



Sep 12, 2022

Stereotaxic rat brain surgery for Substantia Nigra targeting

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ABSTRACT

Stereotaxic rat brain surgery

DOI

dx.doi.org/10.17504/protocols.io.dm6gpj8zpgzp/v1

PROTOCOL CITATION

miquel.vila 2022. Stereotaxic rat brain surgery for Substantia Nigra targeting.
protocols.io
<https://protocols.io/view/stereotaxic-rat-brain-surgery-for-substantia-nigra-cgg5tty6>



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CREATED

Sep 12, 2022

LAST MODIFIED

Sep 12, 2022

PROTOCOL INTEGER ID

69885

- 1 Anesthetize rat with isoflurane (5% induction phase, 2% maintenance phase)

- 2 Weight rat & shave the head
- 3 Inject meloxicam (0.5 mg/mL) and Baytril (5 mg/mL)
- 4 Place rat head gently with ears bar onto the stereotaxic equipment
- 5 Scalpel + Scalpel holder = incision middle of rat head
- 6 Turn vacuum on
- 7 Place 4 hemostats in each extremity of the incision (opening in square shape)
- 8 Add hydrogen peroxide. Clean. Add saline . Clean.
- 9 Remove remaining blood with cotton swab
- 10 Remove tissue of the skull with the not-cutting side of scalpel (scratch in order to see bregma and lambda as better as possible, can bleed for a prolonged time, apply saline as necessary)
- 11 Check skull horizontality: place drill (adjust with the yellow tool) + take DV in lambda and bregma by placing the drill on the cranium (neither above nor pressing it). If not leveled (+/- 0.1 between Bregma and Lambda), adjust as necessary
- 12 Drill very slowly. Regularly check the depth of craniotomy.

- 13 Inject vector solutions using a 10 μ L Hamilton syringe fitted with a glass capillary
- 14 Go to Bregma with the Hamilton syringe
- 15 Calculate SN coordinates: AP (5.2), ML (2.0), DV (7.6)
- 16 Perform infusion at 0.4 μ L/min and let the needle in place for 4 minutes
- 17 Seal craniotomy with bonewax using a small spatula
- 18 Sew the incision 3-5x
- 19 Add skin glue to incision site