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The growth inhibitory properties of a dopamine agonist (SKF 38393) on MCF-7 cells.

Johnson DE, Ochieng J, Evans SL.

Department of Pharmacology, Meharry Medical College, Nashville, TN 37208, USA.

Dopamine agonists have been indicated as treatment for disorders such as Parkinson's disease, cardiogenic shock and dopamine insufficiency. A unique relationship exists between dopamine and carcinogenicity. Chronic prolactin stimulation has been identified as a promoter of carcinogenicity. Prolactin secretion is regulated through dopamine receptor activation. Dopaminergic agonists inhibit prolactin release and antagonists increase release. High levels of prolactin have been shown to suppress production of estrogen and progesterone. As a result of these findings, a series of experiments were designed to examine the effects of a specific dopamine agonist, SKF 38393, against MCF-7 cells. MDA-MB231 and MCF-10 cells were used as negative controls. The breast cancer in vitro screening procedure involved the plating of MCF-7, MDA-MB231 and MCF-10 cells in a 96-well plate assay. After 1 day, the cells were exposed to SKF 38393 for 2 days and cell growth was determined by the Alamar blue dye reagent method. The optical density data was analyzed and IC50 values determined. The results indicated that SKF 38393 caused a significant decrease in proliferation of MCF-7 cells. The IC50 value was 0.1 +/- 0.03 microM. The results also indicated no significant effect on MDA-MB231 and MCF-10 cells.

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