**ABSTRACT**

Various benzodiazepine derivatives were synthesized from chalcones using o-Phenylene diamine by microwave oven technique. These chalcones were synthesized from dehydroacetic acid/ methylated dehydroacetic acid by ClaisenSchmidt Condensation. All the synthesized benzodiazepine derivatives were.characterized by FTIR, 1H-NMR and Mass spectra. The derivatives containing electron withdrawing and electron releasing groups were evaluated for their In-vivoanticancer activity using Ehrlich ascites carcinoma cells. The various parameters such as increase in life span, increase in % of Hemoglobin, RBC and Lymphocytes and decrease in WBC count, neutrophils were noted to find out the efficacy of the derivatives as anticancer agent. The derivatives 1NB4 with electron withdrawing -NO2 group and 2B5 with electron releasing -OCH3 group, showed potent and significant anticancer activity and the derivatives 1NB3, 2NB5, which were possessing electron withdrawing group like chloro, nitro showed good activity and the remaining derivatives were found to be inactive as anticancer agent.

**Keywords:** Dehydroacetic acid; Chalcones; Benzodiazepines; Ehrlich ascites

carcinoma cells; Anticancer