

Aloe-emodin is a new type of anticancer agent with selective activity against neuroectodermal tumors.

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Abstract:

Here we report that aloe-emodin (AE), a hydroxyanthraquinone present in Aloe vera leaves, has a specific in vitro and in vivo antineuroectodermal tumor activity. The growth of human neuroectodermal tumors is inhibited in mice with severe combined immunodeficiency without any appreciable toxic effects on the animals. The compound does not inhibit the proliferation of normal fibroblasts nor that of hemopoietic progenitor cells. The cytotoxicity mechanism consists of the induction of apoptosis, whereas the selectivity against neuroectodermal tumor cells is founded on a specific energy-dependent pathway of drug incorporation. Taking into account its unique cytotoxicity profile and mode of action, AE might represent a conceptually new lead antitumor drug.