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Investigation of antioxidant effect on chemically induced breast cancer model

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Glutathione transferase P1-1 (GST P1-1) is often overexpressed in tumor cells and is regarded as a contributor to their drug resistance. The available literature contains a limited of strong GST P1-1 inhibitors. Additionally, *in vivo* studies of these inhibitors are very restricted because of their highly toxic effects. Therefore, the most potent and comparatively less harmful GST P1-1 inhibitors seem to be an attractive target for drug development. The aim of this study is to evaluate the protective effects of chlorophyllide as an antioxidant molecule which has inhibitory effects on GST P1-1 on chemically-induced breast cancer model. For this purpose, N-methyl-N-nitrosourea (MNU) was used for inducing carcinogenesis in eighteen, 21-day-old female Sprague-Dawley rats. MNU and chlorophyllide solutions were injected intraperitoneally when the rats were 21, 28, 35 and 42 days old. Their weight and tumor diameters were measured throughout 5 months. At the end of the study, all animals were sacrificed and determined DNA damage in blood, organs and tumor tissues. According to the preliminary data, chlorophyllide treatment significantly decreased the DNA damage in tissues and blood. However, after tumorigenesis, we observed that it promoted tumor growth. The measurement of glutathione levels, GST and antioxidant enzymes activity in organ and tumor tissue are underway.

Biography

Mehmet Ozcan graduated from Cukurova University, Department of Chemistry and he is a master student and research assistant at Medical Biochemistry Department of Hacettepe University in Turkey. His research interests are in the following areas: Glutathione S-transferase, Enzyme Kinetics, Drug Designing, Cell Culture and Experimental Animals.