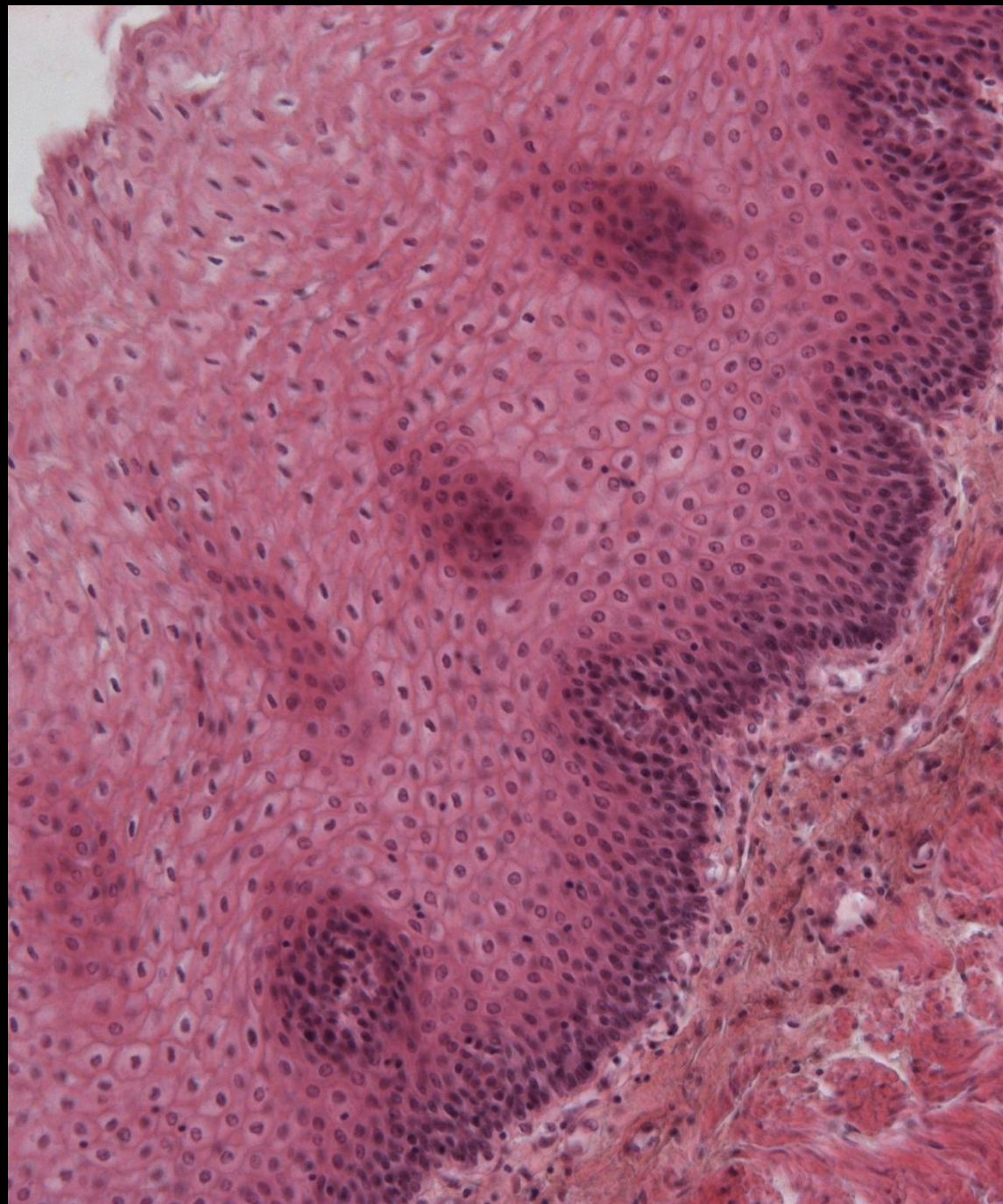
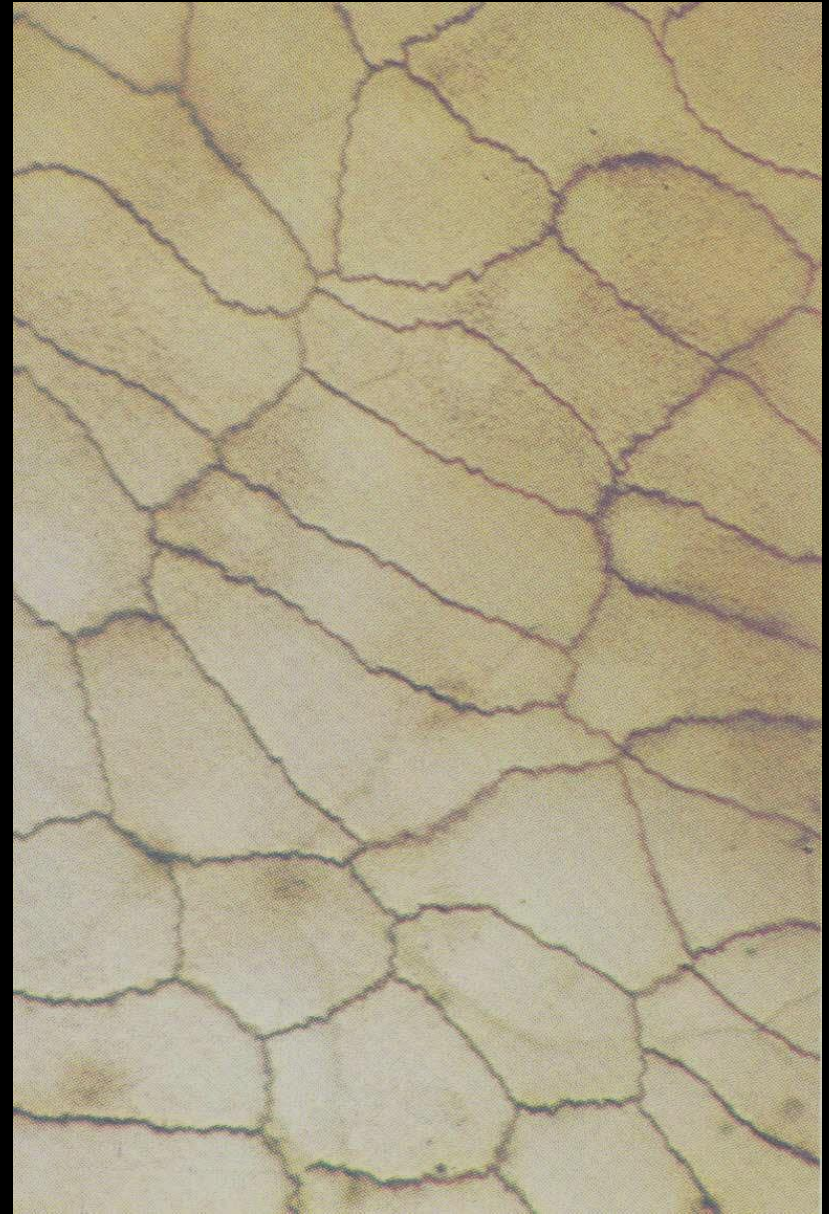
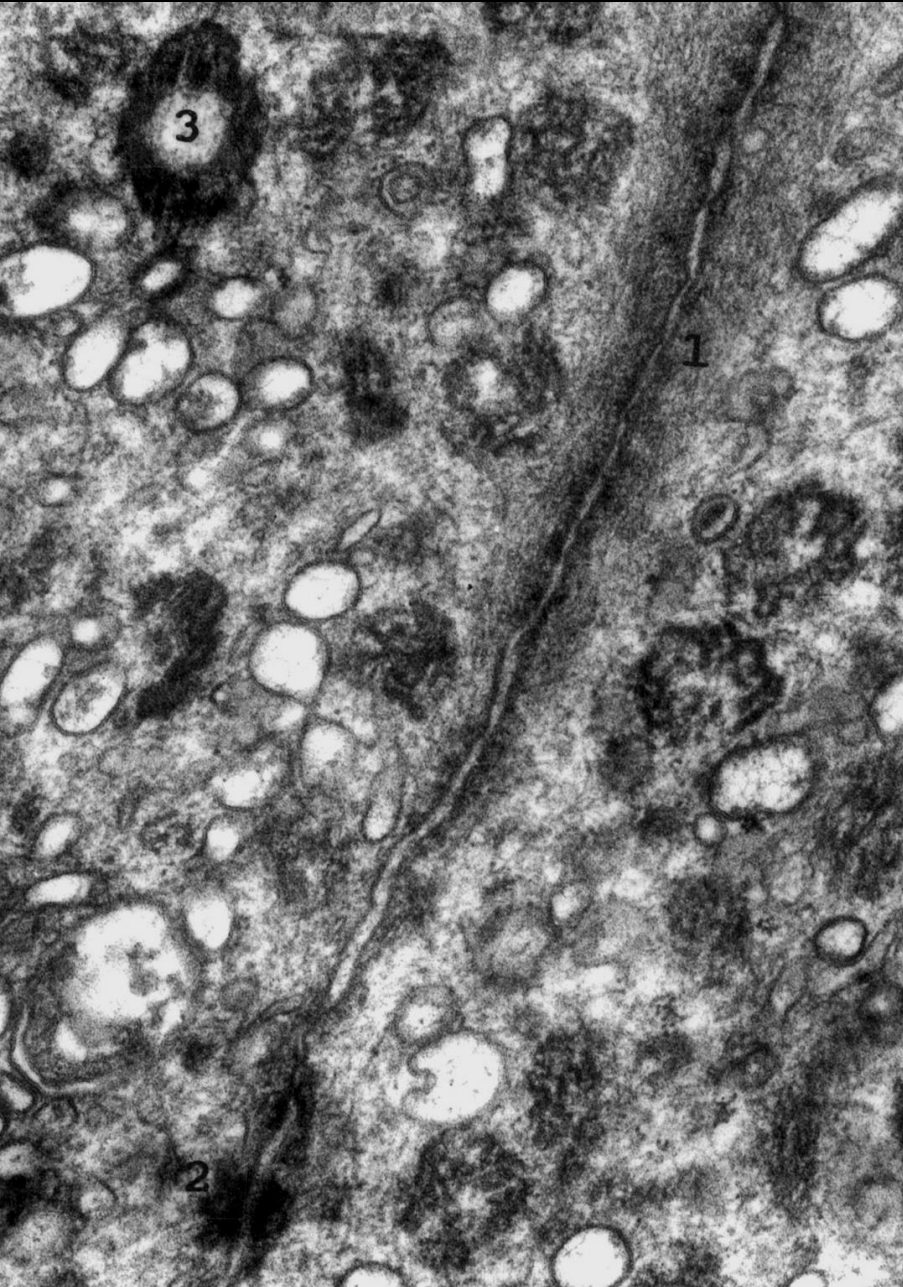


Tkáň epitelová

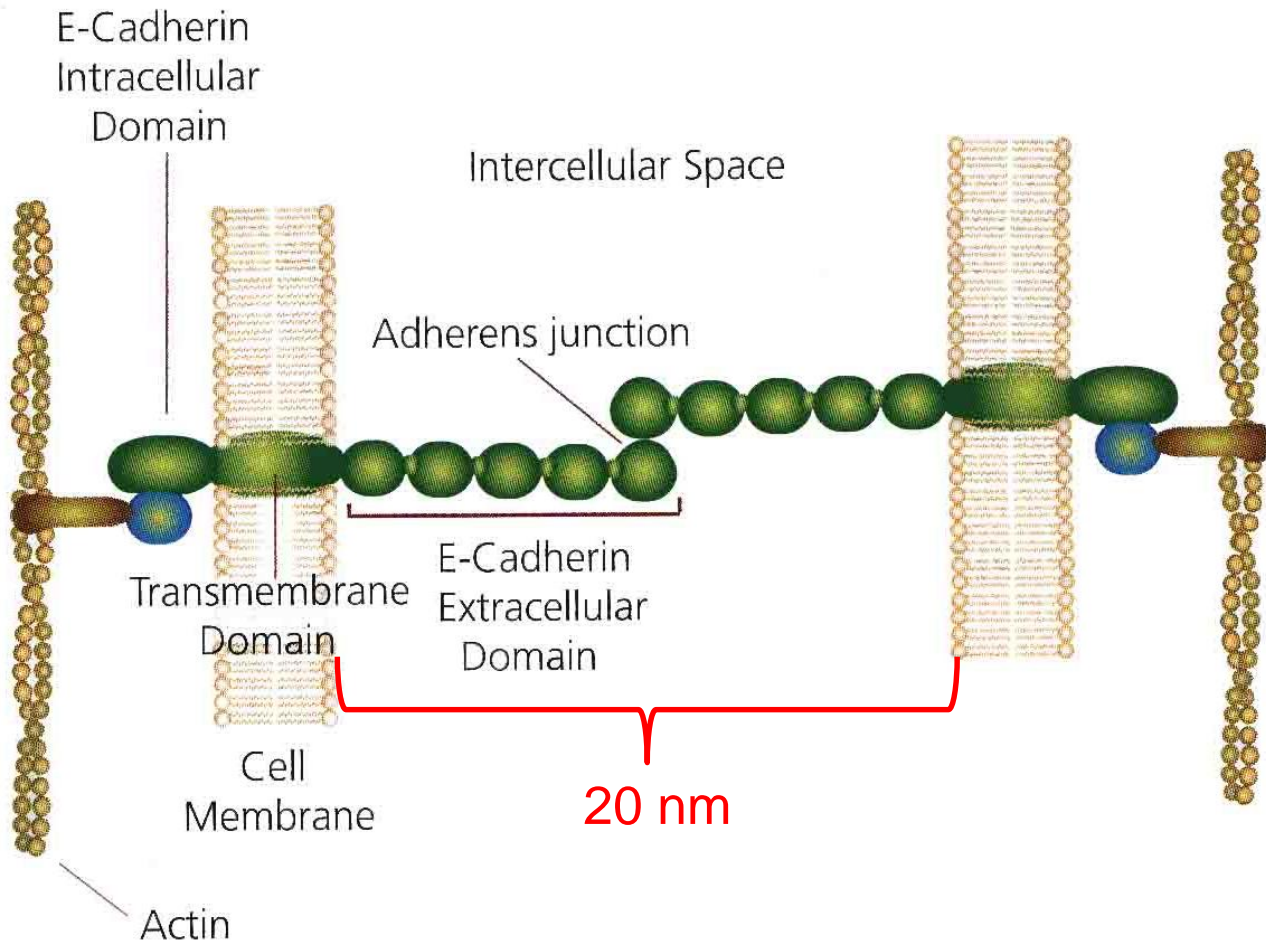
- buňky těsně vedle sebe
- malé množství mezibuněčné hmoty
- vysoká soudržnost
- buňky jsou polarizované
- povrchové specializace
- bezcévná tkáň
- bohatá inervace
- rychlá obměna buněk
- vysoká schopnost regenerace



Buňky těsně vedle sebe, malé množství mezibuněčné hmoty

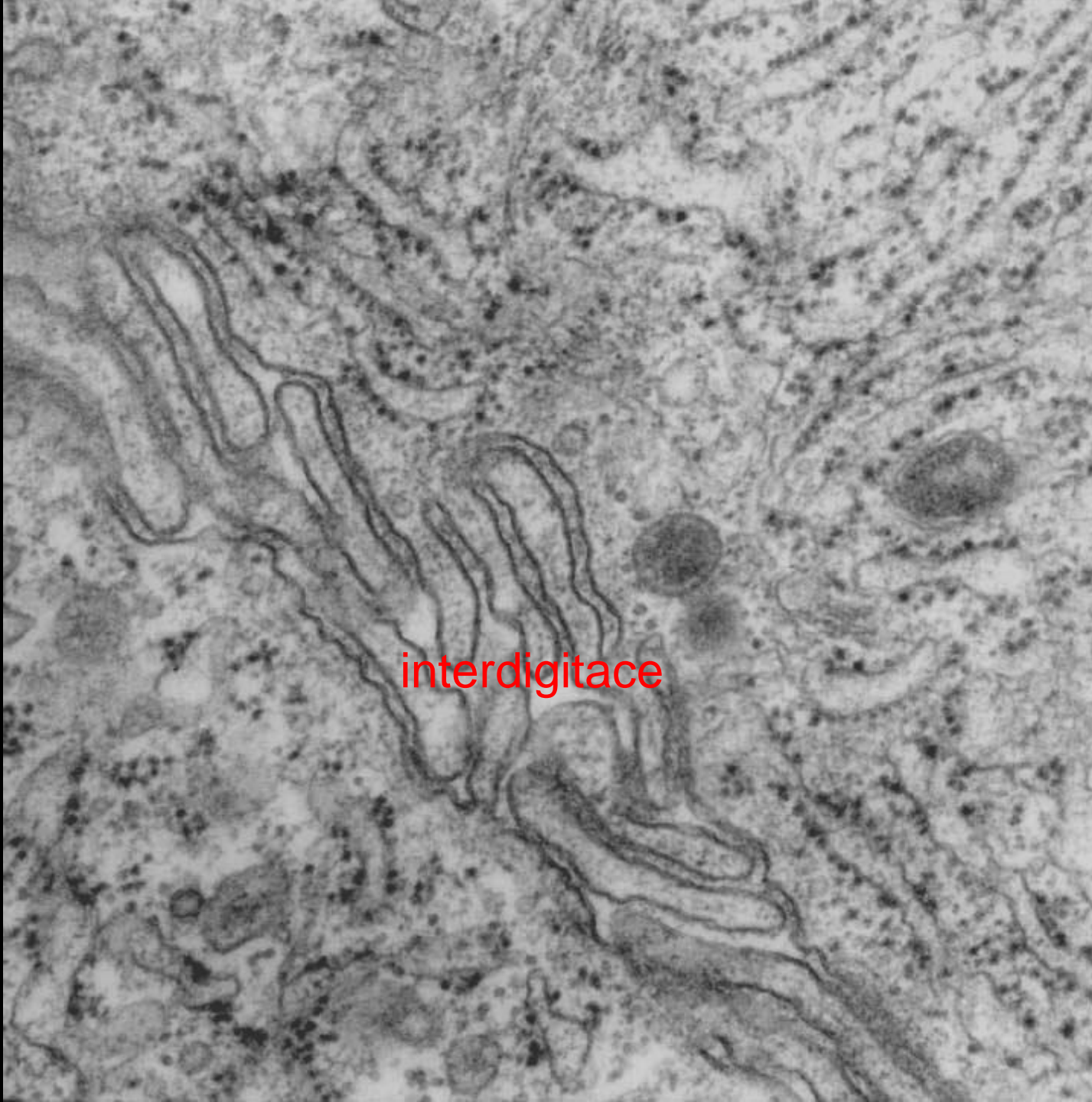


Vysoká soudržnost



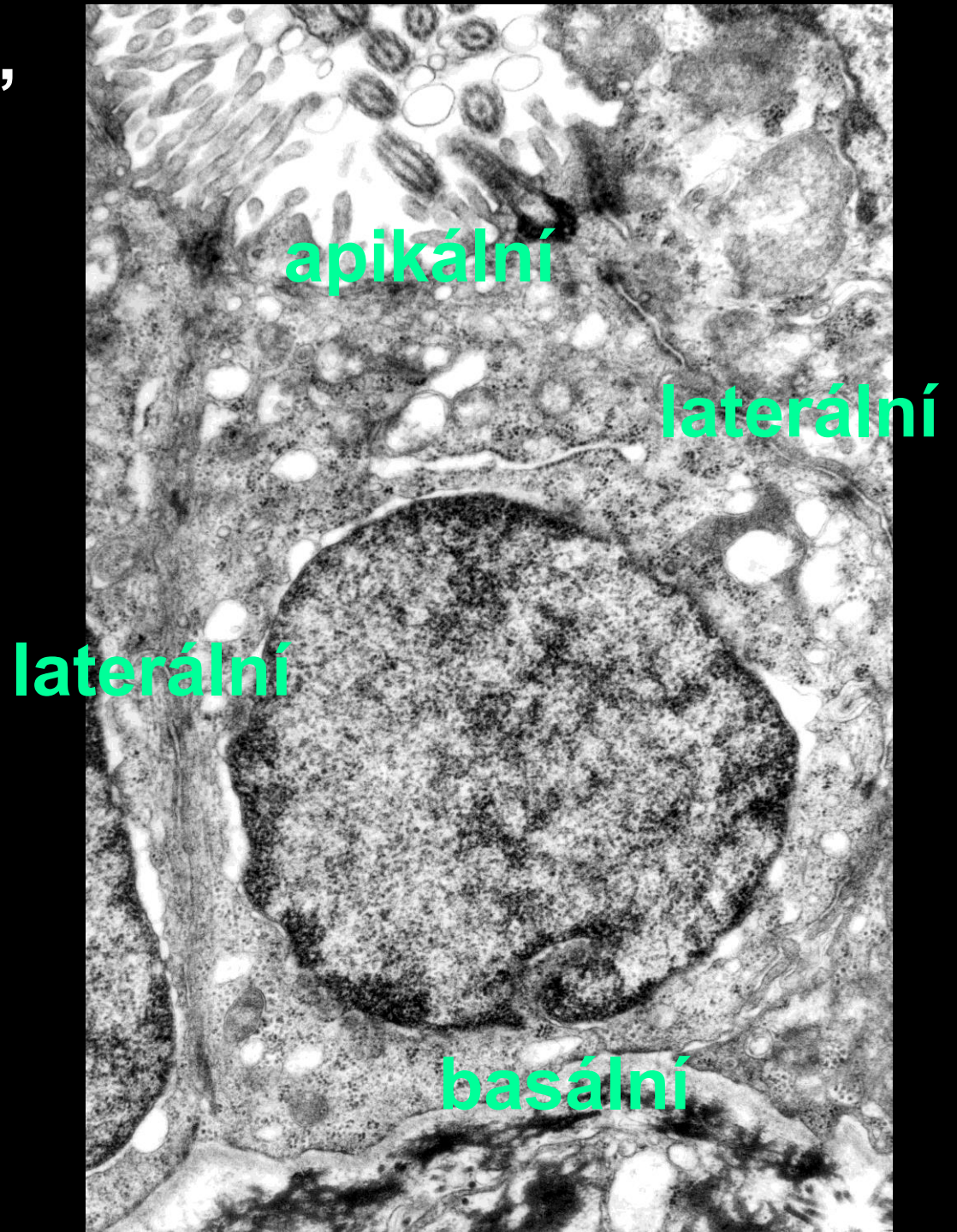
Molekuly buněčné adheze (CAM)

cell-to-cell adheze CADHERINY
(s účastí Ca^{2+})
E-cadherin - uvomorulin



interdigitace

Polarizace buněk, povrchové specializace



SPECIALIZACE LATERÁLNÍCH POVRCHŮ EPITELOVÝCH BUNĚK

1/ zonula occludens (tight junction, těsné spojení)

2/ zonula adhaerens

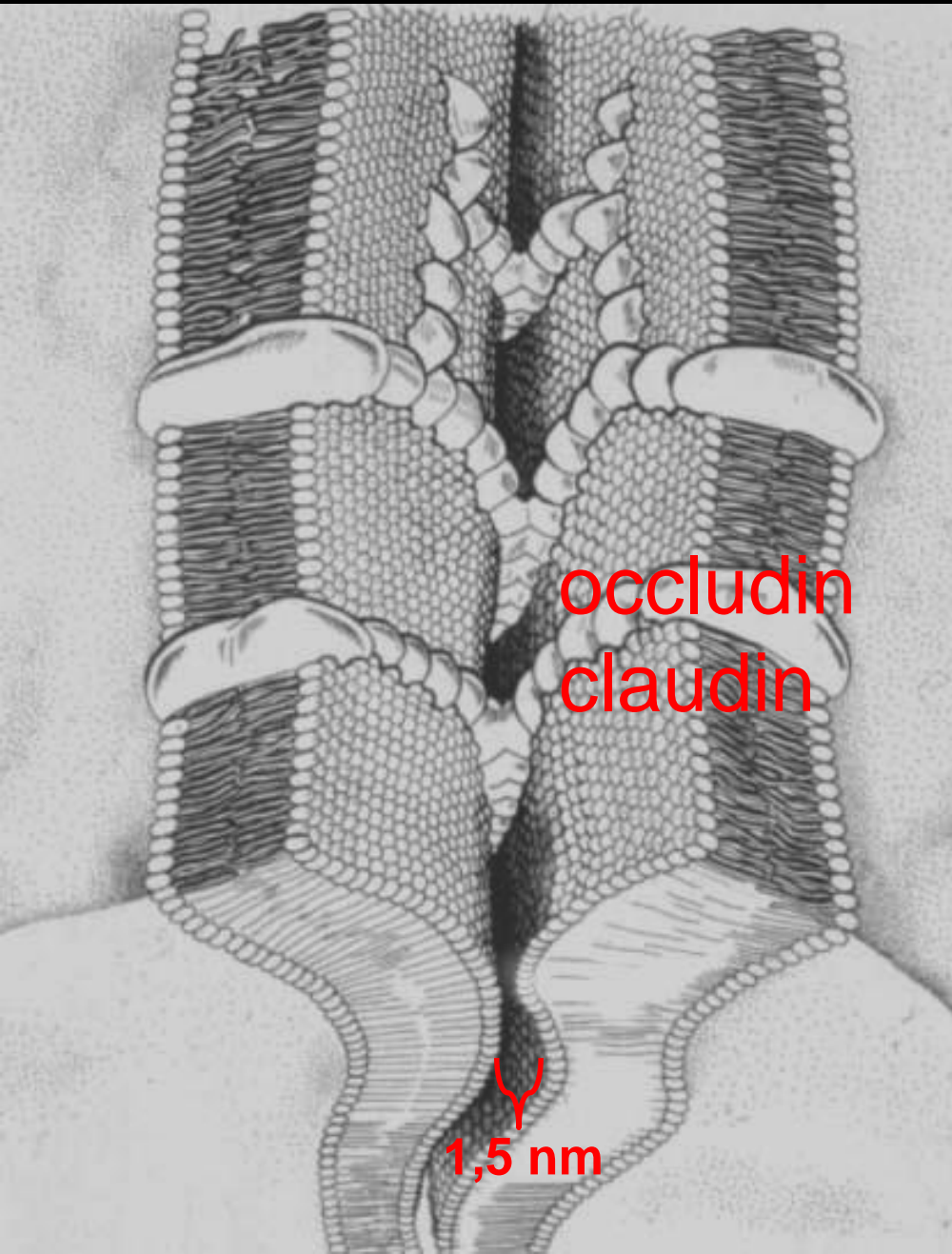
3/ macula adhaerens (desmosom)

terminální lišta (1+2)

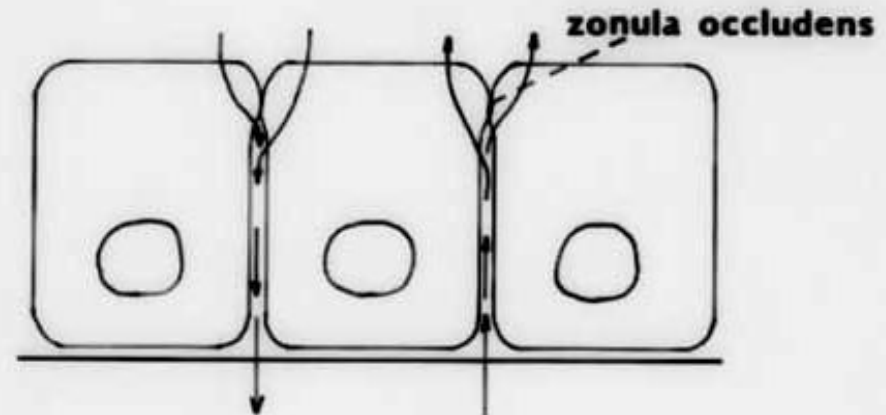
apikální spojovací komplex (1+2+3)

4/ nexus (gap junction)

