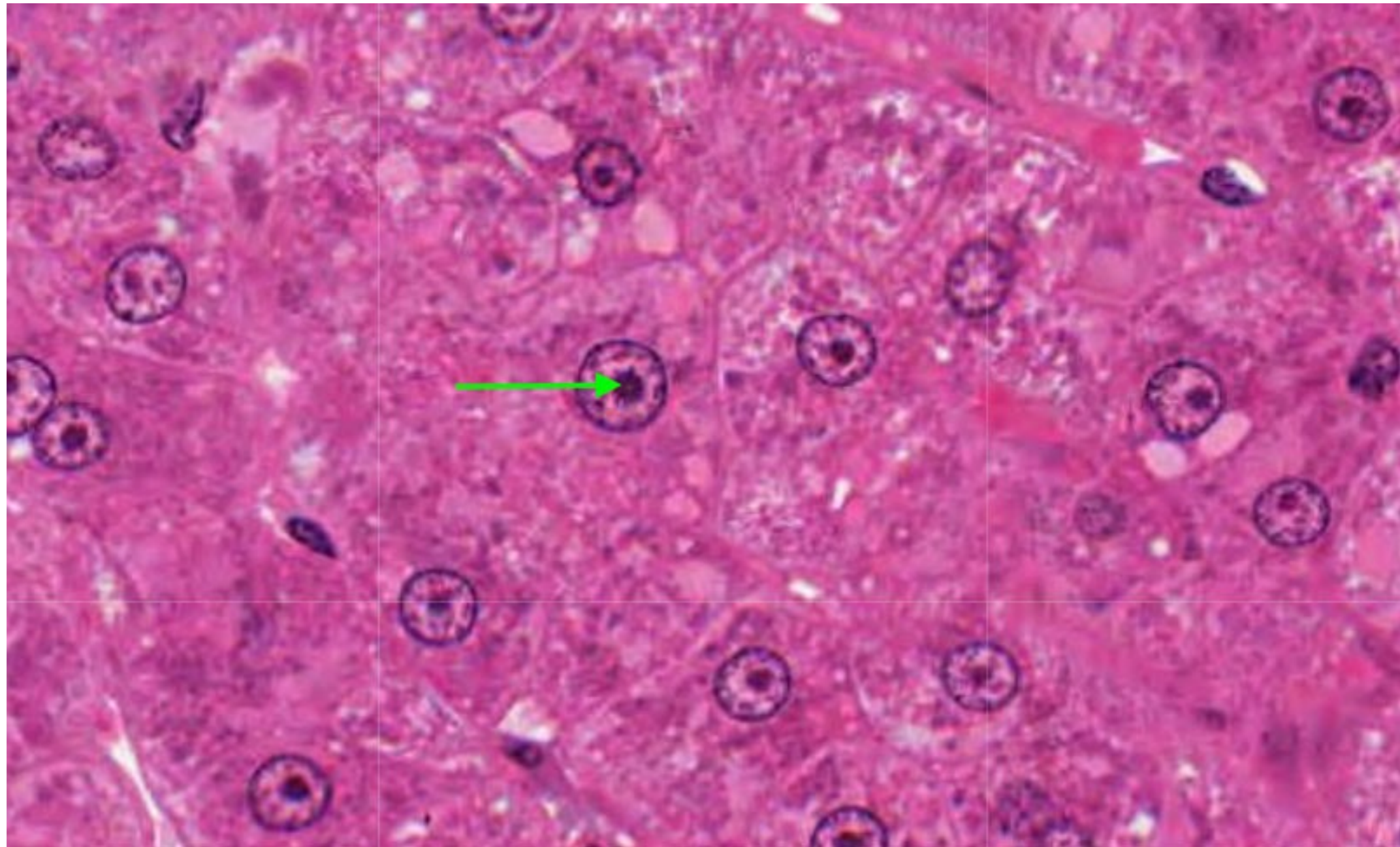# Histology of Cell and Epithelia
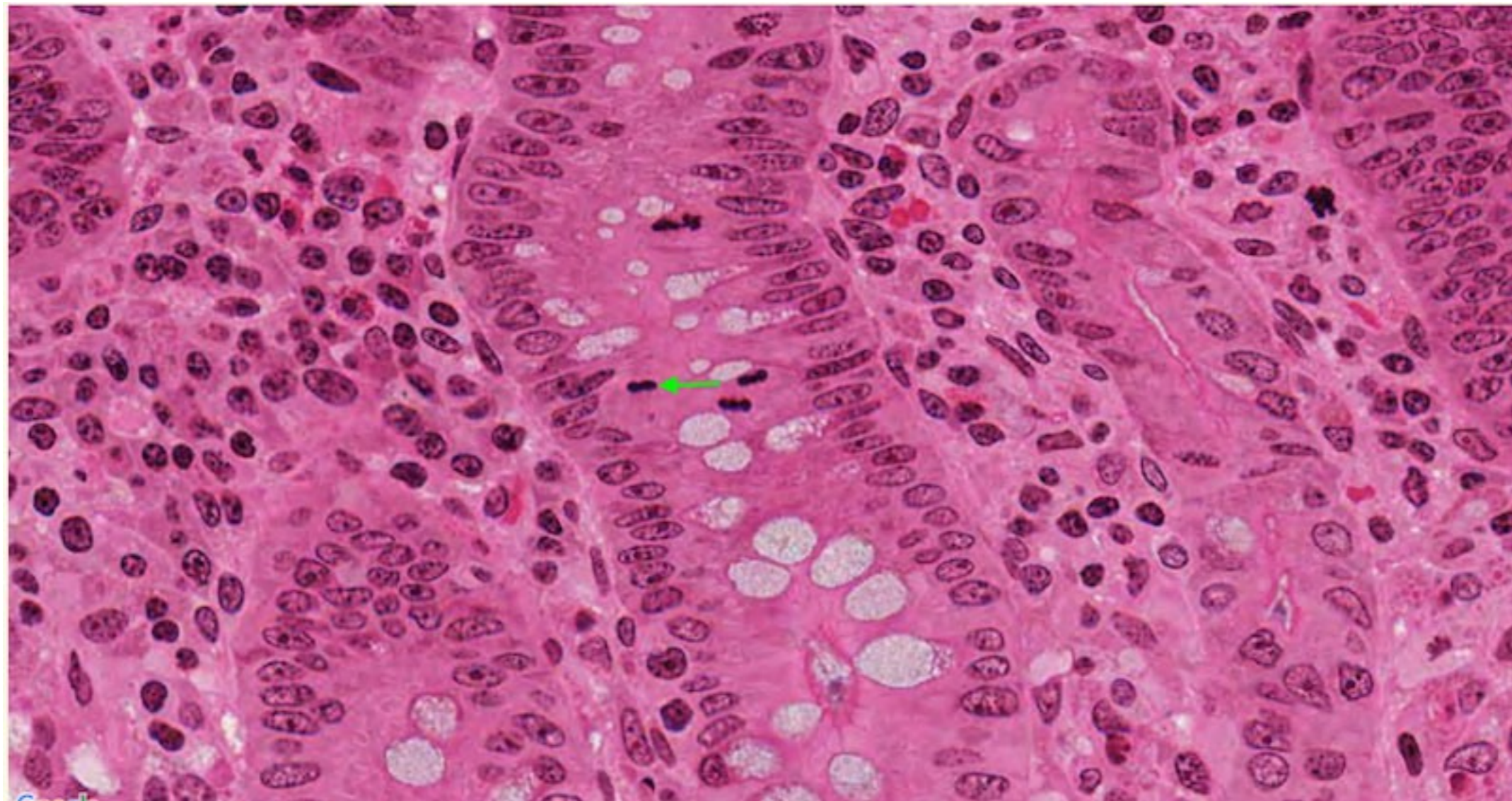
Readiness Assessment Questions

