The Effect of Crataegus songarica Extract on Proliferation and Apoptosis in HCT116 and SW480 Colon Cancer Cells

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Colorectal cancer affects more than 130,000 people per year. Currently, the available methods of treatment target cancer cells by eliminating all rapidly proliferating cells, including normal ones. The purpose of this study was to investigate the anti-cancer effects of the Crataegus songarica plant extract as a novel approach to chemotherapy. The extract was analyzed for its ability to inhibit proliferation, suppress cancer stem cell formation, and target proteins involved in proliferation or apoptosis, programmed cell death. During the proliferation and clonogenicity assays, cell viability and colony formation in colon cancer cells HCT116 and SW480 decreased as a result of increasing concentrations of C. songarica, indicating that the C. songarica plant extract was effective in preventing both cell growth and spheroid formation. During the western blot analysis, cells treated with increasing concentrations were analyzed for relative levels of ß- catenin, NICD, Hes1, EZH2, and PKM2, as well as Bcl-2, Cleaved Caspase-3 and Bcl-XL, proteins involved in proliferation or apoptosis. As the concentration of the extract increased, levels of the proteins decreased, indicating that the extract was effective in blocking proteins involved in proliferation and apoptosis inhibition. The plant extract seems highly capable of being an effective means of targeting colon cancer.

Awards Won:

Third Award of $1,000