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Breast Cancer Res Treat. 2004 Mar;84(2):151-60.

Cimicifuga racemosa extract inhibits proliferation of estrogen receptor-positive and negative human breast carcinoma cell lines by induction of apoptosis.

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Author information

Abstract

Hormone replacement therapy is contraindicated in women with **breast** cancer. Extracts from the rhizomes of **Cimicifuga racemosa**, have gained acceptance as a natural alternative for the treatment of menopausal symptoms. In the present study we investigated the antiproliferative activity of C. **racemosa** extracts (isopropanolic and ethanolic) on the **estrogen receptor positive** MCF-7 and **estrogen** receptor **negative** MDA-MB231 **breast** cancer cells by WST-1 assay. Down regulation of the proliferative activity and **cell** killing by isopropanolic and ethanolic extracts occurred in a clear dose-dependent response with a 50% growth inhibitory concentration of 54.1 +/- 11.4 and 80.6 +/- 17.7 micro g/ml in MCF-7 cells and of 29.5 +/- 3.0 and 58.6 +/- 12.6 microg/ml in MDA-MB231 cells, respectively. Further, the mode of **cell** death was identified as **apoptosis** by microscopic inspection and confirmed by light scatter characteristics and by detection of Annexin V adherence to phosphatidylserine by flow cytometry. In addition, the involvement of activated caspases was supported by the cleavage of cytokeratin 18 detected with M30 antibody. Increases in the level of M30-antigen of about 4-fold and 2-fold over untreated controls were observed in C. **racemosa** -treated MCF-7 and MDA-MB231 cells. These results indicate that C. **racemosa extract** exerts no proliferative activity, but kills the **estrogen receptor positive** MCF-7 as well as **estrogen** receptor **negative** MDA-MB231 cells by activation of caspases and **induction** of **apoptosis**.

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