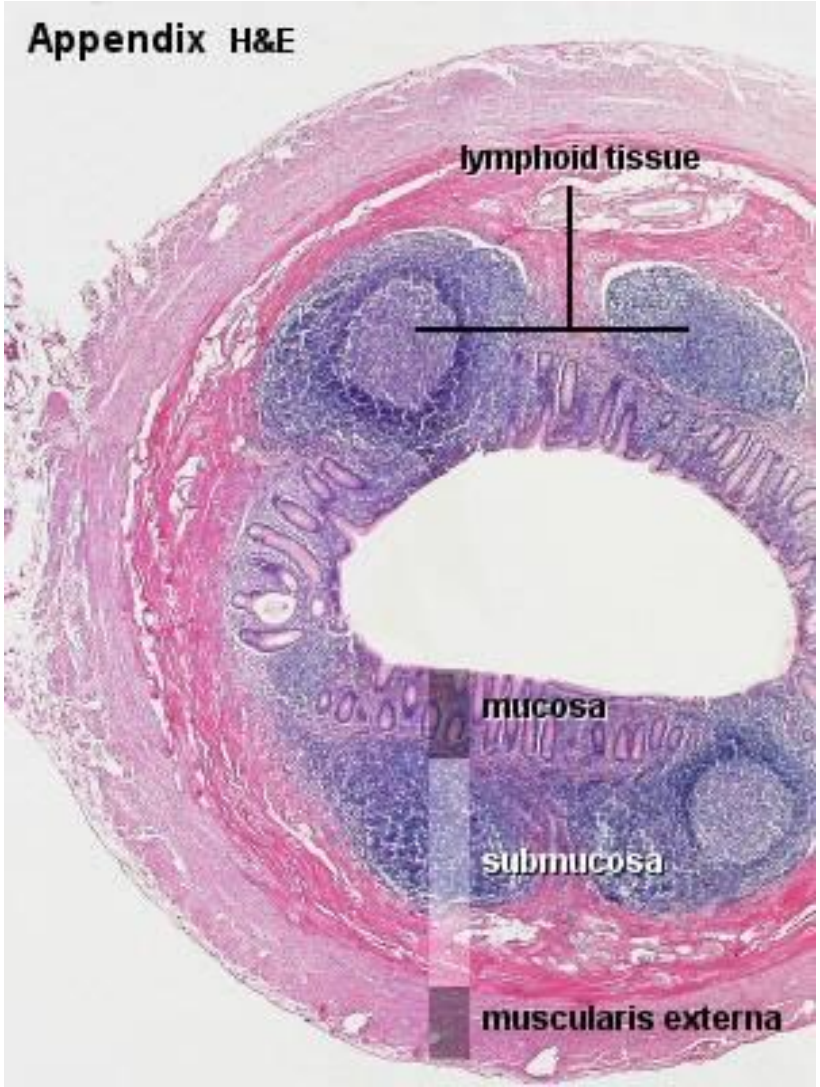
EEOB 3520
Lab 9
Digestive Glands

Appendix Reservoir for beneficial microbes!

1. Vestigial portion; immune function
2. All layers present, but obscured by many lymphoid nodules in lamina propria and submucosa
3. Small, angular lumen, w/ epithelium of absorptive cells interrupted by short glands made of goblet cells
4. Rare enteroendocrine cells line lumen





Salivary glands

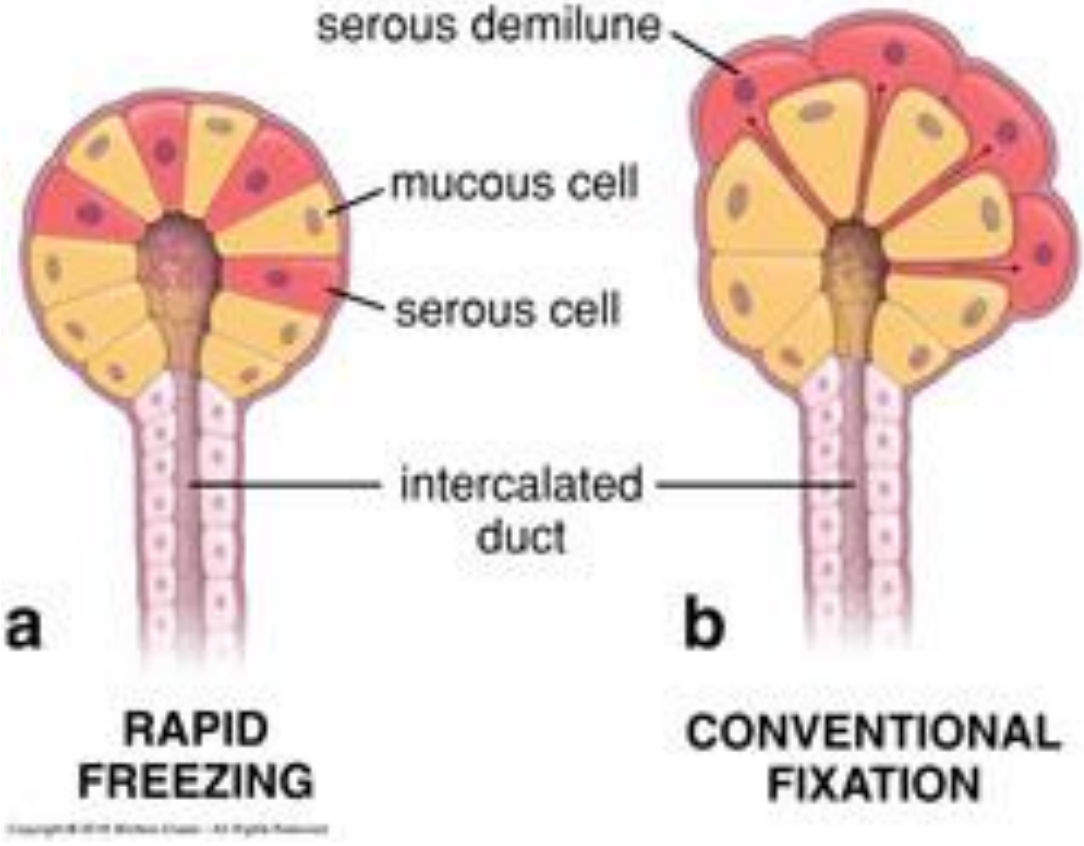
Major or extrinsic salivary glands extend beyond the submucosa (the connective tissue deep to the epithelial/mucosal layer) of the oral cavity

- parotid glands:
  - almost entirely serous acini, with myoepithelial cells (basket cells) between the secretory cells and the basal lamina
- submandibular glands:
  - seromucous acini, with demilunes, predominate over mucous acini
- sublingual glands:
  - mostly mucous acini, but acini with serous demilunes can be also found

