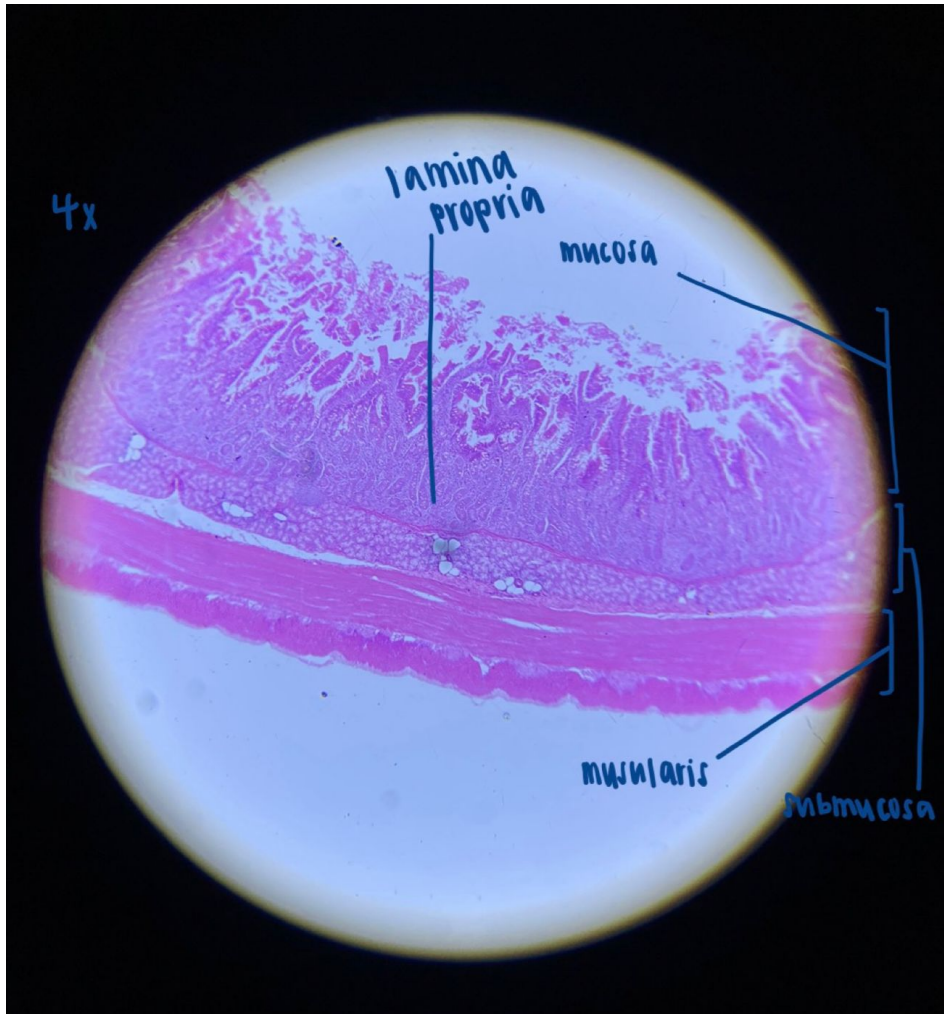


Introduction to Histology: Digestive System Answer Sheet

Observations

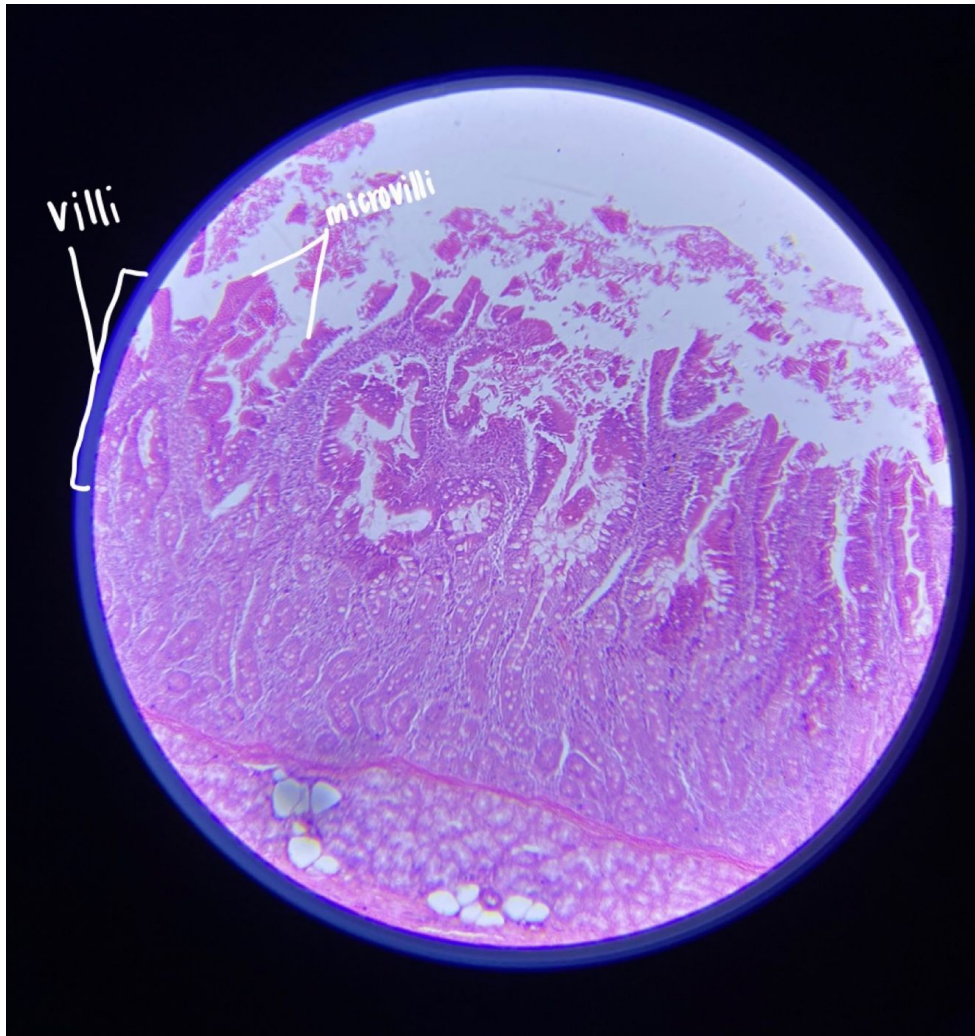
Take a picture and insert it in the appropriate section below. Also record the total magnification needed to best view the object.

