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The Effect of Wogonin Isolated from Skullcap Flowers in Hepatitis-B Treatment

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ABSTRACT

Background: Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV) that affects the liver, it is a type of viral hepatitis. It can cause both acute and chronic infection. Many people have no symptoms during the initial infection. In acute infection, some may develop a rapid onset of sickness with vomiting, yellowish skin, tiredness, dark urine and abdominal pain. Often these symptoms last a few weeks and rarely does the initial infection result in death. About a third of the world population has been infected at one point in their lives. Over 750,000 people die of hepatitis B each year.

Methods: Scutellaria radix has been used for thousands of years, mainly for the treatment of inflammatory conditions including hepatitis B. The major active constituent, Wogonin (WG), isolated from *S. radix* has attracted increasing scientific attention in recent years due to its effective biological activities. Wogonin is a type of flavonoid, effectively inhibiting the HBV antigen secretion with an IC₅₀ value of 4 mg/mL for both HBsAg and HBeAg and also reduced HBV DNA level in hepG2 cells. By using an HBV-producing cell line in vitro culture system, it is found that wogonin can suppress HBV surface antigen production without any trace of cytotoxicity.

Results: An assay of endogenous HBV DNA polymerase activity shows that both the relaxed circular and the linear forms of HBV DNA are significantly reduced in the wogonin-treated group. DHBV DNA polymerase was clearly suppressed by wogonin with an IC₅₀ value of 0.57 mg/mL. In ducks with DHBV infection, wogonin decreased the plasma level of DHBV DNA with a 50% effective dose (ED₅₀) of 5 mg/kg. In human HBV-transgenic mice, wogonin significantly reduced plasma HBsAg level. Immunohistological staining of the liver confirmed the HBsAg reduction by wogonin.

Conclusion: The results establish that wogonin possesses potent anti-HBV activity both in vitro and in vivo. Wogonin is under primary development as an anti-HBV drug candidate at present. This paper review aims to study the efficacy of wogonin in the treatment of Hepatitis B.



Aims & Scope

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