Minor or intrinsic salivary glands are distributed throughout the submucosa

- tubular
- mucous (mostly) and serous

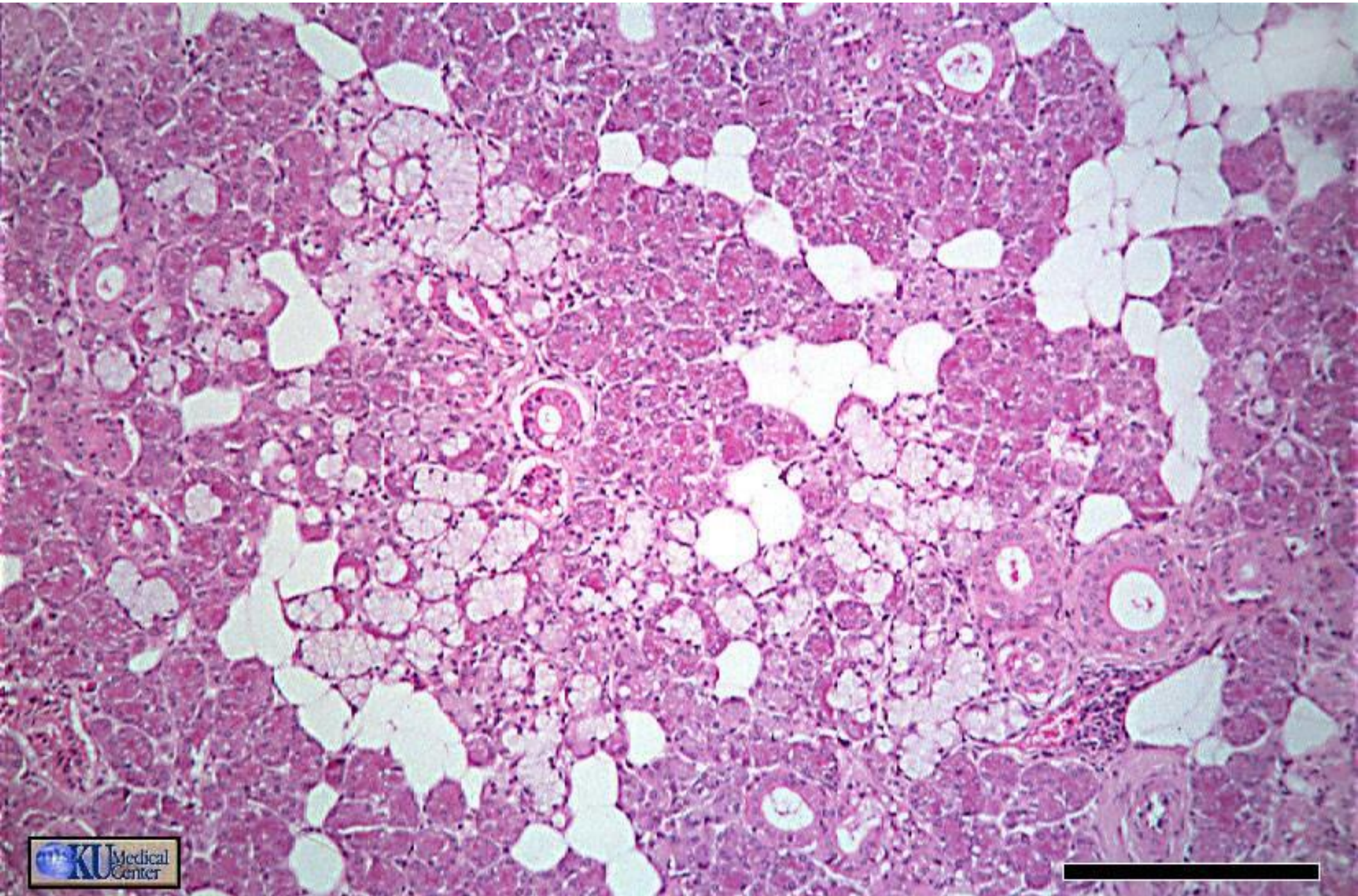
Serous demilunes seen in salivary glands are an artifact of fixation



