

FIG. 1

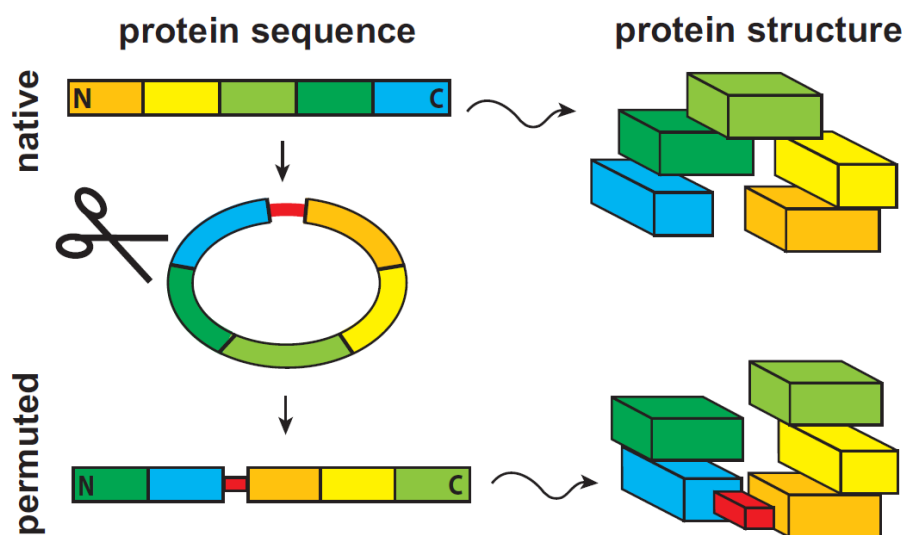


FIG. 2