1. Identify the intracellular structure indicated by the arrow.

- Secretory granule

- Heterochromatin

- Nucleolus
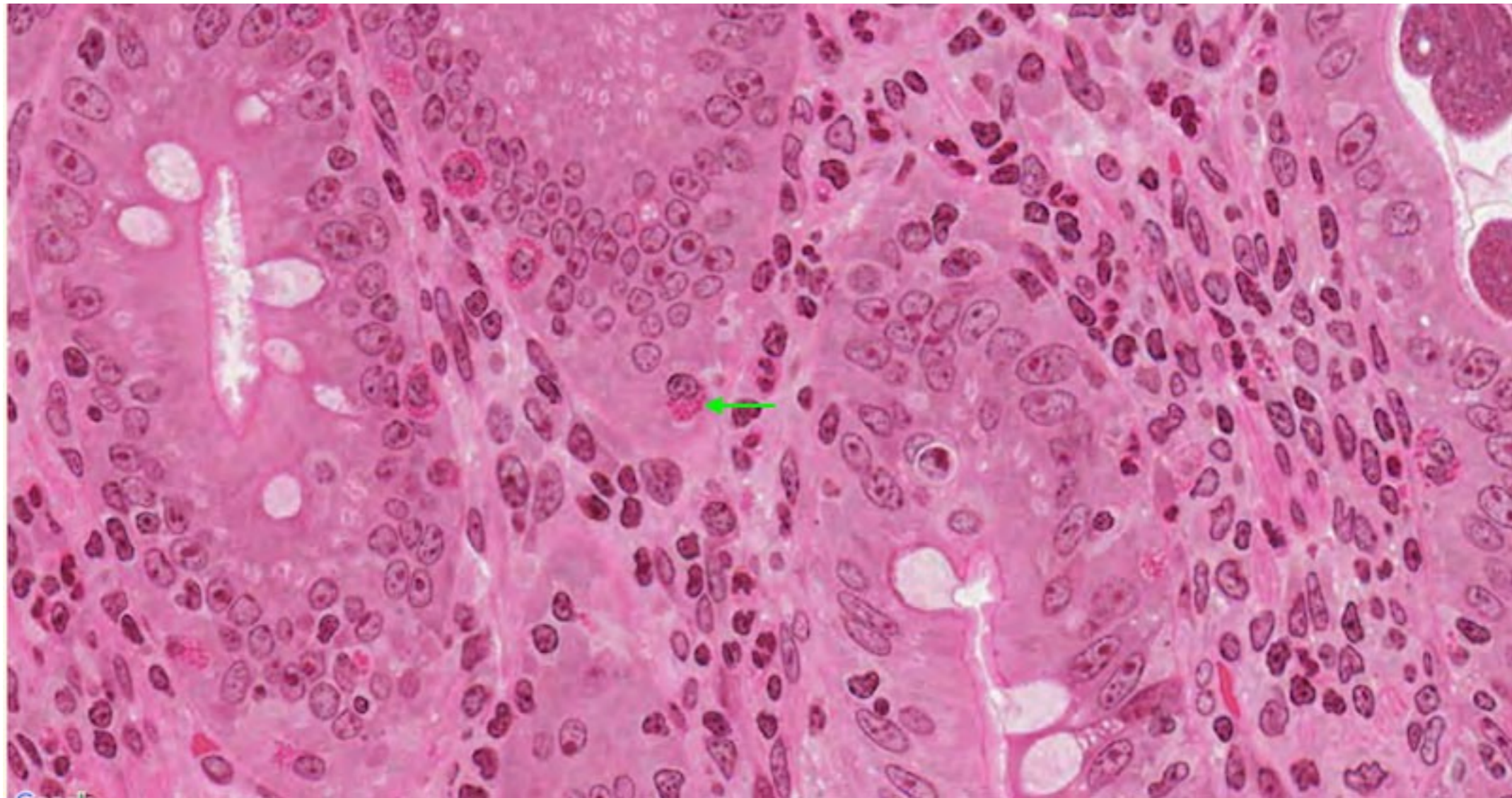
- Endoplasmic Reticulum

2. Which answer best explains what this structure signifies about the cell?

- Cell is dividing

- Cell is actively producing protein

- Cell secretes protein

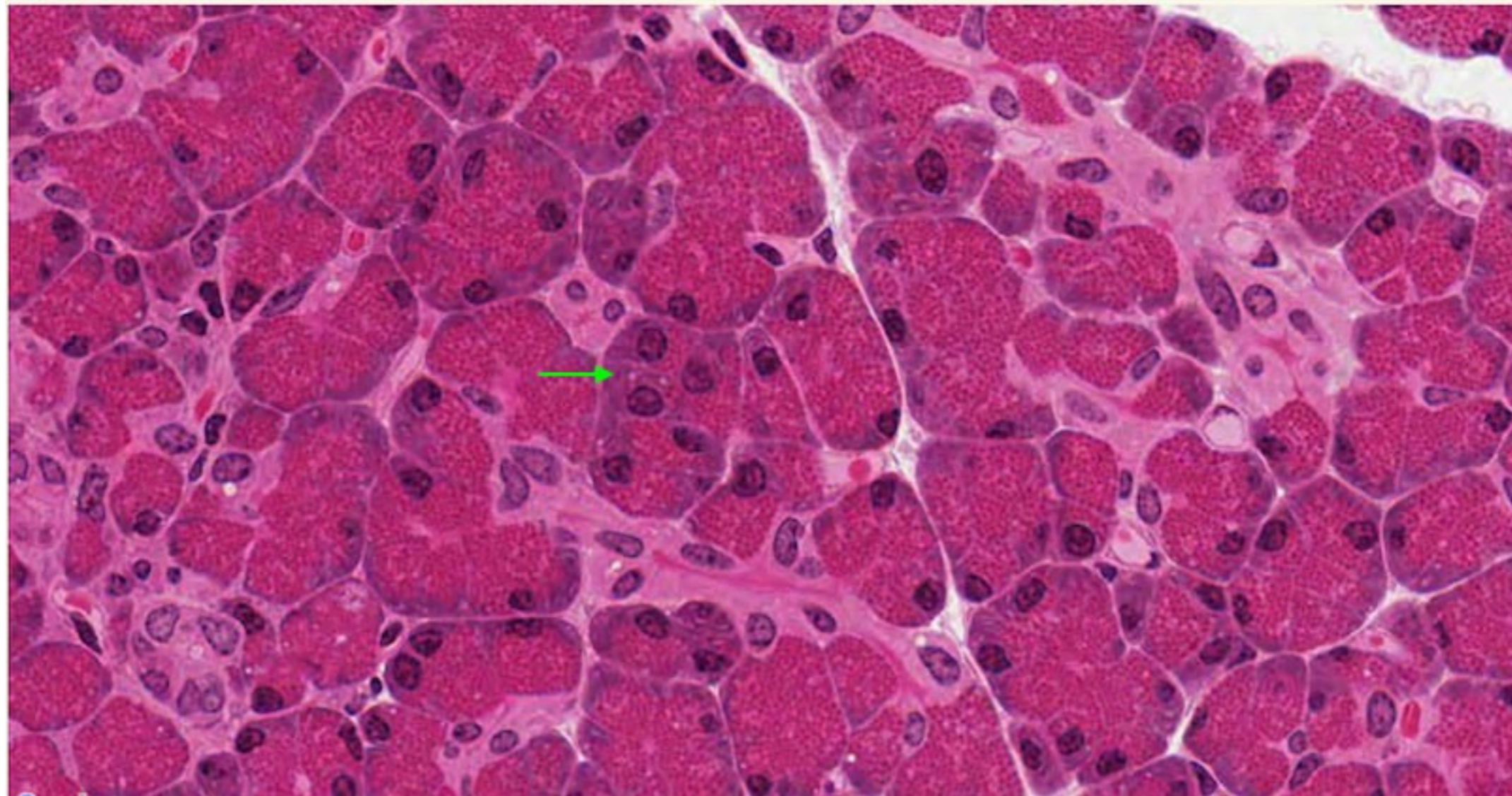- Genes in the cell are transcriptionally silent

