

# Alpinia officinarum Medicinal Research and Application

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## Abstract

Triptolide has piqued the interest of the organic and medicinal chemistry communities in recent decades due to its fascinating structural characteristics and prospective diverse pharmacological actions. However, its low water solubility and oral bioavailability, uncertain mode of action and severe toxicity, natural scarcity and complexity in synthesis have severely hampered its therapeutic usefulness. As a result, several clever total synthesis algorithms have been created to avoid such difficulties. Various triptolide derivatives have been produced and evaluated in the hunt for new drug-like derivatives for possible anticancer, anti-inflammatory, immunosuppressive and anti-agents, Alzheimer's among other things. Meanwhile, by developing and synthesising diverse bioactive probes, certain molecular targets responsible for numerous pharmacological actions have been identified.

**Keywords:** Anti-inflammatory • Anticancer • Bioavailability • Toxicity

## Introduction

*Alpinia officinarum* Hance (Gaoliangjiang in Chinese, lesser galangal) is a spice that has been used for over 1000 years in Europe and China. It has also been used in traditional Chinese medicine to cure stomach aches, colds, invigorate the circulatory system, alleviate vomiting and reduce edoema. It was originally documented in Hong-jing Tao's Mingyi Bielu and it is included in the Chinese Pharmacopoeia. It is also a significant dietary Chinese medicine that is gaining popularity across the world. Galangal contains anti-inflammatory, anti-oxidant, anti-emetic and anticancer properties, according to recent research. We introduced the botanical resource, chemistry, ethnopharmacology and pharmacology and therapeutic use of galanga in this review.

## Literature Review

Recent research has revealed that skin pigmentation is affected not only by the kind and quantity of melanin, but also by melanosome transit, redistribution and degradation. Following melanogenesis, melanosomes travel from the nucleus to the dendrites via F-actin, tubulin, myosin5a, Rab27a, melanophilin and other proteins and subsequently transport to the surrounding keratinocytes via the control of protease-activated receptors-2 and membrane glycoprotein. Melanosomes enter keratinocytes and subsequently migrate to the epidermis side of keratinocytes with the help of cytoskeleton components and microtubule-associated dynein.

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## Discussion

Aside from complex extracts and single-herb pure bioactive components, combinations of multiple herbs have historically been utilised to treat dementia. Yukmijihwang-tang (a blend of six herbs, including *Rehmannia glutinosa*, *Cornus officinalis*, *Dioscorea batatas*, *Paeonia suffruticosa*, *Poria cocos* and *Alisma orientale*) is a popular herbal formula in Korea, China and Japan. Yukmijihwang-tang boosted the hippocampus's production of transthyretin and PEP19, a neuron-specific protein that reduced apoptosis [1-7].

## Conclusion

Alzheimer's disease is the most common kind of dementia and it is now a worldwide and economic danger. Because Alzheimer's disease is a complex disease, there are several treatment targets. The current FDA-approved medication for Alzheimer's disease (AD) primarily addresses symptoms and is unable to improve memory issues or slow the pace of AD neurodegeneration. As a result, there is an urgent need to discover alternative methods to AD treatments that target numerous underlying pathways in order to provide improved therapy for AD. Many medicinal plants, according to traditional medical systems, may be effective in the treatment of serious diseases such as cancer, stroke, cardiovascular problems and neurological disorders.

## Conflict of Interest

There are no conflicts of interest by author.

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