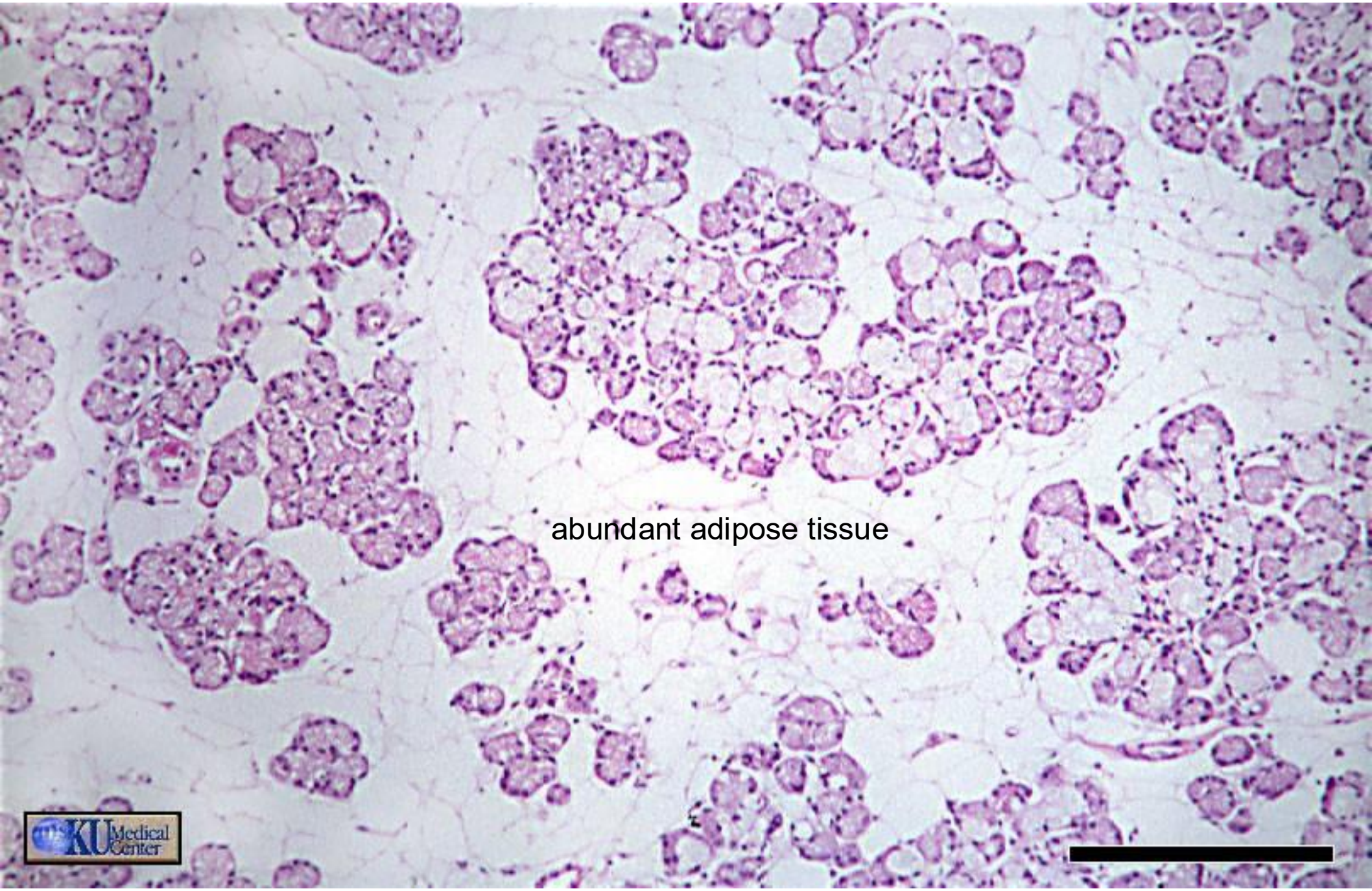
Parotid gland



Submandibular gland



Sublingual gland



Liver

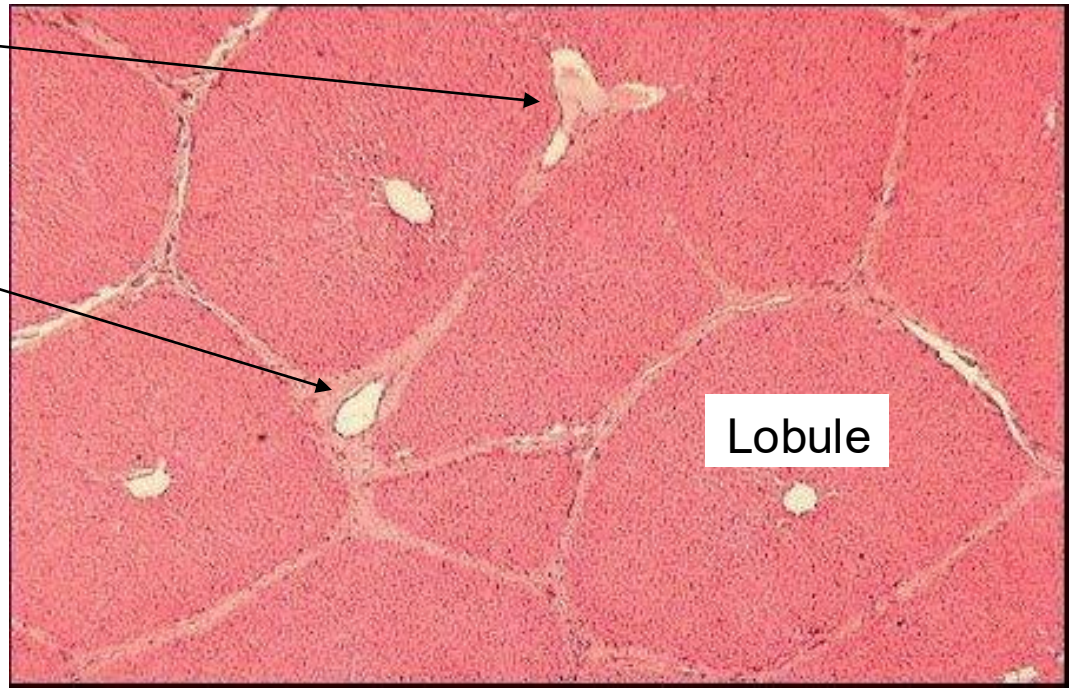
1. Produces bile used to emulsify fat in small intestine
2. Stores glycogen, releases glucose into blood
3. Synthesizes blood proteins
4. Detoxifies harmful substances present in blood
5. Stores vitamins

Glissons's capsule: thin capsule of CT around entire organ

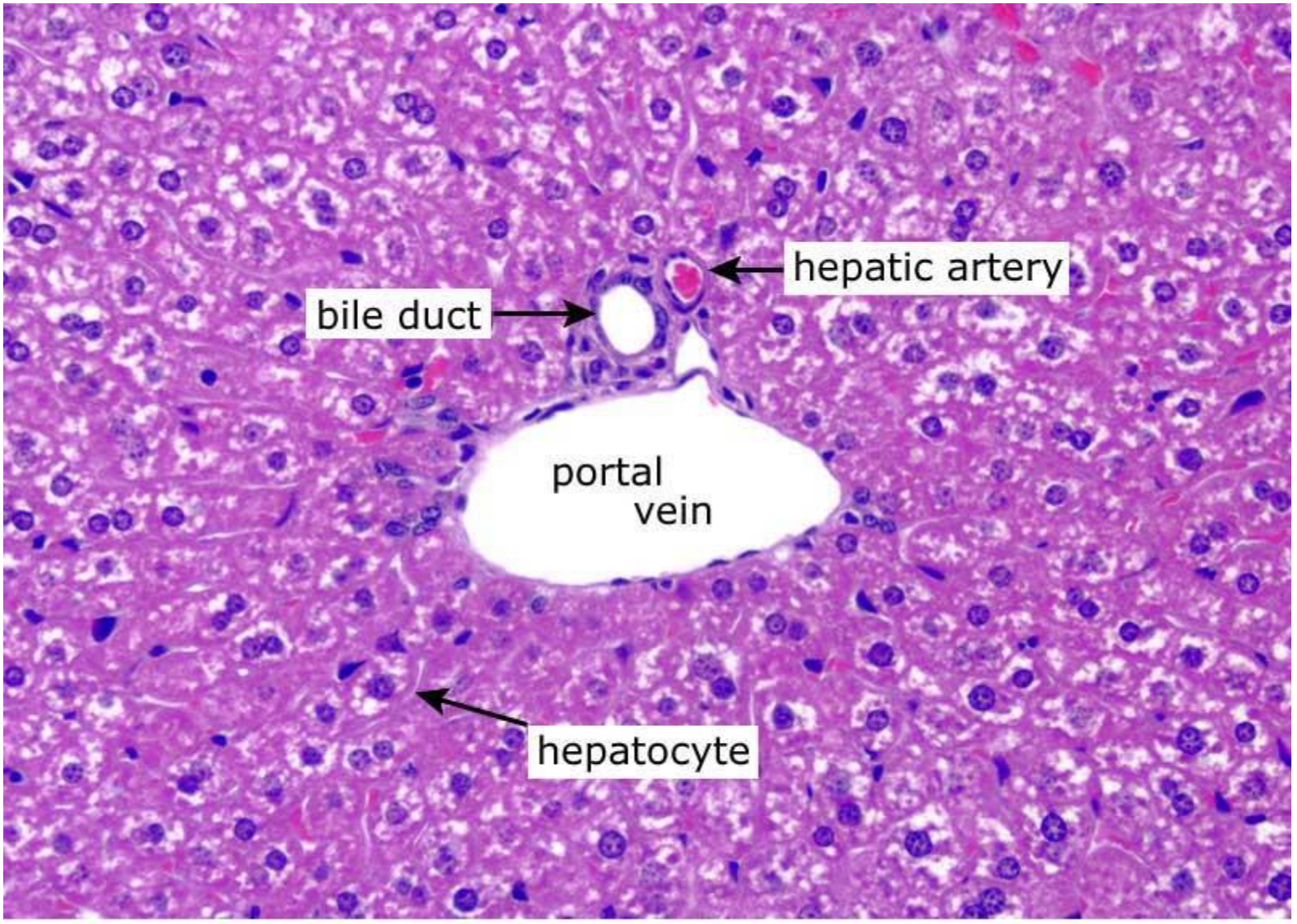
Parenchyma uniform in appearance, but hexagonal units (**hepatic lobules**) are distinguishable (plates of hepatocytes arranged radially around a central vein)

