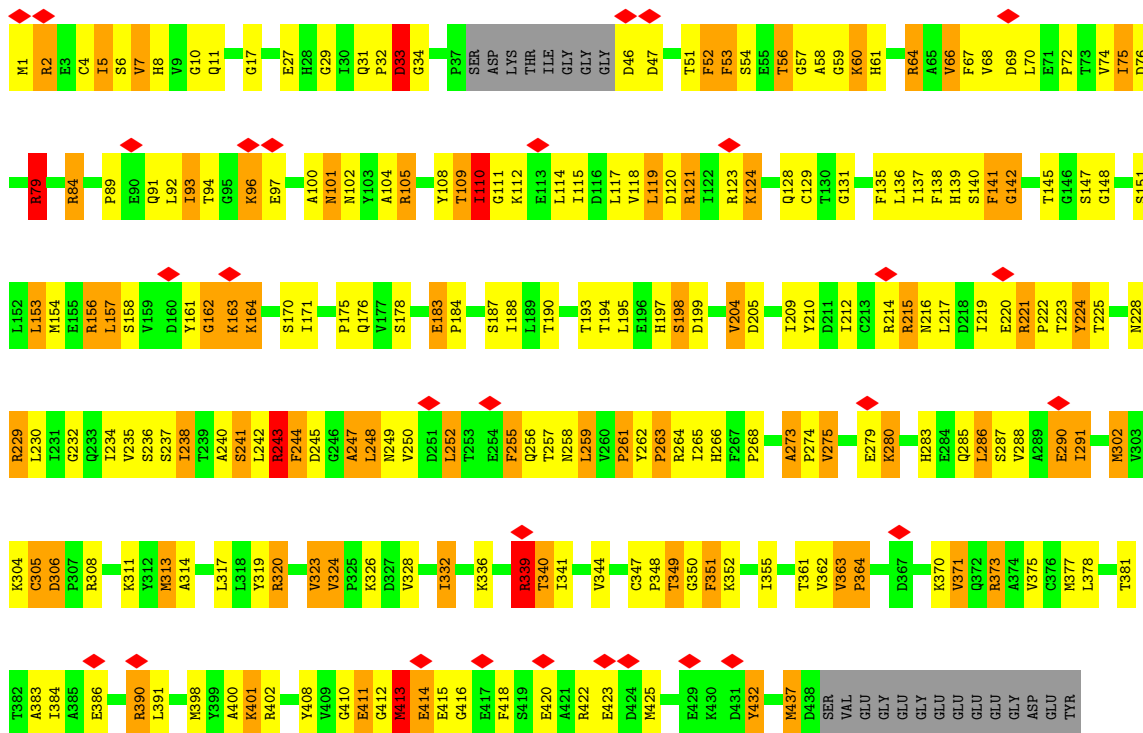


• Molecule 42: Tubulin alpha-1D chain

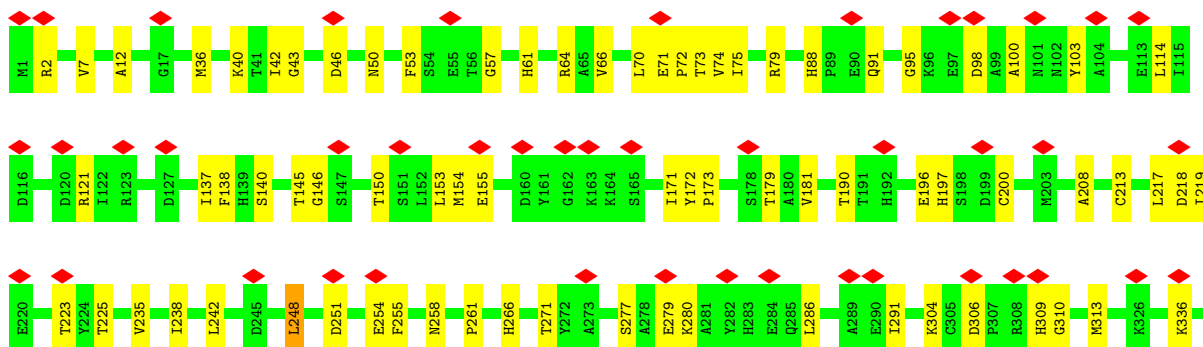
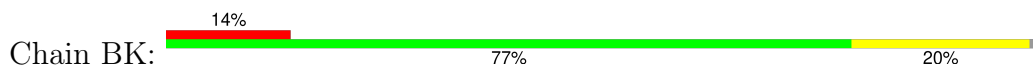


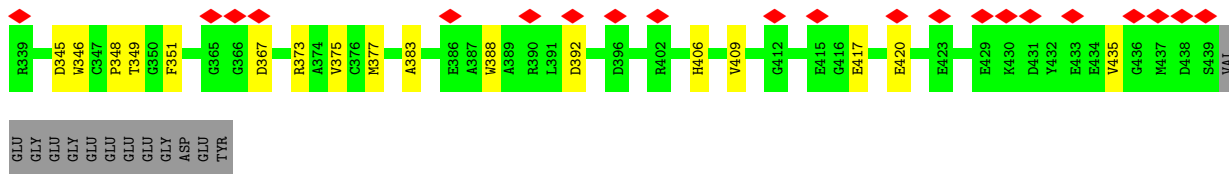


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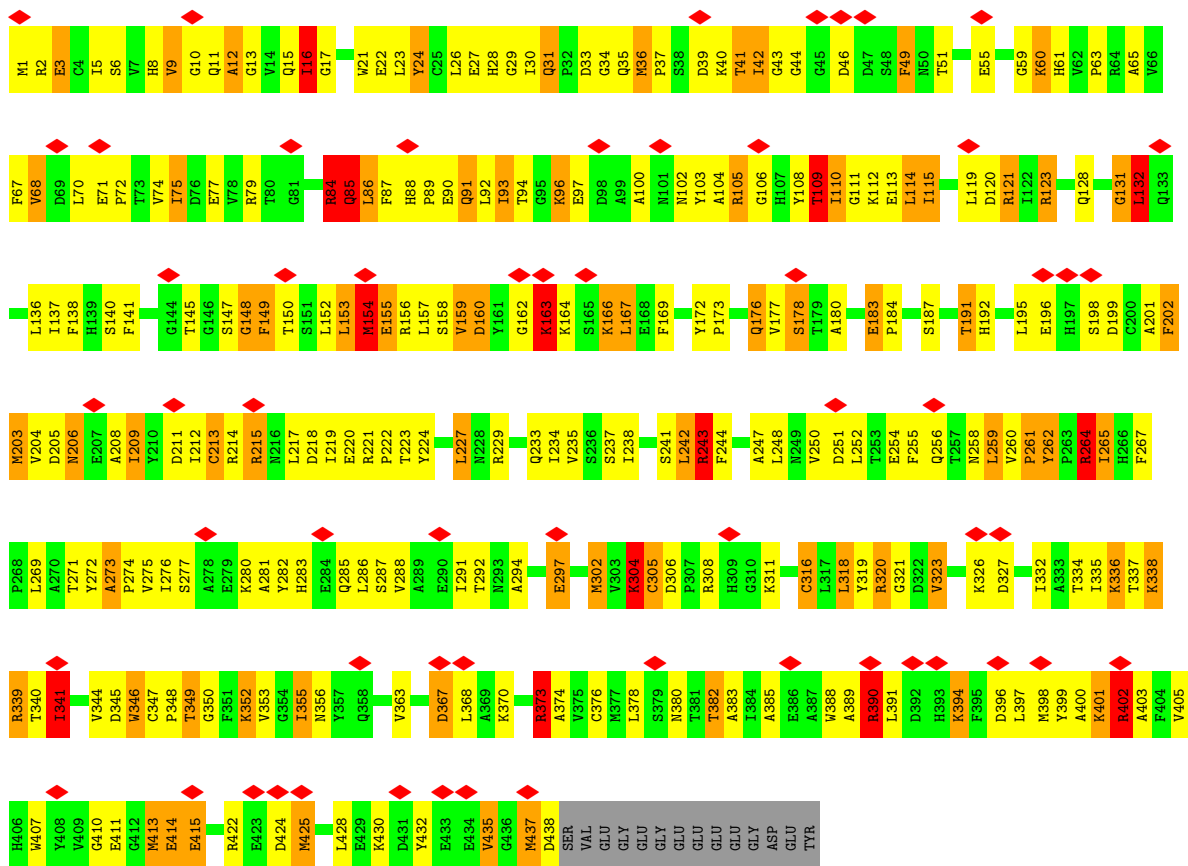


• Molecule 42: Tubulin alpha-1D chain

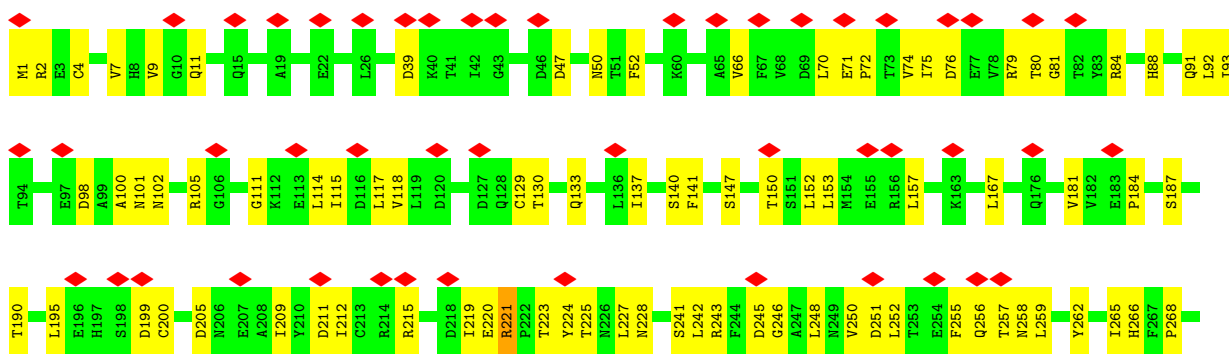


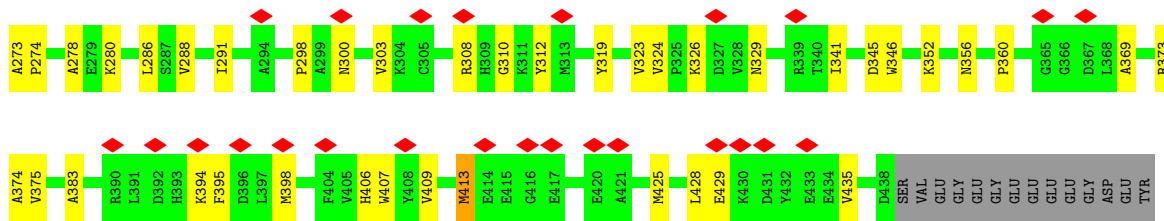


• Molecule 42: Tubulin alpha-1D chain

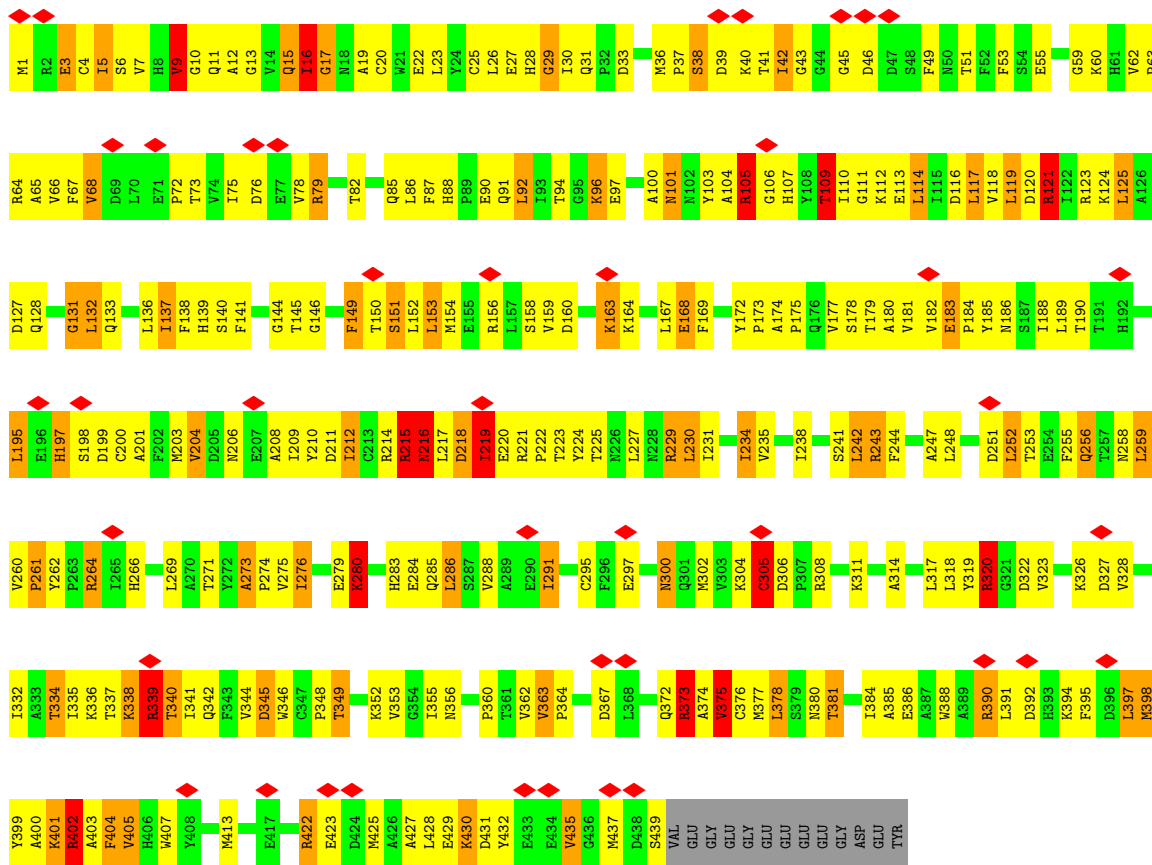


• Molecule 42: Tubulin alpha-1D chain

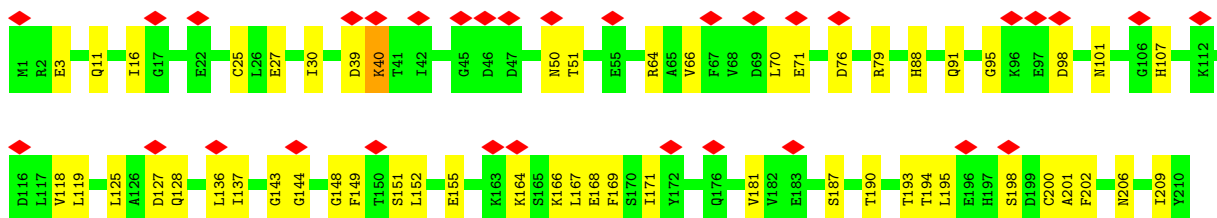


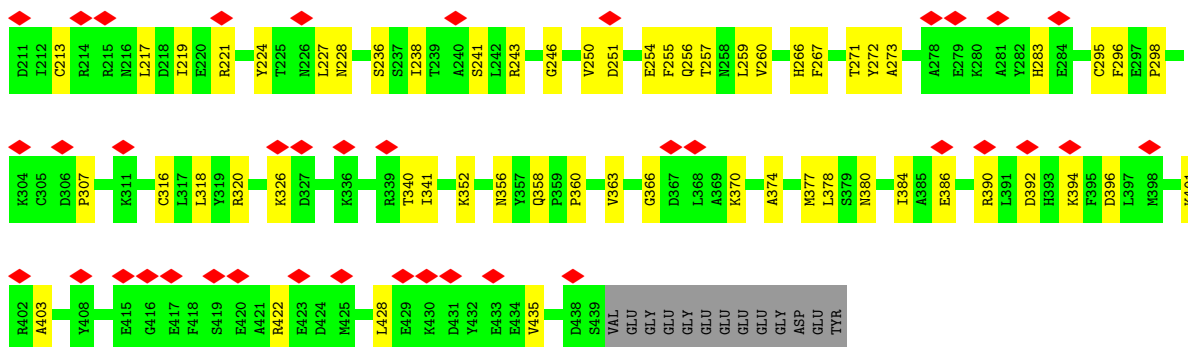


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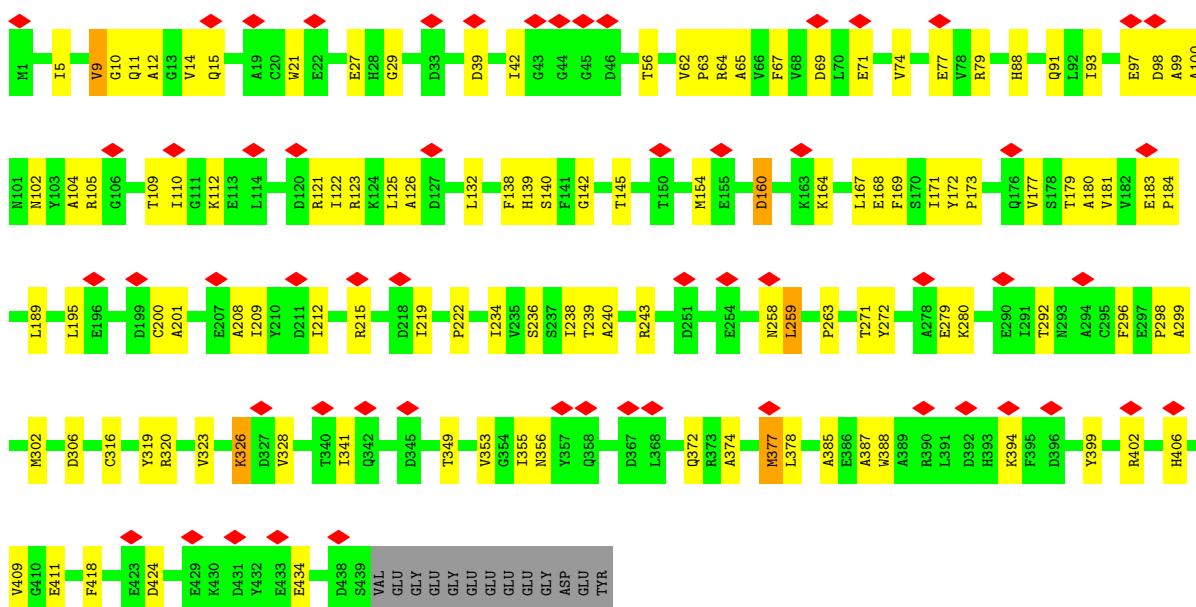


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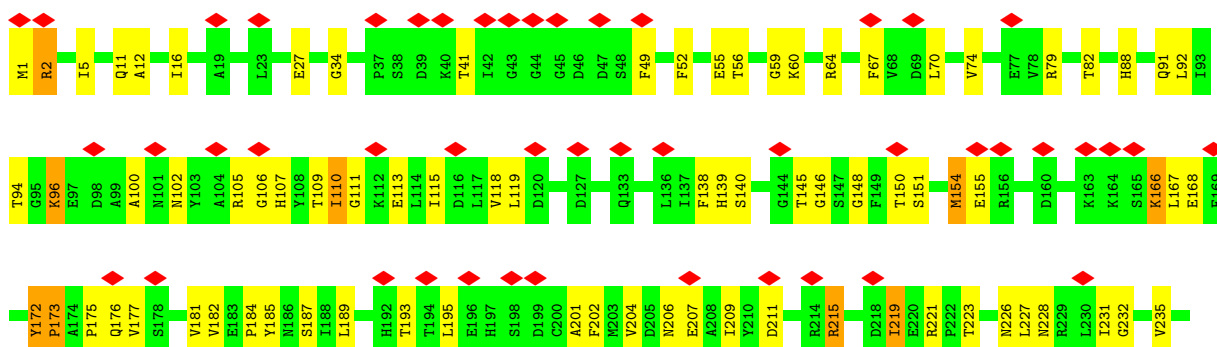


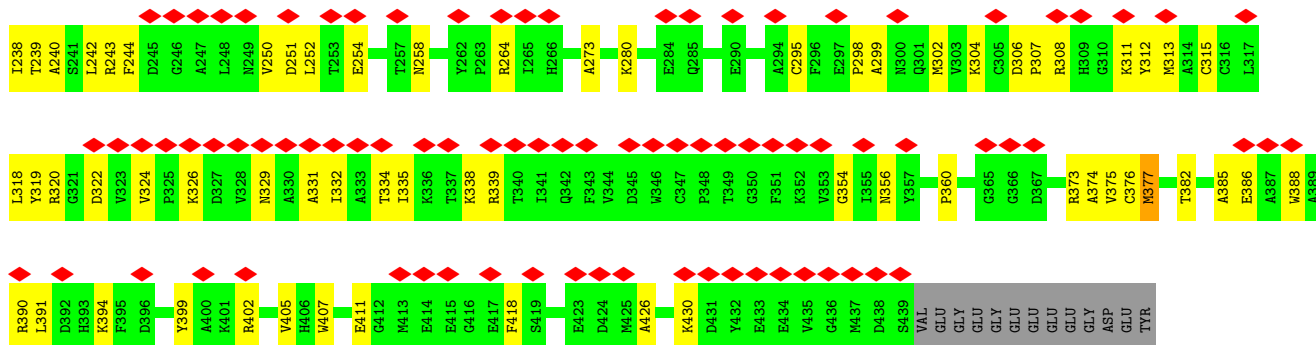


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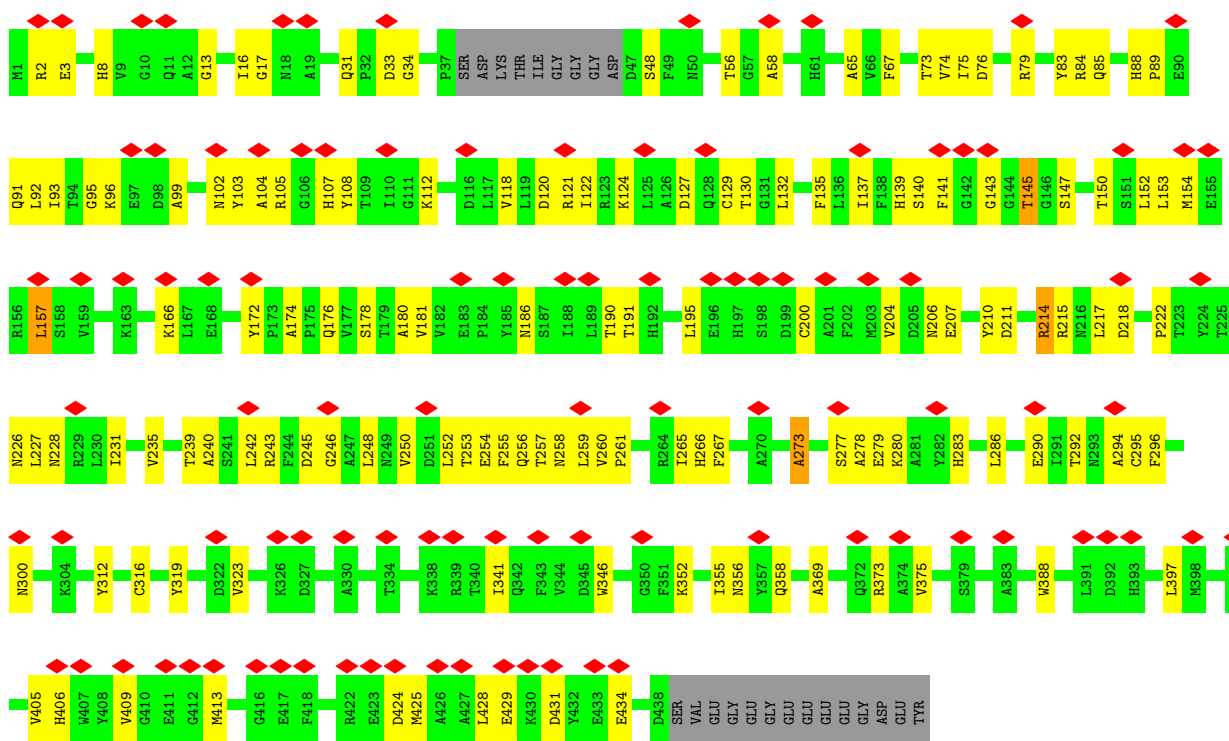


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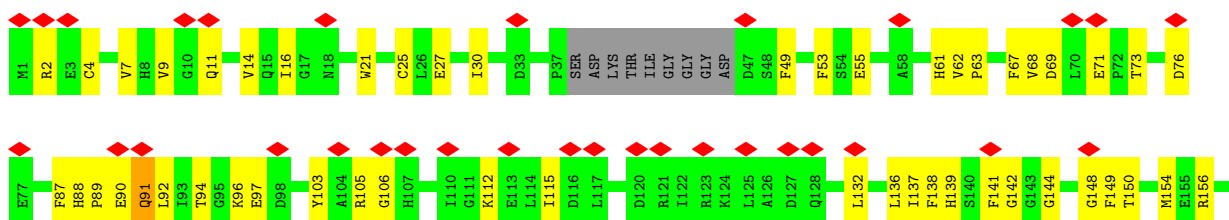


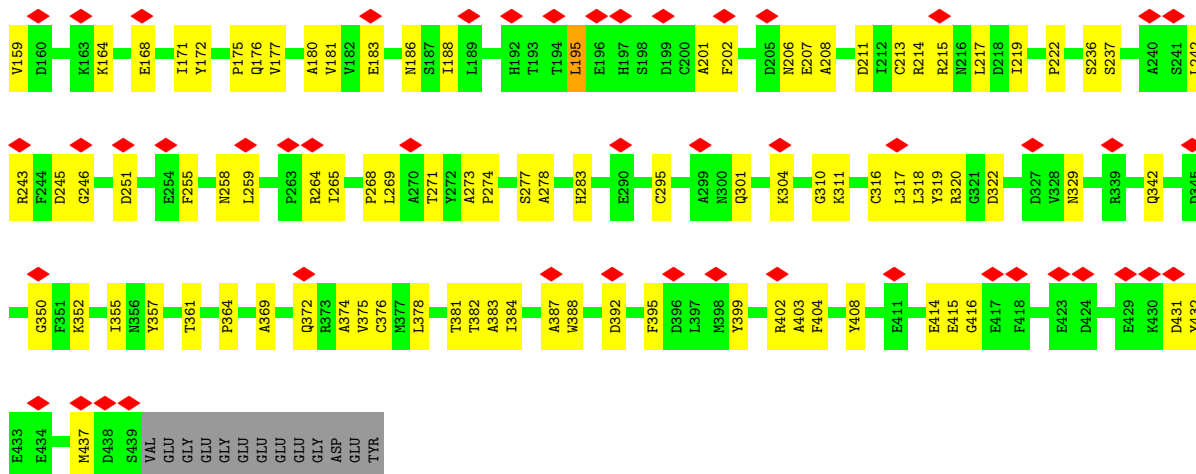


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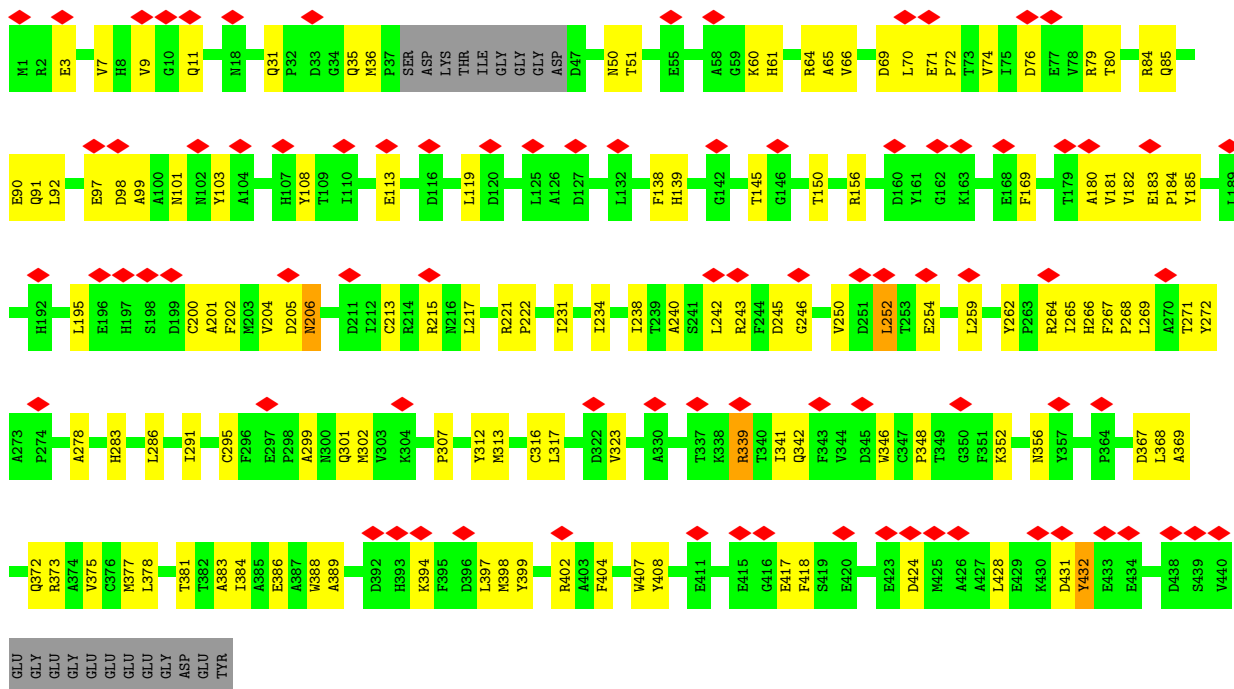


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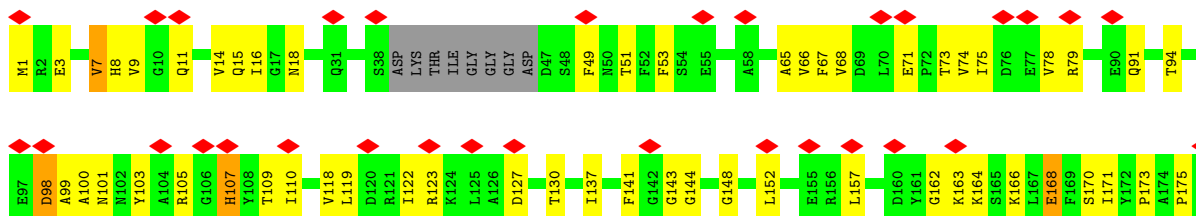


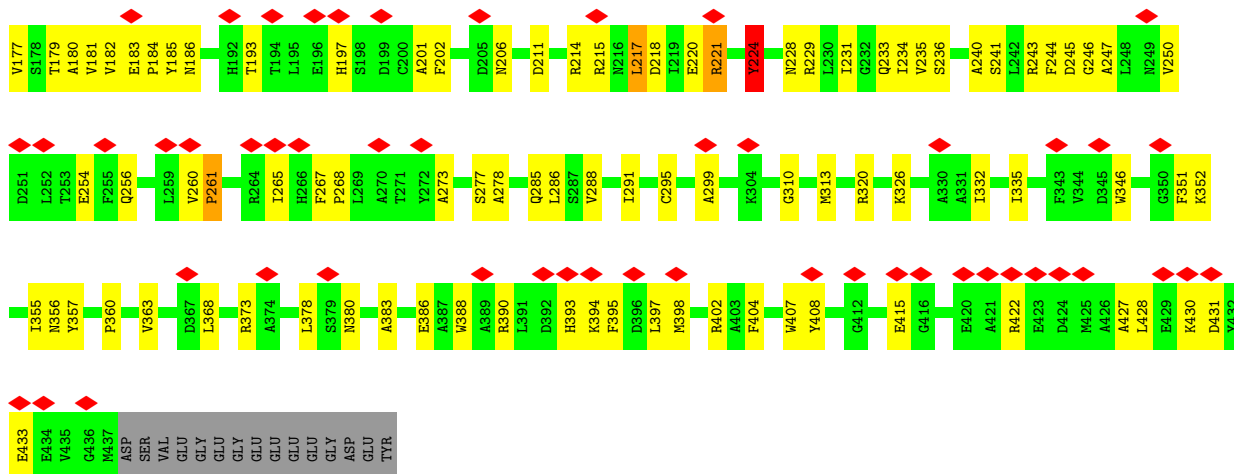


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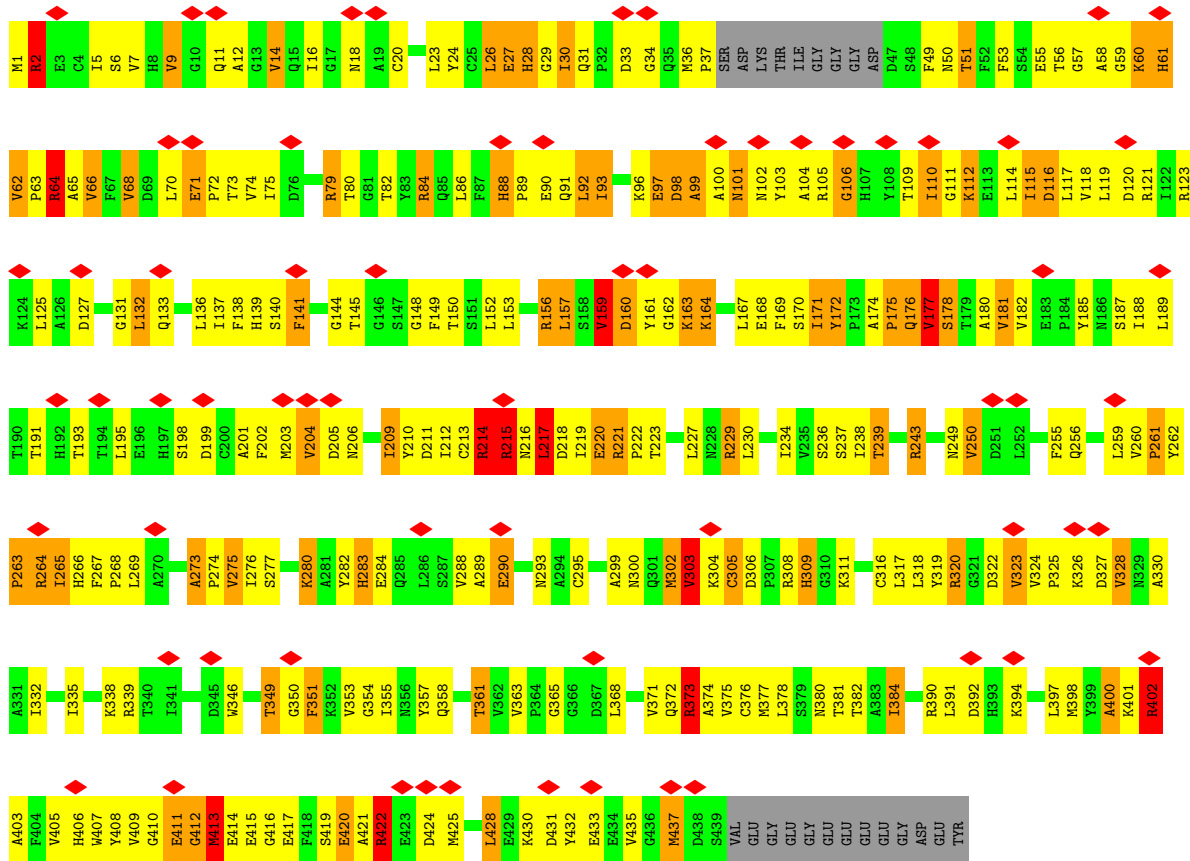


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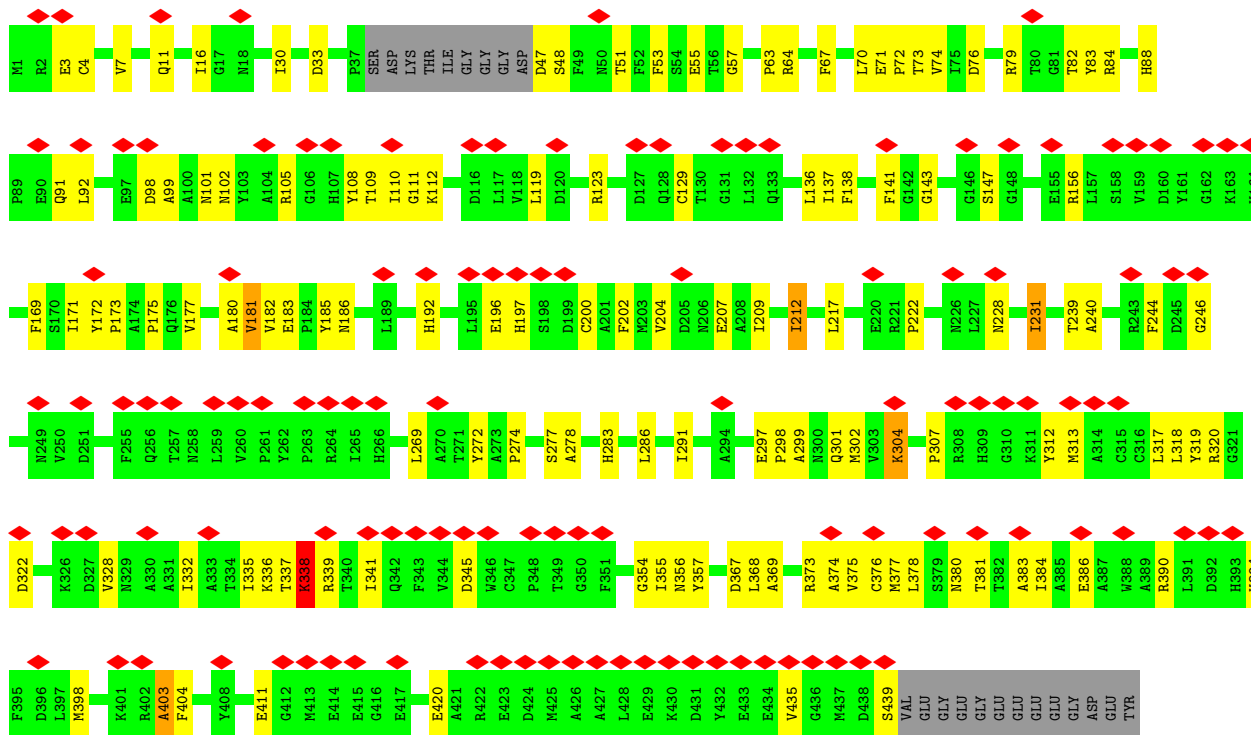


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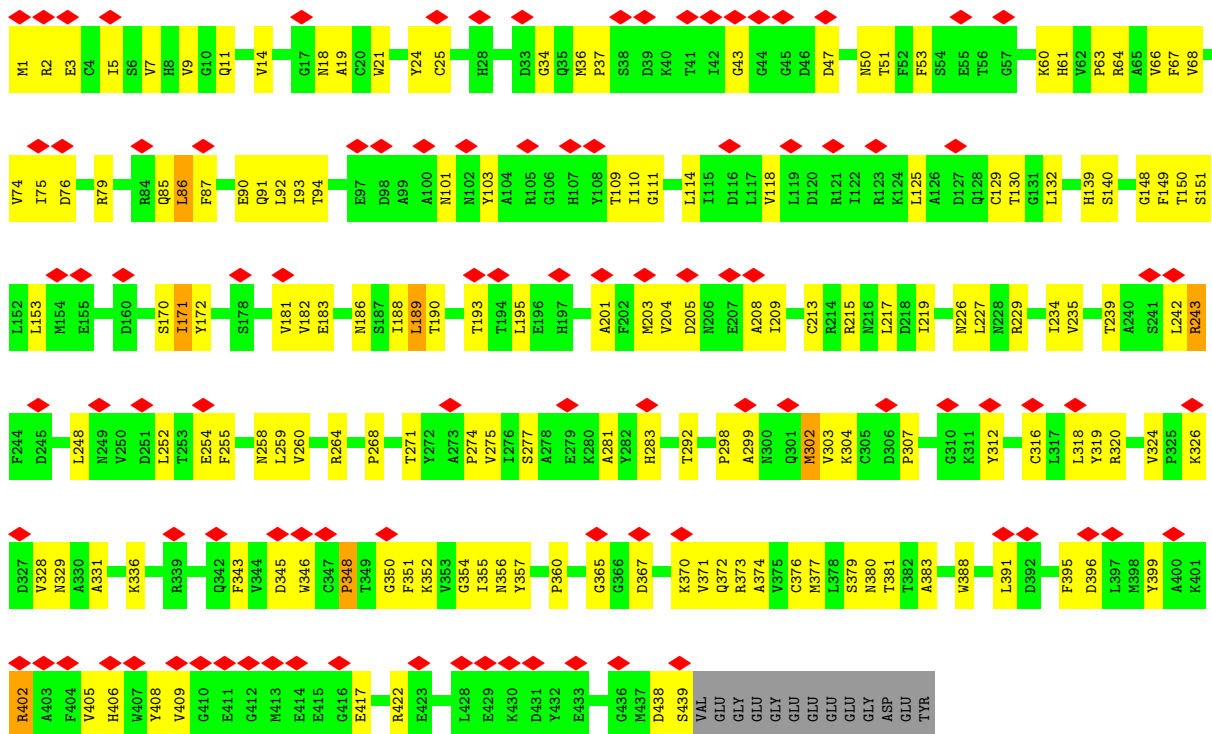


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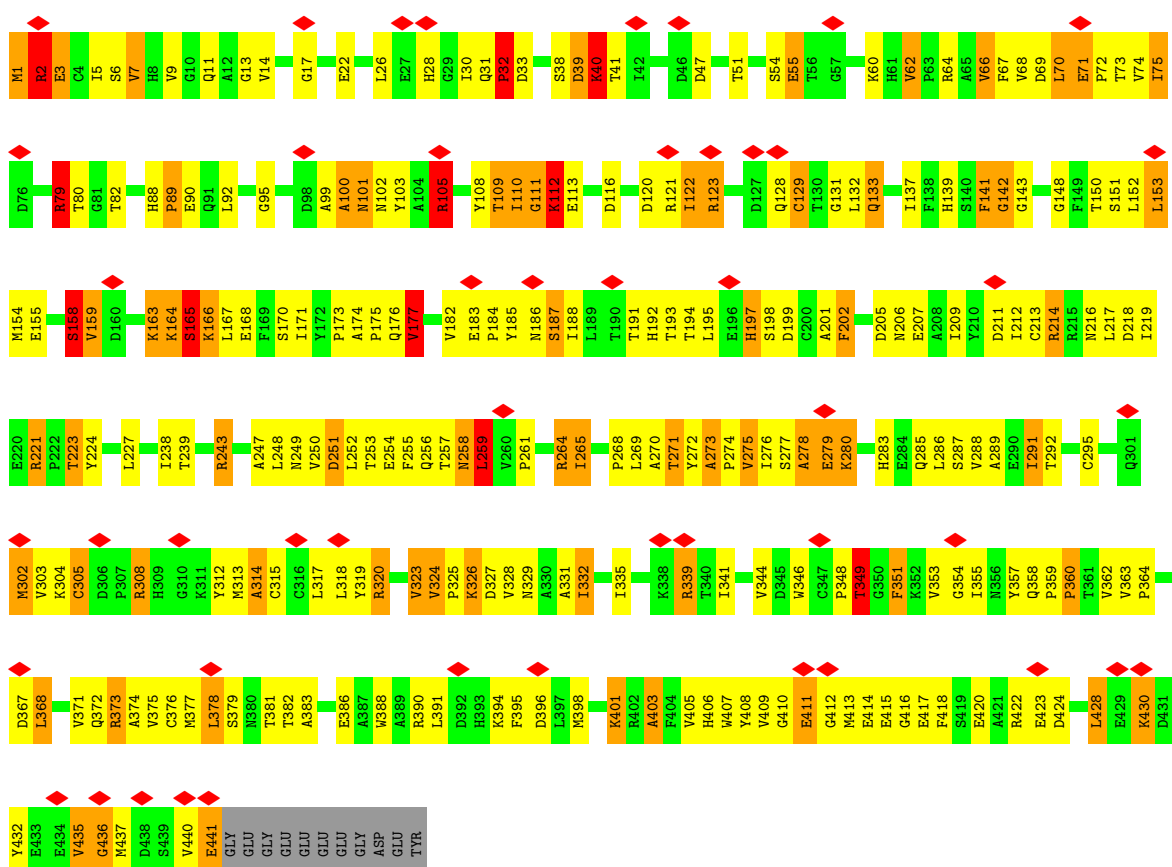




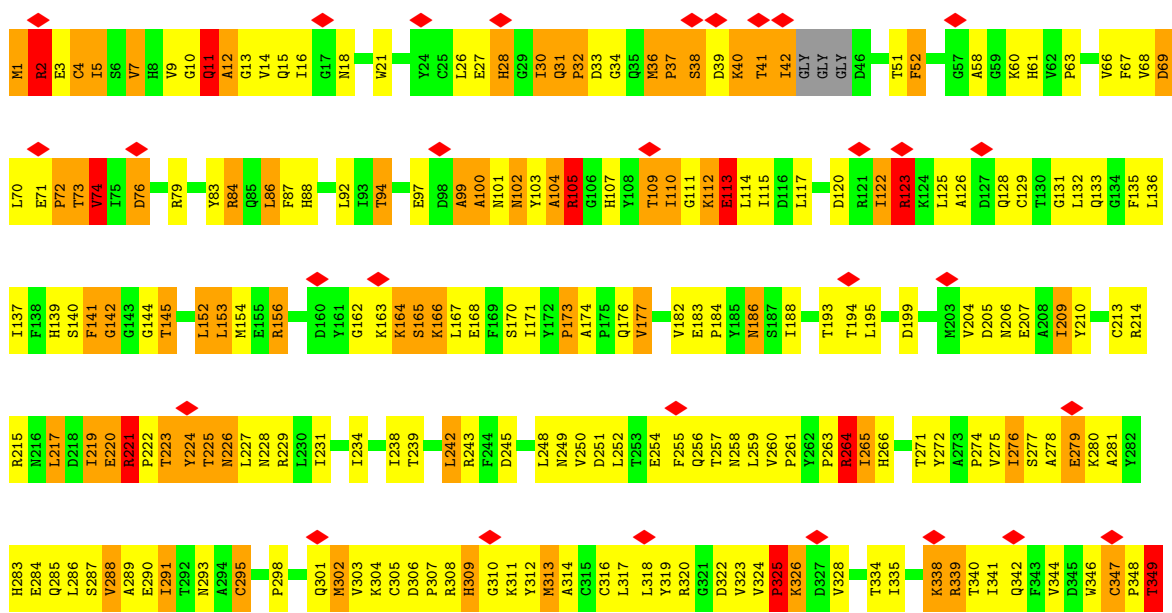
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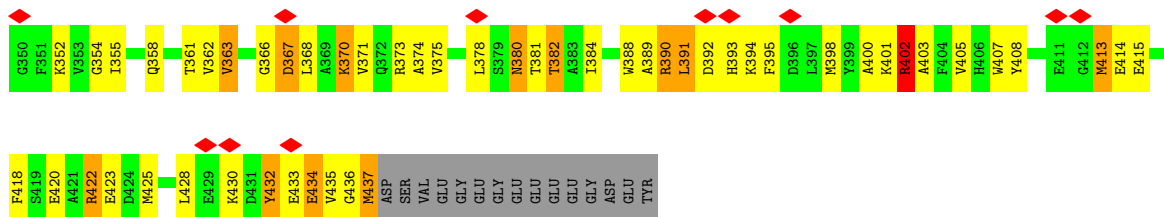


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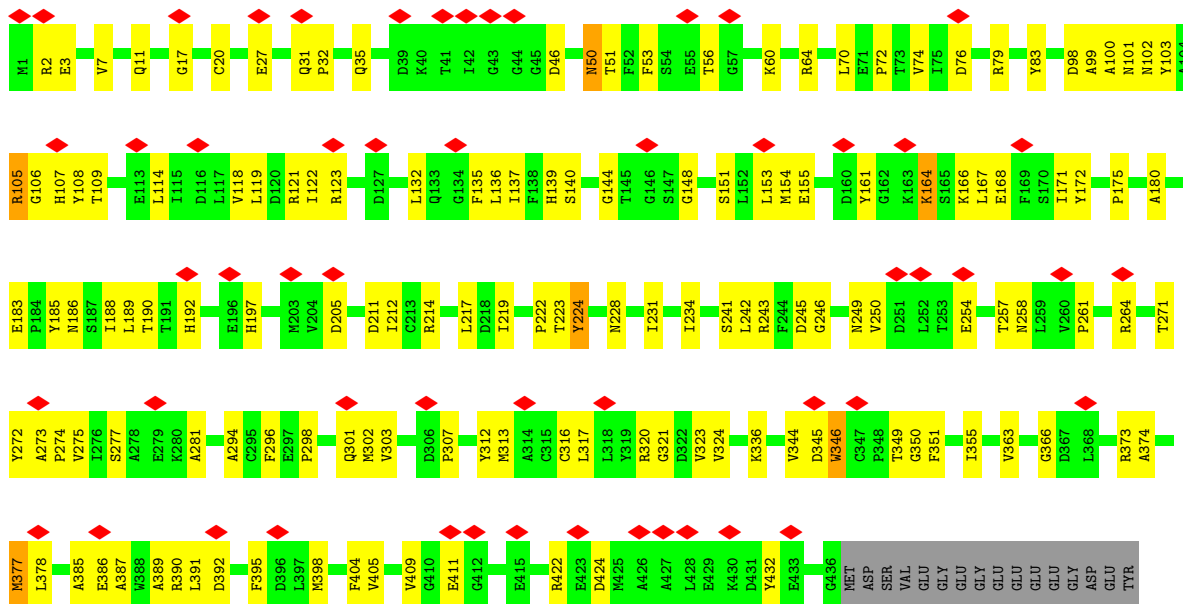


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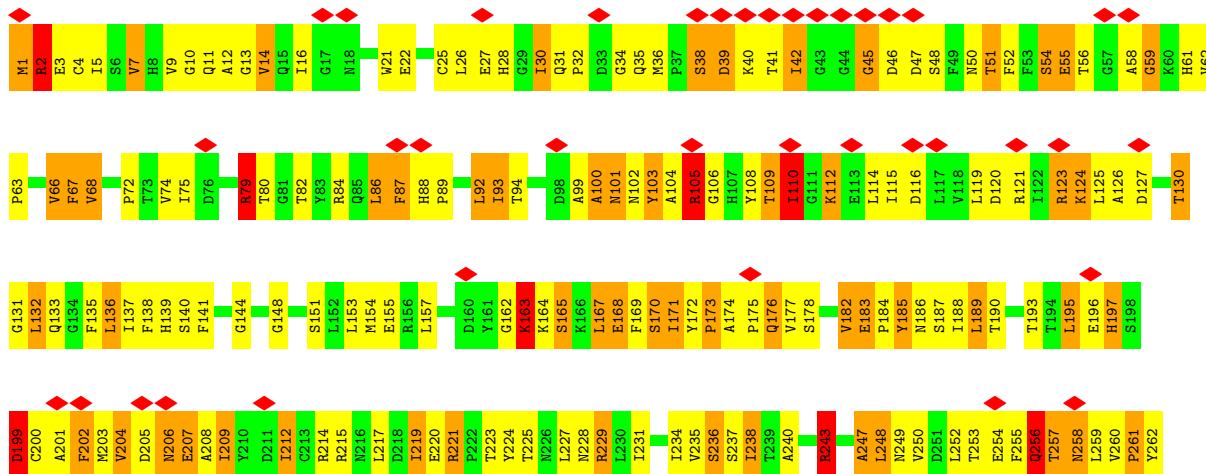


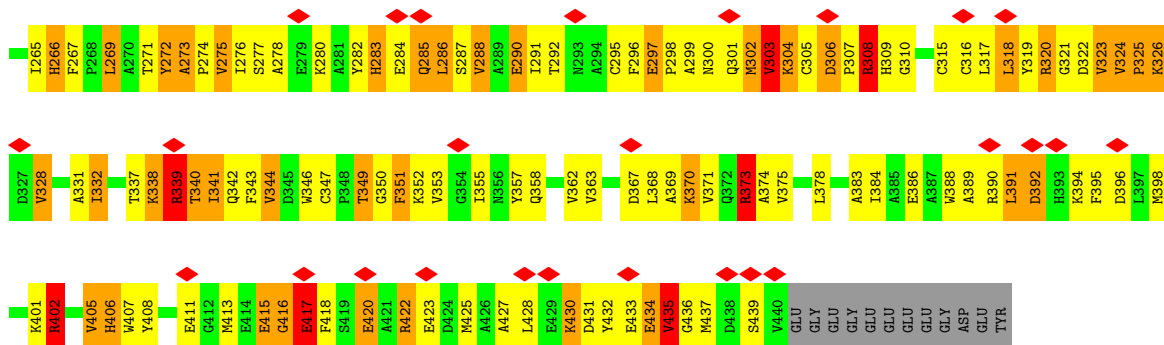


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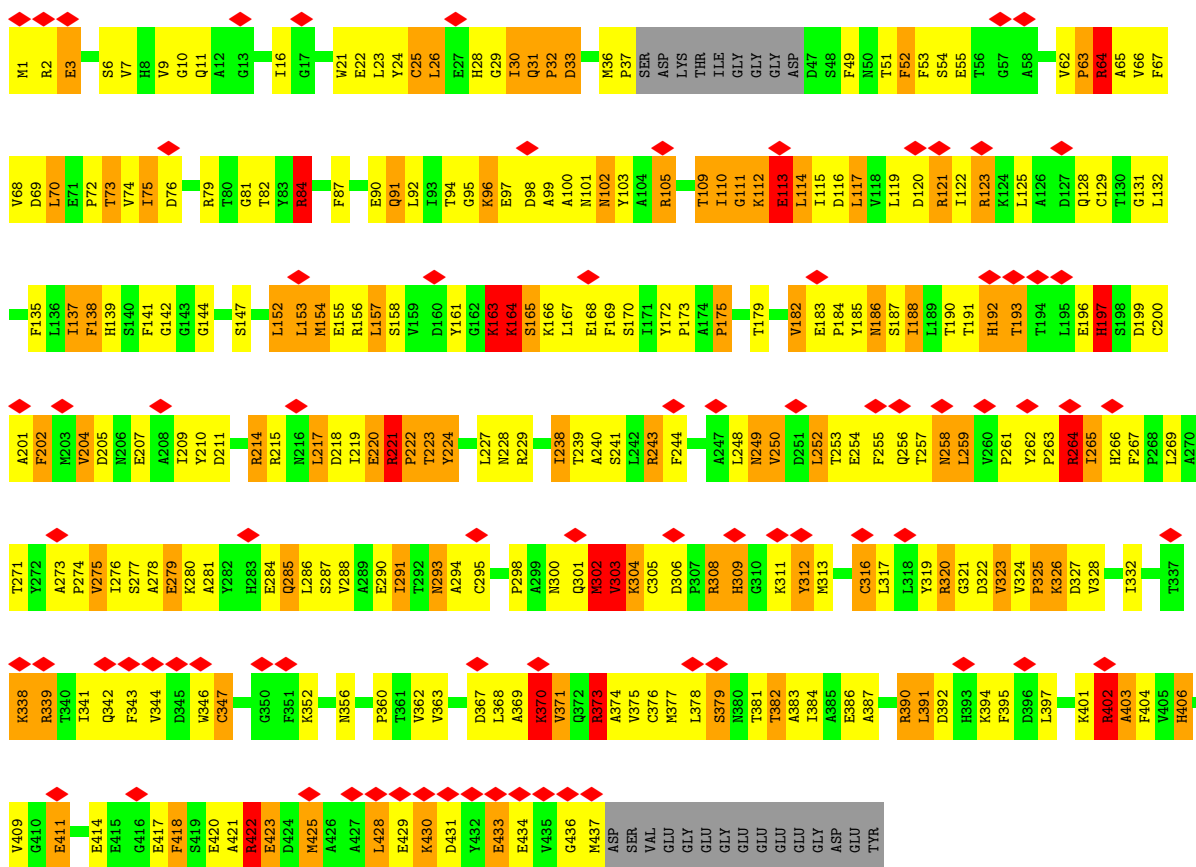


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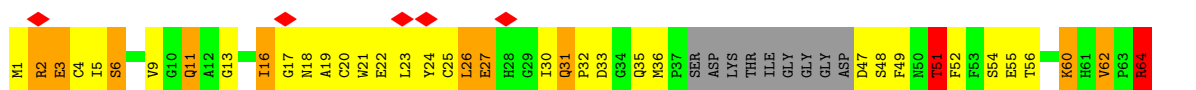


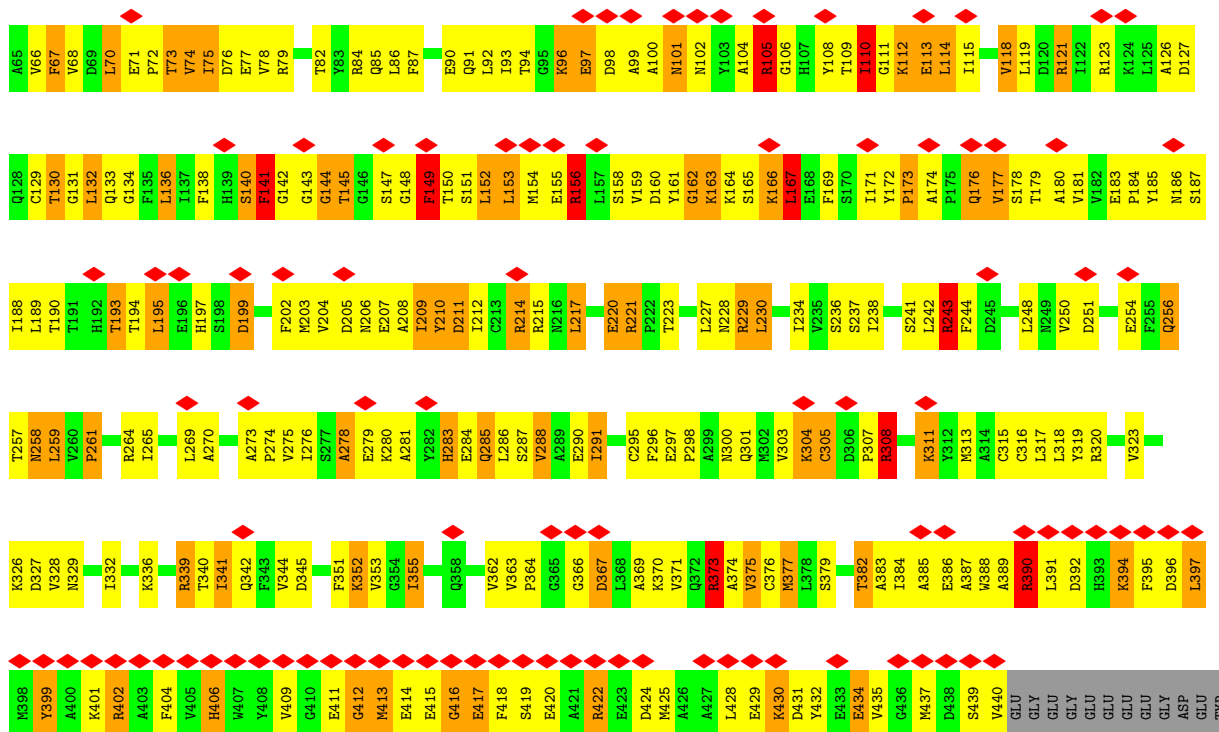


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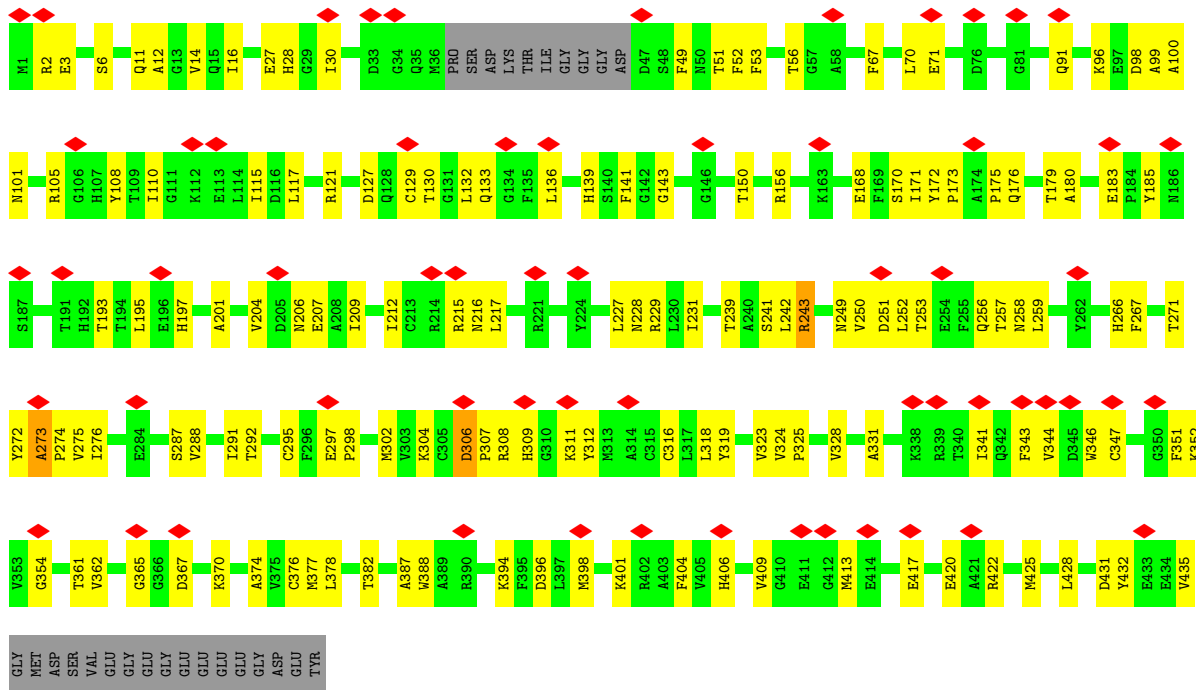


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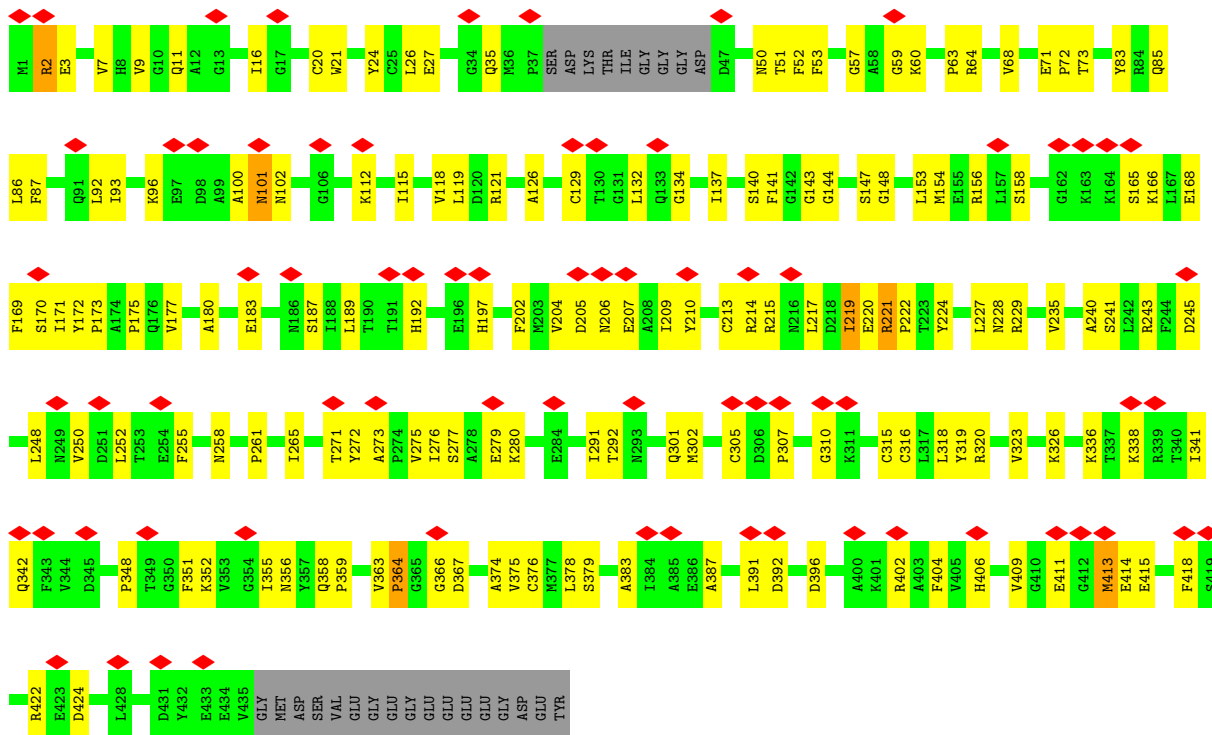


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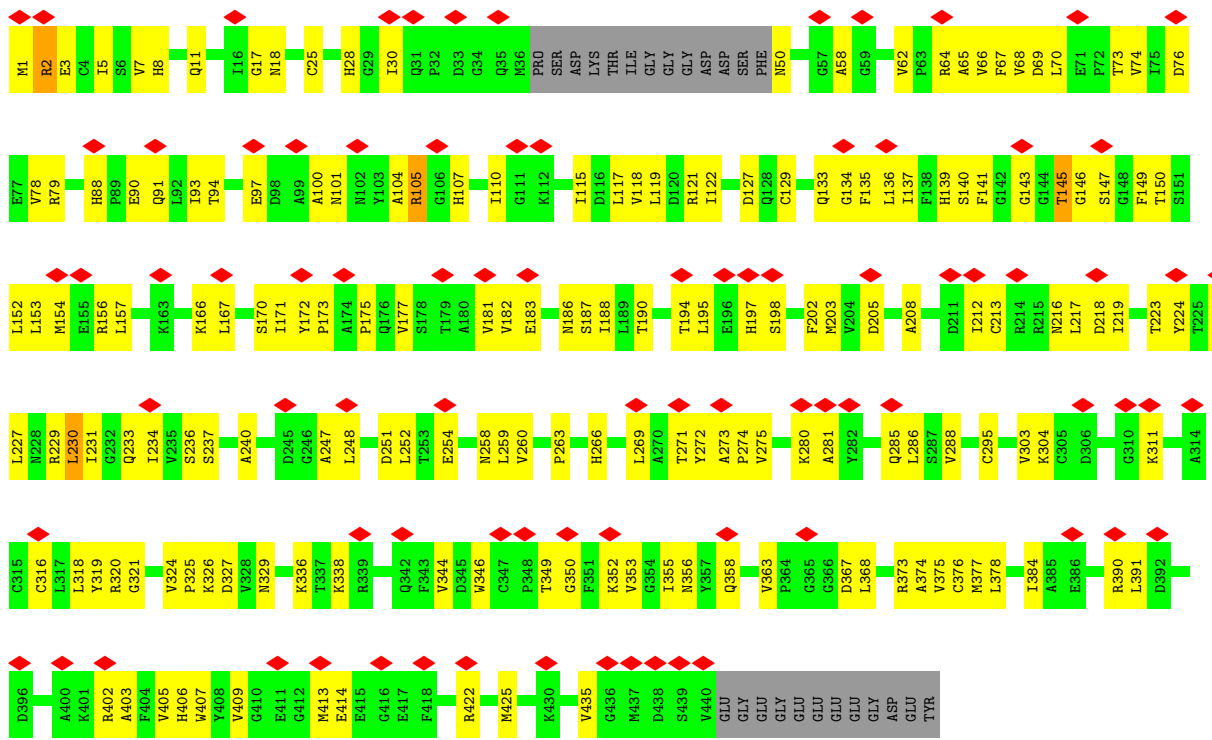


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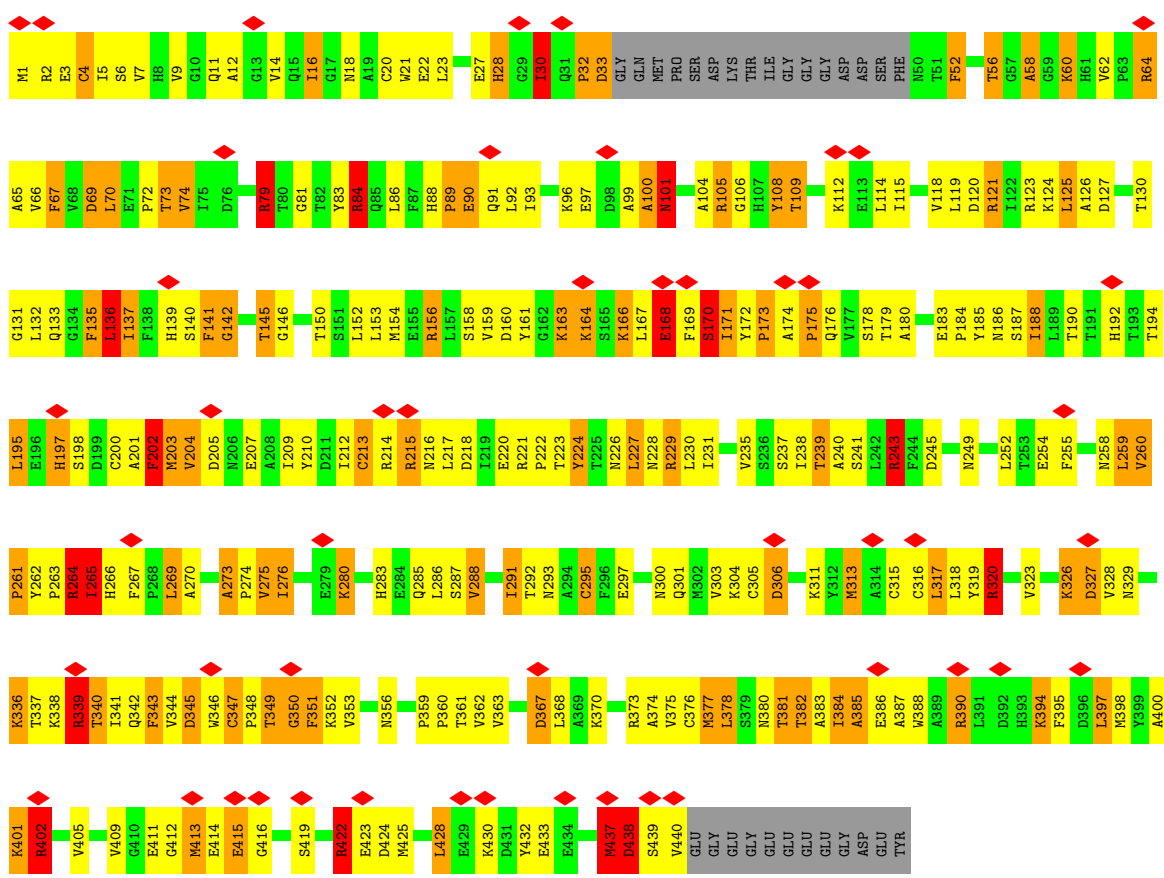




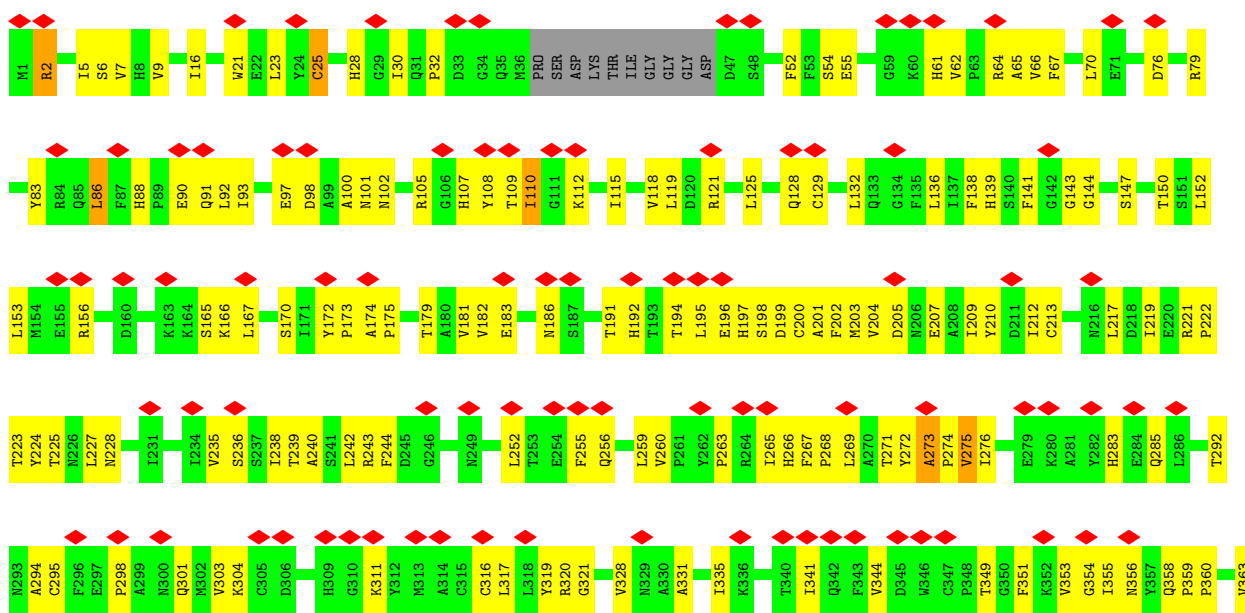
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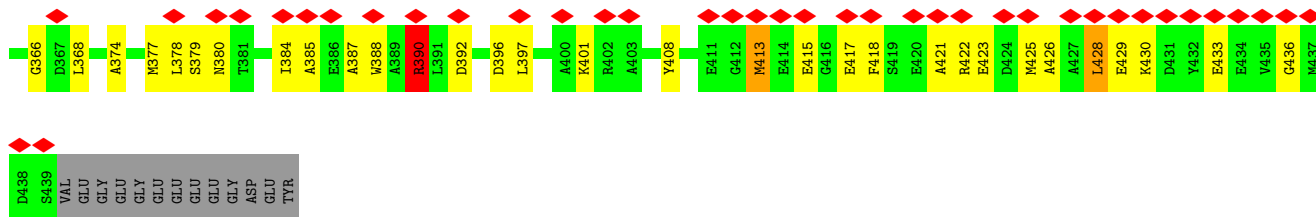


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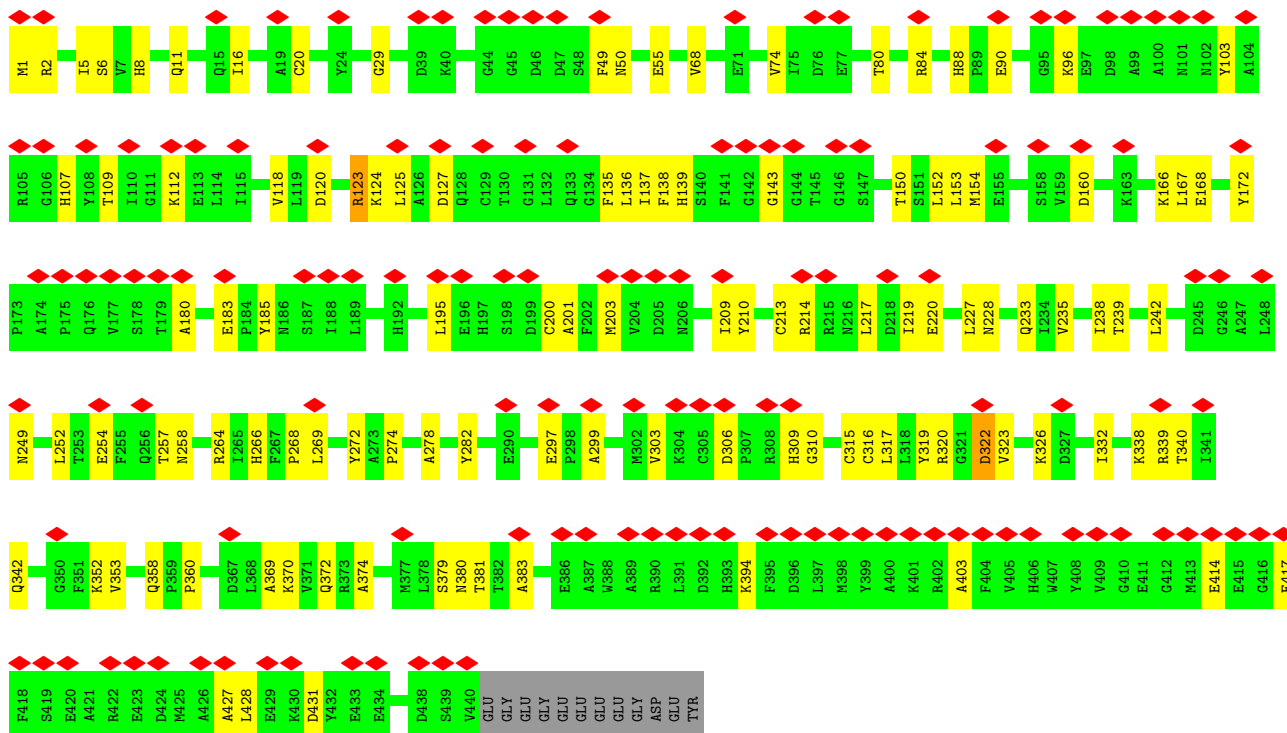
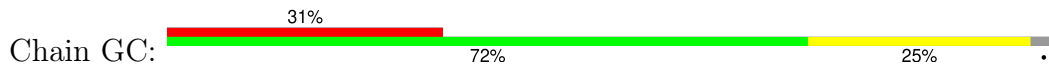


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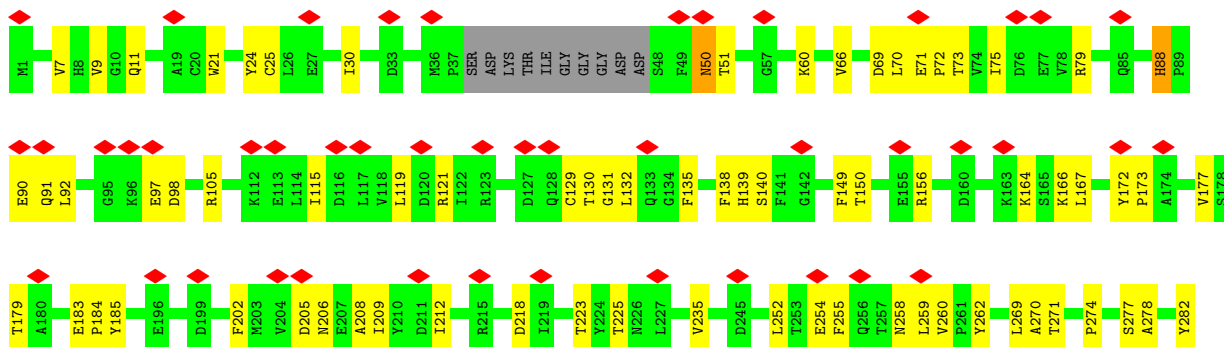
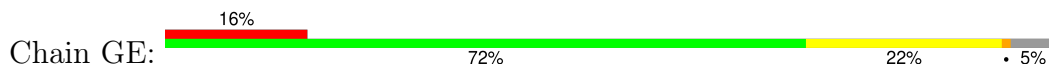


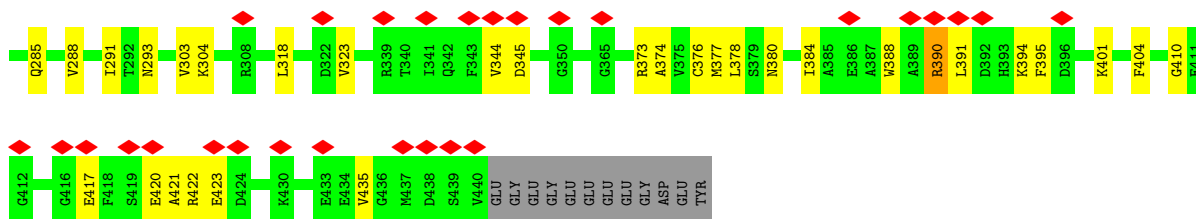


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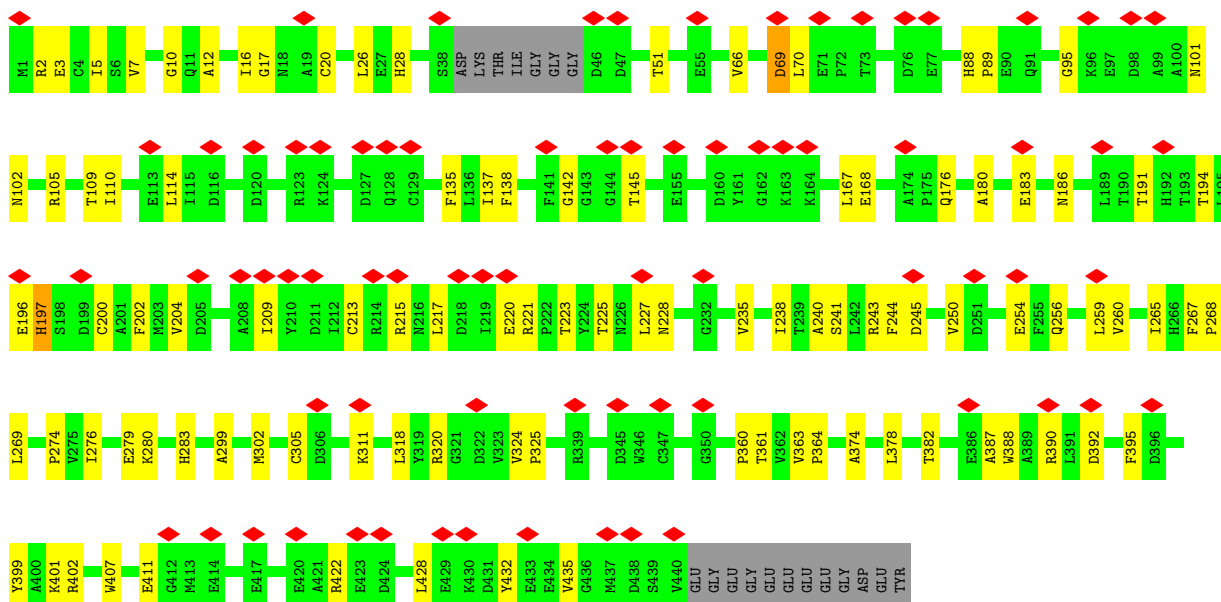
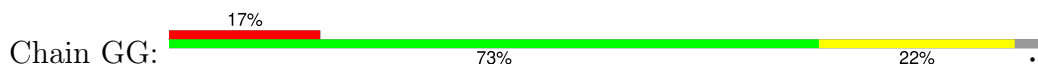


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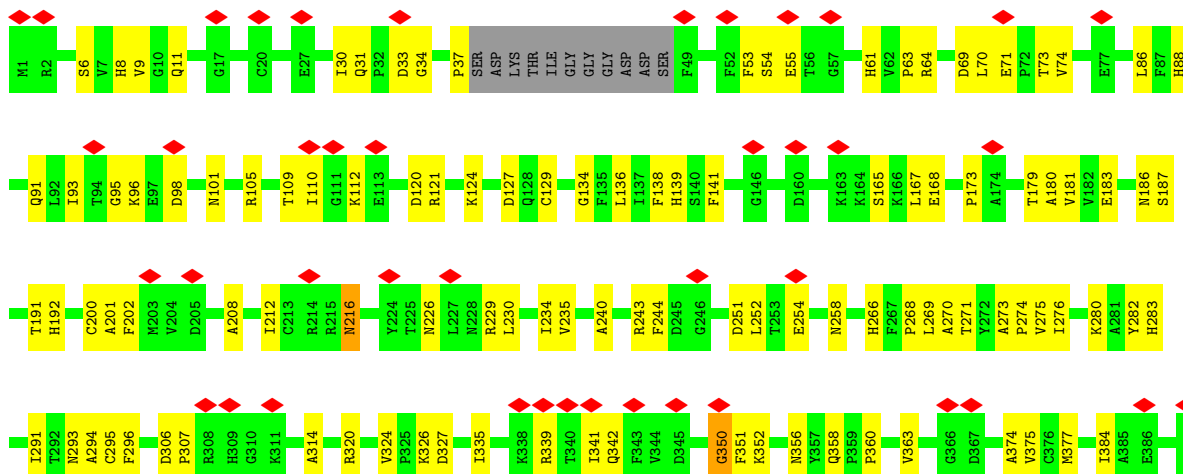




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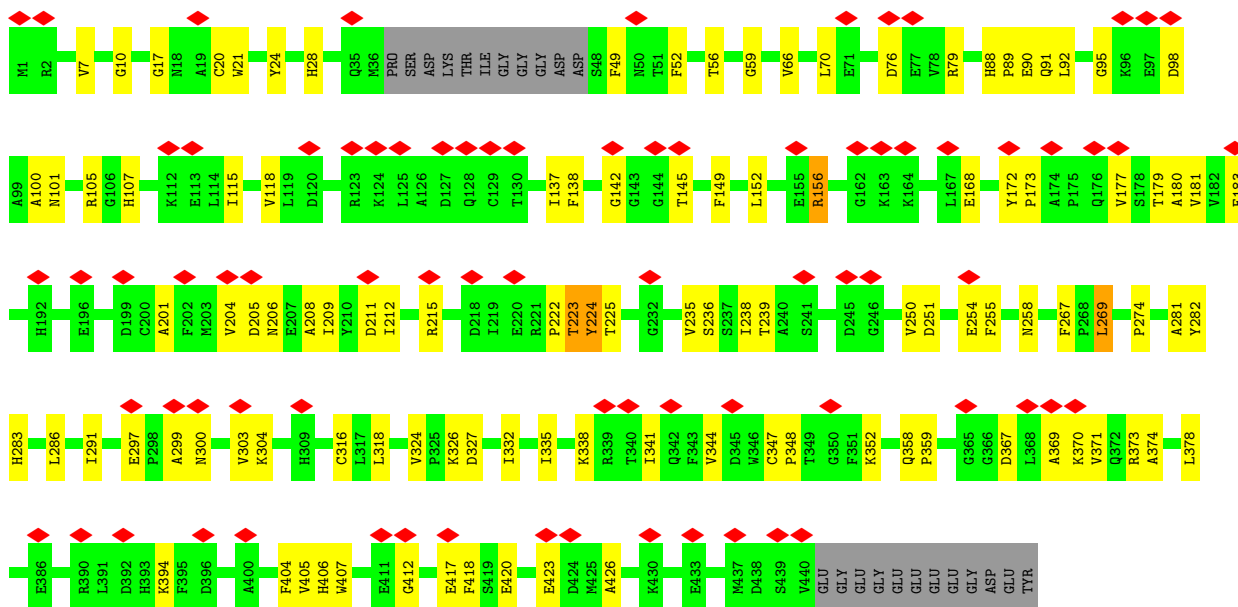


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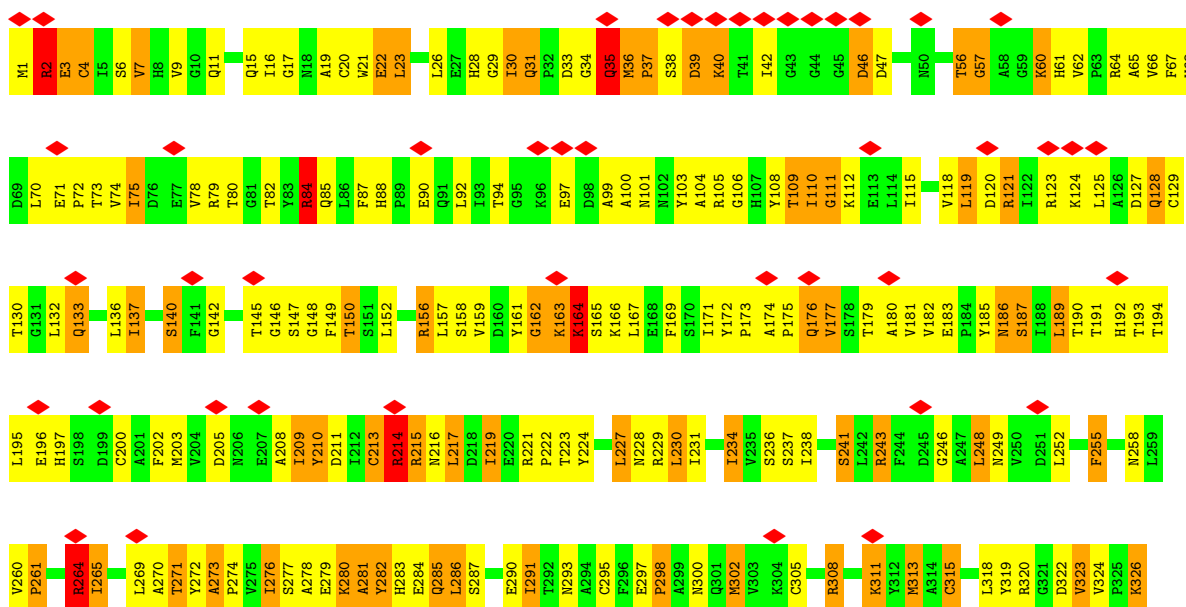
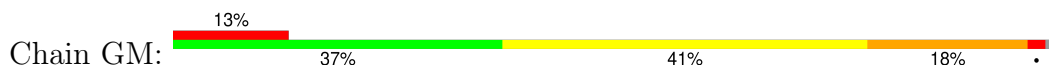


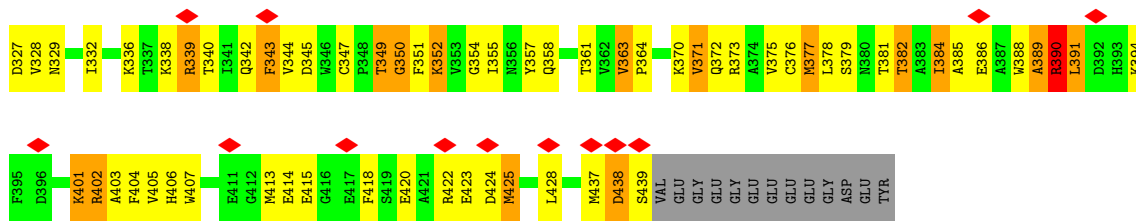


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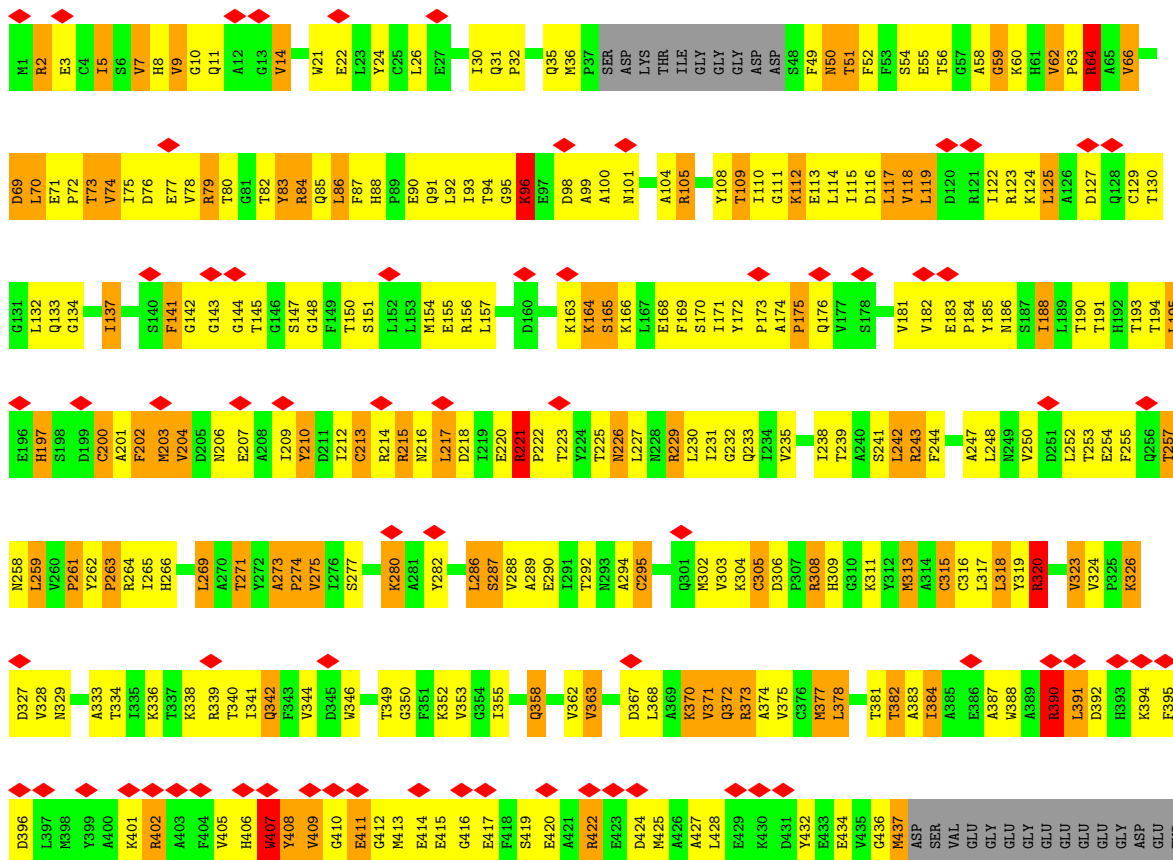


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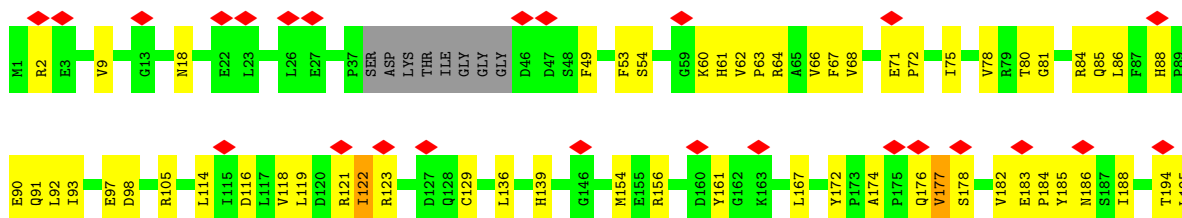


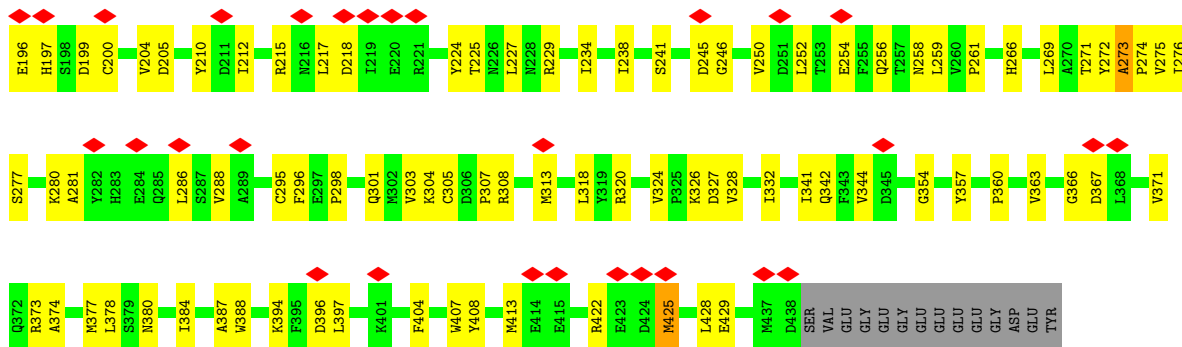


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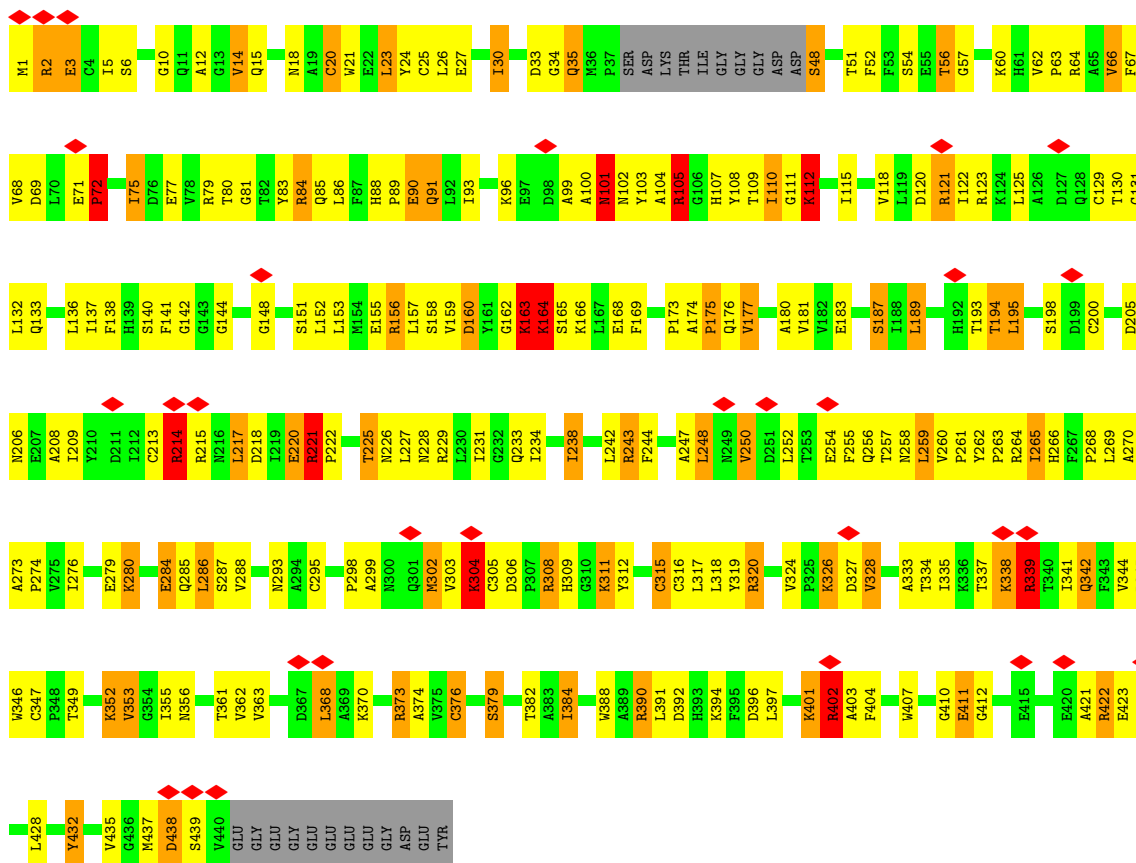


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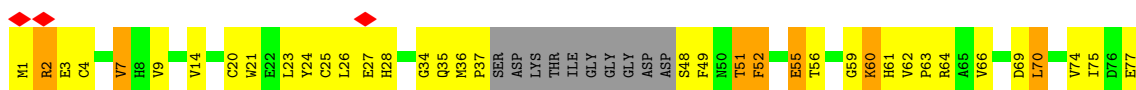


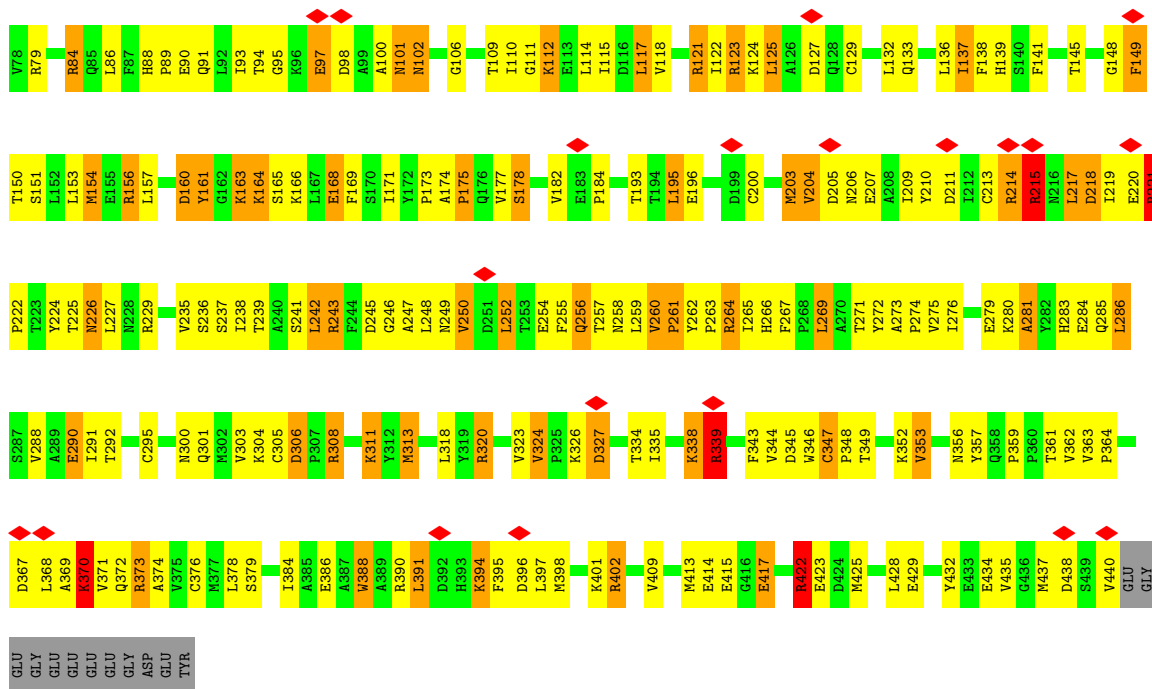


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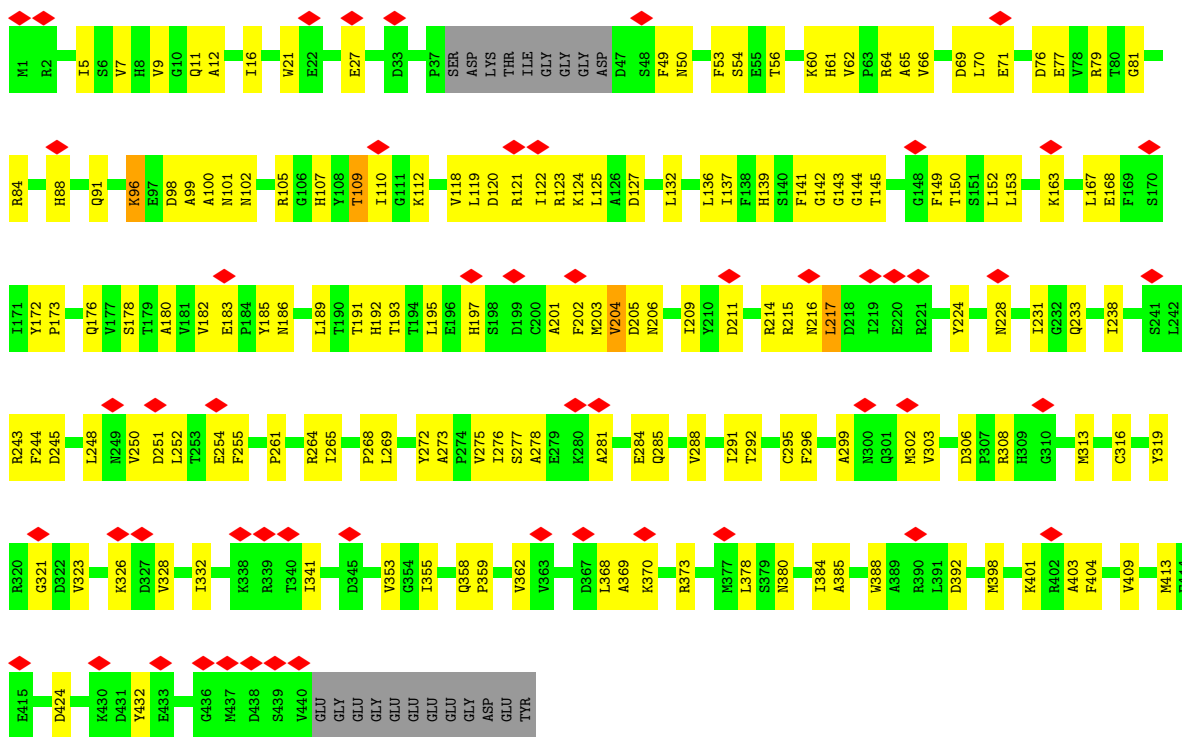


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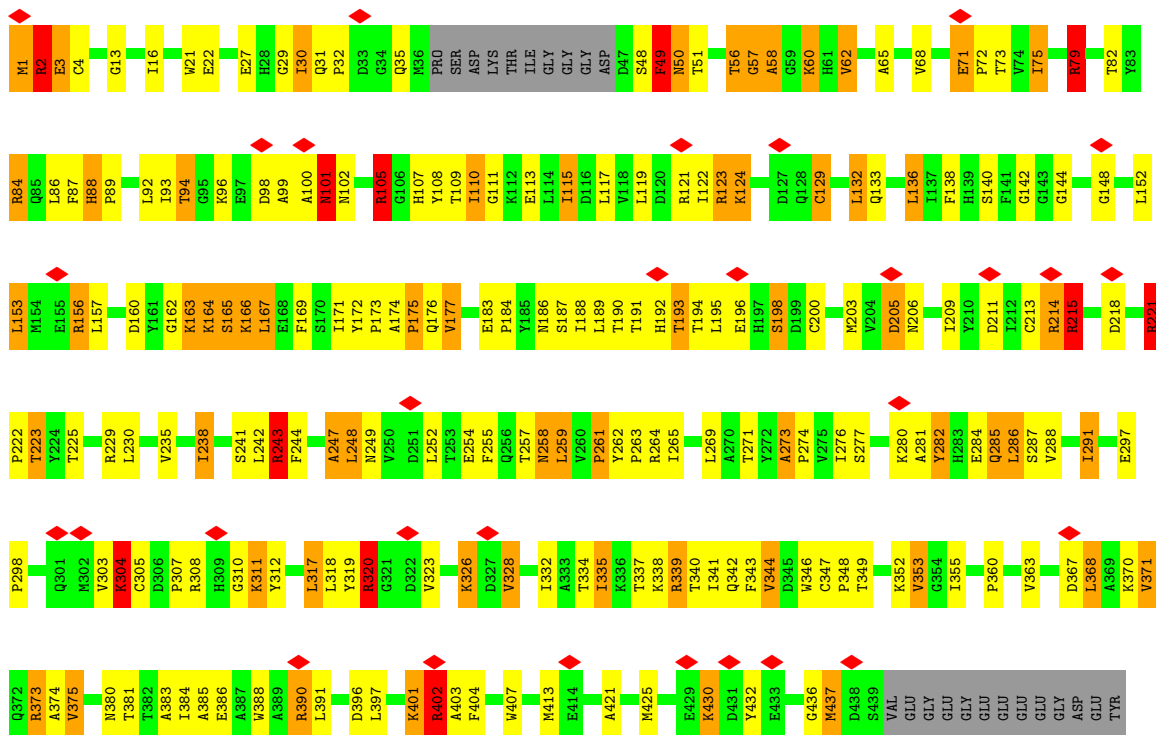


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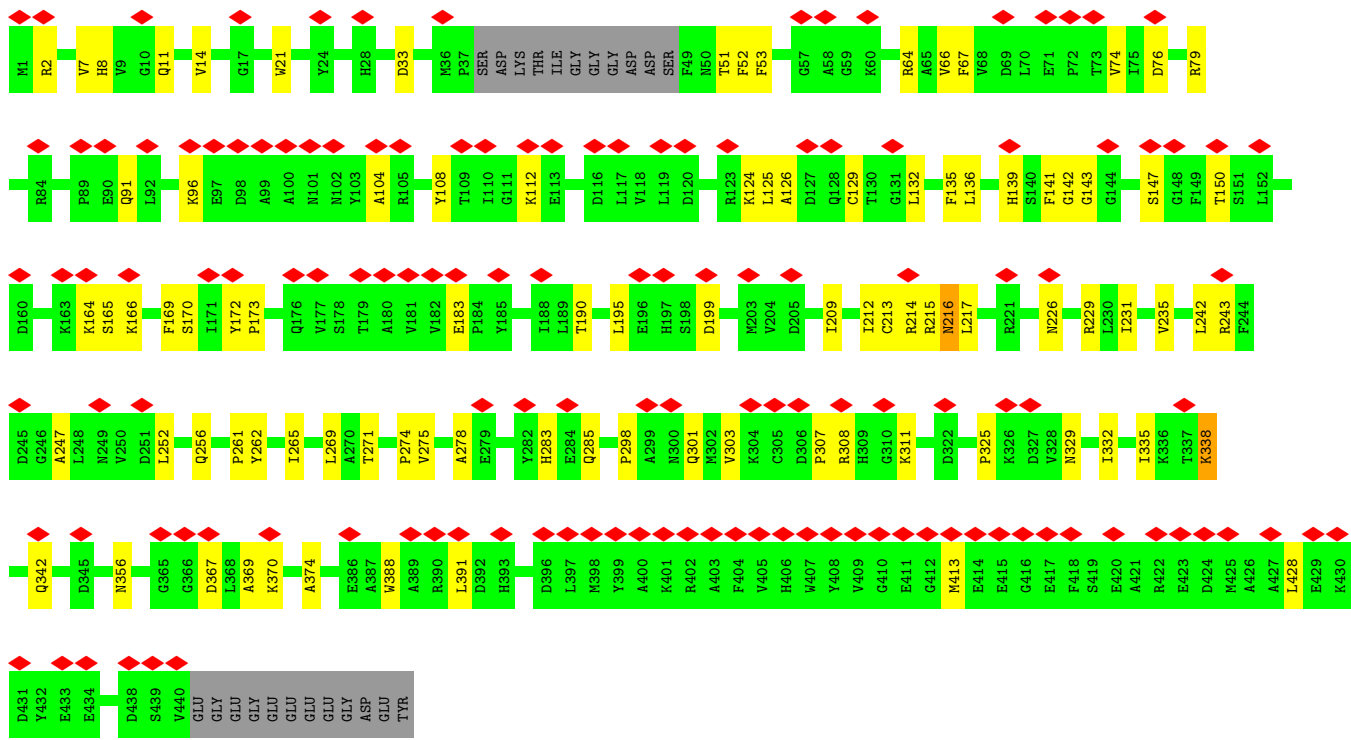
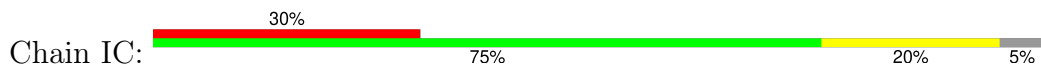


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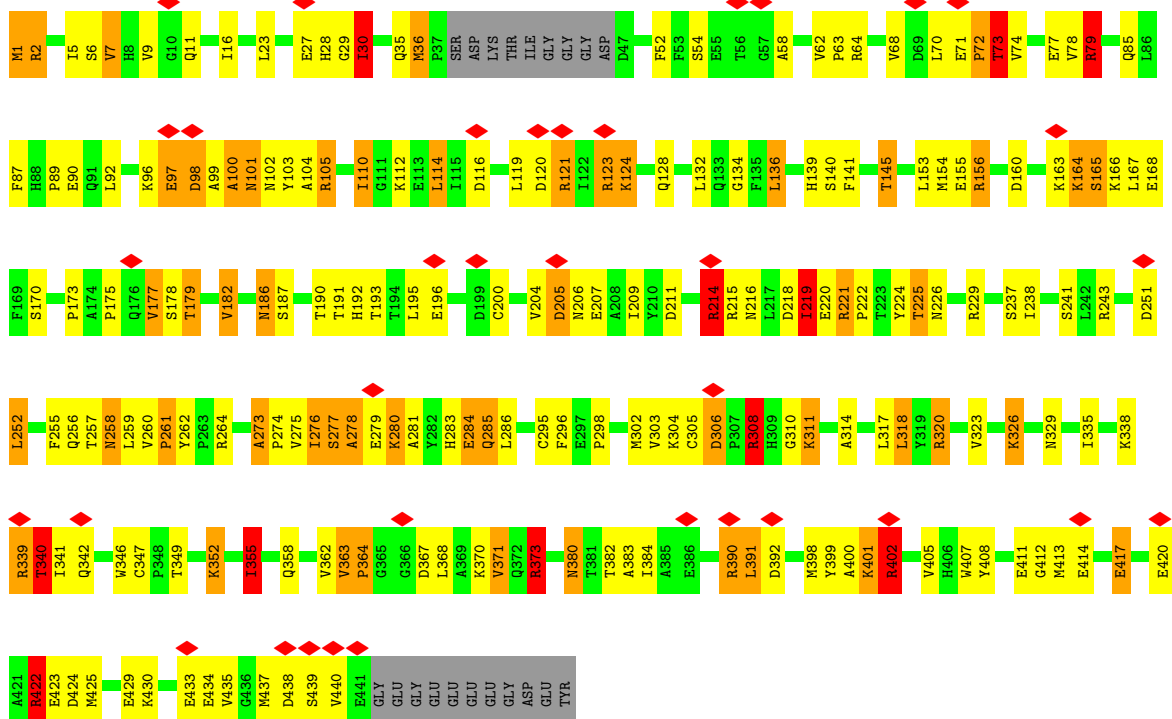




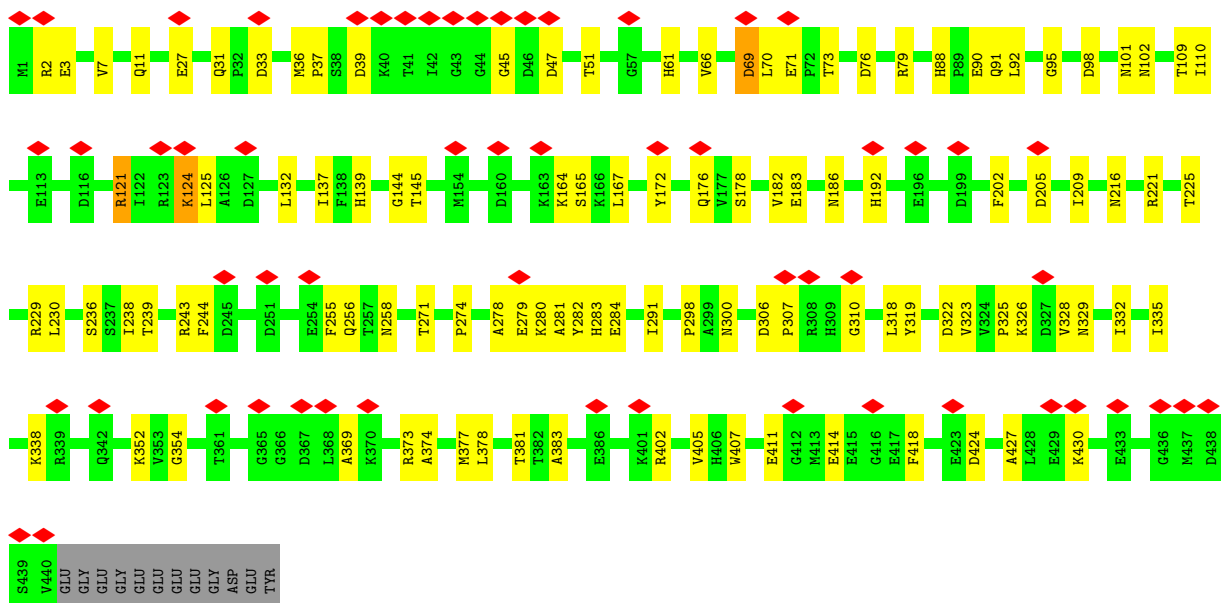
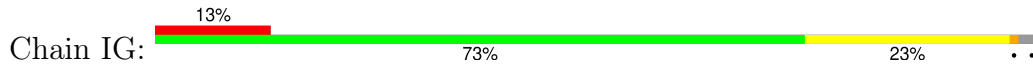
• Molecule 42: Tubulin alpha-1D chain



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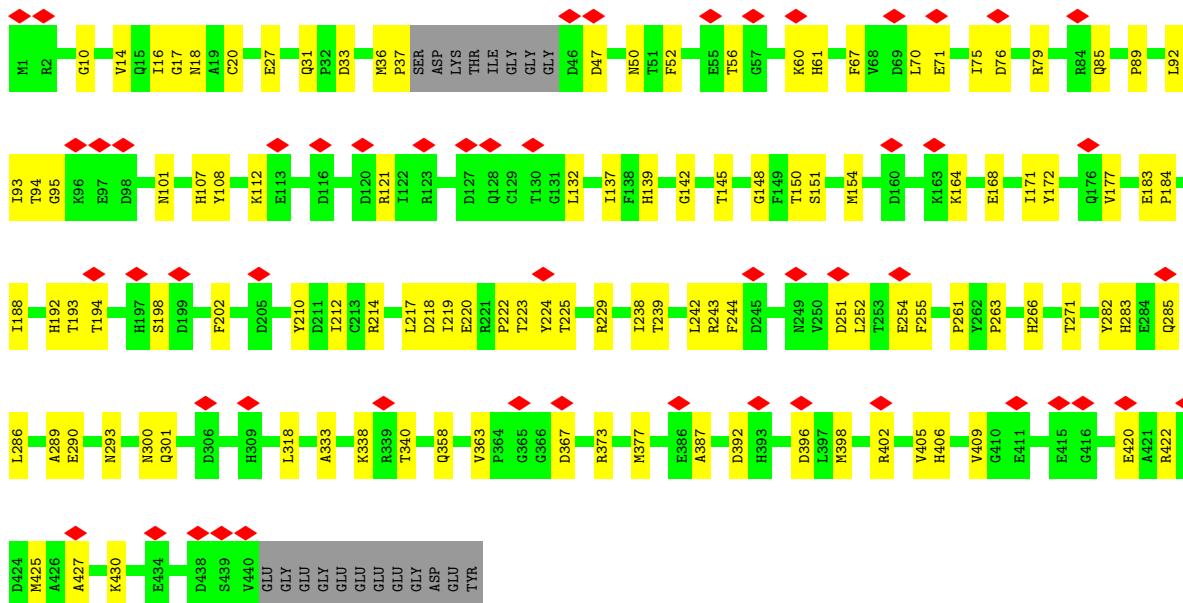


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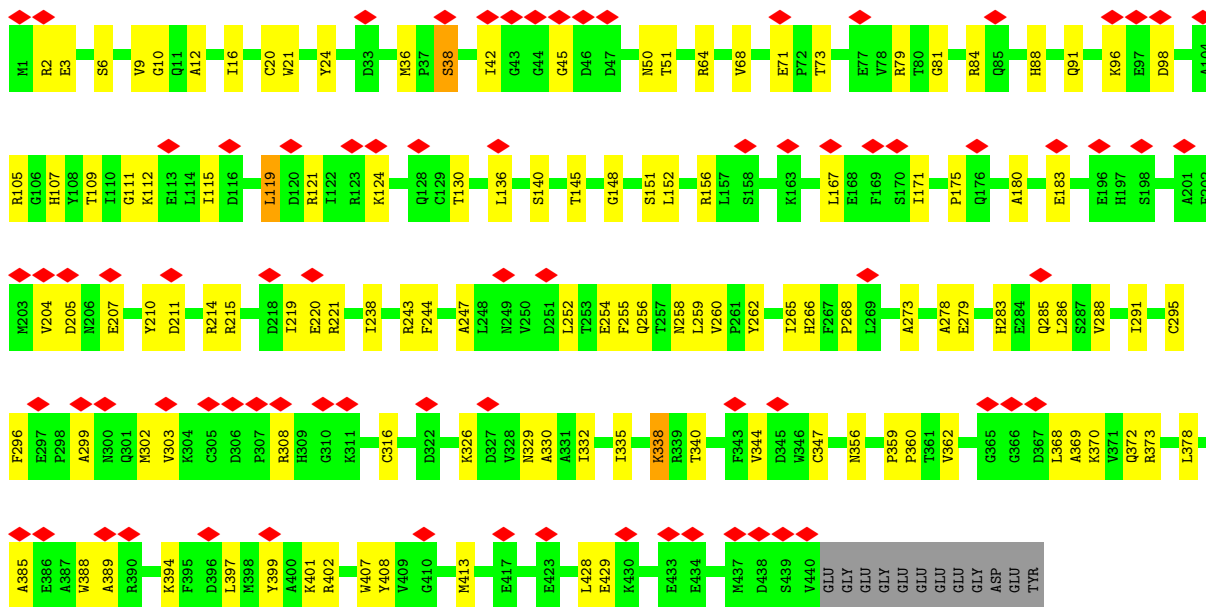


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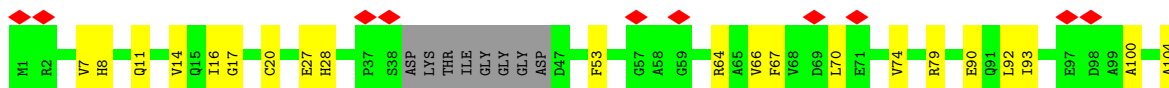


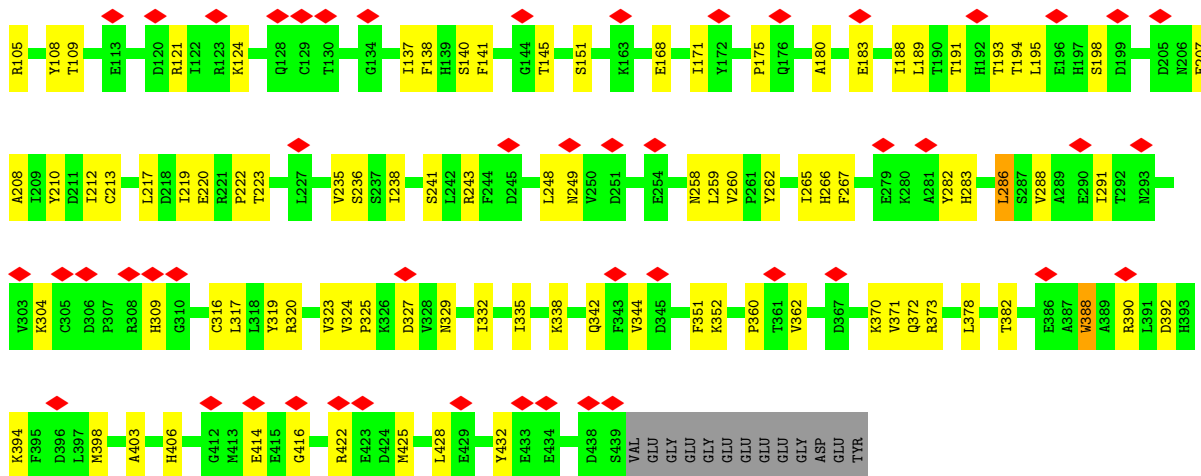


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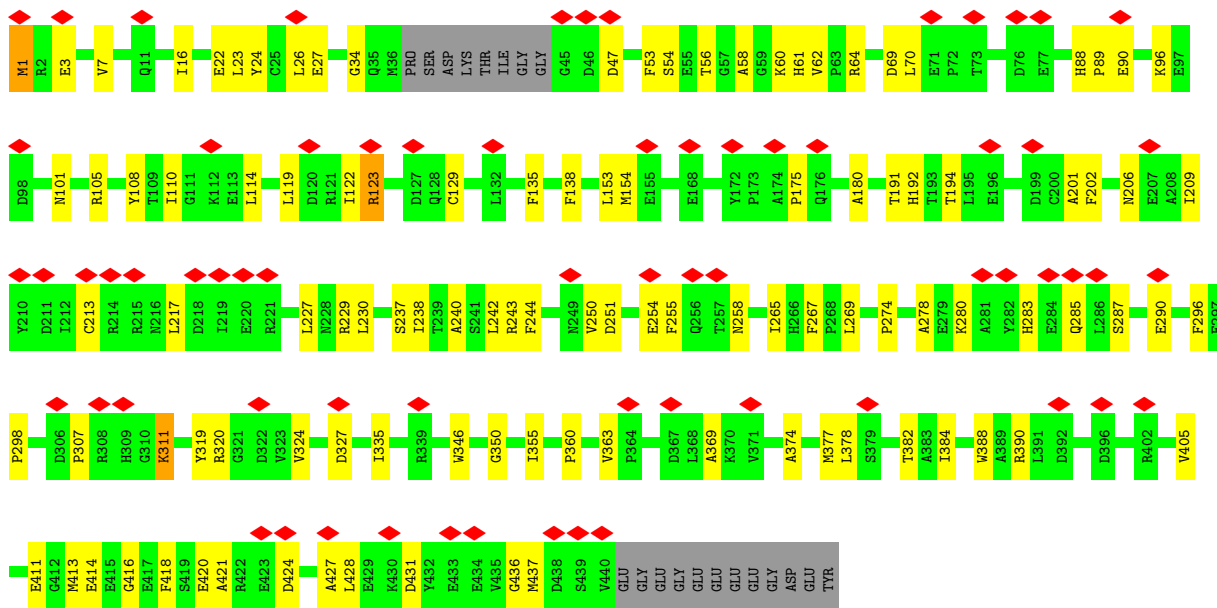
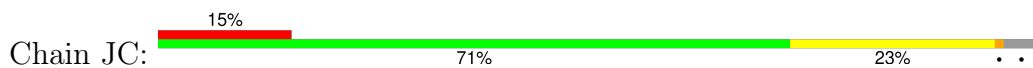


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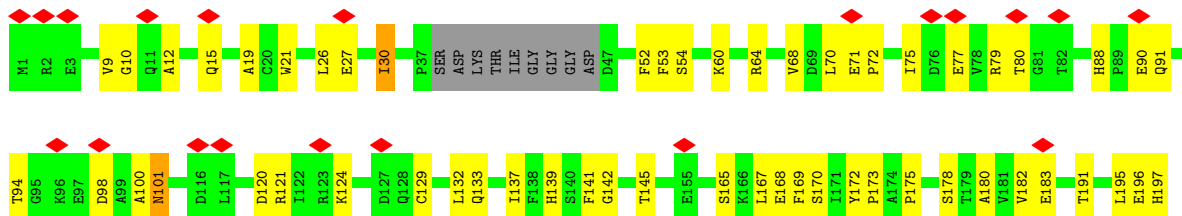


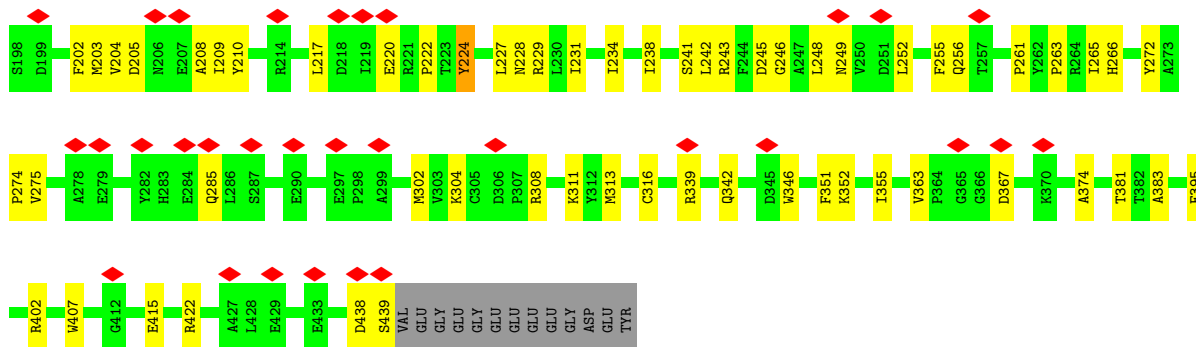


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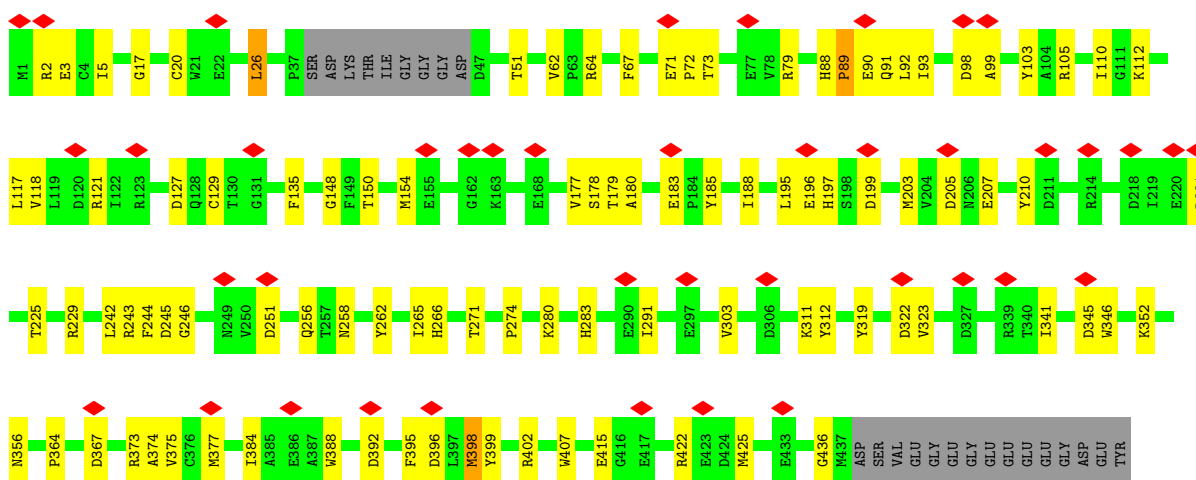
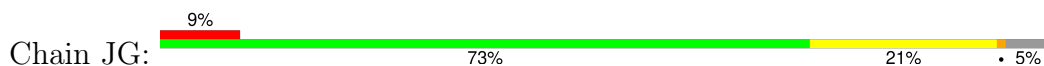


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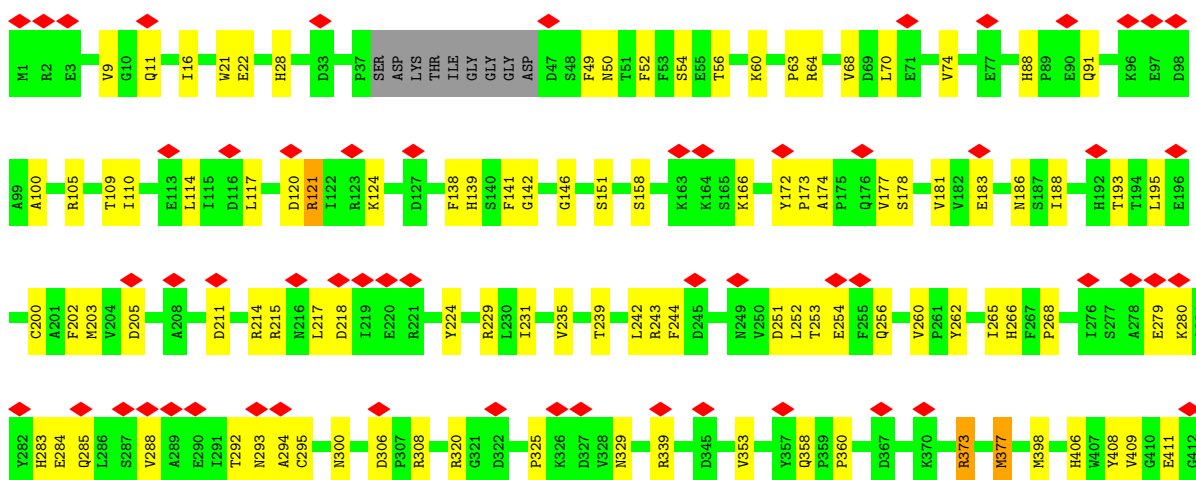


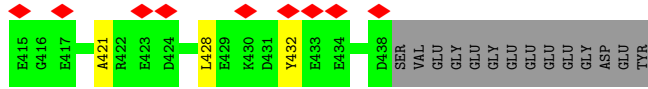


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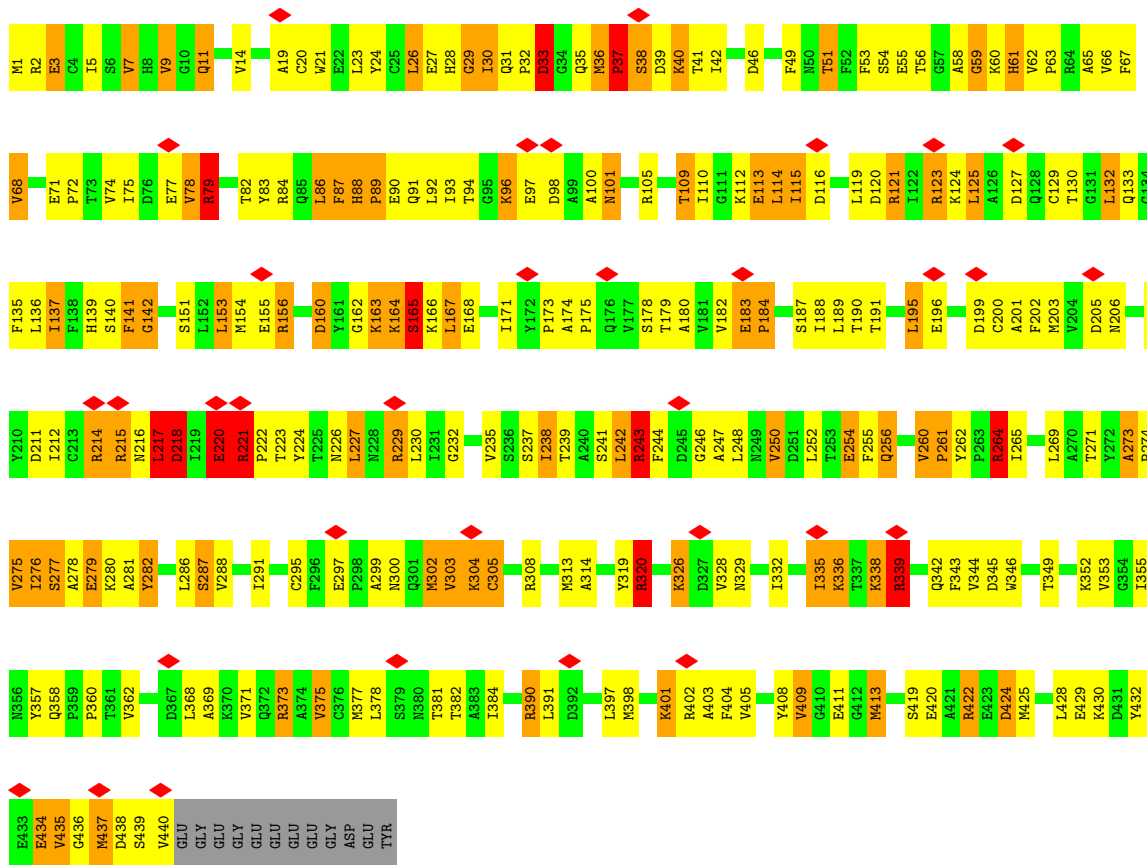


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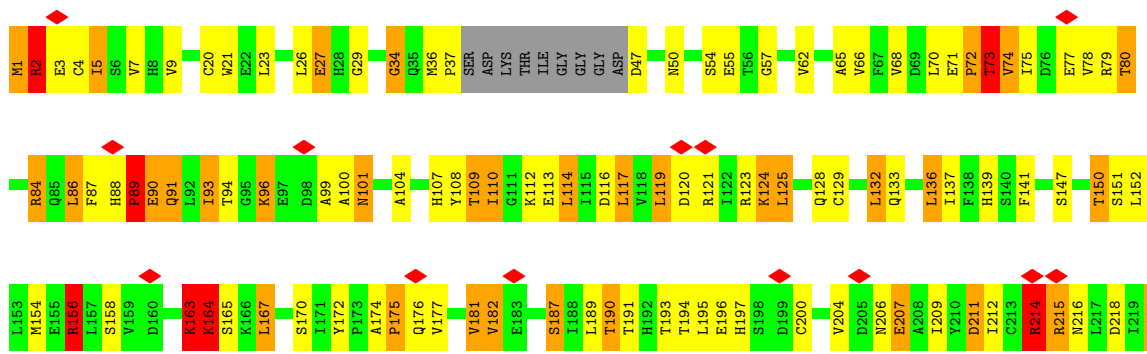


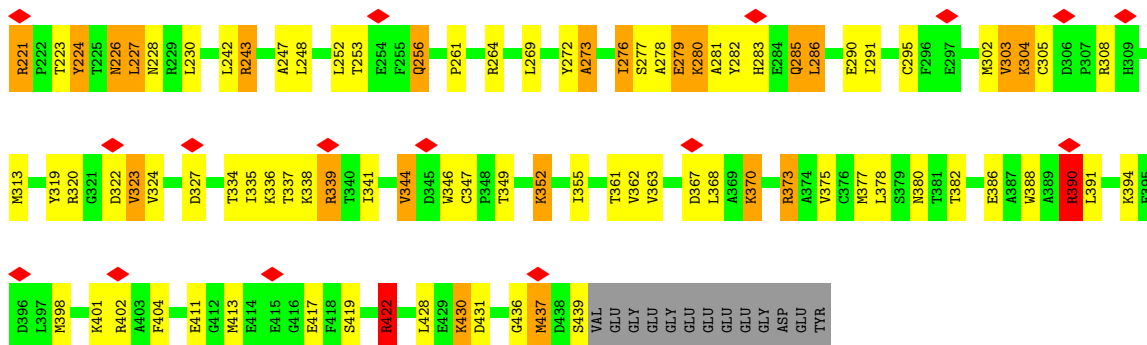


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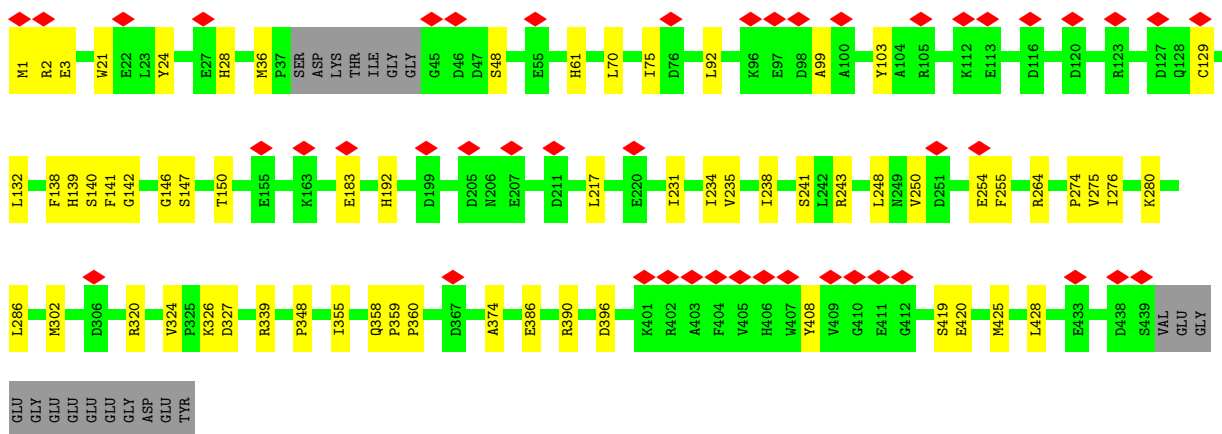
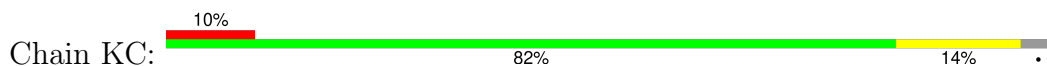


