



Oct 18, 2023

Polysomnography

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<https://dx.doi.org/10.17504/protocols.io.rm7vzx77xgx1/v1>

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External link: <https://doi.org/10.1038/s41467-024-53168-7>

Protocol Citation: Núria Peñuelas, Ariadna Laguna, Miquel Vila 2023. Polysomnography. **protocols.io**
<https://dx.doi.org/10.17504/protocols.io.rm7vzx77xgx1/v1>



Manuscript citation:

Laguna, A., Peñuelas, N., Gonzalez-Sepulveda, M. *et al.* Modelling human neuronal catecholaminergic pigmentation in rodents recapitulates age-related neurodegenerative deficits. *Nat Commun* **15**, 8819 (2024). <https://doi.org/10.1038/s41467-024-53168-7>

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Protocol status: Working

We use this protocol and it's working

Created: October 18, 2023

Last Modified: November 17, 2023

Protocol Integer ID: 89550

Keywords: polysomnography polysomnography, mice

Abstract

Polysomnography in mice

- 1 Anesthetize the animals (ketamine and xylazine, 100/10 mg/kg. i.p.) for polysomnography.
- 2 Screw 3 electrodes to skull above parietal and frontal cortex and cerebellum as the reference for electroencephalogram (EEG).
- 3 Slip 2 wire electrodes between neck muscles for electromyogram (EMG).
- 4 Braze the leads to a miniature plug (Plastics One, Billerica, MA), cemented to skull using acrylic cement (Superbond, C&B Sun Medical) and coated using dental cement (Paladur, Heraeus Kulzer).
- 5 For pain caring, administer a subcutaneous injection of carprofen (5 mg/kg).
- 6 Once recovered, house mice in individual barrels under 12h light/dark cycle (light-on 7 a.m.) and constant temperature, tethered to the acquisition system and record 1 week out of 3 over 12 consecutive months until natural death.
- 7 Based on amplified/digitized unipolar EEG and bipolar EMG signals, visually score vigilance states using a 5s sliding window frame and assign them as Waking (W), Slow Wave Sleep (SWS) and Paradoxical Sleep (PS) to produce hypnograms and state quantifications (Sleepscore, Viewpoint).