Zonula occludens

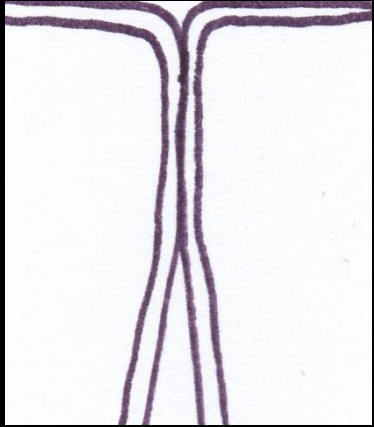


FUNKCE TĚSNÉHO SPOJENÍ



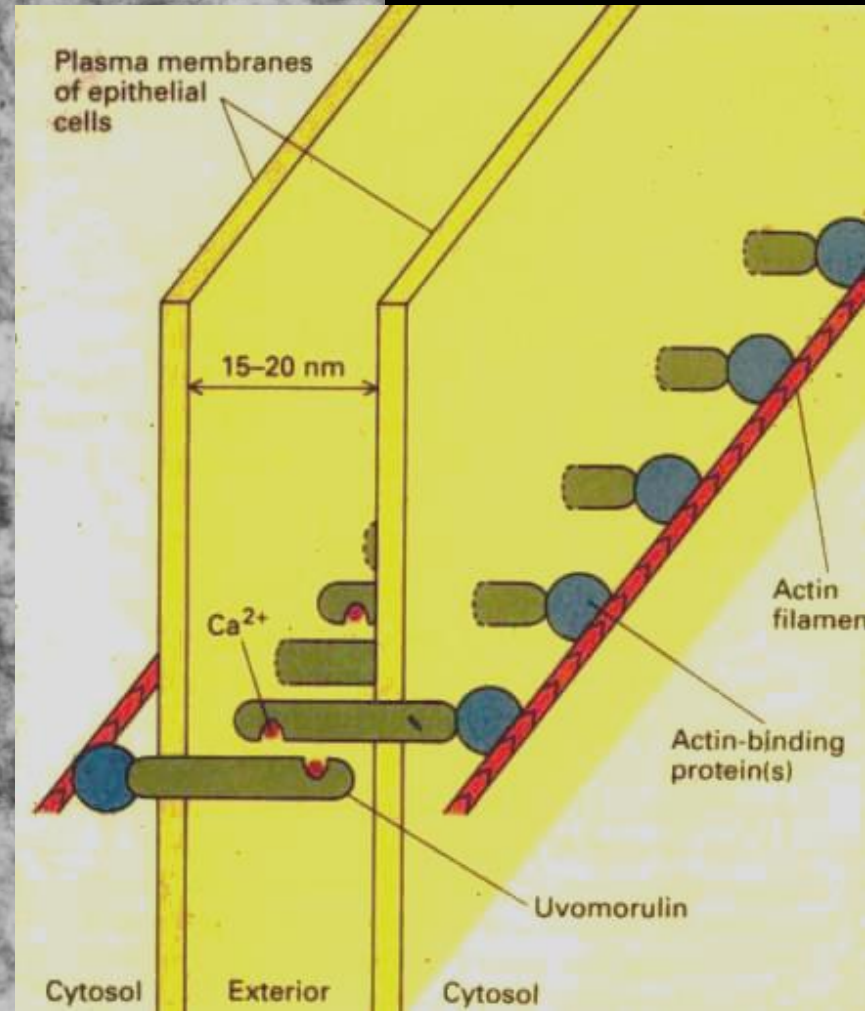
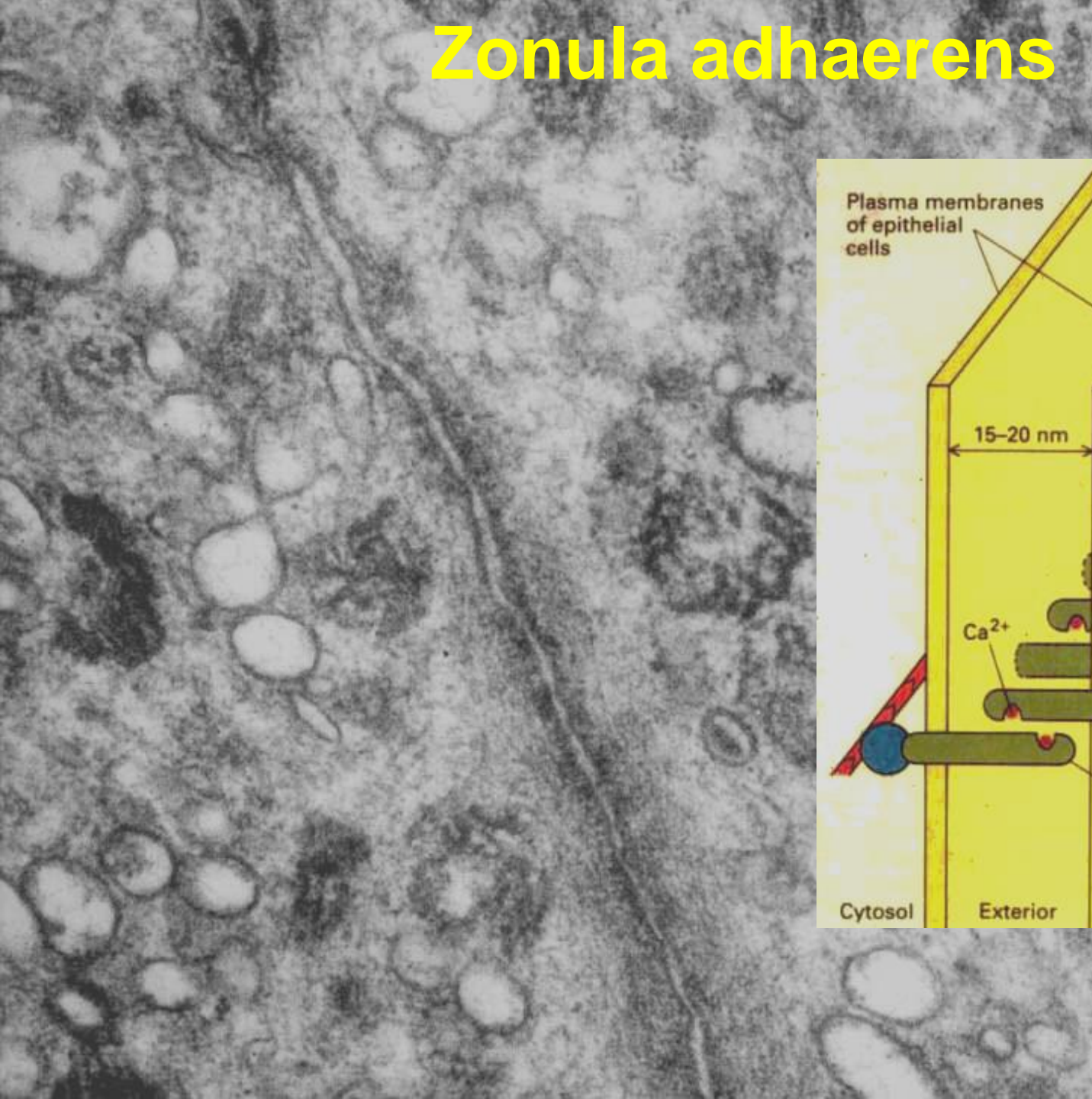


pentalaminární struktura

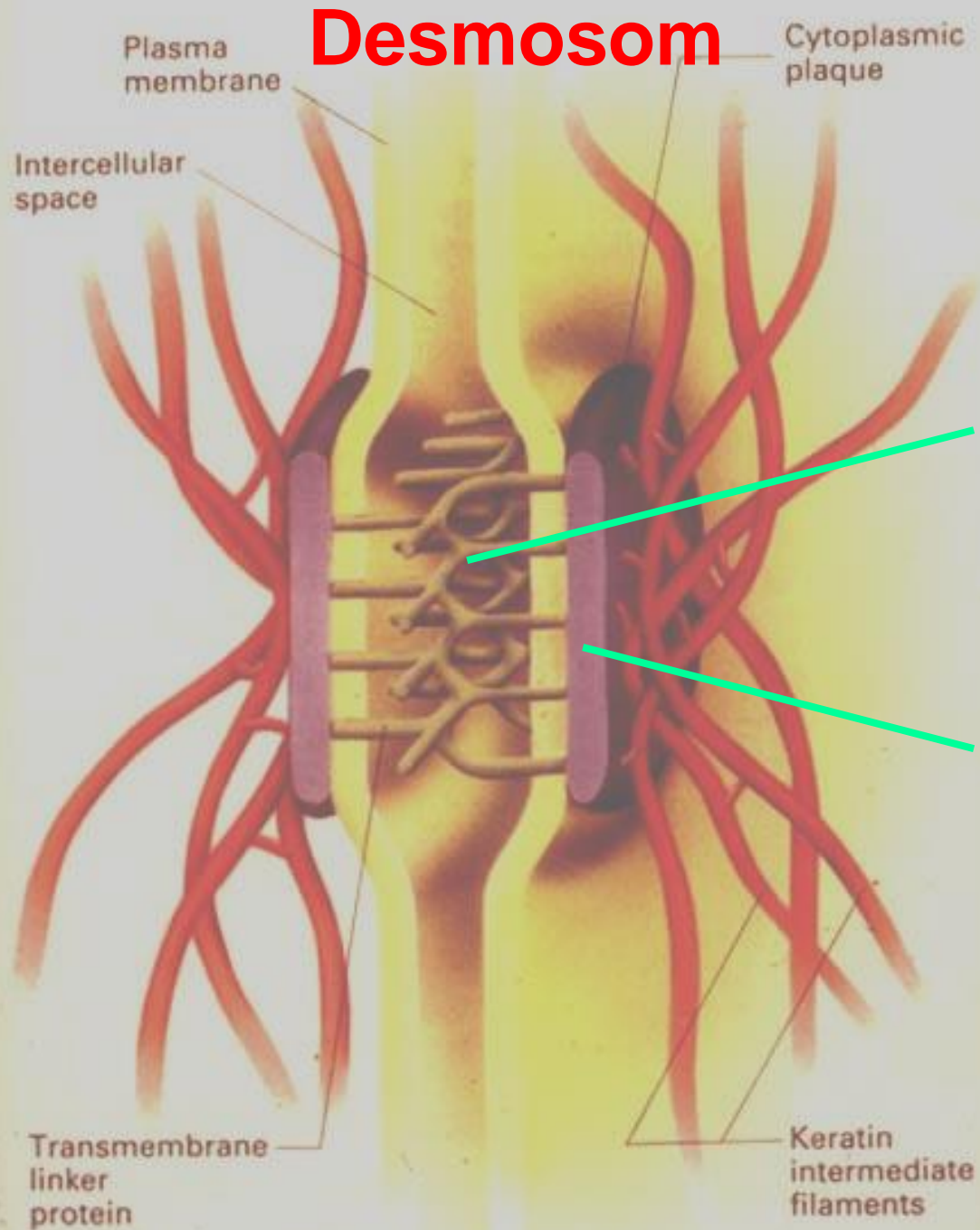




Zonula adhaerens

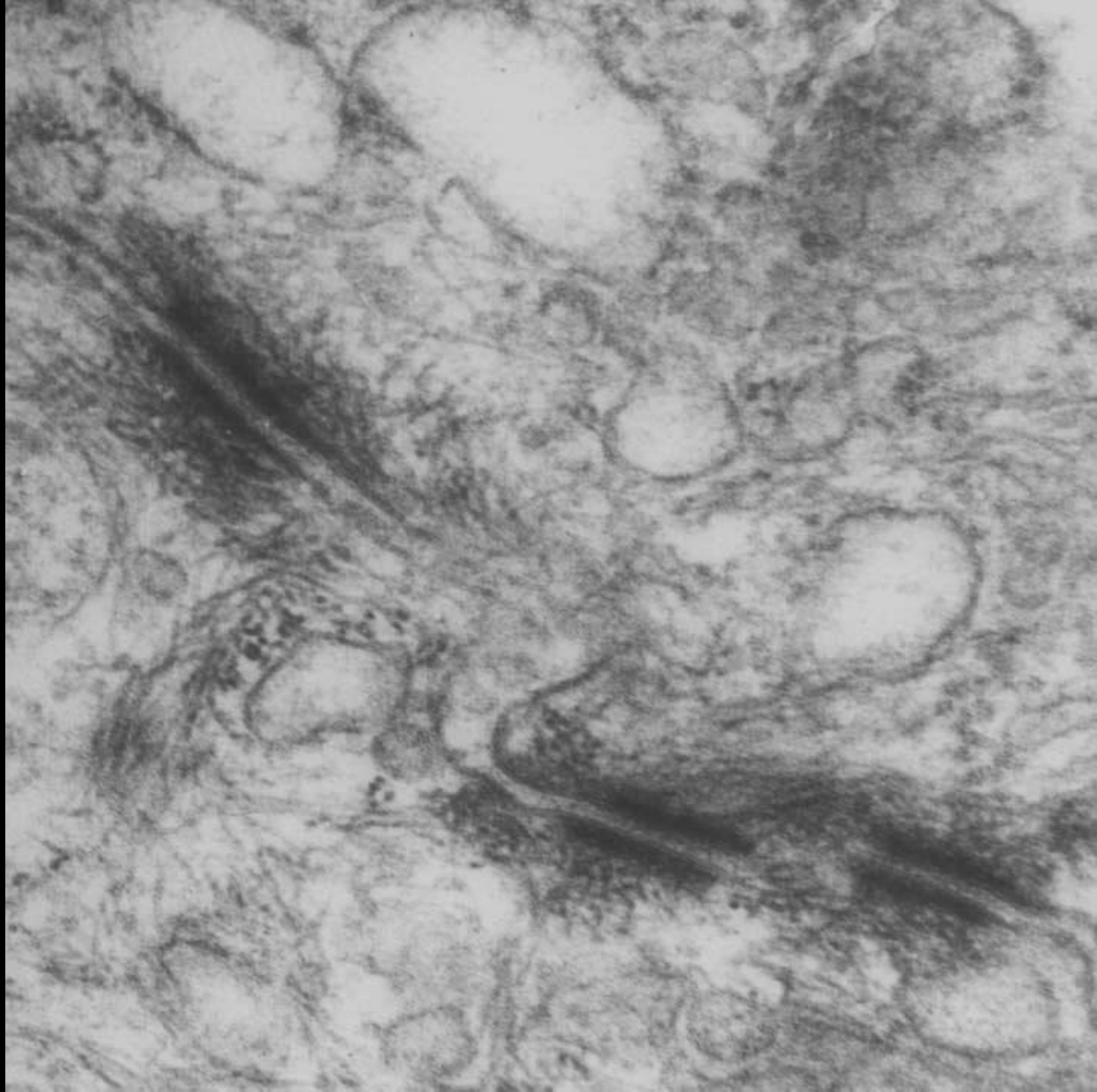


Desmosom

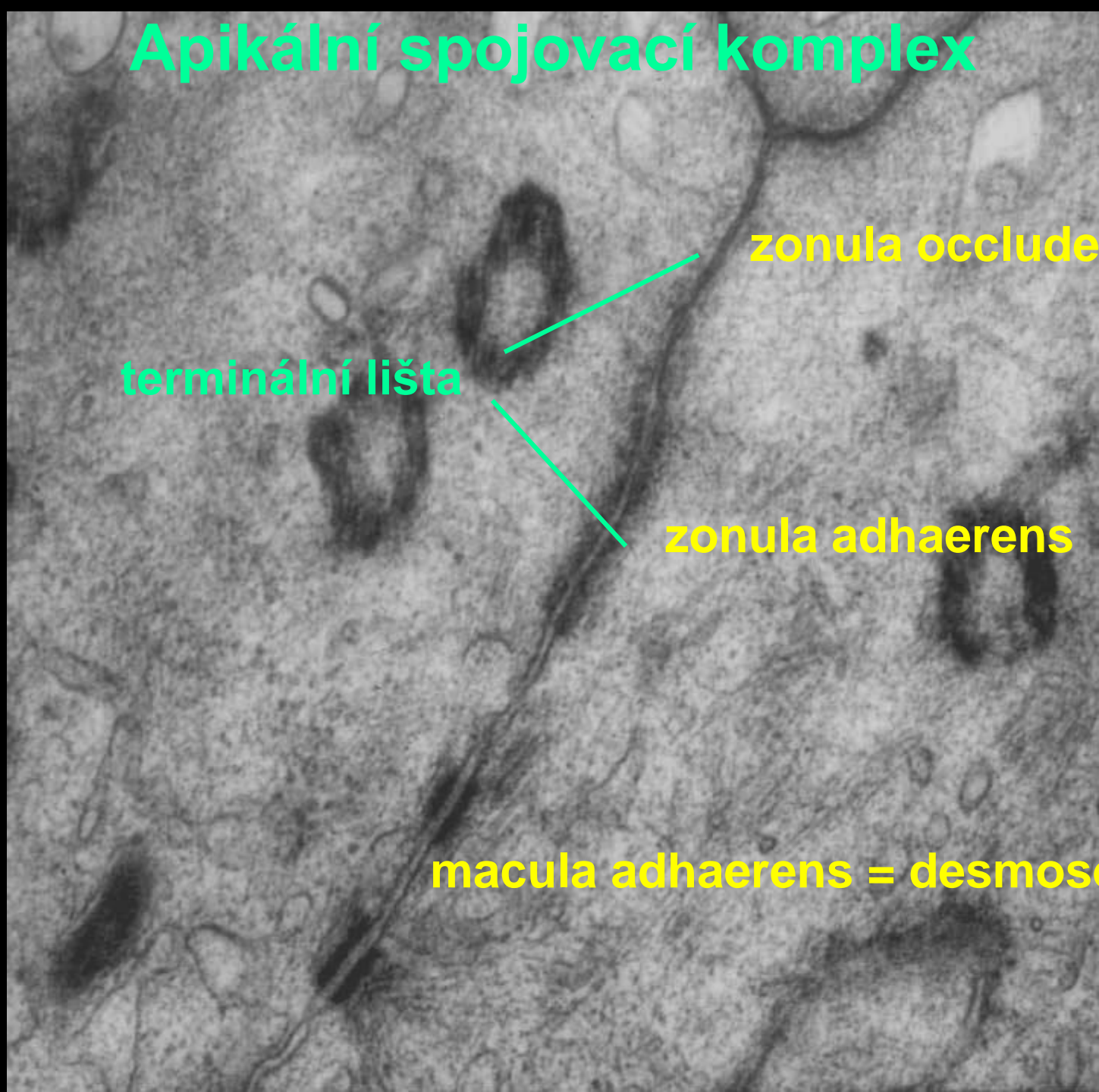


desmoglein
desmocollin

desmoplakin
plakoglobin



Apikální spojovací komplex



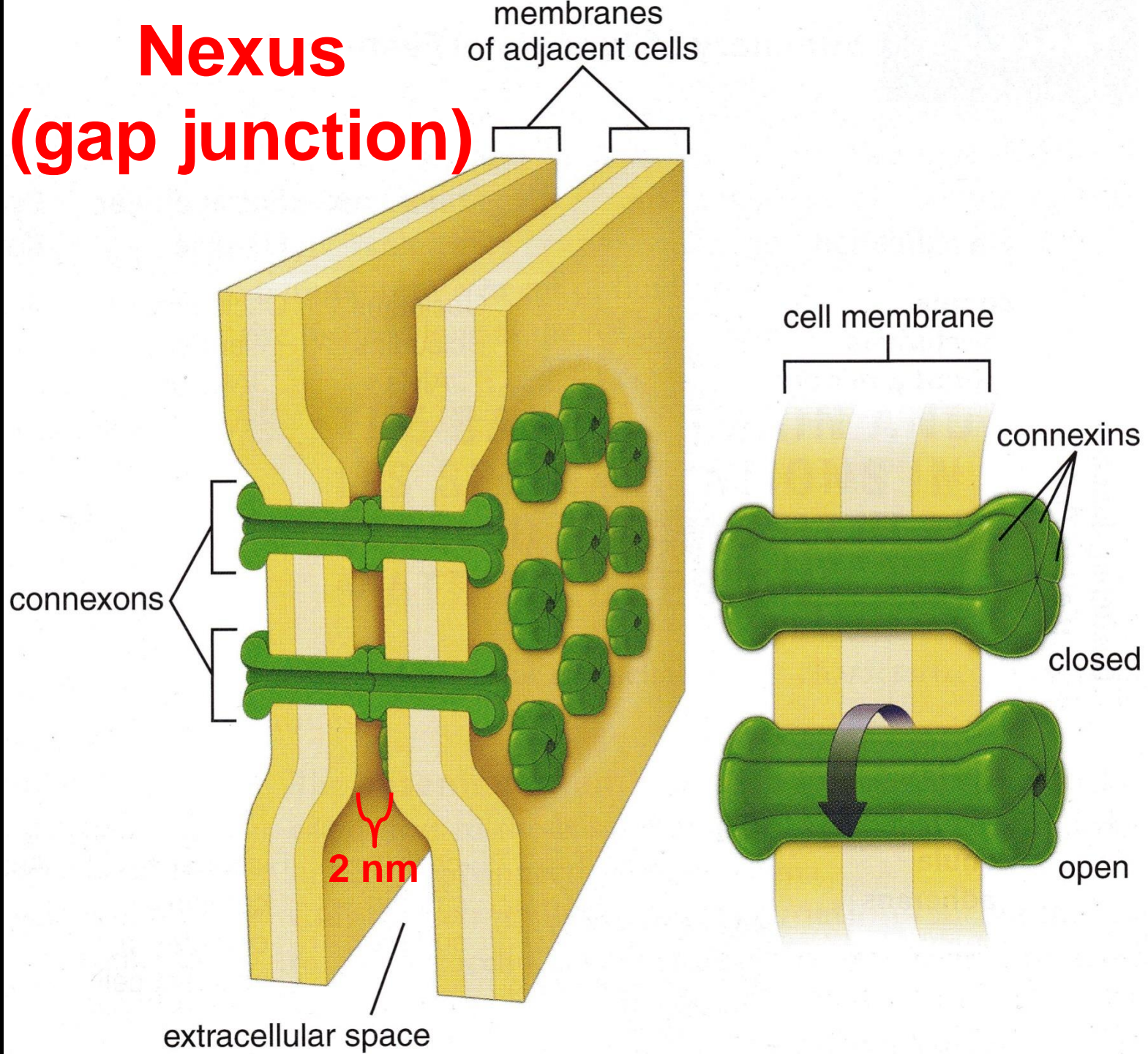
zonula occludens

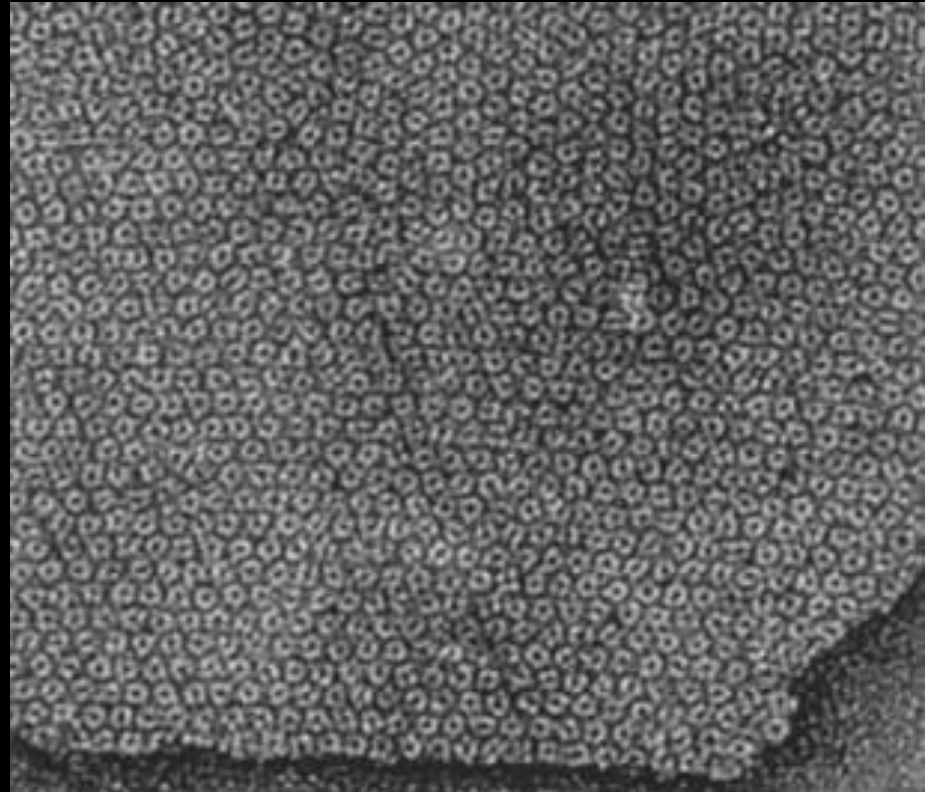
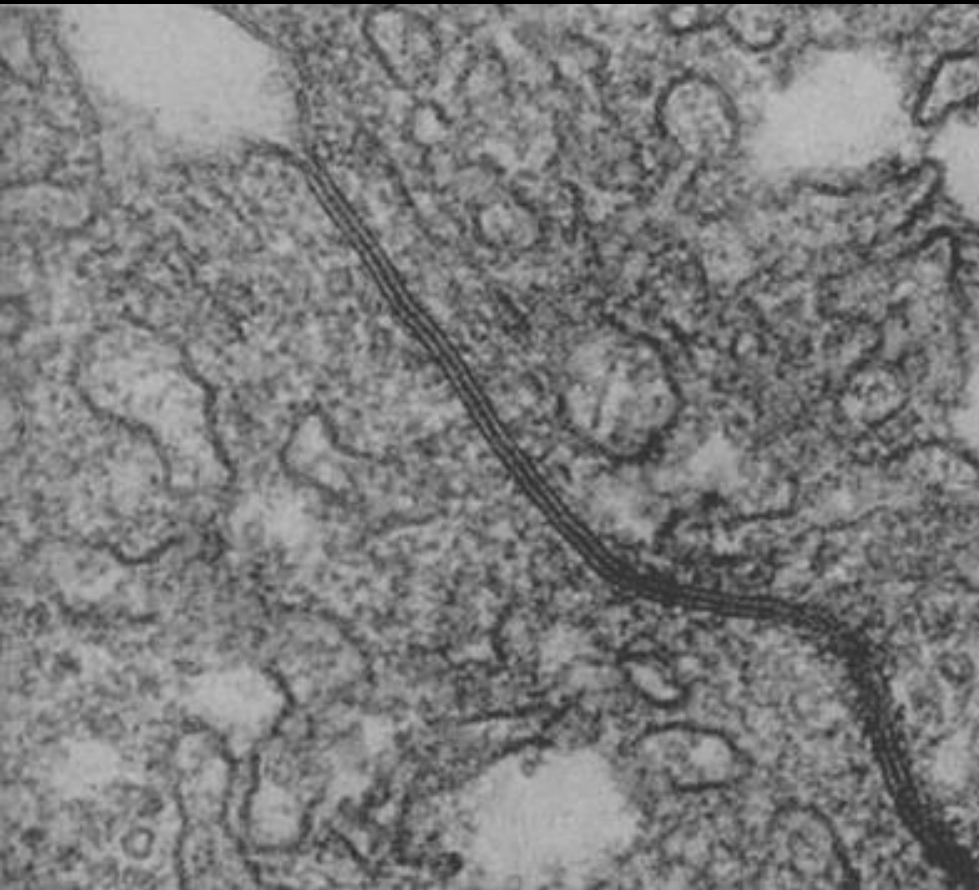
terminální lišta

zonula adhaerens

macula adhaerens = desmosom

Nexus (gap junction)



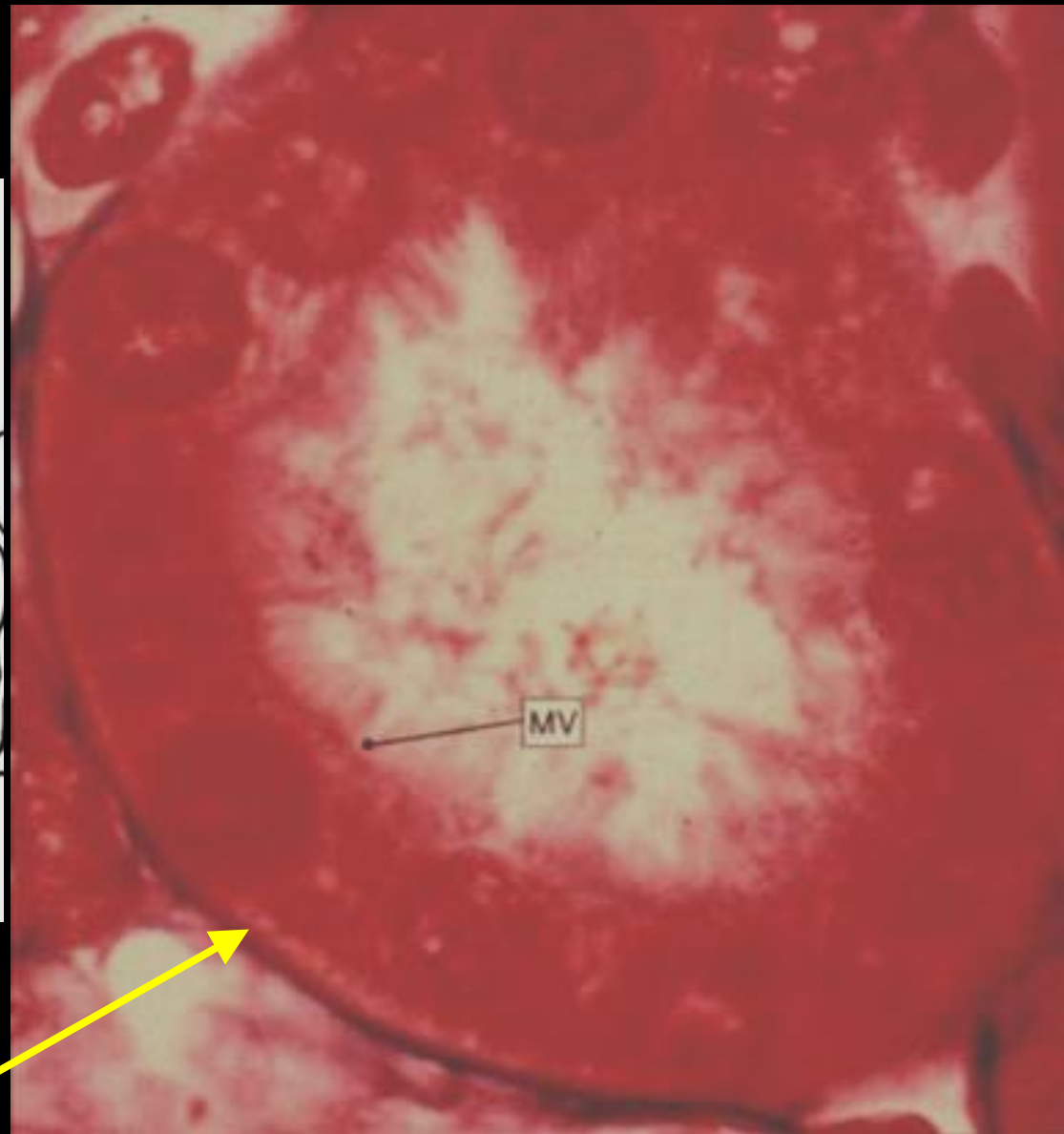
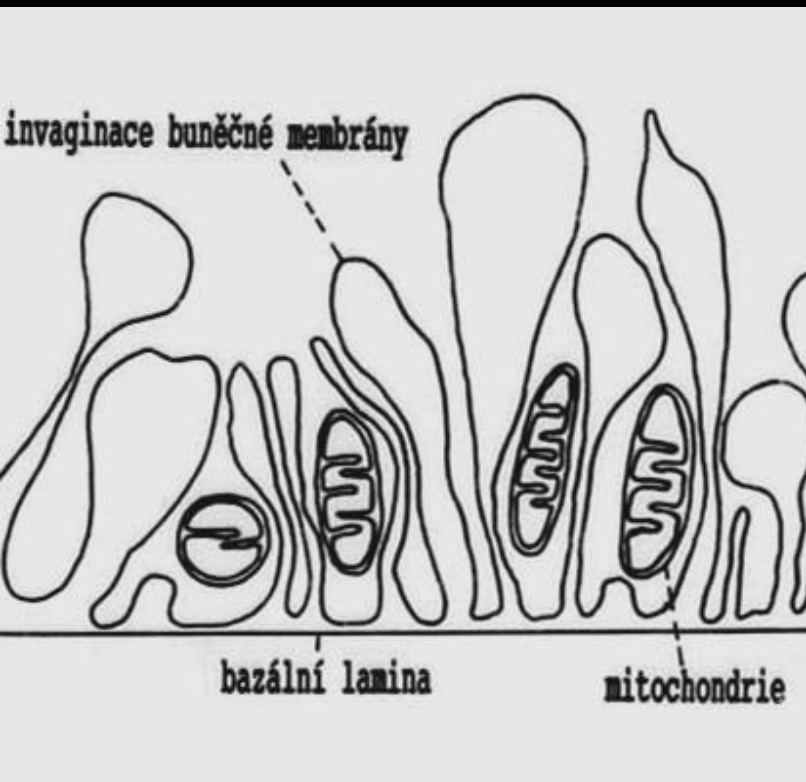