3. Which answer best explains what this structure signifies about the cell.

- Cell is dividing

- Cell is actively producing protein

- Cell secretes protein

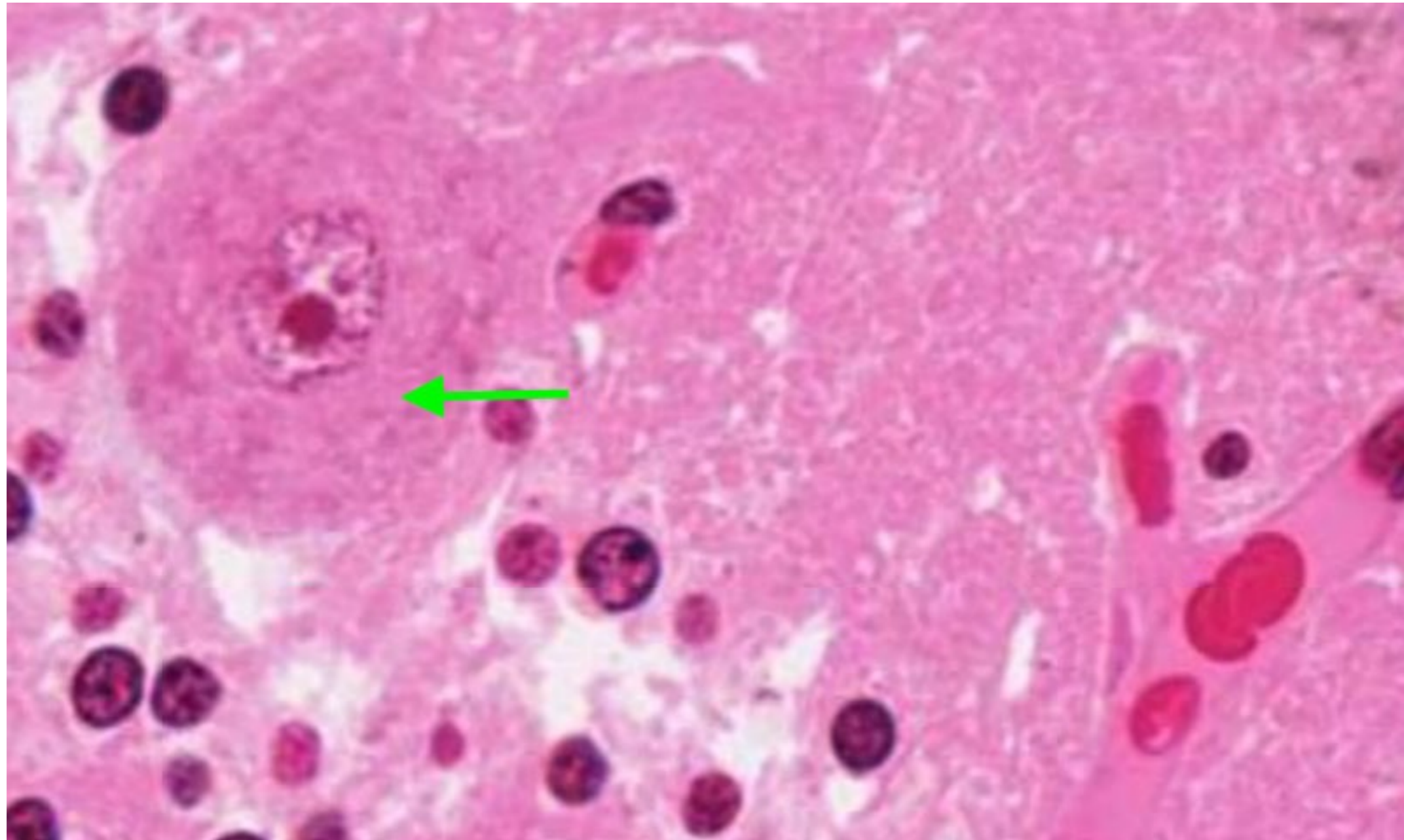- Genes in the cell are transcriptionally silent

