

Efficacy of relieve premenstrual syndrome of *Inula helenium* L. root extract

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Premenstrual syndrome (PMS) is a common disorder affecting the emotional and physical health of women during certain periods of the menstrual cycle. Many researchers who have previously studied PMS have believed that PMS is associated with changes in sex hormones and serotonin levels at the beginning of the menstrual cycle. However, recent studies suggest that progesterone/estrogen imbalance and elevation of prolactin-induced by dopamine low-secretion play a crucial role in increasing PMS symptoms. Because of this, we have focused on mitigating PMS symptoms through the mechanism of prolactin secretion inhibition by dopamine receptor activation. The inhibition of prolactin secretion by 61-kinds of medicinal herb extracts was investigated in GH3 pituitary cells. Among them, *Inula helenium* L. root extract (IHE) showed excellent prolactin secretion inhibitory effect. IHEs were prepared using 30, 50, and 70% ethanol. And the yield, cytotoxicity, dopamine receptor activity and inhibition of prolactin secretion of each extract were measured. Through a series of experiments, we found that prolactin secretion was significantly reduced ($P<0.01$) by the components present in IHE and that dopamine receptor regulation was possible ($P<0.05$). Considering yield and safety, we suggest the use of 30% ethanol IHE in the development of PMS symptom relief products.

Key words: Premenstrual syndrome, *Inula helenium* L., Prolactin secretion, Dopamine receptor D2

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