Duodenum overview



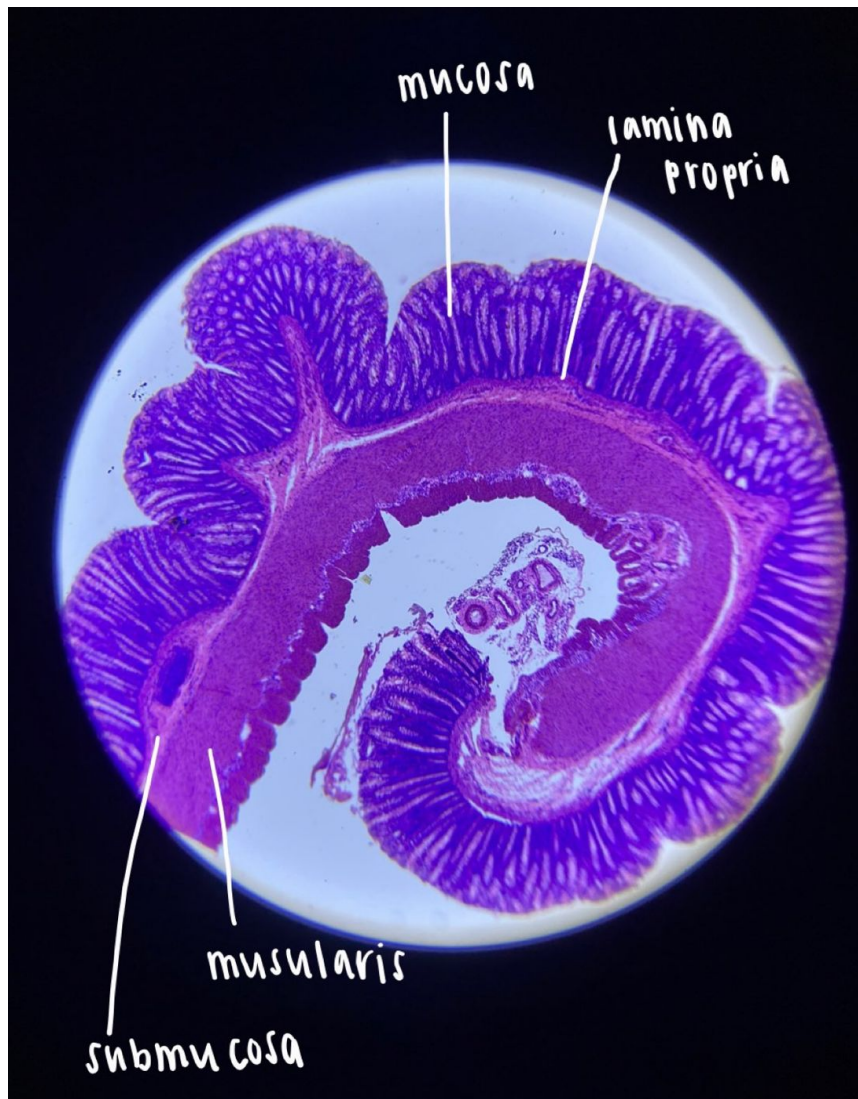
Magnification used: 10x

Villi



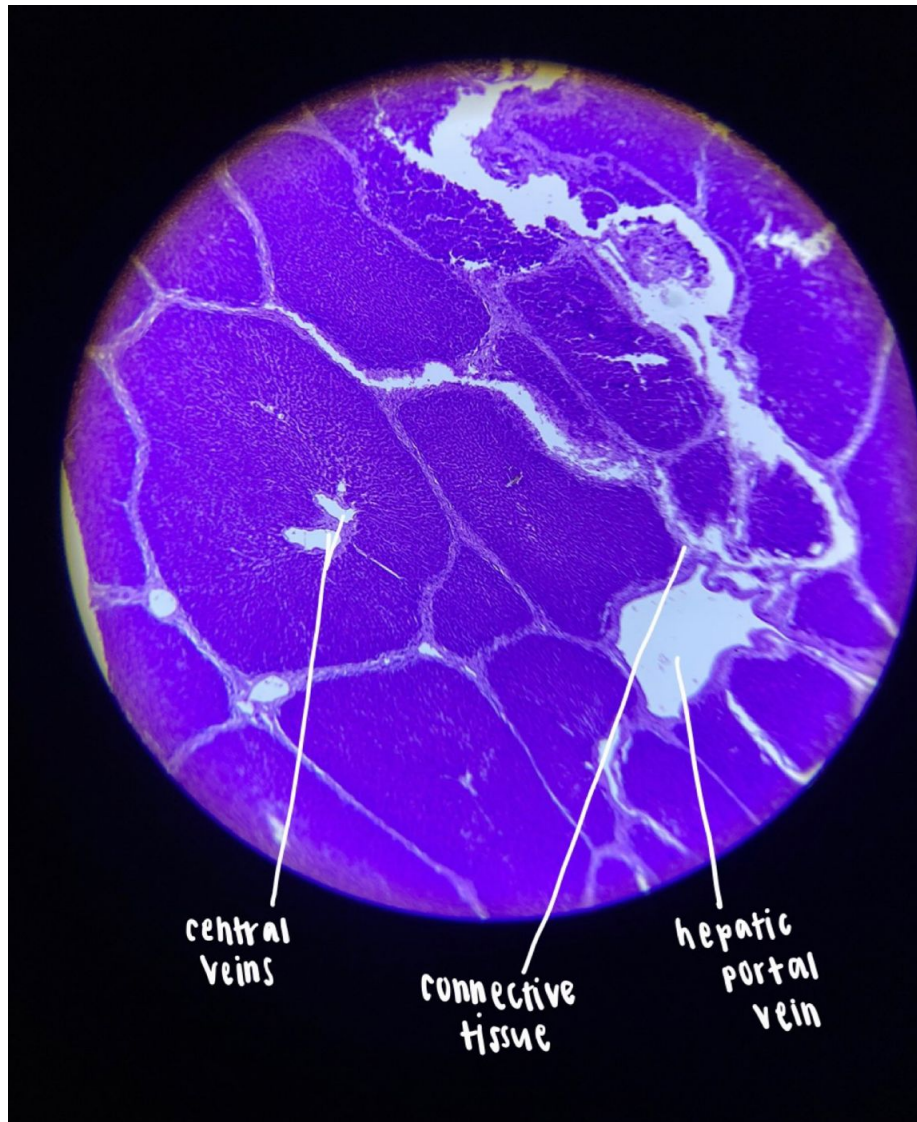
Magnification used: 4x

Colon

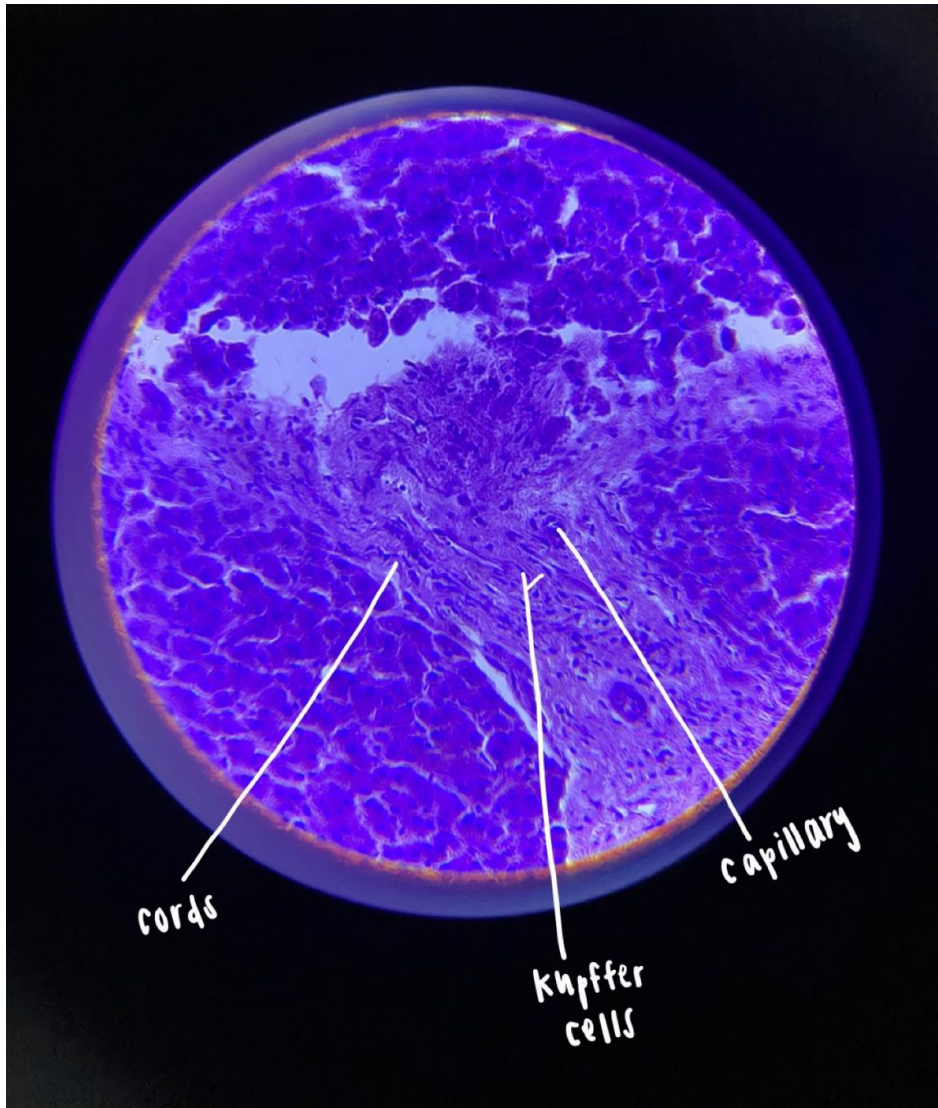


Magnification used: 4x

Liver lobule



Magnification used: 10x



Data table

| Tissue type | Best magnification | Tissue comparison What is specific about this tissue compared to the other tissue types |
|-------------------|--------------------|--|
| Duodenum - Mucosa | 4x | Contains the villi and microvilli; looks like flames; simple or stratified epithelium |

| | | |
|---------------------------|------------|--|
| Duodenum – Lamina propria | 10x | loose connective tissue; has longitudinal transverse folds |
| Duodenum – Submucosa | 4x | dense irregular tissue; |
| Duodenum – Villi | 4x | finger-like projections; consists columnar epithelium |
| Duodenum – Microvilli | 10x | outer lining of the villi; columnar epithelium but structure is smaller than the villi |
