بسم الله الرحمن الرحيم



#### **Histology – Practical**

# Glands Lab

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#### SIMPLE TUBULAR GLAND

This can be seen in the stomach

The duct

This is simple glands, one gland has one opening. and from the washed out appearance and basally located nucleus this is (mucous tubules) . tubular = produce mucous



SEBACEOUS GLAND

microscopic glands found in your hair follicles that secrete sebum

#### Expelling of mature fat cells to the outside $\rightarrow$ opened at the shaft

The sebaceous glands has the holocrine secretion mode. the cells near to the duct are more mature.

the more mature they are the more they are dead cells filled with the secretary product (sebum) so they will be expelled from the gland



no washed-out structures, only pinkish structures, so it is a purely serous gland



## PANCREAS

This is the endocrine part of the pancreas .-> lightly stained langerhans islets

The rest is the exocrine part



## COMPOUND TUBULOALVEOLAR

- This is a section from the submandibular gland (the second largest of the three main salivary glands).
- compound: because it is a complex duct
- tubular = mucous tubules
- alveolar = serous acini

This is a major duct (excretory duct) with stratified cuboidal forming it.

The duct is surrounded by connective tissue.



### COMPOUND TUBULOALVEOLAR

This is the same as before

This is a serous acinus, but note that it is not complete, it is related to the mucous tubule and it does caping for mucous tubules, it looks like a (crescent moon J). This is called serous demilunes

The alveolar part is more watery with bigger nuclei than the tubular



Dark red tiny

## COMPOUNDTUBULAR

#### Seen in sublingual glands in the GI tract

Compound = complex duct system Tubular = mucous tubules so it is an example of pure mucoussecreting cells

\*it is not pure 100% but most of it are mucous tubules, with some serous acini scattered here in there . acinus: collection of secretory cells mucous secretion = thick fluid serous secretion= watery fluid

Tabular→ Vacuoles are filled with mucus & more washed out Look like goblet cells because they have the same type of secretion

Major gland with complex duct system



This is also a major salivary gland ( which is submandibular gland btw) at this magnification what would you say? is it compound or simple? Definitely ,this is compound (a complex duct system)

This is a septum





At higher magnification we do recognize different regions.

the darkly stained are : serous acini ( their secretion is watery )

the likely stained ( washed out appearance ) : mucous acini <u>tubules to be</u> <u>accurate</u> (their secretion is thick )

> Ducts with simple cuboidal epithelium.

The existence of Fat cells (adipocytes ) in the salivary ← glands is a sign of ageing علامة على تقدم العمر



higher magnification, and you can see the granules حبيبات within the cytoplasm.

Round nucleus for the serous cells

More or less flattened nucleus for the mucous cells , and more basally located (pushed to the very basal aspect of it )



the second largest of the three main salivary glands

This is a major salivary gland (major exocrine gland ), and when we that that mean we will have what is called the capsule ( connective tissue structure that surround &protect the exocrine cells ). Capsule sends sents to farther divide the gland into smaller(lobes ) and

Capsule sends septa to farther divide the gland into smaller(lobes) and smaller (lobules) compartments



Each lobule has a duct duct from lobules form a bigger duct in lobes

duct of lobes join together to form the main duct

Serous cells usually they have lots of granules ,which contains the secretory product , they travel to the apical surface then there content will be released . This is a higher magnification of the previous gland. we see here three different structures (different in the staining) whitish: mucus tubules pinkish : ducts very pinkish : serous acini

duct

epters

# SEROUS DEMILUNES

Higher magnification , and you can see the granny felling of the serous cells.

how to distinguish the mucous cells :

- 1 washed out appearance
- 2 more basally located nucleus
- 3 more flattened nucleus

So this is an example of mixed gland (serous&mucous) and a compound gland ( complex duct system )

\*all major glands ,such as this one , are considered compound glands .



## PAROTID

The largest of three salivary glands

We can see the very pinkish (kind of purple structures ) these are serous acini .

but the white structures are these mucus tubules ?? no these are fat cells (adipocytes) their existence in the salivary glands

their existence in the salivary glands is a sign of ageing

So this is considered a serous gland ( it has mainly serous )and it is kind of pure serous gland.





#### Sublingual G

The smallest of three salivary glands

It is a compound gland.

we can see :

capsule

#### septa

very pinkish structures (serous acini ) white structures (mucous tubules ) so it is a mixed gland but it has more mucus tubules than serous acini



#### Sublingual G

- This is a higher magnification we can see mucous tubules :
  - have washed out appearance
    more basally located nucleus
    more flattened nucleus
- compared to the serous acini cells.



# For any feedback, scan the code or click on it.



Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			

رسالة من الفريق العلمي:

اللهم أنت ربي لا إله إلا أنت خلقتني وأنا عبدك وأنا على عهدك ووعدك ما استطعت أعوذ بك من شر ما صنعت أبوء لك بنعمتك علي وأبوء لك بذنبي فاغفر لي فإنه لا يغفر الذنوب إلا أنت