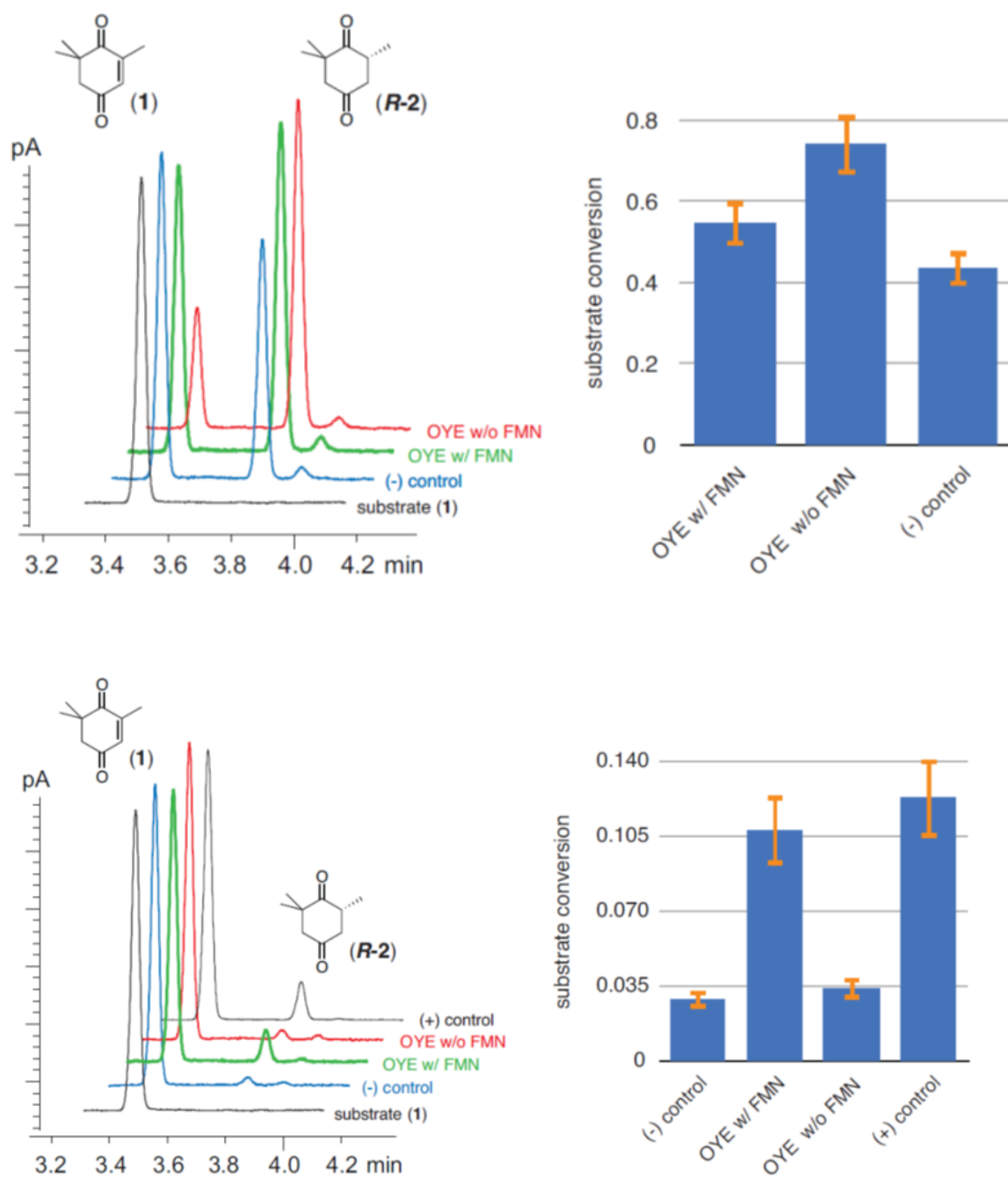


FIG. 3

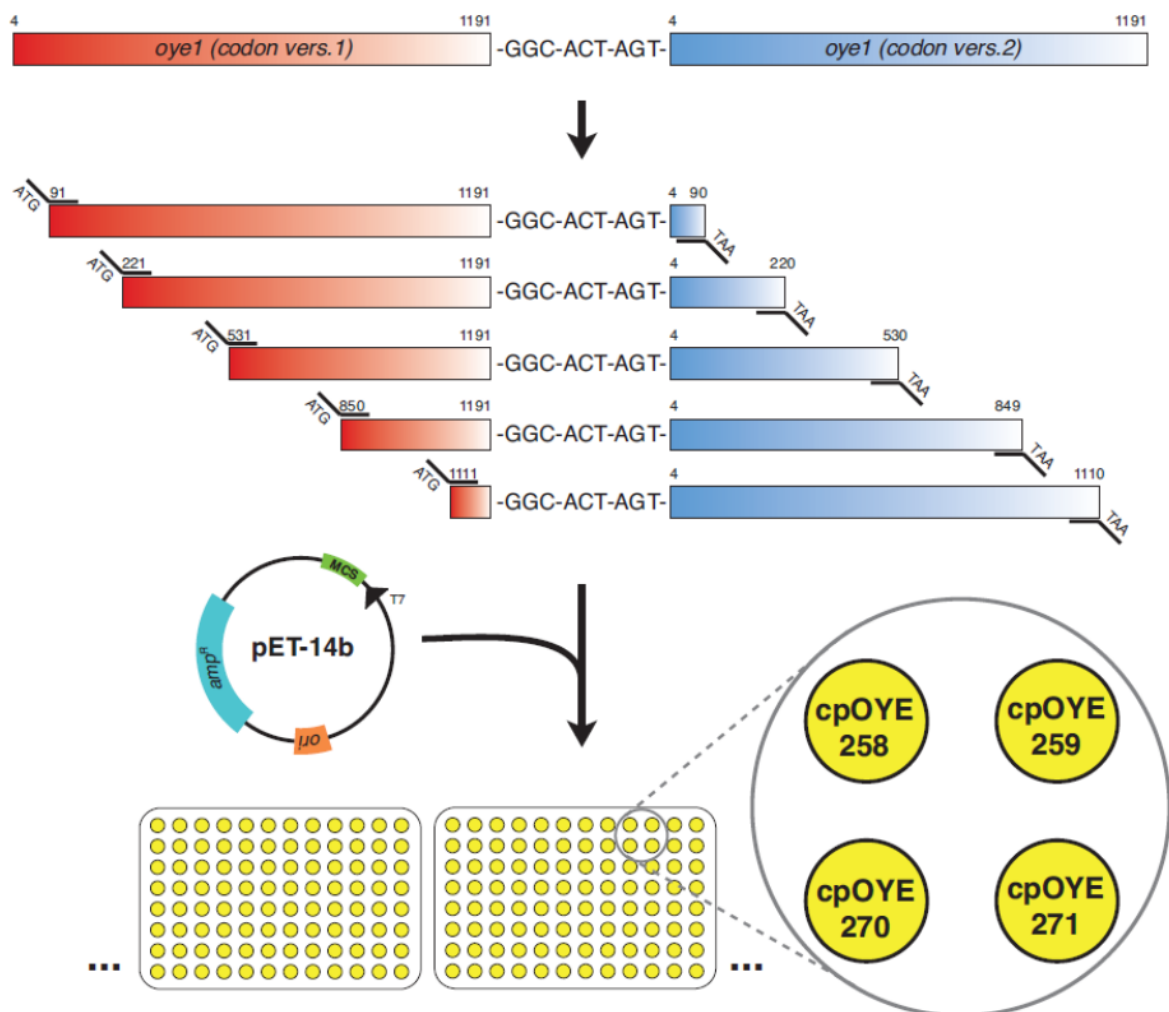


