

**S7 Table. Protein coding genes related to (A) growth, (B) pigment pattern and (C) sex differentiation found on LG12.**

<b>A. Genes related to growth</b>				
Scaffold	NCBI mRNA	NCBI protein	Predicted protein	Reference
10	XM_008423749.1	XP_008421971.1	BDNF/NT-3 growth factors receptor-like	[1]
10	XM_008423561.1	XP_008421783.1	epidermal growth factor-like protein 7	[2]
10	XM_008423514.1	XP_008421736.1	growth arrest-specific protein 1-like (GAS1)	[3]
10	XM_008423783.1	XP_008422005.1	growth/differentiation factor 7-like (GSDF)	[4]
10	XM_008423158.1	XP_008421380.1	Basic fibroblast growth factor receptor 1A-like (GHR1a)	[5]
13	XM_008424055.1	XP_008422277.1	fibroblast growth factor 10-like	[6]
188	XM_008424590.1	XP_008422812.1	teratocarcinoma-derived growth factor 1-like (TDGF1, one-eyed pinhead)	[7]
185	XM_008424758.1	XP_008422980.1	growth hormone receptor-like (GHR2)	[5]
<b>B. Genes related to pigment pattern formation</b>				
10	XM_008423759.1	XP_008421981.1	superkiller viralicidic activity 2-like 2 (skiv2l2)	[8]
10	XM_008423772.1	XP_008421994.1	SLC45A2 (aim1)	[9]
80	XM_008424603.1	XP_008422825.1	prepromelanin concentrating hormone (pro-MCH-like)	[10]
231	XM_008424833.1	XP_008423055.1	sepiapterin reductase (spra)	[11]
<b>C. Genes related to sex differentiation</b>				
10	XM_008423078.1	XP_008421300.1	nuclear receptor subfamily 5 group A member 1b (NR5A1b, SF1)	[12]
13	XM_008423879.1	XP_008422101.1	progesterin and adipoQ receptor family member 3-like	[13]
13	XM_008424014.1	XP_008422236.1	spermatid perinuclear RNA-binding protein	[14]
13	XM_008424087.1	XP_008422309.1	stAR-related lipid transfer protein 7	[15]

13	XM_008424101.1	XP_008422323.1	germ cell-less homolog 1	[16]
13	XM_008424116.1	XP_008422338.1	oxysterol-binding protein 2-like	[17]
13	XM_008424492.1	XP_008422714.1	prolactin receptor	[18]
13	XM_008424151.1	XP_008422373.1	prolactin-releasing peptide receptor-like	[19]
188	XM_008424583.1	XP_008422805.1	spindlin1-like (spin4, 1 of 4)	[20]
188	XM_008424565.1	XP_008422787.1	one cut domain family member 2	[21]
185	XM_008424751.1	XP_008422973.1	prostate androgen-regulated mucin-like protein 1 homolog (parm1)	[22]
185	XM_008424748.1	XP_008422970.1	5-hydroxytryptamine receptor 1A-beta-like	[23]
185	XM_008424735.1	XP_008422957.1	growth arrest and DNA damage-inducible protein GADD45 gamma-like	[24]