4. Identify the structure indicate by the arrow.

- Golgi

- Microtubules

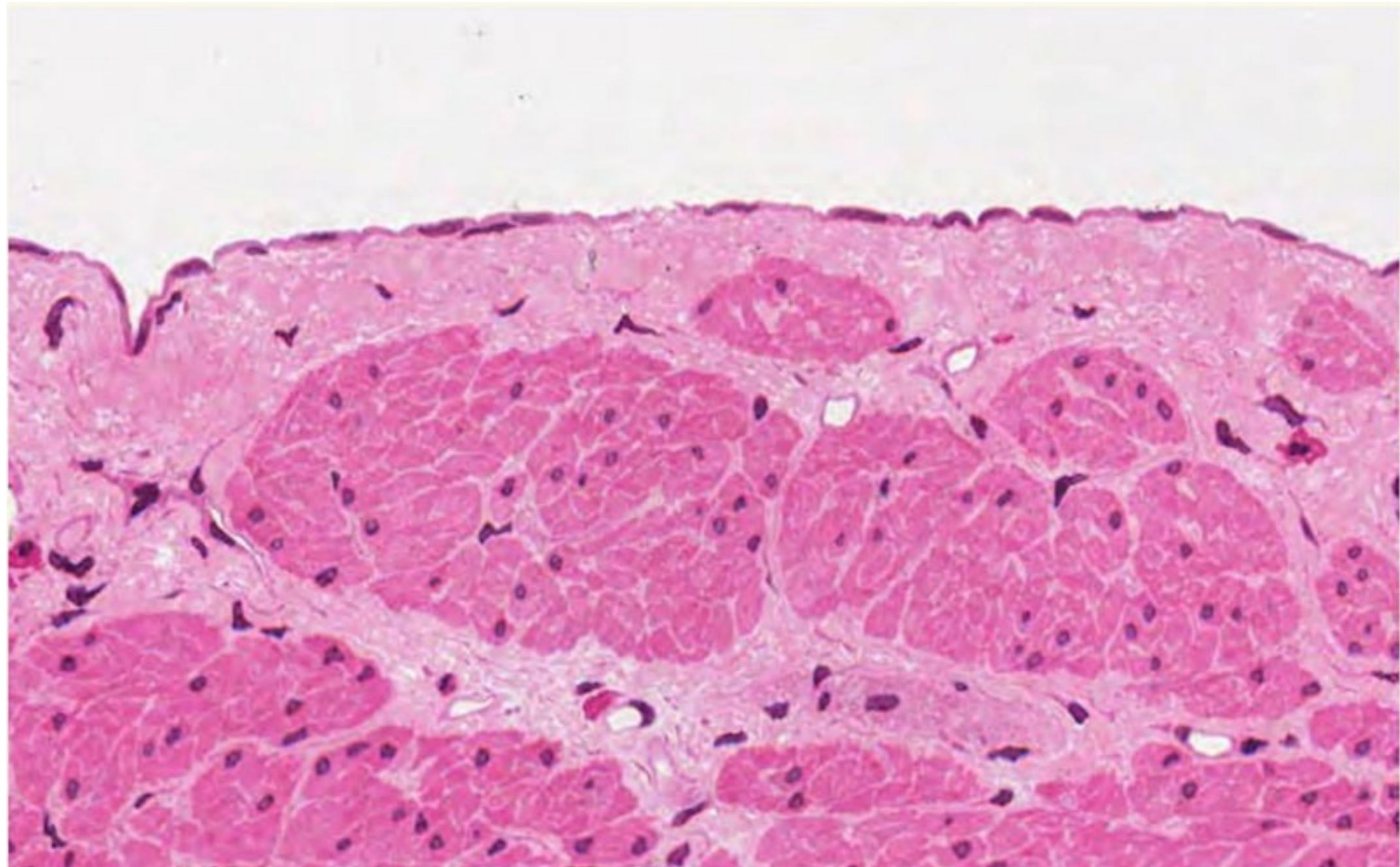- Nucleus

- Rough endoplasmic reticulum

5. The arrow indicates the cell body of a Purkinje neuron. Estimate the size of its nucleus.
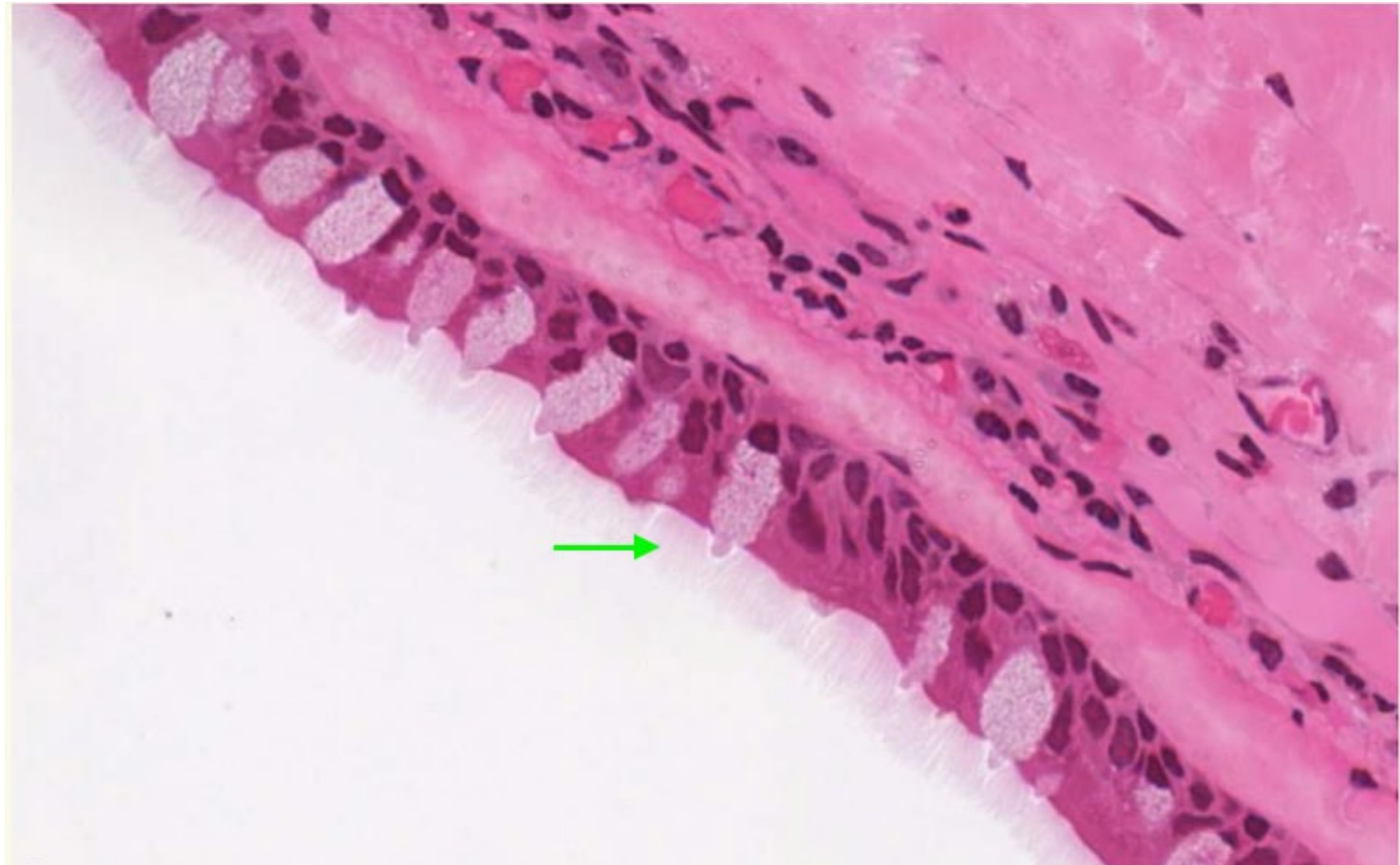
- 5 μm

