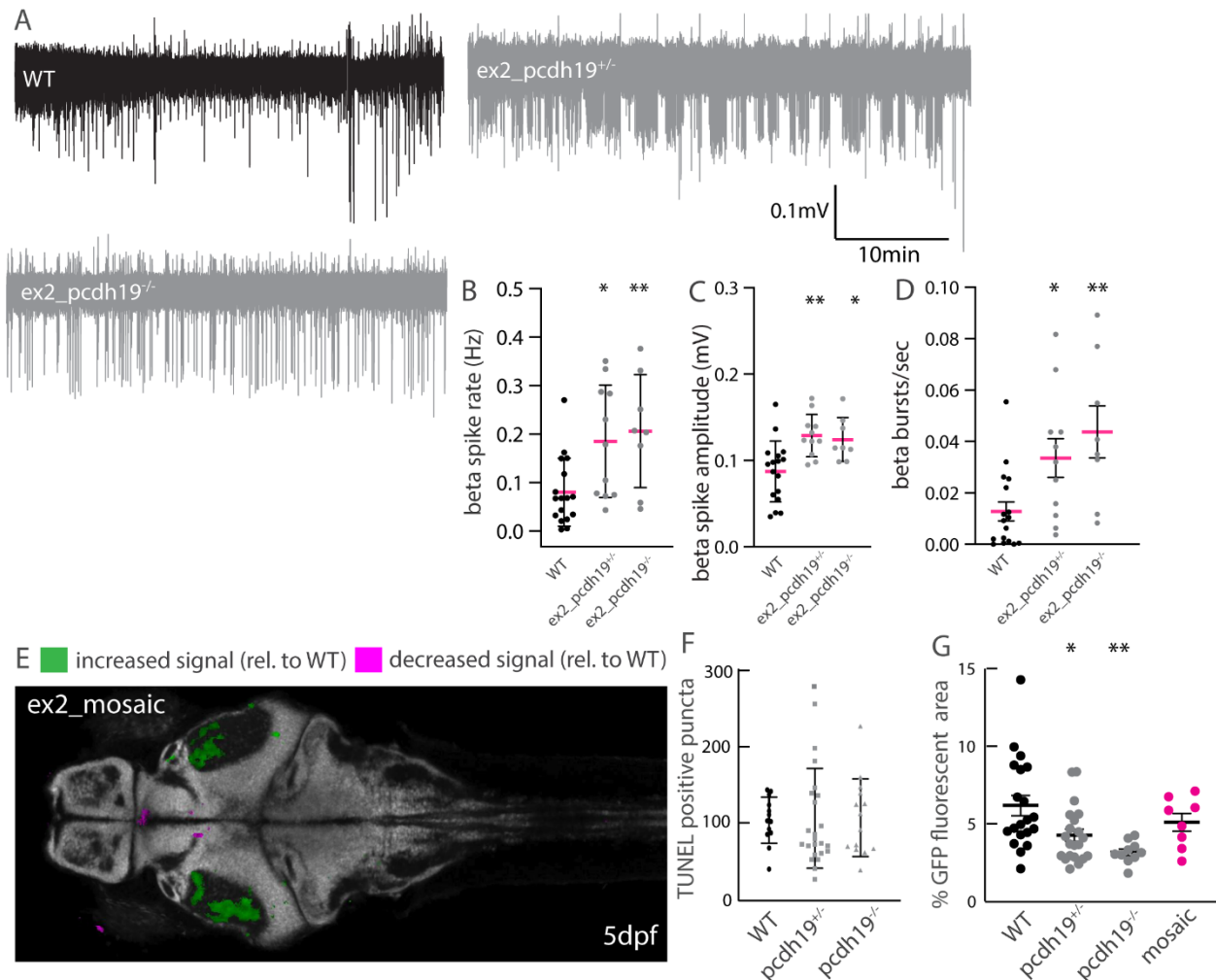


Supplemental information



Supplemental Figure 1: (A) Representative traces of LFP recordings for WT, exon2-*pcdh19*^{+/−}, and exon2-*pcdh19*^{−/−} larvae showing beta events consisting of bursts of spikes present in *pcdh19* mutants and, to a lesser extent, in controls. (B) Quantification shows a significant increase in beta event rate, (C) in the average beta spike amplitude, and (D) in the average beta burst rate in both exon2 *pcdh19* mutants compared to the WT. n=16 WT, n=11 *ex2_pcdh19*^{+/−}, n=8 *ex2_pcdh19*^{−/−}. One-way ANOVA with Dunnett's multiple comparisons test, *p < 0.05, **p < 0.01. (E) Confocal image shows pERK signal intensity is increased within the neuropil of the optic tectum relative to the control. n=23 exon2 mosaic, n=28 scrambled injected larvae. (F) Quantification of TUNEL positive puncta shows no difference in WT compared to *pcdh19* KO mutants. n=13 WT, n=33 *pcdh19*^{+/−}, n=14 *pcdh19*^{−/−}. One-way ANOVA with Tukey's multiple comparisons test. (G) Quantification of the percentage of GFP-positive pixels shows a significant decrease in *pcdh19*^{+/−} and *pcdh19*^{−/−} larvae compared to WT and mosaic larvae. n=20 WT, n=21 *pcdh19*^{+/−}, n=10 *pcdh19*^{−/−}, n=8 mosaic. One-way ANOVA with Dunnett's multiple comparisons test, *p < 0.05, **p < 0.01.

Supplemental video 1: Light sheet calcium imaging video of a 7dpf *pcdh19*^{+/−} larvae with spontaneous calcium activity

Supplemental video 2 & 3: FDSS low-resolution calcium imaging video clip of a heterozygous *pcdh19* mutant having a seizure and a calcium event.