

Fig. S1. High levels of GFP expression driven by Tg[vglut2a:Gal4] and Tg[glyt2:Gal4]. Comparisons of GFP expression between the simple transgenic fish (Tg[vglut2a:GFP] and Tg[glyt2:GFP]) and the corresponding Gal4 transgenic fish. Images were taken from fish that were 3.5 dpf. **(A,B)** Lateral views of the spinal cord in the Tg[vglut2a:GFP] transgenic fish and the Tg[vglut2a:Gal4]; Tg[UAS:GFP] compound transgenic fish. Higher levels of GFP expression occurs in B. **(C,D)** Lateral views of the spinal cord in the Tg[glyt2:GFP] transgenic fish and the Tg[glyt2:Gal4]; Tg[UAS:GFP] compound transgenic fish. Higher levels of GFP expression occurs in D. Scale bar: 50 μ m.

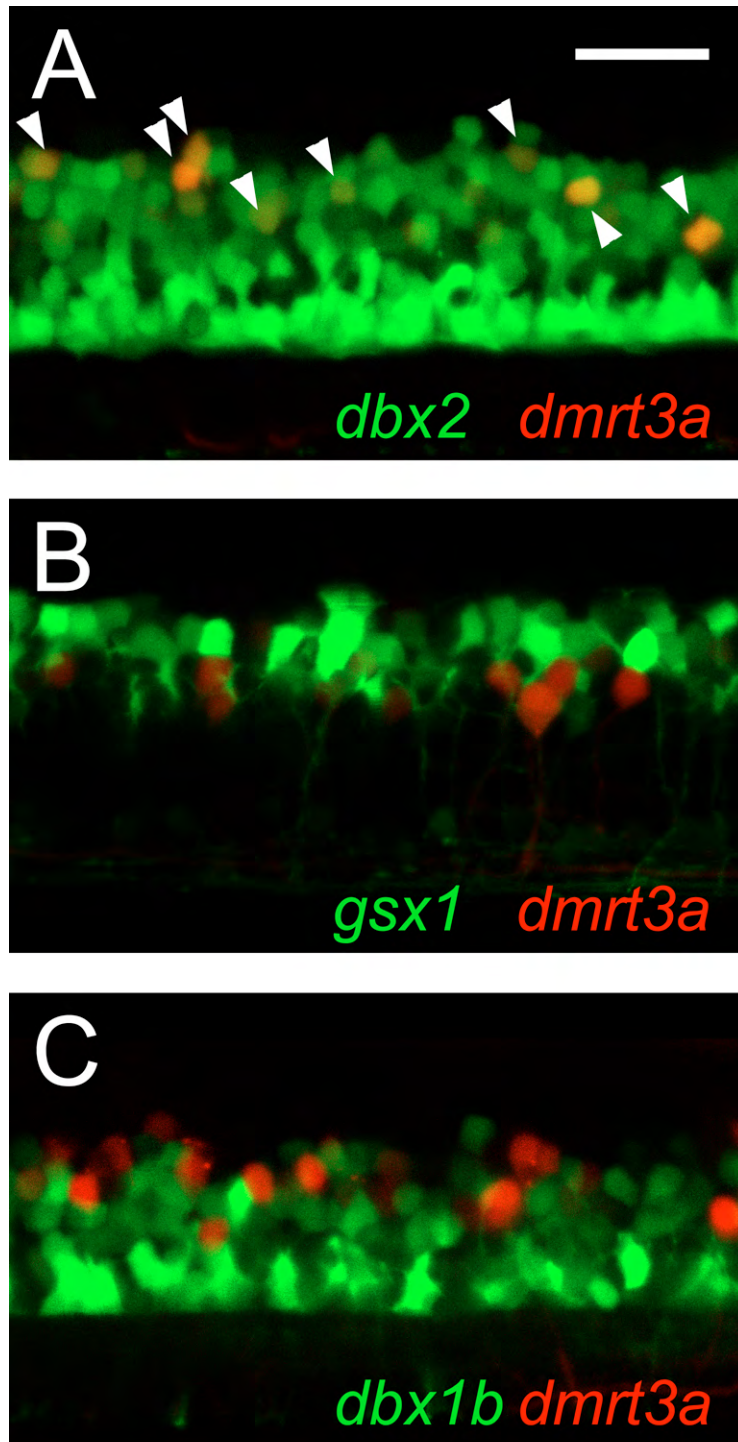


