Ácido betulínico seria eficaz contra o câncer e o vírus HIV (AIDS)

Chemistry, biological activity, and chemotherapeutic potential of betulinic acid for the prevention and treatment of cancer and HIV infection.

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Source

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Abstract

3beta-Hydroxy-lup-20(29)-en-28-oic acid (betulinic acid) is a pentacyclic lupane-type triterpene that is widely distributed throughout the plant kingdom. A variety of biological activities have been ascribed to betulinic acid including anti-inflammatory and in vitro antimalarial effects. However, betulinic acid is most highly regarded for its anti-HIV-1 activity and specific cytotoxicity against a variety of tumor cell lines. Interest in developing even more potent anti-HIV agents based on betulinic acid has led to the discovery of a host of highly active derivatives exhibiting greater potencies and better therapeutic indices than some current clinical anti-HIV agents. While its mechanism of action has not been fully determined, it has been shown that some betulinic acid analogs disrupt viral fusion to the cell in a post-binding step through interaction with the viral glycoprotein gp41 whereas others disrupt assembly and budding of the HIV-1 virus. With regard to its anticancer properties, betulinic acid was previously reported to exhibit selective cytotoxicity against several melanoma-derived cell lines. However, more recent work has demonstrated that betulinic acid is cytotoxic against other non-melanoma (neuroectodermal and malignant brain tumor) human tumor varieties. Betulinic acid appears to function by means of inducing apoptosis in cells irrespective of their p53 status. Because of its selective cytotoxicity against tumor cells and favorable therapeutic index, even at doses up to 500 mg/kg body weight, betulinic acid is a very promising new chemotherapeutic agent for the treatment of HIV infection and cancer.

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