

## **History and Functions of Quiescent Hepatic Stellate Cell**

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In 1876, von Kupffer described liver Sternzellen (star-shaped cells). The functions of these cells remained enigmatic for 75 years until Ito observed lipid-containing perisinusoidal cells in human liver. In 1971, Wake demonstrated that the Sternzellen of von Kupffer and the fat-storing cells described by Ito were identical. Wake also established that these cells were important sites of vitamin A storage. Soon thereafter, Kent and Popper demonstrated that the stellate cells were intimately linked to the pathogenesis of hepatic fibrosis. Since then, these cells have been studied in detail. Quiescent stellate cells represent 5-8% of the total number of liver cells. They play a cardinal role in storage and controlled release of retinoids. They control extracellular matrix (ECM) turnover in the space of Disse by secreting the correct amounts of a limited number of ECM molecules, and by releasing matrix metalloproteinases and their inhibitors. By virtue of their long cytoplasmic processes, quiescent stellate cells presumably contribute to the control of blood flow through the sinusoidal capillaries. They are important sources of paracrine, autocrine, juxtacrine, and chemoattractant factors that maintain homeostasis in the microenvironment of the hepatic sinusoid.

**Keywords:** Liver - hepatic stellate cells - extrahepatic stellate cells - vitamin A - extracellular matrix - sinusoidal blood flow - intercellular communication - fibrosis - cirrhosis - portal hypertension - liver cancer