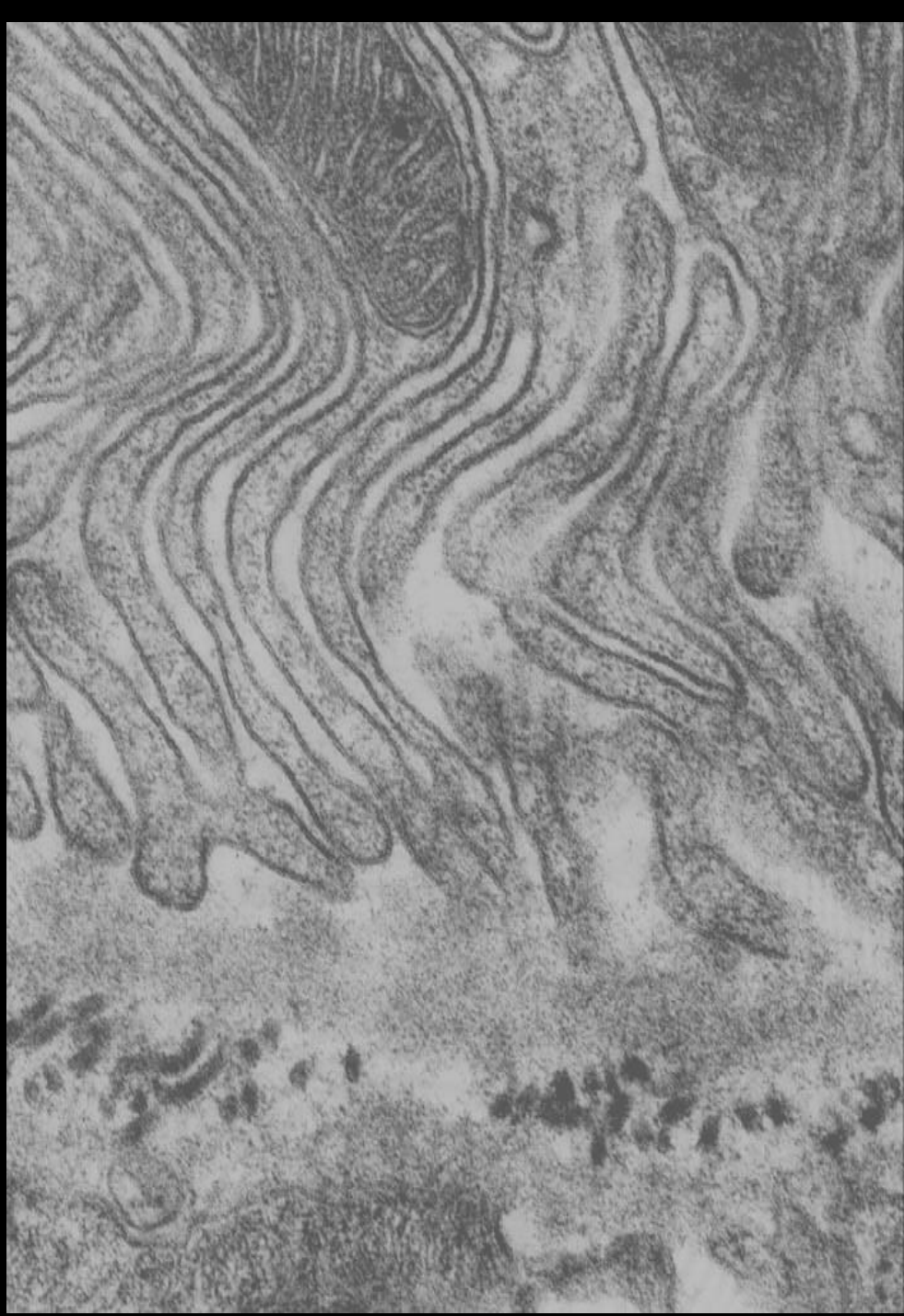
SPECIALIZACE BASÁLNÍCH POVRCHŮ EPITELOVÝCH BUNĚK

basální labyrint

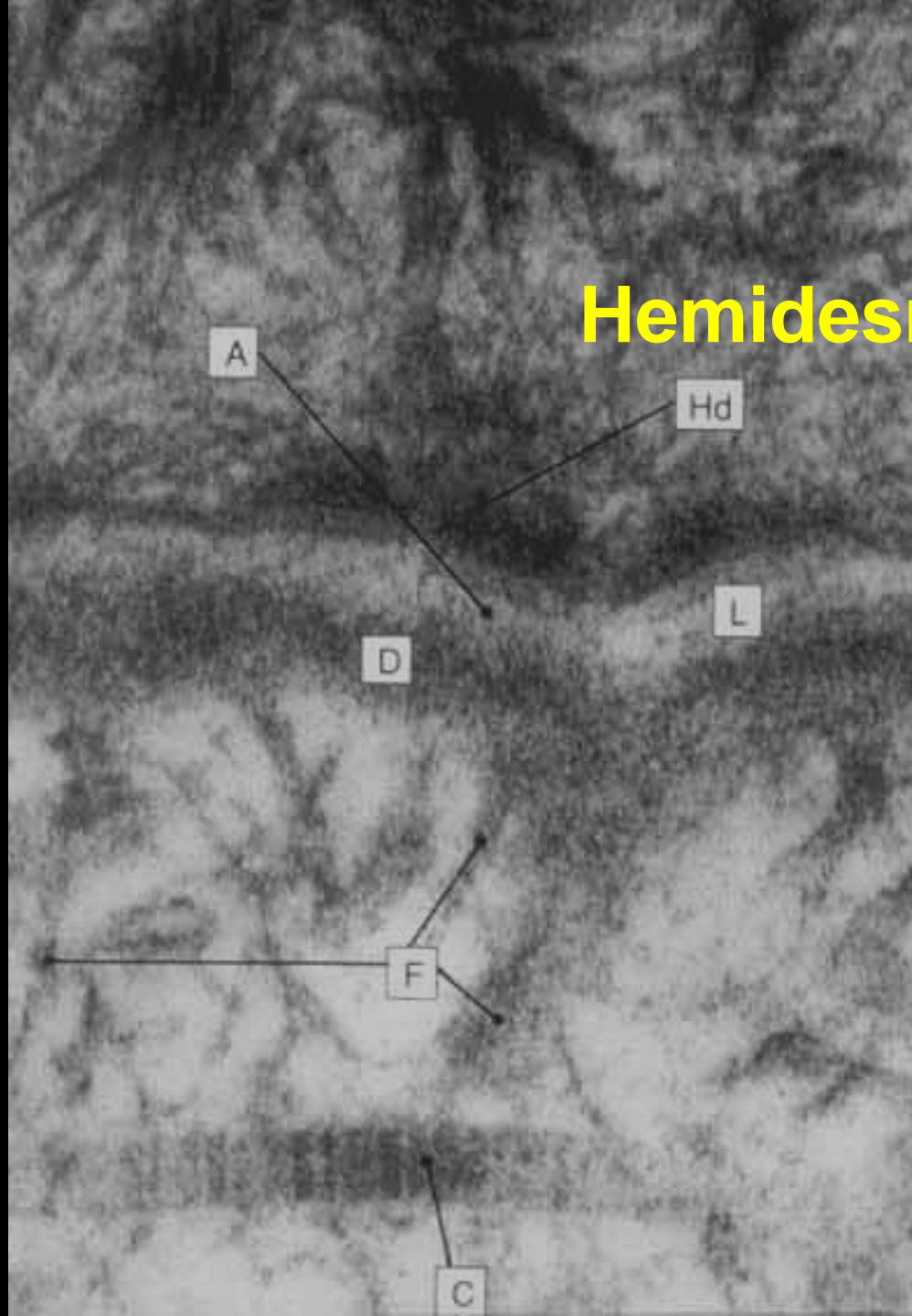
hemidesmosom

Basální labyrint





Hemidesmosom



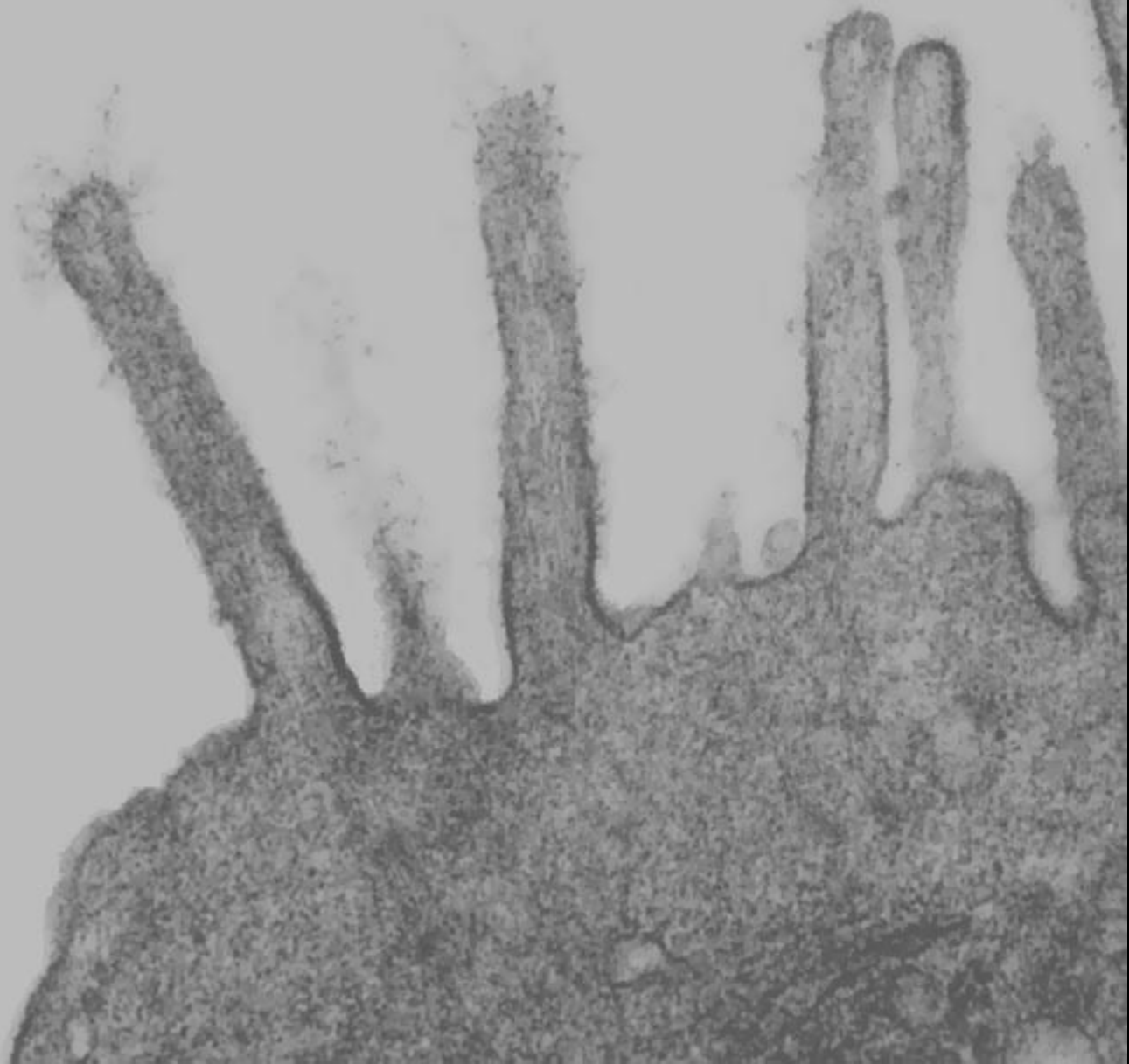
SPECIALIZACE APIKÁLNÍCH POVRCHŮ EPITELOVÝCH BUNĚK

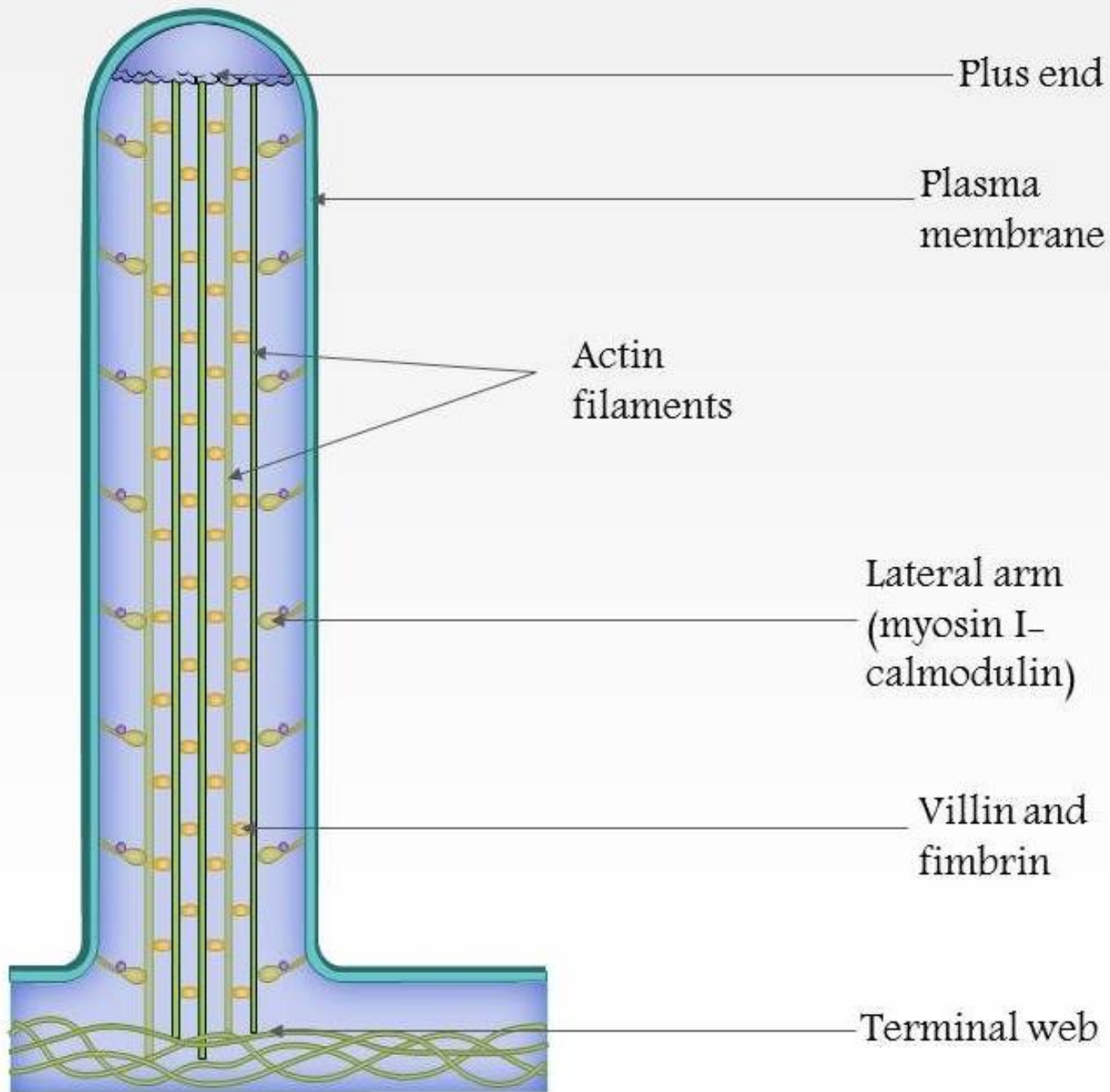
mikroklky (0,5 – 1 μm)

stereocilie (7 μm)

řasinky (kinocilie) (10 μm)

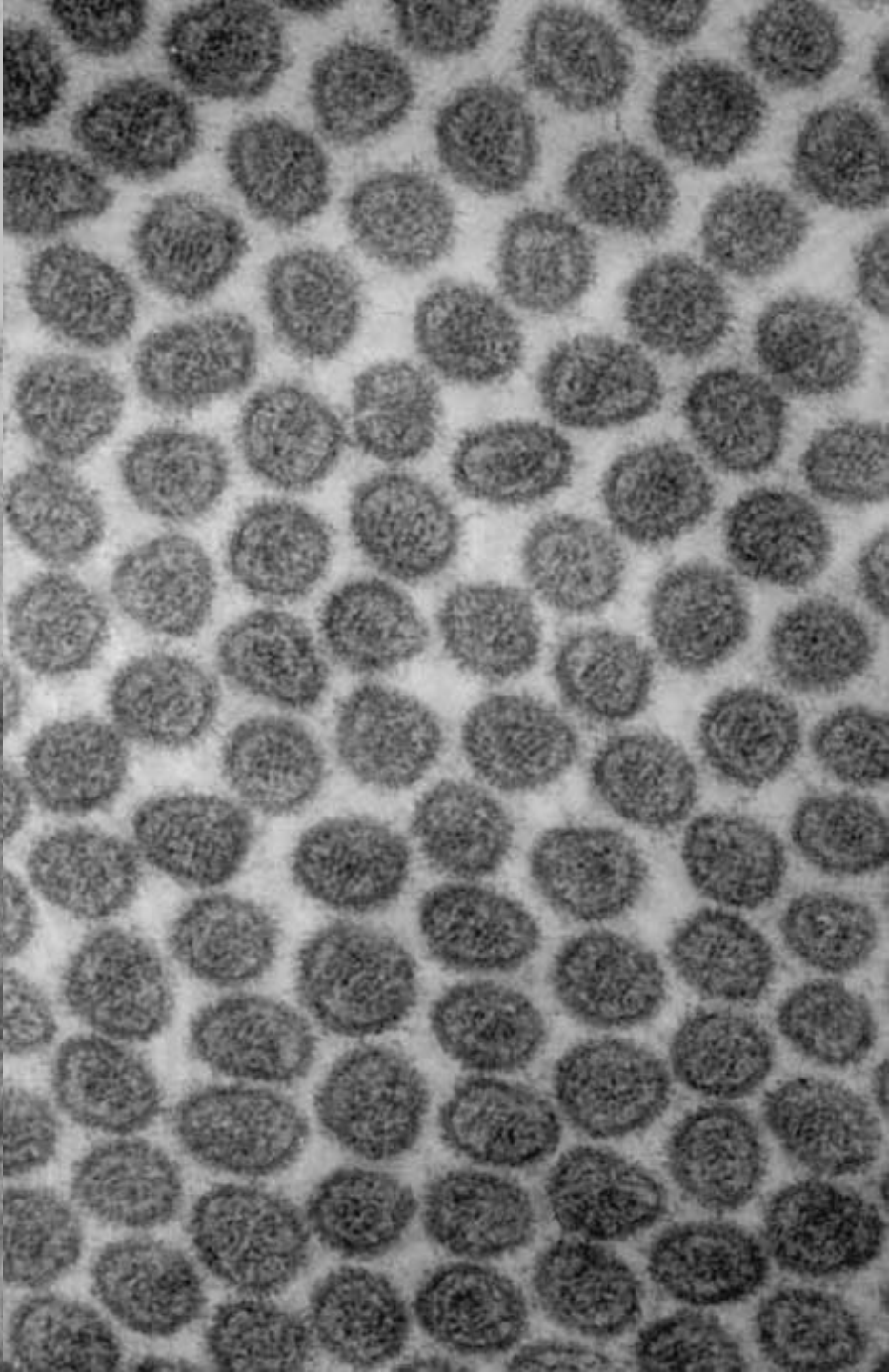
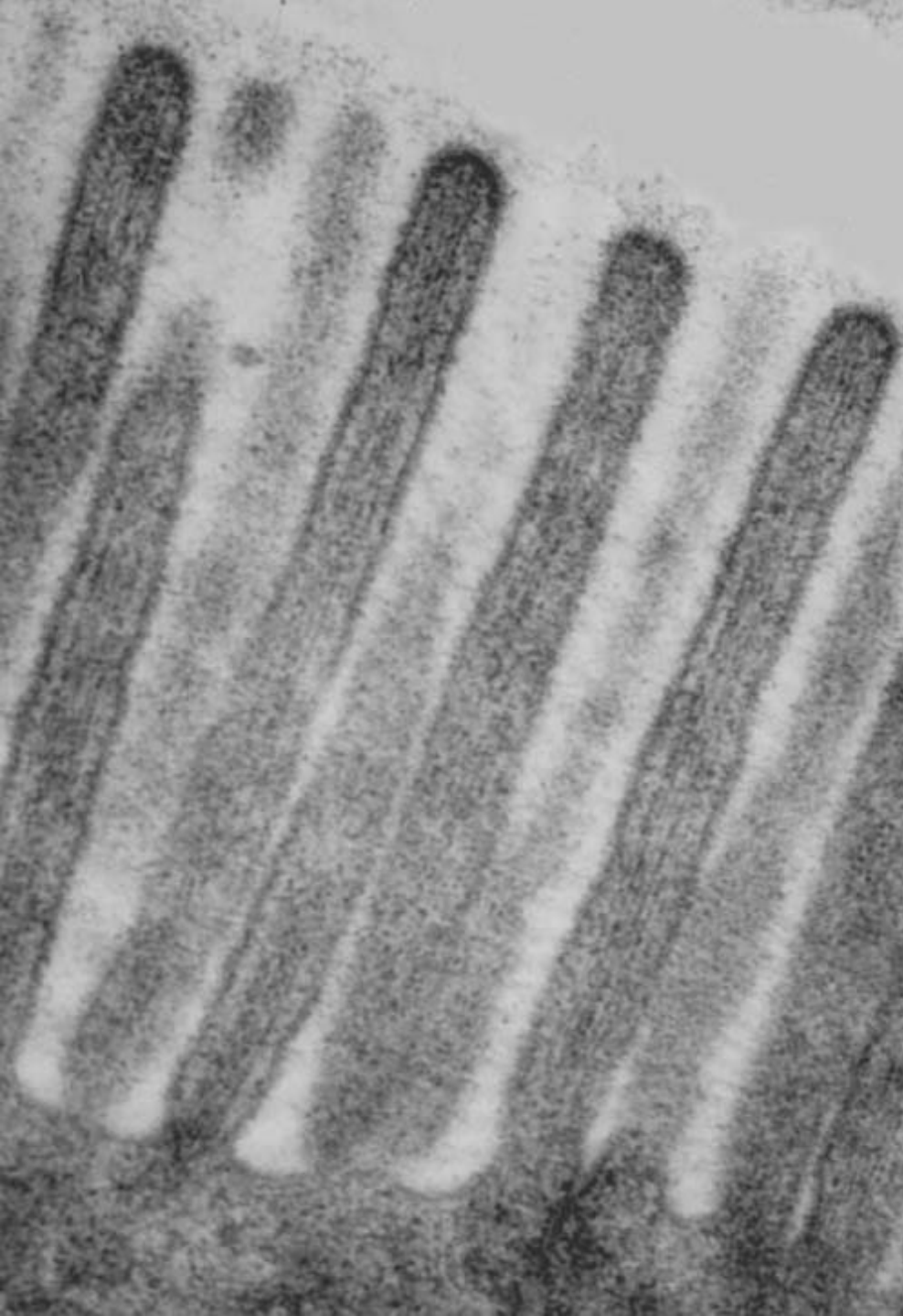
Mikroklky



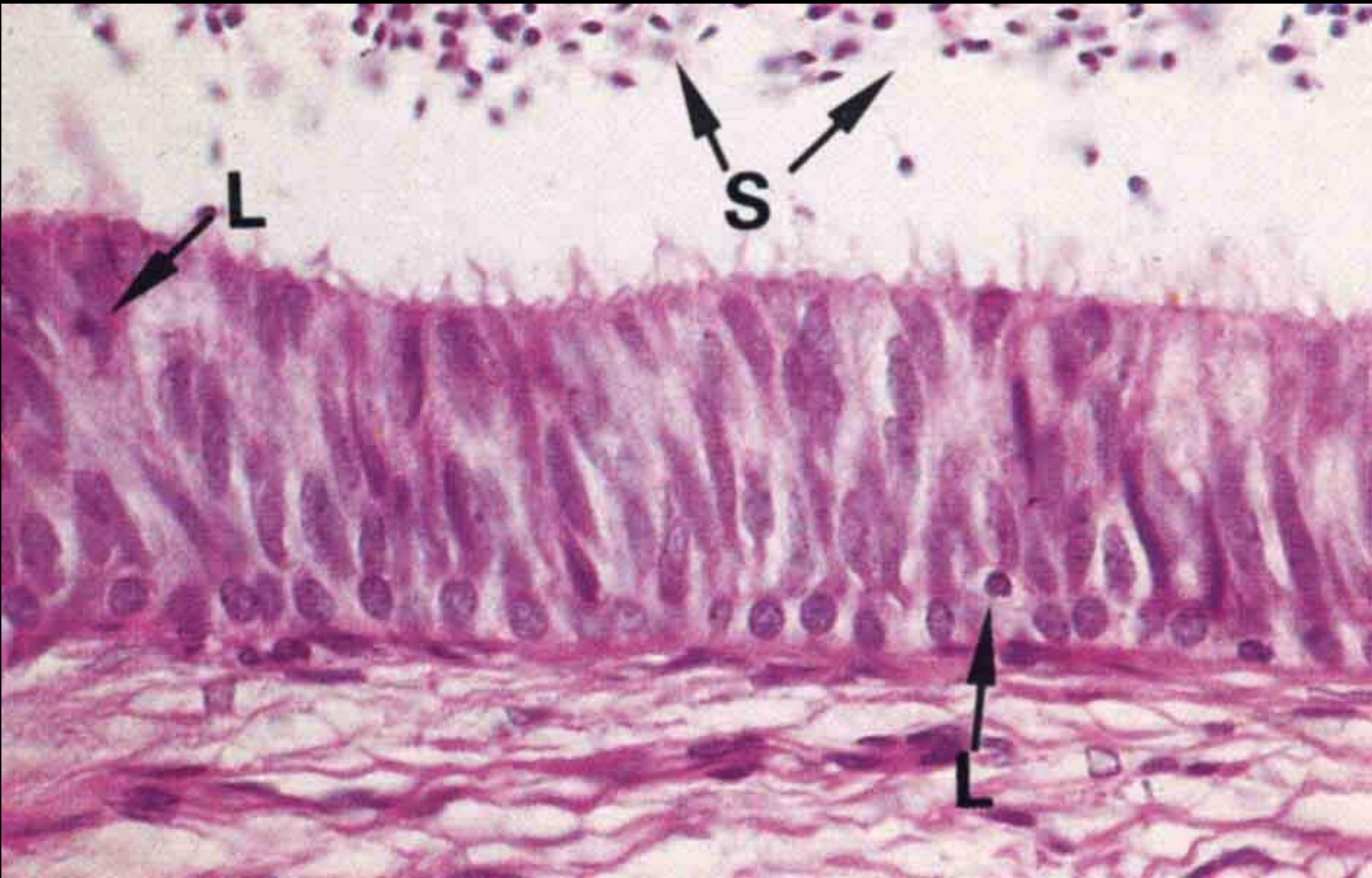


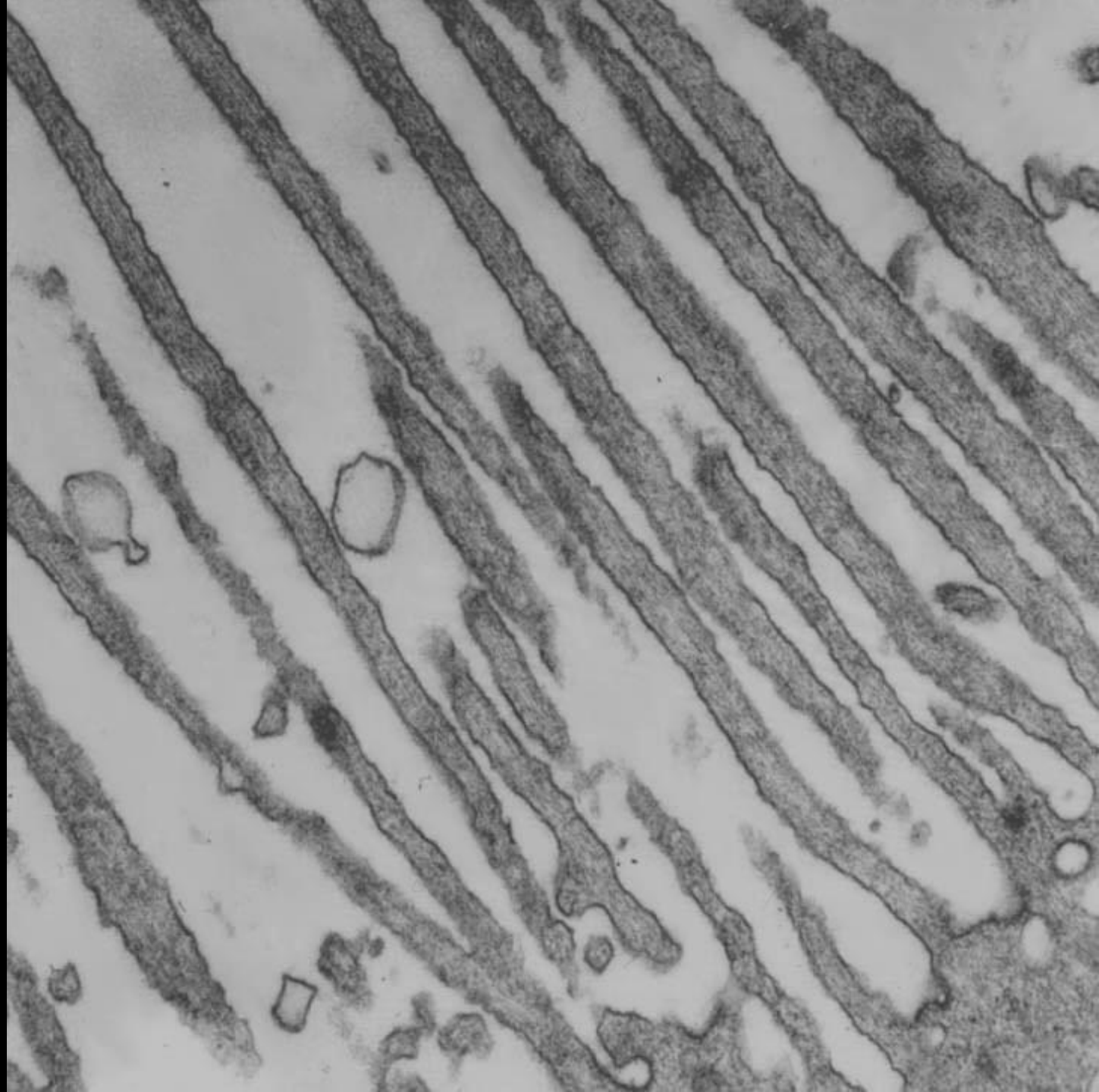
Kartáčový (žíhaný) lem

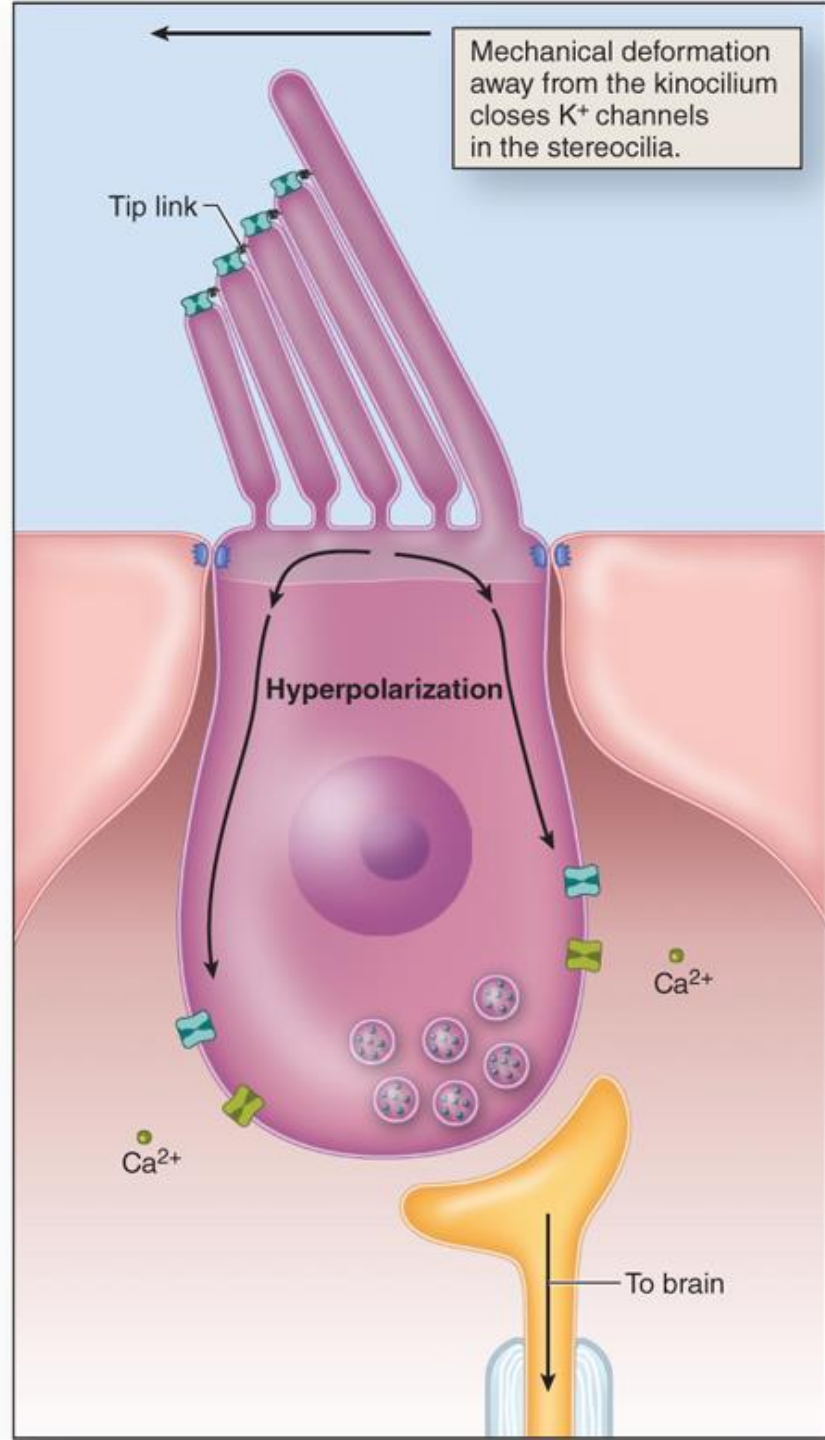
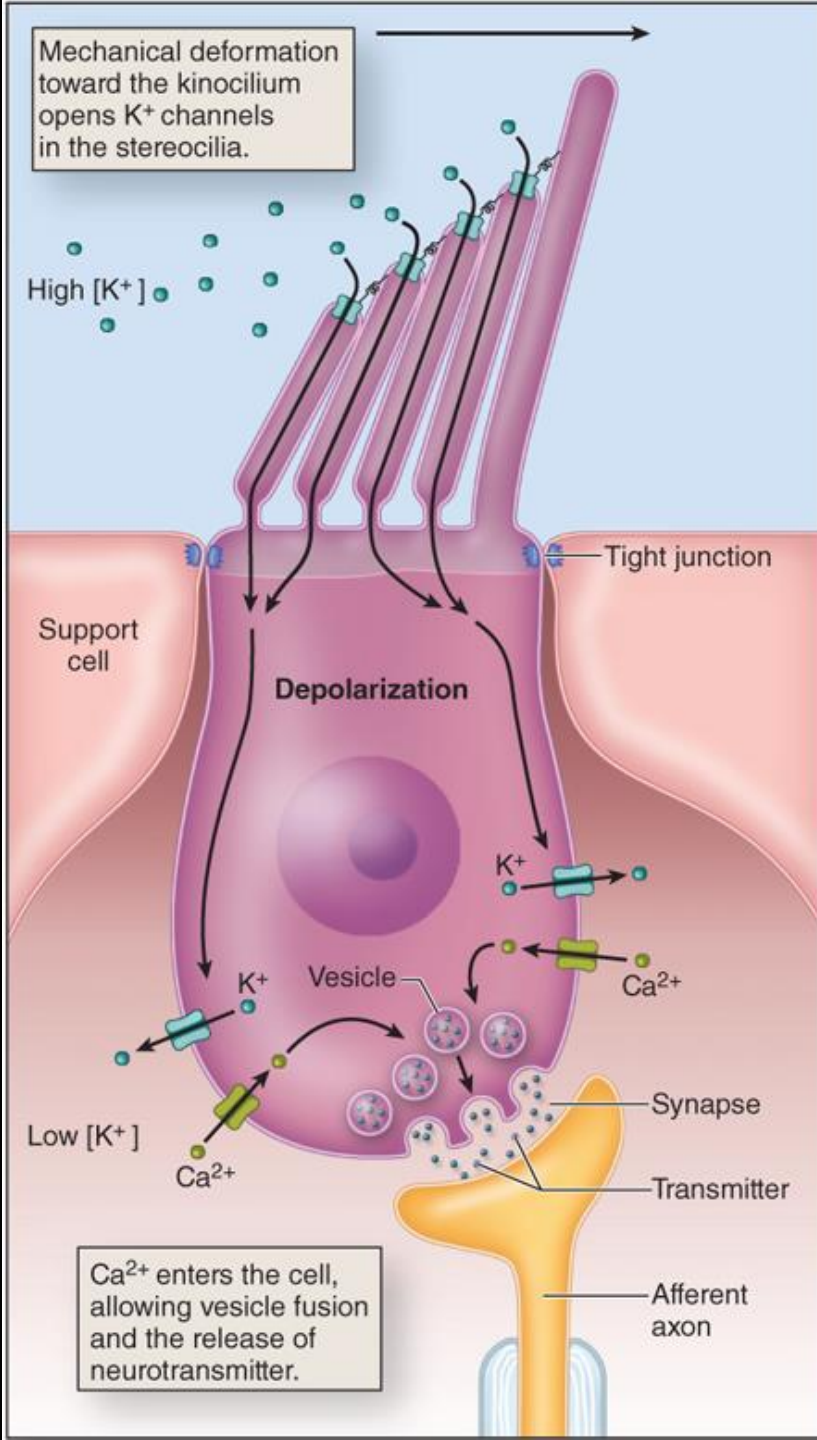