FIG. 4

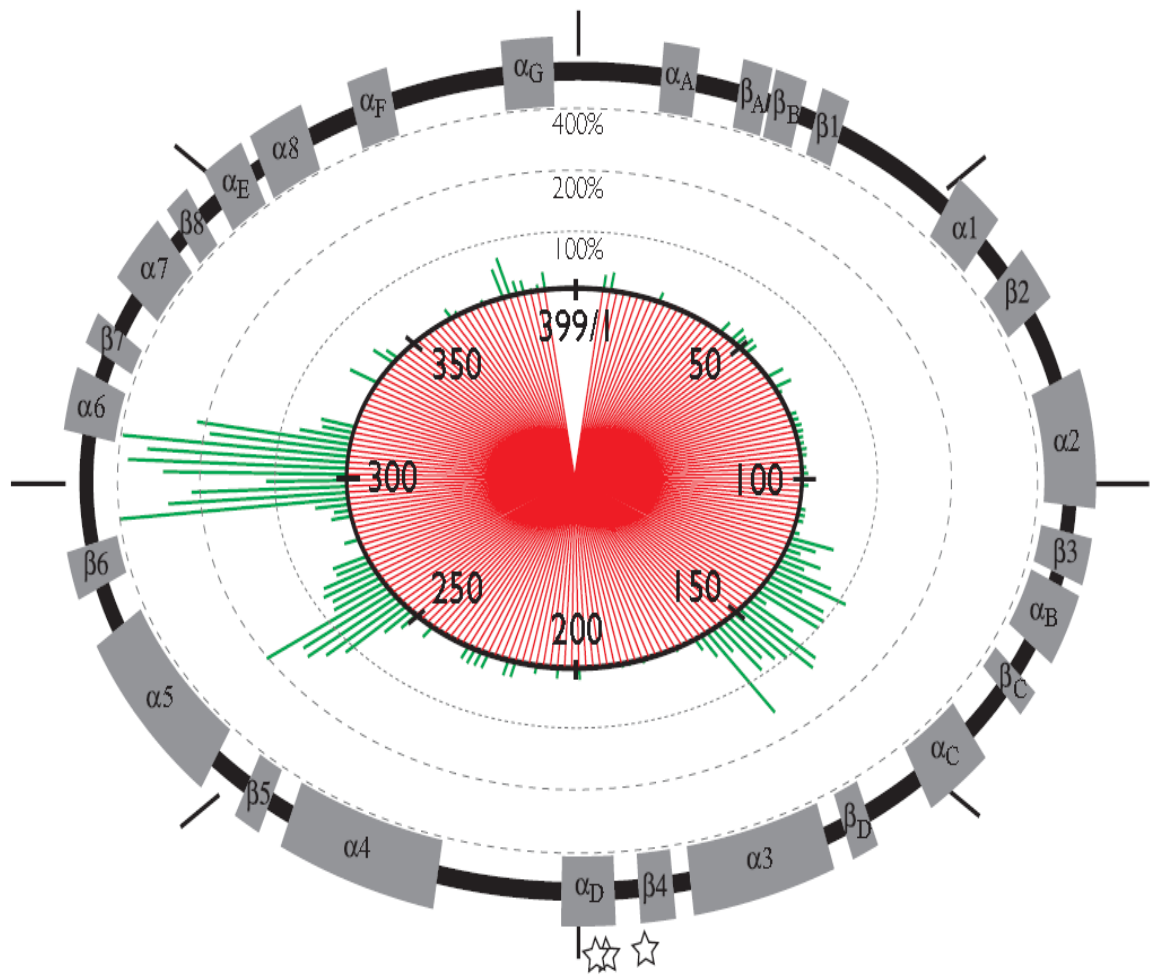


FIG. 5

