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Lack of promotion of estrogen-dependent mammary gland tumors in vivo by an isopropanolic Cimicifuga racemosa extract.

Freudenstein J[1], Dasenbrock C, Nisslein T.

Author information

Abstract

Cimicifuga racemosa (CR) is widely used in the treatment of menopausal symptoms. Mechanistic studies suggest that unlike hormone-replacement therapy, CR does not stimulate estrogen-receptor positive breast cancer cells. To evaluate CR safety, we performed an in vivo investigation of a clinically tested isopropanolic CR extract. Mammary tumors were induced in Sprague Dawley rats (n = 75) by the application of 7,12-dimethylbenz[a]anthracene. Five to nine weeks later, the animals were ovariectomized, allowed to recover, and administered daily doses of CR extract (0.714, 7.14, or 71.4 mg/kg body weight per day) or control substances (estrogen/positive control: 450 microg/kg/day mestranol; or CR vehicle/negative control). The animals were sacrificed 6 weeks later, and tumor number, size, plasma hormone levels, and the weight of estrogen-sensitive organs were analyzed. In contrast to mestranol treatment, CR treatment did not stimulate cancerous growth. There were no significant differences in tumor number or size between the CR groups and the vehicle control. Likewise, prolactin, follicle-stimulating hormone, and luteinizing hormone levels and organ weights and endometrial proliferation were unaffected. The lack of mammary tumor-stimulating effects of this extract is of great significance in establishing the safety of CR extracts for treatment of menopausal symptoms in women with a history of breast cancer in which hormone-replacement therapy is contraindicated.

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