In vitro antiviral activity of lutein against hepatitis B virus.


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Abstract

Despite the availability of an effective vaccine, the hepatitis B virus (HBV) infection and its treatment remains one of the foremost public health problems in the world. The present study was performed in order to investigate the anti-HBV activity of lutein in vitro. The antiviral activity of lutein was examined by detecting the levels of HBsAg, HBeAg and extracellular HBV DNA in stable HBV-producing human hepatoblastoma HepG2 2.2.15 cells. It was found that lutein effectively suppressed the secretion of HBsAg from HepG2 2.2.15 cells in a dose-dependent manner, and it also suppressed the amount of extracellular HBV DNA. A luciferase reporter gene assay was used to determine the effects of lutein on the activities of HBV promoters. The results showed that lutein inhibited the activity of HBV full-length promoter (Fp). These data indicate that lutein possesses an anti-HBV activity and exerts its antivirus effects via inhibition of HBV transcription.

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