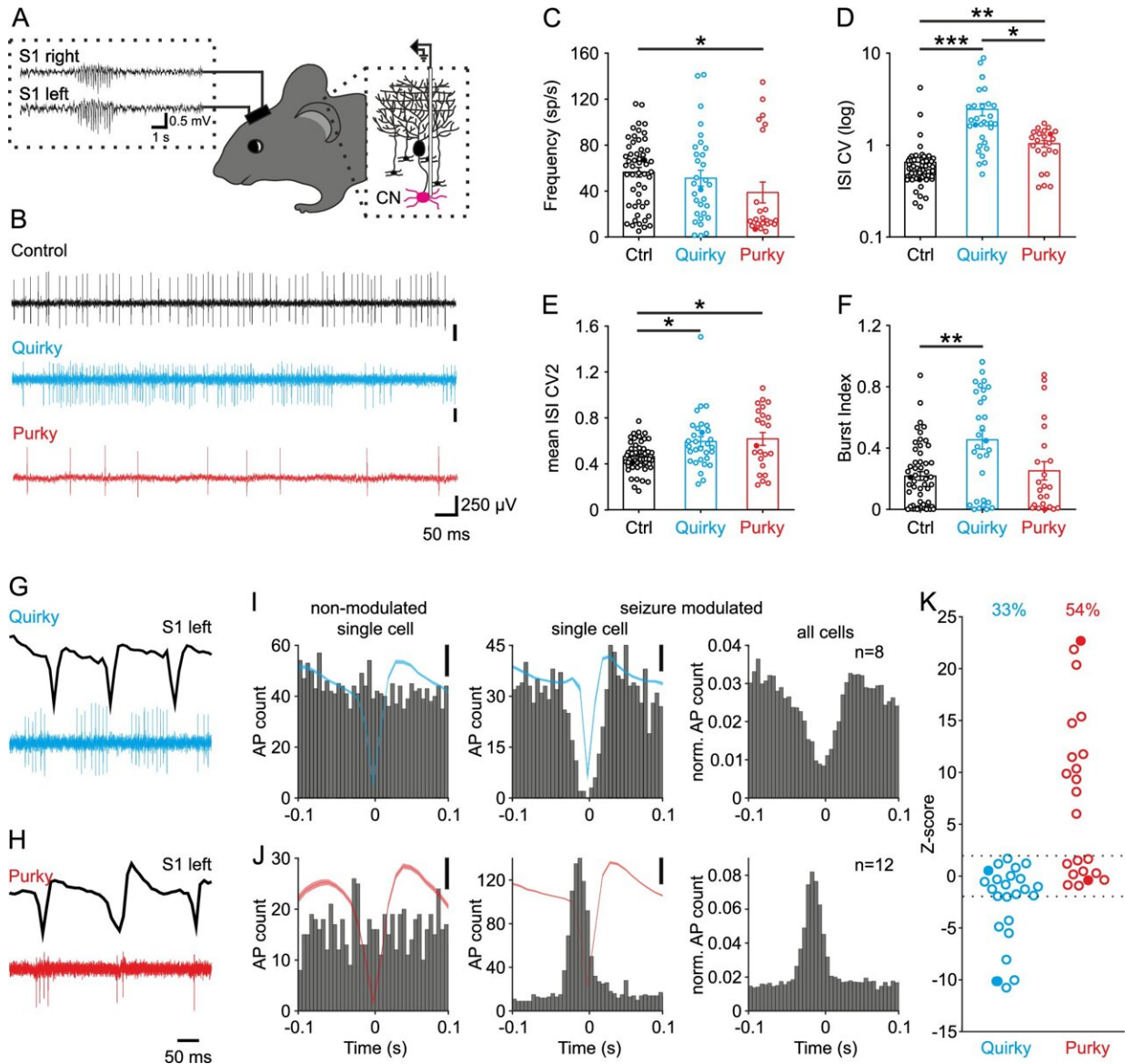


The role of the cerebellum in absence seizures

May 4 2022



CN neurons fire aberrantly and seizure-modulated in quirky and purky mice. A Experimental design: Extracellular recordings of CN (magenta) neurons were performed in awake head-restrained mice with simultaneous ECoG recordings.

B Example of CN neuron activity in control (black), quirky (cyan) and purky (red) mice. Examples are expressed as filled circles in (C to F). C Mean firing rate, (D) interspike interval coefficient of variation and (E) mean interspike interval coefficient of variation 2 and (F) burst index of CN neurons in control (n = 53 recorded from eight mice), quirky (n = 31 recorded from eight mice) and purky (n = 23 recorded from three mice) mice. C to F bars represent mean \pm SEM and individual cells are represented as circles (Kruskal–Wallis test with pairwise Dunn’s test). G and H Example of (G) quirky and (H) purky CN neurons that are phase-locked to the ictal activity. I and J Raster plot of non-modulated and seizure-modulated CN neuron with corresponding mean spike-and-wave complex. Scale bar represents 0.1 mV. Single cell examples are expressed as filled circles in K. I Quirky mice show a decrease in action potential firing during the spike of the spike-and-wave complex while (J) purky mice show an increase in action potential firing. Thick lines represent mean spike-and-wave complex activity and shadowed areas represent \pm SEM. K Proportion of CN neurons in quirky (n = 23 recorded from seven mice) and purky (n = 22 recorded from three mice) mice that fire phase-locked with the ictal activity (quirky 33% and purky 54%). The horizontal dotted line represents ± 1.96 (corresponding to p

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