

# 7 Centella

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## 7.1 Botany

### 7.1.1 Introduction

#### Taxonomy

*Centella asiatica* (L.) Urban (or *Centella asiatica* (L.) Urb.), a tropical plant belonging to the family Apiaceae (Umbelliferae), is commonly known as 'gotu kola', Asiatic pennywort, Indian pennywort, Indian water navelwort, wild violet, tiger herb and spadeleaf, and also just as *Centella* or 'centella' (Yu *et al.*, 2006; James and Dubery, 2009; Orhan, 2012). Its taxonomic hierarchy is as follows:

Kingdom: Plantae  
Division: Tracheophyta  
Subdivision: Spermatophytina  
Class: Magnoliopsida  
Order: Apiales  
Family: Apiaceae  
Genus: *Centella*  
Species: *asiatica*

The species is an ancient medicinal herb used in Ayurvedic medicine in India and in herbal medicine in Malaysia and China, and some other Asian countries. Moreover, it has been used in folk and alternative medicines for

treating numerous human ailments, including wounds, psoriasis and leprosy, and improving brain function. In contrast to other medicinal herbs, *C. asiatica* has been investigated experimentally and clinically rather extensively (Brinkhaus *et al.*, 2000).

The use of *C. asiatica* in food and beverages has become popular owing to its health benefits, including its antihypertensive (Intharachatorn and Srisawat, 2013), antioxidant (Pittella *et al.*, 2009), immunomodulatory (Wang *et al.*, 2003), antimicrobial, anticancer (Roy *et al.*, 2013), anti-inflammatory (Somchit *et al.*, 2004), wound healing (Suguna *et al.*, 1996), memory-enhancing (Meena *et al.*, 2012) and anti-ulcer (Abdulla *et al.*, 2010) properties. Currently, the resources of *C. asiatica* are gradually being depleted and thus the species is included in the IUCN (International Union for Conservation of Nature) list of threatened species (Singh *et al.*, 2010; IUCN, 2013).

*C. asiatica* has various synonyms (for example, *C. coriacea*, *C. asiatica* var. *floridana*, *Hydrocotyle asiatica*, *H. asiatica* var. *floridana*, *H. lunata* and *Trisanthus cochinchinensis*), a detailed list of which is given by the Institute for Systematic Botany of the University of South Florida (Wunderlin and

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