

Table S1. Morphometric characteristics of glutamine synthetase-positive cells ($M \pm SD$) in the pallial and subpallial zones of the telencephalon in intact juvenile chum salmon *Oncorhynchus keta* and on day 3 days post-injury

Pallial/subpallial zone	Size of GS labeled cells (μm), area of localization, intensity of immunolabeling					
	Intact animals			Injured telencephalon		
	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Negative</i>	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Negative</i>
DD	4.5 $\pm$ 0.5/4.3 $\pm$ 0.3 (PVZ) 7.8 $\pm$ 0.7/6.3 $\pm$ 0.6 (PVZ, PZ)	4.8 $\pm$ 1.0/3.6 $\pm$ 0.6 (SVZ) 9.5 $\pm$ 1.4/7.1 $\pm$ 0.8 (PVZ, PZ)	10.1 $\pm$ 1.0/7.4 $\pm$ 0.8 (PVZ, SVZ) 7.2 $\pm$ 0.5/5.7 $\pm$ 0.5 (SVZ, PZ)	4.5 $\pm$ 0.5/4.3 $\pm$ 0.3 (PVZ) 7.8 $\pm$ 0.9/5.5 $\pm$ 0.9* (DD1, DD2 PVZ) 8.1 $\pm$ 0.6/6.2 $\pm$ 0.5 (DD1, DD2, DD3 PVZ) 7.8 $\pm$ 0.8/6.3 $\pm$ 0.4* (DD3 PVZ)	7.3 $\pm$ 0.9/5.7 $\pm$ 0.9 (DD1, DD2, PVZ, SVZ) 7.8 $\pm$ 0.6/5.9 $\pm$ 0.5(DD3, SVZ)	5.7 $\pm$ 1.8/4.3 $\pm$ 1.7 (PVZ) 7.5 $\pm$ 1.1/6.0 $\pm$ 1.1(DD1, DD2, DD3 SVZ, PZ) 8.2 $\pm$ 0.9/4.2 $\pm$ 0.2 (DD1, DD2, DD3, PZ)
DM	1.5 $\pm$ 0.2/1.2 $\pm$ 0.1 (PVZ, SVZ, PZ) 4.4 $\pm$ 0.5/4.2 $\pm$ 0.3 (PVZ, SVZ) 7.6 $\pm$ 0.8/7.3 $\pm$ 0.6 (PVZ, SVZ, PZ)	1.3 $\pm$ 0.2/1.1 $\pm$ 0.1 (SVZ, PZ) 4.6 $\pm$ 0.3/4.4 $\pm$ 0.2 (SVZ) 8.6 $\pm$ 0.6/7.0 $\pm$ 0.7 (SVZ, PZ)	9.3 $\pm$ 0.8/6.8 $\pm$ 1.0 (PVZ, SVZ) 8.3 $\pm$ 0.4/4.8 $\pm$ 0.6 (PZ)	4.6 $\pm$ 0.5/4.2 $\pm$ 0.4(PVZ) 7.8 $\pm$ 0.9/5.5 $\pm$ 0.9* (DM1, DM2, DM3 PVZ) 8.3 $\pm$ 0.5/5.8 $\pm$ 0.8 (DM1, DM2, DM3 PVZ)	4.5 $\pm$ 0.5/4.3 $\pm$ 0.3 (DM1, DM2, DM3 PVZ) 7.2 $\pm$ 0.8/5.5 $\pm$ 0.7* (DM1, DM2, DM3 PVZ, SVZ)	7.2 $\pm$ 0.5/6.2 $\pm$ 0.9 (PVZ) 7.7 $\pm$ 0.4/4.5 $\pm$ 0.5 (DM1, DM2, DM3, SVZ, PZ).
