

Supplementary Table 1: Expression of *cyp27c1* gene

species	order	stage	code	raw reads	reads after bacteria filtering	reads (Zebrafish <i>cyp27c1</i>)	reads (Medaka <i>cyp27c1</i>)	reads to most common opsin
<i>Anoplogaster cornuta</i>	Trachichthyiformes	Larva	39016	36,373,372	36,125,630	6	39	620
		Larva	39017	34,712,538	34,604,364	3	14	1,257
		Larva	4_23	41,592,840	41,519,070	13	41	10,215
		Larva	4_22	75,109,270	74,990,214	4	11	133,480
		Larva	4_21	28,945,804	28,869,552	10	19	64,446
		Larva	261s03	48,458,044	48,457,472	3	4	12,913
		Adult	56H6	11,658,040	11,635,610	0	0	1,473
<i>Ceratoscopelus warmingii</i>	Myctophiformes	Adult	300s03	49,078,974	44,114,639	0	0	81,655
		Adult	S1	8,796,786	8,789,961	5	8	16,378
		Adult	S2	8,655,248	8,649,342	0	0	25,227
		Adult	S3	7,904,714	7,899,617	0	0	20,815
<i>Chauliodus</i> sp.	Stomiiformes	Larva	67I2_2	34,445,252	34,371,394	0	0	150,691
		Larva	67I1	20,701,686	20,683,764	3	0	126,407
		Juvenile	109C7	32,865,334	32,834,300	0	0	129,259
		Juvenile	109A2	25,389,318	25,344,182	0	0	76,168
		Subadult	109D7	18,540,248	18,533,484	0	0	121,329
		Adult	109B6	24,854,866	24,835,646	0	0	106,114
		Larva	109G8	26,376,620	26,359,060	0	0	102,195
<i>Coccorella atlantica</i>	Aulopiformes	Adult	56C7	36,794,070	36,790,854	0	0	37,155
		Adult	297_7	43,948,534	40,511,279	0	0	10,430
		Adult	56H8	9,775,520	9,742,864	0	0	6,691
<i>Grammastomias flagellibarba</i>	Stomiiformes	Adult	56H8	9,775,520	9,742,864	0	0	6,691
<i>Gyrinomimus myersi</i>	Beryciformes	Larva	S25	19,270,096	19,122,986	19	68	64,566
<i>Howella brodiei</i>	Pempheriformes	Adult	56D8	56,905,264	43,936,178	0	0	17,201
		Adult	56D9	61,909,674	61,590,270	0	3	166,291
<i>Hygophum reinhardtii</i>	Myctophiformes	Larva	67I2_1	17,222,626	17,122,880	0	0	45,449
<i>Idiacanthus fasciola</i>	Stomiiformes	Larva	71C2	23,382,468	23,379,360	1	0	688
		Larva	67D2	6,647,384	6,623,496	0	0	470
		Larva	71C1	23,632,774	23,497,715	0	0	610
		Larva	67I7	25,713,960	25,701,768	0	0	58,121
		Larva	71B9	43,695,620	43,633,424	0	0	50,709
		Larva	67B8	28,333,642	28,313,024	24	25	24,282
		Larva	109A1	27,834,274	27,818,750	0	0	268,778
		Adult	228s01	21,704,528	21,622,274	3	0	91,813
		Adult	67F8	15,744,604	15,739,004	0	0	35,904
		Adult	67B6	11,368,044	15,439,954	0	0	520
		<i>Melamphaes</i> sp.	Beryciformes	Juvenile	4_26	38,583,370	38,534,507	29
Juvenile	4_28			35,489,970	35,431,421	4	35	29,336
<i>Melanolagus bericoides</i>	Argentiformes	Larva	71H3	26,219,646	26,210,402	0	0	209,343
<i>Pteraclis aesticola</i>	Scombriformes	Larva	109H4	19,918,922	19,870,484	0	0	2,490
<i>Pollichthys maui</i>	Stomiiformes	Adult	109I2	55,767,498	54,875,747	17	5	299,305
		Adult	109I3	68,655,686	67,082,709	0	0	388,496
<i>Scombrolabrax heterolepis</i>	Scombriformes	Adult	,56E3	65,770,014	5,527,135	1	12	47,072
		Adult	,56E4	60,643,652	60,472,479	0	15	28,231
<i>Scopelarchus</i> sp.	Aulopiformes	Larva	71B7	43,695,620	43,682,534	0	0	93,716
		Larva	109H1	37,542,802	37,416,486	0	0	30,914
		Larva	109B9	9,971,250	9,919,148	0	0	2,950
		Adult	272_10	45,565,202	43,729,338	0	0	10,929
<i>Scopelogadus mizolepis</i>	Beryciformes	Adult	,57E2	5,160,876	5,160,876	0	4	76,858
		Adult	300s01	15,448,240	15,420,650	0	0	11,449
<i>Scopelosaurus hoedti</i>	Aulopiformes	Adult	297_9	43,948,534	42,248,053	0	0	1,454
<i>Vinciguerria poweriae</i>	Stomiiformes	Larva	109H2	25,863,628	25,755,100	0	0	61,859
		Larva	109C8	22,914,004	22,858,398	0	0	16,118