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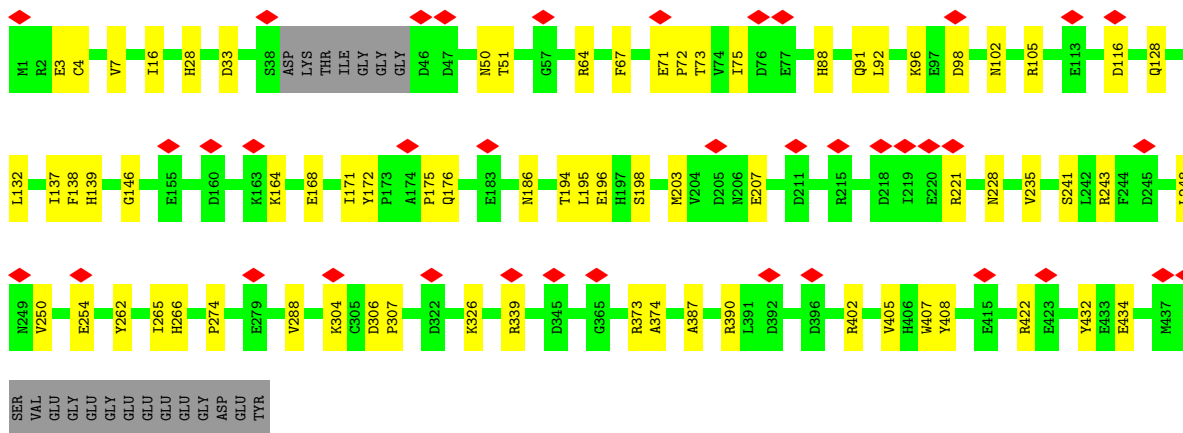
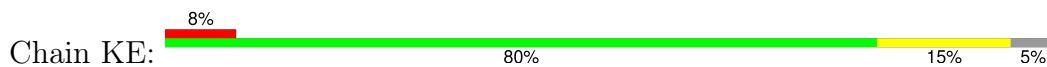




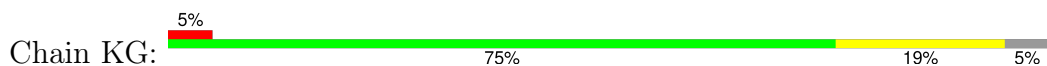
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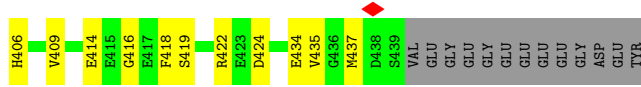


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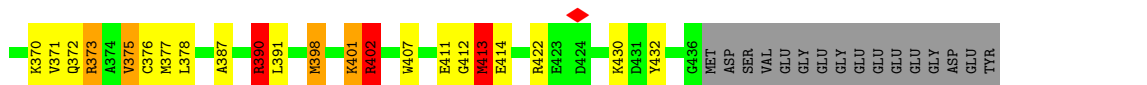
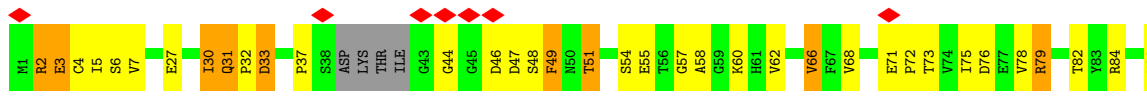


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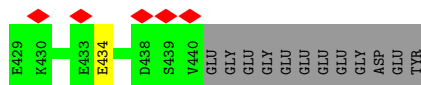
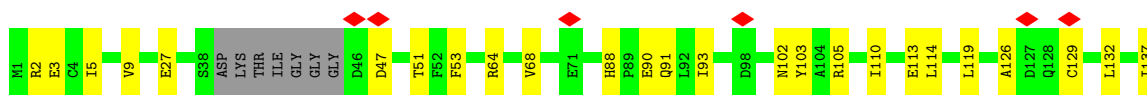
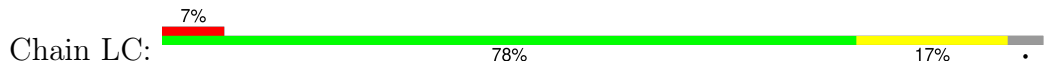




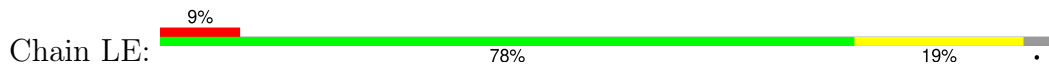
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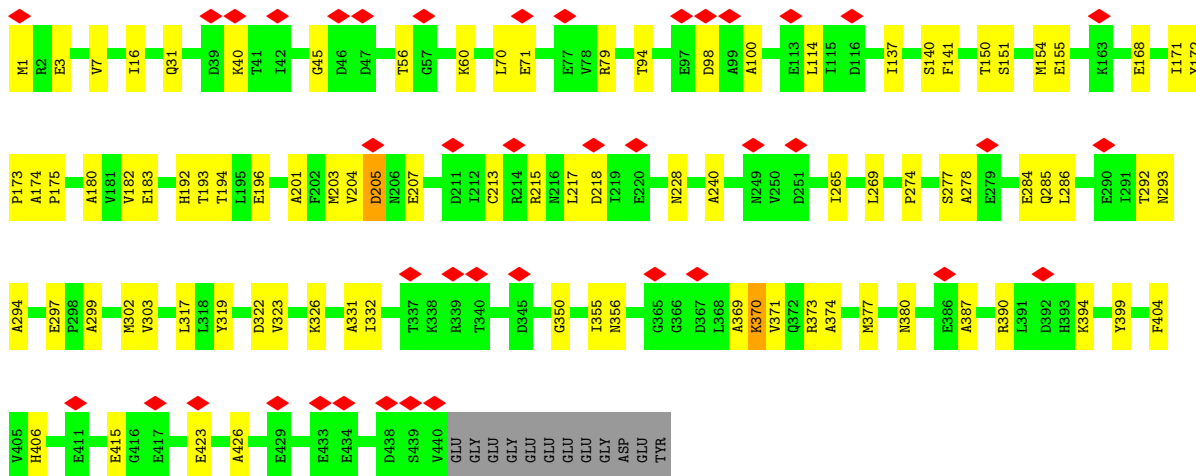


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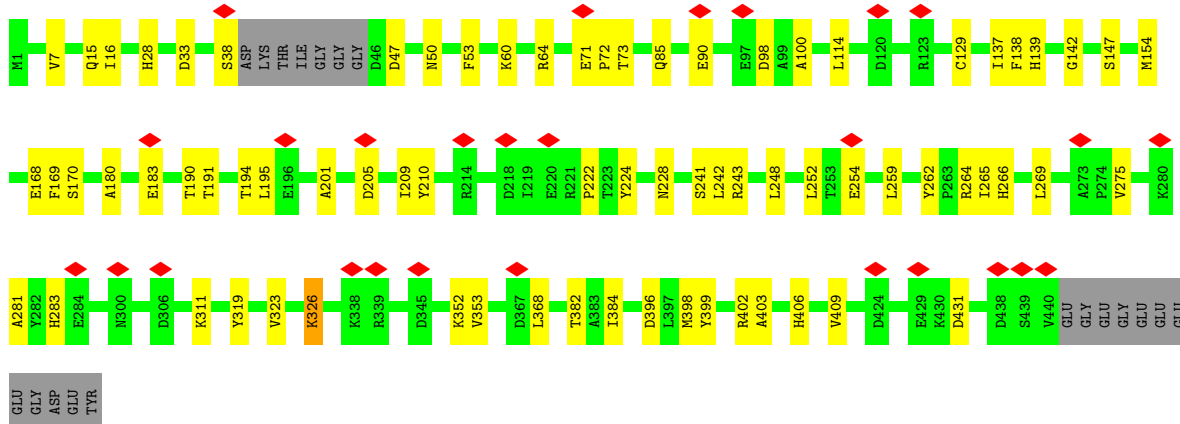
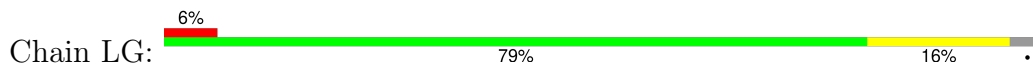


• Molecule 42: Tubulin alpha-1D chain

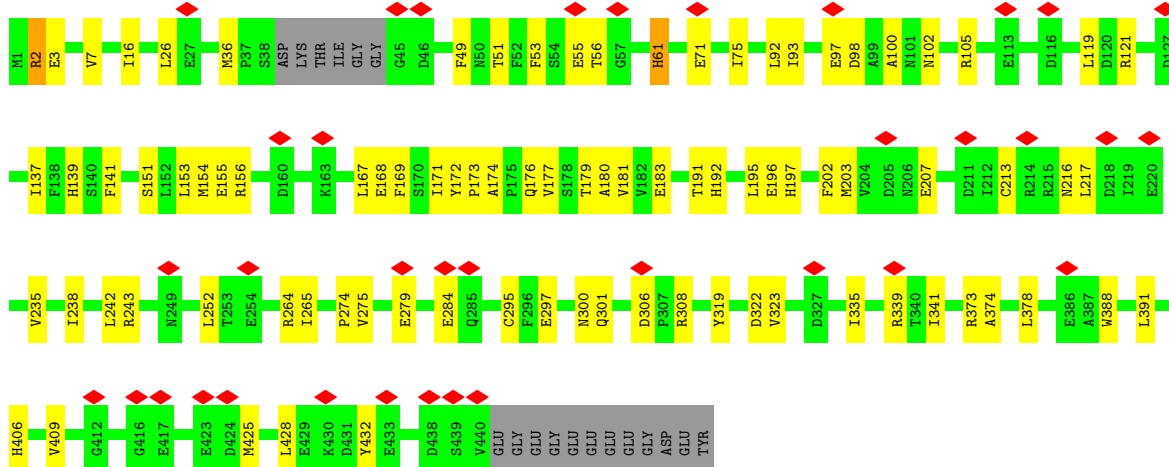
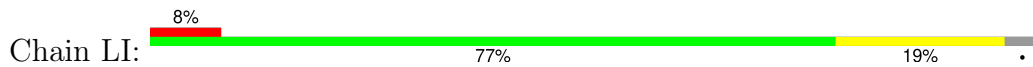





• Molecule 42: Tubulin alpha-1D chain

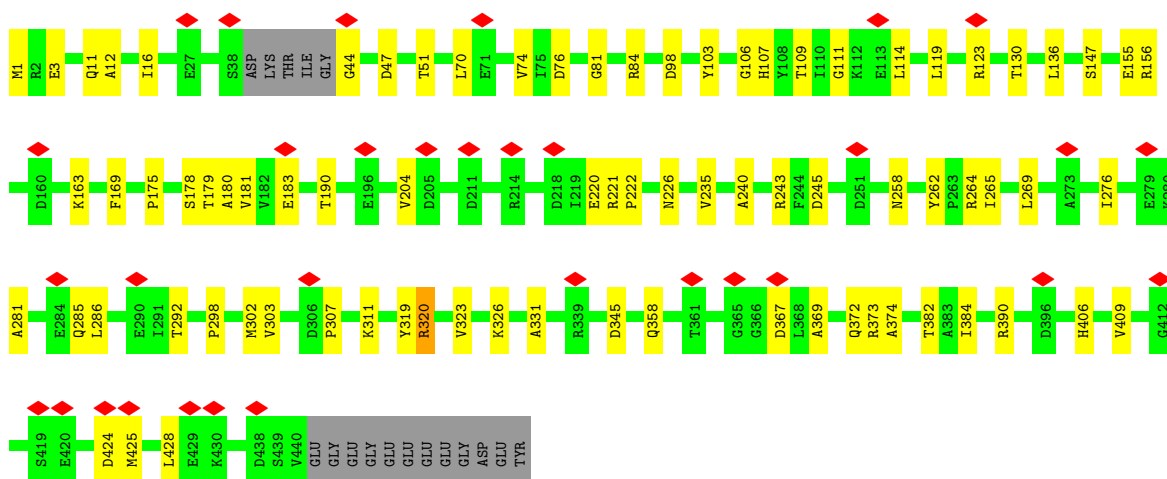


• Molecule 42: Tubulin alpha-1D chain




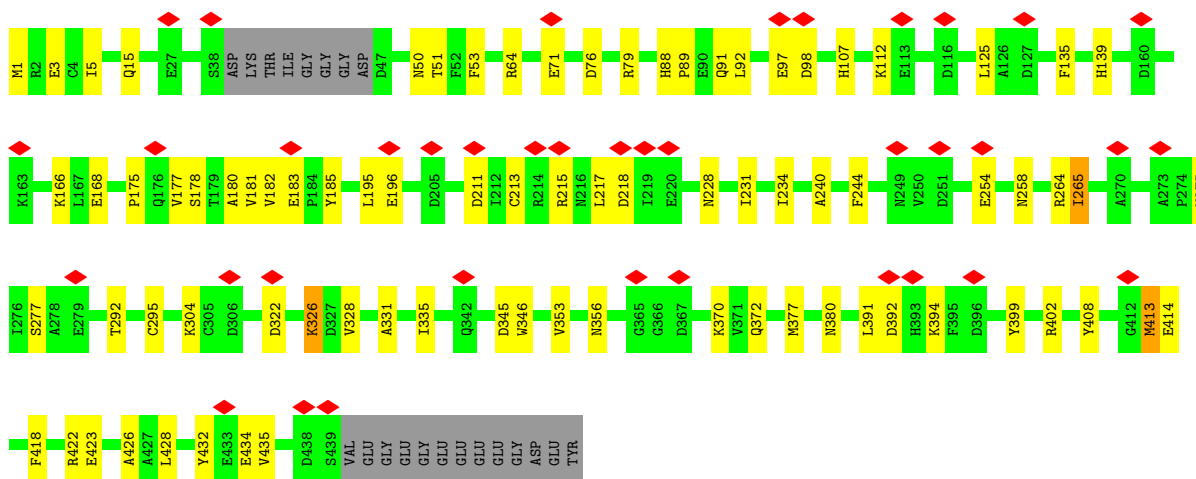
- Molecule 42: Tubulin alpha-1D chain

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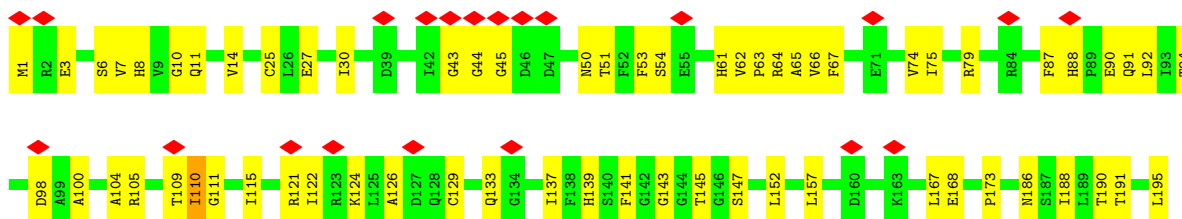
- Molecule 42: Tubulin alpha-1D chain

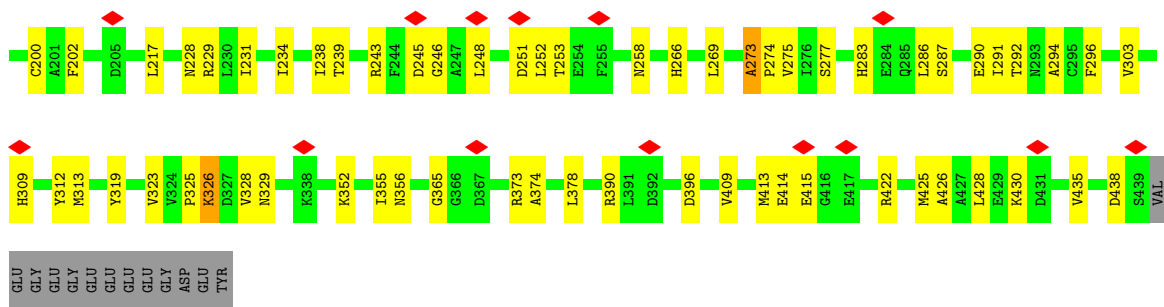
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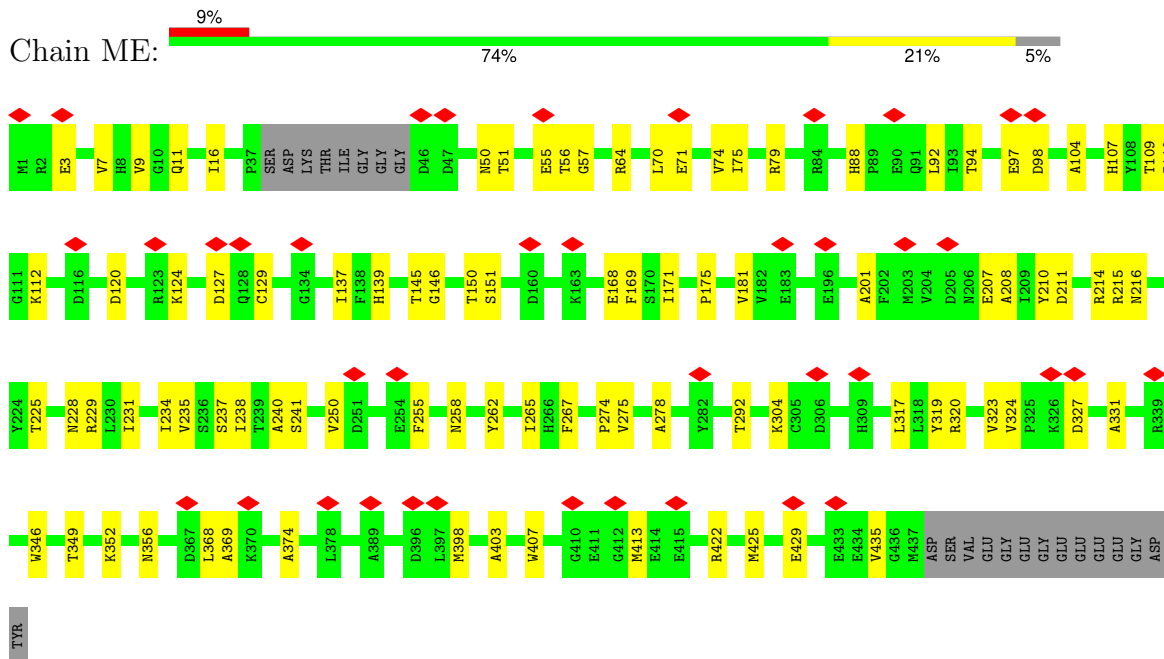
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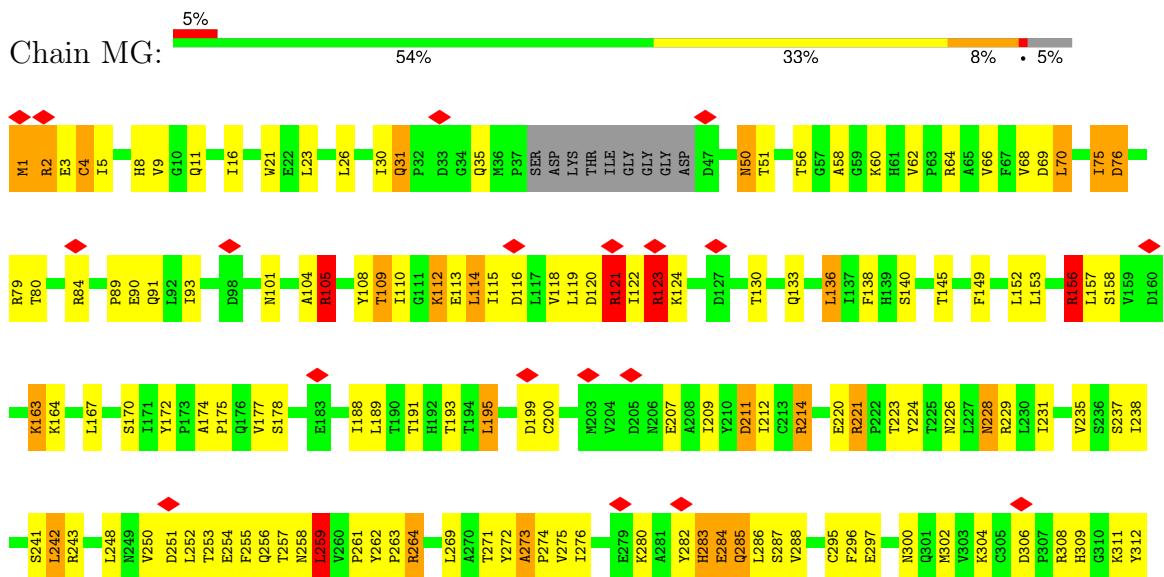


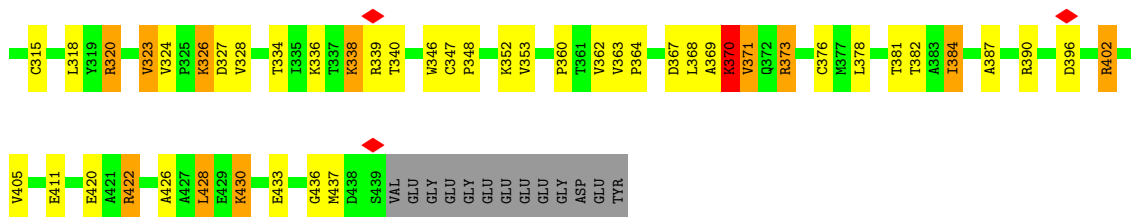


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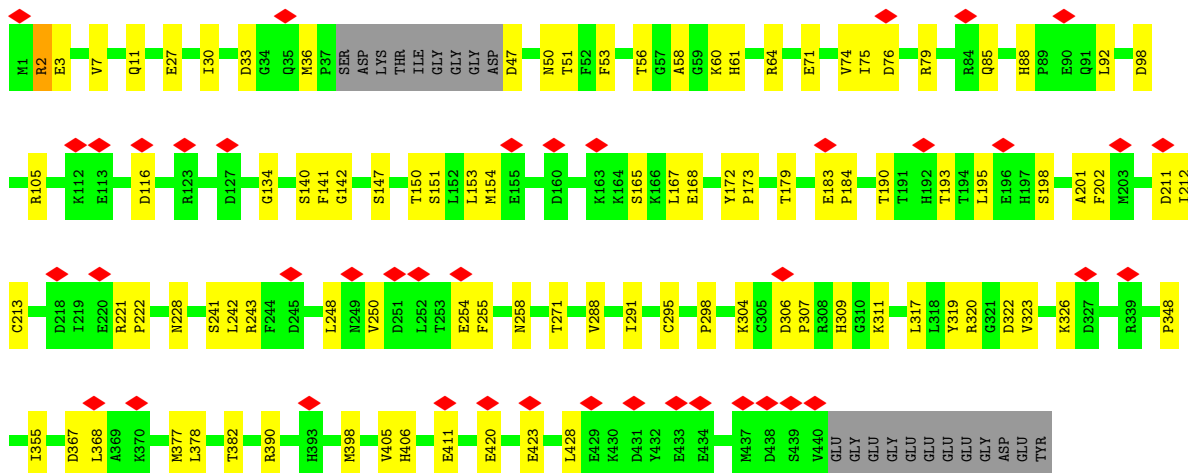
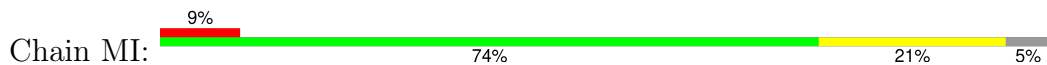


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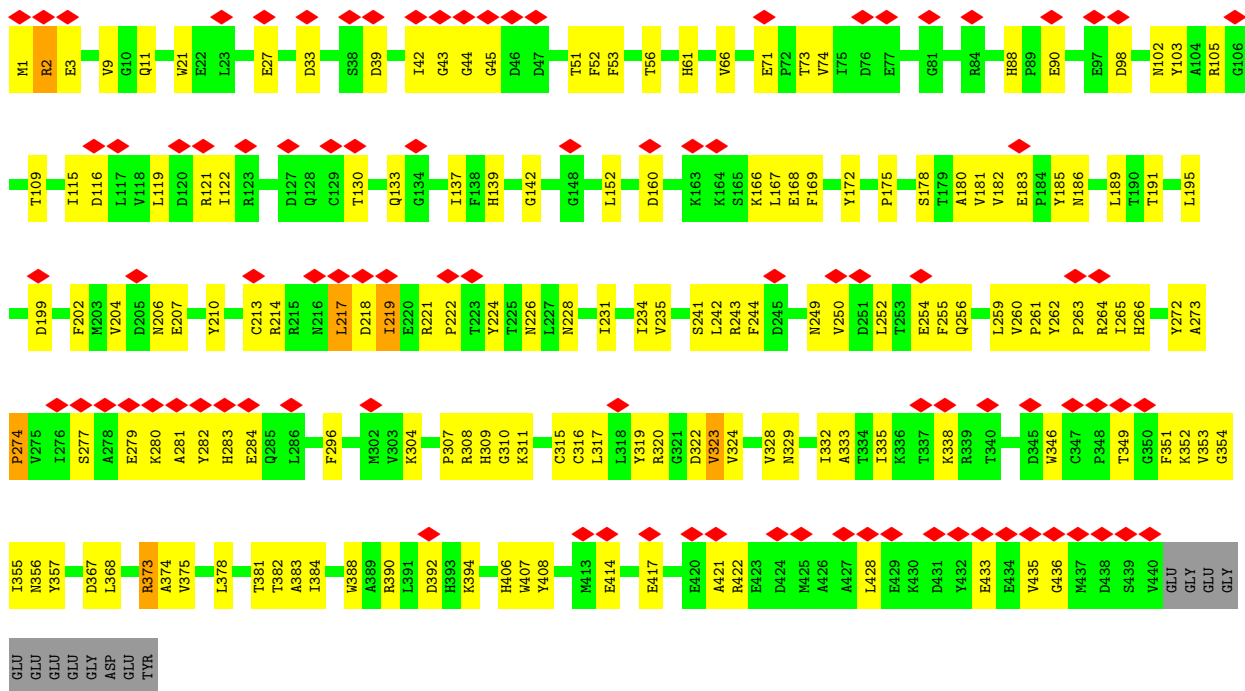




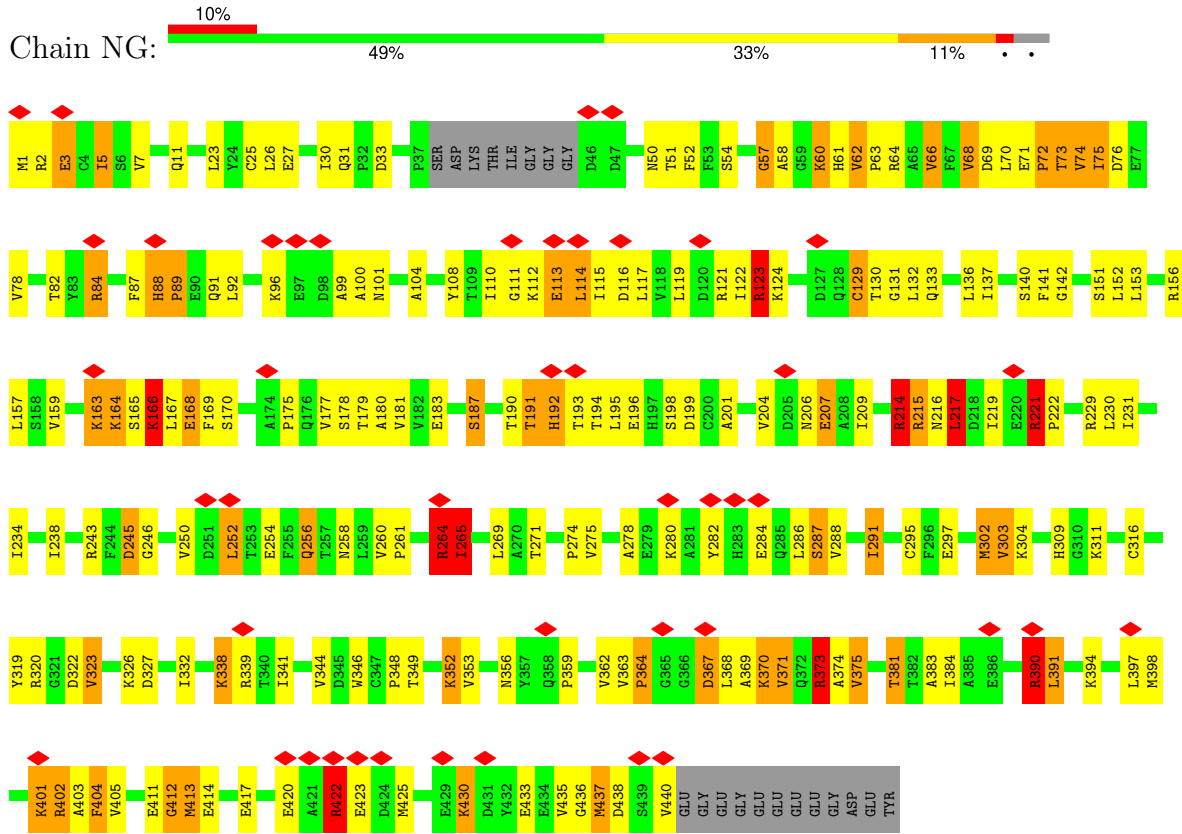
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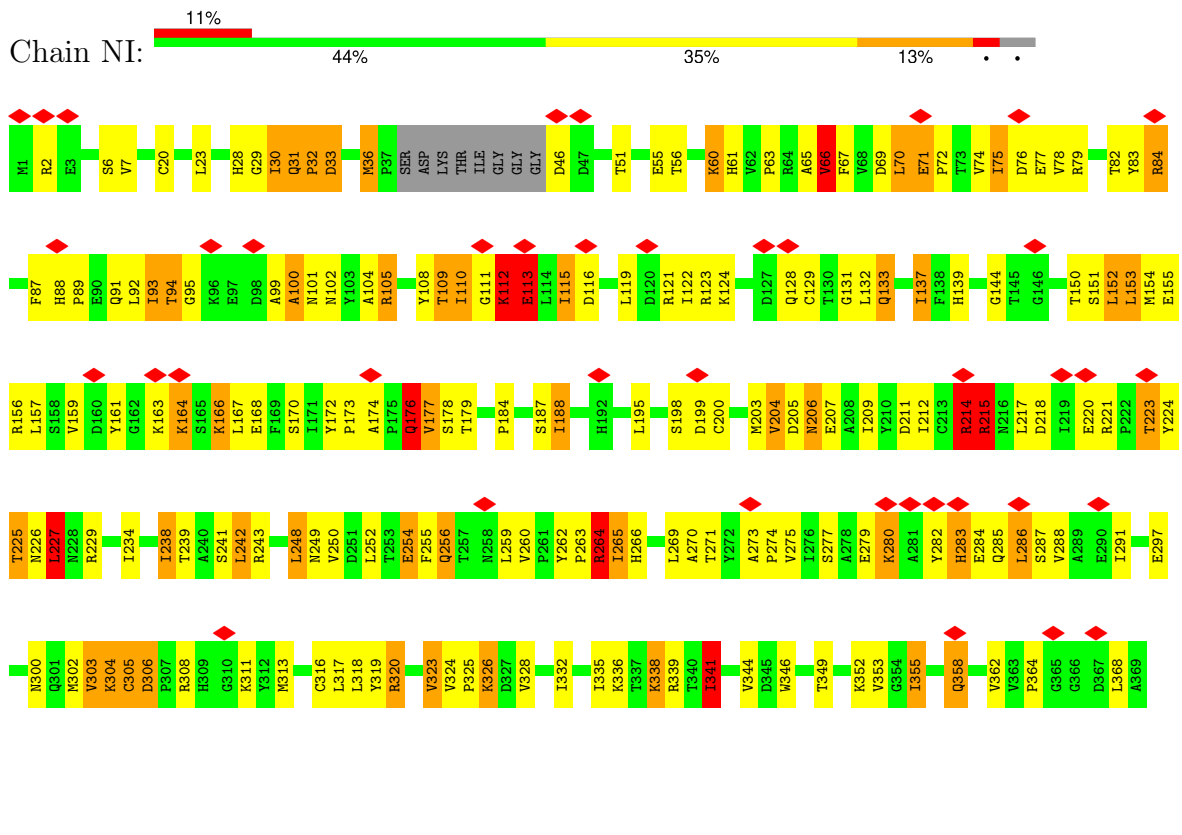
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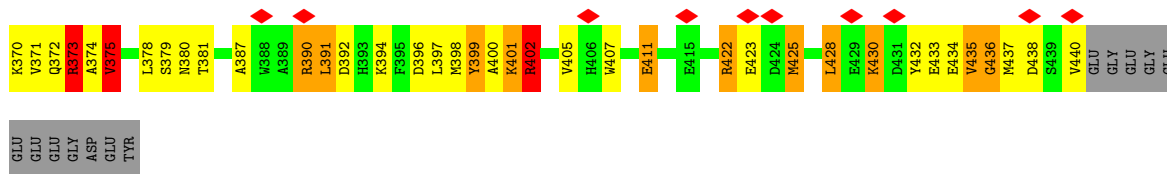


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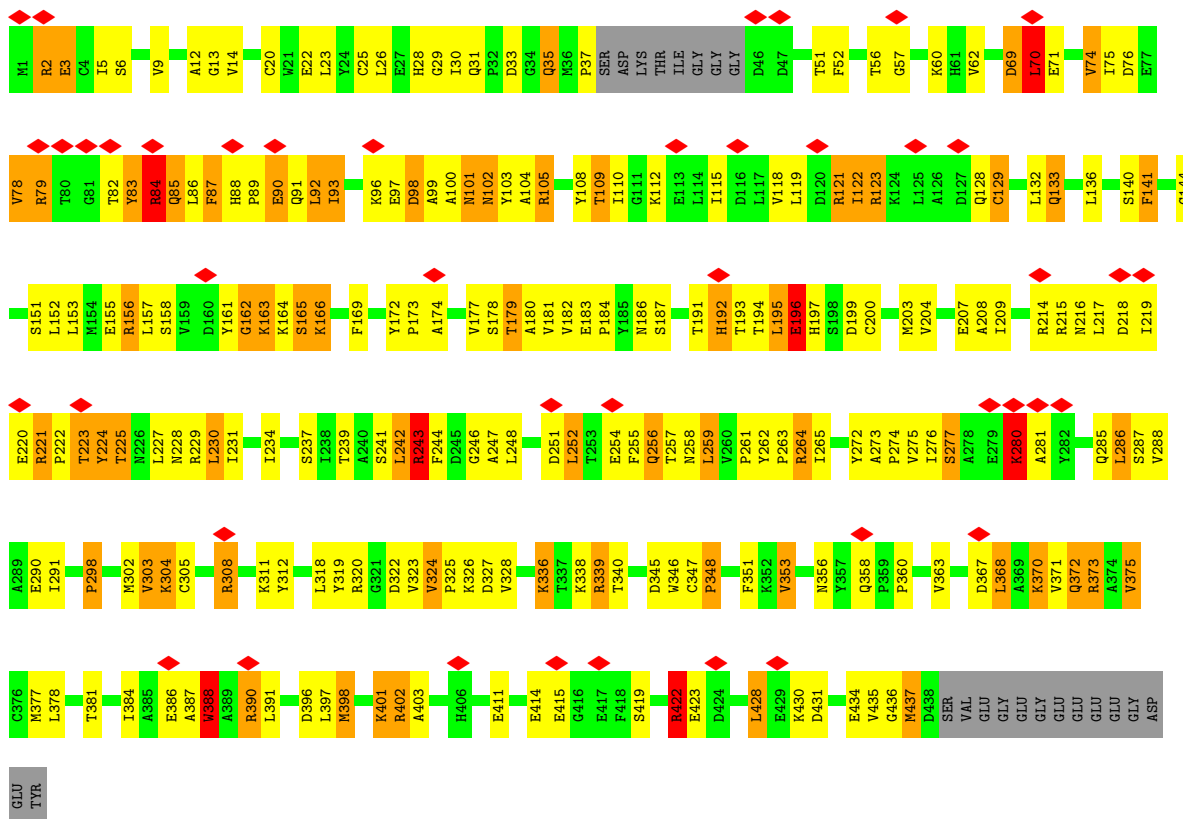
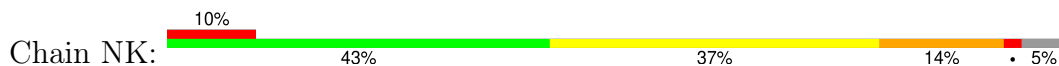


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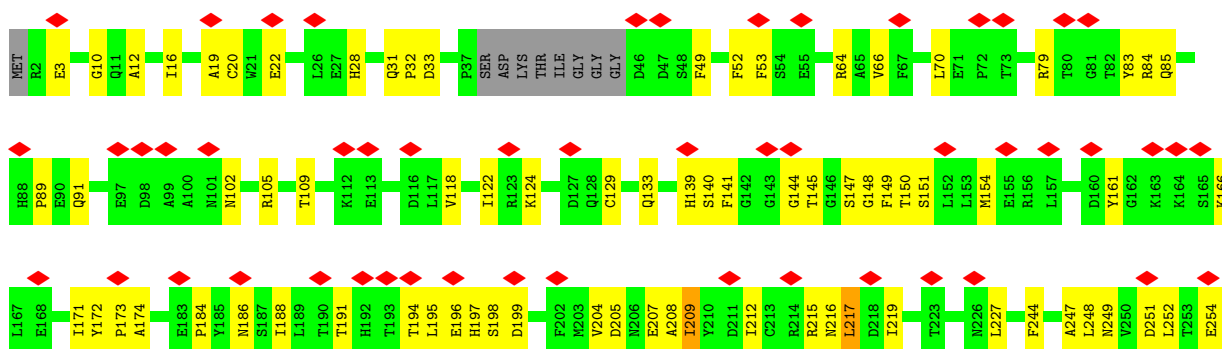


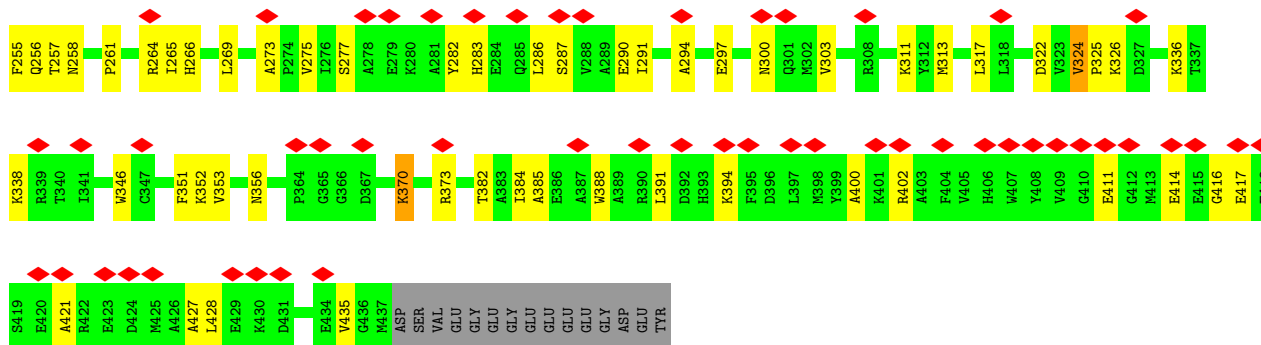


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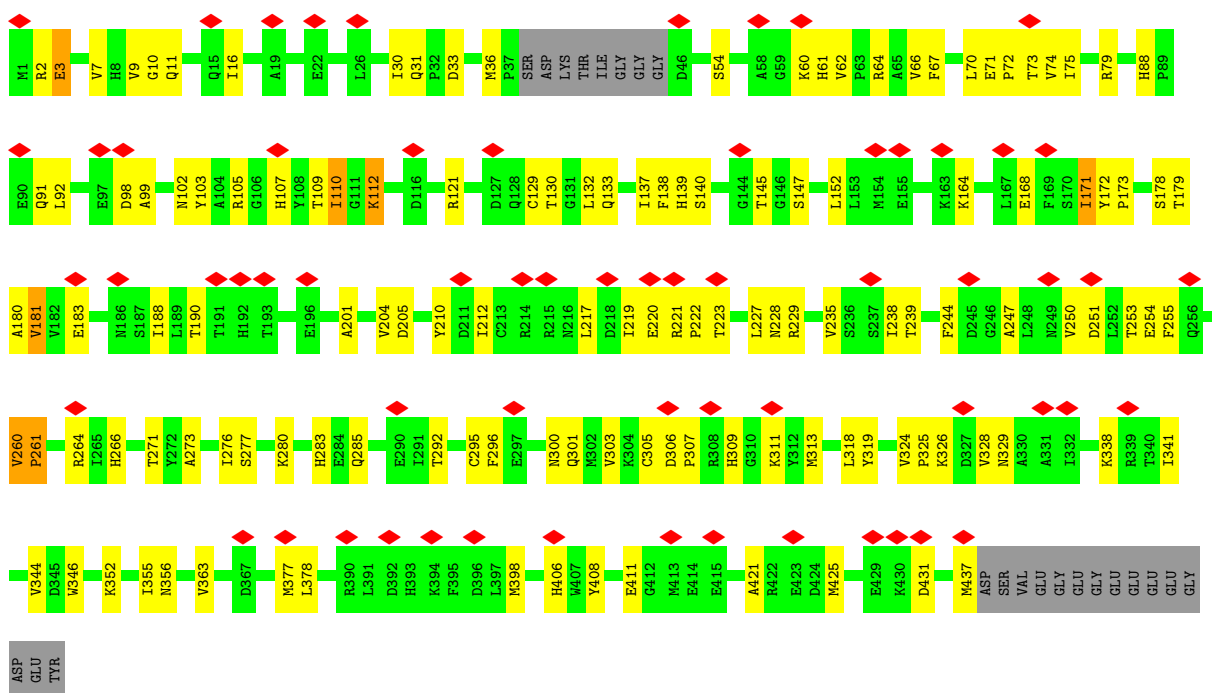


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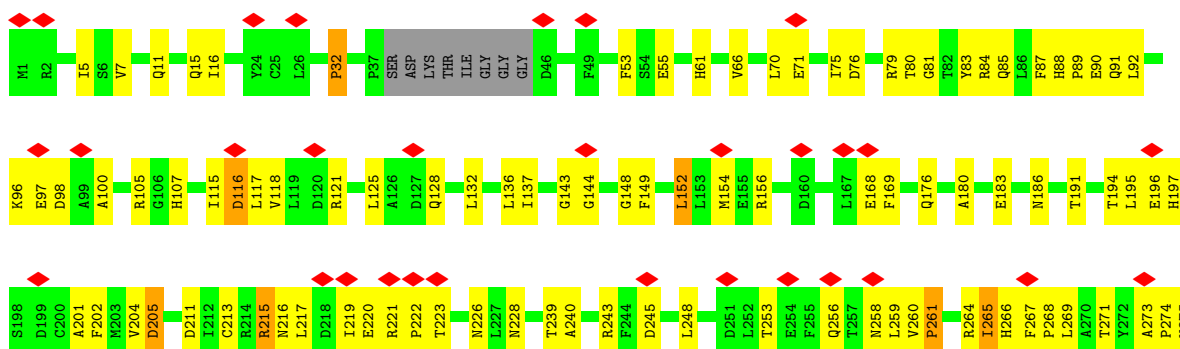


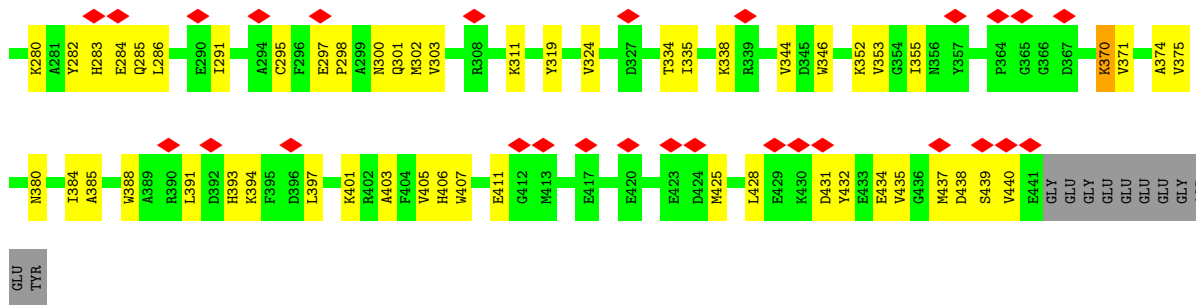


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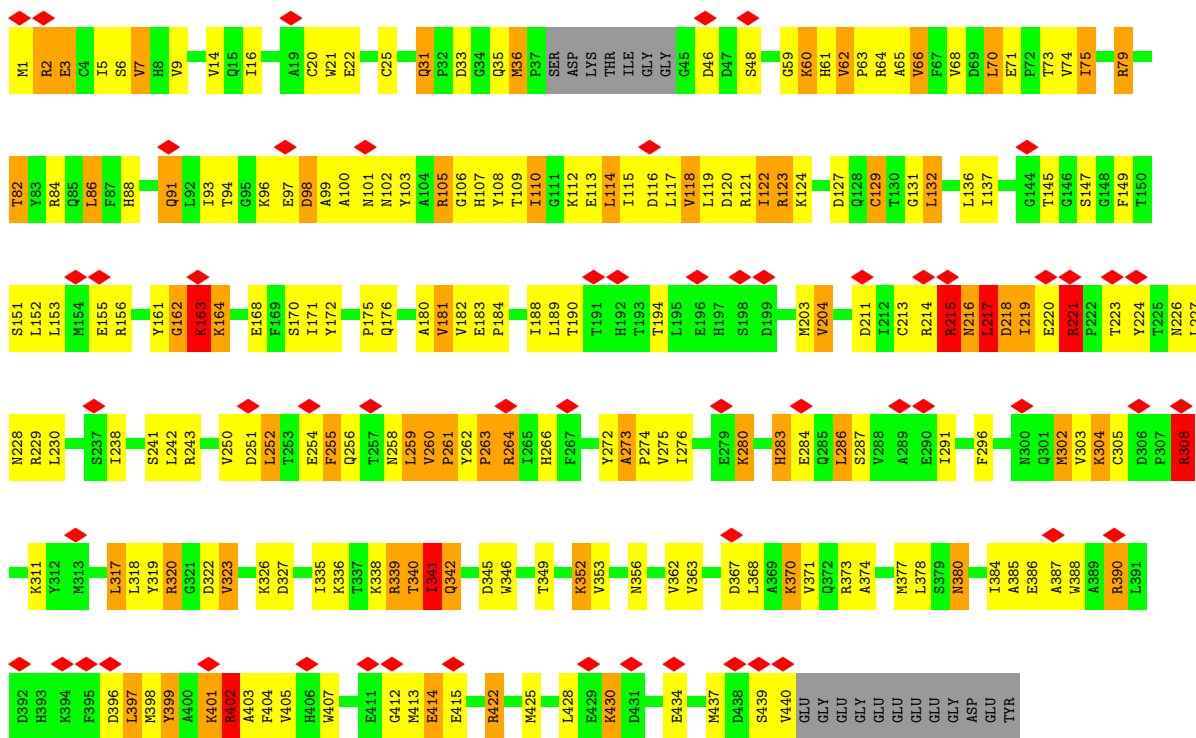


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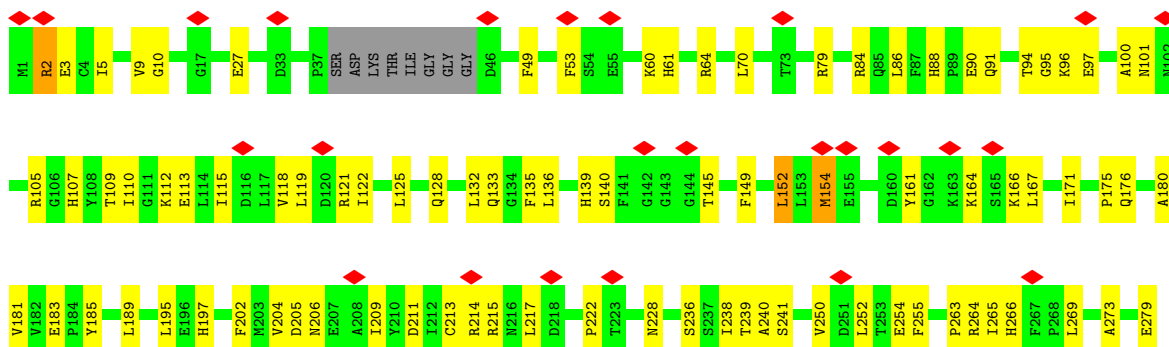


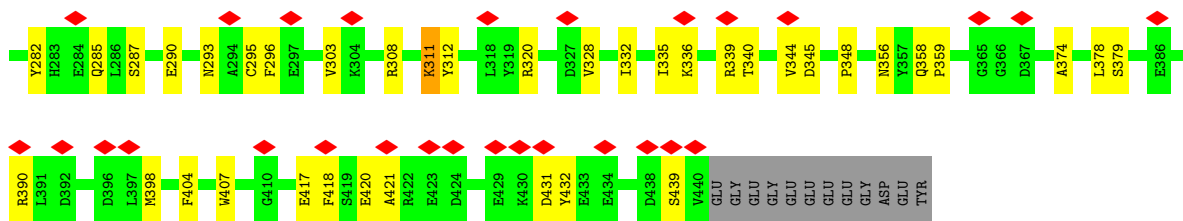


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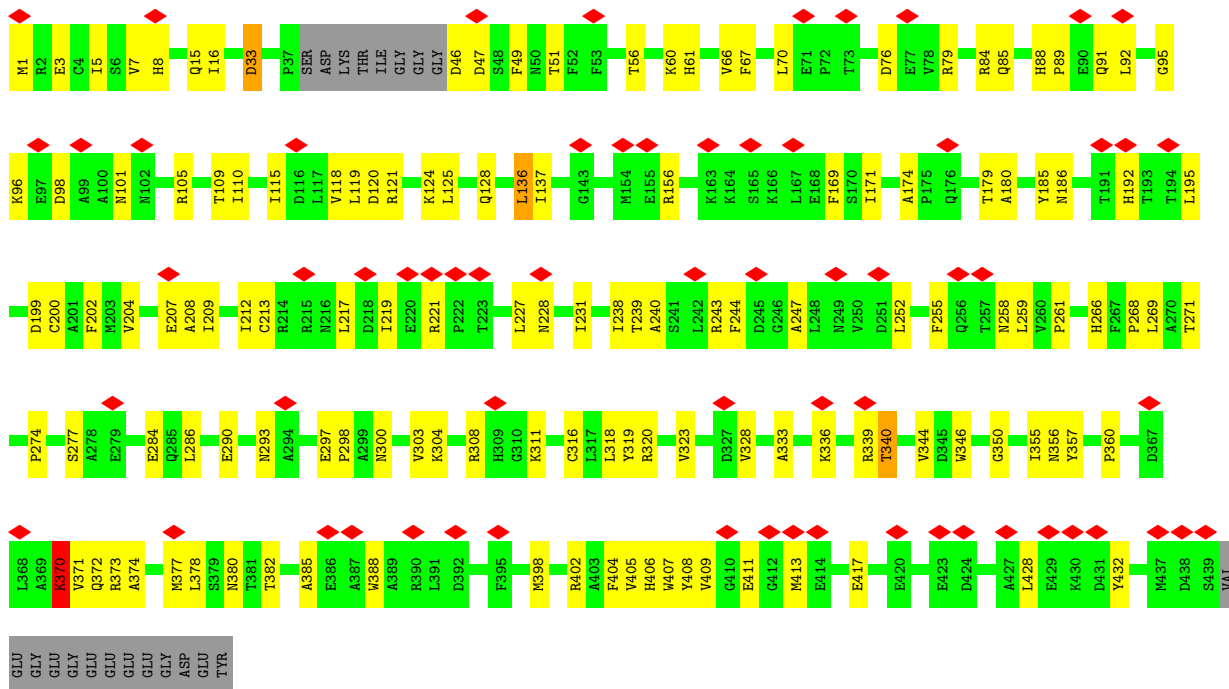


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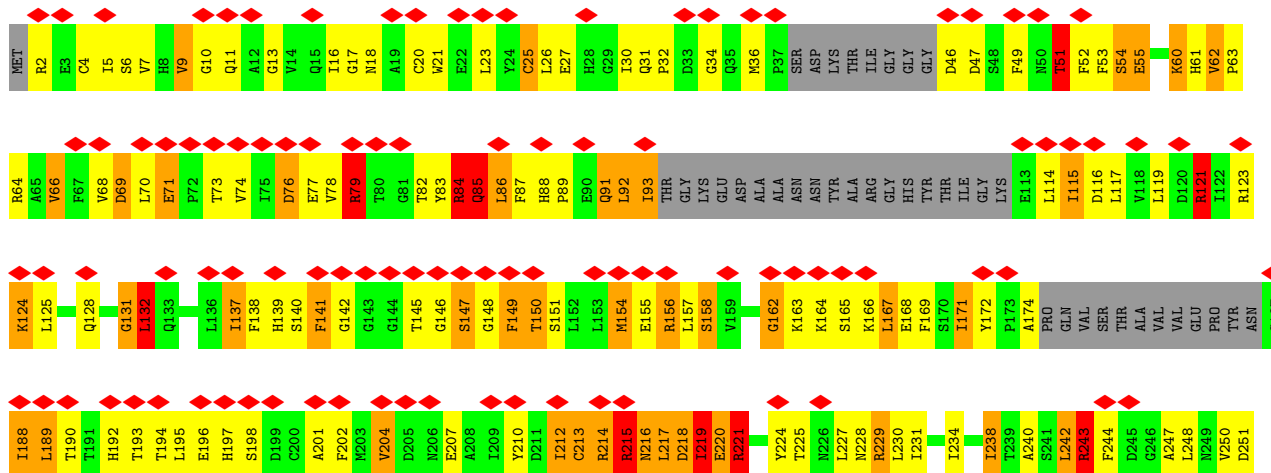


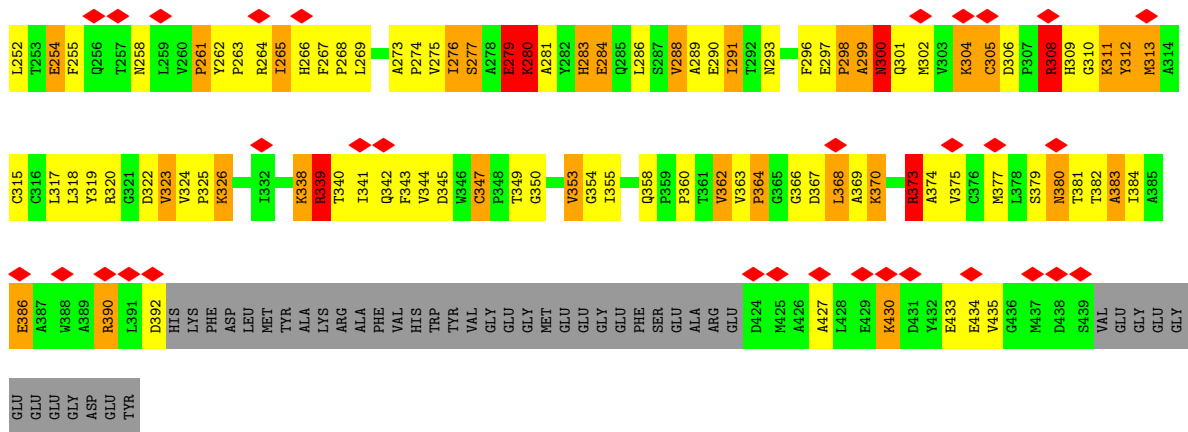


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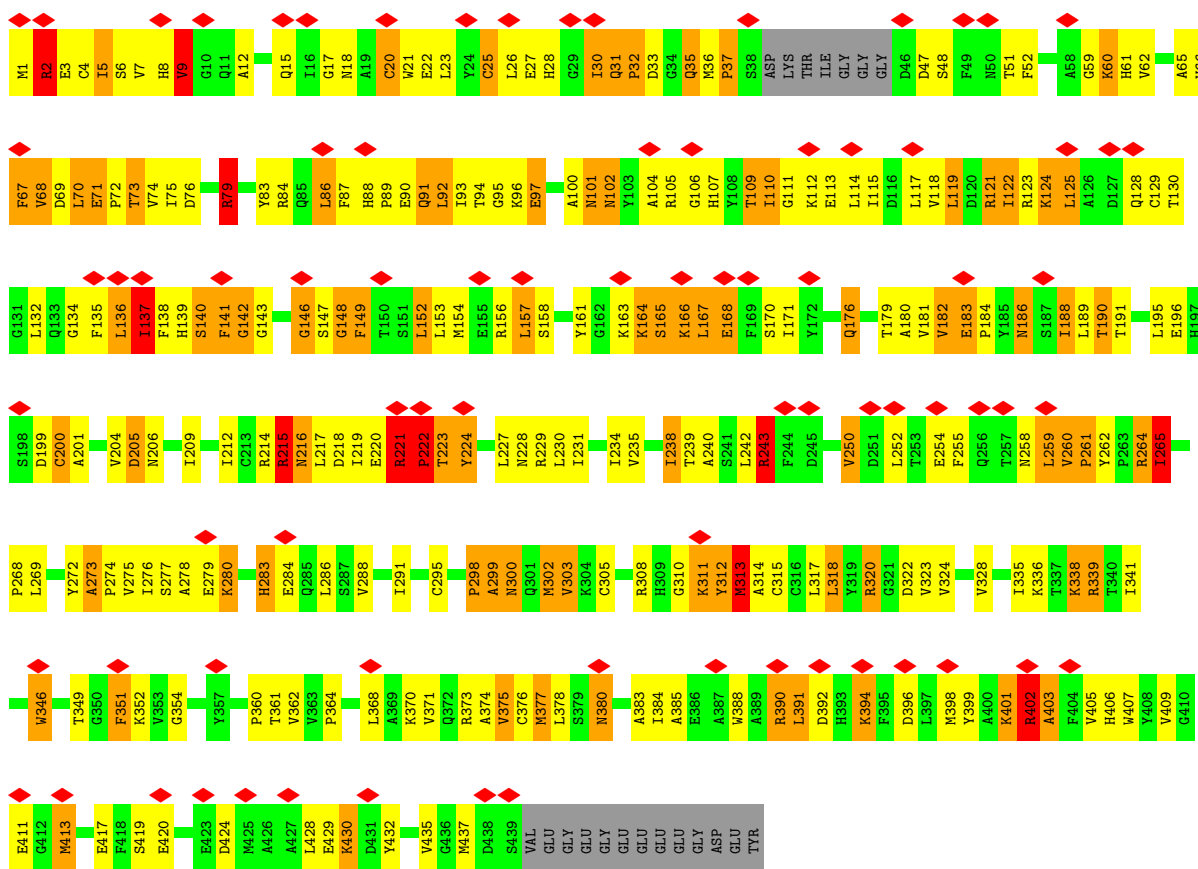


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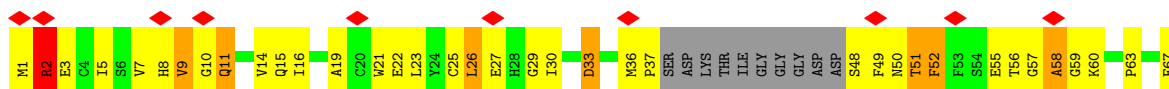


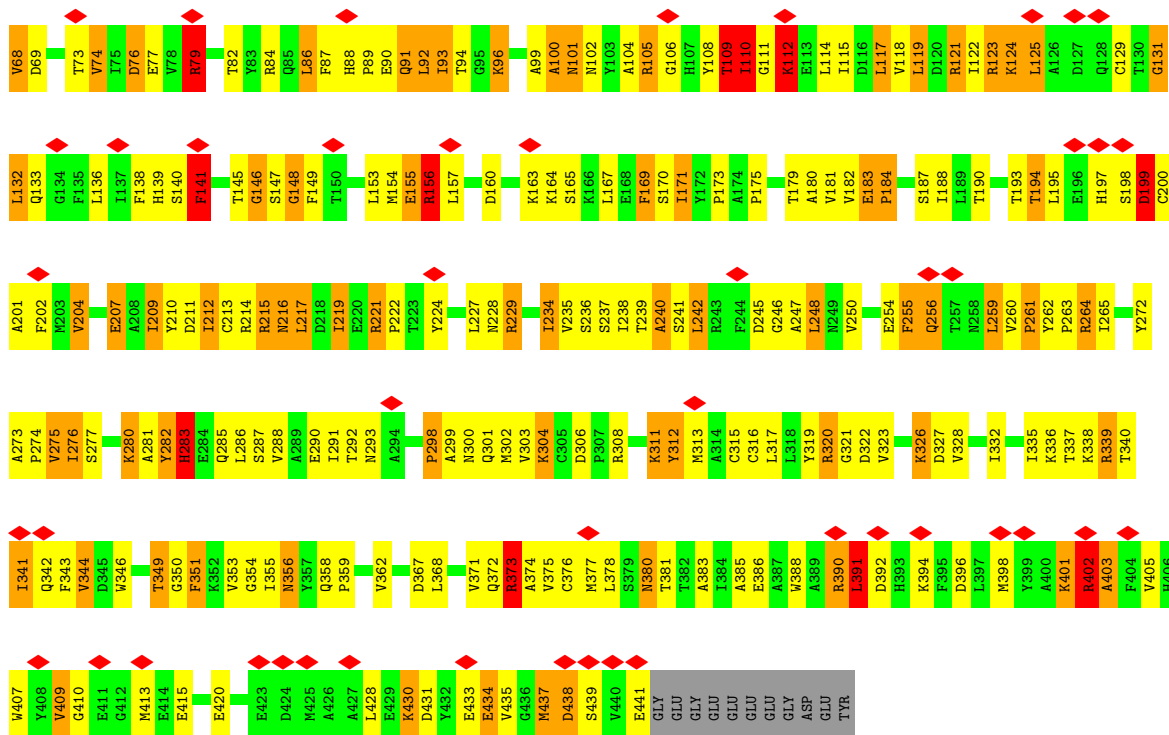


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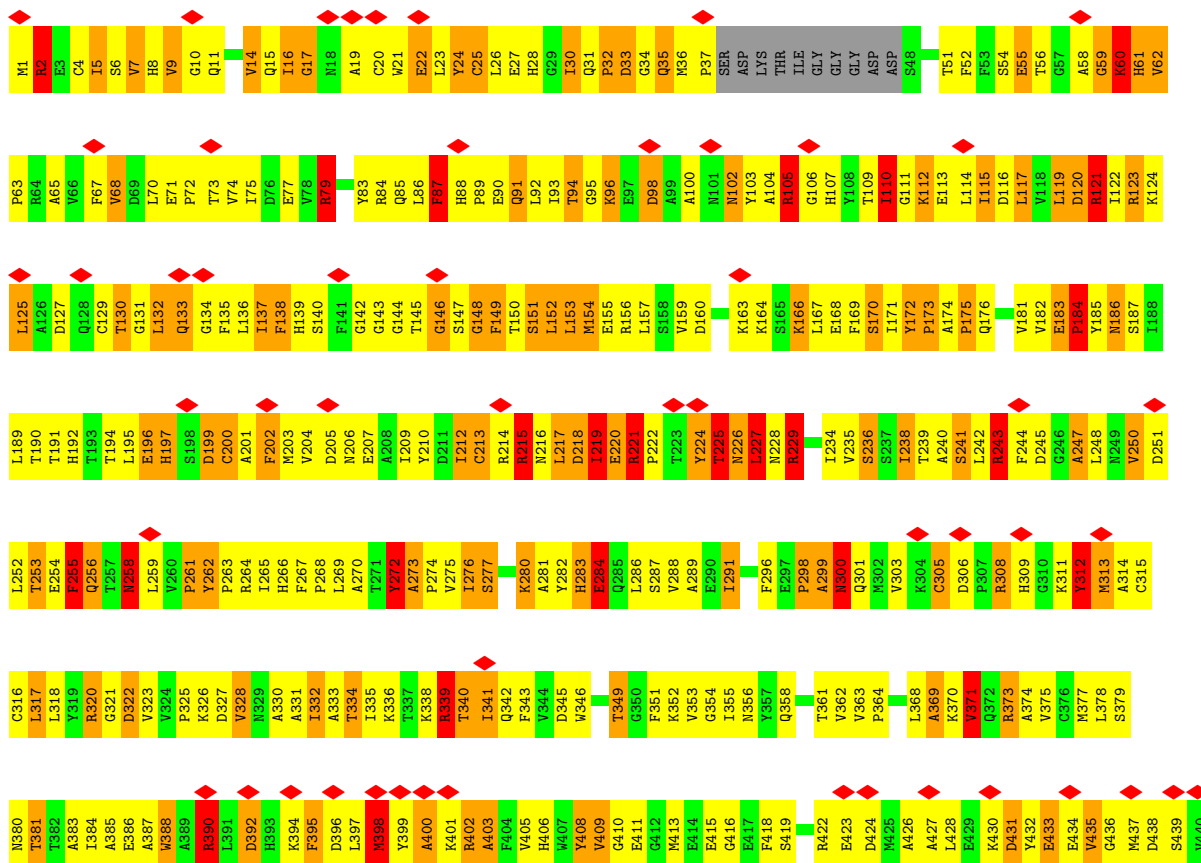
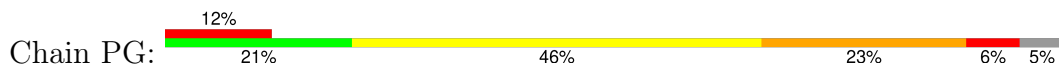


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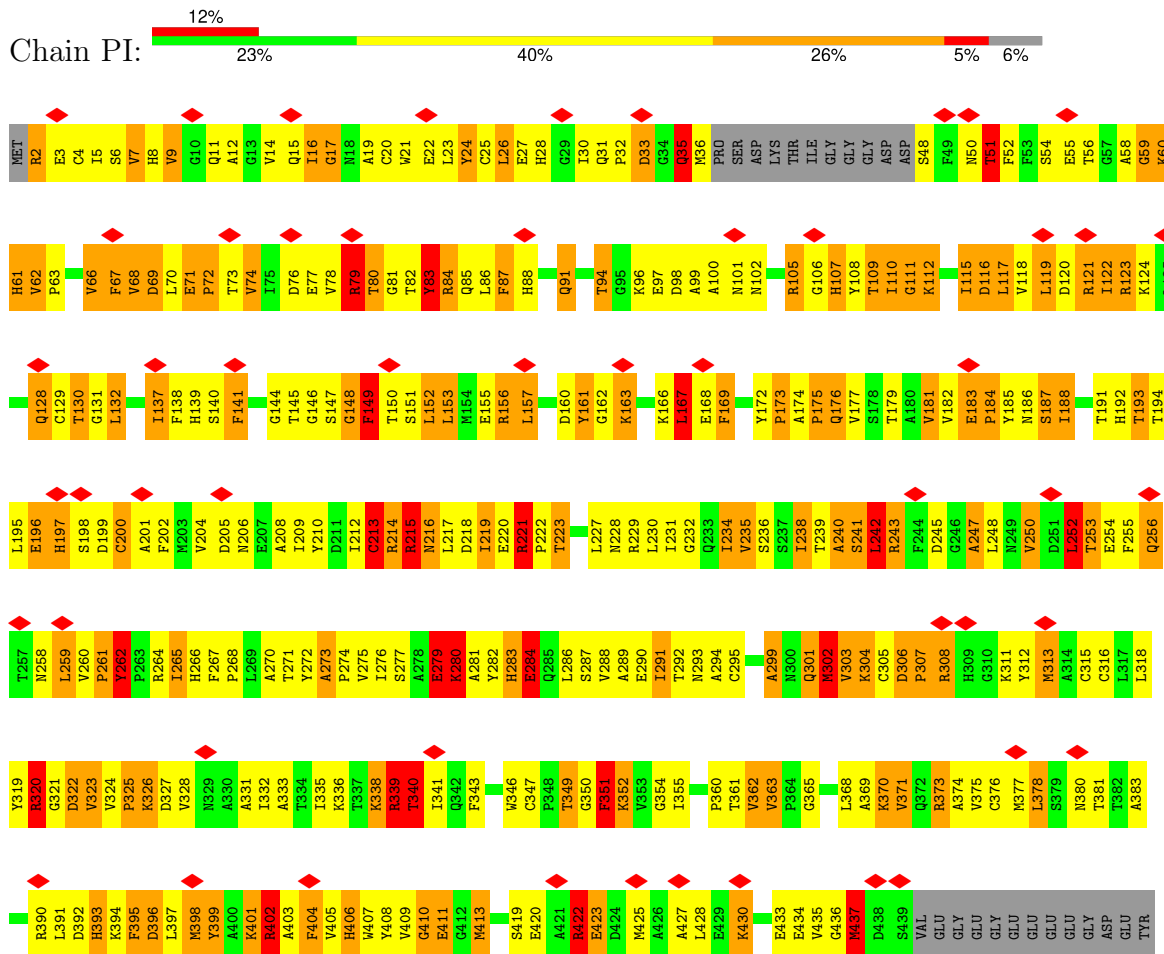


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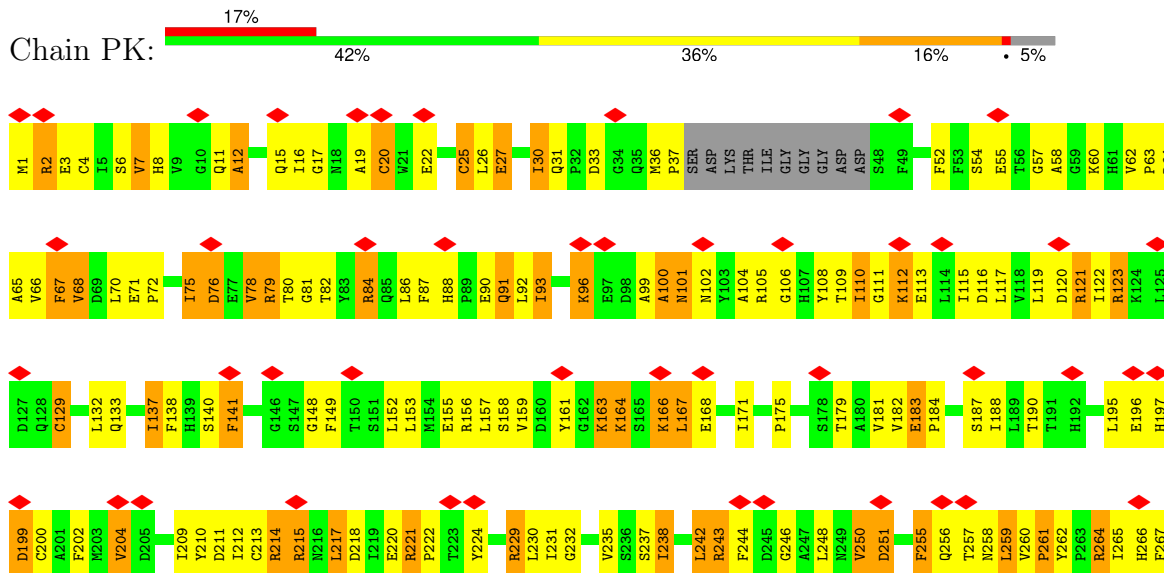


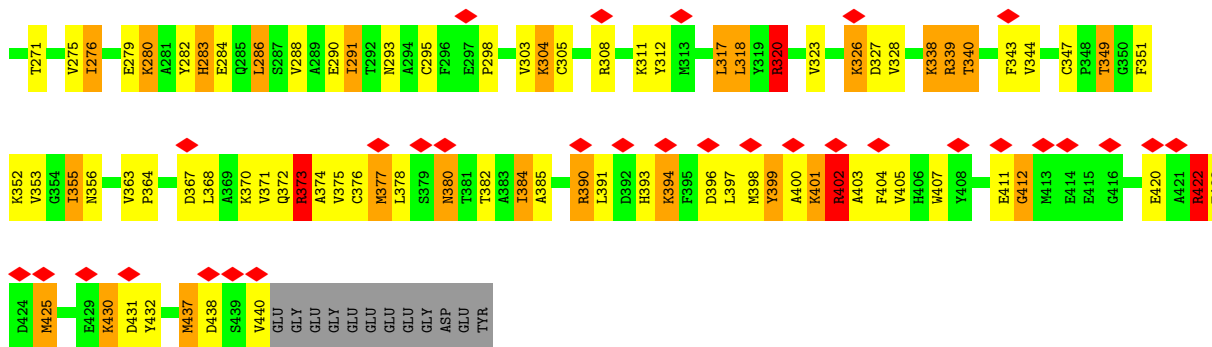
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● Molecule 42: Tubulin alpha-1D chain

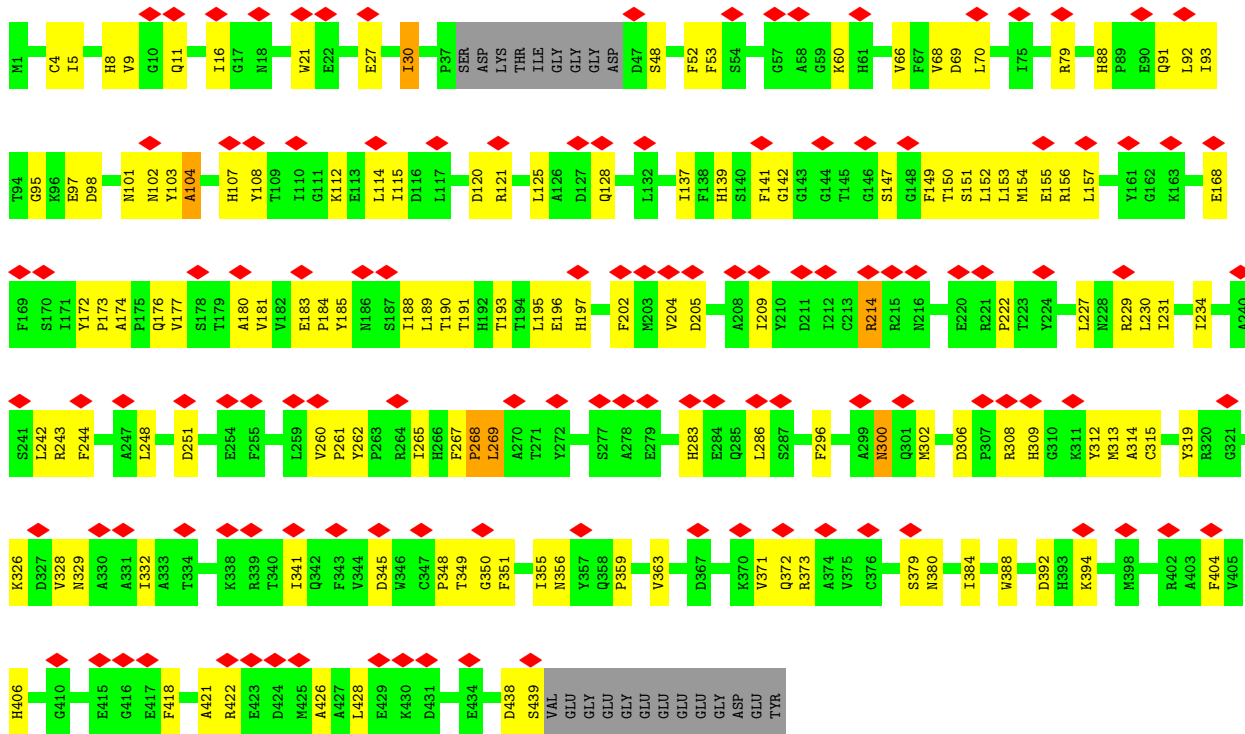


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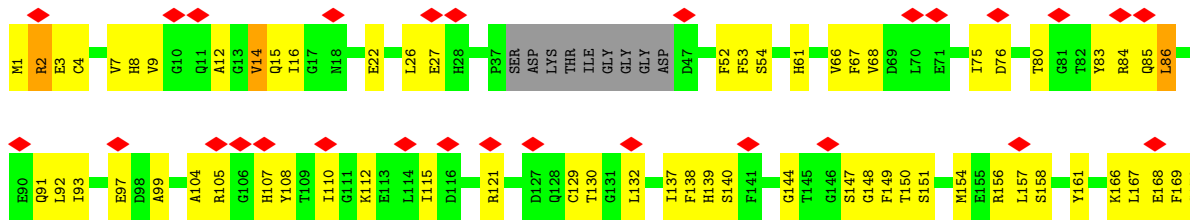


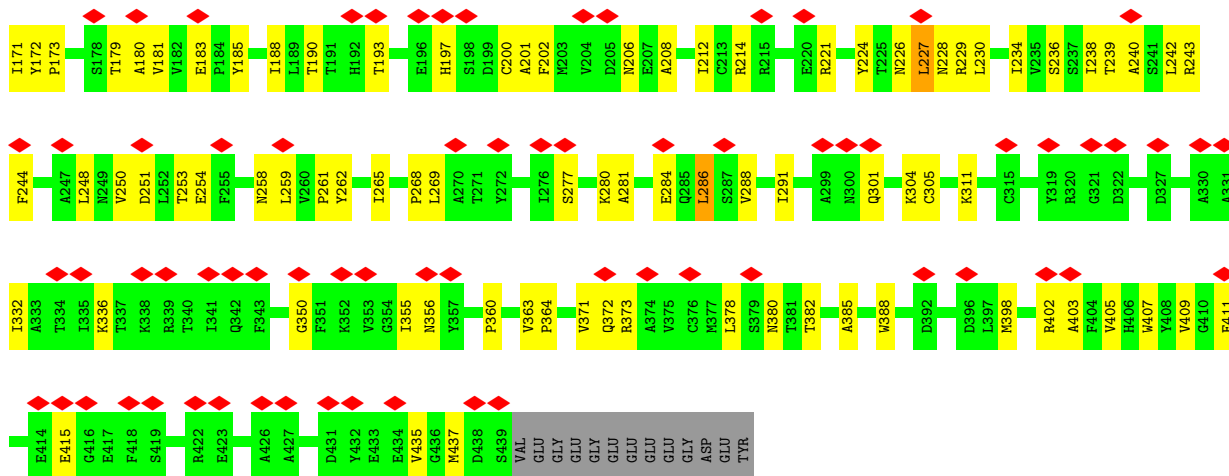


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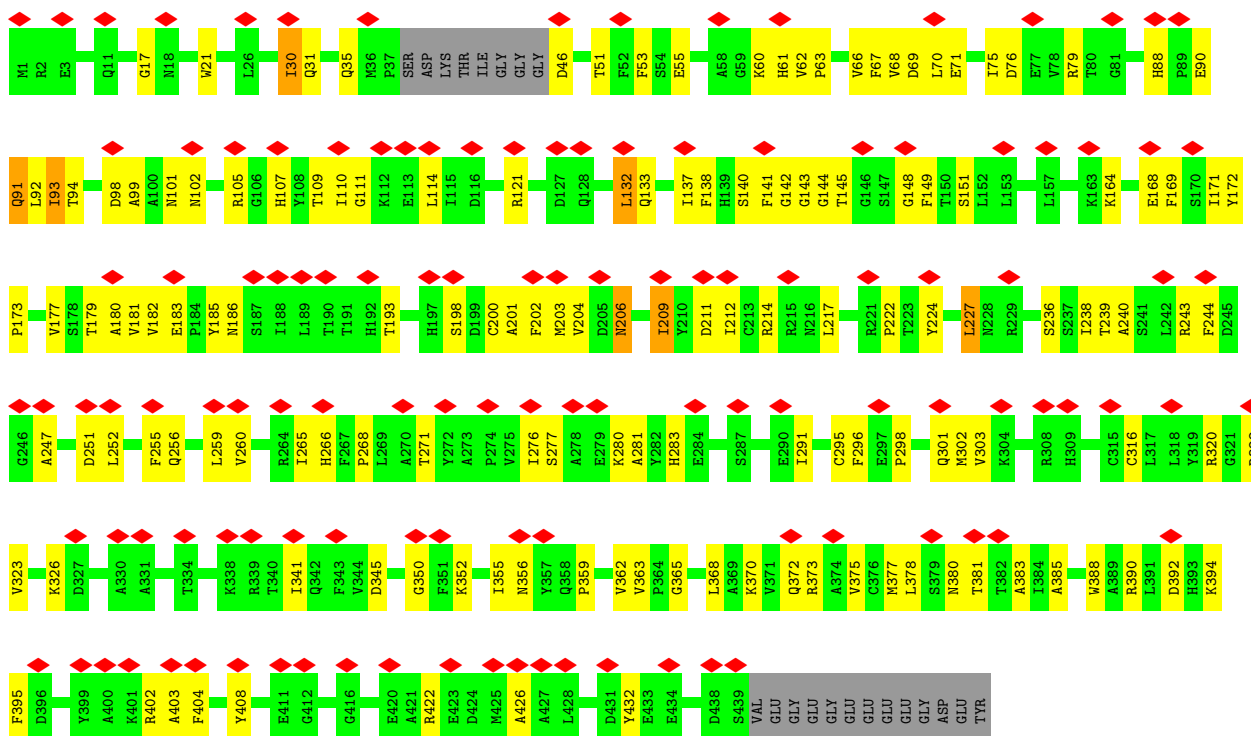


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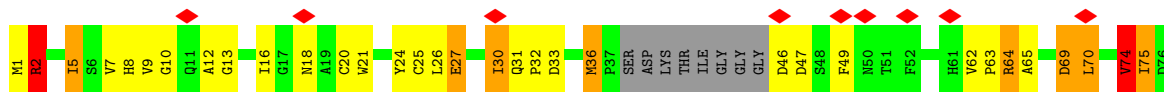




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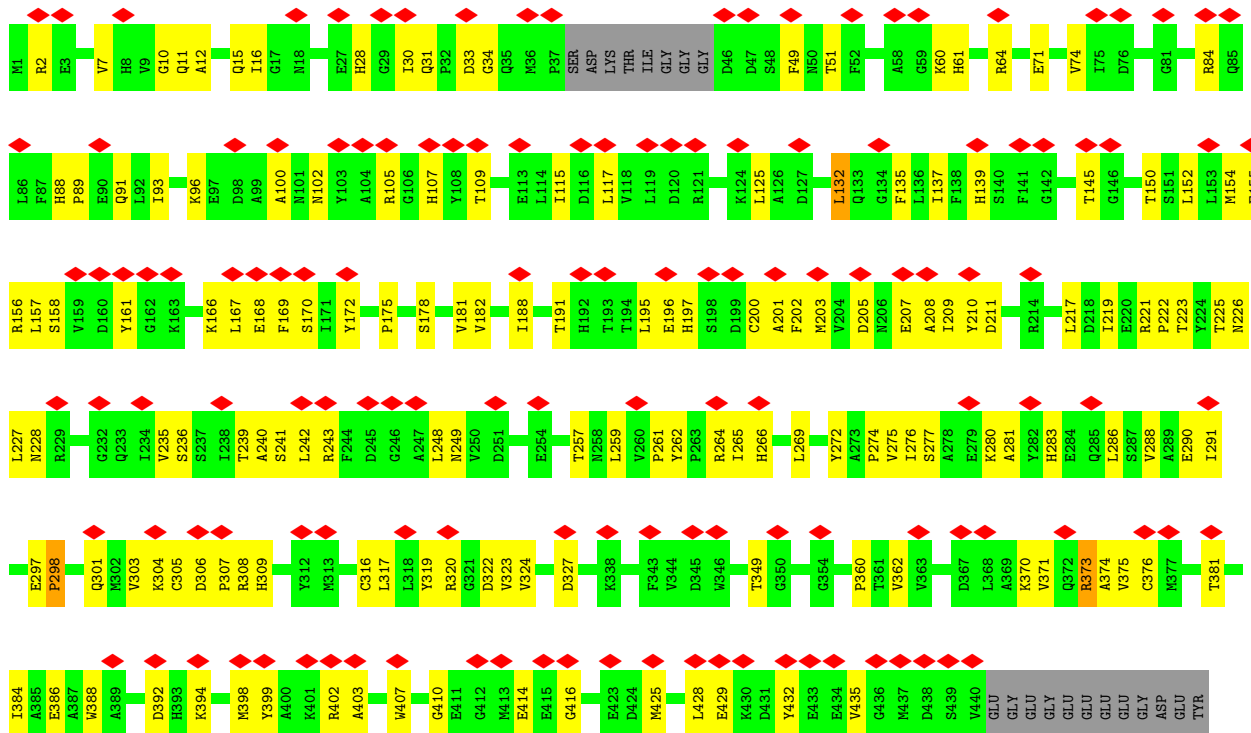


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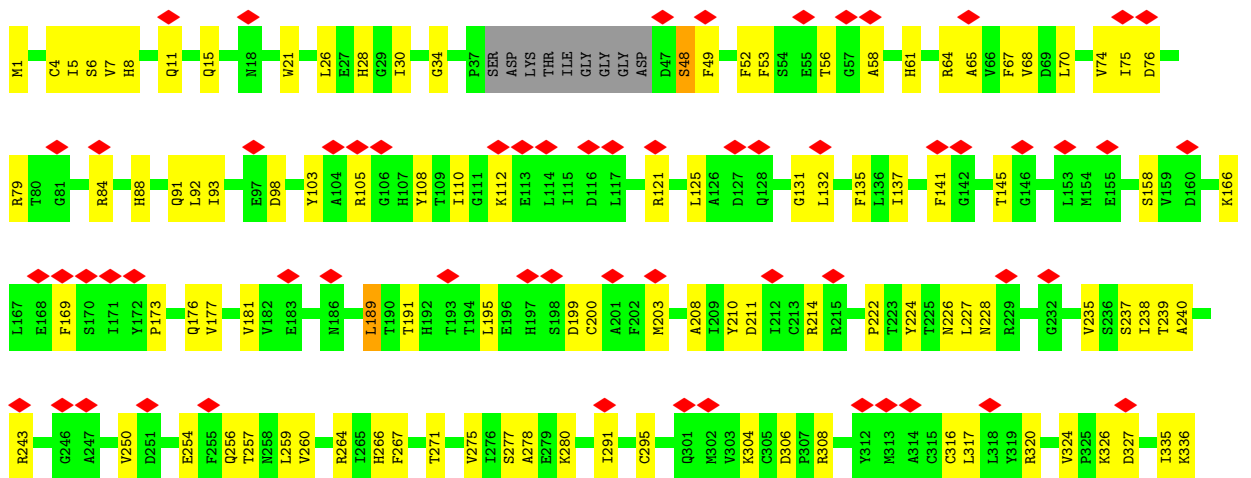


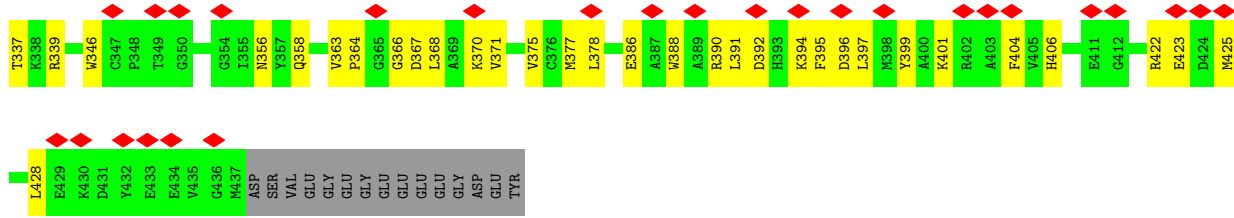


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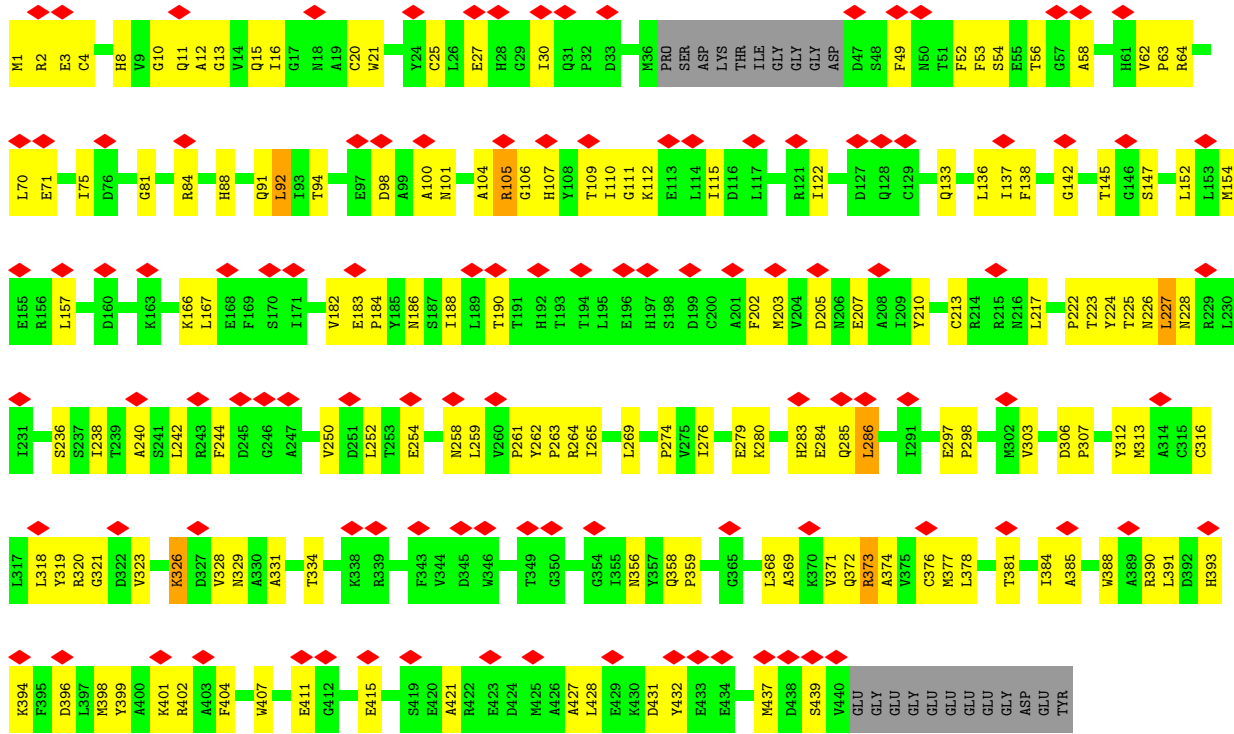


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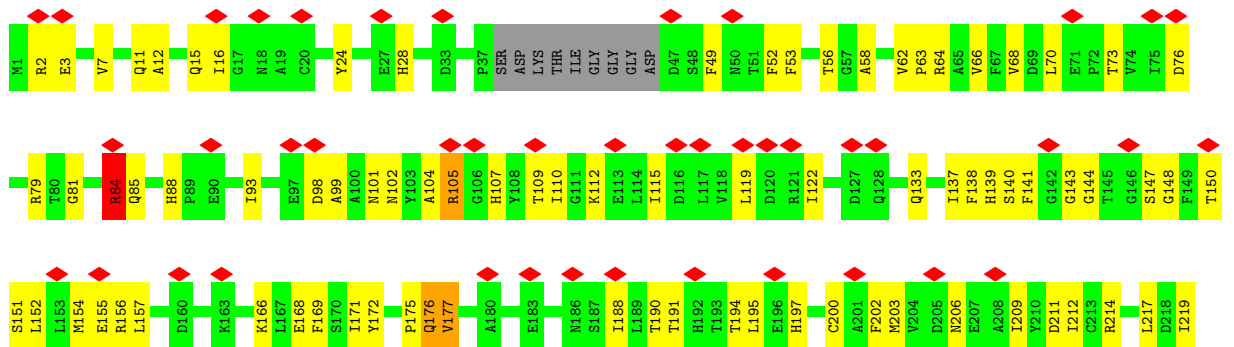


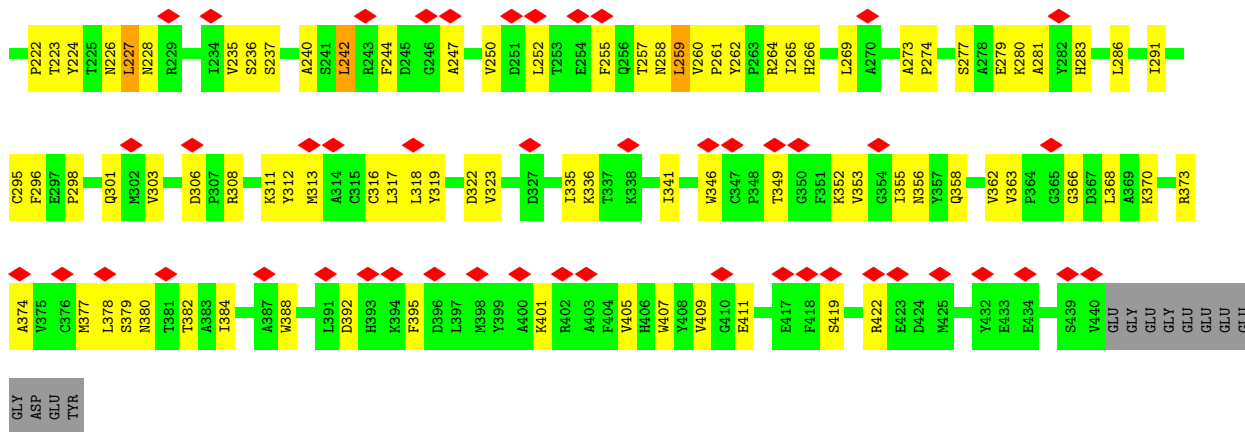


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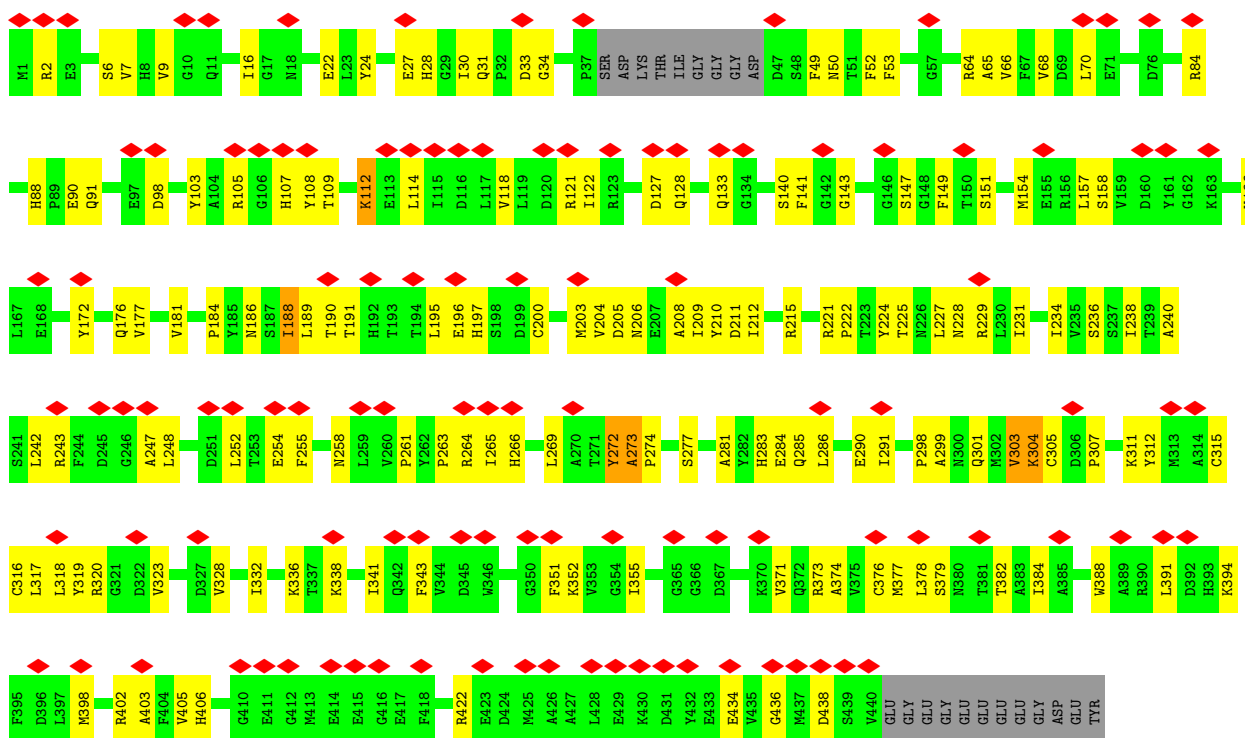


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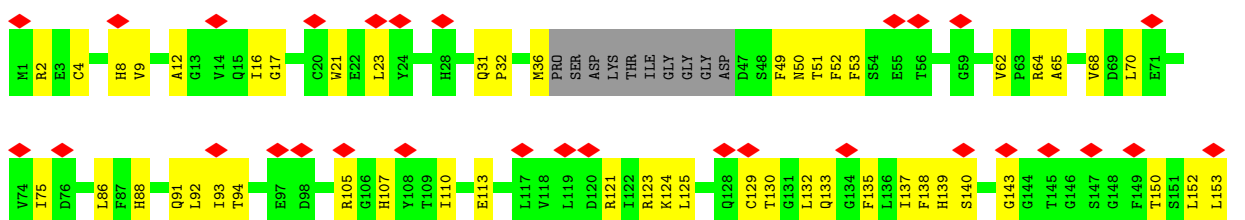


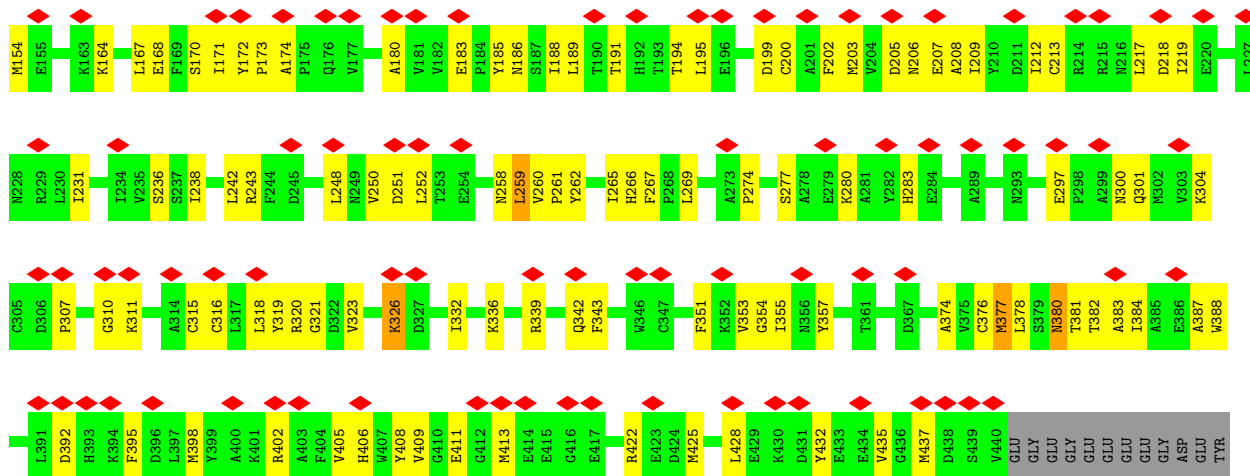


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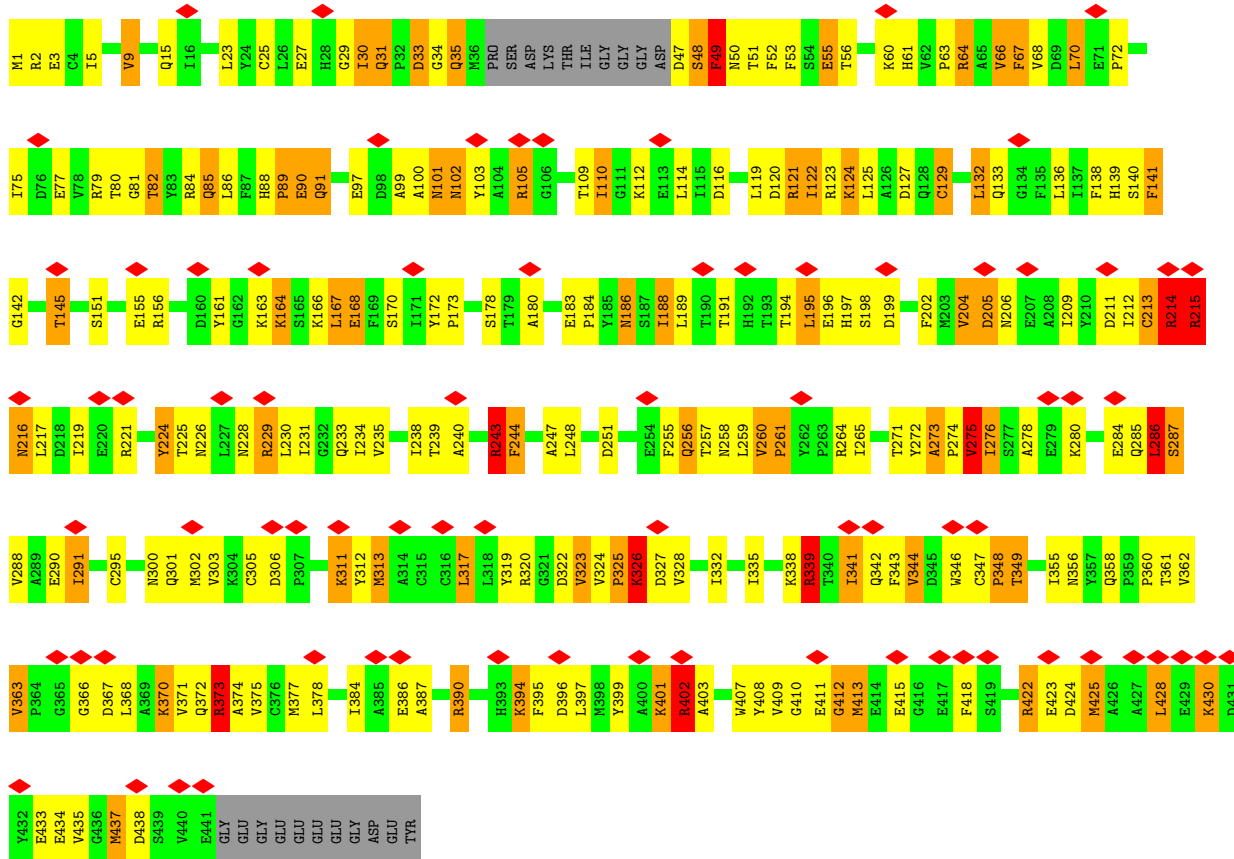


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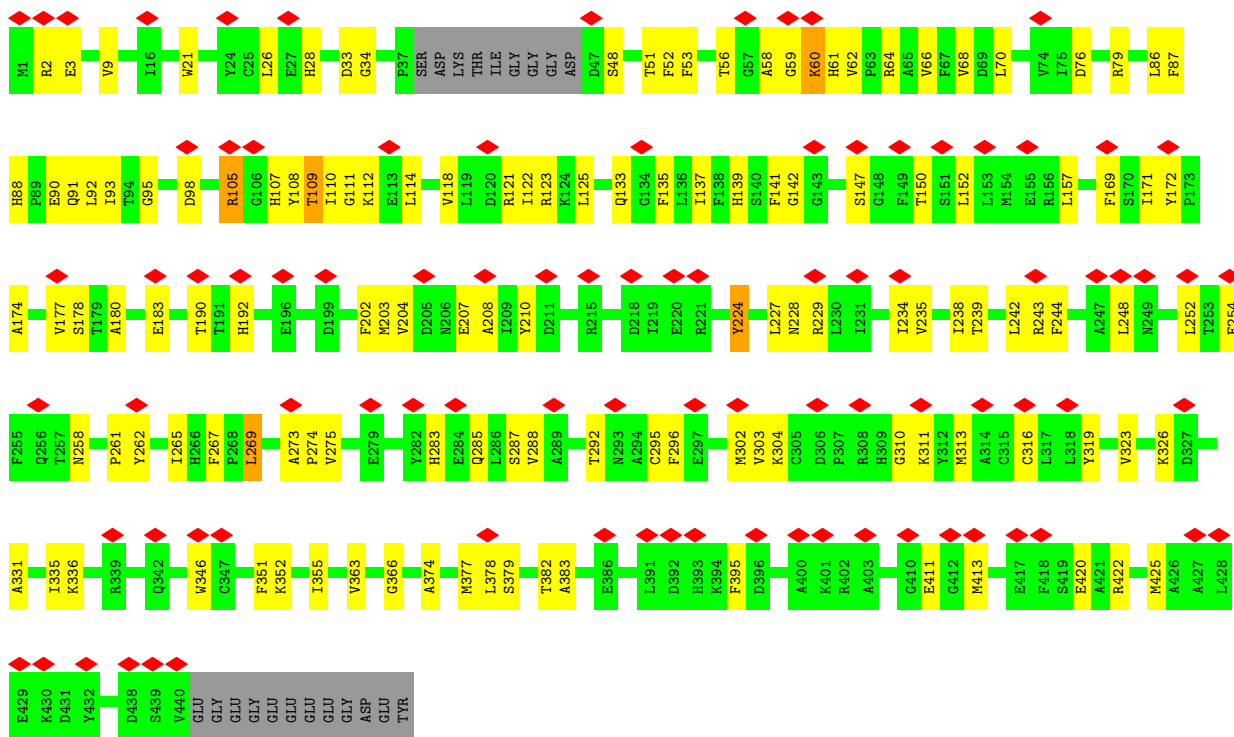


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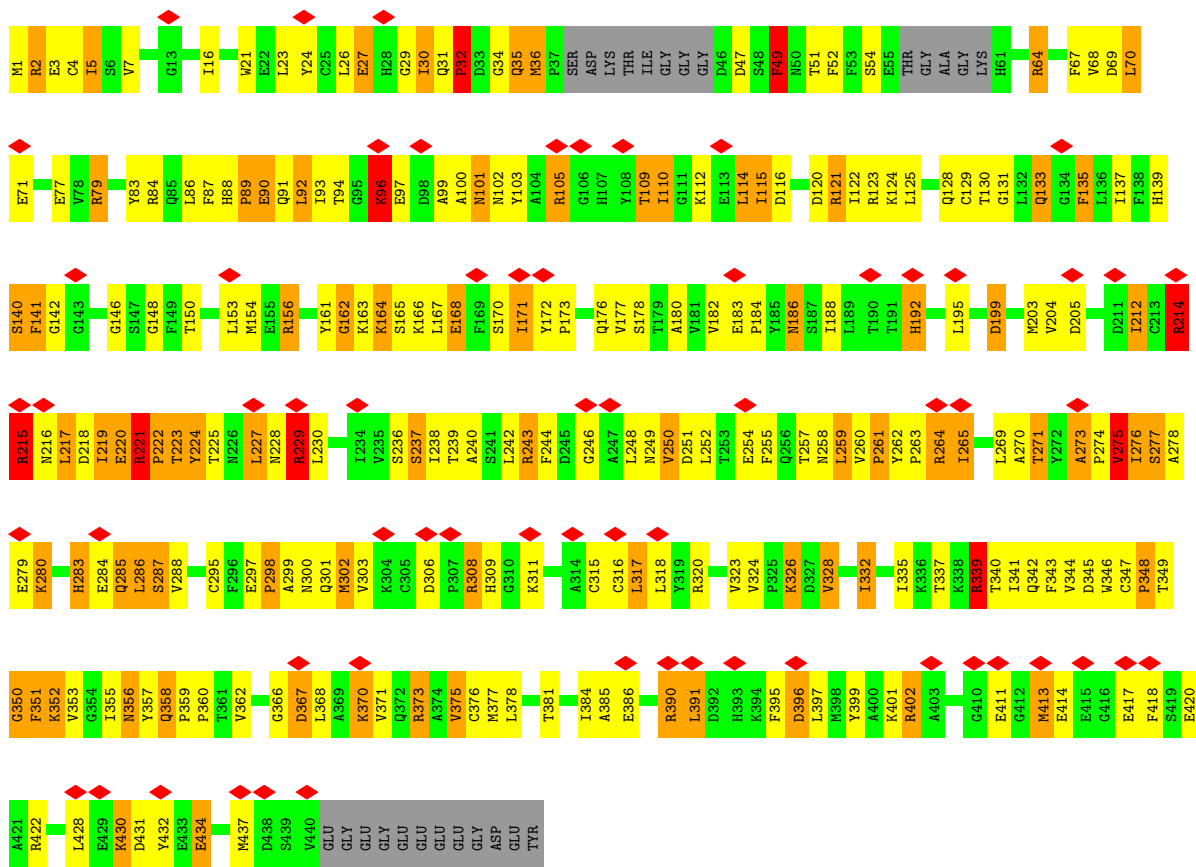


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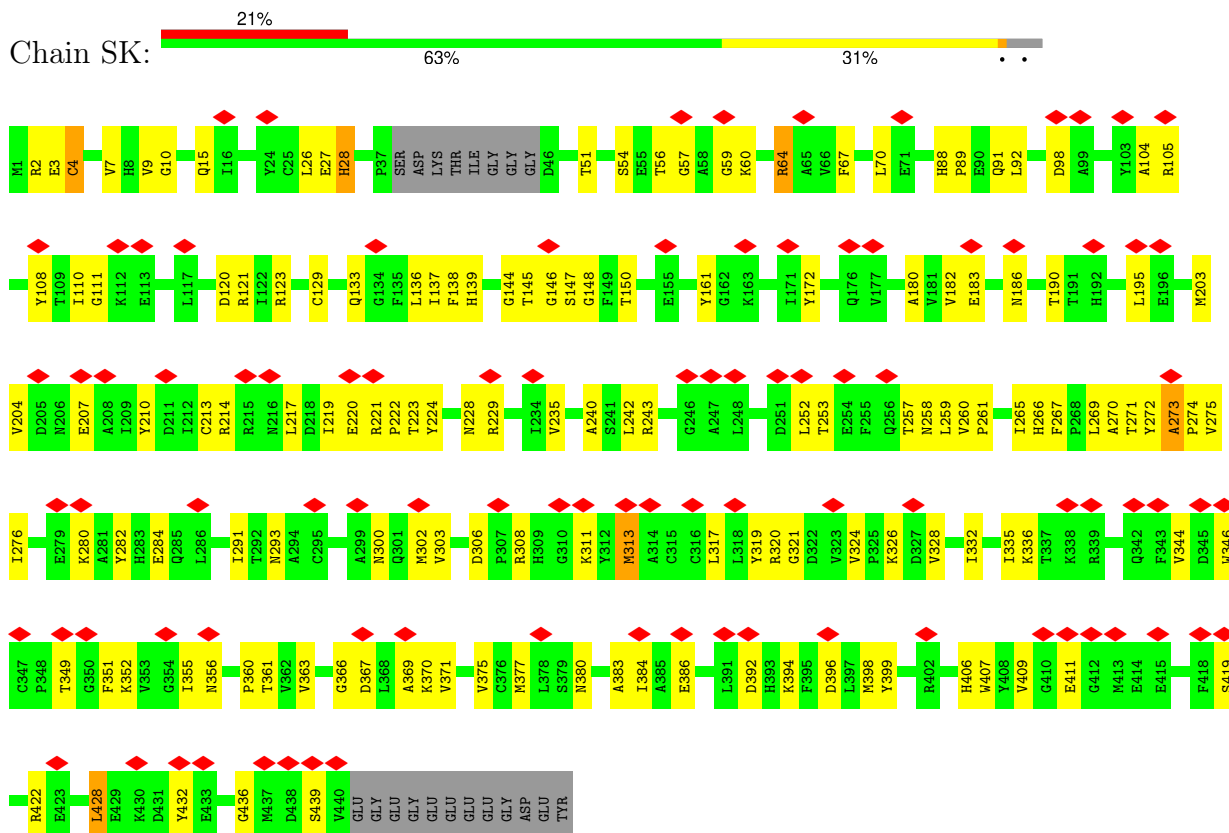




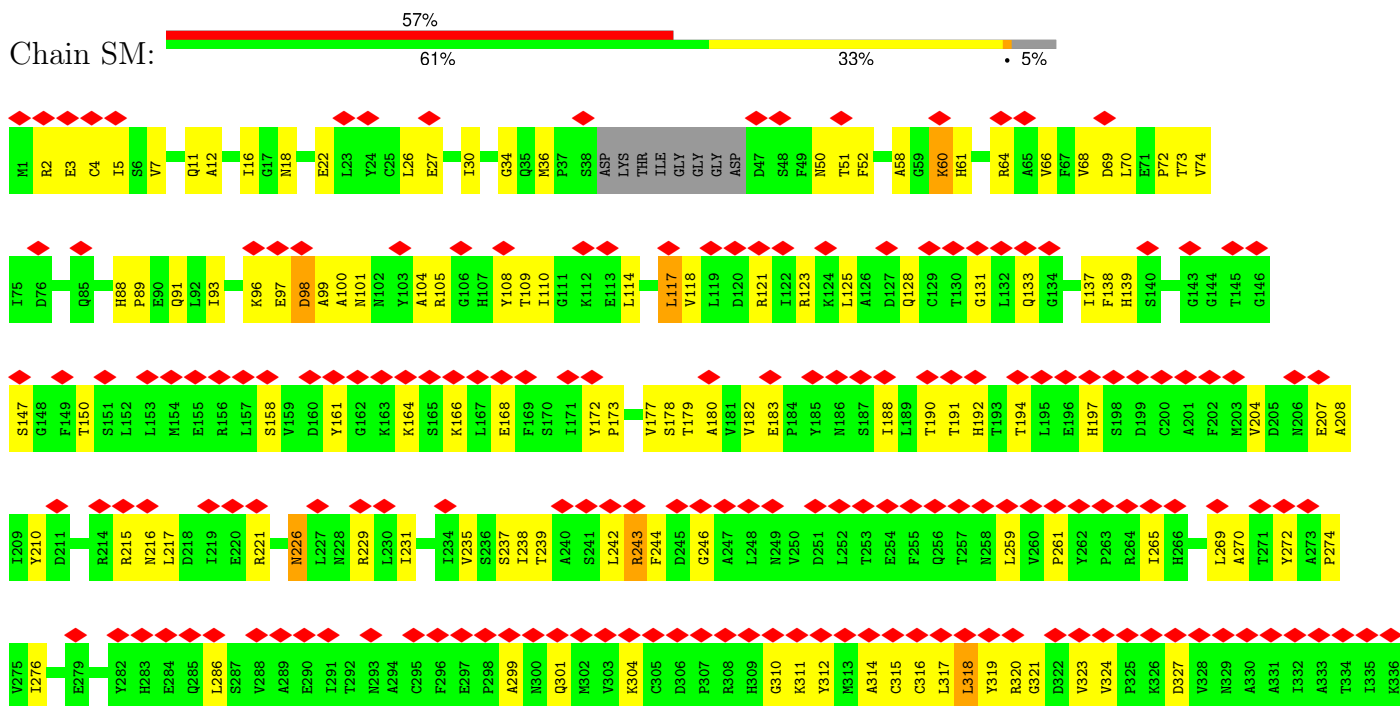
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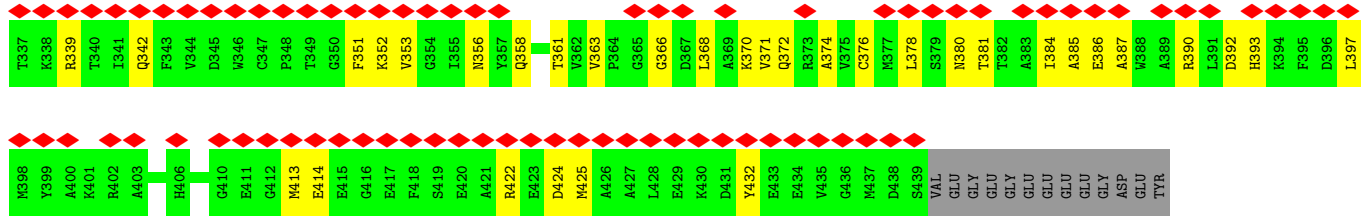


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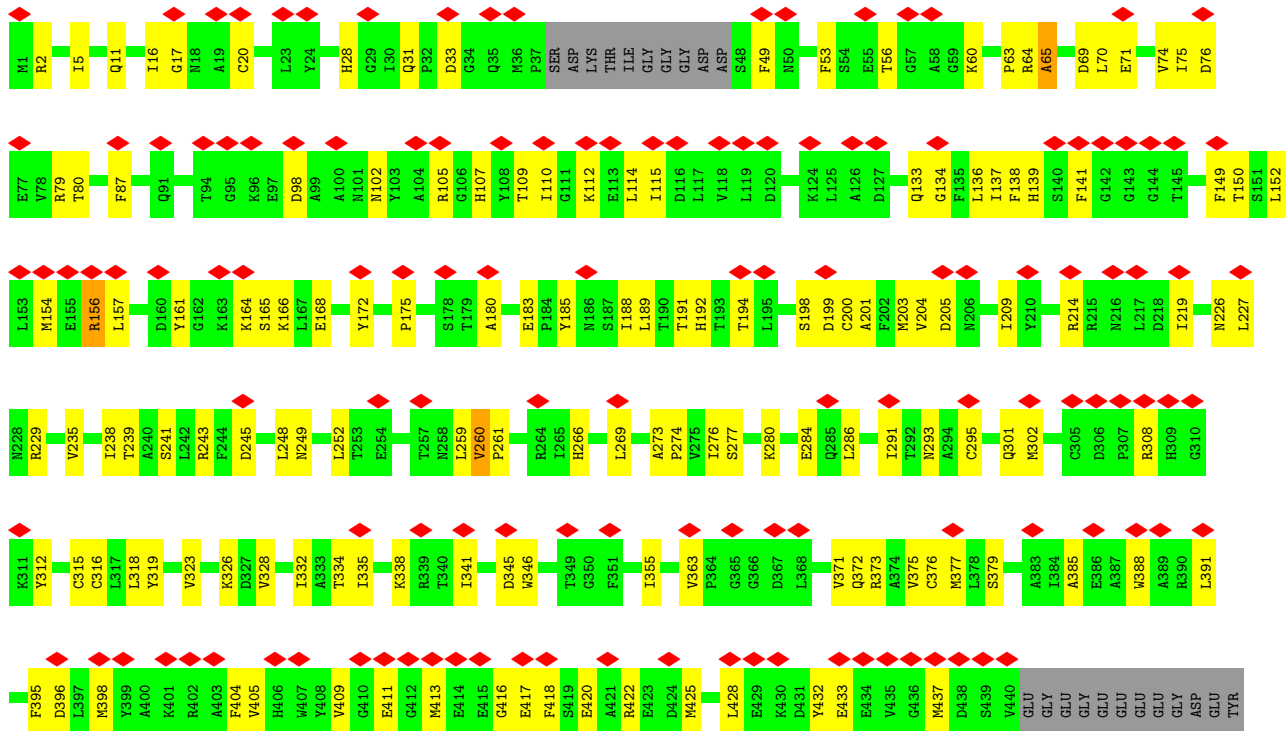


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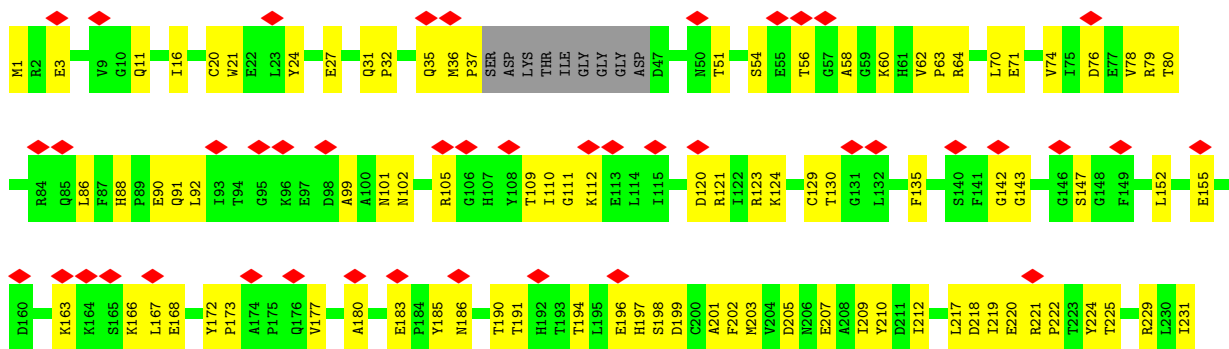


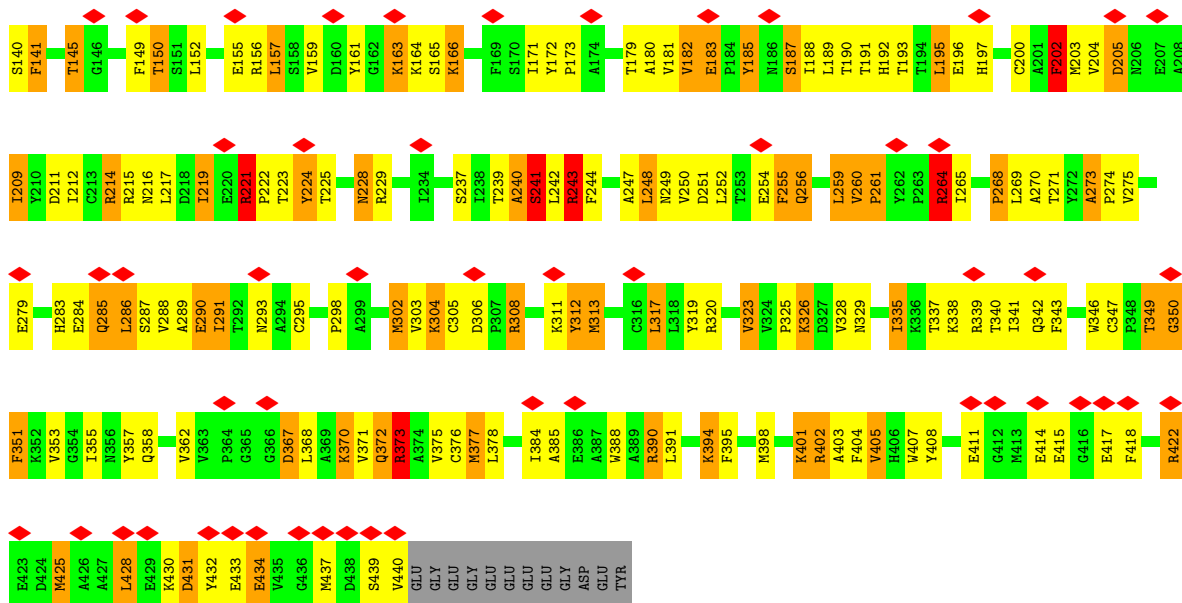


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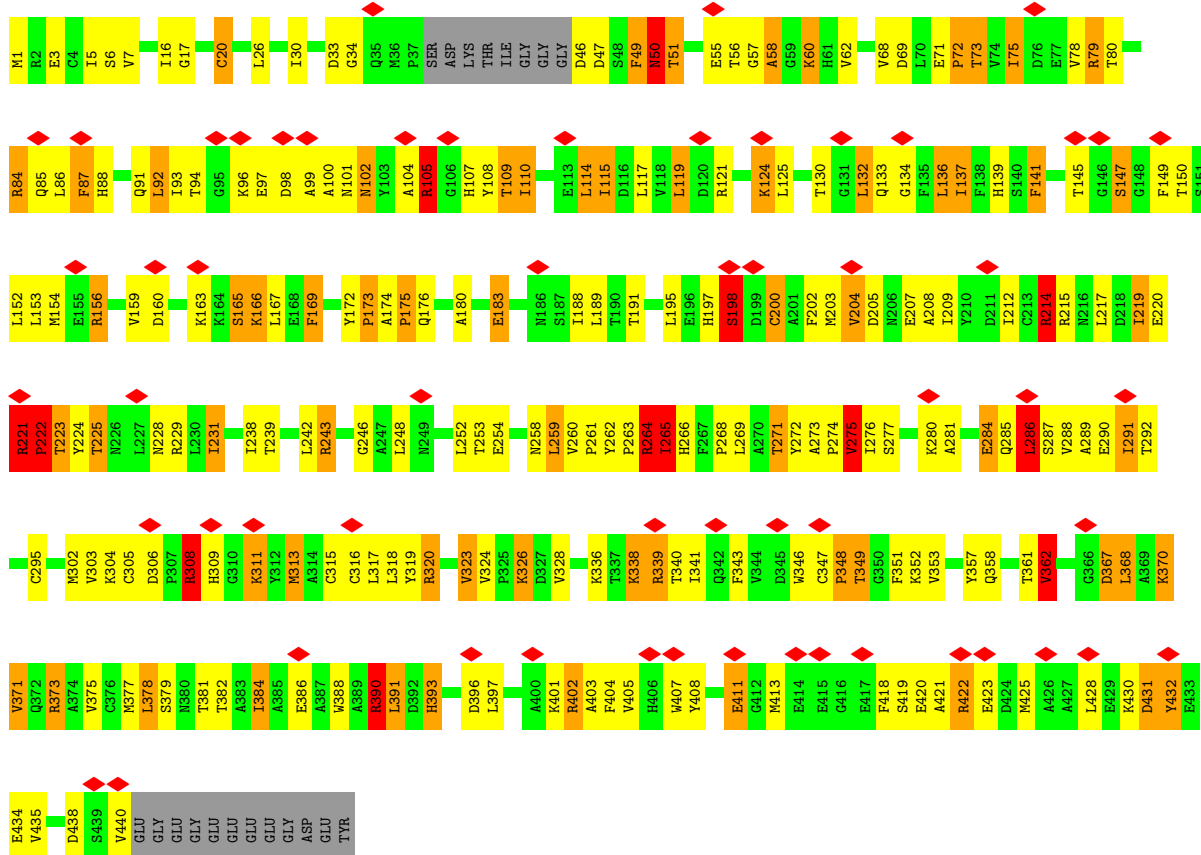
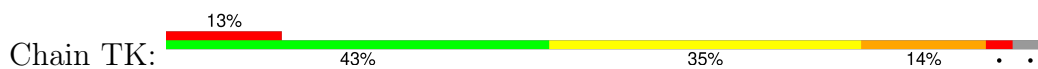


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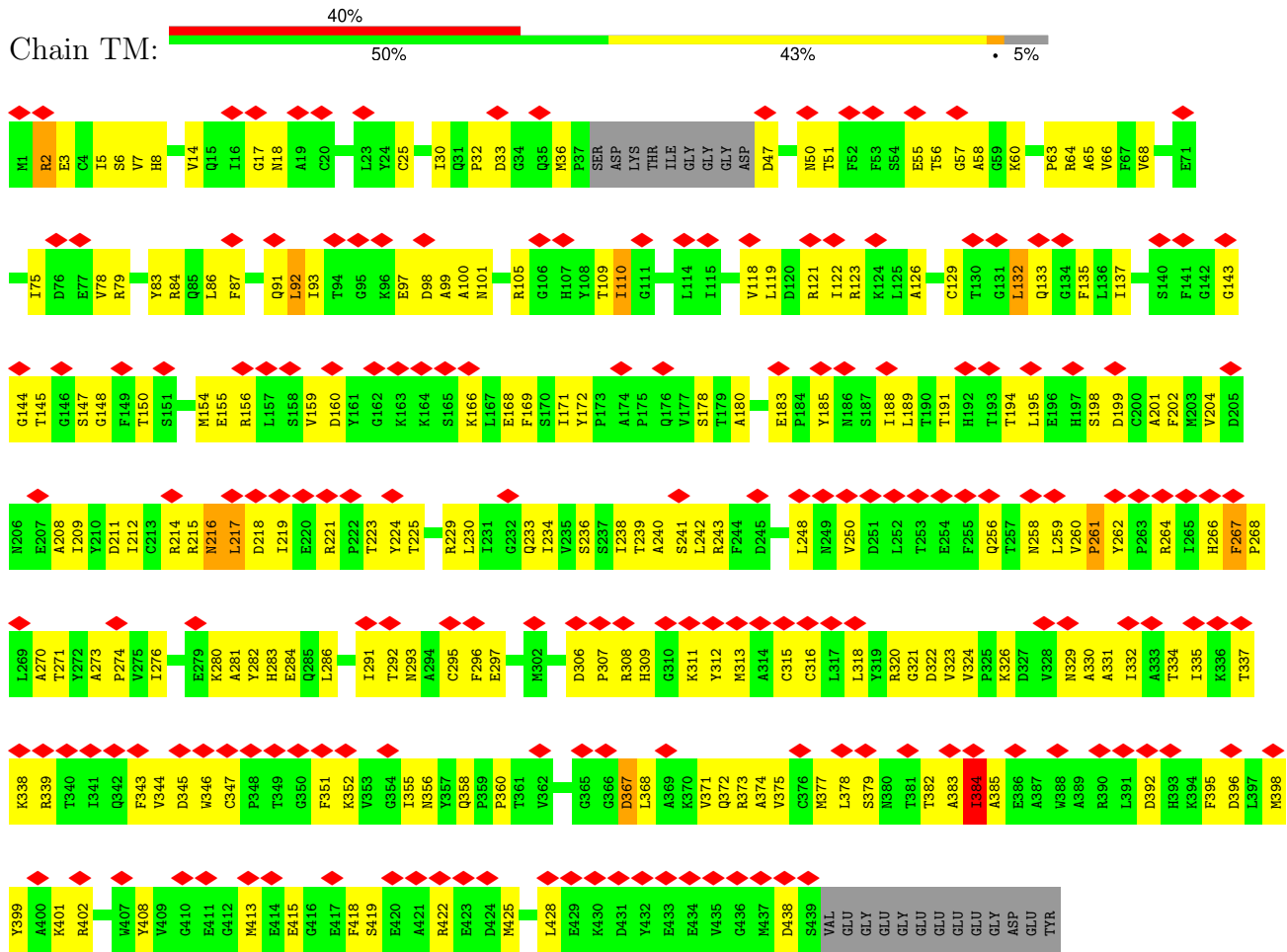




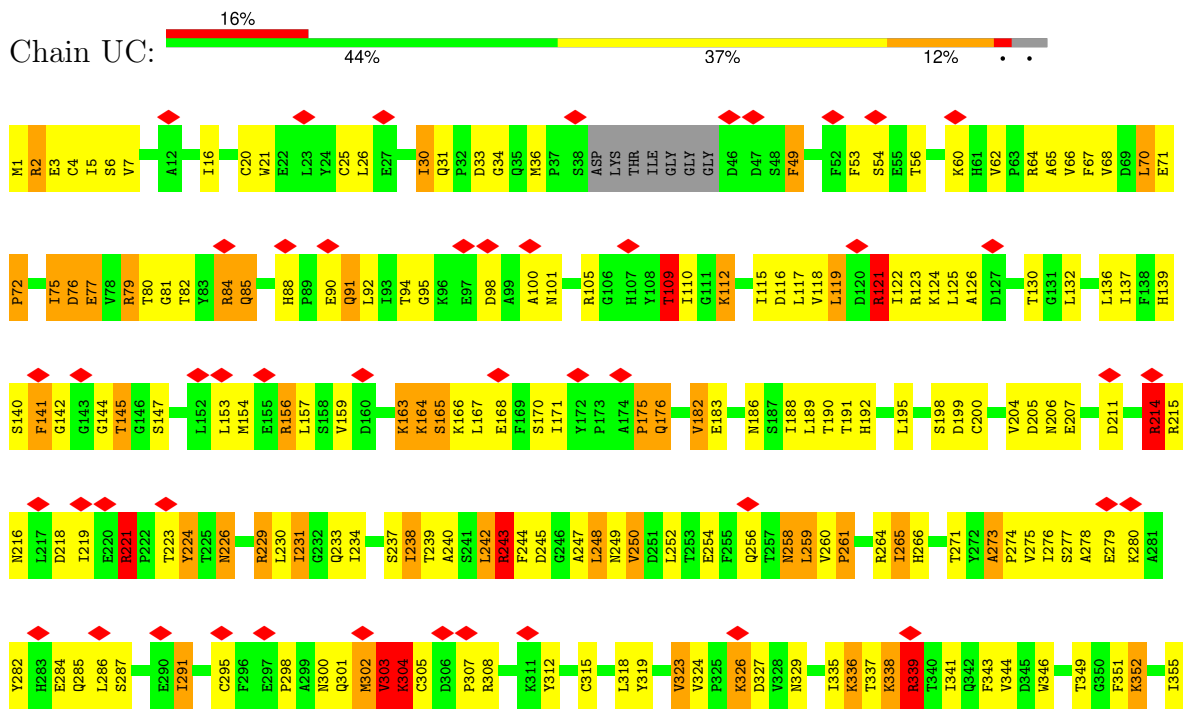
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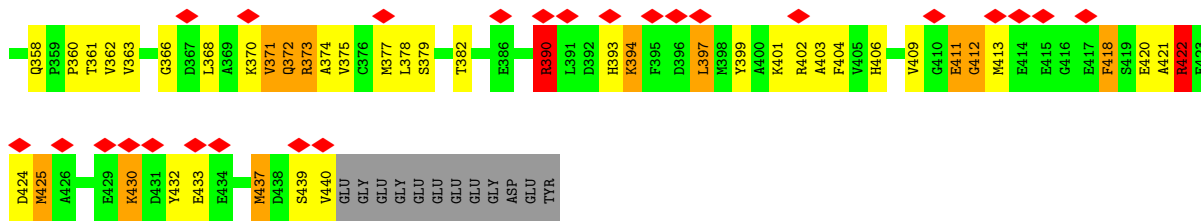


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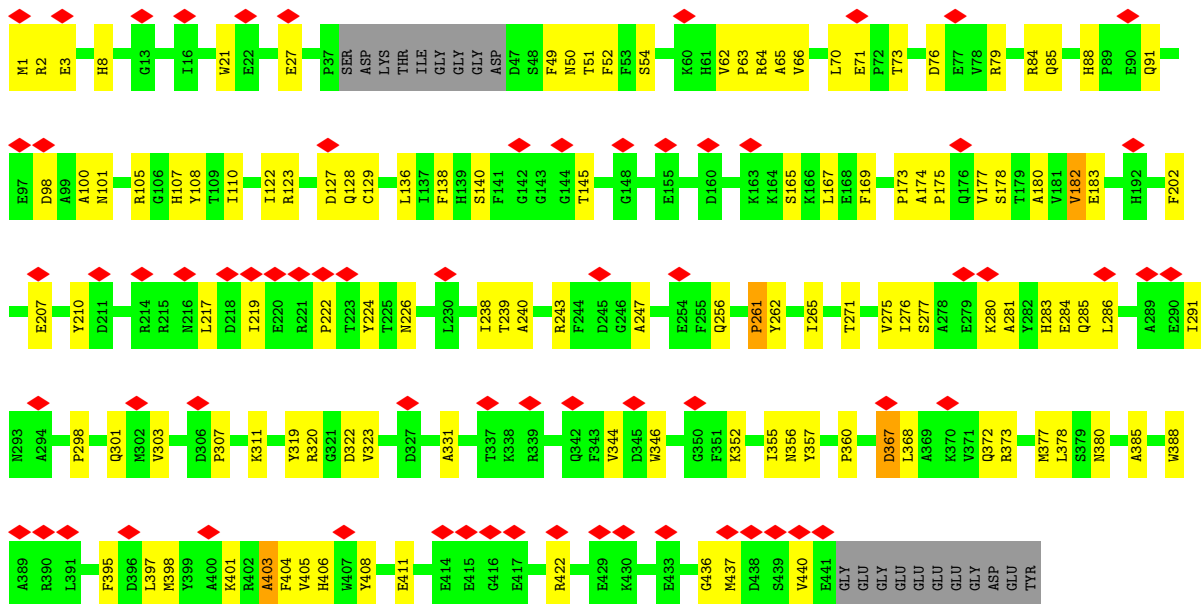


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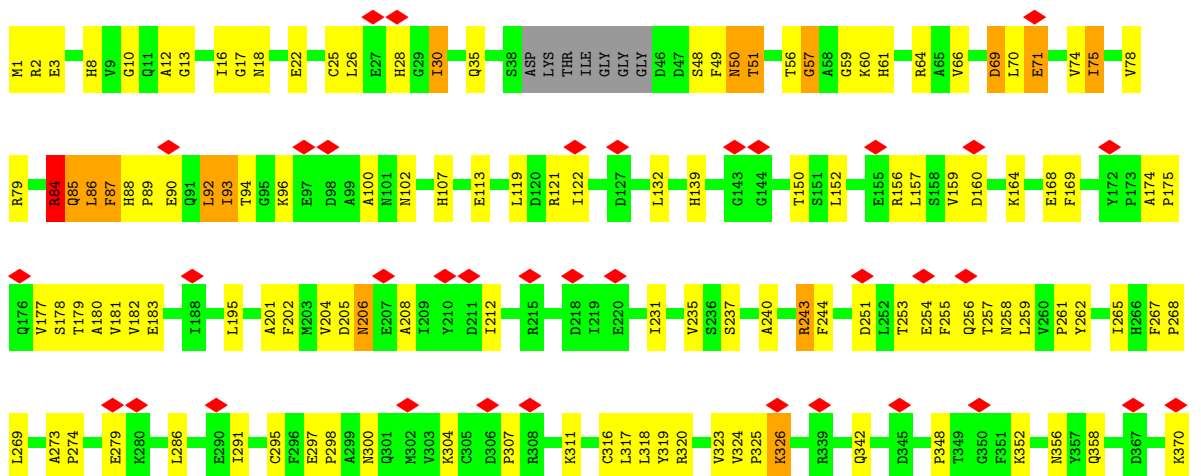