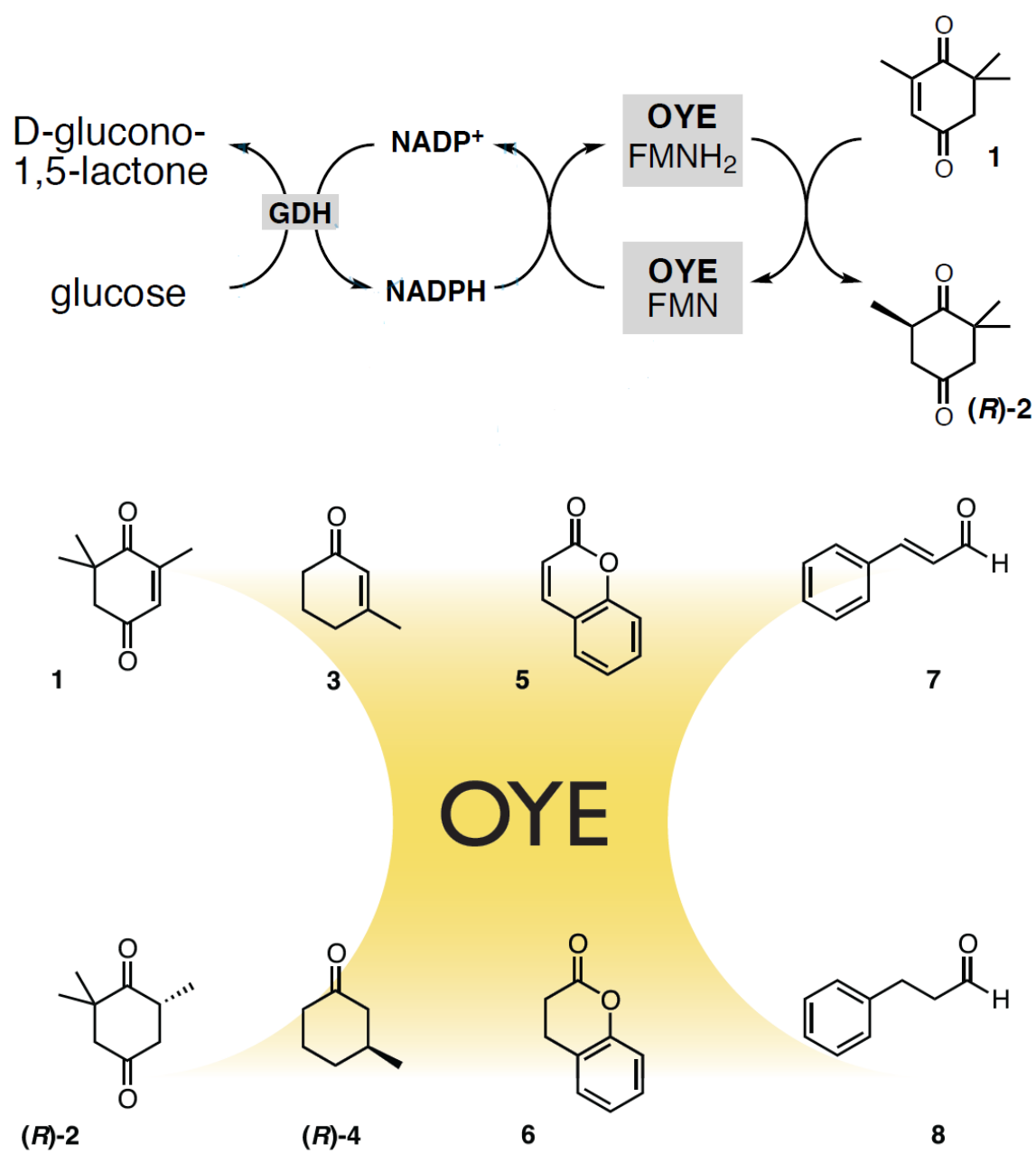
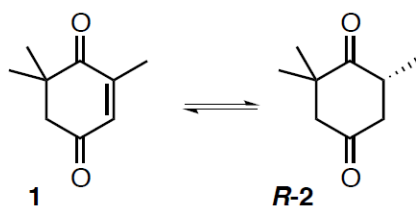
