

Table A1. Summary of gene and corresponding protein product information and denomination of six opsins and three cognate transducers from the original genome project and the present study.

Gene	Locus tag	Annotated product	Genome project note	AA length	Protein name in this study	Gene name in this study
<i>bop</i>	rrnAC3161	bacteriorhodopsin		250	HmBRI	<i>bop</i>
<i>hop</i>	rrnAC1659	halorhodopsin precursor	HR	276	HmHR	<i>hop</i>
<i>htr</i>	rrnAC3281	MCP domain-containing signal transducer	soluble protein	431	HmHtrI	
				528	reHmHtrI	<i>htr1</i>
<i>sop1</i>	rrnAC3280	sensory rhodopsin I	SR-I	236	HmSRI	<i>sop1</i>
<i>htr</i>	rrnAC0013	MCP domain-containing signal transducer	membrane protein	773	HmHtrII	<i>htr2</i>
<i>sop2</i>	rrnAC0014	sensory rhodopsin 1		236	HmSRII	<i>sop2</i>
<i>xop1</i>	rrnAC2030	bacteriorhodopsin precursor	BR	250	HmBRII	<i>xop1</i>
<i>xop2</i>	rrnAC0559	opsin of unknown function		232	HmSRM	<i>xop2</i>
	rrnAC0558	HAMP domain-containing protein	signal transducer	184	HmHtrM	<i>htrM</i>

Table A2. Primers used for the reverse transcriptase PCR experiments.

Gene	Primer ID	Sequences 5'-->3'	Blast matched Genome site	Gene site
<i>bop</i>	bop F	ATGCCAGCACCAGGGAGCGAA	2793474 > 2793494	2793474 > 2794226
	bop R	GTCTGCAGGCGTTGCGCCAGT	2794200 < 2794220	
<i>hop</i>	hop F	TTCATCGATCTGGGTGAACA	1490073 < 1490092	1489351 < 1490181
	hop R	CCAGAGCACACAGTGAGAA	1489561 > 1489580	
<i>sop1</i>	sop1 F	GGGGTTGCAGGTATCTCGTA	2902787 < 2902806	2902231 < 2902941
	sop1 R	CGTCGGGCGTAGAAAAAGTA	2902295 > 2901314	
<i>sop2</i>	sop2 F	GTTCACGCTGGGATTACTGG	14091 > 14110	14071 > 14781
	sop2 R	ACCACGTCGAGGTAAACGAC	14662 < 14681	
<i>xop1</i>	xop1 F	GGTGTAGAGGGCGAAGGAAT	1819355 < 1819374	1818640 < 1819401
	xop1 R	TTGAACGTCGACTGTGCTTC	1818869 > 1818888	
<i>xop2</i>	xop2 F	CTACTACCTGCCGCCGATAC	495417 < 495436	494845 < 495543
	xop2 R	TTTGGCAATGGTGTCAAGAA	494929 > 494948	
<i>htr1</i>	htr1 F	CCACAGCCTACCAGGACATT	2904087 < 2904106	2902941 < 2904236
	htr1 R	ATCTGGTCCATCTCCGTCAG	2903644 > 2903663	
<i>htr2</i>	htr2 F	ACGGAGAAACAGCAACGACT	12020 > 12039	11747 > 14068
	htr2 R	GGTCAGCCCATCAACATAC	12513 < 12532	
<i>htrM</i>	htrM F	TAGGAGCGGTGTTGGTTCTT	494705 < 494724	494219 < 494773
	htrM R	TATCGGGAATCGATCTCTGC	494220 > 494239	