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Antioxidants from *Clerodendrum viscosum* leaf play a role in anticancer activity against brain cancer

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Free radicals are formed naturally in the body and play an important role in many normal cellular processes. Sometimes, several internal metabolic processes or external stimuli (UV, radiation, ozone) may lead to the production of high concentrations of free radicals. These abnormally high concentrations of free radicals are hazardous to major components of cells, especially DNA, which may play a role in the development of cancer. In the last few decades, the incidence of brain tumor and other types of cancer are markedly increased. The free radical scavengers (antioxidants) could modify the behavior of cancer cells by altering their redox environment as well as reduce their genetic instability and thus may be considered as a novel approach in cancer treatment. The antioxidant property of hexane, chloroform, ethyl acetate and water fractions of 70% methanolic *Clerodendrum viscosum* leaf extract was evaluated. The chloroform and ethyl acetate fractions displayed better efficacy in projecting total antioxidant activity as well as scavenging of DPPH, hydroxyl, superoxide, nitric oxide, peroxynitrite and hypochlorous radicals. The same fractions showed significant cytotoxicity against human glioblastoma (U87) cells. Furthermore, when treated cells were subjected to cell cycle analysis, it is found that the same fractions are able to arrest the cells at G_2/M phase as well as induce apoptosis. Since, the chloroform and ethyl acetate fractions exhibited potent antioxidant as well as anticancer activity, it was concluded that the phytochemicals in the *C. viscosum* leaf those are responsible for antioxidant property could be useful in cancer treatment.

Biography

Nikhil Baban Ghate is completing his PhD under the guidance of Dr. Nripendranath Mandal from Bose Institute and the University of Calcutta, India. He is a dynamic researcher in the field of antioxidant activity of Indian medicinal plants, along with their anticancer capacities. In this respect, he has published 10 papers in reputed international peer-reviewed journals.

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