

## **A review: antibacterial activities, antioxidant properties and toxicity profile of *Centella asiatica***

### **ABSTRACT**

*Centella asiatica* (*C. asiatica*) has been widely used as traditional or alternative medicine for thousand years due to its capabilities to cure various kinds of diseases. This plant has been used widely to prepare numerous kinds of food and beverages in many countries due to its beneficial functional properties. Active compounds that contribute to its antimicrobial properties are madecassic acid, asiatic acid, madecassoside, and asiaticoside. *C. asiatica* extract can inhibit majorities of foodborne pathogenic and spoilage microorganisms. It also contained antioxidant properties and has been proven to have an insignificant toxicity effect on human consumption. Currently, there is an increase of interest in research development for natural antioxidants and antimicrobial agents to replace the synthetic types in the food industry. This review presents information on the antioxidant capabilities of *C. asiatica* and its function to inhibit, reduce or minimize microbial growth. The toxicity and safety aspects of consuming *C. asiatica* extract has also been highlighted to provide essential data for the development of natural preservatives.

**Keyword:** *Centella asiatica*; Chemical composition; Antioxidant capacity; Antimicrobial activity; Toxicity