EXCERPT FROM REVISED DEPARTMENTAL HISTOLOGY LAB MANUAL (HAN 2220).

PRACTICAL 4: EPITHELIA II - EXOCRINE GLANDS

Learning objectives

The students should be able to:

1. Classify glands on the basis of morphology and types of secretion
2. Describe the structures of the different types of exocrine glands
3. Enumerate the factors that stimulate or inhibits secretion by the various glands

Simple tubular glands &unicellular glands

SLIDE 55 ILEUM (H&E)
SLIDE H5 532ILEUM (H&E)

Last time we observed the simple columnar epithelial of the intestinal villi.

Note now the presence of numerous goblet cells which are unicellular intraepithelial glands.

Between adjacent villi lie simple, straight tubular glands looking like tubes or pits continuous with the epithelium. These pits are called intestinal crypts of lieberkuhn and many will appear sectioned in the circular or oval profile. You see special cell filled with red granules at the blind bases of many of the crypts; these are called Paneth cells. What is the function of these cells?

Draw at LP>HP

SLIDE 88 UTERUS (H&E)

Simple tubular glands extend from the narrow lumen of this organ, lined by the same simple columnar epithelium. Some may be branched. Draw at LP>HP.

SLIDE H9.331 UTERUS-SECRETING MUCOSA (H/E)

Contrast this slide with slide 88. This uterus is in the secretory phase. Note the tortuous and dilated glands, some of the them containing eosinophilic secretory materials what is the other name for the secretory phase of the uterine cycle? sketch at LP>HP.

SLIDE 35 SCALP (H&E)

Identify the sweat glands, which are simply, coiled tubular glands secreting by the merocrine (eccrine) methods at LP make a sketch of suitable cluster of glandular units showing its duct (cut up a different levels) leading to the surface. The coiled secretory part is a cluster of cross and oblique sections of tubes lined by a simple or pseudostratified low columnar epithelium,

while the excretory duet, which stains darker, has a different type of the epithelium (what type?). Draw diagrams of each part, and identify myoepithelial cells occasionally (with luck!) you may find a duct, which can be traced up to the surface.

2.**Simple Saccular Glands**

SLIDES 35 SCALP (H&E)

SLIDE H11.34 SCALP (H&E)

Identify the numerous sebaceous glands, again, noting that that they are usually attached to hair follicles into which they empty. Observe the epithelial capsule covering the glands, consisting of small cells, which are continuous with stratified squamous epithelium of the overlying skin. Note the changing pattern of the cells and their nuclei from the base of the glands to its duct in the upper (neck) region. Pay attention to the frothy or vacuolated nature of the cytoplasm resulting from the dissolved lipid droplets.

These are simple branched saccular glands which secrete by the Holocrine methods. Draw at LP and a small segment at HP, showing the epithelial capsules, normal and hypertrophic glandular cell, cells with pyknotic nuclei, and disintegrating cells forming the gland secretion in the upper zone.

1 **Compound alveolar glands**
SLIDE 95 BREAST MAMMMRY GLANDS (H&E)
SLIDEH9.352 MAMMARY GLANDS (H&E)

In this specimen the glands are secreting and therefore then alveoli are dilated with a homogeneous pink –stained material, often vacuolated because of dissolved lipid droplets. The alveoli are lined by a simple cuboidal epithelium whose luminal surface is uneven because the glands secrete by the apocrine method.

Now identify the ducts and observe that their epithelium is similar to that lining the ducts of sweat glands (what type).

Draw a cluster (lobule) of secretory units (LP) and one or two alveoli and a duct at HP.

4**. Compounds tubule-acinar glands; serous and mucous acini**

SLIDE 48 SUBLINGUAL GLAND (MALLORY)

Identify, compare and concrete the two types of the acini with labelled drawings (HP) both secrete by the merocrine methods.

Draw a mucous secretory unity with a serious Demilune (HP).

Identify the interlobular ducts (simple cuboidal or low columnar epithelium) and the larger interlobular ducts (lying in the connective tissue septa stained blue, with stratified columnar epithelium) Draw appropriate examples (HP)

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EXERCISE

1. What is the difference between endocrine and exocrine glands?
2. With well labelled diagrams, explain what is meant by holocrine, merocrine and apocrine secretion of glands?
3. Which type of secretion method do the following glands use?
    a. Ceruminous glands
    b. Glands of Zoll
    c. Meibomian glands
    d. Salivary glands
    e. Exocrine pancreas
    f. Goblet cells
    g. Lacrimal glands
    h. Sebaceous glands
4. With labelled diagrams, contrast the appearance of serous vs mucous cells
5. With a labelled diagram, illustrate a myoepithelial cell

PRIVATE STUDY: Junqueira chapter 4