

**Title: Enhanced Efficacy of Homeophotodynamic Therapy of Rhodomyosarcoma Cancer Cells by using Chemo-drug as an Adjuvant Agent**

**Abstract**

After cardiovascular diseases the leading cause of death all around the world is cancer. Rhodomyosarcoma (RMS) is the cancer of soft tissues and it mostly occurs in children and in adults aged between 10 to 25 years. There are several therapeutic modalities that are being used for treating cancer such as surgery, radiation therapy and chemotherapy. But due to their side effects these therapeutic modalities are not so effective. Photodynamic therapy (PDT) is a new treatment modality introduced for cancer treatment. Low doses of photosensitizer (PS) and light are used in PDT. In this work, combination of homeo-drug *Hydrastis canadensis* (mother tincture, H30C and H200C) and chemo-drug Methotrexate (MTX), Doxorubicin (DOX) and Dutcine (DTIC) along with PDT were studied by using RD cell line. The results obtained were compared with individual therapy and the most effective therapeutic combination was selected. It was found that individual administration of PDT, chemo-therapeutic drugs and Hydrastis was not effective because less killing (about 10-15%) occurred as a result of individual therapy. Conversely, combination of chemo and homeo drug with PDT gave efficient results. The most suitable combination that showed effective killing (about 50% cells viable) of RD cells was the combination of MTX with Hydrastis potency H200C along with PDT. It was concluded that the combination therapy is more effective and targeted in treating cancer than mono-therapy.

Keywords: Photodynamic Therapy; Cancer; Chemotherapy; Rhodomyosarcoma; Homeotherapy; Combinational Therapy