

**Supplementary file 1. Summary of experimental animals and recordings in this study.**

BS-Si, silicon probe recording in the brainstem. HP-Si, silicon probe recording in the hippocampus. BS-EEG, EEG recording in the brainstem. FP, fiber photometry. Exc1, the animal was excluded due to electrode mispositioning. Exc2, the animal was excluded due to lack of histological data. Exc3, the animal was excluded due to eye closure during recording.