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CHEMICAL COMPOSITIONS AND COSMECEUTICAL ACTIVITIES OF *CORDYCEPS MILITARIS E*XTRACTS

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Pachabadee Marsup[1], Jakkapan Sirithunyalug[1], Songyot Anuchapreeda[2], Chaiwat To-Anun[3], Tawat Tapingkae[4], Wantida Chaiyana1[1]

[1]*Department of Pharmaceutical Sciences, Faculty of Pharmacy, Chiang Mai University, Chiang Mai-50200, Thailand*
[2]*Division of Clinical Microscopy, Department of Medical Technology, Faculty of Associated Medical Sciences, Chiang Mai University, Chiang Mai-50200, Thailand*
[3]*Department of Plant Pathology, Faculty of Agriculture, Chiang Mai University, Chiang Mai-50200, Thailand*
[4]*Mushroom Research and Development Center, Pa Pae, Mae Taeng, Chiang Mai-50150, Thailand*

Address for Correspondence: serviceheb@gmail.com

Cordyceps militaris, a fungus parasitized on the larvae of lepidopteran insects, has been used as a traditional Chinese herbal medicine for over hundred years [1]. Various pharmacological activities of *C. militaris* had been reported, including antioxidant, free radical scavenging, antibacterial, antiviral, and anti-inflammatory activities [2]. Therefore, it has a potential to be used as active compound in the cosmetic products. This research aimed to investigate the cordycepin content and skin beneficial effects of *C. militaris* extracts. Briefly, *C. militaris* obtained from laboratory cultivation was dried, ground, and macerated using hexane, ethyl acetate, and ethanol, respectively. All extracts were investigated for the cordycepin, total phenolic, and total flavonoid content. Their antioxidant, anti-tyrosinase and anti-ageing activity was analysed by *in vitro* spectrophotometric methods [3-4]. The highest cordycepin content was detected in *C. miliaris* ethanolic extract (0.040%), followed by ethyl acetate extract (0.025%), and hexane extract (0.001%), respectively. Similarly, the ethanolic extract contained the highest phenolic and flavonoid content of 199.0±27.1 mg gallic acid/g extract and 2.00±1.4 mg quercetin/g extract, respectively. The ethanolic extract was found to possessed the highest antioxidant activity with Trolox equivalent antioxidant capacity of 1.0±0.2 mg/mg dried material and equivalent concentration of 0.2±0.1 μM FeSO4/mg dried material. Additionally, it showed the highest anti-tyrosinase activity with the inhibition of 21.4±5.7% 25.1±8.3% against tyrosinase on the cleavage of L-tyrosine and L-dopa, respectively. However, the highest anti-elastase and anti-hyaluronidase activities were detected in *C. miliaris* ethyl acetate extract with the inhibition of 57.0±11.4% and 69.0±3.9%, respectively. Therefore, *C. militaris* ethanolic extract was suggested for whitening product development, whereas, *C. militaris* ethyl acetate extract was suggested for anti-ageing product development.

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