

Natural products as inducers of cancer cell death: Effects of extracts of *Commelina spp* on mouse melanoma (B16) cells.

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Recent studies on tumor inhibitory compounds of plant origin have yielded an impressive array of novel structures. Certain secondary metabolites from plants are known to induce apoptosis in neoplastic cells but not in normal cells. Hence, this study was designed to determine the antiproliferative and antioxidant properties of partially purified extract from indigenous medicinal plant, *Commelina spp*. This plant is being used by traditional healers in Limpopo Province of South Africa to treat several types of skin abnormalities. The plant was extracted using acetone and further sub-fractionated with n-hexane (F1) and dichloromethane (F2). Mouse melanoma (B16) cells were cultured in various concentrations of the extracts ranging from 0-750 μ g/ml for 24hrs and 48hrs. The extract showed a dose-dependent inhibition of B16 cell proliferation with F2 exhibiting the greatest antiproliferative activity than F1 as determined by sulphorhodamine B (SRB) assay and 5-bromo-2-deoxyuridine (BrdU) colorimetric immunoassay. The antioxidant activity of the fractions was evaluated in terms of their reducing power, H₂O₂ scavenging potential, as well as their free radical scavenging activity. Hydrogen-donating ability of extracts was quantified in the presence of 1,1-diphenyl-picryl-hydrazyl (DPPH) stable radical. Results showed that both fractions exhibit the greatest antioxidant activity which is concentration dependent. The total phenolic content of the extract was also measured using the Folin-Ciocalteu assay and showed a positive correlation with the antioxidant activity of the extracts. Understanding the properties and mode of action of these compounds should provide useful information regarding possible application in cancer prevention and therapy.