In vivo Antitumor Activity of the Bioactive Fraction of *Garcinia Pedunculata* Fruit Against Murine Dalton's Lymphoma Ascites Tumor

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Traditional approaches to cancer treatment typically involve surgery, chemotherapy, radiation therapy, and immunotherapy. Despite their effectiveness, these methods often bring about a range of side effects within the host body. Thereby, causing a need to approach a more nature-based approach for development of drugs. On the basis of various ethnopharmacological researches, this study was aimed to evaluate the antitumor activity of *Garcinia pedunculata* fruit against murine Dalton's Lymphoma ascites model. *G. pedunculata* (GP) found mostly in the Northeastern region of India. This tropical plant is slowly gaining great interest for its various medicinal qualities such as anti-inflammatory activity, cardioprotective activity, antioxidant activity, etc. In this study, the anti-tumor activity of the bioactive fraction of GP fruit in Dalton's Lymphoma Ascites (DLA) tumor model was evaluated in *in vivo* models. The results showed that the bioactive fraction of GP at a dose of 250 mg/kg for five consecutive days significantly increased the life span of DLA-induced mice. The GP fraction significantly increased the mean survival time (MST) of the animals, decreased the tumor volume, and restored the hematological, biochemical as well as histopathological parameters. Fluorescence study using Ao/Etbr further validated the cytotoxicity of DLA cells after treatment with the bioactive fraction of GP. The bioactive fraction of GP also showed significant anti-angiogenic activity in *in ovo* (Chorioallantoic membrane assay) as well as in the *in vivo* study. However, further research is needed to elucidate the active compound from the bioactive fraction and study its anti-tumor properties.

Keywords: Apoptosis; Cytotoxicity; Histopathology; Medicinal plant; Microscopy