Stereocilie - vlásky



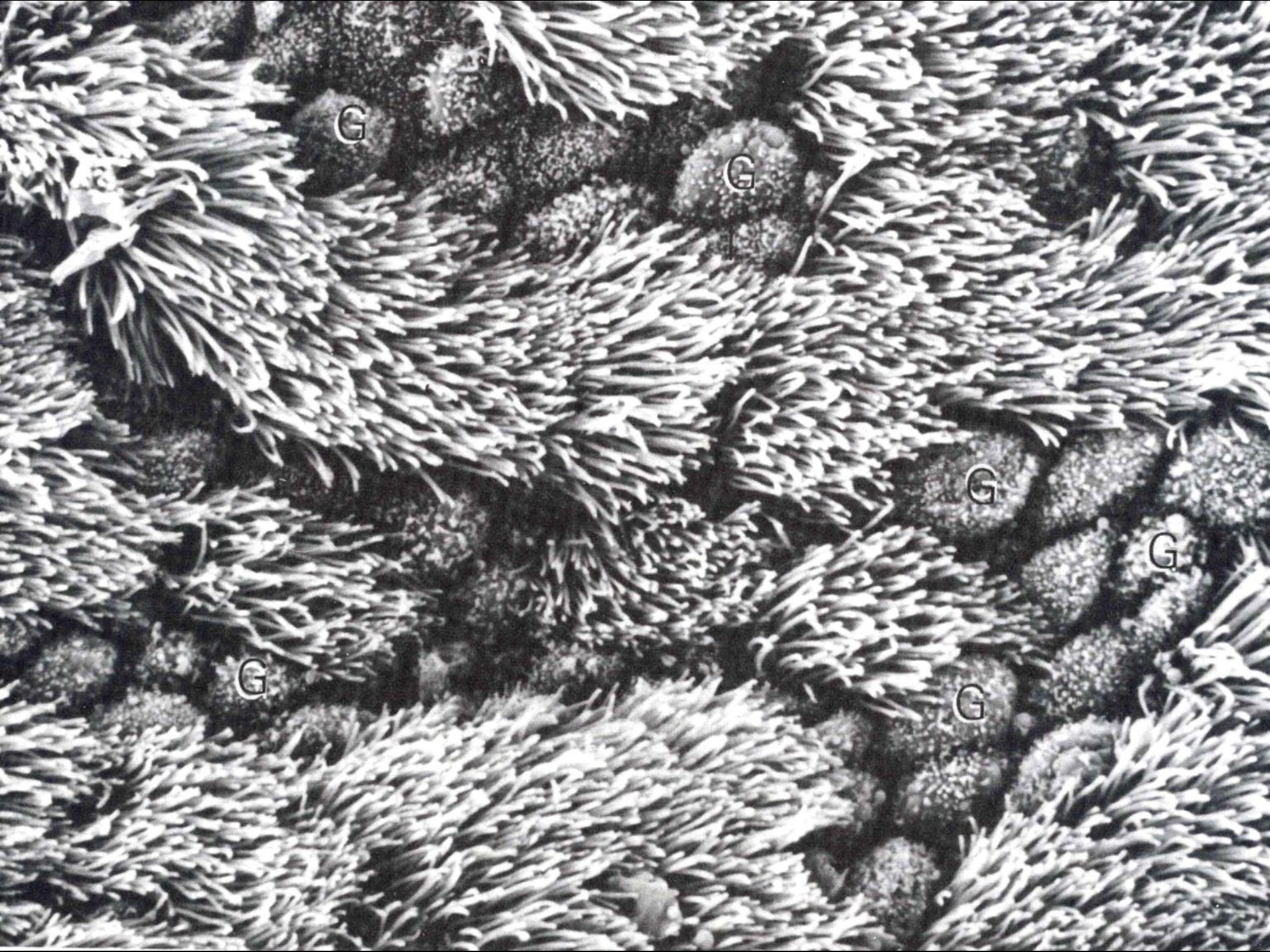


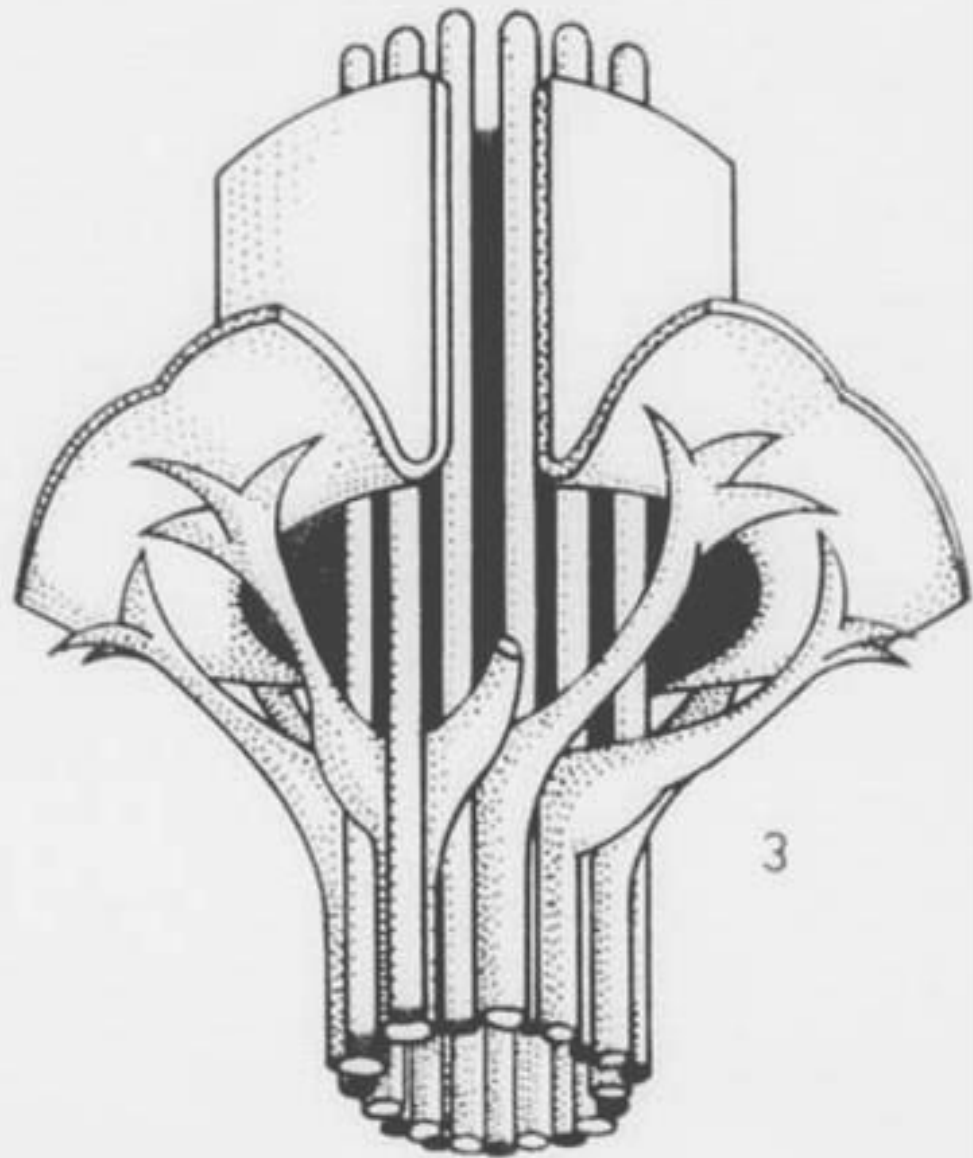
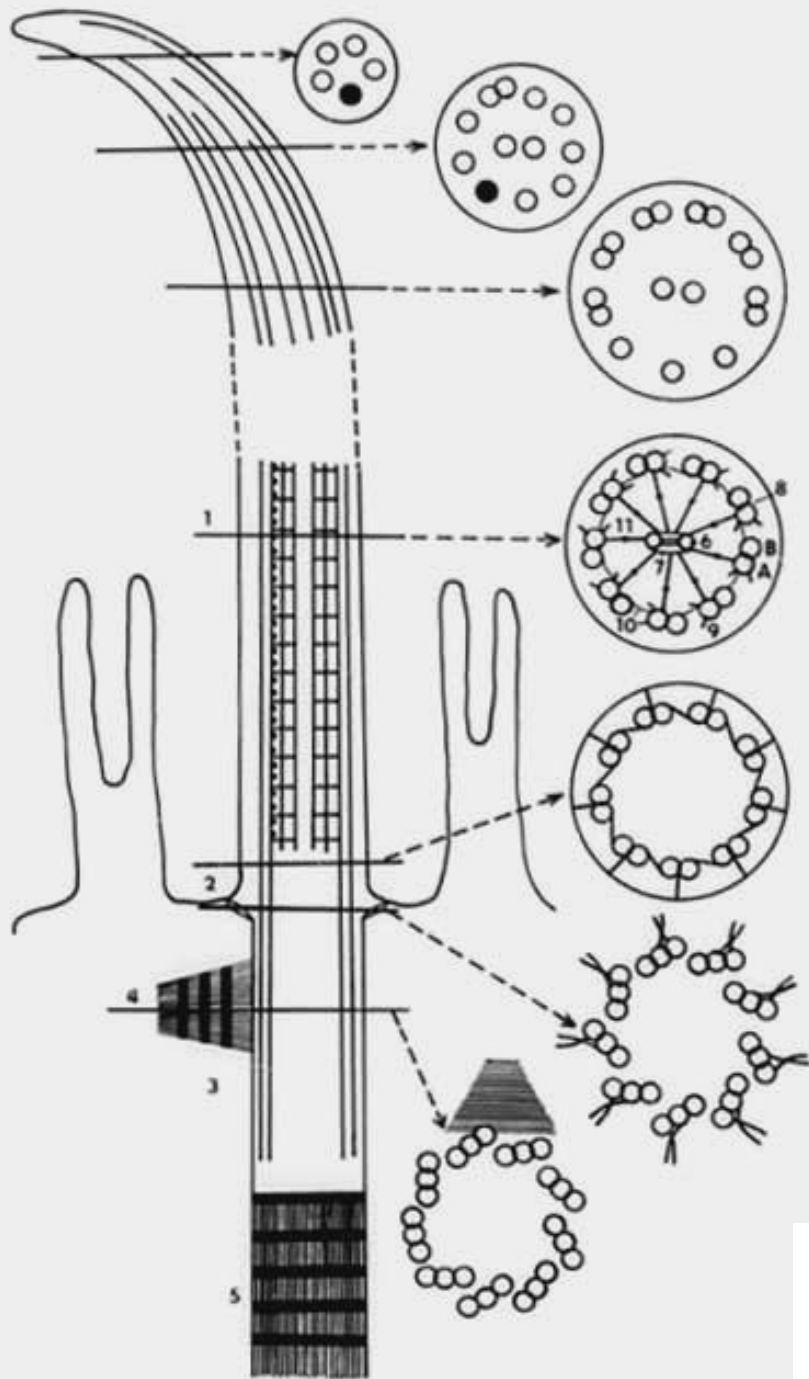


10 μm

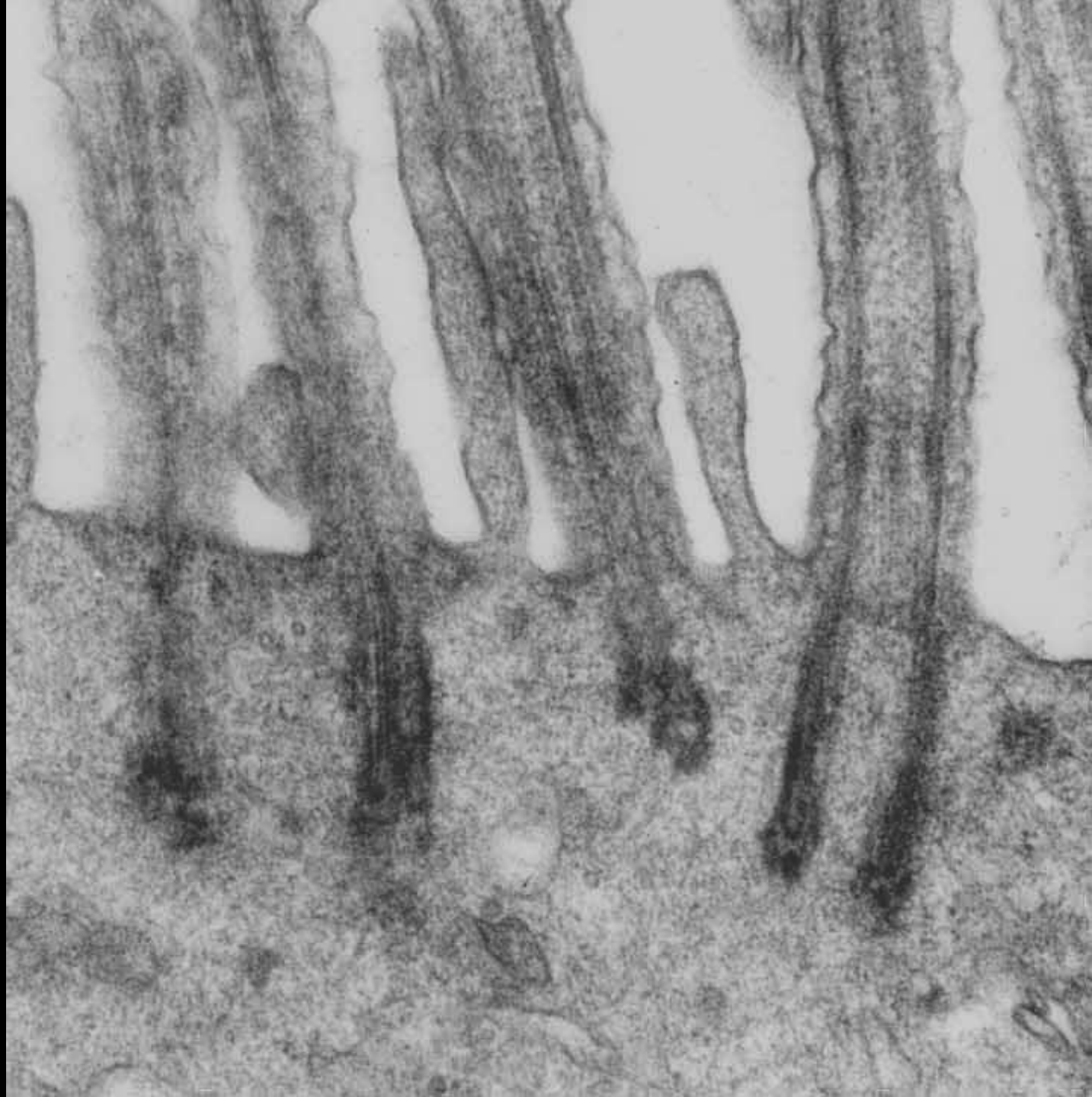
Řasinky (kinocilie)

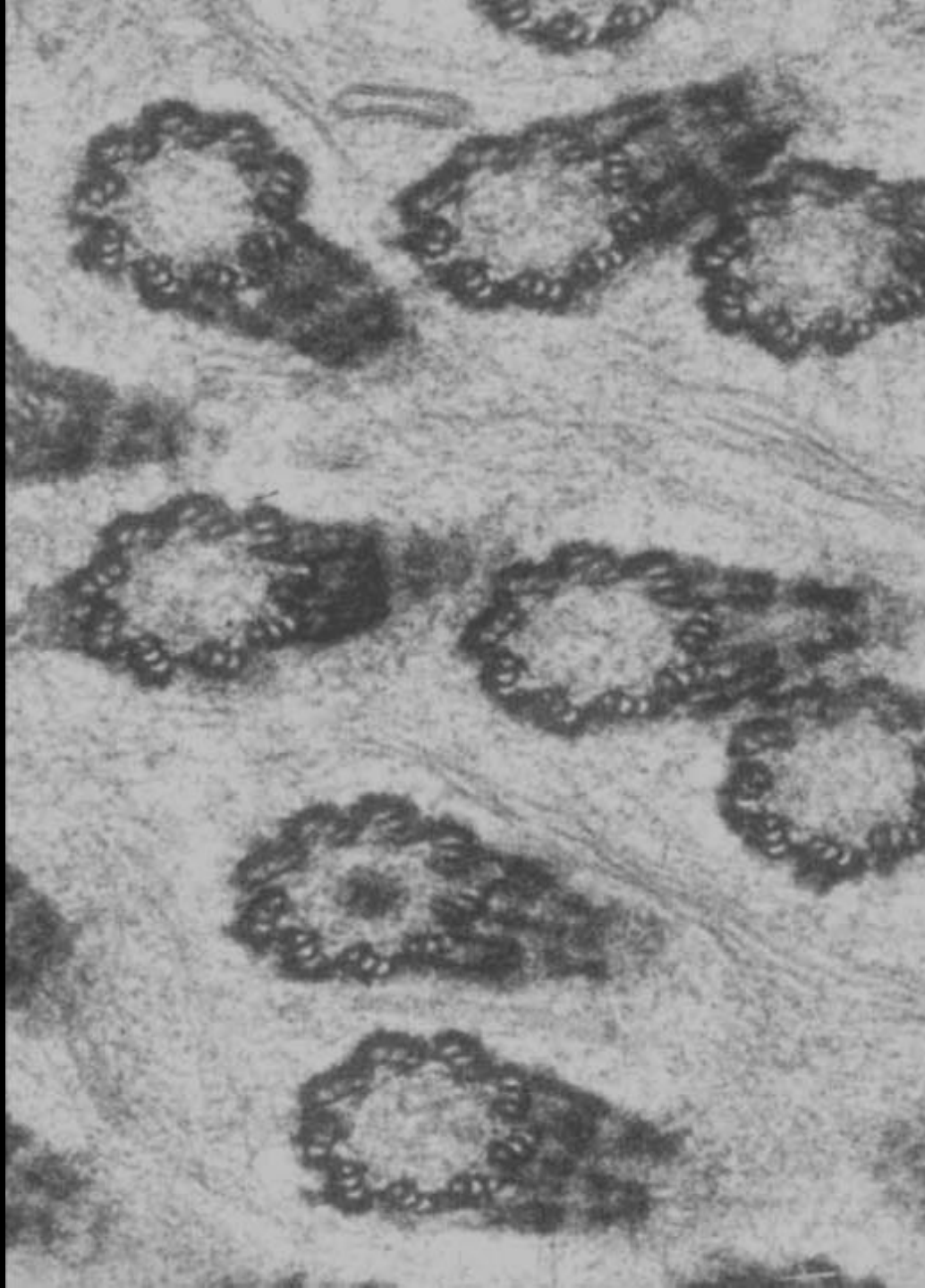
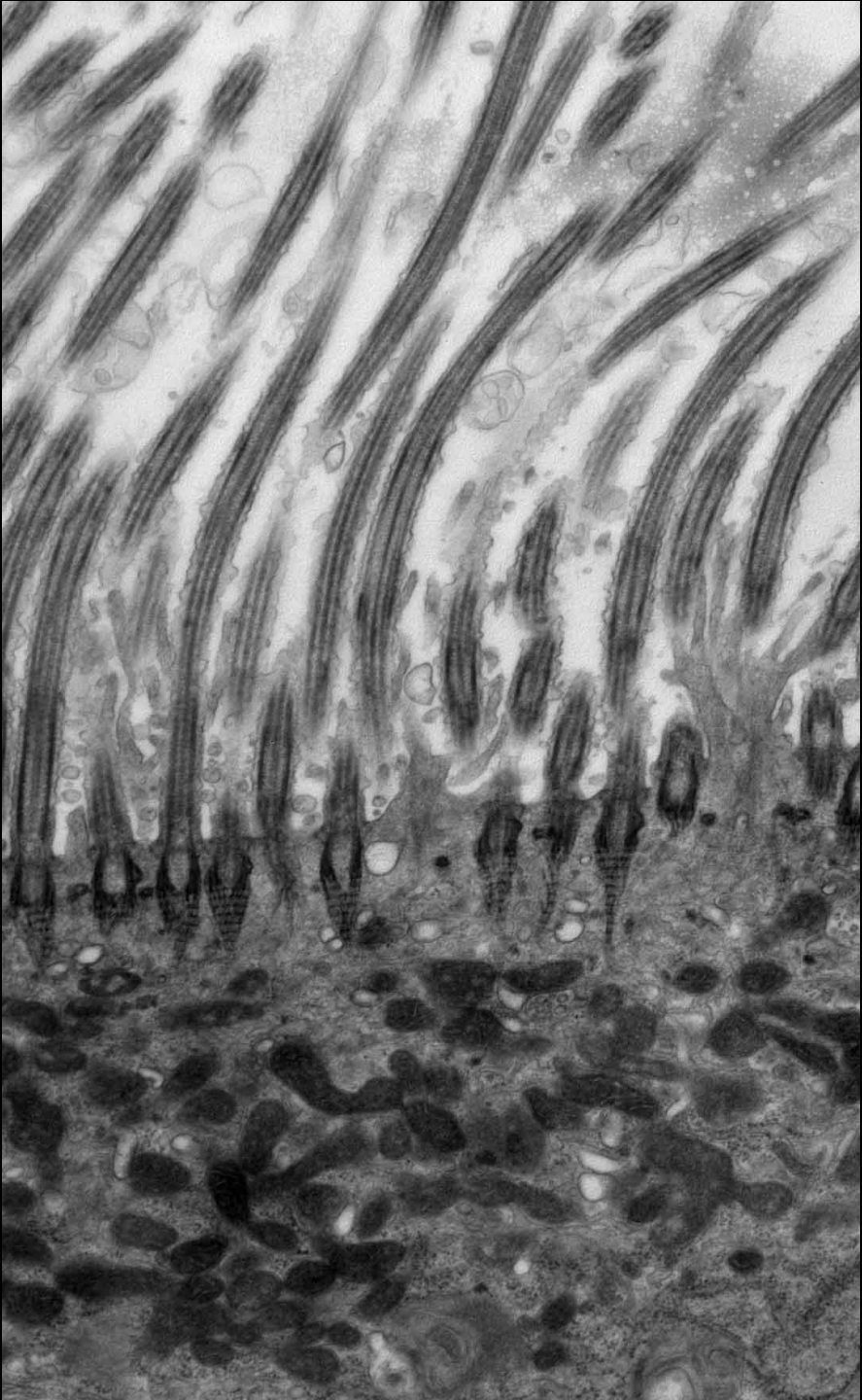


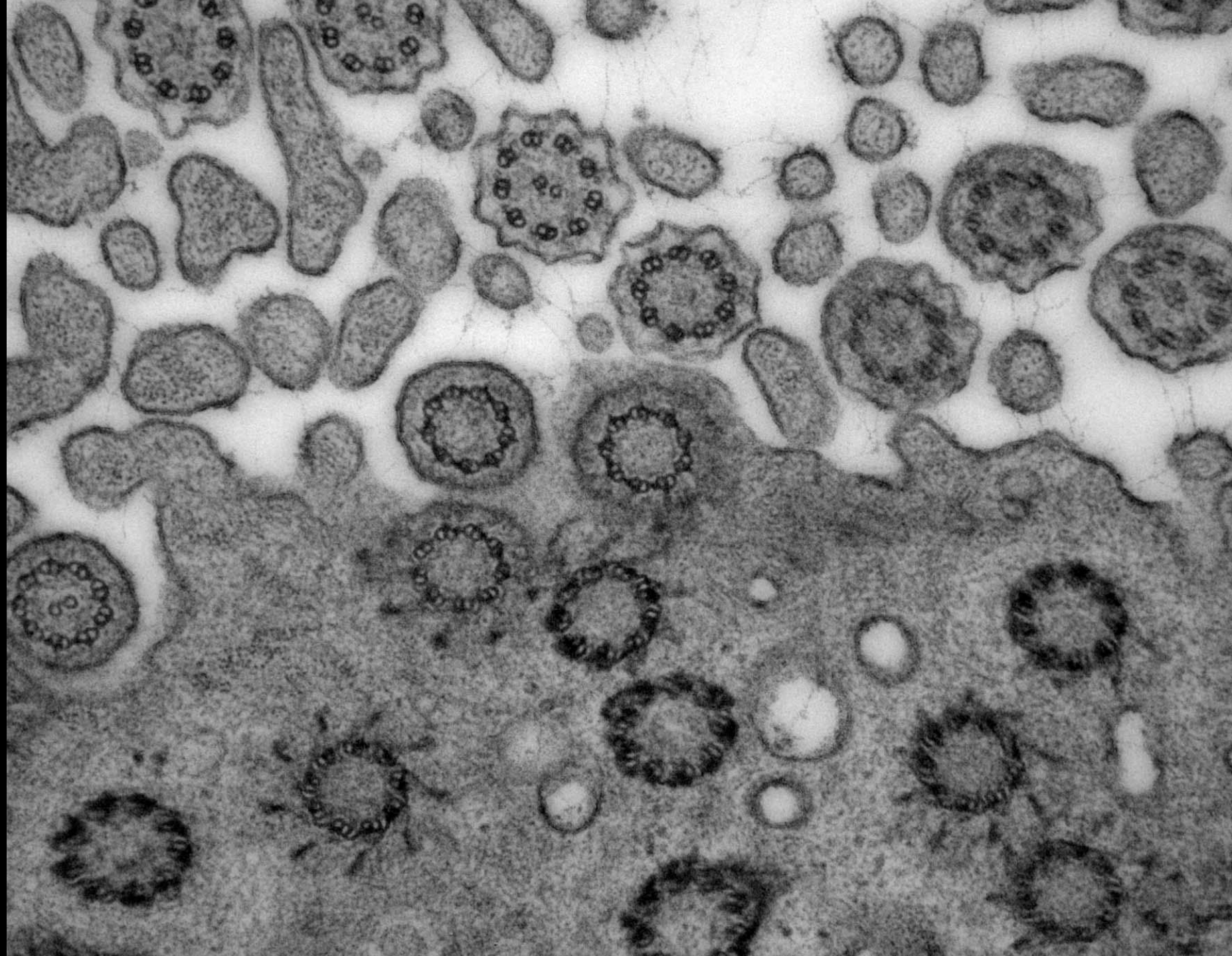


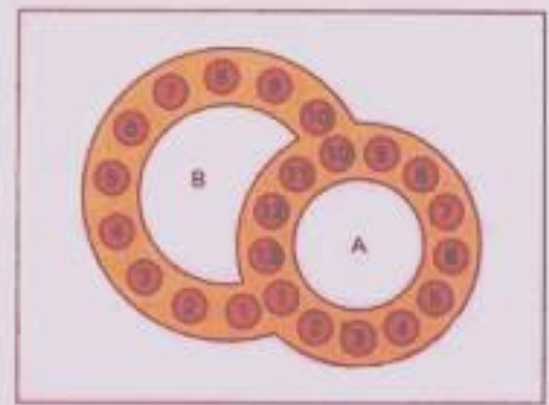
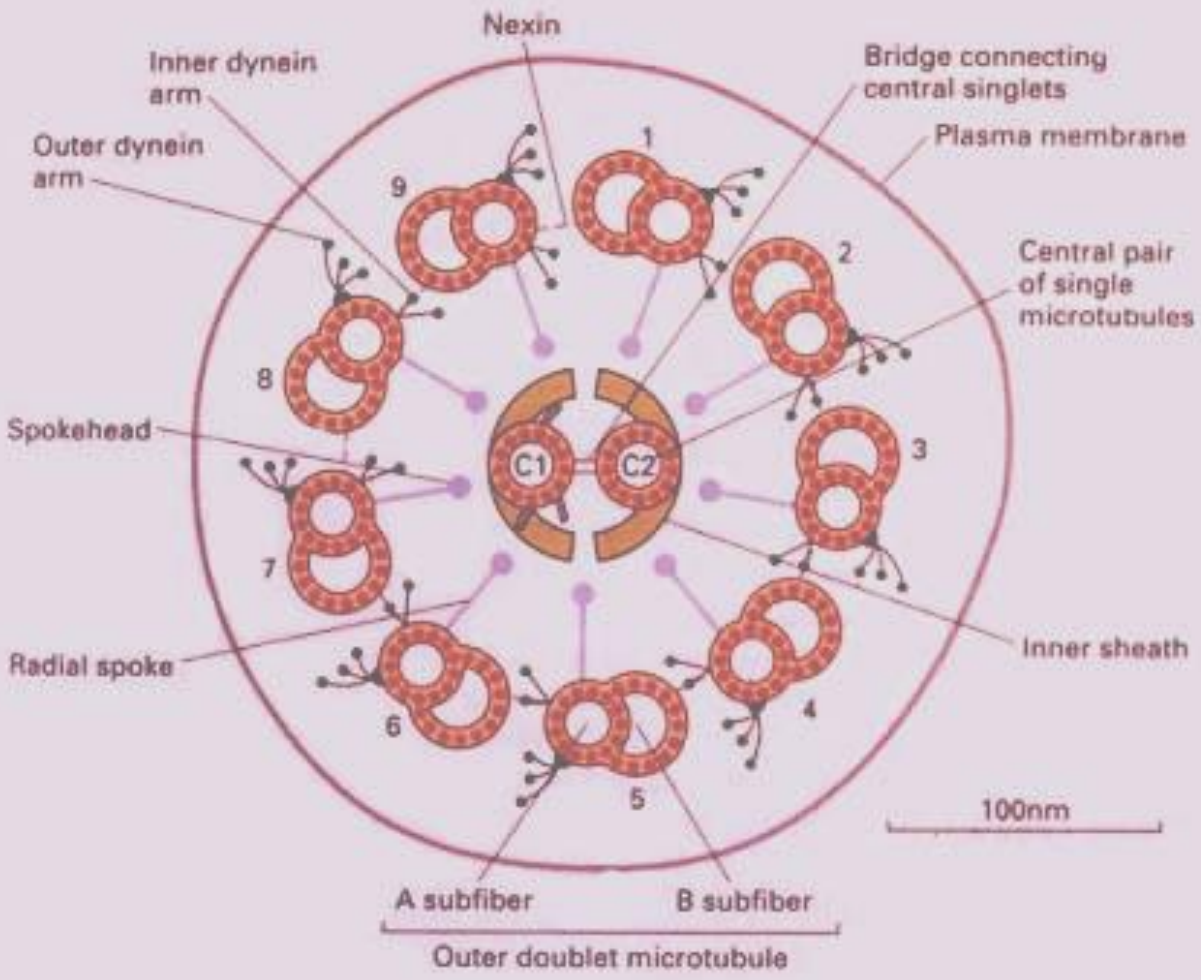