Portal triads: small ***artery***, parallel ***vein*** and a **bile duct** in small triangular areas of CT at 3 corners of each lobule

Hepatocytes:
Acidophilic cytoplasm with conspicuous basophilic bodies



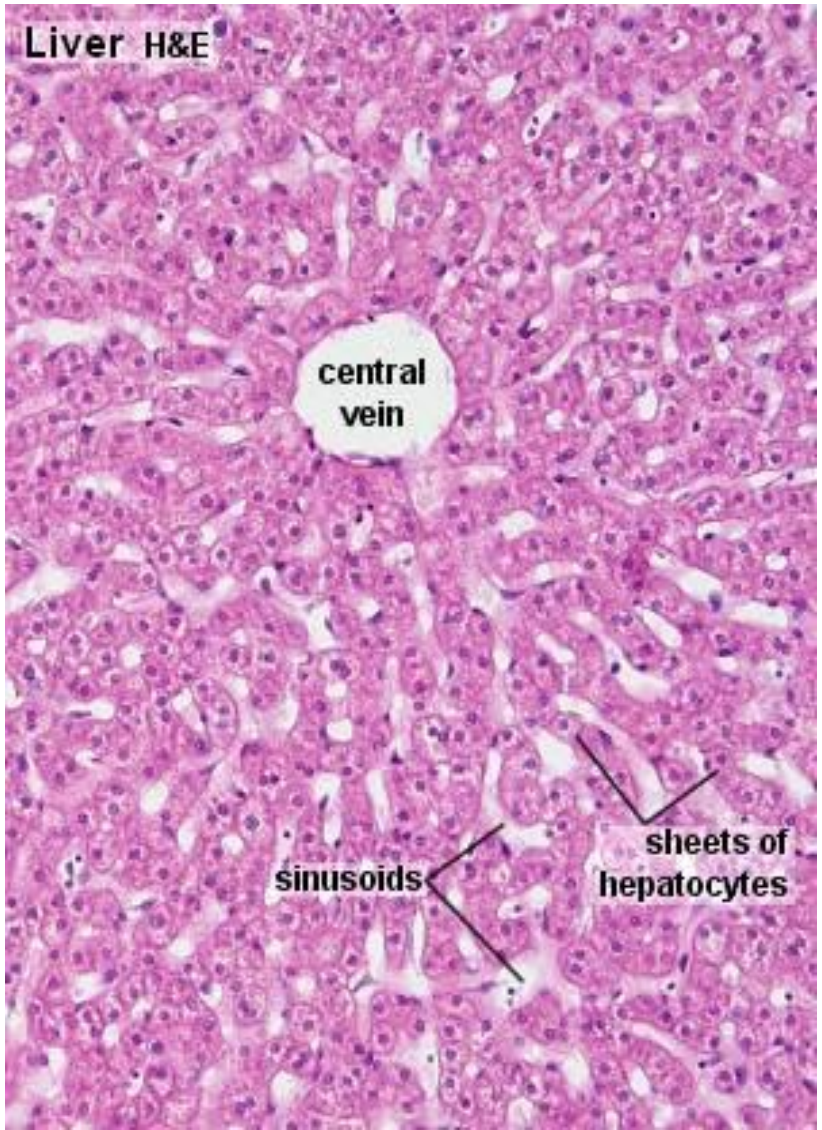
Portal Triad

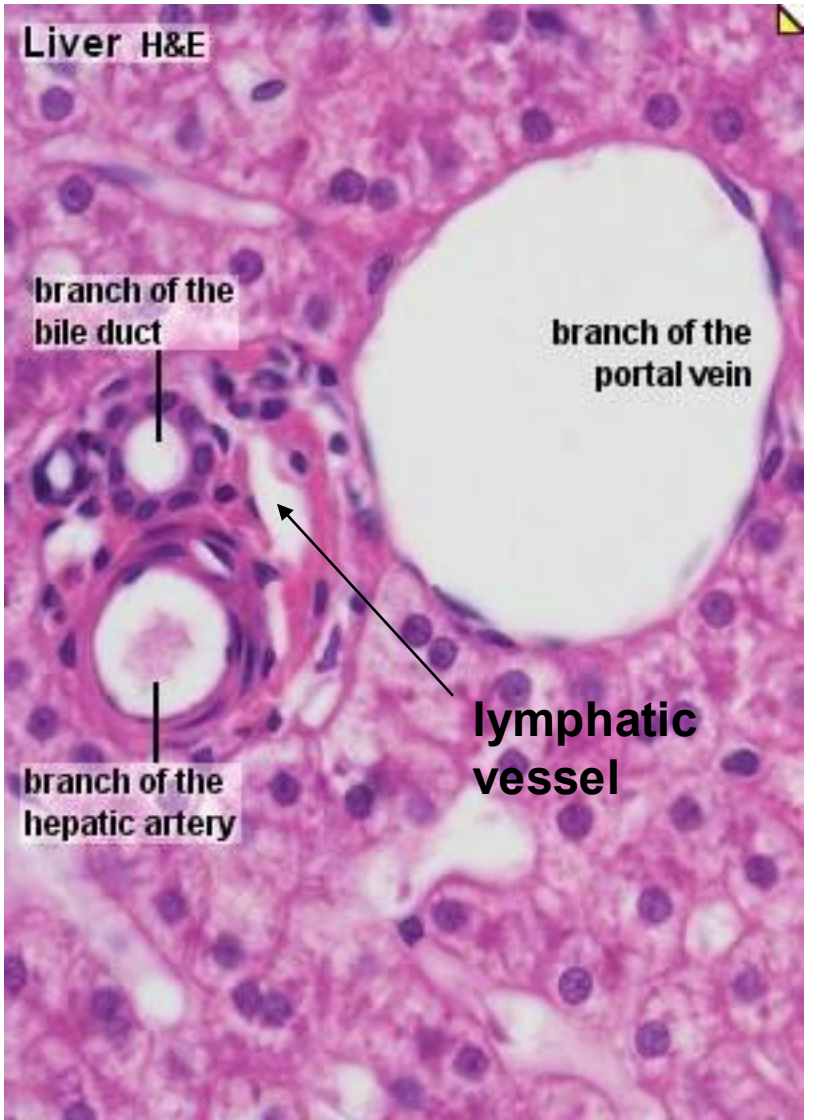


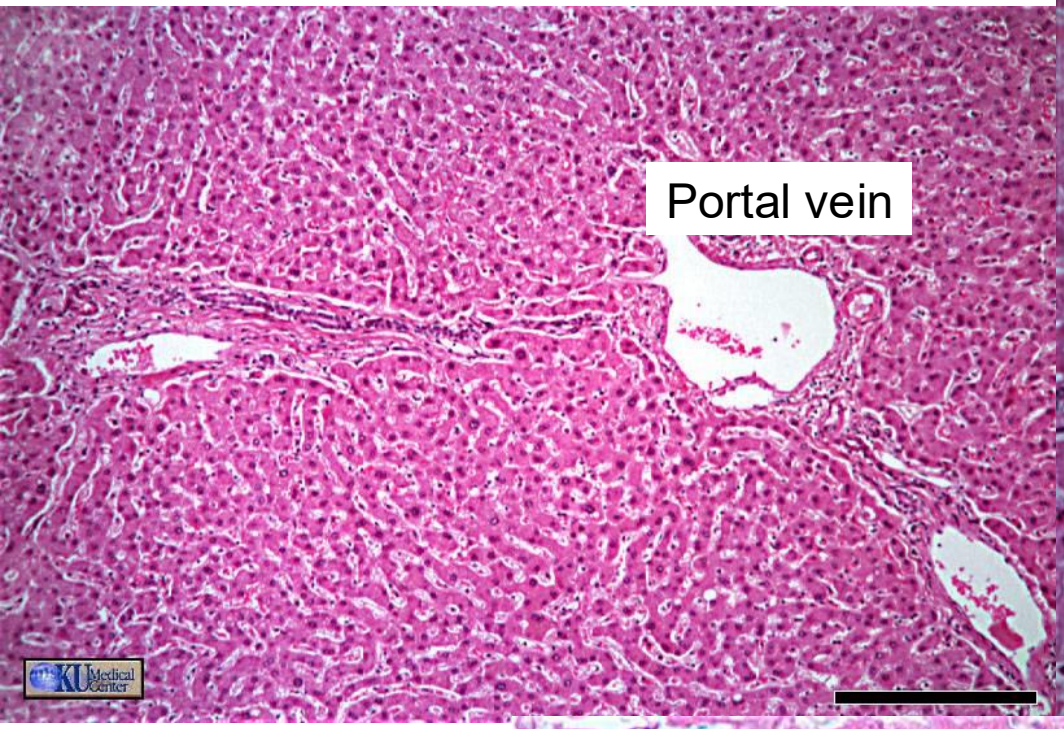
© Deltagen Inc.

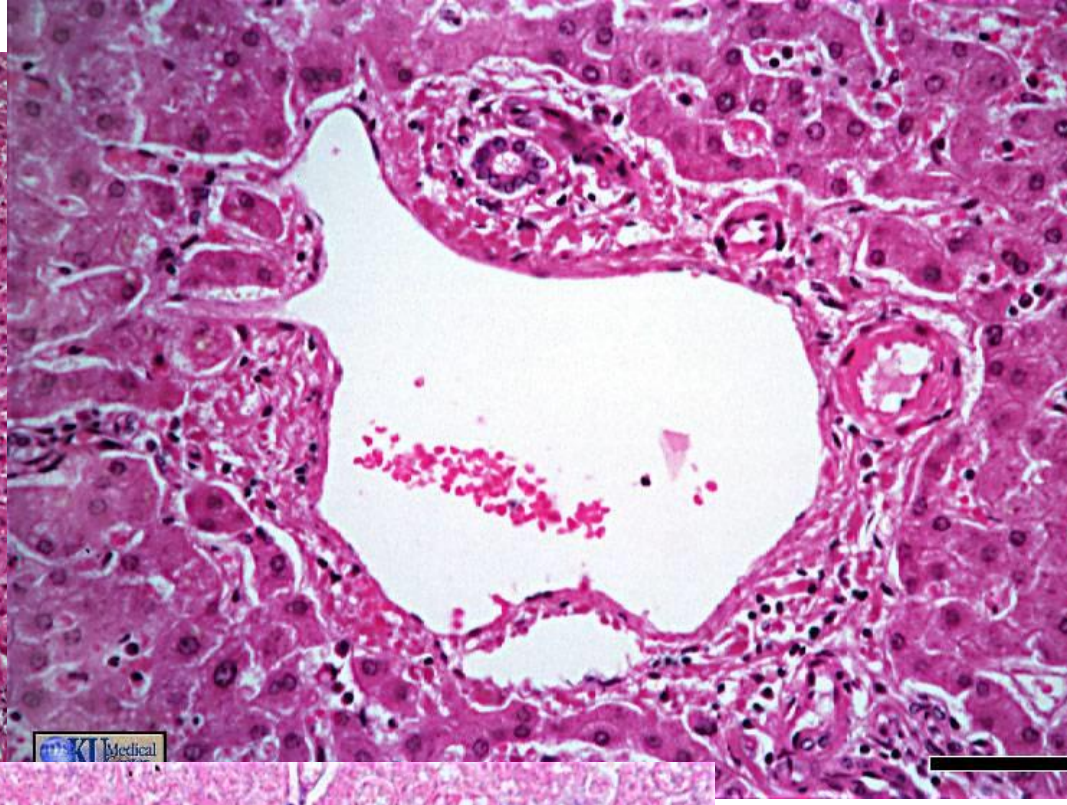
