

***In vitro* anticancer activity of RA extracts of peppermint leaves against human cancer breast and cervical cancer cells**

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ABSTRACT

Natural product research provides a unique opportunity to test new anticancer agents while also learning about significant and relatively important modes of action. Aromatic rosmarinic acid (RA), which is an ester of caffeic acid and 3,4-dihydro-xyphenyllactic acid, has been claimed to have anti-inflammatory, anti-obesity and cancer prevention characteristics. It is found in the Lamiaceae family. The anticancer capacity of rosmarinic acid derived from (Peppermint) *Mentha piperita* L. was tested *in vitro* towards breast Cancer cells MCF7 cell line at range of concentrations 100,250,500,750,1000µg/ml and human Cervical cancer HeLa cell line at different concentrations of 100, 250, 500, and 1000 µg/ml. The growth of MCF-7 breast cancer cells was slowed down by RA at a concentration of 1000 g/ml, 48% and the growth of cervical cancer cells HeLa was inhibited by RA at a concentration of 1000 µg/ml only 1%.



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1. INTRODUCTION

A primary cause of death worldwide is cancer, according to the World Health Organization. A most common types of from cancer are reproductive system cancer which include a breast, cervical cancer, and prostate cancer [1]. Present drug therapy, because of their negative effects on non-targeted organs, such as chemotherapy, these treatments can worsen human health conditions. Anticancer drugs that have minimal or no cytotoxic action on healthy cells are an attractive new approach to cancer therapy. This strategy can be utilized as a long-term treatment in conjunction with standard short-term cytotoxic anticancer medicines [2]. New chemical groups of anticancer drugs can be tested, as well as novel mechanisms of action, through natural product research. Anticancer chemicals that originate from plants are the most popular source for alternative cancer therapy.

In terms of secondary metabolism, polyphenols may be the most important because of their medicinal and pharmacological effects. Polyphenols can be used to fight cancer, among other things [3- 5]. As apoptosis-inducing polyphenols are thought to have anticancer characteristics, they can be used. They were found to have anti-cancer properties such as anti-oxidant capacity, cancer cell growth inhibition, apoptosis induction, target specificity, and cancer cell cytotoxicity [6- 8].