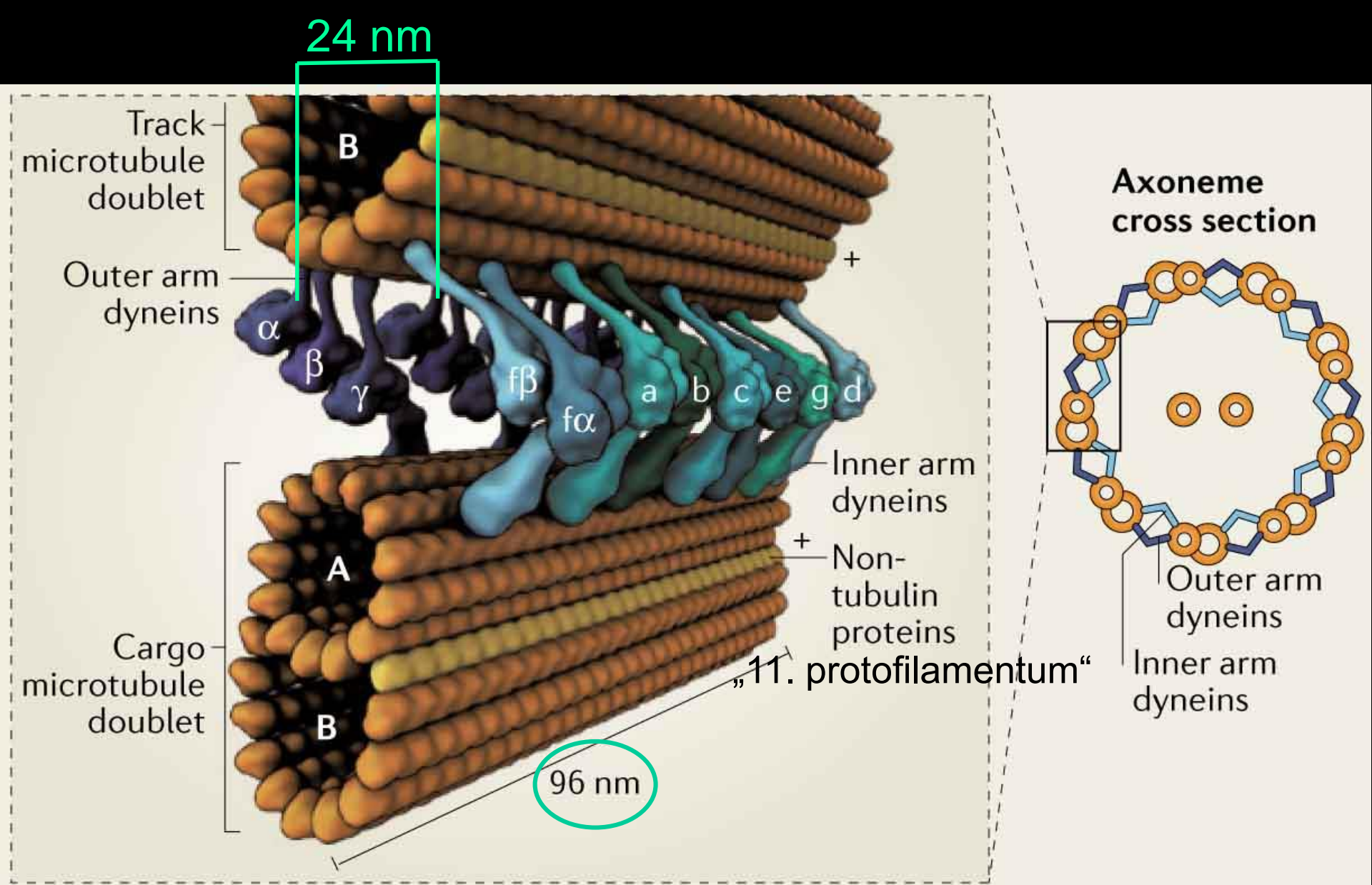
- 1 volná část řasinky** **4 bazální nožka**
2 přechodná část řasinky **5 bazální kořínek**
3 bazální tělísko



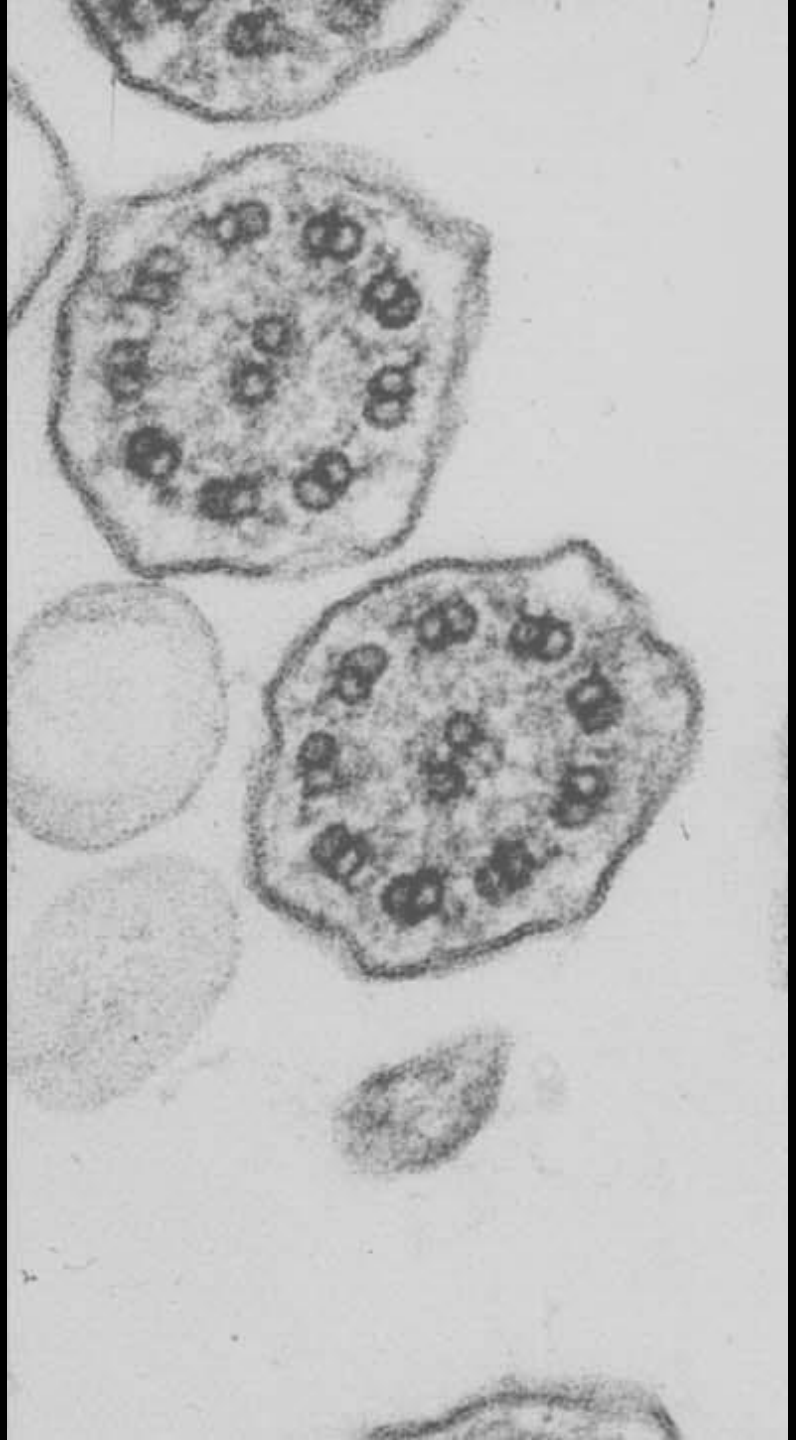
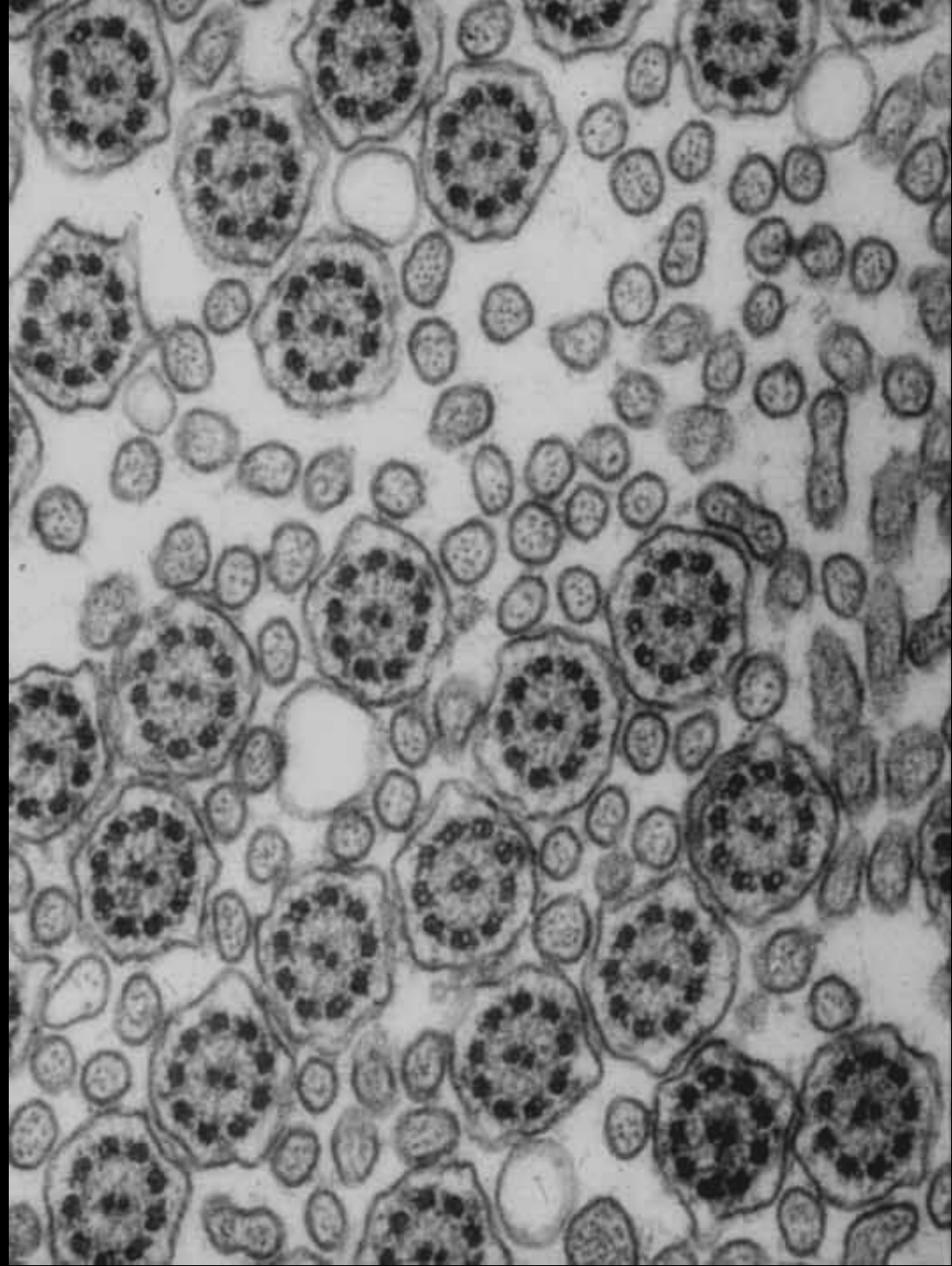


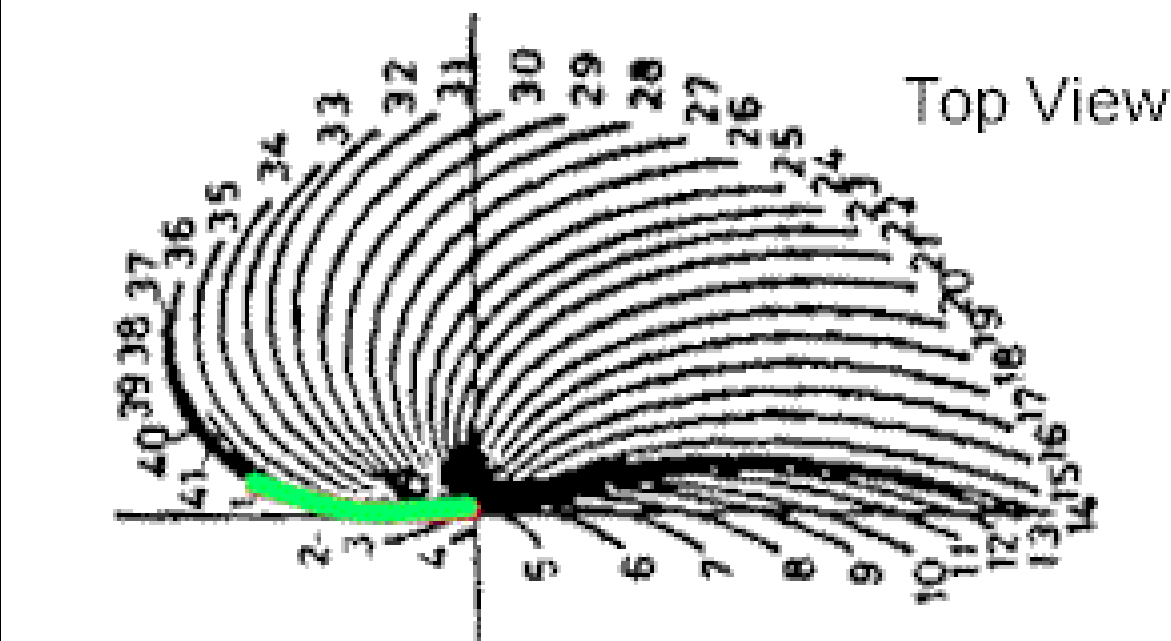
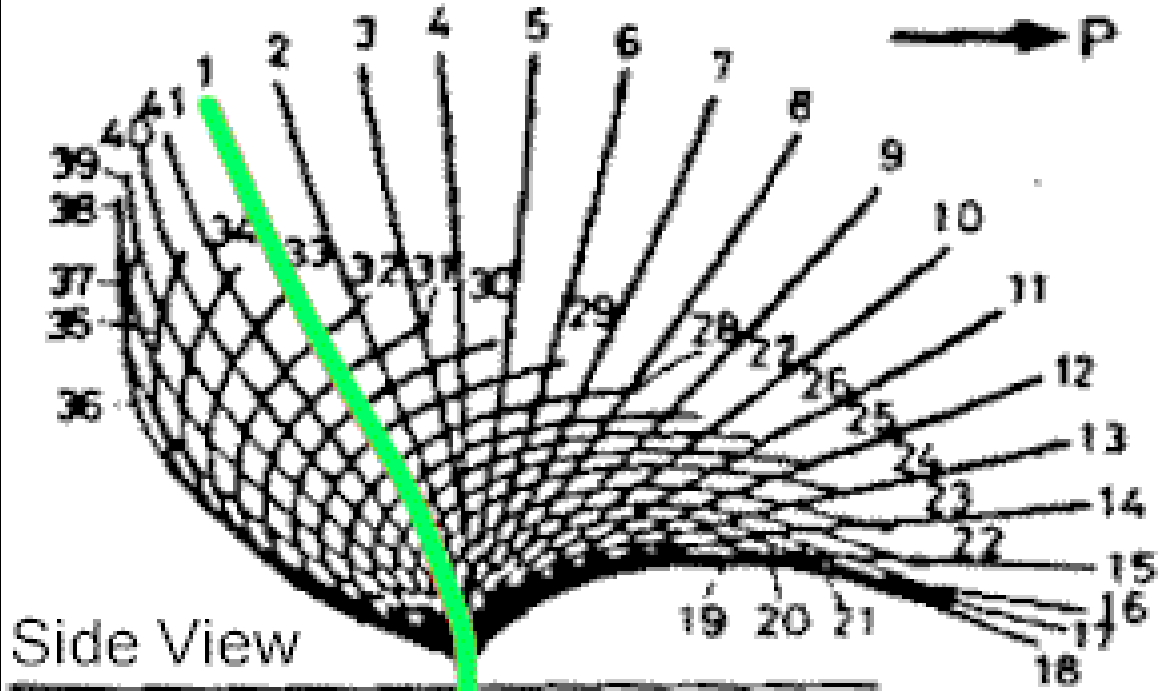




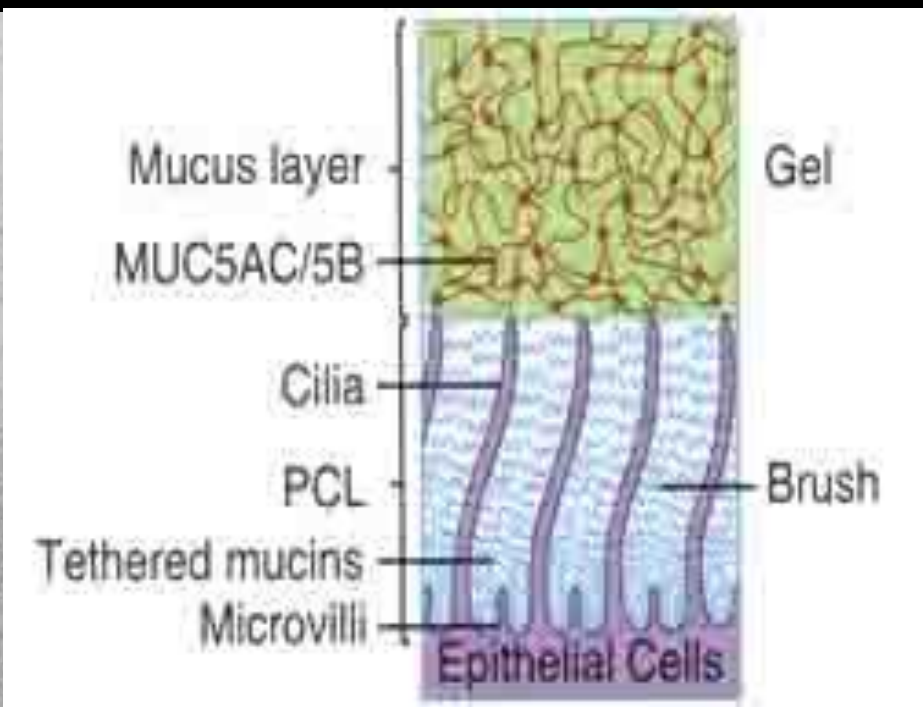
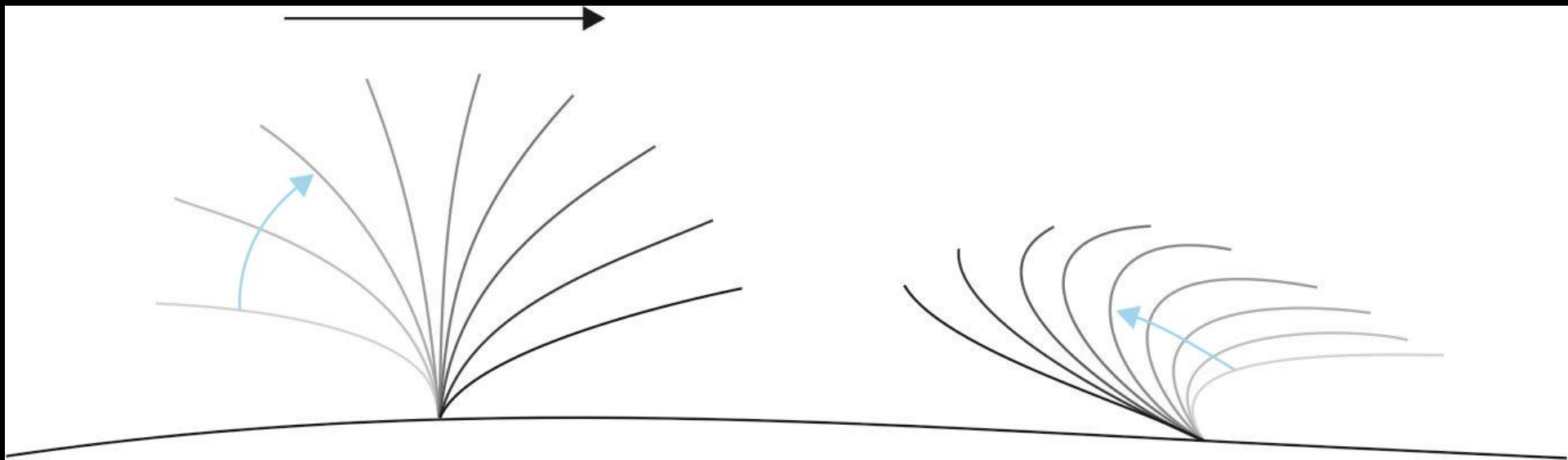


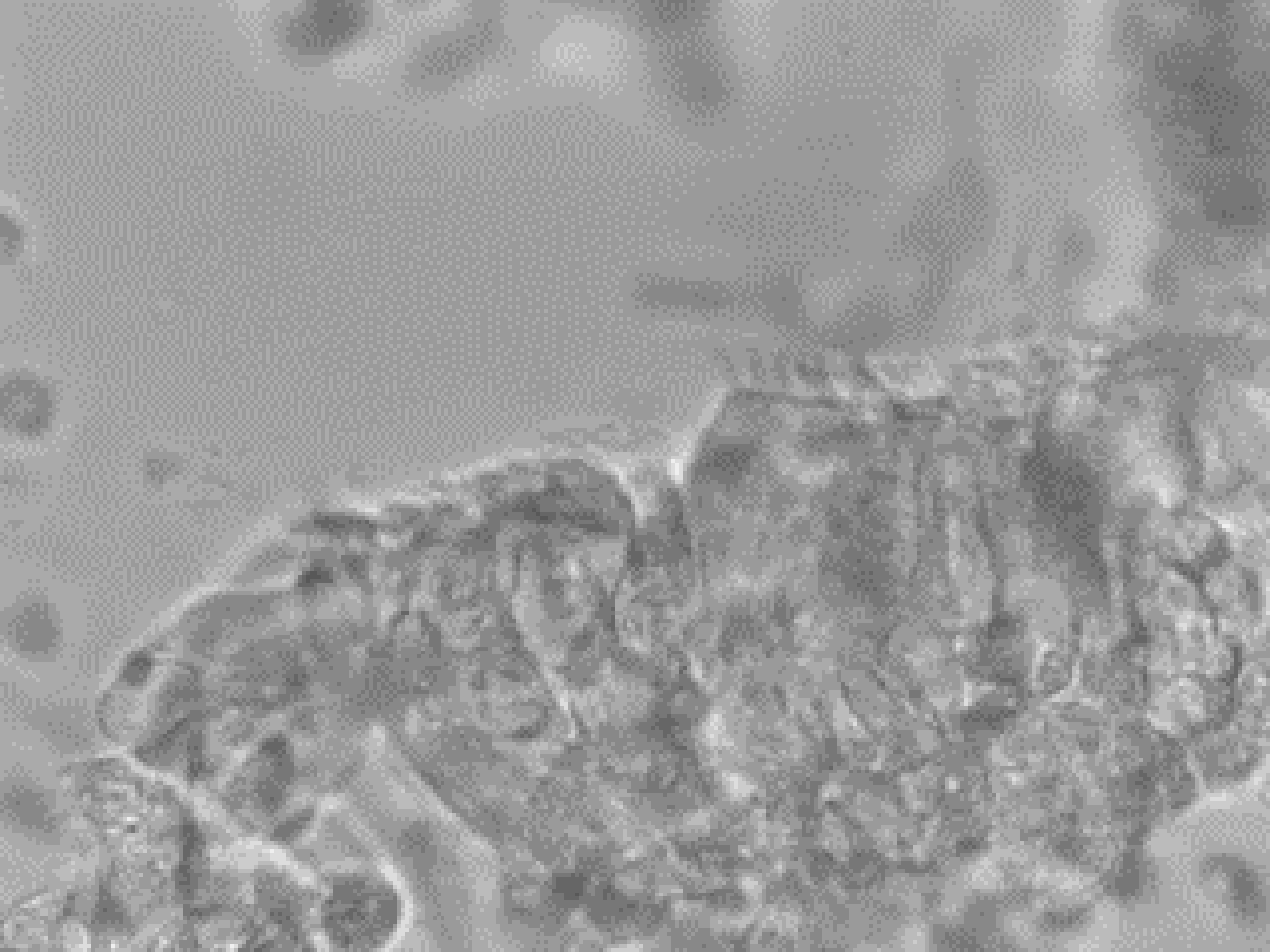
Roberts, A.J., Kon, T., Knight, P.T., Sutoh, K., Burgess, S.A.:
 Functions and mechanics of dynein motor proteins,
 Nature Reviews 14, 2013, 713-726





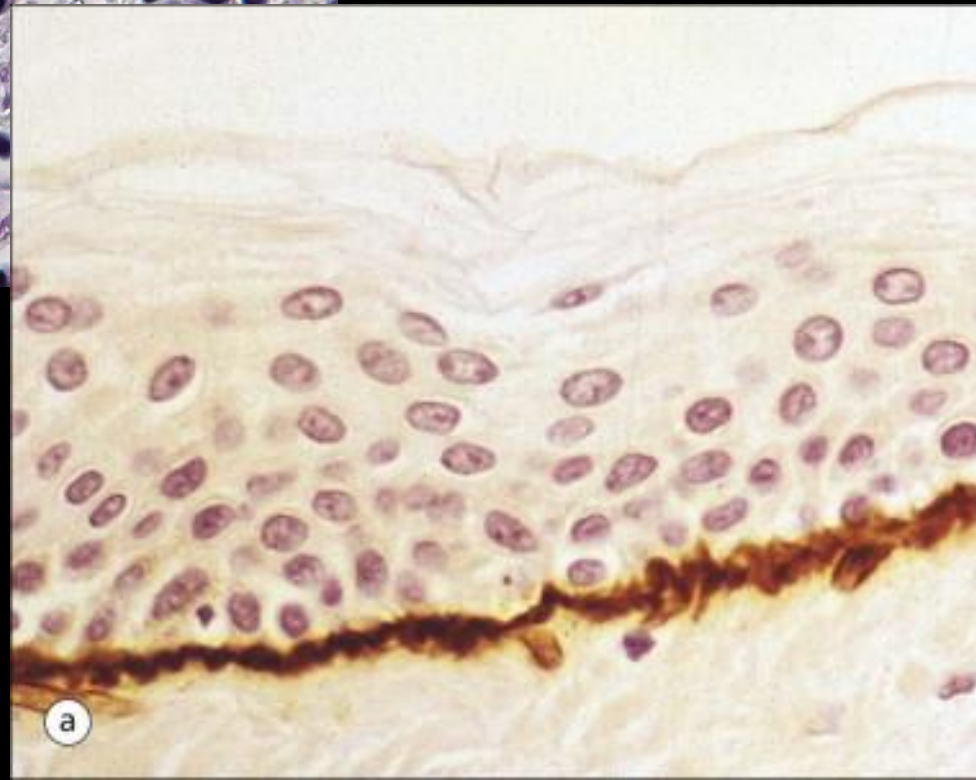
Zdroj: UBC Dep. of Zoology
 (http://www.zoology.ubc.ca/courses/bio332/flagellar_motion.htm, Biology 332, Protistology Term 2, Flagellar motion in Paramecium)





