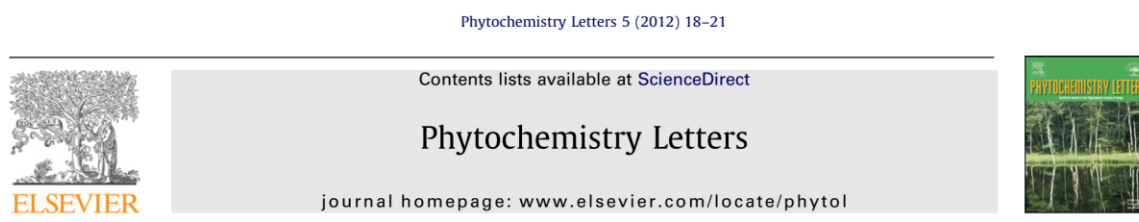
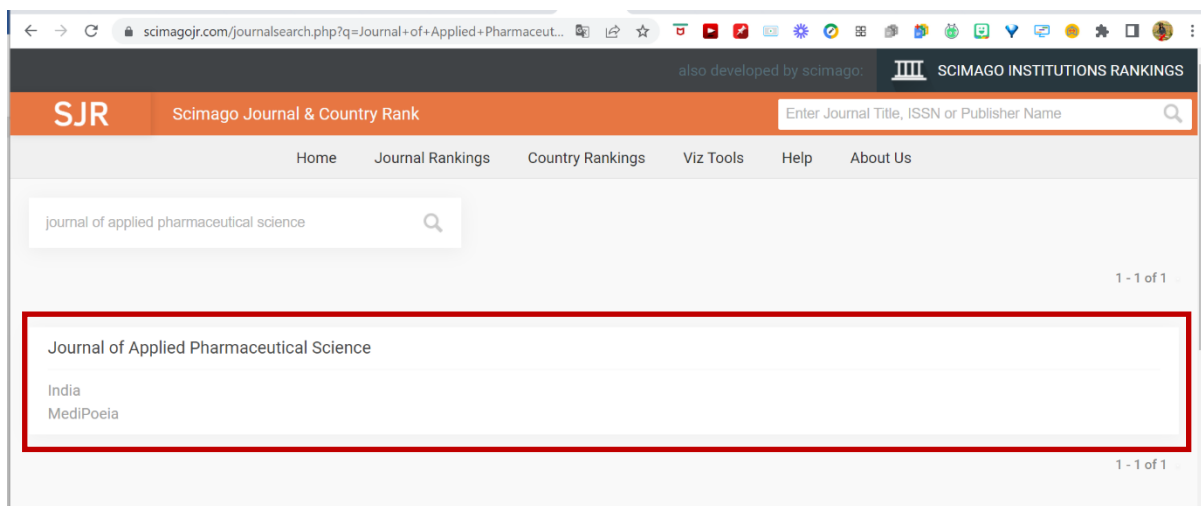


รายงานการอ้างอิงบทความเรื่อง “Neolignans from *Callistemon lanceolatus*”

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1. A review of the chemical composition and biological activities of *Callistemon lanceolatus* (Sm.) Sweet. *Journal of Applied Pharmaceutical Science*. (2021). 11(12). 065-073. (Dec 2021)



Neolignans from *Callistemon lanceolatus*

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A review of the chemical composition and biological activities of *Callistemon lanceolatus* (Sm.) Sweet

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ABSTRACT

The genus *Callistemon* belongs to the family Myrtaceae that comprises approximately 50 shrub species. These species are mainly found in the east and southeast of Australia. Among them, *Callistemon lanceolatus* (Sm.) Sweet (common name: lemon bottlebrush) is an important medicinal plant and is traditionally used to treat various disorders. *C. lanceolatus* is widely distributed in tropical and subtropical regions. This plant contains a wide variety of chemical components such as triterpenoids, flavonoids, fatty acids, and phenolic compounds. In the present review, the chemical composition and biological activities of *C. lanceolatus* were summarized. In this regard, a literature search was carried out to retrieve information concerning the chemical composition and biological activities of *C. lanceolatus* from PubMed, Science Direct, Taylor and Francis, BMC, Wiley, Springer, ACS, Google Scholar, and other literature databases. The isolated compounds and extracts of *C. lanceolatus* were reported for a variety of biological properties, including antimicrobial, antioxidant, anti-inflammatory, antidiabetic, antiproliferative, and insecticidal activities. In this review, we attempt to combine the literature regarding phytochemical composition and biological activities of *C. lanceolatus*.

INTRODUCTION

Traditionally, numerous plant species have been extensively used to treat various ailments by ethnic people throughout the world. In general, plants contain a wide variety of biologically active components, including phenolic acids, flavonoids, alkaloids, terpenoids, phytosterols, saponins, tannins, and lignins (Clardy and Walsh, 2004; Goyal *et al.*, 2012; Shanmugam *et al.*, 2021). The genus *Callistemon* (Myrtaceae) contains about 50 species with immense medicinal importance. *Callistemon* species are mainly found in the eastern and southeastern regions of Australia (Sharma *et al.*, 2021). The general characteristics of this genus are lanceolate leaves, flower spikes like bottlebrushes, and red stamens (Gad *et al.*, 2019). Previous studies reported the isolation and identification of different

chemical groups from *Callistemon* species, including polyphenols and terpenoids (Shehabeldine *et al.*, 2020). The leaves of this plant possess a pleasant fragrance due to the presence of essential oil. Different species of *Callistemon* are cultivated for the purposes of essential oils, farm trees, land reclamation, and ornamental horticulture besides other applications (Lopez-Mejia *et al.*, 2021; Zubair *et al.*, 2013).

Callistemon lanceolatus (Sm.) Sweet is a medium-sized tree, native to Australia, and is widely found in subtropical and tropical zones. This plant is commonly known as lemon bottlebrush due to its cylindrical brush-like red flowers (Singh *et al.*, 2020). It is also widely cultivated as an ornamental plant throughout the world. Aerial parts of *C. lanceolatus* are known to possess various biological activities, including antimicrobial (Nazreen *et al.*, 2020), antioxidant, antidiabetic (Ahmad *et al.*, 2018; Kumar *et al.*, 2011a), anti-inflammatory (Kumar *et al.*, 2011b), and antiproliferative (Park *et al.*, 2018) activities. In particular, essential oils from the leaves of *C. lanceolatus* have antimicrobial and anti-inflammatory properties (Shukla *et al.*, 2012; Sudhakar *et al.*, 2004). This plant is a versatile source of

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