

Chapter I

Introduction

Pueraria mirifica was long recorded to be consumed as folklore remedies among Thai people with the purposes of improving human physical appearance such as enlarging breasts, re-growing hair, promote black hair and improving body complexion. In northern Thailand, the powder of *P. mirifica* was consumed by women for rejuvenile and aphrodisiac purpose. Interestingly, *P. mirifica* consumption can induce menstruation in menopause women (60-88 years of age). It was believed to rejuvenate and prolong life after orally taking the pill consisted of *P. mirifica* and honey (Suntara, 1931). Some side effects e.g. headache, malaise and vomiting were reported when taking overdose. (Kerr, 1932). These symptoms were remained for two weeks after stop consuming the herb (Wanandorn, 1933).

Not only *P. mirifica* was consumed in Thai folklore remedies, *Butea superba* and *Mucuna collettii* were also used in Thai remedies for the purposes of rejuvenile and aphrodisiac too. But the dosage was two third and one third of *P. mirifica* amount, respectively.

The plants were reported to contain estrogenic substances or phytoestrogens (Yavada *et. al.*, 1998 and Roengsamran *et. al.*, 2001). These substances could also be found in soybean. Many reports showed that these substances could inhibit the growth of cancer cell line while some reports mention about their ability to stimulate the proliferation of the estrogen sensitive cancer cell line, such as human mammary carcinoma, MCF-7, cell line. (Wang *et. al.*, 1996; Wang and Kuzer, 1997; Zawa and Duwe, 1997)

Pueraria lobata a similar plant to *P. mirifica* was also widely popular consumed in China, Japan and Korea. This plant was used for hypertension (Qicheng, 1980).

Due to the widely consumption of *P. mirifica*, *B. superba* and *M. collettii* in Thailand as well as the popularity for consumption of *P. lobata* in China, Korea and Japan. Due to the rapid development of the plants into food supplements and cosmetic products for both domestic consumption and exportation, the scientific data should be rapidly established to support the product development. Some of the effects of the plants were still unclear. The studies of the effects of the plants should be done as soon as possible.

This study focused on the effect of the plant extracts upon the carcinoma cell lines, which could establish data to support the further for the plants.

Aims of this study are as followed:

1. Effects of *P. mirifica*, *B. superba*, *M. collettii* and *P. lobata* extracts on the growth of human mammary carcinoma (MCF-7) and human cervical cancer carcinoma (HeLa) cell lines.
2. ED₅₀ analysis of *P. mirifica*, *B. superba*, *M. collettii* and *P. lobata* extracts on the growth inhibition of MCF-7 and HeLa cell lines.
3. Effects of *P. mirifica*, *B. superba*, *M. collettii* and *P. lobata* extracts on the growth of MCF-7 and HeLa cell lines in presence of estrogen (estradiol or E₂).

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