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ABSTRACT BOOK

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TOPICAL CREAM CONTAINING RUTA MONTANA L. ESSENTIAL OIL: PREPARATION, CHARACTERIZATION, IN VITRO AND IN VIVO BIOLOGICAL ACTIVITY

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Ruta montana L. (Rutaceae) which is native to the Mediterranean region and Southwest Asia [1] is used traditionally for its antifungal, antioxidant and anti-inflammatory activities [2]. A topical cream containing *R. montana* essential oil was designed, characterized and screened for its *in vitro* antioxidant, antimicrobial and *in vivo* anti-inflammatory activities. The essential oil obtained from the leaves was screened for its composition by using GC-FID/MS method. *In vitro* antioxidant and antimicrobial activities of the essential oil and cream were screened by using ABTS decolorization, DPPH scavenging, metal chelating potential, reducing power and agar microdilution tests, respectively. *In vivo* anti-inflammatory activity was screened by using HET-CAM assay. 2-Undecanone (90.5%), 2-nonanone (2.2%) and 2-decanone (1.3%) were found as the major compounds of the essential oil. Inhibition values of DPPH scavenging, metal chelating activities and TEAC value of ABTS decolorization potentials of the cream were found as 8.12%, 6.7% and 0.31±0.02 mM respectively. EC_{50} value for reducing power was found as 8.26±0.35 mg/mL. Antimicrobial potentials were determined against *E. coli*, *S. aureus* and *L. reuteri* as 500 µg/mL, >500 µg/mL, 250 µg/mL for cream when compared with Chloramphenicol, respectively. The cream also exhibited strong *in vivo* anti-inflammatory activities with 78.13±0.48% value whereas the essential oil showed weak potential (62.5±0.71%) compared with Hydrocortisone (80.30 ± 6.75%). This study reports a promising topical cream containing *Ruta montana* L. essential oil with good *in vitro* antimicrobial and *in vivo* anti-inflammatory potentials.

Keywords

Ruta montana L. Essential oil, Cream, Antioxidant, Antimicrobial, Anti-inflammatory

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