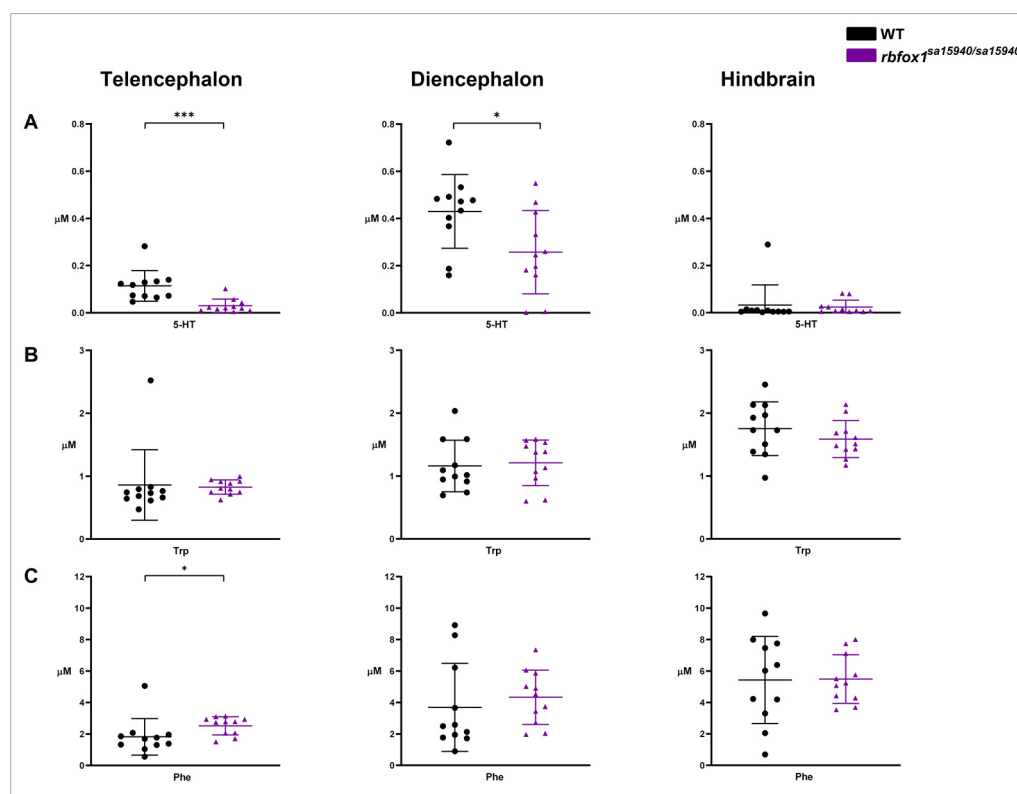




Supplementary Material

Quantification of basal serotonin, tryptophan, and phenylalanine levels

Raw levels of serotonin (5-HT), tryptophan (Trp) and phenylalanine (Phe) were measured via ultra-high-performance liquid chromatography-tandem mass spectrometry (UPLC/MS-MS) as described in **4. Materials and Methods**. Without normalization, the 5-HT levels in *rbfox1*^{sa15940/sa15940} zebrafish are significantly lower than in WT zebrafish in the telencephalon and diencephalon ($p_{\text{adj}} < 0.0001$ and $p_{\text{adj}} = 0.0336$, respectively) but not the hindbrain ($p_{\text{adj}} = 0.3316$) (Supplementary Figure S1). Raw Trp and Phe levels do not show significant differences except for raw Phe levels in the Telencephalon, which were higher in *rbfox1*^{sa15940/sa15940} zebrafish ($p_{\text{adj}} = 0.0104$).



Supplementary Figure S1: Raw levels of serotonin, tryptophan, and phenylalanine in wildtype and *rbfox1*^{sa15940/sa15940} zebrafish. (A) Serotonin (5-HT), (B) tryptophan (Trp) and (C) phenylalanine (Phe) levels of adult zebrafish were measured via ultra-high-performance liquid chromatography-tandem mass spectrometry (UPLC/MS-MS) in the telencephalon, diencephalon and hindbrain. WT = wildtype, *rbfox1*^{sa15940/sa15940} = homozygous mutants, 5-HT = Serotonin, Trp = Tryptophan, Phe = Phenylalanine; N = 11 per group; Two tailed Mann-Whitney test; mean $\pm$ SD; * $p_{\text{adj}} < 0.05$, *** $p_{\text{adj}} < 0.001$.