DL	4.5 $\pm$ 0.5/4.3 $\pm$ 0.3 (PVZ) 7.9 $\pm$ 0.6/4.2 $\pm$ 0.6 (PVZ, PZ)	4.4 $\pm$ 0.4/4.3 $\pm$ 0.5 (PVZ, PZ) 7.7 $\pm$ 0.6/6.4 $\pm$ 0.5(PZ)	5.7 $\pm$ 0.4/4.4 $\pm$ 0.2 (PVZ, PZ) 8.4 $\pm$ 0.6/5.8 $\pm$ 0.9 (PZ)	7.0 $\pm$ 0.2/4.2 $\pm$ 0.2 (DL1, DL2, DL3 PVZ, DL2 SVZ) 8.1 $\pm$ 0.7/5.7 $\pm$ 0.6* (DL1, DL2, DL3 PVZ)	4.7 $\pm$ 0.3/4.4 $\pm$ 0.2 (DL2, DL3 PVZ) 6.8 $\pm$ 0.3/4.3 $\pm$ 0.2 (DL1, DL2, SVZ)	6.9 $\pm$ 0.4/6.3 $\pm$ 0.4 (PVZ) 7.4 $\pm$ 0.7/4.7 $\pm$ 0.5 (DL1, DL2, DL3 SVZ, PZ)
VD	4.8 $\pm$ 0.8/3.6 $\pm$ 0.5 (PVZ) 7.2 $\pm$ 0.4/6.3 $\pm$ 0.3 (PVZ, PZ)	1.1 $\pm$ 0.2/0.9 $\pm$ 0.2 (PVZ, SVZ, PZ) 4.7 $\pm$ 0.4/4.5 $\pm$ 0.3 (SVZ, PZ) 8.2 $\pm$ 0.5/7.0 $\pm$ 0.4 (SVZ, PZ)	7.4 $\pm$ 1.0/5.2 $\pm$ 1.2 (PVZ) 8.5 $\pm$ 0.3/6.4 $\pm$ 0.4 (SVZ, PZ).	4.5 $\pm$ 0.5/3.7 $\pm$ 0.3 (VD1, VD2 PVZ) 9.3 $\pm$ 0.7/3.8 $\pm$ 0.3 (VD1 PVZ) 7.8 $\pm$ 0.5/5.8 $\pm$ 0.5* (VD1, VD2 PVZ)	4.6 $\pm$ 0.4/3.7 $\pm$ 0.4 (VD1, VD2 PVZ) 8.7 $\pm$ 0.7/4.1 $\pm$ 0.3 (VD2 SVZ)	6.5 $\pm$ 0.3/5.5 $\pm$ 0.3(VD1, VD2 PVZ, SVZ) 9.5 $\pm$ 0.5/3.7 $\pm$ 0.4 (VD1 PVZ) 8.2 $\pm$ 0.4/5.7 $\pm$ 0.5 (VD1, VD2, PZ)
VV	1.3 $\pm$ 0.3/1.2 $\pm$ 0.3 (SVZ) 5.6 $\pm$ 0.2/2.8 $\pm$ 0.2 (PVZ) 7.4 $\pm$ 0.5/6.6 $\pm$ 0.4 (PVZ, PZ)	1.2 $\pm$ 0.1/0.9 $\pm$ 0.3 (PVZ, SVZ, PZ) 5.2 $\pm$ 0.3/4.6 $\pm$ 0.4 (PVZ, SVZ, PZ) 7.2 $\pm$ 0.3/6.4 $\pm$ 0.5 (PVZ, SVZ, PZ)	7.2 $\pm$ 0.5/5.7 $\pm$ 0.2 (SVZ, PZ) 8.4 $\pm$ 0.7/6.4 $\pm$ 0.5 (SVZ, PZ).	4.4 $\pm$ 0.6/3.8 $\pm$ 0.3 (VV2 PVZ) 8.3 $\pm$ 0.5/5.8 $\pm$ 0.6 (VV1 PVZ) 7.8 $\pm$ 0.5/5.8 $\pm$ 0.5* (VV1, PVZ)	7.8 $\pm$ 0.6/6.1 $\pm$ 0.6 (VV1 SVZ, PZ)	7.2 $\pm$ 0.8/5.3 $\pm$ 0.7 (VV1, SVZ) 6.8 $\pm$ 0.5/5.5 $\pm$ 0.7 (VV2, SVZ, PZ)
VL	5.1 $\pm$ 0.8/4.1 $\pm$ 0.9 (PVZ)	1.3 $\pm$ 0.2/1.0 $\pm$ 0.3 (PVZ, SVZ, PZ)	5.2 $\pm$ 0.3/4.7 $\pm$ 0.3 (PZ) 6.4 $\pm$ 0.3/6.1 $\pm$ 0.2 (SVZ,	5.1 $\pm$ 0.5/3.9 $\pm$ 1.1 (VL1, VL2, PZ)	4.5 $\pm$ 0.3/3.7 $\pm$ 0.2 (VL1, SVZ)	8.7 $\pm$ 0.6/6.0 $\pm$ 0.3 (VL1, VL2, SVZ, PZ)