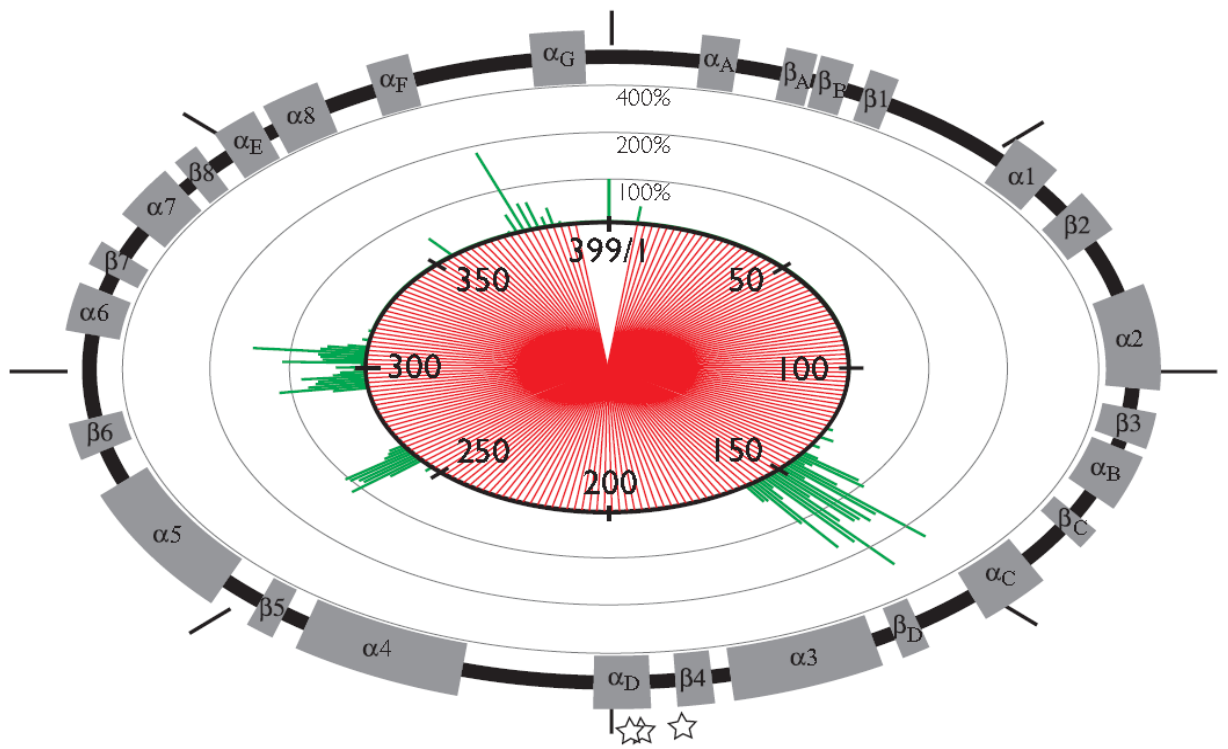
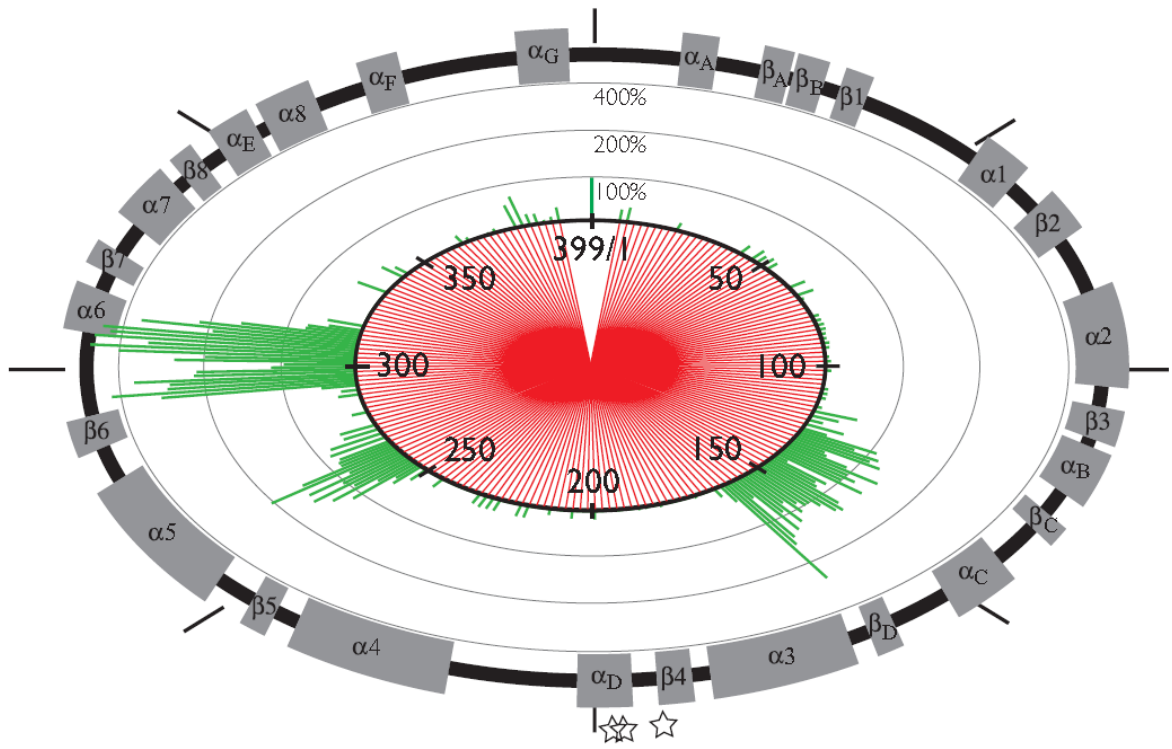


