

Lab

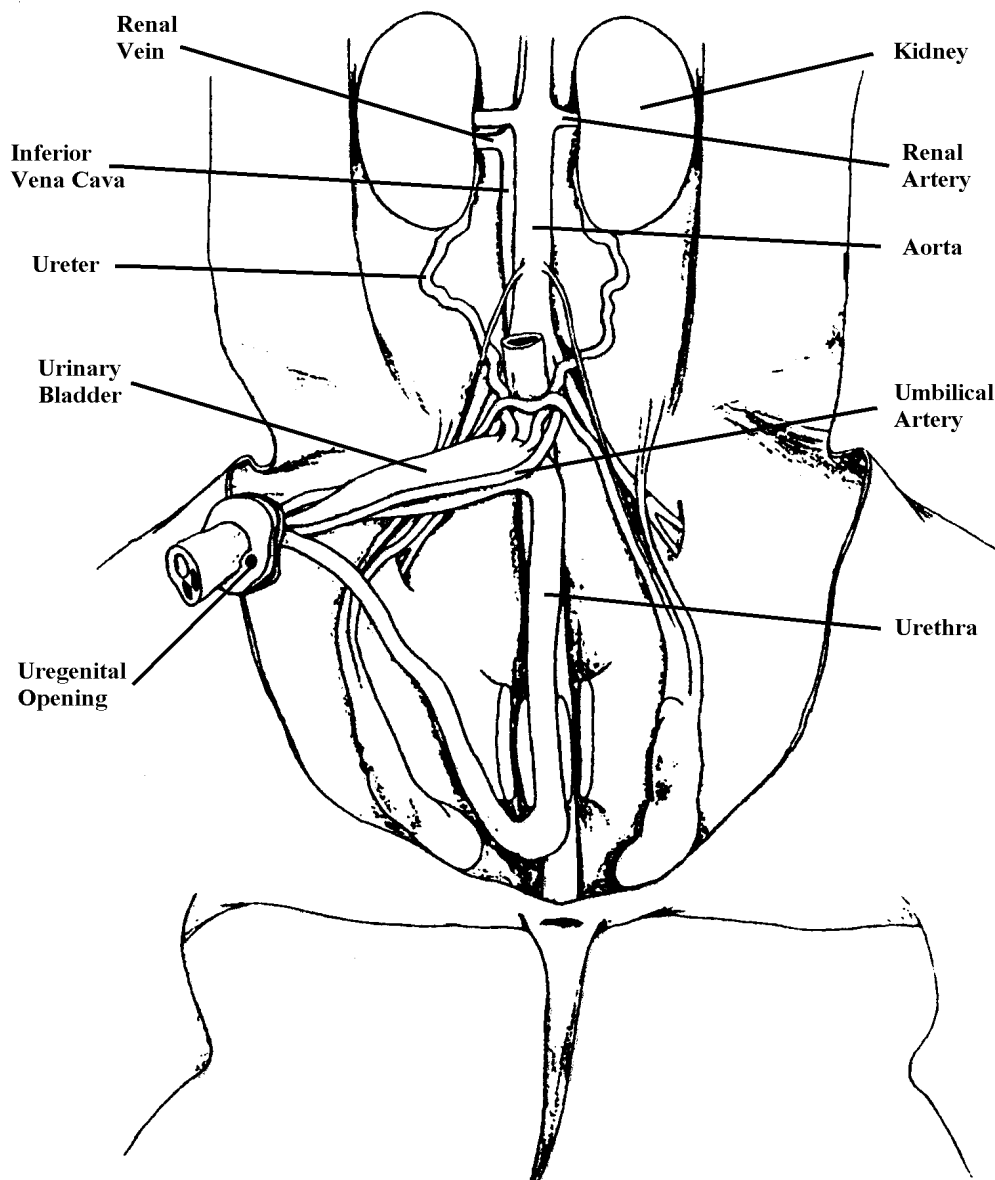
Dissection -Excretory System

**Background Information**

The organs in the urinary system of the fetal pig are very similar to those in the human. As you dissect the organs, be prepared to trace the path of urine from its site of production to the point at which it passes to the outside. The pig kidney will be sectioned in order to study its internal structure, since it provides a good example of a typical mammalian kidney.

