



Cytotoxic Activity of the *Pueraria mirifica* on the Oral Cancer Cell Line ORL48T

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Introduction

Pueraria mirifica (*P. mirifica*), locally named Kwao Krua Kao, has been used for Thai traditionally herbal medicine as a source of rejuvenation and good health. It has been reported that *P. mirifica* contains at least 17 potent phytoestrogens. Previous studies demonstrated the anti-proliferative and antitumor activities of *P. mirifica* on mammary adenocarcinoma cell lines; however, the effect on oral malignant cells has yet unknown.

Objective

The aim of the study was to evaluate the cytotoxic activity of *P. mirifica* on the oral cancer cell line ORL48T.



Fig. 1 *Pueraria mirifica* (*P. mirifica*)
Thai name: Kwao Krua Kao

Materials and methods

Oral cancer cell line ORL48T was incubated with *P. mirifica* extract (Puresterol™, BIO-BOTANICA, Inc. New York, USA) at concentrations of 0.0187, 0.0375, 0.075, 0.15, 0.3 and 0.6 µg/ml for 24 hours and cell viability was determined by MTT assay. Normal human gingival progenitor cells (HGEPp, CELLnTEC, Bern, Switzerland) at the relevant concentrations were also used as a proximity reference.

Results

P. mirifica at concentrations between 0.15 and 0.6 µg/ml had a cytotoxic effect on oral cancer cell line ORL48T, but not for normal human gingival progenitor cells. Besides, *P. mirifica* at concentrations of 0.3 and 0.6 µg/ml increased numbers of normal human gingival progenitor cells.

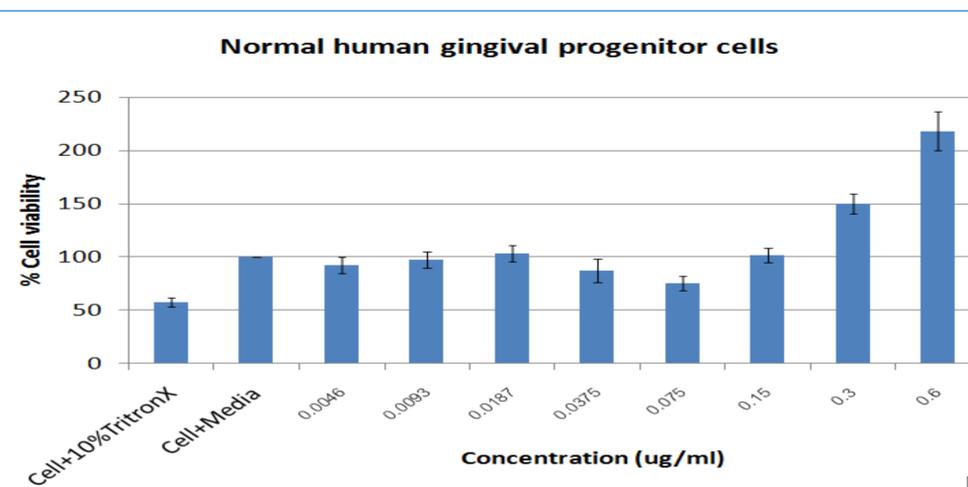
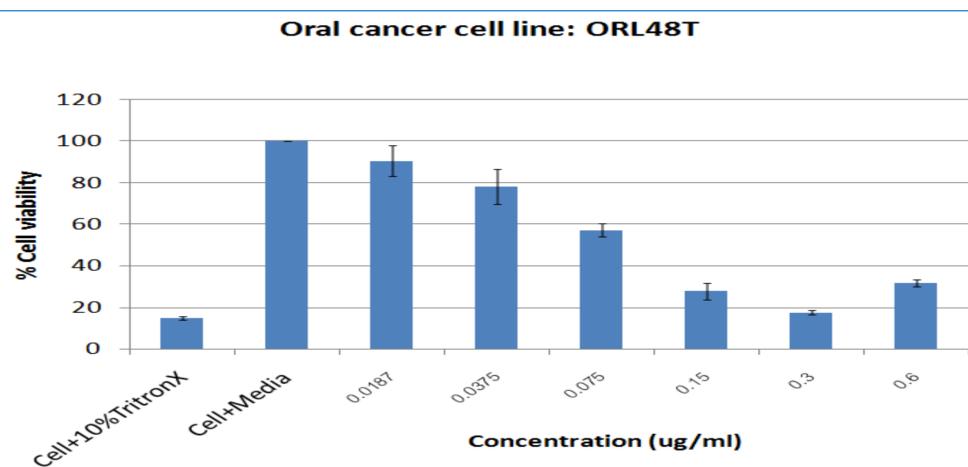


Fig. 2 Effects of *P. mirifica* on cell viability

Conclusions

This study demonstrated that, at certain concentrations, *P. mirifica* had a cytotoxic effect on oral malignant cells, but promoted cell proliferation in normal human oral epithelial cells. These findings imply the antitumor effect of *P. mirifica* on oral malignant cells.

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