

## Prof. Fuad Fares: Cancer Program: Natural Extract for Treatment of Colorectal Cancer (Carmel)

**Project name:** Medicinal plant extract for treatment of colon cancer

**Principal researchers name:** Prof. Fuad Fares and Dr. Rinat Bar-Shalom

**Invention area:** Natural Science

Background: Colorectal cancer is the second leading cause of cancer related death in the western world and it is the main cause of mortality among the gastrointestinal cancers in Israel.

Approximately 60% of drugs currently in use for cancer treatment have been isolated from natural products and many of them are derived from plants. In the present study we examined the beneficial effects of a medicinal plant extract on colon cancer cells invitro and in vivo.

Results: Treatment with the plant extract demonstrated a profound reduction in cell viability. This reduction was accompanied with inhibition of DNA synthesis, cell cycle arrest at the G2/M phase and induction of apoptosis through both intrinsic and extrinsic pathways. In vivo results indicated that the plant extract has a significant inhibitory effect, which is shown by a deceleration in tumor growth and small final tumor weights and volume. Histological examination clearly revealed apoptotic cells inside the tumor and a decrease in tumor cells' proliferation. No side effects such as weight loss, behavioral changes or changes in kidney and liver functions were observed.

**Advantageous:**First line treatment for colon cancer is surgery; however the majority of colorectal cancer patients are not candidates for curative local surgery, thus requiring chemotherapy. The effectiveness of chemotherapy treatment has been limited by the side effects and by development of resistance. In order to combat the problem of side effects and chemo-resistance, alternative therapies are required for the treatment of colorectal cancer. Natural products are an important source of anticancer drugs. The medicinal plant extract demonstrated a profound reduction in cell viability in vitro and in tumor progression in vivoand no side effects were observed.

**Usage:**The importance of this research stems from the profound inhibitory effects of the plant extract on colon cancer cells demonstrated in vitro and in vivo. Therefore, the plant extract is worthy of further investigation in order to be considered as a safe and natural treatment for colon cancer.

Carmel Ltd. is looking for potential partners and/or investors in this area. Please Contact us for further information.

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