1. Germana A, Laura R, Montalbano G, Guerrera MC, Amato V, et al. (2010) Expression of brain-derived neurotrophic factor and TrkB in the lateral line system of zebrafish during development. *Cell Mol Neurobiol* 30: 787-793.
2. Shen MM, Schier AF (2000) The EGF-CFC gene family in vertebrate development. *Trends Genet* 16: 303-309.
3. Airaksinen MS, Holm L, Hatinen T (2006) Evolution of the GDNF family ligands and receptors. *Brain Behav Evol* 68: 181-190.
4. Myosho T, Otake H, Masuyama H, Matsuda M, Kuroki Y, et al. (2012) Tracing the emergence of a novel sex-determining gene in medaka, *Oryzias luzonensis*. *Genetics* 191: 163-170.
5. Ellens ER, Kittilson JD, Hall JA, Sower SA, Sheridan MA (2013) Evolutionary origin and divergence of the growth hormone receptor family: insight from studies on sea lamprey. *Gen Comp Endocrinol* 192: 222-236.
6. Liu F, Pogoda HM, Pearson CA, Ohyama K, Lohr H, et al. (2013) Direct and indirect roles of Fgf3 and Fgf10 in innervation and vascularisation of the vertebrate hypothalamic neurohypophysis. *Development* 140: 1111-1122.
7. Skinner MK, Schmidt M, Savenkova MI, Sadler-Riggleman I, Nilsson EE (2008) Regulation of granulosa and theca cell transcriptomes during ovarian antral follicle development. *Mol Reprod Dev* 75: 1457-1472.
8. Yang CT, Hindes AE, Hultman KA, Johnson SL (2007) Mutations in *gfpt1* and *skiv2l2* cause distinct stage-specific defects in larval melanocyte regeneration in zebrafish. *PLoS Genet* 3: e88.
9. Fukamachi S, Asakawa S, Wakamatsu Y, Shimizu N, Mitani H, et al. (2004) Conserved function of medaka pink-eyed dilution in melanin synthesis and its divergent transcriptional regulation in gonads among vertebrates. *Genetics* 168: 1519-1527.
10. Kawachi H, Baker BI (2004) Melanin-concentrating hormone signaling systems in fish. *Peptides* 25: 1577-1584.
11. Negishi S, Fujimoto K, Katoh S (2003) Localization of sepiapterin reductase in pigment cells of *Oryzias latipes*. *Pigment Cell Res* 16: 501-503.
12. Kuo MW, Postlethwait J, Lee WC, Lou SW, Chan WK, et al. (2005) Gene duplication, gene loss and evolution of expression domains in the vertebrate nuclear receptor NR5A (Ftz-F1) family. *Biochem J* 389: 19-26.

13. Thomas P, Pang Y (2012) Membrane progesterone receptors: evidence for neuroprotective, neurosteroid signaling and neuroendocrine functions in neuronal cells. *Neuroendocrinology* 96: 162-171.
14. Meikar O, Vagin VV, Chalmel F, Sostar K, Lardenois A, et al. (2014) An atlas of chromatoid body components. *RNA* 20: 483-495.
15. Miller WL (2013) Steroid hormone synthesis in mitochondria. *Mol Cell Endocrinol* 379: 62-73.
16. Cinalli RM, Lehmann R (2013) A spindle-independent cleavage pathway controls germ cell formation in *Drosophila*. *Nat Cell Biol* 15: 839-845.
17. Ramachandra RK, Lankford SE, Weber GM, Rexroad CE, 3rd, Yao J (2007) Identification of OORP-T, a novel oocyte-specific gene encoding a protein with a conserved oxysterol binding protein domain in rainbow trout. *Mol Reprod Dev* 74: 502-511.
18. Whittington CM, Wilson AB (2013) The role of prolactin in fish reproduction. *Gen Comp Endocrinol* 191: 123-136.
19. Watanabe S, Kaneko T (2010) Prolactin-releasing peptide receptor expressed in the pituitary in Mozambique tilapia *Oreochromis mossambicus*: an aspect of prolactin regulatory mechanisms. *Gen Comp Endocrinol* 167: 27-34.
20. Chew TG, Peaston A, Lim AK, Lorthongpanich C, Knowles BB, et al. (2013) A tudor domain protein SPINDLIN1 interacts with the mRNA-binding protein SERBPI and is involved in mouse oocyte meiotic resumption. *PLoS One* 8: e69764.
21. Gladden JM, Meyer BJ (2007) A ONECUT homeodomain protein communicates X chromosome dose to specify *Caenorhabditis elegans* sexual fate by repressing a sex switch gene. *Genetics* 177: 1621-1637.
22. Park JY, Jang H, Curry TE, Sakamoto A, Jo M (2013) Prostate androgen-regulated mucin-like protein 1: a novel regulator of progesterone metabolism. *Mol Endocrinol* 27: 1871-1886.
23. Loveland JL, Uy N, Maruska KP, Carpenter RE, Fernald RD (2014) Social status differences regulate the serotonergic system of a cichlid fish, *Astatotilapia burtoni*. *J Exp Biol* 217: 2680-2690.
24. Johnen H, Gonzalez-Silva L, Carramolino L, Flores JM, Torres M, et al. (2013) Gadd45g is essential for primary sex determination, male fertility and testis development. *PLoS One* 8: e58751.