- 15 μm

- 40 μm

- 100 μm

6. Classify the epithelium in the image below.

- Simple squamous

- Stratified squamous

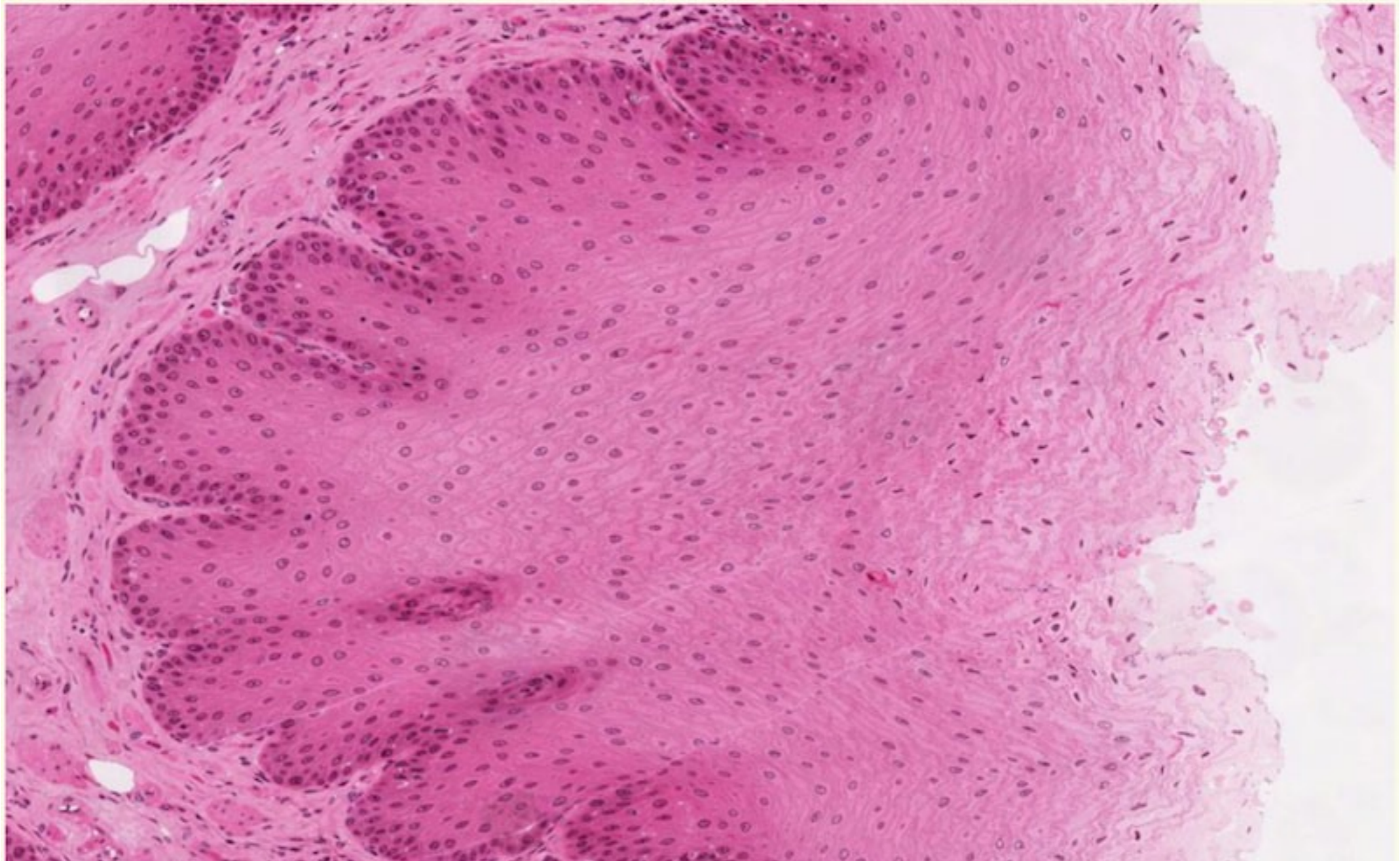- Simple cuboidal

- Pseudostratified

7. An antibody to which protein would label the indicated structure.

- Actin

- Microtubules

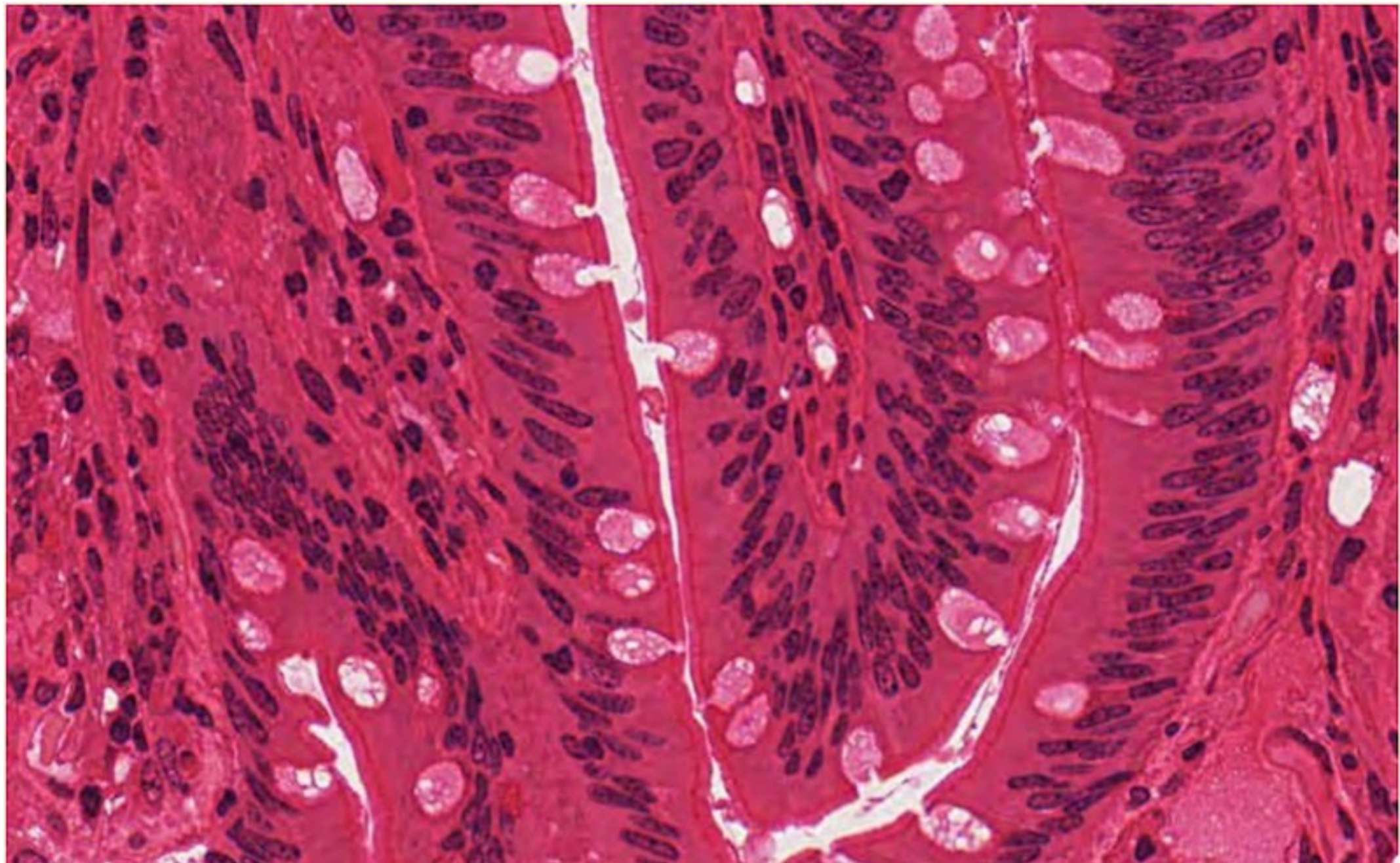- Intermediate filaments

- Cadherins

