

Anticancer activity of *Moringa oleifera* leaves extract

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ABSTRACT

Cancer is one of the most dangerous illness in the world. It occurs when cells in the body divide at an uncontrolled rate, which then, produces lumps or masses of tissue known as tumour. In addition, it affects the digestive, nervous and circulatory systems. These tumours also produce hormones which disrupts body functions. A benign tumour which remains in the same spot is harmless, on the contrary, a malignant tumour is dangerous as it may destroy healthy cells. These malignant tumours spread to healthy cells through the blood or lymphatic system. This condition is known as metastasis. Nowadays, various cancer treatments are available, including surgery, drugs, chemotherapy, radiation therapy, steroid medications, and hormonal therapy. However, there are numerous side effects that arise from these modern treatments such as heart, lung, endocrine system, bone, joint, soft tissue, brain, spinal cord, nerve, memory, dental, vision and digestion problems. Moreover, the patient may suffer from emotional difficulties, fatigue as well as develop secondary type of cancer. To prevent the side effects which arise from modern cancer treatments, a more natural approach with no detrimental effect to human health is required to combat cancer. The objectives of this research are to extract the bioactive compounds from the leaves of *Moringa oleifera*, and to test the effect of the extracted materials on cancer cells. In this study, the bioactive compounds from *Moringa oleifera* leaves were extracted using two methods (Soxhlet extraction method using ethanol, 2-propanol, acetone, petroleum ether and water solvent and the soaking method using ethanol and boiling water as solvents). Sample S2 which was extracted using the Soxhlet extraction technique with water as the solvent exhibited a significant cytotoxic activity against the human breast adenocarcinoma cancer cell line (MCF-7) in a concentration dependent manner, with an IC_{50} value of 81.77 ± 6.05 μ g/mL. The other samples showed no cytotoxic activity.

KEYWORDS

Anticancer; modern treatments; cancer treatments; *Moringa oleifera*; Soxhlet extraction technique

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