Albendazol pode ser útil no carcinoma hepatocelular: inhibição da proliferação cellular

In vitro and in vivo suppression of growth of hepatocellular carcinoma cells by albendazole.


Source
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Abstract

Tubulin protein is a major target of drug molecules, and consequently, tubulin inhibitors have attracted great attention as antimitotic antitumor agents for chemotherapeutic use. It has been shown that, the benzimidazole carbamate group of antiparasitics including albendazole act by inhibiting tubulin polymerization. In this study, albendazole was tested in culture against a range of human, rat and mice hepatocellular carcinoma (HCC) cells and in vivo against human SKHEP-1 tumor growth in nude mice. Albendazole induced a dose-dependent inhibition of 

[3]H\text{thymidine incorporation in all cell lines examined and a dramatic decline in cell numbers in SKHEP-1 cells. The inhibitory effect of albendazole was evident at the 100 nM concentration and at 1000 nM, proliferation in all cell lines examined was inhibited by more than 80%, while, proliferation of HepG2, Hep3B and SKHEP-1 were suppressed by more than 90%, compared to control. Cell cycle analysis revealed that, depending on the dose employed, albendazole can arrest SKHEP-1 cells at both G0-G1 (250 nM) and G2-M (1000 nM) phases of the cycle. Albendazole treatment (300 mg/kg per day oral for 20 days) of nude mice inoculated subcutaneously with SKHEP-1, led to profound suppression of tumor growth. Immunohistochemical analysis of these tumors revealed that compared to control, those treated with albendazole have lower growth fractions. These findings demonstrate that albendazole strongly suppresses both in vitro and in vivo proliferation of HCC cells.

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