

The liver, the largest internal organ in the human body, is located in the upper right quadrant of the abdomen beneath the diaphragm. It is a reddish-brown organ with two primary lobes, the larger right lobe and the smaller left lobe, separated by the falciform ligament. Structurally, the liver is composed of thousands of microscopic functional units called lobules, which consist of hepatocytes (liver cells) arranged around a central vein. These lobules are interconnected by a network of blood vessels, bile ducts, and connective tissue, allowing the liver to perform its vital roles efficiently.

The liver receives a dual blood supply: oxygenated blood from the hepatic artery and nutrient-rich blood from the portal vein, which carries substances absorbed from the gastrointestinal tract. This dual supply is essential for the liver's diverse functions, including metabolism, detoxification, and bile production. The bile produced by hepatocytes is collected in small ducts that merge to form the common bile duct, which delivers it to the gallbladder and intestines. The liver also serves as a storage site for glycogen, vitamins, and minerals and plays a critical role in regulating blood clotting factors and the breakdown of red blood cells. This multifaceted organ is indispensable for maintaining homeostasis.