Biology 2201 Investigation 8.A Identifying Structures of the Excretory System Gillam Holy Heart Name: _____

In this investigation, you will perform a dissection of a sheep's kidney in order to identify the major parts of the organ. Note that your teacher may, instead, have you examine structures of the excretory system using a virtual dissection.

Question

What features of a mammalian kidney can you identify?

Safety Precautions

Extreme care must be taken when using dissecting instruments, particularly scalpels. To the extent possible, make cuts away from your body. The kidneys are preserved in a chemical solution. Wear plastic gloves, goggles, and an apron at all times, and work in a well-ventilated area. At the end of the lesson, wash your hands thoroughly. Dispose of all materials as instructed by your teacher, and clean your work area.

Materials

- preserved sheep kidney
- dissecting instruments
- disposable plastic gloves
- large tongs
- dissecting tray
- newspapers and/or paper towels
- apron
- plastic bag and tie (to store your specimen if necessary)

Procedure

1.) Obtain a kidney and observe its external features. The renal capsule is a smooth, semi-transparent membrane that is tightly bound to the outer surface of the kidney. You may notice fatty deposits clinging to the renal capsule. Identify and remove the renal capsule.

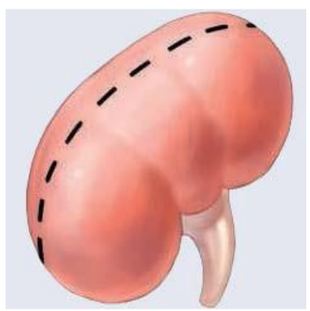
2.) Under the renal capsule is the surface of the renal cortex. Locate the area where the renal blood vessels and the ureter are attached to the kidney.

3.) Cut through the kidney lengthwise as shown in the illustration below. Identify the renal cortex.

4.) Locate the renal medulla. The renal medulla contains the collecting ducts. They are visible as a striped pattern throughout the medulla.

5.) Locate the renal pelvis, which is continuous with the ureter.

The renal capsule provides a thin layer of protection for the outer tissues of the kidney.



Remember to cut away from you as you open the kidney.

Internal features of the kidney

Analysis

1.) Based on your specimen, draw a labelled sketch of the kidney that includes the following structures.

- renal capsule
- renal cortex
- renal medulla
- renal pelvis
- renal vein
- renal artery

2. Make a sketch of the nephron including the structures: glomerulus, proximal tubule, loop of Henle, distal tubule, and collecting duct.