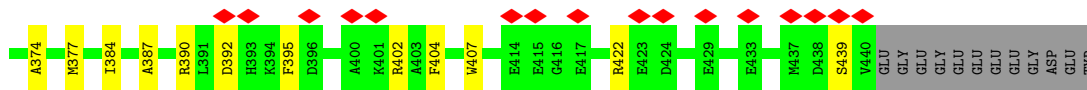


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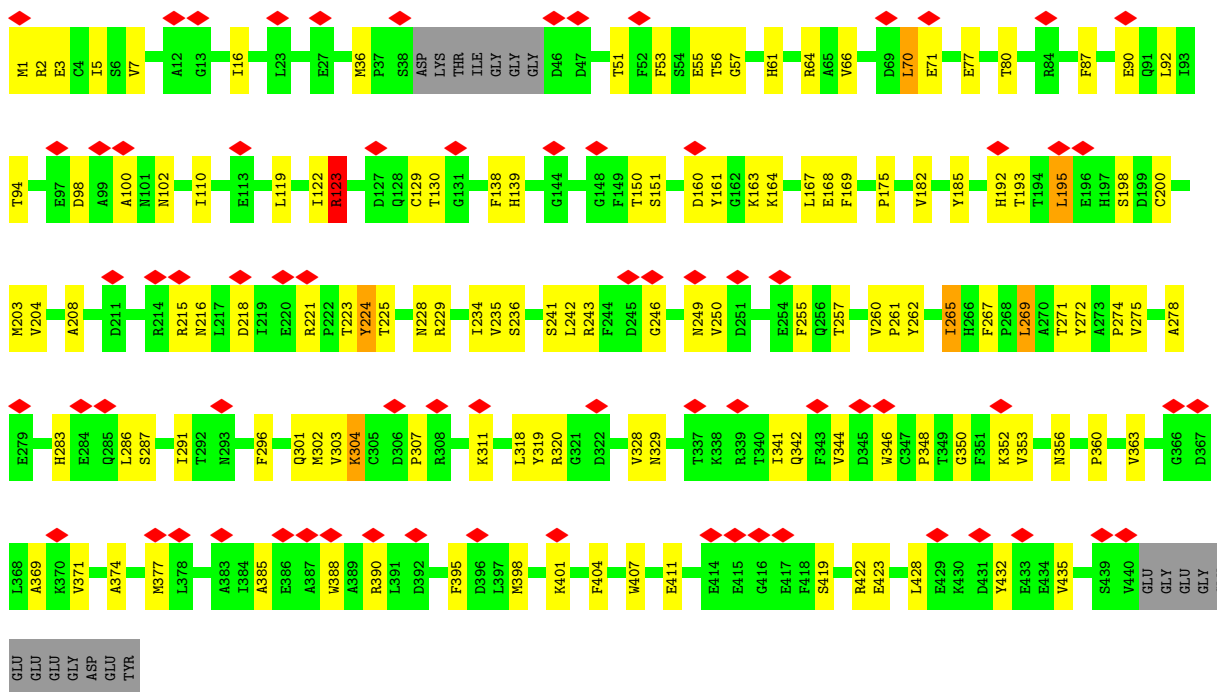


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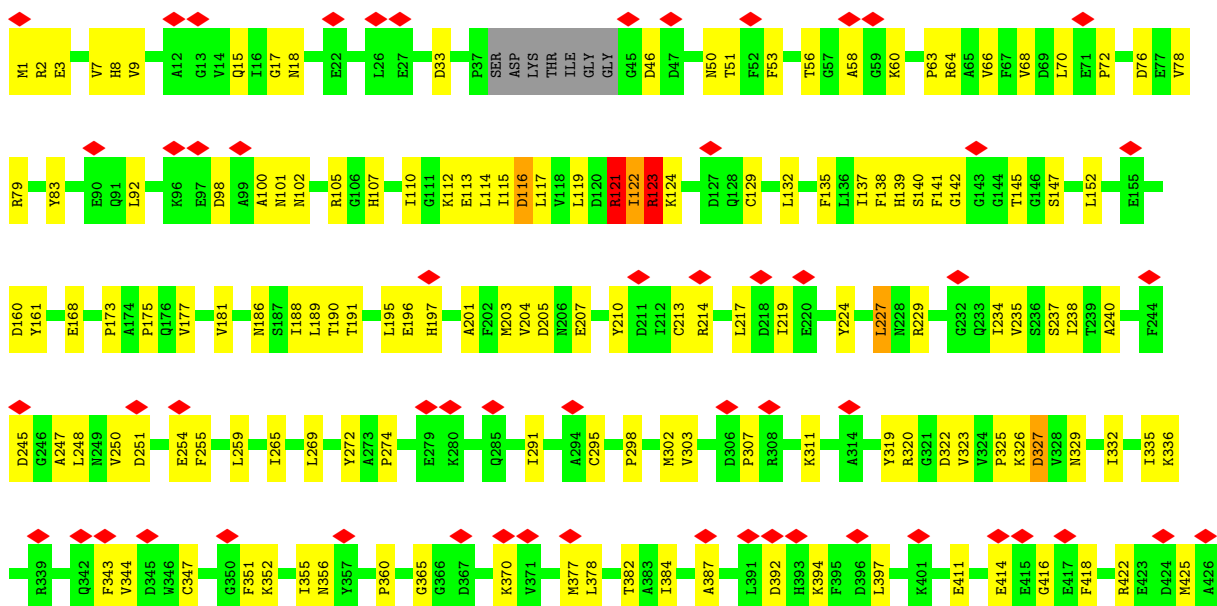


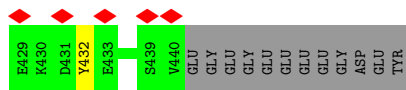


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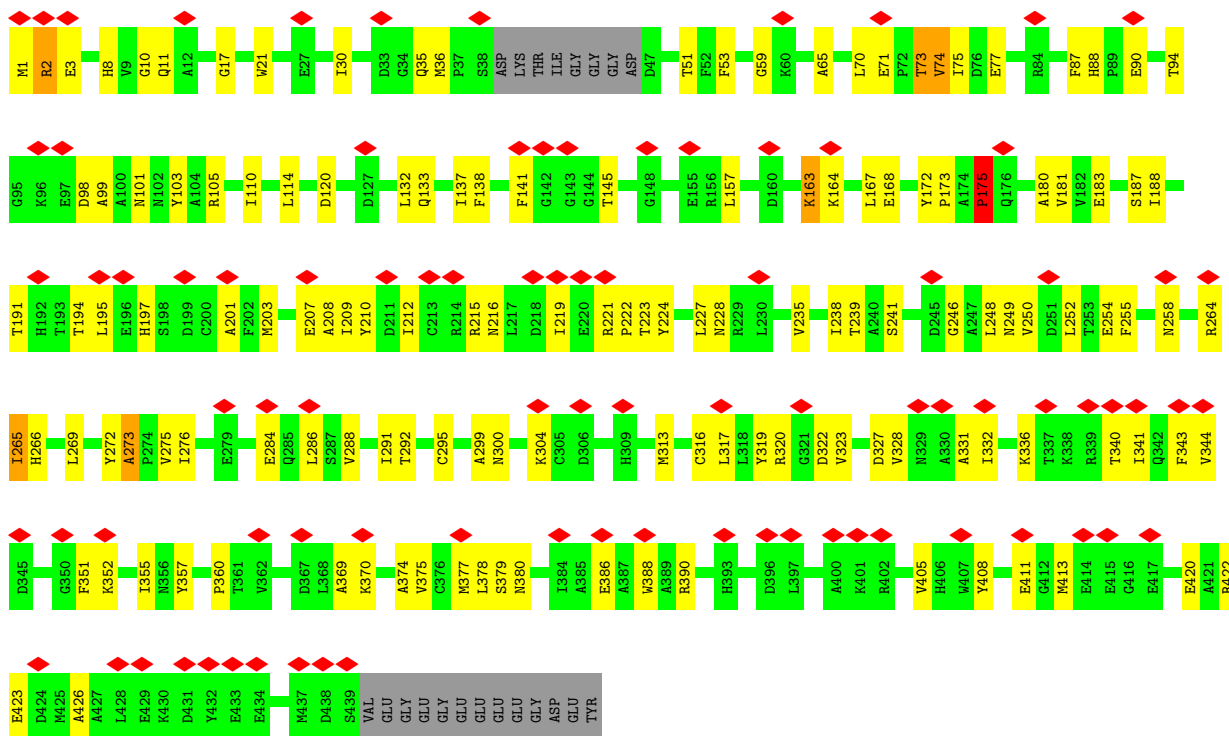


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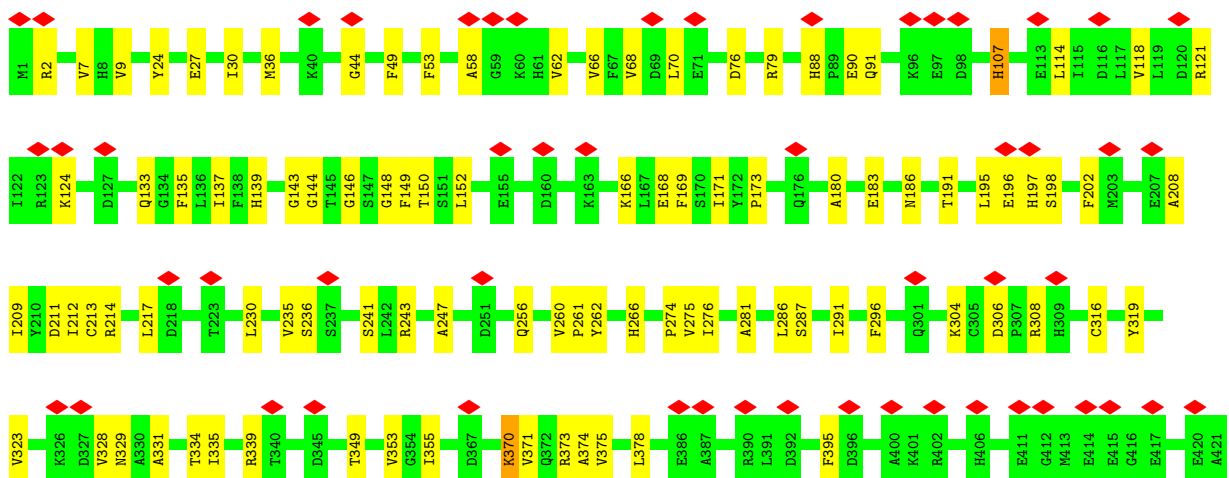
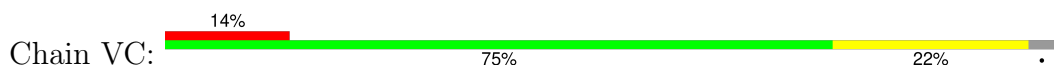


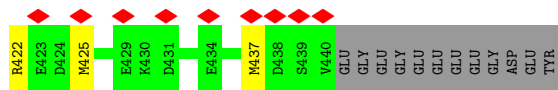


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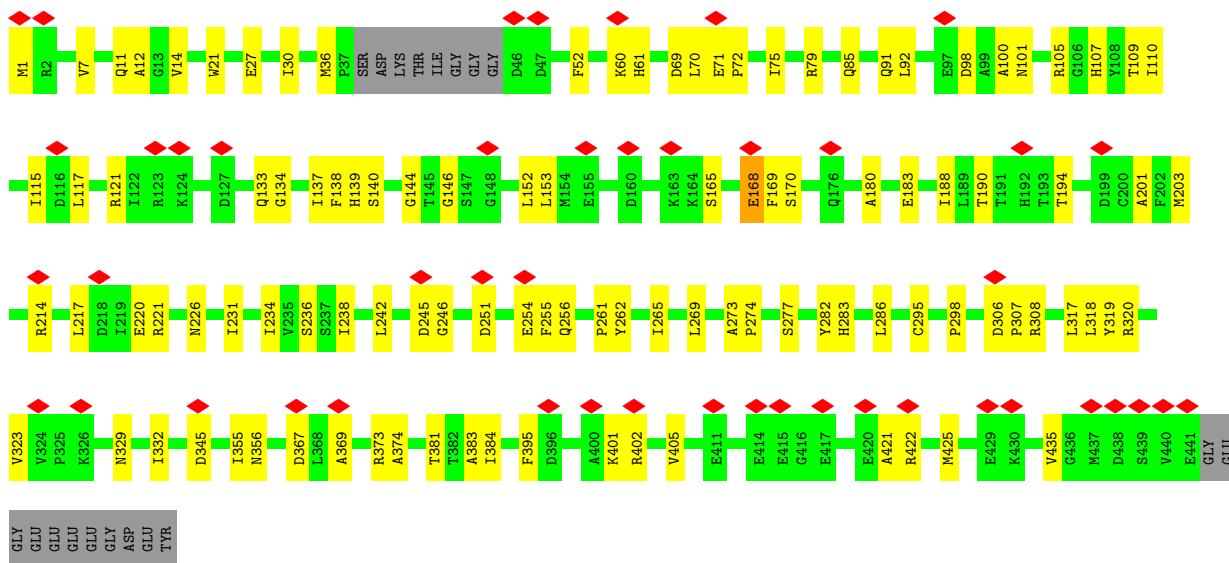
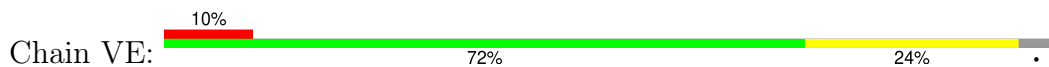


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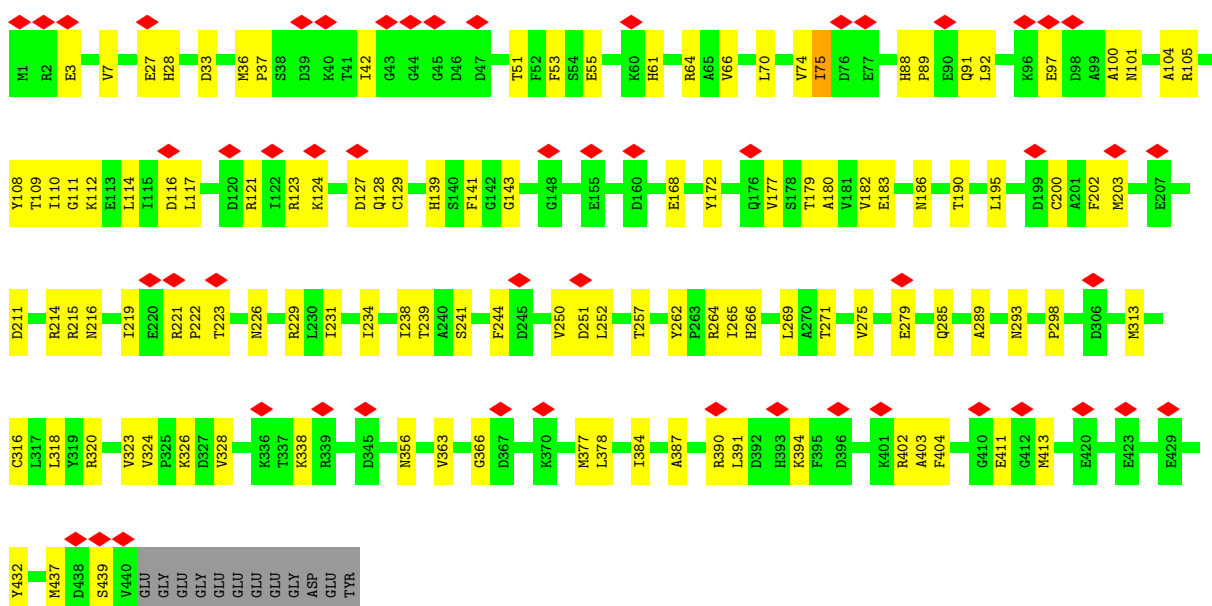




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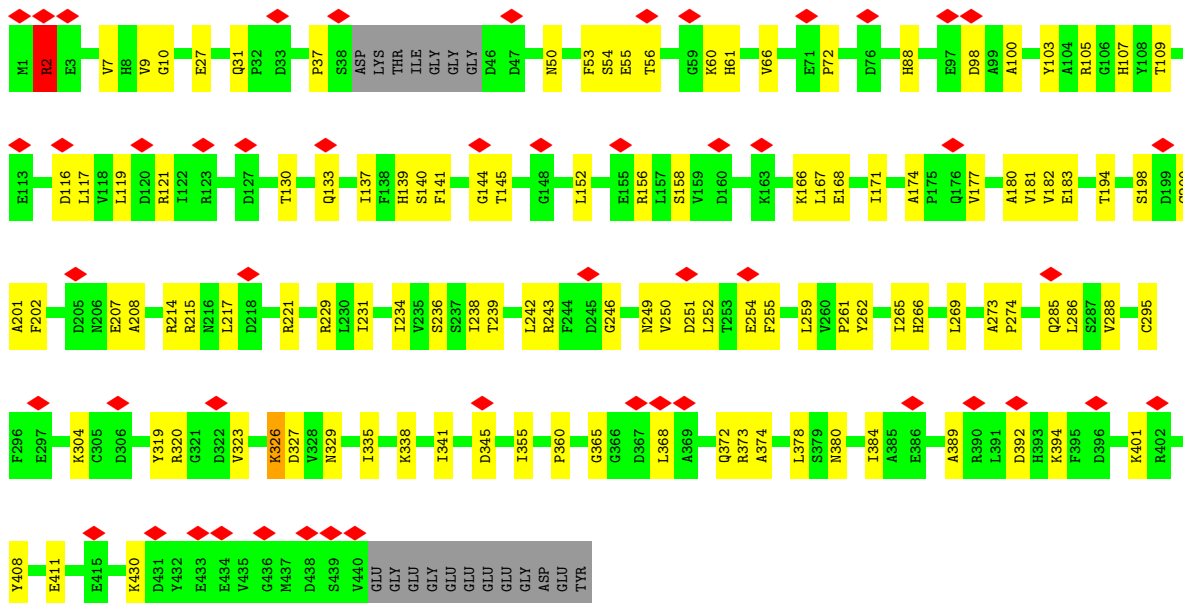


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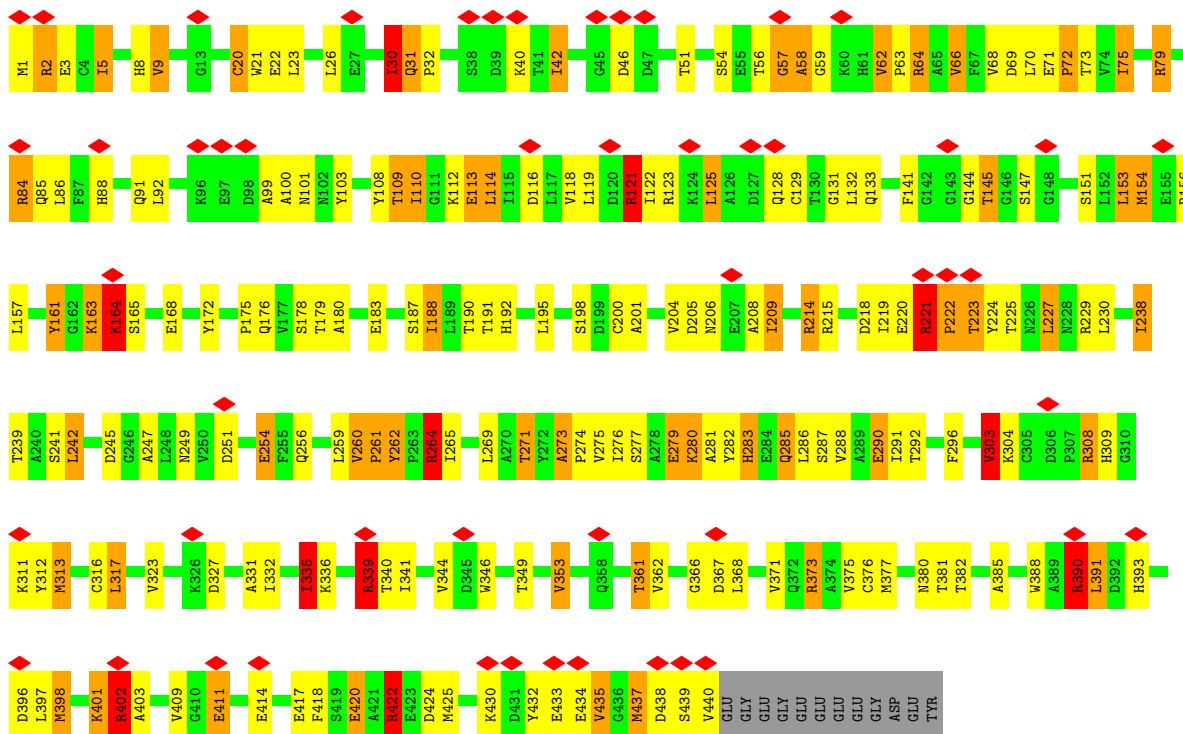


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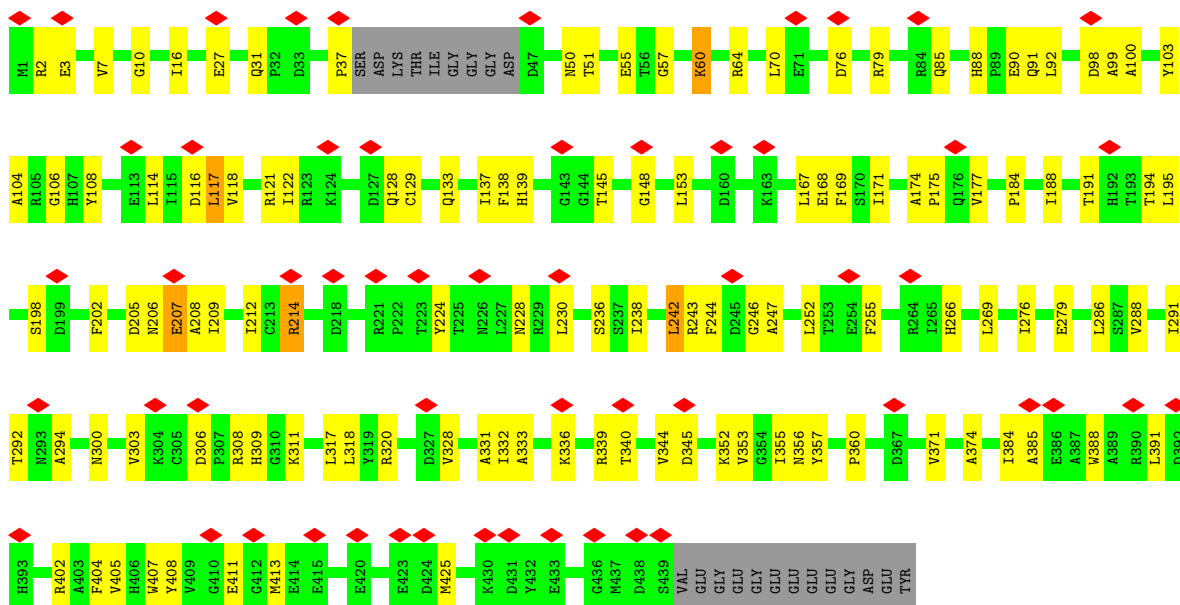


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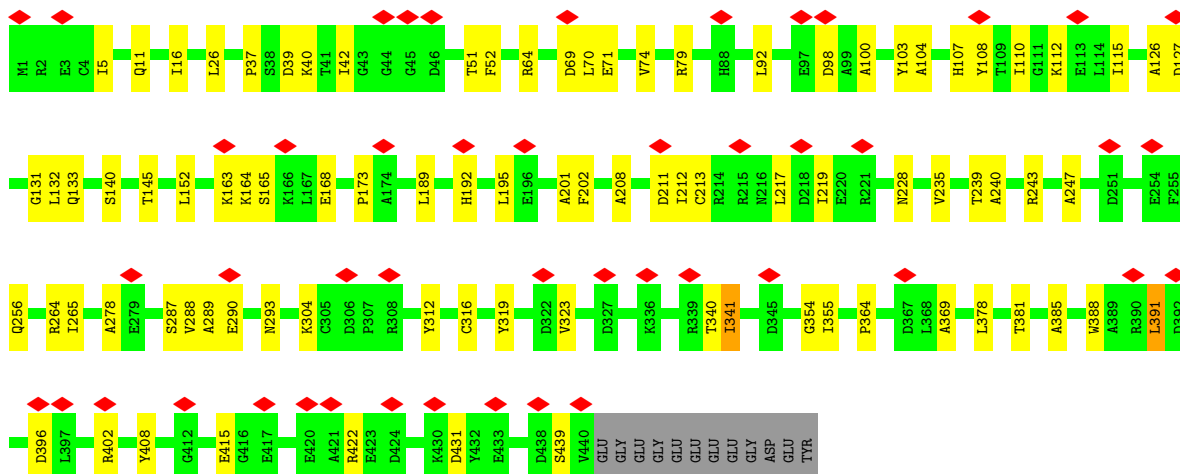
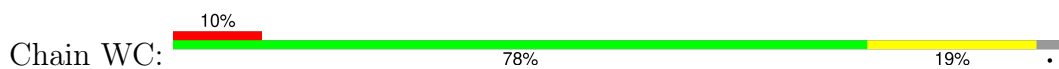


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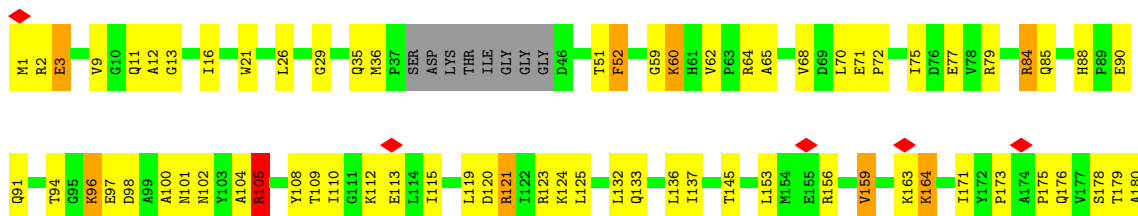


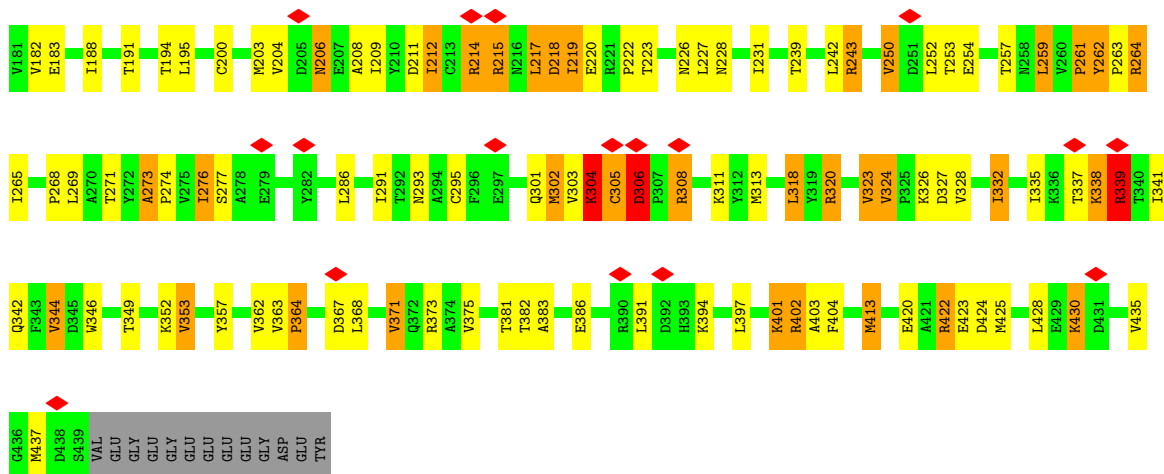


• Molecule 42: Tubulin alpha-1D chain

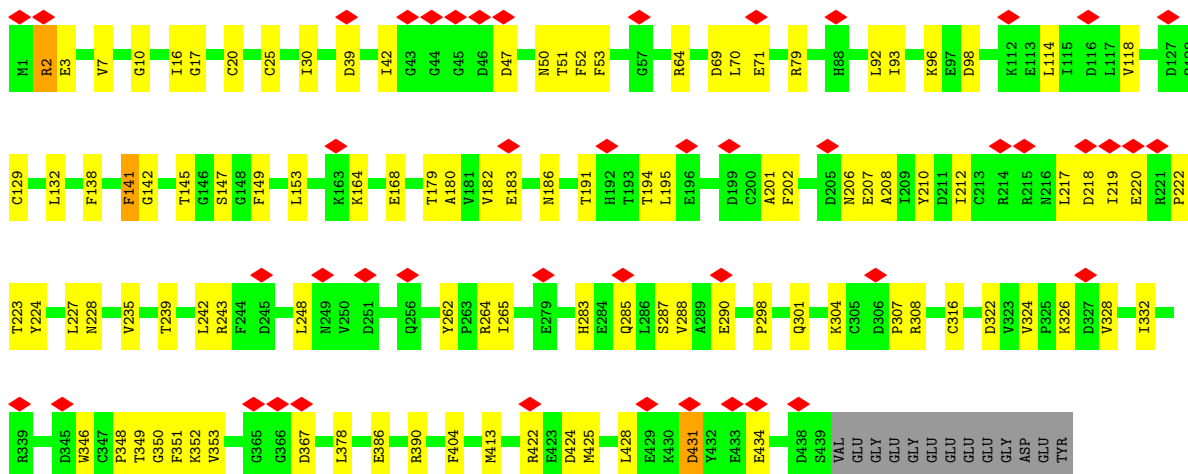
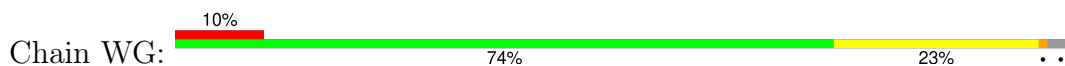


• Molecule 42: Tubulin alpha-1D chain

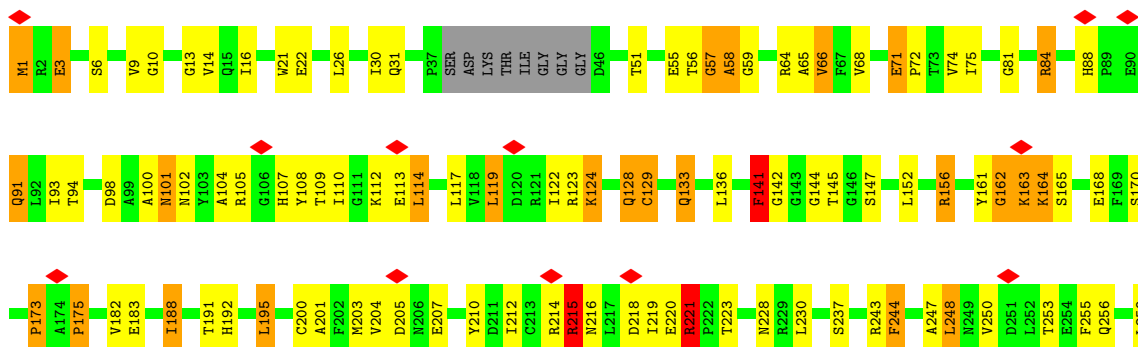


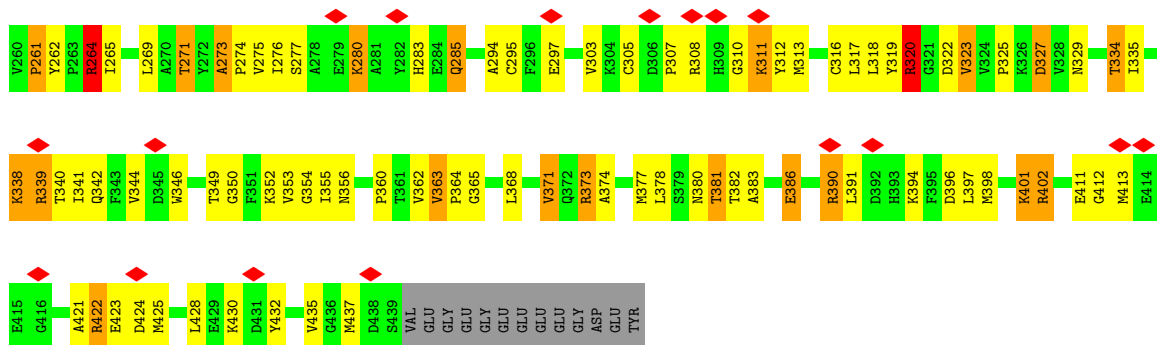


• Molecule 42: Tubulin alpha-1D chain

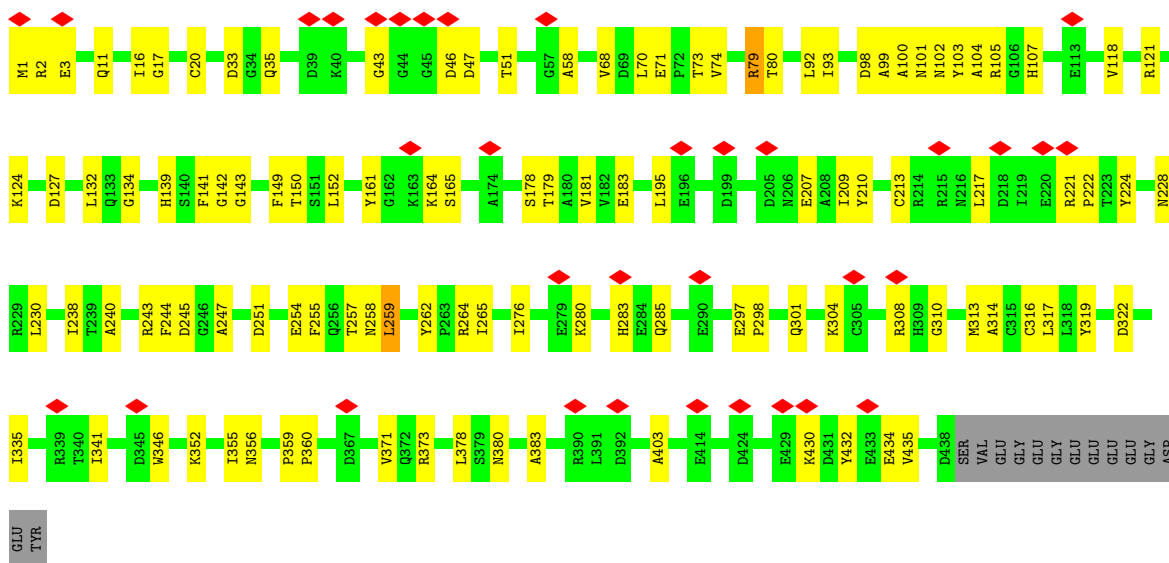
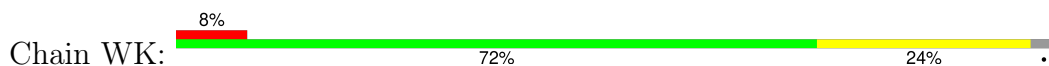


• Molecule 42: Tubulin alpha-1D chain

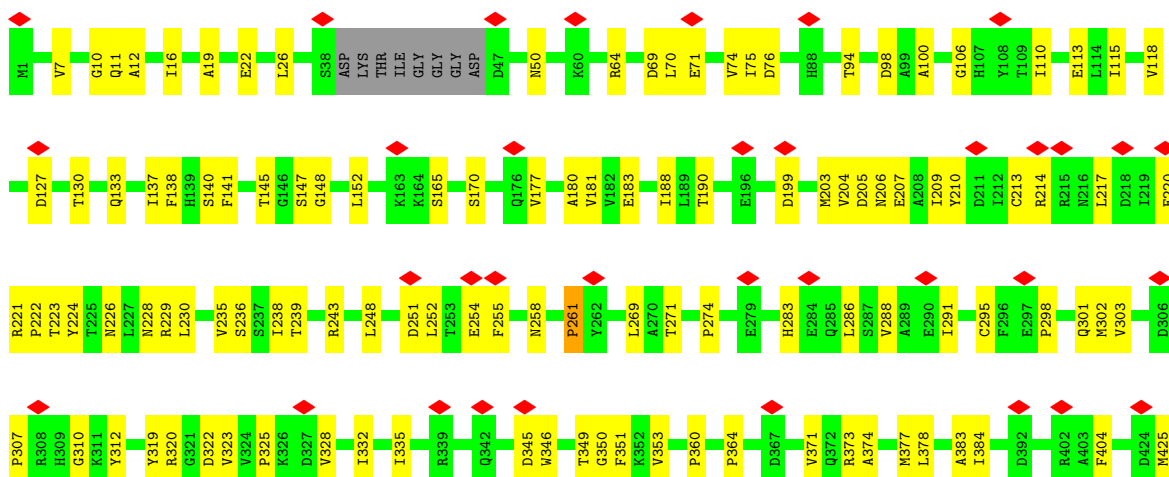
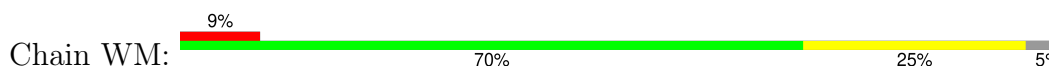


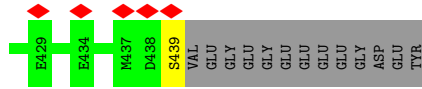


• Molecule 42: Tubulin alpha-1D chain



• Molecule 42: Tubulin alpha-1D chain





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	153589	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.542	Depositor
Minimum map value	0.000	Depositor
Average map value	0.011	Depositor
Map value standard deviation	0.078	Depositor
Recommended contour level	0.3	Depositor
Map size (\AA)	686.08, 686.08, 686.08	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.34, 1.34, 1.34	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: GTP, GDP, MG

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	1A	0.22	0/2435	0.37	0/3389
2	1D	0.44	0/1114	0.73	1/1488 (0.1%)
2	1E	0.45	0/1577	0.83	3/2102 (0.1%)
2	1F	0.30	0/701	0.73	0/930
3	1H	0.36	0/693	0.60	0/922
3	1I	0.34	0/3271	0.69	2/4333 (0.0%)
4	1K	0.34	0/1405	0.69	3/1922 (0.2%)
4	1L	0.36	0/276	0.66	0/372
5	1N	0.37	0/921	0.70	2/1253 (0.2%)
5	1O	0.30	0/938	0.60	0/1276
5	1P	0.32	0/957	0.61	0/1302
6	1R	0.32	0/801	0.63	0/1073
7	1T	0.31	0/2105	0.64	0/2851
7	1U	0.32	0/2105	0.72	2/2851 (0.1%)
8	1W	0.65	0/1166	0.66	0/1565
8	1X	0.30	0/1565	0.65	1/2111 (0.0%)
8	1Y	0.30	0/1565	0.65	2/2111 (0.1%)
8	1Z	0.31	0/1565	0.77	4/2111 (0.2%)
8	2A	0.41	0/1565	0.71	2/2111 (0.1%)
8	2B	4.82	8/1565 (0.5%)	1.03	9/2111 (0.4%)
9	2D	3.11	6/3746 (0.2%)	0.75	11/5066 (0.2%)
9	2E	0.26	0/832	0.51	0/1122
10	2F	0.30	0/646	0.57	0/871
10	2G	0.33	0/646	0.62	0/871
10	2H	0.30	0/646	0.63	0/871
11	2J	0.35	0/1359	0.78	4/1811 (0.2%)
11	2K	0.39	0/2567	0.77	3/3392 (0.1%)
11	2L	0.33	0/2344	0.76	4/3111 (0.1%)
11	2M	0.40	2/1598 (0.1%)	0.78	5/2115 (0.2%)
12	2O	0.41	1/4812 (0.0%)	0.74	5/6515 (0.1%)
12	2P	0.36	0/4812	0.73	8/6515 (0.1%)
12	2Q	0.38	1/4812 (0.0%)	0.72	4/6515 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
13	2S	0.30	0/2089	0.66	1/2798 (0.0%)
13	2T	0.43	0/1706	0.67	0/2257
14	2V	0.25	0/298	0.57	0/402
14	2W	0.31	0/1800	0.71	1/2430 (0.0%)
14	2X	0.30	0/1754	0.69	3/2370 (0.1%)
14	2Y	0.32	0/1359	0.70	2/1842 (0.1%)
15	3A	0.42	0/1525	0.75	2/2064 (0.1%)
16	3C	0.44	0/1739	0.75	2/2338 (0.1%)
16	3D	0.32	0/547	0.59	0/739
17	3F	0.21	0/516	0.37	0/713
18	3H	0.24	0/480	0.43	0/668
19	3J	0.41	1/3656 (0.0%)	0.74	5/4945 (0.1%)
19	3K	0.35	0/3747	0.70	4/5069 (0.1%)
19	3L	0.35	0/3823	0.73	8/5172 (0.2%)
20	3N	0.35	0/2452	0.75	7/3310 (0.2%)
20	3O	0.33	0/4889	0.70	6/6578 (0.1%)
20	3P	0.31	0/4895	0.63	2/6590 (0.0%)
20	3Q	0.30	0/2450	0.63	0/3282
21	3S	0.42	0/573	0.54	0/771
21	3T	0.31	0/1982	0.64	3/2659 (0.1%)
21	3U	0.30	0/1982	0.62	3/2659 (0.1%)
21	3V	0.31	0/1733	0.59	2/2322 (0.1%)
22	3X	0.31	0/1047	0.62	0/1413
22	3Y	0.50	0/1153	0.77	1/1557 (0.1%)
22	3Z	0.96	4/1093 (0.4%)	1.35	7/1474 (0.5%)
22	4A	0.39	0/867	0.66	0/1170
22	4B	0.32	0/856	0.59	0/1153
22	4C	0.28	0/685	0.54	0/920
23	4D	0.36	0/1019	0.69	0/1379
24	4F	0.49	0/1268	0.64	0/1685
24	4G	0.38	0/2909	0.71	1/3853 (0.0%)
25	4I	0.28	0/2575	0.58	2/3508 (0.1%)
25	4J	0.36	0/3011	0.68	1/4065 (0.0%)
26	4K	0.37	0/1114	0.78	4/1495 (0.3%)
26	4L	0.36	0/1933	0.75	2/2595 (0.1%)
26	4M	0.29	0/886	0.72	3/1189 (0.3%)
27	4O	0.31	0/1810	0.61	0/2446
27	4P	0.29	0/1810	0.62	1/2446 (0.0%)
27	4Q	0.38	1/1810 (0.1%)	0.70	2/2446 (0.1%)
27	4R	0.67	0/1810	0.65	0/2446
27	4S	0.29	0/1810	0.63	1/2446 (0.0%)
27	4T	0.40	0/1810	0.60	1/2446 (0.0%)
28	4V	0.34	0/312	0.66	0/424

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
28	4W	0.33	0/676	0.69	0/918
29	4Y	0.59	2/802 (0.2%)	0.74	1/1094 (0.1%)
30	5A	0.30	0/2949	0.65	1/3937 (0.0%)
30	5B	0.26	0/136	0.57	0/183
31	5D	0.25	0/1284	0.53	0/1731
31	5E	0.36	0/1278	0.59	0/1724
31	5F	0.26	0/1301	0.52	0/1753
31	5G	0.28	0/1284	0.62	1/1731 (0.1%)
31	5H	0.38	3/1284 (0.2%)	0.55	0/1731
31	5I	0.24	0/1284	0.46	0/1731
31	5J	0.27	0/1284	0.51	0/1731
32	5L	0.40	0/951	0.67	2/1279 (0.2%)
32	5M	0.32	0/3270	0.63	1/4403 (0.0%)
32	5N	0.30	0/3270	0.64	5/4403 (0.1%)
32	5O	0.64	0/2445	0.63	0/3290
33	5Q	0.36	0/917	0.67	0/1244
33	5R	0.42	3/3290 (0.1%)	0.68	4/4434 (0.1%)
33	5S	0.47	0/3290	0.64	2/4434 (0.0%)
33	5T	0.63	0/2523	0.66	0/3388
33	5V	0.41	0/2541	0.80	2/3414 (0.1%)
33	5W	0.36	0/3378	0.73	3/4552 (0.1%)
33	5X	0.41	0/3378	0.79	10/4552 (0.2%)
33	5Y	0.45	0/892	0.71	0/1210
34	6A	0.64	0/2272	0.72	0/3060
34	6B	0.40	0/3230	0.71	3/4355 (0.1%)
34	6C	0.65	0/3241	0.63	0/4369
34	6D	0.63	0/999	0.63	0/1347
34	6E	0.67	1/489 (0.2%)	0.65	0/656
34	6F	0.37	0/2930	0.66	2/3947 (0.1%)
34	6G	0.34	0/3432	0.65	6/4630 (0.1%)
34	6H	0.40	0/3031	0.72	8/4086 (0.2%)
34	6I	0.47	0/542	0.68	0/734
34	6J	0.33	0/571	0.68	2/780 (0.3%)
34	6K	0.32	0/3071	0.64	0/4147
34	6L	0.39	1/3462 (0.0%)	0.61	1/4675 (0.0%)
34	6M	0.34	0/2957	0.63	1/3983 (0.0%)
34	6N	0.32	0/447	0.74	1/600 (0.2%)
35	6P	0.34	0/1520	0.61	1/2050 (0.0%)
35	6Q	0.45	4/3415 (0.1%)	0.66	3/4600 (0.1%)
35	6R	0.46	1/3415 (0.0%)	0.74	4/4600 (0.1%)
35	6S	0.47	0/2076	0.63	1/2791 (0.0%)
35	6T	0.35	0/1936	0.72	2/2601 (0.1%)
35	6U	0.34	0/3465	0.67	2/4671 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	6V	0.41	0/3625	0.69	4/4886 (0.1%)
35	6W	0.42	0/1799	0.69	2/2427 (0.1%)
36	6Y	0.31	0/1318	0.64	1/1783 (0.1%)
36	6Z	0.28	0/1318	0.55	0/1783
37	7C	0.43	0/923	0.96	1/1247 (0.1%)
37	7D	0.41	0/642	0.90	3/877 (0.3%)
37	7E	0.34	0/640	0.72	0/862
37	7F	0.48	0/539	0.60	0/731
38	7H	0.40	0/657	0.88	1/892 (0.1%)
38	7I	0.51	0/245	0.71	0/333
39	7K	0.41	0/900	0.64	0/1209
39	7L	0.32	0/396	0.68	1/538 (0.2%)
40	7N	0.38	0/534	0.76	2/721 (0.3%)
41	AB	0.37	0/3500	0.69	5/4742 (0.1%)
41	AD	0.35	1/3500 (0.0%)	0.62	2/4742 (0.0%)
41	AF	0.31	0/3500	0.62	1/4742 (0.0%)
41	AH	0.66	0/3500	0.67	0/4742
41	AJ	0.38	0/3500	0.59	0/4742
41	AL	0.65	0/3500	0.70	0/4742
41	BB	0.33	0/3431	0.67	3/4649 (0.1%)
41	BD	0.66	0/3431	0.68	0/4649
41	BF	0.31	0/3436	0.59	0/4656
41	BH	0.37	1/3431 (0.0%)	0.62	1/4649 (0.0%)
41	BJ	0.37	0/3431	0.66	5/4649 (0.1%)
41	BL	2.79	6/3415 (0.2%)	0.71	6/4628 (0.1%)
41	CB	0.39	3/3423 (0.1%)	0.72	7/4638 (0.2%)
41	CD	0.66	0/3423	0.68	0/4638
41	CF	0.66	0/3436	0.69	0/4656
41	CH	0.36	0/3431	0.71	9/4649 (0.2%)
41	CJ	0.66	0/3436	0.68	0/4656
41	CL	0.37	0/3415	0.70	3/4628 (0.1%)
41	DB	0.43	0/3423	0.81	5/4638 (0.1%)
41	DD	0.40	0/3423	0.74	3/4638 (0.1%)
41	DF	0.44	0/3423	0.83	10/4638 (0.2%)
41	DH	0.67	0/3423	0.70	0/4638
41	DJ	0.66	0/3423	0.69	0/4638
41	DL	0.47	0/3415	0.74	4/4628 (0.1%)
41	ED	0.66	0/3423	0.69	0/4638
41	EF	0.39	0/3423	0.77	7/4638 (0.2%)
41	EH	0.38	0/3436	0.82	6/4656 (0.1%)
41	EJ	0.49	3/3423 (0.1%)	0.84	11/4638 (0.2%)
41	EL	0.49	0/3415	0.78	8/4628 (0.2%)
41	FD	0.66	0/3431	0.68	0/4649

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
41	FF	0.41	1/3423 (0.0%)	0.73	5/4638 (0.1%)
41	FH	0.42	0/3423	0.77	4/4638 (0.1%)
41	FJ	0.41	0/3423	0.73	5/4638 (0.1%)
41	FL	0.66	0/3415	0.68	0/4628
41	GD	0.65	0/3431	0.70	0/4649
41	GF	0.36	1/3436 (0.0%)	0.71	6/4656 (0.1%)
41	GH	0.38	0/3436	0.72	4/4656 (0.1%)
41	GJ	0.65	0/3436	0.68	0/4656
41	GL	0.32	0/3415	0.66	1/4628 (0.0%)
41	HB	0.41	1/3423 (0.0%)	0.75	6/4638 (0.1%)
41	HD	0.65	0/3431	0.66	0/4649
41	HF	0.41	0/3436	0.74	4/4656 (0.1%)
41	HH	0.40	0/3431	0.74	7/4649 (0.2%)
41	HJ	0.65	0/3436	0.67	0/4656
41	HL	0.37	0/3415	0.71	3/4628 (0.1%)
41	ID	0.33	0/3431	0.66	1/4649 (0.0%)
41	IF	0.36	1/3436 (0.0%)	0.64	0/4656
41	IH	0.34	0/3431	0.64	2/4649 (0.0%)
41	IJ	0.45	3/3436 (0.1%)	0.67	3/4656 (0.1%)
41	IL	0.38	0/3423	0.69	3/4638 (0.1%)
41	IN	0.62	1/3436 (0.0%)	1.07	15/4656 (0.3%)
41	JD	0.46	1/3431 (0.0%)	0.72	7/4649 (0.2%)
41	JF	0.35	0/3423	0.70	7/4638 (0.2%)
41	JH	0.37	0/3423	0.70	2/4638 (0.0%)
41	JJ	0.35	0/3423	0.72	5/4638 (0.1%)
41	JL	0.65	0/3423	0.68	0/4638
41	KD	0.36	0/3436	0.75	12/4656 (0.3%)
41	KF	0.34	0/3431	0.59	1/4649 (0.0%)
41	KH	0.32	0/3443	0.59	1/4666 (0.0%)
41	KJ	0.33	0/3423	0.62	3/4638 (0.1%)
41	KL	0.33	0/3443	0.61	2/4666 (0.0%)
41	KN	0.32	0/3436	0.61	0/4656
41	LD	0.65	0/3431	0.69	0/4649
41	LF	0.30	0/3436	0.57	0/4656
41	LH	0.32	0/3436	0.59	0/4656
41	LJ	0.35	0/3436	0.63	5/4656 (0.1%)
41	LL	0.32	0/3423	0.63	4/4638 (0.1%)
41	LN	0.29	0/3436	0.59	2/4656 (0.0%)
41	MD	0.65	0/3423	0.69	0/4638
41	MF	0.65	0/3436	0.69	0/4656
41	MH	0.31	0/3436	0.62	0/4656
41	MJ	0.36	0/3423	0.65	3/4638 (0.1%)
41	ML	0.40	0/3423	0.74	4/4638 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
41	MN	0.66	0/3423	0.69	0/4638
41	NB	0.65	0/3436	0.70	0/4656
41	ND	0.65	0/3431	0.71	0/4649
41	NF	0.66	0/3431	0.70	1/4649 (0.0%)
41	NH	0.65	0/3436	0.69	1/4656 (0.0%)
41	NJ	0.41	0/3436	0.69	1/4656 (0.0%)
41	NL	0.38	0/3188	0.76	8/4316 (0.2%)
41	OB	0.66	0/3414	0.67	0/4626
41	OD	0.39	0/3401	0.78	6/4608 (0.1%)
41	OF	0.43	0/3414	0.76	9/4626 (0.2%)
41	OH	0.65	0/3436	0.71	0/4656
41	OJ	0.65	0/3436	0.69	0/4656
41	OL	0.39	0/3401	0.76	5/4608 (0.1%)
41	PB	0.65	0/3431	0.72	1/4649 (0.0%)
41	PD	0.65	0/3431	0.71	0/4649
41	PF	0.65	0/3436	0.71	0/4656
41	PH	0.67	0/3436	1.07	16/4656 (0.3%)
41	PJ	0.65	0/3436	1.03	5/4656 (0.1%)
41	PL	0.64	0/3415	0.70	0/4628
41	QB	0.39	0/3436	0.78	8/4656 (0.2%)
41	QD	0.39	1/3431 (0.0%)	0.81	9/4649 (0.2%)
41	QF	0.39	0/3436	0.76	7/4656 (0.2%)
41	QH	0.65	0/3436	0.74	0/4656
41	QJ	0.65	0/3436	0.74	1/4656 (0.0%)
41	QL	0.65	0/3423	0.71	0/4638
41	RB	0.39	1/3436 (0.0%)	0.79	8/4656 (0.2%)
41	RD	0.65	0/3431	0.71	0/4649
41	RF	0.66	0/3436	0.74	0/4656
41	RH	0.43	0/3436	0.74	3/4656 (0.1%)
41	RJ	0.66	0/3436	0.71	0/4656
41	RL	0.41	0/3423	0.81	8/4638 (0.2%)
41	SD	0.44	1/3431 (0.0%)	0.91	10/4649 (0.2%)
41	SF	0.65	0/3436	0.71	0/4656
41	SH	0.43	3/3436 (0.1%)	0.83	9/4656 (0.2%)
41	SJ	0.42	1/3436 (0.0%)	0.79	6/4656 (0.1%)
41	SL	0.65	0/3423	0.71	0/4638
41	TD	0.38	0/3431	0.81	12/4649 (0.3%)
41	TF	0.46	2/3436 (0.1%)	0.82	3/4656 (0.1%)
41	TH	0.38	0/3436	0.77	8/4656 (0.2%)
41	TJ	0.44	0/3436	0.76	4/4656 (0.1%)
41	TL	0.42	1/3423 (0.0%)	0.82	10/4638 (0.2%)
41	UD	0.42	0/3431	0.73	5/4649 (0.1%)
41	UF	0.39	0/3436	0.72	2/4656 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
41	UH	0.39	0/3436	0.74	6/4656 (0.1%)
41	UJ	0.43	0/3436	0.87	12/4656 (0.3%)
41	UL	0.54	5/3423 (0.1%)	0.79	5/4638 (0.1%)
41	VD	0.38	0/3431	0.74	4/4649 (0.1%)
41	VF	0.42	0/3431	0.70	5/4649 (0.1%)
41	VH	0.40	0/3436	0.72	3/4656 (0.1%)
41	VJ	0.43	0/3436	0.73	3/4656 (0.1%)
41	VL	0.34	0/3423	0.67	4/4638 (0.1%)
41	WD	0.36	0/3431	0.68	3/4649 (0.1%)
41	WF	0.65	0/3423	0.70	0/4638
41	WH	0.65	0/3423	0.69	0/4638
41	WJ	0.36	0/3423	0.65	4/4638 (0.1%)
41	WL	0.36	0/3423	0.67	2/4638 (0.0%)
41	WN	0.36	0/3423	0.67	2/4638 (0.0%)
42	AC	0.31	0/3515	0.61	1/4771 (0.0%)
42	AE	0.36	0/3515	0.64	3/4771 (0.1%)
42	AG	0.38	0/3515	0.62	1/4771 (0.0%)
42	AI	0.66	0/3515	0.65	0/4771
42	AK	0.66	0/3515	0.69	0/4771
42	BC	0.36	1/3515 (0.0%)	0.68	3/4771 (0.1%)
42	BE	0.35	0/3473	0.66	3/4714 (0.1%)
42	BG	0.39	1/3515 (0.0%)	0.67	5/4771 (0.1%)
42	BI	0.65	0/3451	0.68	0/4684
42	BK	0.32	0/3508	0.63	2/4761 (0.0%)
42	CC	0.66	0/3502	0.68	0/4753
42	CE	0.34	0/3502	0.66	5/4753 (0.1%)
42	CG	0.66	0/3508	0.69	0/4761
42	CI	0.33	0/3508	0.65	1/4761 (0.0%)
42	CK	0.40	0/3508	0.72	8/4761 (0.2%)
42	CM	0.71	6/3508 (0.2%)	0.90	12/4761 (0.3%)
42	DC	0.43	0/3443	0.77	4/4673 (0.1%)
42	DE	0.39	1/3449 (0.0%)	0.77	8/4681 (0.2%)
42	DG	0.41	1/3456 (0.0%)	0.72	1/4691 (0.0%)
42	DI	0.40	0/3441	0.76	7/4670 (0.1%)
42	DK	0.66	0/3449	0.69	0/4681
42	DM	0.44	2/3449 (0.1%)	0.81	7/4681 (0.1%)
42	EC	0.45	1/3508 (0.0%)	0.83	6/4761 (0.1%)
42	EE	0.67	0/3524	0.68	0/4783
42	EG	0.66	0/3481	0.70	0/4724
42	EI	0.84	7/3486 (0.2%)	0.81	11/4732 (0.2%)
42	EK	0.66	0/3515	0.69	1/4771 (0.0%)
42	EM	0.66	0/3435	0.67	1/4662 (0.0%)
42	FC	0.66	0/3456	0.65	0/4691

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
42	FE	0.43	0/3415	0.73	2/4635 (0.0%)
42	FG	0.41	1/3423 (0.0%)	0.72	5/4647 (0.1%)
42	FI	0.40	0/3422	0.68	2/4644 (0.0%)
42	FK	0.67	0/3401	0.67	0/4617
42	FM	0.44	1/3441 (0.0%)	0.75	6/4669 (0.1%)
42	GC	0.34	0/3515	0.66	2/4771 (0.0%)
42	GE	0.35	0/3448	0.64	1/4680 (0.0%)
42	GG	0.35	0/3470	0.65	2/4710 (0.0%)
42	GI	0.36	0/3442	0.66	1/4672 (0.0%)
42	GK	0.33	0/3440	0.68	2/4668 (0.0%)
42	GM	0.66	0/3508	0.66	0/4761
42	HC	0.65	0/3427	0.65	0/4651
42	HE	0.42	0/3451	0.73	6/4684 (0.1%)
42	HG	0.66	0/3448	0.67	0/4680
42	HI	0.66	0/3448	0.69	0/4680
42	HK	0.45	0/3456	0.74	2/4691 (0.0%)
42	HM	0.66	0/3441	0.66	2/4669 (0.0%)
42	IC	0.34	0/3442	0.65	1/4672 (0.0%)
42	IE	0.65	0/3465	0.69	0/4703
42	IG	0.37	1/3515 (0.0%)	0.67	3/4771 (0.1%)
42	II	0.36	0/3464	0.65	0/4702
42	IK	0.38	0/3515	0.71	2/4771 (0.0%)
42	IM	0.40	1/3455 (0.0%)	0.68	3/4689 (0.1%)
42	JC	0.41	0/3460	0.75	7/4695 (0.1%)
42	JE	0.41	1/3449 (0.0%)	0.67	4/4681 (0.1%)
42	JG	0.35	0/3435	0.66	5/4662 (0.1%)
42	JI	0.36	0/3443	0.69	2/4673 (0.0%)
42	JK	0.66	0/3515	0.67	0/4771
42	JM	0.65	0/3449	0.69	0/4681
42	KC	0.31	0/3461	0.57	0/4697
42	KE	0.30	0/3457	0.59	1/4692 (0.0%)
42	KG	0.33	0/3447	0.61	4/4678 (0.1%)
42	KI	0.33	0/3435	0.62	4/4662 (0.1%)
42	KK	0.35	0/3449	0.62	6/4681 (0.1%)
42	KM	0.65	0/3453	0.68	0/4686
42	LC	0.35	1/3470 (0.0%)	0.60	3/4710 (0.1%)
42	LE	0.31	0/3515	0.60	2/4771 (0.0%)
42	LG	0.34	1/3470 (0.0%)	0.59	3/4710 (0.1%)
42	LI	0.33	1/3474 (0.0%)	0.62	4/4715 (0.1%)
42	LK	0.32	0/3478	0.61	2/4720 (0.0%)
42	LM	0.38	0/3455	0.62	3/4689 (0.1%)
42	MC	0.39	0/3508	0.68	3/4761 (0.1%)
42	ME	0.34	0/3443	0.63	0/4673

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
42	MG	0.65	0/3449	0.68	0/4681
42	MI	0.32	0/3456	0.61	2/4691 (0.0%)
42	MK	0.50	1/3515 (0.0%)	0.80	9/4771 (0.2%)
42	MM	0.40	0/3453	0.73	4/4687 (0.1%)
42	NA	0.65	0/3449	0.69	0/4682
42	NC	0.66	0/3442	0.67	0/4672
42	NE	0.34	0/3451	0.69	2/4684 (0.0%)
42	NG	0.65	0/3464	0.70	0/4702
42	NI	0.65	0/3464	0.71	0/4702
42	NK	0.65	0/3451	0.71	0/4684
42	OA	0.40	0/3435	0.77	6/4663 (0.1%)
42	OC	0.41	2/3443 (0.1%)	0.74	3/4673 (0.1%)
42	OE	0.52	2/3473 (0.1%)	0.85	9/4714 (0.2%)
42	OG	0.65	0/3468	0.69	0/4707
42	OI	0.41	0/3464	0.74	4/4702 (0.1%)
42	OK	0.36	0/3457	0.73	4/4692 (0.1%)
42	PA	0.65	0/2931	0.70	0/3977
42	PC	0.66	0/3463	0.73	0/4700
42	PE	0.64	0/3457	0.72	0/4692
42	PG	0.66	0/3448	1.14	22/4680 (0.5%)
42	PI	0.66	0/3425	1.04	14/4648 (0.3%)
42	PK	0.65	0/3448	0.70	0/4680
42	QC	0.46	1/3449 (0.0%)	0.90	4/4681 (0.1%)
42	QE	0.39	0/3449	0.82	8/4681 (0.2%)
42	QG	0.42	0/3457	0.78	5/4692 (0.1%)
42	QI	0.65	0/3443	0.73	0/4673
42	QK	0.65	0/3457	0.71	0/4692
42	RC	0.68	3/3464 (0.1%)	0.90	10/4702 (0.2%)
42	RE	0.42	0/3435	0.74	1/4662 (0.0%)
42	RG	0.46	1/3448 (0.0%)	0.78	5/4679 (0.1%)
42	RI	0.39	0/3456	0.78	5/4691 (0.1%)
42	RK	0.41	0/3456	0.78	5/4691 (0.1%)
42	SC	0.39	0/3448	0.76	2/4679 (0.0%)
42	SE	0.65	0/3457	0.72	0/4691
42	SG	0.46	0/3456	0.81	7/4691 (0.1%)
42	SI	0.65	0/3434	0.71	0/4661
42	SK	0.42	2/3464 (0.1%)	0.77	3/4702 (0.1%)
42	SM	0.40	0/3455	0.78	5/4689 (0.1%)
42	TC	0.75	3/3448 (0.1%)	0.90	7/4680 (0.1%)
42	TE	0.42	0/3465	0.73	4/4703 (0.1%)
42	TG	0.38	1/3448 (0.0%)	0.79	10/4680 (0.2%)
42	TI	0.66	0/3448	0.73	1/4680 (0.0%)
42	TK	0.66	0/3464	0.71	0/4702

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
42	TM	0.42	1/3449 (0.0%)	0.80	9/4681 (0.2%)
42	UC	0.65	0/3470	0.70	0/4710
42	UE	0.44	1/3465 (0.0%)	0.77	0/4703
42	UG	0.45	0/3470	0.72	4/4710 (0.1%)
42	UI	0.37	0/3470	0.71	5/4710 (0.1%)
42	UK	0.46	0/3468	0.78	7/4707 (0.1%)
42	UM	0.42	0/3455	0.77	6/4689 (0.1%)
42	VC	0.35	0/3515	0.68	3/4771 (0.1%)
42	VE	0.45	3/3473 (0.1%)	0.72	4/4714 (0.1%)
42	VG	0.42	2/3515 (0.1%)	0.67	2/4771 (0.0%)
42	VI	0.37	0/3470	0.68	3/4710 (0.1%)
42	VK	0.65	0/3515	0.69	0/4771
42	VM	0.40	1/3449 (0.0%)	0.70	3/4681 (0.1%)
42	WC	0.36	0/3515	0.66	2/4771 (0.0%)
42	WE	0.65	0/3457	0.70	0/4692
42	WG	0.38	0/3508	0.69	4/4761 (0.1%)
42	WI	0.65	0/3457	0.68	0/4692
42	WK	0.32	0/3502	0.63	2/4753 (0.0%)
42	WM	0.34	0/3455	0.72	5/4689 (0.1%)
All	All	0.56	129/1148355 (0.0%)	0.71	1083/1555321 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	1D	0	4
2	1E	0	4
3	1I	0	1
6	1R	0	1
7	1T	0	1
7	1U	0	1
8	1W	0	10
8	1X	0	1
8	2A	0	5
8	2B	0	1
9	2D	0	3
11	2J	0	1
11	2K	0	4
11	2M	0	1
12	2O	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
12	2P	0	1
13	2S	0	1
13	2T	0	6
14	2V	0	1
14	2W	0	2
14	2X	0	1
15	3A	0	3
16	3C	0	3
19	3J	0	2
19	3K	0	1
19	3L	0	2
20	3N	0	3
20	3O	0	3
20	3Q	0	1
21	3U	0	1
22	3Y	0	3
22	4B	0	1
24	4F	0	7
27	4R	0	6
27	4T	0	2
28	4W	0	1
29	4Y	0	1
30	5A	0	1
31	5D	0	1
32	5O	0	20
33	5R	0	1
33	5S	0	14
33	5T	0	17
33	5V	0	5
33	5W	0	2
33	5X	0	2
33	5Y	0	5
34	6A	0	18
34	6B	0	5
34	6C	0	20
34	6D	0	8
34	6E	0	5
34	6F	0	1
34	6H	0	4
34	6L	0	1
35	6R	0	8
35	6S	0	10

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Mol	Chain	#Chirality outliers	#Planarity outliers
35	6V	0	7
35	6W	0	2
36	6Z	0	1
37	7C	0	3
37	7D	0	1
37	7F	0	1
38	7H	0	2
41	AH	0	17
41	AL	0	18
41	BD	0	19
41	CD	0	17
41	CF	0	17
41	CH	0	2
41	CJ	0	19
41	CL	0	1
41	DF	0	1
41	DH	0	18
41	DJ	0	17
41	DL	0	4
41	ED	0	18
41	EF	0	1
41	EH	0	3
41	EJ	0	3
41	EL	0	5
41	FD	0	17
41	FF	0	4
41	FH	0	1
41	FL	0	20
41	GD	0	20
41	GF	0	2
41	GJ	0	20
41	GL	0	1
41	HB	0	2
41	HD	0	15
41	HF	0	1
41	HH	0	2
41	HJ	0	17
41	HL	0	2
41	ID	0	1
41	IF	0	1
41	IJ	0	2
41	IL	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
41	IN	0	15
41	JD	0	2
41	JL	0	18
41	KD	0	2
41	KJ	0	1
41	KN	0	1
41	LD	0	15
41	LJ	0	1
41	MD	0	18
41	MF	0	21
41	MH	0	1
41	MJ	0	1
41	ML	0	1
41	MN	0	19
41	NB	0	18
41	ND	0	15
41	NF	0	17
41	NH	0	20
41	NJ	0	1
41	NL	0	1
41	OB	0	17
41	OD	0	1
41	OF	0	1
41	OH	0	19
41	OJ	0	16
41	OL	0	3
41	PB	0	18
41	PD	0	21
41	PF	0	15
41	PH	0	19
41	PJ	0	18
41	PL	0	17
41	QB	0	1
41	QD	0	1
41	QF	0	1
41	QH	0	21
41	QJ	0	16
41	QL	0	18
41	RB	0	2
41	RD	0	21
41	RF	0	15
41	RH	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
41	RJ	0	18
41	RL	0	1
41	SD	0	2
41	SF	0	17
41	SH	0	4
41	SJ	0	2
41	SL	0	17
41	TD	0	1
41	TF	0	1
41	TH	0	2
41	TJ	0	4
41	UD	0	1
41	UF	0	2
41	UH	0	1
41	UL	0	1
41	VD	0	1
41	VF	0	1
41	VH	0	1
41	VJ	0	4
41	WD	0	1
41	WF	0	17
41	WH	0	19
41	WJ	0	3
42	AI	0	18
42	AK	0	16
42	BC	0	1
42	BE	0	1
42	BI	0	20
42	CC	0	14
42	CG	0	16
42	CK	0	3
42	CM	0	2
42	DC	0	3
42	DG	0	1
42	DI	0	3
42	DK	0	18
42	DM	0	1
42	EC	0	3
42	EE	0	14
42	EG	0	10
42	EI	0	2
42	EK	0	14

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Mol	Chain	#Chirality outliers	#Planarity outliers
42	EM	0	17
42	FC	0	19
42	FE	0	1
42	FG	0	1
42	FI	0	1
42	FK	0	18
42	FM	0	1
42	GC	0	2
42	GE	0	1
42	GK	0	2
42	GM	0	15
42	HC	0	17
42	HG	0	15
42	HI	0	17
42	HK	0	1
42	HM	0	19
42	IC	0	1
42	IE	0	17
42	IG	0	1
42	IK	0	1
42	IM	0	1
42	JC	0	2
42	JI	0	4
42	JK	0	17
42	JM	0	16
42	KM	0	16
42	LI	0	1
42	LK	0	1
42	MC	0	1
42	MG	0	17
42	MM	0	2
42	NA	0	15
42	NC	0	15
42	NE	0	1
42	NG	0	13
42	NI	0	12
42	NK	0	17
42	OA	0	1
42	OC	0	1
42	OE	0	1
42	OG	0	21
42	PA	0	15

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Mol	Chain	#Chirality outliers	#Planarity outliers
42	PC	0	17
42	PE	0	17
42	PG	0	18
42	PI	0	16
42	PK	0	20
42	QC	0	1
42	QE	0	2
42	QI	0	19
42	QK	0	19
42	RI	0	1
42	RK	0	1
42	SC	0	1
42	SE	0	15
42	SG	0	2
42	SI	0	18
42	SK	0	1
42	SM	0	1
42	TC	0	1
42	TG	0	2
42	TI	0	15
42	TK	0	16
42	TM	0	1
42	UC	0	16
42	UE	0	2
42	UG	0	3
42	UI	0	1
42	UK	0	4
42	VC	0	1
42	VG	0	1
42	VI	0	1
42	VK	0	18
42	VM	0	1
42	WC	0	1
42	WE	0	17
42	WI	0	16
42	WK	0	1
All	All	0	1942

The worst 5 of 129 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	2D	567	TYR	CD2-CE2	104.46	2.96	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	2B	15	TYR	CD1-CE1	103.98	2.95	1.39
9	2D	567	TYR	CD1-CE1	101.76	2.92	1.39
8	2B	15	TYR	CD2-CE2	101.38	2.91	1.39
41	BL	281	TYR	CD2-CE2	89.68	2.73	1.39

The worst 5 of 1083 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	TC	261	PRO	N-CD-CG	-32.13	55.01	103.20
41	IN	276	ARG	CD-NE-CZ	29.54	164.96	123.60
8	2B	164	ARG	CD-NE-CZ	28.16	163.03	123.60
42	CM	173	PRO	CB-CG-CD	-27.29	0.07	106.50
42	QC	268	PRO	N-CD-CG	-27.15	62.48	103.20

There are no chirality outliers.

5 of 1942 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1D	150	ARG	Sidechain
2	1D	151	ARG	Sidechain
2	1D	187	ARG	Sidechain
2	1D	222	ARG	Sidechain
2	1E	150	ARG	Sidechain

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	1A	2437	0	1166	0	0
2	1D	1109	0	1132	15	0
2	1E	1569	0	1624	24	0
2	1F	698	0	735	12	0
3	1H	685	0	684	3	0
3	1I	3234	0	3300	13	0
4	1K	1348	0	1323	11	0
4	1L	269	0	267	3	0
5	1N	894	0	894	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	1O	910	0	914	10	0
5	1P	928	0	925	5	0
6	1R	785	0	787	5	0
7	1T	2055	0	2024	11	0
7	1U	2055	0	2024	11	0
8	1W	1143	0	1162	0	0
8	1X	1532	0	1559	8	0
8	1Y	1532	0	1559	5	0
8	1Z	1532	0	1559	5	0
8	2A	1532	0	1559	11	0
8	2B	1532	0	1559	5	0
9	2D	3649	0	3628	96	0
9	2E	816	0	802	4	0
10	2F	631	0	605	7	0
10	2G	631	0	605	5	0
10	2H	631	0	605	9	0
11	2J	1349	0	1408	8	0
11	2K	2554	0	2614	12	0
11	2L	2330	0	2400	18	0
11	2M	1589	0	1624	7	0
12	2O	4713	0	4699	6	0
12	2P	4713	0	4699	5	0
12	2Q	4713	0	4699	8	0
13	2S	2081	0	1873	19	0
13	2T	1694	0	1714	13	0
14	2V	287	0	270	3	0
14	2W	1756	0	1756	11	0
14	2X	1711	0	1706	13	0
14	2Y	1327	0	1334	13	0
15	3A	1487	0	1428	17	0
16	3C	1693	0	1653	36	0
16	3D	531	0	532	8	0
17	3F	520	0	221	0	0
18	3H	481	0	216	0	0
19	3J	3563	0	3513	49	0
19	3K	3652	0	3604	77	0
19	3L	3726	0	3675	74	0
20	3N	2388	0	2308	60	0
20	3O	4781	0	4714	95	0
20	3P	4787	0	4707	88	0
20	3Q	2409	0	2414	26	0
21	3S	563	0	565	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
21	3T	1939	0	2008	29	0
21	3U	1939	0	2008	27	0
21	3V	1696	0	1761	28	0
22	3X	1014	0	974	19	0
22	3Y	1116	0	1085	41	0
22	3Z	1059	0	1008	31	0
22	4A	840	0	810	30	0
22	4B	830	0	795	16	0
22	4C	667	0	637	24	0
23	4D	992	0	974	27	0
24	4F	1261	0	1276	44	0
24	4G	2883	0	2934	54	0
25	4I	2533	0	2088	32	0
25	4J	2947	0	2927	60	0
26	4K	1102	0	1103	27	0
26	4L	1911	0	1935	45	0
26	4M	876	0	903	22	0
27	4O	1767	0	1777	32	0
27	4P	1767	0	1777	22	0
27	4Q	1767	0	1777	34	0
27	4R	1767	0	1777	62	0
27	4S	1767	0	1777	15	0
27	4T	1767	0	1777	31	0
28	4V	304	0	287	14	0
28	4W	654	0	616	16	0
29	4Y	775	0	745	23	0
30	5A	2915	0	2907	67	0
30	5B	133	0	110	6	0
31	5D	1260	0	1246	24	0
31	5E	1254	0	1235	23	0
31	5F	1277	0	1270	8	0
31	5G	1260	0	1246	29	0
31	5H	1260	0	1246	17	0
31	5I	1260	0	1246	6	0
31	5J	1260	0	1246	25	0
32	5L	943	0	978	22	0
32	5M	3231	0	3294	69	0
32	5N	3231	0	3294	56	0
32	5O	2414	0	2445	71	0
33	5Q	901	0	878	25	0
33	5R	3250	0	3272	65	0
33	5S	3250	0	3272	89	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
33	5T	2498	0	2529	78	0
33	5V	2513	0	2534	97	0
33	5W	3336	0	3348	95	0
33	5X	3336	0	3348	92	0
33	5Y	877	0	846	12	0
34	6A	2240	0	2185	123	0
34	6B	3189	0	3161	102	0
34	6C	3200	0	3174	116	0
34	6D	992	0	1015	43	0
34	6E	487	0	509	28	0
34	6F	2896	0	2894	62	0
34	6G	3386	0	3351	74	0
34	6H	2989	0	2948	70	0
34	6I	531	0	508	8	0
34	6J	553	0	512	13	0
34	6K	3022	0	2962	56	0
34	6L	3411	0	3370	87	0
34	6M	2923	0	2929	69	0
34	6N	445	0	463	14	0
35	6P	1491	0	1389	21	0
35	6Q	3364	0	3303	60	0
35	6R	3364	0	3303	66	0
35	6S	2057	0	2109	48	0
35	6T	1917	0	1965	51	0
35	6U	3413	0	3327	76	0
35	6V	3571	0	3522	99	0
35	6W	1766	0	1683	59	0
36	6Y	1300	0	1065	13	0
36	6Z	1300	0	1065	11	0
37	7C	898	0	885	65	0
37	7D	618	0	637	25	0
37	7E	625	0	614	30	0
37	7F	519	0	497	26	0
38	7H	637	0	600	44	0
38	7I	238	0	215	14	0
39	7K	878	0	850	11	0
39	7L	382	0	368	7	0
40	7N	524	0	492	13	0
41	AB	3424	0	3291	83	0
41	AD	3424	0	3293	79	0
41	AF	3424	0	3291	67	0
41	AH	3424	0	3293	125	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	AJ	3424	0	3293	66	0
41	AL	3424	0	3293	73	0
41	BB	3356	0	3237	57	0
41	BD	3356	0	3240	134	0
41	BF	3361	0	3245	62	0
41	BH	3356	0	3240	78	0
41	BJ	3356	0	3240	77	0
41	BL	3340	0	3223	77	0
41	CB	3348	0	3236	84	0
41	CD	3348	0	3236	125	0
41	CF	3361	0	3245	153	0
41	CH	3356	0	3240	92	0
41	CJ	3361	0	3245	146	0
41	CL	3340	0	3224	108	0
41	DB	3348	0	3234	110	0
41	DD	3348	0	3235	99	0
41	DF	3348	0	3236	101	0
41	DH	3348	0	3236	239	0
41	DJ	3348	0	3236	261	0
41	DL	3340	0	3223	122	0
41	ED	3348	0	3236	206	0
41	EF	3348	0	3236	115	0
41	EH	3361	0	3243	106	0
41	EJ	3348	0	3235	120	0
41	EL	3340	0	3224	117	0
41	FD	3356	0	3240	169	0
41	FF	3348	0	3234	108	0
41	FH	3348	0	3236	125	0
41	FJ	3348	0	3236	146	0
41	FL	3340	0	3223	185	0
41	GD	3356	0	3240	109	0
41	GF	3361	0	3244	75	0
41	GH	3361	0	3245	80	0
41	GJ	3361	0	3245	148	0
41	GL	3340	0	3224	72	0
41	HB	3348	0	3236	81	0
41	HD	3356	0	3240	165	0
41	HF	3361	0	3245	101	0
41	HH	3356	0	3238	108	0
41	HJ	3361	0	3245	157	0
41	HL	3340	0	3224	84	0
41	ID	3356	0	3240	88	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	IF	3361	0	3244	96	0
41	IH	3356	0	3240	68	0
41	IJ	3361	0	3245	76	0
41	IL	3348	0	3236	98	0
41	IN	3361	0	3245	187	0
41	JD	3356	0	3239	84	0
41	JF	3348	0	3236	71	0
41	JH	3348	0	3235	80	0
41	JJ	3348	0	3236	89	0
41	JL	3348	0	3236	90	0
41	KD	3361	0	3244	93	0
41	KF	3356	0	3239	67	0
41	KH	3368	0	3252	73	0
41	KJ	3348	0	3235	66	0
41	KL	3368	0	3252	74	0
41	KN	3361	0	3245	59	0
41	LD	3356	0	3240	78	0
41	LF	3361	0	3243	45	0
41	LH	3361	0	3245	54	0
41	LJ	3361	0	3245	57	0
41	LL	3348	0	3236	66	0
41	LN	3361	0	3245	62	0
41	MD	3348	0	3236	132	0
41	MF	3361	0	3245	90	0
41	MH	3361	0	3245	59	0
41	MJ	3348	0	3236	78	0
41	ML	3348	0	3236	111	0
41	MN	3348	0	3236	130	0
41	NB	3361	0	3245	111	0
41	ND	3356	0	3240	107	0
41	NF	3356	0	3240	95	0
41	NH	3361	0	3245	96	0
41	NJ	3361	0	3245	79	0
41	NL	3118	0	3001	81	0
41	OB	3339	0	3228	179	0
41	OD	3327	0	3218	100	0
41	OF	3339	0	3227	92	0
41	OH	3361	0	3245	107	0
41	OJ	3361	0	3245	113	0
41	OL	3327	0	3219	95	0
41	PB	3356	0	3240	150	0
41	PD	3356	0	3240	129	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	PF	3361	0	3245	137	0
41	PH	3361	0	3245	258	0
41	PJ	3361	0	3245	216	0
41	PL	3340	0	3224	177	0
41	QB	3361	0	3245	104	0
41	QD	3356	0	3240	108	0
41	QF	3361	0	3244	106	0
41	QH	3361	0	3245	168	0
41	QJ	3361	0	3245	161	0
41	QL	3348	0	3236	188	0
41	RB	3361	0	3244	113	0
41	RD	3356	0	3240	158	0
41	RF	3361	0	3245	188	0
41	RH	3361	0	3245	101	0
41	RJ	3361	0	3245	153	0
41	RL	3348	0	3236	88	0
41	SD	3356	0	3239	107	0
41	SF	3361	0	3245	140	0
41	SH	3361	0	3243	118	0
41	SJ	3361	0	3244	88	0
41	SL	3348	0	3236	159	0
41	TD	3356	0	3240	103	0
41	TF	3361	0	3245	110	0
41	TH	3361	0	3245	107	0
41	TJ	3361	0	3245	121	0
41	TL	3348	0	3236	114	0
41	UD	3356	0	3238	107	0
41	UF	3361	0	3244	83	0
41	UH	3361	0	3245	96	0
41	UJ	3361	0	3243	109	0
41	UL	3348	0	3236	113	0
41	VD	3356	0	3240	87	0
41	VF	3356	0	3240	94	0
41	VH	3361	0	3244	87	0
41	VJ	3361	0	3244	70	0
41	VL	3348	0	3236	88	0
41	WD	3356	0	3240	60	0
41	WF	3348	0	3236	97	0
41	WH	3348	0	3236	86	0
41	WJ	3348	0	3236	85	0
41	WL	3348	0	3236	75	0
41	WN	3348	0	3236	71	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	AC	3437	0	3349	55	0
42	AE	3437	0	3349	63	0
42	AG	3437	0	3349	75	0
42	AI	3437	0	3349	131	0
42	AK	3437	0	3349	133	0
42	BC	3437	0	3349	92	0
42	BE	3396	0	3305	70	0
42	BG	3437	0	3349	75	0
42	BI	3374	0	3285	136	0
42	BK	3430	0	3340	68	0
42	CC	3424	0	3335	166	0
42	CE	3424	0	3335	89	0
42	CG	3430	0	3340	181	0
42	CI	3430	0	3340	88	0
42	CK	3430	0	3340	79	0
42	CM	3430	0	3340	94	0
42	DC	3366	0	3281	99	0
42	DE	3372	0	3286	100	0
42	DG	3379	0	3295	83	0
42	DI	3364	0	3282	114	0
42	DK	3372	0	3286	203	0
42	DM	3372	0	3285	92	0
42	EC	3430	0	3340	110	0
42	EE	3446	0	3355	177	0
42	EG	3404	0	3321	211	0
42	EI	3408	0	3322	105	0
42	EK	3437	0	3349	223	0
42	EM	3358	0	3277	187	0
42	FC	3379	0	3295	170	0
42	FE	3339	0	3258	115	0
42	FG	3346	0	3264	104	0
42	FI	3347	0	3270	125	0
42	FK	3326	0	3250	206	0
42	FM	3365	0	3279	140	0
42	GC	3437	0	3349	82	0
42	GE	3371	0	3291	74	0
42	GG	3393	0	3304	71	0
42	GI	3365	0	3285	86	0
42	GK	3364	0	3283	106	0
42	GM	3430	0	3340	155	0
42	HC	3350	0	3273	188	0
42	HE	3374	0	3285	104	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	HG	3371	0	3291	176	0
42	HI	3371	0	3291	151	0
42	HK	3379	0	3295	127	0
42	HM	3365	0	3279	143	0
42	IC	3365	0	3286	63	0
42	IE	3388	0	3301	99	0
42	IG	3437	0	3349	78	0
42	II	3387	0	3299	80	0
42	IK	3437	0	3348	96	0
42	IM	3378	0	3291	80	0
42	JC	3384	0	3295	72	0
42	JE	3372	0	3285	76	0
42	JG	3358	0	3277	64	0
42	JI	3366	0	3281	70	0
42	JK	3437	0	3349	157	0
42	JM	3372	0	3286	91	0
42	KC	3384	0	3293	41	0
42	KE	3380	0	3290	52	0
42	KG	3370	0	3284	66	0
42	KI	3358	0	3277	59	0
42	KK	3372	0	3286	63	0
42	KM	3376	0	3286	75	0
42	LC	3393	0	3304	57	0
42	LE	3437	0	3349	63	0
42	LG	3393	0	3304	51	0
42	LI	3397	0	3307	54	0
42	LK	3401	0	3310	56	0
42	LM	3378	0	3291	57	0
42	MC	3430	0	3340	94	0
42	ME	3366	0	3281	60	0
42	MG	3372	0	3286	82	0
42	MI	3379	0	3295	63	0
42	MK	3437	0	3349	125	0
42	MM	3376	0	3281	116	0
42	NA	3372	0	3278	98	0
42	NC	3365	0	3286	156	0
42	NE	3374	0	3292	70	0
42	NG	3387	0	3299	93	0
42	NI	3387	0	3299	126	0
42	NK	3374	0	3285	125	0
42	OA	3358	0	3269	95	0
42	OC	3366	0	3281	99	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	OE	3396	0	3305	114	0
42	OG	3391	0	3302	95	0
42	OI	3387	0	3299	91	0
42	OK	3380	0	3289	102	0
42	PA	2872	0	2816	166	0
42	PC	3386	0	3295	170	0
42	PE	3380	0	3297	149	0
42	PG	3371	0	3291	257	0
42	PI	3349	0	3263	244	0
42	PK	3371	0	3291	137	0
42	QC	3372	0	3286	105	0
42	QE	3372	0	3285	105	0
42	QG	3380	0	3290	119	0
42	QI	3366	0	3281	163	0
42	QK	3380	0	3290	139	0
42	RC	3387	0	3299	109	0
42	RE	3358	0	3275	100	0
42	RG	3372	0	3288	119	0
42	RI	3379	0	3295	117	0
42	RK	3379	0	3295	127	0
42	SC	3372	0	3288	127	0
42	SE	3381	0	3294	149	0
42	SG	3379	0	3295	96	0
42	SI	3358	0	3267	144	0
42	SK	3387	0	3298	119	0
42	SM	3378	0	3291	118	0
42	TC	3371	0	3291	101	0
42	TE	3388	0	3301	110	0
42	TG	3371	0	3290	119	0
42	TI	3371	0	3291	152	0
42	TK	3387	0	3299	137	0
42	TM	3372	0	3286	154	0
42	UC	3393	0	3304	118	0
42	UE	3388	0	3301	100	0
42	UG	3393	0	3304	95	0
42	UI	3393	0	3303	97	0
42	UK	3391	0	3302	95	0
42	UM	3378	0	3291	99	0
42	VC	3437	0	3349	64	0
42	VE	3396	0	3305	77	0
42	VG	3437	0	3349	83	0
42	VI	3393	0	3304	80	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	VK	3437	0	3349	115	0
42	VM	3372	0	3286	86	0
42	WC	3437	0	3349	54	0
42	WE	3380	0	3290	88	0
42	WG	3430	0	3340	70	0
42	WI	3380	0	3290	88	0
42	WK	3424	0	3335	72	0
42	WM	3378	0	3291	81	0
43	AB	28	0	11	0	0
43	AD	28	0	12	0	0
43	AF	28	0	12	1	0
43	AH	28	0	12	0	0
43	AJ	28	0	12	1	0
43	AL	28	0	12	0	0
43	BB	28	0	10	0	0
43	BD	28	0	12	0	0
43	BF	28	0	12	1	0
43	BH	28	0	12	0	0
43	BJ	28	0	12	1	0
43	BL	28	0	12	0	0
43	CB	28	0	12	2	0
43	CD	28	0	12	0	0
43	CF	28	0	12	3	0
43	CH	28	0	12	0	0
43	CJ	28	0	12	1	0
43	CL	28	0	12	0	0
43	DB	28	0	12	0	0
43	DD	28	0	12	2	0
43	DF	28	0	12	1	0
43	DH	28	0	12	3	0
43	DJ	28	0	12	1	0
43	DL	28	0	11	1	0
43	ED	28	0	12	2	0
43	EF	28	0	12	2	0
43	EH	28	0	12	3	0
43	EJ	28	0	11	1	0
43	EL	28	0	12	0	0
43	FD	28	0	12	3	0
43	FF	28	0	10	2	0
43	FH	28	0	12	3	0
43	FJ	28	0	12	0	0
43	FL	28	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	GD	28	0	12	0	0
43	GF	28	0	12	3	0
43	GH	28	0	12	0	0
43	GJ	28	0	12	1	0
43	GL	28	0	12	2	0
43	HB	28	0	12	1	0
43	HD	28	0	12	2	0
43	HF	28	0	12	0	0
43	HH	28	0	11	4	0
43	HJ	28	0	12	0	0
43	HL	28	0	12	0	0
43	ID	28	0	12	3	0
43	IF	28	0	12	3	0
43	IH	28	0	11	2	0
43	IJ	28	0	12	2	0
43	IL	28	0	11	2	0
43	IN	28	0	12	0	0
43	JD	28	0	11	1	0
43	JF	28	0	12	2	0
43	JH	28	0	12	3	0
43	JJ	28	0	12	0	0
43	JL	28	0	12	1	0
43	KD	28	0	12	1	0
43	KF	28	0	12	0	0
43	KG	28	0	11	1	0
43	KJ	28	0	12	0	0
43	KL	28	0	12	0	0
43	KN	28	0	12	1	0
43	LD	28	0	12	1	0
43	LF	28	0	12	1	0
43	LH	28	0	12	1	0
43	LJ	28	0	12	0	0
43	LL	28	0	12	2	0
43	LN	28	0	12	2	0
43	MD	28	0	12	2	0
43	MF	28	0	12	0	0
43	MH	28	0	12	1	0
43	MJ	28	0	12	0	0
43	ML	28	0	12	2	0
43	MN	28	0	12	1	0
43	NB	28	0	12	0	0
43	ND	28	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	NF	28	0	12	0	0
43	NH	28	0	12	0	0
43	NJ	28	0	12	1	0
43	NL	28	0	12	1	0
43	OB	28	0	12	0	0
43	OD	28	0	12	1	0
43	OF	28	0	12	0	0
43	OH	28	0	12	1	0
43	OJ	28	0	12	1	0
43	OL	28	0	11	0	0
43	PB	28	0	12	1	0
43	PD	28	0	12	0	0
43	PF	28	0	12	0	0
43	PH	28	0	12	2	0
43	PJ	28	0	12	2	0
43	PL	28	0	12	1	0
43	QB	28	0	12	3	0
43	QD	28	0	12	0	0
43	QF	28	0	12	1	0
43	QH	28	0	12	1	0
43	QJ	28	0	12	2	0
43	QL	28	0	12	2	0
43	RB	28	0	12	2	0
43	RD	28	0	12	1	0
43	RF	28	0	12	1	0
43	RH	28	0	12	0	0
43	RJ	28	0	12	2	0
43	RL	28	0	12	0	0
43	SD	28	0	12	0	0
43	SF	28	0	12	2	0
43	SH	28	0	12	0	0
43	SJ	28	0	11	1	0
43	SL	28	0	12	3	0
43	TD	28	0	12	1	0
43	TF	28	0	12	0	0
43	TH	28	0	11	1	0
43	TJ	28	0	12	1	0
43	TL	28	0	12	0	0
43	UD	28	0	12	0	0
43	UF	28	0	12	0	0
43	UH	28	0	12	0	0
43	UJ	28	0	10	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	UL	28	0	12	1	0
43	VD	28	0	12	1	0
43	VF	28	0	12	0	0
43	VH	28	0	12	1	0
43	VJ	28	0	12	0	0
43	VL	28	0	12	1	0
43	WD	28	0	12	2	0
43	WF	28	0	12	2	0
43	WH	28	0	12	0	0
43	WJ	28	0	12	1	0
43	WL	28	0	12	0	0
43	WN	28	0	12	2	0
44	AB	1	0	0	0	0
44	AE	1	0	0	0	0
44	AG	1	0	0	0	0
44	AI	1	0	0	0	0
44	AK	1	0	0	0	0
44	BC	1	0	0	0	0
44	BE	1	0	0	0	0
44	BG	1	0	0	0	0
44	BI	1	0	0	0	0
44	BK	1	0	0	0	0
44	CC	1	0	0	0	0
44	CE	1	0	0	0	0
44	CI	1	0	0	0	0
44	CK	1	0	0	0	0
44	CM	1	0	0	0	0
44	DM	1	0	0	0	0
44	EK	1	0	0	0	0
44	FC	1	0	0	0	0
44	FD	1	0	0	0	0
44	FG	1	0	0	0	0
44	FI	1	0	0	0	0
44	FK	1	0	0	0	0
44	FL	1	0	0	0	0
44	GC	1	0	0	0	0
44	GE	1	0	0	0	0
44	GG	1	0	0	0	0
44	GI	1	0	0	0	0
44	GK	1	0	0	0	0
44	GM	1	0	0	0	0
44	HC	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	HE	1	0	0	0	0
44	HG	1	0	0	0	0
44	HI	1	0	0	0	0
44	HK	1	0	0	0	0
44	HM	1	0	0	0	0
44	IC	1	0	0	0	0
44	IE	1	0	0	0	0
44	IG	1	0	0	0	0
44	IK	1	0	0	0	0
44	IL	1	0	0	0	0
44	JC	1	0	0	0	0
44	JE	1	0	0	0	0
44	JG	1	0	0	0	0
44	JI	1	0	0	0	0
44	JK	1	0	0	0	0
44	JM	1	0	0	0	0
44	KC	1	0	0	0	0
44	KE	1	0	0	0	0
44	KG	1	0	0	0	0
44	KI	1	0	0	0	0
44	KK	1	0	0	0	0
44	KM	1	0	0	0	0
44	LC	1	0	0	0	0
44	LD	1	0	0	0	0
44	LG	1	0	0	0	0
44	LI	1	0	0	0	0
44	LK	1	0	0	0	0
44	LM	1	0	0	0	0
44	MC	1	0	0	0	0
44	ME	1	0	0	0	0
44	MH	1	0	0	0	0
44	MK	1	0	0	0	0
44	MM	1	0	0	0	0
44	NA	1	0	0	0	0
44	NB	1	0	0	0	0
44	NE	1	0	0	0	0
44	NG	1	0	0	0	0
44	NI	1	0	0	0	0
44	NK	1	0	0	0	0
44	OA	1	0	0	0	0
44	OC	1	0	0	0	0
44	OE	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	OI	1	0	0	0	0
44	OK	1	0	0	0	0
44	PC	1	0	0	0	0
44	PE	1	0	0	0	0
44	PG	1	0	0	0	0
44	PI	1	0	0	0	0
44	SC	1	0	0	0	0
44	SD	1	0	0	0	0
44	SF	1	0	0	0	0
44	SH	1	0	0	0	0
44	SJ	1	0	0	0	0
44	TC	1	0	0	0	0
44	TD	1	0	0	0	0
44	TF	1	0	0	0	0
44	TI	1	0	0	0	0
44	TK	1	0	0	0	0
44	TL	1	0	0	0	0
44	UE	1	0	0	0	0
44	UG	1	0	0	0	0
44	UI	1	0	0	0	0
44	UK	1	0	0	0	0
44	UM	1	0	0	0	0
44	VC	1	0	0	0	0
44	VE	1	0	0	0	0
44	VG	1	0	0	0	0
44	VI	1	0	0	0	0
44	VJ	1	0	0	0	0
44	VM	1	0	0	0	0
44	WC	1	0	0	0	0
44	WD	1	0	0	0	0
44	WG	1	0	0	0	0
44	WI	1	0	0	0	0
44	WK	1	0	0	0	0
44	WM	1	0	0	0	0
45	AC	32	0	12	2	0
45	AE	32	0	12	2	0
45	AF	32	0	12	3	0
45	AI	32	0	12	1	0
45	AK	32	0	12	0	0
45	BC	32	0	12	1	0
45	BE	32	0	12	0	0
45	BG	32	0	12	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	BI	32	0	12	1	0
45	BK	32	0	12	2	0
45	CC	32	0	12	0	0
45	CE	32	0	12	4	0
45	CG	32	0	12	4	0
45	CI	32	0	11	4	0
45	CK	32	0	12	2	0
45	CM	32	0	12	4	0
45	DC	32	0	11	4	0
45	DE	32	0	12	2	0
45	DG	32	0	12	0	0
45	DI	32	0	12	2	0
45	DK	32	0	12	1	0
45	DM	32	0	11	0	0
45	EC	32	0	12	1	0
45	EE	32	0	12	1	0
45	EG	32	0	12	6	0
45	EI	32	0	12	2	0
45	EK	32	0	12	2	0
45	EM	32	0	12	0	0
45	FC	32	0	12	2	0
45	FE	32	0	12	1	0
45	FF	32	0	12	1	0
45	FI	32	0	12	2	0
45	FK	32	0	12	5	0
45	FM	32	0	12	1	0
45	GC	32	0	11	3	0
45	GE	32	0	12	3	0
45	GF	32	0	11	0	0
45	GI	32	0	10	0	0
45	GK	32	0	12	2	0
45	GM	32	0	12	3	0
45	HC	32	0	12	3	0
45	HE	32	0	12	1	0
45	HG	32	0	12	2	0
45	HI	32	0	12	1	0
45	HK	32	0	12	2	0
45	HM	32	0	12	0	0
45	IC	32	0	12	0	0
45	IE	32	0	12	2	0
45	IG	32	0	12	0	0
45	II	32	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	IK	32	0	11	1	0
45	IM	32	0	12	0	0
45	JC	32	0	11	0	0
45	JE	32	0	12	2	0
45	JG	32	0	12	1	0
45	JI	32	0	12	1	0
45	JK	32	0	12	3	0
45	JM	32	0	12	3	0
45	KC	32	0	12	1	0
45	KE	32	0	12	1	0
45	KG	32	0	12	1	0
45	KI	32	0	12	0	0
45	KK	32	0	12	1	0
45	KM	32	0	12	0	0
45	LC	32	0	12	0	0
45	LE	32	0	12	3	0
45	LF	32	0	11	1	0
45	LI	32	0	12	1	0
45	LK	32	0	12	0	0
45	LM	32	0	12	0	0
45	MC	32	0	12	1	0
45	ME	32	0	12	1	0
45	MG	32	0	12	0	0
45	MI	32	0	12	2	0
45	MK	32	0	12	0	0
45	MM	32	0	12	4	0
45	NA	32	0	12	2	0
45	NC	32	0	12	3	0
45	NE	32	0	12	1	0
45	NG	32	0	12	0	0
45	NI	32	0	12	1	0
45	NK	32	0	12	2	0
45	OA	32	0	12	2	0
45	OC	32	0	12	1	0
45	OE	32	0	12	2	0
45	OG	32	0	12	0	0
45	OI	32	0	12	2	0
45	OK	32	0	12	1	0
45	PA	32	0	12	3	0
45	PC	32	0	12	1	0
45	PE	32	0	12	3	0
45	PG	32	0	12	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	PI	32	0	12	3	0
45	PK	32	0	12	5	0
45	QC	32	0	12	1	0
45	QE	32	0	12	0	0
45	QG	32	0	12	2	0
45	QI	32	0	12	1	0
45	QK	32	0	12	2	0
45	RC	32	0	12	0	0
45	RE	32	0	10	0	0
45	RG	32	0	12	3	0
45	RI	32	0	12	2	0
45	RK	32	0	12	2	0
45	SC	32	0	12	0	0
45	SE	32	0	12	3	0
45	SG	32	0	12	0	0
45	SI	32	0	12	2	0
45	SK	32	0	12	0	0
45	SM	32	0	12	3	0
45	TC	32	0	12	0	0
45	TE	32	0	12	3	0
45	TG	32	0	12	2	0
45	TI	32	0	12	1	0
45	TK	32	0	12	0	0
45	TM	32	0	12	2	0
45	UC	32	0	12	4	0
45	UE	32	0	12	1	0
45	UG	32	0	12	0	0
45	UI	32	0	12	1	0
45	UK	32	0	12	1	0
45	UM	32	0	12	1	0
45	VC	32	0	12	1	0
45	VE	32	0	12	1	0
45	VG	32	0	12	0	0
45	VI	32	0	12	1	0
45	VK	32	0	12	0	0
45	VM	32	0	12	4	0
45	WC	32	0	12	2	0
45	WE	32	0	12	2	0
45	WG	32	0	12	1	0
45	WI	32	0	12	0	0
45	WK	32	0	12	3	0
45	WM	32	0	12	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	1132145	0	1096916	29327	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 13.

The worst 5 of 29327 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)
42:EI:346:TRP:CH2	42:EI:346:TRP:CZ3	1.87	1.57
41:EJ:391:ARG:CB	41:EJ:391:ARG:CG	1.76	1.57
41:BL:281:TYR:CD2	41:BL:281:TYR:CG	1.96	1.53
41:BL:281:TYR:CG	41:BL:281:TYR:CD1	1.96	1.51
41:EJ:391:ARG:CG	41:EJ:391:ARG:CD	1.84	1.51

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	1A	489/1044 (47%)	425 (87%)	56 (12%)	8 (2%)	8	36
2	1D	130/687 (19%)	123 (95%)	5 (4%)	2 (2%)	8	37
2	1E	183/687 (27%)	174 (95%)	9 (5%)	0	100	100
2	1F	81/687 (12%)	79 (98%)	2 (2%)	0	100	100
3	1H	81/547 (15%)	78 (96%)	3 (4%)	0	100	100
3	1I	375/547 (69%)	364 (97%)	11 (3%)	0	100	100
4	1K	157/196 (80%)	135 (86%)	22 (14%)	0	100	100
4	1L	30/196 (15%)	27 (90%)	3 (10%)	0	100	100
5	1N	112/196 (57%)	101 (90%)	10 (9%)	1 (1%)	14	48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	1O	114/196 (58%)	111 (97%)	3 (3%)	0	100	100
5	1P	116/196 (59%)	108 (93%)	8 (7%)	0	100	100
6	1R	89/101 (88%)	89 (100%)	0	0	100	100
7	1T	251/321 (78%)	227 (90%)	23 (9%)	1 (0%)	30	63
7	1U	251/321 (78%)	210 (84%)	37 (15%)	4 (2%)	8	36
8	1W	126/193 (65%)	89 (71%)	32 (25%)	5 (4%)	2	19
8	1X	182/193 (94%)	172 (94%)	10 (6%)	0	100	100
8	1Y	182/193 (94%)	173 (95%)	9 (5%)	0	100	100
8	1Z	182/193 (94%)	169 (93%)	13 (7%)	0	100	100
8	2A	182/193 (94%)	164 (90%)	18 (10%)	0	100	100
8	2B	182/193 (94%)	168 (92%)	14 (8%)	0	100	100
9	2D	449/877 (51%)	377 (84%)	69 (15%)	3 (1%)	19	53
9	2E	99/877 (11%)	97 (98%)	2 (2%)	0	100	100
10	2F	75/170 (44%)	68 (91%)	7 (9%)	0	100	100
10	2G	75/170 (44%)	69 (92%)	6 (8%)	0	100	100
10	2H	75/170 (44%)	65 (87%)	10 (13%)	0	100	100
11	2J	160/549 (29%)	154 (96%)	5 (3%)	1 (1%)	22	55
11	2K	292/549 (53%)	288 (99%)	4 (1%)	0	100	100
11	2L	273/549 (50%)	252 (92%)	20 (7%)	1 (0%)	30	63
11	2M	182/549 (33%)	173 (95%)	9 (5%)	0	100	100
12	2O	607/623 (97%)	531 (88%)	72 (12%)	4 (1%)	19	53
12	2P	607/623 (97%)	515 (85%)	88 (14%)	4 (1%)	19	53
12	2Q	607/623 (97%)	505 (83%)	101 (17%)	1 (0%)	44	75
13	2S	279/514 (54%)	265 (95%)	13 (5%)	1 (0%)	30	63
13	2T	197/514 (38%)	186 (94%)	9 (5%)	2 (1%)	13	45
14	2V	32/284 (11%)	30 (94%)	2 (6%)	0	100	100
14	2W	207/284 (73%)	163 (79%)	42 (20%)	2 (1%)	13	45
14	2X	202/284 (71%)	186 (92%)	13 (6%)	3 (2%)	8	37
14	2Y	161/284 (57%)	138 (86%)	21 (13%)	2 (1%)	11	42
15	3A	179/232 (77%)	142 (79%)	33 (18%)	4 (2%)	5	30
16	3C	209/309 (68%)	175 (84%)	31 (15%)	3 (1%)	9	39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	3D	67/309 (22%)	61 (91%)	6 (9%)	0	100	100
17	3F	97/212 (46%)	86 (89%)	9 (9%)	2 (2%)	5	31
18	3H	95/1410 (7%)	88 (93%)	7 (7%)	0	100	100
19	3J	425/640 (66%)	371 (87%)	50 (12%)	4 (1%)	14	48
19	3K	437/640 (68%)	376 (86%)	58 (13%)	3 (1%)	19	53
19	3L	446/640 (70%)	386 (86%)	60 (14%)	0	100	100
20	3N	278/733 (38%)	246 (88%)	31 (11%)	1 (0%)	30	63
20	3O	561/733 (76%)	486 (87%)	71 (13%)	4 (1%)	19	53
20	3P	563/733 (77%)	527 (94%)	36 (6%)	0	100	100
20	3Q	280/733 (38%)	252 (90%)	25 (9%)	3 (1%)	12	44
21	3S	68/259 (26%)	63 (93%)	5 (7%)	0	100	100
21	3T	231/259 (89%)	217 (94%)	14 (6%)	0	100	100
21	3U	231/259 (89%)	214 (93%)	17 (7%)	0	100	100
21	3V	199/259 (77%)	191 (96%)	8 (4%)	0	100	100
22	3X	119/274 (43%)	109 (92%)	10 (8%)	0	100	100
22	3Y	132/274 (48%)	104 (79%)	25 (19%)	3 (2%)	5	29
22	3Z	125/274 (46%)	103 (82%)	21 (17%)	1 (1%)	16	50
22	4A	99/274 (36%)	95 (96%)	4 (4%)	0	100	100
22	4B	99/274 (36%)	91 (92%)	8 (8%)	0	100	100
22	4C	79/274 (29%)	74 (94%)	5 (6%)	0	100	100
23	4D	114/135 (84%)	100 (88%)	11 (10%)	3 (3%)	4	27
24	4F	149/495 (30%)	141 (95%)	8 (5%)	0	100	100
24	4G	333/495 (67%)	321 (96%)	11 (3%)	1 (0%)	37	68
25	4I	370/377 (98%)	346 (94%)	24 (6%)	0	100	100
25	4J	370/377 (98%)	345 (93%)	24 (6%)	1 (0%)	37	68
26	4K	130/621 (21%)	128 (98%)	2 (2%)	0	100	100
26	4L	226/621 (36%)	217 (96%)	8 (4%)	1 (0%)	30	63
26	4M	102/621 (16%)	101 (99%)	1 (1%)	0	100	100
27	4O	217/257 (84%)	202 (93%)	15 (7%)	0	100	100
27	4P	217/257 (84%)	204 (94%)	13 (6%)	0	100	100
27	4Q	217/257 (84%)	205 (94%)	12 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	4R	217/257 (84%)	162 (75%)	38 (18%)	17 (8%)	1	8
27	4S	217/257 (84%)	205 (94%)	12 (6%)	0	100	100
27	4T	217/257 (84%)	197 (91%)	17 (8%)	3 (1%)	9	39
28	4V	35/136 (26%)	30 (86%)	5 (14%)	0	100	100
28	4W	77/136 (57%)	70 (91%)	6 (8%)	1 (1%)	10	40
29	4Y	94/120 (78%)	81 (86%)	12 (13%)	1 (1%)	12	44
30	5A	348/377 (92%)	324 (93%)	20 (6%)	4 (1%)	12	44
30	5B	14/377 (4%)	11 (79%)	3 (21%)	0	100	100
31	5D	155/169 (92%)	146 (94%)	8 (5%)	1 (1%)	22	55
31	5E	155/169 (92%)	137 (88%)	14 (9%)	4 (3%)	4	27
31	5F	157/169 (93%)	148 (94%)	9 (6%)	0	100	100
31	5G	155/169 (92%)	148 (96%)	7 (4%)	0	100	100
31	5H	155/169 (92%)	148 (96%)	6 (4%)	1 (1%)	22	55
31	5I	155/169 (92%)	149 (96%)	5 (3%)	1 (1%)	22	55
31	5J	155/169 (92%)	147 (95%)	6 (4%)	2 (1%)	10	40
32	5L	114/418 (27%)	111 (97%)	3 (3%)	0	100	100
32	5M	390/418 (93%)	373 (96%)	17 (4%)	0	100	100
32	5N	390/418 (93%)	377 (97%)	13 (3%)	0	100	100
32	5O	287/418 (69%)	243 (85%)	34 (12%)	10 (4%)	3	23
33	5Q	105/430 (24%)	100 (95%)	4 (4%)	1 (1%)	13	45
33	5R	397/430 (92%)	384 (97%)	11 (3%)	2 (0%)	25	59
33	5S	397/430 (92%)	358 (90%)	28 (7%)	11 (3%)	4	26
33	5T	302/430 (70%)	273 (90%)	24 (8%)	5 (2%)	7	35
33	5V	304/430 (71%)	281 (92%)	21 (7%)	2 (1%)	19	53
33	5W	406/430 (94%)	384 (95%)	22 (5%)	0	100	100
33	5X	406/430 (94%)	387 (95%)	18 (4%)	1 (0%)	44	75
33	5Y	103/430 (24%)	99 (96%)	4 (4%)	0	100	100
34	6A	267/490 (54%)	199 (74%)	64 (24%)	4 (2%)	8	37
34	6B	390/490 (80%)	363 (93%)	22 (6%)	5 (1%)	10	40
34	6C	391/490 (80%)	312 (80%)	68 (17%)	11 (3%)	4	26
34	6D	121/490 (25%)	92 (76%)	27 (22%)	2 (2%)	7	35

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
34	6E	57/490 (12%)	49 (86%)	6 (10%)	2 (4%)	3	23
34	6F	356/490 (73%)	339 (95%)	17 (5%)	0	100	100
34	6G	414/490 (84%)	404 (98%)	10 (2%)	0	100	100
34	6H	364/490 (74%)	339 (93%)	22 (6%)	3 (1%)	16	50
34	6I	61/490 (12%)	58 (95%)	3 (5%)	0	100	100
34	6J	61/490 (12%)	60 (98%)	1 (2%)	0	100	100
34	6K	365/490 (74%)	358 (98%)	7 (2%)	0	100	100
34	6L	414/490 (84%)	393 (95%)	17 (4%)	4 (1%)	13	45
34	6M	359/490 (73%)	353 (98%)	6 (2%)	0	100	100
34	6N	52/490 (11%)	50 (96%)	2 (4%)	0	100	100
35	6P	176/447 (39%)	175 (99%)	1 (1%)	0	100	100
35	6Q	408/447 (91%)	398 (98%)	10 (2%)	0	100	100
35	6R	408/447 (91%)	394 (97%)	13 (3%)	1 (0%)	44	75
35	6S	250/447 (56%)	233 (93%)	14 (6%)	3 (1%)	11	42
35	6T	232/447 (52%)	224 (97%)	8 (3%)	0	100	100
35	6U	417/447 (93%)	395 (95%)	20 (5%)	2 (0%)	25	59
35	6V	433/447 (97%)	392 (90%)	33 (8%)	8 (2%)	7	34
35	6W	209/447 (47%)	188 (90%)	17 (8%)	4 (2%)	6	33
36	6Y	188/683 (28%)	161 (86%)	24 (13%)	3 (2%)	8	36
36	6Z	188/683 (28%)	171 (91%)	17 (9%)	0	100	100
37	7C	107/254 (42%)	63 (59%)	38 (36%)	6 (6%)	1	14
37	7D	76/254 (30%)	60 (79%)	13 (17%)	3 (4%)	2	20
37	7E	73/254 (29%)	53 (73%)	20 (27%)	0	100	100
37	7F	55/254 (22%)	36 (66%)	17 (31%)	2 (4%)	3	21
38	7H	73/274 (27%)	47 (64%)	22 (30%)	4 (6%)	1	14
38	7I	28/274 (10%)	24 (86%)	4 (14%)	0	100	100
39	7K	103/147 (70%)	83 (81%)	18 (18%)	2 (2%)	6	33
39	7L	44/147 (30%)	39 (89%)	4 (9%)	1 (2%)	5	29
40	7N	54/484 (11%)	45 (83%)	9 (17%)	0	100	100
41	AB	434/445 (98%)	388 (89%)	44 (10%)	2 (0%)	25	59
41	AD	434/445 (98%)	415 (96%)	19 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	AF	434/445 (98%)	418 (96%)	15 (4%)	1 (0%)	44	75
41	AH	434/445 (98%)	347 (80%)	68 (16%)	19 (4%)	2	17
41	AJ	434/445 (98%)	419 (96%)	15 (4%)	0	100	100
41	AL	434/445 (98%)	350 (81%)	66 (15%)	18 (4%)	2	19
41	BB	425/445 (96%)	400 (94%)	25 (6%)	0	100	100
41	BD	425/445 (96%)	325 (76%)	83 (20%)	17 (4%)	2	19
41	BF	426/445 (96%)	411 (96%)	15 (4%)	0	100	100
41	BH	425/445 (96%)	408 (96%)	15 (4%)	2 (0%)	25	59
41	BJ	425/445 (96%)	407 (96%)	18 (4%)	0	100	100
41	BL	423/445 (95%)	401 (95%)	22 (5%)	0	100	100
41	CB	424/445 (95%)	395 (93%)	29 (7%)	0	100	100
41	CD	424/445 (95%)	309 (73%)	91 (22%)	24 (6%)	1	13
41	CF	426/445 (96%)	314 (74%)	89 (21%)	23 (5%)	1	14
41	CH	425/445 (96%)	390 (92%)	33 (8%)	2 (0%)	25	59
41	CJ	426/445 (96%)	315 (74%)	85 (20%)	26 (6%)	1	12
41	CL	423/445 (95%)	383 (90%)	40 (10%)	0	100	100
41	DB	424/445 (95%)	370 (87%)	52 (12%)	2 (0%)	25	59
41	DD	424/445 (95%)	376 (89%)	46 (11%)	2 (0%)	25	59
41	DF	424/445 (95%)	365 (86%)	55 (13%)	4 (1%)	14	48
41	DH	424/445 (95%)	272 (64%)	111 (26%)	41 (10%)	0	6
41	DJ	424/445 (95%)	261 (62%)	120 (28%)	43 (10%)	0	6
41	DL	423/445 (95%)	353 (84%)	58 (14%)	12 (3%)	4	26
41	ED	424/445 (95%)	266 (63%)	121 (28%)	37 (9%)	0	7
41	EF	424/445 (95%)	377 (89%)	44 (10%)	3 (1%)	19	53
41	EH	426/445 (96%)	357 (84%)	65 (15%)	4 (1%)	14	48
41	EJ	424/445 (95%)	374 (88%)	45 (11%)	5 (1%)	11	42
41	EL	423/445 (95%)	352 (83%)	66 (16%)	5 (1%)	11	42
41	FD	425/445 (96%)	290 (68%)	101 (24%)	34 (8%)	1	8
41	FF	424/445 (95%)	379 (89%)	41 (10%)	4 (1%)	14	48
41	FH	424/445 (95%)	378 (89%)	44 (10%)	2 (0%)	25	59
41	FJ	424/445 (95%)	396 (93%)	28 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	FL	423/445 (95%)	289 (68%)	103 (24%)	31 (7%)	1	9
41	GD	425/445 (96%)	321 (76%)	78 (18%)	26 (6%)	1	12
41	GF	426/445 (96%)	404 (95%)	22 (5%)	0	100	100
41	GH	426/445 (96%)	391 (92%)	35 (8%)	0	100	100
41	GJ	426/445 (96%)	321 (75%)	85 (20%)	20 (5%)	2	17
41	GL	423/445 (95%)	399 (94%)	24 (6%)	0	100	100
41	HB	424/445 (95%)	360 (85%)	59 (14%)	5 (1%)	11	42
41	HD	425/445 (96%)	303 (71%)	91 (21%)	31 (7%)	1	9
41	HF	426/445 (96%)	385 (90%)	39 (9%)	2 (0%)	25	59
41	HH	425/445 (96%)	384 (90%)	39 (9%)	2 (0%)	25	59
41	HJ	426/445 (96%)	310 (73%)	98 (23%)	18 (4%)	2	18
41	HL	423/445 (95%)	373 (88%)	48 (11%)	2 (0%)	25	59
41	ID	425/445 (96%)	403 (95%)	21 (5%)	1 (0%)	44	75
41	IF	426/445 (96%)	406 (95%)	20 (5%)	0	100	100
41	IH	425/445 (96%)	404 (95%)	20 (5%)	1 (0%)	44	75
41	IJ	426/445 (96%)	411 (96%)	15 (4%)	0	100	100
41	IL	424/445 (95%)	406 (96%)	18 (4%)	0	100	100
41	IN	426/445 (96%)	303 (71%)	92 (22%)	31 (7%)	1	9
41	JD	425/445 (96%)	384 (90%)	41 (10%)	0	100	100
41	JF	424/445 (95%)	403 (95%)	21 (5%)	0	100	100
41	JH	424/445 (95%)	405 (96%)	19 (4%)	0	100	100
41	JJ	424/445 (95%)	400 (94%)	24 (6%)	0	100	100
41	JL	424/445 (95%)	346 (82%)	68 (16%)	10 (2%)	5	29
41	KD	426/445 (96%)	406 (95%)	19 (4%)	1 (0%)	44	75
41	KF	425/445 (96%)	410 (96%)	15 (4%)	0	100	100
41	KH	427/445 (96%)	414 (97%)	13 (3%)	0	100	100
41	KJ	424/445 (95%)	410 (97%)	14 (3%)	0	100	100
41	KL	427/445 (96%)	407 (95%)	20 (5%)	0	100	100
41	KN	426/445 (96%)	407 (96%)	17 (4%)	2 (0%)	25	59
41	LD	425/445 (96%)	366 (86%)	51 (12%)	8 (2%)	6	33
41	LF	426/445 (96%)	411 (96%)	15 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	LH	426/445 (96%)	409 (96%)	17 (4%)	0	100	100
41	LJ	426/445 (96%)	408 (96%)	18 (4%)	0	100	100
41	LL	424/445 (95%)	406 (96%)	18 (4%)	0	100	100
41	LN	426/445 (96%)	407 (96%)	19 (4%)	0	100	100
41	MD	424/445 (95%)	326 (77%)	79 (19%)	19 (4%)	2	17
41	MF	426/445 (96%)	345 (81%)	68 (16%)	13 (3%)	3	25
41	MH	426/445 (96%)	413 (97%)	13 (3%)	0	100	100
41	MJ	424/445 (95%)	405 (96%)	19 (4%)	0	100	100
41	ML	424/445 (95%)	393 (93%)	30 (7%)	1 (0%)	44	75
41	MN	424/445 (95%)	328 (77%)	74 (18%)	22 (5%)	1	14
41	NB	426/445 (96%)	318 (75%)	83 (20%)	25 (6%)	1	13
41	ND	425/445 (96%)	324 (76%)	82 (19%)	19 (4%)	2	17
41	NF	425/445 (96%)	323 (76%)	77 (18%)	25 (6%)	1	13
41	NH	426/445 (96%)	316 (74%)	93 (22%)	17 (4%)	2	19
41	NJ	426/445 (96%)	382 (90%)	42 (10%)	2 (0%)	25	59
41	NL	388/445 (87%)	343 (88%)	42 (11%)	3 (1%)	16	50
41	OB	423/445 (95%)	278 (66%)	102 (24%)	43 (10%)	0	5
41	OD	422/445 (95%)	370 (88%)	51 (12%)	1 (0%)	44	75
41	OF	423/445 (95%)	368 (87%)	51 (12%)	4 (1%)	14	48
41	OH	426/445 (96%)	308 (72%)	94 (22%)	24 (6%)	1	14
41	OJ	426/445 (96%)	305 (72%)	103 (24%)	18 (4%)	2	18
41	OL	422/445 (95%)	365 (86%)	55 (13%)	2 (0%)	25	59
41	PB	425/445 (96%)	287 (68%)	108 (25%)	30 (7%)	1	9
41	PD	425/445 (96%)	306 (72%)	92 (22%)	27 (6%)	1	11
41	PF	426/445 (96%)	298 (70%)	100 (24%)	28 (7%)	1	11
41	PH	426/445 (96%)	240 (56%)	119 (28%)	67 (16%)	0	2
41	PJ	426/445 (96%)	267 (63%)	112 (26%)	47 (11%)	0	5
41	PL	423/445 (95%)	255 (60%)	123 (29%)	45 (11%)	0	5
41	QB	426/445 (96%)	350 (82%)	73 (17%)	3 (1%)	19	53
41	QD	425/445 (96%)	370 (87%)	53 (12%)	2 (0%)	25	59
41	QF	426/445 (96%)	375 (88%)	46 (11%)	5 (1%)	11	42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	QH	426/445 (96%)	278 (65%)	115 (27%)	33 (8%)	1	8
41	QJ	426/445 (96%)	280 (66%)	100 (24%)	46 (11%)	0	5
41	QL	424/445 (95%)	258 (61%)	122 (29%)	44 (10%)	0	5
41	RB	426/445 (96%)	376 (88%)	49 (12%)	1 (0%)	44	75
41	RD	425/445 (96%)	289 (68%)	109 (26%)	27 (6%)	1	11
41	RF	426/445 (96%)	277 (65%)	117 (28%)	32 (8%)	1	9
41	RH	426/445 (96%)	361 (85%)	63 (15%)	2 (0%)	25	59
41	RJ	426/445 (96%)	275 (65%)	119 (28%)	32 (8%)	1	9
41	RL	424/445 (95%)	371 (88%)	48 (11%)	5 (1%)	11	42
41	SD	425/445 (96%)	377 (89%)	46 (11%)	2 (0%)	25	59
41	SF	426/445 (96%)	277 (65%)	119 (28%)	30 (7%)	1	9
41	SH	426/445 (96%)	361 (85%)	60 (14%)	5 (1%)	11	42
41	SJ	426/445 (96%)	373 (88%)	50 (12%)	3 (1%)	19	53
41	SL	424/445 (95%)	290 (68%)	102 (24%)	32 (8%)	1	9
41	TD	425/445 (96%)	367 (86%)	58 (14%)	0	100	100
41	TF	426/445 (96%)	365 (86%)	56 (13%)	5 (1%)	11	42
41	TH	426/445 (96%)	367 (86%)	51 (12%)	8 (2%)	6	33
41	TJ	426/445 (96%)	370 (87%)	54 (13%)	2 (0%)	25	59
41	TL	424/445 (95%)	363 (86%)	57 (13%)	4 (1%)	14	48
41	UD	425/445 (96%)	382 (90%)	41 (10%)	2 (0%)	25	59
41	UF	426/445 (96%)	375 (88%)	47 (11%)	4 (1%)	14	48
41	UH	426/445 (96%)	374 (88%)	49 (12%)	3 (1%)	19	53
41	UJ	426/445 (96%)	372 (87%)	53 (12%)	1 (0%)	44	75
41	UL	424/445 (95%)	378 (89%)	43 (10%)	3 (1%)	19	53
41	VD	425/445 (96%)	392 (92%)	33 (8%)	0	100	100
41	VF	425/445 (96%)	384 (90%)	39 (9%)	2 (0%)	25	59
41	VH	426/445 (96%)	386 (91%)	40 (9%)	0	100	100
41	VJ	426/445 (96%)	380 (89%)	42 (10%)	4 (1%)	14	48
41	VL	424/445 (95%)	390 (92%)	33 (8%)	1 (0%)	44	75
41	WD	425/445 (96%)	377 (89%)	45 (11%)	3 (1%)	19	53
41	WF	424/445 (95%)	341 (80%)	71 (17%)	12 (3%)	4	26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	WH	424/445 (95%)	353 (83%)	58 (14%)	13 (3%)	3	25
41	WJ	424/445 (95%)	385 (91%)	35 (8%)	4 (1%)	14	48
41	WL	424/445 (95%)	379 (89%)	41 (10%)	4 (1%)	14	48
41	WN	424/445 (95%)	378 (89%)	44 (10%)	2 (0%)	25	59
42	AC	438/452 (97%)	424 (97%)	13 (3%)	1 (0%)	44	75
42	AE	438/452 (97%)	414 (94%)	24 (6%)	0	100	100
42	AG	438/452 (97%)	409 (93%)	26 (6%)	3 (1%)	19	53
42	AI	438/452 (97%)	367 (84%)	60 (14%)	11 (2%)	4	28
42	AK	438/452 (97%)	346 (79%)	75 (17%)	17 (4%)	2	20
42	BC	438/452 (97%)	409 (93%)	29 (7%)	0	100	100
42	BE	429/452 (95%)	414 (96%)	15 (4%)	0	100	100
42	BG	438/452 (97%)	405 (92%)	32 (7%)	1 (0%)	44	75
42	BI	426/452 (94%)	323 (76%)	72 (17%)	31 (7%)	1	9
42	BK	437/452 (97%)	408 (93%)	29 (7%)	0	100	100
42	CC	436/452 (96%)	289 (66%)	110 (25%)	37 (8%)	0	7
42	CE	436/452 (96%)	417 (96%)	19 (4%)	0	100	100
42	CG	437/452 (97%)	303 (69%)	105 (24%)	29 (7%)	1	11
42	CI	437/452 (97%)	409 (94%)	27 (6%)	1 (0%)	44	75
42	CK	437/452 (97%)	393 (90%)	43 (10%)	1 (0%)	44	75
42	CM	437/452 (97%)	390 (89%)	42 (10%)	5 (1%)	12	44
42	DC	425/452 (94%)	370 (87%)	52 (12%)	3 (1%)	19	53
42	DE	426/452 (94%)	366 (86%)	57 (13%)	3 (1%)	19	53
42	DG	427/452 (94%)	366 (86%)	59 (14%)	2 (0%)	25	59
42	DI	425/452 (94%)	379 (89%)	41 (10%)	5 (1%)	11	42
42	DK	426/452 (94%)	265 (62%)	120 (28%)	41 (10%)	0	6
42	DM	426/452 (94%)	357 (84%)	63 (15%)	6 (1%)	9	39
42	EC	437/452 (97%)	387 (89%)	48 (11%)	2 (0%)	25	59
42	EE	439/452 (97%)	299 (68%)	107 (24%)	33 (8%)	1	9
42	EG	430/452 (95%)	277 (64%)	112 (26%)	41 (10%)	0	6
42	EI	434/452 (96%)	384 (88%)	50 (12%)	0	100	100
42	EK	438/452 (97%)	274 (63%)	121 (28%)	43 (10%)	0	6

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	EM	424/452 (94%)	264 (62%)	123 (29%)	37 (9%)	0	7
42	FC	427/452 (94%)	276 (65%)	122 (29%)	29 (7%)	1	10
42	FE	421/452 (93%)	378 (90%)	42 (10%)	1 (0%)	44	75
42	FG	422/452 (93%)	386 (92%)	36 (8%)	0	100	100
42	FI	423/452 (94%)	370 (88%)	51 (12%)	2 (0%)	25	59
42	FK	420/452 (93%)	274 (65%)	107 (26%)	39 (9%)	0	6
42	FM	425/452 (94%)	382 (90%)	42 (10%)	1 (0%)	44	75
42	GC	438/452 (97%)	417 (95%)	21 (5%)	0	100	100
42	GE	426/452 (94%)	406 (95%)	19 (4%)	1 (0%)	44	75
42	GG	429/452 (95%)	411 (96%)	18 (4%)	0	100	100
42	GI	425/452 (94%)	387 (91%)	37 (9%)	1 (0%)	44	75
42	GK	425/452 (94%)	395 (93%)	29 (7%)	1 (0%)	44	75
42	GM	437/452 (97%)	322 (74%)	83 (19%)	32 (7%)	1	9
42	HC	423/452 (94%)	282 (67%)	106 (25%)	35 (8%)	0	7
42	HE	426/452 (94%)	388 (91%)	35 (8%)	3 (1%)	19	53
42	HG	426/452 (94%)	317 (74%)	81 (19%)	28 (7%)	1	11
42	HI	426/452 (94%)	327 (77%)	80 (19%)	19 (4%)	2	17
42	HK	427/452 (94%)	389 (91%)	37 (9%)	1 (0%)	44	75
42	HM	425/452 (94%)	313 (74%)	88 (21%)	24 (6%)	1	14
42	IC	425/452 (94%)	405 (95%)	20 (5%)	0	100	100
42	IE	428/452 (95%)	326 (76%)	82 (19%)	20 (5%)	2	17
42	IG	438/452 (97%)	409 (93%)	28 (6%)	1 (0%)	44	75
42	II	428/452 (95%)	404 (94%)	24 (6%)	0	100	100
42	IK	438/452 (97%)	404 (92%)	33 (8%)	1 (0%)	44	75
42	IM	427/452 (94%)	402 (94%)	25 (6%)	0	100	100
42	JC	428/452 (95%)	402 (94%)	26 (6%)	0	100	100
42	JE	426/452 (94%)	402 (94%)	23 (5%)	1 (0%)	44	75
42	JG	424/452 (94%)	406 (96%)	18 (4%)	0	100	100
42	JI	425/452 (94%)	393 (92%)	32 (8%)	0	100	100
42	JK	438/452 (97%)	326 (74%)	82 (19%)	30 (7%)	1	10
42	JM	426/452 (94%)	332 (78%)	74 (17%)	20 (5%)	2	17

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	KC	428/452 (95%)	406 (95%)	22 (5%)	0	100	100
42	KE	427/452 (94%)	404 (95%)	23 (5%)	0	100	100
42	KG	426/452 (94%)	411 (96%)	15 (4%)	0	100	100
42	KI	424/452 (94%)	408 (96%)	16 (4%)	0	100	100
42	KK	426/452 (94%)	407 (96%)	19 (4%)	0	100	100
42	KM	428/452 (95%)	360 (84%)	57 (13%)	11 (3%)	4	27
42	LC	429/452 (95%)	417 (97%)	12 (3%)	0	100	100
42	LE	438/452 (97%)	416 (95%)	22 (5%)	0	100	100
42	LG	429/452 (95%)	416 (97%)	13 (3%)	0	100	100
42	LI	430/452 (95%)	414 (96%)	15 (4%)	1 (0%)	44	75
42	LK	431/452 (95%)	419 (97%)	12 (3%)	0	100	100
42	LM	427/452 (94%)	407 (95%)	20 (5%)	0	100	100
42	MC	437/452 (97%)	410 (94%)	25 (6%)	2 (0%)	25	59
42	ME	425/452 (94%)	404 (95%)	21 (5%)	0	100	100
42	MG	426/452 (94%)	348 (82%)	69 (16%)	9 (2%)	5	31
42	MI	427/452 (94%)	402 (94%)	25 (6%)	0	100	100
42	MK	438/452 (97%)	394 (90%)	42 (10%)	2 (0%)	25	59
42	MM	427/452 (94%)	392 (92%)	35 (8%)	0	100	100
42	NA	426/452 (94%)	324 (76%)	76 (18%)	26 (6%)	1	12
42	NC	425/452 (94%)	295 (69%)	94 (22%)	36 (8%)	0	7
42	NE	426/452 (94%)	373 (88%)	48 (11%)	5 (1%)	11	42
42	NG	428/452 (95%)	316 (74%)	88 (21%)	24 (6%)	1	14
42	NI	428/452 (95%)	318 (74%)	87 (20%)	23 (5%)	1	14
42	NK	426/452 (94%)	292 (68%)	105 (25%)	29 (7%)	1	10
42	OA	424/452 (94%)	362 (85%)	62 (15%)	0	100	100
42	OC	425/452 (94%)	370 (87%)	52 (12%)	3 (1%)	19	53
42	OE	429/452 (95%)	372 (87%)	55 (13%)	2 (0%)	25	59
42	OG	429/452 (95%)	309 (72%)	99 (23%)	21 (5%)	2	16
42	OI	428/452 (95%)	382 (89%)	45 (10%)	1 (0%)	44	75
42	OK	427/452 (94%)	366 (86%)	60 (14%)	1 (0%)	44	75
42	PA	358/452 (79%)	230 (64%)	101 (28%)	27 (8%)	1	9

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	PC	428/452 (95%)	280 (65%)	108 (25%)	40 (9%)	0	6
42	PE	427/452 (94%)	275 (64%)	112 (26%)	40 (9%)	0	6
42	PG	426/452 (94%)	250 (59%)	122 (29%)	54 (13%)	0	3
42	PI	423/452 (94%)	236 (56%)	131 (31%)	56 (13%)	0	3
42	PK	426/452 (94%)	301 (71%)	103 (24%)	22 (5%)	1	14
42	QC	426/452 (94%)	365 (86%)	59 (14%)	2 (0%)	25	59
42	QE	426/452 (94%)	357 (84%)	68 (16%)	1 (0%)	44	75
42	QG	427/452 (94%)	351 (82%)	75 (18%)	1 (0%)	44	75
42	QI	425/452 (94%)	279 (66%)	120 (28%)	26 (6%)	1	12
42	QK	427/452 (94%)	285 (67%)	115 (27%)	27 (6%)	1	12
42	RC	428/452 (95%)	366 (86%)	60 (14%)	2 (0%)	25	59
42	RE	424/452 (94%)	366 (86%)	56 (13%)	2 (0%)	25	59
42	RG	426/452 (94%)	363 (85%)	61 (14%)	2 (0%)	25	59
42	RI	427/452 (94%)	368 (86%)	55 (13%)	4 (1%)	14	48
42	RK	427/452 (94%)	367 (86%)	56 (13%)	4 (1%)	14	48
42	SC	426/452 (94%)	367 (86%)	57 (13%)	2 (0%)	25	59
42	SE	427/452 (94%)	291 (68%)	98 (23%)	38 (9%)	0	7
42	SG	427/452 (94%)	364 (85%)	62 (14%)	1 (0%)	44	75
42	SI	421/452 (93%)	274 (65%)	118 (28%)	29 (7%)	1	10
42	SK	428/452 (95%)	369 (86%)	57 (13%)	2 (0%)	25	59
42	SM	427/452 (94%)	365 (86%)	60 (14%)	2 (0%)	25	59
42	TC	426/452 (94%)	369 (87%)	53 (12%)	4 (1%)	14	48
42	TE	428/452 (95%)	364 (85%)	60 (14%)	4 (1%)	14	48
42	TG	426/452 (94%)	348 (82%)	77 (18%)	1 (0%)	44	75
42	TI	426/452 (94%)	286 (67%)	113 (26%)	27 (6%)	1	12
42	TK	428/452 (95%)	303 (71%)	96 (22%)	29 (7%)	1	10
42	TM	426/452 (94%)	339 (80%)	82 (19%)	5 (1%)	11	42
42	UC	429/452 (95%)	307 (72%)	99 (23%)	23 (5%)	1	14
42	UE	428/452 (95%)	366 (86%)	59 (14%)	3 (1%)	19	53
42	UG	429/452 (95%)	368 (86%)	57 (13%)	4 (1%)	14	48
42	UI	429/452 (95%)	382 (89%)	42 (10%)	5 (1%)	11	42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	UK	429/452 (95%)	373 (87%)	54 (13%)	2 (0%)	25	59
42	UM	427/452 (94%)	380 (89%)	44 (10%)	3 (1%)	19	53
42	VC	438/452 (97%)	399 (91%)	38 (9%)	1 (0%)	44	75
42	VE	429/452 (95%)	397 (92%)	30 (7%)	2 (0%)	25	59
42	VG	438/452 (97%)	393 (90%)	44 (10%)	1 (0%)	44	75
42	VI	429/452 (95%)	391 (91%)	38 (9%)	0	100	100
42	VK	438/452 (97%)	337 (77%)	79 (18%)	22 (5%)	1	15
42	VM	426/452 (94%)	389 (91%)	37 (9%)	0	100	100
42	WC	438/452 (97%)	393 (90%)	45 (10%)	0	100	100
42	WE	427/452 (94%)	341 (80%)	69 (16%)	17 (4%)	2	19
42	WG	437/452 (97%)	400 (92%)	35 (8%)	2 (0%)	25	59
42	WI	427/452 (94%)	343 (80%)	62 (14%)	22 (5%)	1	14
42	WK	436/452 (96%)	390 (89%)	44 (10%)	2 (0%)	25	59
42	WM	427/452 (94%)	402 (94%)	23 (5%)	2 (0%)	25	59
All	All	141324/170864 (83%)	120912 (86%)	17406 (12%)	3006 (2%)	8	31

5 of 3006 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1A	619	SER
1	1A	807	VAL
1	1A	850	PRO
2	1D	146	VAL
5	1N	86	ALA

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	
2	1D	123/611 (20%)	105 (85%)	18 (15%)	2	15
2	1E	176/611 (29%)	157 (89%)	19 (11%)	5	24

