

Antiproliferative and apoptotic potential of Chinese medicinal plants against MCF-7 (luminal A), HCC1954 (HER2+) and Hs578t breast cancer cells

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Abstract

Breast cancer is a significant cause of death among women worldwide. Medicinal plant extracts with large amounts of polyphenolic compounds, which are antioxidants, can have an important role in cancer prevention. The purpose of this study is to test *in vitro* the antiproliferative activities of the ethanolic and aqueous extracts of selected Chinese medicinal plants against three human breast cancer cell lines [MCF-7 (luminal A); HCC1954 (HER2+); Hs578t (triple negative)] and one normal cell line [MCF-10A]. The ethanolic extracts of *Polygonum cuspidatum*, *Rheum officinale*, *Eucomia ulmoides*, *Lysinachia christinae*, *Rhizoma Alpinae*, *Sarcandra glabre*, *Scutellaria baicalensis*, *Smilax glabra* and *Atractyloides macrocephala* showed potent anti-cancer activity with little or no toxicity to normal cells. The apoptosis test was carried out for one of the active plant extract (*S. baicalensis*) and the results were found to be very significant. The plant extracts investigated in this study have significant anticancer activity against the breast cancer cell lines tested. Further investigation is required to isolate and elucidate the structure of the compounds responsible for the observed activity.

Keywords: Rats, amnesia, anxiety, *Piliostigma thoningii*

Introduction

Breast cancer is a heterogeneous and complex disease, being the most common cancer in women worldwide. It is also a major cause of death from cancer among women globally. In 2010, it was estimated that over 1.5 million women worldwide were diagnosed with