



Supplementary Figure 1

## Supplementary Figure 1

### Spontaneous swimming in dorsal-V0v-ablated fish did not show any obvious defects

(A) Laser ablation of dorsally located V0v neurons. Confocal stacked images of Tg[*evx2*-hs:GFP] fish before (left) and after (right) laser ablation. Images of two hemi-segments are shown. Magenta arrows show dorsally located V0v neurons that were chosen for laser ablation. Brown lines show boundaries of muscle segments. (B) Graphs of head yaw angle (y axis) versus time (x-axis) during swimming. Left, intact fish. Right, dorsal-V0v-ablated fish. For the rest of the panels (C-H), five fish were examined for each fish type. For each fish, 10 swim bouts (or a 1-min movie in the case of E) were examined. Data obtained from the same fish are color coded. (C) Maximum head yaw angle of intact and dorsal-ablated fish during swim bouts. Average values: intact fish,  $6.40 \pm 2.16$ ; dorsal-V0v-ablated fish,  $6.12 \pm 2.18$ . Statistically not significant (n.s.;  $p = 0.54$ ). (D) Mean head yaw angle for displacement peaks of intact and dorsal-V0v-ablated fish during swim bouts. Average values: intact fish,  $5.35 \pm 1.51$  degrees; dorsal-V0v-ablated fish,  $4.98 \pm 1.56$  degrees. Statistically not significant (n.s.;  $p = 0.18$ ). (E) Occurrence frequency of swim bouts (per min) of intact and dorsal-V0v-ablated fish. Average values: intact fish,  $40.50 \pm 4.90$  times/min; dorsal-V0v-ablated fish,  $40.15 \pm 5.59$  times/min. Statistically not significant (n.s.;  $p = 0.75$ ). (F) Swim bout duration of intact and dorsal-V0v-ablated fish. Average values: intact fish,  $40.50 \pm 4.90$  ms; dorsal-V0v-ablated fish,  $40.15 \pm 5.59$  ms. Statistically not significant (n.s.;  $p = 0.75$ ). (G) Average swim speed in bouts of intact and dorsal-V0v-ablated fish. Average values: intact fish,  $146.46 \pm 14.78$   $\mu\text{m}/\text{ms}$ ; dorsal-V0v-ablated fish,  $161.15 \pm 16.07$   $\mu\text{m}/\text{ms}$ . Statistically not significant (n.s.;  $p = 0.31$ ). (H) Average tail beat frequency in bouts of intact and dorsal-V0v-ablated fish. Average values: intact fish,  $25.44 \pm 2.48$  Hz; dorsal-V0v-ablated fish,  $24.76 \pm 3.05$  Hz. Statistically not significant (n.s.;  $p = 0.21$ ).