

O1-PS-2

Development of Soy Isoflavone Body Scrub Formulations

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Introduction: Isoflavones are more attention in cosmeceuticals regarding the skin care benefit effects. Scientific evidences demonstrated the potential use of isoflavones in the prevention and treatment of numerous skin disorders such as skin aging, cellulite, acne and sensitive skin. Recently, scrub products have gained popularity and gradually grown in the mass market. Moreover, scrub products provide cleansing and skin rejuvenation benefits. Therefore, the objective of this study was to develop the soy isoflavone body scrub formulations contained soybean extract and powder of soybean seed. **Materials and Method:** Isoflavones were extracted from soybean powder by using ethanol-water system. After isoflavone extraction, the soy powders were dried and sieved. The oil in water emulsion base with optimum viscosity and good skin hydration effects was formulated and prepared by using beaker method. The soy isoflavone body scrubs containing soy extract and soy powder were prepared. The physical appearance, pH, viscosity, and physical stability of soy isoflavone body scrubs were determined. **Results:** The pH and viscosity of emulsion base were 7.77 ± 0.03 and $2.19 \pm 0.20 \times 10^6$ cps, respectively. Incorporation of soy isoflavone and powder of soybean seed significantly decreased the pH value, but had insignificantly effect on the viscosity of the emulsion base. The developed soy isoflavone body scrubs had a good physical stability at accelerated, heating (45°C , 24h) and cooling (2°C , 24h) for 6 cycles, and at ambient conditions (3 month). No phase separation or bleeding occurred. The pH and viscosity did not change significantly. The preliminary sensory assessment in 14 healthy volunteers revealed that sizes and amount of soy powder in soy isoflavone scrubs affected their preferences. **Conclusion:** The developed soy isoflavone body scrub formulations had a good appearance and physical stability. Further studies regarding the chemical stability of soy isoflavones in the scrub formulations, as well as the efficacy evaluations such as skin hydration shall be performed.

Keywords : Body Scrubs, Isoflavones, Soy powders

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O1-PS-3

Effect of *Pueraria mirifica* and miroestrol on estrogen deficiency in ovariectomized mice

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Introduction: Estrogens are important hormonal signals and playing a critical role in reproductive system as well as non-reproductive system including central nervous system (CNS). Decreasing of estrogen in menopause women may associate with depression and cognitive impairment. Ovariectomized (OVX) mice, the estrogen deficiency model exhibited the depressive and cognitive impairment behaviors. Estrogen plays an important role in neurogenesis and synaptic plasticity of the neuron. Brain-derived neurotrophic factor (BDNF) is also promotes neurogenesis. cAMP response-element-binding protein (CREB) is an important regulator of the transcription of the BDNF gene and reduction of CREB resulting in decrease level of BDNF. **Objective:** This study is interested in effects of hormone replacement therapy (HRT), 17β -estradiol (E_2) and phytoestrogen, *Pueraria mirifica* crude extract and miroestrol on gene expression including BDNF, CREB in OVX mice correlated with depression and cognitive impairment. **Materials and methods:** Three week old female ICR mice were divided into sham and OVX groups. For OVX groups, the animals were divided into 6 groups ($n = 3-6$). Group 1 received only corn oil. Group 2 was administered with E_2 (10 $\mu\text{g}/\text{kg}$, i.p.). Group 3-4 were administered with *Pueraria mirifica* crude extract (10 and 25 mg/kg, p.o, respectively) and group 5-6 were administered with miroestrol (0.1 and 1 mg/kg, i.p., respectively). Level of estrogen serum was determined by using Electrochemiluminescence immunoassay. Gene expression of BDNF and CREB were determined by using Reverse transcription polymerase chain reaction (RT-PCR). **Results:** OVX mice showed significantly decreasing in level of estrogen serum and the expression of CREB and BDNF in hippocampus and frontal cortex. After mice received *Pueraria mirifica* crude extract (10 and 25 mg/kg, p.o) and miroestrol (0.1 and 1 mg/kg, i.p.) for ten weeks, the level of estrogen serum was increased as similar as E_2 . The expression of CREB and BDNF in the brain of OVX mice was increased after received *Pueraria mirifica* crude extract and miroestrol. **Conclusion:** The finding support that *Pueraria mirifica* crude extract and miroestrol are good phytoestrogen to increase level of estrogen and gene related to neurogenesis which might be improve depression and cognitive impairment.

Keywords: Ovariectomized mice, 17β -estradiol, *Pueraria mirifica*, miroestrol, CREB and BDNF

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