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	1F	78/611 (13%)	78 (100%)	0	100	100
3	1H	72/486 (15%)	72 (100%)	0	100	100
3	1I	342/486 (70%)	338 (99%)	4 (1%)	67	82
4	1K	147/182 (81%)	145 (99%)	2 (1%)	62	79
4	1L	31/182 (17%)	31 (100%)	0	100	100
5	1N	95/168 (56%)	95 (100%)	0	100	100
5	1O	97/168 (58%)	97 (100%)	0	100	100
5	1P	99/168 (59%)	98 (99%)	1 (1%)	73	84
6	1R	83/92 (90%)	83 (100%)	0	100	100
7	1T	223/281 (79%)	221 (99%)	2 (1%)	75	86
7	1U	223/281 (79%)	221 (99%)	2 (1%)	75	86
8	1W	128/180 (71%)	82 (64%)	46 (36%)	0	1
8	1X	172/180 (96%)	171 (99%)	1 (1%)	84	91
8	1Y	172/180 (96%)	169 (98%)	3 (2%)	56	75
8	1Z	172/180 (96%)	172 (100%)	0	100	100
8	2A	172/180 (96%)	159 (92%)	13 (8%)	11	35
8	2B	172/180 (96%)	172 (100%)	0	100	100
9	2D	392/750 (52%)	390 (100%)	2 (0%)	86	92
9	2E	91/750 (12%)	91 (100%)	0	100	100
10	2F	69/152 (45%)	68 (99%)	1 (1%)	62	79
10	2G	69/152 (45%)	69 (100%)	0	100	100
10	2H	69/152 (45%)	67 (97%)	2 (3%)	37	63
11	2J	150/495 (30%)	149 (99%)	1 (1%)	81	89
11	2K	268/495 (54%)	254 (95%)	14 (5%)	19	47
11	2L	256/495 (52%)	251 (98%)	5 (2%)	50	71
11	2M	162/495 (33%)	160 (99%)	2 (1%)	67	82
12	2O	515/527 (98%)	513 (100%)	2 (0%)	89	94
12	2P	515/527 (98%)	513 (100%)	2 (0%)	89	94
12	2Q	515/527 (98%)	513 (100%)	2 (0%)	89	94
13	2S	175/469 (37%)	172 (98%)	3 (2%)	56	75
13	2T	183/469 (39%)	147 (80%)	36 (20%)	1	6

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	2V	29/252 (12%)	29 (100%)	0	100	100
14	2W	189/252 (75%)	188 (100%)	1 (0%)	86	92
14	2X	184/252 (73%)	184 (100%)	0	100	100
14	2Y	144/252 (57%)	143 (99%)	1 (1%)	81	89
15	3A	165/208 (79%)	161 (98%)	4 (2%)	44	68
16	3C	182/264 (69%)	176 (97%)	6 (3%)	33	60
16	3D	58/264 (22%)	58 (100%)	0	100	100
19	3J	391/574 (68%)	389 (100%)	2 (0%)	86	92
19	3K	400/574 (70%)	398 (100%)	2 (0%)	86	92
19	3L	409/574 (71%)	406 (99%)	3 (1%)	81	89
20	3N	264/672 (39%)	262 (99%)	2 (1%)	79	87
20	3O	532/672 (79%)	530 (100%)	2 (0%)	89	94
20	3P	532/672 (79%)	529 (99%)	3 (1%)	84	91
20	3Q	268/672 (40%)	266 (99%)	2 (1%)	81	89
21	3S	62/238 (26%)	62 (100%)	0	100	100
21	3T	218/238 (92%)	216 (99%)	2 (1%)	75	86
21	3U	218/238 (92%)	215 (99%)	3 (1%)	62	79
21	3V	191/238 (80%)	191 (100%)	0	100	100
22	3X	106/231 (46%)	106 (100%)	0	100	100
22	3Y	116/231 (50%)	107 (92%)	9 (8%)	10	34
22	3Z	108/231 (47%)	108 (100%)	0	100	100
22	4A	89/231 (38%)	89 (100%)	0	100	100
22	4B	87/231 (38%)	87 (100%)	0	100	100
22	4C	70/231 (30%)	70 (100%)	0	100	100
23	4D	107/121 (88%)	107 (100%)	0	100	100
24	4F	131/450 (29%)	104 (79%)	27 (21%)	1	5
24	4G	306/450 (68%)	304 (99%)	2 (1%)	81	89
25	4I	191/324 (59%)	190 (100%)	1 (0%)	86	92
25	4J	319/324 (98%)	312 (98%)	7 (2%)	47	69
26	4K	118/551 (21%)	117 (99%)	1 (1%)	79	87
26	4L	206/551 (37%)	205 (100%)	1 (0%)	86	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
26	4M	95/551 (17%)	95 (100%)	0	100	100
27	4O	192/227 (85%)	192 (100%)	0	100	100
27	4P	192/227 (85%)	191 (100%)	1 (0%)	86	92
27	4Q	192/227 (85%)	192 (100%)	0	100	100
27	4R	192/227 (85%)	140 (73%)	52 (27%)	0	2
27	4S	192/227 (85%)	192 (100%)	0	100	100
27	4T	192/227 (85%)	180 (94%)	12 (6%)	15	42
28	4V	36/122 (30%)	36 (100%)	0	100	100
28	4W	70/122 (57%)	69 (99%)	1 (1%)	62	79
29	4Y	91/114 (80%)	91 (100%)	0	100	100
30	5A	311/335 (93%)	308 (99%)	3 (1%)	73	84
30	5B	14/335 (4%)	14 (100%)	0	100	100
31	5D	145/154 (94%)	145 (100%)	0	100	100
31	5E	144/154 (94%)	135 (94%)	9 (6%)	15	42
31	5F	147/154 (96%)	147 (100%)	0	100	100
31	5G	145/154 (94%)	144 (99%)	1 (1%)	81	89
31	5H	145/154 (94%)	144 (99%)	1 (1%)	81	89
31	5I	145/154 (94%)	145 (100%)	0	100	100
31	5J	145/154 (94%)	145 (100%)	0	100	100
32	5L	103/382 (27%)	103 (100%)	0	100	100
32	5M	363/382 (95%)	357 (98%)	6 (2%)	56	75
32	5N	363/382 (95%)	360 (99%)	3 (1%)	79	87
32	5O	274/382 (72%)	174 (64%)	100 (36%)	0	1
33	5Q	103/386 (27%)	103 (100%)	0	100	100
33	5R	357/386 (92%)	356 (100%)	1 (0%)	91	96
33	5S	357/386 (92%)	301 (84%)	56 (16%)	2	13
33	5T	271/386 (70%)	159 (59%)	112 (41%)	0	0
33	5V	271/386 (70%)	257 (95%)	14 (5%)	19	47
33	5W	366/386 (95%)	360 (98%)	6 (2%)	58	75
33	5X	366/386 (95%)	364 (100%)	2 (0%)	86	92
33	5Y	99/386 (26%)	93 (94%)	6 (6%)	15	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	6A	249/444 (56%)	151 (61%)	98 (39%)	0	1
34	6B	354/444 (80%)	324 (92%)	30 (8%)	8	32
34	6C	355/444 (80%)	225 (63%)	130 (37%)	0	1
34	6D	110/444 (25%)	69 (63%)	41 (37%)	0	1
34	6E	55/444 (12%)	43 (78%)	12 (22%)	1	4
34	6F	320/444 (72%)	308 (96%)	12 (4%)	28	57
34	6G	378/444 (85%)	376 (100%)	2 (0%)	86	92
34	6H	333/444 (75%)	330 (99%)	3 (1%)	75	86
34	6I	63/444 (14%)	63 (100%)	0	100	100
34	6J	63/444 (14%)	63 (100%)	0	100	100
34	6K	335/444 (76%)	334 (100%)	1 (0%)	91	96
34	6L	378/444 (85%)	362 (96%)	16 (4%)	25	54
34	6M	323/444 (73%)	323 (100%)	0	100	100
34	6N	50/444 (11%)	50 (100%)	0	100	100
35	6P	158/394 (40%)	158 (100%)	0	100	100
35	6Q	363/394 (92%)	362 (100%)	1 (0%)	91	96
35	6R	363/394 (92%)	334 (92%)	29 (8%)	10	33
35	6S	226/394 (57%)	202 (89%)	24 (11%)	5	24
35	6T	209/394 (53%)	208 (100%)	1 (0%)	86	92
35	6U	365/394 (93%)	364 (100%)	1 (0%)	91	96
35	6V	386/394 (98%)	360 (93%)	26 (7%)	13	40
35	6W	189/394 (48%)	178 (94%)	11 (6%)	17	44
36	6Y	97/593 (16%)	96 (99%)	1 (1%)	73	84
36	6Z	97/593 (16%)	96 (99%)	1 (1%)	73	84
37	7C	98/215 (46%)	97 (99%)	1 (1%)	73	84
37	7D	66/215 (31%)	66 (100%)	0	100	100
37	7E	65/215 (30%)	65 (100%)	0	100	100
37	7F	56/215 (26%)	50 (89%)	6 (11%)	5	24
38	7H	66/239 (28%)	66 (100%)	0	100	100
38	7I	25/239 (10%)	24 (96%)	1 (4%)	27	55
39	7K	93/126 (74%)	93 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	7L	41/126 (32%)	41 (100%)	0	100	100
40	7N	62/397 (16%)	62 (100%)	0	100	100
41	AB	373/380 (98%)	371 (100%)	2 (0%)	86	92
41	AD	373/380 (98%)	372 (100%)	1 (0%)	91	96
41	AF	373/380 (98%)	372 (100%)	1 (0%)	91	96
41	AH	373/380 (98%)	268 (72%)	105 (28%)	0	2
41	AJ	373/380 (98%)	373 (100%)	0	100	100
41	AL	373/380 (98%)	267 (72%)	106 (28%)	0	2
41	BB	367/380 (97%)	367 (100%)	0	100	100
41	BD	367/380 (97%)	245 (67%)	122 (33%)	0	1
41	BF	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	BH	367/380 (97%)	363 (99%)	4 (1%)	70	83
41	BJ	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	BL	365/380 (96%)	361 (99%)	4 (1%)	70	83
41	CB	366/380 (96%)	366 (100%)	0	100	100
41	CD	366/380 (96%)	225 (62%)	141 (38%)	0	1
41	CF	367/380 (97%)	229 (62%)	138 (38%)	0	1
41	CH	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	CJ	367/380 (97%)	238 (65%)	129 (35%)	0	1
41	CL	365/380 (96%)	364 (100%)	1 (0%)	91	96
41	DB	366/380 (96%)	364 (100%)	2 (0%)	86	92
41	DD	366/380 (96%)	366 (100%)	0	100	100
41	DF	366/380 (96%)	366 (100%)	0	100	100
41	DH	366/380 (96%)	246 (67%)	120 (33%)	0	1
41	DJ	366/380 (96%)	242 (66%)	124 (34%)	0	1
41	DL	365/380 (96%)	344 (94%)	21 (6%)	17	44
41	ED	366/380 (96%)	258 (70%)	108 (30%)	0	2
41	EF	366/380 (96%)	366 (100%)	0	100	100
41	EH	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	EJ	366/380 (96%)	363 (99%)	3 (1%)	79	87
41	EL	365/380 (96%)	344 (94%)	21 (6%)	17	44

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
41	FD	367/380 (97%)	233 (64%)	134 (36%)	0	1
41	FF	366/380 (96%)	356 (97%)	10 (3%)	40	65
41	FH	366/380 (96%)	366 (100%)	0	100	100
41	FJ	366/380 (96%)	363 (99%)	3 (1%)	79	87
41	FL	365/380 (96%)	237 (65%)	128 (35%)	0	1
41	GD	367/380 (97%)	250 (68%)	117 (32%)	0	2
41	GF	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	GH	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	GJ	367/380 (97%)	249 (68%)	118 (32%)	0	1
41	GL	365/380 (96%)	365 (100%)	0	100	100
41	HB	366/380 (96%)	359 (98%)	7 (2%)	52	73
41	HD	367/380 (97%)	251 (68%)	116 (32%)	0	2
41	HF	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	HH	367/380 (97%)	364 (99%)	3 (1%)	79	87
41	HJ	367/380 (97%)	245 (67%)	122 (33%)	0	1
41	HL	365/380 (96%)	364 (100%)	1 (0%)	91	96
41	ID	367/380 (97%)	367 (100%)	0	100	100
41	IF	367/380 (97%)	367 (100%)	0	100	100
41	IH	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	IJ	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	IL	366/380 (96%)	365 (100%)	1 (0%)	91	96
41	IN	367/380 (97%)	257 (70%)	110 (30%)	0	2
41	JD	367/380 (97%)	357 (97%)	10 (3%)	40	65
41	JF	366/380 (96%)	365 (100%)	1 (0%)	91	96
41	JH	366/380 (96%)	364 (100%)	2 (0%)	86	92
41	JJ	366/380 (96%)	365 (100%)	1 (0%)	91	96
41	JL	366/380 (96%)	258 (70%)	108 (30%)	0	2
41	KD	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	KF	367/380 (97%)	367 (100%)	0	100	100
41	KH	368/380 (97%)	367 (100%)	1 (0%)	91	96
41	KJ	366/380 (96%)	366 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
41	KL	368/380 (97%)	368 (100%)	0	100	100
41	KN	367/380 (97%)	364 (99%)	3 (1%)	79	87
41	LD	367/380 (97%)	276 (75%)	91 (25%)	0	3
41	LF	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	LH	367/380 (97%)	367 (100%)	0	100	100
41	LJ	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	LL	366/380 (96%)	366 (100%)	0	100	100
41	LN	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	MD	366/380 (96%)	246 (67%)	120 (33%)	0	1
41	MF	367/380 (97%)	224 (61%)	143 (39%)	0	1
41	MH	367/380 (97%)	367 (100%)	0	100	100
41	MJ	366/380 (96%)	365 (100%)	1 (0%)	91	96
41	ML	366/380 (96%)	365 (100%)	1 (0%)	91	96
41	MN	366/380 (96%)	232 (63%)	134 (37%)	0	1
41	NB	367/380 (97%)	257 (70%)	110 (30%)	0	2
41	ND	367/380 (97%)	237 (65%)	130 (35%)	0	1
41	NF	367/380 (97%)	239 (65%)	128 (35%)	0	1
41	NH	367/380 (97%)	244 (66%)	123 (34%)	0	1
41	NJ	367/380 (97%)	362 (99%)	5 (1%)	62	79
41	NL	339/380 (89%)	337 (99%)	2 (1%)	84	91
41	OB	365/380 (96%)	247 (68%)	118 (32%)	0	1
41	OD	364/380 (96%)	364 (100%)	0	100	100
41	OF	365/380 (96%)	358 (98%)	7 (2%)	52	73
41	OH	367/380 (97%)	244 (66%)	123 (34%)	0	1
41	OJ	367/380 (97%)	236 (64%)	131 (36%)	0	1
41	OL	364/380 (96%)	364 (100%)	0	100	100
41	PB	367/380 (97%)	231 (63%)	136 (37%)	0	1
41	PD	367/380 (97%)	236 (64%)	131 (36%)	0	1
41	PF	367/380 (97%)	242 (66%)	125 (34%)	0	1
41	PH	367/380 (97%)	222 (60%)	145 (40%)	0	1
41	PJ	367/380 (97%)	216 (59%)	151 (41%)	0	1

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
41	PL	365/380 (96%)	228 (62%)	137 (38%)	0	1
41	QB	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	QD	367/380 (97%)	367 (100%)	0	100	100
41	QF	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	QH	367/380 (97%)	237 (65%)	130 (35%)	0	1
41	QJ	367/380 (97%)	225 (61%)	142 (39%)	0	1
41	QL	366/380 (96%)	241 (66%)	125 (34%)	0	1
41	RB	367/380 (97%)	367 (100%)	0	100	100
41	RD	367/380 (97%)	230 (63%)	137 (37%)	0	1
41	RF	367/380 (97%)	215 (59%)	152 (41%)	0	0
41	RH	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	RJ	367/380 (97%)	238 (65%)	129 (35%)	0	1
41	RL	366/380 (96%)	364 (100%)	2 (0%)	86	92
41	SD	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	SF	367/380 (97%)	246 (67%)	121 (33%)	0	1
41	SH	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	SJ	367/380 (97%)	362 (99%)	5 (1%)	62	79
41	SL	366/380 (96%)	239 (65%)	127 (35%)	0	1
41	TD	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	TF	367/380 (97%)	367 (100%)	0	100	100
41	TH	367/380 (97%)	363 (99%)	4 (1%)	70	83
41	TJ	367/380 (97%)	358 (98%)	9 (2%)	42	67
41	TL	366/380 (96%)	366 (100%)	0	100	100
41	UD	367/380 (97%)	360 (98%)	7 (2%)	52	73
41	UF	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	UH	367/380 (97%)	365 (100%)	2 (0%)	86	92
41	UJ	367/380 (97%)	366 (100%)	1 (0%)	91	96
41	UL	366/380 (96%)	353 (96%)	13 (4%)	30	58
41	VD	367/380 (97%)	367 (100%)	0	100	100
41	VF	367/380 (97%)	352 (96%)	15 (4%)	26	54
41	VH	367/380 (97%)	365 (100%)	2 (0%)	86	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
41	VJ	367/380 (97%)	361 (98%)	6 (2%)	58	75
41	VL	366/380 (96%)	366 (100%)	0	100	100
41	WD	367/380 (97%)	367 (100%)	0	100	100
41	WF	366/380 (96%)	239 (65%)	127 (35%)	0	1
41	WH	366/380 (96%)	264 (72%)	102 (28%)	0	2
41	WJ	366/380 (96%)	359 (98%)	7 (2%)	52	73
41	WL	366/380 (96%)	364 (100%)	2 (0%)	86	92
41	WN	366/380 (96%)	365 (100%)	1 (0%)	91	96
42	AC	370/379 (98%)	367 (99%)	3 (1%)	79	87
42	AE	370/379 (98%)	369 (100%)	1 (0%)	91	96
42	AG	370/379 (98%)	362 (98%)	8 (2%)	47	69
42	AI	370/379 (98%)	265 (72%)	105 (28%)	0	2
42	AK	370/379 (98%)	262 (71%)	108 (29%)	0	2
42	BC	370/379 (98%)	369 (100%)	1 (0%)	91	96
42	BE	366/379 (97%)	362 (99%)	4 (1%)	70	83
42	BG	370/379 (98%)	358 (97%)	12 (3%)	34	61
42	BI	363/379 (96%)	259 (71%)	104 (29%)	0	2
42	BK	369/379 (97%)	369 (100%)	0	100	100
42	CC	368/379 (97%)	240 (65%)	128 (35%)	0	1
42	CE	368/379 (97%)	368 (100%)	0	100	100
42	CG	369/379 (97%)	239 (65%)	130 (35%)	0	1
42	CI	369/379 (97%)	369 (100%)	0	100	100
42	CK	369/379 (97%)	369 (100%)	0	100	100
42	CM	369/379 (97%)	368 (100%)	1 (0%)	91	96
42	DC	362/379 (96%)	359 (99%)	3 (1%)	79	87
42	DE	363/379 (96%)	363 (100%)	0	100	100
42	DG	364/379 (96%)	362 (100%)	2 (0%)	86	92
42	DI	362/379 (96%)	362 (100%)	0	100	100
42	DK	363/379 (96%)	258 (71%)	105 (29%)	0	2
42	DM	363/379 (96%)	363 (100%)	0	100	100
42	EC	369/379 (97%)	368 (100%)	1 (0%)	91	96

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	EE	371/379 (98%)	260 (70%)	111 (30%)	0	2
42	EG	367/379 (97%)	258 (70%)	109 (30%)	0	2
42	EI	366/379 (97%)	365 (100%)	1 (0%)	91	96
42	EK	370/379 (98%)	232 (63%)	138 (37%)	0	1
42	EM	361/379 (95%)	228 (63%)	133 (37%)	0	1
42	FC	364/379 (96%)	217 (60%)	147 (40%)	0	1
42	FE	359/379 (95%)	359 (100%)	0	100	100
42	FG	360/379 (95%)	354 (98%)	6 (2%)	56	75
42	FI	360/379 (95%)	357 (99%)	3 (1%)	79	87
42	FK	358/379 (94%)	219 (61%)	139 (39%)	0	1
42	FM	362/379 (96%)	360 (99%)	2 (1%)	84	91
42	GC	370/379 (98%)	368 (100%)	2 (0%)	86	92
42	GE	363/379 (96%)	362 (100%)	1 (0%)	91	96
42	GG	366/379 (97%)	364 (100%)	2 (0%)	86	92
42	GI	362/379 (96%)	361 (100%)	1 (0%)	91	96
42	GK	362/379 (96%)	361 (100%)	1 (0%)	91	96
42	GM	369/379 (97%)	232 (63%)	137 (37%)	0	1
42	HC	360/379 (95%)	230 (64%)	130 (36%)	0	1
42	HE	363/379 (96%)	361 (99%)	2 (1%)	84	91
42	HG	363/379 (96%)	256 (70%)	107 (30%)	0	2
42	HI	363/379 (96%)	230 (63%)	133 (37%)	0	1
42	HK	364/379 (96%)	360 (99%)	4 (1%)	70	83
42	HM	362/379 (96%)	256 (71%)	106 (29%)	0	2
42	IC	362/379 (96%)	357 (99%)	5 (1%)	62	79
42	IE	365/379 (96%)	233 (64%)	132 (36%)	0	1
42	IG	370/379 (98%)	370 (100%)	0	100	100
42	II	365/379 (96%)	365 (100%)	0	100	100
42	IK	370/379 (98%)	369 (100%)	1 (0%)	91	96
42	IM	364/379 (96%)	364 (100%)	0	100	100
42	JC	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	JE	363/379 (96%)	360 (99%)	3 (1%)	79	87

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	JG	361/379 (95%)	359 (99%)	2 (1%)	84	91
42	JI	362/379 (96%)	362 (100%)	0	100	100
42	JK	370/379 (98%)	233 (63%)	137 (37%)	0	1
42	JM	363/379 (96%)	240 (66%)	123 (34%)	0	1
42	KC	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	KE	364/379 (96%)	364 (100%)	0	100	100
42	KG	362/379 (96%)	361 (100%)	1 (0%)	91	96
42	KI	361/379 (95%)	360 (100%)	1 (0%)	91	96
42	KK	363/379 (96%)	362 (100%)	1 (0%)	91	96
42	KM	362/379 (96%)	265 (73%)	97 (27%)	0	2
42	LC	366/379 (97%)	365 (100%)	1 (0%)	91	96
42	LE	370/379 (98%)	368 (100%)	2 (0%)	86	92
42	LG	366/379 (97%)	366 (100%)	0	100	100
42	LI	366/379 (97%)	365 (100%)	1 (0%)	91	96
42	LK	366/379 (97%)	366 (100%)	0	100	100
42	LM	364/379 (96%)	364 (100%)	0	100	100
42	MC	369/379 (97%)	367 (100%)	2 (0%)	86	92
42	ME	362/379 (96%)	361 (100%)	1 (0%)	91	96
42	MG	363/379 (96%)	262 (72%)	101 (28%)	0	2
42	MI	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	MK	370/379 (98%)	367 (99%)	3 (1%)	79	87
42	MM	363/379 (96%)	363 (100%)	0	100	100
42	NA	363/379 (96%)	224 (62%)	139 (38%)	0	1
42	NC	362/379 (96%)	252 (70%)	110 (30%)	0	2
42	NE	363/379 (96%)	361 (99%)	2 (1%)	84	91
42	NG	365/379 (96%)	241 (66%)	124 (34%)	0	1
42	NI	365/379 (96%)	235 (64%)	130 (36%)	0	1
42	NK	363/379 (96%)	246 (68%)	117 (32%)	0	1
42	OA	361/379 (95%)	360 (100%)	1 (0%)	91	96
42	OC	362/379 (96%)	362 (100%)	0	100	100
42	OE	366/379 (97%)	363 (99%)	3 (1%)	79	87

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	OG	365/379 (96%)	239 (66%)	126 (34%)	0	1
42	OI	365/379 (96%)	364 (100%)	1 (0%)	91	96
42	OK	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	PA	314/379 (83%)	196 (62%)	118 (38%)	0	1
42	PC	365/379 (96%)	234 (64%)	131 (36%)	0	1
42	PE	364/379 (96%)	238 (65%)	126 (35%)	0	1
42	PG	363/379 (96%)	227 (62%)	136 (38%)	0	1
42	PI	360/379 (95%)	222 (62%)	138 (38%)	0	1
42	PK	363/379 (96%)	248 (68%)	115 (32%)	0	2
42	QC	363/379 (96%)	362 (100%)	1 (0%)	91	96
42	QE	363/379 (96%)	360 (99%)	3 (1%)	79	87
42	QG	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	QI	362/379 (96%)	238 (66%)	124 (34%)	0	1
42	QK	364/379 (96%)	243 (67%)	121 (33%)	0	1
42	RC	365/379 (96%)	363 (100%)	2 (0%)	86	92
42	RE	361/379 (95%)	360 (100%)	1 (0%)	91	96
42	RG	363/379 (96%)	361 (99%)	2 (1%)	84	91
42	RI	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	RK	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	SC	363/379 (96%)	361 (99%)	2 (1%)	84	91
42	SE	364/379 (96%)	258 (71%)	106 (29%)	0	2
42	SG	364/379 (96%)	363 (100%)	1 (0%)	91	96
42	SI	363/379 (96%)	231 (64%)	132 (36%)	0	1
42	SK	365/379 (96%)	364 (100%)	1 (0%)	91	96
42	SM	364/379 (96%)	362 (100%)	2 (0%)	86	92
42	TC	363/379 (96%)	362 (100%)	1 (0%)	91	96
42	TE	365/379 (96%)	364 (100%)	1 (0%)	91	96
42	TG	363/379 (96%)	363 (100%)	0	100	100
42	TI	363/379 (96%)	239 (66%)	124 (34%)	0	1
42	TK	365/379 (96%)	248 (68%)	117 (32%)	0	1
42	TM	363/379 (96%)	361 (99%)	2 (1%)	84	91

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	UC	366/379 (97%)	245 (67%)	121 (33%)	0	1
42	UE	365/379 (96%)	364 (100%)	1 (0%)	91	96
42	UG	366/379 (97%)	344 (94%)	22 (6%)	16	43
42	UI	366/379 (97%)	365 (100%)	1 (0%)	91	96
42	UK	365/379 (96%)	357 (98%)	8 (2%)	47	69
42	UM	364/379 (96%)	359 (99%)	5 (1%)	62	79
42	VC	370/379 (98%)	369 (100%)	1 (0%)	91	96
42	VE	366/379 (97%)	365 (100%)	1 (0%)	91	96
42	VG	370/379 (98%)	369 (100%)	1 (0%)	91	96
42	VI	366/379 (97%)	364 (100%)	2 (0%)	86	92
42	VK	370/379 (98%)	253 (68%)	117 (32%)	0	2
42	VM	363/379 (96%)	363 (100%)	0	100	100
42	WC	370/379 (98%)	370 (100%)	0	100	100
42	WE	364/379 (96%)	274 (75%)	90 (25%)	0	3
42	WG	369/379 (97%)	367 (100%)	2 (0%)	86	92
42	WI	364/379 (96%)	269 (74%)	95 (26%)	0	3
42	WK	368/379 (97%)	367 (100%)	1 (0%)	91	96
42	WM	364/379 (96%)	364 (100%)	0	100	100
All	All	121565/144487 (84%)	109251 (90%)	12314 (10%)	9	26

5 of 12314 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
42	NI	167	LEU
41	PH	390	ARG
41	OB	19	LYS
42	NI	137	ILE
41	PB	209	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 1108 such sidechains are listed below:

Mol	Chain	Res	Type
42	RG	11	GLN
42	SE	61	HIS
41	RF	426	GLN

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Mol	Chain	Res	Type
42	UG	101	ASN
42	FM	380	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 370 ligands modelled in this entry, 106 are monoatomic - leaving 264 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	II	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.29	3 (8%)
43	GDP	FL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.02	1 (3%)
43	GDP	IL	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.38	5 (16%)
43	GDP	GF	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.06	2 (6%)
43	GDP	RB	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.17	2 (6%)
43	GDP	MN	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.14	3 (10%)
45	GTP	KI	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.32	5 (14%)
43	GDP	UJ	501	-	25,30,30	1.39	3 (12%)	30,47,47	1.69	6 (20%)
45	GTP	GK	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.33	5 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	IG	501	44	29,34,34	1.21	2 (6%)	35,54,54	1.32	4 (11%)
45	GTP	PC	501	44	29,34,34	1.29	2 (6%)	35,54,54	1.39	6 (17%)
43	GDP	LN	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.08	1 (3%)
43	GDP	QJ	501	-	25,30,30	1.00	1 (4%)	30,47,47	1.28	5 (16%)
43	GDP	DL	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.19	3 (10%)
43	GDP	UF	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.13	2 (6%)
43	GDP	UD	501	-	25,30,30	0.91	1 (4%)	30,47,47	1.09	2 (6%)
45	GTP	KG	501	44	29,34,34	1.29	3 (10%)	35,54,54	1.28	4 (11%)
45	GTP	IC	501	44	29,34,34	1.26	1 (3%)	35,54,54	1.17	4 (11%)
45	GTP	NC	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.34	4 (11%)
45	GTP	GC	501	44	29,34,34	1.31	3 (10%)	35,54,54	1.77	6 (17%)
43	GDP	FD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.13	2 (6%)
45	GTP	KC	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.35	5 (14%)
45	GTP	JE	501	44	29,34,34	1.42	4 (13%)	35,54,54	1.49	5 (14%)
45	GTP	JI	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.31	4 (11%)
45	GTP	MI	501	44	29,34,34	1.22	1 (3%)	35,54,54	1.22	3 (8%)
43	GDP	IJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	RF	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.15	2 (6%)
43	GDP	OB	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.13	3 (10%)
45	GTP	CK	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.42	6 (17%)
45	GTP	FE	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.38	5 (14%)
45	GTP	RC	501	-	29,34,34	1.20	2 (6%)	35,54,54	1.24	4 (11%)
43	GDP	ED	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.07	2 (6%)
45	GTP	WI	501	44	29,34,34	1.21	2 (6%)	35,54,54	1.67	6 (17%)
43	GDP	NB	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	HJ	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.12	3 (10%)
45	GTP	NA	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.41	6 (17%)
45	GTP	TK	501	44	29,34,34	1.24	2 (6%)	35,54,54	1.33	6 (17%)
45	GTP	SI	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.26	4 (11%)
45	GTP	FM	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.33	4 (11%)
45	GTP	GM	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.31	4 (11%)
45	GTP	RK	501	-	29,34,34	1.20	2 (6%)	35,54,54	1.39	4 (11%)
45	GTP	VM	501	44	29,34,34	1.22	1 (3%)	35,54,54	1.42	6 (17%)
45	GTP	PK	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.30	4 (11%)
45	GTP	SE	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.39	5 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
43	GDP	RL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.10	3 (10%)
45	GTP	AF	502	44	29,34,34	1.25	2 (6%)	35,54,54	1.38	7 (20%)
43	GDP	CB	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.06	2 (6%)
45	GTP	RI	501	-	29,34,34	1.12	2 (6%)	35,54,54	1.74	6 (17%)
43	GDP	PB	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.26	4 (13%)
43	GDP	UH	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.08	2 (6%)
43	GDP	TJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.11	2 (6%)
45	GTP	AC	501	44	29,34,34	1.21	2 (6%)	35,54,54	1.30	5 (14%)
45	GTP	DC	501	-	29,34,34	1.16	1 (3%)	35,54,54	1.33	5 (14%)
45	GTP	TC	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.38	3 (8%)
43	GDP	EF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	2 (6%)
45	GTP	TM	501	44	29,34,34	1.18	2 (6%)	35,54,54	1.42	7 (20%)
45	GTP	UG	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.31	4 (11%)
45	GTP	KK	501	44	29,34,34	1.27	1 (3%)	35,54,54	1.39	5 (14%)
45	GTP	OA	501	44	29,34,34	1.33	5 (17%)	35,54,54	1.29	5 (14%)
43	GDP	SJ	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.15	1 (3%)
45	GTP	PG	501	44	29,34,34	1.23	1 (3%)	35,54,54	1.30	3 (8%)
43	GDP	WF	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.05	2 (6%)
45	GTP	BE	501	44	29,34,34	1.24	2 (6%)	35,54,54	1.31	4 (11%)
43	GDP	HF	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.14	3 (10%)
45	GTP	BC	501	44	29,34,34	1.32	3 (10%)	35,54,54	1.29	4 (11%)
43	GDP	CL	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.08	2 (6%)
43	GDP	GJ	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.14	3 (10%)
45	GTP	QC	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.24	3 (8%)
43	GDP	MJ	501	-	25,30,30	1.01	1 (4%)	30,47,47	1.13	3 (10%)
43	GDP	JD	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.06	2 (6%)
43	GDP	GD	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.07	2 (6%)
45	GTP	PI	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.33	4 (11%)
43	GDP	BH	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.06	2 (6%)
43	GDP	VH	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.13	2 (6%)
45	GTP	UM	501	44	29,34,34	1.14	1 (3%)	35,54,54	1.39	4 (11%)
43	GDP	SD	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	BD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.10	2 (6%)
45	GTP	LM	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.34	6 (17%)
45	GTP	DM	501	44	29,34,34	1.24	3 (10%)	35,54,54	1.34	5 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	IM	501	44	29,34,34	1.25	1 (3%)	35,54,54	1.35	4 (11%)
45	GTP	MC	501	44	29,34,34	1.26	2 (6%)	35,54,54	1.39	6 (17%)
45	GTP	GF	502	44	29,34,34	1.26	2 (6%)	35,54,54	1.35	5 (14%)
45	GTP	GI	501	44	29,34,34	1.28	2 (6%)	35,54,54	1.53	6 (17%)
45	GTP	NE	501	44	29,34,34	1.14	2 (6%)	35,54,54	1.38	5 (14%)
43	GDP	HL	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.12	3 (10%)
45	GTP	NK	501	44	29,34,34	1.33	4 (13%)	35,54,54	1.33	4 (11%)
43	GDP	TL	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	3 (10%)
45	GTP	WC	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.26	4 (11%)
45	GTP	NI	501	44	29,34,34	1.22	1 (3%)	35,54,54	1.40	6 (17%)
43	GDP	ID	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.12	3 (10%)
45	GTP	MK	501	44	29,34,34	1.26	2 (6%)	35,54,54	1.37	4 (11%)
45	GTP	FF	502	44	29,34,34	1.20	2 (6%)	35,54,54	1.32	4 (11%)
43	GDP	AD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.09	2 (6%)
45	GTP	MG	501	-	29,34,34	1.23	2 (6%)	35,54,54	1.26	3 (8%)
45	GTP	JK	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.33	4 (11%)
43	GDP	AJ	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.18	3 (10%)
45	GTP	JM	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.26	4 (11%)
43	GDP	KN	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.06	2 (6%)
43	GDP	SL	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.24	3 (10%)
45	GTP	AK	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.34	4 (11%)
43	GDP	ND	501	-	25,30,30	1.01	1 (4%)	30,47,47	1.03	1 (3%)
45	GTP	UE	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.36	6 (17%)
43	GDP	AF	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.12	2 (6%)
43	GDP	LL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.08	2 (6%)
45	GTP	SK	501	44	29,34,34	1.22	1 (3%)	35,54,54	1.42	5 (14%)
43	GDP	BF	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.12	2 (6%)
43	GDP	EJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.18	2 (6%)
45	GTP	AE	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.35	4 (11%)
45	GTP	IE	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.38	7 (20%)
45	GTP	LF	502	44	29,34,34	1.24	3 (10%)	35,54,54	1.39	4 (11%)
45	GTP	WE	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.24	4 (11%)
45	GTP	BG	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.33	5 (14%)
45	GTP	UC	501	-	29,34,34	1.37	3 (10%)	35,54,54	1.41	5 (14%)
45	GTP	OE	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.35	3 (8%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	WK	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.34	4 (11%)
45	GTP	HK	501	44	29,34,34	1.31	2 (6%)	35,54,54	1.42	6 (17%)
45	GTP	VI	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.31	5 (14%)
43	GDP	WJ	501	-	25,30,30	1.00	1 (4%)	30,47,47	1.15	2 (6%)
43	GDP	TD	501	-	25,30,30	1.00	2 (8%)	30,47,47	1.24	3 (10%)
45	GTP	LE	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.39	5 (14%)
45	GTP	WM	501	44	29,34,34	1.21	2 (6%)	35,54,54	1.35	6 (17%)
45	GTP	CG	501	-	29,34,34	1.22	1 (3%)	35,54,54	1.27	5 (14%)
43	GDP	JJ	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.16	3 (10%)
45	GTP	KM	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.31	4 (11%)
43	GDP	GH	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.14	1 (3%)
43	GDP	CH	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.09	2 (6%)
43	GDP	DF	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.20	2 (6%)
43	GDP	QB	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.12	2 (6%)
43	GDP	PD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.21	4 (13%)
45	GTP	RE	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.43	7 (20%)
45	GTP	TI	501	44	29,34,34	1.27	3 (10%)	35,54,54	1.33	4 (11%)
45	GTP	QE	501	-	29,34,34	1.11	3 (10%)	35,54,54	1.86	5 (14%)
45	GTP	HG	501	44	29,34,34	1.23	1 (3%)	35,54,54	1.28	5 (14%)
43	GDP	EL	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.13	3 (10%)
45	GTP	LK	501	44	29,34,34	1.29	4 (13%)	35,54,54	1.30	6 (17%)
43	GDP	DB	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.11	3 (10%)
45	GTP	EI	501	-	29,34,34	1.31	1 (3%)	35,54,54	1.28	5 (14%)
45	GTP	TE	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.52	6 (17%)
45	GTP	TG	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.25	4 (11%)
43	GDP	QL	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.12	2 (6%)
45	GTP	EG	501	-	29,34,34	1.31	2 (6%)	35,54,54	1.32	4 (11%)
45	GTP	VK	501	44	29,34,34	1.28	2 (6%)	35,54,54	1.42	5 (14%)
43	GDP	IN	501	-	25,30,30	0.91	0	30,47,47	1.19	4 (13%)
43	GDP	LF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.07	2 (6%)
43	GDP	PJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.14	3 (10%)
43	GDP	FJ	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.09	1 (3%)
43	GDP	JL	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.18	4 (13%)
45	GTP	HI	501	44	29,34,34	1.30	3 (10%)	35,54,54	1.34	6 (17%)
45	GTP	MM	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.36	4 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	FC	501	44	29,34,34	1.30	4 (13%)	35,54,54	1.40	4 (11%)
45	GTP	IK	501	44	29,34,34	1.36	4 (13%)	35,54,54	1.66	6 (17%)
45	GTP	ME	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.40	5 (14%)
45	GTP	VE	501	44	29,34,34	1.24	2 (6%)	35,54,54	1.26	4 (11%)
45	GTP	QG	501	-	29,34,34	1.20	2 (6%)	35,54,54	1.40	5 (14%)
45	GTP	OI	501	44	29,34,34	1.24	2 (6%)	35,54,54	1.37	6 (17%)
45	GTP	SG	501	44	29,34,34	1.26	2 (6%)	35,54,54	1.49	6 (17%)
43	GDP	NJ	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.12	2 (6%)
45	GTP	DI	501	-	29,34,34	1.19	2 (6%)	35,54,54	1.31	4 (11%)
45	GTP	SM	501	-	29,34,34	1.22	2 (6%)	35,54,54	1.33	5 (14%)
43	GDP	TF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	QD	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.09	2 (6%)
45	GTP	LC	501	44	29,34,34	1.24	2 (6%)	35,54,54	1.31	4 (11%)
43	GDP	GL	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.08	2 (6%)
43	GDP	SH	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.08	3 (10%)
43	GDP	TH	501	-	25,30,30	1.02	1 (4%)	30,47,47	1.09	2 (6%)
43	GDP	CF	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.24	4 (13%)
43	GDP	HB	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.12	2 (6%)
43	GDP	RD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.08	2 (6%)
43	GDP	OH	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.05	2 (6%)
43	GDP	JF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.11	2 (6%)
45	GTP	CM	501	44	29,34,34	1.18	1 (3%)	35,54,54	1.35	5 (14%)
43	GDP	AL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.18	3 (10%)
43	GDP	VL	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.07	3 (10%)
43	GDP	AH	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.06	2 (6%)
45	GTP	OG	501	-	29,34,34	1.24	2 (6%)	35,54,54	1.30	4 (11%)
45	GTP	VG	501	44	29,34,34	1.29	2 (6%)	35,54,54	1.31	5 (14%)
43	GDP	OD	501	-	25,30,30	1.03	2 (8%)	30,47,47	1.13	2 (6%)
43	GDP	NL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.17	2 (6%)
43	GDP	PH	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.14	3 (10%)
43	GDP	MD	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.09	2 (6%)
43	GDP	RH	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.13	1 (3%)
43	GDP	BB	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.30	6 (20%)
43	GDP	MH	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.11	2 (6%)
43	GDP	SF	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.12	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
43	GDP	NF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.08	1 (3%)
43	GDP	VF	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.11	3 (10%)
43	GDP	PL	501	-	25,30,30	1.12	2 (8%)	30,47,47	1.14	3 (10%)
43	GDP	OF	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.14	2 (6%)
43	GDP	VD	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.11	2 (6%)
43	GDP	UL	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.15	2 (6%)
43	GDP	WL	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.09	2 (6%)
45	GTP	DG	501	-	29,34,34	1.24	2 (6%)	35,54,54	1.43	5 (14%)
45	GTP	QK	501	-	29,34,34	1.24	3 (10%)	35,54,54	1.41	4 (11%)
43	GDP	KJ	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.11	2 (6%)
43	GDP	MF	501	-	25,30,30	1.13	2 (8%)	30,47,47	1.25	2 (6%)
43	GDP	LJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.14	3 (10%)
43	GDP	IF	501	-	25,30,30	1.01	1 (4%)	30,47,47	1.17	3 (10%)
45	GTP	EM	501	-	29,34,34	1.22	1 (3%)	35,54,54	1.31	6 (17%)
45	GTP	JG	501	44	29,34,34	1.29	3 (10%)	35,54,54	1.34	5 (14%)
43	GDP	CD	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.07	2 (6%)
45	GTP	NG	501	44	29,34,34	1.17	1 (3%)	35,54,54	1.35	5 (14%)
45	GTP	AI	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.32	4 (11%)
43	GDP	DH	501	-	25,30,30	1.01	1 (4%)	30,47,47	1.31	3 (10%)
43	GDP	EH	501	-	25,30,30	1.05	1 (4%)	30,47,47	2.09	5 (16%)
45	GTP	UK	501	44	29,34,34	1.30	3 (10%)	35,54,54	1.43	5 (14%)
43	GDP	BJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.09	2 (6%)
43	GDP	QF	501	-	25,30,30	1.00	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	HD	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	QH	501	-	25,30,30	1.02	1 (4%)	30,47,47	1.28	4 (13%)
45	GTP	EK	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.31	3 (8%)
45	GTP	GE	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.38	5 (14%)
45	GTP	HC	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.40	5 (14%)
43	GDP	LH	501	-	25,30,30	0.98	1 (4%)	30,47,47	1.13	3 (10%)
45	GTP	HE	501	44	29,34,34	1.26	2 (6%)	35,54,54	1.32	3 (8%)
45	GTP	JC	501	44	29,34,34	1.20	1 (3%)	35,54,54	1.33	3 (8%)
43	GDP	NH	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.08	2 (6%)
43	GDP	KG	503	-	25,30,30	0.97	1 (4%)	30,47,47	1.17	1 (3%)
45	GTP	EC	501	-	29,34,34	1.22	2 (6%)	35,54,54	1.32	4 (11%)
45	GTP	LI	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.34	4 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
45	GTP	BI	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.38	5 (14%)
43	GDP	FF	501	-	25,30,30	1.29	2 (8%)	30,47,47	1.61	5 (16%)
43	GDP	ML	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.37	4 (13%)
45	GTP	CI	501	44	29,34,34	1.26	2 (6%)	35,54,54	1.51	5 (14%)
43	GDP	JH	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.26	3 (10%)
43	GDP	PF	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.14	3 (10%)
45	GTP	FK	501	44	29,34,34	1.34	4 (13%)	35,54,54	1.37	6 (17%)
45	GTP	UI	501	44	29,34,34	1.11	1 (3%)	35,54,54	1.51	4 (11%)
43	GDP	FH	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.03	2 (6%)
43	GDP	WH	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	2 (6%)
45	GTP	CE	501	44	29,34,34	1.26	1 (3%)	35,54,54	1.26	4 (11%)
45	GTP	PA	501	-	29,34,34	1.25	1 (3%)	35,54,54	1.41	5 (14%)
45	GTP	RG	501	-	29,34,34	1.23	2 (6%)	35,54,54	1.57	9 (25%)
45	GTP	BK	501	44	29,34,34	1.20	3 (10%)	35,54,54	1.50	6 (17%)
43	GDP	BL	501	-	25,30,30	1.03	2 (8%)	30,47,47	1.17	3 (10%)
43	GDP	IH	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.13	3 (10%)
45	GTP	FI	501	44	29,34,34	1.20	2 (6%)	35,54,54	1.28	4 (11%)
43	GDP	DD	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.24	4 (13%)
45	GTP	CC	501	44	29,34,34	1.27	3 (10%)	35,54,54	1.29	4 (11%)
43	GDP	CJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.10	2 (6%)
43	GDP	AB	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.05	2 (6%)
45	GTP	OK	501	44	29,34,34	1.34	4 (13%)	35,54,54	1.38	5 (14%)
45	GTP	QI	501	-	29,34,34	1.21	2 (6%)	35,54,54	1.27	4 (11%)
43	GDP	LD	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.11	2 (6%)
45	GTP	DK	501	-	29,34,34	1.29	4 (13%)	35,54,54	1.53	7 (20%)
45	GTP	EE	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.29	4 (11%)
45	GTP	SC	501	44	29,34,34	1.23	2 (6%)	35,54,54	1.30	4 (11%)
43	GDP	WD	501	-	25,30,30	0.93	1 (4%)	30,47,47	1.06	2 (6%)
45	GTP	PE	501	44	29,34,34	1.25	2 (6%)	35,54,54	1.43	6 (17%)
43	GDP	HH	501	-	25,30,30	1.13	2 (8%)	30,47,47	1.76	4 (13%)
43	GDP	WN	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.03	1 (3%)
45	GTP	VC	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.38	5 (14%)
43	GDP	OL	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.22	3 (10%)
43	GDP	KF	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.06	2 (6%)
43	GDP	KL	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.09	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
43	GDP	OJ	501	-	25,30,30	0.96	1 (4%)	30,47,47	1.27	3 (10%)
43	GDP	KD	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.09	2 (6%)
45	GTP	WG	501	44	29,34,34	1.22	2 (6%)	35,54,54	1.35	5 (14%)
43	GDP	VJ	501	-	25,30,30	0.95	1 (4%)	30,47,47	1.08	3 (10%)
43	GDP	DJ	501	-	25,30,30	0.97	1 (4%)	30,47,47	1.09	1 (3%)
45	GTP	HM	501	44	29,34,34	1.29	4 (13%)	35,54,54	1.42	7 (20%)
45	GTP	DE	501	-	29,34,34	1.24	3 (10%)	35,54,54	1.38	4 (11%)
45	GTP	OC	501	44	29,34,34	1.19	2 (6%)	35,54,54	1.42	7 (20%)
43	GDP	RJ	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.39	4 (13%)
45	GTP	KE	501	44	29,34,34	1.27	2 (6%)	35,54,54	1.31	5 (14%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	GTP	II	501	-	-	3/18/38/38	0/3/3/3
43	GDP	FL	501	-	-	3/12/32/32	0/3/3/3
43	GDP	IL	501	-	-	6/12/32/32	0/3/3/3
43	GDP	GF	501	-	-	5/12/32/32	0/3/3/3
43	GDP	RB	501	-	-	1/12/32/32	0/3/3/3
43	GDP	MN	501	-	-	4/12/32/32	0/3/3/3
45	GTP	KI	501	44	-	5/18/38/38	0/3/3/3
43	GDP	UJ	501	-	-	4/12/32/32	0/3/3/3
45	GTP	GK	501	44	-	6/18/38/38	0/3/3/3
45	GTP	IG	501	44	-	6/18/38/38	0/3/3/3
45	GTP	PC	501	44	-	8/18/38/38	0/3/3/3
43	GDP	LN	501	-	-	3/12/32/32	0/3/3/3
43	GDP	QJ	501	-	-	1/12/32/32	0/3/3/3
43	GDP	DL	501	-	-	5/12/32/32	0/3/3/3
43	GDP	UF	501	-	-	0/12/32/32	0/3/3/3
43	GDP	UD	501	-	-	4/12/32/32	0/3/3/3
45	GTP	KG	501	44	-	5/18/38/38	0/3/3/3
45	GTP	IC	501	44	-	4/18/38/38	0/3/3/3
45	GTP	NC	501	44	-	7/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	GTP	GC	501	44	-	5/18/38/38	0/3/3/3
43	GDP	FD	501	-	-	4/12/32/32	0/3/3/3
45	GTP	KC	501	44	-	5/18/38/38	0/3/3/3
45	GTP	JE	501	44	-	9/18/38/38	0/3/3/3
45	GTP	JI	501	44	-	1/18/38/38	0/3/3/3
45	GTP	MI	501	44	-	7/18/38/38	0/3/3/3
43	GDP	IJ	501	-	-	1/12/32/32	0/3/3/3
43	GDP	RF	501	-	-	0/12/32/32	0/3/3/3
43	GDP	OB	501	-	-	3/12/32/32	0/3/3/3
45	GTP	CK	501	44	-	5/18/38/38	0/3/3/3
45	GTP	FE	501	44	-	4/18/38/38	0/3/3/3
45	GTP	RC	501	-	-	7/18/38/38	0/3/3/3
43	GDP	ED	501	-	-	1/12/32/32	0/3/3/3
45	GTP	WI	501	44	-	2/18/38/38	0/3/3/3
43	GDP	NB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	HJ	501	-	-	3/12/32/32	0/3/3/3
45	GTP	NA	501	44	-	5/18/38/38	0/3/3/3
45	GTP	TK	501	44	-	3/18/38/38	0/3/3/3
45	GTP	SI	501	44	-	6/18/38/38	0/3/3/3
45	GTP	FM	501	44	-	3/18/38/38	0/3/3/3
45	GTP	GM	501	44	-	5/18/38/38	0/3/3/3
45	GTP	RK	501	-	-	3/18/38/38	0/3/3/3
45	GTP	VM	501	44	-	5/18/38/38	0/3/3/3
45	GTP	PK	501	-	-	3/18/38/38	0/3/3/3
45	GTP	SE	501	44	-	6/18/38/38	0/3/3/3
43	GDP	RL	501	-	-	1/12/32/32	0/3/3/3
45	GTP	AF	502	44	-	7/18/38/38	0/3/3/3
43	GDP	CB	501	-	-	4/12/32/32	0/3/3/3
45	GTP	RI	501	-	-	5/18/38/38	0/3/3/3
43	GDP	PB	501	-	-	2/12/32/32	0/3/3/3
43	GDP	UH	501	-	-	2/12/32/32	0/3/3/3
43	GDP	TJ	501	-	-	0/12/32/32	0/3/3/3
45	GTP	AC	501	44	-	6/18/38/38	0/3/3/3
45	GTP	DC	501	-	-	11/18/38/38	0/3/3/3
45	GTP	TC	501	44	-	3/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	EF	501	-	-	3/12/32/32	0/3/3/3
45	GTP	TM	501	44	-	4/18/38/38	0/3/3/3
45	GTP	UG	501	44	-	4/18/38/38	0/3/3/3
45	GTP	KK	501	44	-	7/18/38/38	0/3/3/3
45	GTP	OA	501	44	-	7/18/38/38	0/3/3/3
43	GDP	SJ	501	-	-	3/12/32/32	0/3/3/3
45	GTP	PG	501	44	-	8/18/38/38	0/3/3/3
43	GDP	WF	501	-	-	1/12/32/32	0/3/3/3
45	GTP	BE	501	44	-	5/18/38/38	0/3/3/3
43	GDP	HF	501	-	-	2/12/32/32	0/3/3/3
45	GTP	BC	501	44	-	4/18/38/38	0/3/3/3
43	GDP	CL	501	-	-	2/12/32/32	0/3/3/3
43	GDP	GJ	501	-	-	0/12/32/32	0/3/3/3
45	GTP	QC	501	-	-	8/18/38/38	0/3/3/3
43	GDP	MJ	501	-	-	4/12/32/32	0/3/3/3
43	GDP	JD	501	-	-	0/12/32/32	0/3/3/3
43	GDP	GD	501	-	-	3/12/32/32	0/3/3/3
45	GTP	PI	501	44	-	1/18/38/38	0/3/3/3
43	GDP	BH	501	-	-	4/12/32/32	0/3/3/3
43	GDP	VH	501	-	-	1/12/32/32	0/3/3/3
45	GTP	UM	501	44	-	4/18/38/38	0/3/3/3
43	GDP	SD	501	-	-	1/12/32/32	0/3/3/3
43	GDP	BD	501	-	-	1/12/32/32	0/3/3/3
45	GTP	LM	501	44	-	6/18/38/38	0/3/3/3
45	GTP	DM	501	44	-	2/18/38/38	0/3/3/3
45	GTP	IM	501	44	-	6/18/38/38	0/3/3/3
45	GTP	MC	501	44	-	6/18/38/38	0/3/3/3
45	GTP	GF	502	44	-	6/18/38/38	0/3/3/3
45	GTP	GI	501	44	-	2/18/38/38	0/3/3/3
45	GTP	NE	501	44	-	4/18/38/38	0/3/3/3
43	GDP	HL	501	-	-	2/12/32/32	0/3/3/3
45	GTP	NK	501	44	-	6/18/38/38	0/3/3/3
43	GDP	TL	501	-	-	2/12/32/32	0/3/3/3
45	GTP	WC	501	44	-	0/18/38/38	0/3/3/3
45	GTP	NI	501	44	-	7/18/38/38	0/3/3/3
43	GDP	ID	501	-	-	2/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	GTP	MK	501	44	-	7/18/38/38	0/3/3/3
45	GTP	FF	502	44	-	6/18/38/38	0/3/3/3
43	GDP	AD	501	-	-	4/12/32/32	0/3/3/3
45	GTP	MG	501	-	-	4/18/38/38	0/3/3/3
45	GTP	JK	501	44	-	9/18/38/38	0/3/3/3
43	GDP	AJ	501	-	-	2/12/32/32	0/3/3/3
45	GTP	JM	501	44	-	3/18/38/38	0/3/3/3
43	GDP	KN	501	-	-	2/12/32/32	0/3/3/3
43	GDP	SL	501	-	-	1/12/32/32	0/3/3/3
45	GTP	AK	501	44	-	7/18/38/38	0/3/3/3
43	GDP	ND	501	-	-	1/12/32/32	0/3/3/3
45	GTP	UE	501	44	-	4/18/38/38	0/3/3/3
43	GDP	AF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	LL	501	-	-	2/12/32/32	0/3/3/3
45	GTP	SK	501	44	-	6/18/38/38	0/3/3/3
43	GDP	BF	501	-	-	2/12/32/32	0/3/3/3
43	GDP	EJ	501	-	-	4/12/32/32	0/3/3/3
45	GTP	AE	501	44	-	4/18/38/38	0/3/3/3
45	GTP	IE	501	44	-	5/18/38/38	0/3/3/3
45	GTP	LF	502	44	-	9/18/38/38	0/3/3/3
45	GTP	WE	501	44	-	5/18/38/38	0/3/3/3
45	GTP	BG	501	44	-	6/18/38/38	0/3/3/3
45	GTP	UC	501	-	-	6/18/38/38	0/3/3/3
45	GTP	OE	501	44	-	7/18/38/38	0/3/3/3
45	GTP	WK	501	44	-	7/18/38/38	0/3/3/3
45	GTP	HK	501	44	-	7/18/38/38	0/3/3/3
45	GTP	VI	501	44	-	6/18/38/38	0/3/3/3
43	GDP	WJ	501	-	-	3/12/32/32	0/3/3/3
43	GDP	TD	501	-	-	1/12/32/32	0/3/3/3
45	GTP	LE	501	44	-	6/18/38/38	0/3/3/3
45	GTP	WM	501	44	-	6/18/38/38	0/3/3/3
45	GTP	CG	501	-	-	5/18/38/38	0/3/3/3
43	GDP	JJ	501	-	-	1/12/32/32	0/3/3/3
45	GTP	KM	501	44	-	2/18/38/38	0/3/3/3
43	GDP	GH	501	-	-	2/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	CH	501	-	-	3/12/32/32	0/3/3/3
43	GDP	DF	501	-	-	2/12/32/32	0/3/3/3
43	GDP	QB	501	-	-	1/12/32/32	0/3/3/3
43	GDP	PD	501	-	-	3/12/32/32	0/3/3/3
45	GTP	RE	501	-	-	7/18/38/38	0/3/3/3
45	GTP	TI	501	44	-	6/18/38/38	0/3/3/3
45	GTP	QE	501	-	-	6/18/38/38	0/3/3/3
45	GTP	HG	501	44	-	2/18/38/38	0/3/3/3
43	GDP	EL	501	-	-	2/12/32/32	0/3/3/3
45	GTP	LK	501	44	-	9/18/38/38	0/3/3/3
43	GDP	DB	501	-	-	6/12/32/32	0/3/3/3
45	GTP	EI	501	-	-	3/18/38/38	0/3/3/3
45	GTP	TE	501	44	-	6/18/38/38	0/3/3/3
45	GTP	TG	501	44	-	2/18/38/38	0/3/3/3
43	GDP	QL	501	-	-	3/12/32/32	0/3/3/3
45	GTP	EG	501	-	-	4/18/38/38	0/3/3/3
45	GTP	VK	501	44	-	5/18/38/38	0/3/3/3
43	GDP	IN	501	-	-	1/12/32/32	0/3/3/3
43	GDP	LF	501	-	-	1/12/32/32	0/3/3/3
43	GDP	PJ	501	-	-	2/12/32/32	0/3/3/3
43	GDP	FJ	501	-	-	4/12/32/32	0/3/3/3
43	GDP	JL	501	-	-	0/12/32/32	0/3/3/3
45	GTP	HI	501	44	-	4/18/38/38	0/3/3/3
45	GTP	MM	501	44	-	6/18/38/38	0/3/3/3
45	GTP	FC	501	44	-	7/18/38/38	0/3/3/3
45	GTP	IK	501	44	-	4/18/38/38	0/3/3/3
45	GTP	ME	501	44	-	5/18/38/38	0/3/3/3
45	GTP	VE	501	44	-	4/18/38/38	0/3/3/3
45	GTP	QG	501	-	-	4/18/38/38	0/3/3/3
45	GTP	OI	501	44	-	6/18/38/38	0/3/3/3
45	GTP	SG	501	44	-	4/18/38/38	0/3/3/3
43	GDP	NJ	501	-	-	2/12/32/32	0/3/3/3
45	GTP	DI	501	-	-	4/18/38/38	0/3/3/3
45	GTP	SM	501	-	-	5/18/38/38	0/3/3/3
43	GDP	TF	501	-	-	1/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	QD	501	-	-	1/12/32/32	0/3/3/3
45	GTP	LC	501	44	-	4/18/38/38	0/3/3/3
43	GDP	GL	501	-	-	2/12/32/32	0/3/3/3
43	GDP	SH	501	-	-	0/12/32/32	0/3/3/3
43	GDP	TH	501	-	-	2/12/32/32	0/3/3/3
43	GDP	CF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	HB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	RD	501	-	-	1/12/32/32	0/3/3/3
43	GDP	OH	501	-	-	0/12/32/32	0/3/3/3
43	GDP	JF	501	-	-	0/12/32/32	0/3/3/3
45	GTP	CM	501	44	-	4/18/38/38	0/3/3/3
43	GDP	AL	501	-	-	2/12/32/32	0/3/3/3
43	GDP	VL	501	-	-	2/12/32/32	0/3/3/3
43	GDP	AH	501	-	-	5/12/32/32	0/3/3/3
45	GTP	OG	501	-	-	1/18/38/38	0/3/3/3
45	GTP	VG	501	44	-	3/18/38/38	0/3/3/3
43	GDP	OD	501	-	-	2/12/32/32	0/3/3/3
43	GDP	NL	501	-	-	3/12/32/32	0/3/3/3
43	GDP	PH	501	-	-	2/12/32/32	0/3/3/3
43	GDP	MD	501	-	-	1/12/32/32	0/3/3/3
43	GDP	RH	501	-	-	0/12/32/32	0/3/3/3
43	GDP	BB	501	-	-	3/12/32/32	0/3/3/3
43	GDP	MH	501	-	-	2/12/32/32	0/3/3/3
43	GDP	SF	501	-	-	1/12/32/32	0/3/3/3
43	GDP	NF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	VF	501	-	-	2/12/32/32	0/3/3/3
43	GDP	PL	501	-	-	1/12/32/32	0/3/3/3
43	GDP	OF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	VD	501	-	-	5/12/32/32	0/3/3/3
43	GDP	UL	501	-	-	1/12/32/32	0/3/3/3
43	GDP	WL	501	-	-	2/12/32/32	0/3/3/3
45	GTP	DG	501	-	-	7/18/38/38	0/3/3/3
45	GTP	QK	501	-	-	6/18/38/38	0/3/3/3
43	GDP	KJ	501	-	-	1/12/32/32	0/3/3/3
43	GDP	MF	501	-	-	2/12/32/32	0/3/3/3
43	GDP	LJ	501	-	-	6/12/32/32	0/3/3/3
43	GDP	IF	501	-	-	1/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
45	GTP	EM	501	-	-	6/18/38/38	0/3/3/3
45	GTP	JG	501	44	-	3/18/38/38	0/3/3/3
43	GDP	CD	501	-	-	2/12/32/32	0/3/3/3
45	GTP	NG	501	44	-	7/18/38/38	0/3/3/3
45	GTP	AI	501	44	-	7/18/38/38	0/3/3/3
43	GDP	DH	501	-	-	1/12/32/32	0/3/3/3
43	GDP	EH	501	-	-	1/12/32/32	0/3/3/3
45	GTP	UK	501	44	-	6/18/38/38	0/3/3/3
43	GDP	BJ	501	-	-	2/12/32/32	0/3/3/3
43	GDP	QF	501	-	-	2/12/32/32	0/3/3/3
43	GDP	HD	501	-	-	5/12/32/32	0/3/3/3
43	GDP	QH	501	-	-	2/12/32/32	0/3/3/3
45	GTP	EK	501	44	-	3/18/38/38	0/3/3/3
45	GTP	GE	501	44	-	4/18/38/38	0/3/3/3
45	GTP	HC	501	44	-	6/18/38/38	0/3/3/3
43	GDP	LH	501	-	-	3/12/32/32	0/3/3/3
45	GTP	HE	501	44	-	4/18/38/38	0/3/3/3
45	GTP	JC	501	44	-	1/18/38/38	0/3/3/3
43	GDP	NH	501	-	-	1/12/32/32	0/3/3/3
43	GDP	KG	503	-	-	0/12/32/32	0/3/3/3
45	GTP	EC	501	-	-	7/18/38/38	0/3/3/3
45	GTP	LI	501	44	-	4/18/38/38	0/3/3/3
45	GTP	BI	501	44	-	6/18/38/38	0/3/3/3
43	GDP	FF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	ML	501	-	-	0/12/32/32	0/3/3/3
45	GTP	CI	501	44	-	5/18/38/38	0/3/3/3
43	GDP	JH	501	-	-	1/12/32/32	0/3/3/3
43	GDP	PF	501	-	-	2/12/32/32	0/3/3/3
45	GTP	FK	501	44	-	7/18/38/38	0/3/3/3
45	GTP	UI	501	44	-	7/18/38/38	0/3/3/3
43	GDP	FH	501	-	-	1/12/32/32	0/3/3/3
43	GDP	WH	501	-	-	5/12/32/32	0/3/3/3
45	GTP	CE	501	44	-	3/18/38/38	0/3/3/3
45	GTP	PA	501	-	-	5/18/38/38	0/3/3/3
45	GTP	RG	501	-	-	6/18/38/38	0/3/3/3
45	GTP	BK	501	44	-	8/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	BL	501	-	-	1/12/32/32	0/3/3/3
43	GDP	IH	501	-	-	3/12/32/32	0/3/3/3
45	GTP	FI	501	44	-	4/18/38/38	0/3/3/3
43	GDP	DD	501	-	-	1/12/32/32	0/3/3/3
45	GTP	CC	501	44	-	7/18/38/38	0/3/3/3
43	GDP	CJ	501	-	-	2/12/32/32	0/3/3/3
43	GDP	AB	501	-	-	3/12/32/32	0/3/3/3
45	GTP	OK	501	44	-	6/18/38/38	0/3/3/3
45	GTP	QI	501	-	-	6/18/38/38	0/3/3/3
43	GDP	LD	501	-	-	4/12/32/32	0/3/3/3
45	GTP	DK	501	-	-	5/18/38/38	0/3/3/3
45	GTP	EE	501	-	-	4/18/38/38	0/3/3/3
45	GTP	SC	501	44	-	4/18/38/38	0/3/3/3
43	GDP	WD	501	-	-	1/12/32/32	0/3/3/3
45	GTP	PE	501	44	-	5/18/38/38	0/3/3/3
43	GDP	HH	501	-	-	6/12/32/32	0/3/3/3
43	GDP	WN	501	-	-	0/12/32/32	0/3/3/3
45	GTP	VC	501	44	-	4/18/38/38	0/3/3/3
43	GDP	OL	501	-	-	2/12/32/32	0/3/3/3
43	GDP	KF	501	-	-	3/12/32/32	0/3/3/3
43	GDP	KL	501	-	-	0/12/32/32	0/3/3/3
43	GDP	OJ	501	-	-	2/12/32/32	0/3/3/3
43	GDP	KD	501	-	-	3/12/32/32	0/3/3/3
45	GTP	WG	501	44	-	5/18/38/38	0/3/3/3
43	GDP	VJ	501	-	-	1/12/32/32	0/3/3/3
43	GDP	DJ	501	-	-	1/12/32/32	0/3/3/3
45	GTP	HM	501	44	-	8/18/38/38	0/3/3/3
45	GTP	DE	501	-	-	5/18/38/38	0/3/3/3
45	GTP	OC	501	44	-	8/18/38/38	0/3/3/3
43	GDP	RJ	501	-	-	2/12/32/32	0/3/3/3
45	GTP	KE	501	44	-	6/18/38/38	0/3/3/3

The worst 5 of 422 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	EI	501	GTP	C5-C6	-5.10	1.37	1.47
45	GC	501	GTP	C5-C6	-4.61	1.38	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	IC	501	GTP	C5-C6	-4.56	1.38	1.47
45	QC	501	GTP	C5-C6	-4.55	1.38	1.47
45	VG	501	GTP	C5-C6	-4.54	1.38	1.47

The worst 5 of 967 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
43	EH	501	GDP	O6-C6-N1	7.46	129.48	120.62
45	QE	501	GTP	O4'-C1'-N9	6.84	117.81	108.75
43	EH	501	GDP	O6-C6-C5	-6.51	111.42	124.32
43	HH	501	GDP	O4'-C1'-N9	6.49	117.35	108.75
45	RI	501	GTP	C4'-O4'-C1'	5.48	114.94	109.92

There are no chirality outliers.

5 of 974 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
43	AB	501	GDP	C5'-O5'-PA-O1A
43	AB	501	GDP	O4'-C4'-C5'-O5'
43	AB	501	GDP	C3'-C4'-C5'-O5'
43	AF	501	GDP	O4'-C4'-C5'-O5'
43	AF	501	GDP	C3'-C4'-C5'-O5'

There are no ring outliers.

178 monomers are involved in 336 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
43	IL	501	GDP	2	0
43	GF	501	GDP	3	0
43	RB	501	GDP	2	0
43	MN	501	GDP	1	0
43	UJ	501	GDP	3	0
45	GK	501	GTP	2	0
45	PC	501	GTP	1	0
43	LN	501	GDP	2	0
43	QJ	501	GDP	2	0
43	DL	501	GDP	1	0
45	KG	501	GTP	1	0
45	NC	501	GTP	3	0
45	GC	501	GTP	3	0
43	FD	501	GDP	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	KC	501	GTP	1	0
45	JE	501	GTP	2	0
45	JI	501	GTP	1	0
45	MI	501	GTP	2	0
43	IJ	501	GDP	2	0
43	RF	501	GDP	1	0
45	CK	501	GTP	2	0
45	FE	501	GTP	1	0
43	ED	501	GDP	2	0
45	NA	501	GTP	2	0
45	SI	501	GTP	2	0
45	FM	501	GTP	1	0
45	GM	501	GTP	3	0
45	RK	501	GTP	2	0
45	VM	501	GTP	4	0
45	PK	501	GTP	5	0
45	SE	501	GTP	3	0
45	AF	502	GTP	3	0
43	CB	501	GDP	2	0
45	RI	501	GTP	2	0
43	PB	501	GDP	1	0
43	TJ	501	GDP	1	0
45	AC	501	GTP	2	0
45	DC	501	GTP	4	0
43	EF	501	GDP	2	0
45	TM	501	GTP	2	0
45	KK	501	GTP	1	0
45	OA	501	GTP	2	0
43	SJ	501	GDP	1	0
45	PG	501	GTP	4	0
43	WF	501	GDP	2	0
45	BC	501	GTP	1	0
43	GJ	501	GDP	1	0
45	QC	501	GTP	1	0
43	JD	501	GDP	1	0
45	PI	501	GTP	3	0
43	VH	501	GDP	1	0
45	UM	501	GTP	1	0
45	MC	501	GTP	1	0
45	NE	501	GTP	1	0
45	NK	501	GTP	2	0
45	WC	501	GTP	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	NI	501	GTP	1	0
43	ID	501	GDP	3	0
45	FF	502	GTP	1	0
45	JK	501	GTP	3	0
43	AJ	501	GDP	1	0
45	JM	501	GTP	3	0
43	KN	501	GDP	1	0
43	SL	501	GDP	3	0
45	UE	501	GTP	1	0
43	AF	501	GDP	1	0
43	LL	501	GDP	2	0
43	BF	501	GDP	1	0
43	EJ	501	GDP	1	0
45	AE	501	GTP	2	0
45	IE	501	GTP	2	0
45	LF	502	GTP	1	0
45	WE	501	GTP	2	0
45	BG	501	GTP	2	0
45	UC	501	GTP	4	0
45	OE	501	GTP	2	0
45	WK	501	GTP	3	0
45	HK	501	GTP	2	0
45	VI	501	GTP	1	0
43	WJ	501	GDP	1	0
43	TD	501	GDP	1	0
45	LE	501	GTP	3	0
45	WM	501	GTP	2	0
45	CG	501	GTP	4	0
43	DF	501	GDP	1	0
43	QB	501	GDP	3	0
45	TI	501	GTP	1	0
45	HG	501	GTP	2	0
45	EI	501	GTP	2	0
45	TE	501	GTP	3	0
45	TG	501	GTP	2	0
43	QL	501	GDP	2	0
45	EG	501	GTP	6	0
43	LF	501	GDP	1	0
43	PJ	501	GDP	2	0
43	JL	501	GDP	1	0
45	HI	501	GTP	1	0
45	MM	501	GTP	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	FC	501	GTP	2	0
45	IK	501	GTP	1	0
45	ME	501	GTP	1	0
45	VE	501	GTP	1	0
45	QG	501	GTP	2	0
45	OI	501	GTP	2	0
43	NJ	501	GDP	1	0
45	DI	501	GTP	2	0
45	SM	501	GTP	3	0
43	GL	501	GDP	2	0
43	TH	501	GDP	1	0
43	CF	501	GDP	3	0
43	HB	501	GDP	1	0
43	RD	501	GDP	1	0
43	OH	501	GDP	1	0
43	JF	501	GDP	2	0
45	CM	501	GTP	4	0
43	VL	501	GDP	1	0
43	OD	501	GDP	1	0
43	NL	501	GDP	1	0
43	PH	501	GDP	2	0
43	MD	501	GDP	2	0
43	MH	501	GDP	1	0
43	SF	501	GDP	2	0
43	PL	501	GDP	1	0
43	VD	501	GDP	1	0
43	UL	501	GDP	1	0
45	QK	501	GTP	2	0
43	IF	501	GDP	3	0
45	JG	501	GTP	1	0
45	AI	501	GTP	1	0
43	DH	501	GDP	3	0
43	EH	501	GDP	3	0
45	UK	501	GTP	1	0
43	BJ	501	GDP	1	0
43	QF	501	GDP	1	0
43	HD	501	GDP	2	0
43	QH	501	GDP	1	0
45	EK	501	GTP	2	0
45	GE	501	GTP	3	0
45	HC	501	GTP	3	0
43	LH	501	GDP	1	0

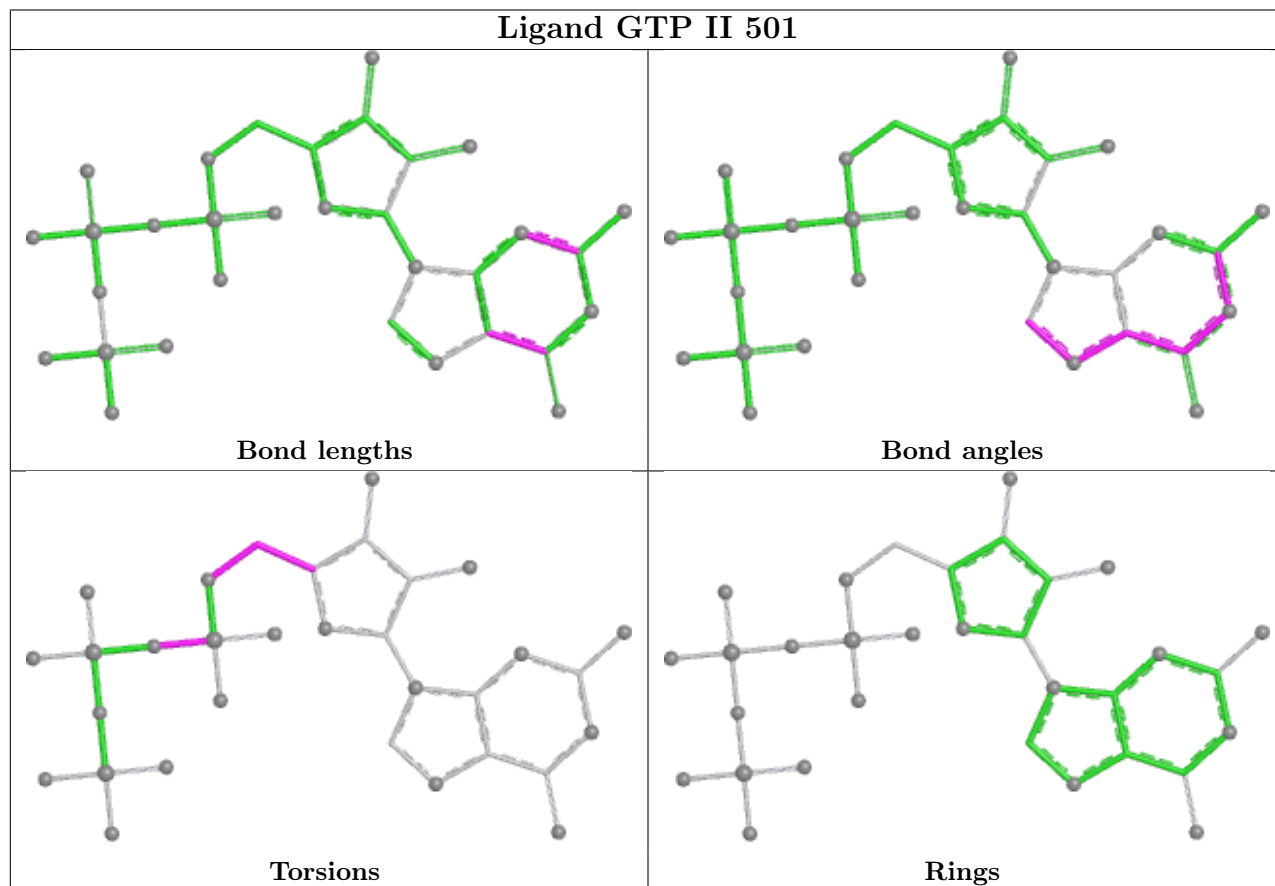
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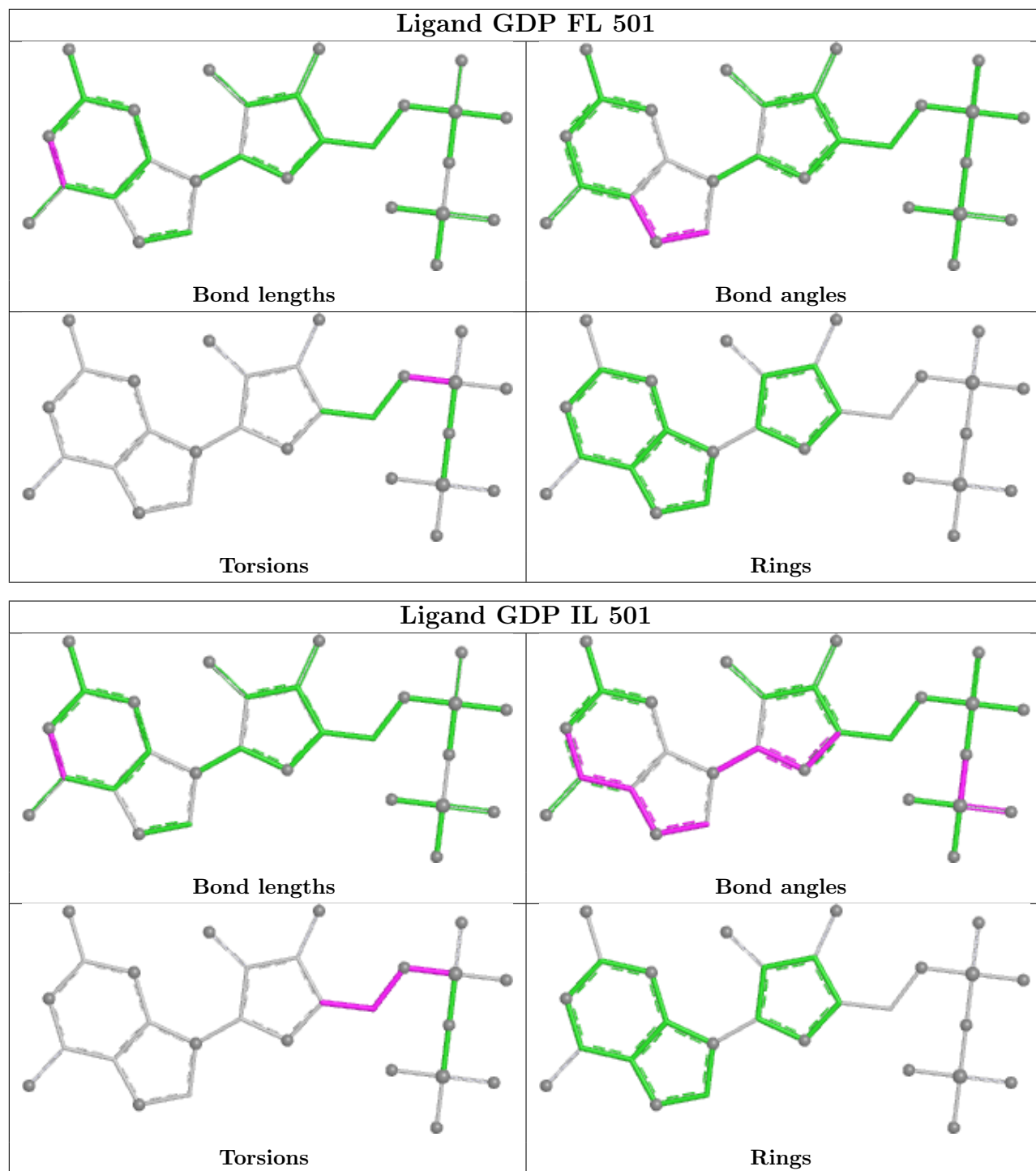
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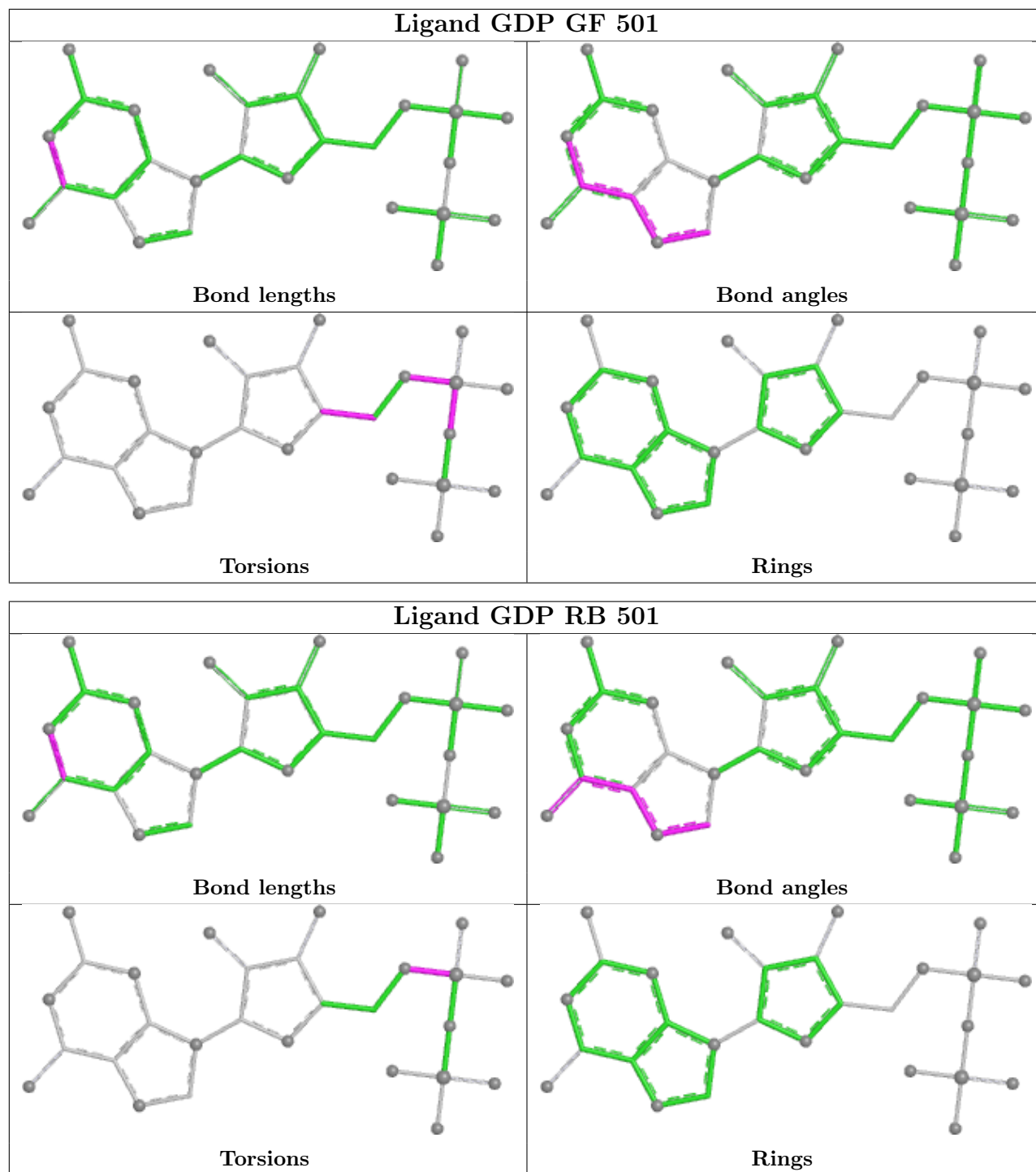
Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	HE	501	GTP	1	0
43	KG	503	GDP	1	0
45	EC	501	GTP	1	0
45	LI	501	GTP	1	0
45	BI	501	GTP	1	0
43	FF	501	GDP	2	0
43	ML	501	GDP	2	0
45	CI	501	GTP	4	0
43	JH	501	GDP	3	0
45	FK	501	GTP	5	0
45	UI	501	GTP	1	0
43	FH	501	GDP	3	0
45	CE	501	GTP	4	0
45	PA	501	GTP	3	0
45	RG	501	GTP	3	0
45	BK	501	GTP	2	0
43	IH	501	GDP	2	0
45	FI	501	GTP	2	0
43	DD	501	GDP	2	0
43	CJ	501	GDP	1	0
45	OK	501	GTP	1	0
45	QI	501	GTP	1	0
43	LD	501	GDP	1	0
45	DK	501	GTP	1	0
45	EE	501	GTP	1	0
43	WD	501	GDP	2	0
45	PE	501	GTP	3	0
43	HH	501	GDP	4	0
43	WN	501	GDP	2	0
45	VC	501	GTP	1	0
43	OJ	501	GDP	1	0
43	KD	501	GDP	1	0
45	WG	501	GTP	1	0
43	DJ	501	GDP	1	0
45	DE	501	GTP	2	0
45	OC	501	GTP	1	0
43	RJ	501	GDP	2	0
45	KE	501	GTP	1	0

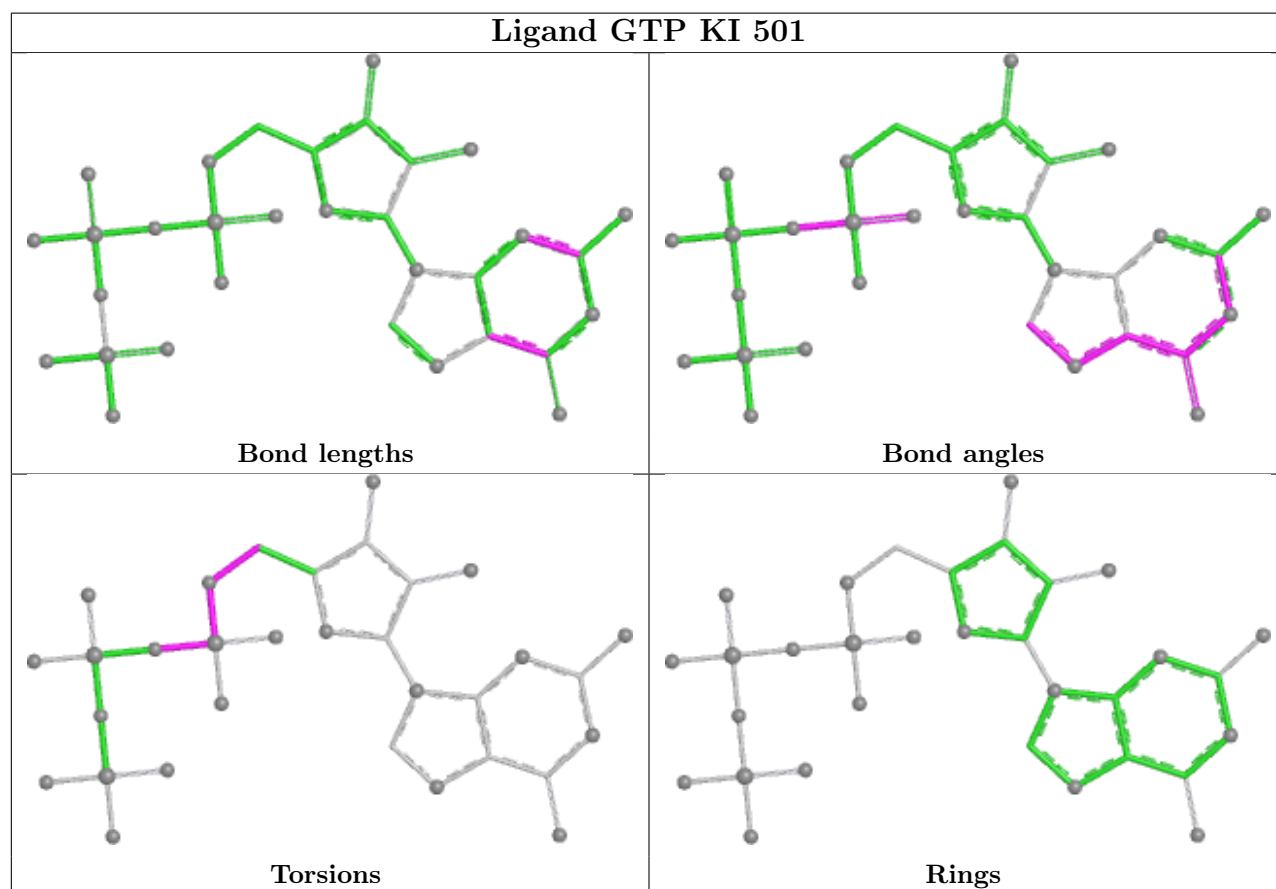
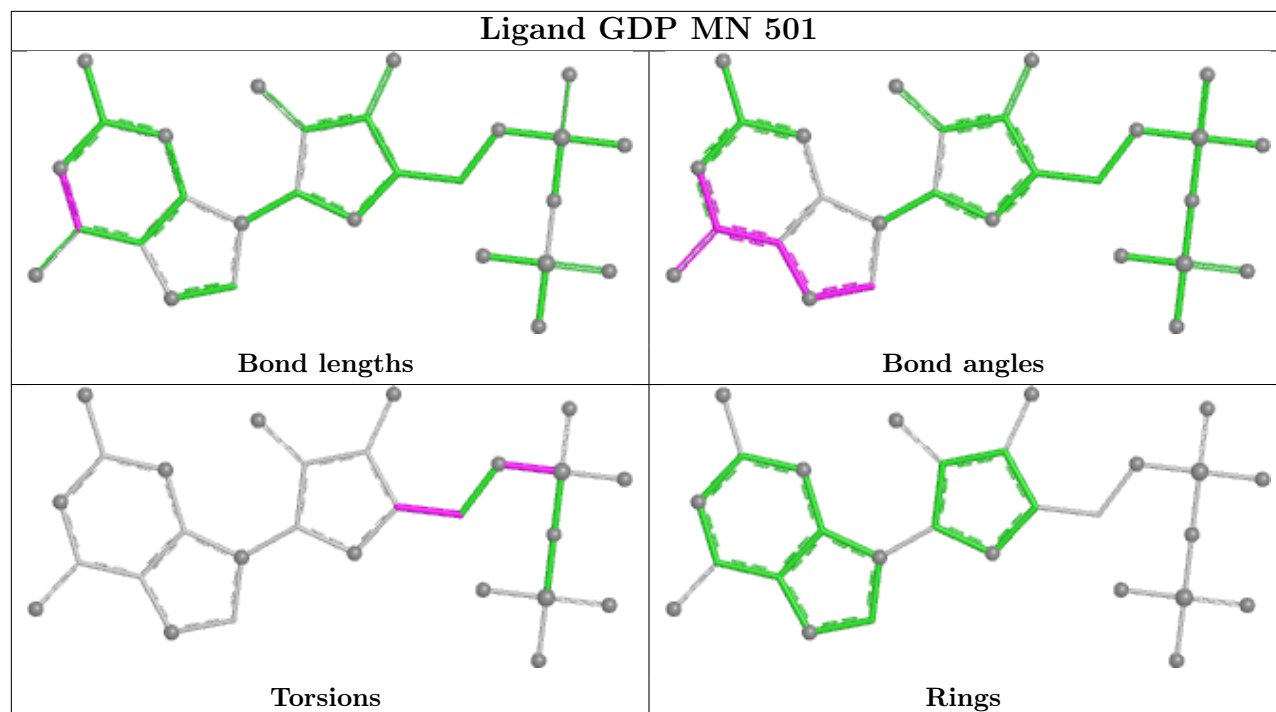
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is

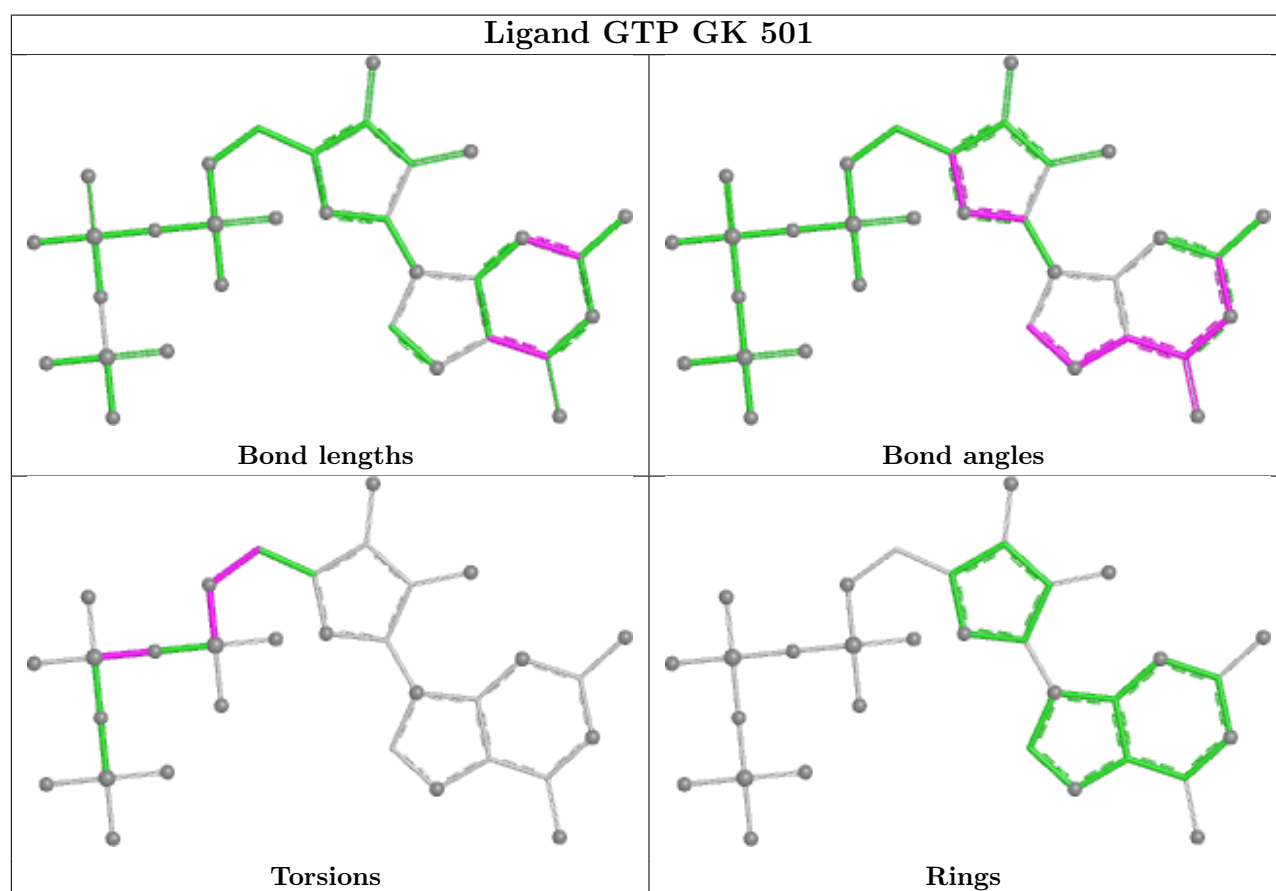
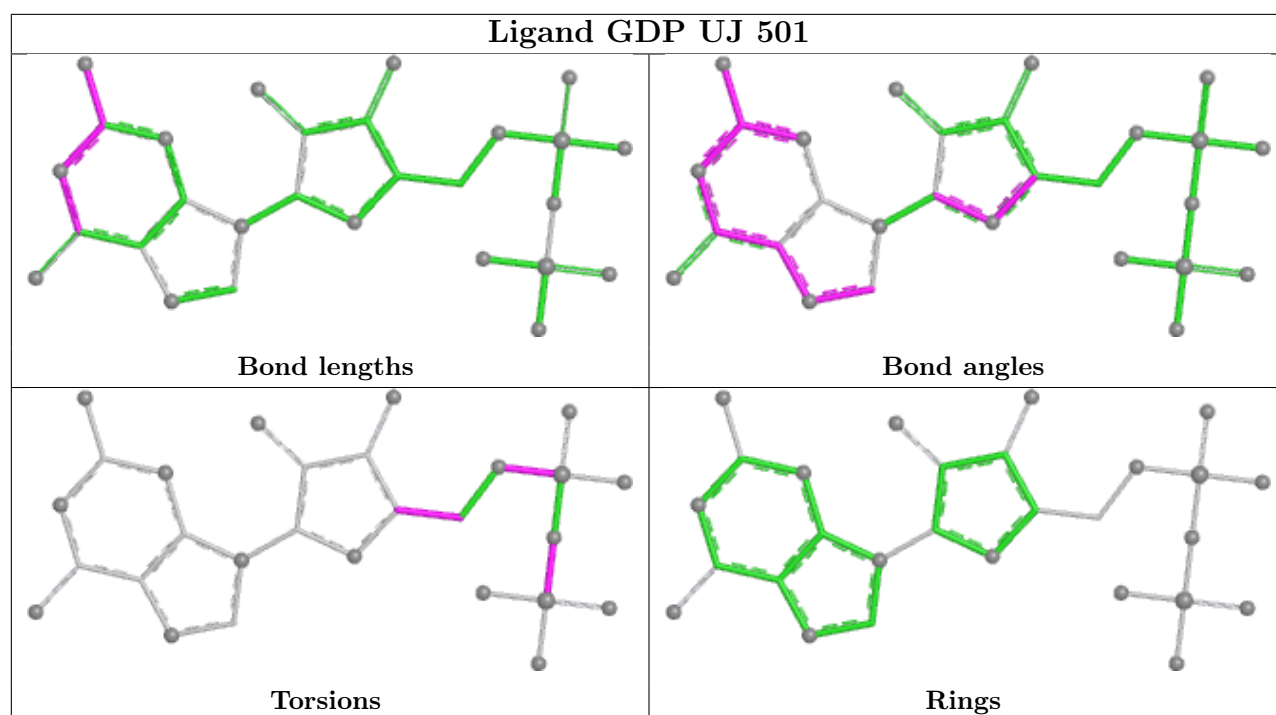
within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

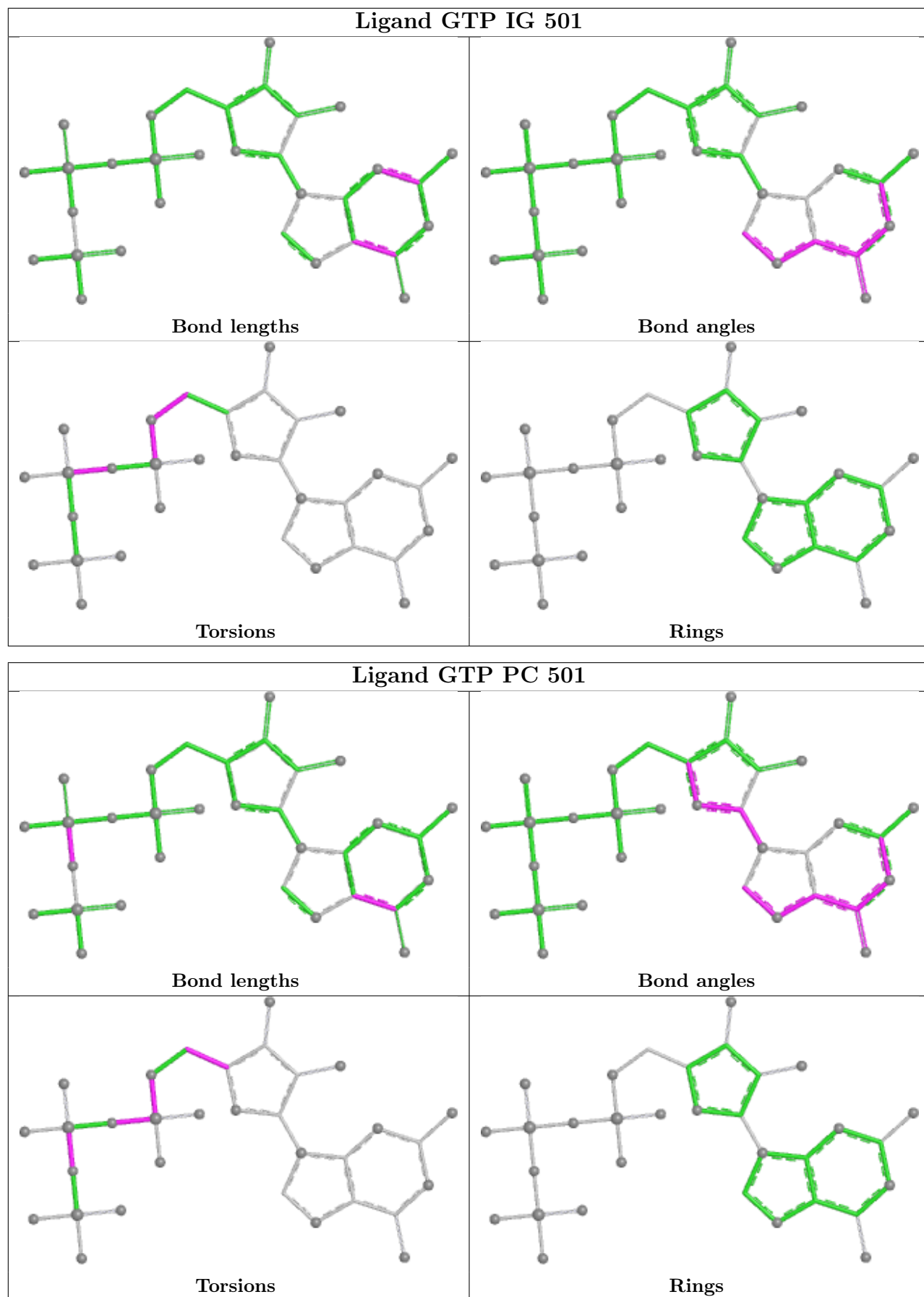


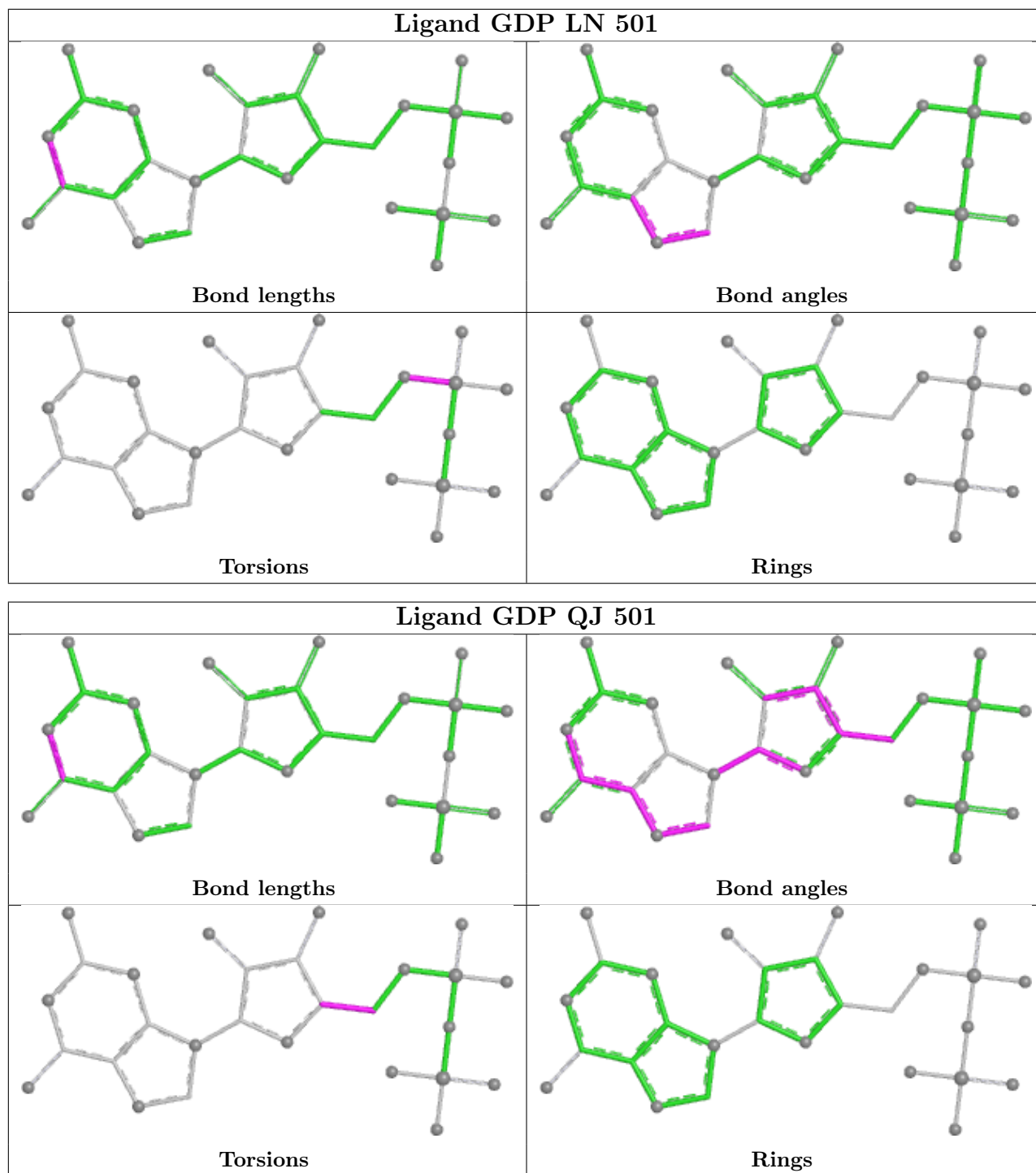


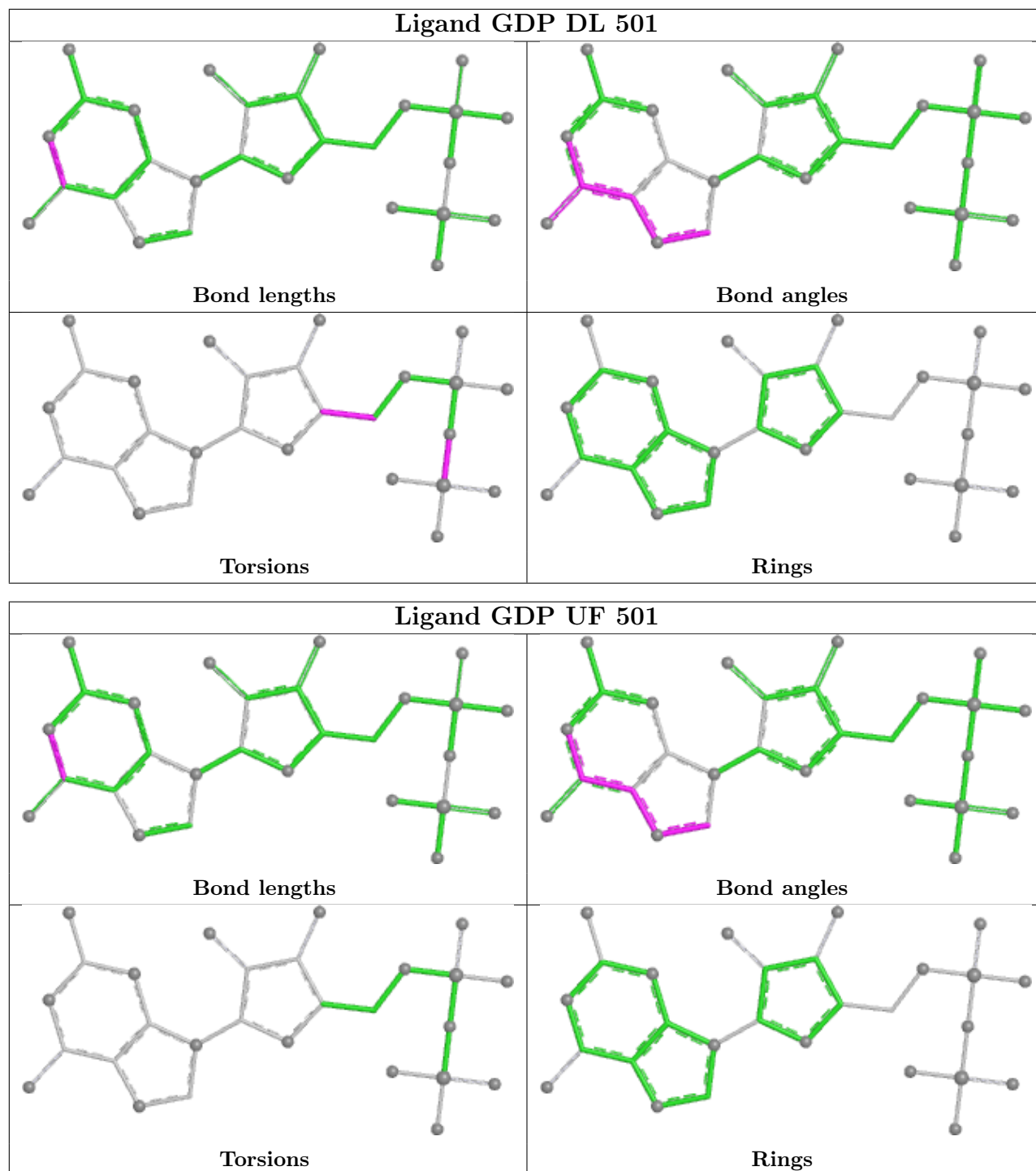


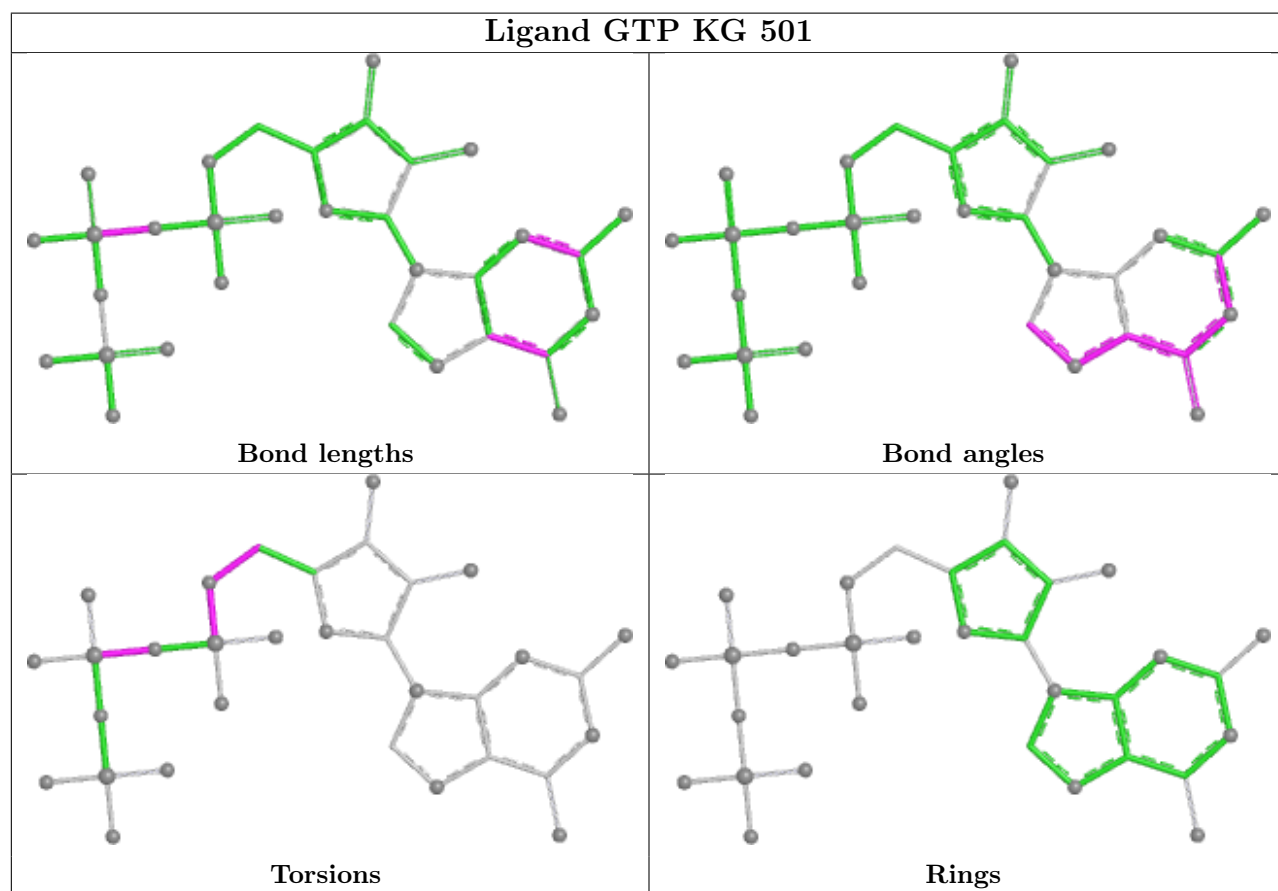
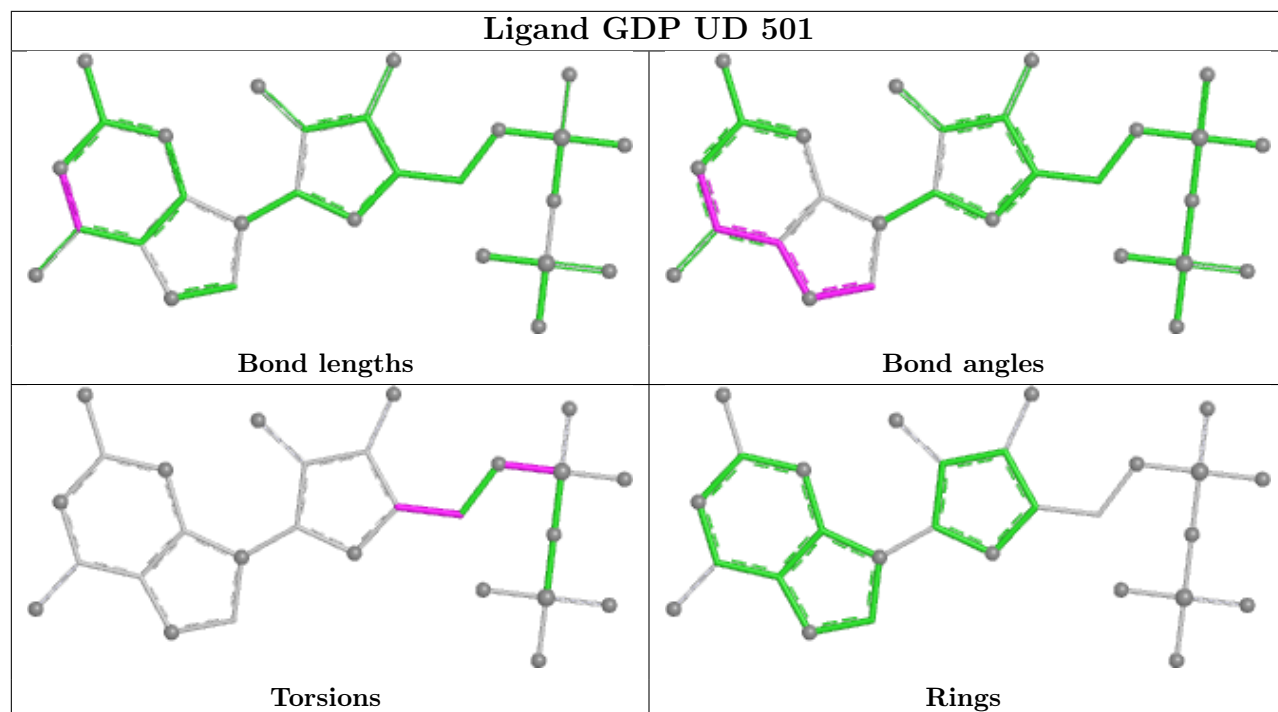


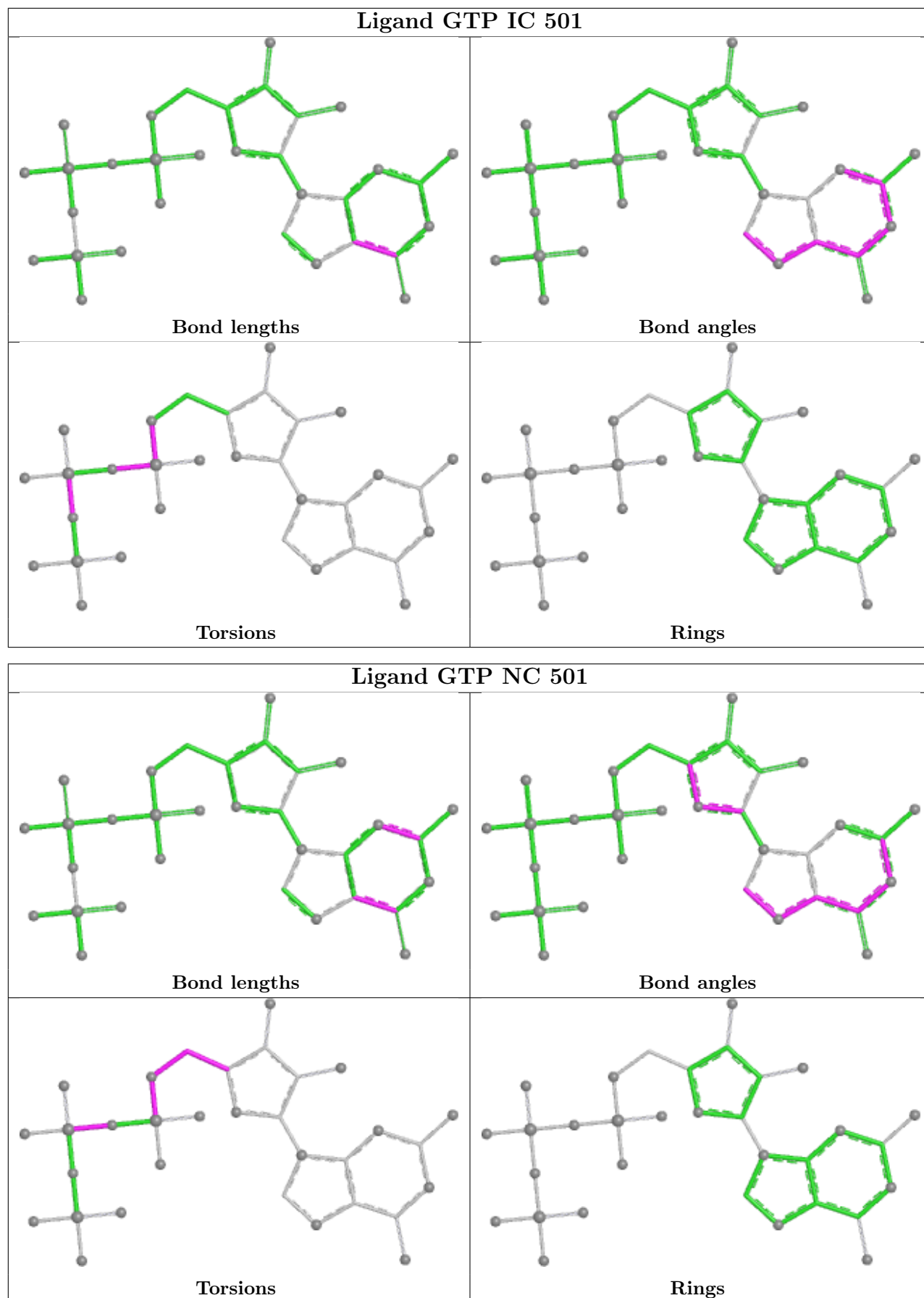


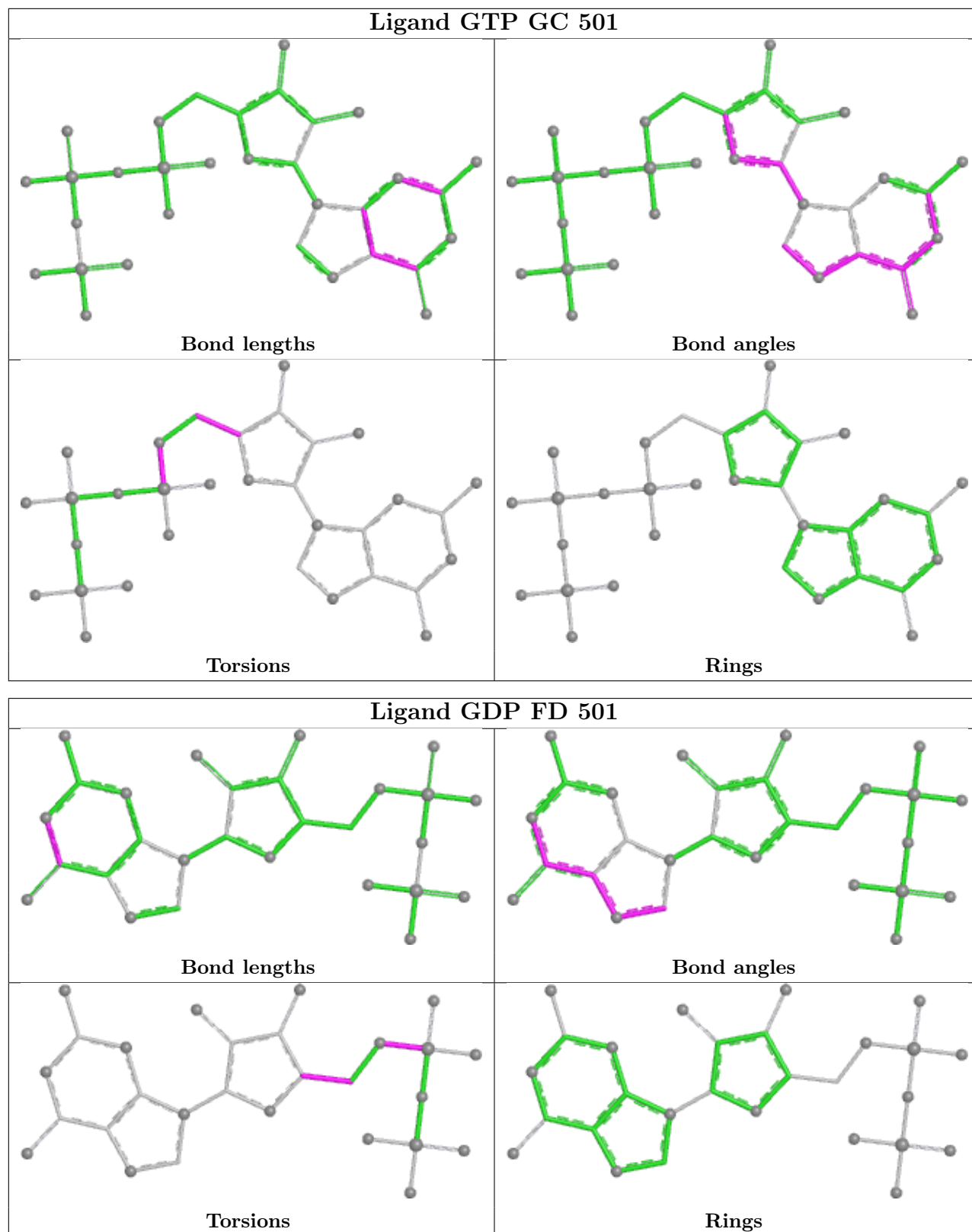


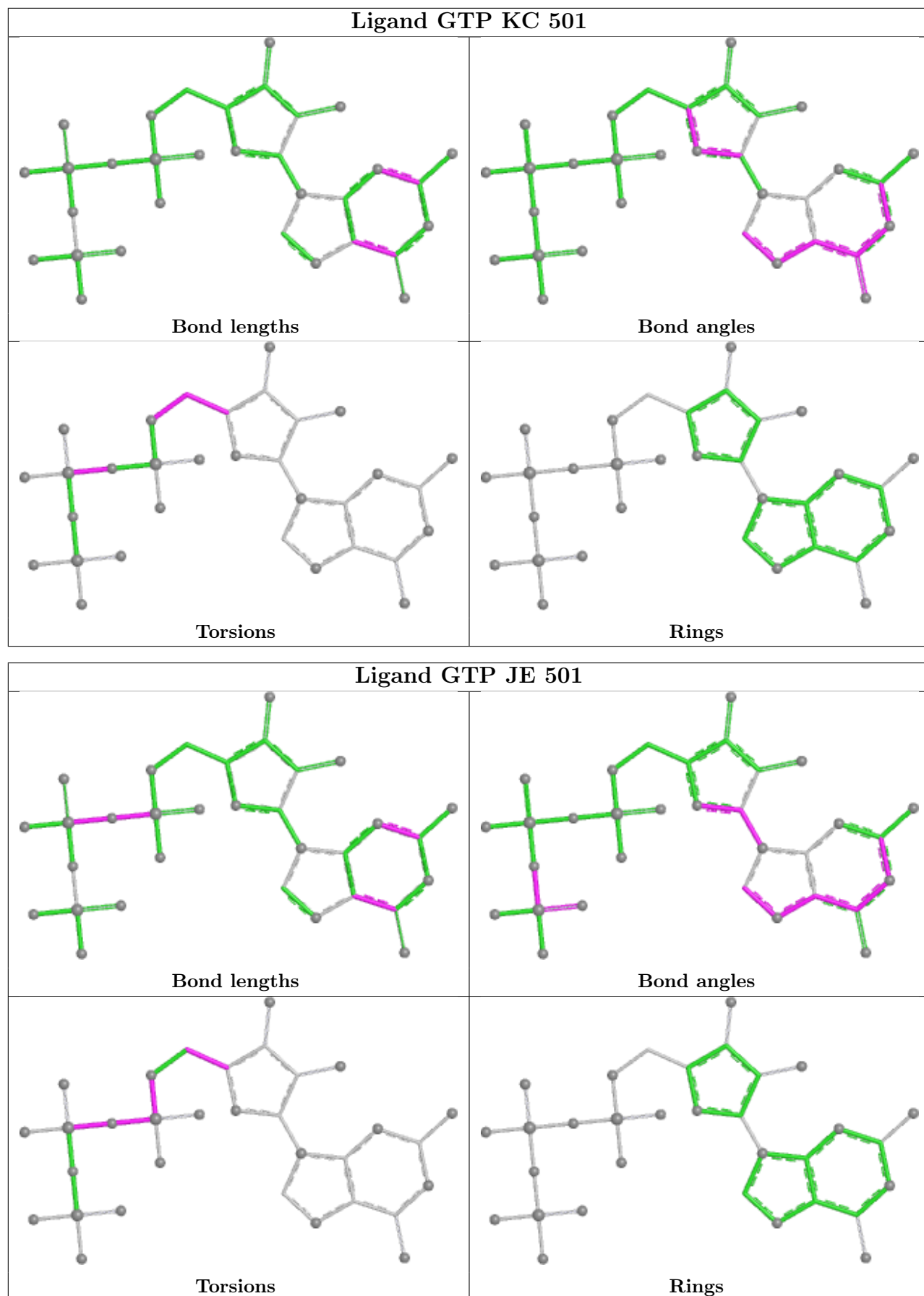


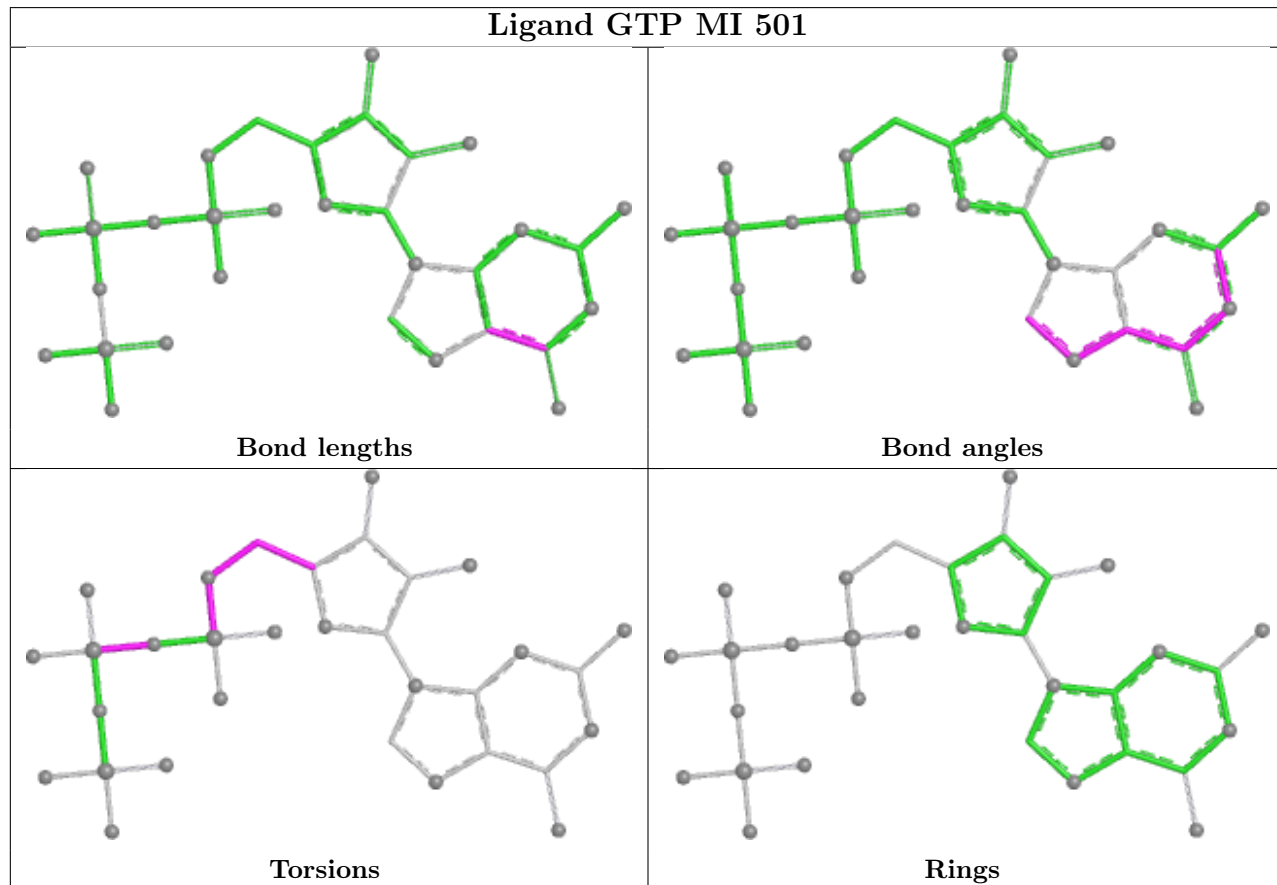
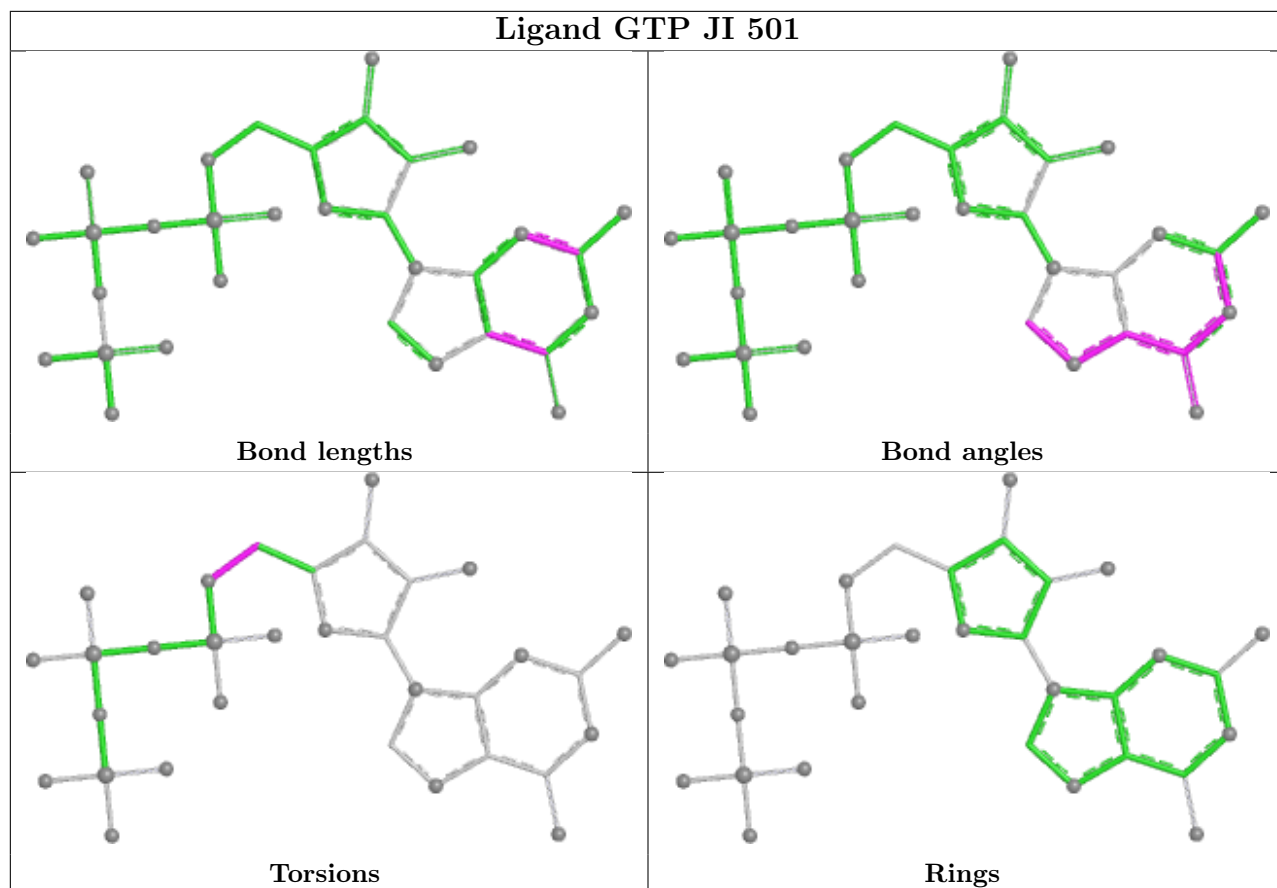


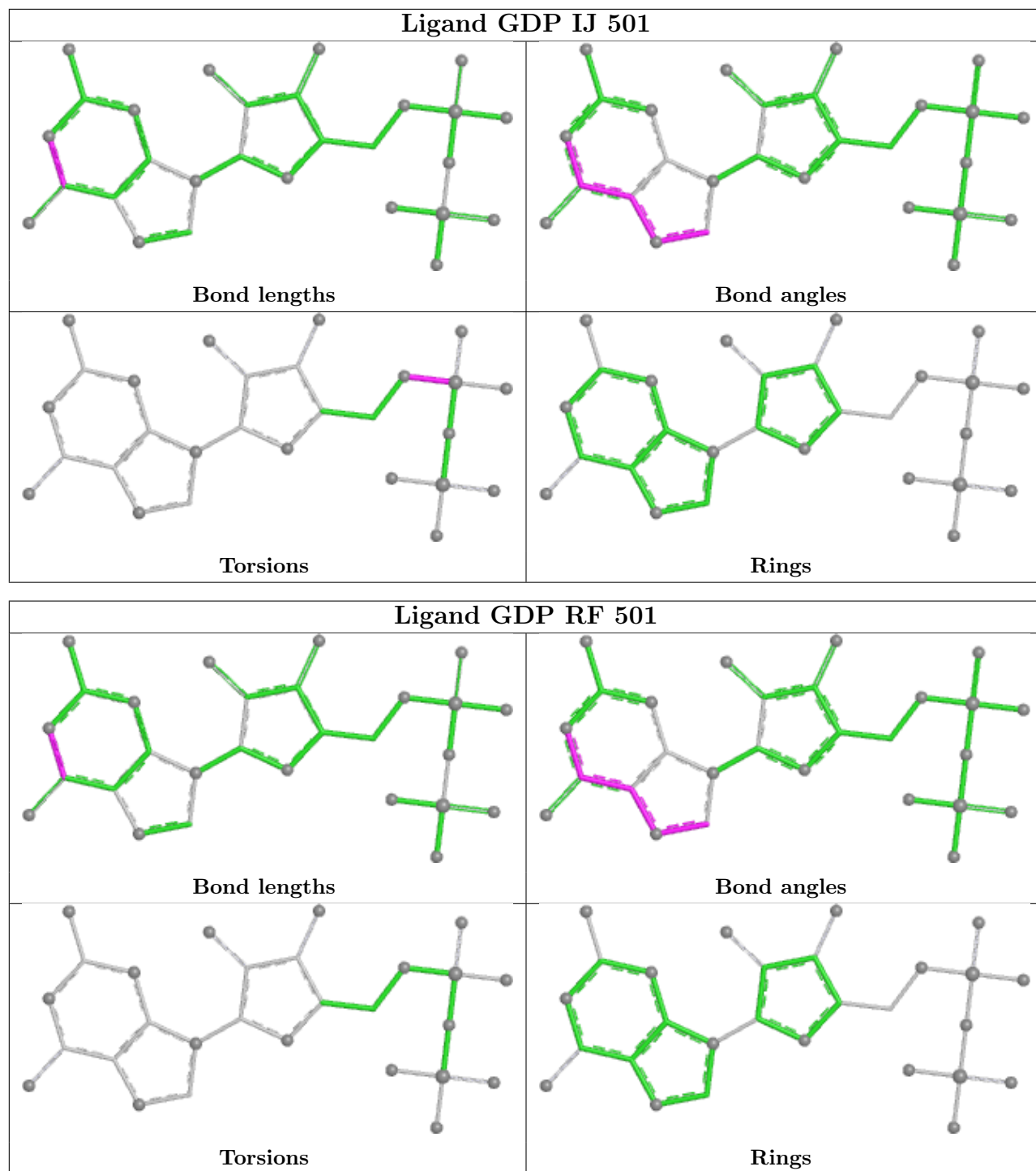


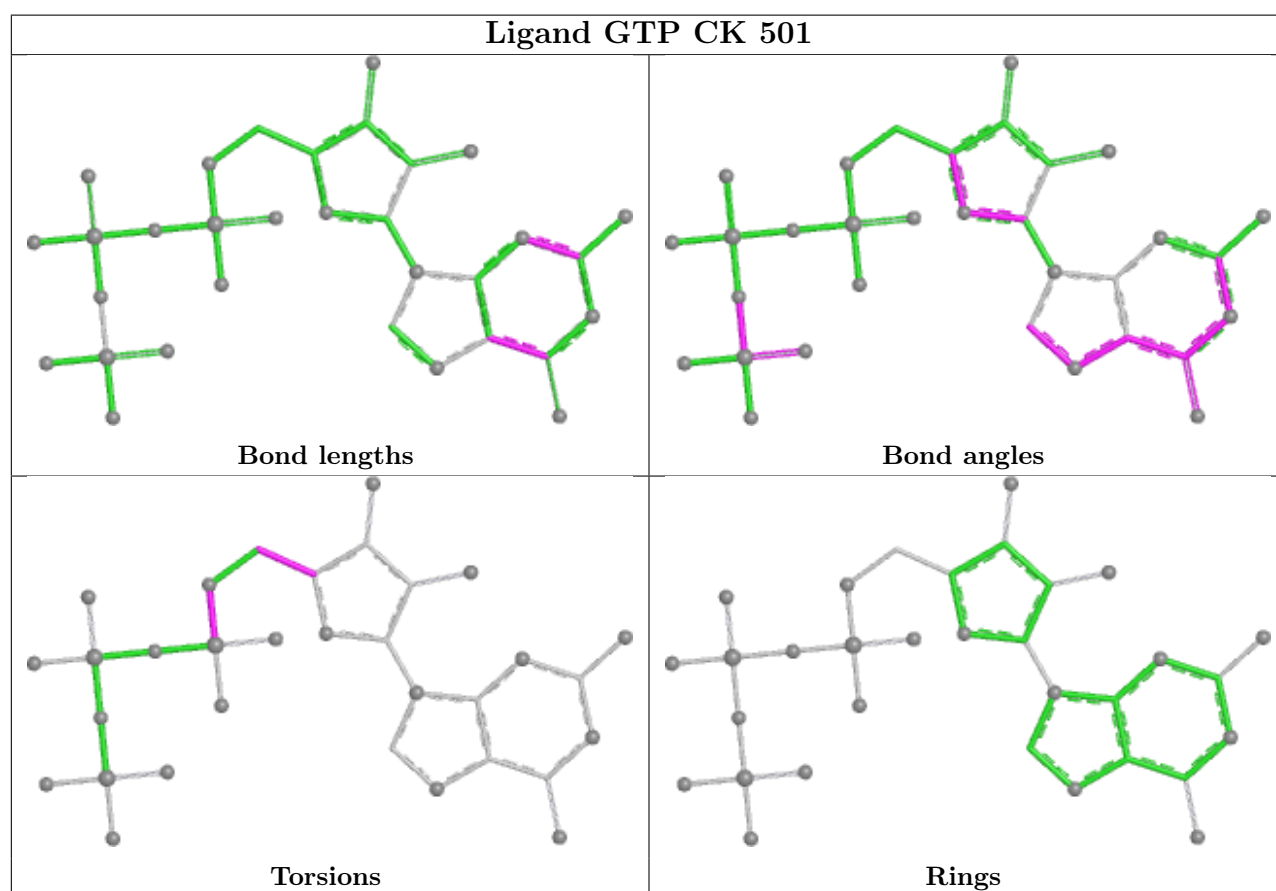
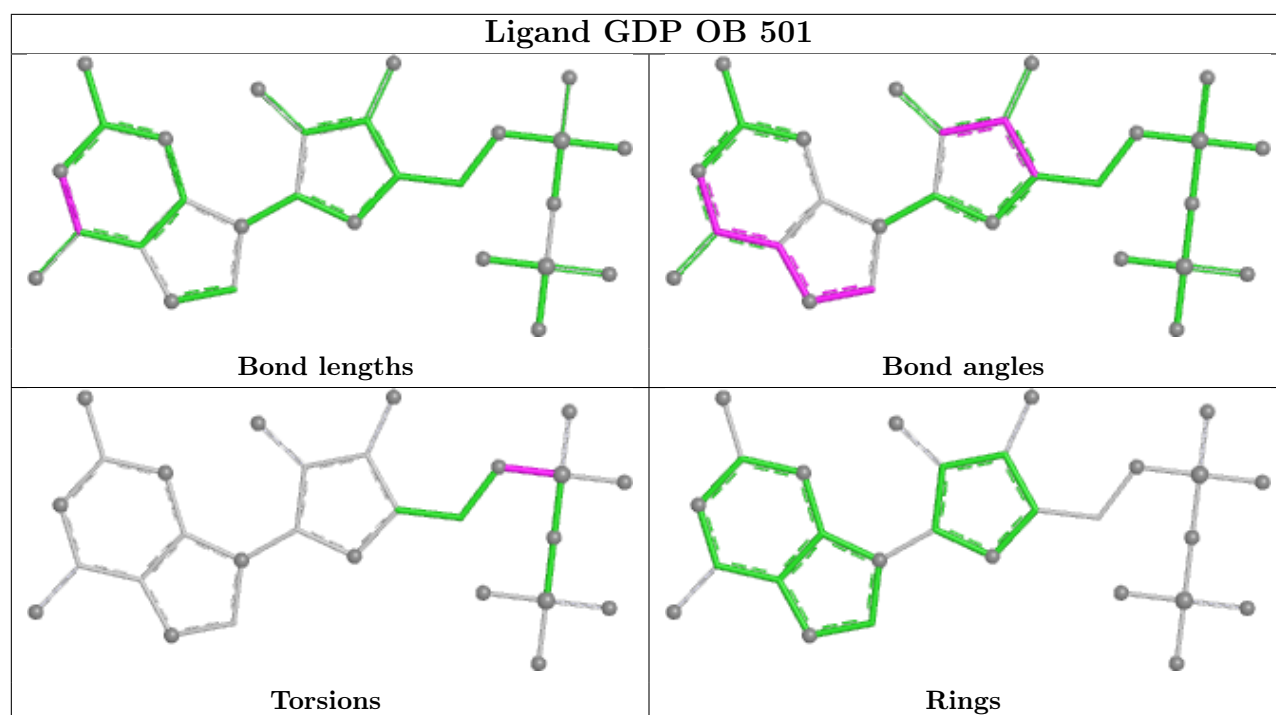