Bile and blood flow in opposite directions within a lobule:

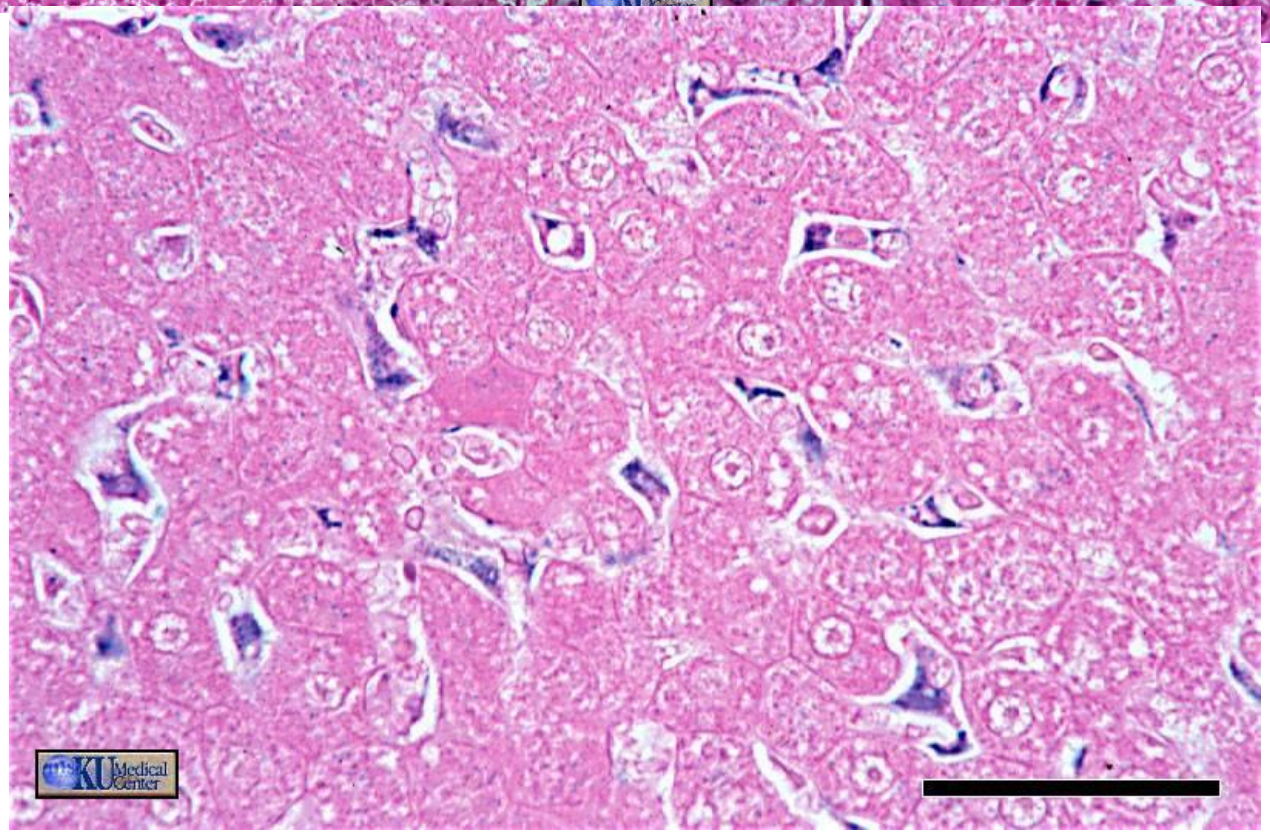
- Hepatocytes release bile into intercellular canaliculi between cells that make up each radially-oriented plate of lobule – *bile flows outwards to small duct in portal triad*
- Artery & vein have branches that empty into hepatic sinusoids that occupy spaces between plates of hepatocytes – *blood flows from triad to central vein*





