

PC-P-40 **Comparative study of microscopic, phytochemical, and thin layer chromatography analyses of *Curcuma longa* L. and *Zingiber cassumunar* Roxb. rhizomes of Cambodia**

Visessakseth So, Hengsovannarith Phal, Borey Hing, Seavmey Ou, Sopharath Yun, Kimyi Ry, Kimyou Lim, Sin Chea, Samell Keo*

Department of Pharmacy, Faculty of Health Sciences, University of Puthisastra, Phnom Penh, Cambodia

*Corresponding author: ksamell@puthisastra.edu.kh; H/P: (855) 12 552 681

KEYWORDS: *Curcuma longa* L., *Zingiber cassumunar* Roxb., Microscopic, Phytochemical, TLC

INTRODUCTION

Curcuma longa L. (Local name: *Romiet* or *Lmiet*) and *Zingiber cassumunar* Roxb. (Local name: *Ponlei*) rhizomes have been widely used by the traditional medical practitioners for curing various illnesses such as arthritis, inflammation and muscle problems. In the field of cosmetics, these plants have been used for the improvement of skin health.

OBJECTIVES

This study aims at comparing the evaluation of microscopic cellular elements, phytochemicals and thin layer chromatography (TLC) fingerprints between the *Curcuma longa* L. and the *Zingiber cassumunar* Roxb. rhizomes cultivated in Cambodia.

MATERIALS AND METHODS

The powder of *Curcuma longa* L. and *Zingiber cassumunar* Roxb. rhizomes were purchased from the local plant drugstore and authenticated by University of Puthisastra (UP)-Herbarium (*C. longa*: UPFPH-210019; *Z. cassumunar*: UPFPH-210033). The powder microscopic study was performed in accordance with the WHO protocol in 1998. The powder of these plants was extracted with methanol by using Ultrasonication-Assisted Extraction (UAE) method. The extracting yields of each plant were subjected to the phytochemical screening by using chemical tests. The TLC analysis of each plant was performed with mobile phase ratio toluene:ethanol (9:1). The TLC layouts were detected by 254-366 nm UV light and 10% of H₂SO₄ reagent.

RESULTS

The powder microscopic studies of *Curcuma longa* L. and *Zingiber cassumunar* Roxb. rhizomes showed that starch granules, vessels, group of fibers, vessels associated with pigment cells, parenchyma and oleo-resin cells were present in both plant rhizomes. The starch granules in *Zingiber cassumunar* Roxb. rhizomes were more abundant than those of *Curcuma longa* L. rhizomes. The phytochemical screening unveiled the positive tests of alkaloids, tannins, steroids, terpenoids, cardiac glycosides, essential oils and resins in both plant rhizomes. The TLC layouts investigated under 254-366 nm UV light and 10% of H₂SO₄ reagent gave good separation with the mobile phase ratio toluene:ethanol (9:1).

CONCLUSION

This study provides the scientific data of cellular elements, phytoconstituents and TLC fingerprints of Cambodian *Curcuma longa* L. and *Zingiber cassumunar* Roxb. These profiles exhibit significant roles in the areas of the plant authentication and new drug isolation.

THE 2ND INTERNATIONAL CONFERENCE ON PHARMACY EDUCATION AND RESEARCH
NETWORK OF ASEAN (ASEAN PharmNET 2017)

21 & 22 November 2017
GRAND SEASON HOTEL, KUALA LUMPUR

Theme:
Advancing Multidimensional Roles of Pharmacy Education and Research

Organised by:
Faculty of Pharmacy, Universiti Kebangsaan Malaysia, Malaysia

Co-organised by:
Faculty of Pharmacy, Universiti Teknologi Mara, Malaysia
School of Pharmacy, Taylor's University, Malaysia

ASEAN PharmNET members
Faculty of Pharmacy, Universiti Kebangsaan Malaysia, Malaysia
Faculty of Pharmacy, Universiti Teknologi Mara, Malaysia
School of Pharmacy, Taylor's University, Malaysia
Faculty of Pharmacy, University of Medicine & Pharmacy at Ho Chi Minh City, Vietnam
Hanoi University of Pharmacy, Vietnam
Faculty of Pharmacy, Mahidol University, Thailand
Faculty of Pharmacy, GadjahMada University, Indonesia
Faculty of Pharmacy, University of Health Science, Laos PDR
Faculty of Pharmacy, University of the Philippines Manila, the Philippines
Faculty of Pharmacy, University of Surabaya, Indonesia
International University, Cambodia
School of Pharmacy, Bandung Institute of Technology, Indonesia
University of Pharmacy, Yangon, Myanmar

Website: <http://www.aseanpharmnet2017.net/>



SCIENTIFIC COMMITTEE

**The 2nd International Conference on Pharmacy Education and Research Network of Asean
(ASEAN PharmNET 2017)
21 & 22 November 2017
Grand Seasons Hotel, Kuala Lumpur**

Head of Scientific Committee:

Assoc. Prof. Dr. Ng Shiow Fern
Universiti Kebangsaan Malaysia (UKM)

Members:

UKM

Assoc. Prof. Dr. Juriyati Jalil
Assoc. Prof. Dr. Haliza Katas
Assoc. Prof. Dr. Endang Kumolosasi
Dr. Adyani Md Redzuan
Dr. Noraida Mohamed Shah
Dr. Lam Kok Wai
Dr. Ernieda Md. Hatah
Dr. Chong Wei Wen
Dr. Mohd Kaisan Mahadi
Dr. Shamin Mohd Saffian
Ms. Nasibatul Husna Adzmi

Taylor's University

Dr. Naveen Kumar Hawala Shivashekaregowda
Dr. Renukha Sellappans
Ms. Hoo Yoon Fong
Dr. Rajinikanth Siddalingam