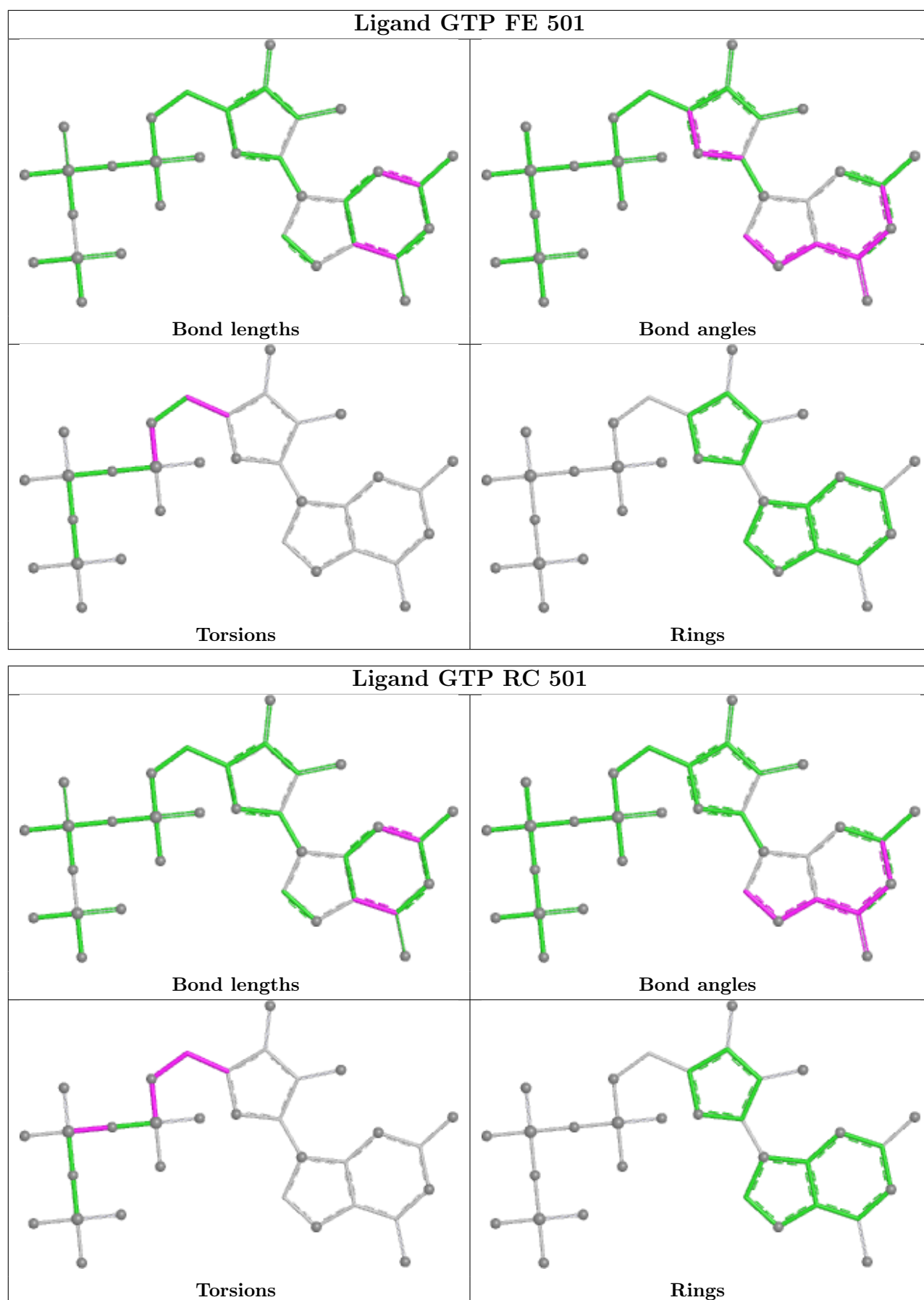


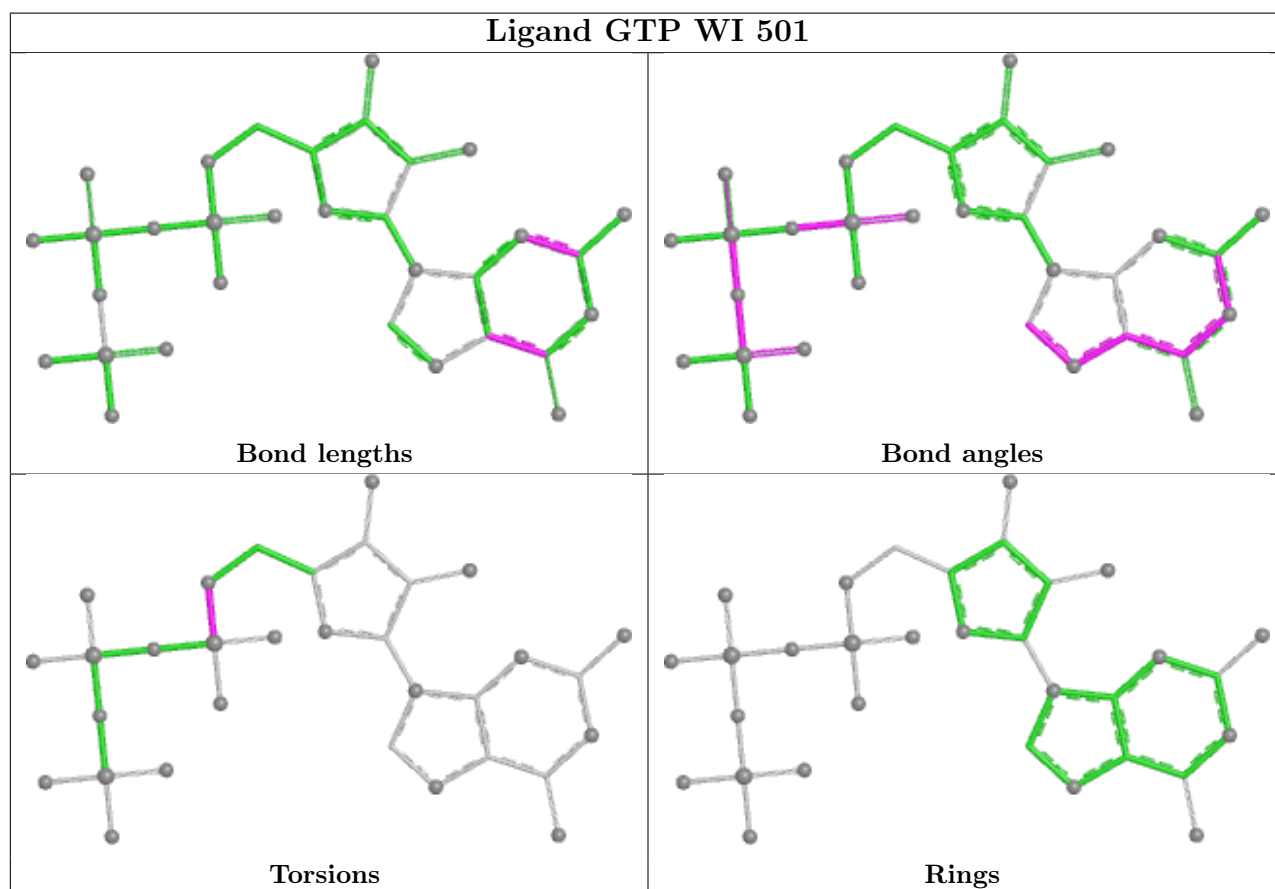
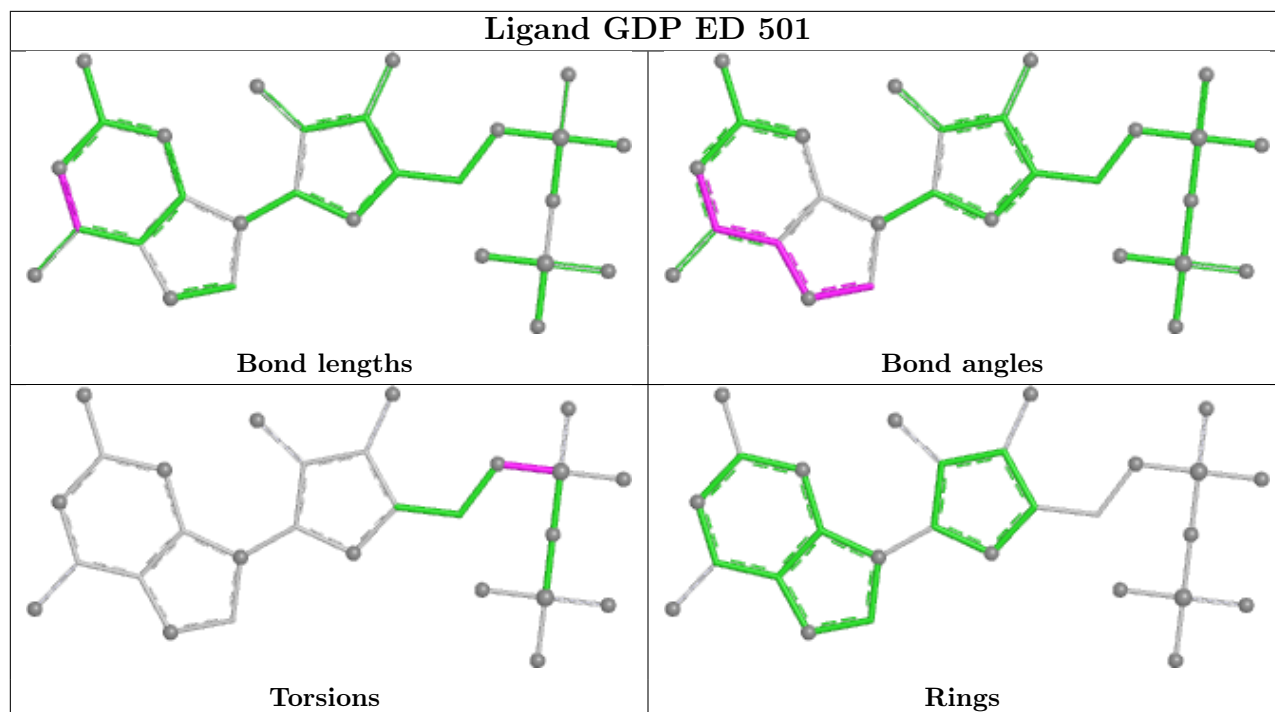


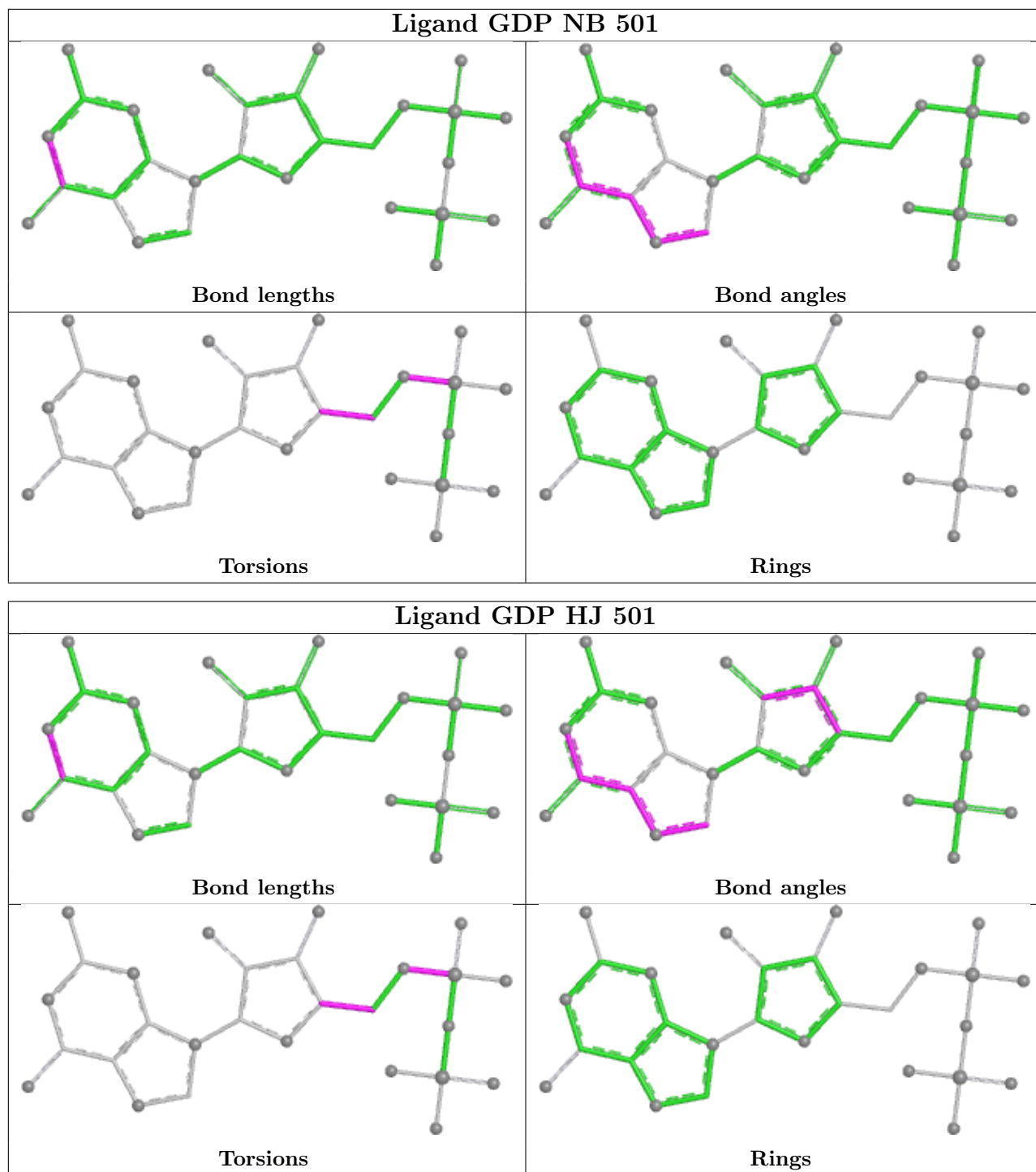


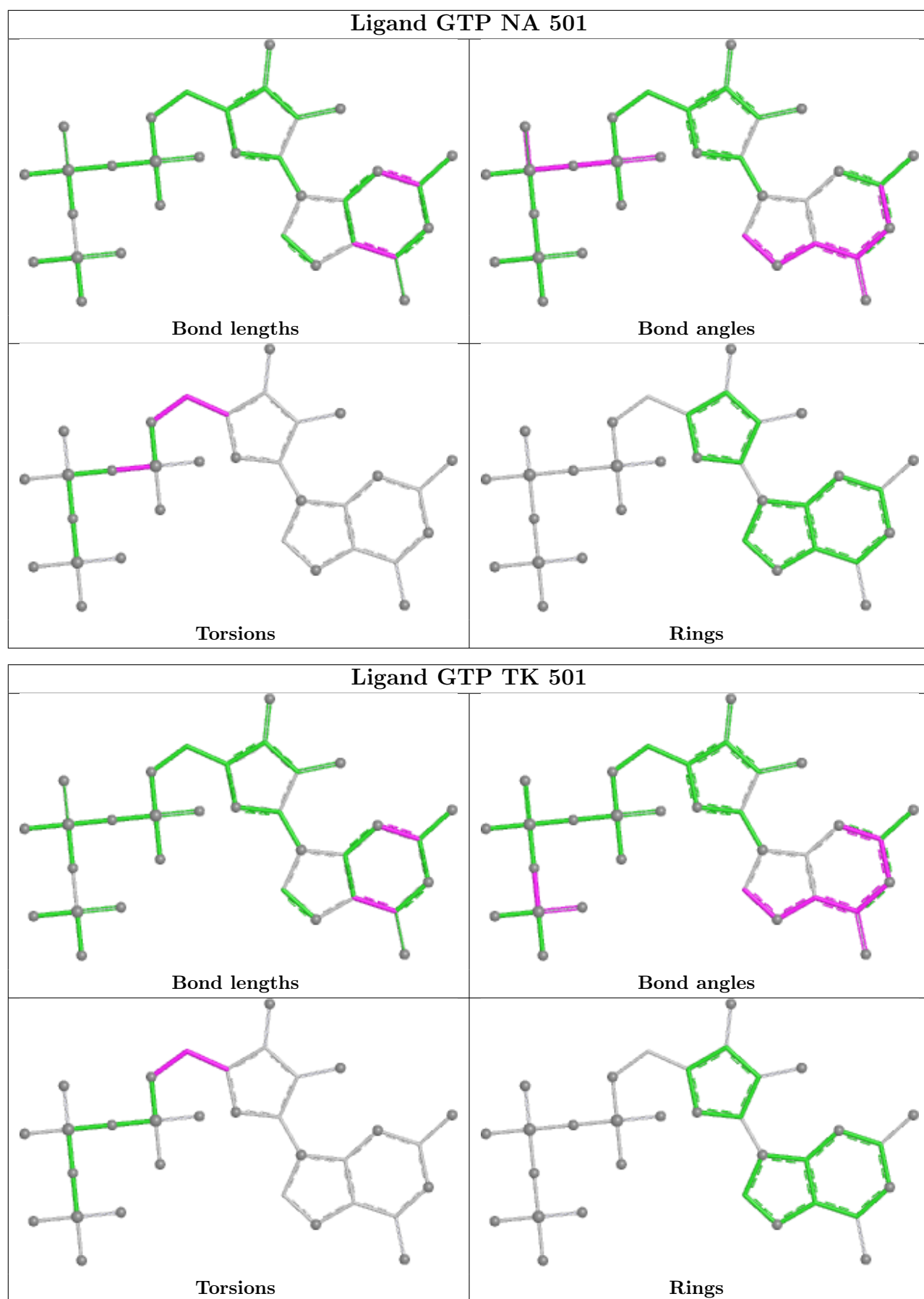


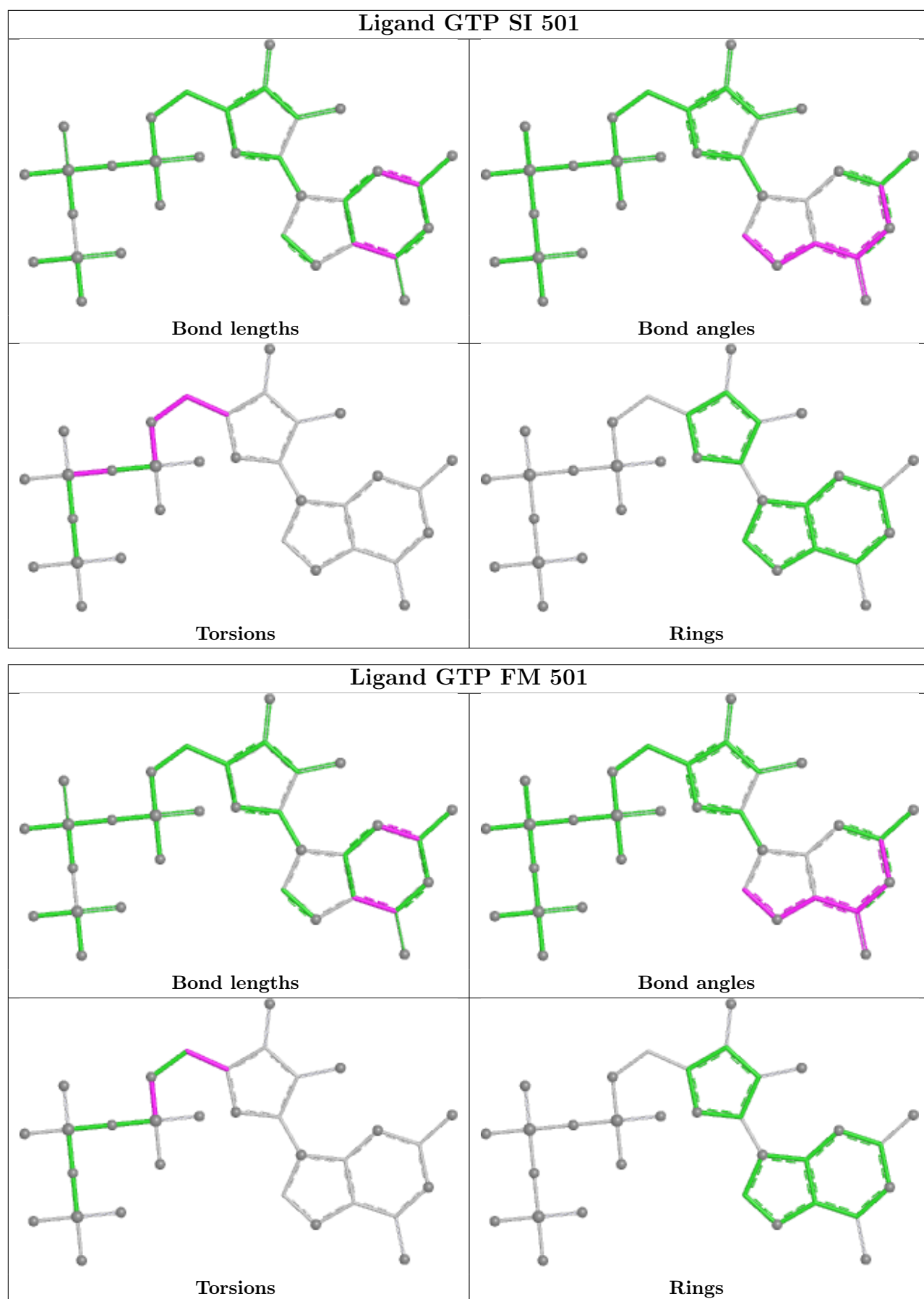


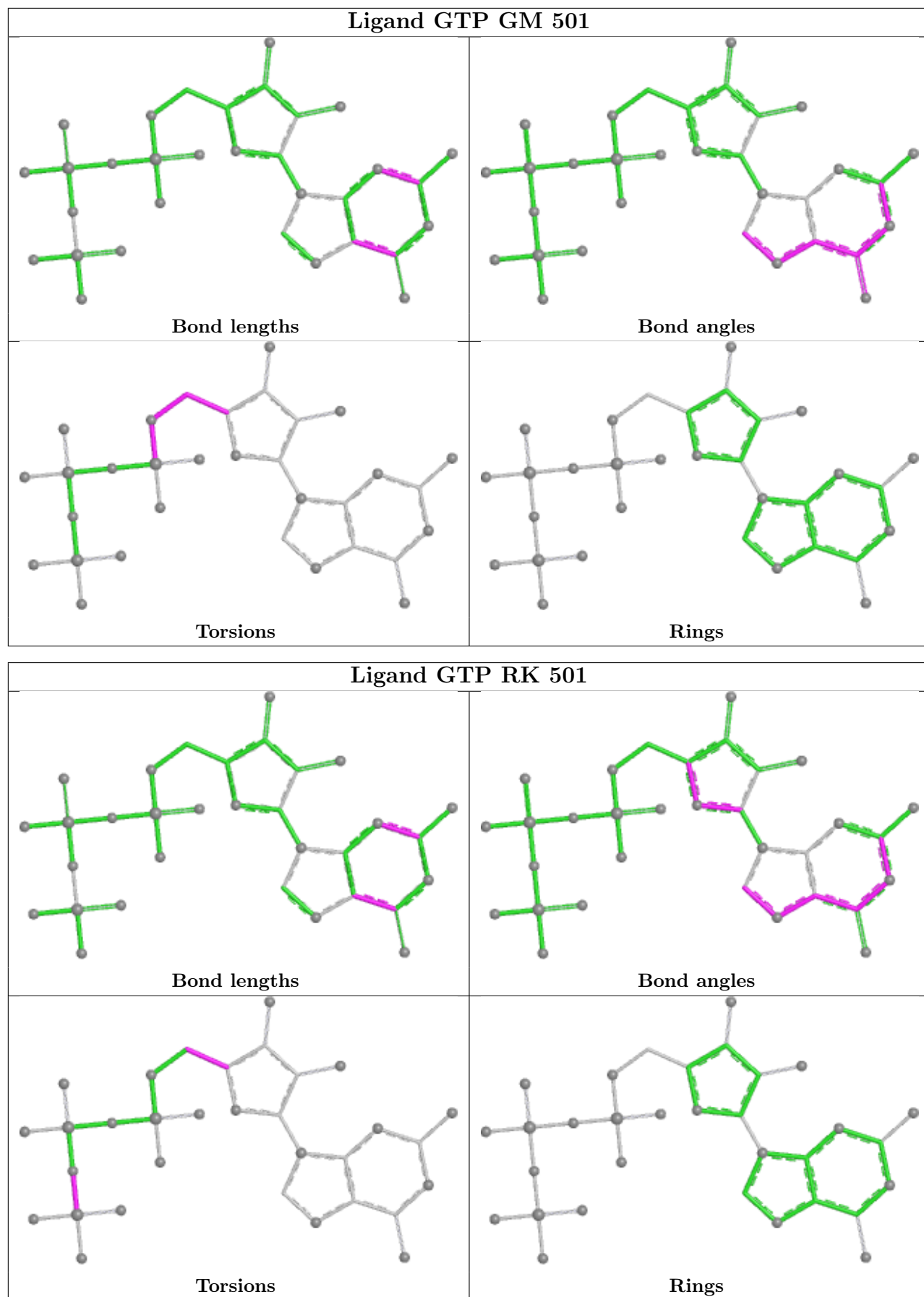


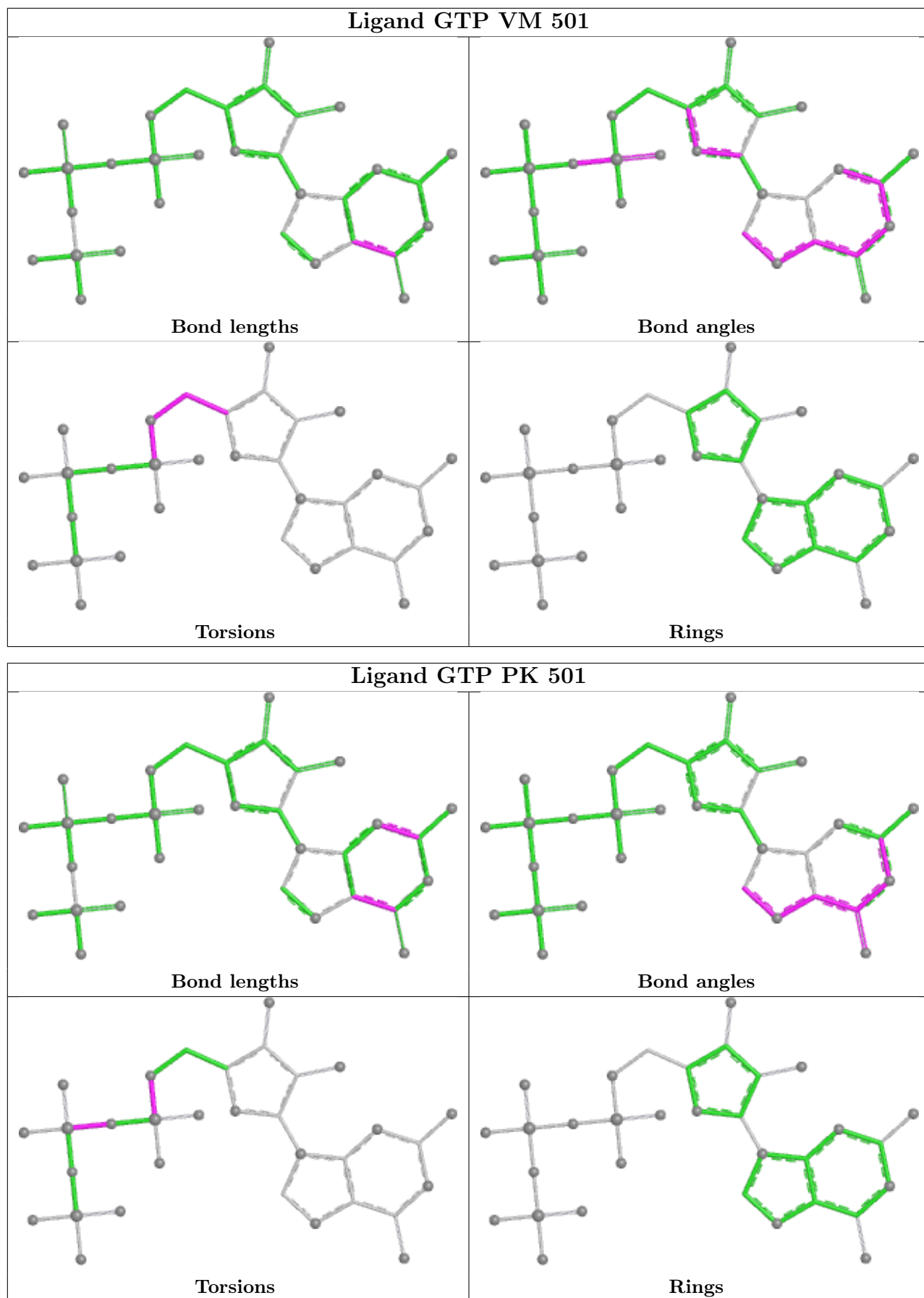


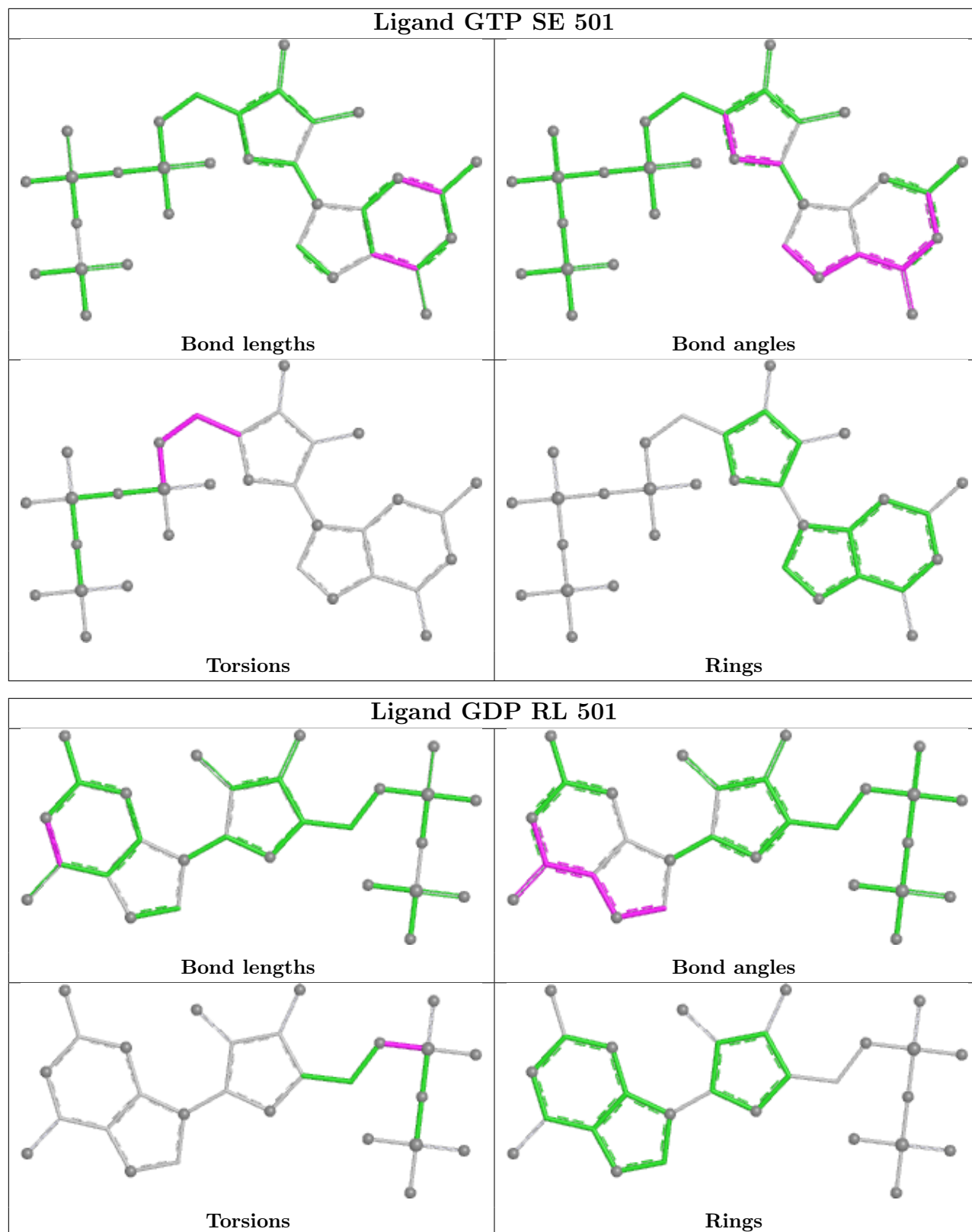


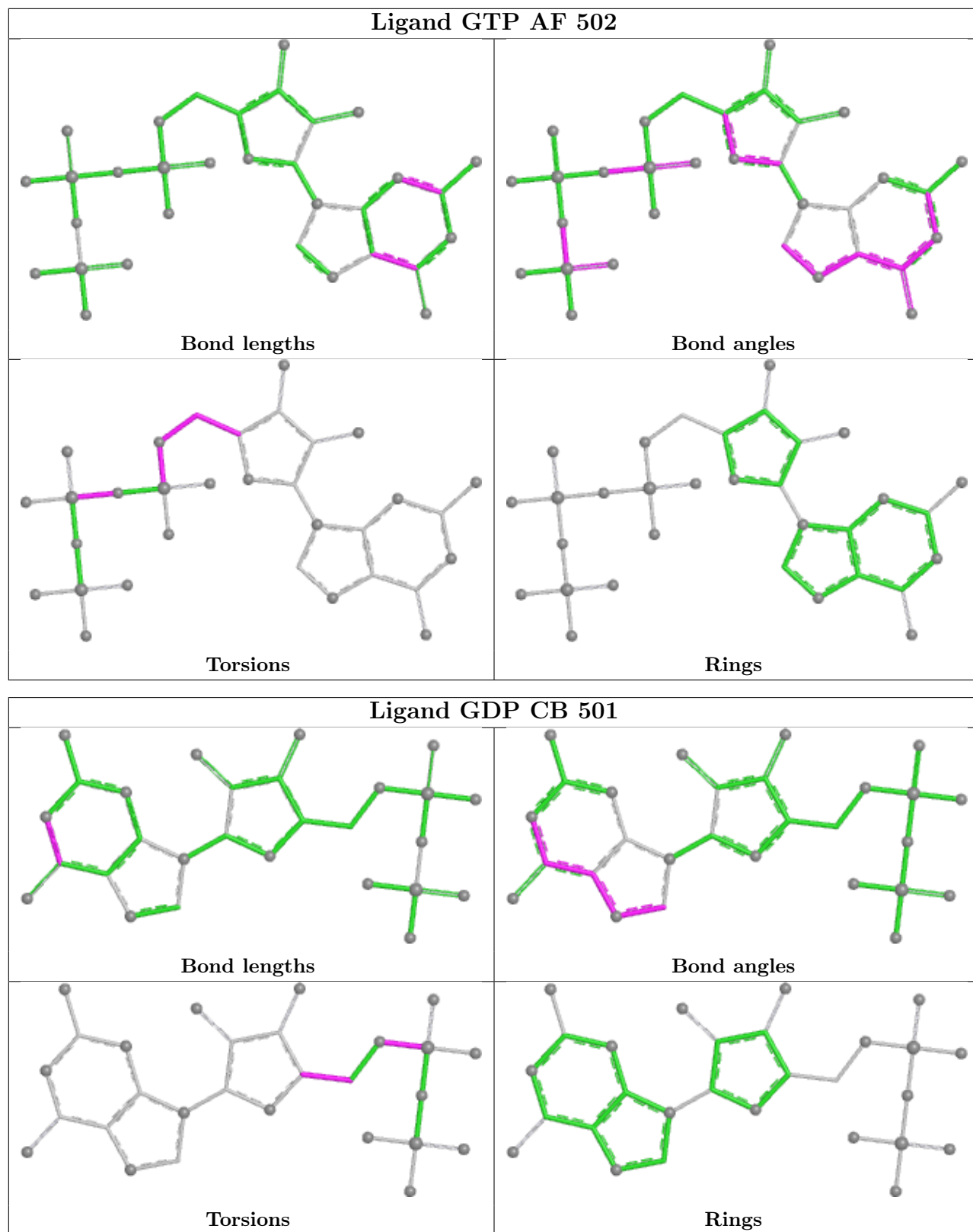


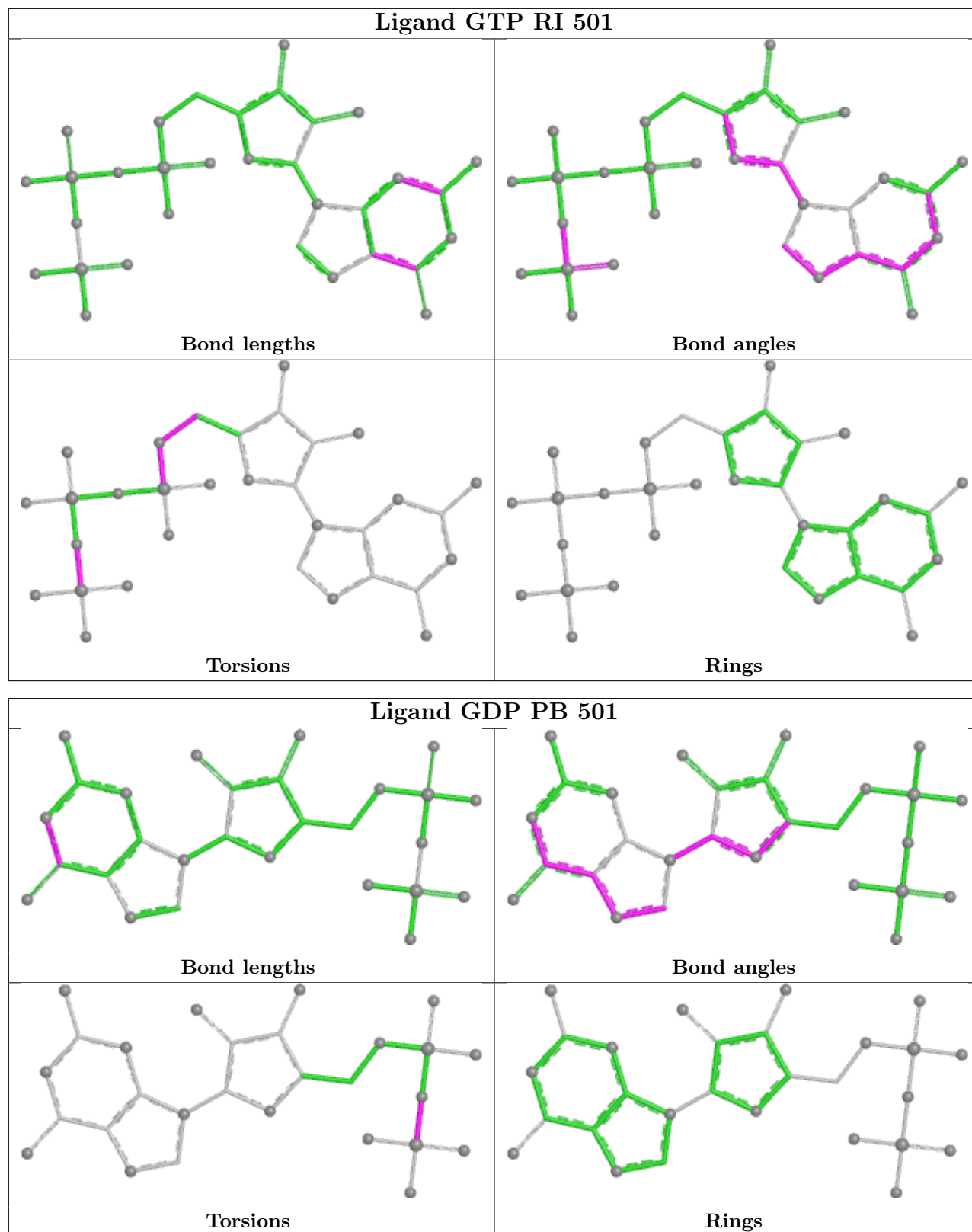


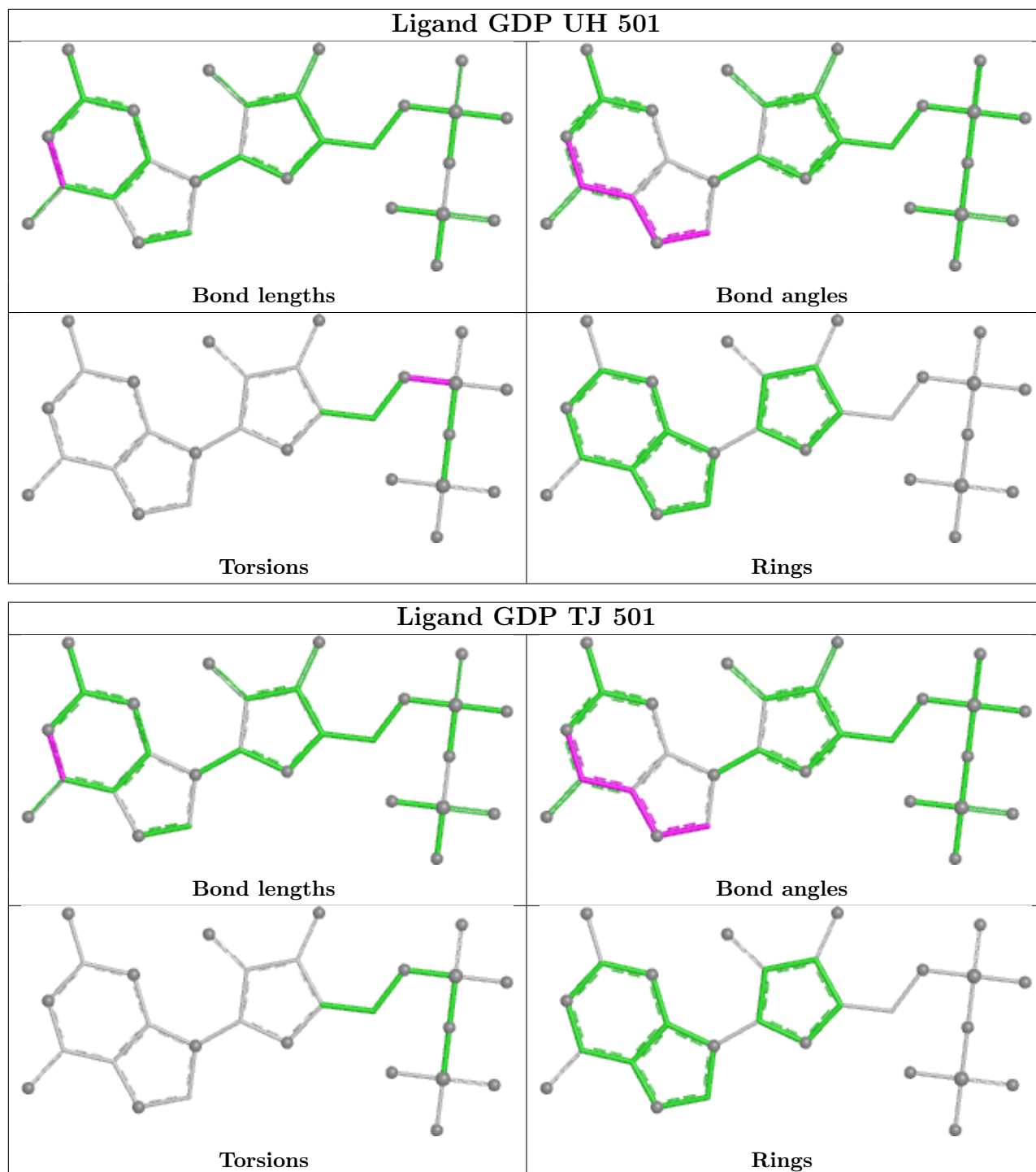


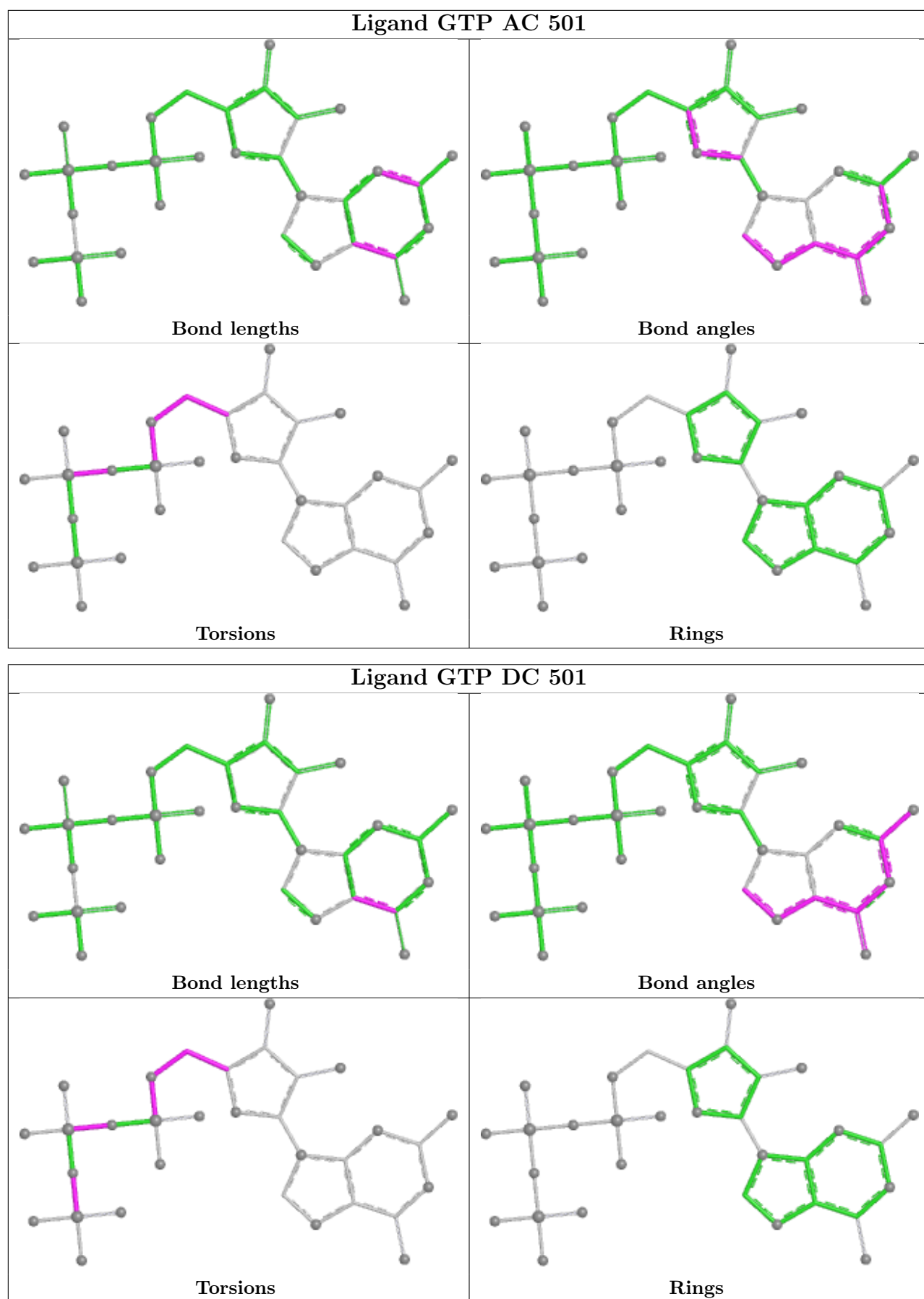


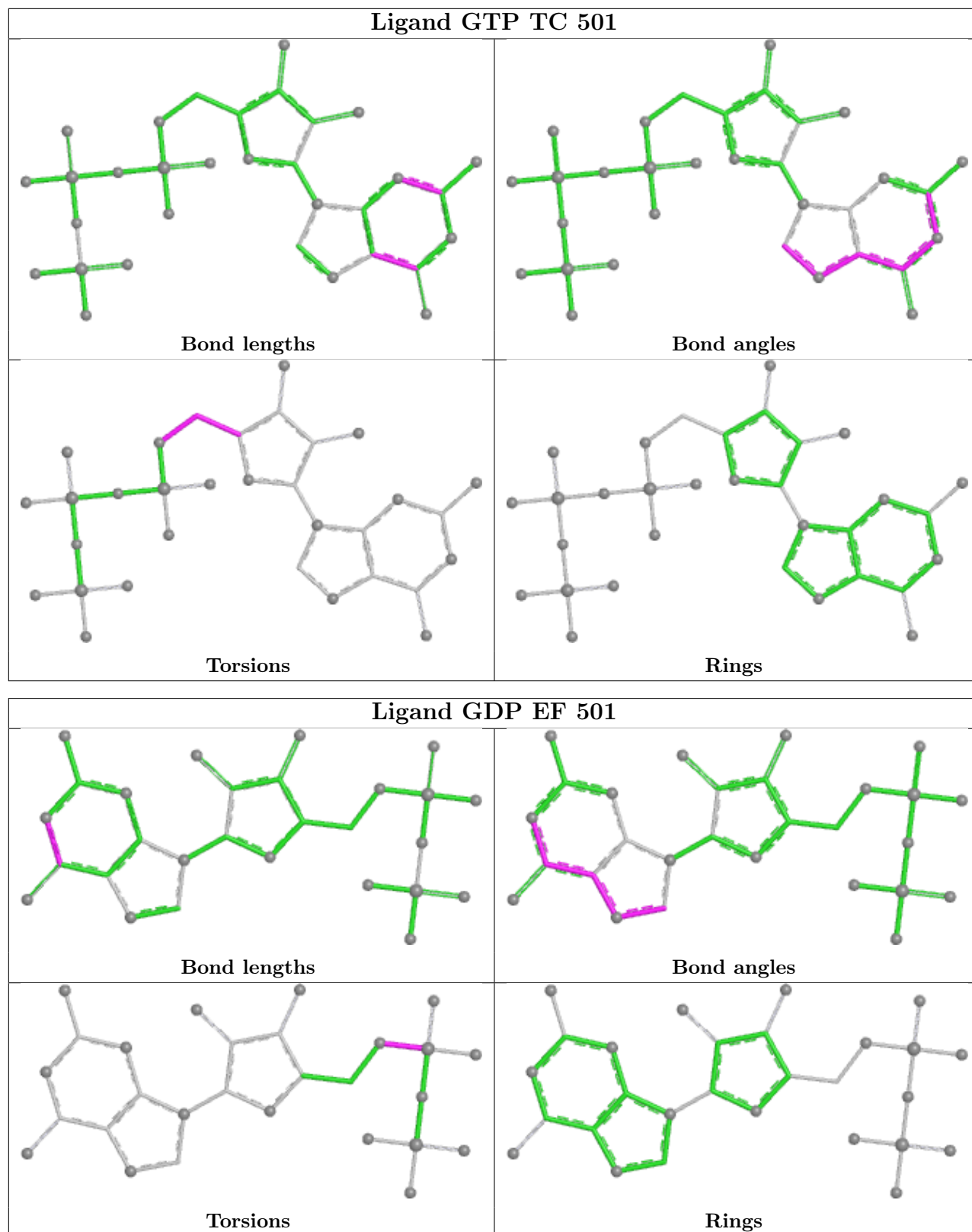


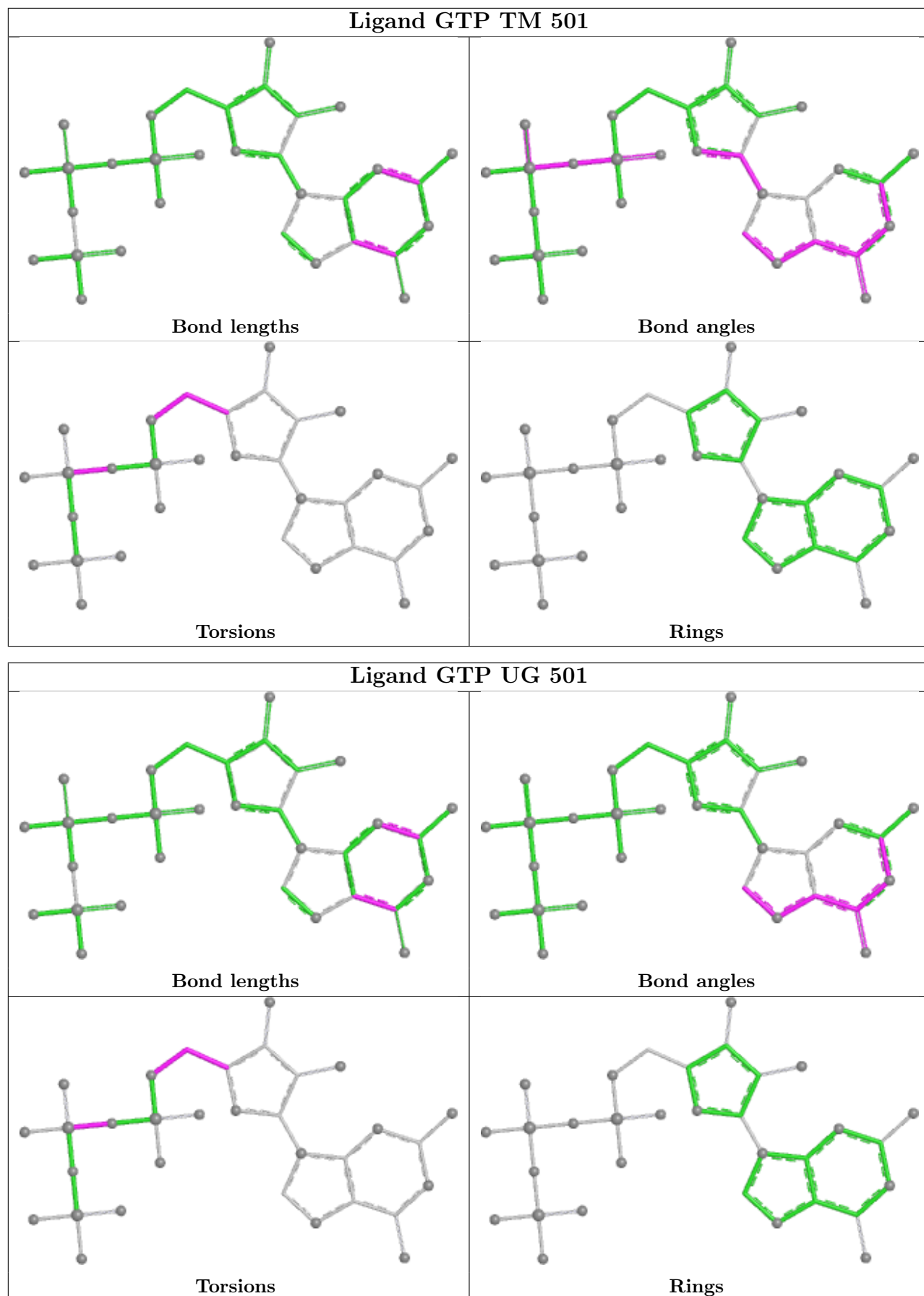


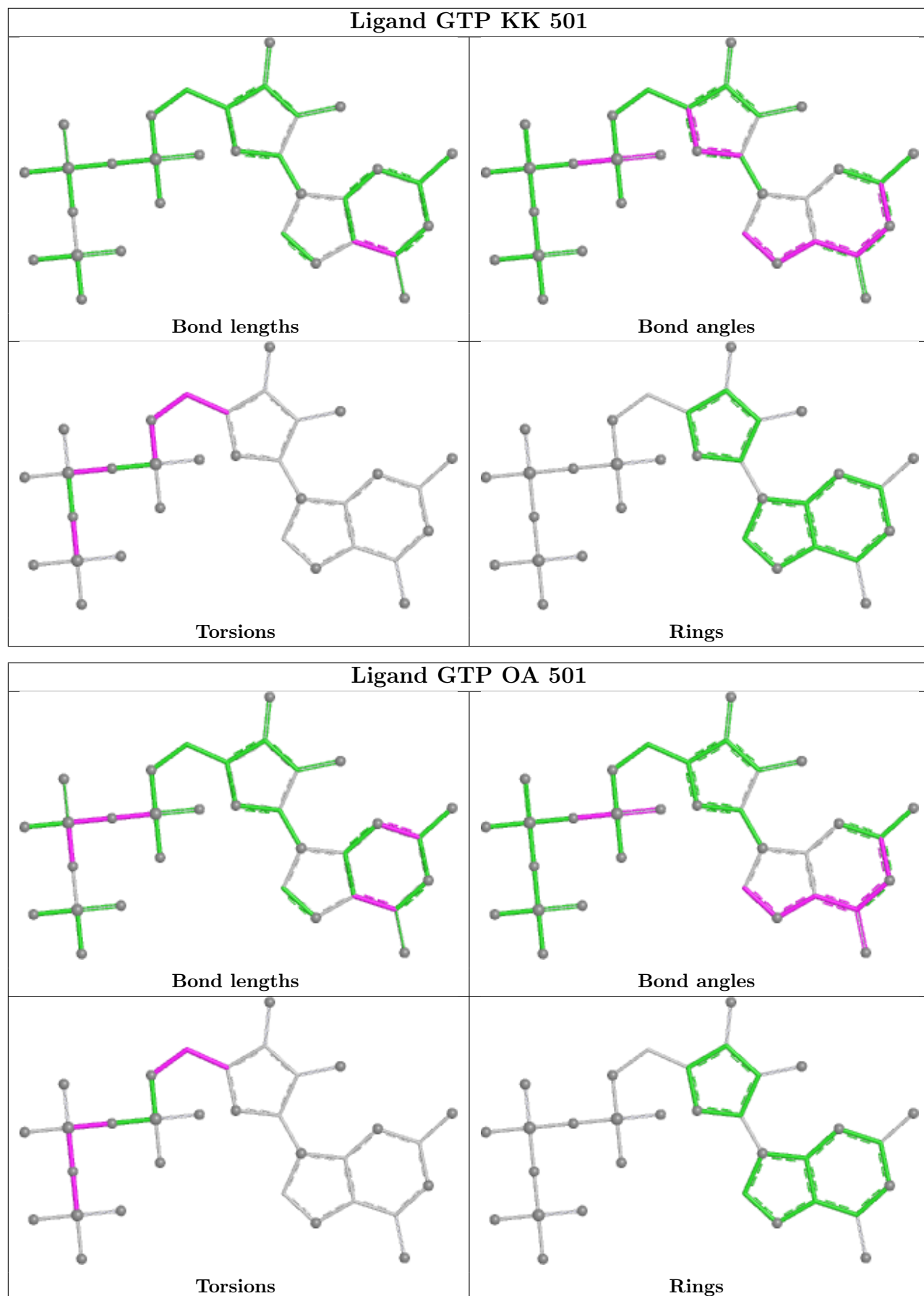


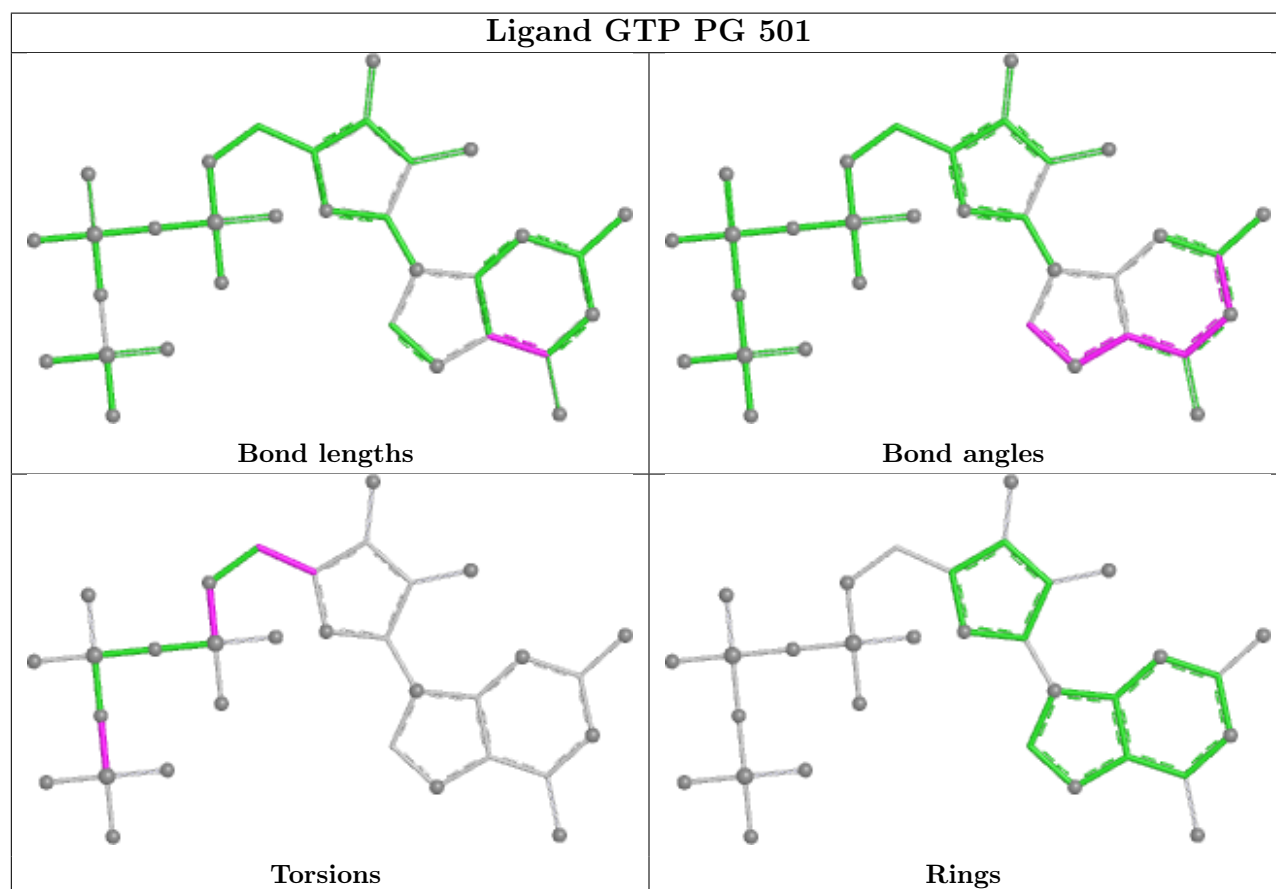
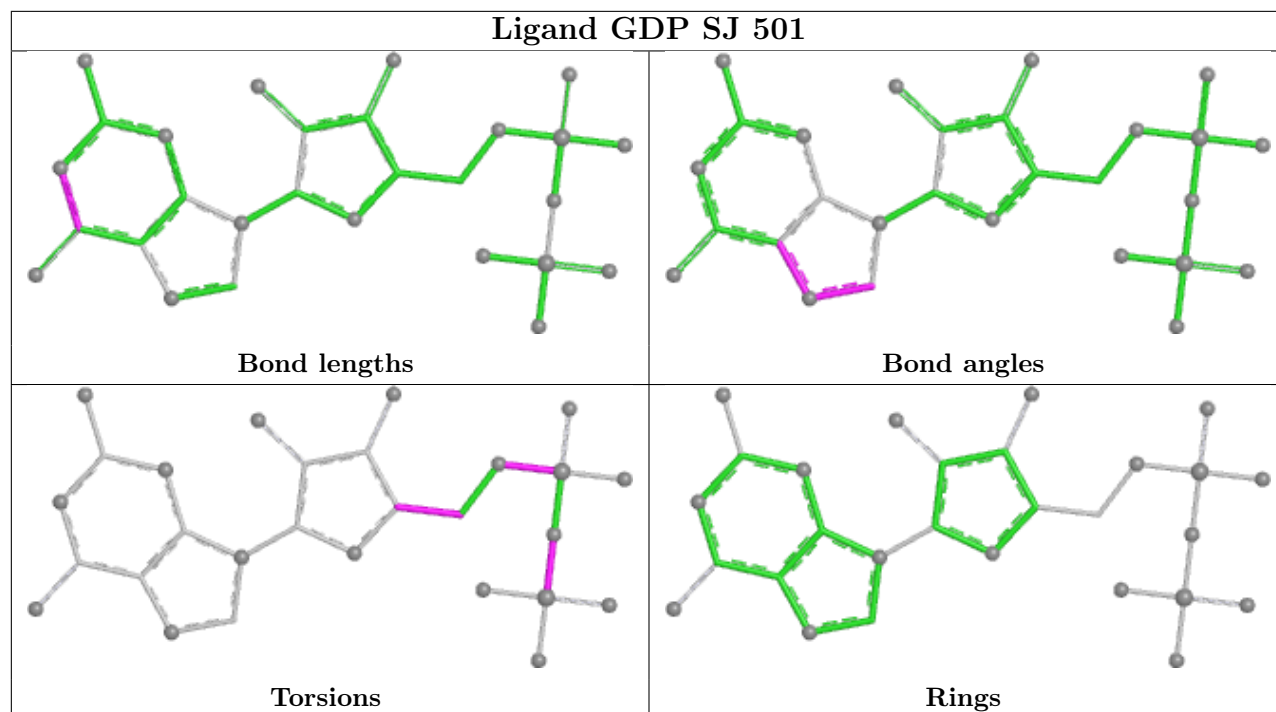


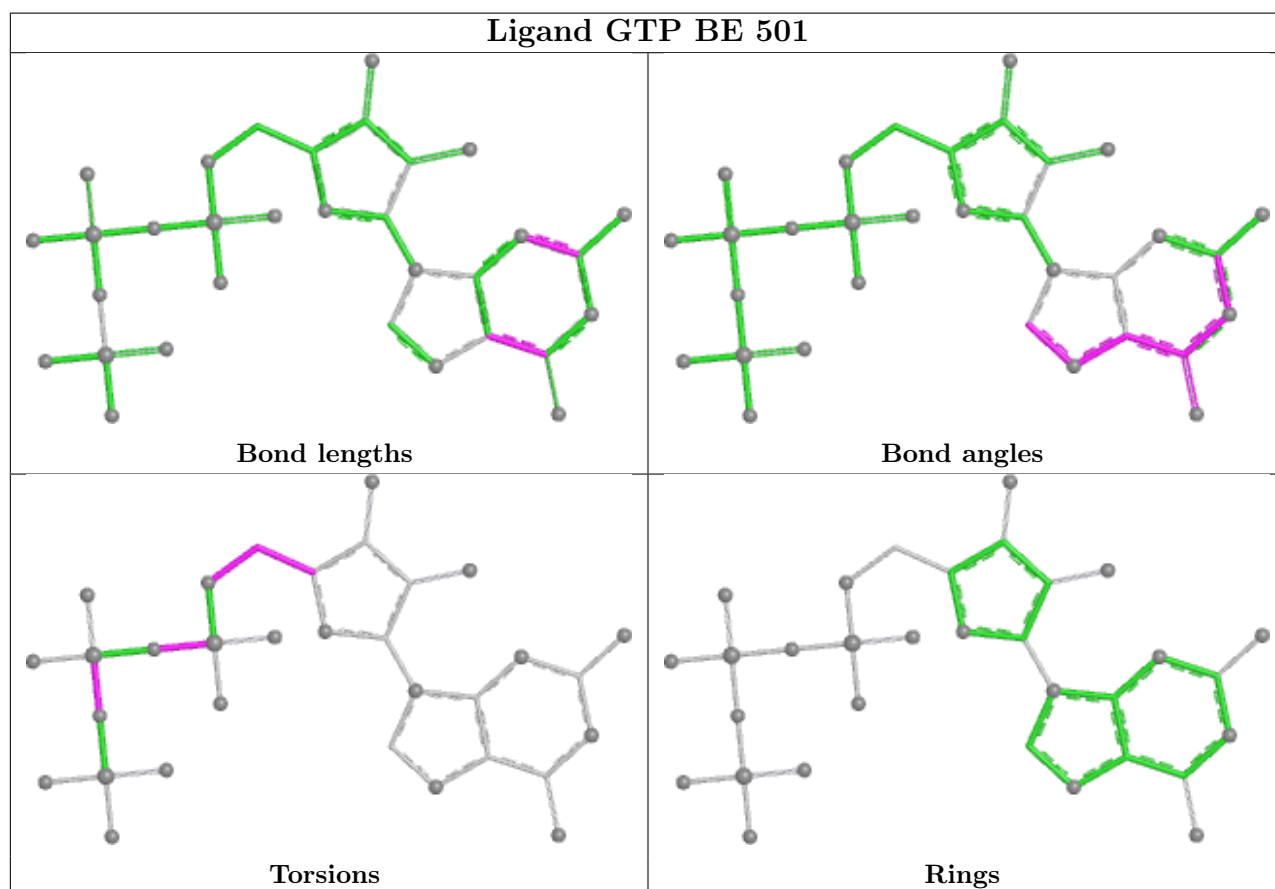
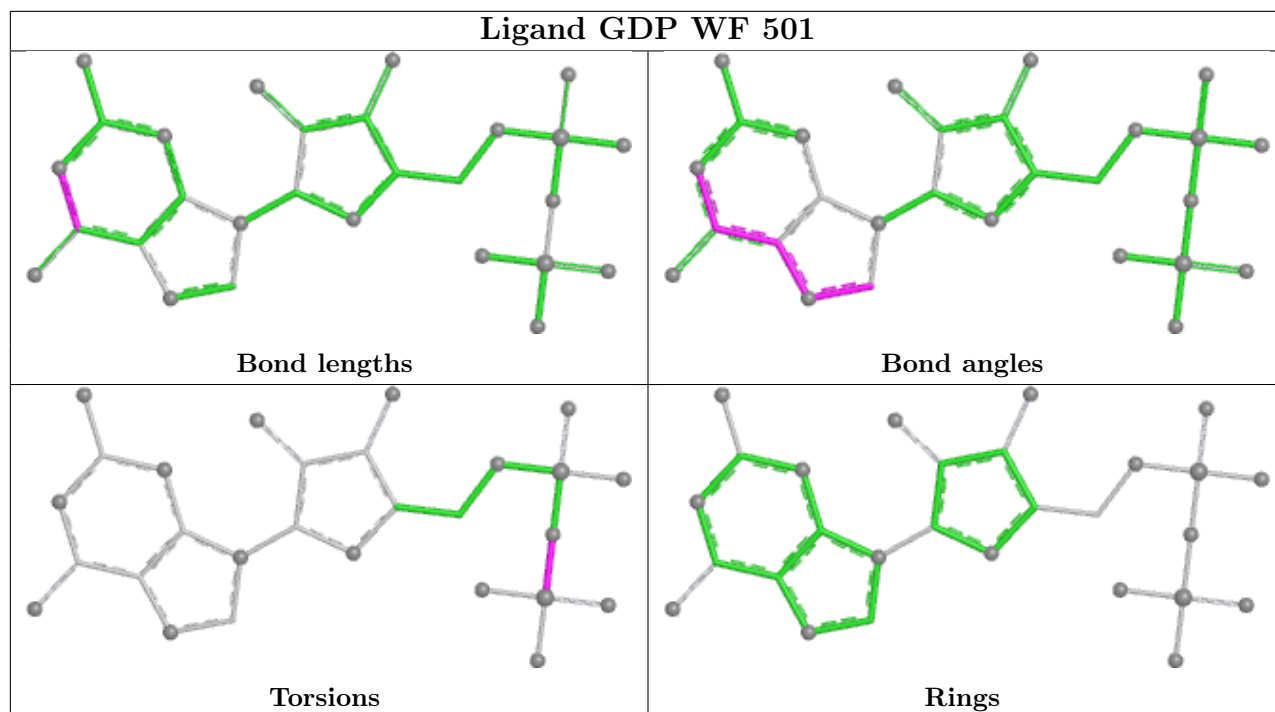


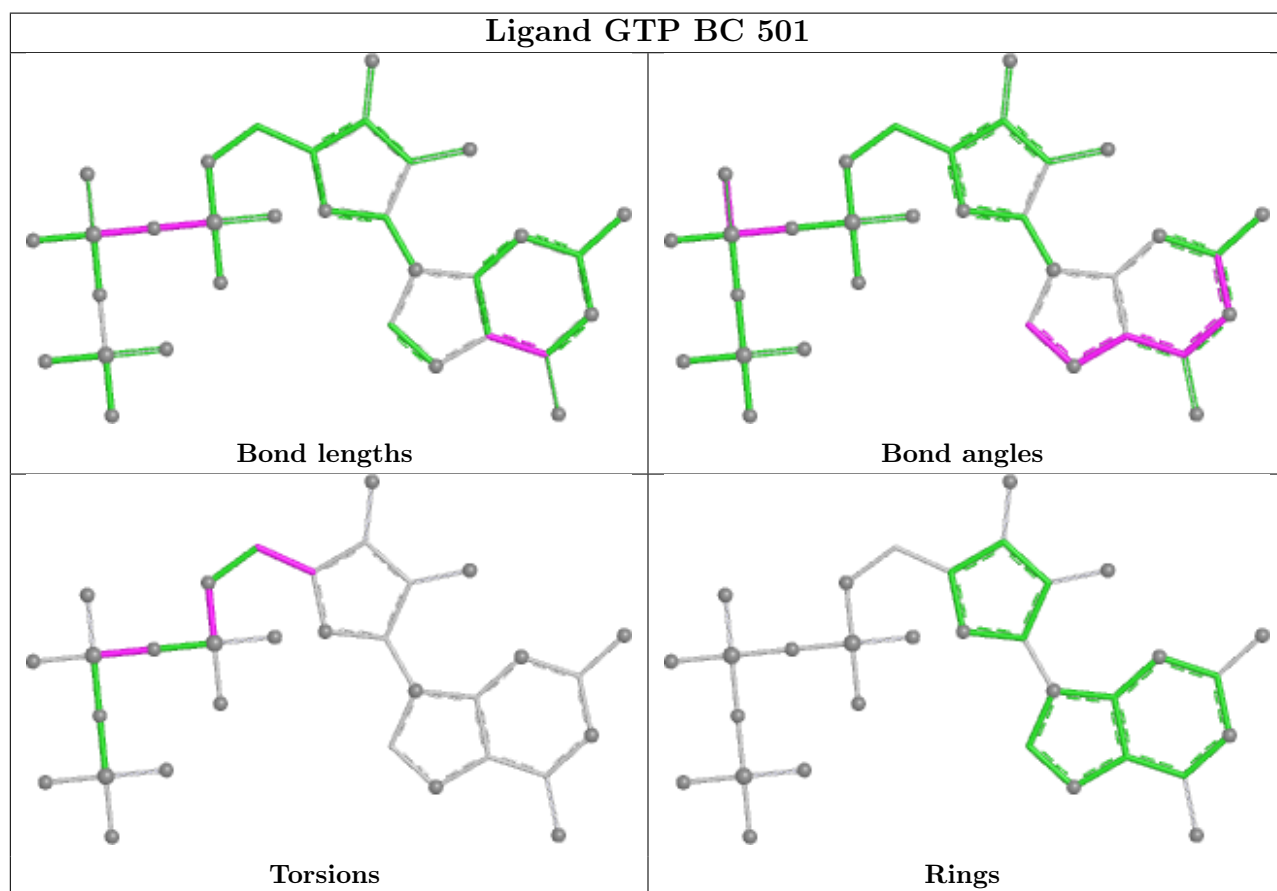
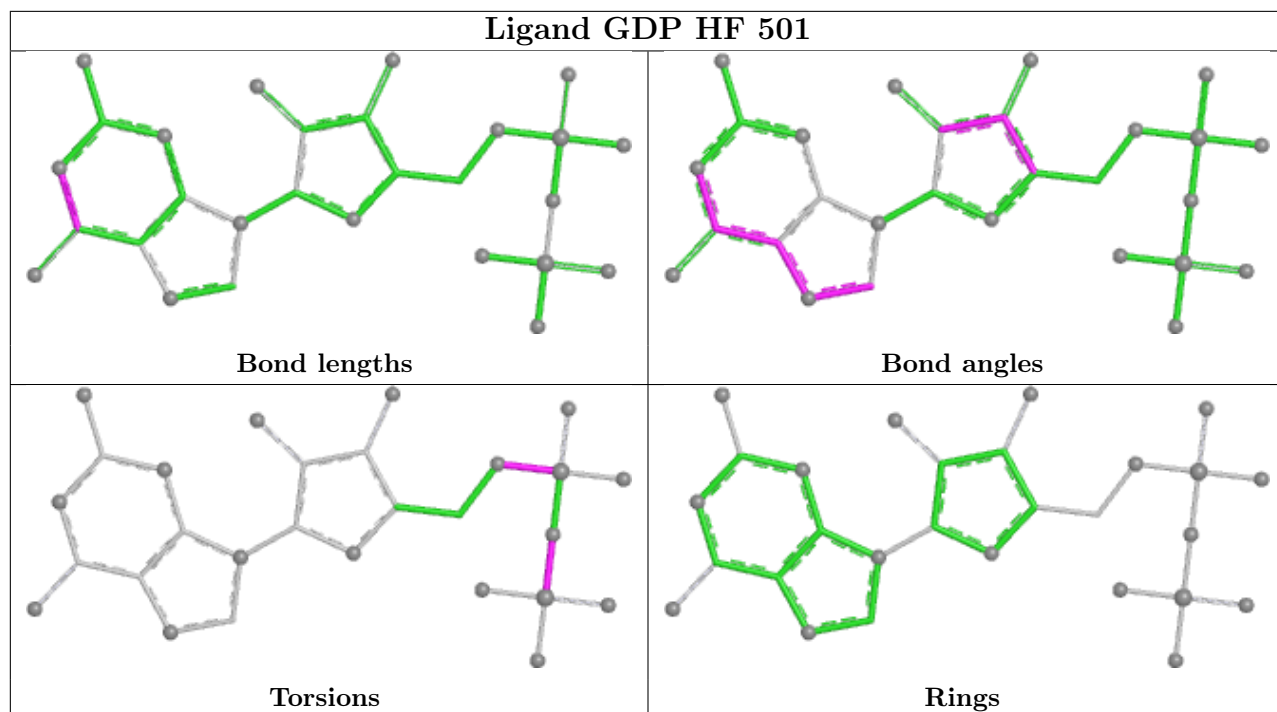


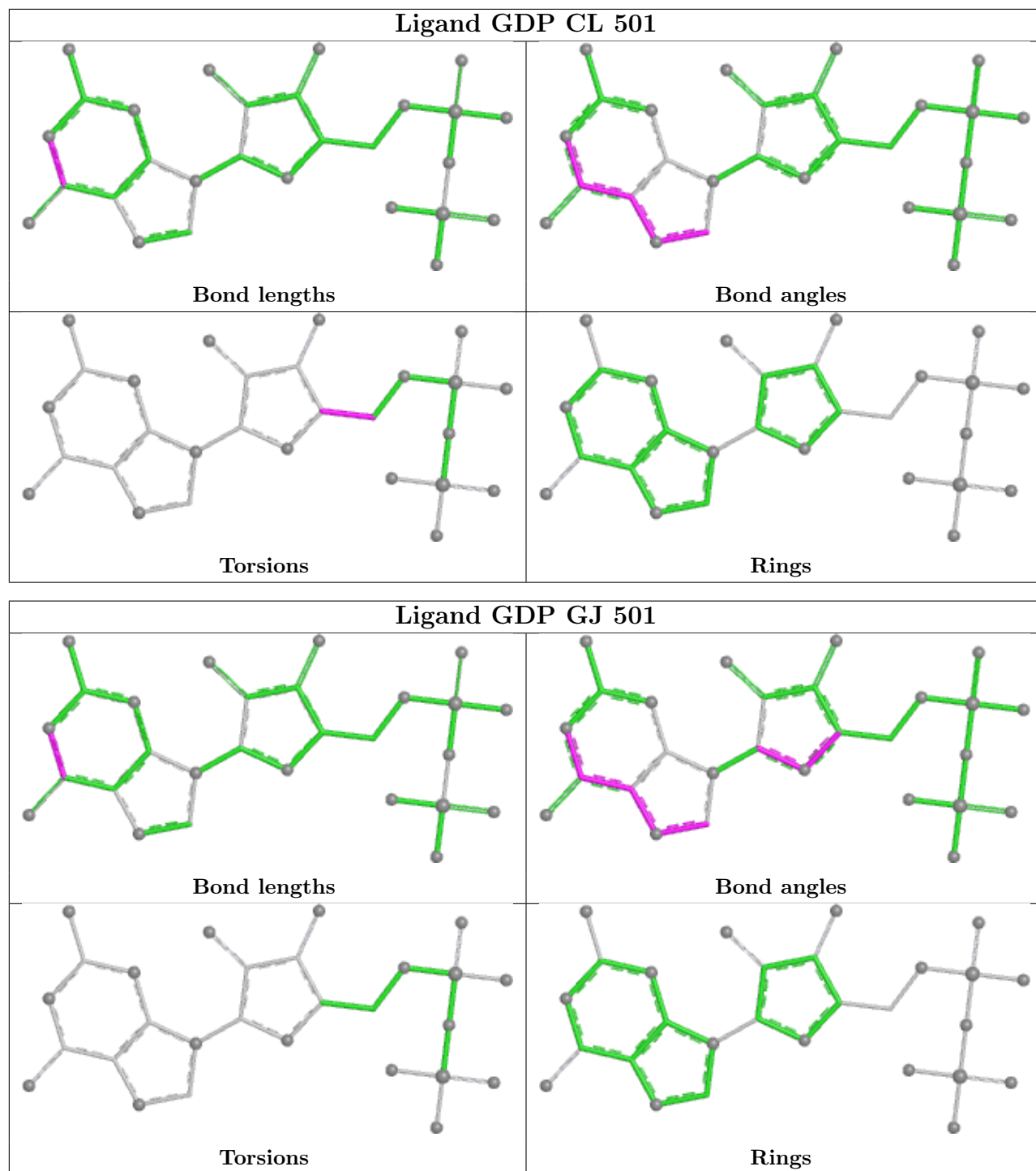


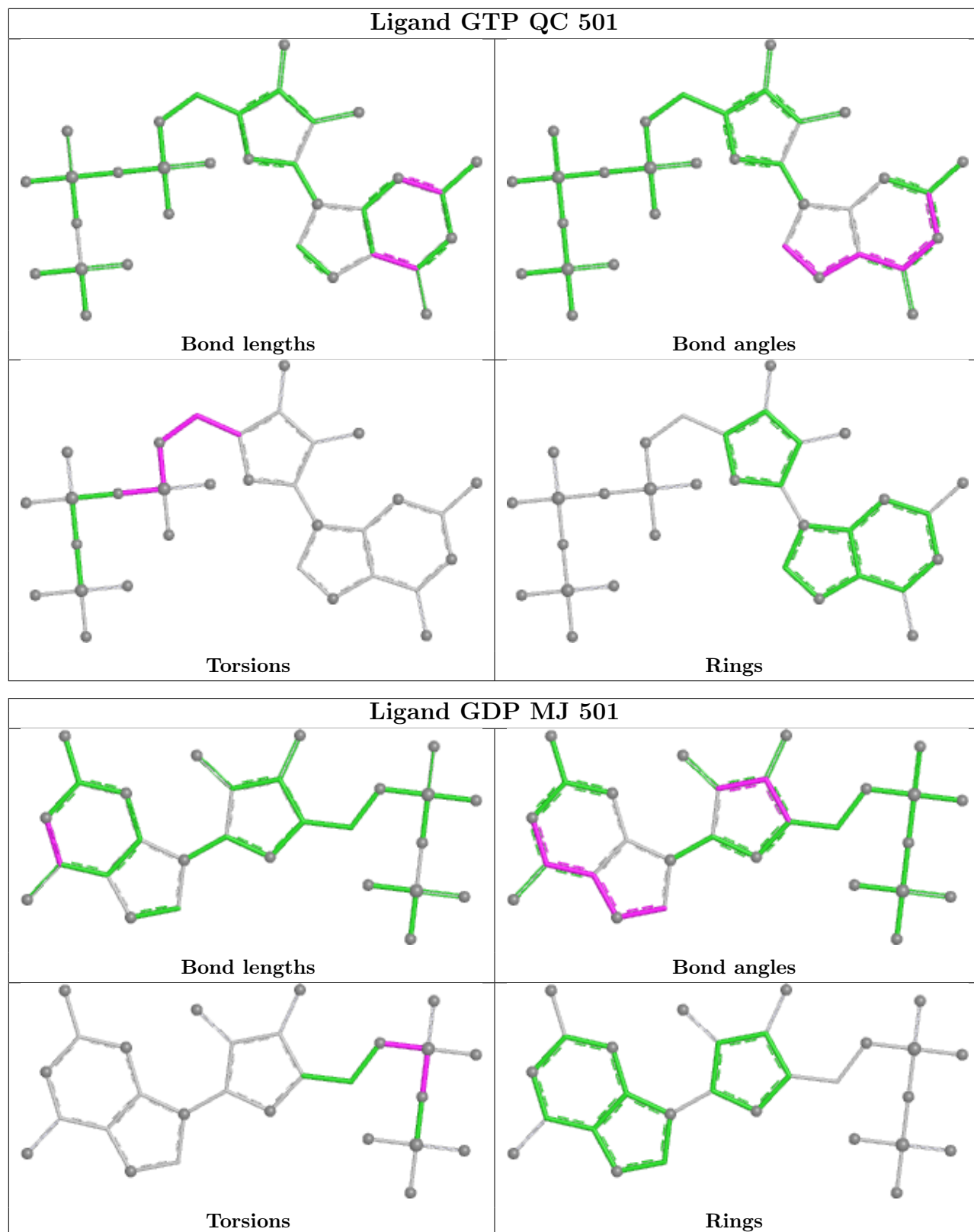


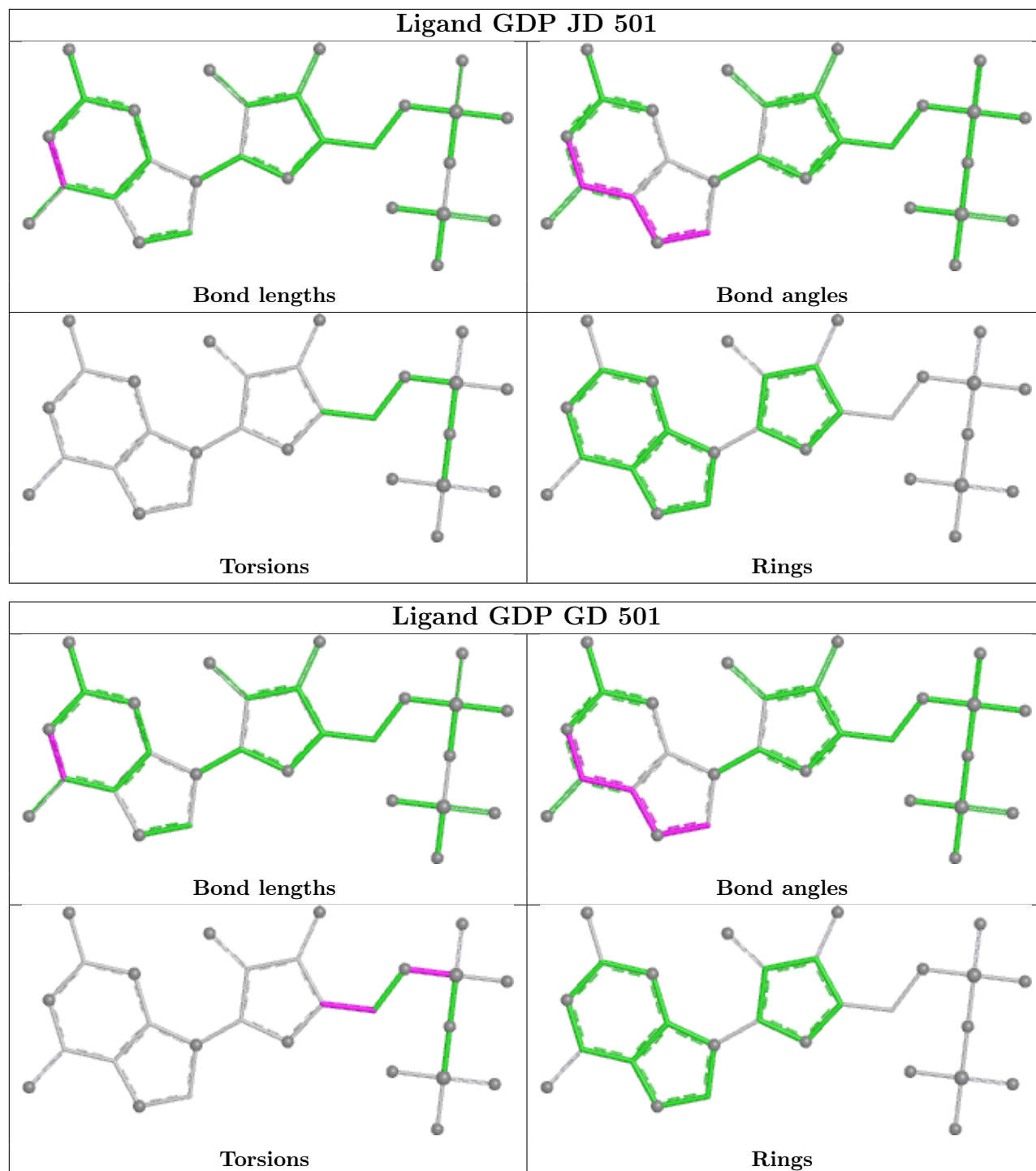


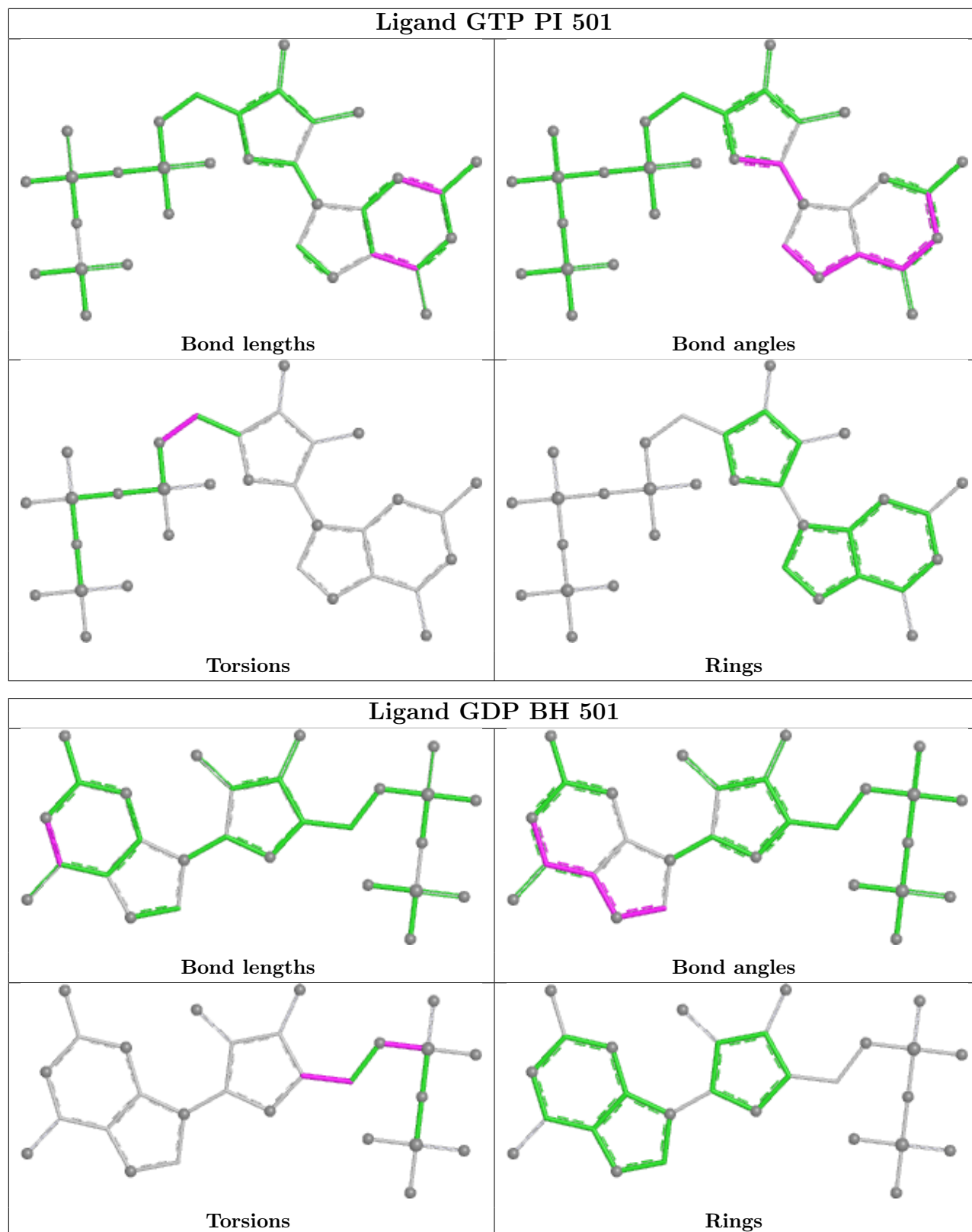


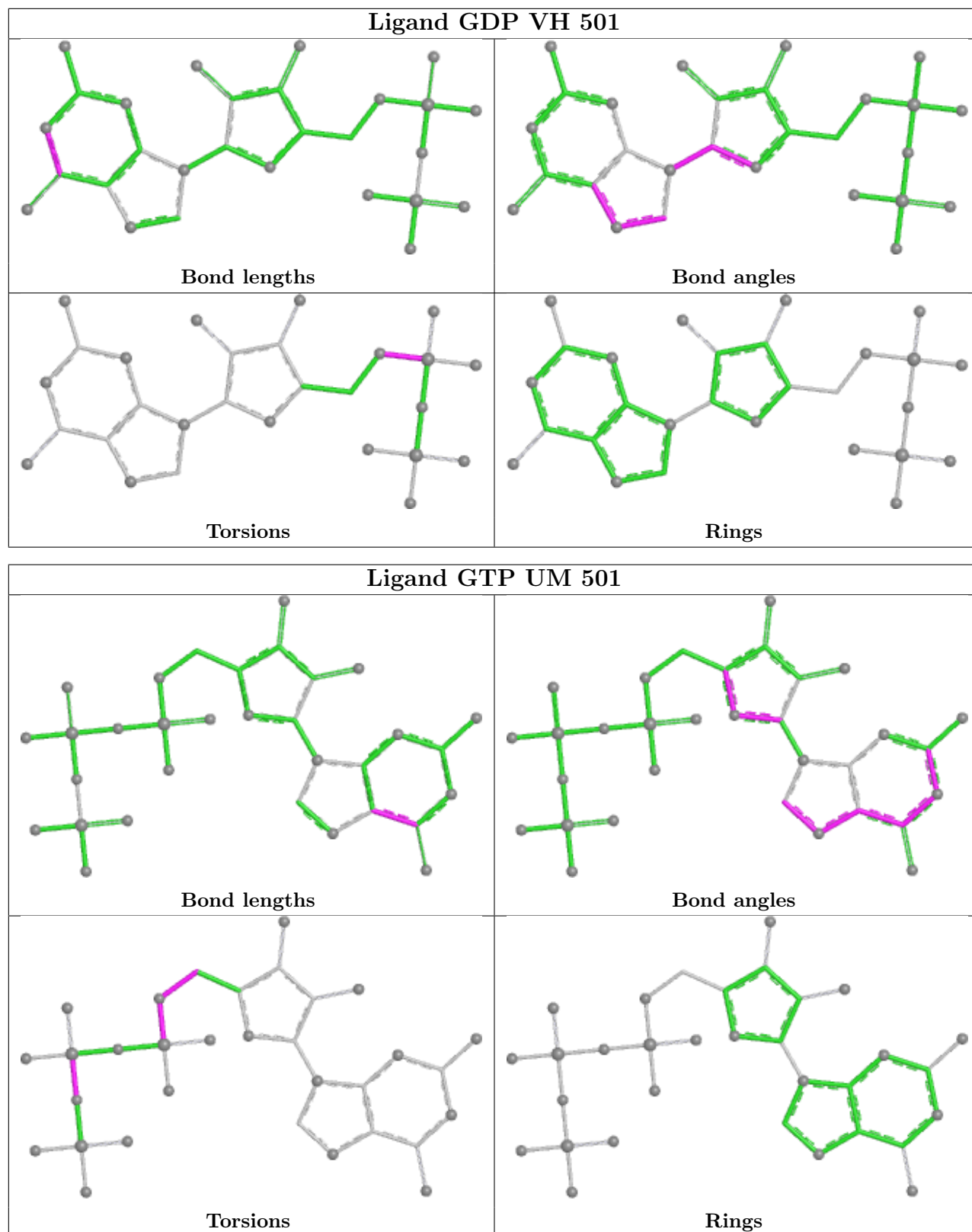


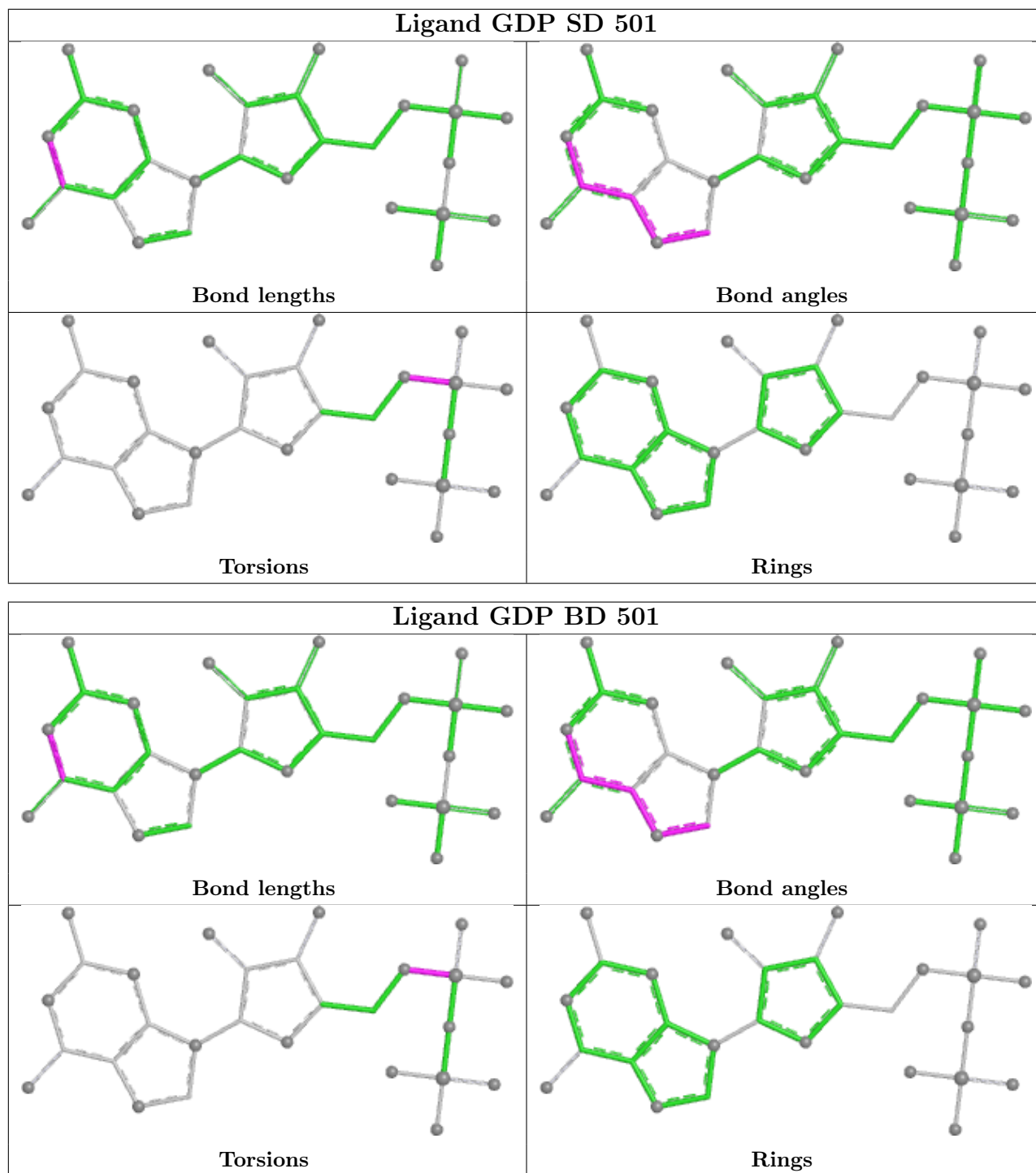


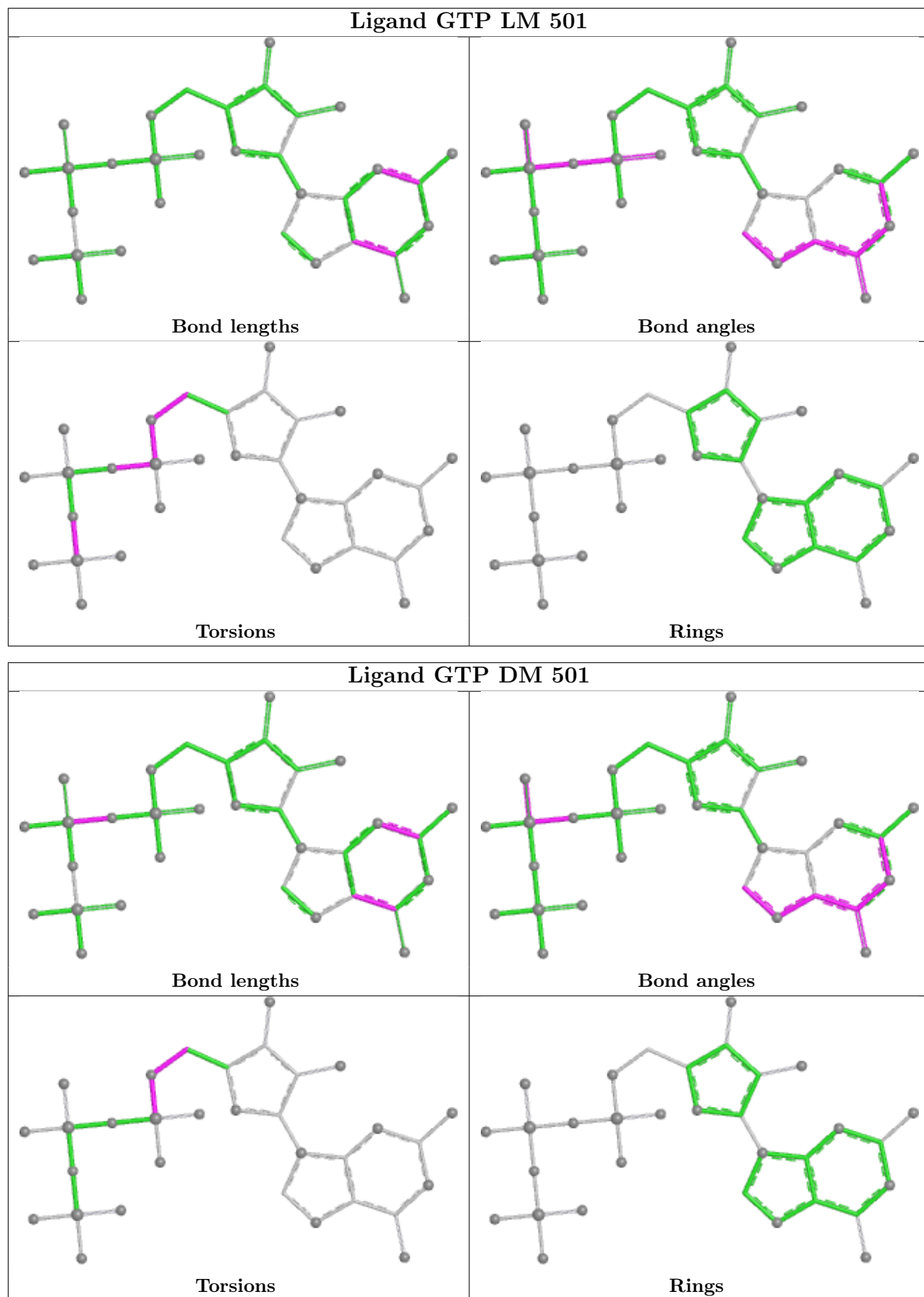


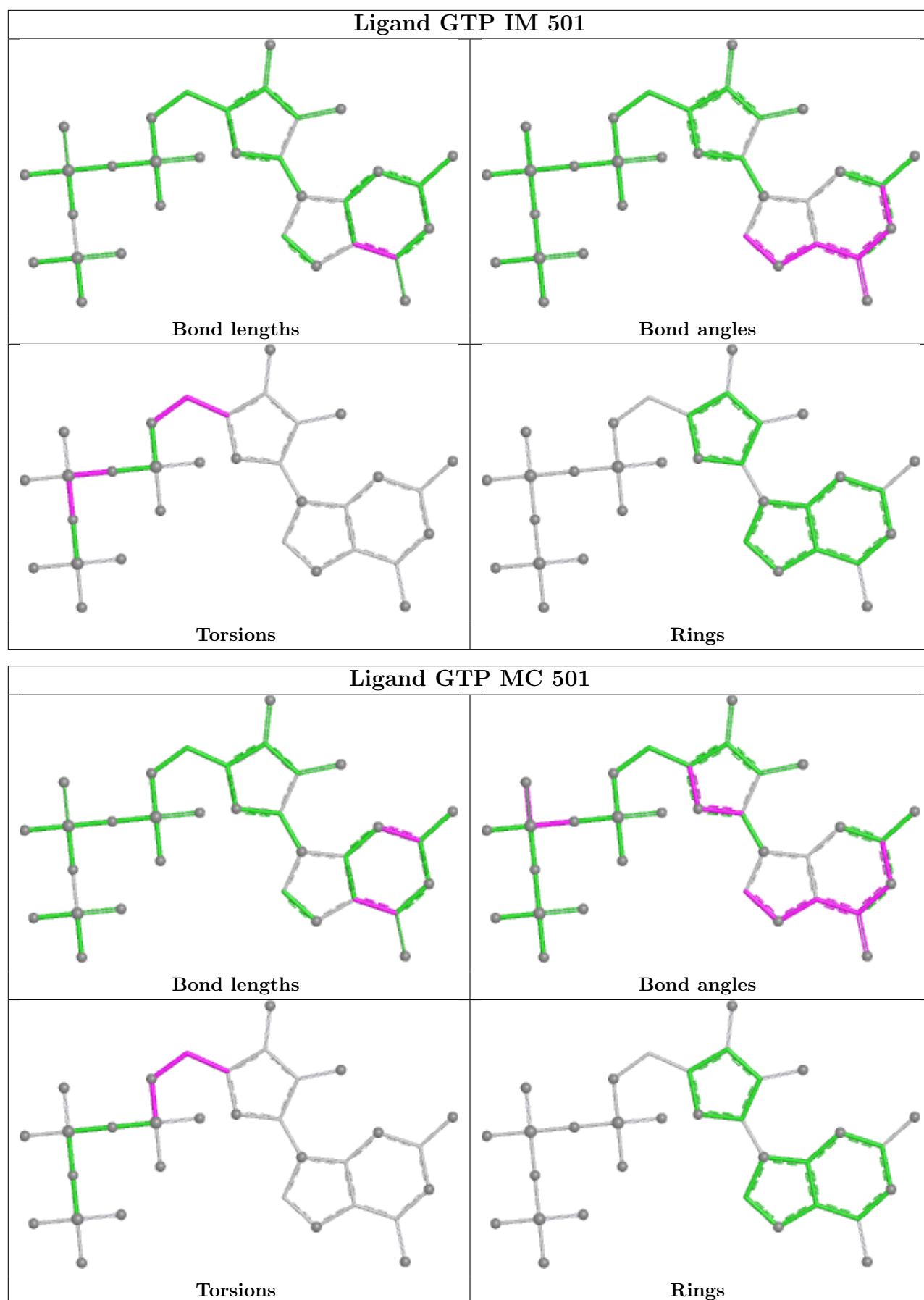


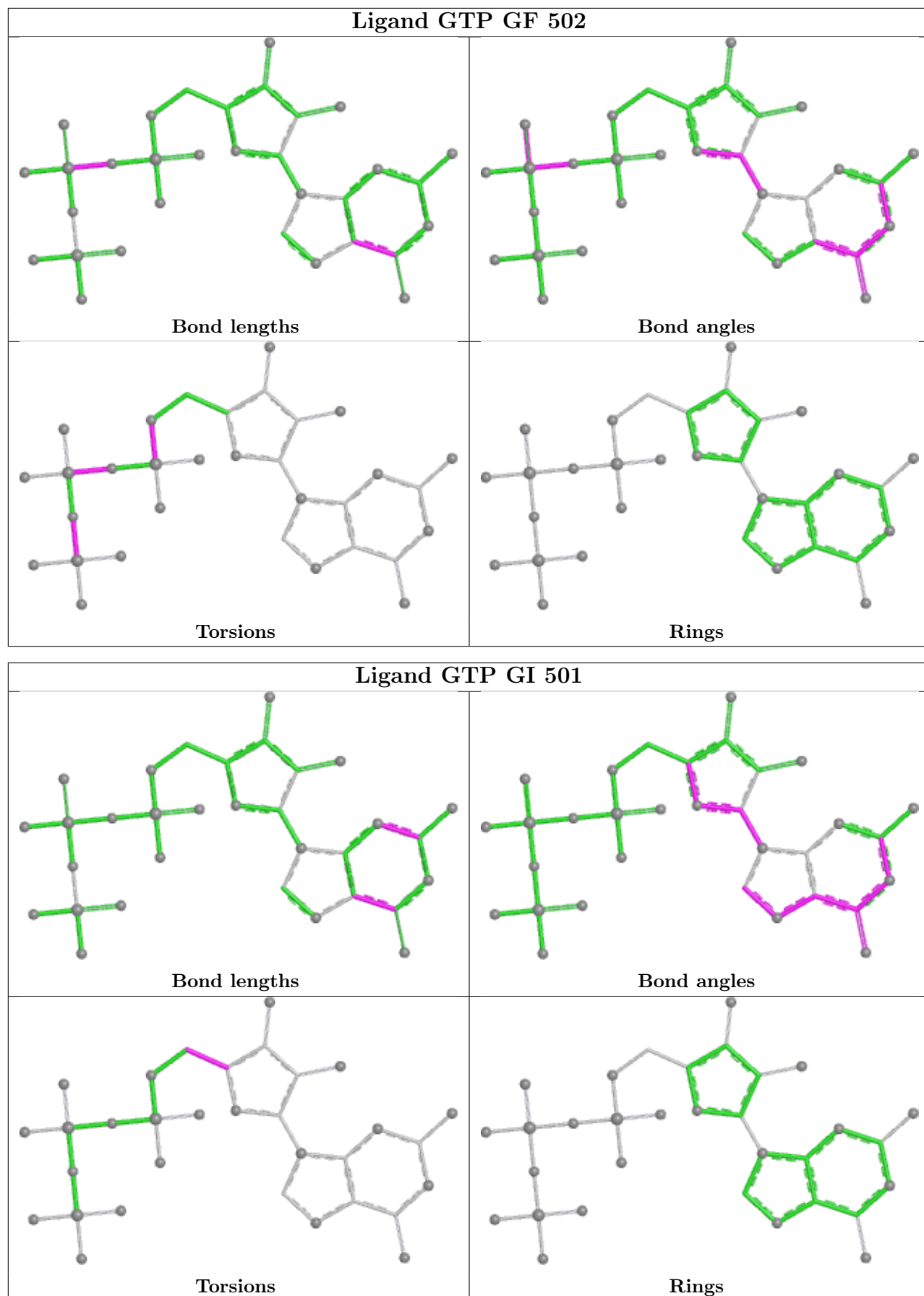


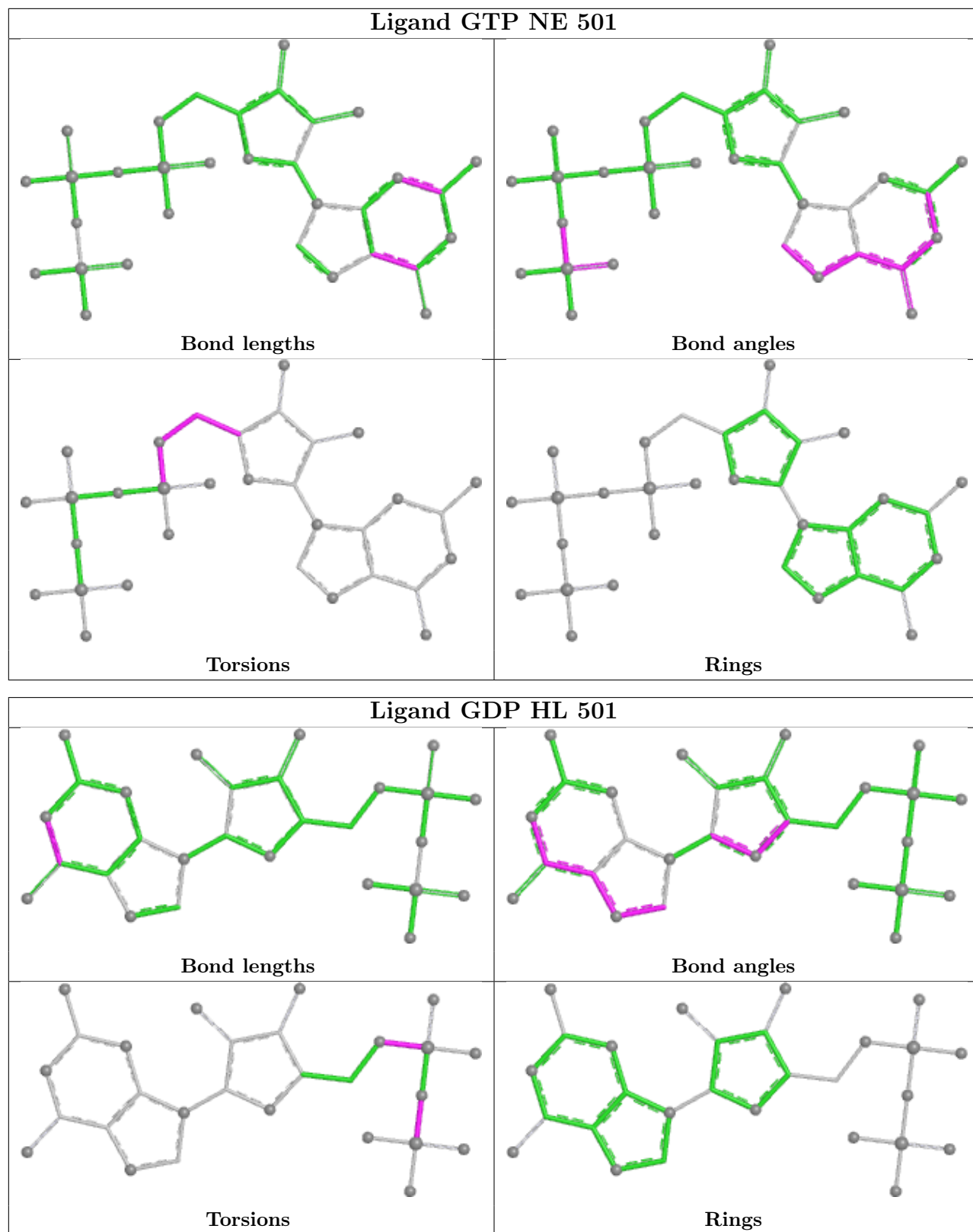


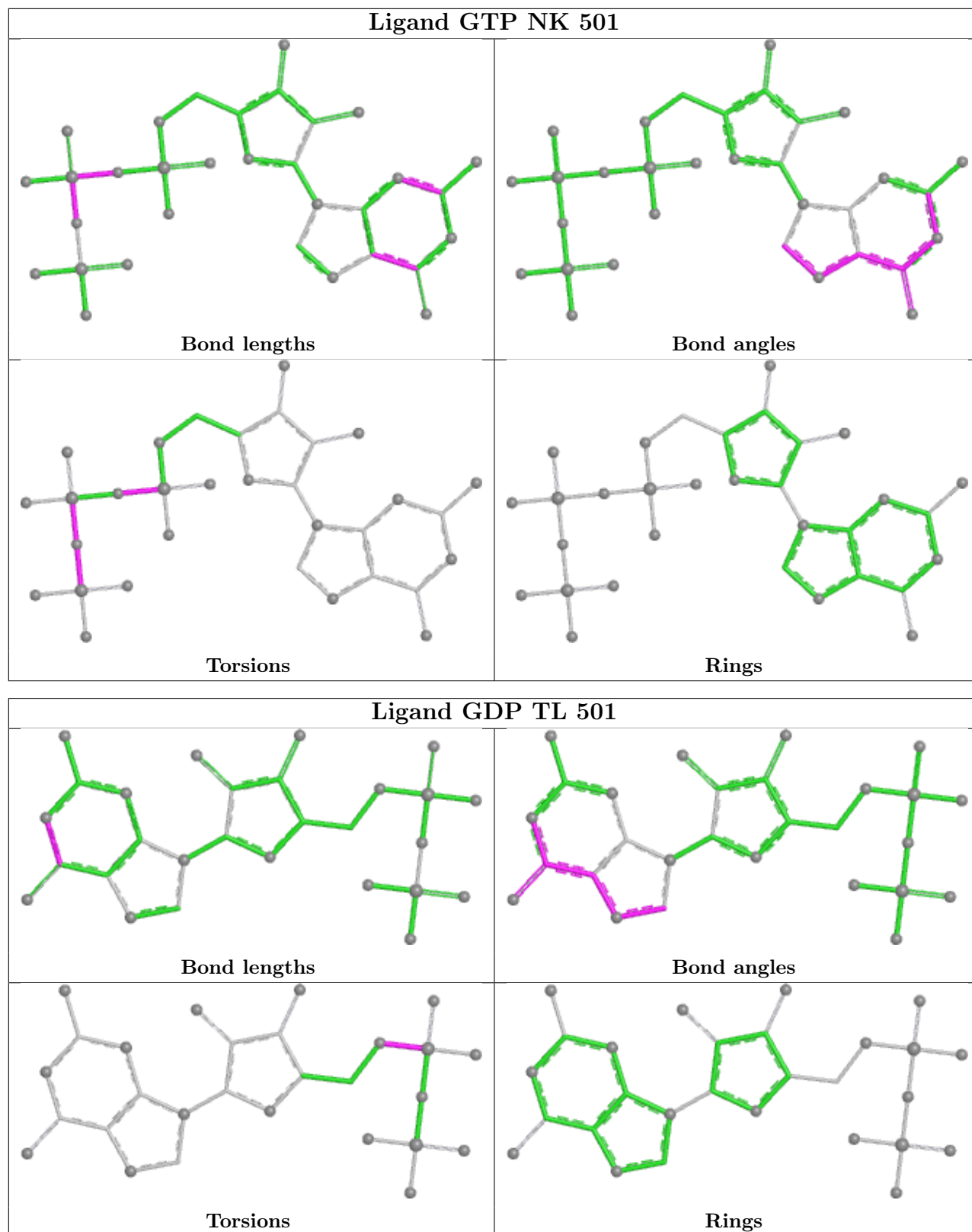


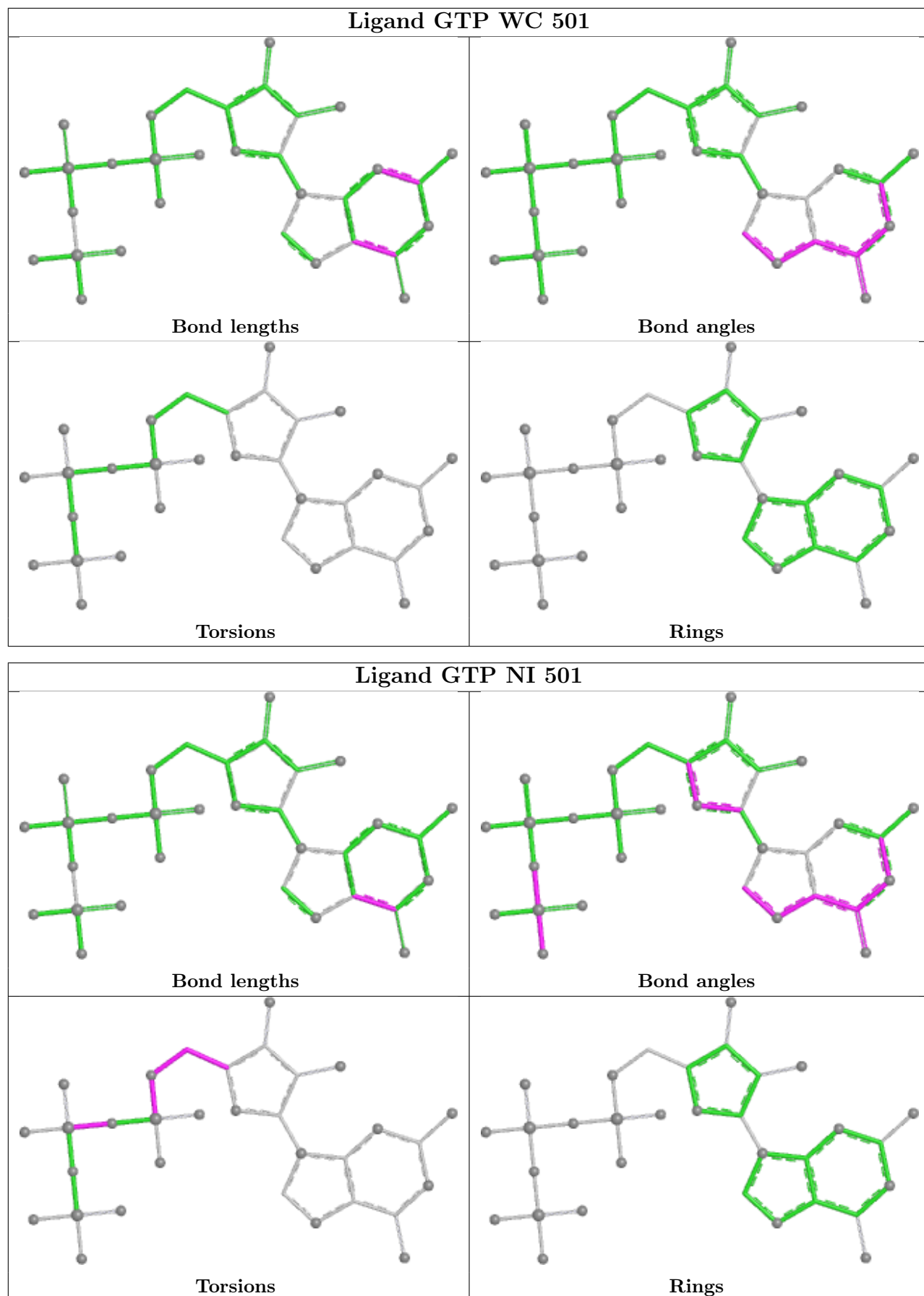


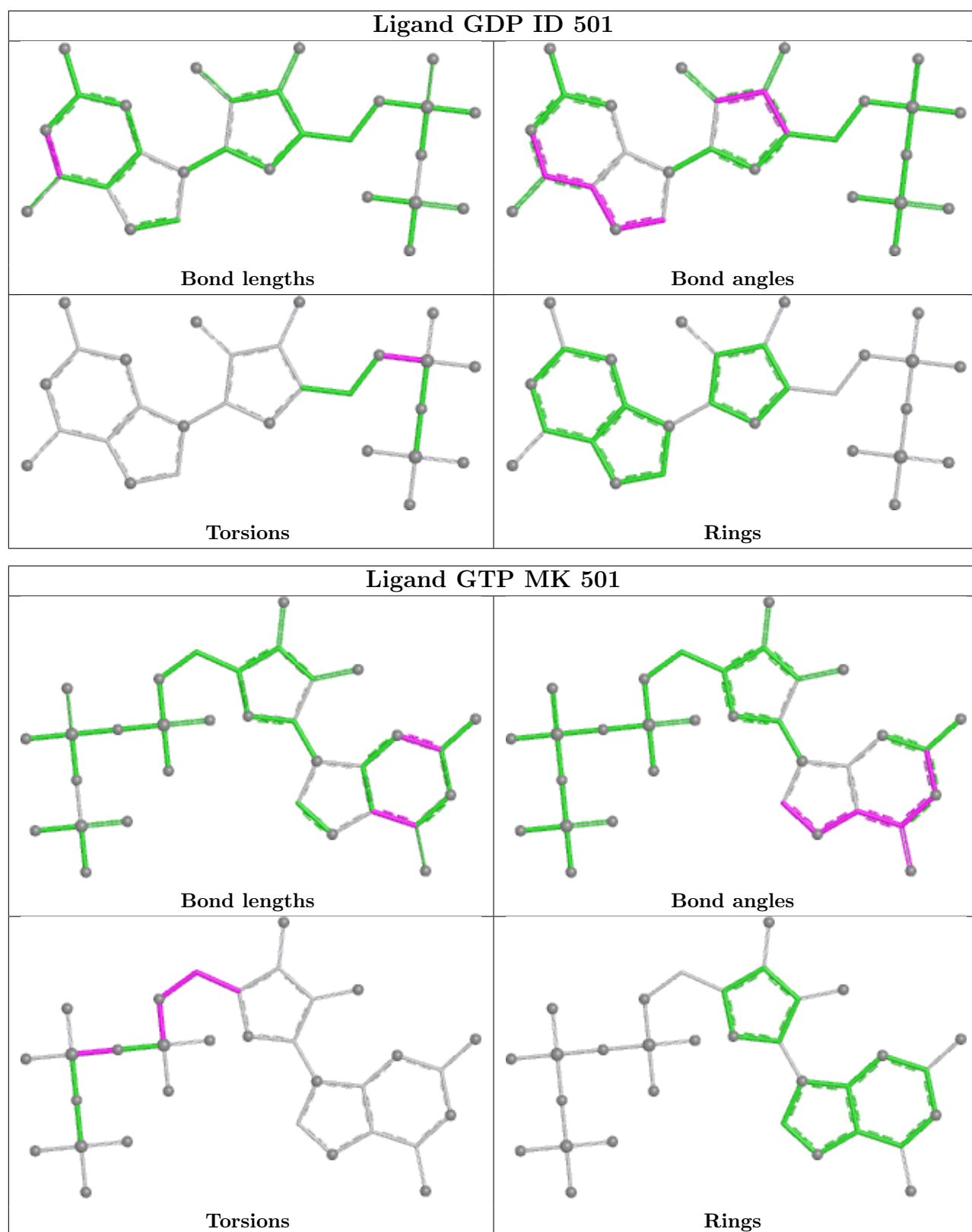


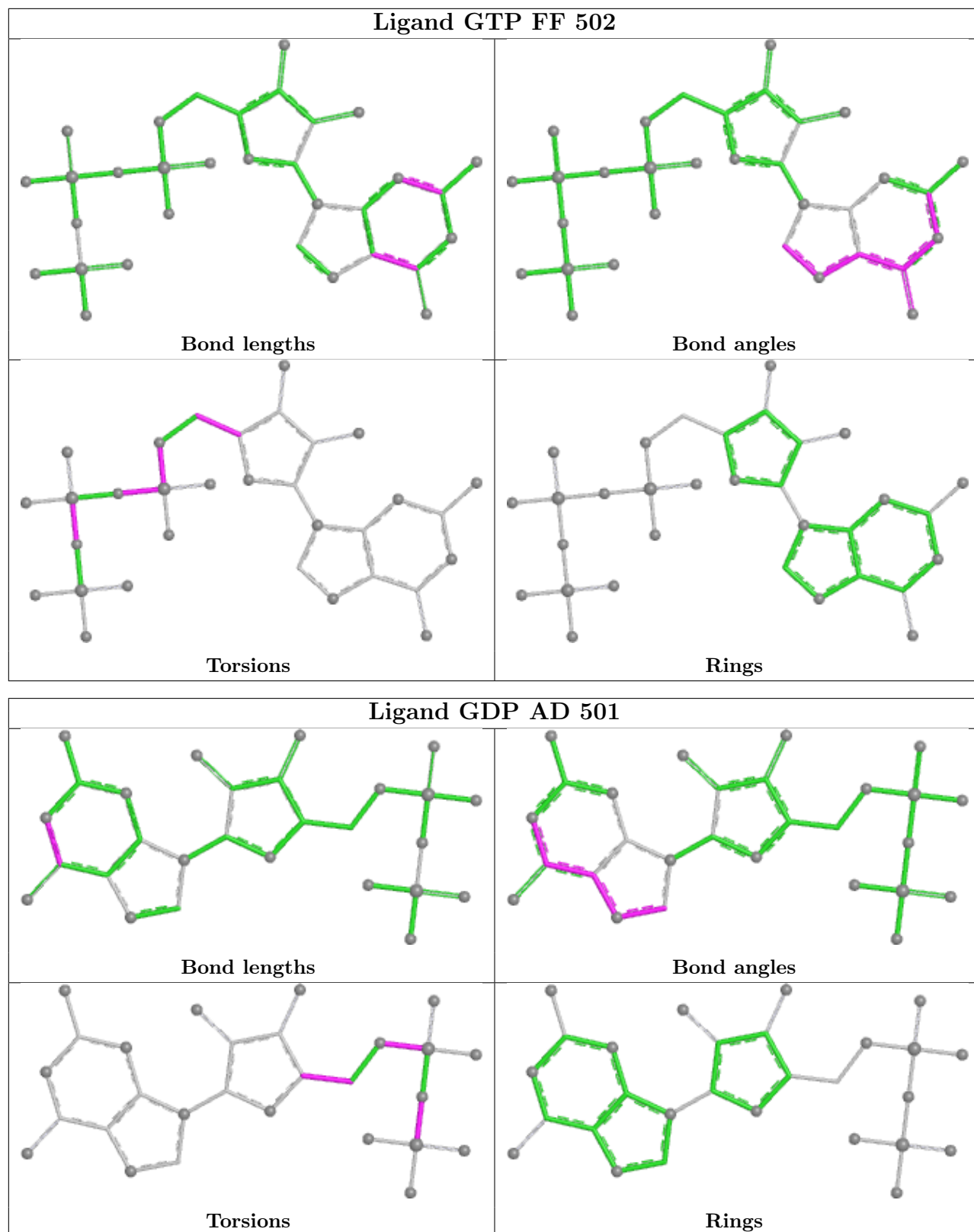


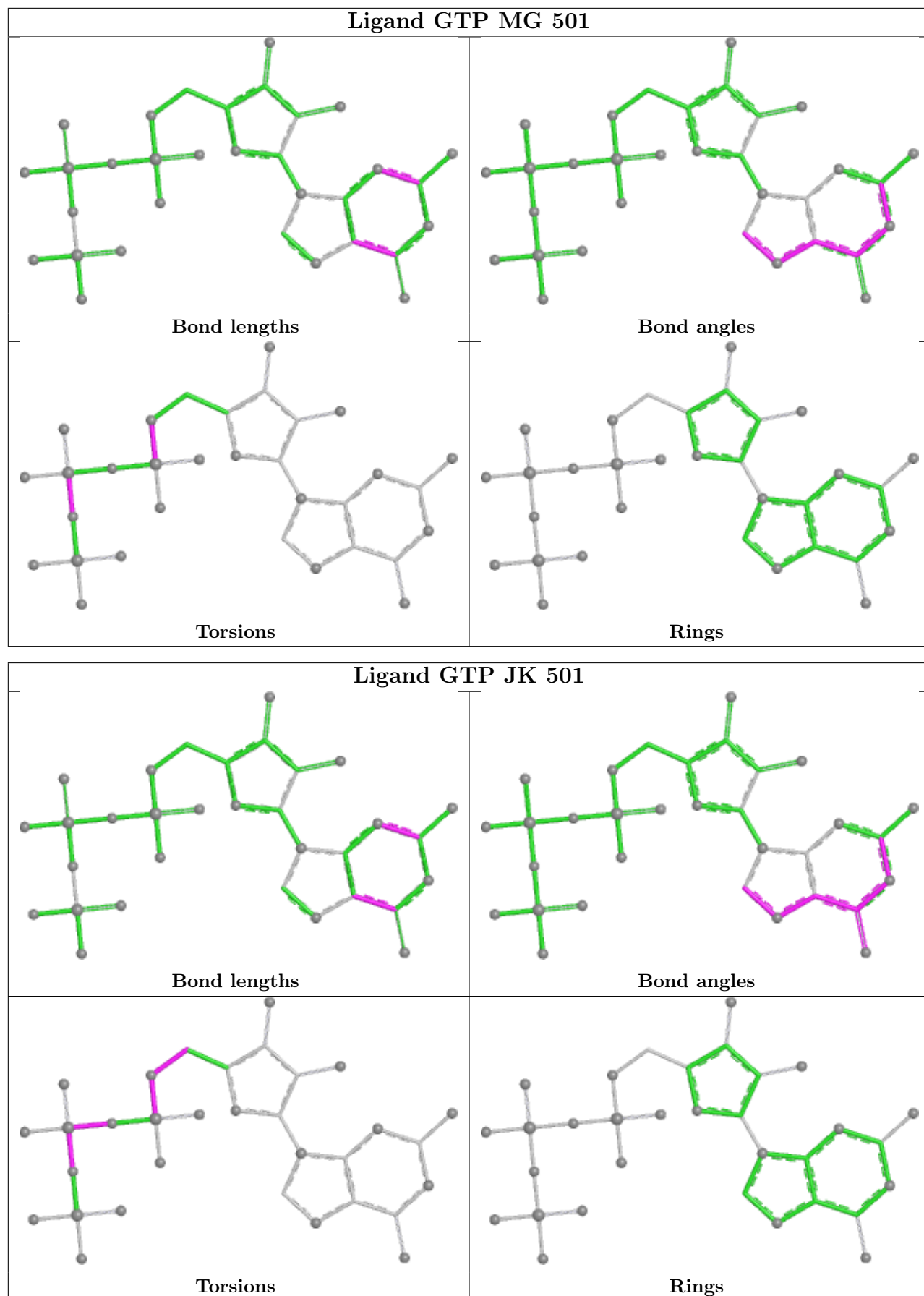


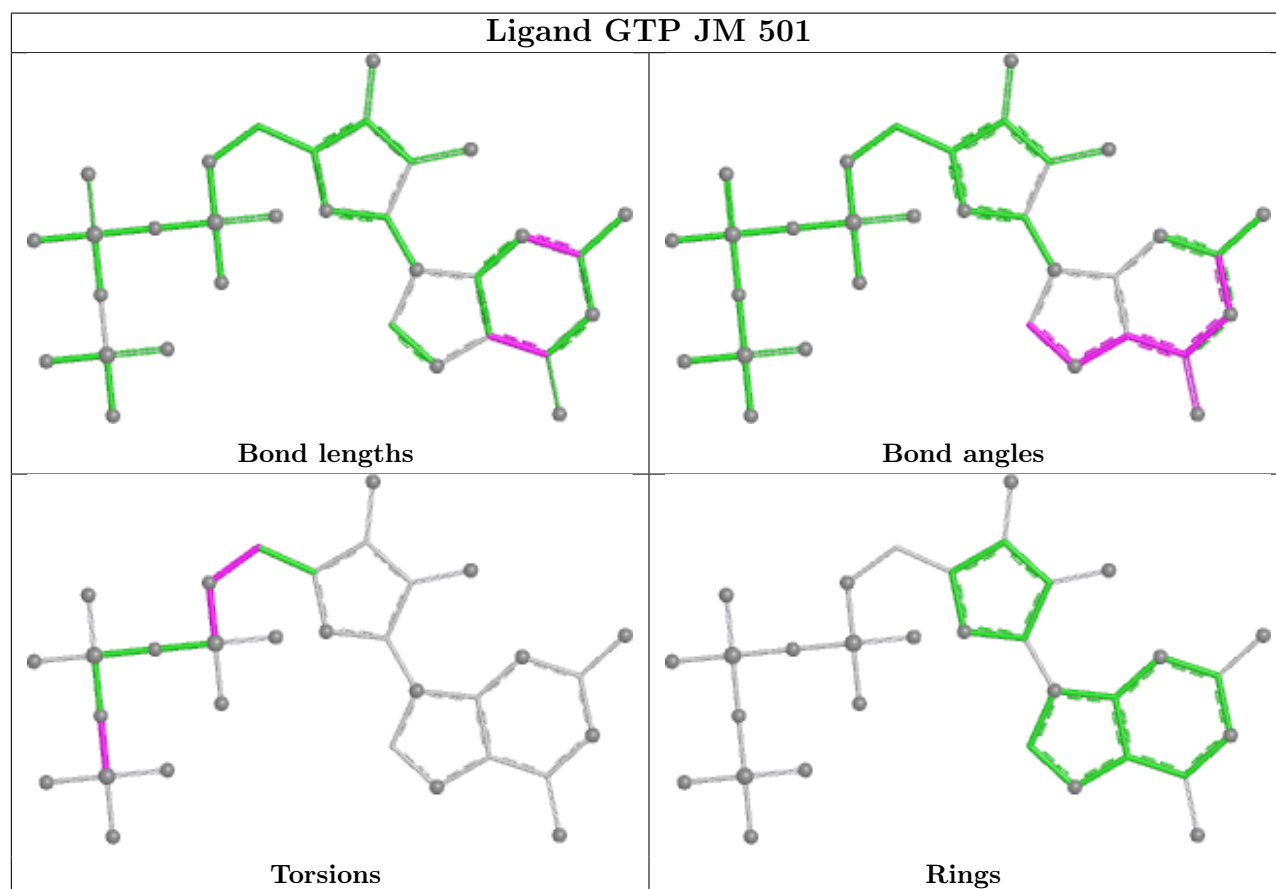
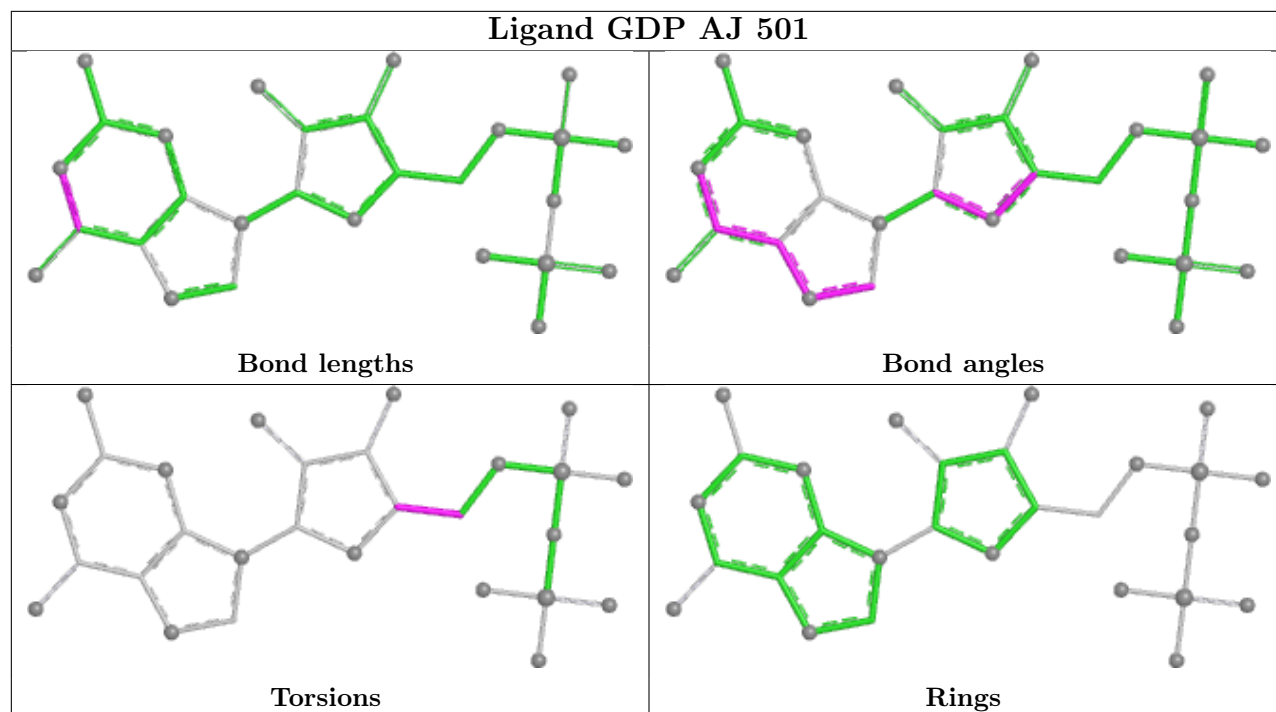


