Review: The Bioavailability Activity of *Centella asiatica*

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**Abstract**
*Centella asiatica* (Bao-bog, Tiger Herbal, Pennywort, Gotu kola) has been announced as one of five “Thailand Champion Herbal Products (TCIIP)” by the Department for Development of Thai Transitional and Alternative Medicine, Ministry of Public Health. *C. asiatica* has been investigated for its bioavailability activity, antimicrobial activity, antioxidant activity, anti-inflammatory activity, wound healing activity and anticancer activity. *C. asiatica* contains many types of active compounds: terpenoids, sesquiterpenoids and phenols. Thus, *C. asiatica* has high potential to be applied in pharmaceutical, cosmetic and food industries.

**Keywords:** Centella asiatica, Phytochemistry, Bioactivity, Herbal product

**1 Introduction**

*Centella asiatica* (Bao-bog, Tiger Herbal, Pennywort, Gotu kola) is used as a traditional drug to decrease blood pressure, heal fresh wounds, heal bruises and treat diuretic symptoms [1]. Normally, most parts of *C. asiatica* are used, including the stems, leaves and aerial parts. In Ayurveda, an Indian system of medicine, *C. asiatica* is used for the management of central nervous system, skin and gastrointestinal disorders [2]. The major biologically active compounds of *C. asiatica* extracts are monoterpenes, sesquiterpenes and triterpenoids [3]. The major active compounds of *C. asiatica* are the polyphenols [4] and triterpenes [5]. In addition to terpenoids, *C. asiatica* also has high phenolic and flavonoid contents, such as quercetin, kaempferol, catechin, rutin, apigenin, naringin and volatile oils (such as caryophyllene, farnesol and elemene) [4], [6]. *C. asiatica* has been demonstrated in many studies to have wound healing activity [7], anticancer activity [8], antioxidant activity [4], antimicrobial activity [9], [10] and antileptotic activity [11]. The enhancement of collagen synthesis by the effect of asiaticoside in *C. asiatica* had been suggested as being able to be applied in functional cosmetics [12]. *C. asiatica*’s active biological activities have been scientifically proved and verified, which indicates that *C. asiatica* has high potential for use in pharmaceutical, cosmetic and food applications.