8. Classify the epithelium.

- Transitional
- Pseudostratified
- Stratified squamous
- Stratified cuboidal

9. The function of this epithelium is most likely which of the following?

- Mechanical protection

- Absorption of material

- Diffusion of gases
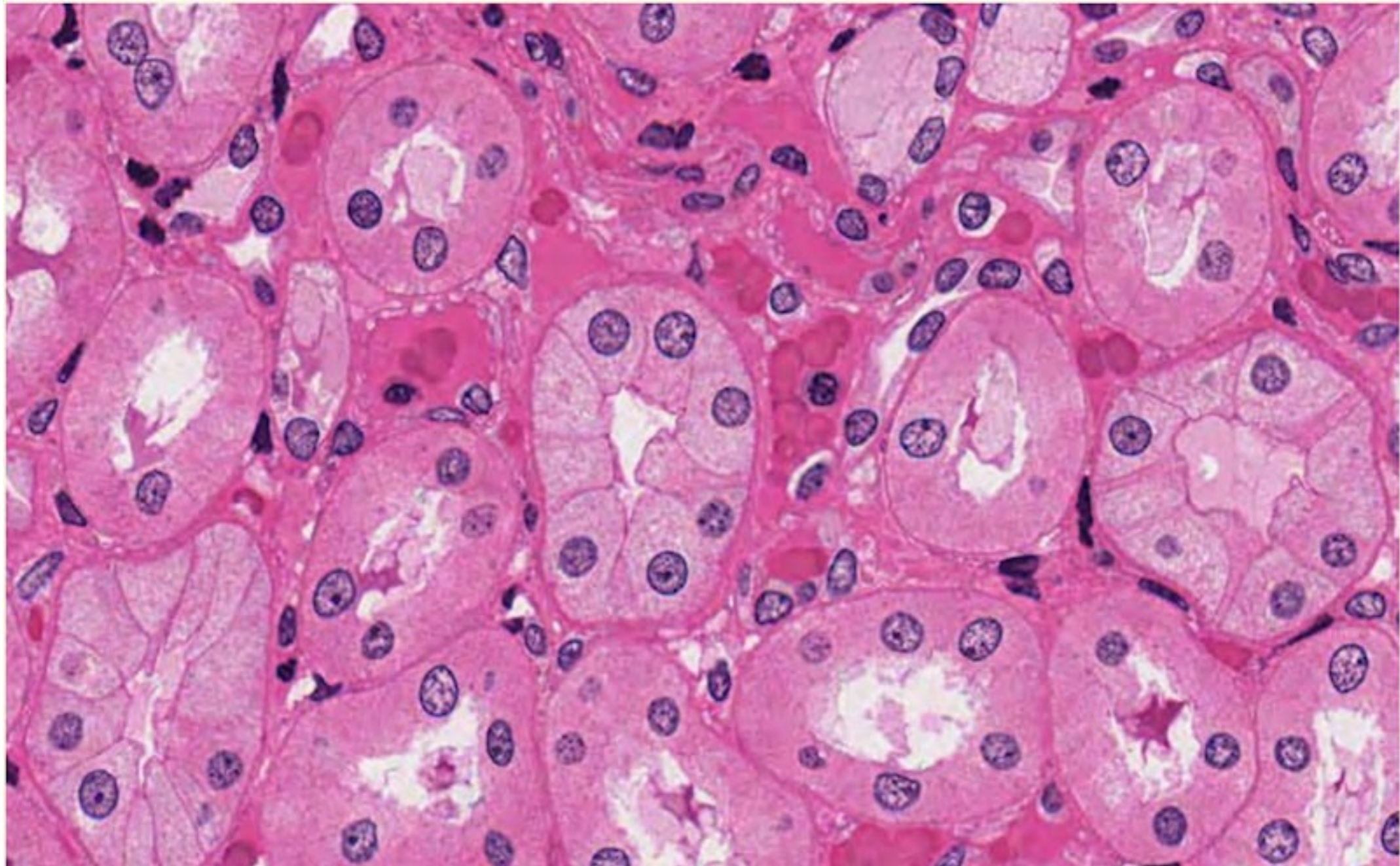
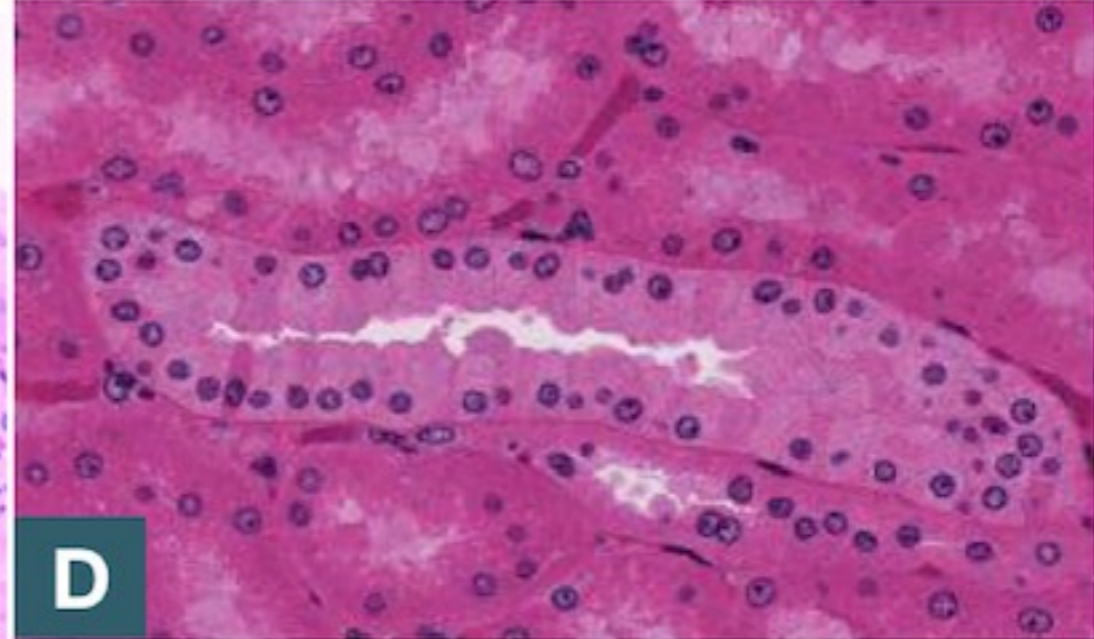- Accommodating changes in volume