HRANICE EPITELU A VAZIVOVÉ TKÁNĚ

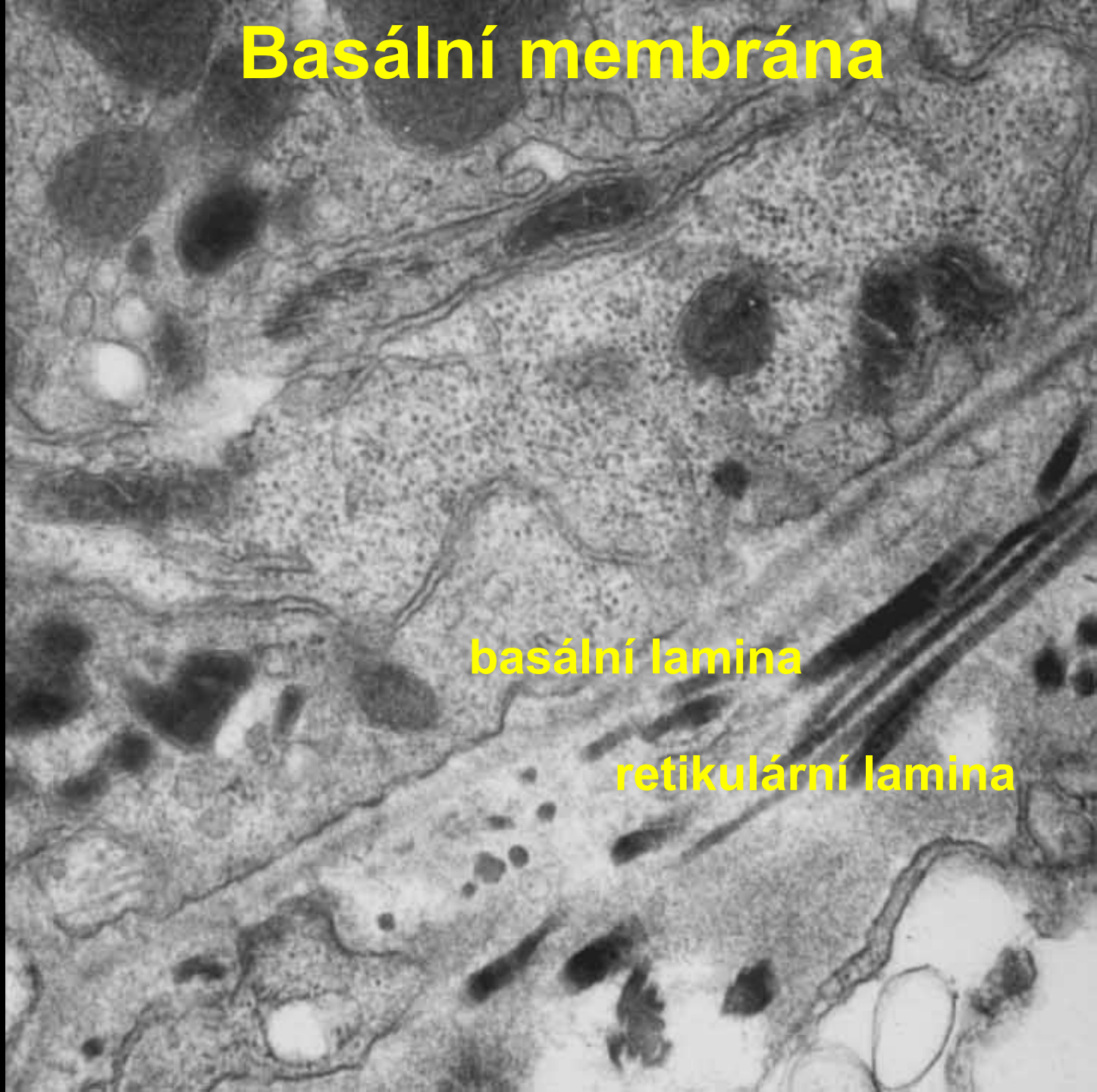
10 μ m

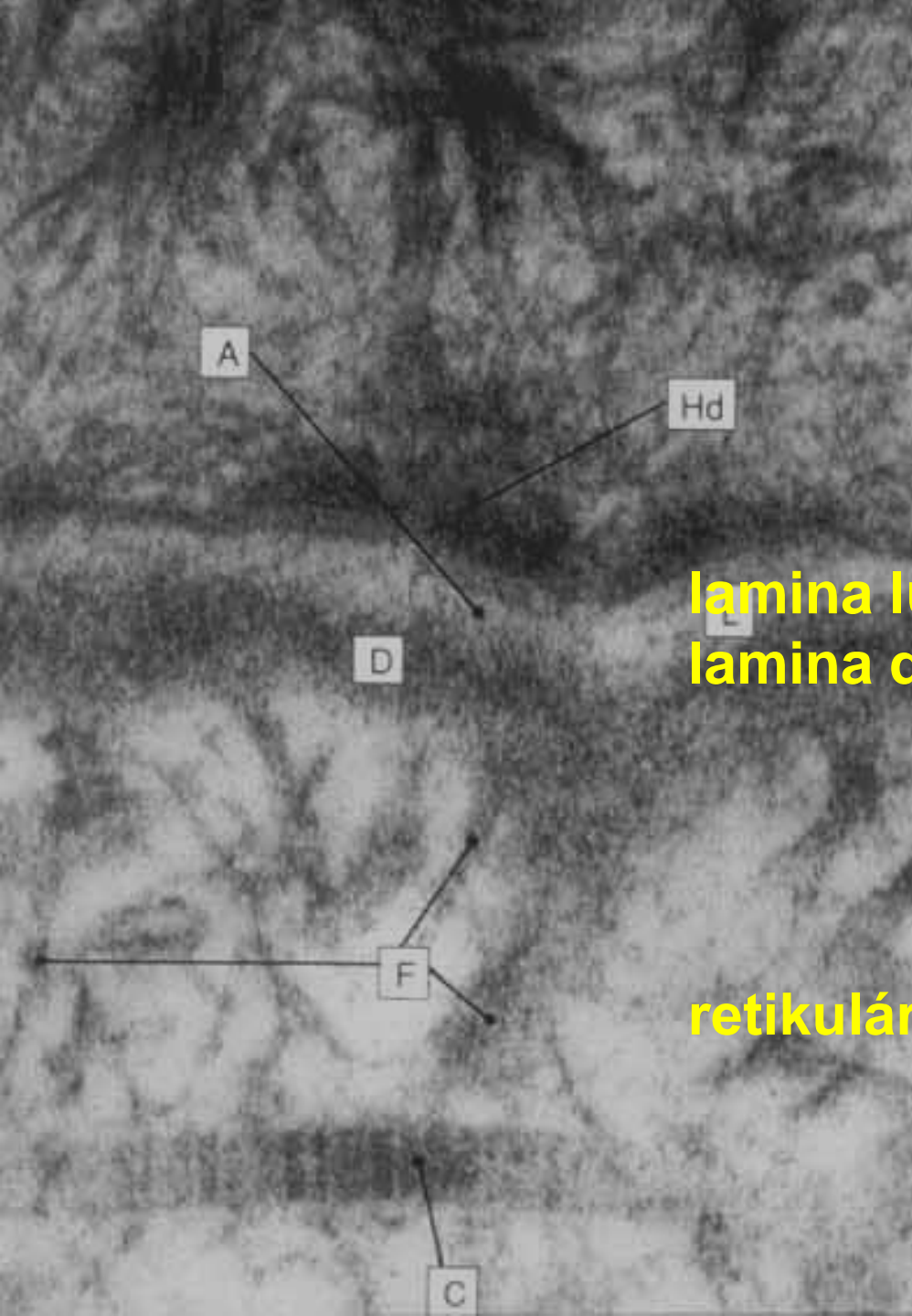


Basální membrána

basální lamina

retikulární lamina



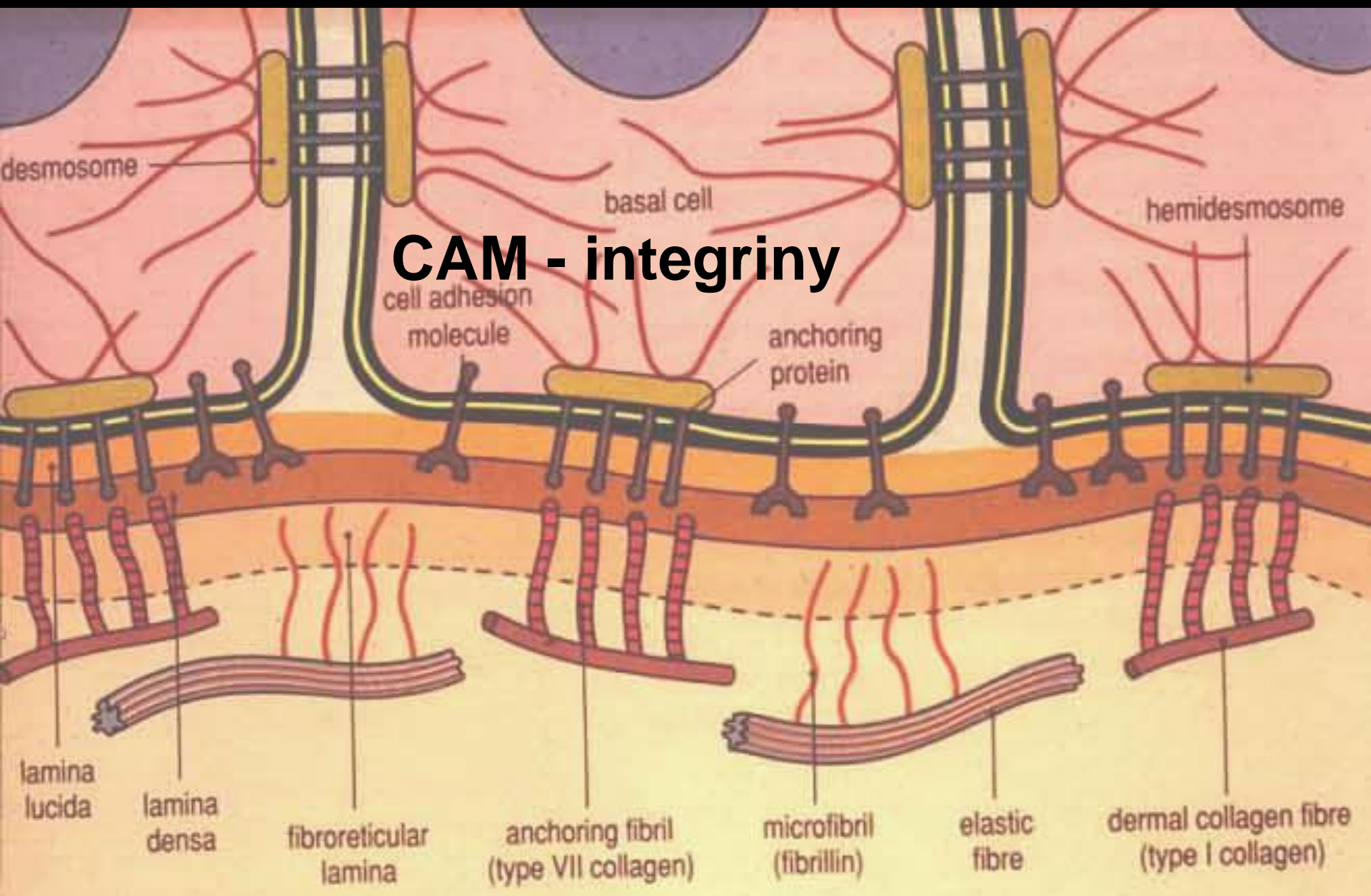


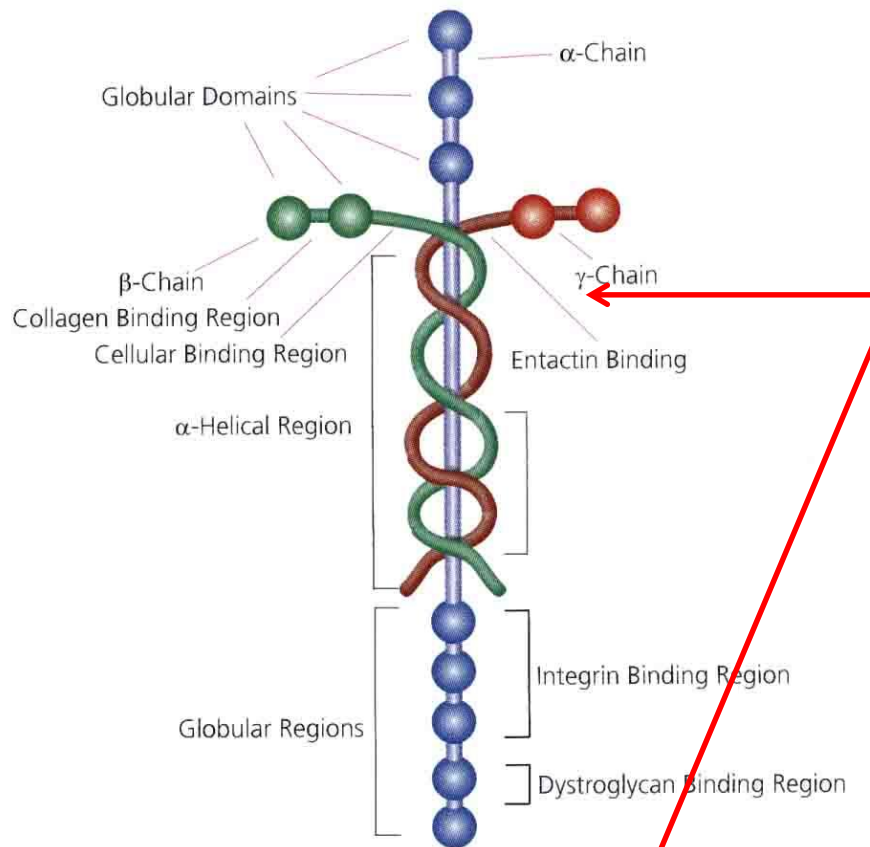
lamina lucida (rara)
lamina densa

} basální lamina

retikulární lamina

CAM - integriny





Basální lamina

laminin

+

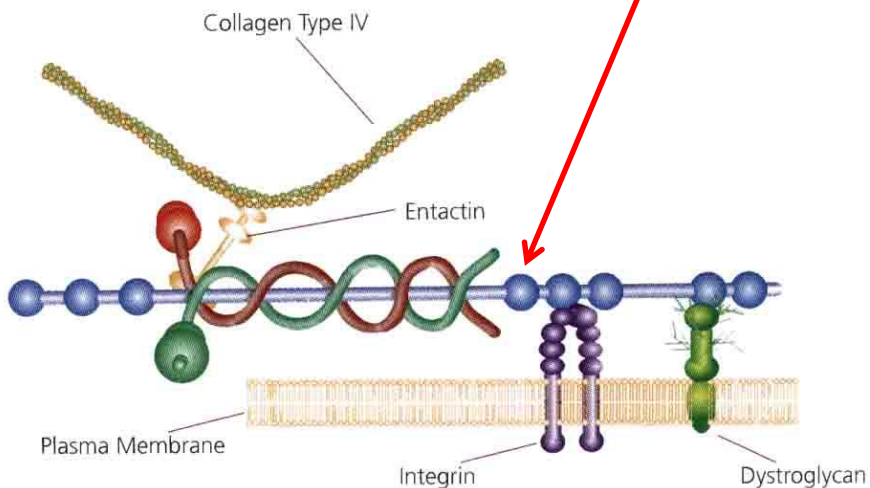
perlekan – proteoglykan bohatý na heparan sulfát
entaktin (nidogen) – glykoprotein
kolagen typu IV

Retikulární lamina

kolagen typu III (retikulární vlákna)

+

kolagen typu VII (kotvicí fibrily)
fibrilin (mikrofibrily)
tenascin – glykoprotein



Zevní lamina

Některé neepitelové buňky

KLASIFIKACE EPITELU

PODLE USPOŘÁDÁNÍ

prostorově uspořádaný epitel

- trámčitý epitel
- retikulární epitel

plošný epitel

počet vrstev

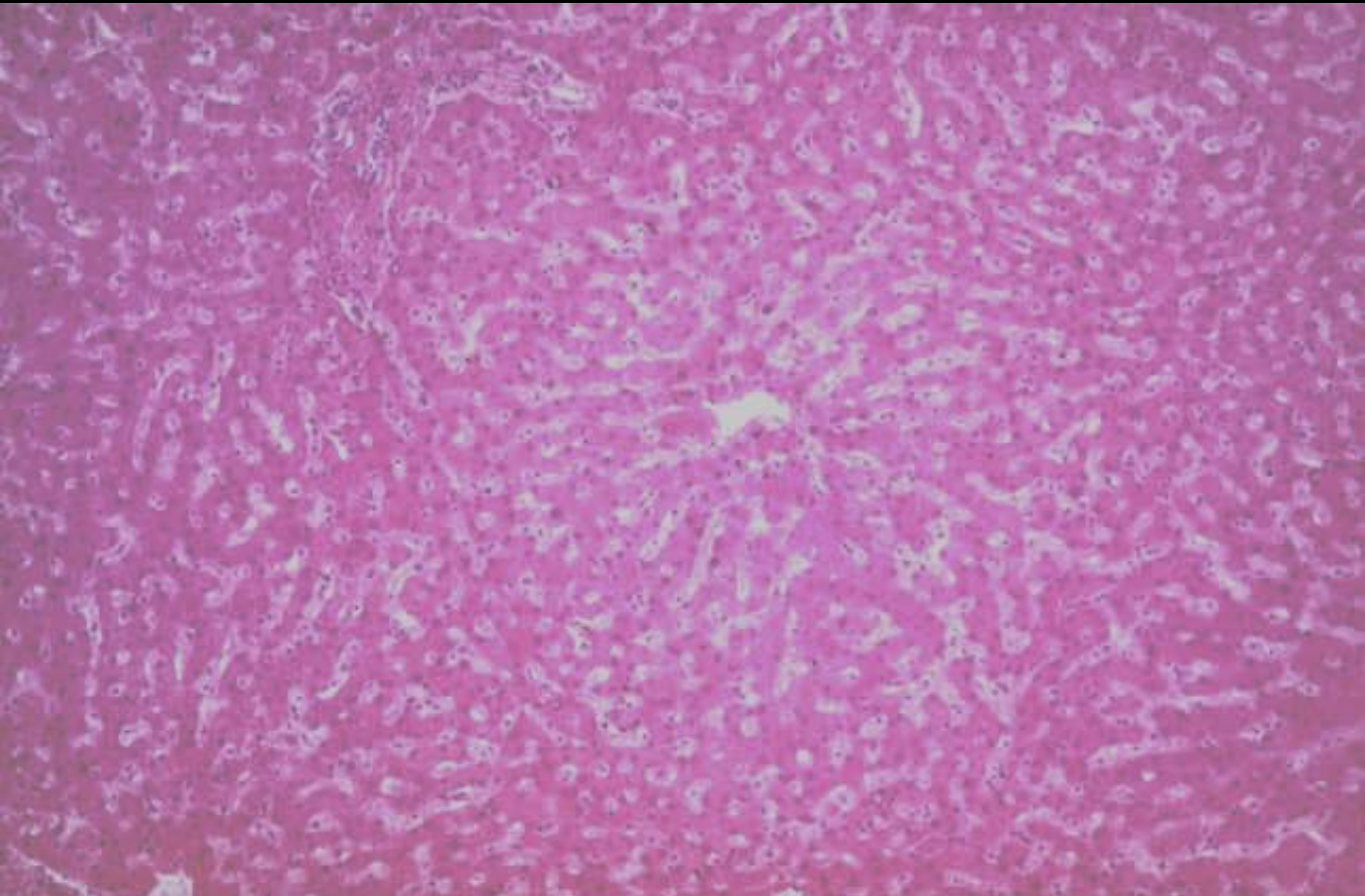
tvary buněk v povrchové vrstvě

PODLE FUNKCE

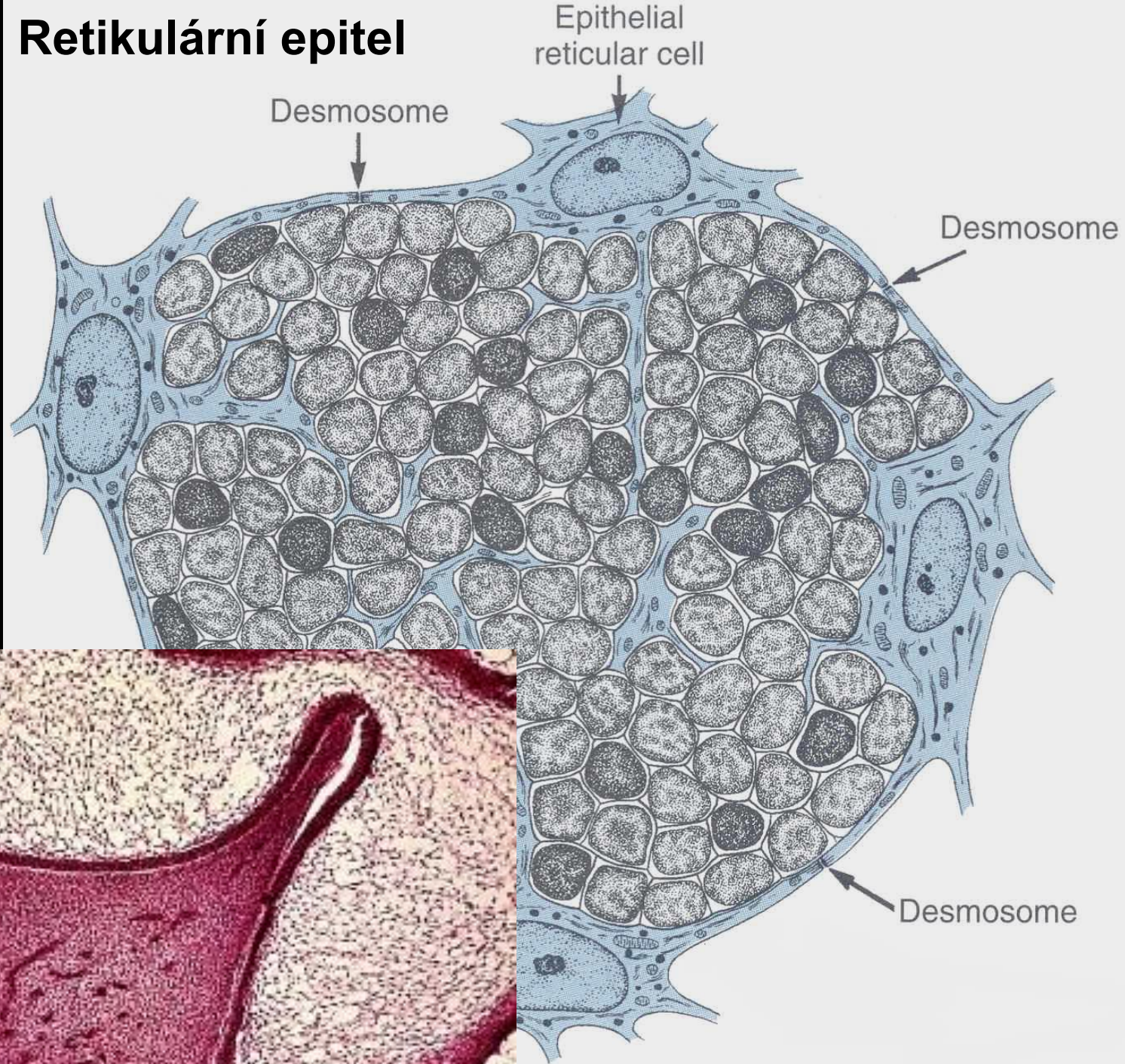
žlázový epitel

krycí epitel

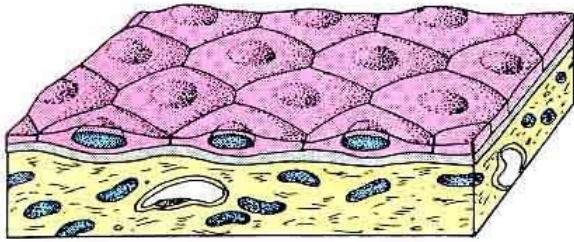
Trámčitý epitel



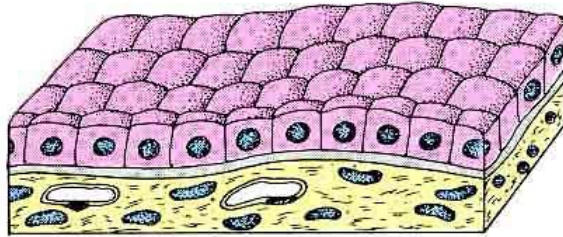
Retikulární epitel



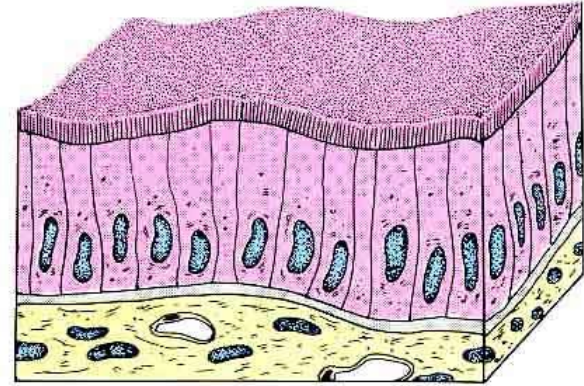
Plošný epitel



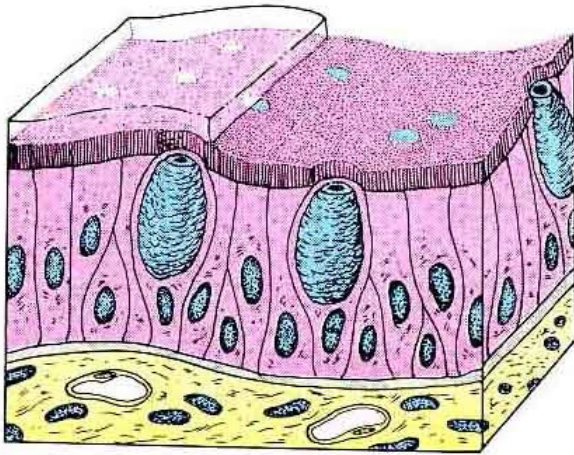
Simple squamous epithelium



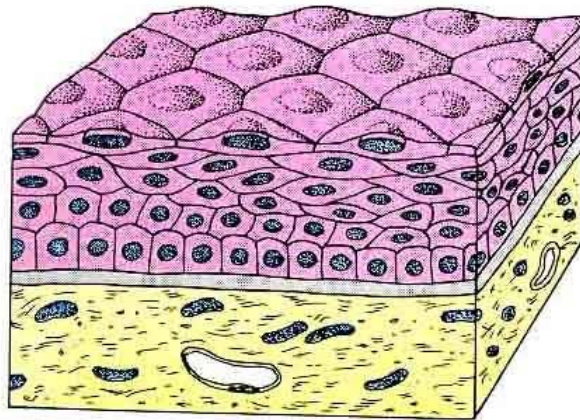
Simple cuboidal epithelium



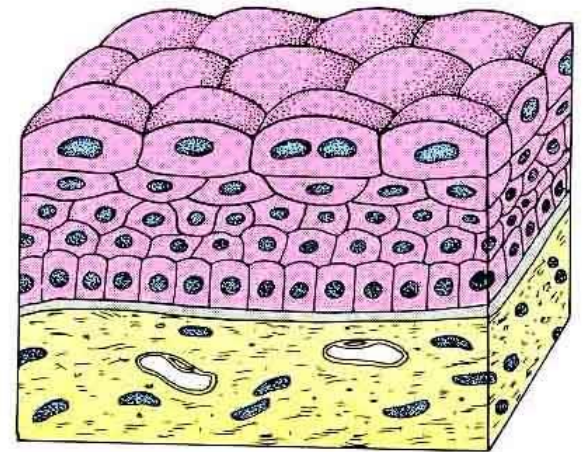
Simple columnar epithelium



Pseudostratified columnar epithelium

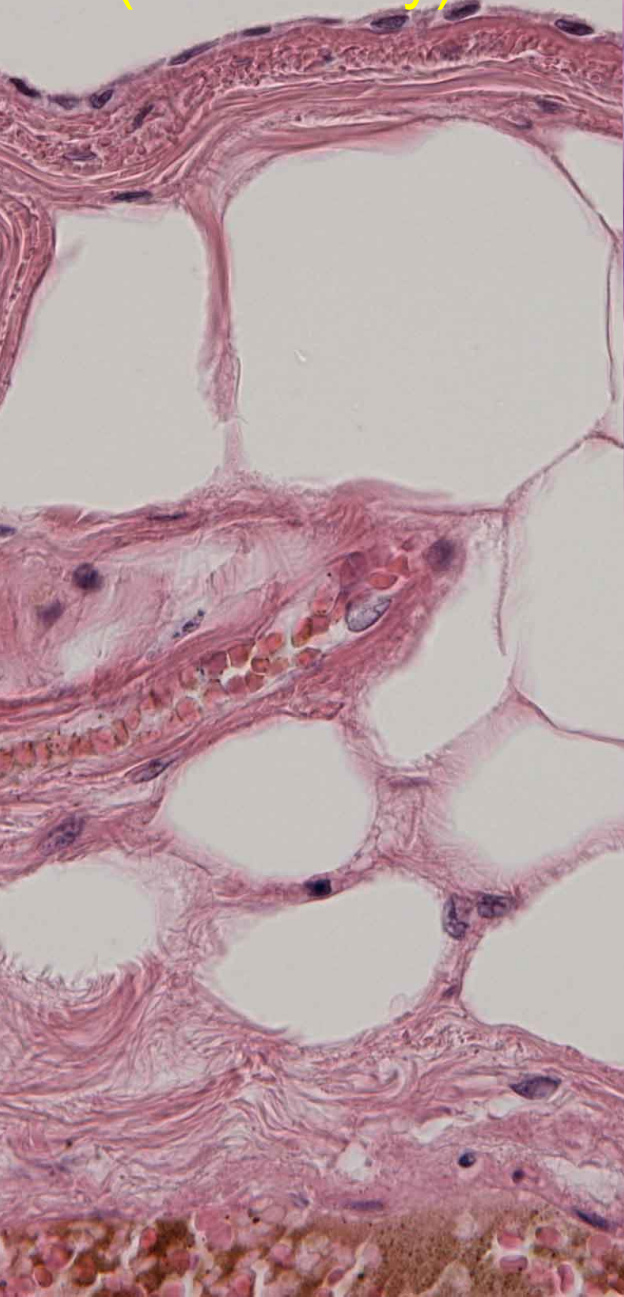


Stratified squamous epithelium

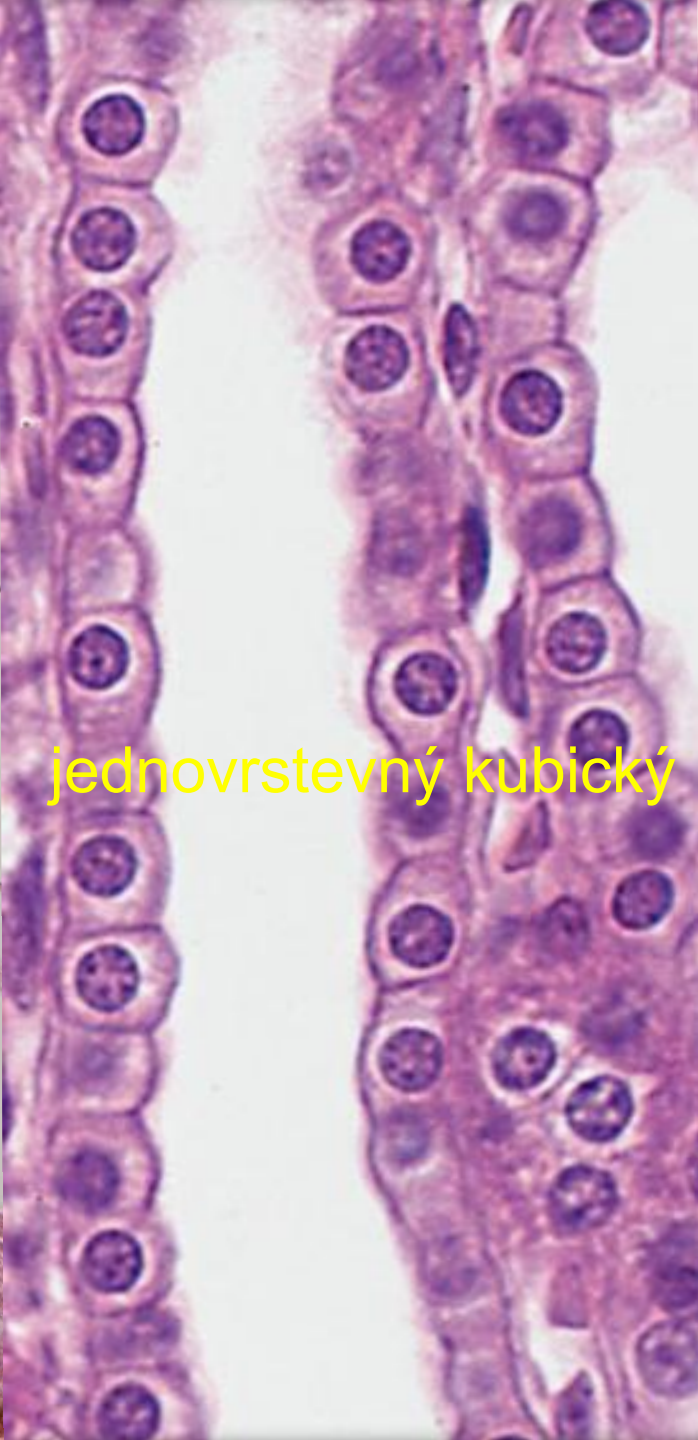


Transitional epithelium

ednovrstevný plochý
(dlaždicový)

