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Antiproliferative potential of *Cuscuta reflexa* Roxb

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Abstract

Cuscuta reflexa Roxb., Family: Convolvulaceae, is well known medicinal plant in Indian System of Medicine for various ailments. This plant is widely distributed throughout the India. In our continued interest of developing the anticancer agents from the plant source, we have explored the antiproliferative properties of *Cuscuta reflexa* (whole plant) both *in vitro* against various human cancer cell lines and *in vivo* against solid murine tumor model. The alcoholic extract and its chloroform fraction were found to be most potent among three extracts and four fractions of alcoholic extract prepared. It showed maximum cytotoxicity against human breast (MCF-7) cancer cell lines. The alcoholic extract showed significant ($p<0.05$) 25.96 % tumor growth inhibition at 40 mg/kg for Sarcoma -180 respectively. Similarly chloroform fraction of alcoholic extract showed significant tumor growth inhibition of 44.11% against Sarcoma-180 respectively, at 10mg/kg. DNA cell cycle analysis of HL-60 cells showed growth arrest in Sub G_1 phase when treated by alcoholic extract and its chloroform fraction and DNA in G2/M phase remained unchanged indicating that it does not produce any mitotic block. This study indicates that the anticancer potential of *Cuscuta reflexa* lies in its alcoholic extract and chloroform fraction of alcoholic extract of the whole plant due to interference in cell proliferation.