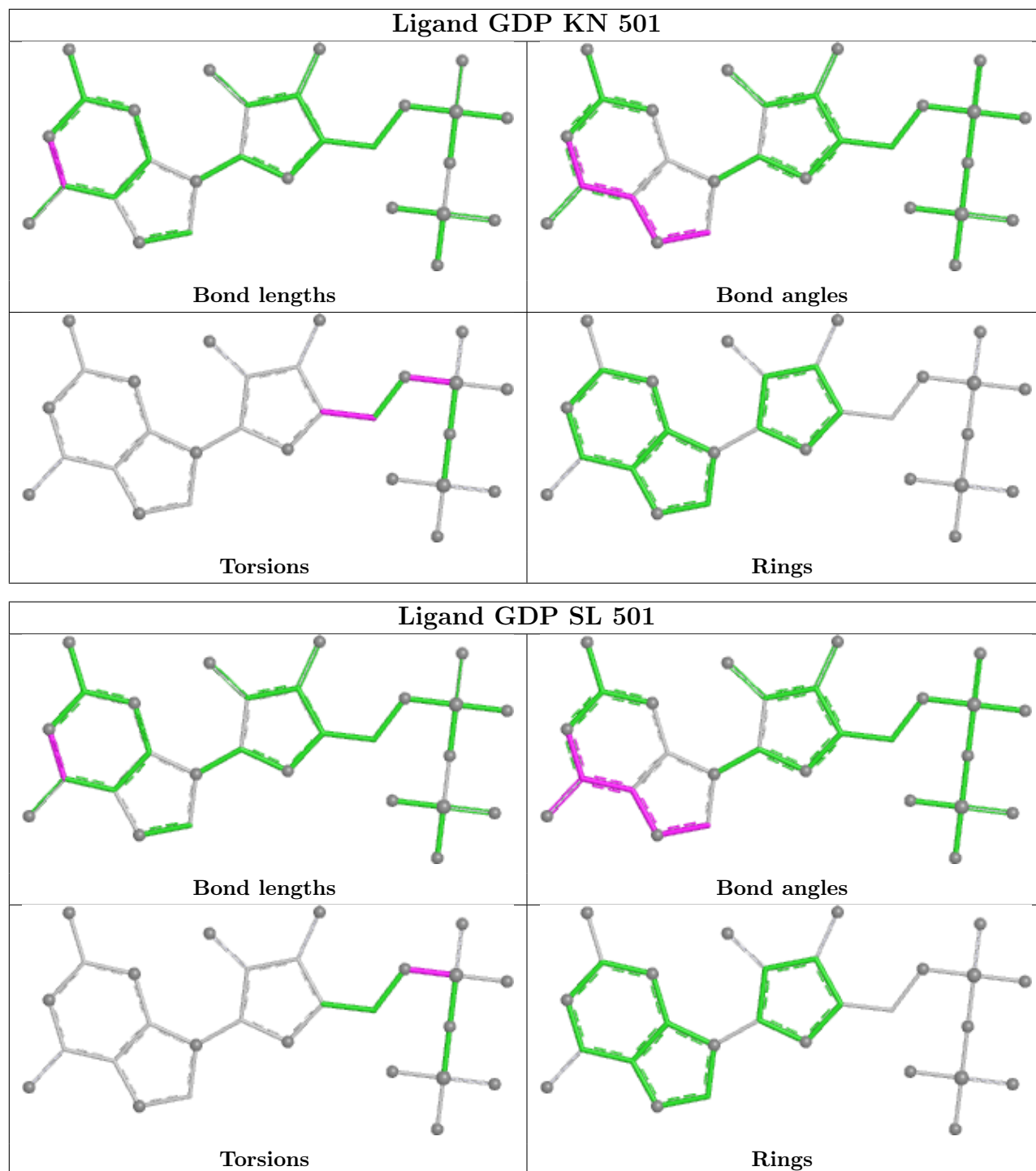


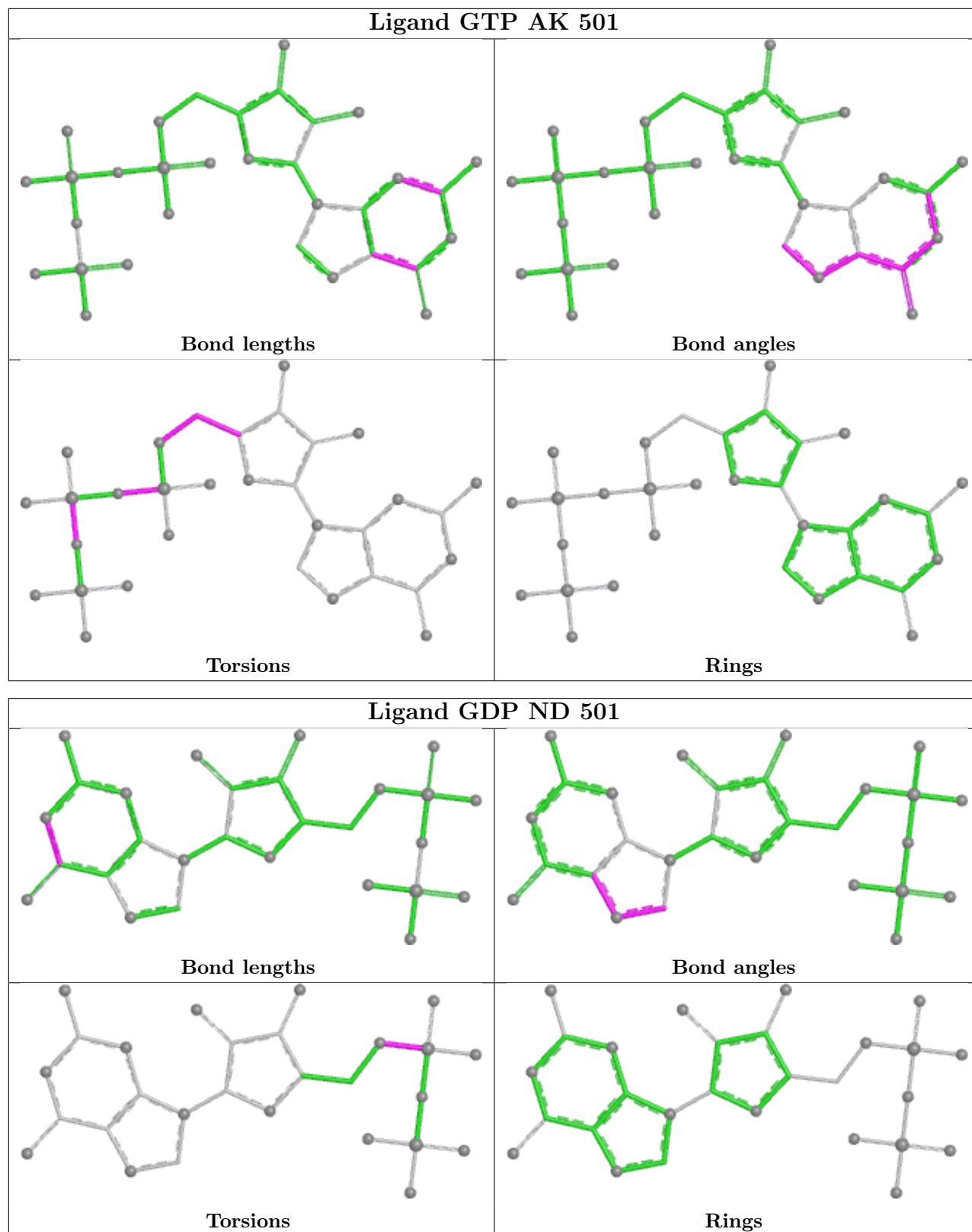


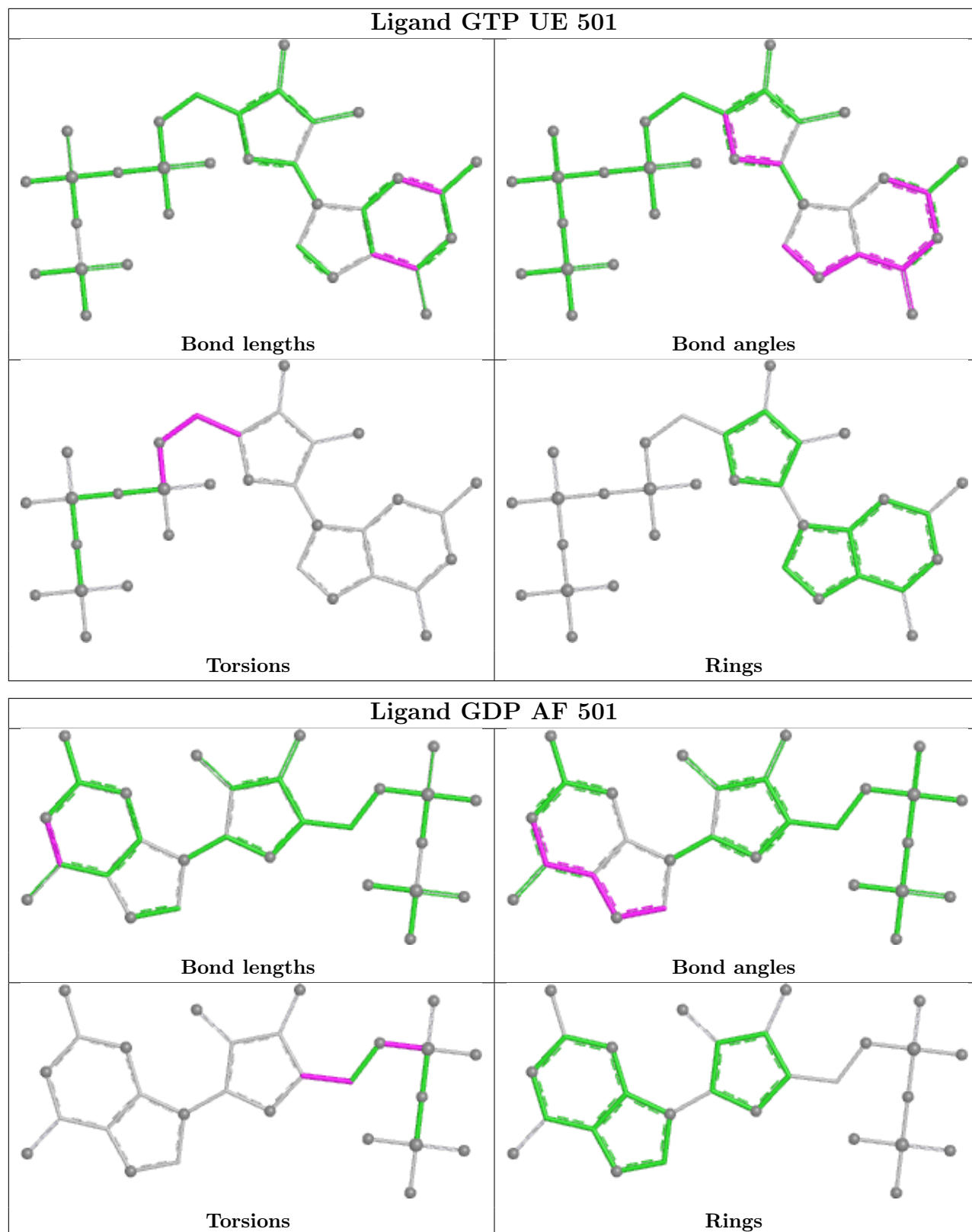


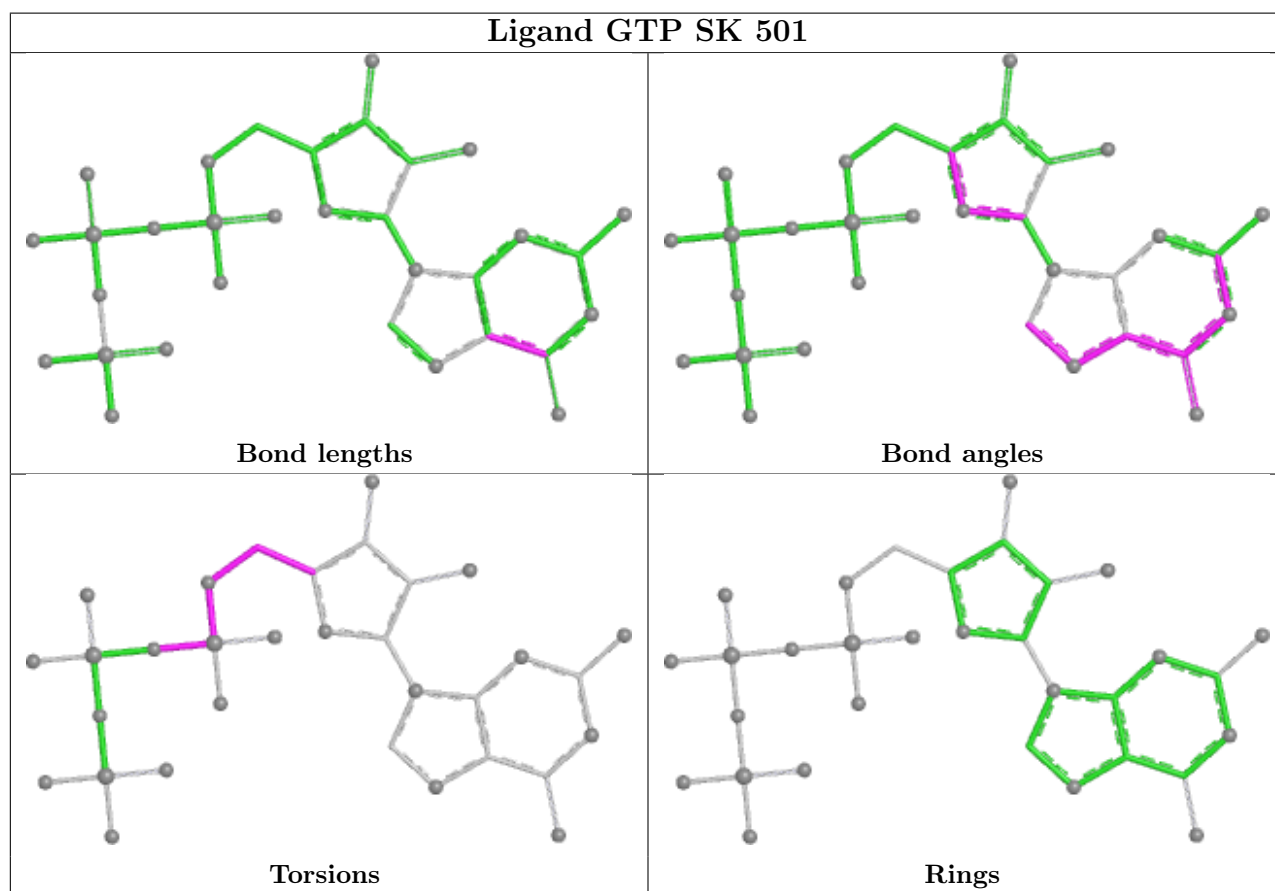
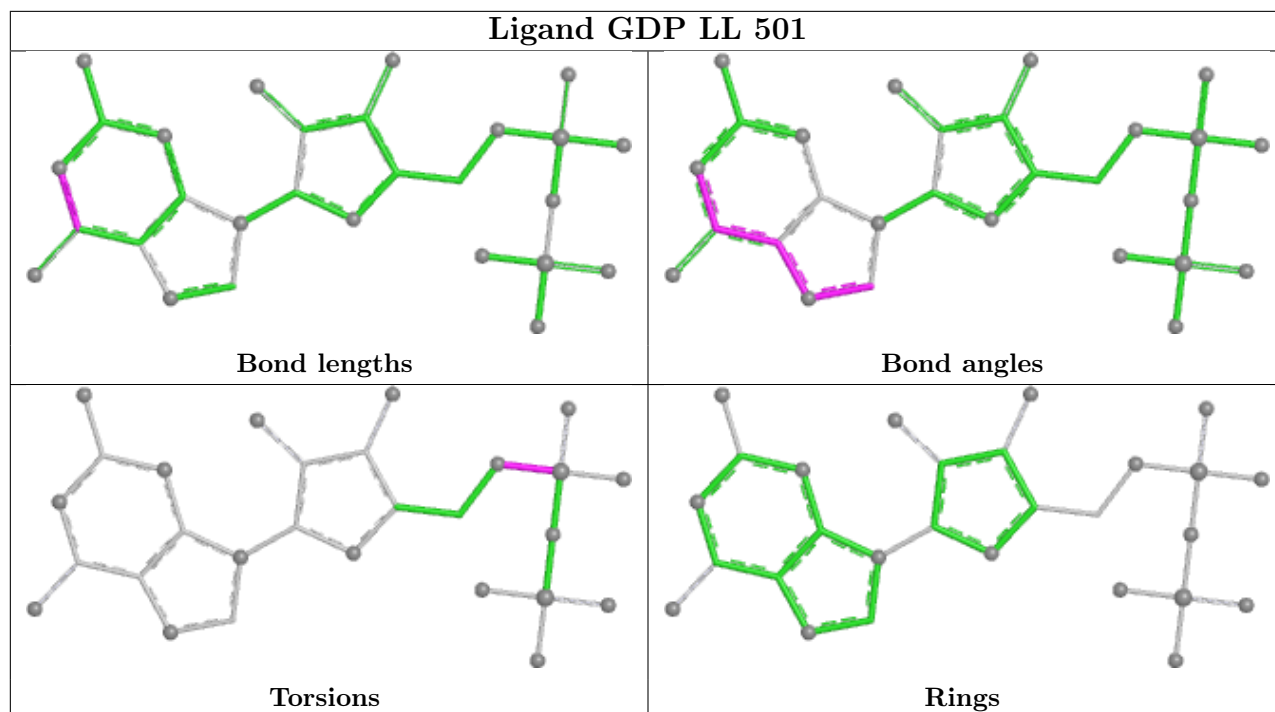


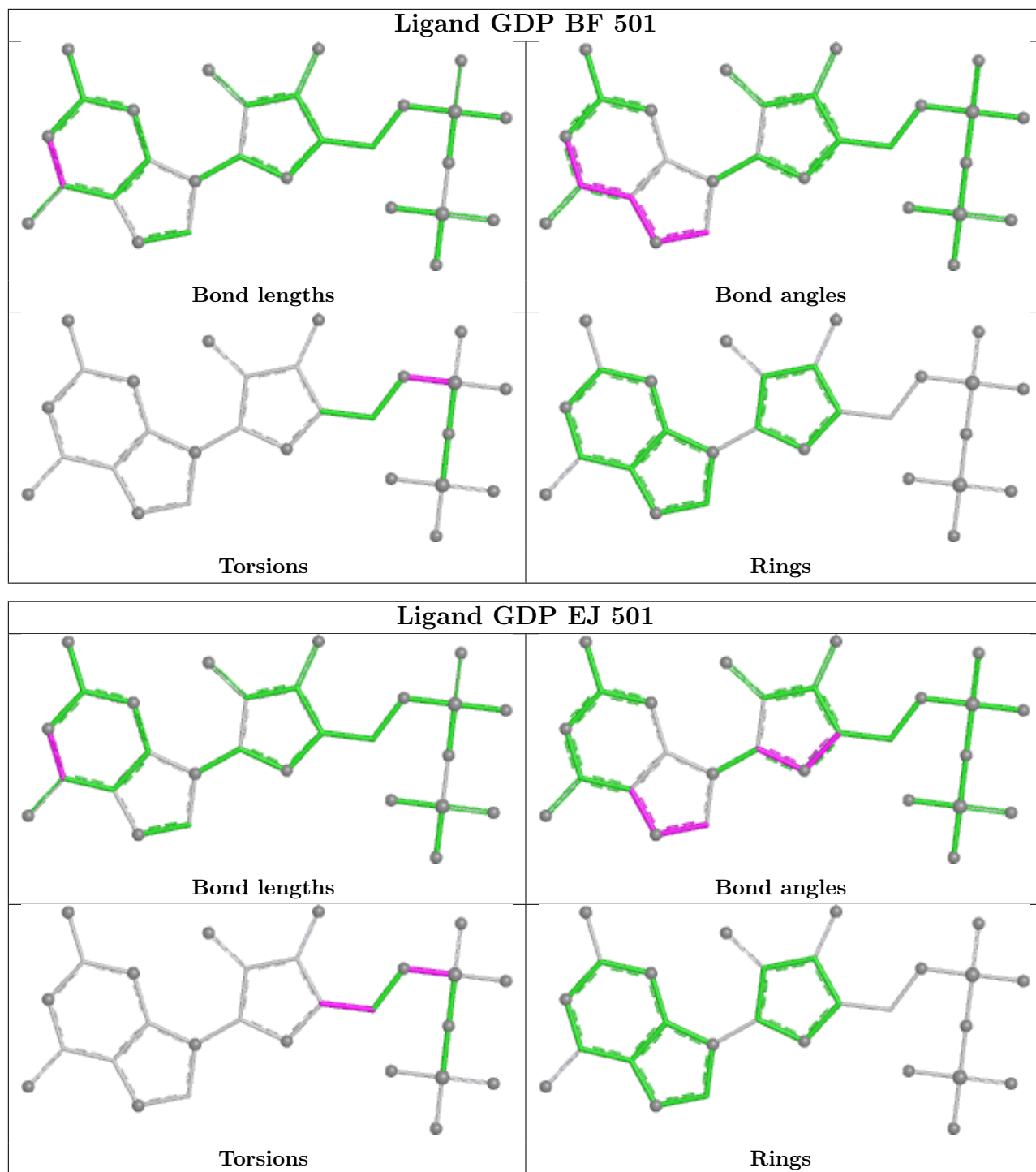


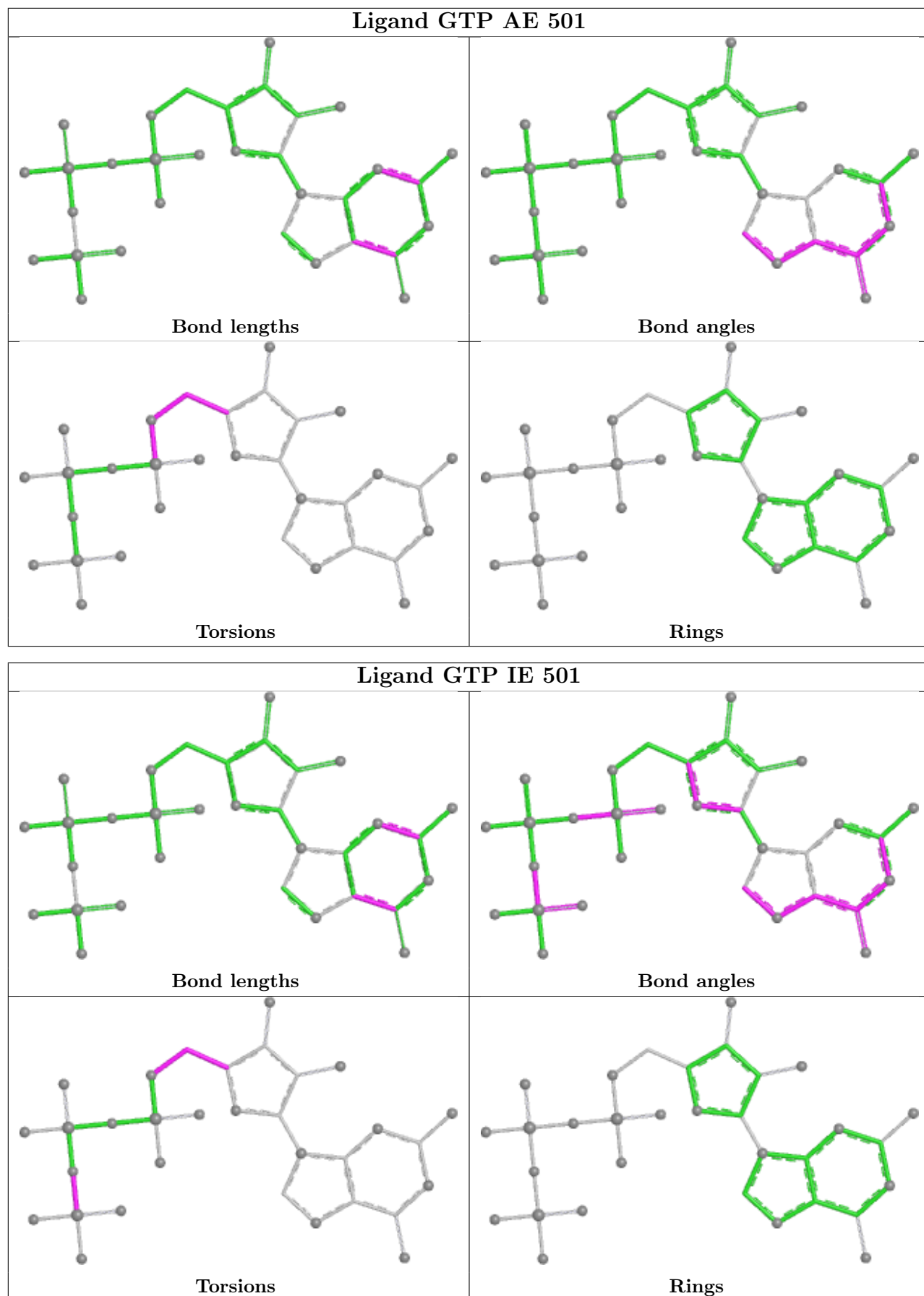


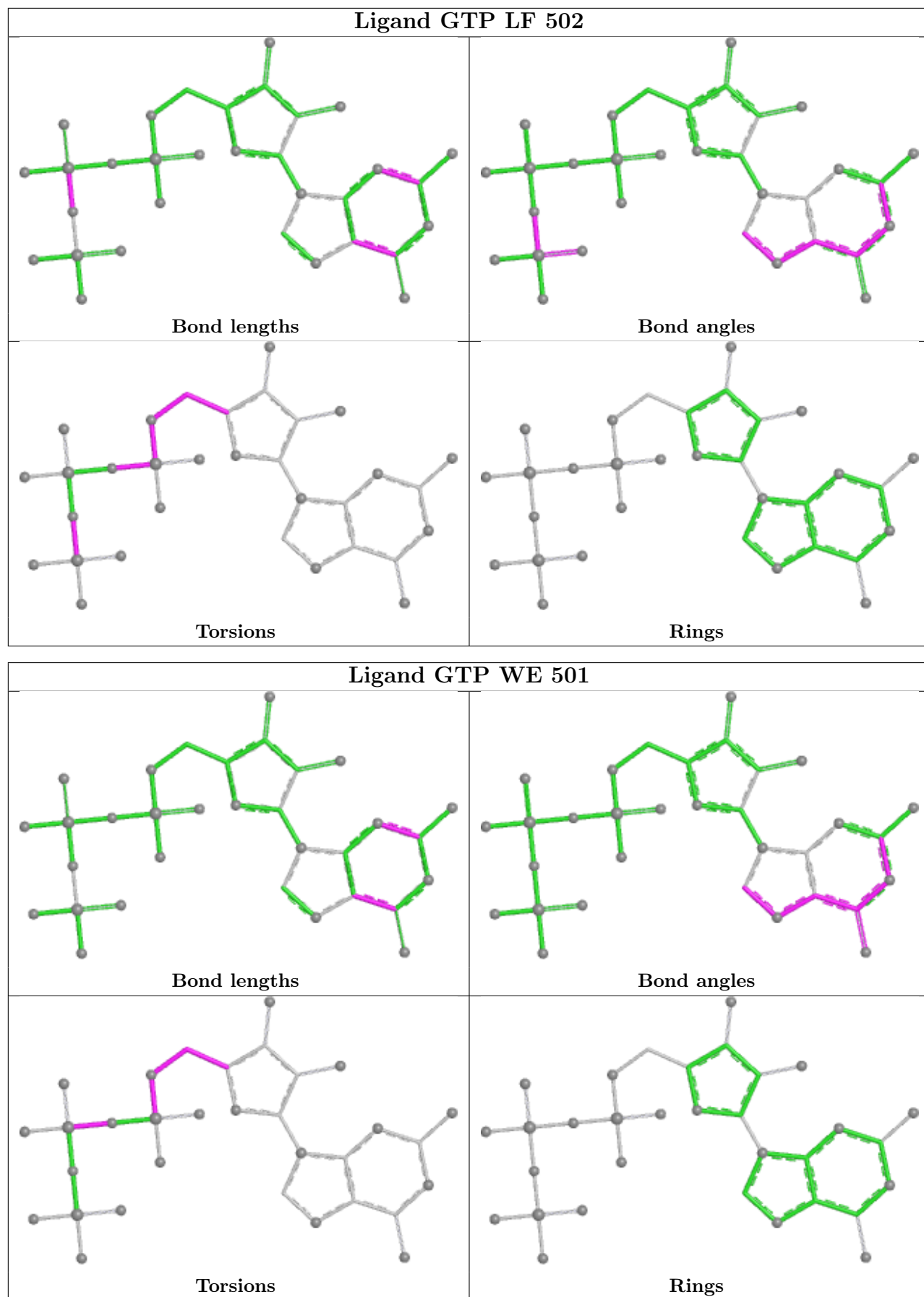


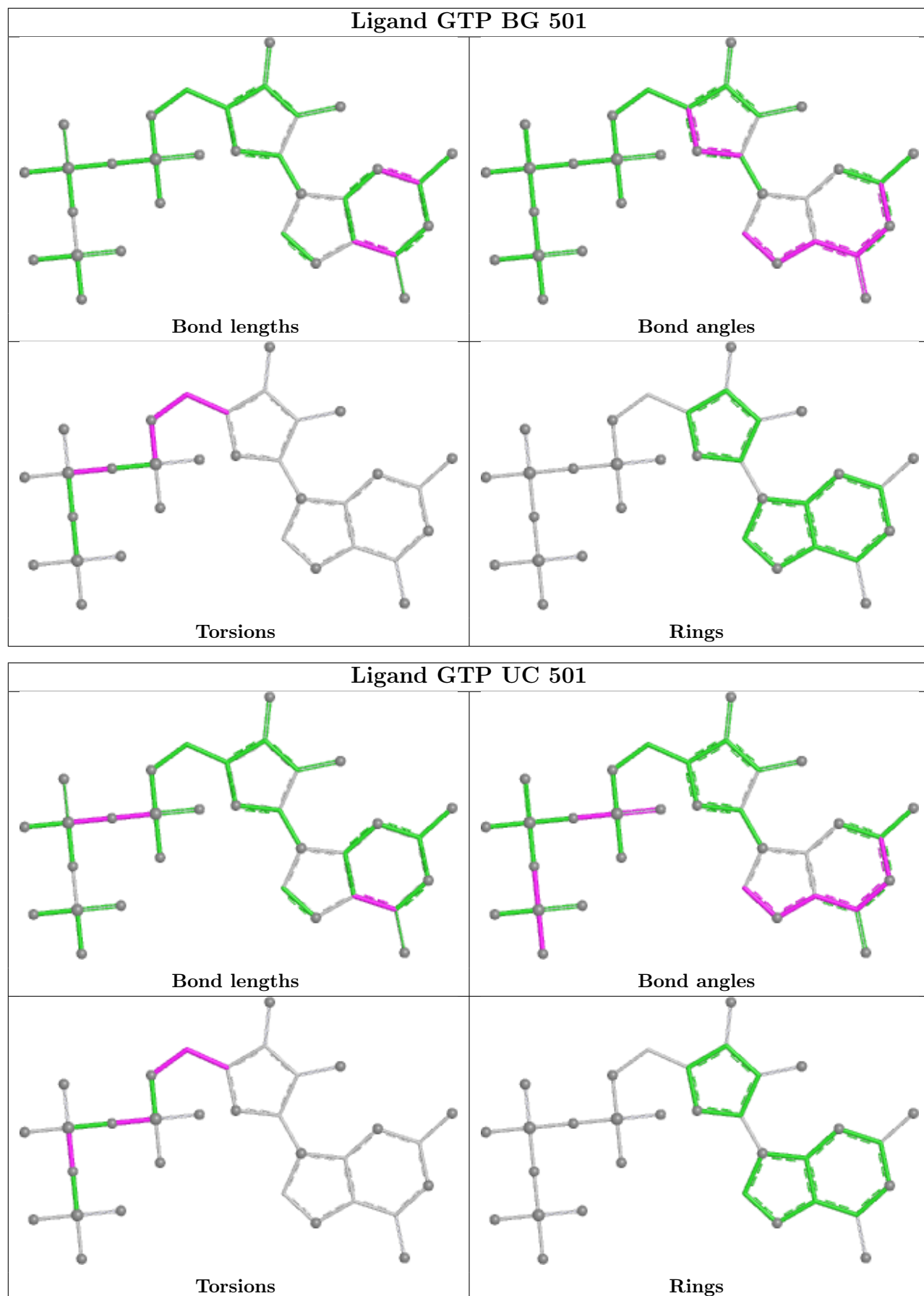


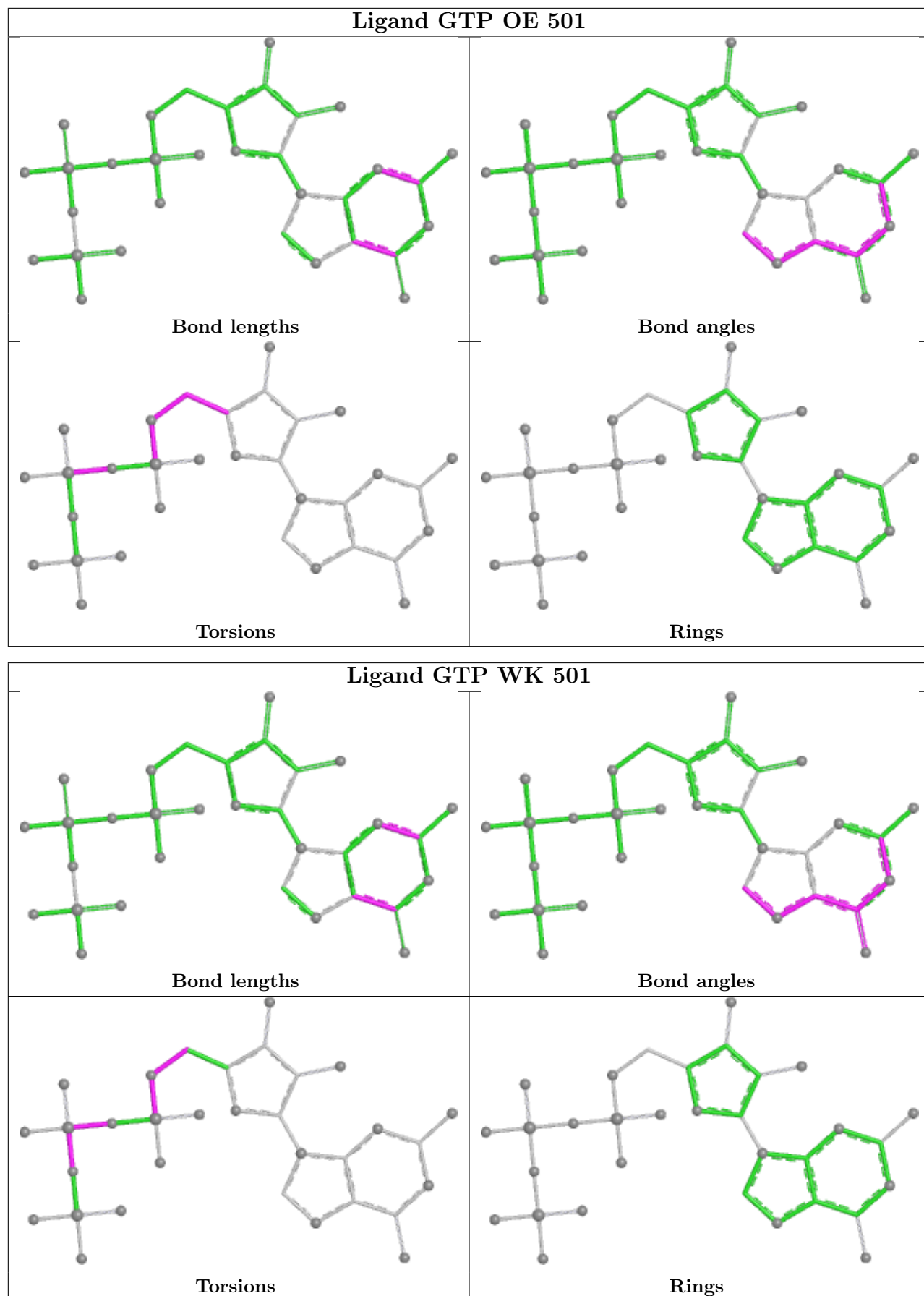


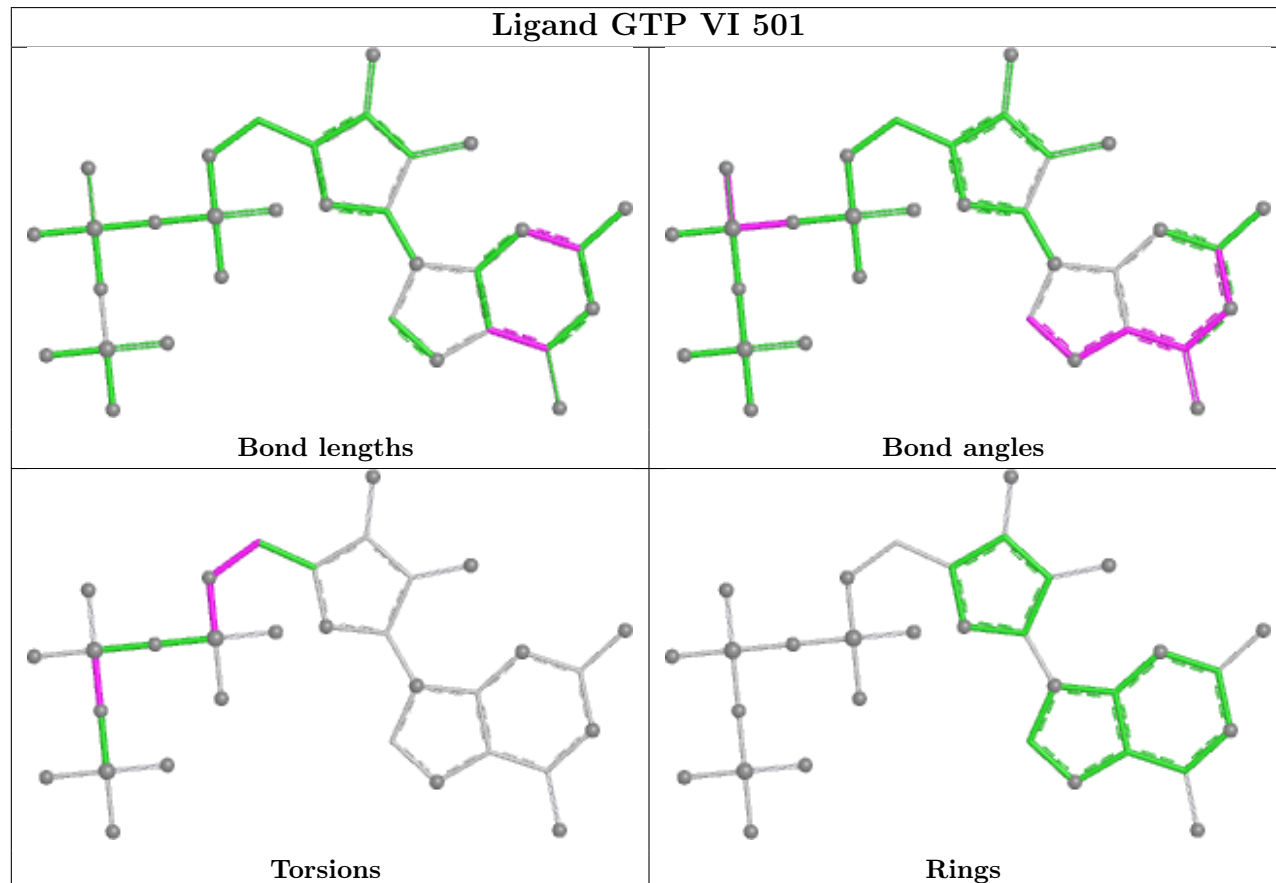
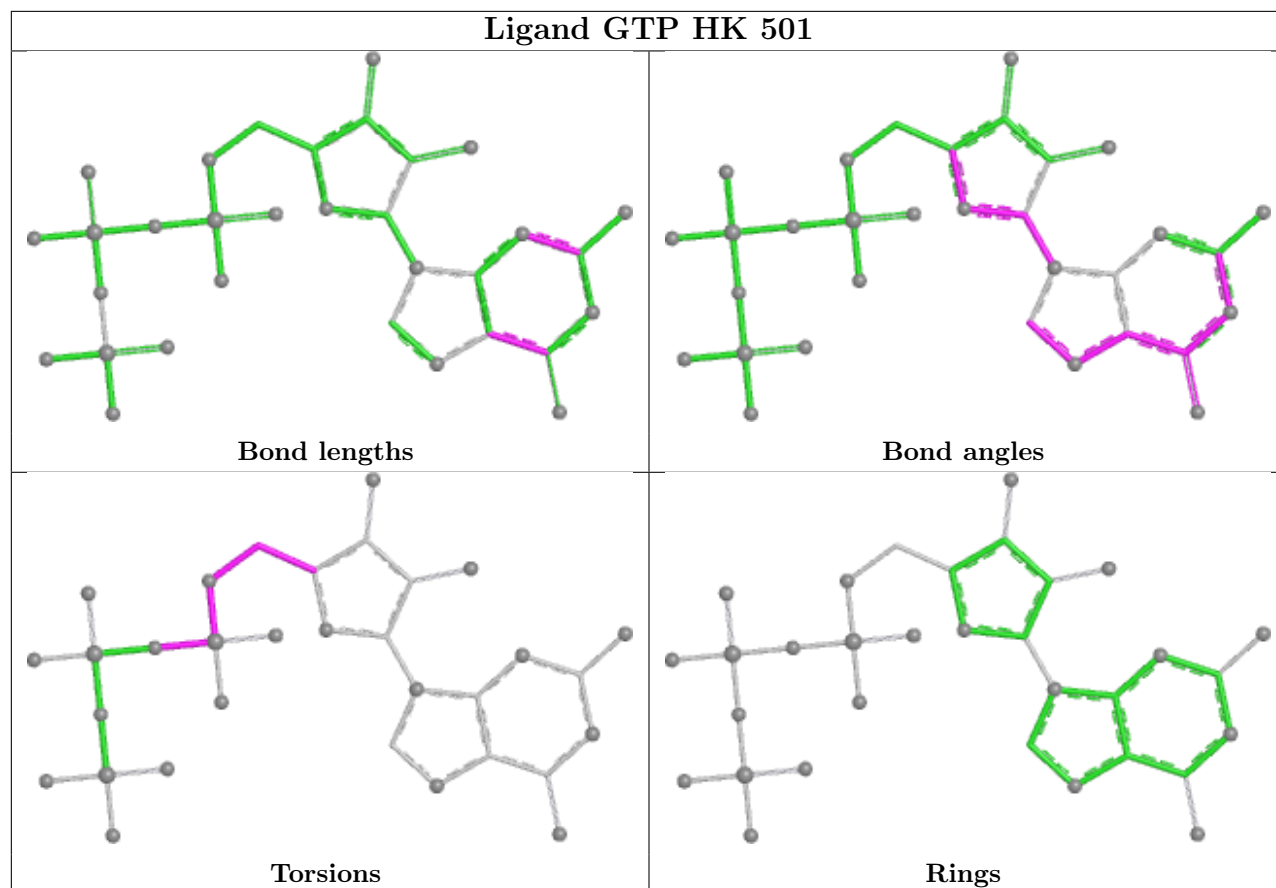


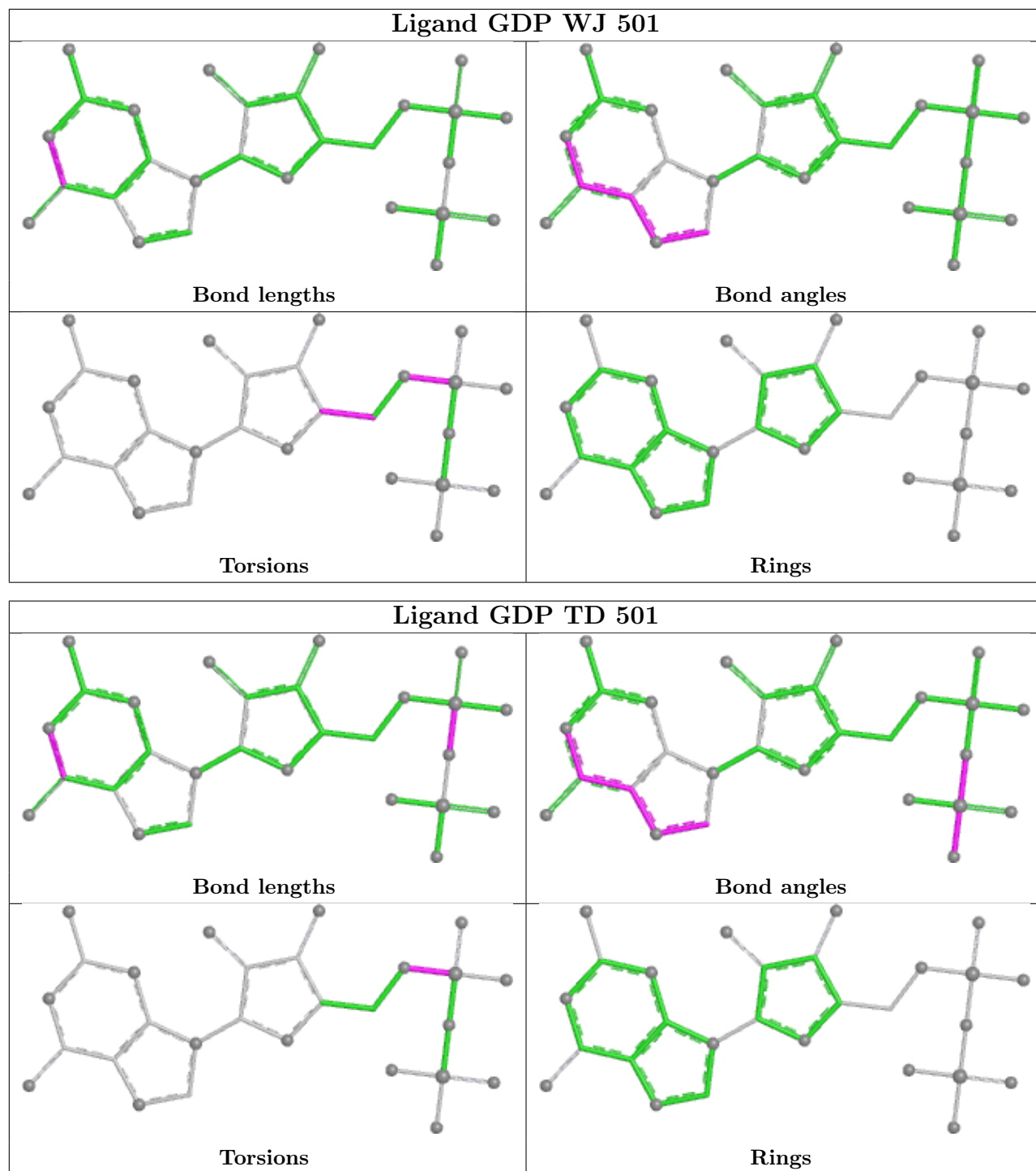


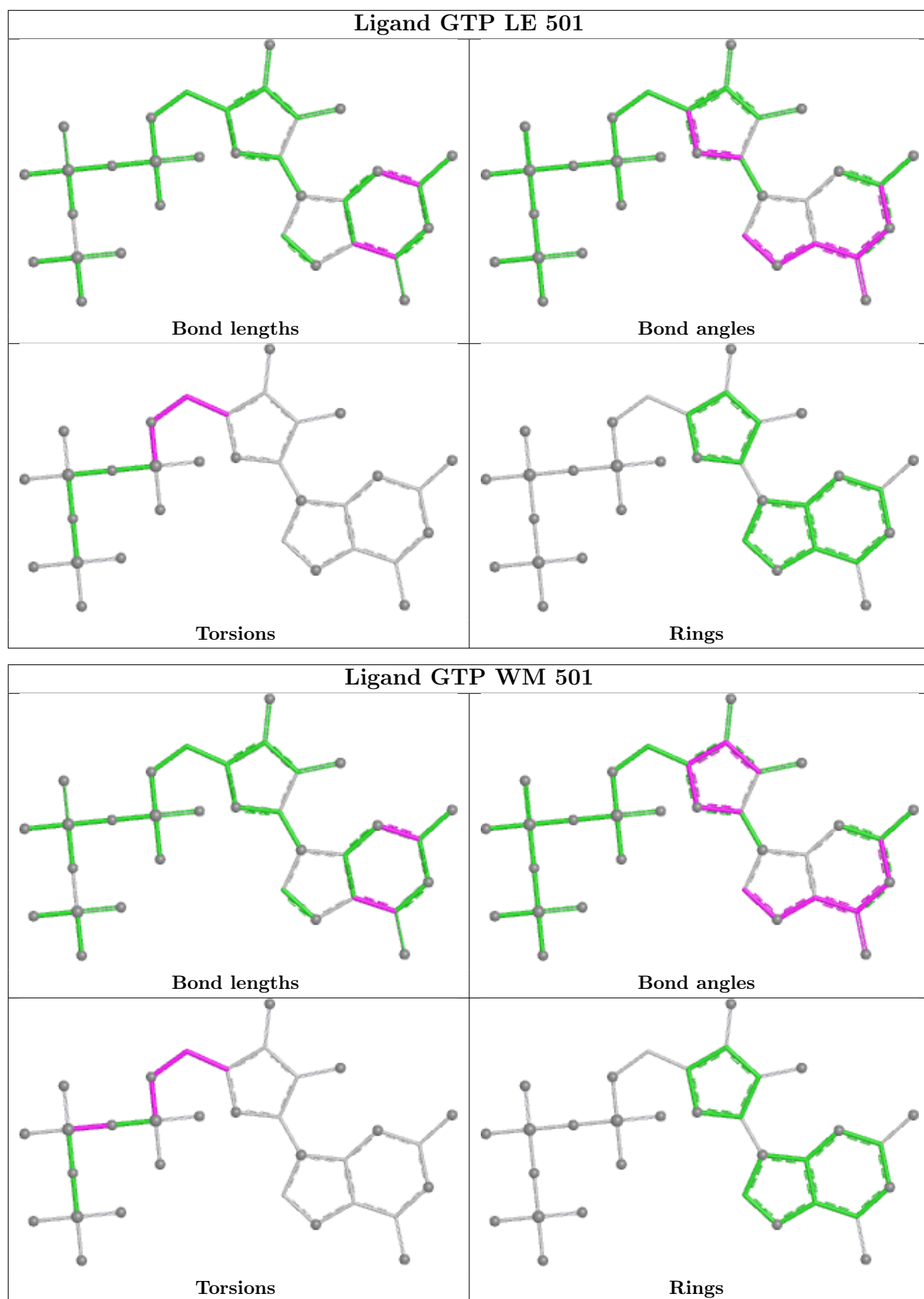


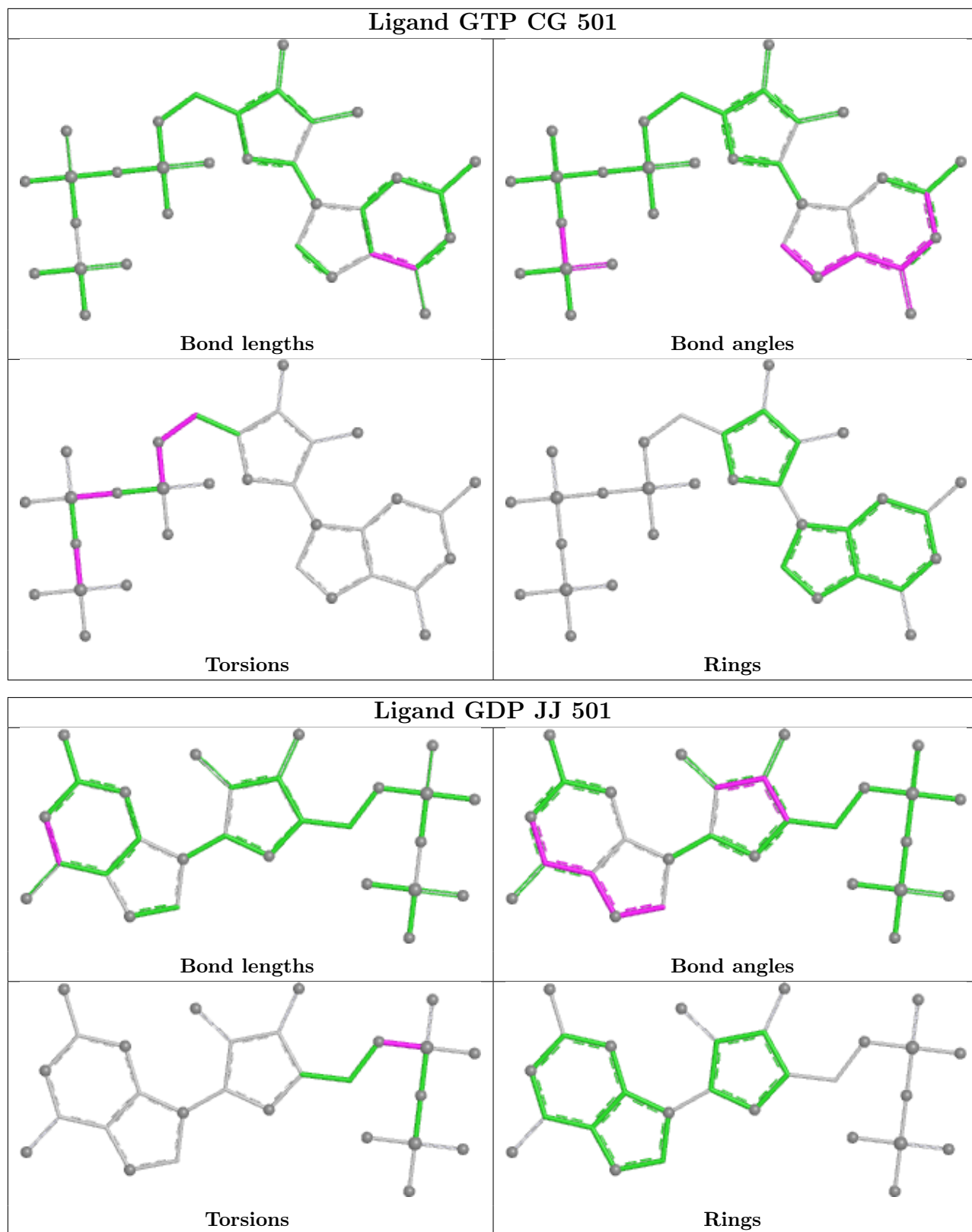


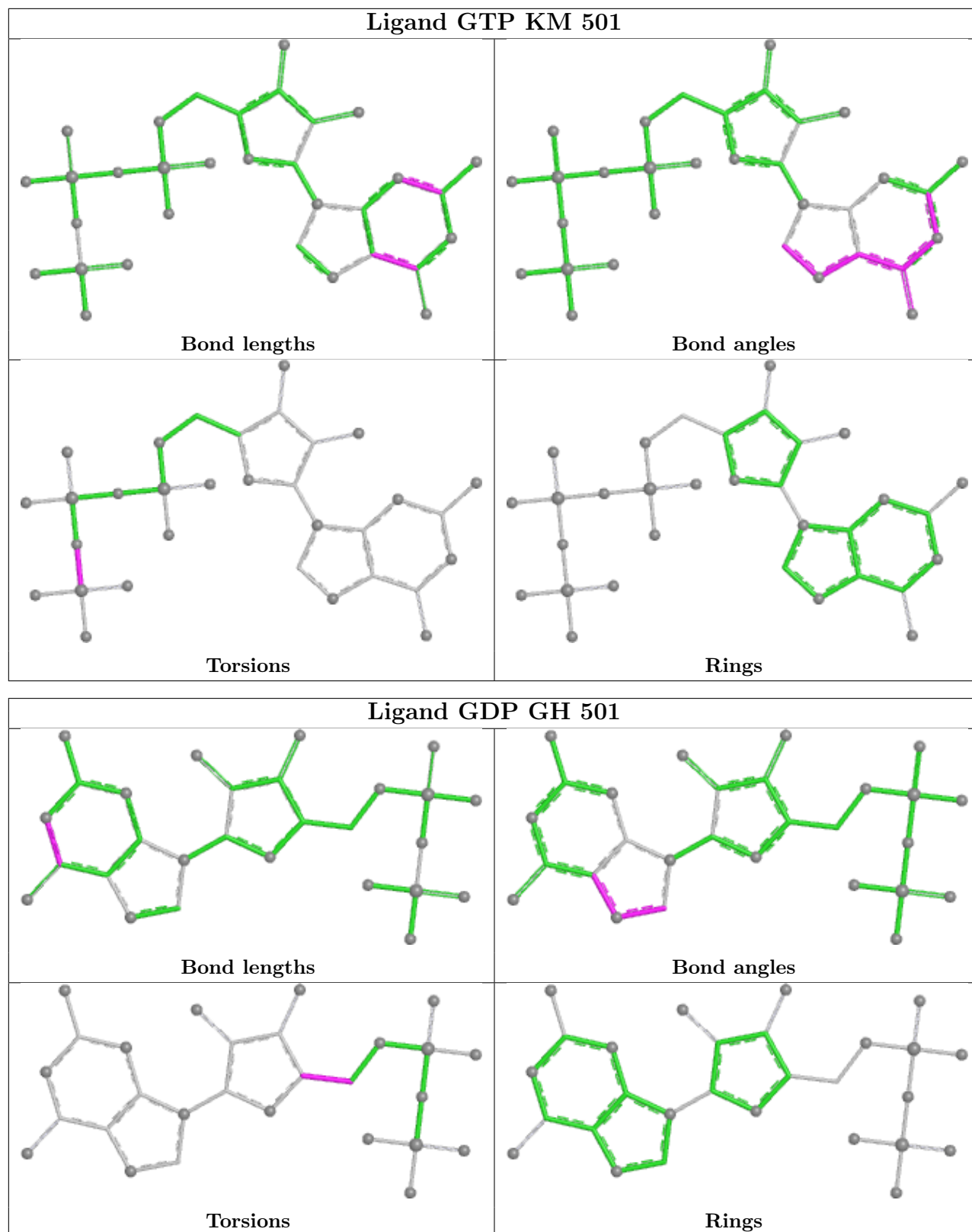


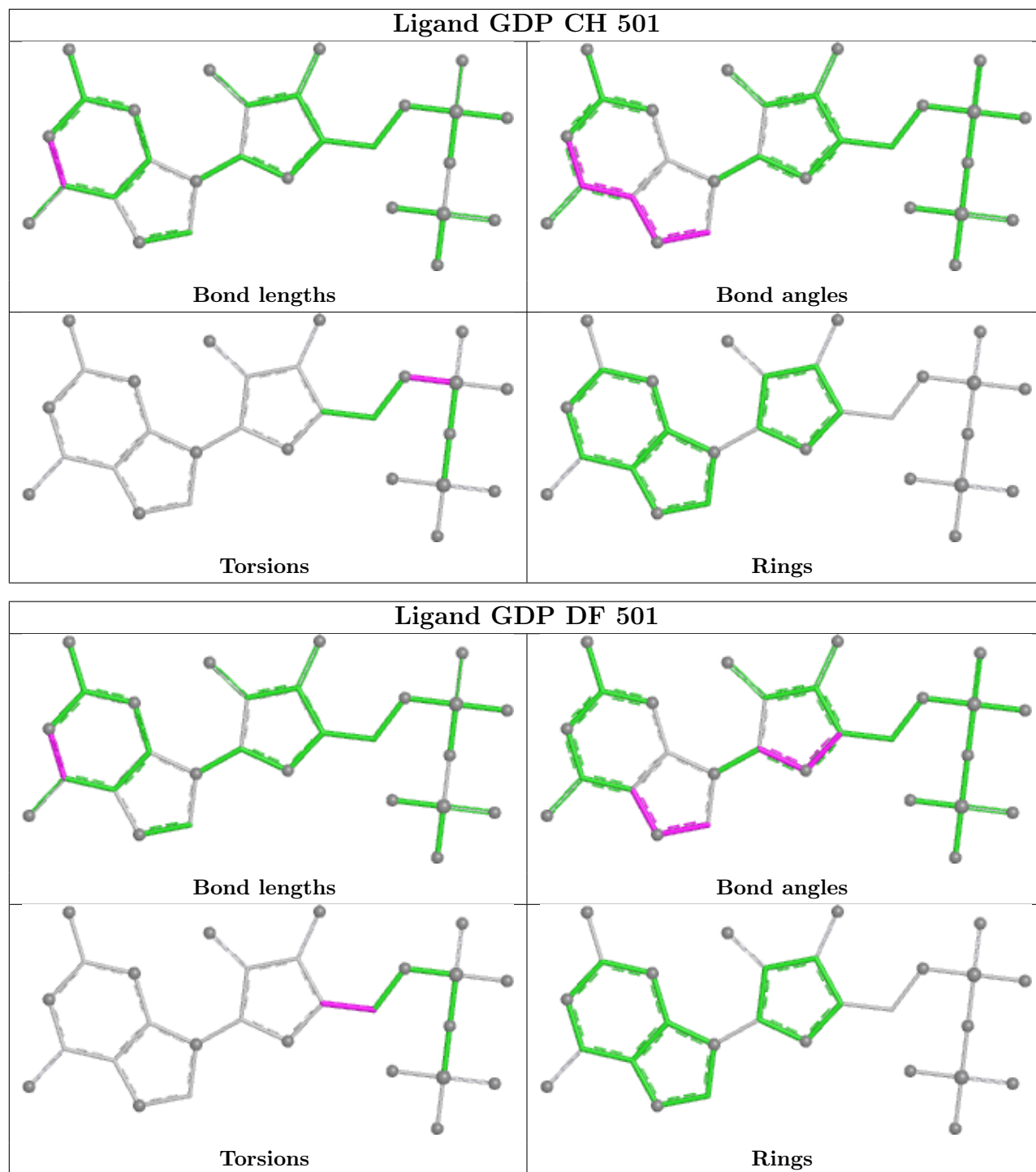


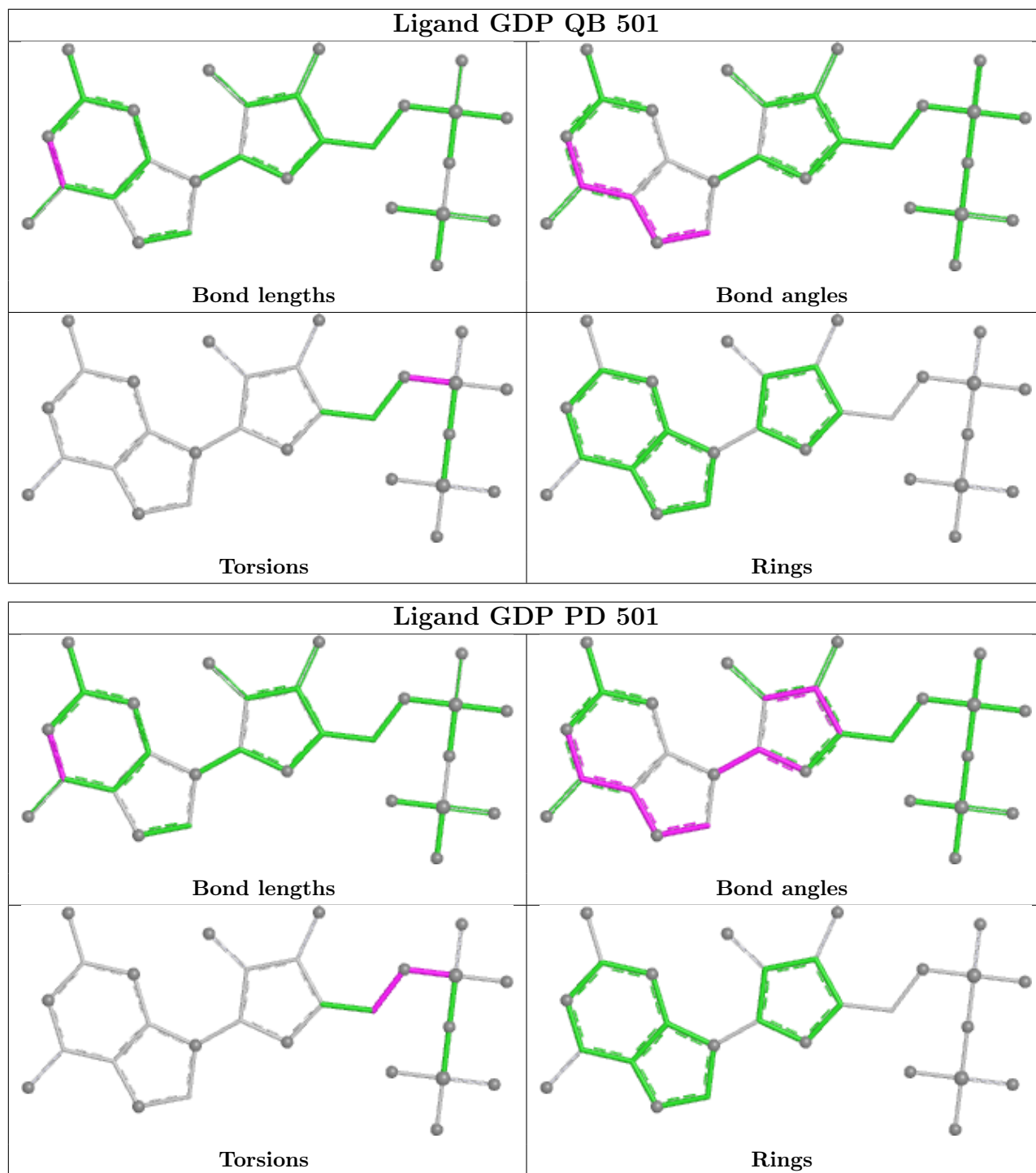


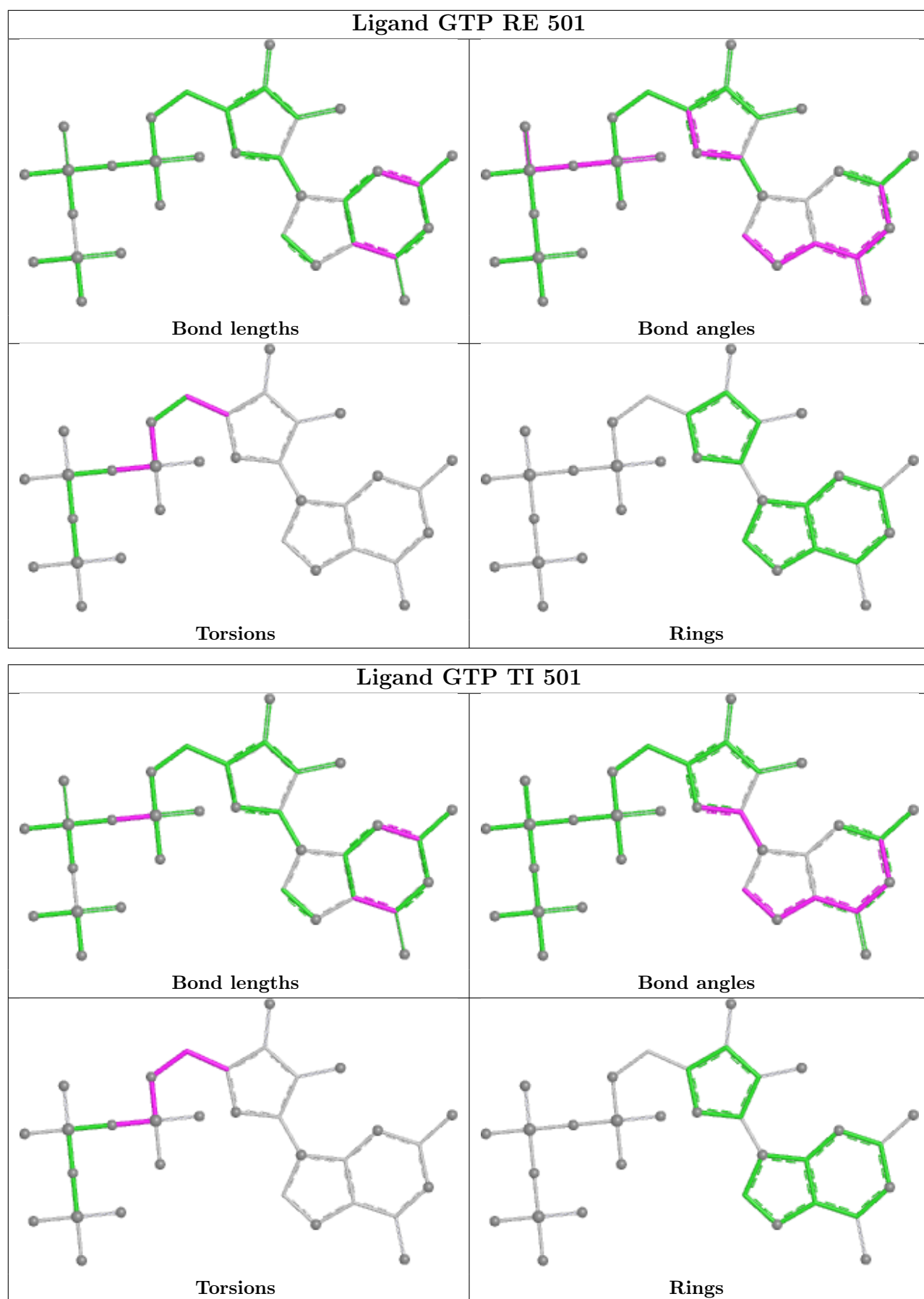


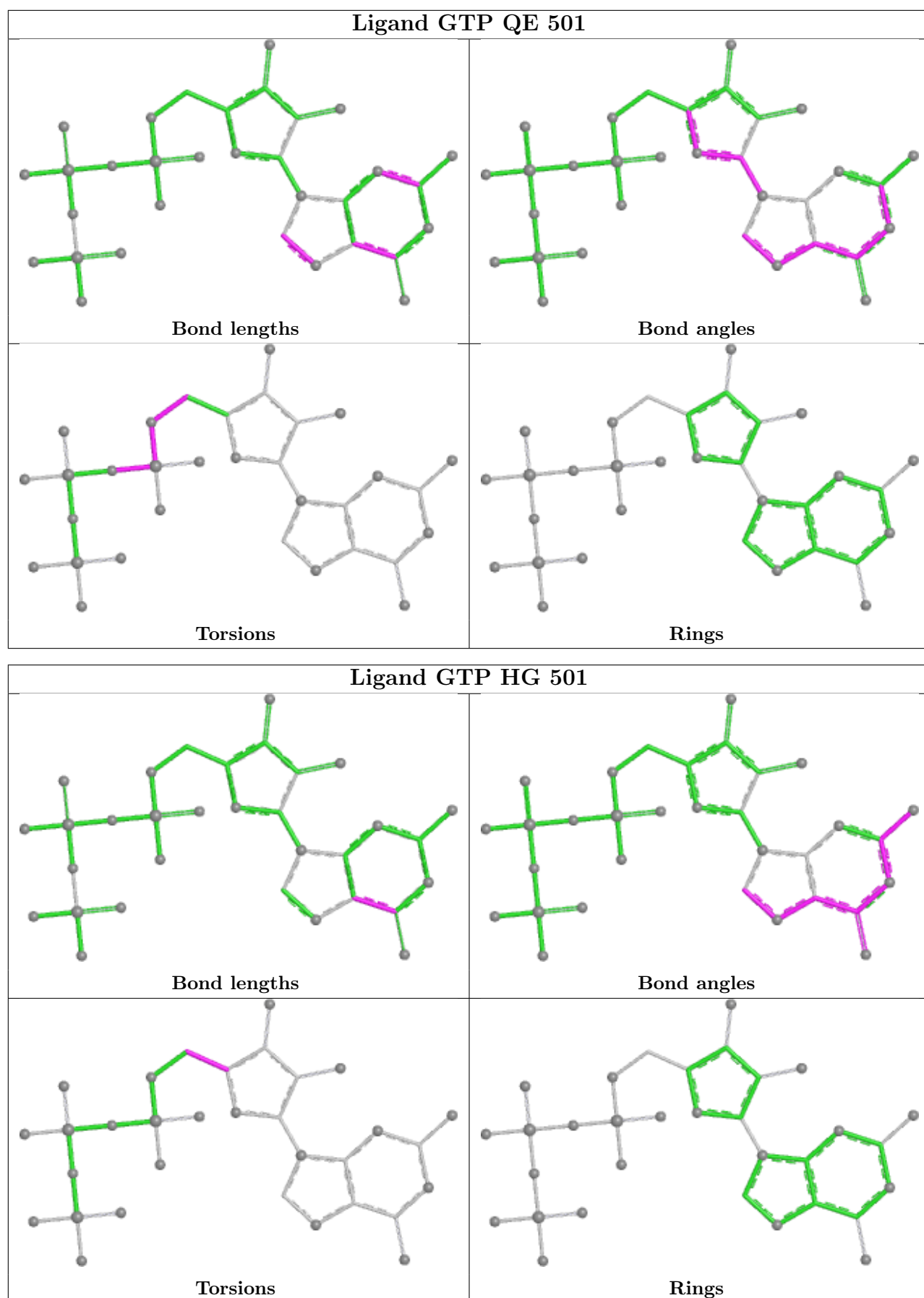


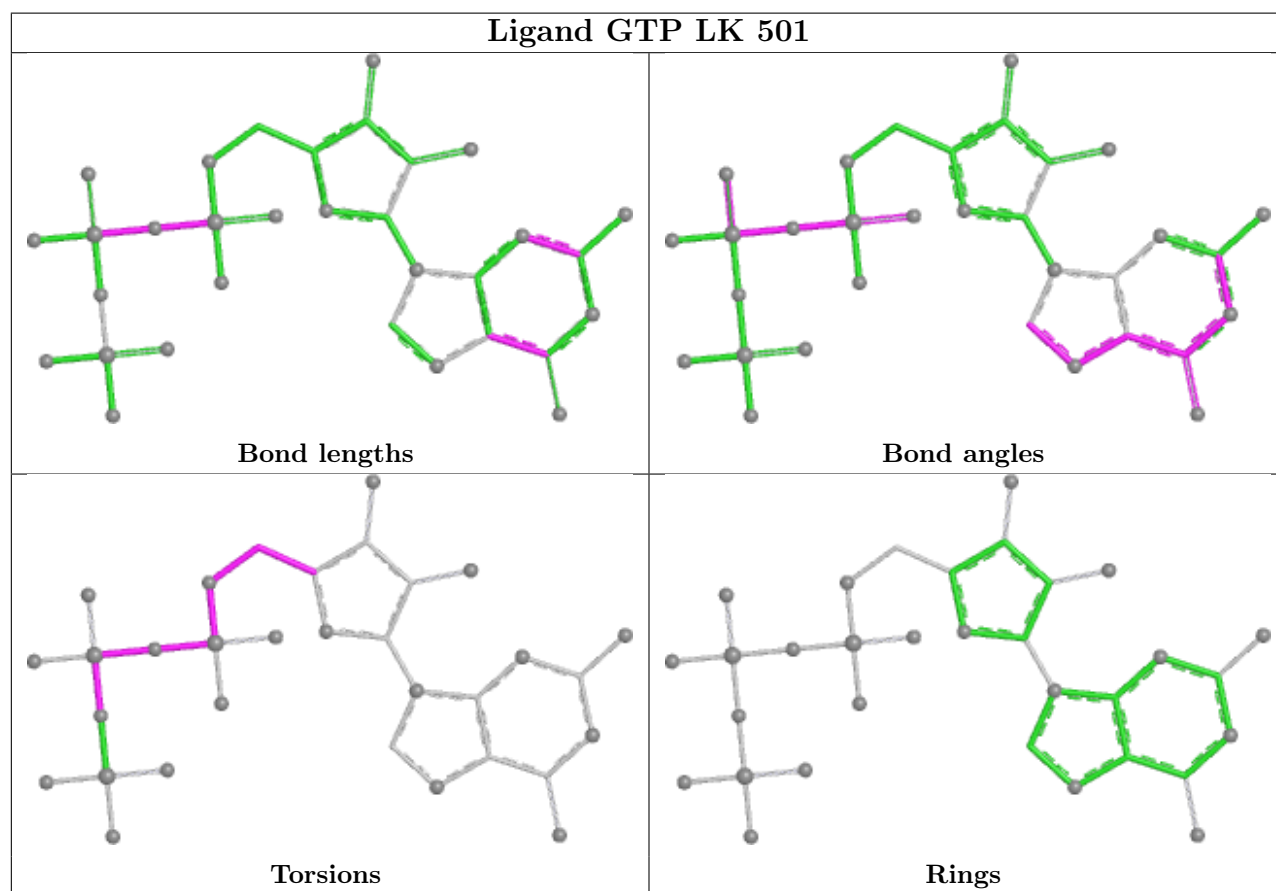
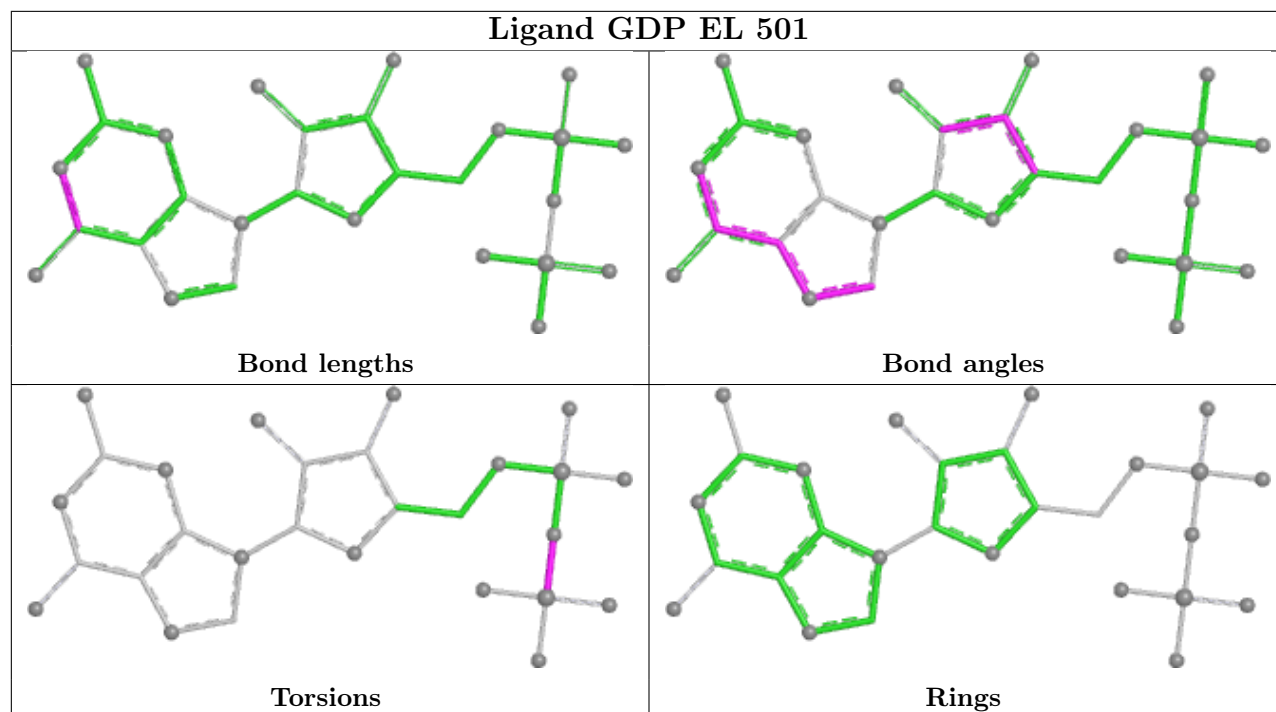


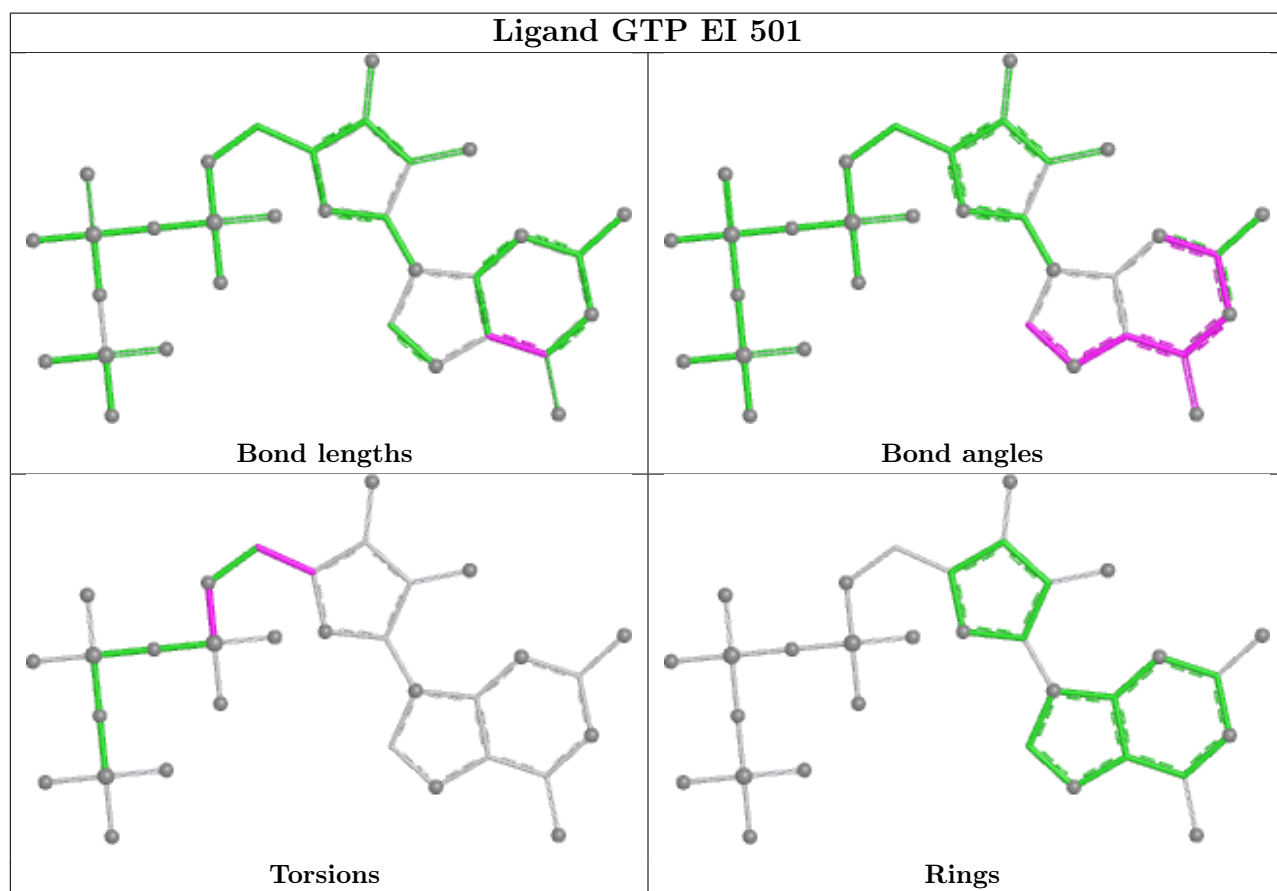
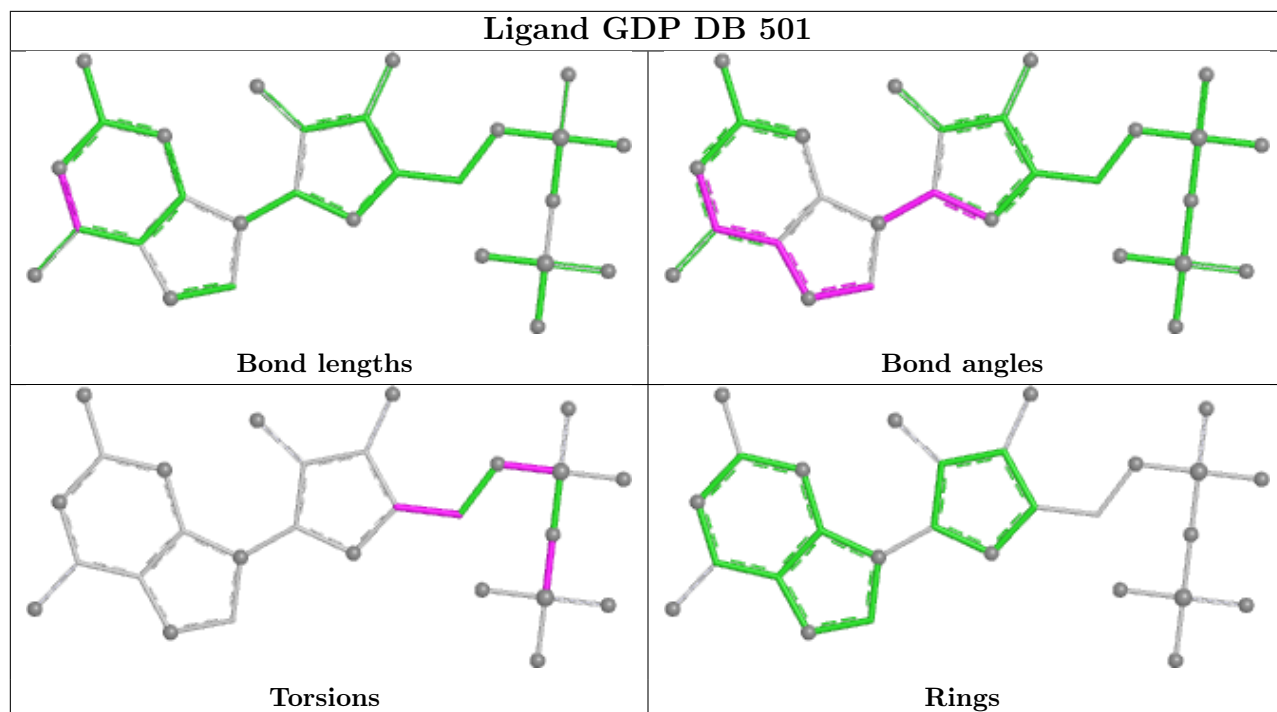


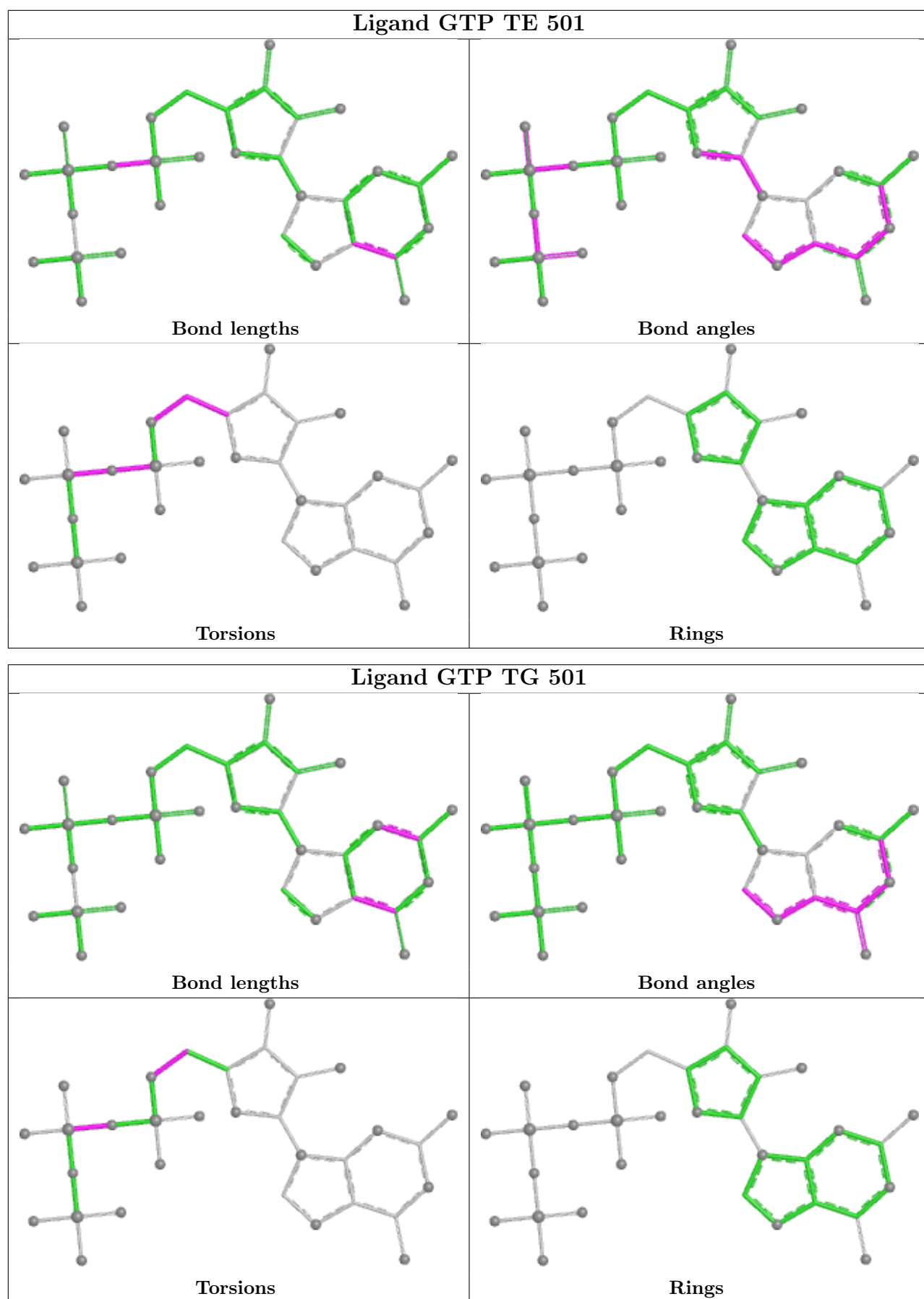


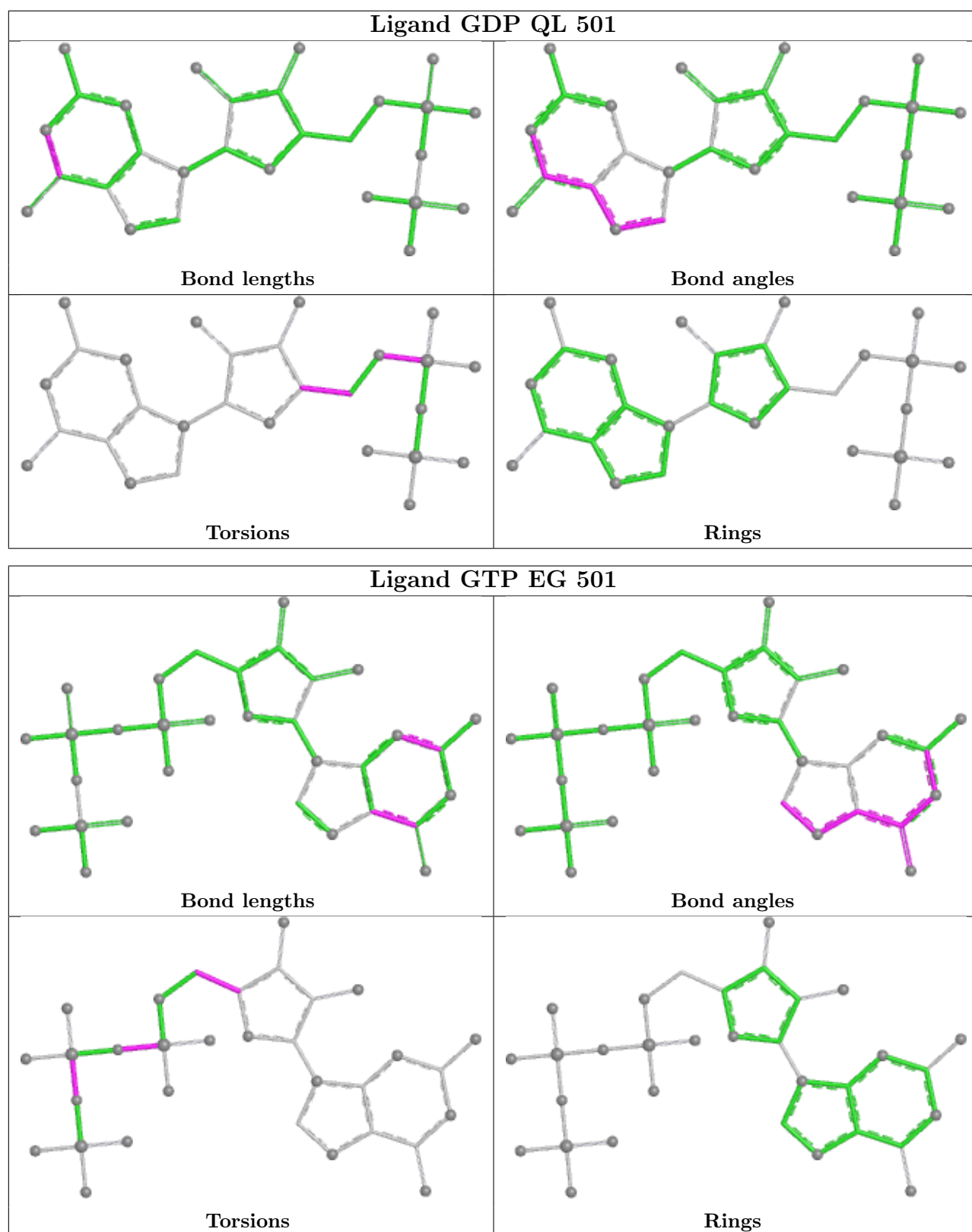


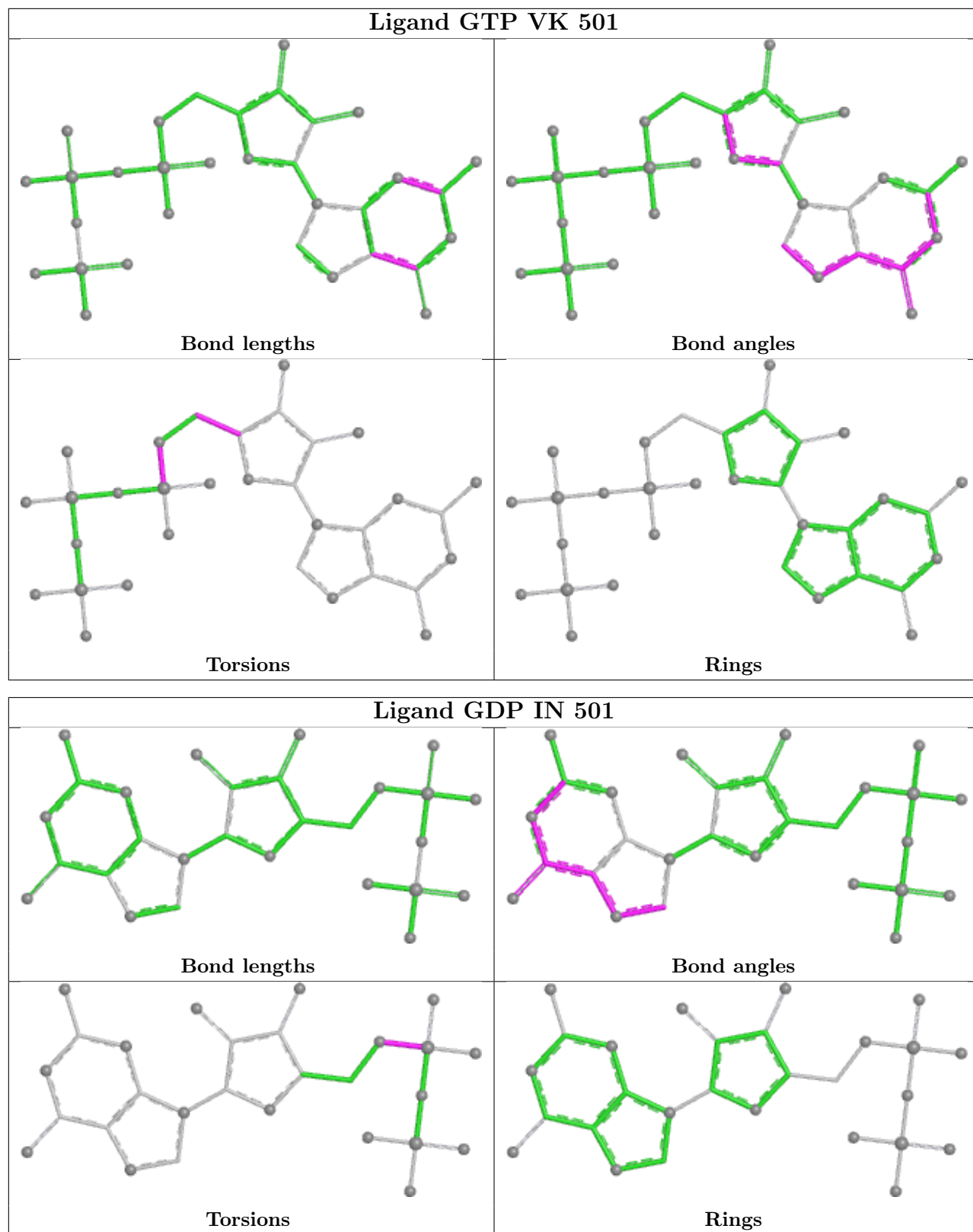


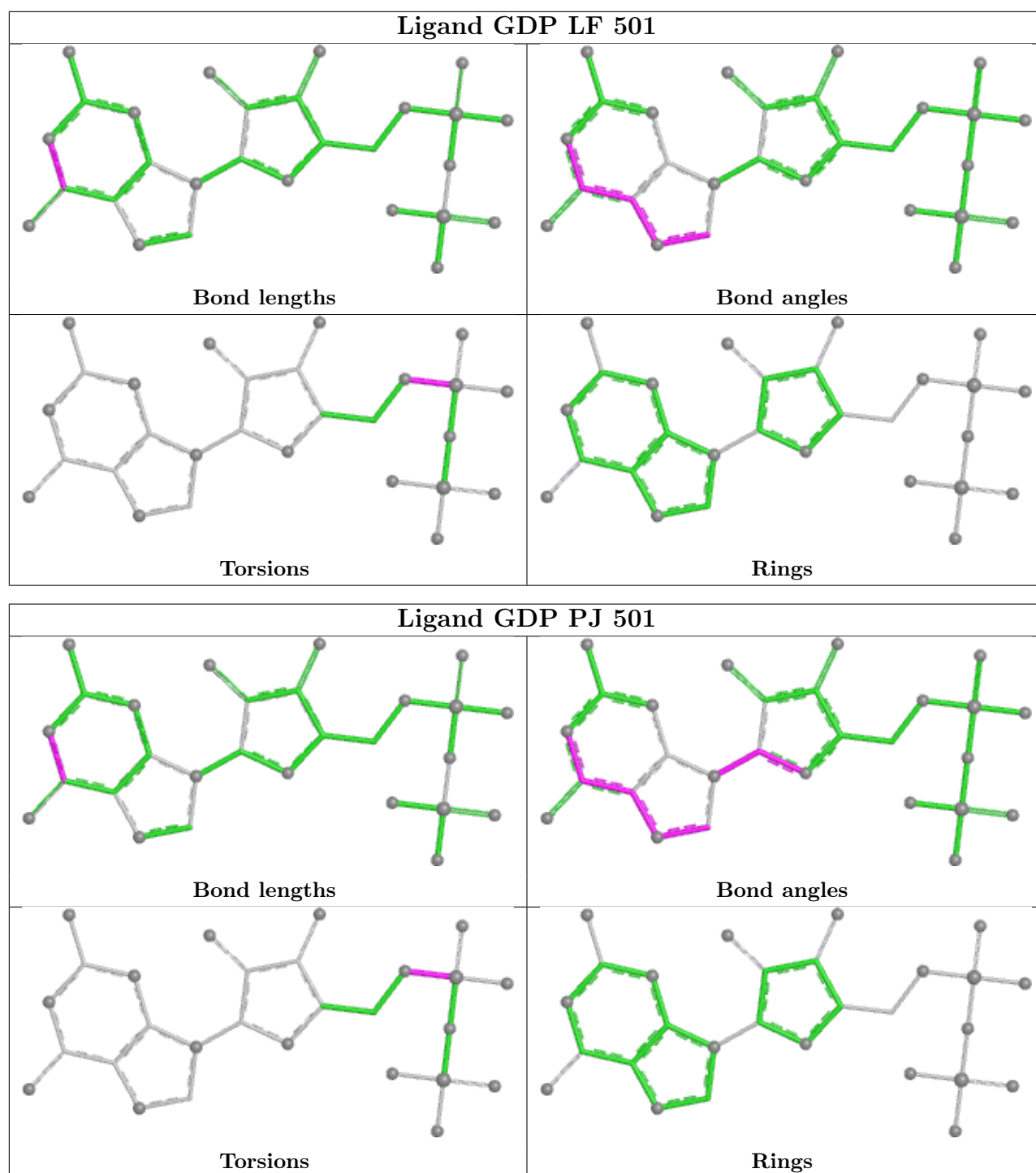


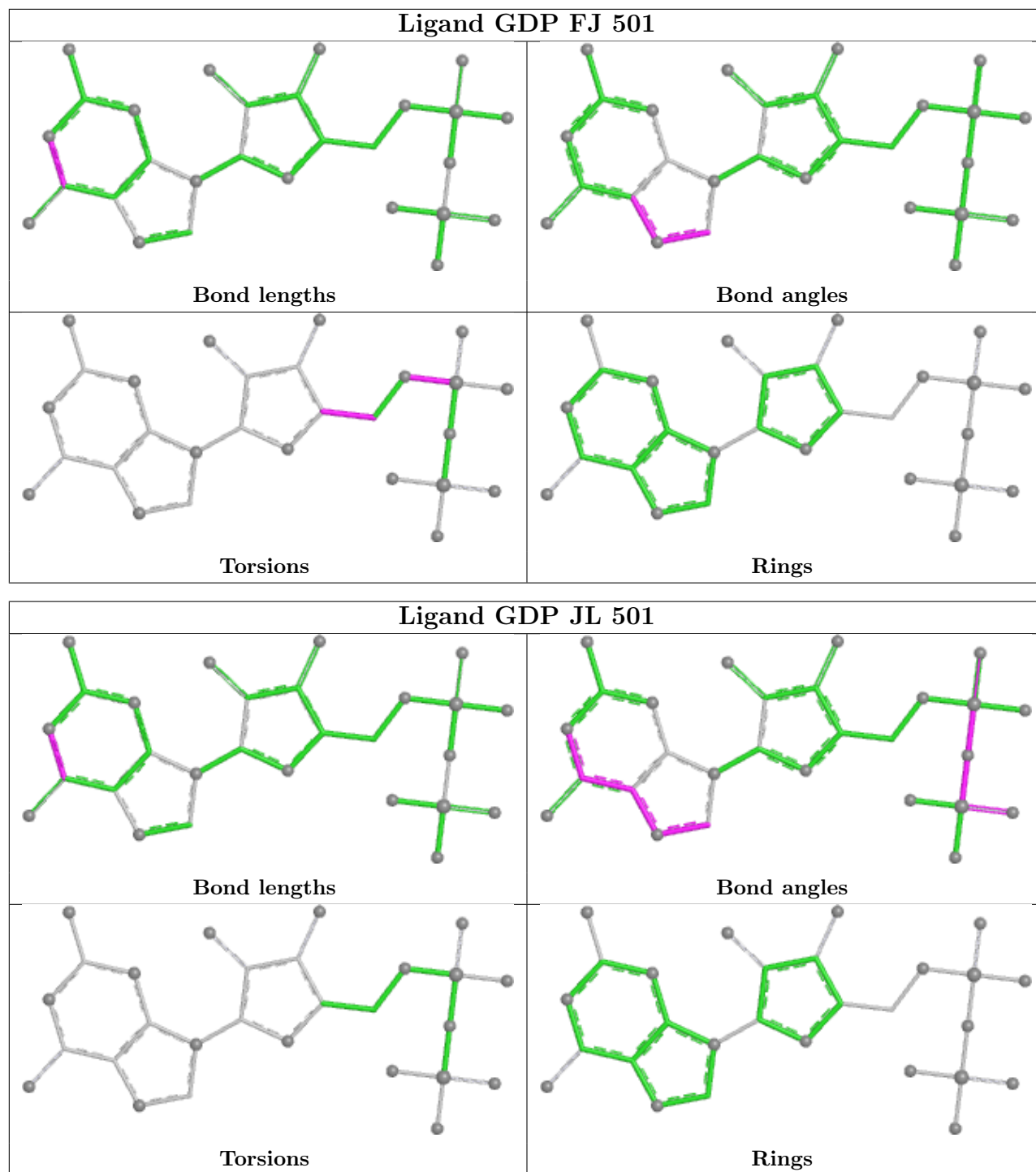


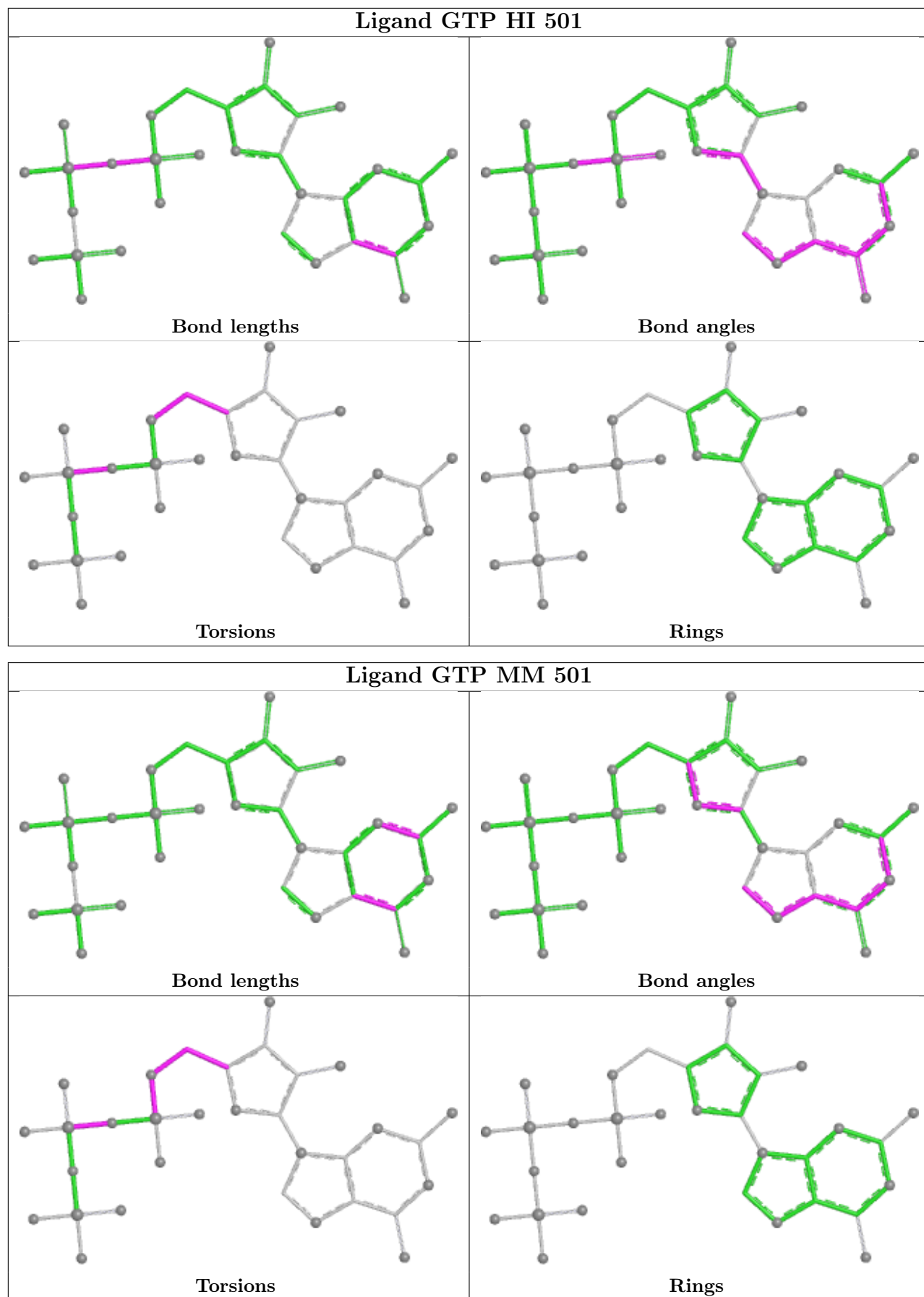


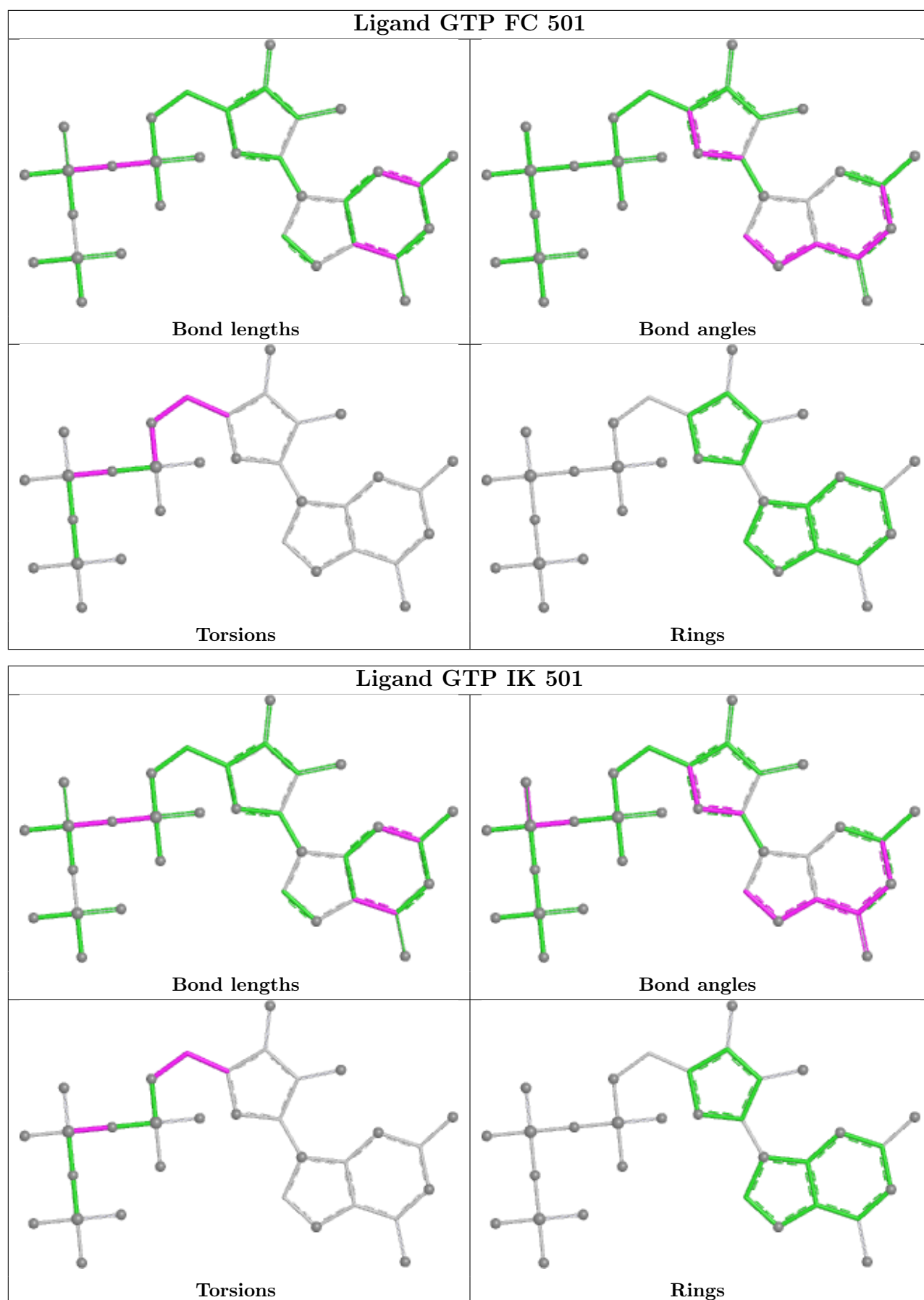


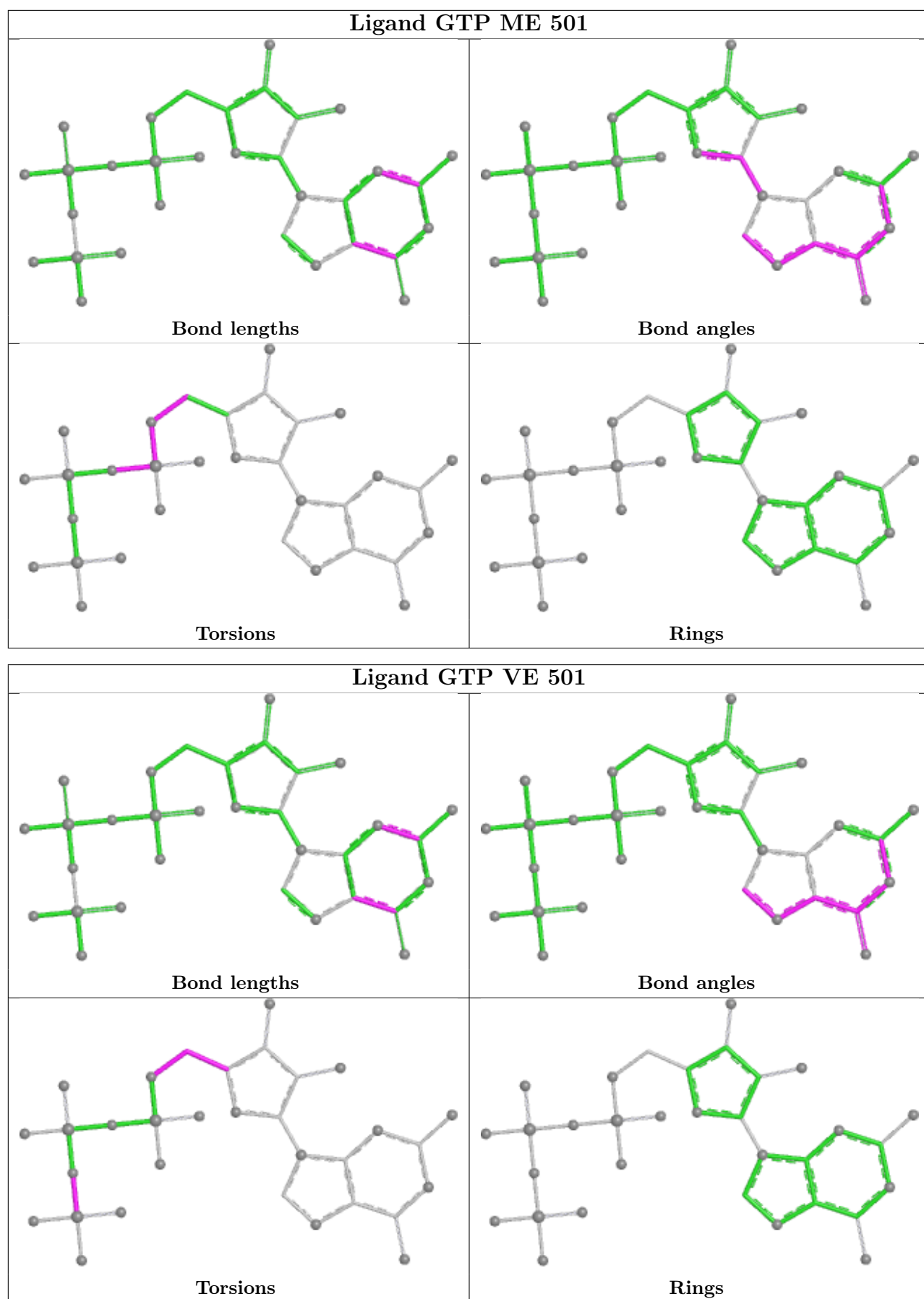


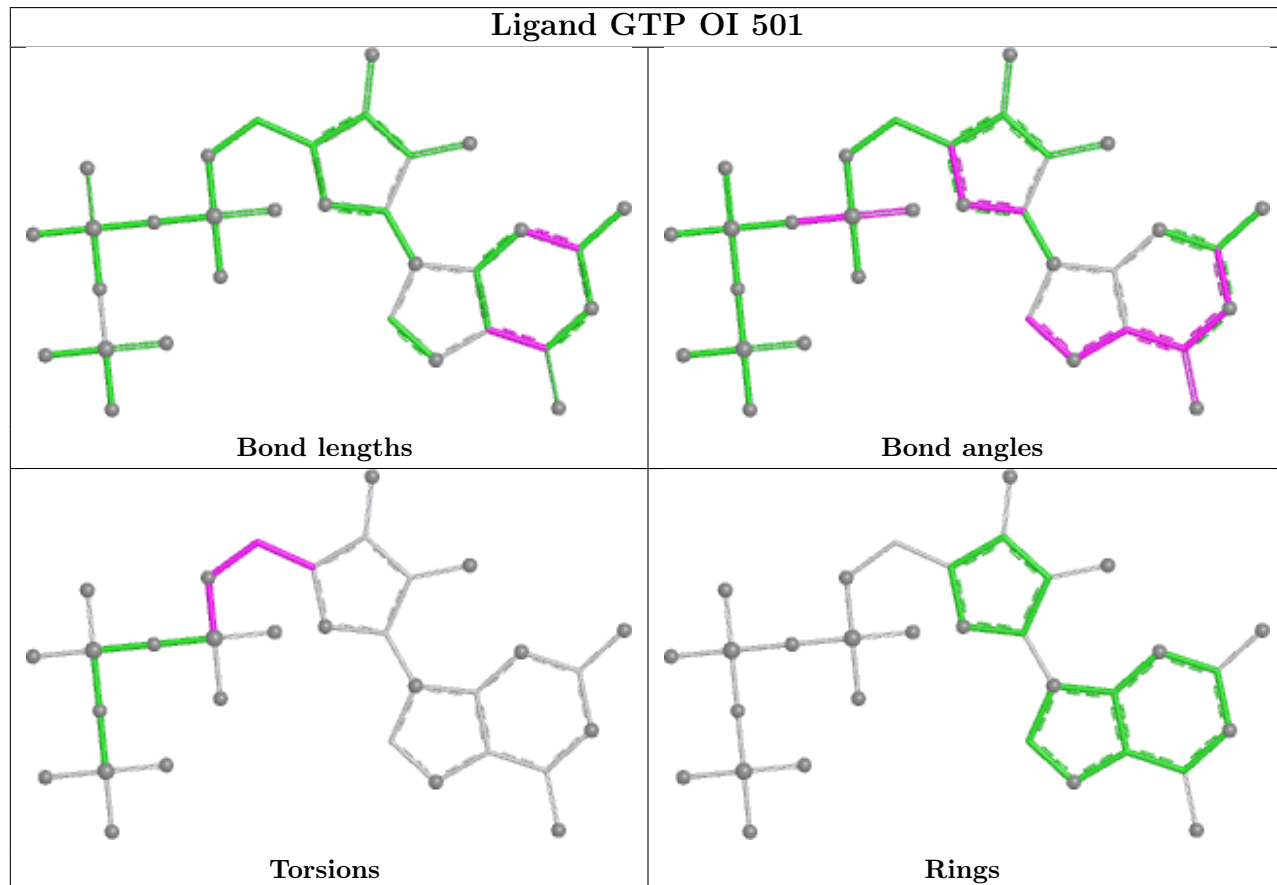
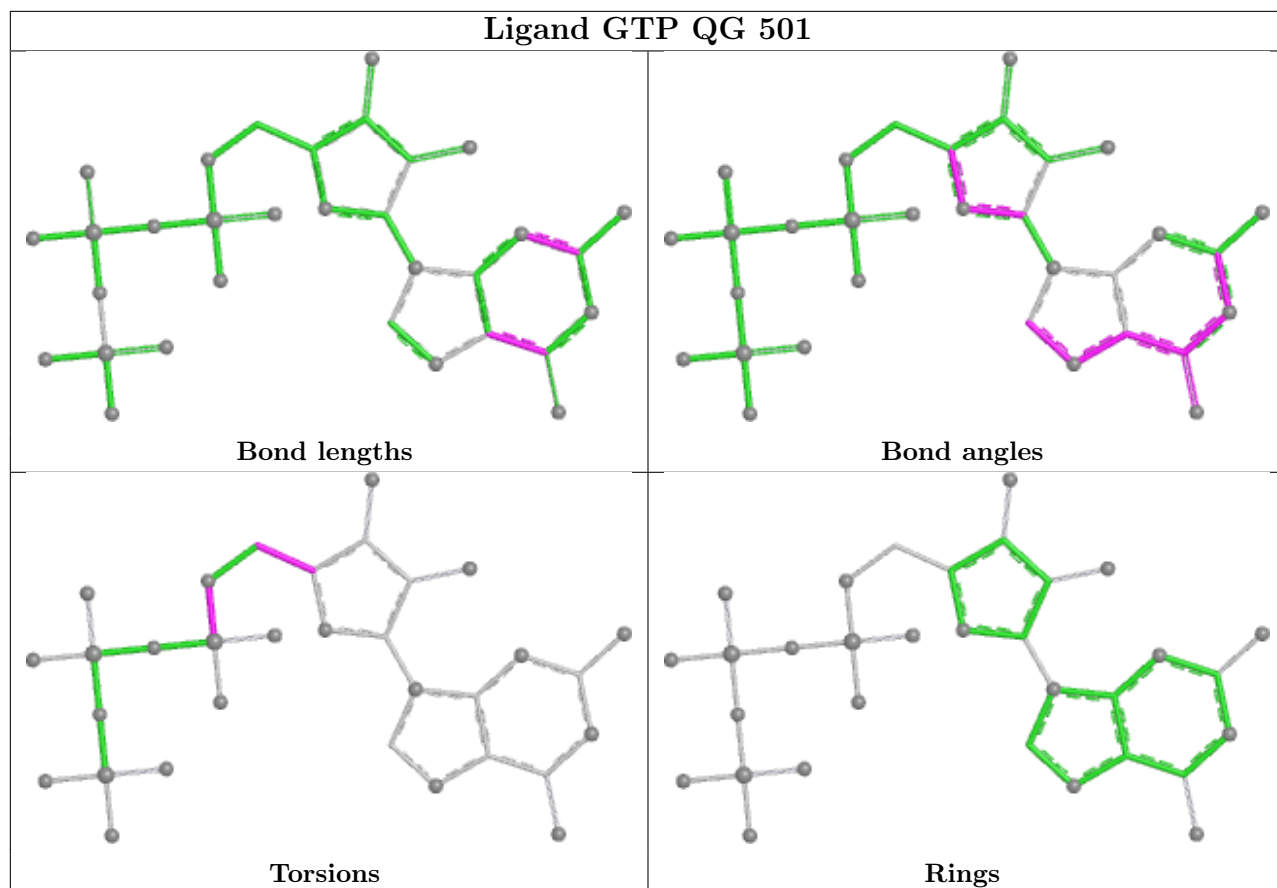


