Hearing the light: neural and perceptual encoding of optogenetic stimulation in the central auditory pathway

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Supplementary Materials

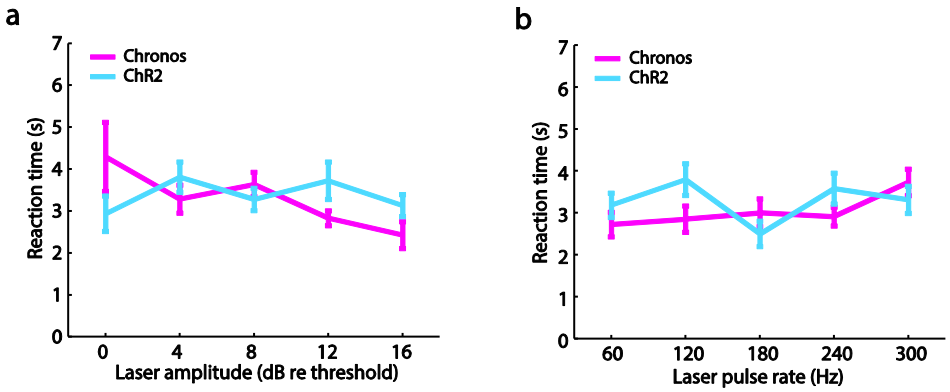


Fig. S1. Animals' reaction time towards the laser stimulation. Behavioral crossing latency, rather than crossing probability, is plotted as a function of laser pulse amplitude (**a**) and rate (**b**).

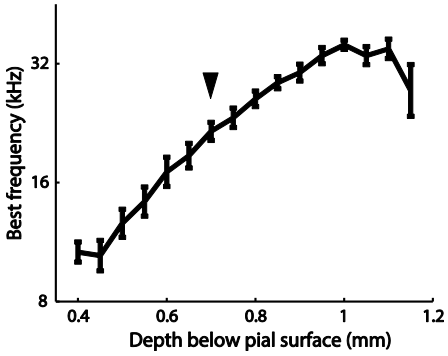


Fig. S2. The ICc is tonotopically organized along the dorsal-ventral axis. The best frequency of recorded sites (N = 10 penetrations, 16 sites per penetration) in the ICc are plotted as a function of depth, revealing a tonotopic organization. The arrow indicates the depth of virus injection.

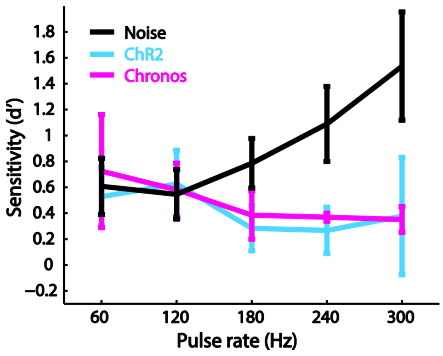
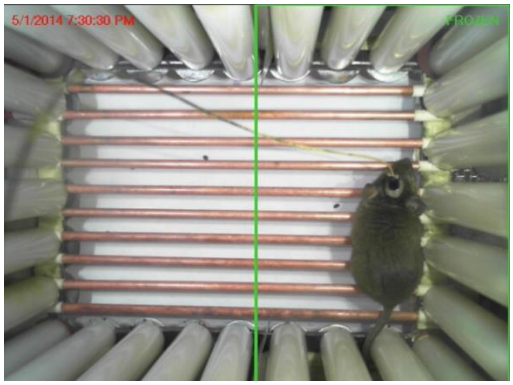


Fig. S3. The performance of population-based detection matches the performance of single-site-based detection. The sensitivity indices (d') for stimuli with different pulse rates are measured with a population decoding scheme, where the population d' is quantified as the highest single-site-based d' out of all the recorded sites from a given animal.



Movie S1. Animals showed generalized avoidance behavior across stimulus types. All animals with either ChR2 or Chronos expressed in the ICc would show avoidance behavior towards laser stimulation highly similar to that of sound stimulation.