WEEK 4: CORONAL, HORIZONTAL, SAGITTAL AND OBLIQUE SECTIONS

Notes

- General tips for handling the brainstem slices during staining: mainly use plastic forks to transfer the slices, and forceps for the small sections. Care should be taken with the forceps, as the prongs can damage the slices.
- Human material is only to be handled by instructors and lab assistants

Learning Objectives

- To become familiar with a staining technique
- To study the location of the structures in sagitally, coronally, horizontally and oblique cut sections
- Compare the relative size and location of structures in the sheep and human brain

Materials

- 0.2 cm brain sections from Week 3 (Whole brain, sagittal hemisphere and cerebellum)
- Plastinated human brains
- Human brain atlas
- Human Brain Model
- Human Brainstem Model
- Coronal, Horizontal, Sagittal and Oblique Sections PPT
- Blunt Dissection Kit
- Dissection Tray
- Plastic storage container
- Staining dishes

Procedures

1. Stain your brainstem sections that you cut in Week 3 using the procedure below.
2. Compare your preparations with the figures in your text and on the powerpoint.
3. Compare the coronally, horizontally and sagittally sectioned sheep brain to the human plastinated tissue.

Staining Procedure

1. We will be using a modified Mulligan stain. Each setup should consist of 5 dissecting dishes with 500 ml of the following solutions:

    a) Solution A (4% Phenol, 0.5% Copper Sulfate, and 0.125% conc. HCl)
    b) dH2O x 2
    c) 2% Tannic Acid
    d) 2% Iron Alum

2. Submerge the slices in solution A for 1-5 minutes. (4 minutes has been yielding better stains 2016-2017)

3. Remove the slices and place them in the dH2O solution for 1 min.

4. Now submerge the slices in the Tannic Acid solution for 1 min.

5. Remove the slices and place them back into the dH2O solution for 5 minutes

6. Now place the slices in the solution of Iron Alum until the grey matter stains dark black (it really only takes a few second.)

7. Place the slices back into the water bath. The water will turn dark black as the excess stain runs off. Place the stained sections in your dissection tray.

8. Compare your preparations with the figures in your text.

9. To store your stained samples, put the brain slices back “together” and then wrap the brain in a paper towel wet in DI water.