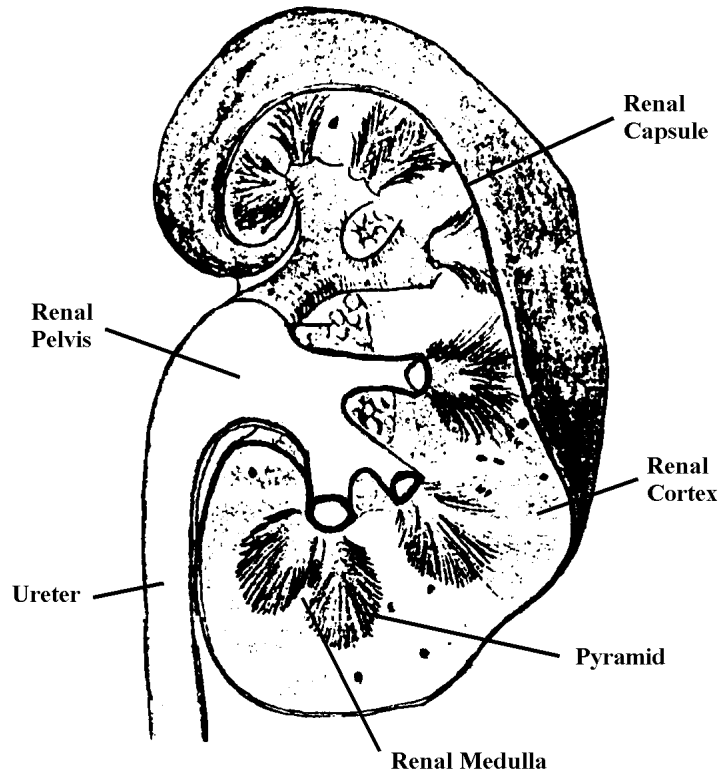
**Procedure**

1. Observe the paired **kidneys** on the dorsal body wall of the pig. Use Figure 1 as a guide.

**Figure 1** Urinary System of a Male Fetal Pig

2. Remove the **peritoneum**, which covers only the ventral surface, from both of the kidneys. Since the kidneys are separated from the abdominal organs by a layer of peritoneum, their location is described as being retroperitoneal.
  
3. Identify the **renal artery** and **renal vein**, which carry blood to and from the kidney. Which vessel carries the cleansed blood?
  
4. Locate the **adrenal gland**, a narrow band immediately above each kidney.
  
5. Observe the **ureter**, the narrow, white convoluted tube which drains the urine from each kidney. Trace the ureter from the hilum, the opening on the medial border of each kidney, to the urinary bladder, freeing it from the peritoneum. The urinary bladder is attached to the reflected ventral strip of the abdominal wall.
  
6. Observe the **umbilical arteries** which lie lateral to the urinary bladder.
  
7. Locate the **urethra**, the duct which conducts urine from the posterior end of the bladder to the outside. The remainder of the urethra will be freed when the reproductive system is dissected.
  
8. Remove one kidney. Make a longitudinal section through the kidney.
  - a. The **renal capsule** the thin layer of connective tissue around the outside of the kidney.
  
  - b. The **renal cortex** is the outer light brown layer of the kidney immediately beneath the capsule. This layer contains most of the filtration units called nephrons. The loop of Henle will extend into the renal medulla.
  
  - c. The next layer of the kidney, the **renal medulla**, contains the pyramids.
  
  - d. Locate the **renal pelvis**, the funnel-shaped expansion of the ureter. It is the hollow interior of the kidney.
  
9. Compare the preceding structures with the illustrations in Figures 2 and 3 of the human kidney.

**Figure 2** Longitudinal Section through the Kidney



**Figure 3** Renal Blood Supply

