Comparison of Rosemary (*Rosmarinus officinalis* L.) hydroalcoholic extract on the viability of head and neck cancer cells Line HN5 and neuronal progenitor cells of Mouse

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Received: 27 September 2017 Accepted: 30 December 2017

Abstract

Cancer is a main health problem worldwide and the number of cancer patients is increasing annually. Cancer treatment needs new anticancer medicines because of drug resistance. Rosemary is one of the herbal medicines which its anti-cancer effects have been reported. The purpose of the present study was to evaluate rosemary extract effect on HN5 cancer cells viability in comparison with neuronal progenitor cells (NPCs). NPCs were obtained from 17 days pregnant mice by enzymatic digestion method. These cells and HN5 cells were treated with 50, 100, 200 and 500 µg/ml of rosemary extract for 24, 48 and 72 hours. Their viability was measured using MTT assay. Results showed that rosemary extract decreased HN5 cells viability in 100, 200 and 500 µg/ml concentrations which were significant in comparison with NPCs. The extract increased NPCs proliferation rate in 50 and 100 µg/ml concentration and decreased their viability in 500 µg/ml concentration. Rosemary extract can decrease cell viability as a dose and time dependent manner but this effect also depends on the cell type such as its killing effect on cancer cells was more.

Keywords: Cancer, Cell viability, NPCs, Rosemary