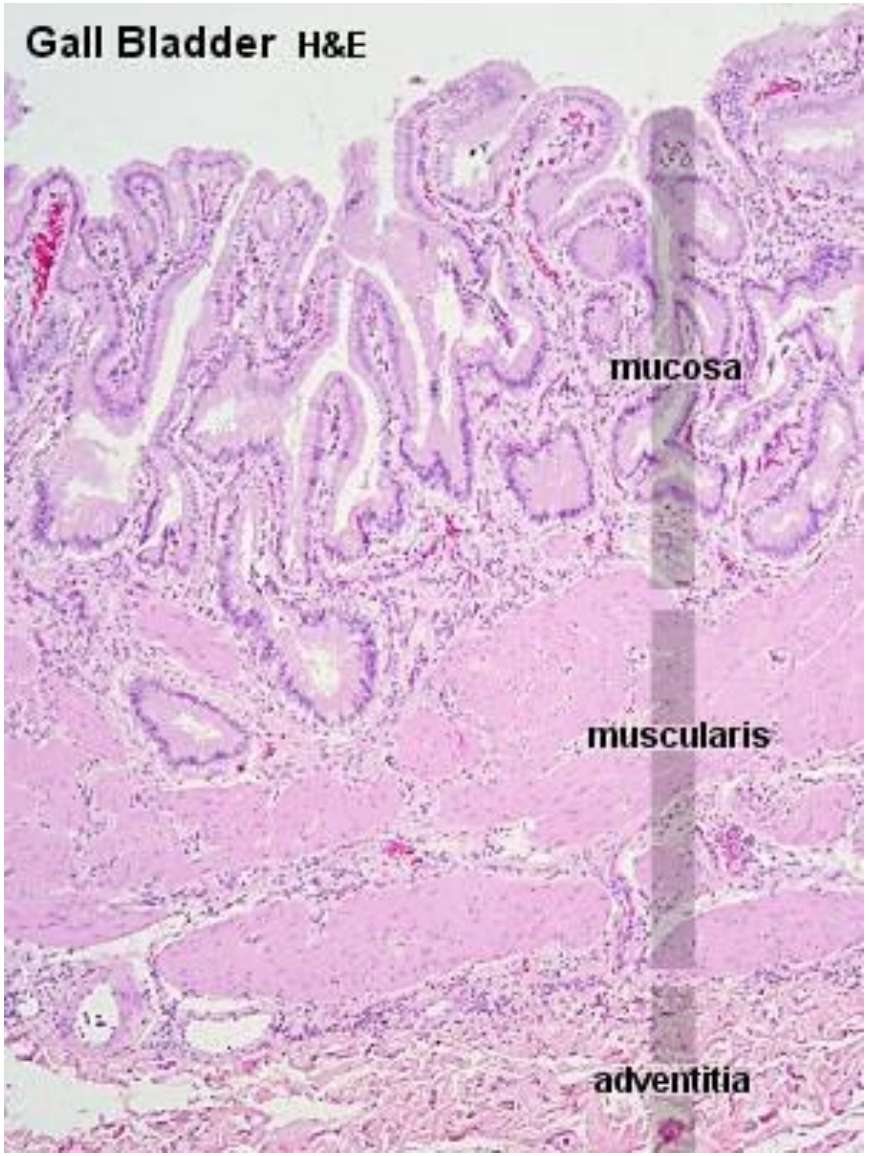

Portal vein

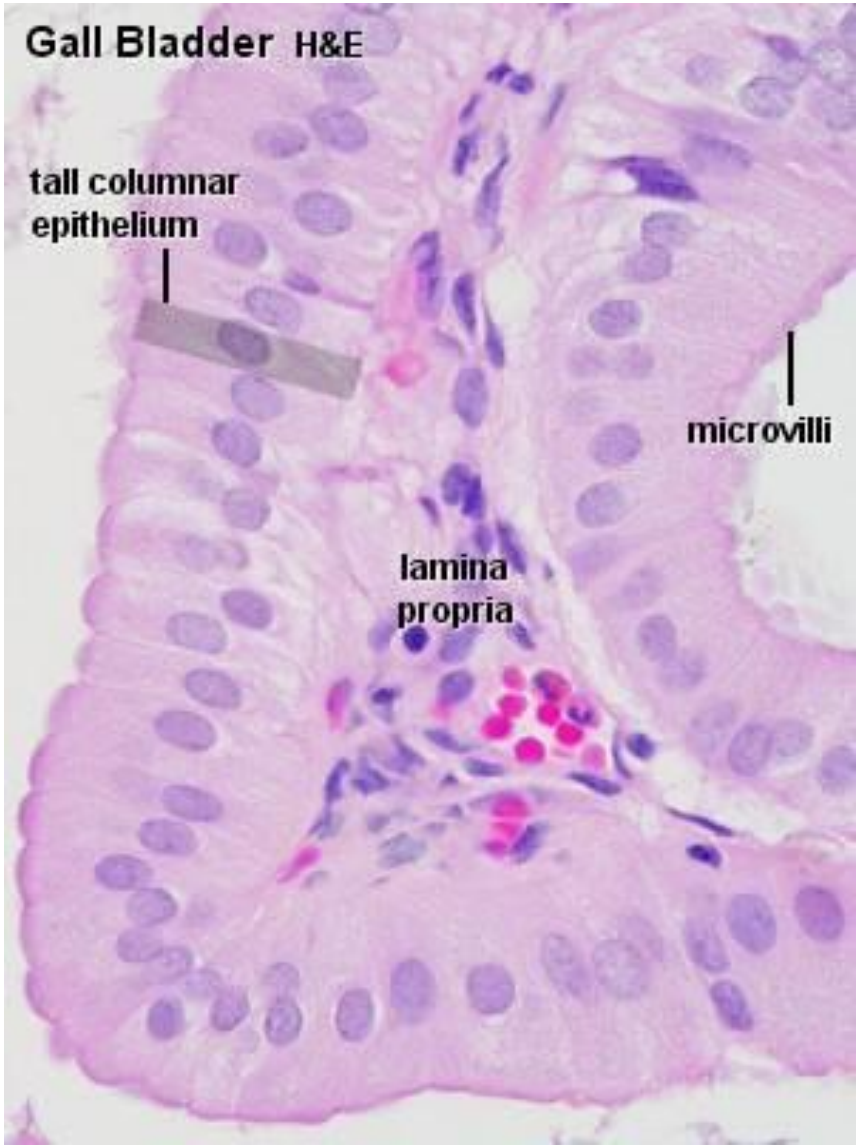




Gallbladder

- Stores and concentrates bile, then releases it into duodenum
- Pear-shaped, hollow organ, with folds when empty
- Wall with mucosa, lamina propria, thin fibromuscular layer, adventitia (no distinct submucosa)
- Epithelium of tall columnar cells with short microvilli