10. Classify the epithelium

   Pseudostratified
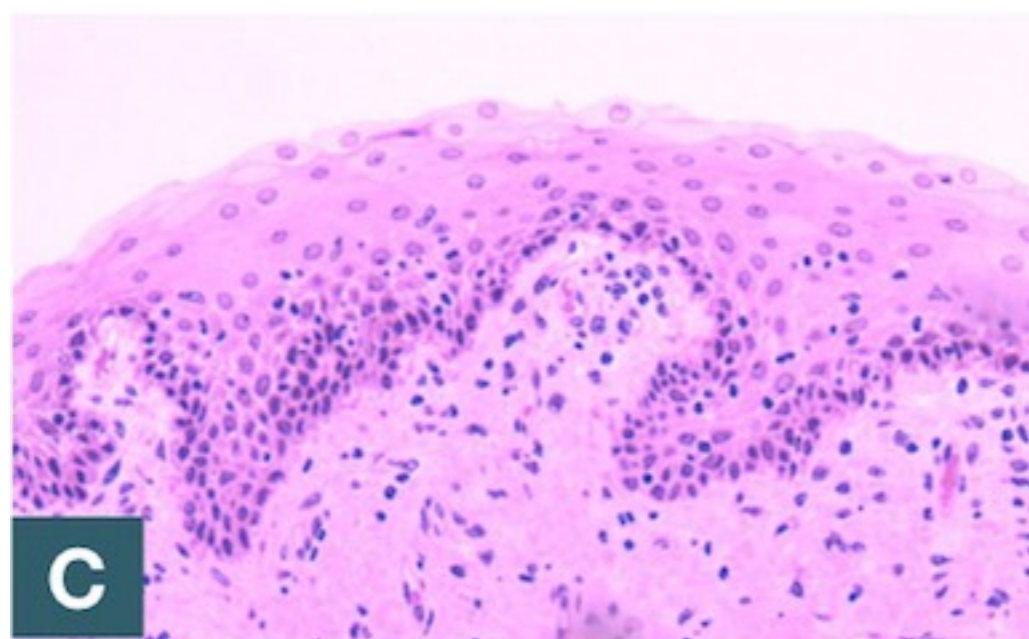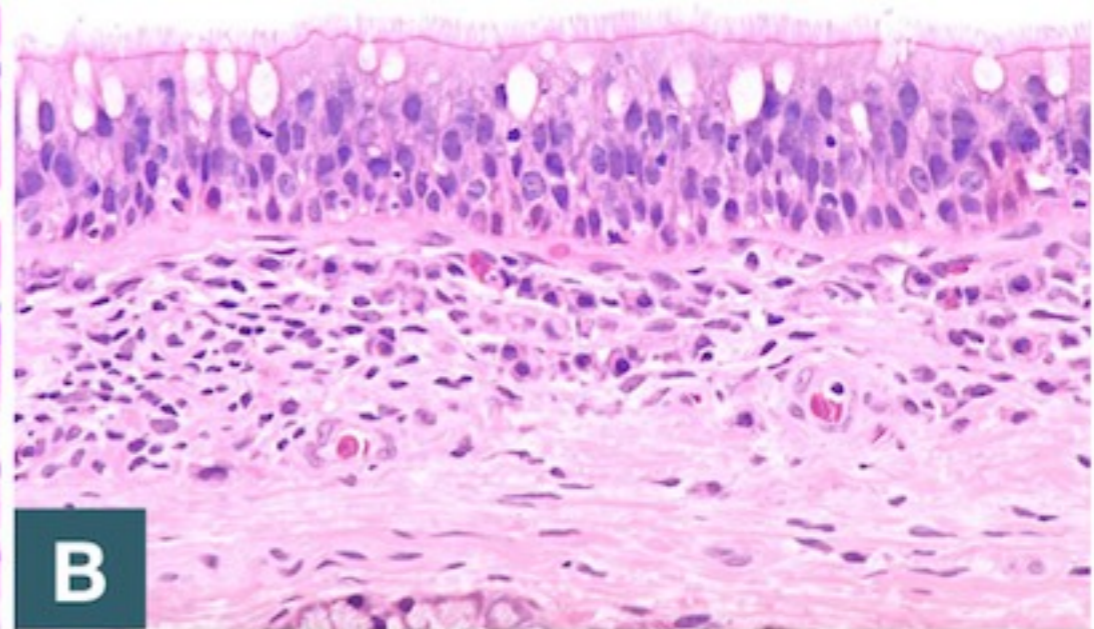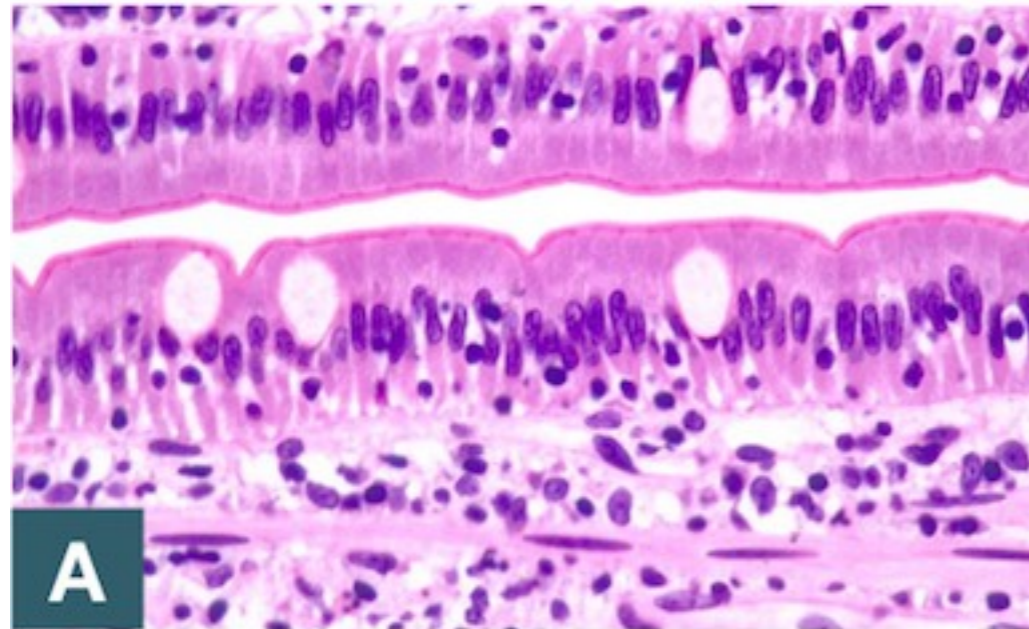
   Stratified cuboidal