FIG. 6

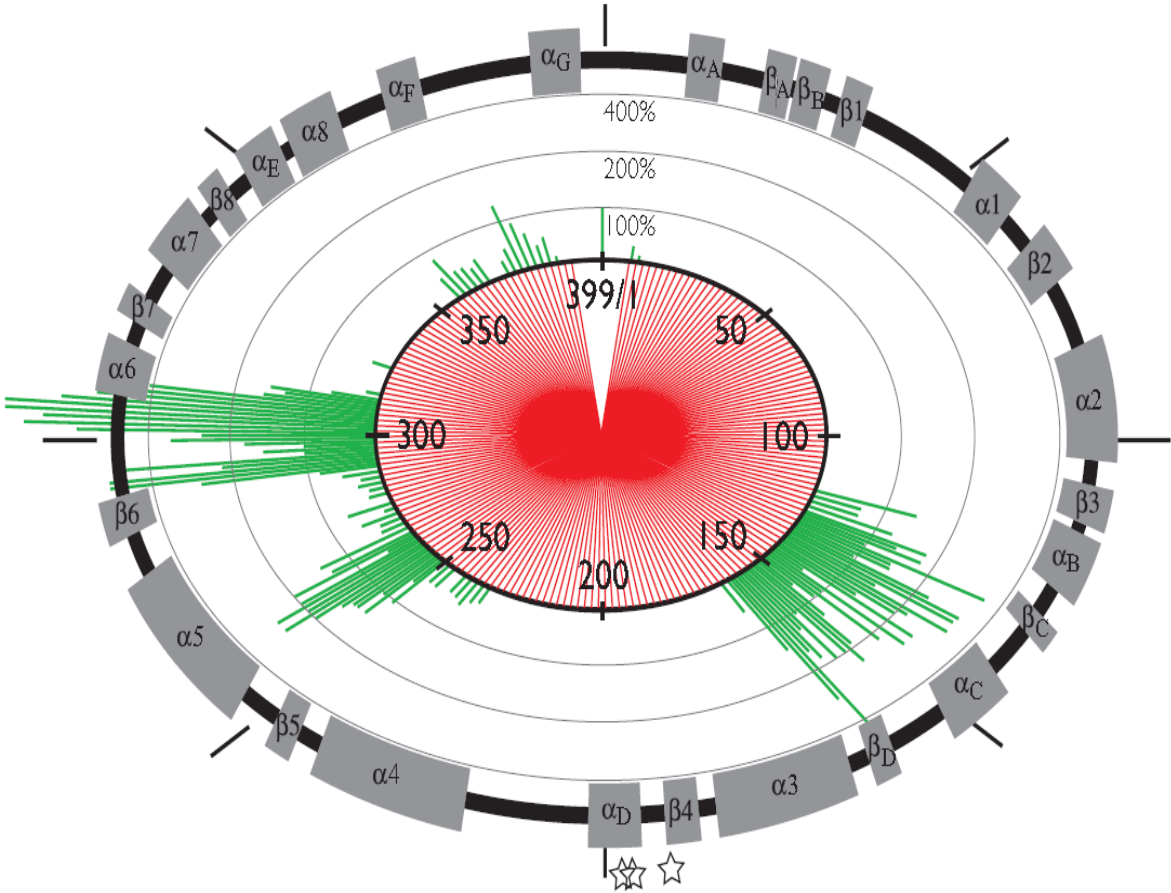


	region	ivTT	1 mM (1) / GC	1 mM (1) / UV
WT		1x	6.5 min <sup>-1</sup> (1x)	4 min <sup>-1</sup> (1x)
cpOYE146	I	1.3x	19 min <sup>-1</sup> (3x)	12.4 min <sup>-1</sup> (3x)
cpOYE160	I	1.6x	10.1 min <sup>-1</sup> (1.6x)	7.2 min <sup>-1</sup> (1.8x)
cpOYE260	II	2x	25.4 min <sup>-1</sup> (4x)	16 min <sup>-1</sup> (4x)
cpOYE292	III	4.3x	67 min <sup>-1</sup> (10x)	32 min <sup>-1</sup> (8x)
cpOYE303	III	5.3x	122 min <sup>-1</sup> (19x)	77 min <sup>-1</sup> (19x)
cpOYE306	III	4.2x	47.2 min <sup>-1</sup> (7.3x)	20.7 min <sup>-1</sup> (5.2x)

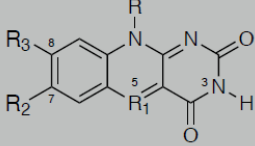
