

A peptide derived from alpha-fetoprotein inhibits the proliferation induced by estradiol in mammary tumor cells in culture

Sierralta, Walter D.

Epuñan, María J.

Reyes, José M.

Valladares, Luis E.

Andersen, Thomas T.

Bennett, James A.

Jacobson, Herbert I.

Pino, Ana M.

This study was aimed to obtain additional information on the activity of a cyclized 9-amino acid peptide (cP) containing the active site of alpha fetoprotein, which inhibits the estrogen-stimulated proliferation of tumor cells in culture and of xenografts in immunodeficient mice. Breast cancer cells cultured in the presence of 2 nM estradiol were exposed to cP for different periods and their proliferation, estradiol binding parameters, clustering tendency and expression of E-cadherin and p21Cip1 were analyzed by biochemical and cell biology methods. The proliferation of MCF7 cells was significantly decreased by the addition of 2 µg/ml cP to the medium. cP did not increase cell death rate nor alter the number of binding sites for estradiol nor the endogenous aromatase activity of MCF7 cells. cP also decreased the proliferation of estrogen-dependent ZR75-1 cells but had no effect on estrogen-independent MDA-MB-231 cells. An increased nuclear p21Cip1 expression detected after cP treatment