

Preliminary Report:

ULTRASTRUCTURE OF THE BOVINE LIVER SINUSOID WITH SPECIAL REFERENCE TO ITO'S, FAT STORING CELLS OR LIPOCYTES

Reporte Preliminar:

Ultraestructura del sinusoides hepático del bovino con referencia especial a las células de Ito, células almacenadoras de grasa o lipocitos

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Our studies confirmed the ultrastructure of the bovine liver sinusoid reported by Wood [3, 4]: an endothelial and Kupffer cell lining, a prominent basal lamina, and the space of Disse where the hepatic cell microvilli, collagen fibrils, and perisinusoidal cells are observed.

These cells were ovoid or fusiform, with large ovoid or fusiform nuclei with a moderate amount of heterochromatin and small nucleoli. The cytoplasm was moderately abundant, containing

few mitochondria, scant rough endoplasmic reticulum, abundant peripheral microtubules, free ribosomes, few glycogen granules

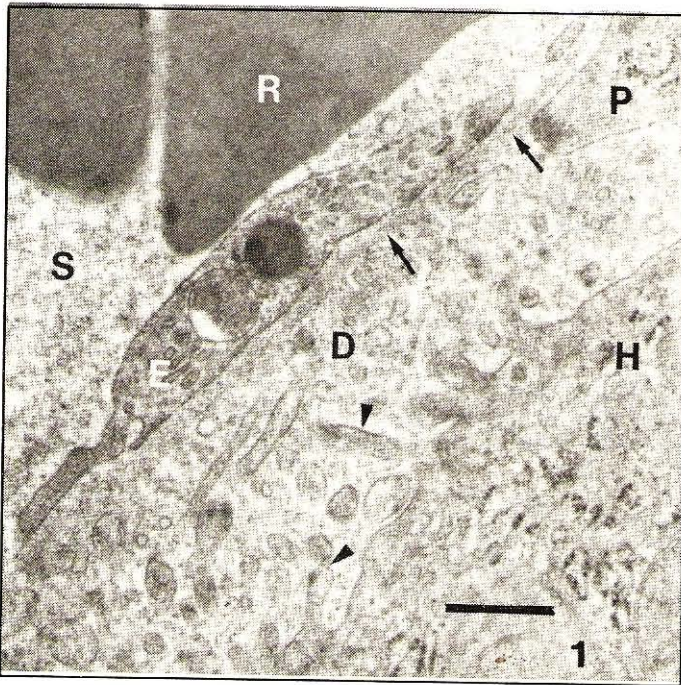


Fig. 1. Normal bovine liver sinusoid (S) showing the endothelial cell lining (E), the basement membrane (arrows), and the space of Disse (D) where microvilli (arrowheads) of a hepatocyte (H) and part of a perisinusoidal cell (P) are observed. A red blood cell (R) is observed at the lumen of the sinusoid. Bar = 0.5 μ m.

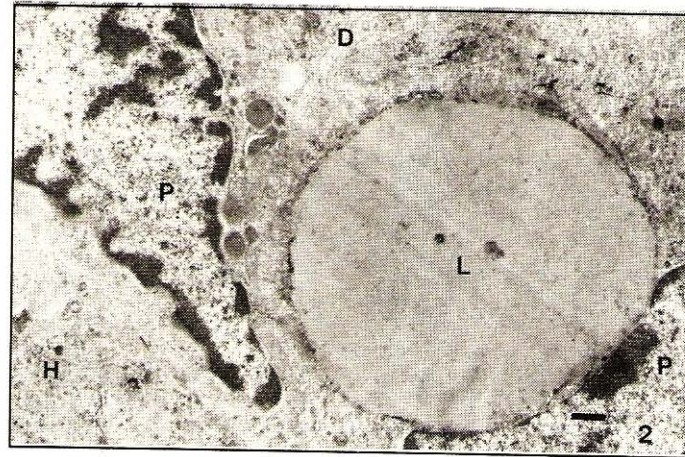


Fig. 2. Observe two perisinusoidal Ito's cells (P) located at Disse's space (D). One Ito's cell shows a lipid droplet (L). Part of a hepatocyte (H) is also observed. Bar = 0.5 μ m.

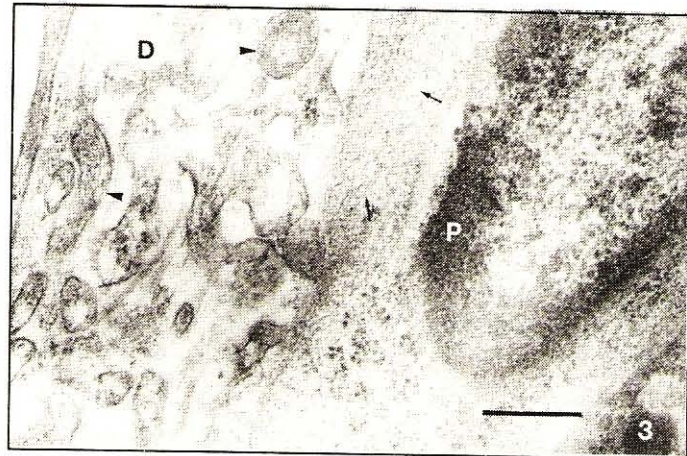


Fig. 3. Detail of a perisinusoidal Ito's cell (P) showing abundant peripheral microtubules (arrows). Microvilli (arrowheads) from nearby hepatocytes are observed at Disse's space (D). Bar = 0.5 μ m.

and, the most important feature of these cells, the presence of a large lipid droplet, round or ovoid, of variable electron density, free, non-coated by cellular membranes; this lipid droplet displaced the nucleus of the cell, causing its deformity. Cell limits were readily discernible and specialized junctions to adjacent hepatocytes were not observed.

This type of cell corresponds to the perisinusoidal cells described in man by Ito and others [1], in the rabbit by Yamagishi [5], and by Kawanami [2], in the bull and goat liver sinusoid.

The function of Ito's cell is unknown, but, due to its location beneath the basal lamina and their abundant microtubules content, they presumably function as a supportive cell for the sinusoidal wall. Their role in the formation of collagen fibrils and the basal lamina have been suggested [2, 4], however, we could not find morphologic evidences to support this theory.

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