**FIG. 7**

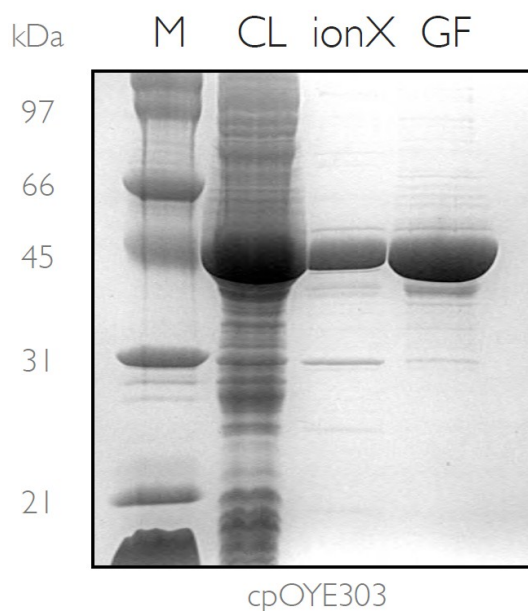


**FIG. 8-1**



**FIG. 8-2**

 R = D-ribityl	R <sub>1</sub> =	R <sub>2</sub> =	R <sub>3</sub> =	redox potential (E <sub>1/2</sub> )
7,8-di(trifluoromethyl) riboflavin	N	-CF <sub>3</sub>	-CF <sub>3</sub>	+20 mV
8-cyano riboflavin	N	-CH <sub>3</sub>	-CN	-50 mV
7,8-dichloro riboflavin	N	-Cl	-Cl	-126 mV
8-chloro riboflavin	N	-CH <sub>3</sub>	-Cl	-152 mV
<b>riboflavin</b>	<b>N</b>	<b>-CH<sub>3</sub></b>	<b>-CH<sub>3</sub></b>	<b>-207 mV</b>
5-deaza-5-carboriboflavin	C	-CH <sub>3</sub>	-CH <sub>3</sub>	-311 mV
8-amino riboflavin	N	-CH <sub>3</sub>	-NH <sub>2</sub>	-330 mV

**FIG. 9****FIG. 10**