

[Open Peer Review on Qeios](#)

Ledipasvir/Sofosbuvir

National Cancer Institute

Source

National Cancer Institute. *Ledipasvir/Sofosbuvir*. NCI Thesaurus. Code C153378.

A tablet containing a fixed dose combination of ledipasvir, an inhibitor of the hepatitis C virus (HCV) non-structural protein 5A (NS5A) replication complex, and the prodrug sofosbuvir, an inhibitor of HCV NS5B polymerase, with activity against HCV. Upon oral administration of ledipasvir/sofosbuvir and intracellular uptake, ledipasvir binds to and blocks the activity of the NS5A protein. This results in the disruption of the viral RNA replication complex, blockage of HCV RNA production, and inhibition of viral replication. Sofosbuvir is converted to its active triphosphate form, and competes with uridine triphosphate for incorporation into RNA, thereby inhibiting NS5B polymerase and preventing viral replication. This may eradicate HCV and prevent HCV-mediated tumorigenesis. NS5A, a zinc-binding and proline-rich hydrophilic phosphoprotein, plays a crucial role in HCV RNA replication. The HCV NS5B protein, an RNA-dependent RNA polymerase, is essential for the replication of the viral HCV RNA genome. HCV is a small, enveloped, single-stranded RNA virus belonging to the Flaviviridae family; HCV infection is associated with the development of certain tumors.