

# Fundus (histological preparation)

This article has been translated from WikiSkripta; the **formatting** needs to be checked.  
This article has been translated from WikiSkripta; ready for the **editor's review**.

The fundus of the stomach is the cranial and widest part of the stomach arched against the diaphragm and containing the air bubble from the food.

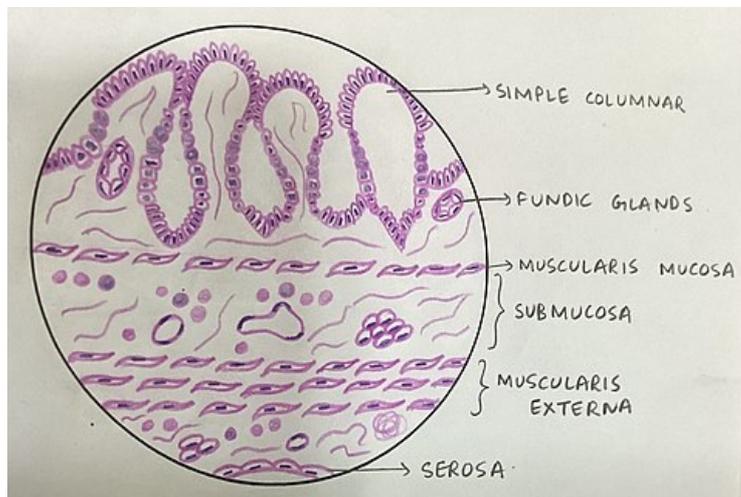
## Tunica mucosa

### Epithelium

The epithelium in the fundus of the stomach is **single-layered cylindrical** mucus-forming.

### Lamina propria mucosae

This part of the mucosa is filled with sparse collagen tissue, blood vessels and lymphatic infiltration. The surface of the mucous membrane is discontinuous, forming **foveolae gastricae** - pits that narrow and deepen to about 1/2 the height of the mucosa. The pits are followed by the glands of the fundus **glandulae gastricae** - long straight tubular glands (sometimes they can be branched). Glands have 3 parts: neck, body and base. The representation of cells is not uniform in the glands and **we distinguish several types of cells**.



drawing - fundus

### Cells of the stomach's gastric glands

#### Undifferentiated cells

Low cylindrical cells located in the neck area. Some differentiate and travel up to the surface of the mucosa to **replace the surface mucinous cells**. Others, on the other hand, descend below, where they differentiate and **maintain the population of glandular cells**.

#### Mucinous cells of the cervix

Cells of irregular shape with a nucleus located **at the base** and a number of mucus granules at the apical surface. Their mucus secretion differs from surface epithelial mucinous cells.

#### Covering (parietal) cells

They are cells of a spherical to pyramidal shape, larger compared to the surrounding cells. They occur mainly in the upper half of the gastric glands, there are fewer of them at the base. They have intensely eosinophilic cytoplasm due to the large content of Mitochondria. **They produce hydrochloric acid** and intrinsic factor needed for the absorption of Vitamin B12.

#### Chief (zymogen) cells

Cylindrical cells with a basally placed nucleus and basophilic cytoplasm due to the large number of Ribosomes. They predominate in the lower section of the tubular glands. They correspond to the characteristics of cells synthesizing and secreting proteins. The chief cells **produce the inactive enzyme pepsinogen**, which is activated to Pepsin by the acidic environment in the stomach. They also produce Lipase.

#### Enteroendocrine cells

They are cylindrical cells with a spherical nucleus and basophilic cytoplasm that are irregularly scattered among the epithelial cells. By producing hormones, they participate in managing the function of the digestive system and belong to the DNES (diffuse neuroendocrine system).

### Lamina muscularis mucosae

The muscular layer of the mucous membrane consists of bundles of smooth muscle cells.

## Tunica submucosa

The tunica submucosa is composed of sparse collagenous connective tissue, which contains blood and lymphatic vessels and contains nerve plexuses (plexus submucosus Meissneri)

## Tunica muscularis

In the tunica muscularis we find **three layers of muscle**:

- inner layer – oblique (fibrae obliquae)
- middle layer – circular (stratum circulare)
- outer layer – longitudinal (stratum longitudinale)

## Tunica serosa

Formed by a sparse collagenous tissue, which is covered on the surface by the mesothelium – a single-layered flat epithelium.

## Links

### Related Articles

- cardia (preparation)
- Pylorus (histological preparation)

## References

- MARTÍNEK, Jindřich a Zdeněk VACEK. Histological atlas. 1. ed. Prague: Grada, 2009, 134 pp. ISBN 978-80-247-2393-8.
- LÜLLMANN-RAUCH, Renate a Zdeněk VACEK. Histology. 1. czech ed. Translation by Radomír Čihák. Prague: Grada, 2012, xx, 556 spp. ISBN 978-80-247-3729-4.
- JUNQUEIRA, L., Robert KELLEY, and José CARNEIRO. Basics of histology. - issue. H+H, 1997. 502 pp. ISBN 9788085787375 .
- Presentation from the website of the Institute of Histology, 1st Faculty of Medicine.