

Liver

1.Stroma

- a.Capsule:** Glisson's Capsule.
- b.Septa** (absent in human) & Portal areas (Portal tracts).
- c.Network of reticular fibers.**

2.Hepatic lobules

Formed of a polygonal mass of liver tissue,
With portal areas at the periphery &
Central (centrolobular) vein in the center.

Hepatocytes

Are grouped in interconnected plates.
Liver sinusoids are located in the spaces between these plates.
Are polyhedral in shape.
Nucleus: 1 or 2, vesicular nucleoli.
Cytoplasm: acidophilic.

Organelles:

- 1- Mitochondria
- 2- ER (sER & rER): abundant.
- 3- Golgi complex.
- 4- Lysosomes.
- 5- Peroxisomes.

Inclusions (Deposits):

- 1- Glycogen.
- 2- Lipid.
- 3- Lipofuscin (old age).

Content

- a.Anastomosing plates** of hepatocytes.
- b.Liver sinusoids** (hepatic blood sinusoids): In between the plates.
- c.Spaces of Disse** (perisinusoidal spaces of Disse).
- d.Central vein.**
- e.Bile canaliculi.**

Borders

- 1.Septa: C.T. septa** (e.g. in pigs).
- 2.Portal areas (Portal tracts):** Are located in the corners of the classic hepatic lobule (usually 3 in No.).
- Contents of portal area:**
 - a.C.T.**
 - b.Bile ducts** (interlobular bile ducts).
 - c.Venule** (Branch of portal vein).
 - d.Arteriole** (Branch of hepatic artery).

Liver sinusoids

1) Endothelial cells:

Fenestrated & discontinuous → Free passage of plasma.
Basal lamina is absent.

2) Kupffer cells:

Are macrophages.
Are found on the luminal.
Surface of the endothelial cells.

Space of disse

Contents:

- 1- Fat-storing cells (Ito cells): contain vitamin A-rich lipid. form reticulin.
- 2- Reticular fibers (type III collagen).
- 3- Plasma of blood.
- 4- Microvilli of hepatocytes.

Spleen

Stroma of spleen

- 1- Capsule:** is covered by visceral layer of peritoneum; mesothelium.
occasionally contains SMCs
- 2- Trabeculae:** irregular.
- 3- Reticular C.T.**

Parenchyma of spleen

(A) White pulp:

- 1.Periarterial lymphatic sheaths:** housing T lymphocytes.
- 2.Lymphoid nodules:** (with germinal centers): housing B lymphocytes.
- N.B.** Both ISZ have the acentrically located central artery (central arteriole).

(B) Red pulp:

1.Pulp (splenic) cords:

Extravasated blood cells, plasma cells,
Macrophages & reticular cells and fibers.

2.Blood sinusoids:

Are lined with elongated fusiform endothelial cells with large intercellular spaces & supported by discontinuous, circular basement membrane.

Pancreas

1.Stroma:

capsule, septa & reticular fibers.

2.Pancreatic acini:

Acini with centroacinar cells, No myoepithelial cells.

3.Duct system:

Centroacinar cells, intercalated ducts (low cuboidal), intralobular ducts (are NOT prominent), interlobular ducts, N.B. No striated ducts.

Acinar cells

They are **pyramidal** cells characterized by:
The apical cytoplasm (**acidophilic**) is rich in zymogenic granules.

The **basal** cytoplasm is rich in RER, so it is **basophilic**.