

Microscopic Cellular Classification
Histology 06/024
LABORATORY DISCUSSION
of special Senses and Neurophysiology

Question
Describe the microanatomy of small and large intestine. Note you are expected to state the functions, segments, layers, general features, and epithelium of each part of the small and large intestine

The small intestine is the part of the gastrointestinal tract where much of the digestion and absorption of food takes place and part of the small intestine that are involved in this are

- Small Intestine (Whole)
- Duodenum
- Jejunum
- Ileum

Small Intestine

Function: Digestion and absorption of food.

Segment: part of the gastrointestinal tract that follows the stomach and in turn is followed by the large intestine

- Layer (A) Serosa: → a smooth membrane consisting of 2 thin layers of cells that secrete serous fluid.
- (B) thin layer of connective tissue
 - (C) the muscularis is a region of muscle adjacent to the submucosa membrane
 - (D) - smooth muscle: circular and longitudinal
 - (E) - submucosa is the layer of dense irregular connective tissue or loose connective tissue that supports the mucosa; it also joins the mucosa to the bulk of underlying smooth muscle
 - (F) - mucosa: the innermost tissue layer of the small intestine and is a mucous membrane that secretes digestive enzymes and hormones. Intestinal cells are part of the mucosa

Duodenum: first section of the small intestine and the shortest part of the small intestine
function: this is where most chemical digestion using enzymes take place

Jejunum: middle section of small intestine
function: Absorb carbohydrates and proteins.

Caer! Mucous membrane is covered in projections called villi; this increases the surface area of tissue the villi is lined by epithelial cells and transportation of nutrients take place by the epithelial cells of the (villi) mucosa

Ileum: The final section of the small intestine
function: Absorption of Vitamin B12, Bile salt and products of digestion that were not absorbed by the Jejunum.

The three sections of the small intestine look similar to each other at a microscopic level but the difference between (Jejunum and Ileum) is they do not have Brunner's glands in the submucosa while the Ileum has Peyer patches in the mucosa but Jejunum and Jejunum do not

Large Intestine: The terminal part of the alimentary canal, the function: finishes absorption of nutrients and water, synthesize certain vitamins, form feces and eliminate feces from the body.

Segment → Cecum, Colon, rectum, anus.

Cecum: a sac-like structure that is suspended inferior to the

terminal valve. (located at the opening between the ileum and the large intestine)

• About 6 cm (2.4 in) long

- function: receives content of the ileum and continues the absorption of water and salt.

- attach to the caecum is the appendix.

Colon: this portion blends seamlessly with the caecum.

- function: food residue first travel up the ascending colon on the right side of the abdomen.

Rectum: located in the pelvis near the third sacral vertebra.

- function: food residue leaving the sigmoid colon enters the rectum

• Anus: last part of the large intestine located in the perineum

• 3.8 - 5 cm (1.5 - 2 in) long structure,

• include two sphincter (→ internal anal sphincter) and (external anal sphincter)

• internal anal sphincter → made of smooth muscle and contraction are involuntary.

• external anal sphincter → made of skeletal muscle and contraction are voluntary except when defecating but usually remain closed

Feature of Intestine (Large Intestine)

1. the wall of the large intestine few enzyme-secreting cells are found there

2. No circular fold or villi

3. the wall of large intestine has few more intestinal gland which contain a vast population of enterocytes and goblet cells. the goblet cell secrete mucus that ease the movement of feces and protect the intestine from the effect of the acid and

- gases

produced

by

the carbon bacteria

3.28