CSF Extraction 腦脊髓液抽取

1. Purpose

1.1 The cerebrospinal fluid (CSF) is a valuable body fluid for analysis in neuroscience research, it can be used to analyze the diseased state of the brain or spinal cord without directly accessing these tissues.

2. Associated Documents

2.1 https://www.jove.com/t/56774/an-improved-method-for-collection-cerebrospinal-fluid-from

3. Quality Control

3.1 The CSF collected in the capillary should be clear, not pink or red. If there is a pink to red tinge to the fluid collected in the capillary, then there was contamination with blood.

4. Supplies

4.1 Shaver
4.2 70% ethanol swab
4.3 Dissection scissors
4.4 Tweezers and forceps
4.5 glass capillary (inner diameter 0.75 mm, outer diameter 1.0 mm)

5. Procedures

5.1 The mice were anesthetized by Isoflurane.
5.2 The skin of the neck was shaved, and the mouse was then placed prone on the stereotaxic instrument. Tilt the mouse head slightly so that it forms an angle of 120° to the body.
5.3 The surgical site of head was swabbed with 70% ethanol (repeat 2 times). Find the part of the skull protruding immediately above the neck muscles - the occipital crest. Lift the overlying skin using a pair of tweezers, and cut an almond shaped piece of skin of approximately 1 cm along the midline.
5.4 The dura mater of the cisterna magna was clearly found when the subcutaneous tissue and muscles were separated by blunt dissection with forceps.
5.5 The cisterna magna was penetrated by a capillary tube into through the dura mater, lateral to the arteria dorsalis spinals.
5.6 The CSF was collected (> 5 µL/mouse) and transferred to an Eppendorf tube, and froze the tube immediately in liquid nitrogen and then transferred it into a -80°C freezer.