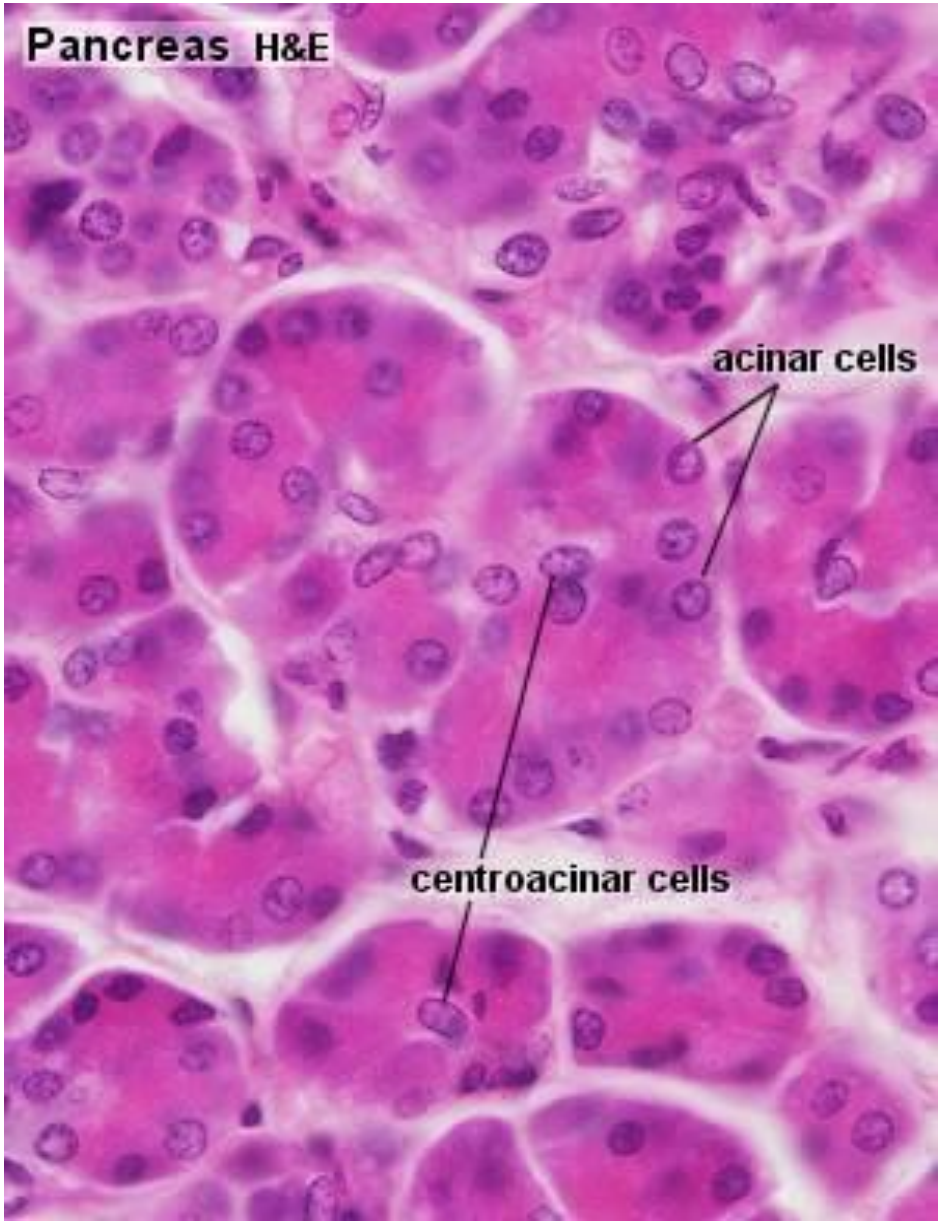


Looks like appendix w/o lymph nodes. Muscularis and submucosa are indistinguishable as separate layers.

Pancreas (exocrine portion)

Serous acini:
Pyramidal cells with heterochromatic nuclei surrounded by basophilic cytoplasm

on apical side the cytoplasm contains closely packed, eosinophilic secretory granules containing precursors of several digestive enzymes



Pancreatic ducts:

Intercalated ducts:

- pale-staining, low cuboidal cells
- transport proenzymes to duodenum
- secrete bicarbonate (5x blood)
- converge to form:

Intralobular ducts (within a lobule)

- collect secretions of intercalated ducts
- combine to form →

Interlobular ducts:

