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Histology and Retention of Implanted Carbon Fiber Thread Electrodes in Fixed Tissue

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We use this protocol and it's working

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Abstract

Methods to cut and retain implanted carbon fiber electrodes in brain tissue are described.



- 1 Rats were deeply anesthetized with Euthasol (pentobarbital sodium and phenytoin sodium from Virbac AH Inc.), then transcardially perfused with 0.9% saline solution followed by 4% paraformaldehyde in 0.1 M phosphate buffer (PB).
- 2 The implanted electrodes were cut just above the skull and below the copper wire bundle component of the device with a rotary saw (Dremel) to retain the flexible Py-CF portion of the device in the fixed brain tissue.
- 3 Brains were removed from the skull, post-fixed for 24 hours in the same fixative solution and stored in 25% glycerol with 0.075% sodium azide in 0.1 M PB overnight or until cutting.
- 4 To prepare sections, brains were frozen on dry ice then cut in the transverse plane on a freezing microtome with a microtome knife (C. L. Sturkey, Inc. #K185A).
- 5 Sections were cut sequentially, with four sections at 25- μ m then one section at 100- μ m, repeated until the end of the frozen block of brain.
- 6 The 100- μ m sections were immediately mounted onto glass slides and air dried, whereas the 25- μ m sections were stored in 0.1% sodium azide in 0.1 M PB at 4°C until use.