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EVALUATION OF *IN VITRO* ANTITUMOR PROPERTY OF ETHANOLIC EXTRACT OF *PIPER NIGRUM* SEEDS

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ABSTRACT

From time immemorial *Piper nigrum* has been used as an important spice and is known for its tremendous applications in culinary purposes and in traditional medicine for treating various disorders. The biological activities of pepper and its alkaloid piperine have been investigated and it was found that pepper exhibited antioxidant, antimicrobial, antiparasitic, immunomodulatory, bioenhancer and stimulative properties. In our present investigation we evaluated the *in vitro* antitumor property of ethanolic extract of *Piper nigrum* seeds against two murine (Ehrlich Ascites Carcinoma and Melanoma B-16 cells) and two human (HeLa, Raji) cancer cell lines, through cytotoxicity testing. It was observed that the IC_{50} values for normal cells were significantly higher than that for tumor cells indicating greater toxicity of the extract on the tumor cells. The results of cell viability test were supported by the values obtained in the MTT assay; the rate of inhibition observed for tumor cells was significantly higher than that for the normal cells. The IC_{50} values for EAC and Raji cells were comparatively lower than that for Melanoma-B16 and HeLa cells, indicating greater sensitivity of the former cell types. Moreover, the cells exhibited a 'dose and time' response to *Piper nigrum* extract treatment; an increase in the rate of cell death was observed with an increase in the concentration of the extract and the time of incubation.

Keywords: *Piper nigrum*, Antitumor, Cytotoxicity, Cell Viability, MTT Assay

INTRODUCTION

Black pepper, *Piper nigrum* belonging to Piperaceae family is one of the most commonly used spices and is well known for its innumerable applications in traditional medicine as well as pharmaceutical and food industries. Pepper and one of its major component, piperine has been investigated by a large group of