Fig. S2. *dmrt3a*-positive neurons derive from the *pd6* domain. Images are lateral views of the spinal cord at 3.5 dpf. (A) *Tg[dbx2:GFP]* and *Tg[dmrt3a:RFP]* compound transgenic fish. All the *dmrt3a:RFP* neurons are positive for *dbx2:GFP* (arrowheads). **(B)** *Tg[gsx1:GFP]* and *Tg[dmrt3a:RFP]* compound transgenic fish. None of the *dmrt3a:RFP* neurons is positive for *gsx1:GFP*. **(C)** *Tg[dbx1b:GFP]* and *Tg[dmrt3a:RFP]* compound transgenic fish. None of the *dmrt3a:RFP* neurons is positive for *dbx1b:GFP*. Scale bar: 50 μ m.

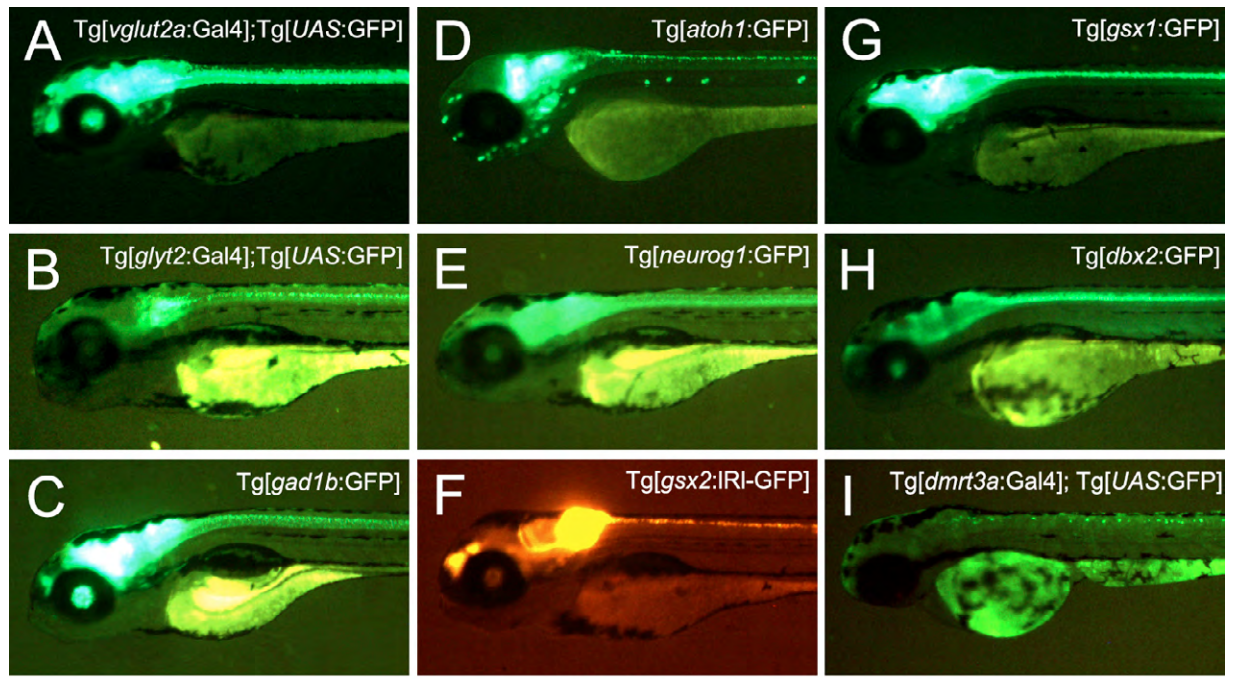


Fig. S3. Fluorescent images of the entire body in the newly generated transgenic fish. (A-I) Images were taken from fish that were 3.5 dpf.



Movie 1. Time-lapse imaging of Tg[atoh1a:GFP]. Time-lapse imaging of Tg[atoh1a:GFP] from 3 dpf to 5 dpf. Lateral view of the spinal cord. The movie shows that some neurons derived from *atoh1a*-positive progenitors migrate ventrally.