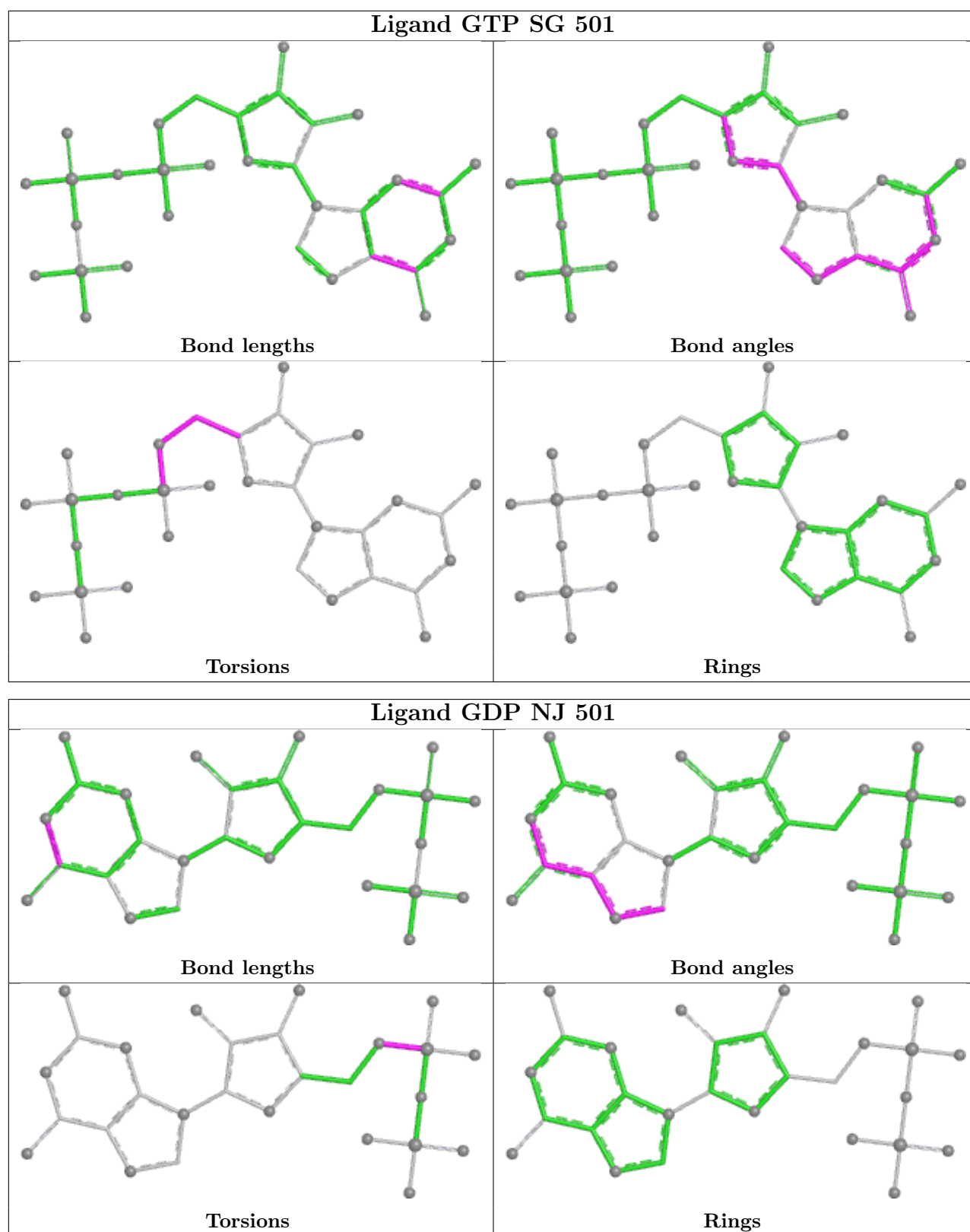


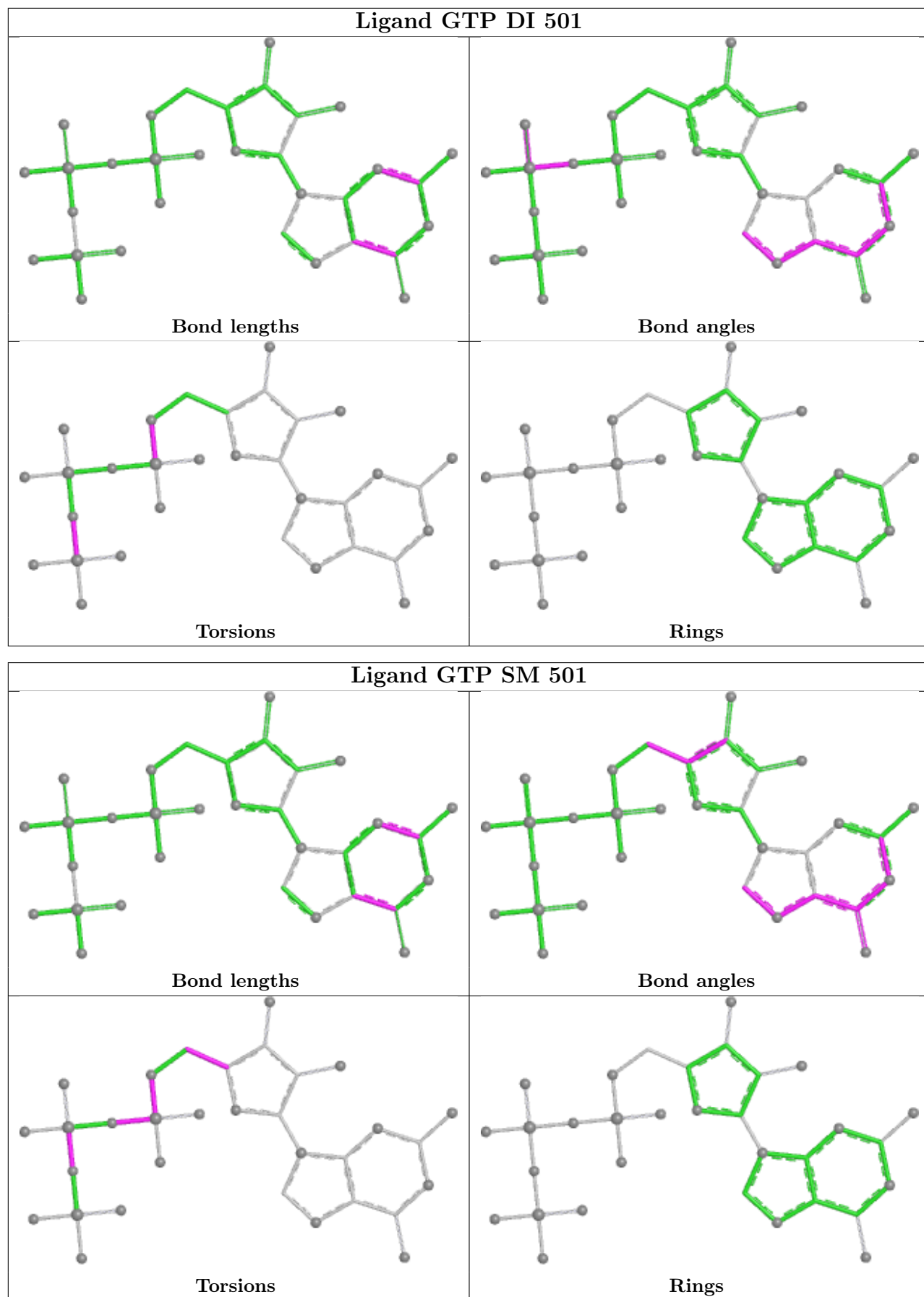


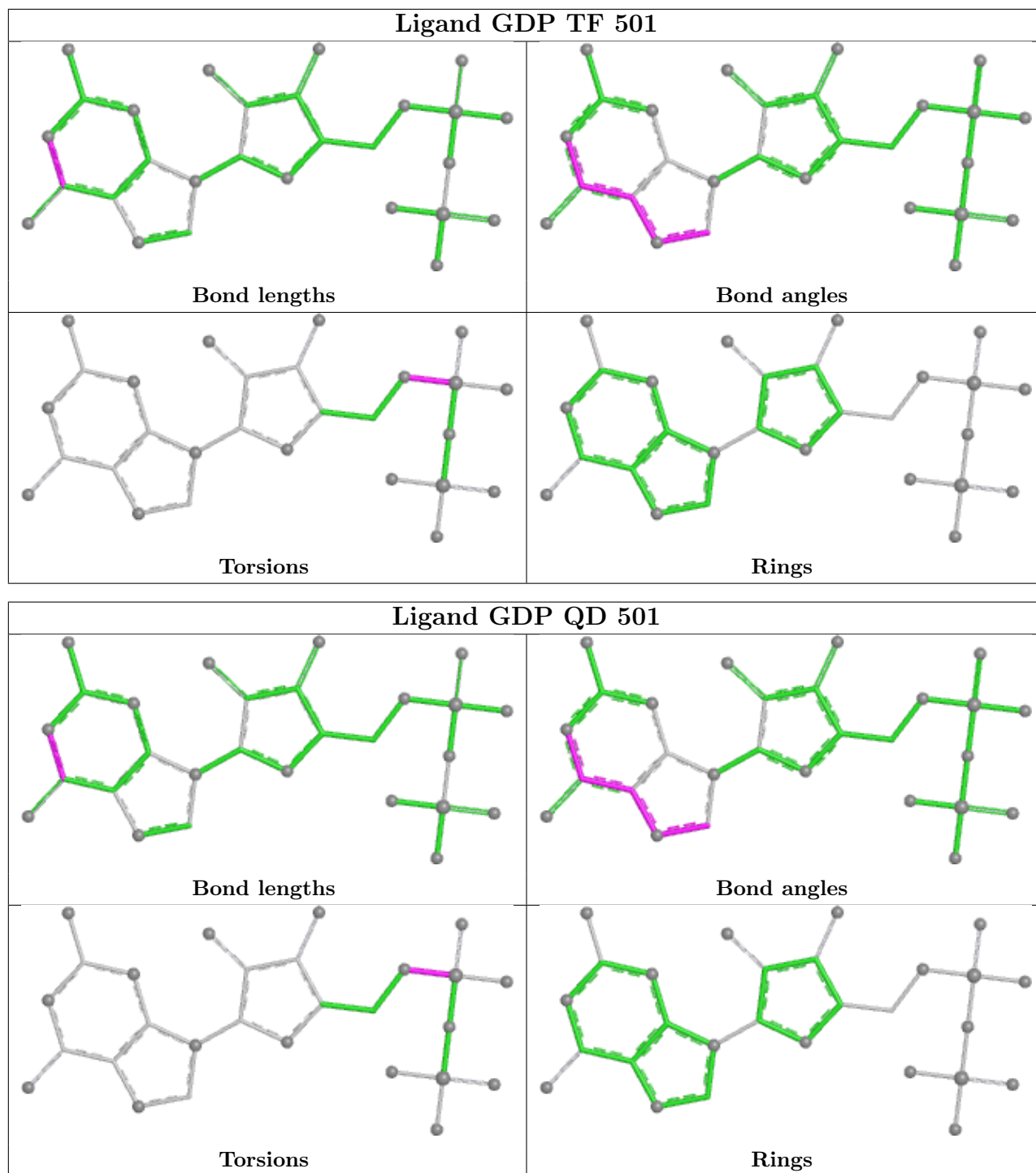


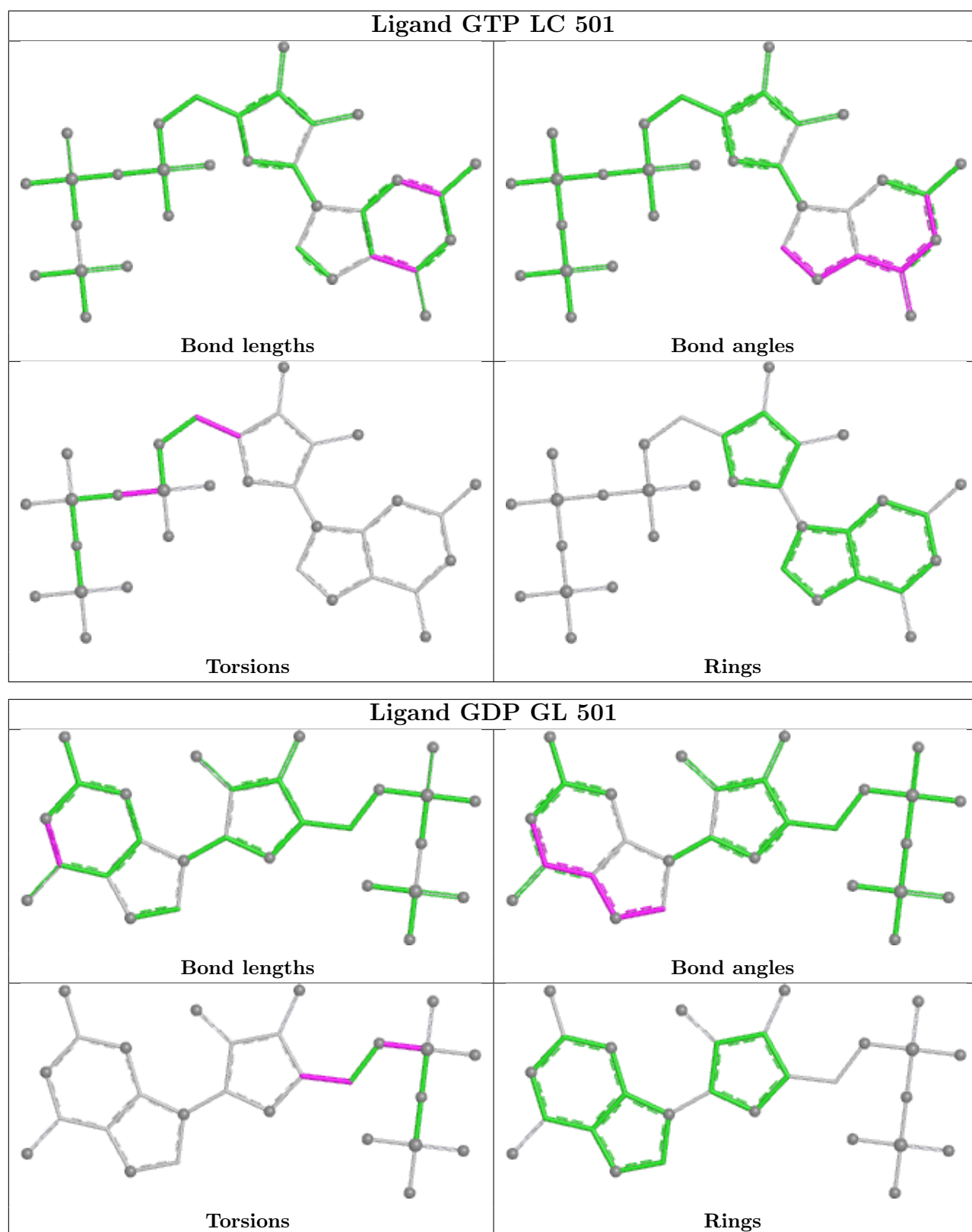


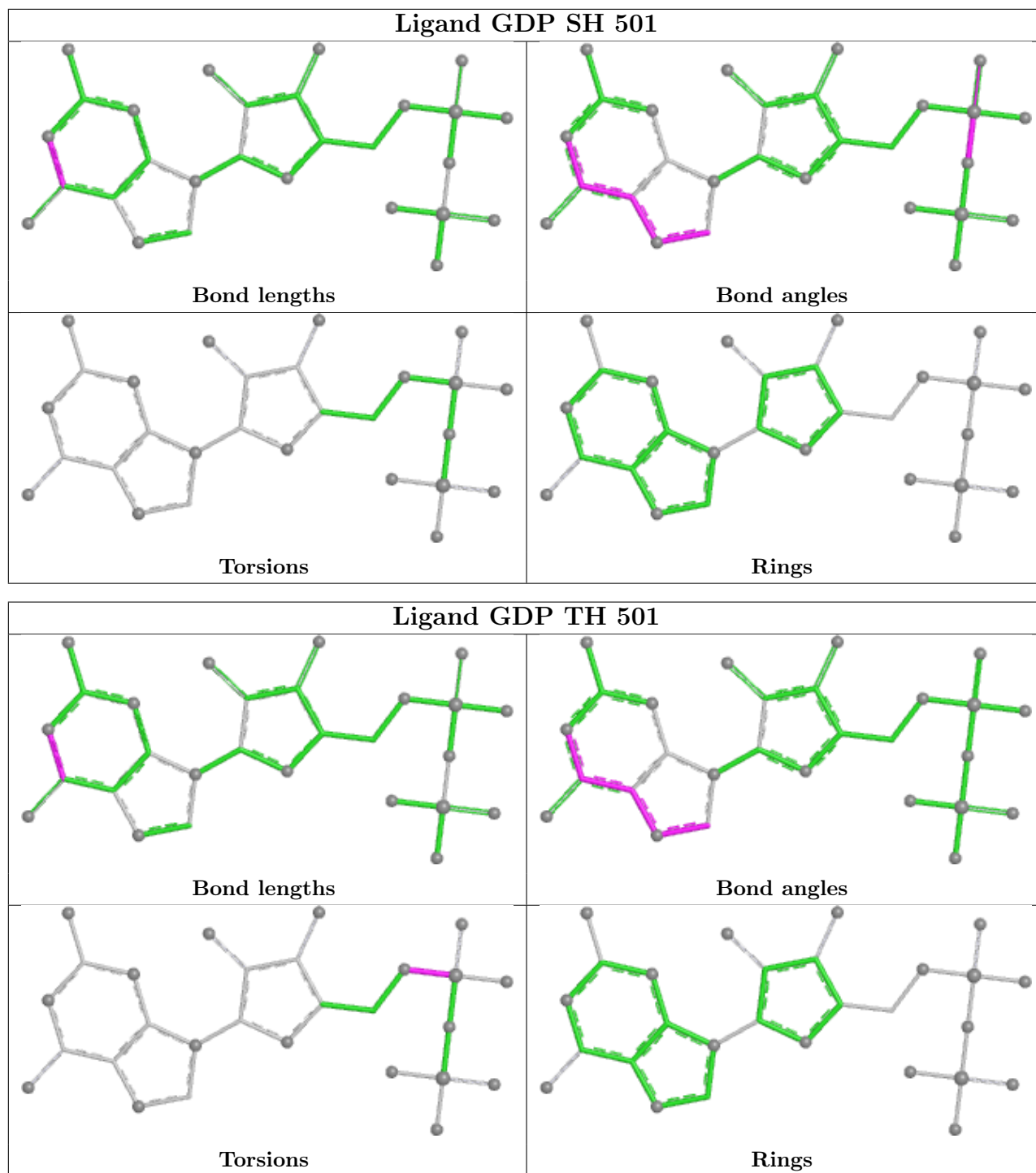


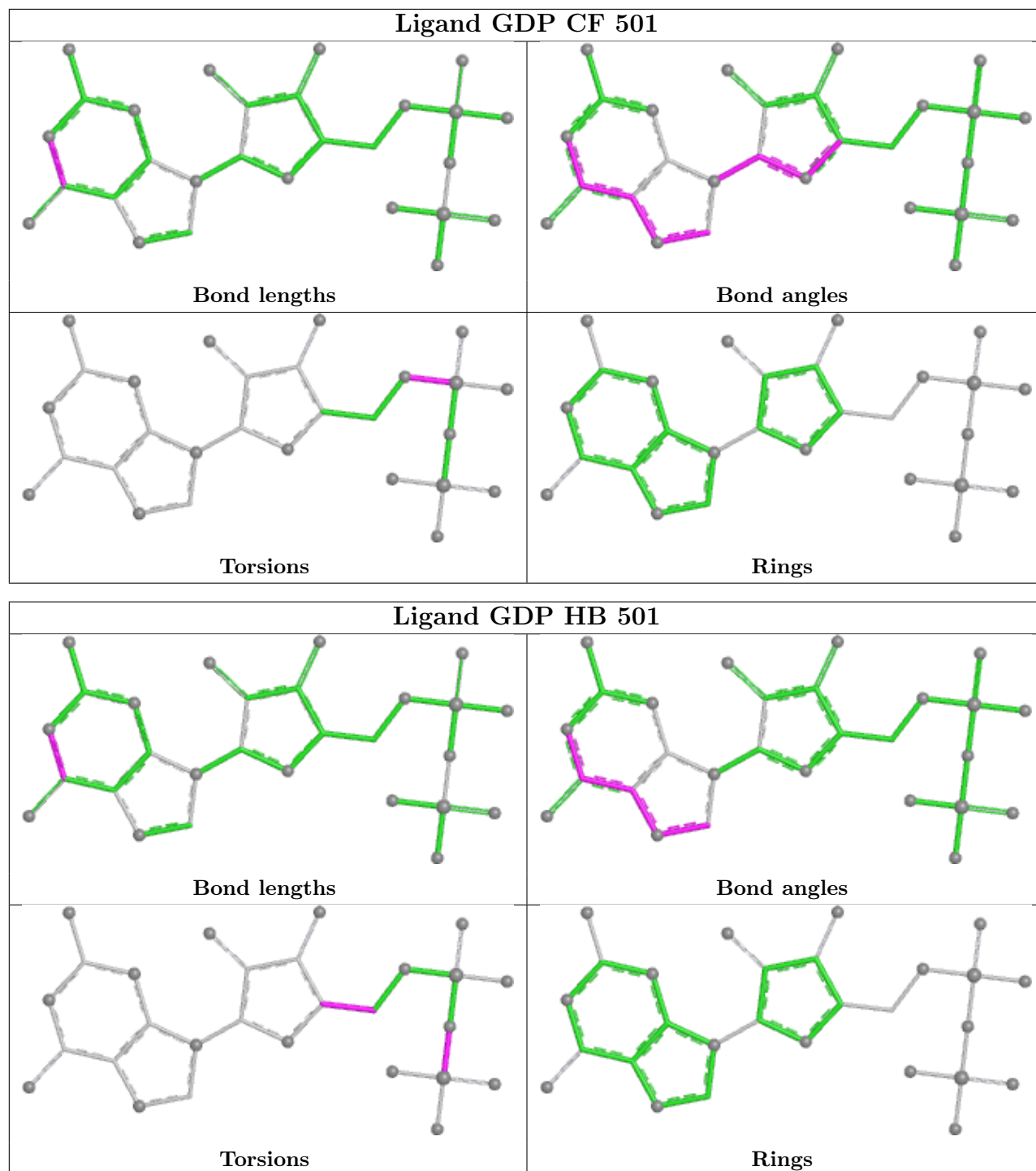


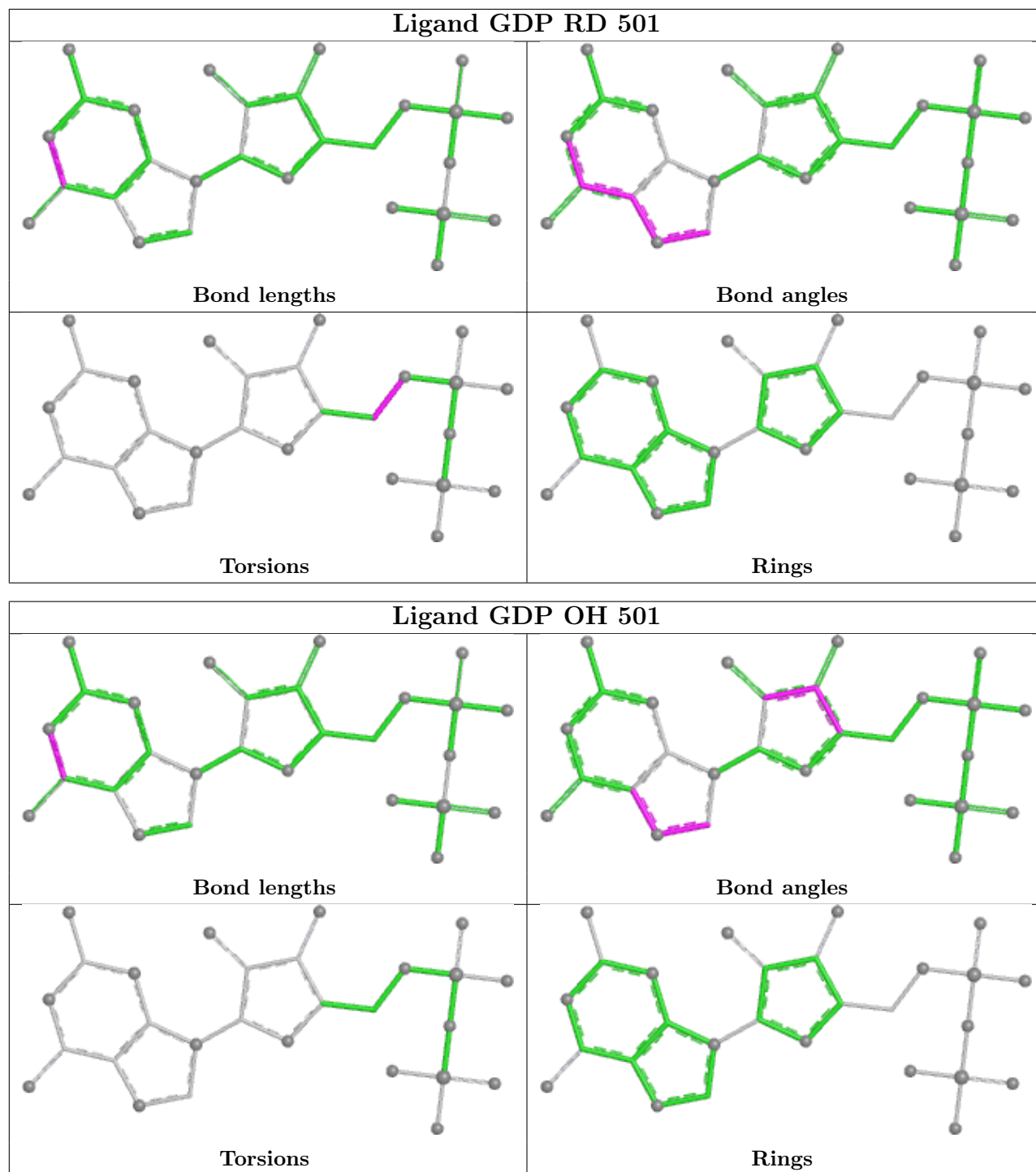


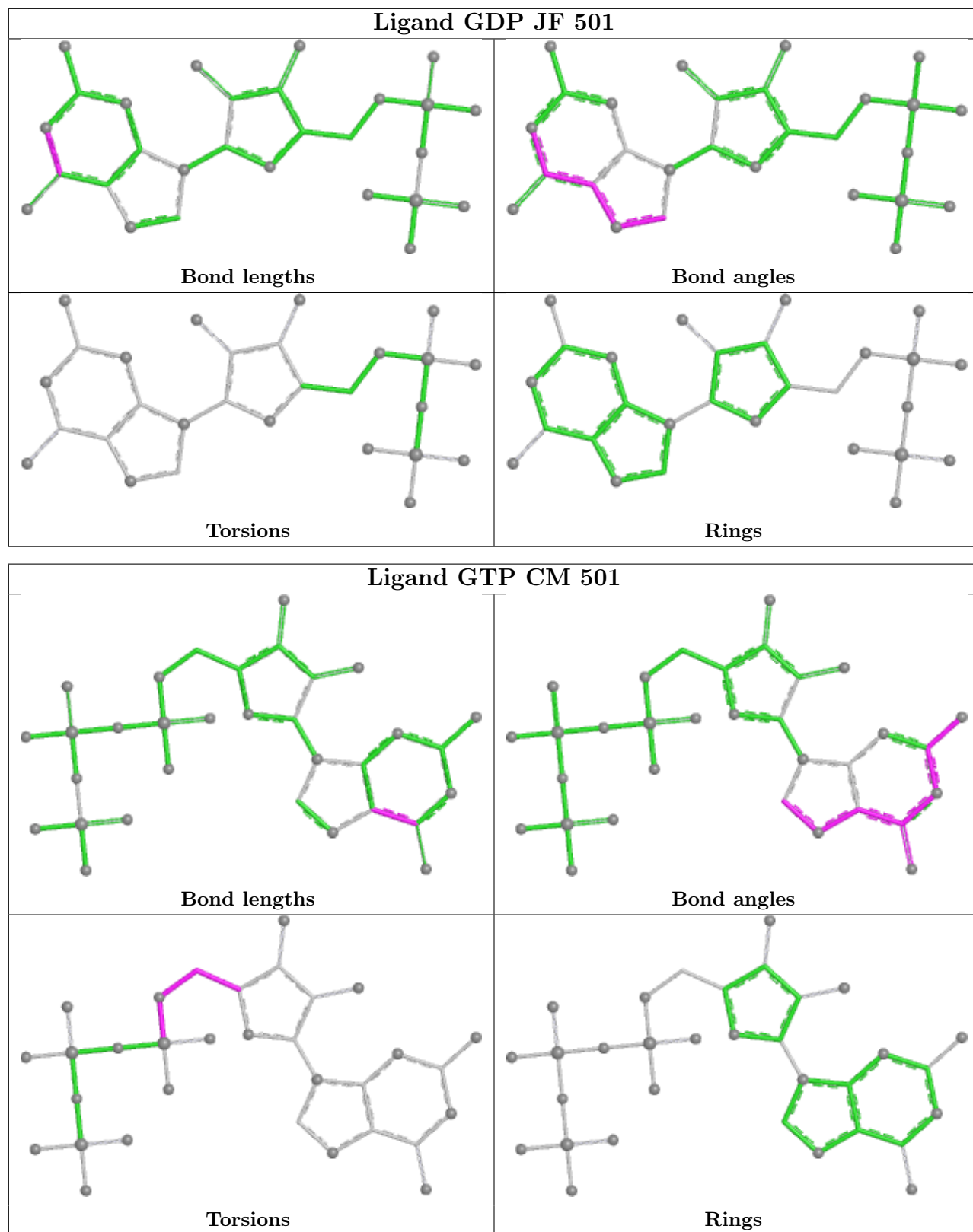


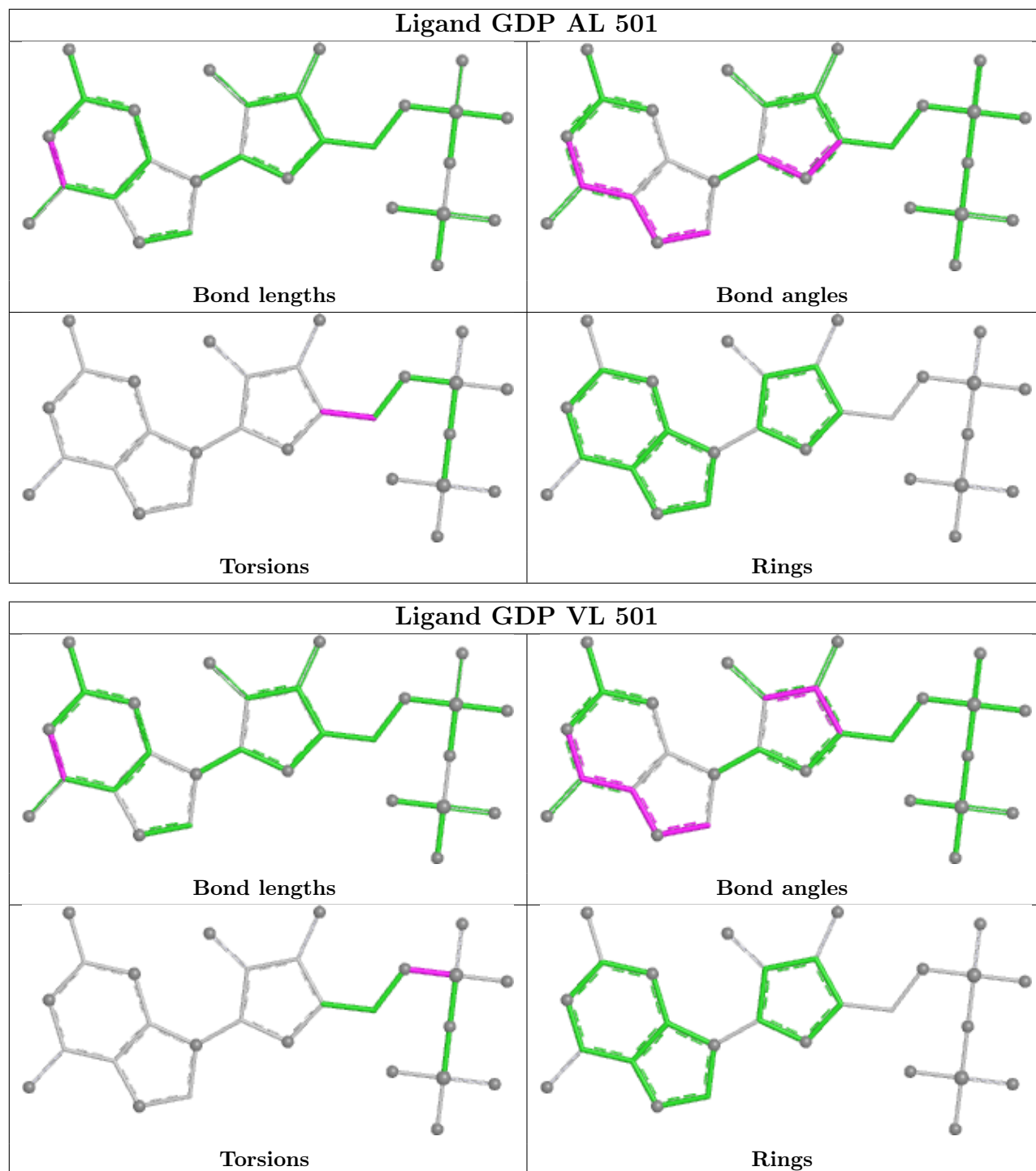


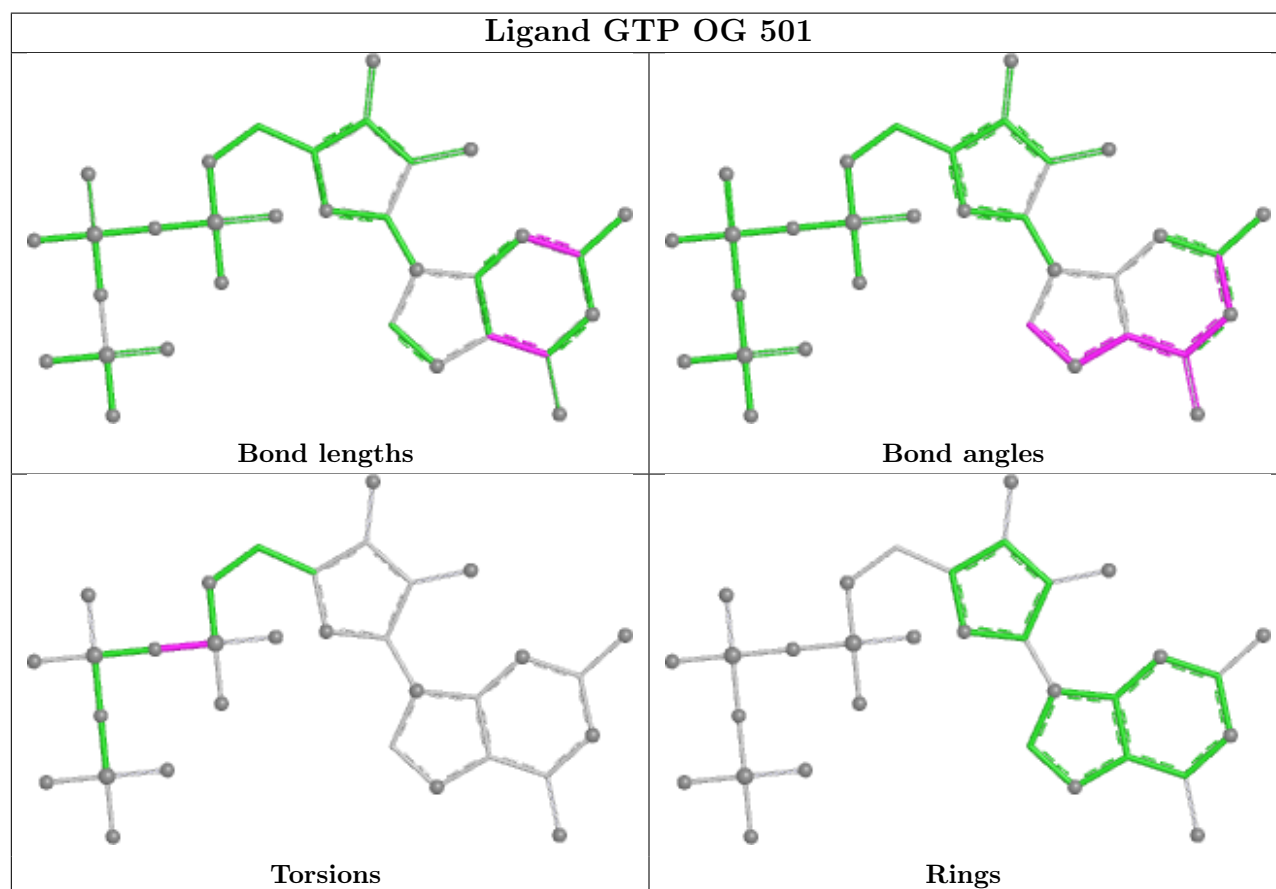
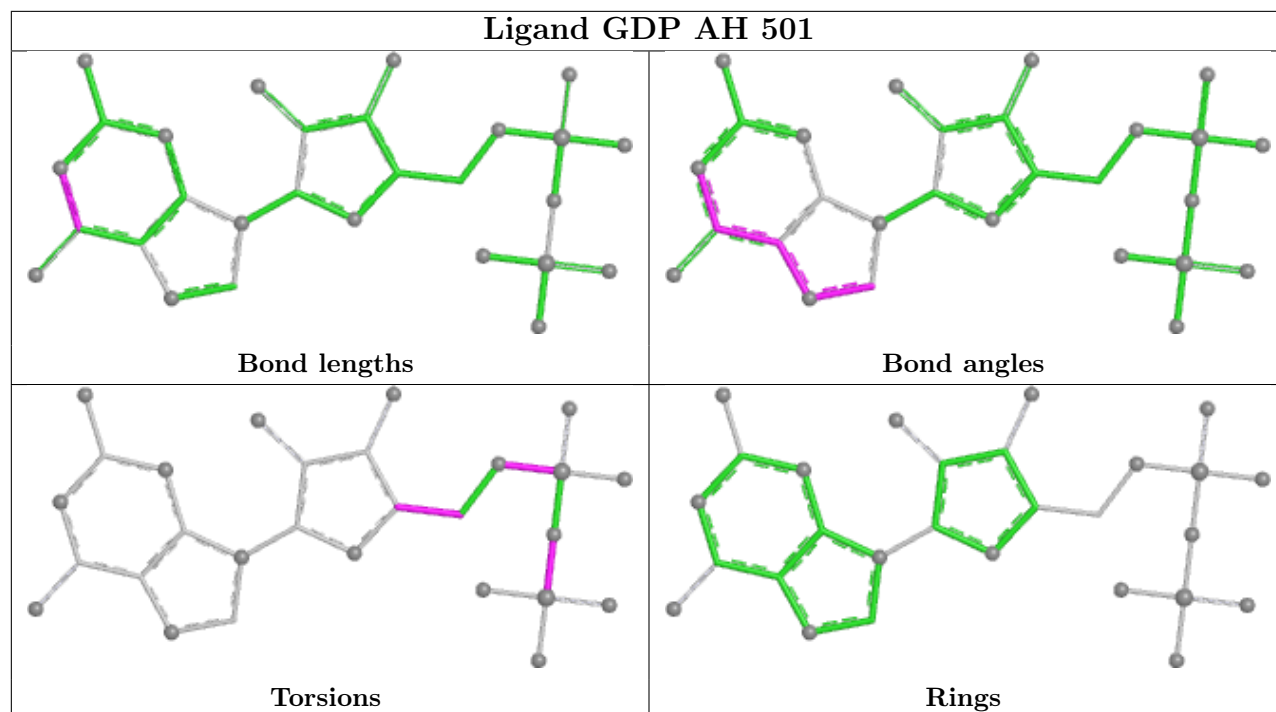


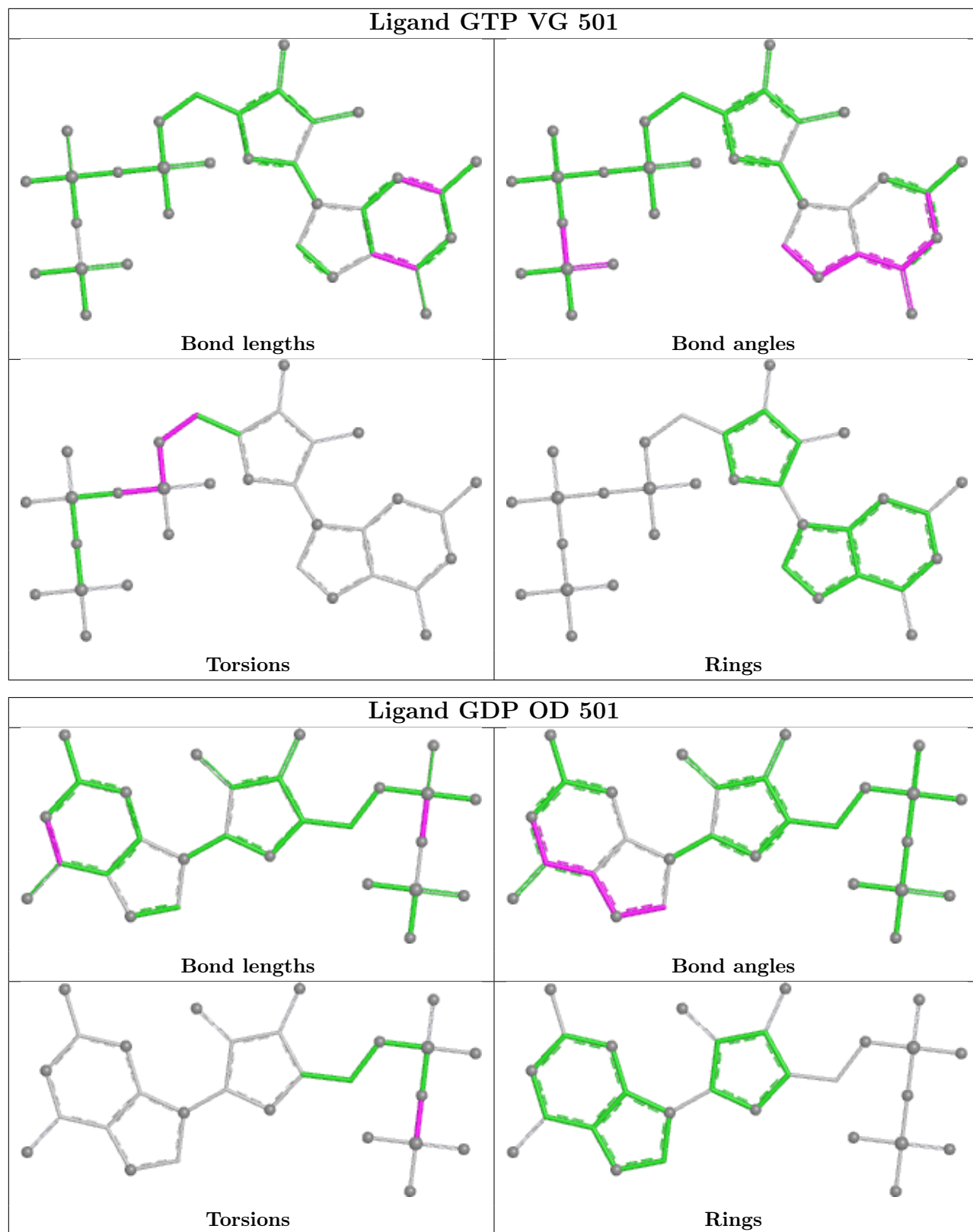


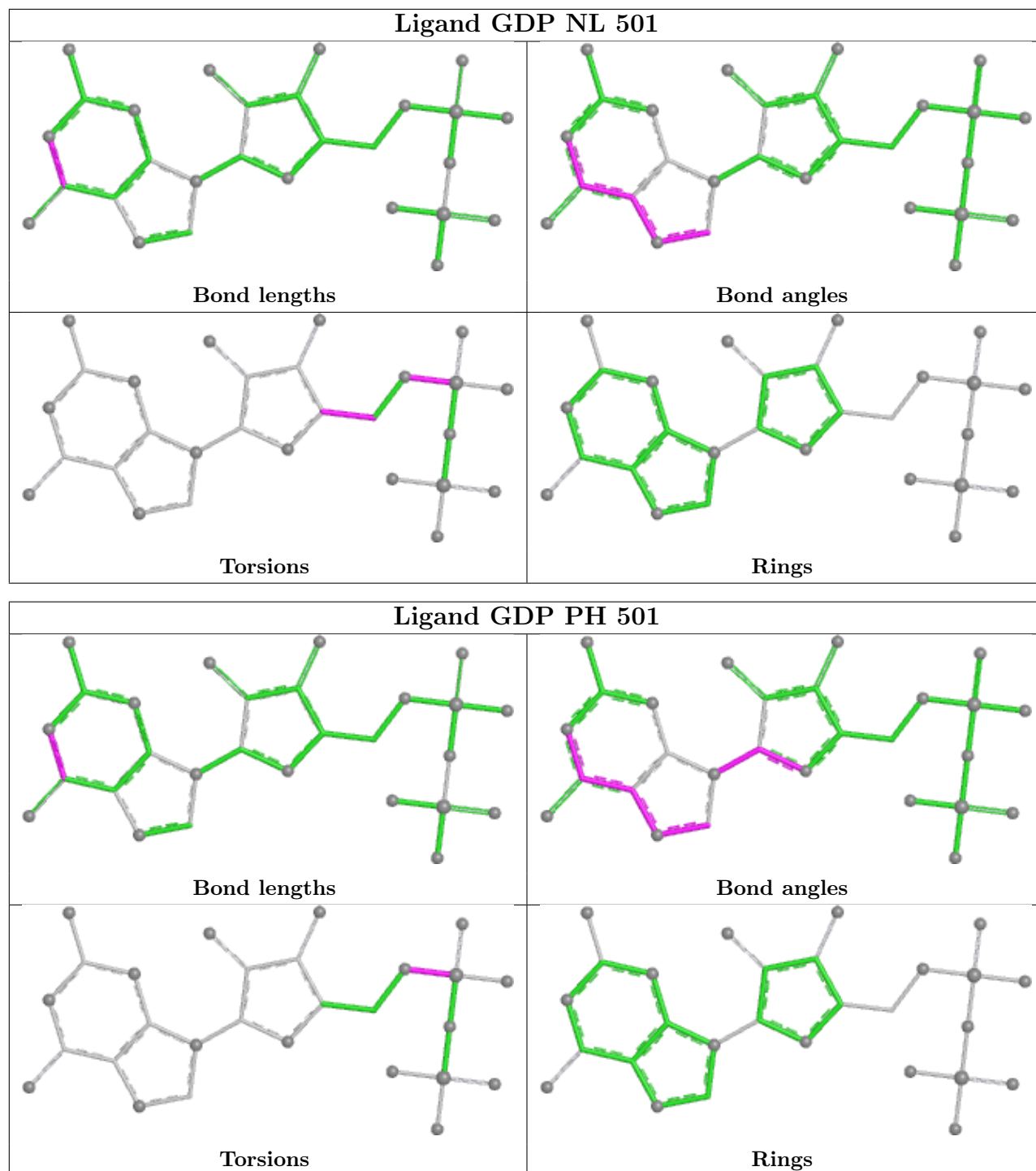


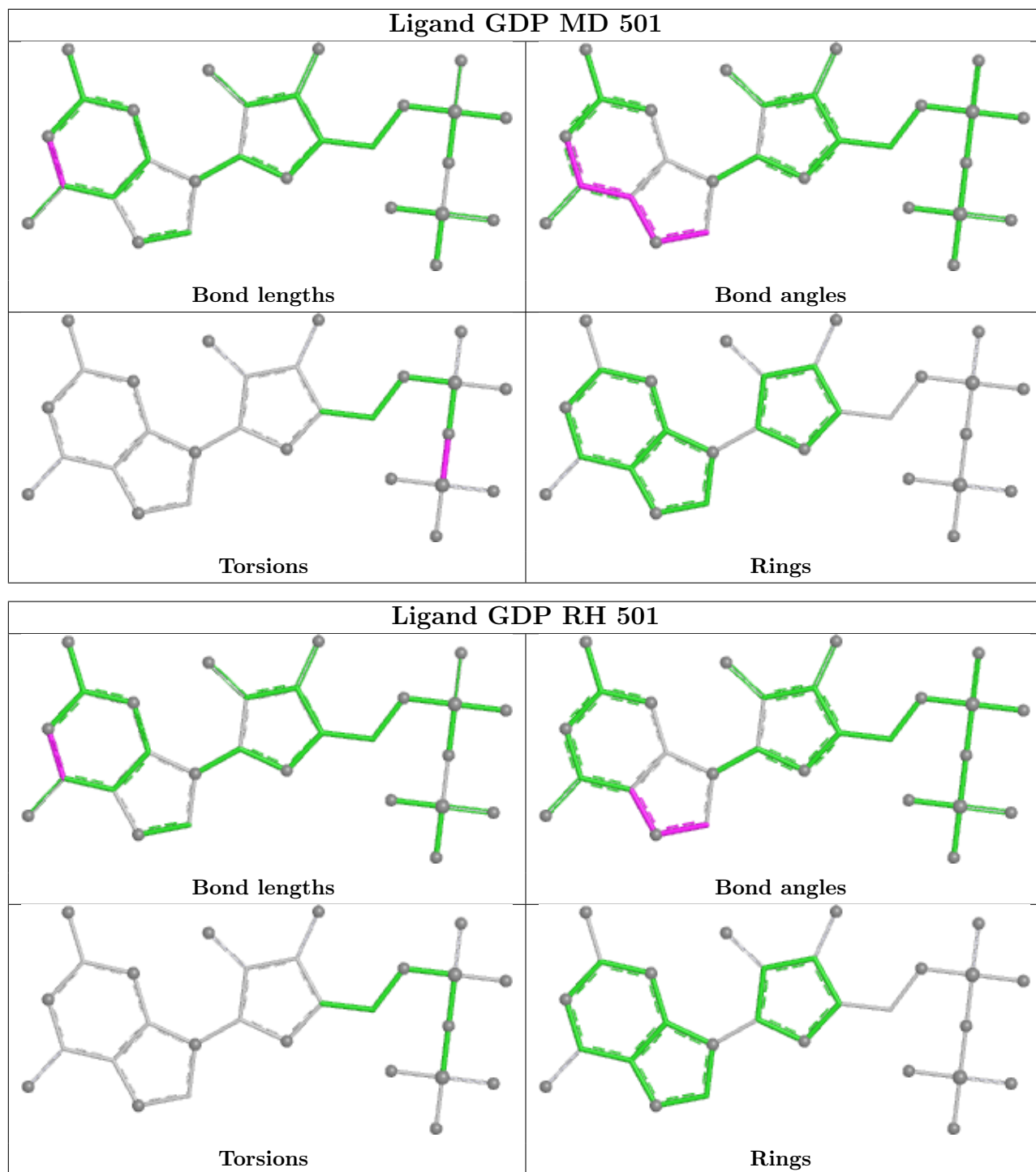


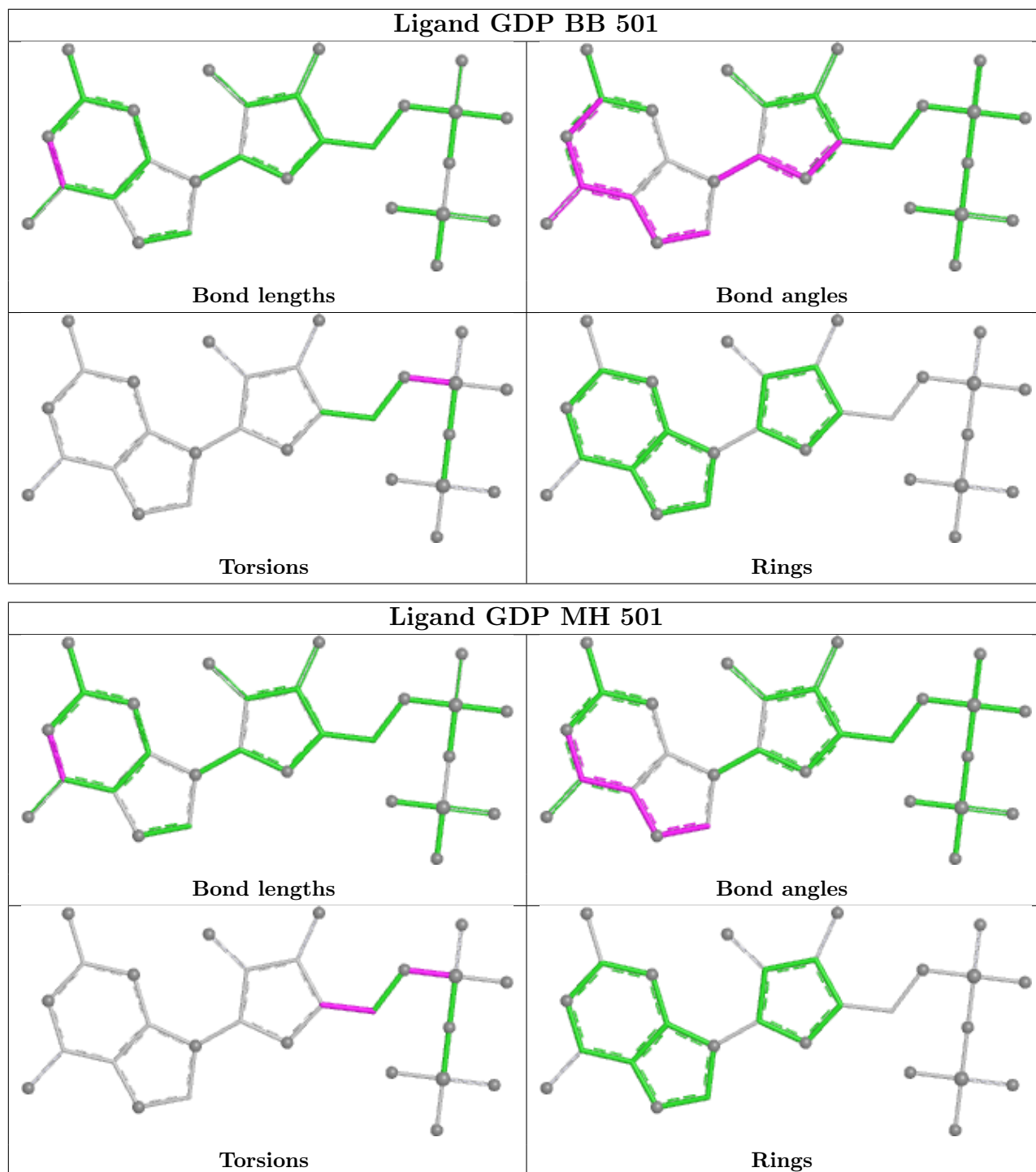


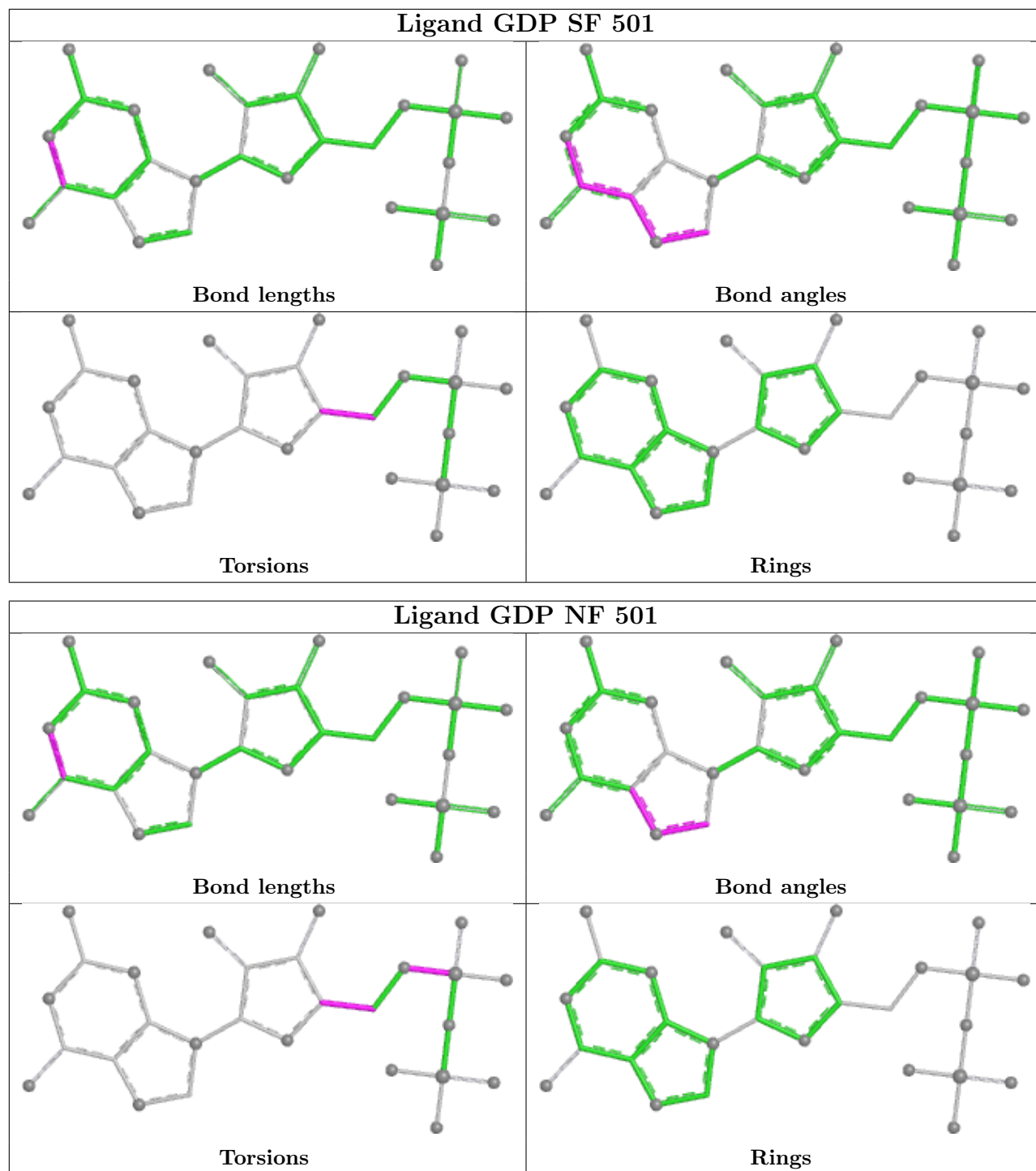


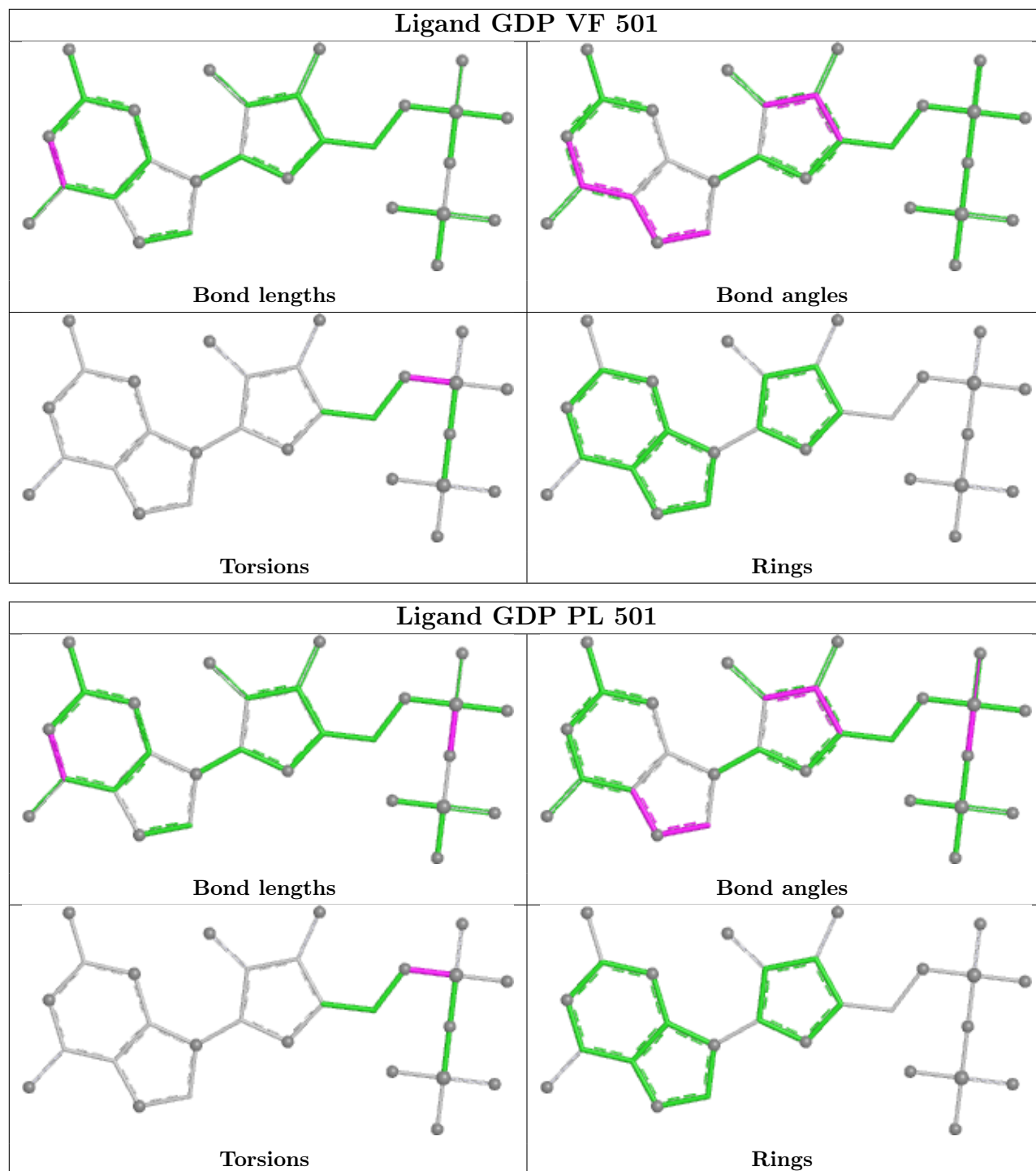


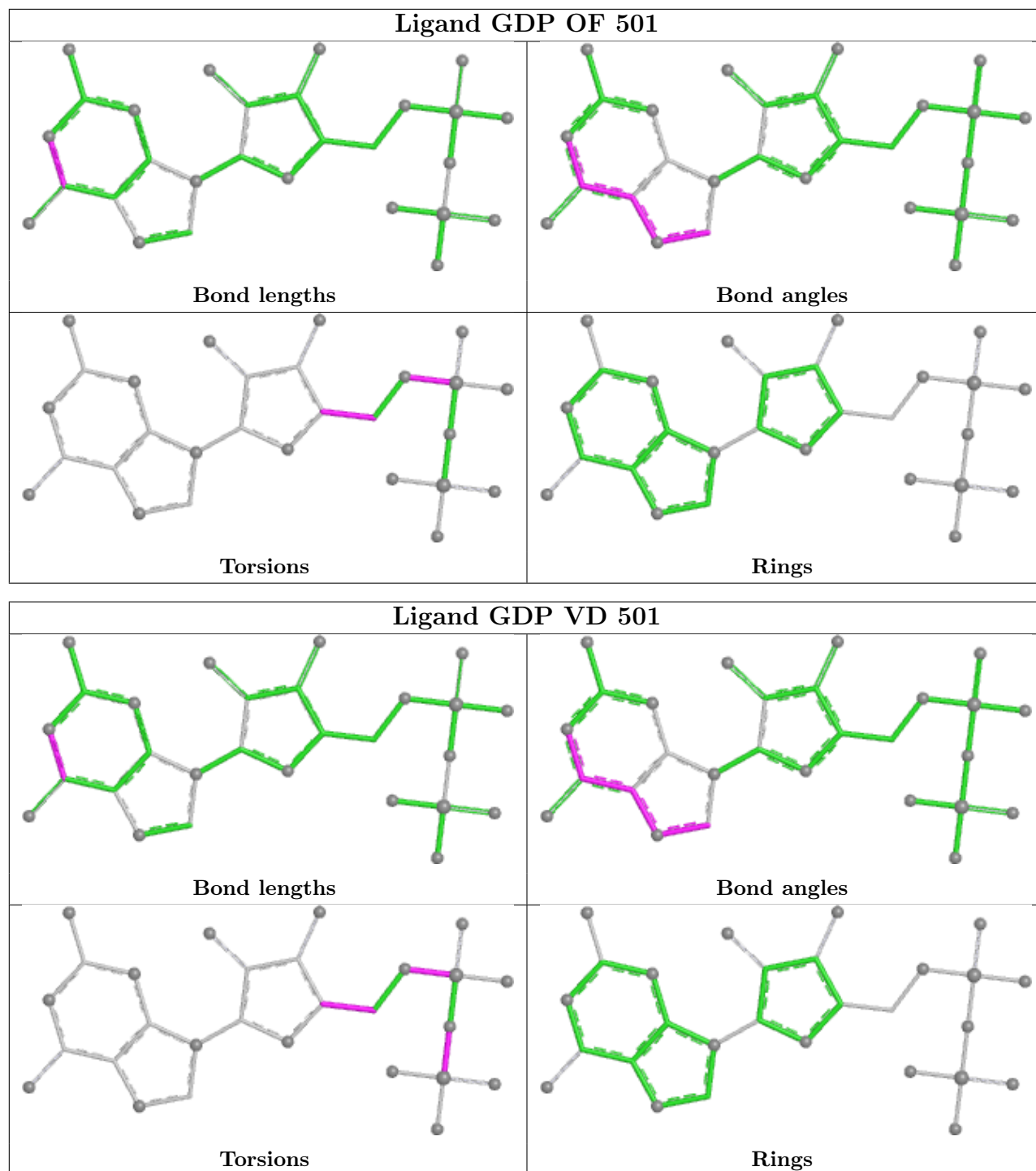


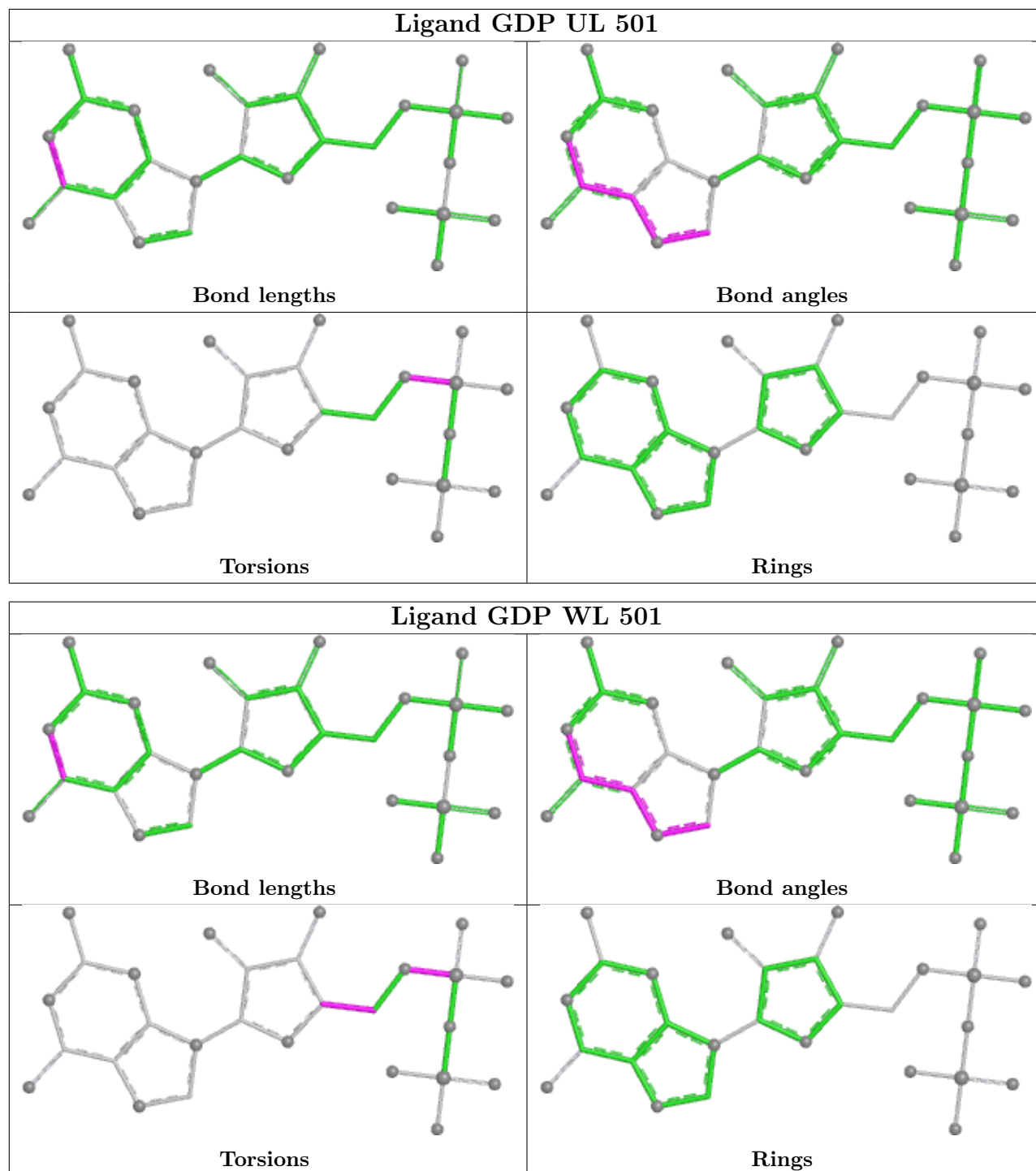


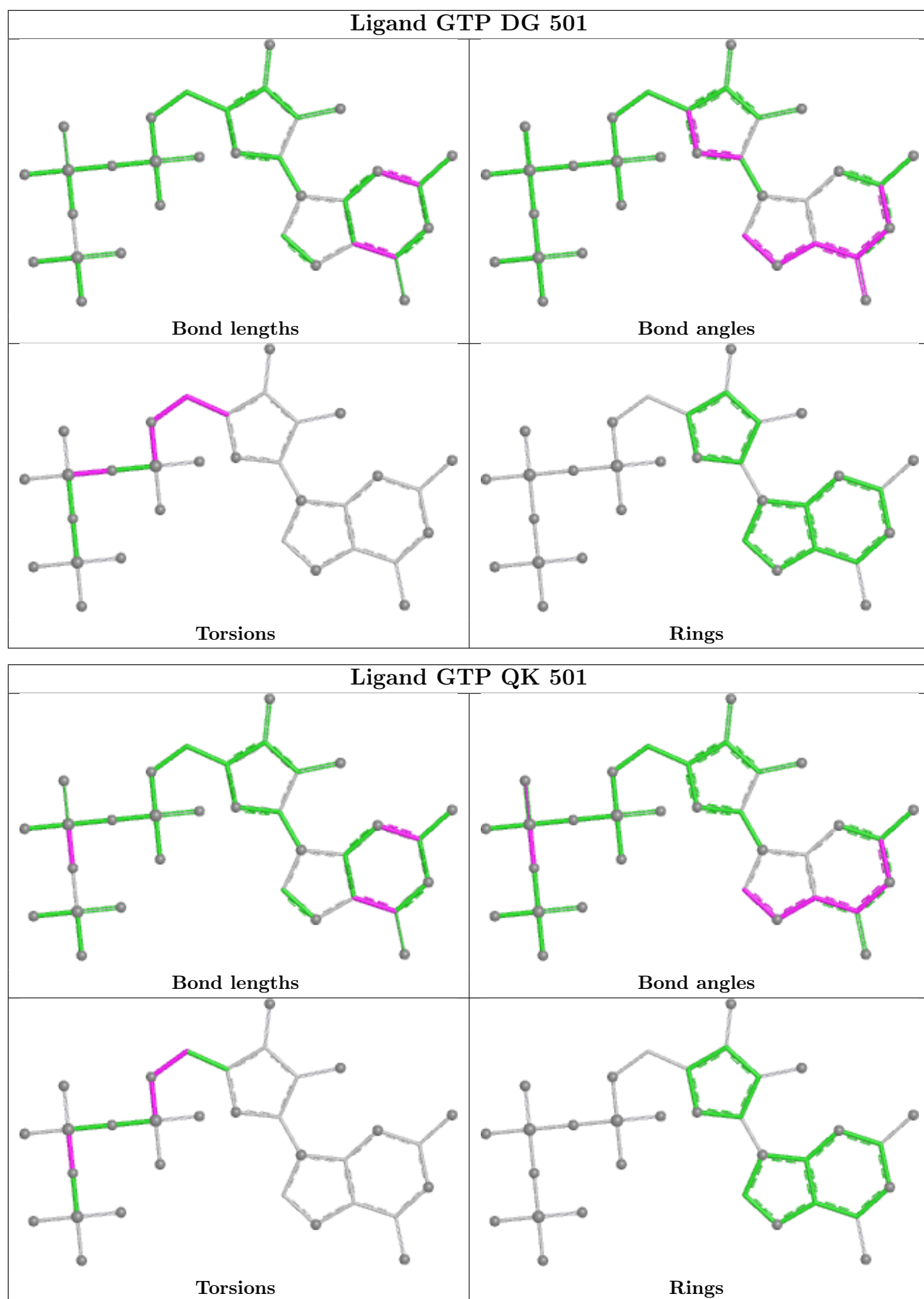


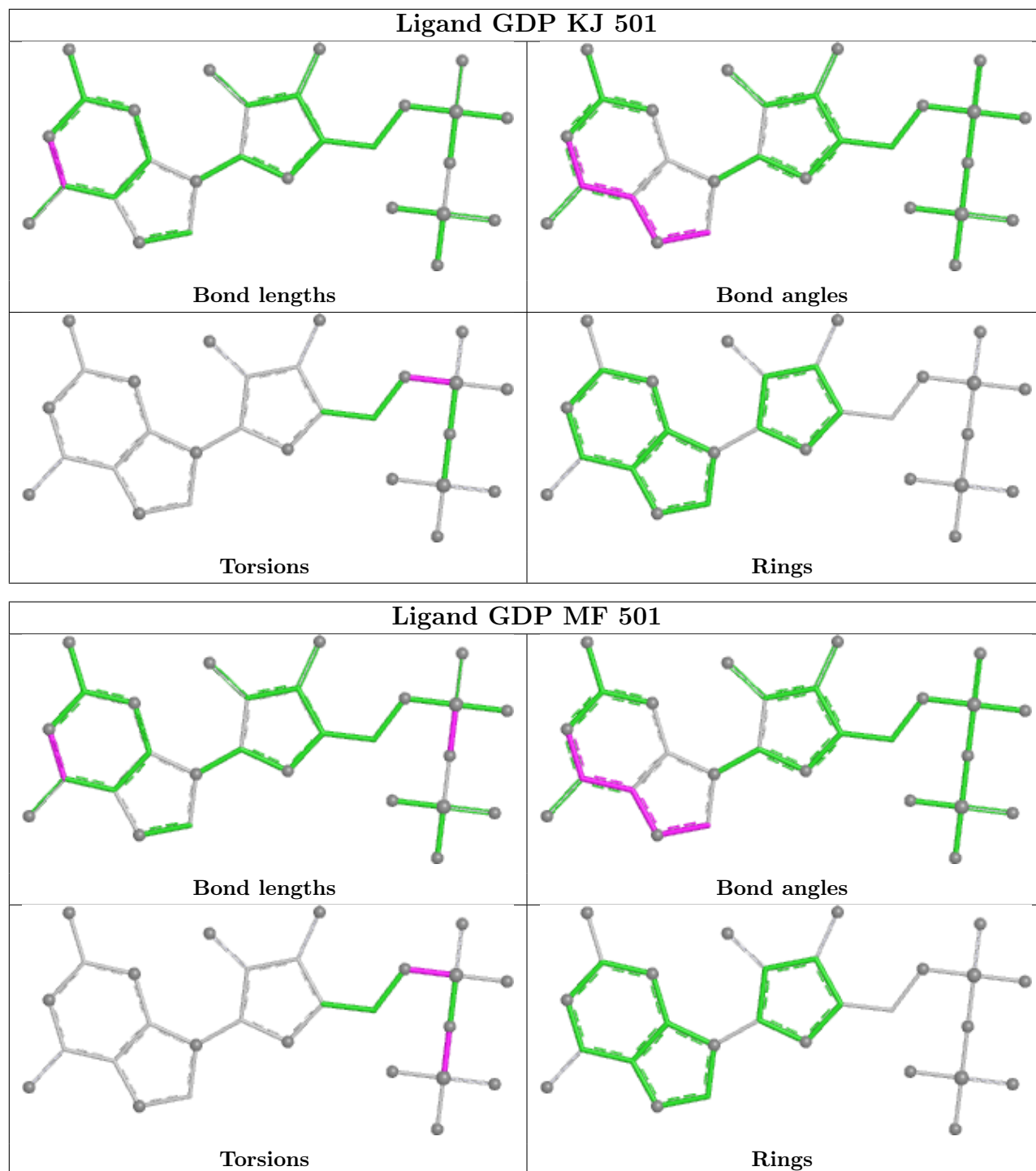


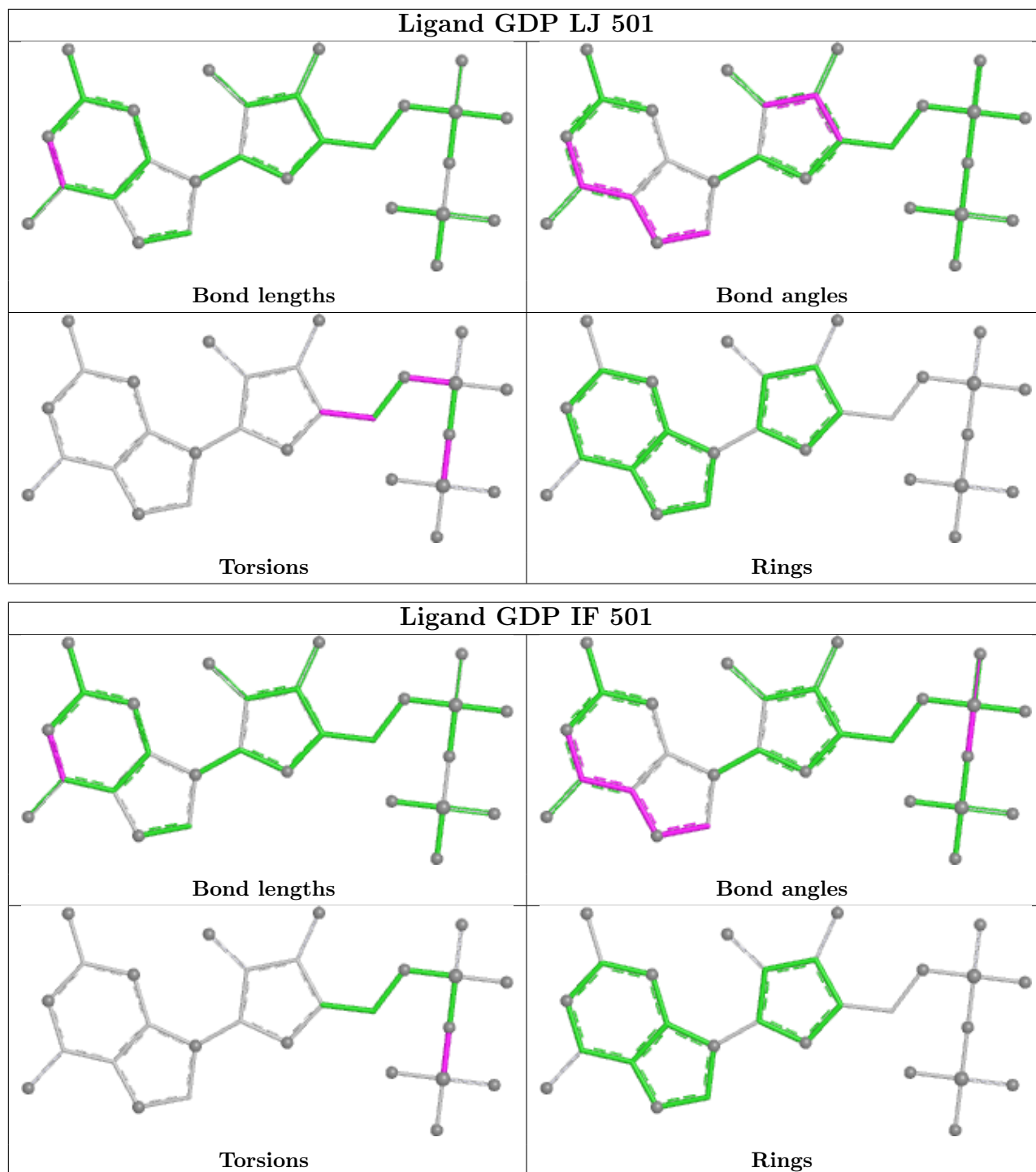


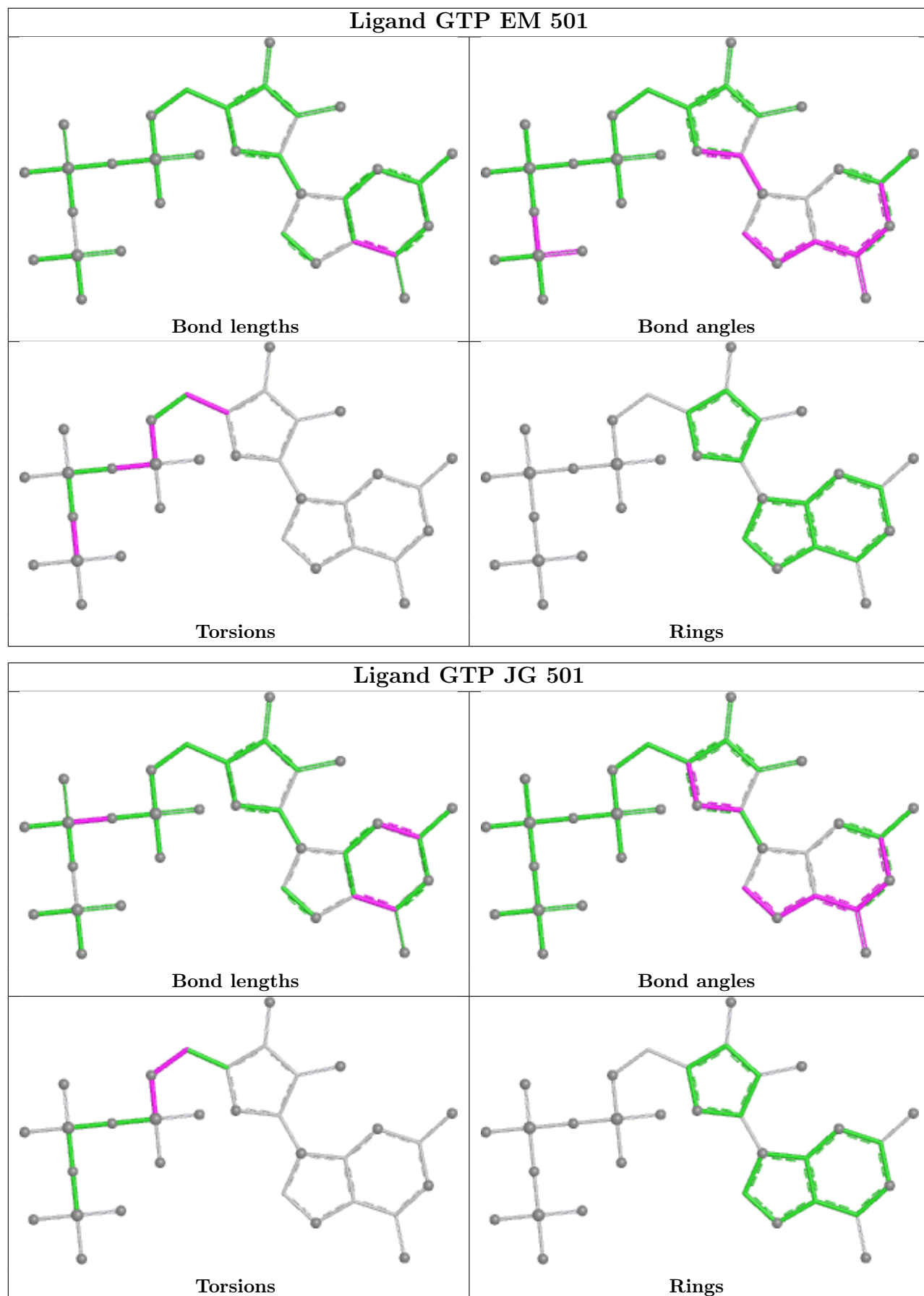


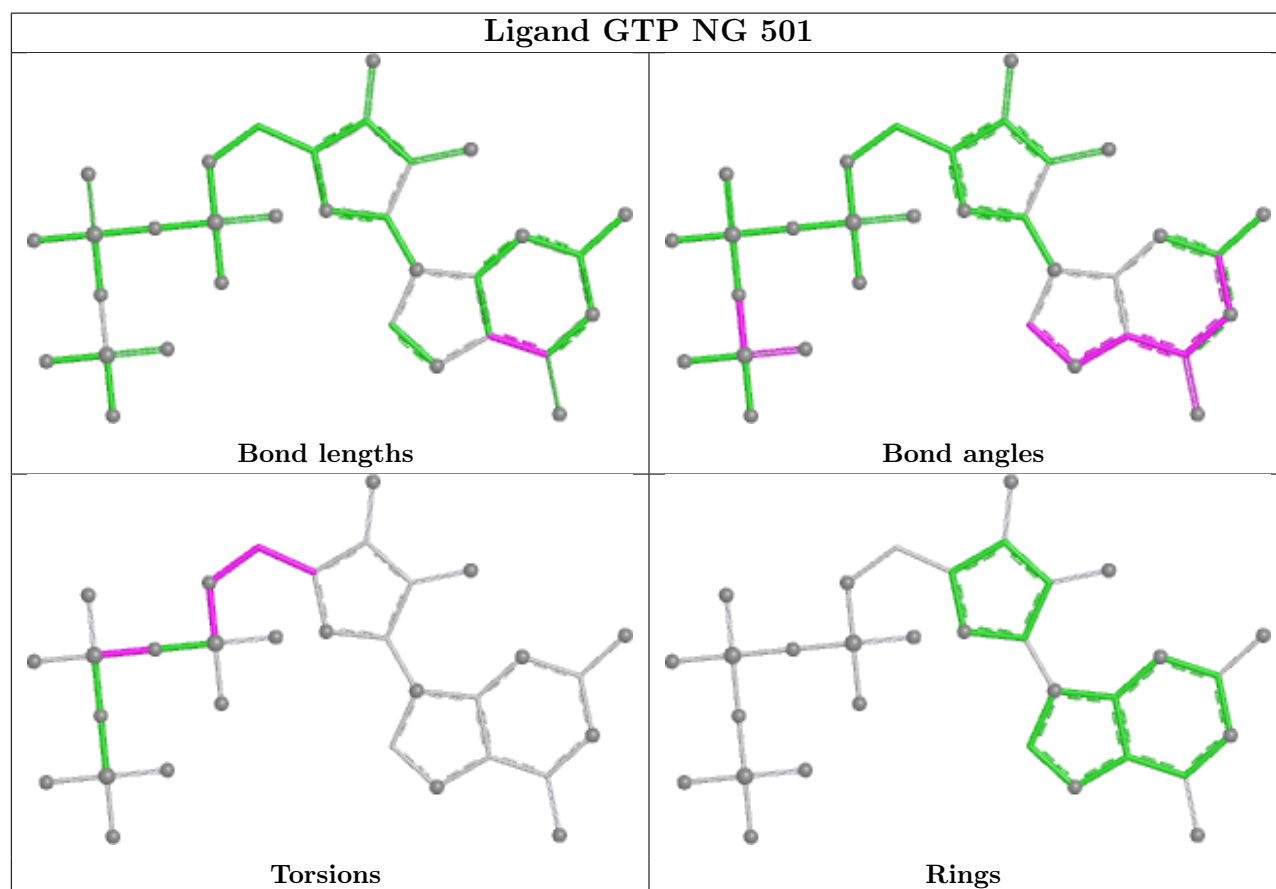
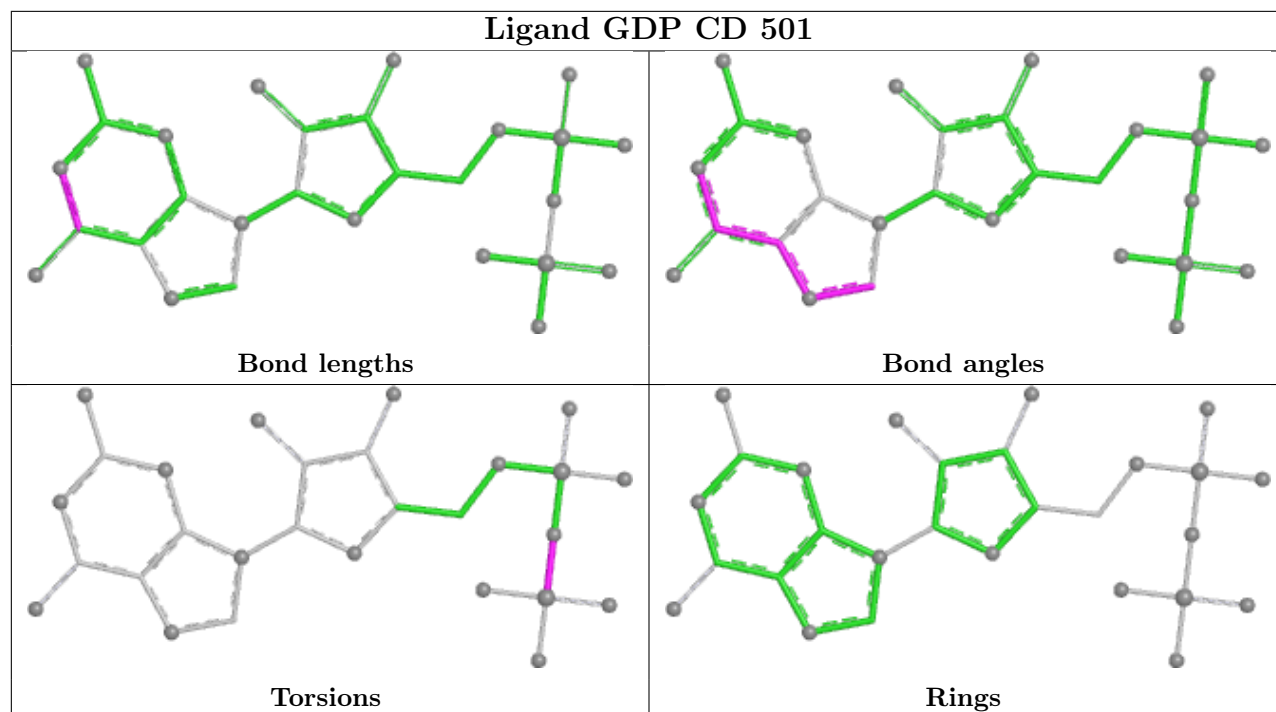


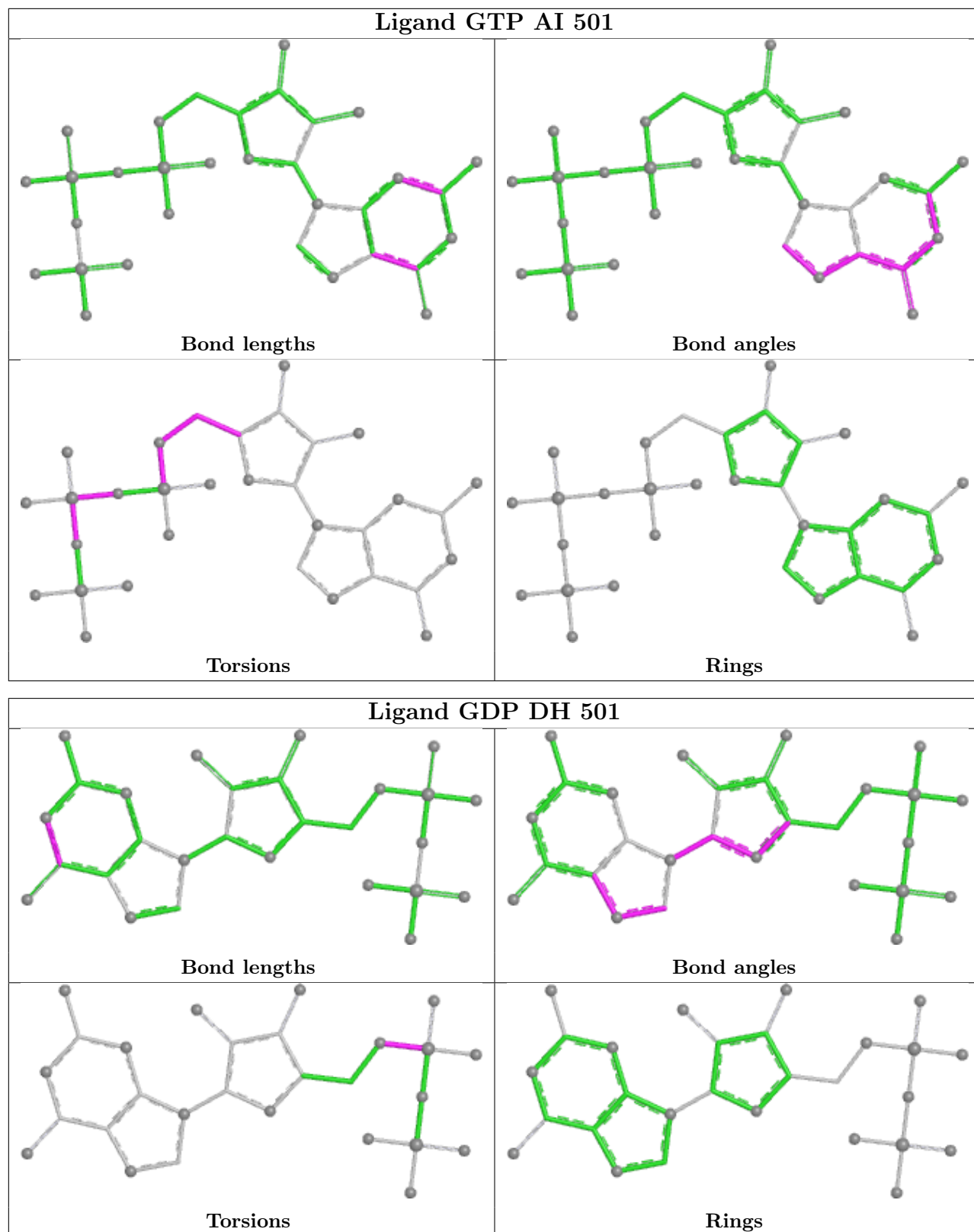


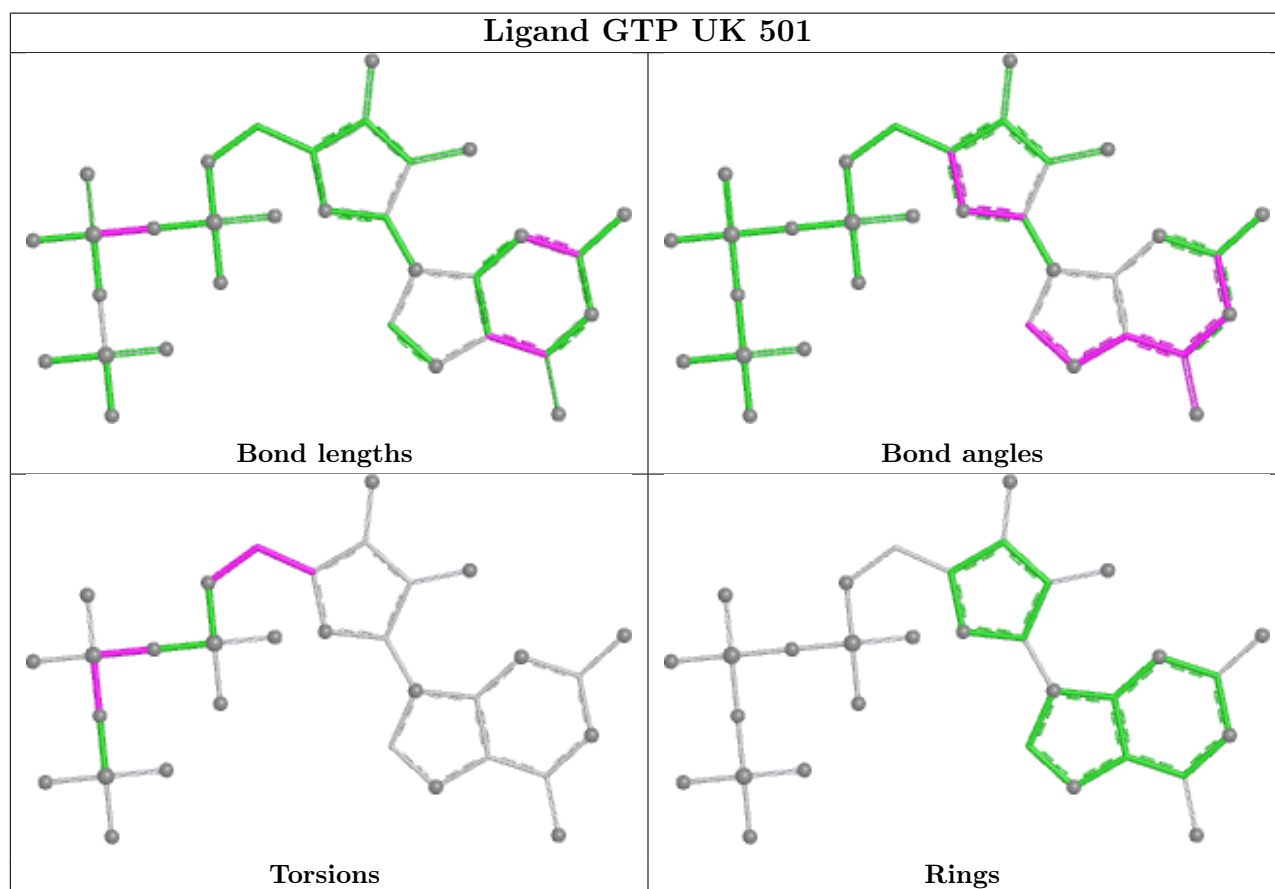
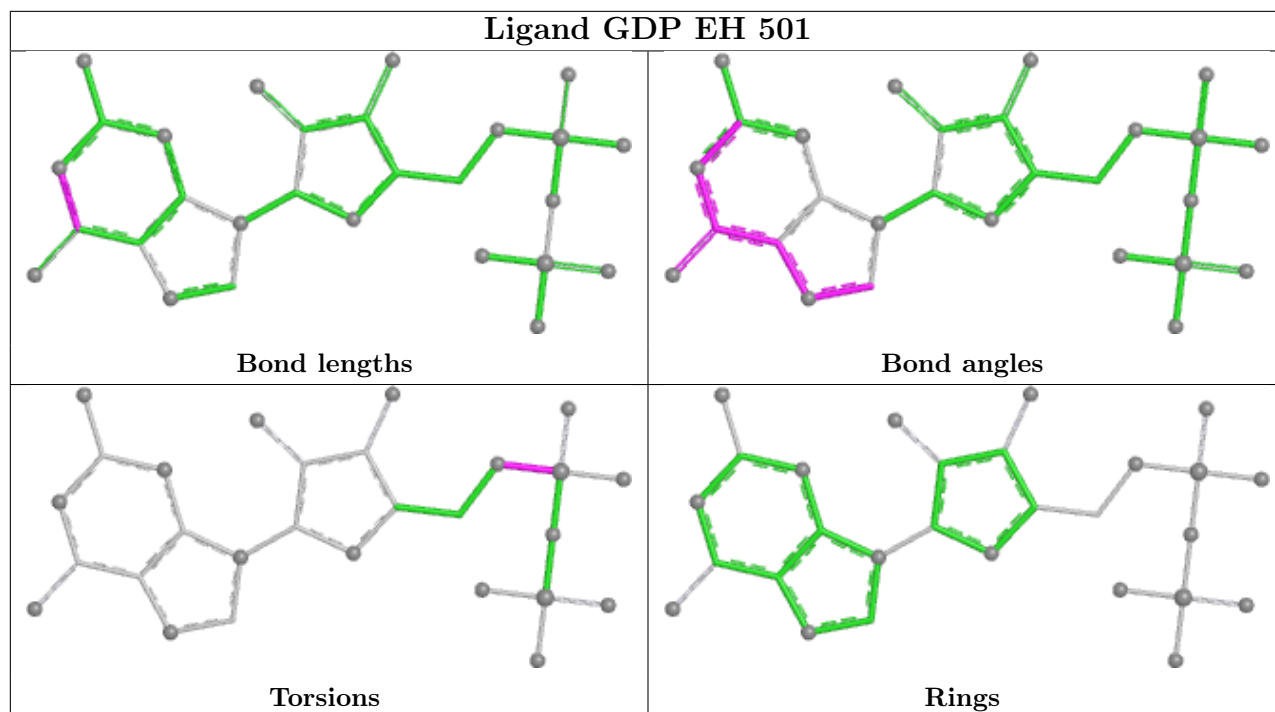


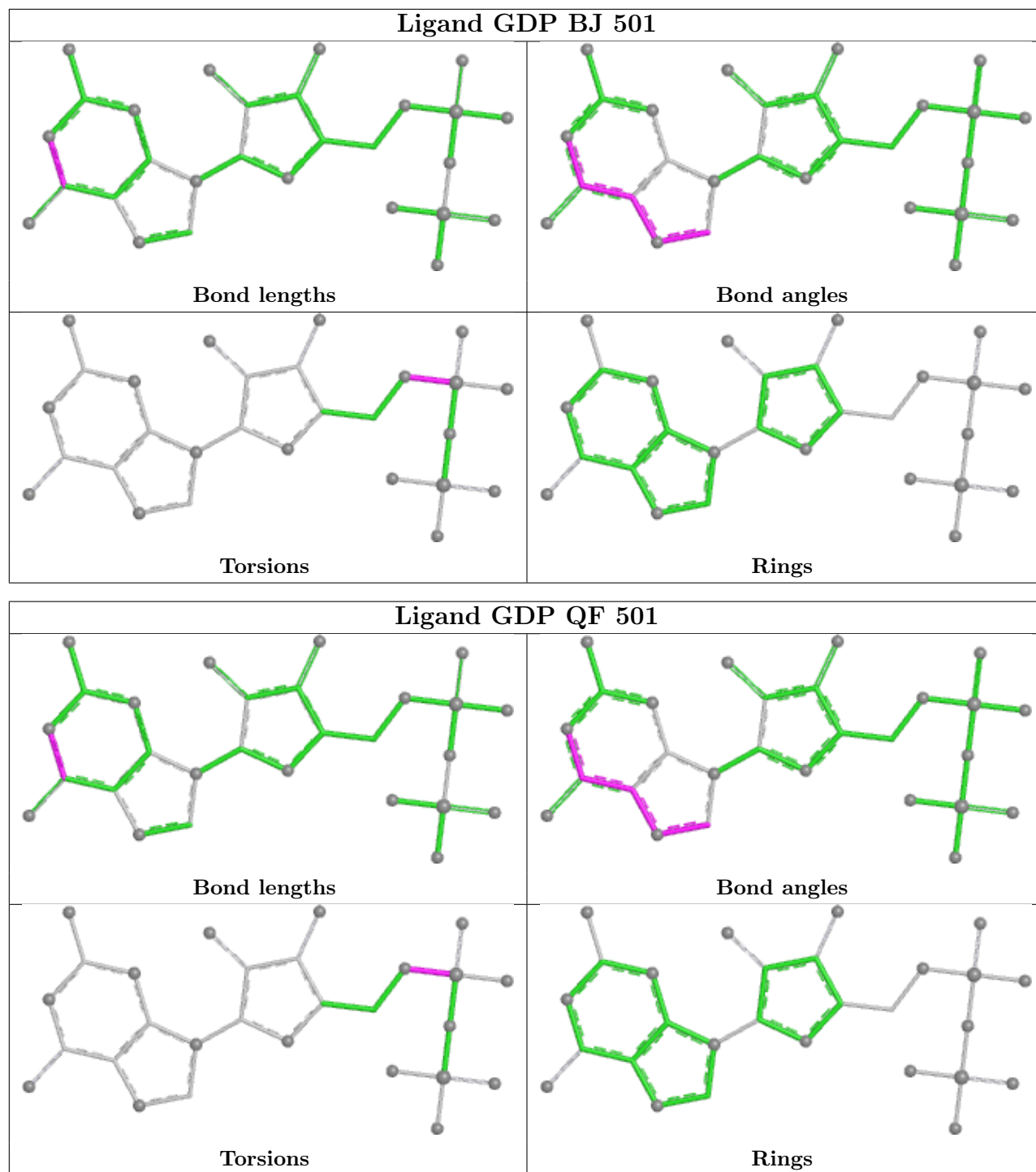


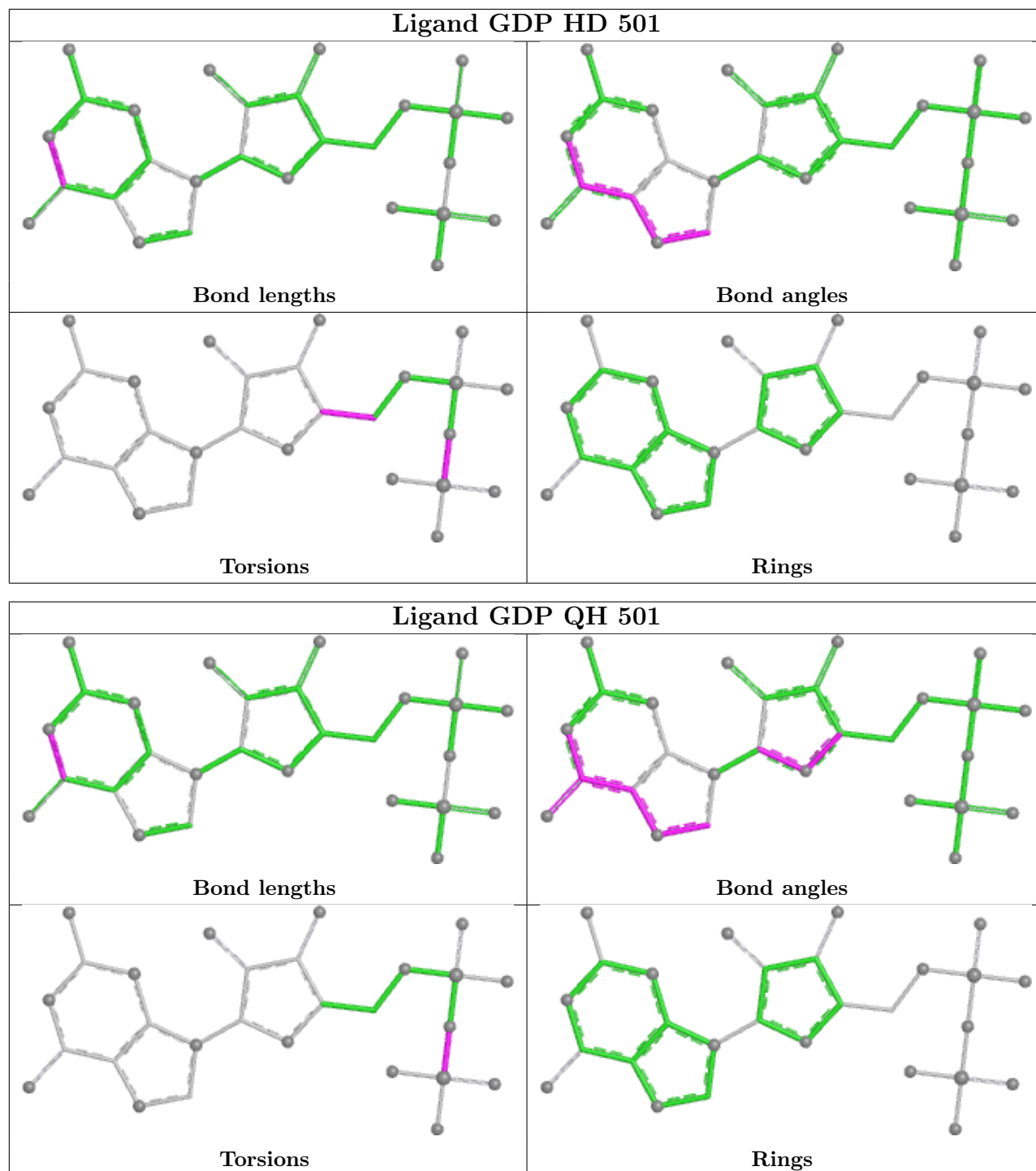


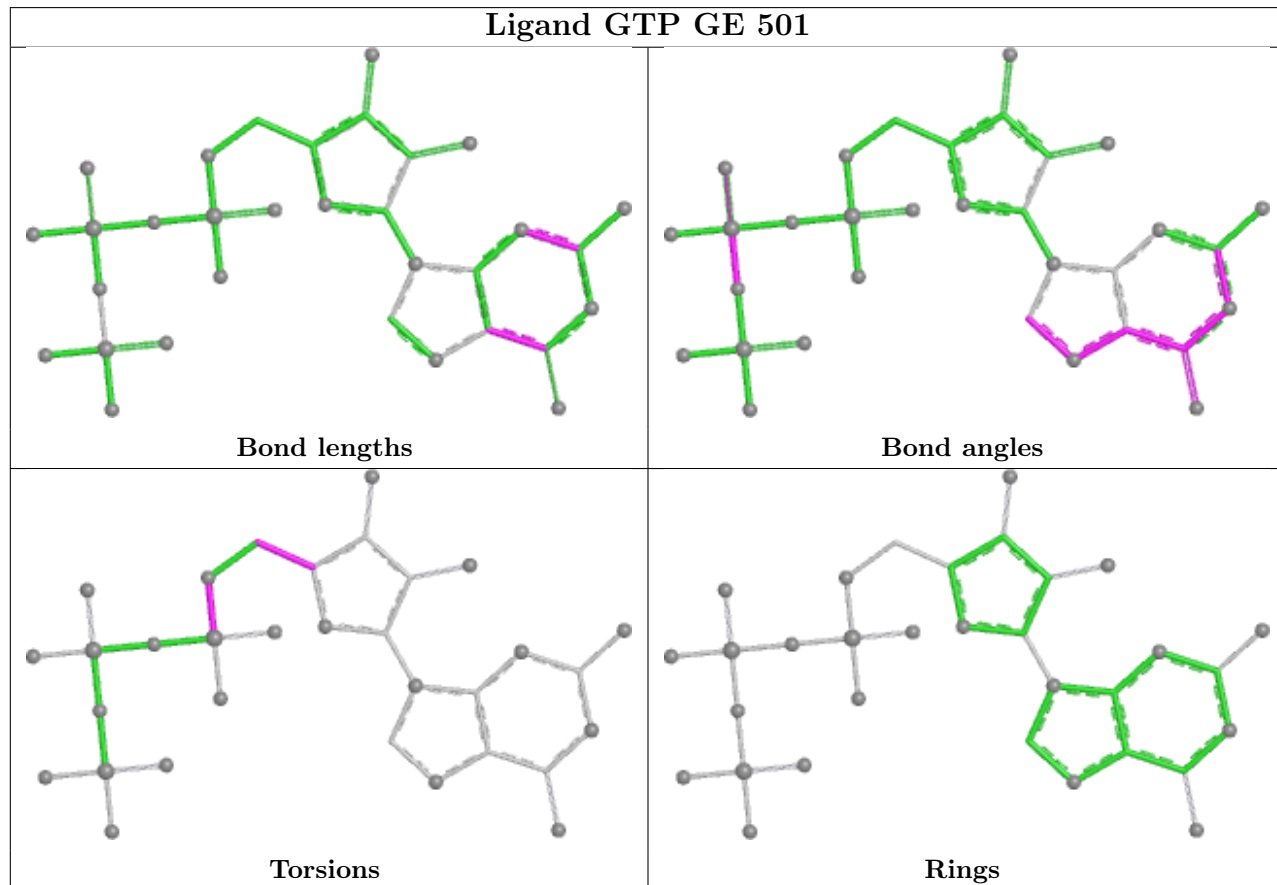
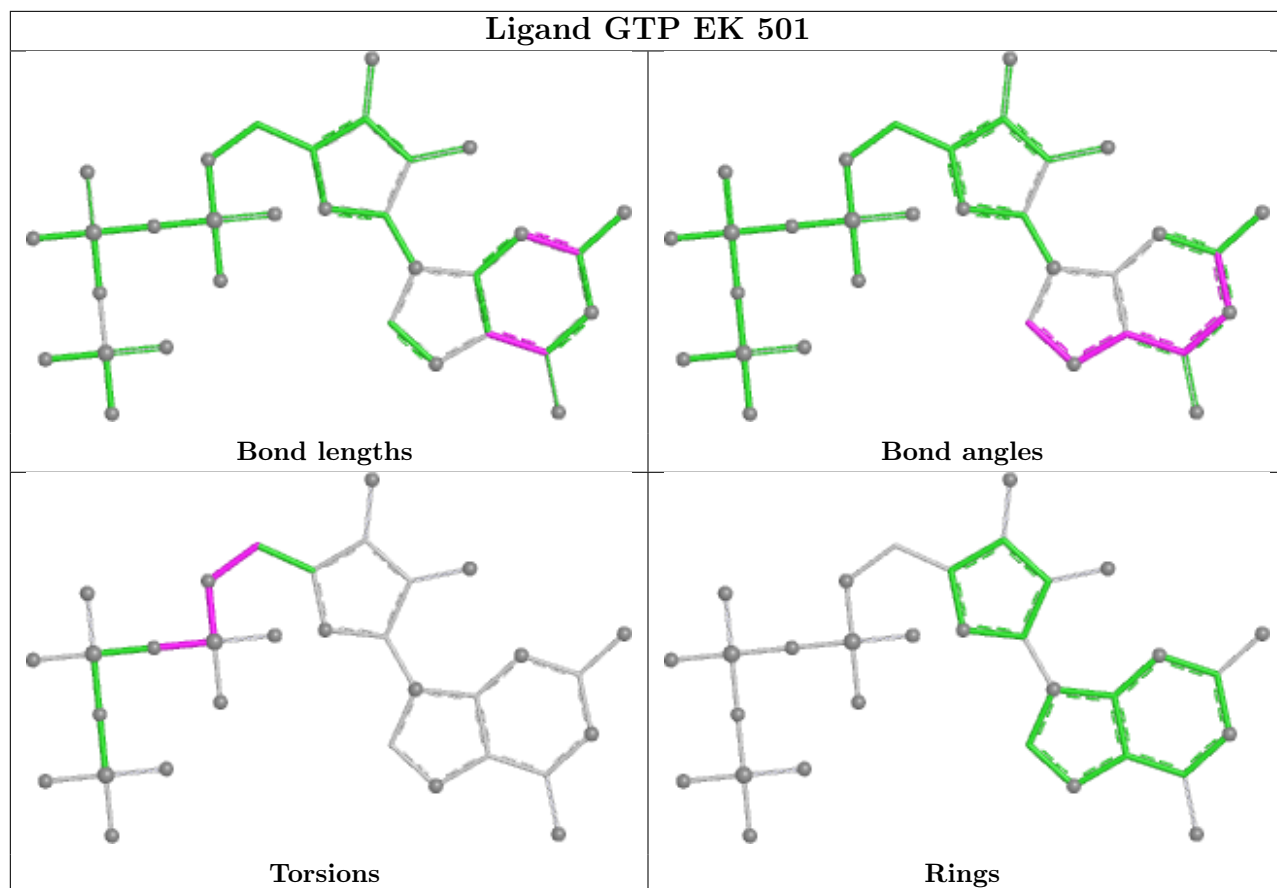


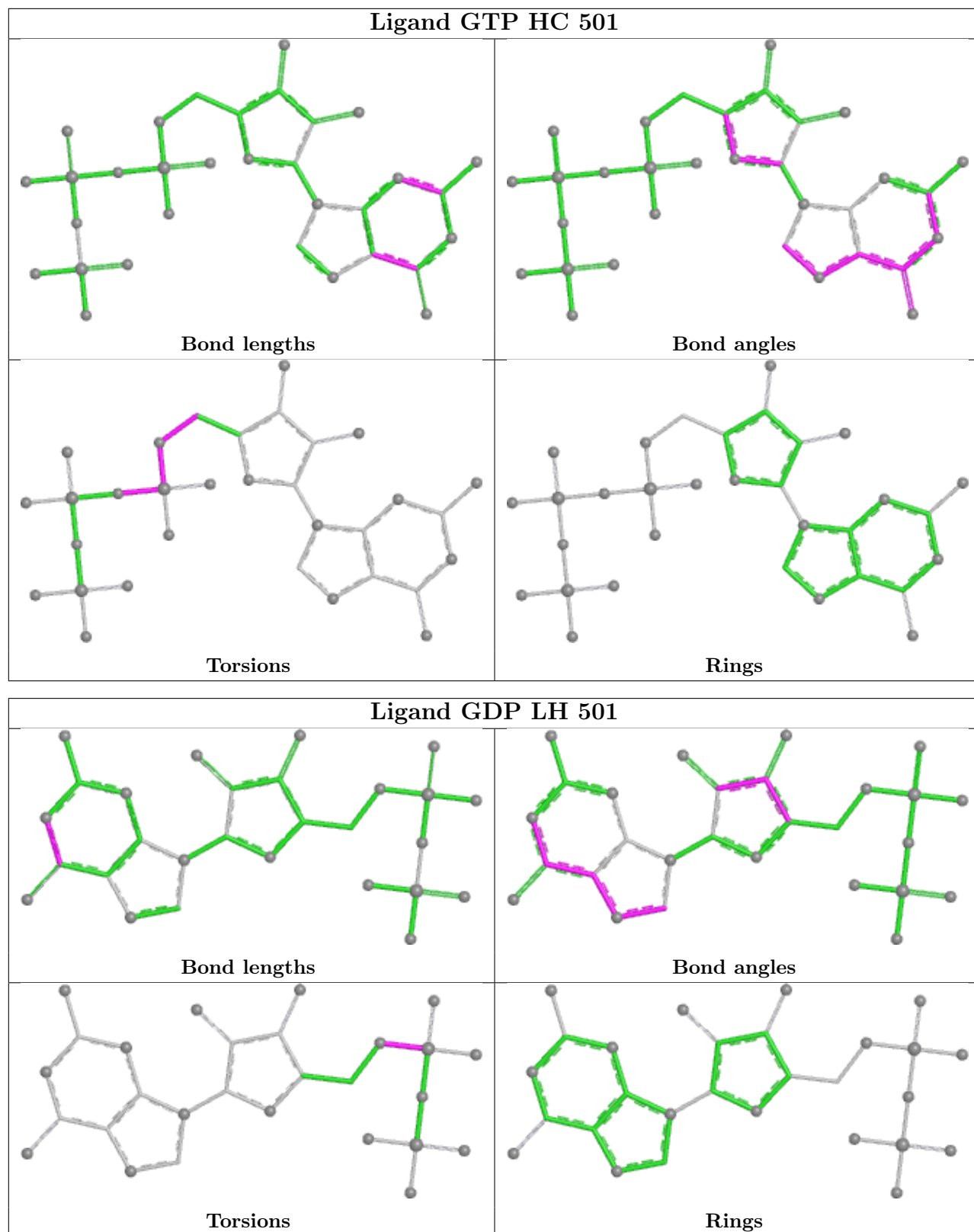


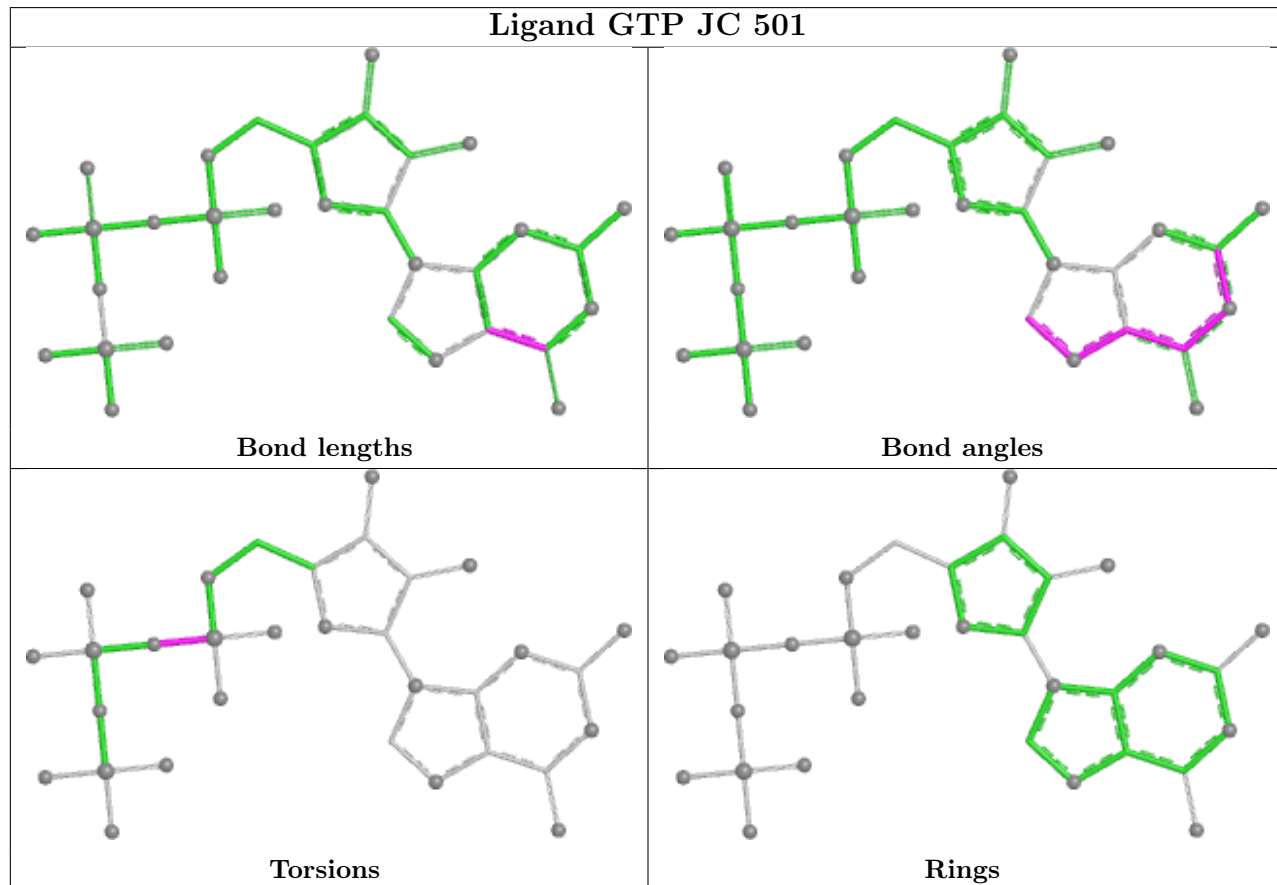
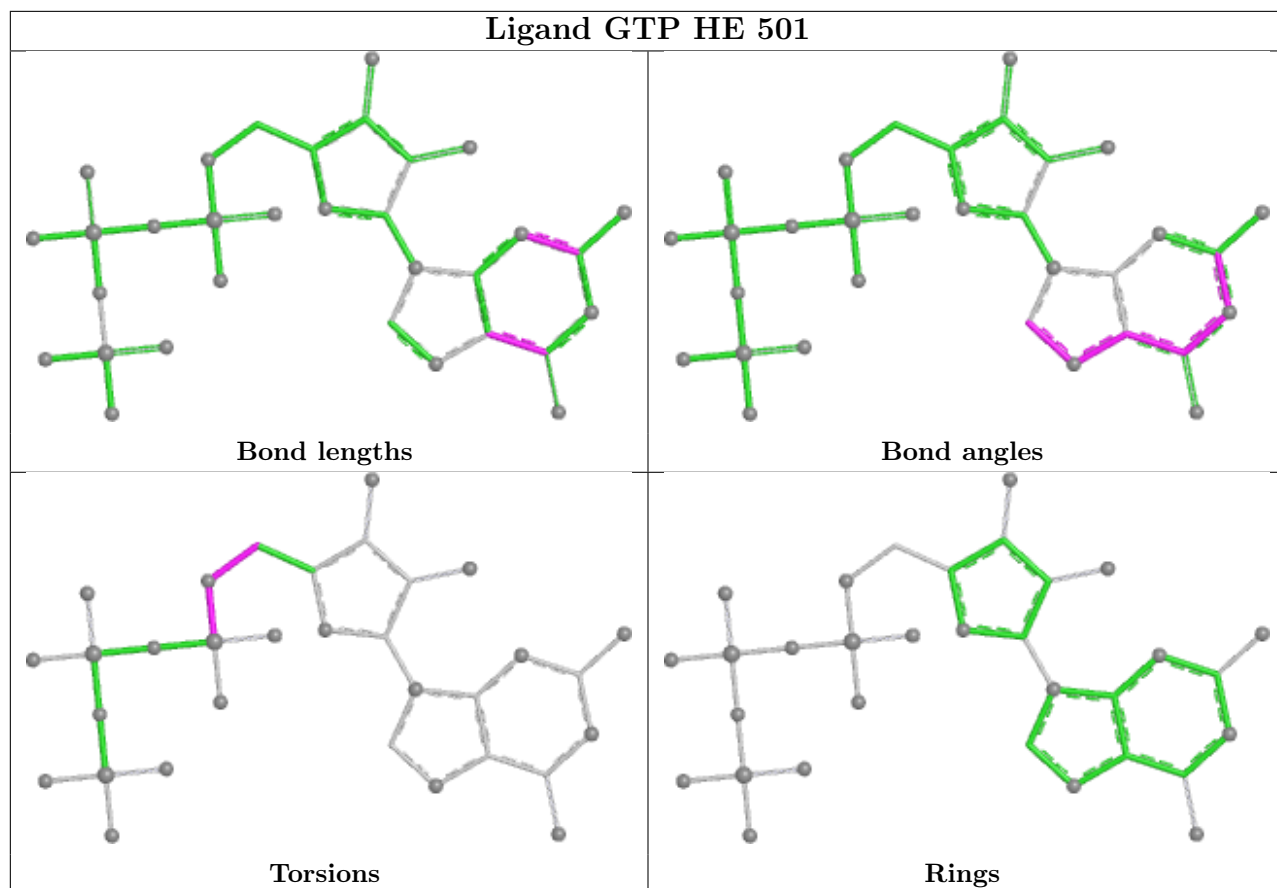


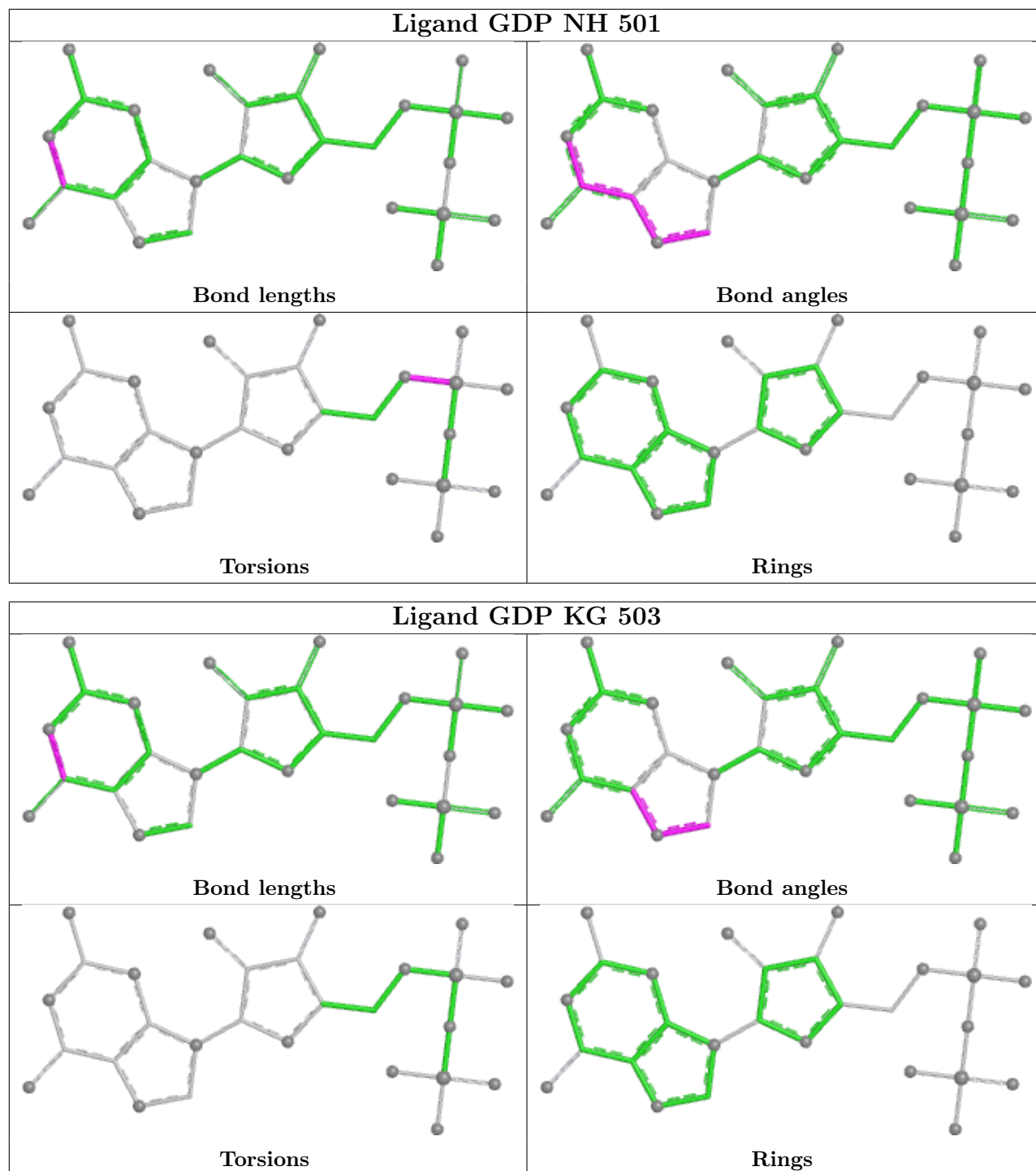


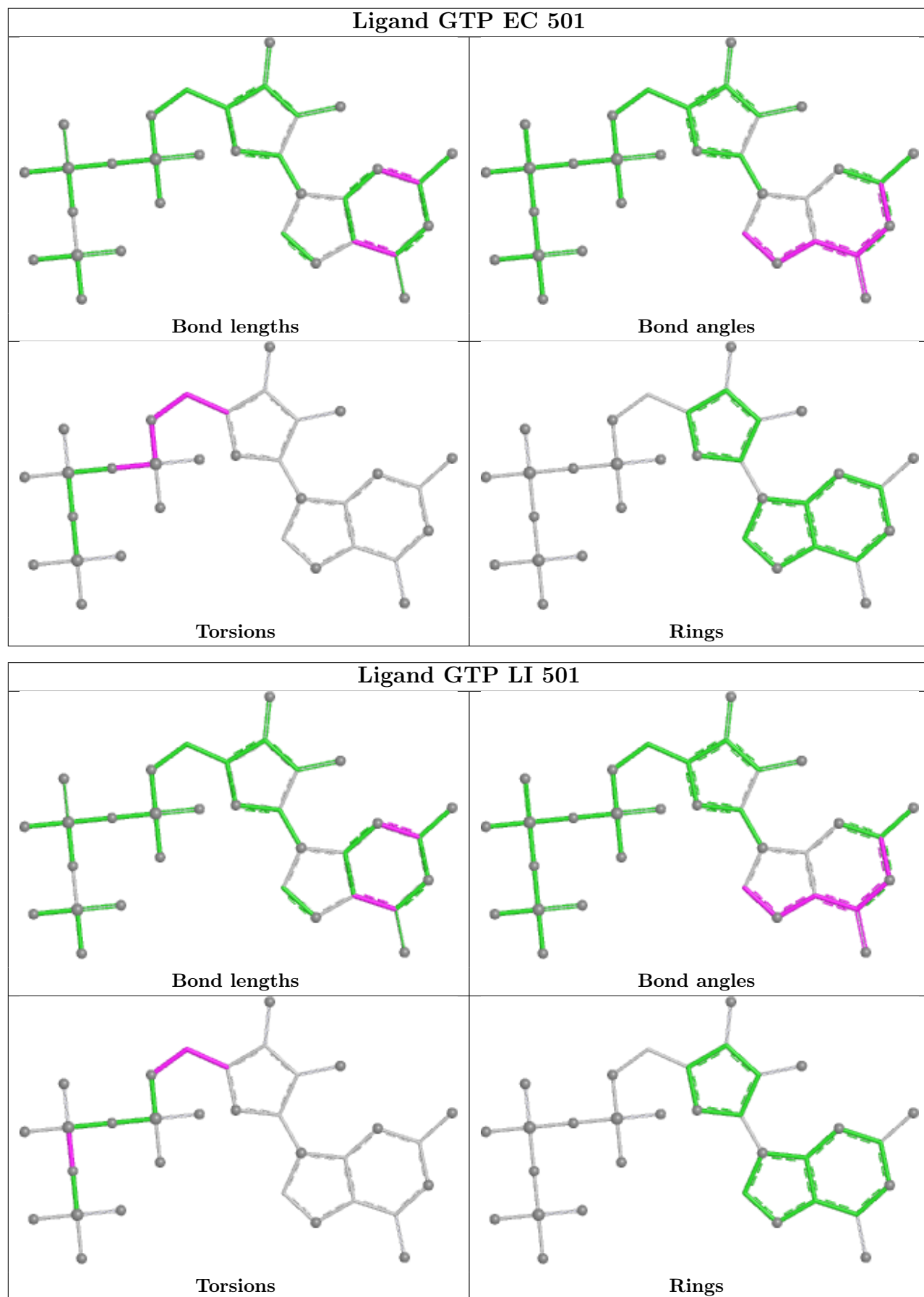


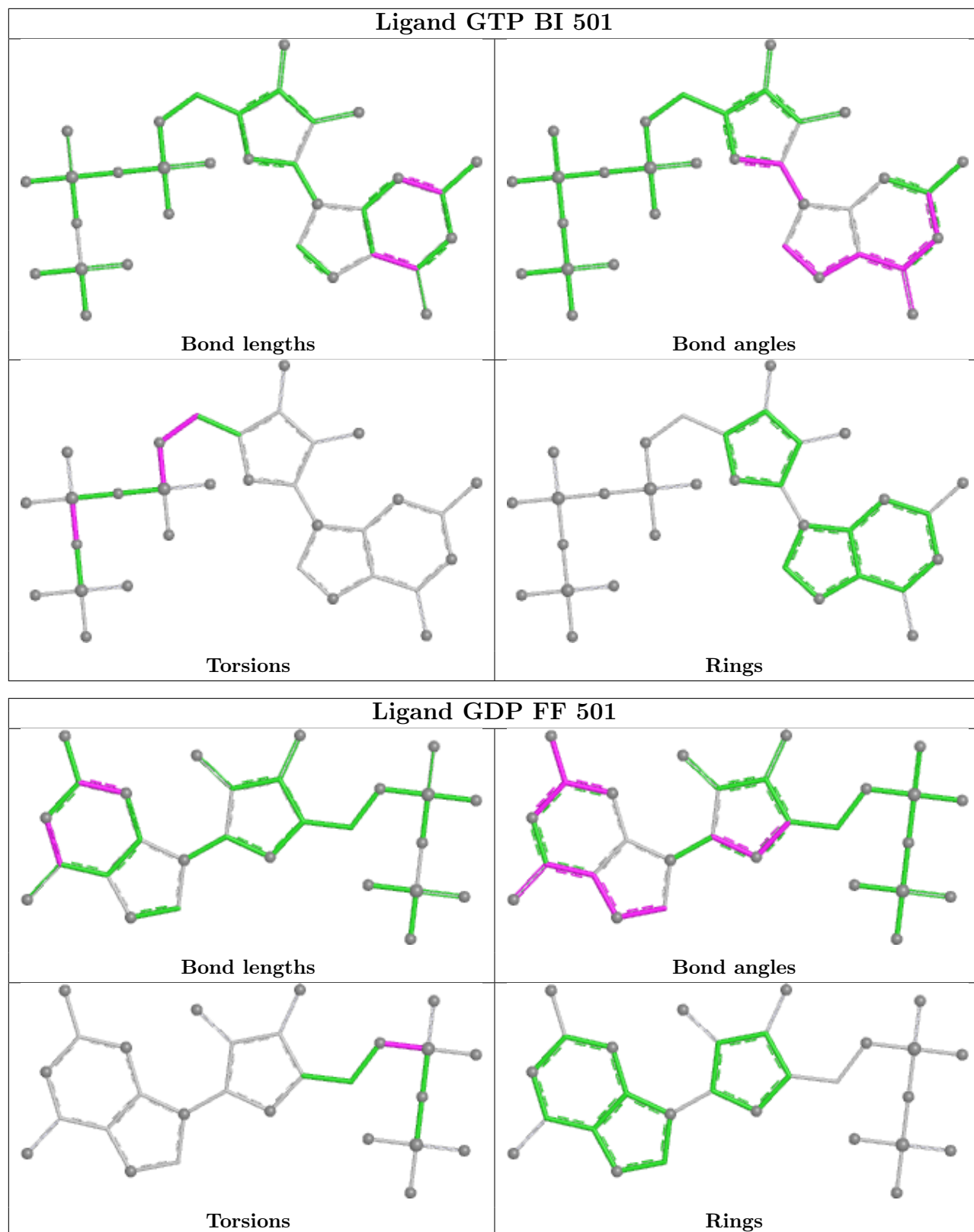


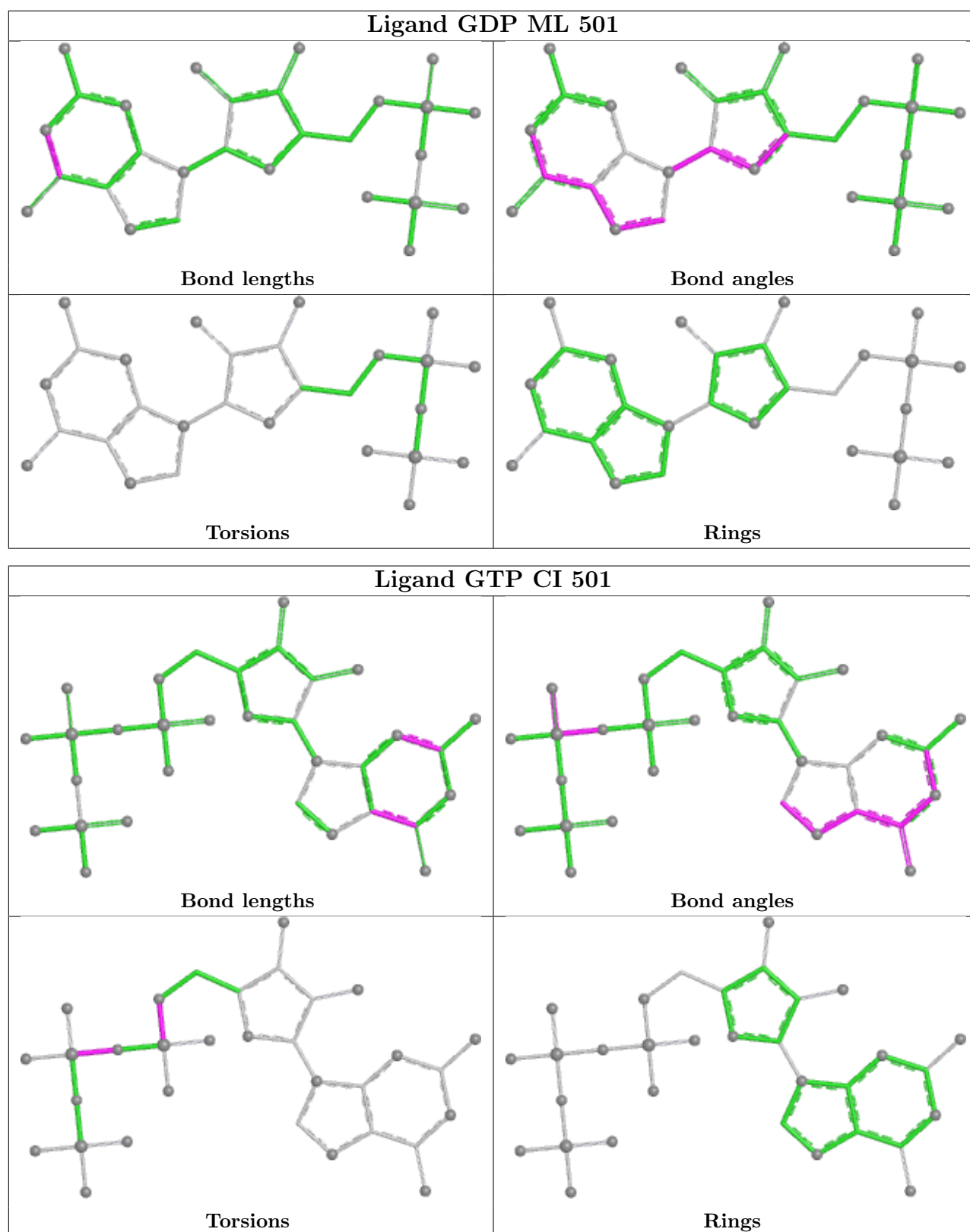


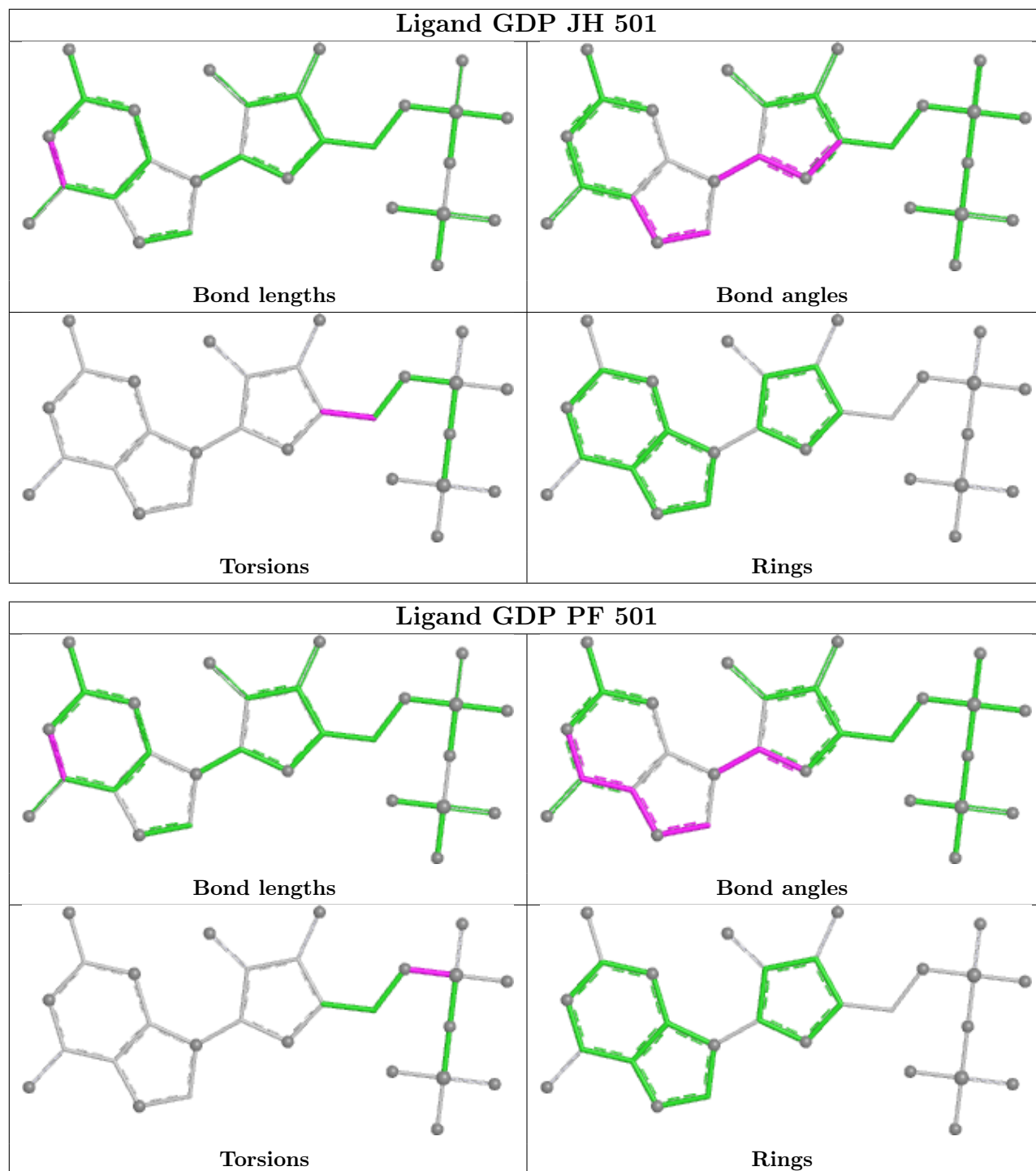


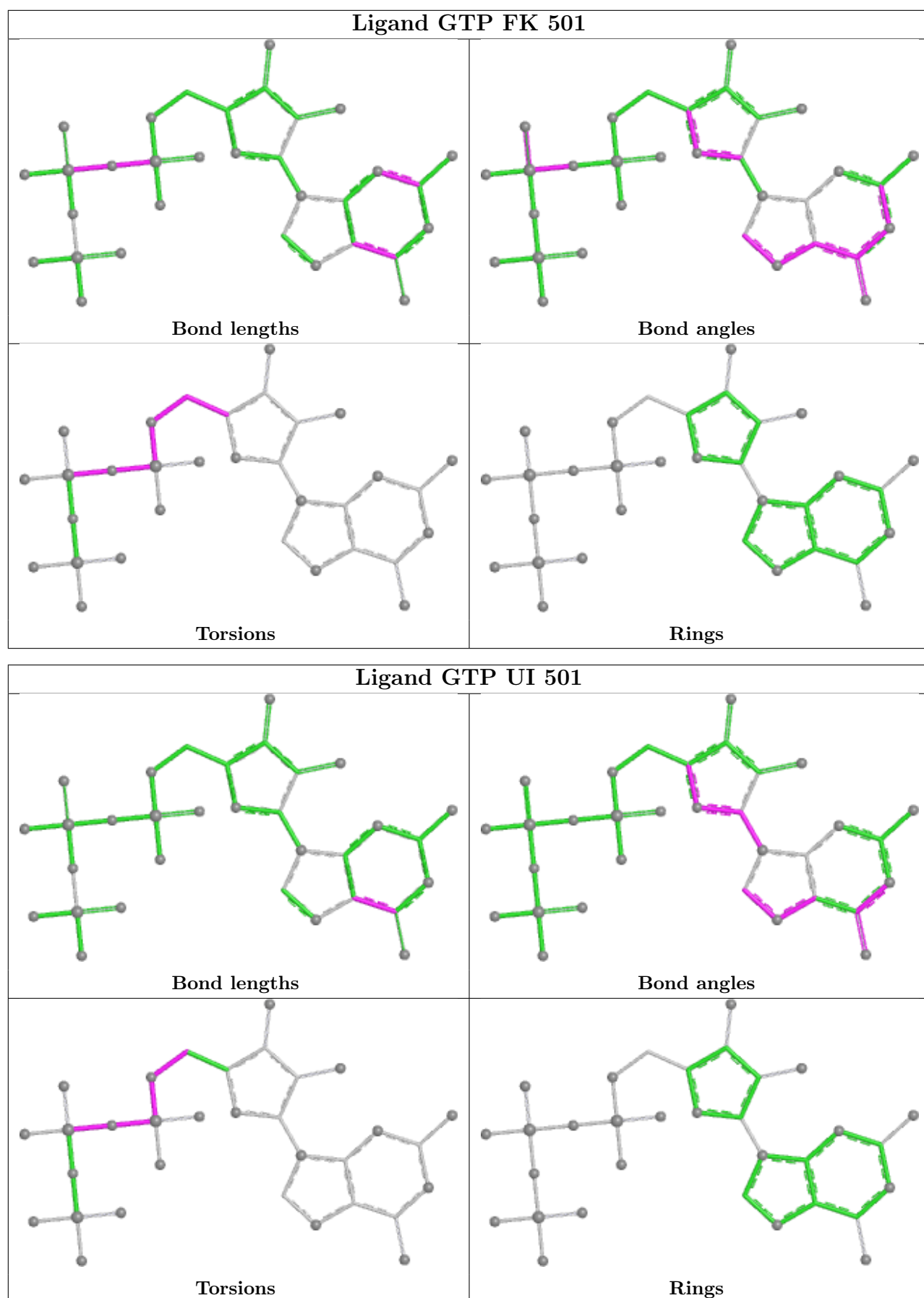


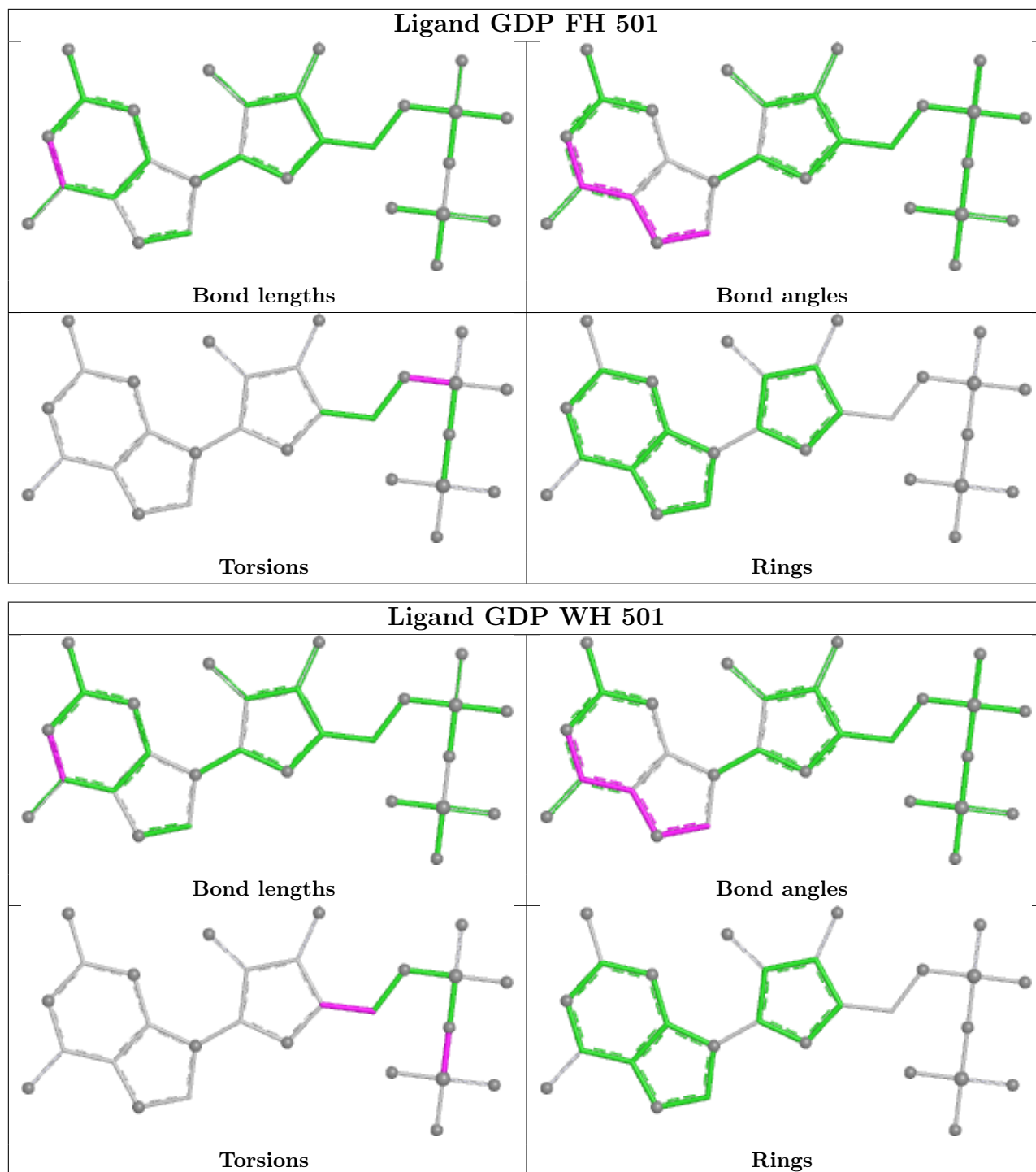


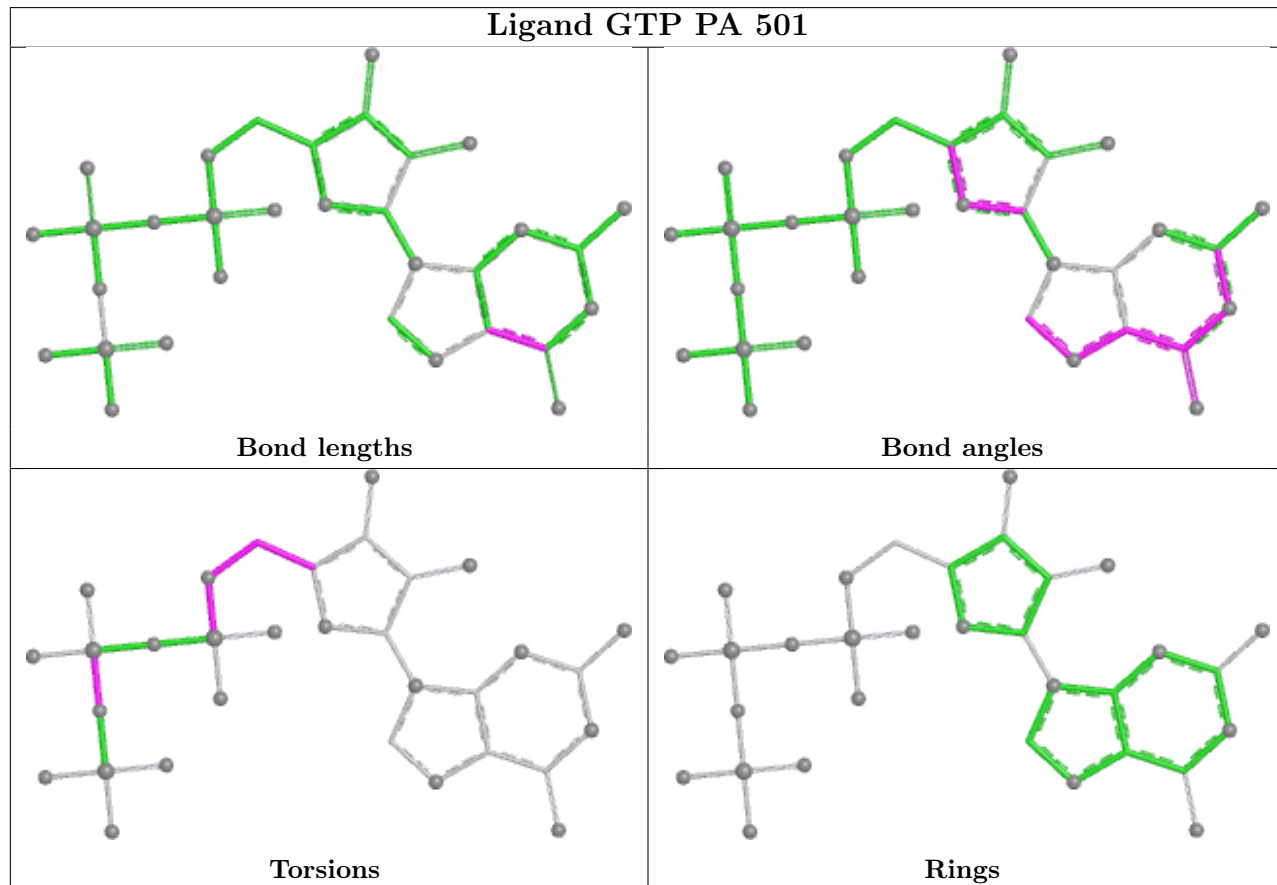
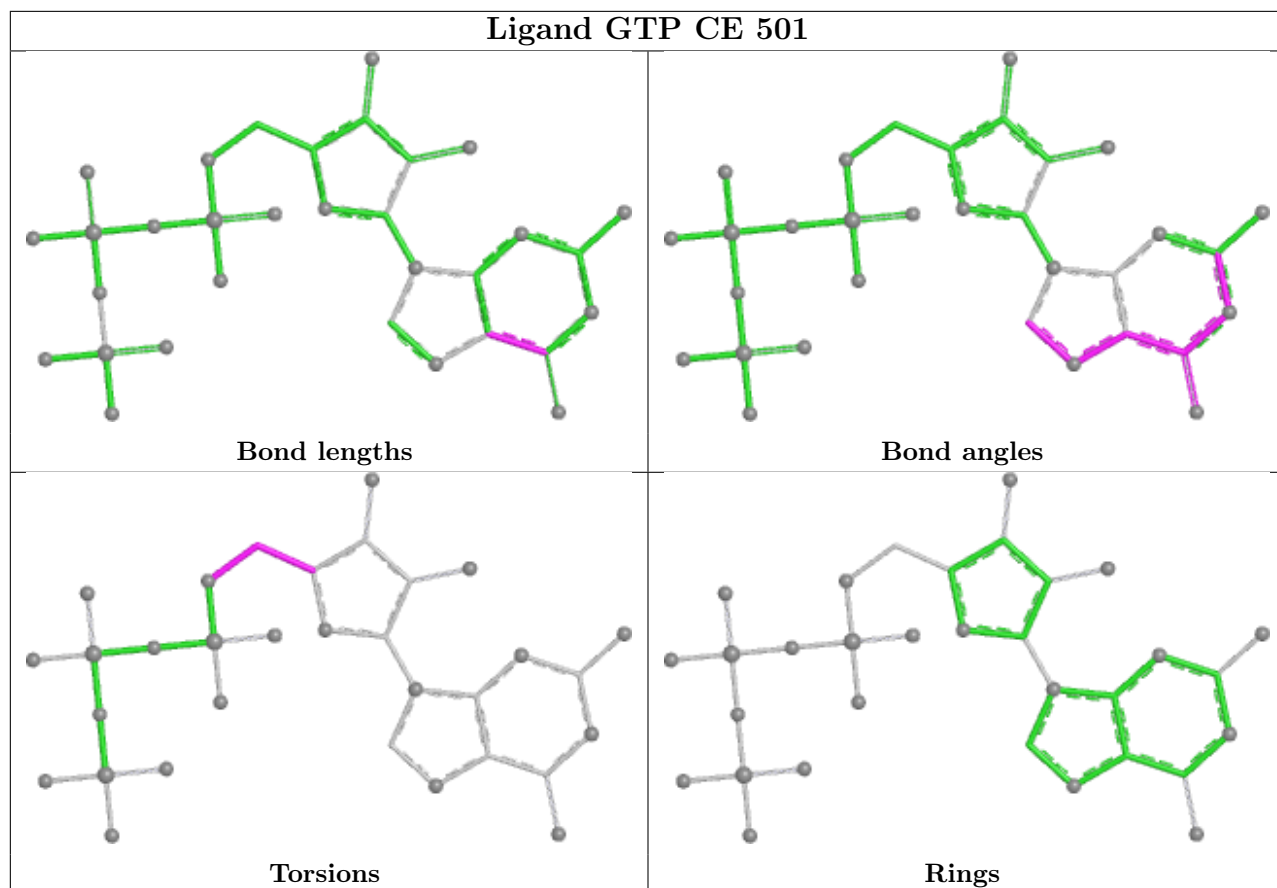


