

# 13<sup>th</sup> World Cancer Congress

February 25-26, 2019 | Paris, France

## Anti-Cancer properties of the Foliose lichen, *Heterodermia diademata* (Taylor) Awasthi against Breast Cancer cell lines

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Nature has its own unique ways to solve her problems. Natural products, especially phytochemicals, are becoming an important area of research for drug discovery. Of late, lichens, the consortium between algae and fungi, have drawn a great deal of attention for their exceptional potential for curing various diseases. Despite the advancement of science, cancer treatment is still not satisfactory and effective. It might reasonably be hypothesized that lichens could contribute to cancer treatment by interfering with the development and/or progression of cancer. In the present study, I explored the anti-growth properties of the foliose lichen, *Heterodermia diademata* (Taylor) Awasthi, collected from the Western Ghats biodiversity hotspot, India. Preliminary investigation of the cytotoxic potential of *H. diademata* was conducted on Daltons Lymphoma Ascites (DLA) and Ehrlich's Ascites Carcinoma (EAC) in Trypan Blue dye exclusion method. The anti-growth

effect was tested in human breast cancer cell line MDA-MB-231 and normal cell line IEC-6 by MTT assay. Cell death modes (apoptosis/necrosis) were morphologically assessed. *H. diademata* inhibited the growth in a dose dependent manner up to a dose of 5 to 25µg/ml. IC50 in MDA MB-231 was estimated to be 20ug/mL. Whereas in case of IEC6 IC50 was found to be higher than 60 ug/mL indicative of its potent cytotoxicity towards breast cancer cell. These results suggest that *H. diademata* may induce cell death at very low doses thus establishing its potential as a promising warrior for the crusade against cancer.

### Speaker Biography

Jijo Francis is doing his Post Graduation (M.Sc.) in Zoology in Sacred Heart College (Autonomous), Cochin, Kerala, India.

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