	7.6±0.3/6.8±0.2 (PZ)	5.3±0.3/4.5±0.4 (SVZ, PZ) 7.4±0.5/6.5±0.3 (PZ)	PZ)		6.5±0.3/4.4±0.4 (VL2, SVZ) 8.1±0.5/5.4±0.5* (VL1, PVZ)	
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Large- and small-sizes of neurons are shown through a slash. Cells were morphologically classified according to a previously developed scheme [6]. * indicates radial glia that appear in the intact juvenile chum salmon *O. keta* telencephalon and/or after injury.

Table S2. Morphometric characteristics of cystathionine β -synthase (CBS) positive cells ($M \pm SD$) in the pallial and subpallial zones of the telencephalon in intact juvenile chum salmon *Oncorhynchus keta* and on day 3 post-injury

Pallial/subpallial zone	Size of CBS-labeled cells (μm), area of localization, intensity of immunolabeling					
	Intact animals			Injured telencephalon		
	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Negative</i>	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Negative</i>
DD	4.6±0.6/4.4±0.3 (PVZ) 6.7±0.7/6.3±0.8 (PVZ, SVZ)	1.3±0.1/1.0±0.2 (PVZ, SVZ, PZ) 4.5±0.5/4.3±0.4 (SVZ) 9.5±1.4/7.1±0.8 (PVZ, PZ)	10.1±1.0/7.4 ±0.8 (PVZ, SVZ) 7.6±0.9/6.5±0.7 (SVZ, PZ)	6.7±0.3/5.1±0.6 (PVZ, SVZ, PZ) 8.1±0.6/6.2±0.5 (PVZ, PZ)	7.3±0.9/5.7±0.9 (SVZ, PZ)	8.1±0.5/6.6±0.5 (SVZ, PZ)
DM	4.4±0.5/4.2±0.3 (PVZ, SVZ) 7.8±0.7/7.3 ±0.6 (PVZ, SVZ, PZ)	1.4±0.2/1.1±0.1 (PVZ, SVZ, PZ) 9.2±0.9/7.0 ±0.7 (SVZ, PZ)	9.3±0.8/6.8±1.0 (PVZ, SVZ) 6.3±0.4/3.8±0.6 (PZ)	5.9±0.9/4.8±0.5 (PVZ, SVZ) 7.8±0.5/5.8±0.7 (PZ)	5.5±0.5/4.7±0.3 (PVZ, SVZ) 8.0±0.4/5.9±0.4 (PZ)	8.1±0.5/6.2±0.9 (SVZ, PZ).
DL	4.4±0.5/4.3±0.2 (PVZ) 8.0±1.4/6.1±1.0 (PVZ, PZ)	4.4±0.4/4.3±0.5 (PVZ) 8.1±0.3/6.1±0.7 (PZ)	5.7±0.4/4.4±0.2 (PVZ, PZ) 8.8±1.3/6.5±0.7 (PZ)	5.6±0.7/5.1±0.4 (PVZ) 7.8±0.7/5.5±0.4 (PZ)	5.7±0.8/4.4±0.3 (SVZ, PZ)	6.9±0.8/5.4±0.9 (SVZ, PZ) 8.9±0.7/7.2±0.7 (PZ)
VD	1.2±0.1/1.0±0.3 (PVZ) 4.8±0.8/3.6±0.5 (PVZ) 8.0±0.8/6.5±0.7 (PVZ,PZ)	1.1±0.2/0.9±0.2 (PVZ, SVZ) 8.1±0.8/6.5±0.5 (PZ)	7.4±1.0/5.2±1.2 (PVZ) 6.3±0.4/3.8±0.6 (SVZ, PZ) 8.4±0.9/6.1±0.9 (SVZ, PZ)	6.6±0.6/5.6±0.5 (PVZ, SVZ, PZ)	6.4±0.8/5.8±0.5 (PVZ, SVZ, PZ) 7.4±0.3/6.4±0.3 (PZ)	7.8±0.4/5.3±0.4 (PVZ, SVZ) 8.2±0.4/6.1±0.3(PZ)
VV	6.6±0.3/3.6±0.4 (PVZ) 7.4±0.5/6.6±0.4 (PVZ, PZ)	1.2±0.2/1.1±0.3 (PVZ, SVZ, PZ) 5.2±0.3/4.6±0.4 (PVZ, SVZ, PZ) 7.6±0.7/5.7±0.7 (SVZ,	7.4±0.4/5.6±0.4 (SVZ, PZ)	4.7±0.2/3.4±0.4 (PVZ) 8.3±0.5/3.8±0.6 (PVZ) 7.3±0.4/6.3±0.3 (PZ)	6.2±0.6/5.7±0.3 (PVZ, SVZ, PZ)	6.8±0.5/5.5±0.7 (SVZ, PZ) 7.2±0.3/5.3±0.7 (SVZ)