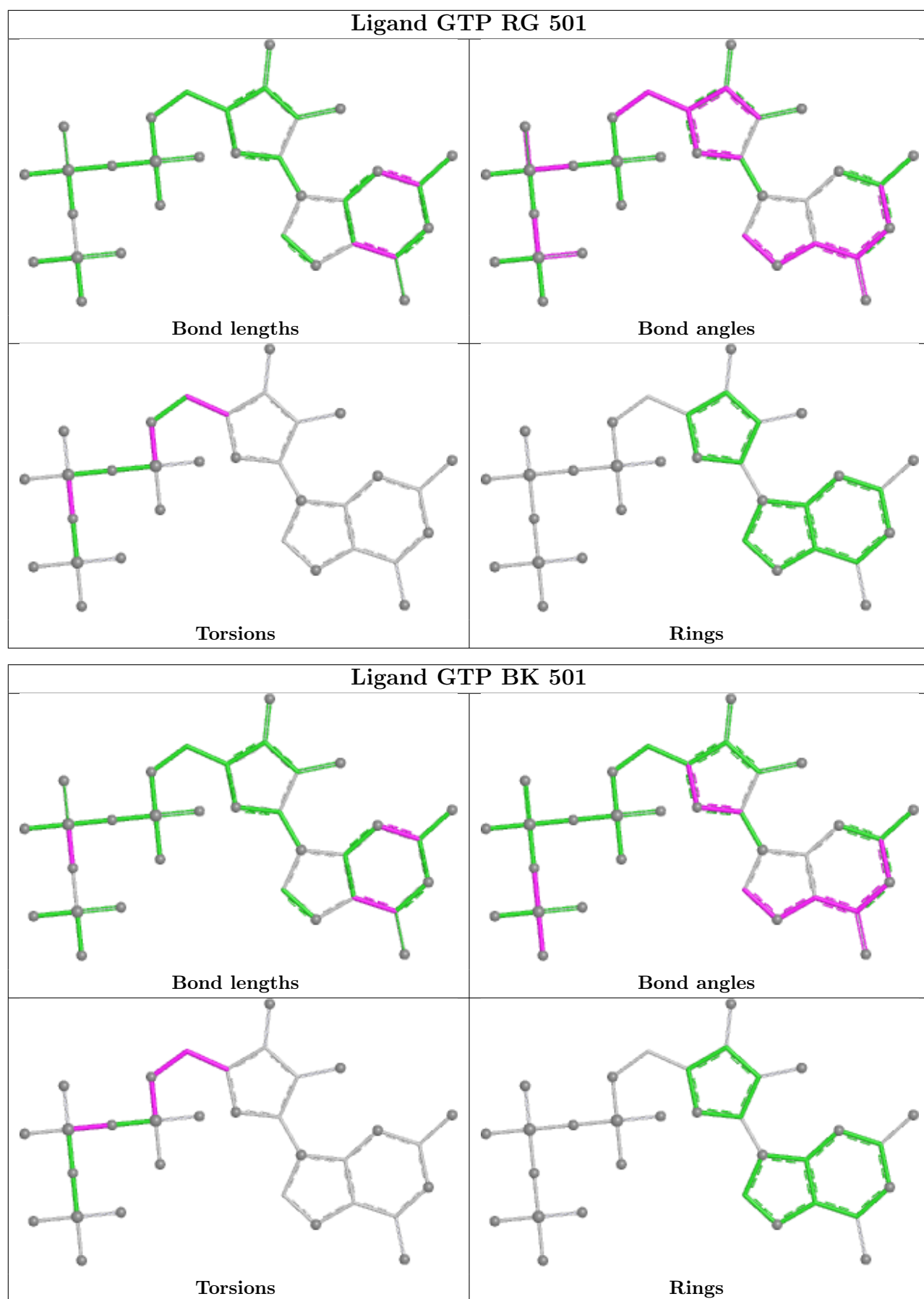


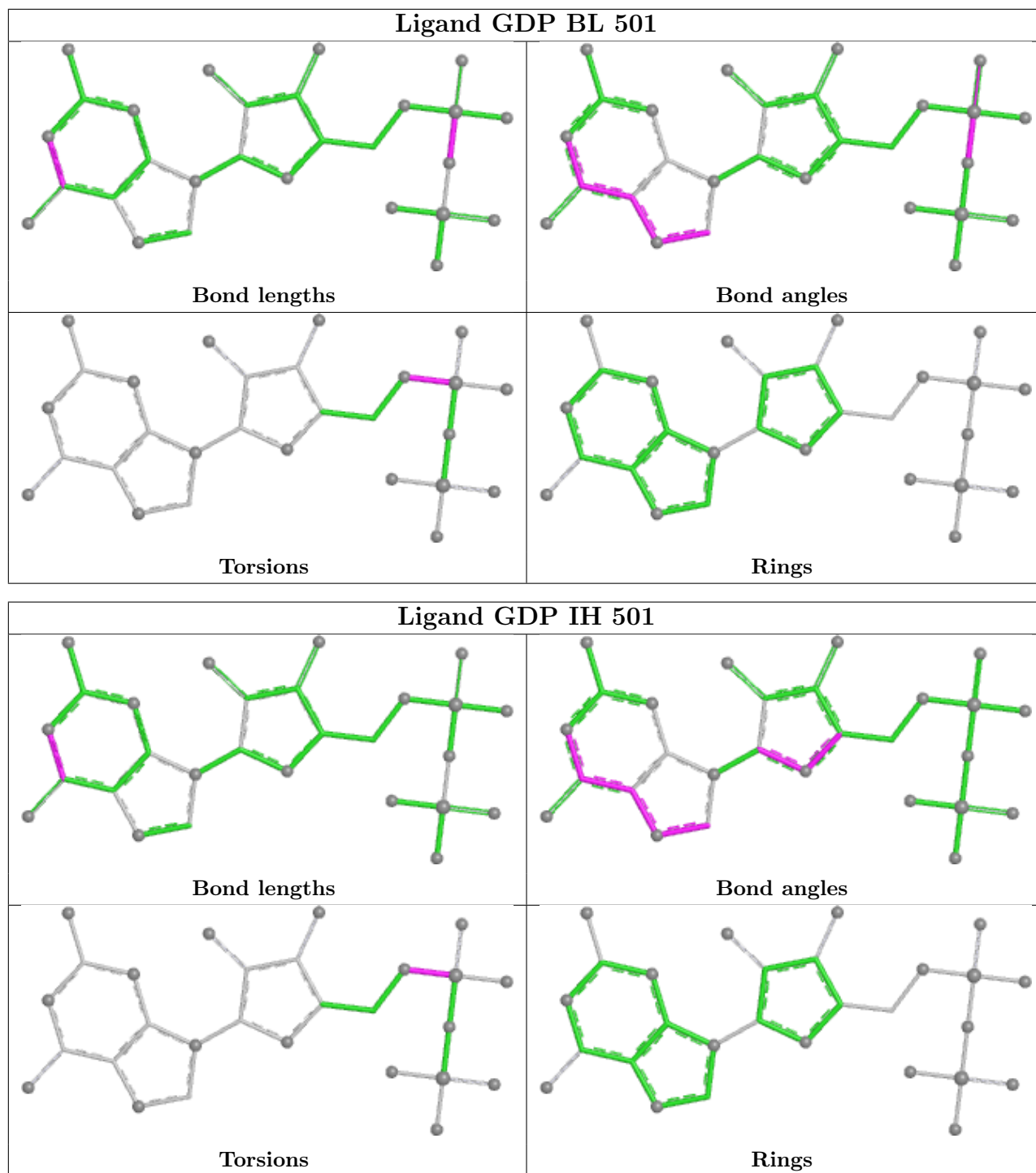


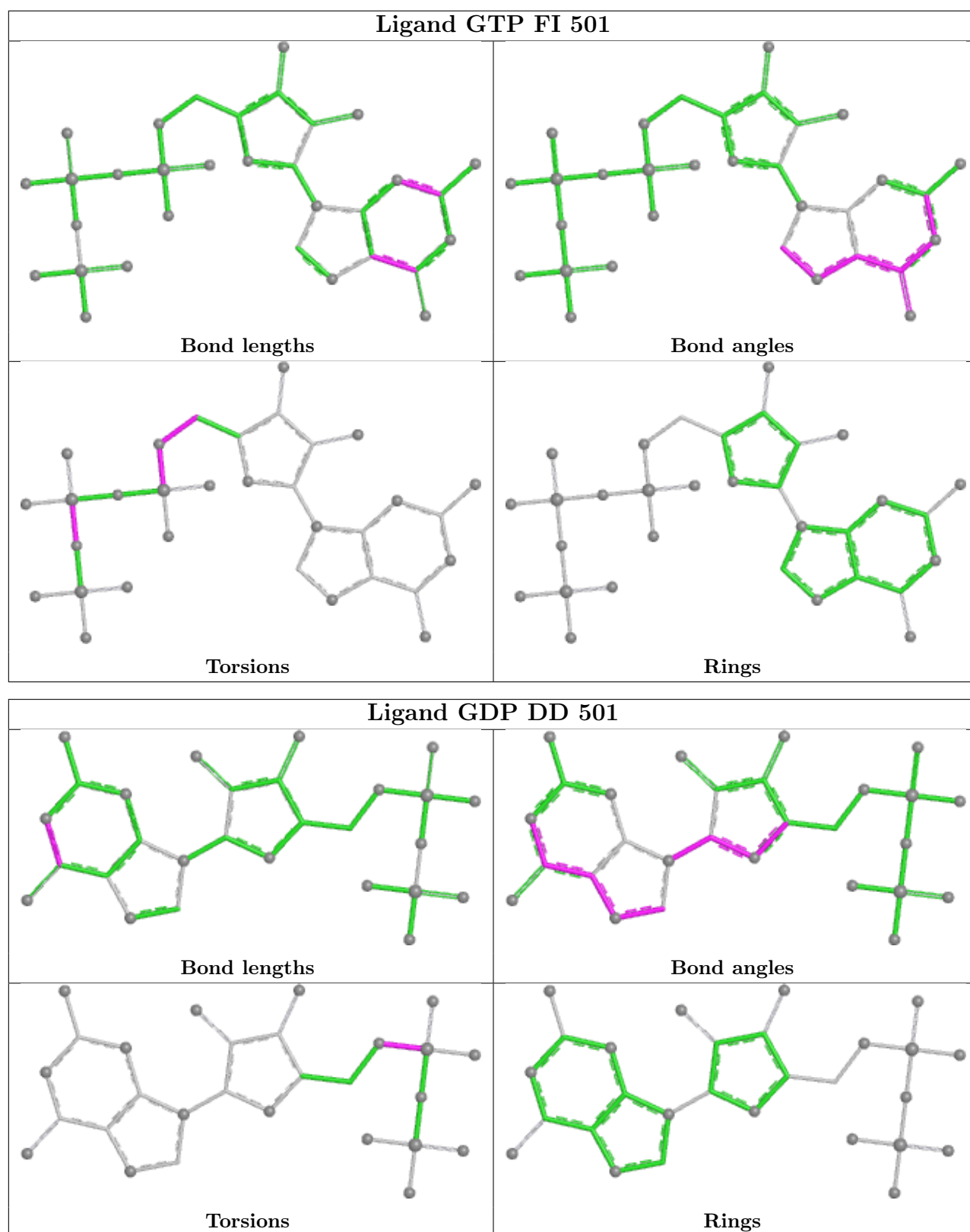


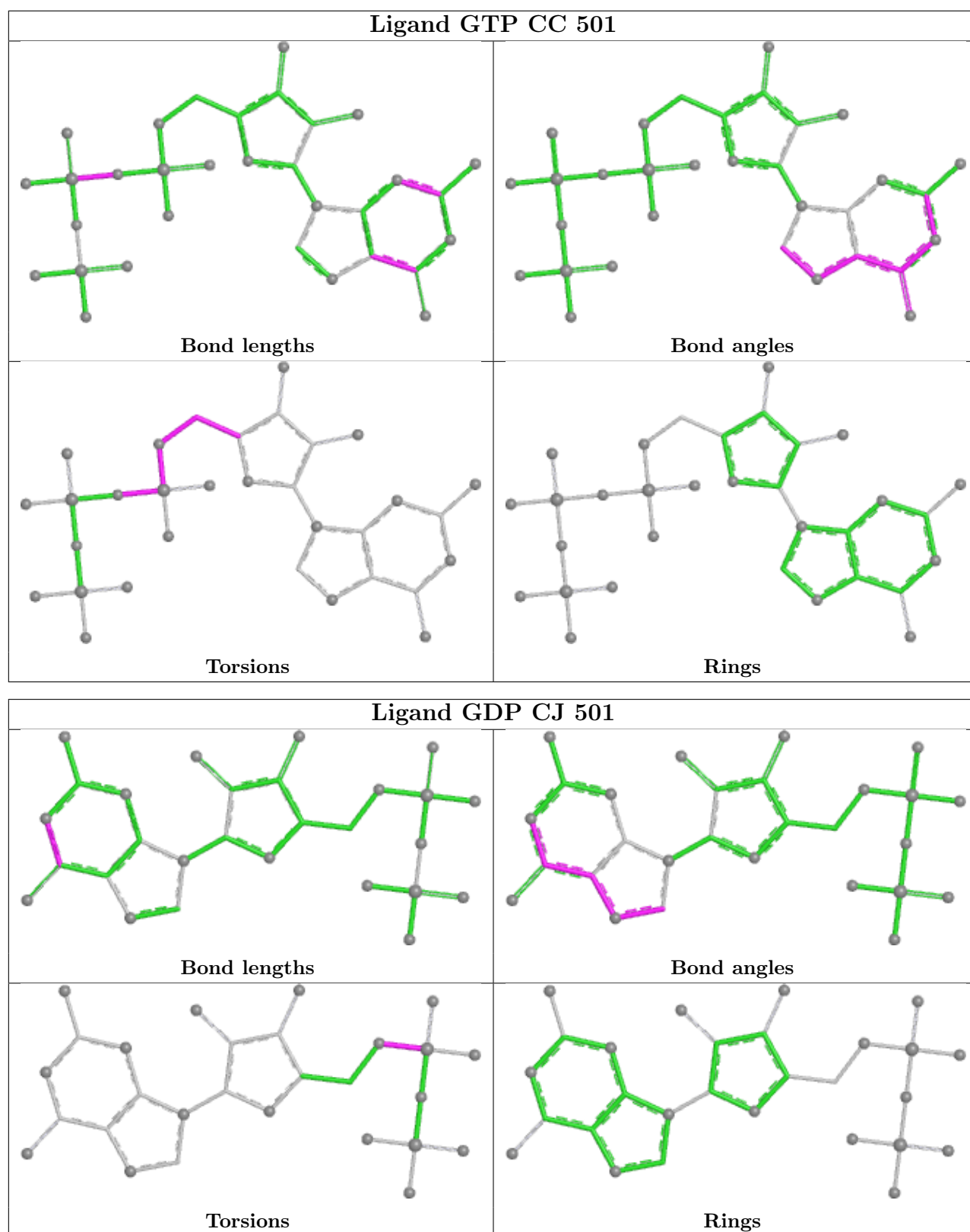


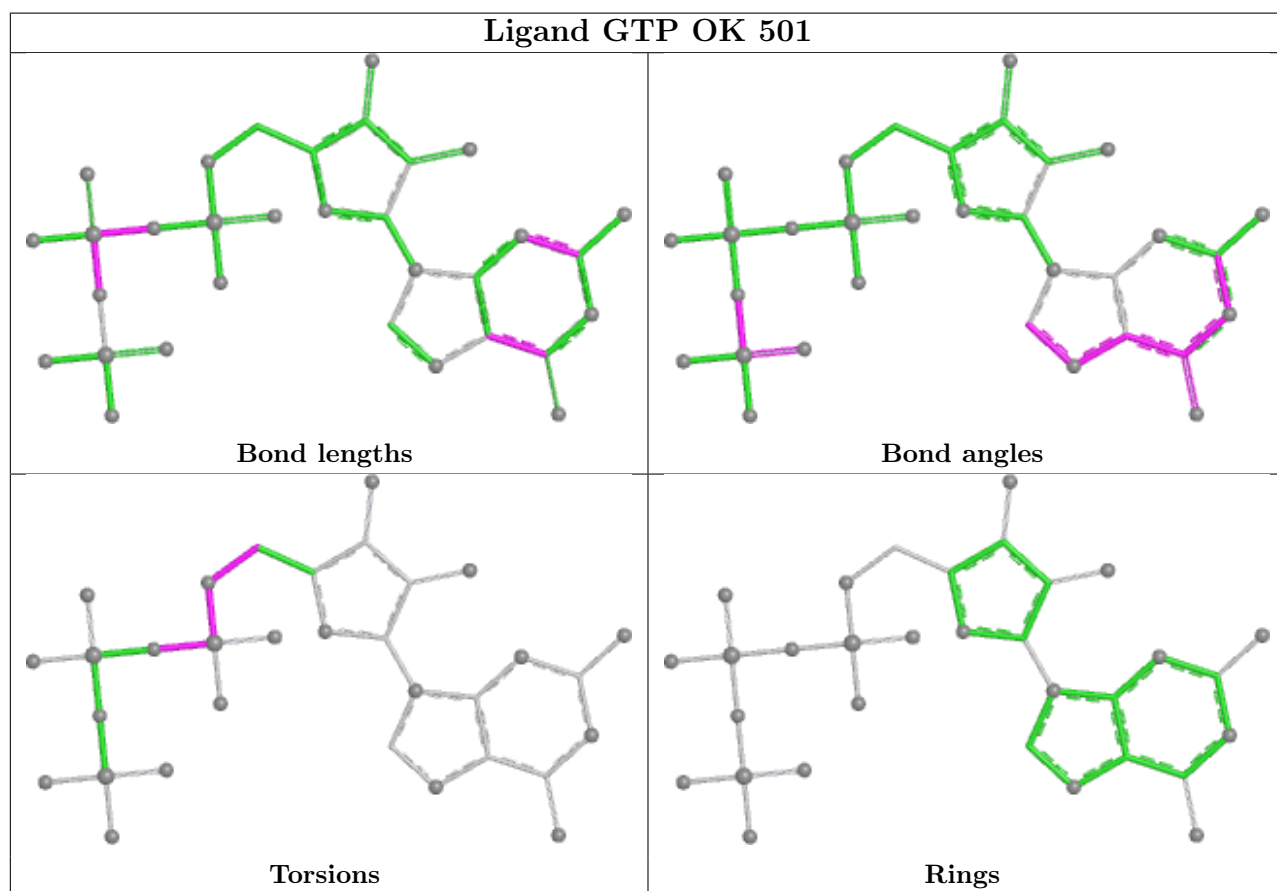
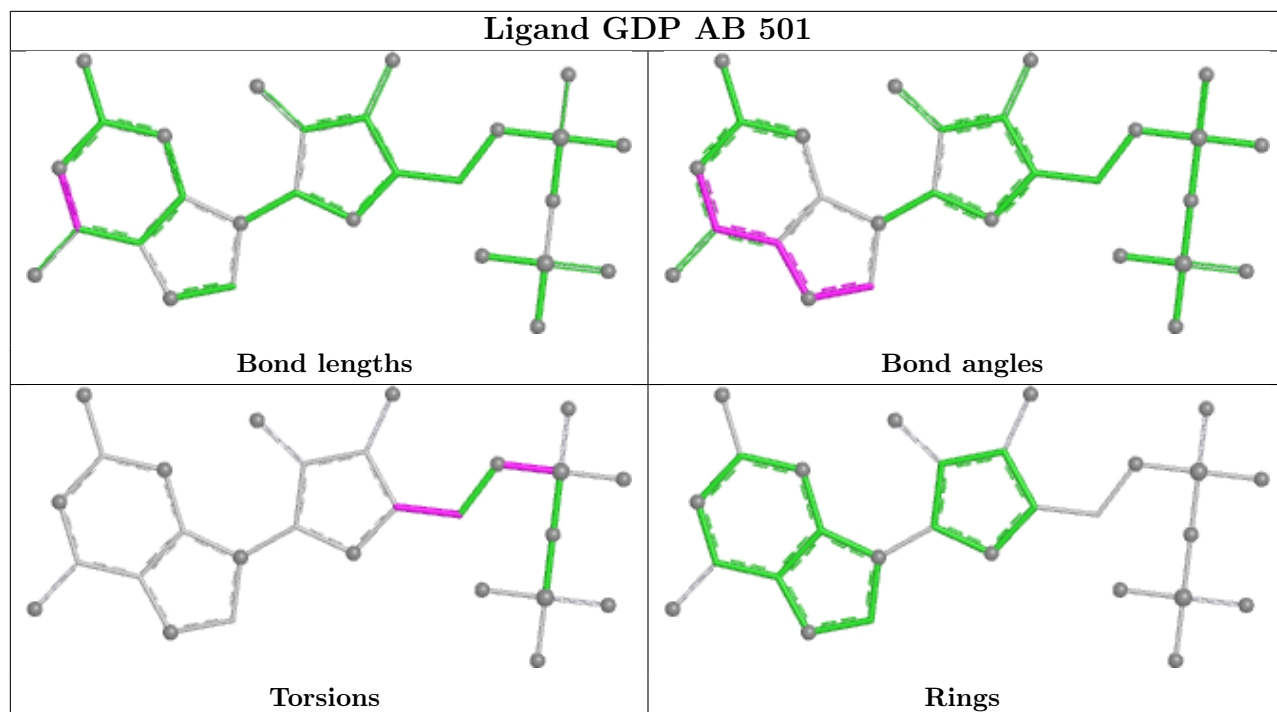


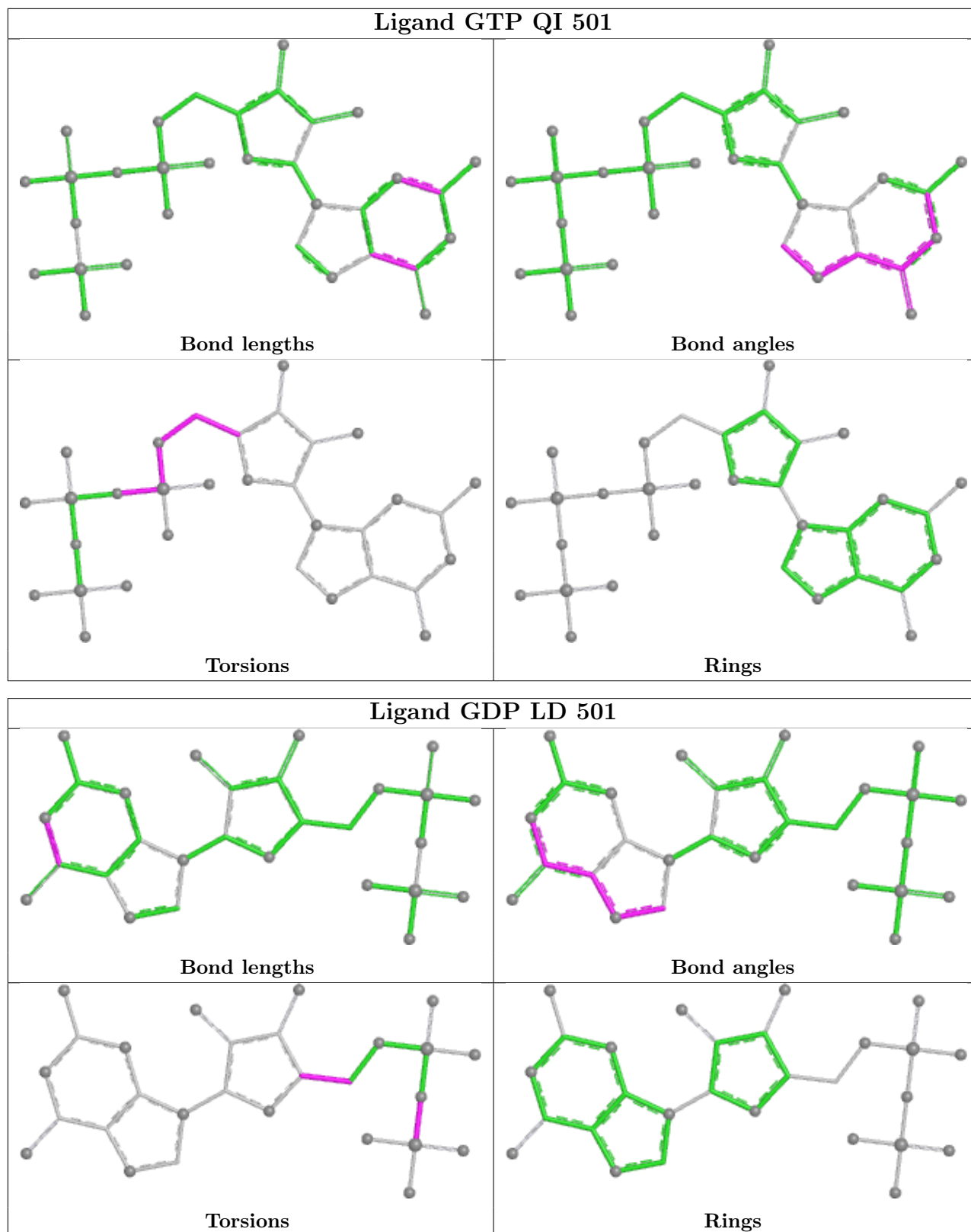


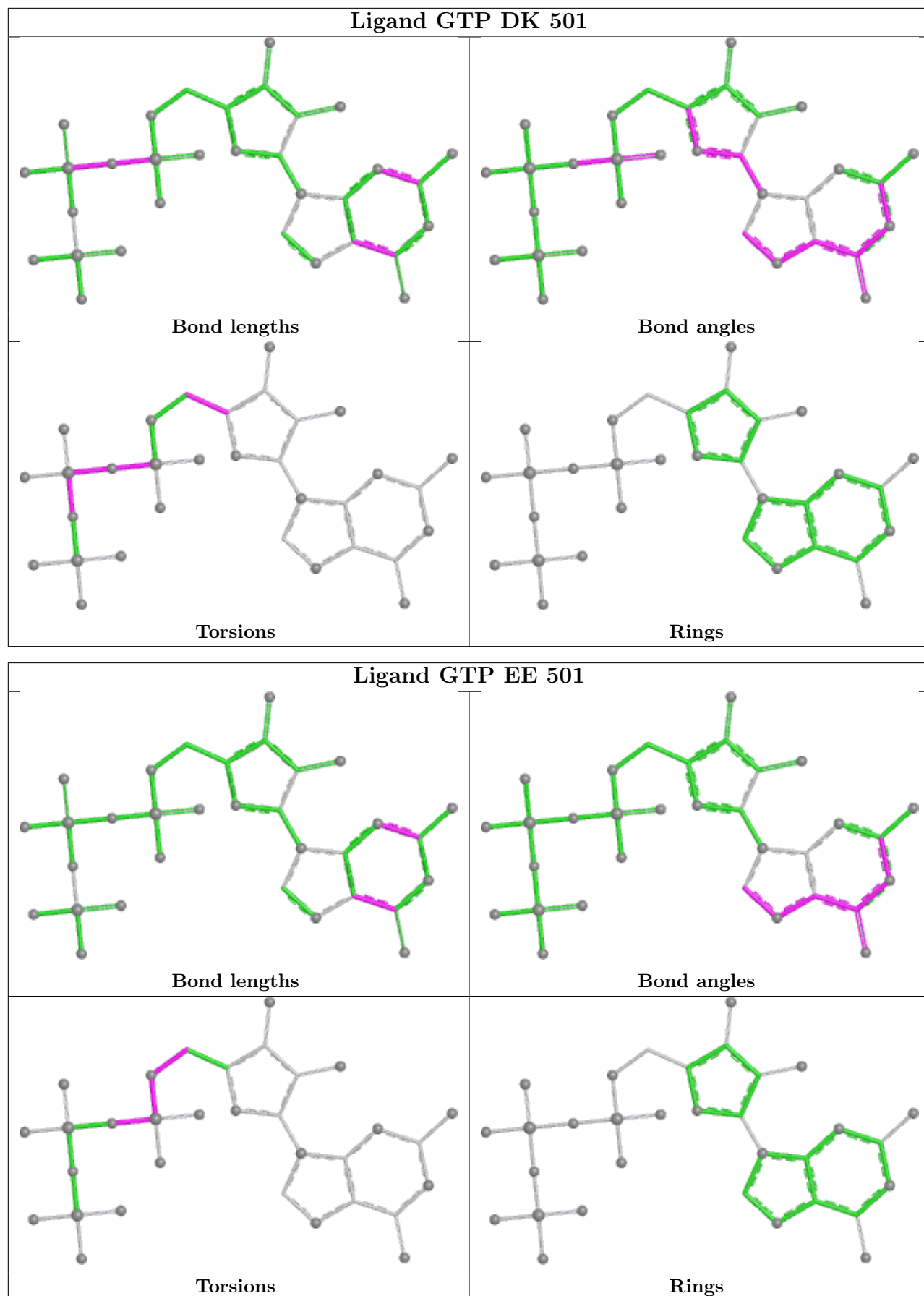


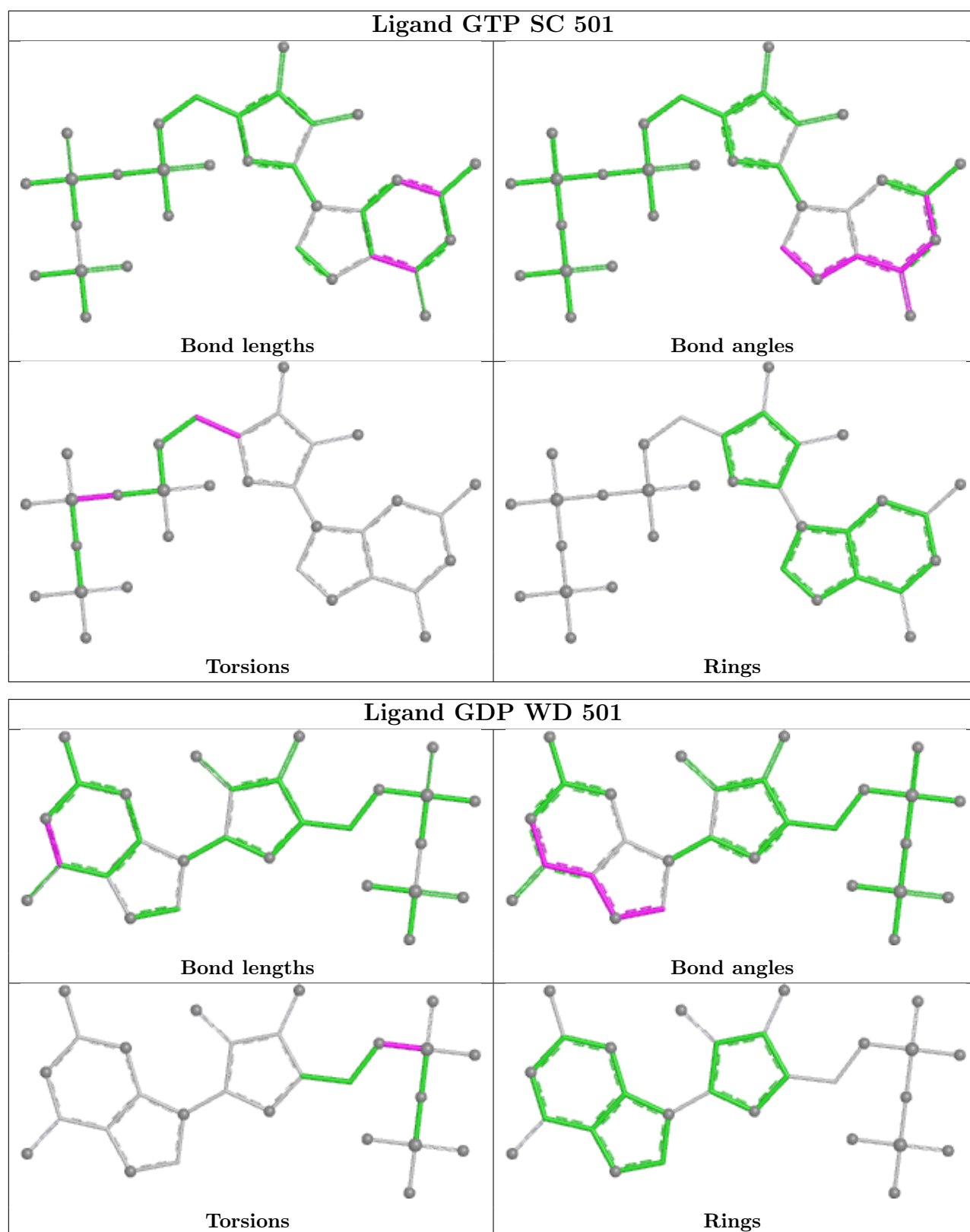


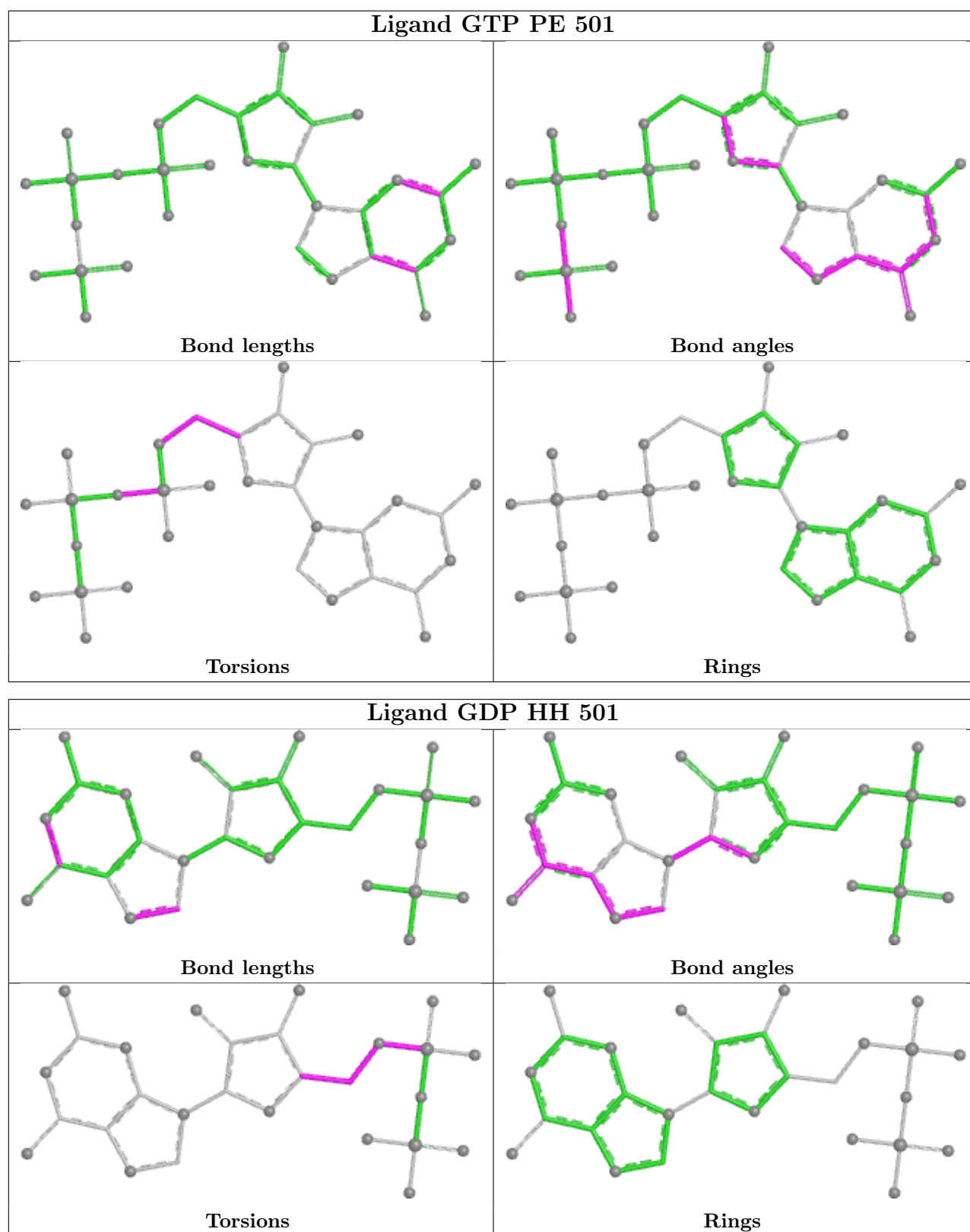


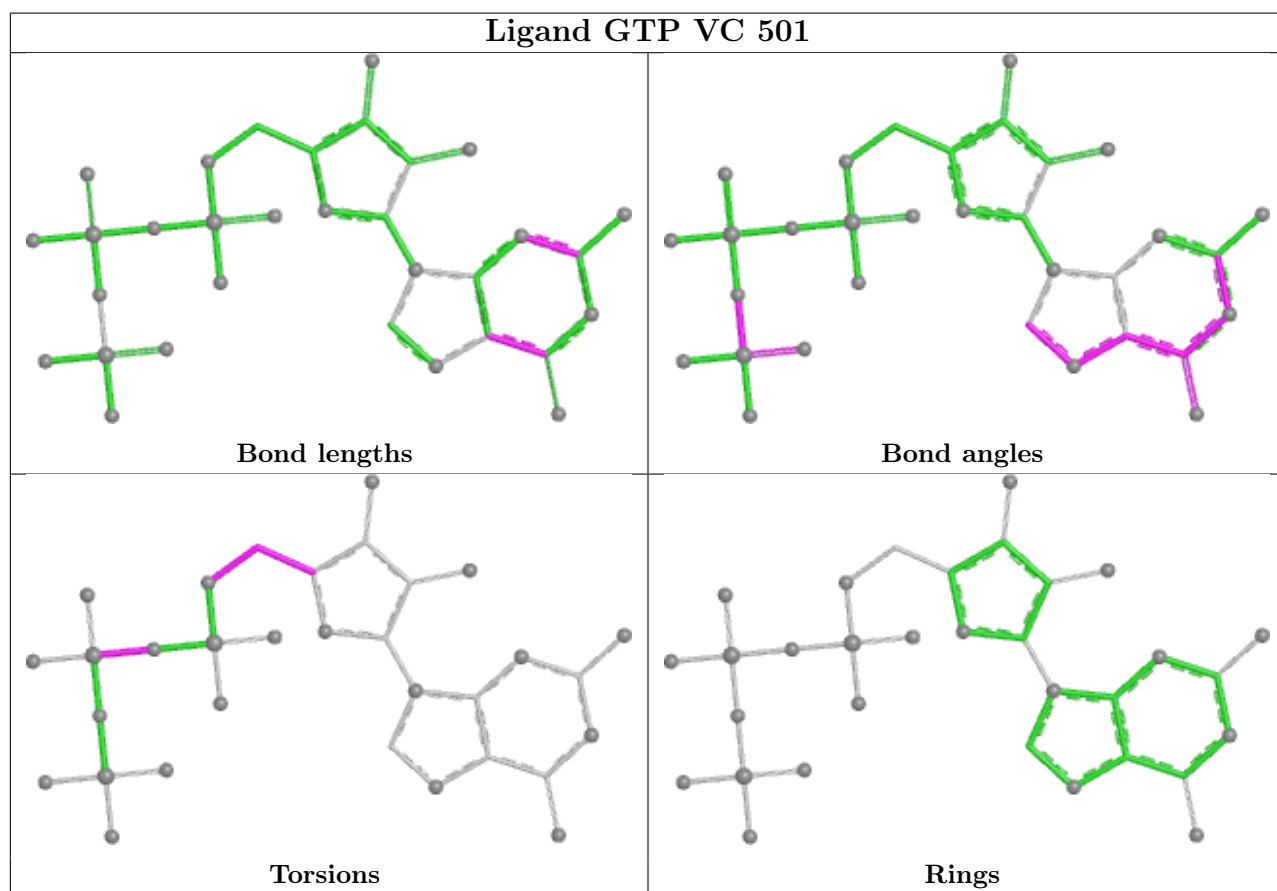
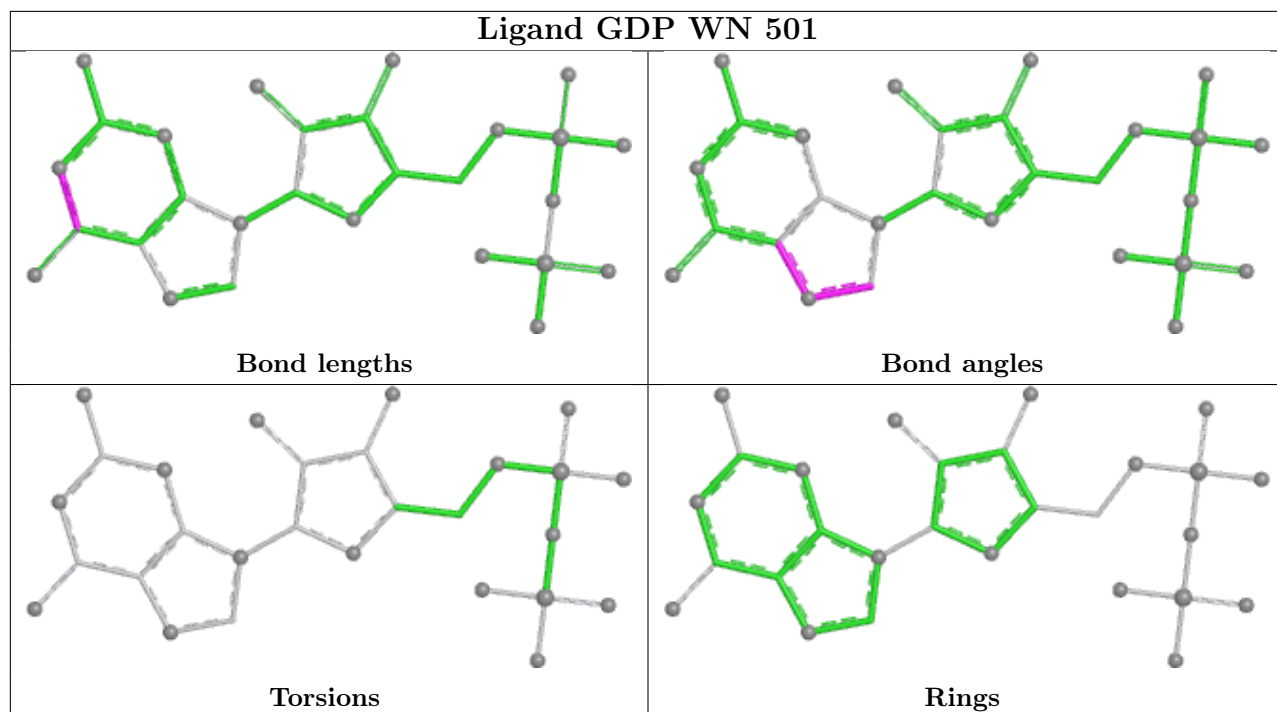


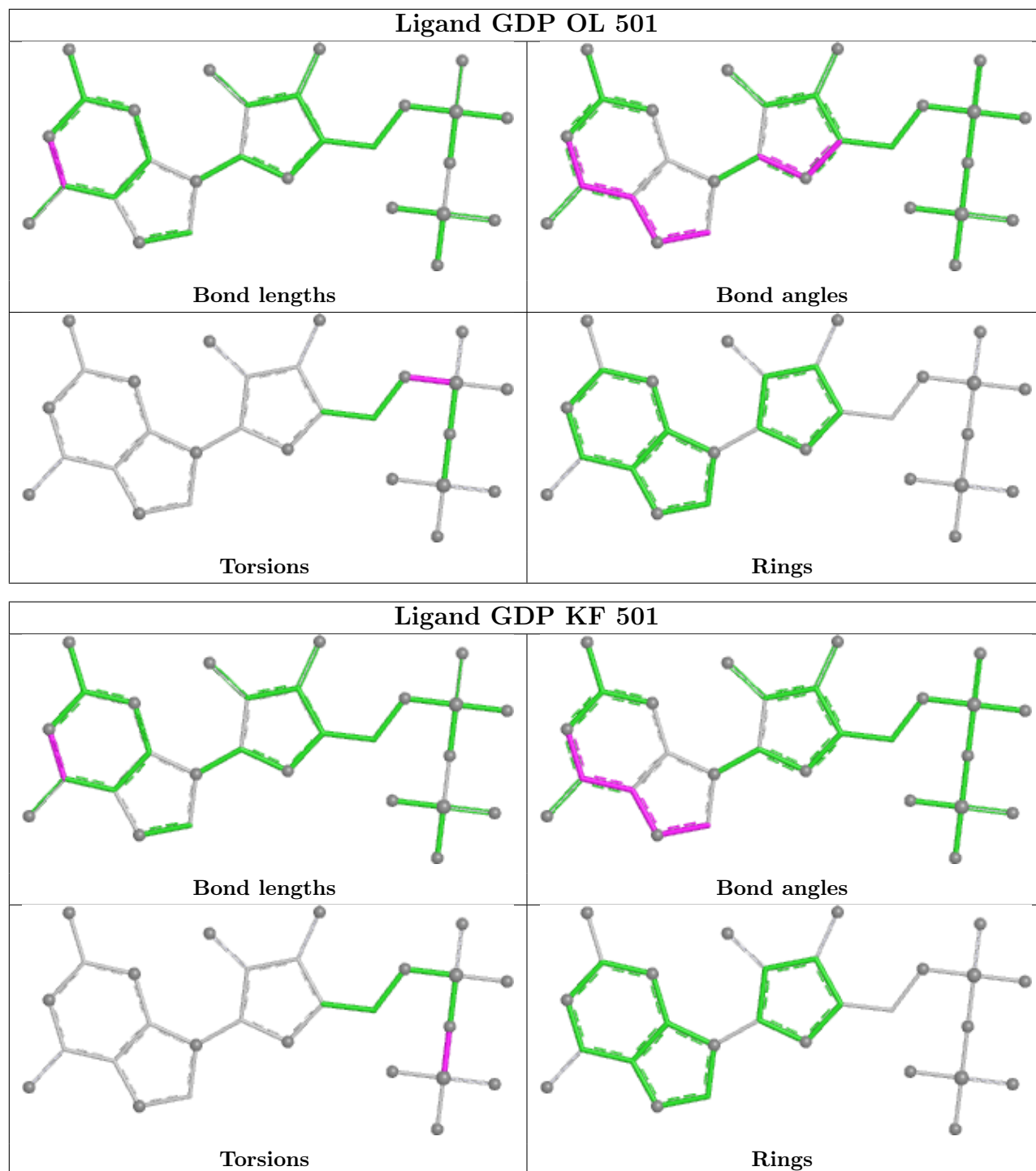


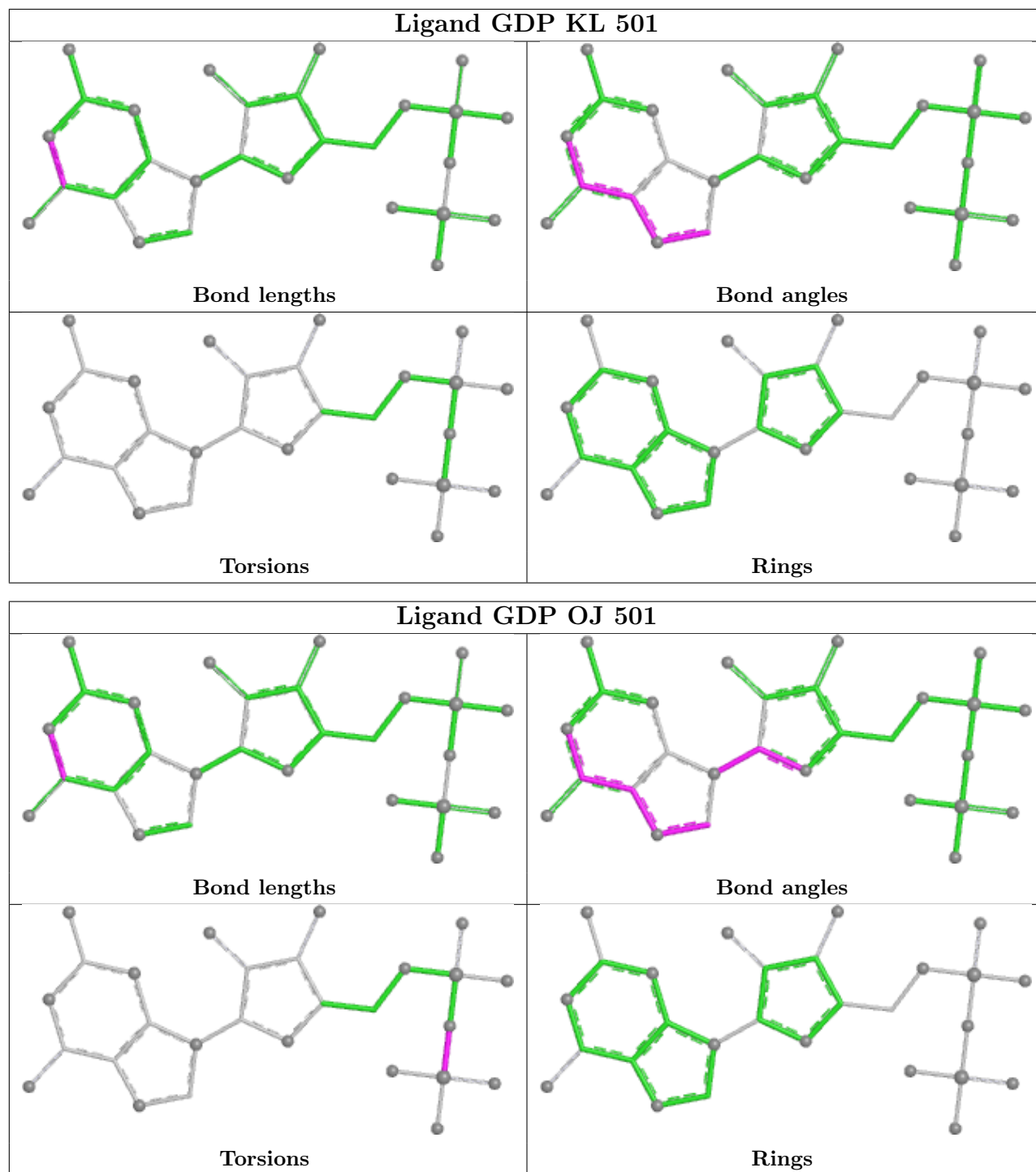


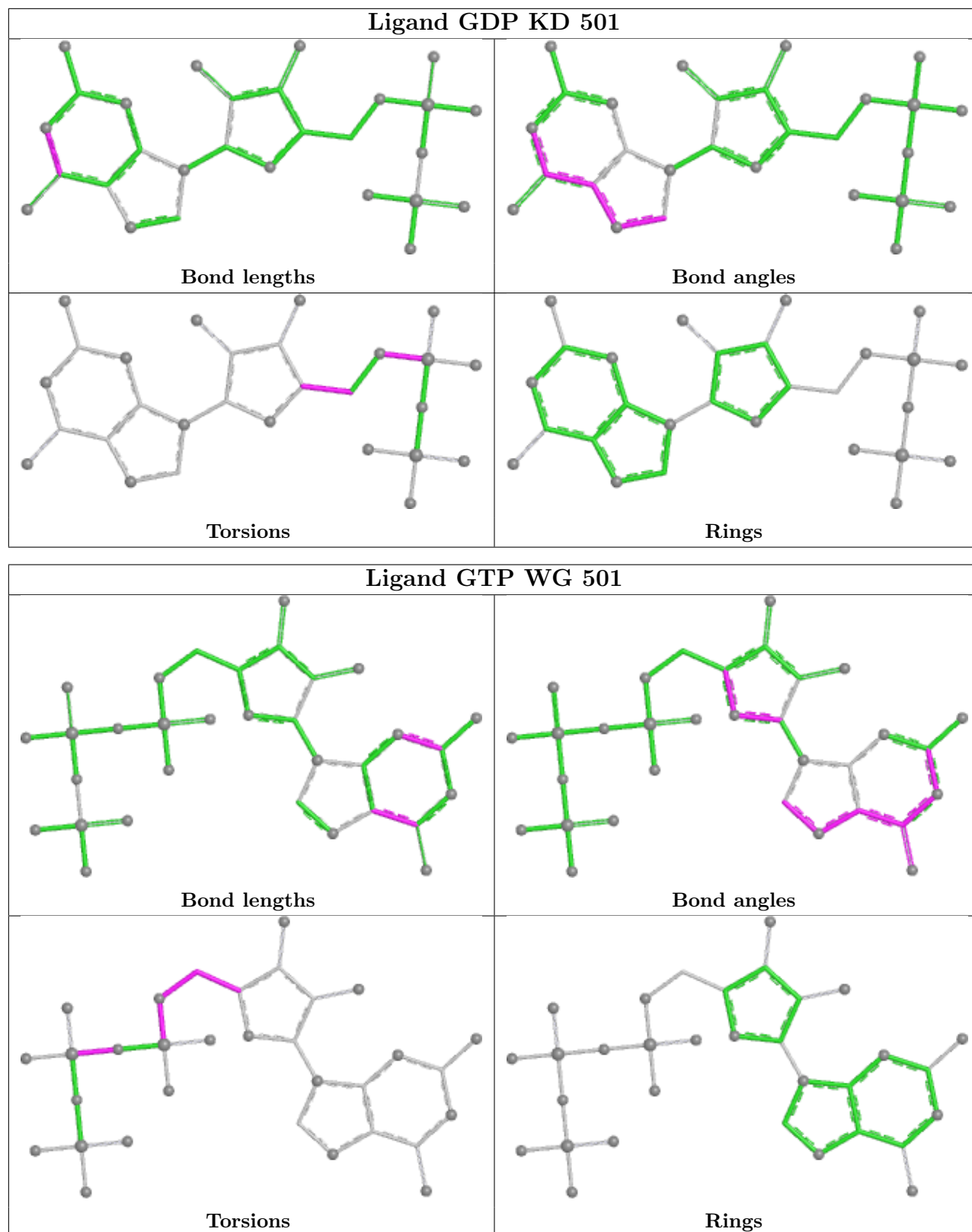


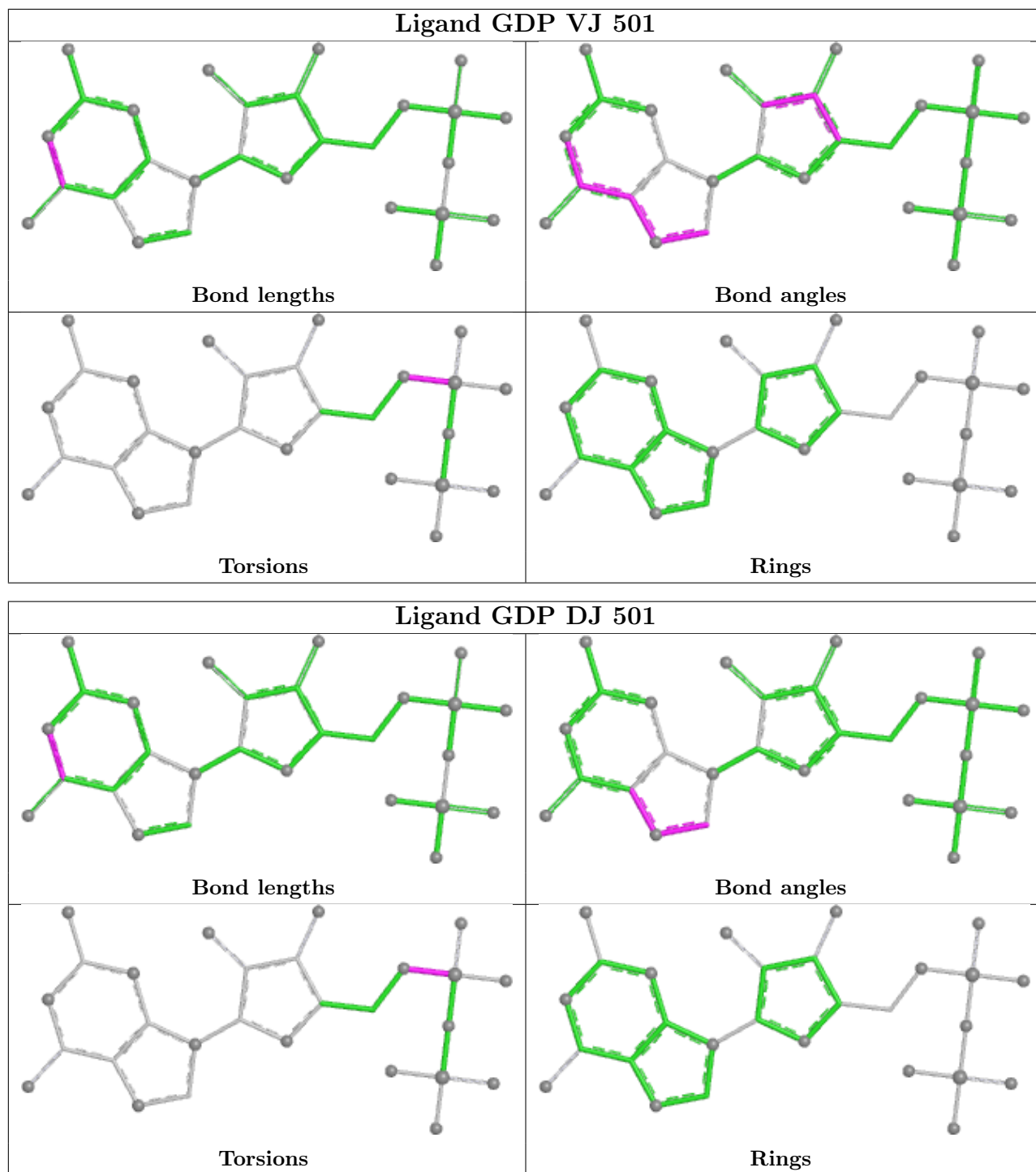


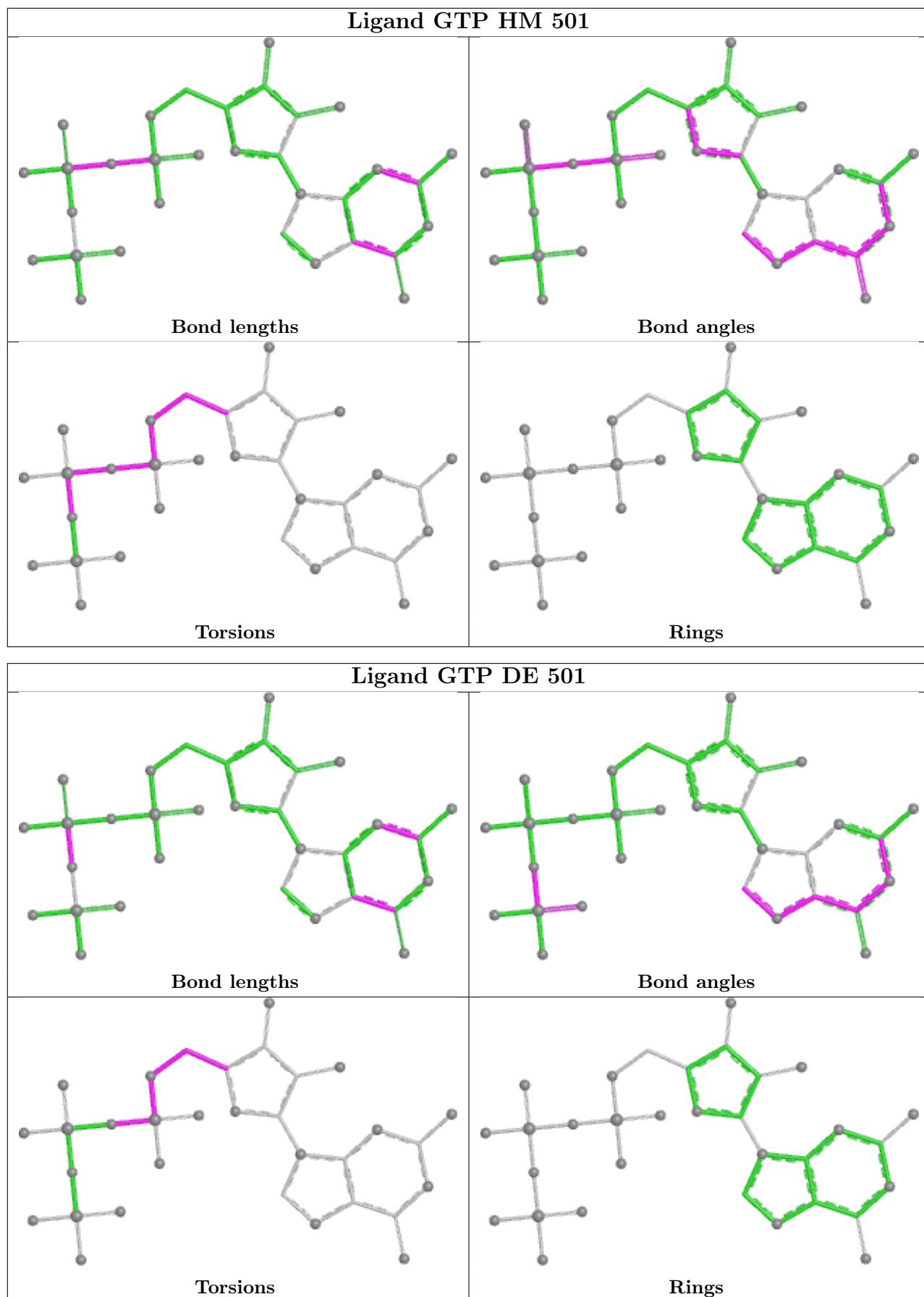


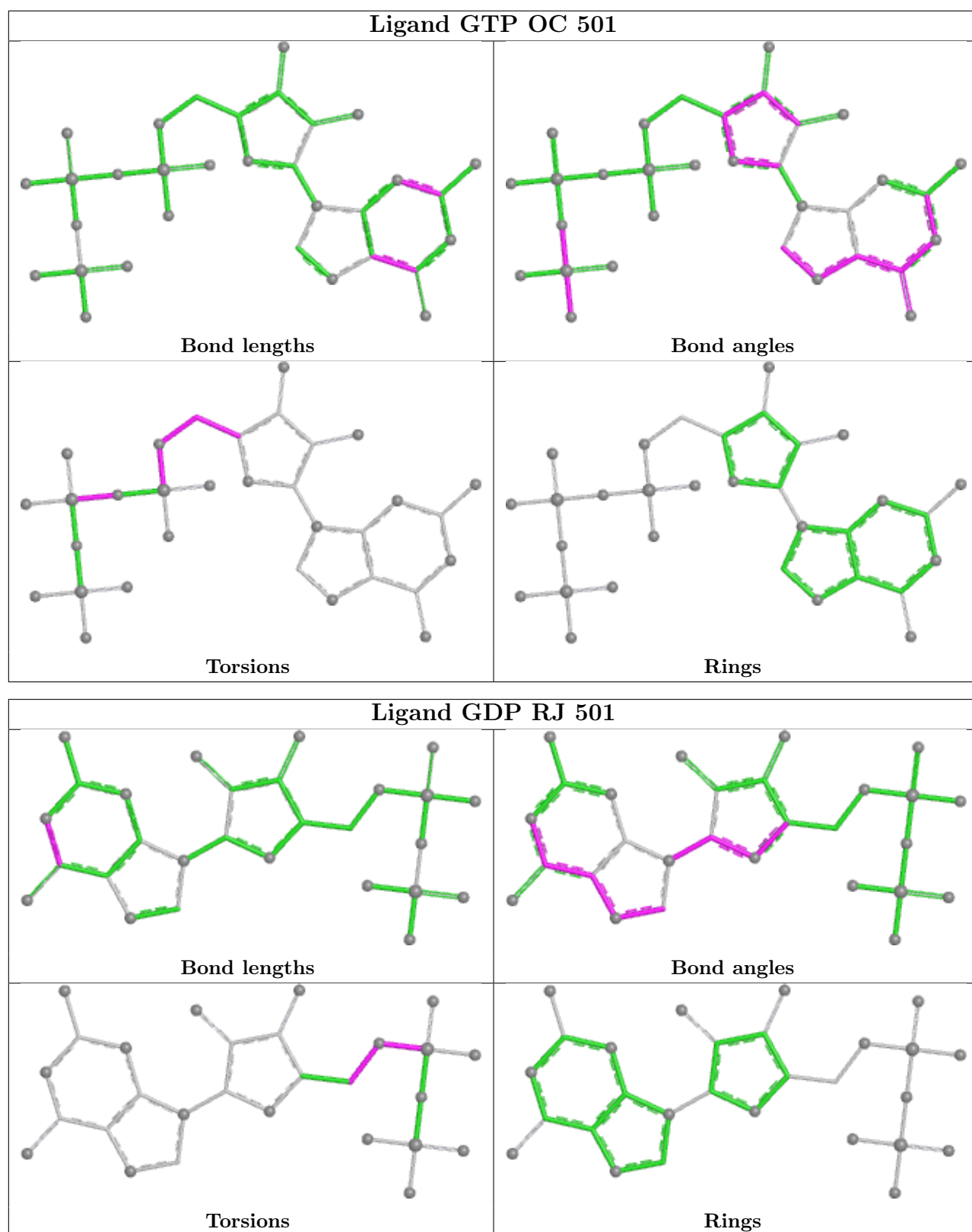


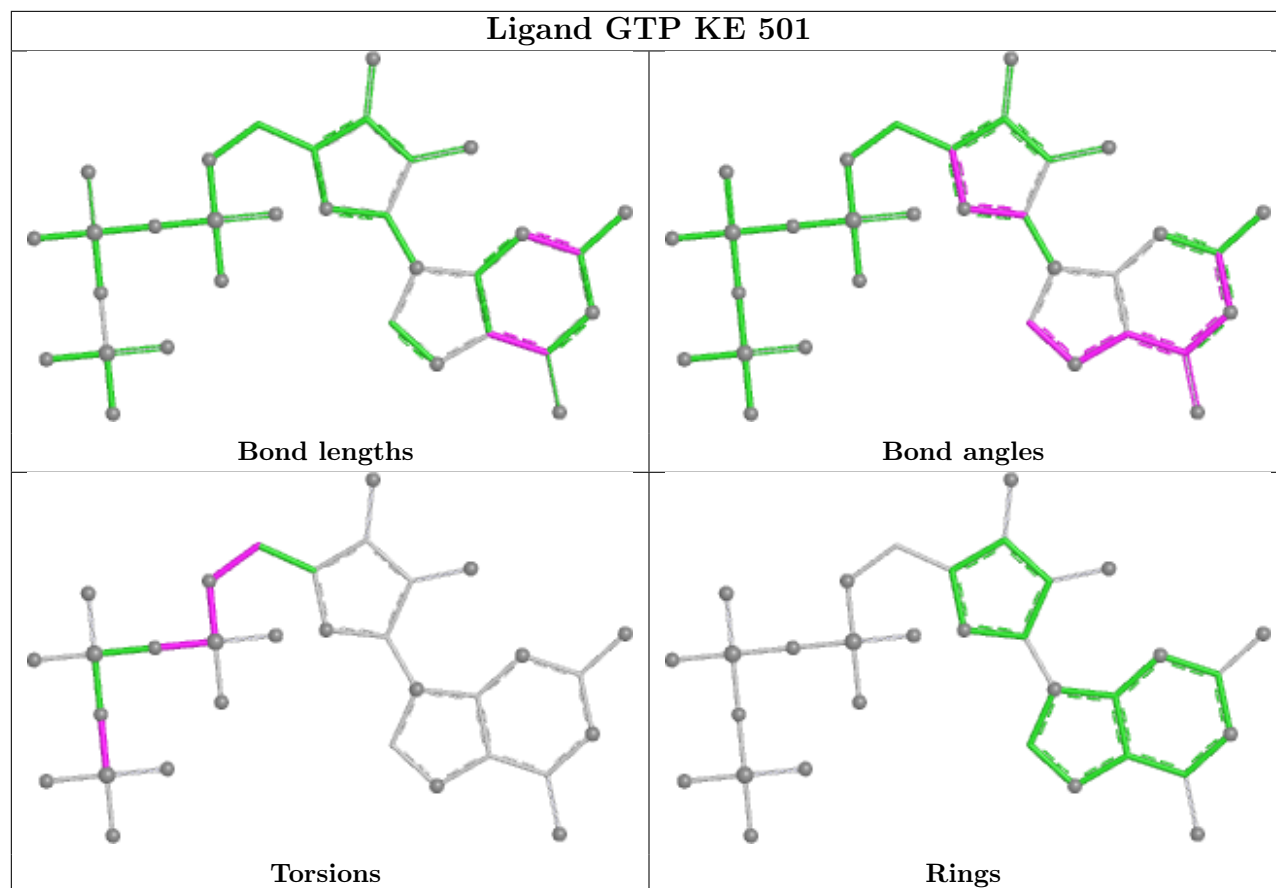












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

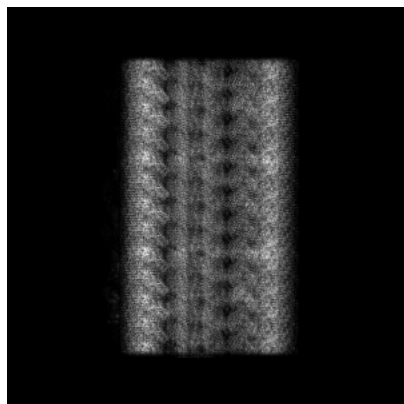
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-45801. These allow visual inspection of the internal detail of the map and identification of artifacts.

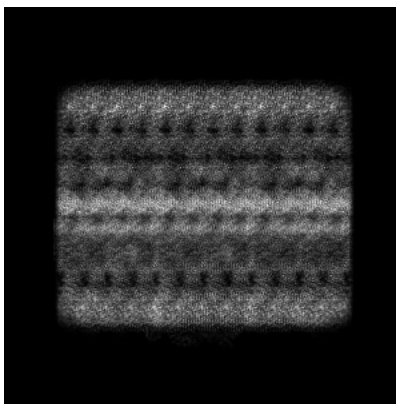
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

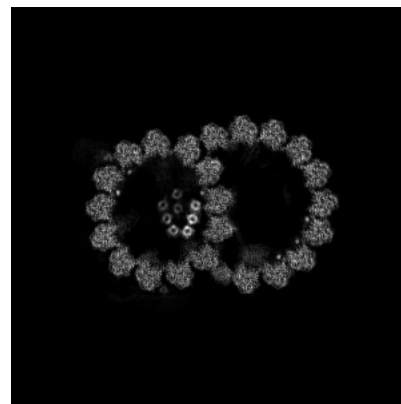
6.1.1 Primary map



X

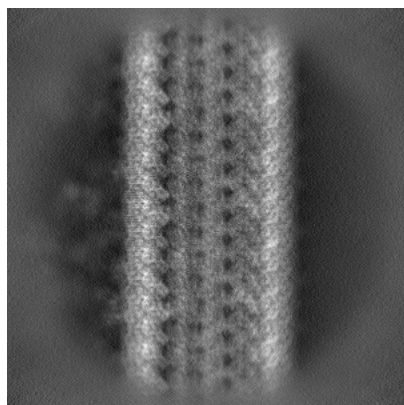


Y

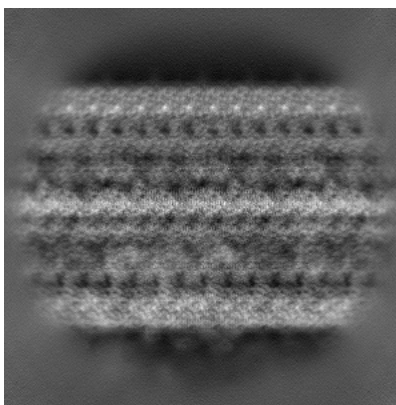


Z

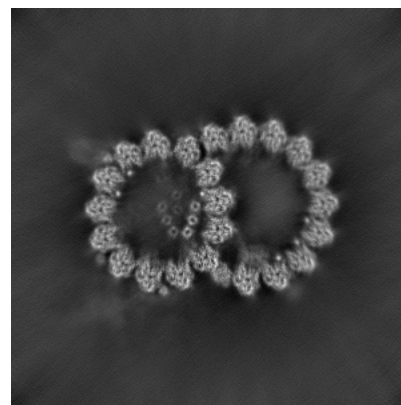
6.1.2 Raw map



X



Y

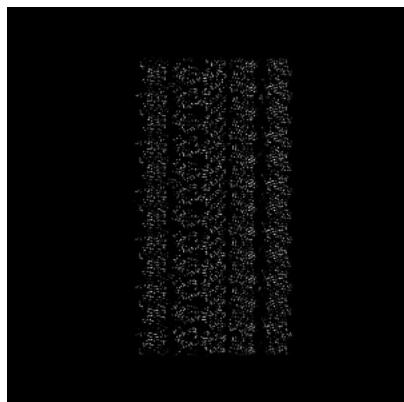


Z

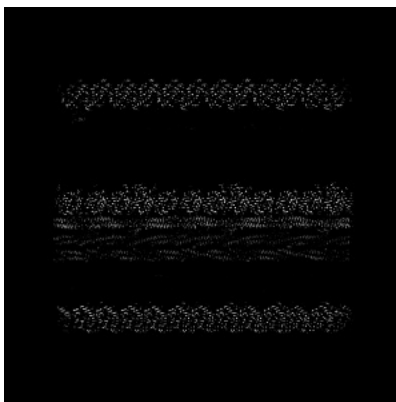
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

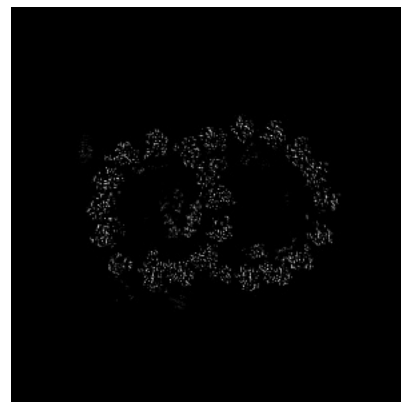
6.2.1 Primary map



X Index: 256

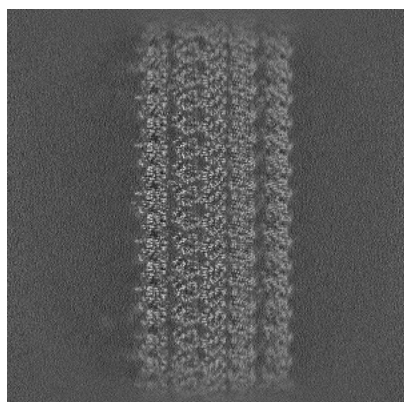


Y Index: 256

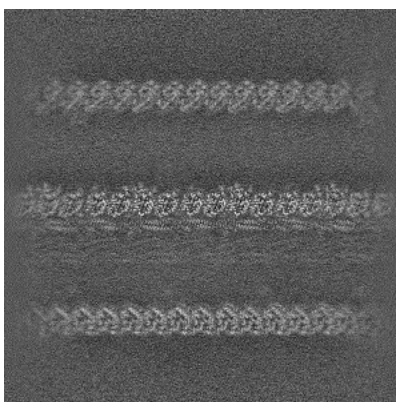


Z Index: 256

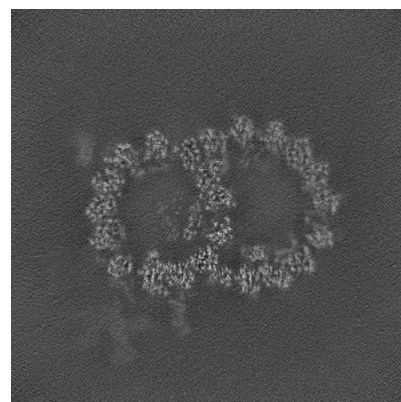
6.2.2 Raw map



X Index: 256



Y Index: 256

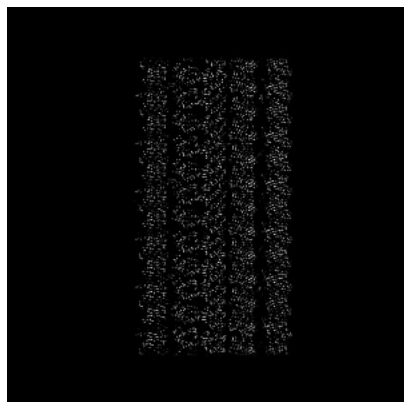


Z Index: 256

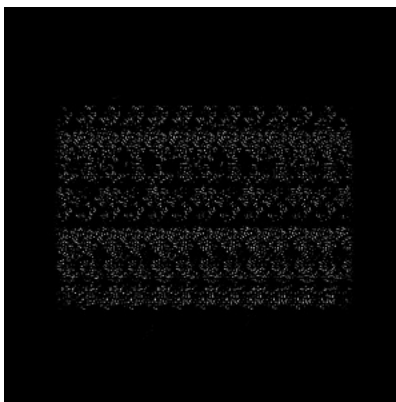
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 256

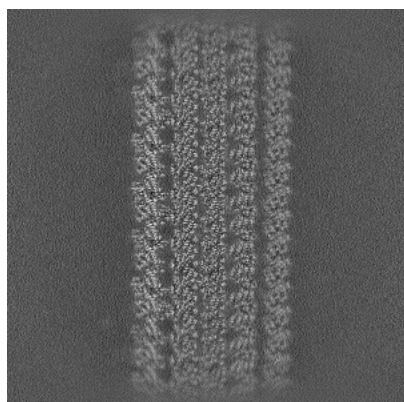


Y Index: 176

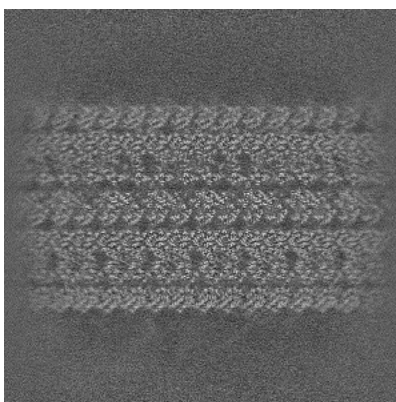


Z Index: 199

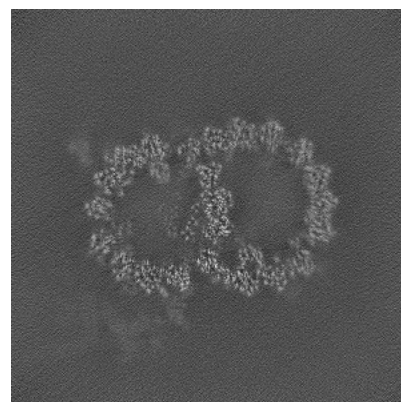
6.3.2 Raw map



X Index: 261



Y Index: 177

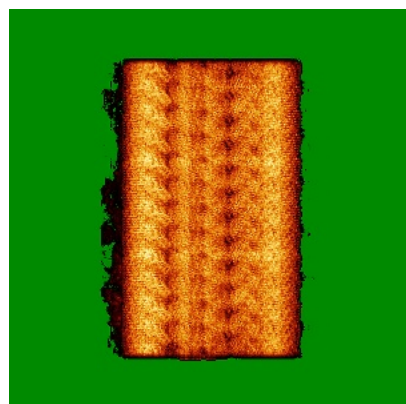


Z Index: 266

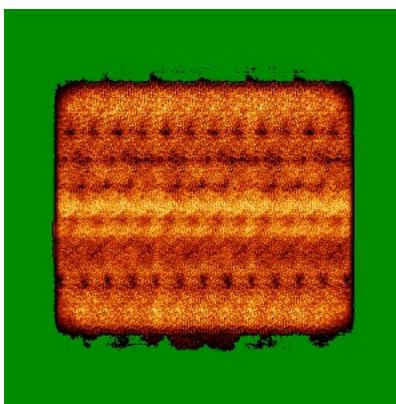
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X

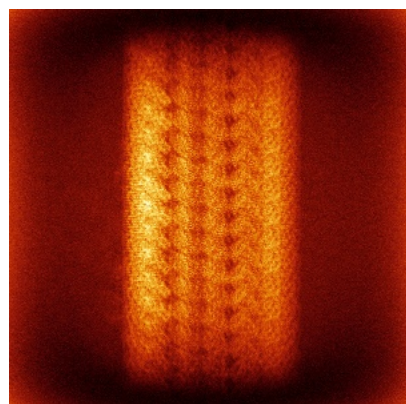


Y

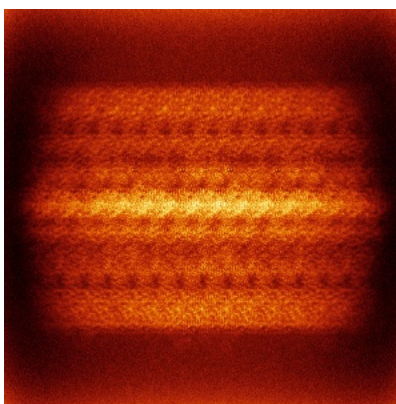


Z

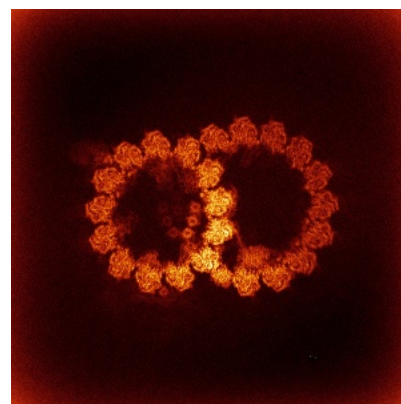
6.4.2 Raw map



X



Y

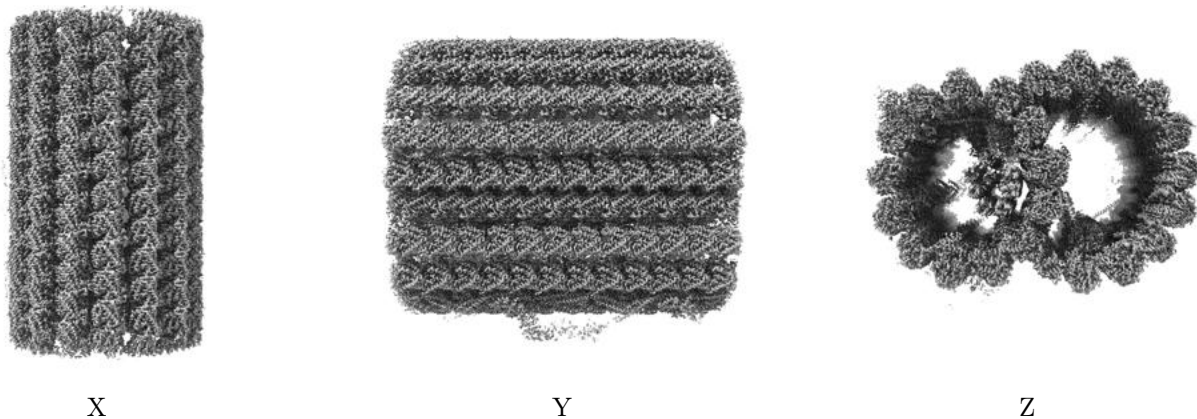


Z

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.

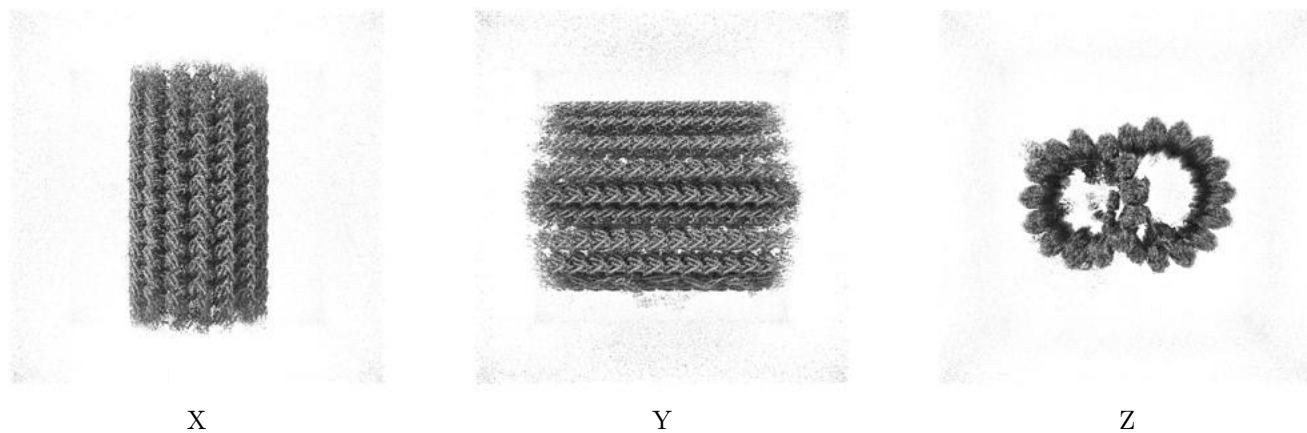
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.3. 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



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.

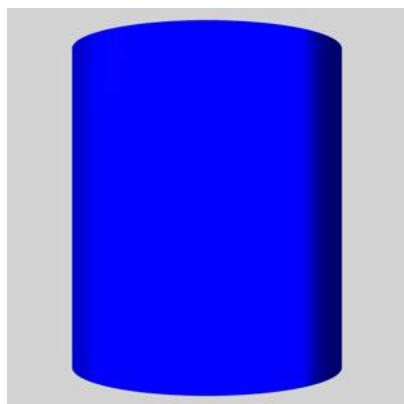
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

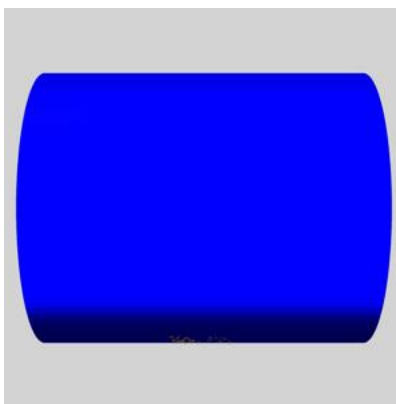
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

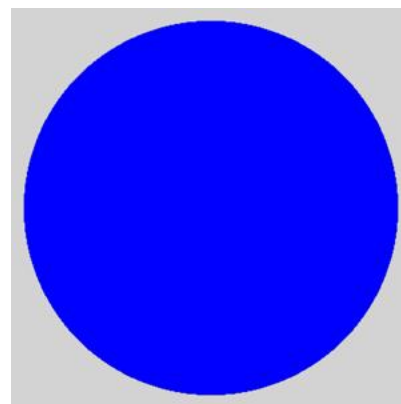
6.6.1 emd_45801_msk_1.map [i](#)



X



Y

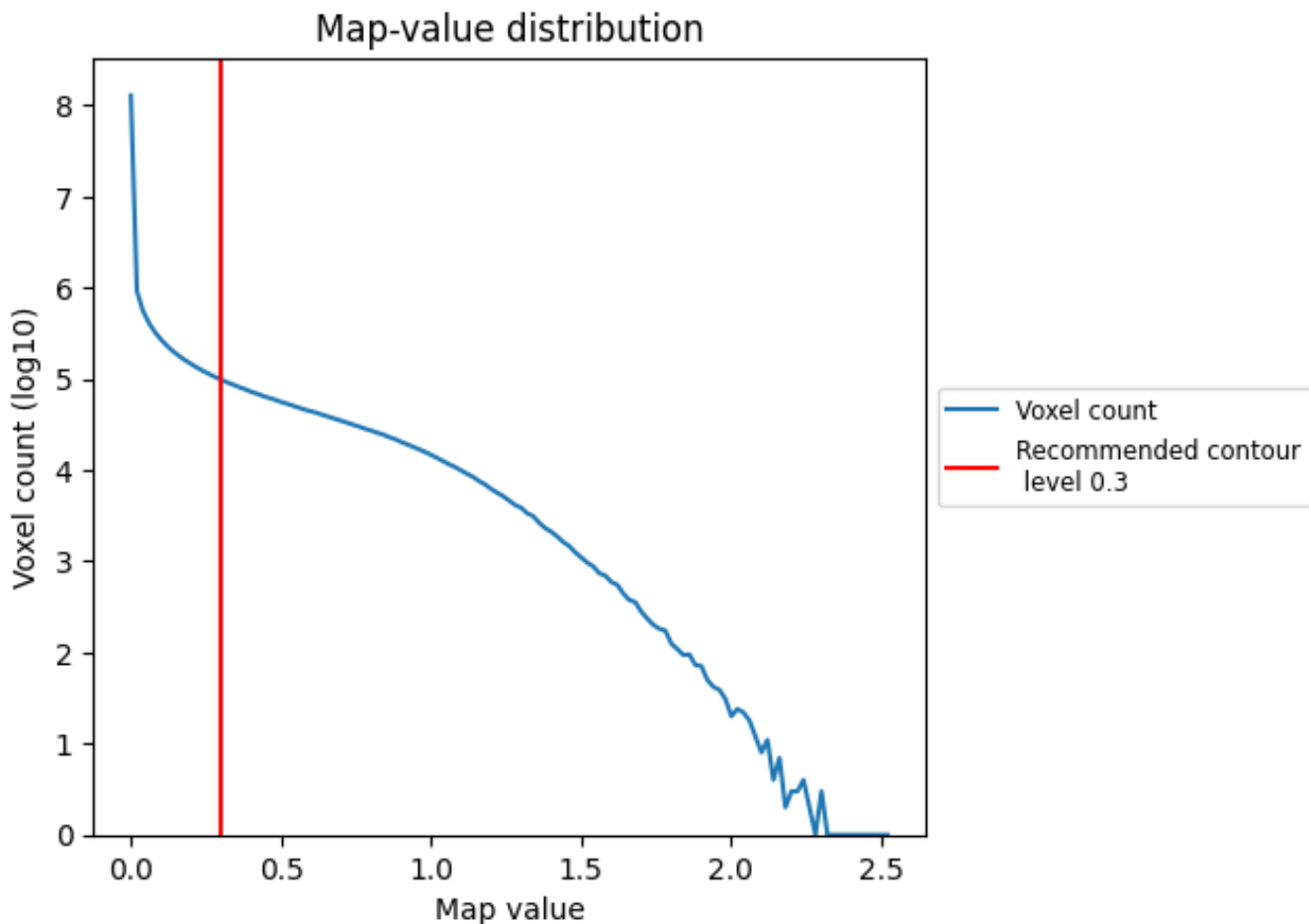


Z

7 Map analysis [i](#)

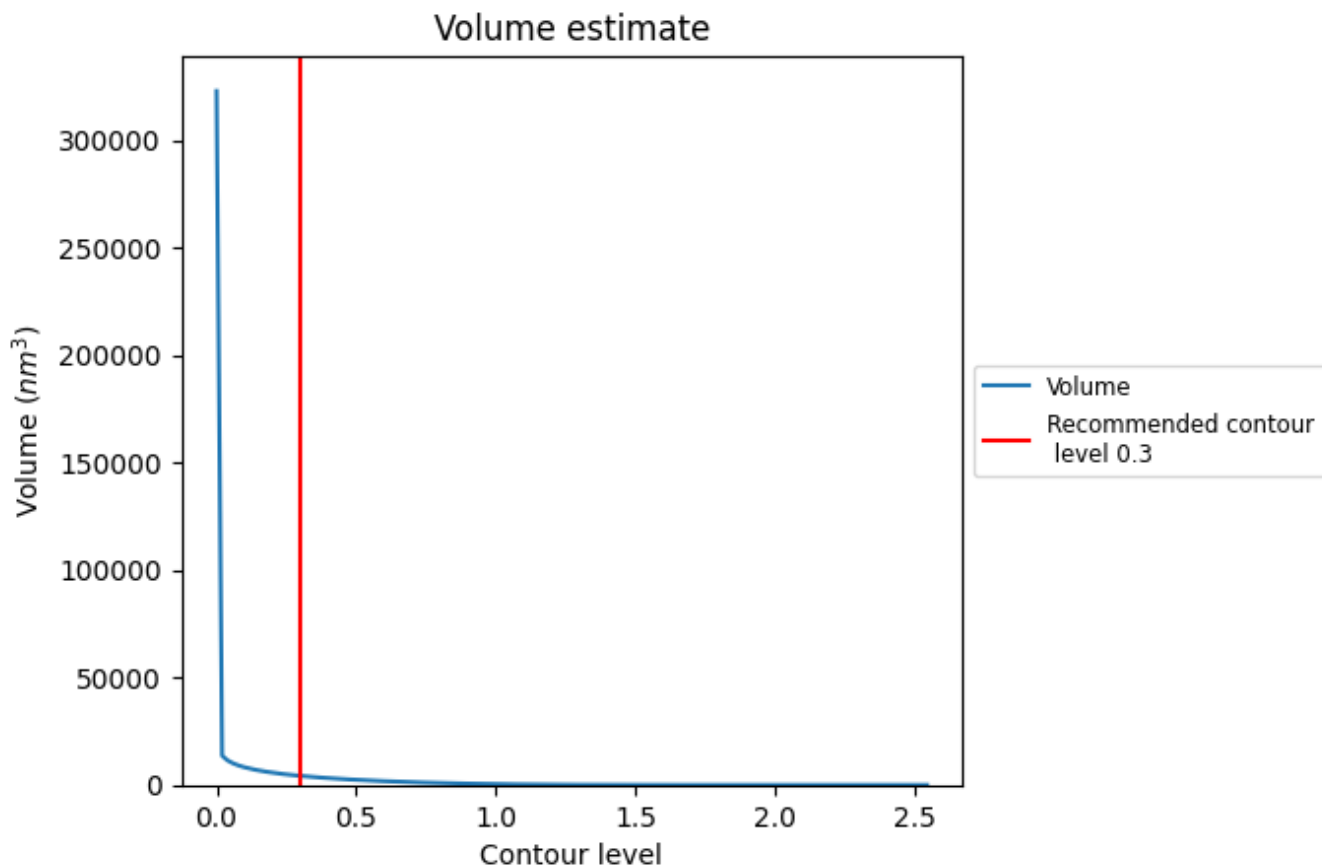
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

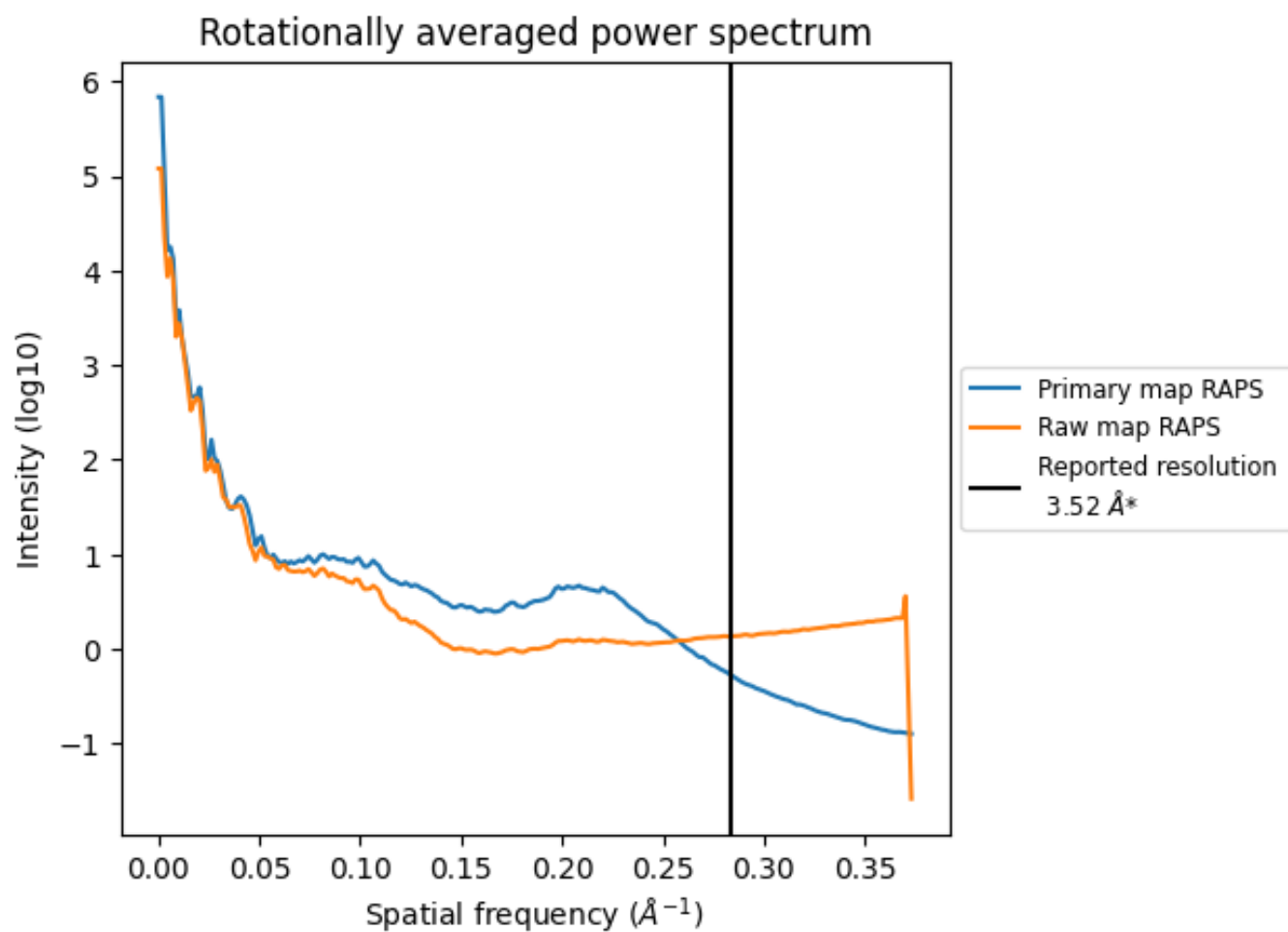
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4225 nm³; this corresponds to an approximate mass of 3816 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

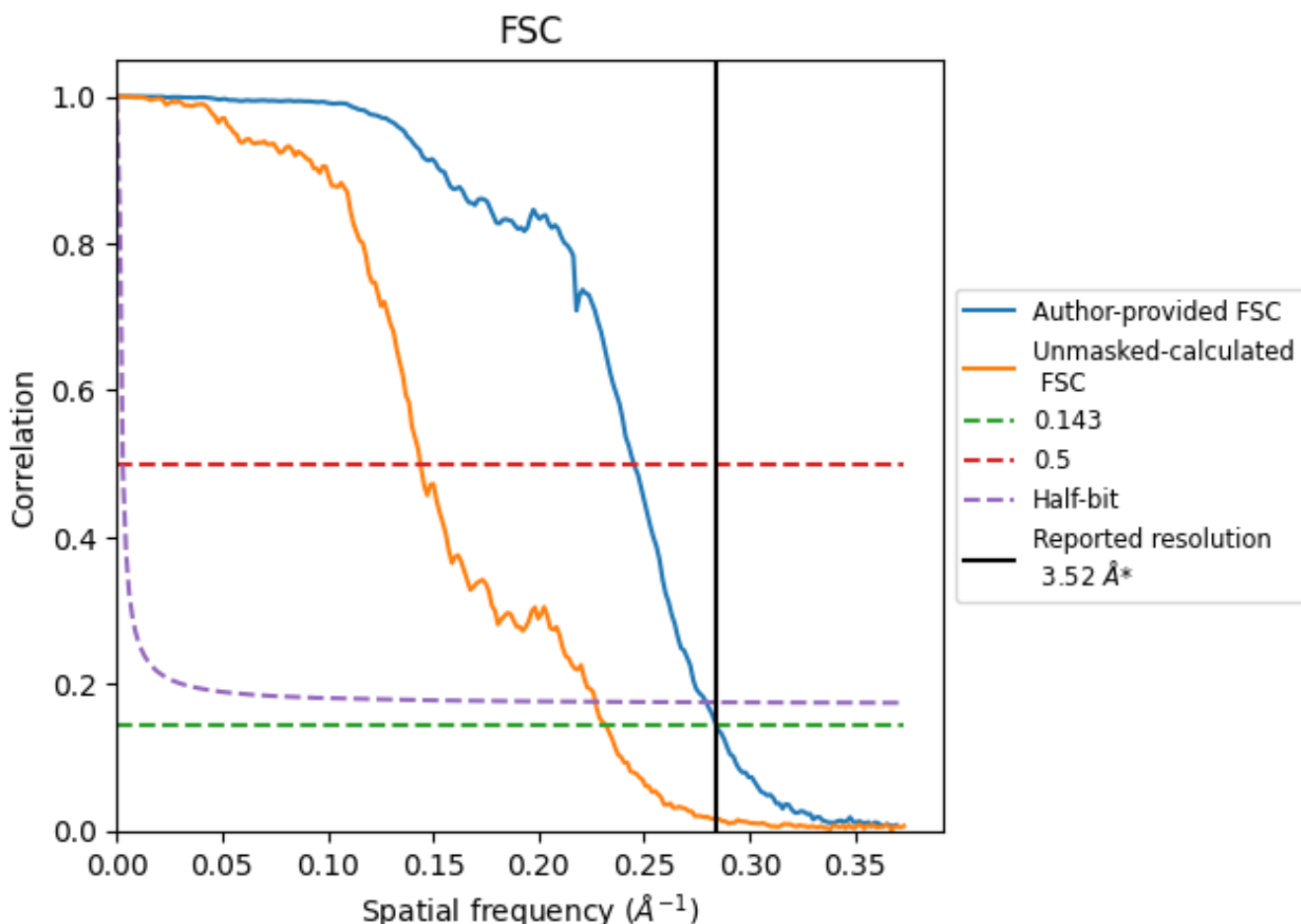


*Reported resolution corresponds to spatial frequency of 0.284 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.284 Å⁻¹

8.2 Resolution estimates [i](#)

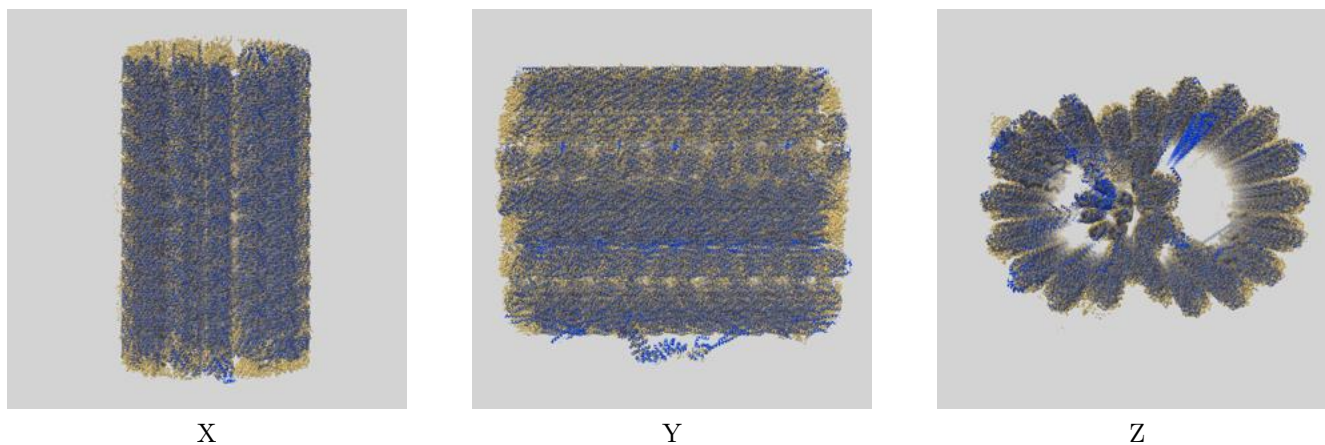
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.52	-	-
Author-provided FSC curve	3.52	4.08	3.58
Unmasked-calculated*	4.31	6.95	4.41

*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 4.31 differs from the reported value 3.52 by more than 10 %

9 Map-model fit [i](#)

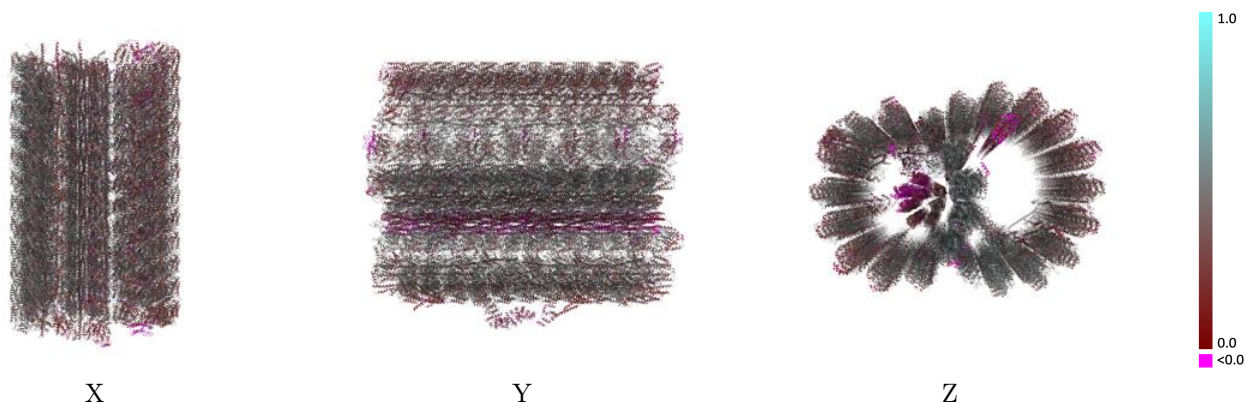
This section contains information regarding the fit between EMDB map EMD-45801 and PDB model 9CPB. Per-residue inclusion information can be found in section 3 on page 61.

9.1 Map-model overlay [i](#)



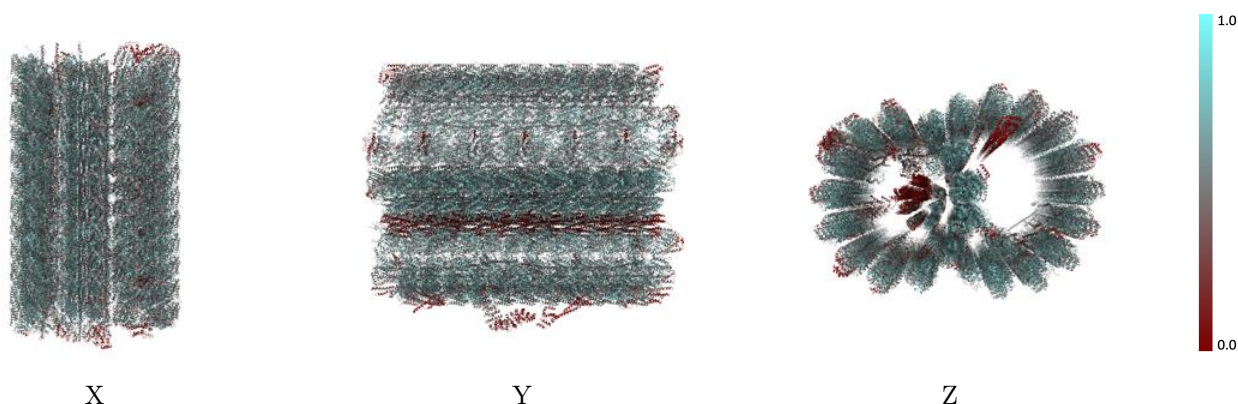
The images above show the 3D surface view of the map at the recommended contour level 0.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



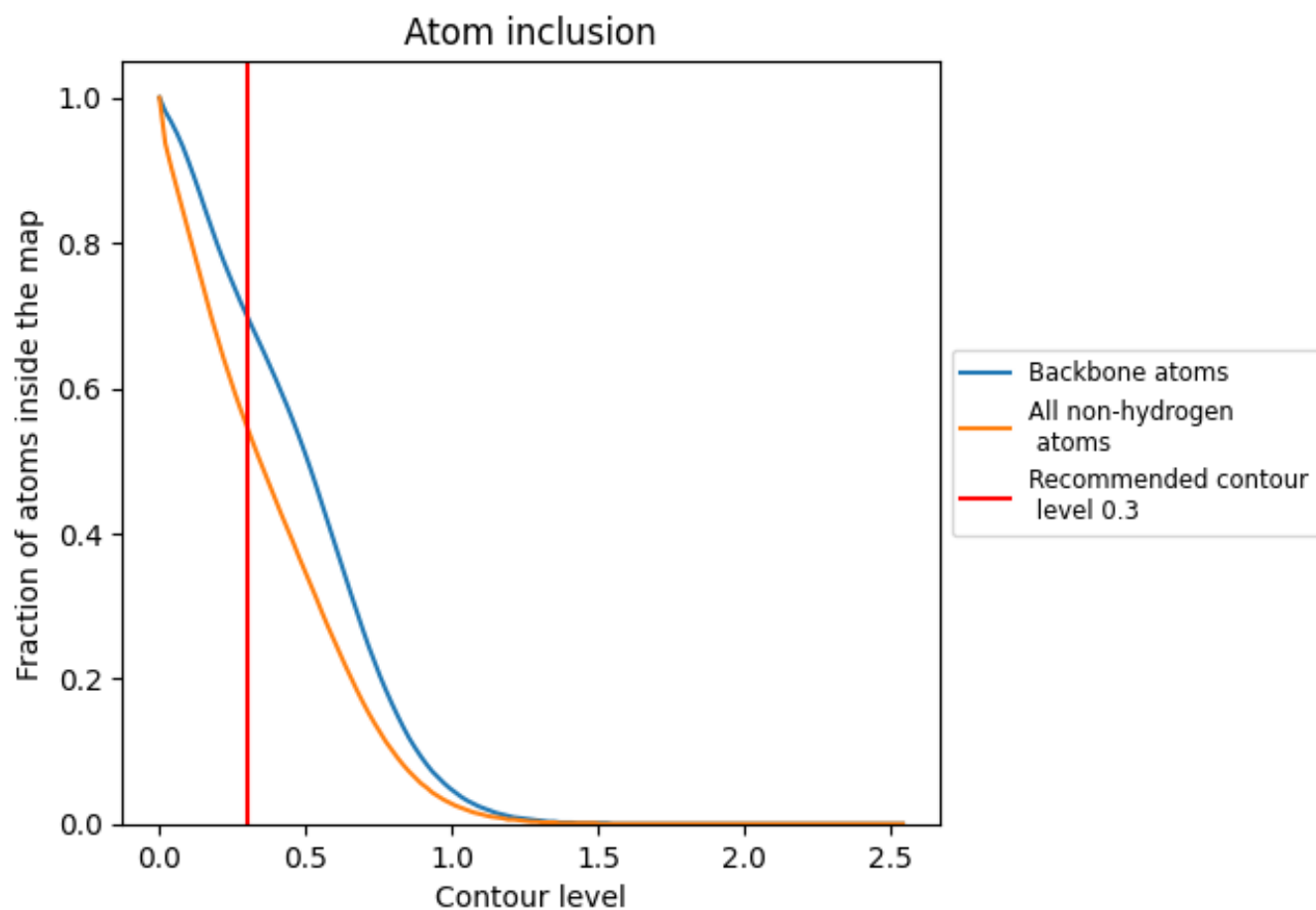
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.3).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 70% of all backbone atoms, 55% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5460	 0.3920
1A	 0.2040	 0.2830
1D	 0.2740	 0.2720
1E	 0.3550	 0.3350
1F	 0.2100	 0.2710
1H	 0.5480	 0.3650
1I	 0.4580	 0.3370
1K	 0.3820	 0.2800
1L	 0.3540	 0.2590
1N	 0.6230	 0.4340
1O	 0.6220	 0.4400
1P	 0.6200	 0.4770
1R	 0.4690	 0.3600
1T	 0.5810	 0.4230
1U	 0.5540	 0.4450
1W	 0.5540	 0.4510
1X	 0.6030	 0.4470
1Y	 0.6210	 0.4540
1Z	 0.6040	 0.4540
2A	 0.5920	 0.4340
2B	 0.6040	 0.4330
2D	 0.2690	 0.2750
2E	 0.0250	 0.0980
2F	 0.5530	 0.4210
2G	 0.4940	 0.3720
2H	 0.4890	 0.3390
2J	 0.3500	 0.3190
2K	 0.3870	 0.3070
2L	 0.3080	 0.2520
2M	 0.3770	 0.2950
2O	 0.5800	 0.4570
2P	 0.5590	 0.4490
2Q	 0.5720	 0.4490
2S	 0.4100	 0.3040
2T	 0.4100	 0.2870



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Chain	Atom inclusion	Q-score
2V	 0.1390	 -0.0150
2W	 0.3370	 0.2550
2X	 0.3520	 0.2760
2Y	 0.3690	 0.2800
3A	 0.4000	 0.3830
3C	 0.4600	 0.3360
3D	 0.5340	 0.4000
3F	 0.0420	 0.2660
3H	 0.3180	 0.3930
3J	 0.5180	 0.4190
3K	 0.4680	 0.4010
3L	 0.4650	 0.3680
3N	 0.3920	 0.3480
3O	 0.4250	 0.3650
3P	 0.3700	 0.3330
3Q	 0.2450	 0.2160
3S	 0.5410	 0.4300
3T	 0.4850	 0.3910
3U	 0.4690	 0.3780
3V	 0.4470	 0.3350
3X	 0.0820	 0.2370
3Y	 0.4360	 0.4040
3Z	 0.3760	 0.3380
4A	 0.1380	 0.2790
4B	 0.3080	 0.2200
4C	 0.0020	 0.1020
4D	 0.4980	 0.3650
4F	 0.4550	 0.3510
4G	 0.3710	 0.3260
4I	 0.3360	 0.2280
4J	 0.4140	 0.3060
4K	 0.3390	 0.3180
4L	 0.3770	 0.3370
4M	 0.2750	 0.2790
4O	 0.5780	 0.4440
4P	 0.5660	 0.4490
4Q	 0.5820	 0.4590
4R	 0.5250	 0.4620
4S	 0.5690	 0.4270
4T	 0.3050	 0.3740
4V	 0.2690	 0.2540
4W	 0.5160	 0.3540





















































































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Chain	Atom inclusion	Q-score
4Y	0.3370	0.3590
5A	0.4910	0.3610
5B	0.5000	0.3280
5D	0.0520	-0.0100
5E	0.2100	0.2210
5F	0.0620	0.1350
5G	0.1220	0.1700
5H	0.0360	0.1140
5I	0.0320	-0.0550
5J	0.0310	0.0560
5L	0.6150	0.3740
5M	0.5970	0.3530
5N	0.6160	0.3620
5O	0.6040	0.3500
5Q	0.5450	0.3690
5R	0.6430	0.3940
5S	0.6420	0.3740
5T	0.6410	0.3650
5V	0.1370	0.0700
5W	0.1440	0.0860
5X	0.1630	0.0950
5Y	0.1310	0.0650
6A	0.2820	0.2230
6B	0.3180	0.2350
6C	0.3330	0.2370
6D	0.3040	0.2120
6E	0.0130	0.0920
6F	0.0340	0.0620
6G	0.0650	0.0790
6H	0.0390	0.0820
6I	0.0200	0.1010
6J	0.0090	0.0610
6K	0.0290	0.0970
6L	0.0500	0.1060
6M	0.0410	0.1000
6N	0.0390	0.1450
6P	0.4010	0.2870
6Q	0.5080	0.2980
6R	0.5000	0.3070
6S	0.4950	0.2900
6T	0.0350	-0.0600
6U	0.0700	-0.0260





















































































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Chain	Atom inclusion	Q-score
6V	 0.0620	 -0.0320
6W	 0.0520	 -0.0170
6Y	 0.4020	 0.3500
6Z	 0.4620	 0.3810
7C	 0.3440	 0.2210
7D	 0.4260	 0.2720
7E	 0.2640	 0.2970
7F	 0.3700	 0.3690
7H	 0.2210	 0.2830
7I	 0.2790	 0.3550
7K	 0.4600	 0.3700
7L	 0.3100	 0.3060
7N	 0.0510	 0.2710
AB	 0.5700	 0.4050
AC	 0.6350	 0.4920
AD	 0.6190	 0.4800
AE	 0.6340	 0.4870
AF	 0.6370	 0.4890
AG	 0.6320	 0.4980
AH	 0.6310	 0.5090
AI	 0.6310	 0.5080
AJ	 0.6310	 0.4870
AK	 0.6400	 0.5070
AL	 0.6180	 0.4780
BB	 0.5860	 0.4230
BC	 0.5780	 0.4410
BD	 0.6070	 0.4760
BE	 0.6200	 0.4480
BF	 0.6000	 0.4520
BG	 0.6220	 0.4610
BH	 0.6070	 0.4630
BI	 0.6350	 0.4850
BJ	 0.5630	 0.3930
BK	 0.6130	 0.4550
BL	 0.6010	 0.4380
CB	 0.5450	 0.3650
CC	 0.5940	 0.4470
CD	 0.5890	 0.4580
CE	 0.5820	 0.4060
CF	 0.6000	 0.4560
CG	 0.5930	 0.4600
CH	 0.5890	 0.4460

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Chain	Atom inclusion	Q-score
CI	 0.6020	 0.4170
CJ	 0.5980	 0.4590
CK	 0.5940	 0.4520
CL	 0.5860	 0.4340
CM	 0.5100	 0.3960
DB	 0.4320	 0.3090
DC	 0.5410	 0.3610
DD	 0.5570	 0.3830
DE	 0.5670	 0.3890
DF	 0.5790	 0.3890
DG	 0.5780	 0.4020
DH	 0.5800	 0.4140
DI	 0.5720	 0.3900
DJ	 0.6020	 0.4180
DK	 0.5900	 0.4240
DL	 0.5820	 0.3930
DM	 0.5110	 0.3440
EC	 0.5670	 0.3550
ED	 0.6280	 0.4390
EE	 0.6350	 0.4520
EF	 0.6260	 0.4120
EG	 0.6360	 0.4370
EH	 0.5960	 0.3960
EI	 0.6240	 0.4170
EJ	 0.6070	 0.3850
EK	 0.6110	 0.4260
EL	 0.6030	 0.3990
EM	 0.5730	 0.4010
FC	 0.5500	 0.4020
FD	 0.6120	 0.4360
FE	 0.5840	 0.3870
FF	 0.5990	 0.3850
FG	 0.5760	 0.3780
FH	 0.5530	 0.3520
FI	 0.5670	 0.3660
FJ	 0.5830	 0.3680
FK	 0.5990	 0.4230
FL	 0.5940	 0.4330
FM	 0.5160	 0.3240
GC	 0.5030	 0.3490
GD	 0.5990	 0.4260
GE	 0.5940	 0.4020

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Chain	Atom inclusion	Q-score
GF	0.5980	0.3900
GG	0.5950	0.4110
GH	0.5920	0.4030
GI	0.5950	0.4030
GJ	0.6400	0.4570
GK	0.5790	0.3990
GL	0.5890	0.3900
GM	0.5880	0.4340
HB	0.5470	0.4140
HC	0.5640	0.4120
HD	0.6130	0.4560
HE	0.6020	0.4030
HF	0.5920	0.4070
HG	0.6210	0.4610
HH	0.6030	0.4040
HI	0.6230	0.4700
HJ	0.6300	0.4650
HK	0.5910	0.4040
HL	0.6130	0.4590
HM	0.6100	0.4650
IC	0.4960	0.3630
ID	0.5900	0.4230
IE	0.5980	0.4560
IF	0.5910	0.4320
IG	0.6060	0.4190
IH	0.6060	0.4290
II	0.6070	0.4400
IJ	0.5980	0.4180
IK	0.5890	0.3910
IL	0.5900	0.4210
IM	0.5900	0.4270
IN	0.5940	0.4370
JC	0.5970	0.3990
JD	0.6240	0.4250
JE	0.6160	0.4260
JF	0.6330	0.4350
JG	0.6290	0.4430
JH	0.5840	0.3880
JI	0.6010	0.4120
JJ	0.6350	0.4320
JK	0.6120	0.4630
JL	0.6090	0.4530

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Chain	Atom inclusion	Q-score
JM	0.6200	0.4530
KC	0.6470	0.4860
KD	0.6560	0.4770
KE	0.6630	0.5030
KF	0.6560	0.4950
KG	0.6820	0.5090
KH	0.6590	0.5010
KI	0.6710	0.5110
KJ	0.6600	0.5020
KK	0.6740	0.4970
KL	0.6710	0.5120
KM	0.6560	0.5100
KN	0.6520	0.4720
LC	0.6600	0.4890
LD	0.6610	0.5140
LE	0.6550	0.5040
LF	0.6650	0.5060
LG	0.6770	0.5200
LH	0.6640	0.5070
LI	0.6520	0.4980
LJ	0.6770	0.5080
LK	0.6680	0.5110
LL	0.6570	0.5070
LM	0.6570	0.4930
LN	0.6240	0.4670
MC	0.6420	0.4420
MD	0.6520	0.4940
ME	0.6580	0.4610
MF	0.6540	0.4700
MG	0.6500	0.4750
MH	0.6400	0.4680
MI	0.6500	0.4610
MJ	0.6530	0.4490
MK	0.5810	0.3820
ML	0.6180	0.4290
MM	0.6300	0.4280
MN	0.4990	0.3940
NA	0.5850	0.4170
NB	0.5880	0.4270
NC	0.6010	0.4600
ND	0.6070	0.4340
NE	0.5810	0.4280

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Chain	Atom inclusion	Q-score
NF	0.5930	0.4390
NG	0.5920	0.4340
NH	0.6030	0.4250
NI	0.5850	0.4310
NJ	0.5780	0.4160
NK	0.5920	0.4240
NL	0.5160	0.3490
OA	0.5470	0.3810
OB	0.5900	0.4270
OC	0.5890	0.4240
OD	0.5710	0.3930
OE	0.5850	0.4070
OF	0.5720	0.4060
OG	0.5790	0.4250
OH	0.5880	0.4070
OI	0.5980	0.4170
OJ	0.5710	0.4120
OK	0.5730	0.4060
OL	0.5520	0.3660
PA	0.4730	0.3190
PB	0.5660	0.3680
PC	0.5570	0.3660
PD	0.5720	0.3760
PE	0.5980	0.3810
PF	0.5710	0.3790
PG	0.6050	0.4290
PH	0.5920	0.4070
PI	0.6180	0.4180
PJ	0.5900	0.4140
PK	0.5620	0.3790
PL	0.5300	0.3260
QB	0.4960	0.3060
QC	0.5190	0.3250
QD	0.5360	0.3380
QE	0.5570	0.3270
QF	0.5300	0.3290
QG	0.5240	0.3330
QH	0.5330	0.3380
QI	0.5760	0.3530
QJ	0.5500	0.3540
QK	0.5290	0.3560
QL	0.4900	0.3010



















































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Chain	Atom inclusion	Q-score
RB	0.4370	0.2990
RC	0.5110	0.3280
RD	0.5640	0.3630
RE	0.5770	0.3420
RF	0.5690	0.3590
RG	0.5390	0.3510
RH	0.5480	0.3450
RI	0.5740	0.3480
RJ	0.5730	0.3710
RK	0.5380	0.3490
RL	0.4980	0.3130
SC	0.5320	0.3420
SD	0.5630	0.3710
SE	0.5790	0.3810
SF	0.5670	0.3680
SG	0.5580	0.3760
SH	0.5470	0.3600
SI	0.6040	0.3840
SJ	0.5610	0.3610
SK	0.5590	0.3610
SL	0.5360	0.3540
SM	0.3420	0.2680
TC	0.5040	0.3190
TD	0.5780	0.3830
TE	0.5620	0.3820
TF	0.5940	0.3710
TG	0.5440	0.3610
TH	0.5600	0.3740
TI	0.5710	0.3790
TJ	0.5910	0.3880
TK	0.5900	0.4080
TL	0.5680	0.3900
TM	0.4470	0.2940
UC	0.5560	0.3890
UD	0.5870	0.4120
UE	0.5780	0.3990
UF	0.6050	0.4050
UG	0.6000	0.4160
UH	0.5900	0.4140
UI	0.5850	0.3980
UJ	0.6150	0.4180
UK	0.5930	0.4170

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Chain	Atom inclusion	Q-score
UL	 0.5880	 0.4190
UM	 0.5600	 0.3950
VC	 0.5880	 0.4470
VD	 0.5930	 0.4580
VE	 0.6060	 0.4660
VF	 0.6180	 0.4600
VG	 0.5950	 0.4540
VH	 0.6110	 0.4630
VI	 0.6100	 0.4620
VJ	 0.6150	 0.4410
VK	 0.5840	 0.4470
VL	 0.5990	 0.4640
VM	 0.5910	 0.4510
WC	 0.6050	 0.4720
WD	 0.6300	 0.4840
WE	 0.6230	 0.4850
WF	 0.6320	 0.4720
WG	 0.6190	 0.4750
WH	 0.6310	 0.4790
WI	 0.6330	 0.4820
WJ	 0.6290	 0.4780
WK	 0.6170	 0.4750
WL	 0.6350	 0.4870
WM	 0.6230	 0.4750
WN	 0.5790	 0.4420