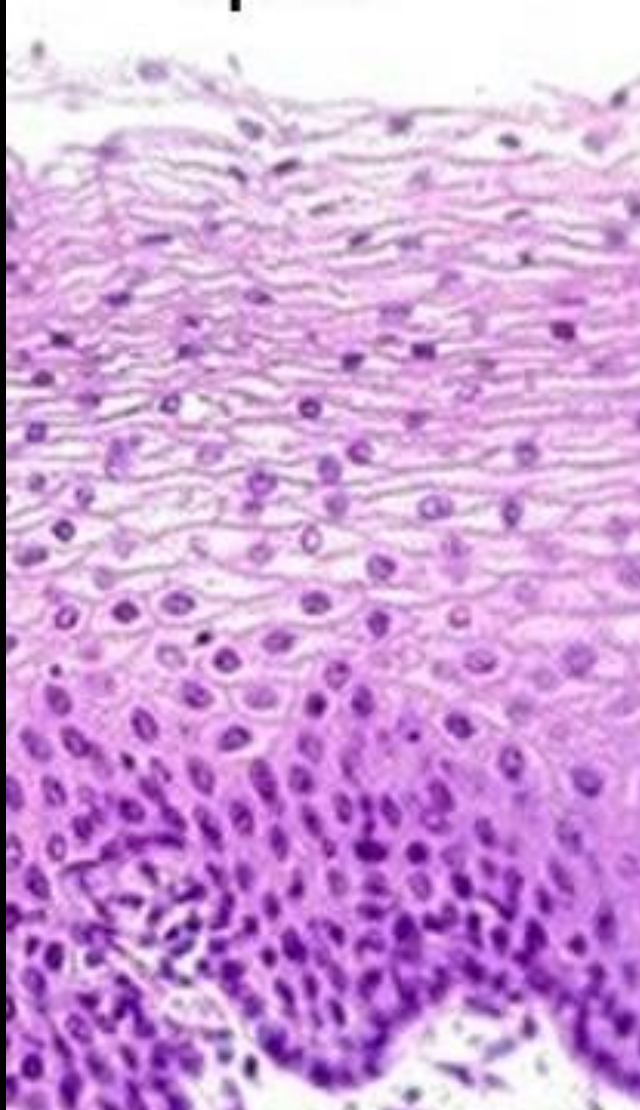


jednovrstevný kubický

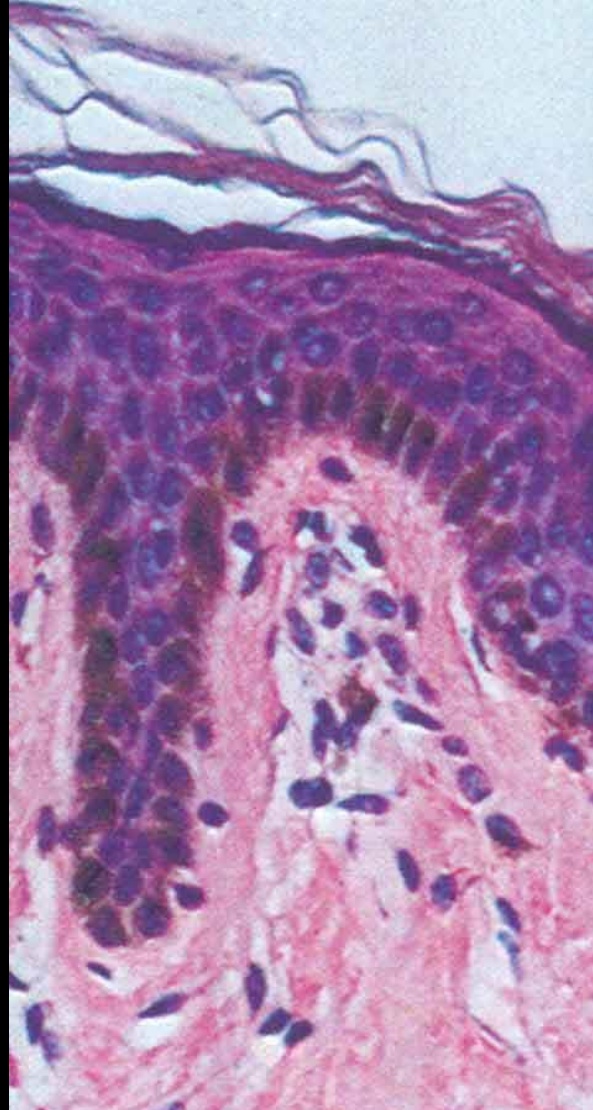


jednovrstevný
cylindrický





vícevrstevný plochý (dlaždicový)
nerohovějící



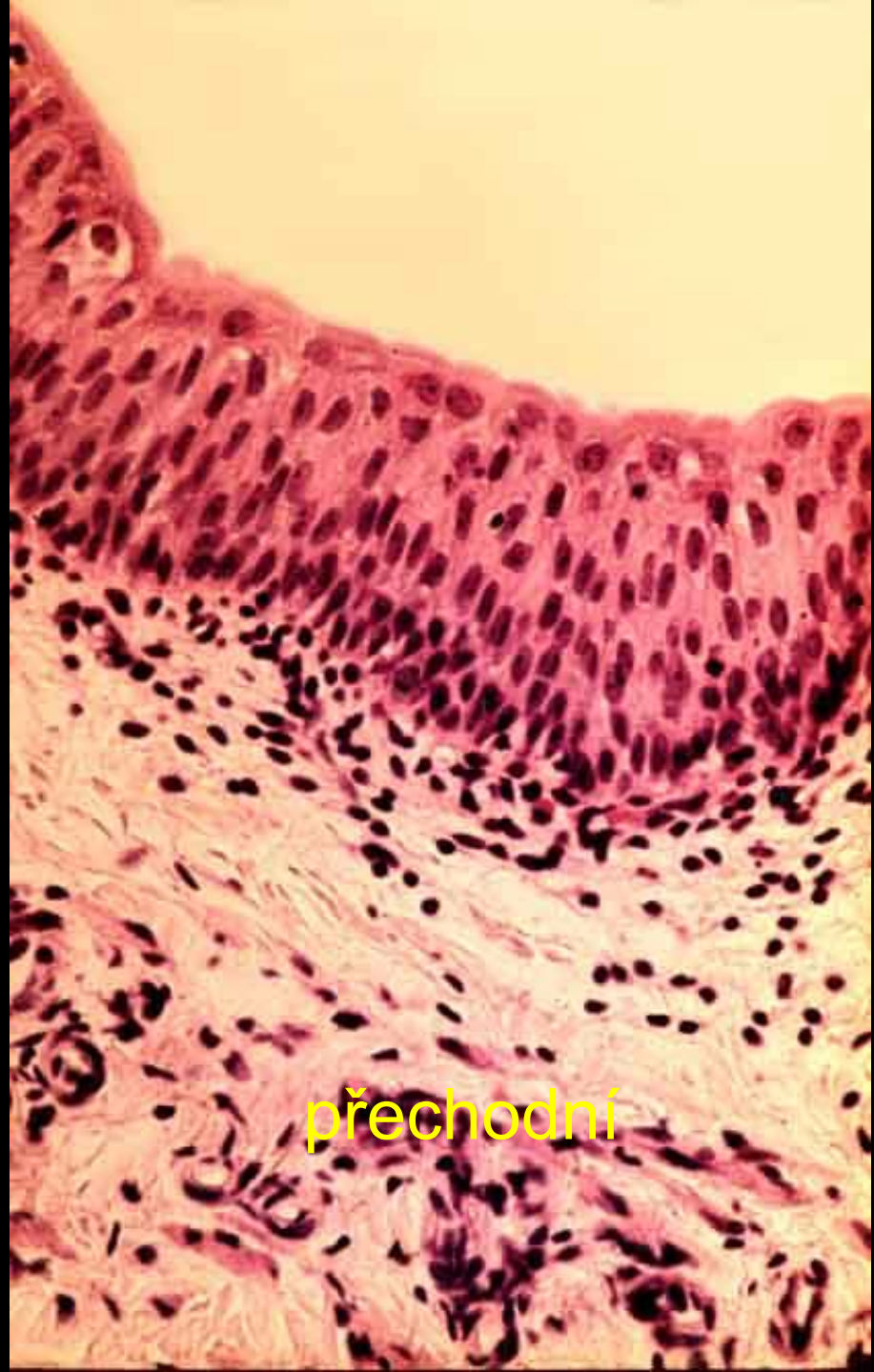
rohovějící



vícevrstevný
cylindrický



víceřadý cylindrický



přechodní

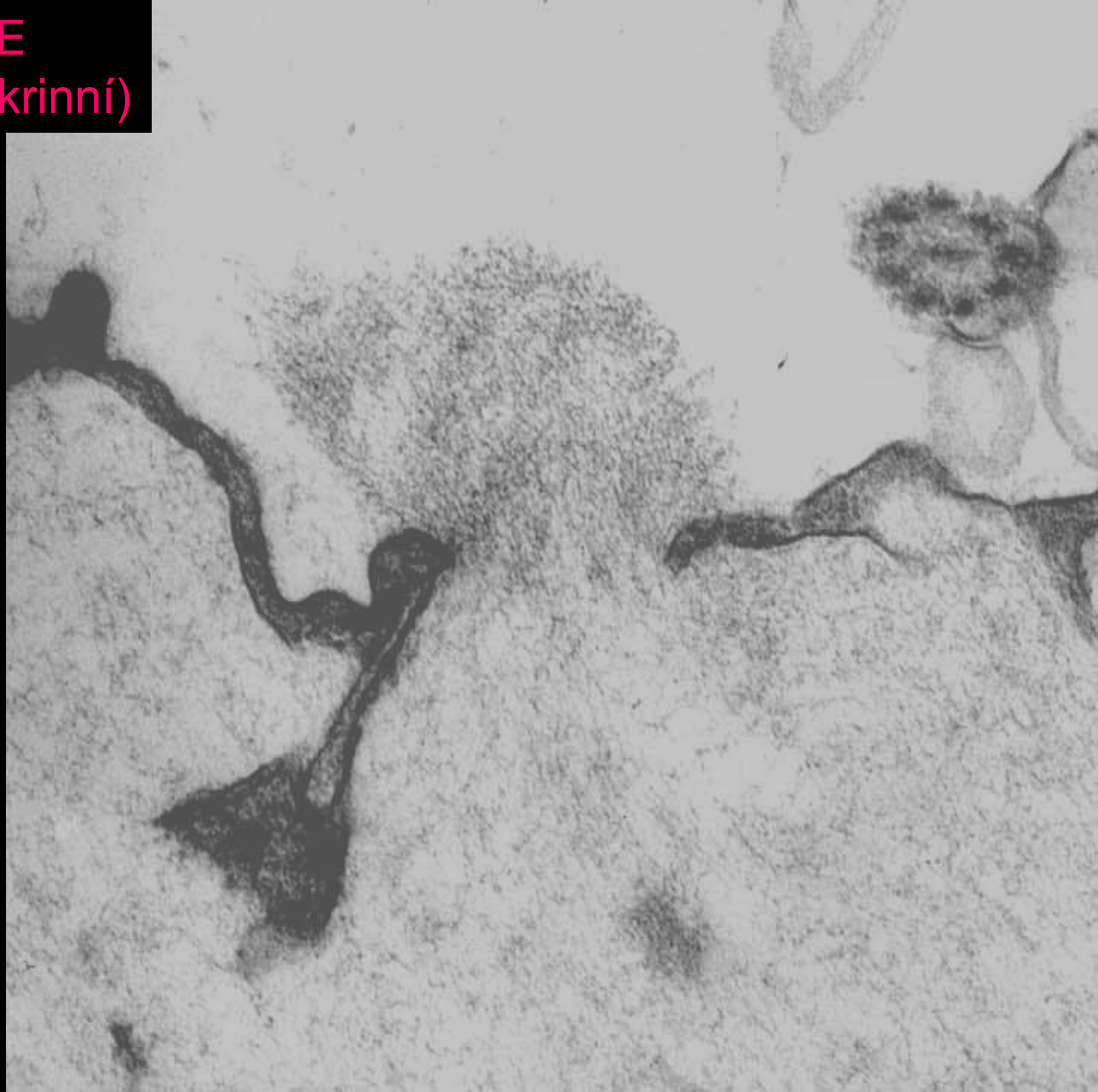
ŽLÁZOVÝ EPITEL

tvořen buňkami specializovanými na produkci a sekreci různých látek, které se chemicky liší od krve nebo mezibuněčné tekutiny

- ingescce
- syntéza
- střádání
- sekrece

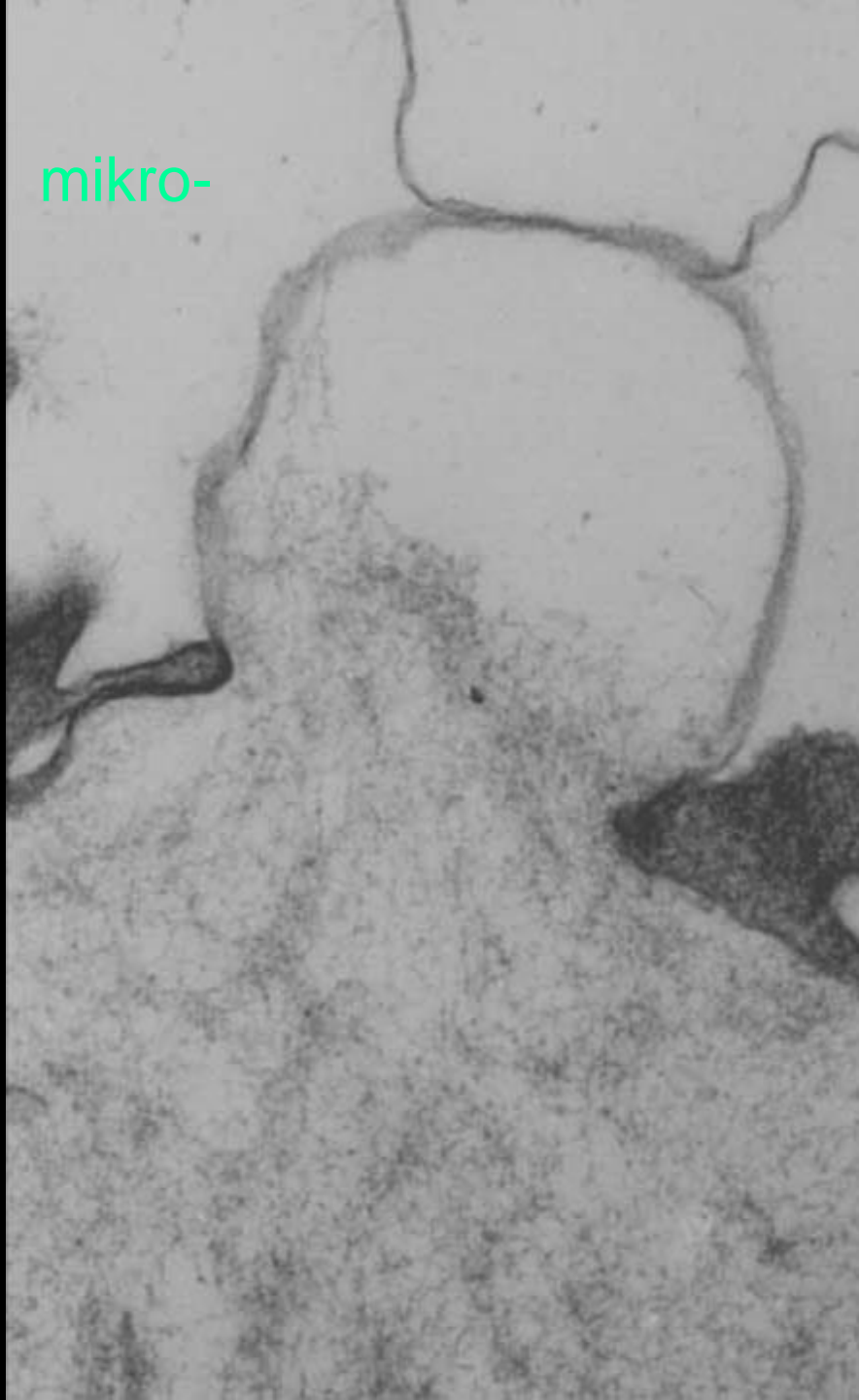
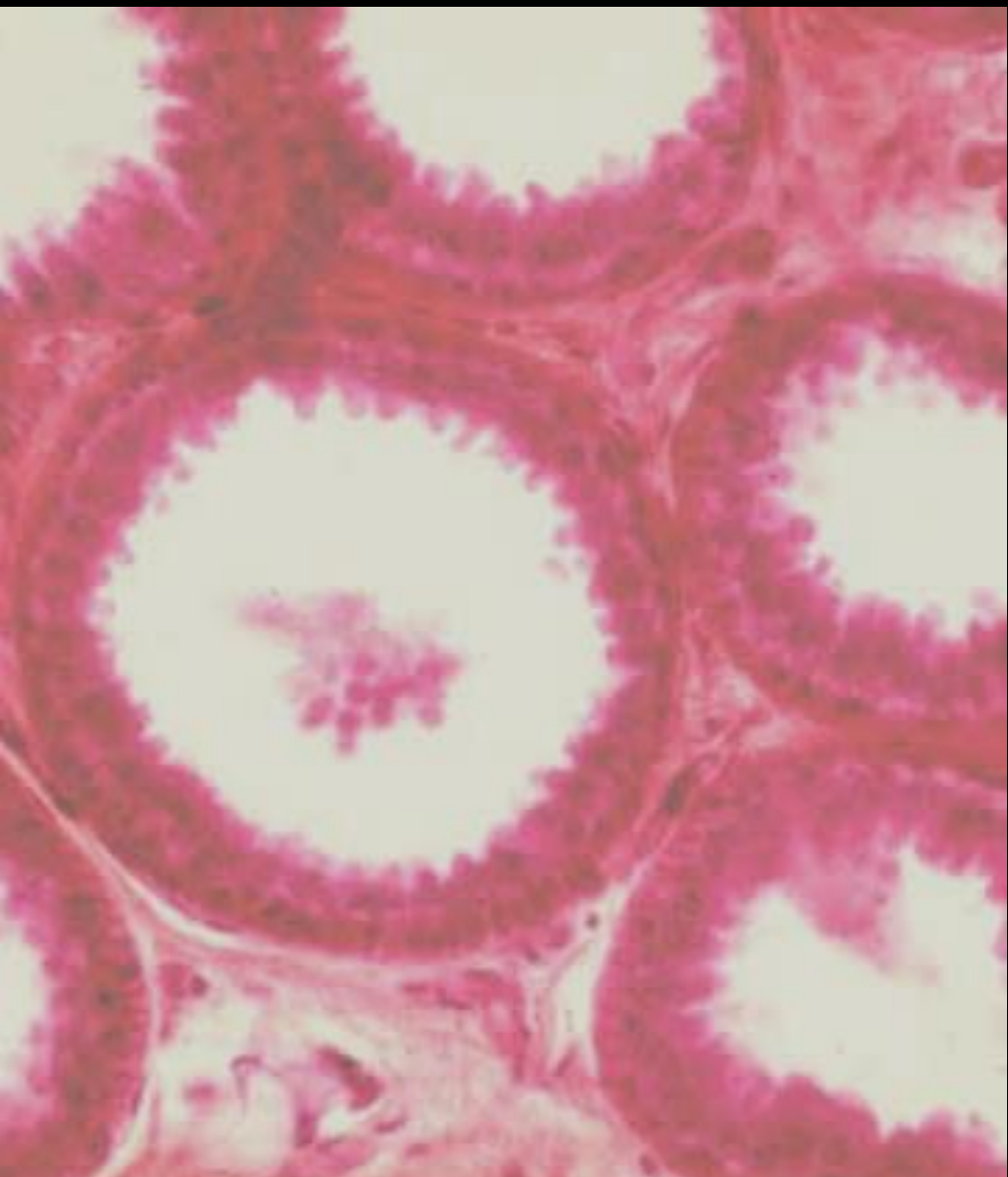
TYPY SEKRECE

- merokrinní (ekkrinní)

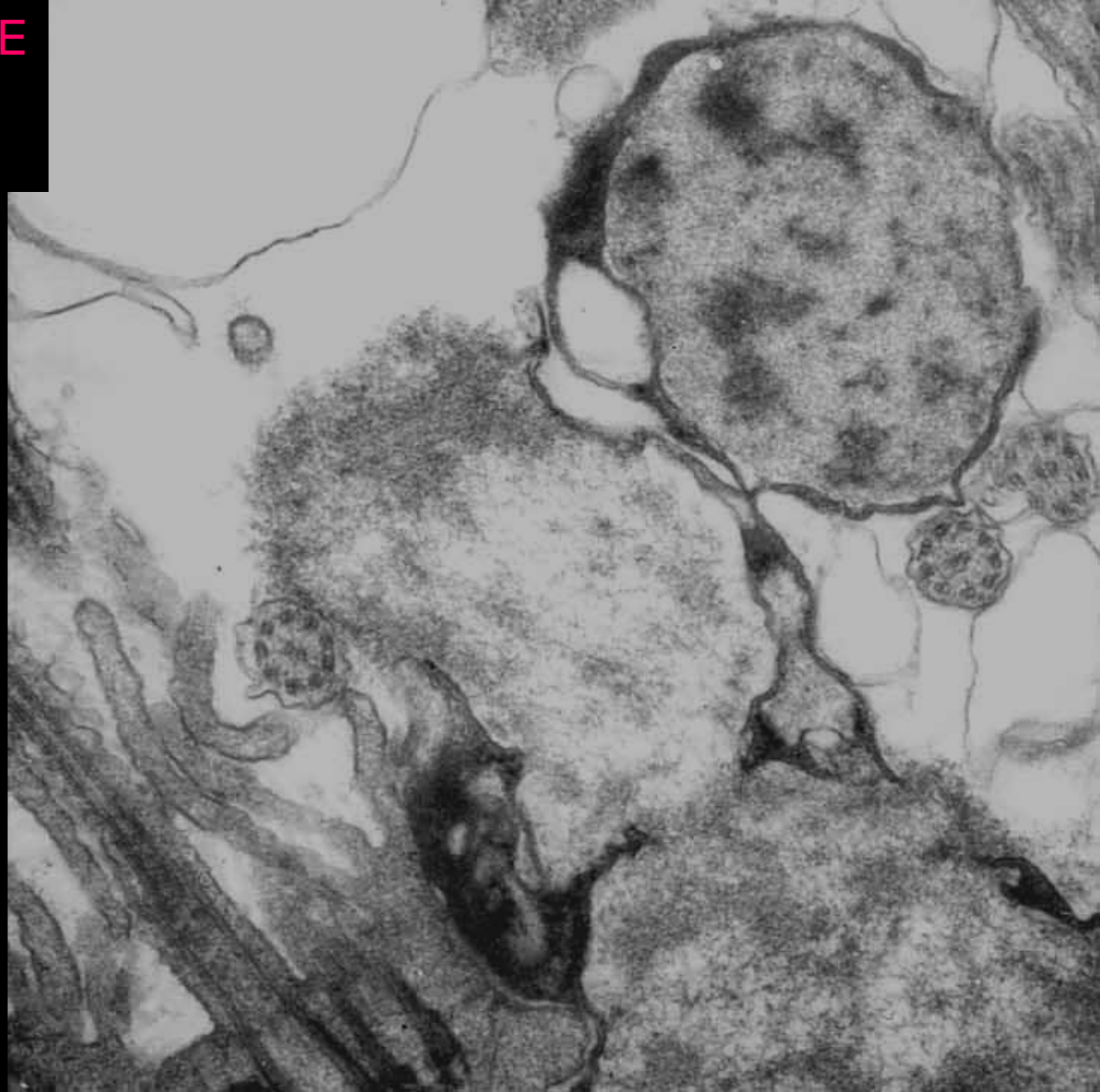


TYPY SEKRECE
apokrinní

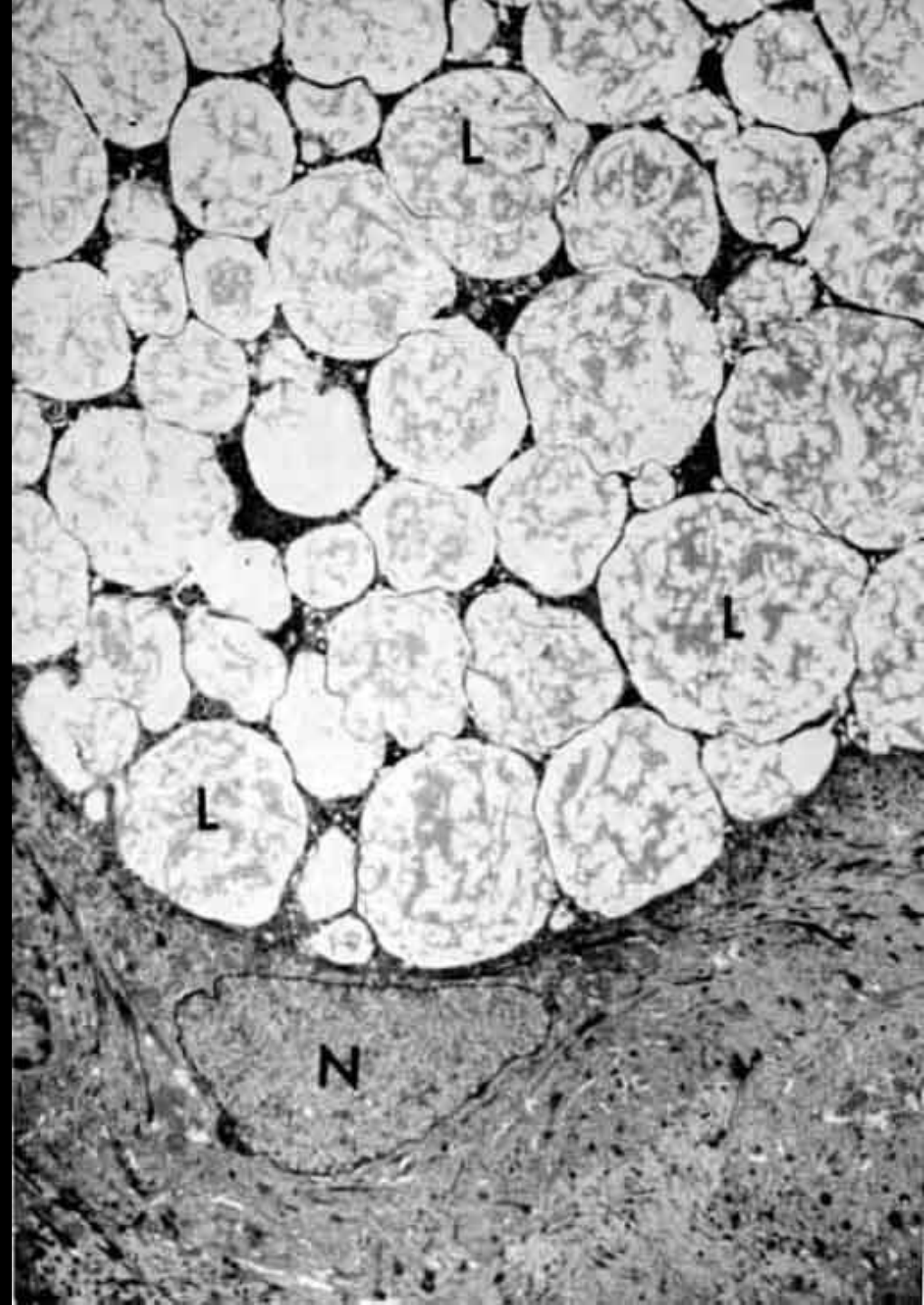
makro- mikro-



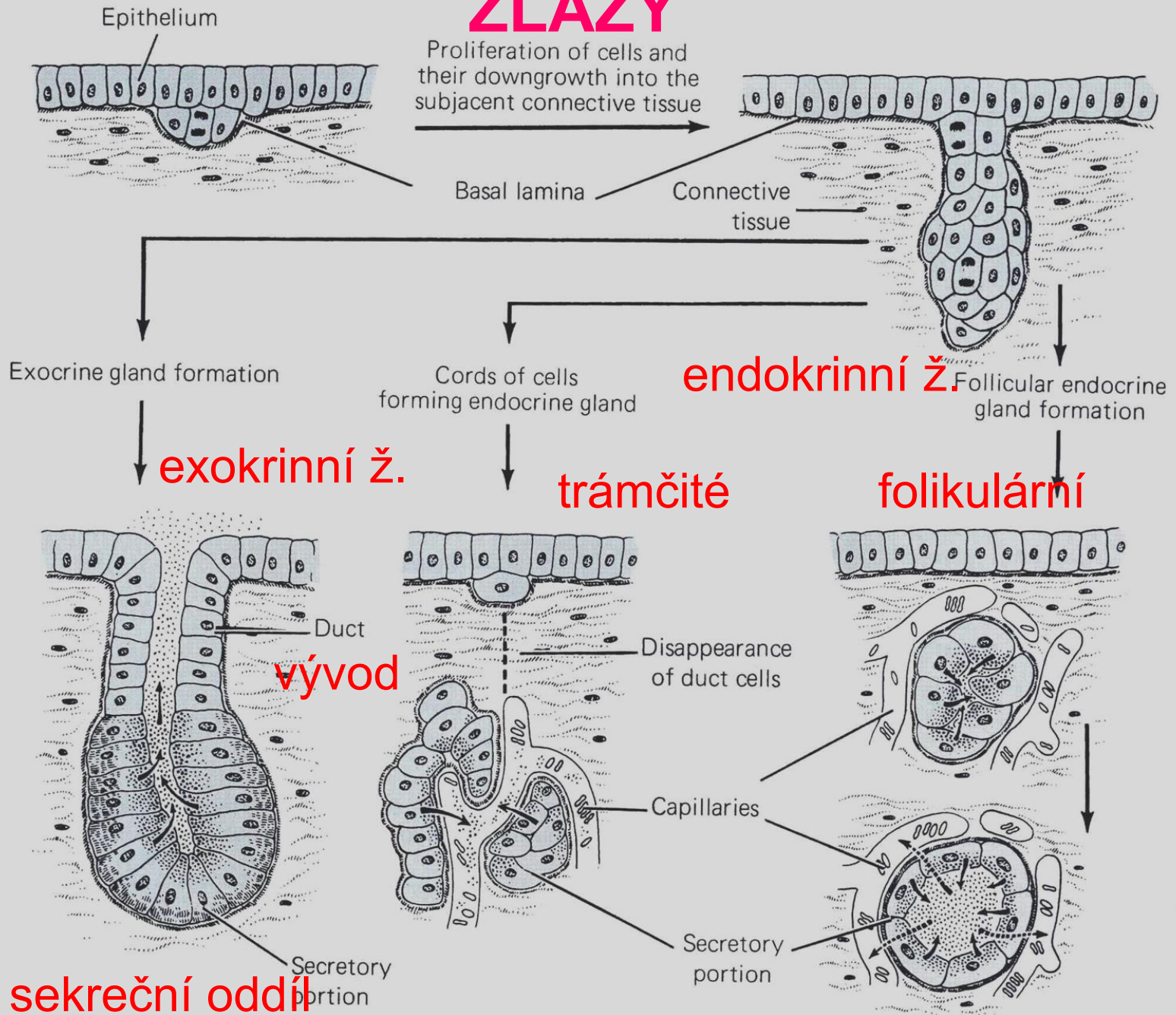
TYPY SEKRECE
-mikroapokrinní
-merokrinní