		PZ)				
VL	4.4±0.8/4.1±0.6 (PVZ, SVZ, PZ) 9.0±0.3/7.3±0.7 (PZ)	1.3±0.2/1.0±0.3 (PVZ) 5.3±0.3/4.5±0.4 (PVZ, SVZ) 8.5±0.7/6.1±0.4 (PZ)	5.2±0.3/4.7±0.3 (PZ) 8.6±0.3/6.8±0.7 (SVZ, PZ)	5.8±0.7/6.3±0.7 (PVZ, SVZ, PZ)	5.8±0.4/5.7±0.4 (PVZ, SVZ) 6.5±0.3/4.4±0.4 (SVZ, PZ)	5.8±0.7/6.3±0.9 (SVZ, PZ)

Table S3. Morphometric characteristics of Pax2 expressing cells ($M \pm SD$) in the pallial and subpallial zones of the telencephalon of intact juvenile chum salmon *Oncorhynchus keta* and on day 3 post-injury.

Pallial/ subpallial area	Size of Pax2-expressing cells (μm), area of localization, intensity of immunolabeling							
	Intact animals				Injured telencephalon			
	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Weak labeling</i>	<i>Negative</i>	<i>Intense labeling</i>	<i>Moderate labeling</i>	<i>Weak labeling</i>	<i>Negative</i>
DD	4.2±0.8/2.7±0.4 (PVZ, nuclei) 5.7±0.7/5.3±0.7 (PVZ, SVZ)	3.5±0.5/3.3±0.2 (SVZ, PZ, nuclei) 9.5±1.4/7.1±0.8 (PVZ, PZ)	4.8±0.3/4.2±0.3 (SVZ, PZ)	5.7±0.9/4.3±0.7 (PZ) 7.9±0.6/6.7±0.5 (PZ)	3.3±0.5/3.1±0.3 (PVZ, SVZ, PZ, nuclei) 6.5±0.4/2.8±0.4 (PVZ) 5.5±1.4/6.1±0.4 (PVZ, PZ)	3.2±0.4/2.9±0.3 (PVZ, SVZ, PZ, nuclei) 5.9±0.6/5.7±0.3 (SVZ, PZ)	-	6.3±0.5/5.6±0.5 (PVZ, SVZ, PZ) 8.0±0.7/6.7±0.7 (PZ)
DM	3.5±0.5/2.7±0.3 (PVZ, SVZ, nuclei) 7.8±0.7/7.3 ±0.6 (PVZ, SVZ, PZ)	1.4±0.2/1.1±0.1 (SVZ, PZ) 3.4±0.4/2.7±0.3 (PVZ, SVZ, nuclei) 5.0±0.4/3.7±0.6 (SVZ, PZ)	5.2±0.4/4.5±0.4 (PZ)	6.6±1.0/4.8±0.5 (SVZ, PZ) 9.1±1.0/4.4 ±0.6 (PZ)	3.1±0.3/2.9±0.2 (PVZ,SVZ, nuclei) 6.5±0.4/2.8±0.3 (PVZ) 5.4±0.6/5.2±0.6 (PVZ, SVZ)	3.1±0.3/2.9±0.3 (PVZ, SVZ, nuclei) 5.5±0.5/4.7±0.3 (SVZ, PZ)	6.8±0.8/5.1±0.3 (SVZ. PZ)	7.2±0.4/5.4±0.5 (PVZ. SVZ) 8.2±0.6/6.8±0.5 (PZ)
DL	3.4±0.4/2.6±0.4 (PVZ, nuclei) 4.8±0.7/3.8±0.3 (PVZ, SVZ) 8.8±0.6/6.1±1.0 (SVZ, PZ)	4.4±0.4/4.3±0.5 (PVZ) 6.1±0.3/5.5±0.7 (SVZ, PZ)	5.7±0.4/5.1±0.4 (PZ)	6.4±0.6/4.7±0.4 (SVZ, PZ) 8.7±0.9/4.2 ±0.7 (PZ)	4.1±0.3/6.1±0.6 (PVZ, SVZ)	3.2±0.3/3.0±0.3 (PVZ, SVZ, nuclei) 5.7±0.8/4.4±0.3 (SVZ, PZ)	6.6±0.7/5.2±0.3 (SVZ, PZ)	5.6±0.4/4.4±0.3 (PVZ, SVZ) 7.2±0.8/5.8±0.7 (SVZ, PZ)
VD	4.4±0.8/3.0±0.4 (PVZ)	3.4±0.3/2.7±0.3 (SVZ, PZ) 8.2±0.7/6.5±0.5	6.7±0.5/5.2±0.3 (PZ)	5.6±1.1/3.7±0.8 (PVZ, SVZ) 7.9±0.6/6.7±0.5 (PZ)	3.1±0.3/3.1±0.3 (PVZ, nuclei) 4.1±0.4/5.5±1.1	3.2±0.2/2.9±0.3 (PVZ, SVZ, nuclei)	5.8±0.4/4.8±0.4 (SVZ, PZ)	6.4±1.0/5.2±1.2 (PVZ, SVZ) 7.5±0.8/6.1±0.3