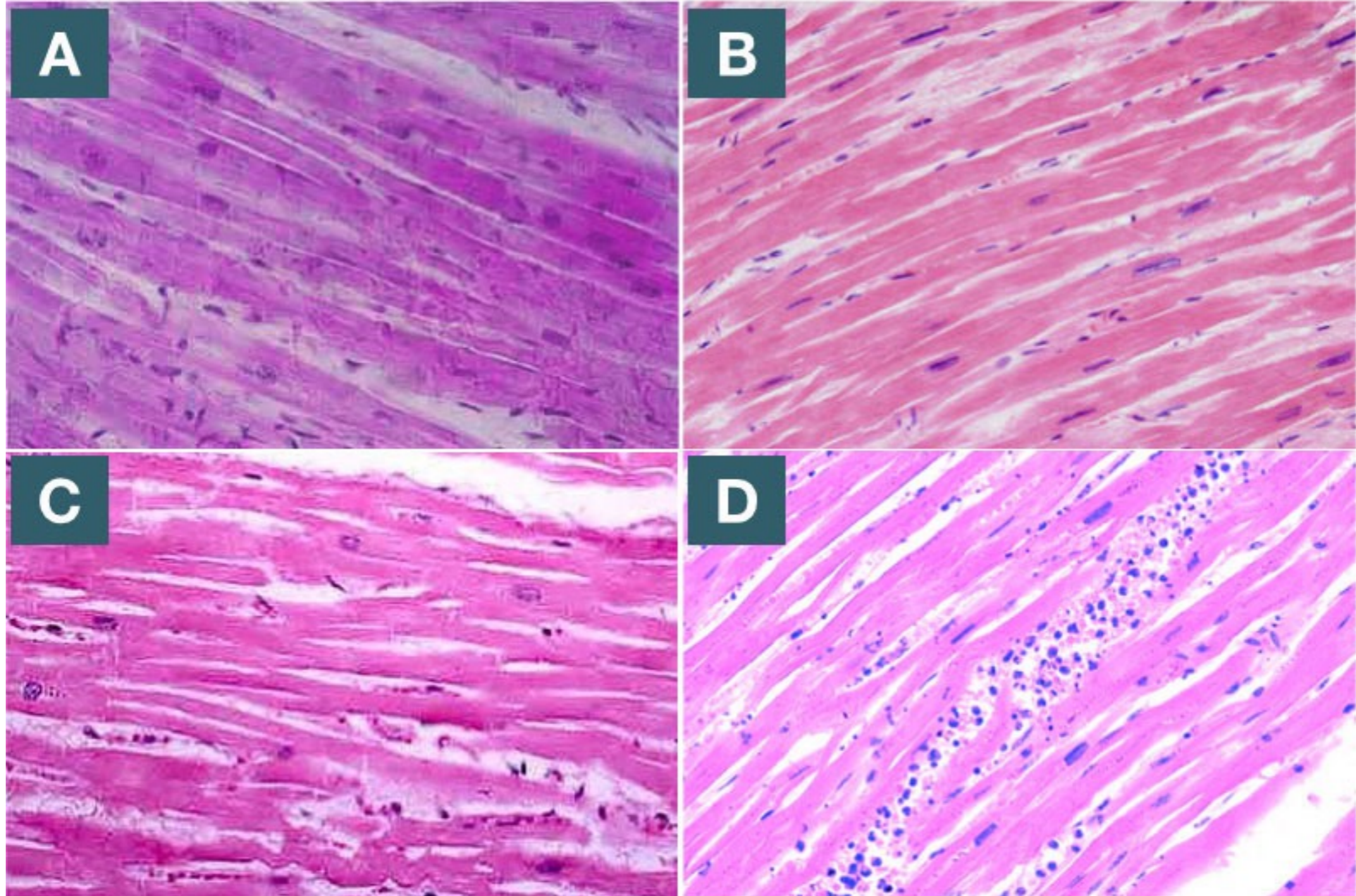   Simple squamous

   Simple cuboidal

Application Questions

1. After completing medical school, you decide to join the robotics team at Google to develop a humanoid robot. Given your medical background, you are tasked with developing a functional intestine for the robot. Your attempts result in four different samples shown below. Which one would you choose to show as a promising prototype?
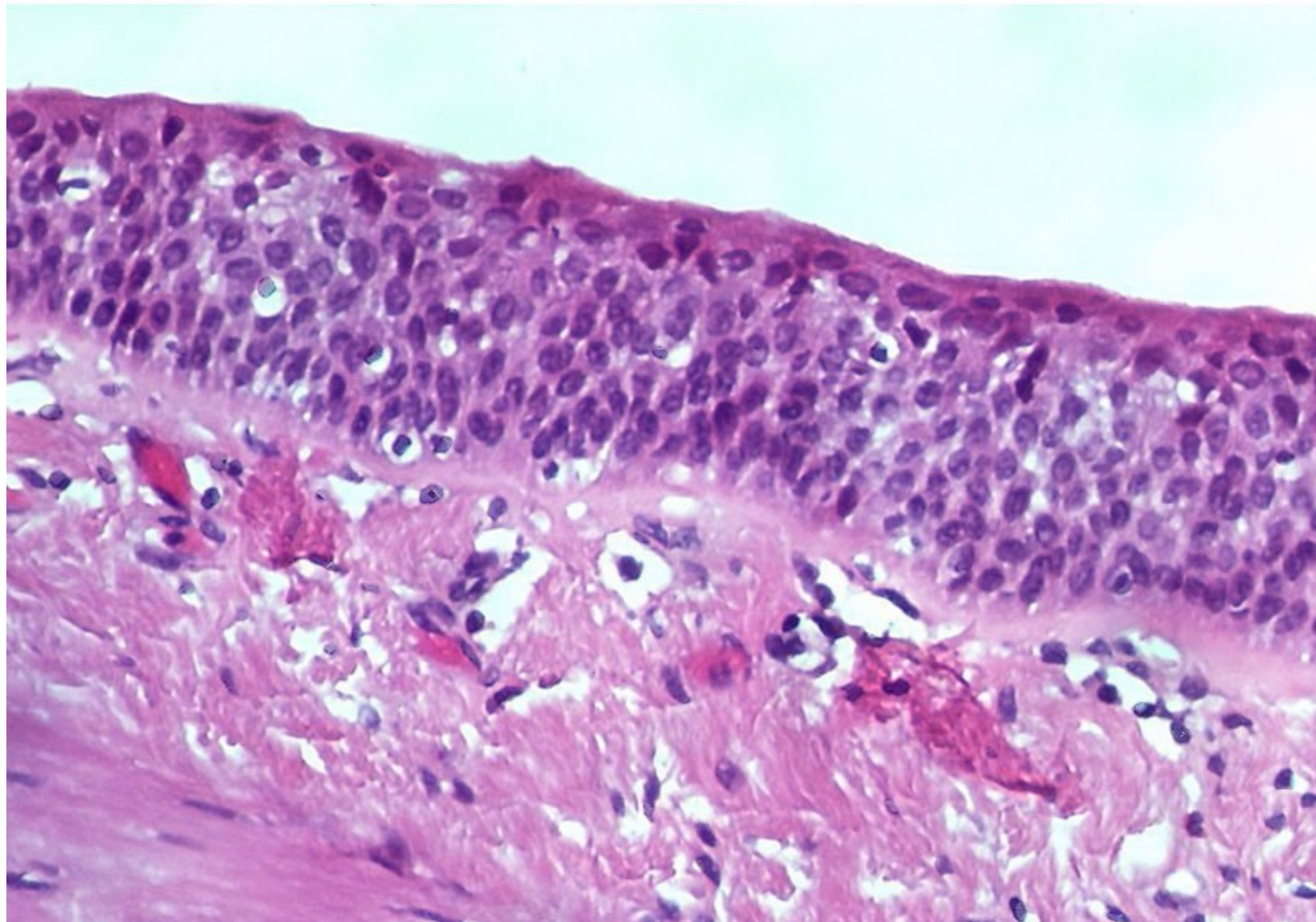
2. You are working with a pathologist who gives you four histological images of cardiac muscle from four different patients. Which patient would you tell the pathologist has a potential problem in their heart?

3. Hearing you are in medical school, your uncle, instead of sending money, asks for medical advice. He sends you an image of a biopsy from his lung and asks for your opinion. You consult your histology book and learn that lining of the airway is usually pseudostratified, simple cuboidal or simple squamous. You email your uncle and tell him which of the following?

- Looks fine to me

- I think this is a biopsy from your skin

- I told you smoking is harmful

- You have an infection in your lungs

Additional histology resource

- Old histology course