TYPY SEKRECE
- holokrinní



ŽLÁZY



Exokrinní žlázy

charakter vývodu



jednoduchý



rozvětvený



složený

charakter sekreční části

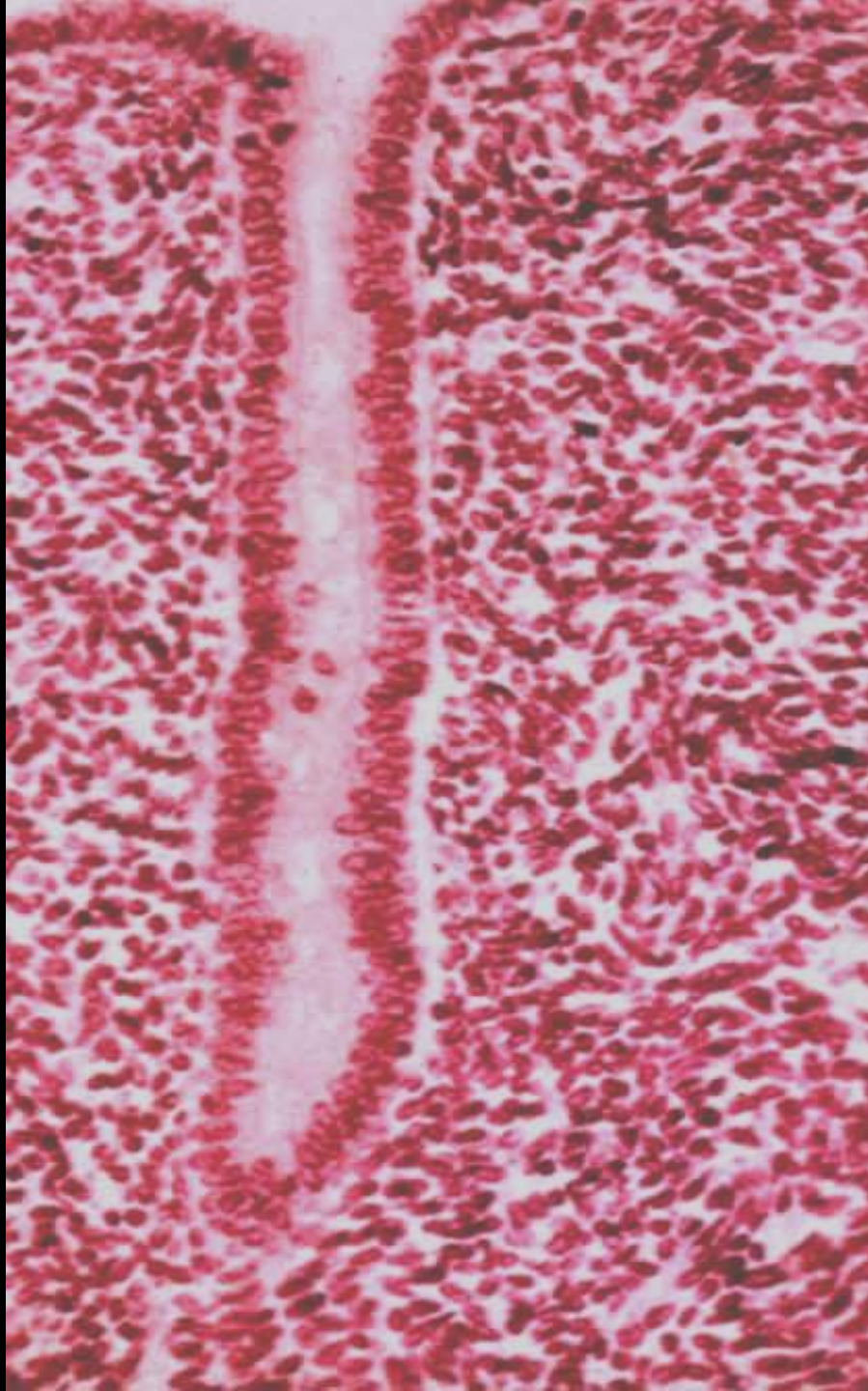


alveolární
(acinózní)

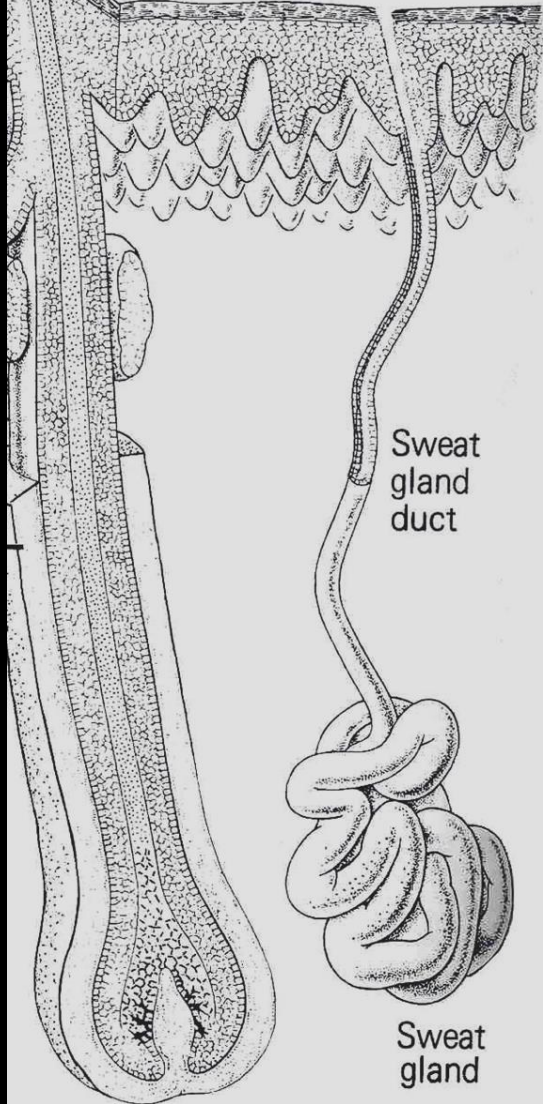


tubulózní

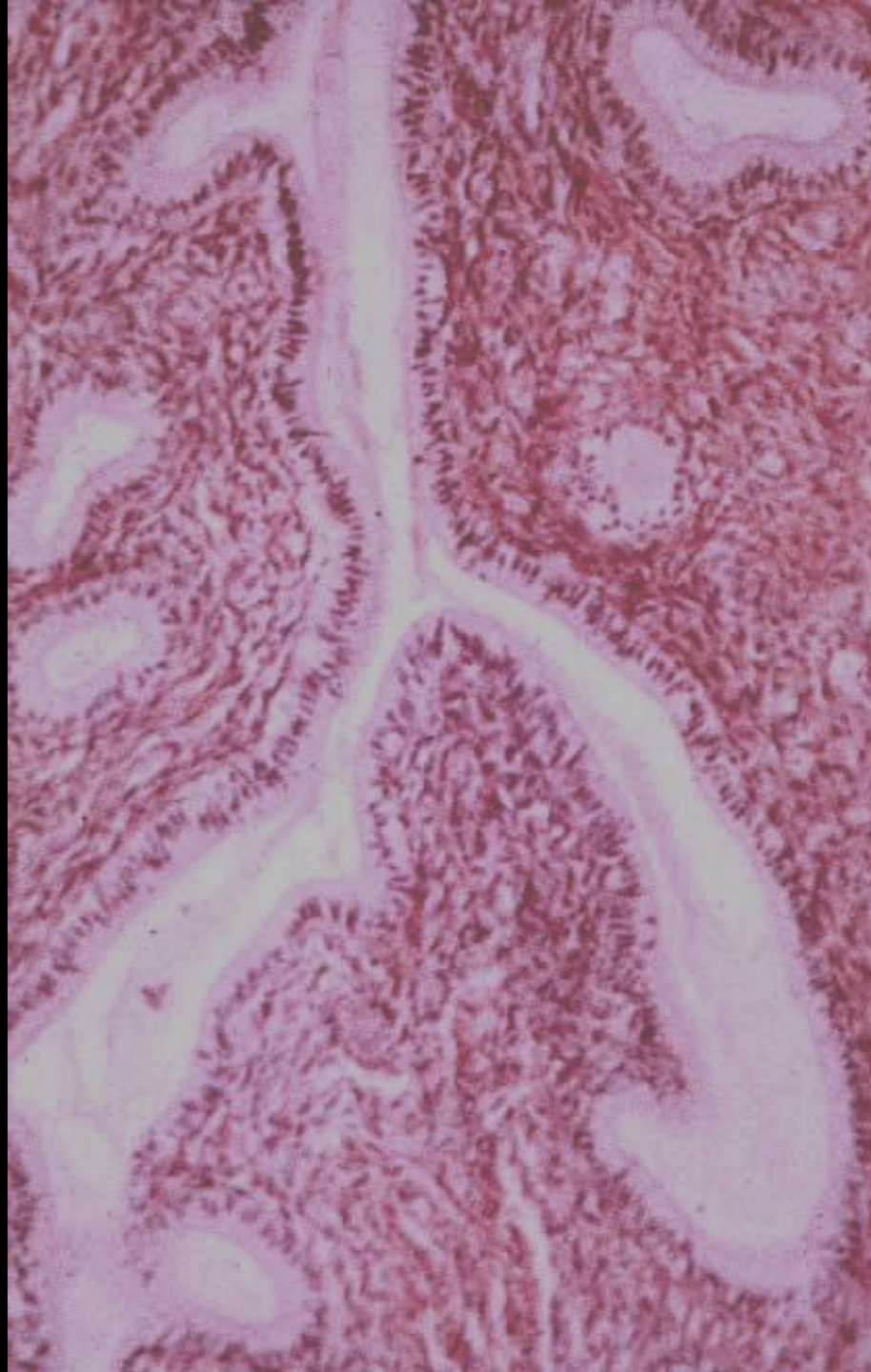
**Jednoduchá
tubulózní
přímá**



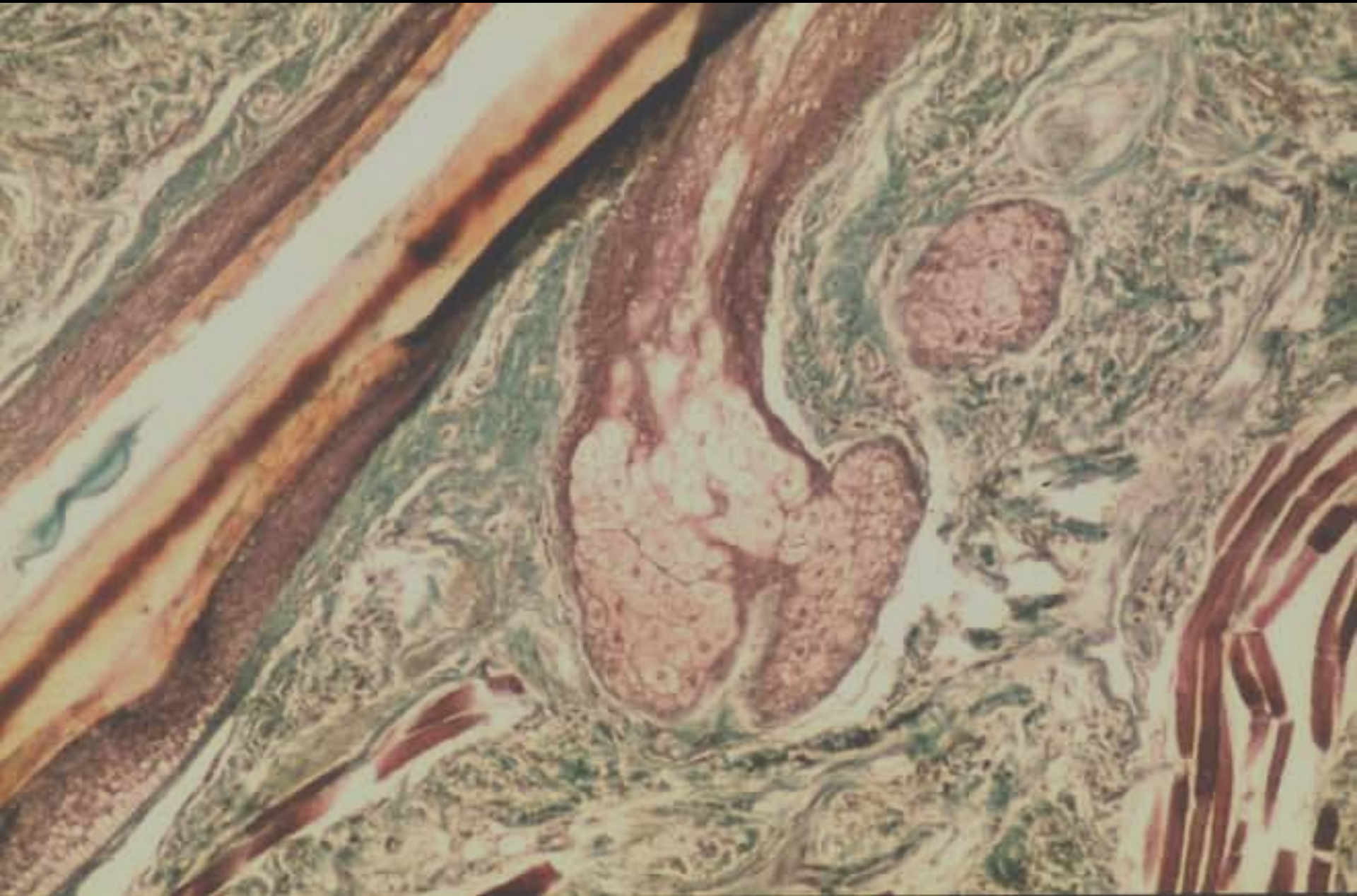
Jednoduchá tubulózní stočená



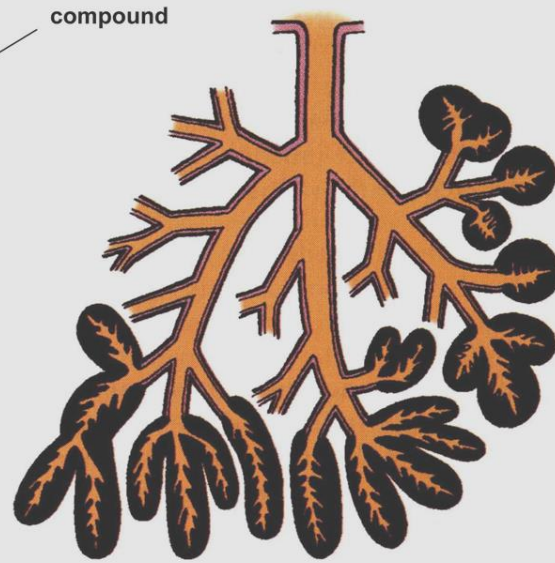
Rozvětvená tubulózní



Rozvětvená alveolární (acinózní)

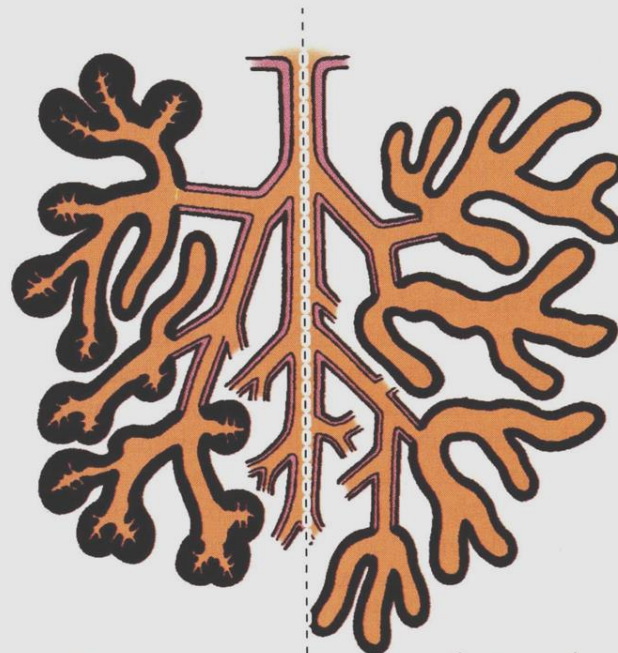


Složená



**alveolární
(acinózní)**

Compound
acinar

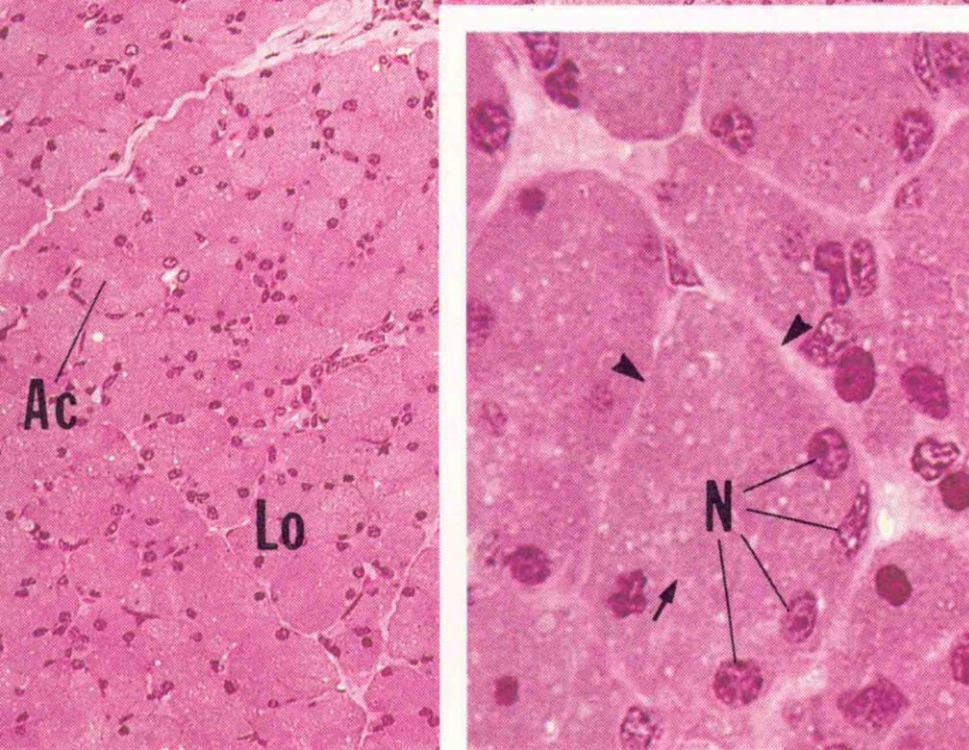
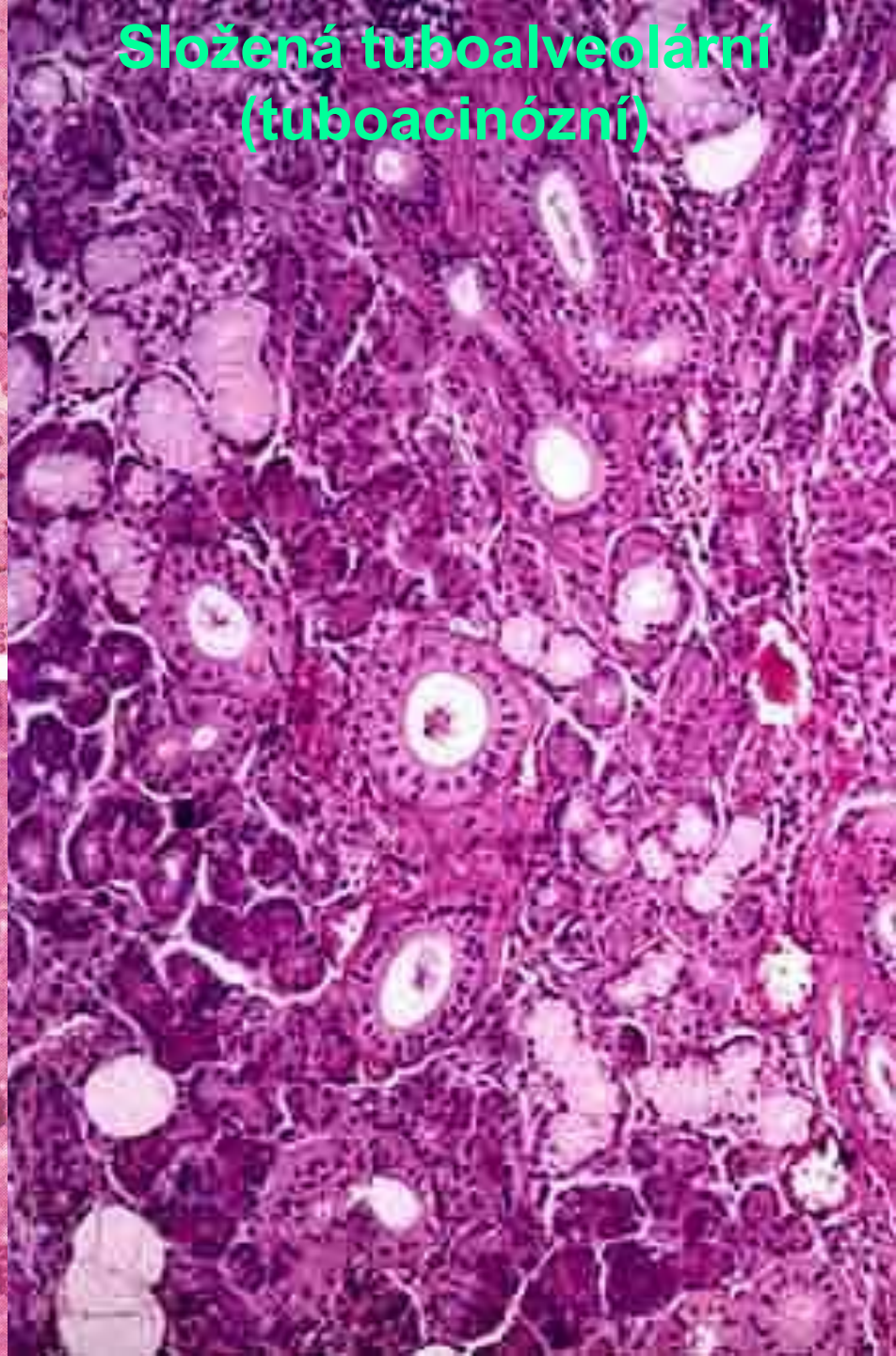
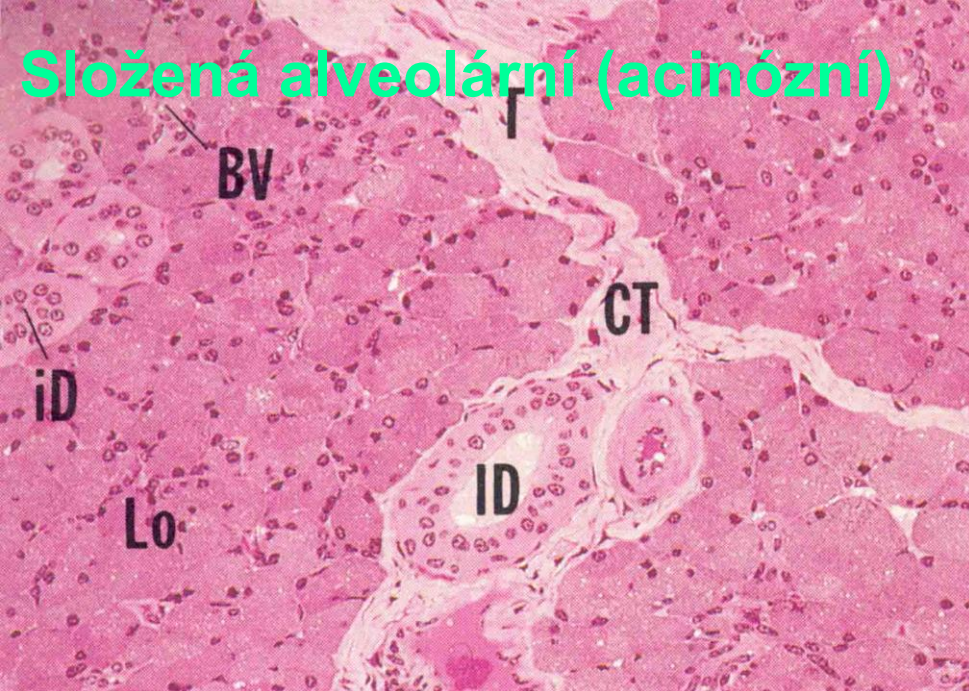


Compound
tubuloacinar

Compound
tubular

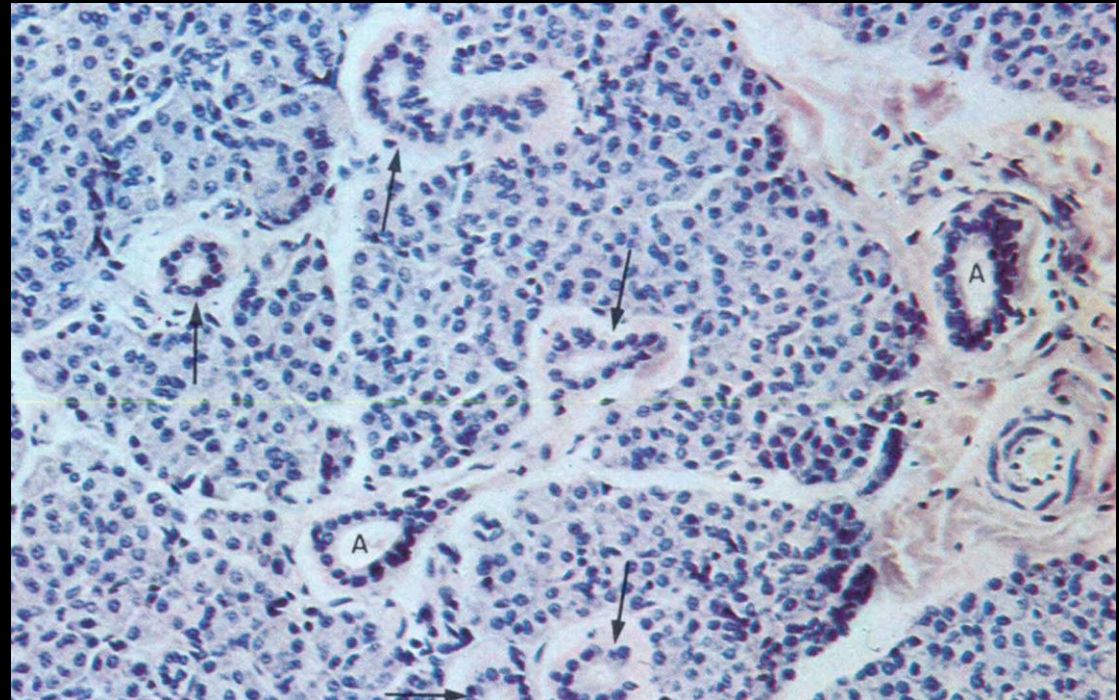
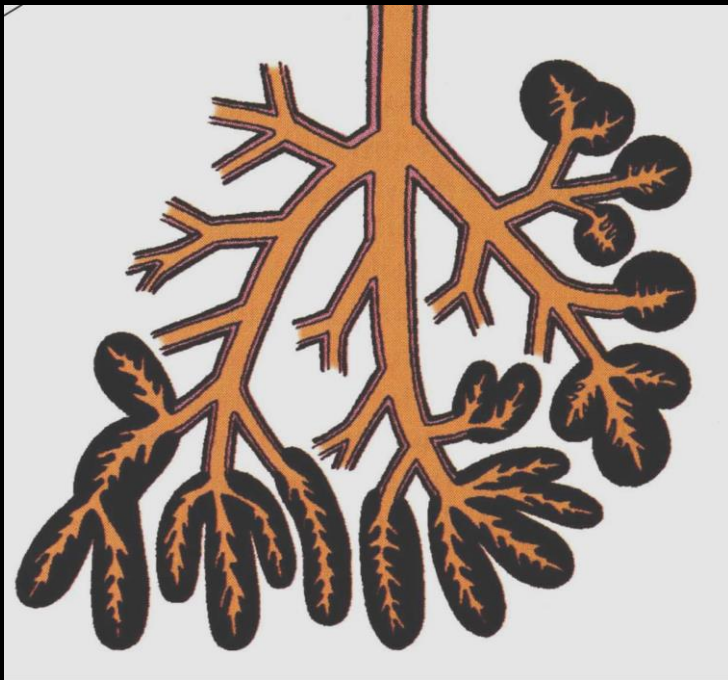
**tuboalveolární
(tuboacinózní)**

tubulózní



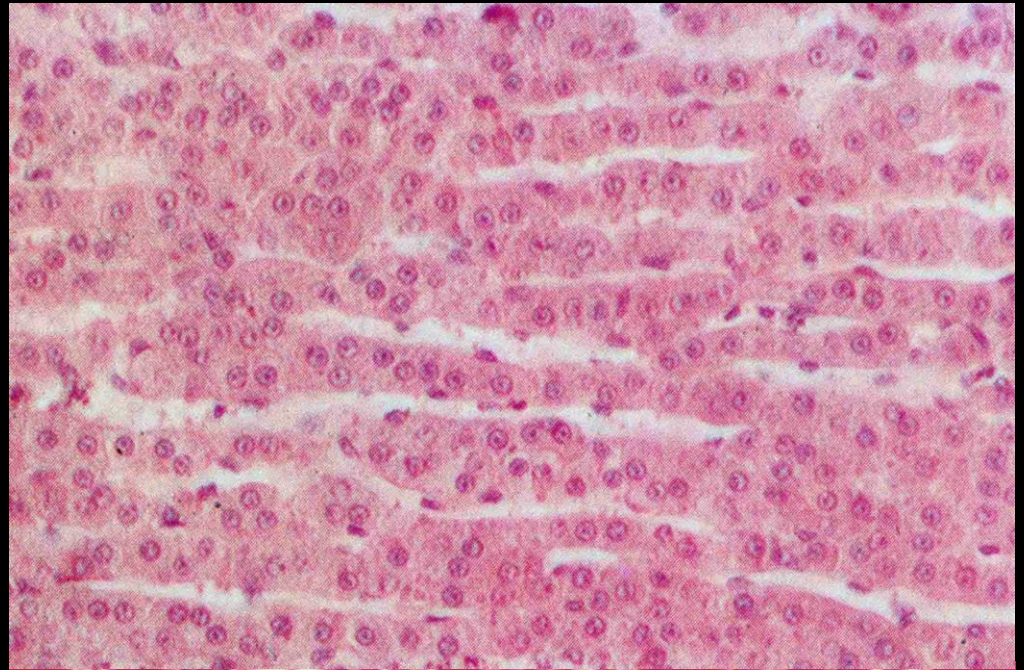
VÝVODY SLOŽENÝCH ŽLÁZ

- intralobulární -- jednovrstevný plochý (vsunuté vývody) až kubický epitel
- interlobulární -- jednovrstevný cylindrický epitel
- lobární -- víceřadý až vícevrstevný cylindrický epitel
- hlavní -- vícevrstevný dlaždicový nerohovějící epitel



Endokrinní žlázy

trabekulární (trámčité)
uspořádání



folikulární uspořádání

