Development of an anti-acne film from the mangosteen pericarp extract
Srigulp\textsuperscript{P}.\textsuperscript{1} Kukhetpitakwong R\textsuperscript{R}'.

Introduction: Garcinia mangostana Linn. (Mangosteen) has been traditionally used for treatment of skin infection. Mangosteen pericarp extract (MPE) reported had strong inhibitory effect against Propionibacterium acnes. Conventional products containing MPE such as cream and gel may be erased out of skin easily. Transdermal drug delivery system can improve duration of action by increasing contact time because reduction in dosing frequency could enhance convenience to administer drugs. It was reported that a MPE anti-acne film composed of polyvinylpyrrolidone K30 (PVP K30) and ethylcellulose (EC) in the ratio of 0.5:5, dibutyl sebacate (DBS) 40 %, propylene glycol (PG) 20 % and sericin 0.64 % had lower inhibitory effect against 3M Nexcare\textsuperscript{TM} acne pads and lower inhibitory against P. acnes than Dalacin T\textsuperscript{R}. The present study was focused on preparation of polymer films to improve their transparency and elasticity. Material and method: Polymer films containing MPE were prepared by solvent evaporation. In order to improve clarity of film, PVP K30 and EC were replaced by hydroxypropyl methylcellulose (HPMC) and Eudragit\textsuperscript{R} RL100, respectively. In addition, effects of plasticizers on flexibility of polymer films and of MPE concentration on antimicrobial activity against P. acnes activity were studied. Results: Film containing PVP K30 and Eudragit\textsuperscript{R} RL100 in the ratio of 1:5, DBS 6.67 % and PG 20 % showed the best flexibility. The prepared film with MPE at concentration of 0.30 %, 0.52 %, 1 % and 2 % showed inhibition zone diameter in the range of 9.20-11.72 mm. There were no significant differences among them. MPE at concentration of 10 %, 20 % and 50 % in the film were then studied. MPE film at concentration 50 % was the lowest inhibitory effect and significantly different from others (p<0.05). Conclusion: Transparency and elasticity of the developed film consisting of PVP K30\textsuperscript{R} RL100 were better than those of polymer film containing EC and HPMC. MPE at concentration of 0.52 %, 1 % and 2 % in film exhibited significantly inhibition zone larger than those of in paper disc. However, adhesion of film on skin should be taken into account for further study.

Keywords: Mangosteen pericarp, Propionibacterium acnes, Eudragit\textsuperscript{R} RL100, PVP K30

Effect of elicitor on isoflavonoid accumulation in cell suspension culture of Pueraria candollei var. mirifica
Sanrattana W\textsuperscript{1}, Patalun W\textsuperscript{2}

Isoflavonoid, an important group of secondary metabolites such as Puerarin, Daidzin, Genistein, and Genistein, can be found in many parts of Pueraria candollei var mirifica, the plant which has a long time history in Thai folk medicine with the local name of “Kwao Kruea Khaw”. As the estrogenic-like effects of this plant, it has abilities to reduce risk of osteoporosis, cardiovascular disease, diabetes, and particular cancers. In this study the cell suspension culture of Pueraria candollei in Murashige and Skoog (MS) media supplement with Thidiazuron (TDZ) 0.1 mg/L, 1-naphthaleneacetic acid (NAA) 1 mg/L, and 6-Benzylaminopurine (BA) 0.5 mg/L were tested on the effect of adding individual parasitic elicitors, 1 g/L Cuscuta elicitor (CE) or 1 g/L Dendrophthoe elicitor (DE), and the combination with yeast extract after 18 days of subculture to see whether isoflavonoids concentration has increased. The result showed that adding an individual elicitor both CE and DE had potential to increased isoflavonoids accumulation 0.541 ± 0.105 mg/g dry weight and 0.887 ± 0.264 mg/g dry weight which increased 5-fold and 4-fold compared to the control group, respectively. Despite, the significant increasing was noticed on 3 days after elicitation for DE-elicited group, faster than CE-elicited group which was over 6 days. Furthermore, combinations of parasitic elicitor with yeast extract were used. By adding 1 g/L DE then 0.5 mg/mL yeast extract gave the highest isoflavonoids level over 6 days, 1.335 ± 0.193 mg/g dry weight. In contrast, adding 1g/L CE then 0.5 mg/mL yeast extract gave lower isoflavonoids compared to the control group.

Key words: Pueraria candollei var mirifica, suspension culture, parasitic elicitor, yeast extract

Faculty of Pharmaceutical Sciences, Khon Kaen University
1\textsuperscript{1}\textsuperscript{Ph.D. Associated Professor in Faculty of Pharmaceutical Sciences, Khon Kaen University
*Corresponding author : e-mail address: waraporn@kku.ac.th

1Undergraduate student, Faculty of Pharmaceutical Sciences, Khon Kaen University, Khon Kaen 40002, THAILAND
2Department of Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand
*Corresponding author : e-mail address: ratkom@kku.ac.th

276