

Original Article

Phytochemical analysis and potential applications of the ethanol and aqueous-ethanol extracts of some selected plant in family Zingiberaceae plants for cosmeceutical and health-promoting food

ABSTRACT

Background: The rhizomes of the *Zingiberaceae* family are a vegetable widely used in many Asian nations, and their therapeutic properties have been acknowledged in many traditional recipes.

Aims and Objectives: Investigate the *in vitro* biological effect of the aqueous-ethanol and ethanol crude extract received from three medicinal plants in the family *Zingiberaceae*.

Materials and Methods: Three species of *Zingiberaceae* plants including *Curcuma longa* L., *Curcuma zedoaria* (Christm.) and *Curcuma aromatica* Salisb. were gathered and evaluated for their phytochemical contents, anti-inflammatory and anti-oxidant characteristics using the aqueous-ethanol (30:70%) and ethanol (95%) extraction and varying according to single and mixed extracts (1:1:1 and 2:1:1 ratio respectively) for determining the synergistic effects.

Results: It was indicated that extracts of the three selected plant contained at least 5 from 13 phytochemical constituents. The single aqueous-ethanol extract of *C. aromatica* Salisb. and synergy achieved at 1:1:1 ratio of aqueous-ethanol extract showed the highest effective anti-inflammatory activity. The greatest antioxidant activity was found in a single ethanol extract of *C. zedoaria* (Christm.) and synergistically obtained at a 1:1:1 ratio of aqueous-ethanol extract. Furthermore, we discovered that combination extract produced greater outcomes than utilizing the mono extract alone.

Conclusion: Our results demonstrate that screening for chosen *Zingiberaceae* plant extracts is a favorable representation of the value of screening for cosmetically and medicinal purposes.

Keywords: *Curcuma aromatica*, *Curcuma longa*, *Curcuma zedoaria*, *Zingiberaceae*

INTRODUCTION

Family *Zingiberaceae* has around 85 species of plants that are mostly grown in Asia, Central and South America, and Africa.^[1] They are recognized by their tuberous or nontuberous rhizomes, which contain aromatic and therapeutic uses. Almost plants have been used by humankind as a source of food (spices and flavoring agents) and traditional medicine. Their rhizomes possess a number of medicinal, pharmacological, and nutritional properties such as anti-inflammatory, immunostimulatory, immunomodulatory,

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