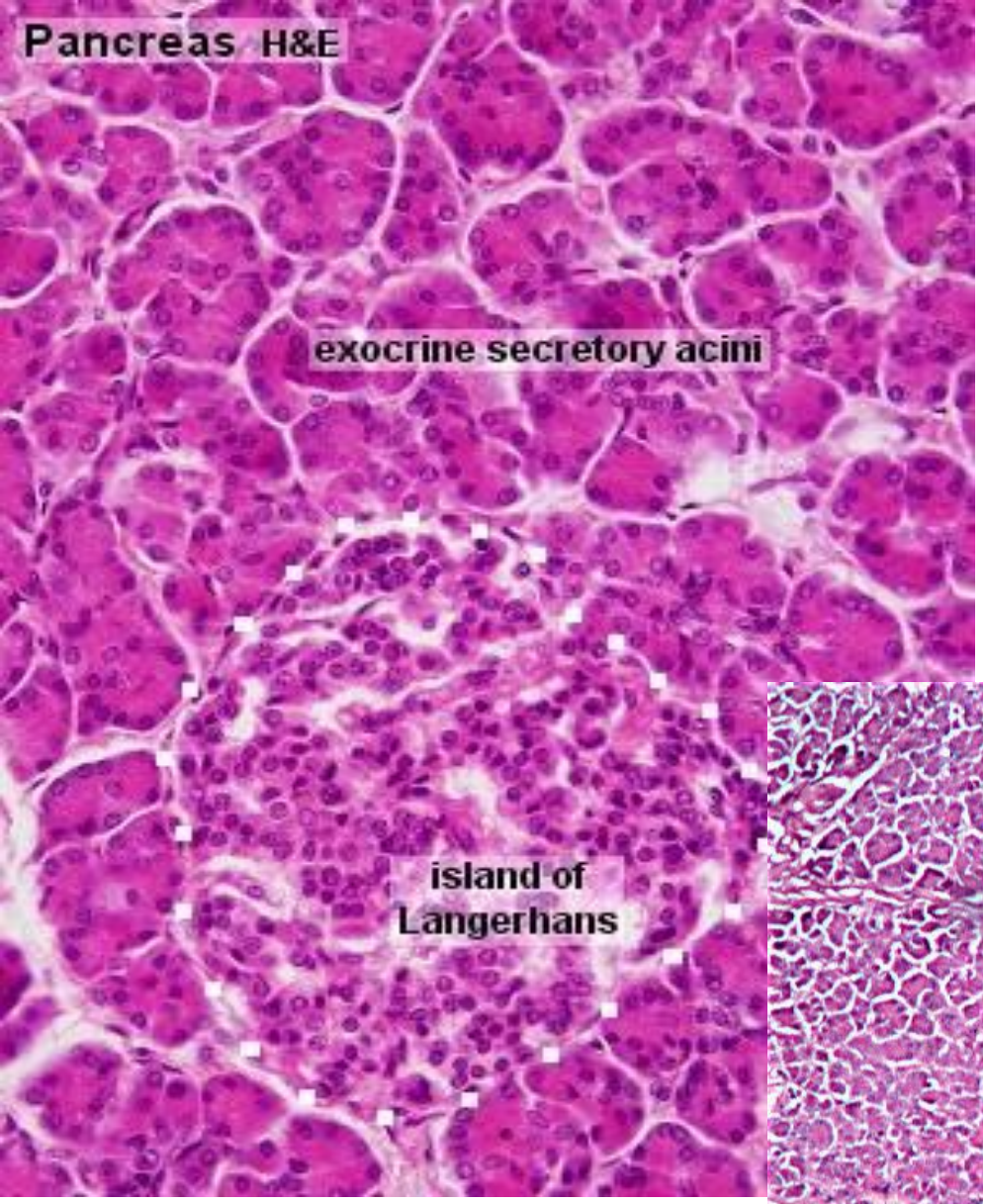
- in CT ***between*** lobules
- lined with low columnar epithelium
- join with →

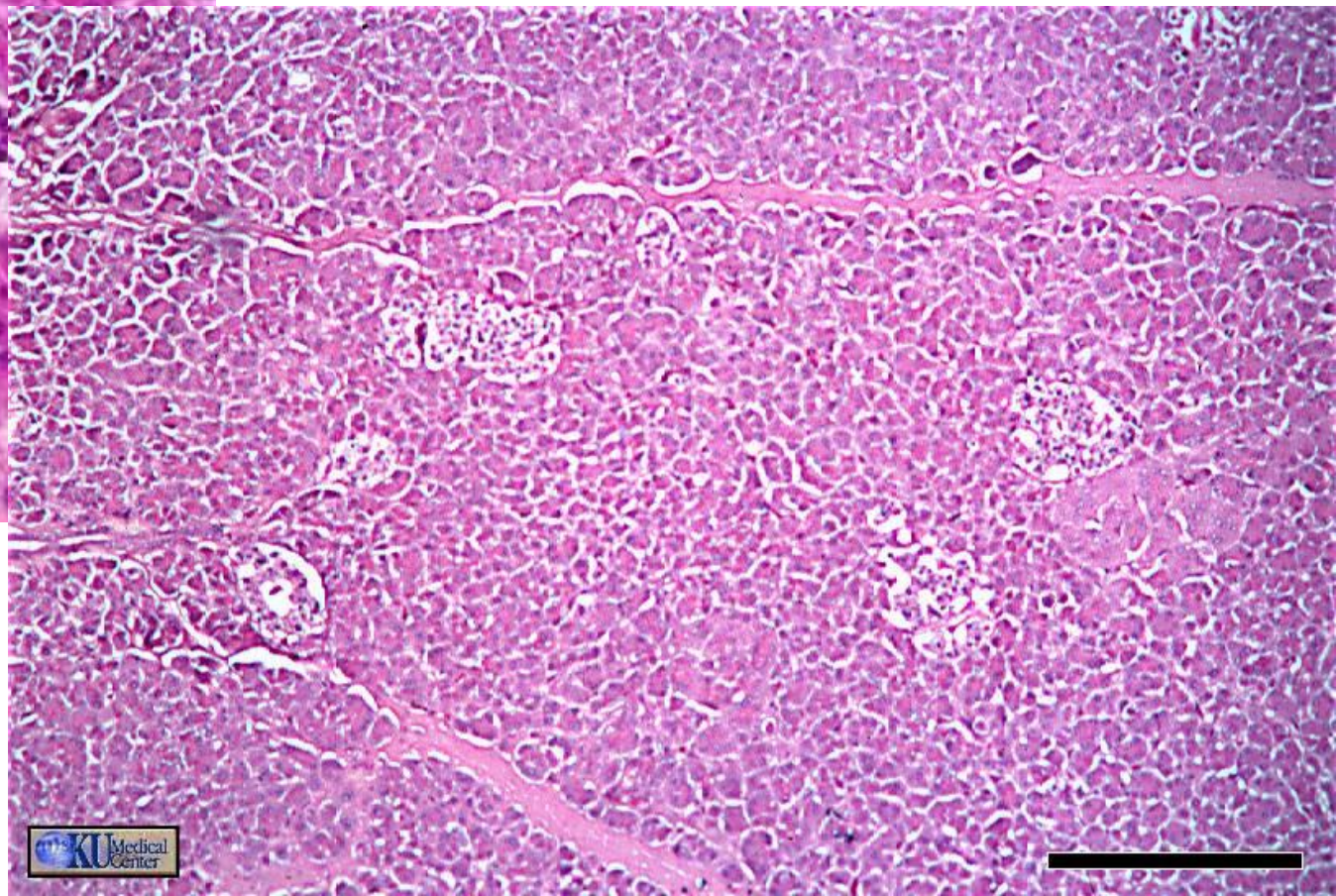
Main pancreatic duct:

- runs longitudinally through entire pancreas
- forms hepatopancreatic duct (with the bile duct), then passes through wall of duodenum

PAGE 644 Figure 18.19




Pancreas H&E
exocrine secretory acini
island of
Langerhans


KU Medical Center

Credits

http://www.med.uiuc.edu/histo/small/index.htm

http://www.anatomyatlases.org/MicroscopicAnatomy/MicroscopicAnatomy.shtm

http://www.lab.anhb.uwa.edu.au/mb140/

http://www.kumc.edu/instruction/medicine/anatomy/histoweb/index.htm

http://www.siumed.edu/~dking2/advice.htm

http://casweb.cas.ou.edu/pbell/Histology/Outline/contents.html

http://www.usuhs.mil/pat/surg_path/nlhist/pictures/nl0038.jpg

http://www.vivo.colostate.edu/hbooks/pathphys/digestion/liver/histo_lobule1.jpg

www.deltagen.com/.../liver_portal_triad_40x.htm

www.vivo.colostate.edu/.../histo_acinus.html