| Colon - Mucosa | 4x | made up of 3 layers; simple columnar without villi |
| Colon – Lamina propria | 10x | loose connective tissue; fills in the grooves and divots of the shape of the mucosa |
| Colon – Submucosa | 4x | contains nerves, blood vessels, and fibers; connective tissue |
| Liver - Cord | 10x or 40x | hepatocytes arranged in a single layer of cells |

| | | |
|---------------------------|-----------|--|
| Liver - Capillaries | 4x or 10x | has a wall of one epithelial cell thick; circular, continuous or discontinuous formation |
| Liver _ Central vein | 4x | found in the center of hepatic lobules; lined with Kupffer cells |
| Liver – Hepatic vein | 4x | define segments or sectors of the liver; large |
| Liver – Connective tissue | 10x | border around each lobule; very easy to see |

Questions

1. What is characteristic of the submucosa?

Submucosa is dense irregular connective tissue that supports the mucosa. It contains a lot of veins and arteries to give rise to the capillary bed of the mucosa. Also it has a nerve network called the Meissner's plexus.

2. What is an easy way to distinguish between a slide of the large and small intestines?

Large intestine does not contain any villi while the small intestine has a lining of villi.

3. How can we easily distinguish the capillaries in a liver slide?

Capillaries can be distinguished by a small circular ring structure. They are surrounded by a single layer of epithelial cells. They are not super difficult to find if using a stronger magnification than 4x.

4. What section of the intestines lack villi and have an abundance of mucous cells? The colon lacks villi but contains a lot of goblet cells. The goblet cells are what produces and secretes mucus.

5. Which area of the liver contains strands of connective tissue?

Connective tissue can be found around the lobes of the liver. It can also be found surrounding the outside of all lobules. Connective tissue is found throughout the liver and is pretty easy to distinguish on slides.