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P336. Membrane-initiated effects of Serelys® on proliferation and apoptosis of human breast cancer cells

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Objective: Herbal extracts used for the alleviation of postmenopausal symptoms might have a lower risk of breast cancer development than hormone therapy. SerelysÂ® is a product composed of purified pollen cytoplasm extracts. Recent experimental data revealed that estrogens might trigger a further proliferative effect on breast cancer cells via the progesterone receptor membrane component-1 (PGRMC1) in addition to the proliferative effect via intracellularly located receptors.
Methods: MCF-7 and T47D cells were stably transfected with PGRMC1. The in-vitro assays were performed with different concentrations of the extract (0.1Âµg/ml to 400 Âµg/ml) alone and in combination with fixed concentrations of E2 or the growth factor mixture. Cells were seeded with 5000 cells per well in a 96-well plate. After 24h of incubation, the culture medium was changed to medium with stripped FCS. The test substances were then added into the medium. After 6 days of incubation, medium was decanted from the 96-well plate and the remaining cells were used for measurement of proliferation and apoptosis.
Main Outcome Measure: Proliferation of treated cells was determined by the MTT-test and apoptosis was determined using a Cell Death Detection ELISA kit.
Results: Hormone receptor positive breast cancer cells respond to estradiol and growth factors by an increased proliferation rate and a downregulation of apoptosis. The proliferation /apoptosis ratio is further enhanced when these cells are transfected with PGRMC1. The growth factor mixture was more potent in eliciting a proliferation than estradiol, however estradiol was more potent in eliciting an anti-apoptotic effect. Overall SerelysÂ® was neutral in the cell lines transfected or not transfected with PGRMC1. SerelysÂ® was also neutral in combination with estradiol or growth factors in terms of cell proliferation and cell apoptosis.
Conclusions: Thus in contrast to hormone therapy SerelysÂ® appears to trigger no further breast cancer risk when applied in the postmenopause to women, who do or do not overexpress PGRMC1. The reduction in symptom scores reported from PMS and postmenopausal women treated with SerelysÂ® may not be mediated by estrogen or estrogen-like pathways. Overall SerelysÂ® may be an effective alternative for alleviating postmenopausal symptoms without increasing breast cancer risk.

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