



Effect of *Litsea cubeba* Pers Essential Oil on Skin Hydration and Transepidermal Water Loss in Healthy Human Volunteers- A Preliminary Study

Chaiyavat Chaiyasut^{1*}, Sasithorn Sirilun¹, Bhagavathi Sundaram Sivamaruthi¹, Nuntawat Khat-udomkiri¹
Korawee Jampatip¹, Areewan Klunklin², Wipada Kunaviktikul²

¹Innovation Center for Holistic Health, Nutraceuticals and Cosmeceuticals, Faculty of Pharmacy, Chiang Mai University, Chiang Mai, Thailand

²Faculty of Nursing, Chiang Mai University, Chiang Mai, Thailand

*Corresponding author, E-mail: chaiyavat@gmail.com

Abstract

Litsea cubeba Pers has been widespread in tropical areas such as southern China, India, and Southeast Asia, and in Northern provinces of Thailand. Its essential oil has been widely used in food, chemical, and medicinal industries for several decades due to its biological properties such as antibacterial, antifungal, insecticidal, anticancer, and antioxidant properties. To demonstrate more biological activity of *L. cubeba* Pers essential oil, this study aims to investigate the effects of *L. cubeba* Pers essential oil on skin hydration and on transepidermal water loss (TEWL). The effects of *L. cubeba* Pers essential oil on skin hydration and TEWL was studied using MoistureMeterSC and VapoMeter, respectively. The measurements were taken at the baseline and at 1, 3, and 5 hours after applying the essential oil on human dorsal forearm skin under controlled conditions. It was found that the surface hydration (au) was significantly increased as compared to the baseline after the application of the essential oil ($p < 0.05$). Besides, *L. cubeba* Pers essential oil also significantly reduced the TEWL (g / m²h) as compared to the baseline ($p < 0.05$) after 5 hours of the essential oil application. These results suggest that *L. cubeba* Pers essential oil does not only hydrate the skin, but it also improves the skin barrier function through the regulation of TEWL in healthy human volunteers. This project was supported by the Thailand Science Research and Innovation (TSRI), and the Development of Lanna Spa Services for Wellness Tourism project of Faculty of Nursing, Chiang Mai University.

Keywords: *Litsea cubeba* Pers, Essential oil, Skin hydration, Transepidermal water loss, Human volunteers.
