

Comparative study of chemoprevention of food factors of Solanum torvum on mcf-7- human mammary gland breast adenocarcinoma cell lines with antimitotic activity using allium cepa root meristamatic cells.

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ABSTRACT

A major focus of the present work has been to identify the targets of natural non-toxic chemopreventive compounds present in herb what we commonly eat. These compounds have potent anticancer effects that work through unknown mechanism. The present work proposes that the food factors to be an effective chemopreventive agent, it must influence a valid cellular or molecular target. The antimitotic activity was screened using Allium cepa root meristamatic cells, which are having similar cell division like that of cancer cell division in human. Experiments were carried out with incorporation of folic acid in the extract. Folic acid inhibited the antimitotic activity of S.torvum extract. The studies were extended to human cells using MCF-7 Human mammary gland breast adenocarcinoma cell lines. The results obtained were compared with methotrexate- a known anticancer drug. S.torvum extract is effective against A.cepa root cells by inhibiting microtubule formation. Thus it is possible that food factors that affect plant chromosome also affect animals and human cells. Extracts of S.torvum was found to be extremely effective in the chemoprevention of the mammary gland breast adenocarcinoma cell lines. The excellent antimitotic and chemopreventive activities of S.torvum was due to its potential food factors, such as poly phenols steroidal saponin glycoside, alkaloids and flavonoids. Active principle sterol has been separated by TLC. Consumption of a diet rich in food factors which have an anti-cancer or chemopreventive effect in humans remains to be determined. One of the major challenges in conquering cancer is in the area of translational research which will help the scientist for moving promising compounds from the bench to the clinic are in near future..