		(SVZ, PZ)		8.9±0.9/3.9 ±0.6 (PZ)	(PVZ, SVZ)	4.8±0.4/4.2±0.5 (SVZ, PZ)		(SVZ, PZ)
VV	5.0±0.9/3.8±0.6 (PVZ, SVZ)	3.4±0.4/2.7±0.3 (PVZ, SVZ, nuclei) 7.6±0.7/5.7±0.7 (SVZ, PZ)	6.4±0.7/5.3±0.6 (PZ)	6.2±0.9/4.3±1.11 (SVZ, PZ) 7.7±0.6/6.8±0.4 (PZ) 9.1±0.9/3.9 ±0.2 (PZ)	3.1±0.2/2.9±0.3 (PVZ, nuclei) 6.6±1.0/5.6±0.6 (PVZ) 7.2±0.4/6.3±0.3 (PZ)	3.1±0.2/2.9±0.3 (PVZ, nuclei) 6.2±0.6/5.7±0.3 (SVZ, PZ)	5.6±0.3/4.8±0.4 (SVZ, PZ)	6.2±1.3/5.6±0.3 (PVZ, SVZ, PZ)
VL	3.5±0.3/2.7±0.3 (PVZ, SVZ nuclei) 6.2±0.5/4.1±0.5 (PZ)	3.5±0.3/2.7±0.3 (PVZ, SVZ nuclei) 5.4±1.0/3.9±0.6 (SVZ, PZ)	6.2±0.5/4.8±0.4 (PZ)	6.5±1.2/4.6±0.3(SVZ, PZ) 7.9±0.7/6.6±0.5 (PZ) 8.9±0.9/4.0 ±0.7 (PZ)	3.2±0.3/3.0±0.2 (PVZ, nuclei) 6.1±0.4/4.5±0.6 (PVZ, SVZ)	3.1±0.2/3.0±0.2 (PVZ, SVZ nuclei) 5.8±0.3/5.3±0.4 (SVZ) 6.5±0.5/4.6±0.4 (SVZ, PZ)	5.5±0.4/4.8±0.6 (PZ)	5.2±1.1/4.6±1.4 (PVZ, SVZ, PZ)