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The role of HBV-induced autophagy in HBV replication and HBV related-HCC

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Abstract

Hepatitis B virus (HBV) is infecting about 364 million people around the world. It can cause various diseases, such as chronic hepatitis, liver cirrhosis, and hepatocellular carcinoma (HCC). However, the present anti-viral treatment in clinics is limited; studies for new therapies are highly desired. Autophagy is a crucial and major catabolic process in the maintenance of normal intracellular homeostasis in host cells. Host cells use this unique process to degrade and recycle long-lived proteins, damaged organelles, and various pathogens for keeping the normal physiological functions. Recently, published studies indicated that HBV can induce autophagy in host cells; this autophagic response is involved in viral replication and pathogenesis. Several viral proteins, such as surface and X proteins, are assumed to be responsible for inducing autophagy in HBV infection. This review briefly summarizes some important mechanisms involved in HBV-induced autophagy and provides a novel perspective on therapies of HBV infection and HBV-related HCC.

Key words: HBV; autophagy; surface proteins; X proteins; viral replication; hepatocellular carcinoma.