Tropical Journal of Pharmaceutical Research August 2021; 20 (8): 1647-1654
ISSN: 1596-5996 (print); 1596-9827 (electronic)

Available online at http://www.tjpr.org
http://dx.doi.org/10.4314/tjpr.v20i8.14

Original Research Article

Evidence of anti-inflammatory and anti-ulcer properties of aerial parts of *Centaurea tougourensis* Boiss. and Reut.

Mohamed Sabri Bensaad[1,2], Saliha Dassamiour[2]*, Leila Hambaba[2], Mohamed Amine Kahoul[3], Mohammed Benhoula[4]

[1]Laboratoire de Physio-Toxicologie, Pathologie Cellulaires et Moléculaires-Biomolécules (LPTPCMB), Département de Biologie des Organismes ; [2]Laboratoire de Biotechnologie des Molécules Bioactives et de la Physiopathologie Cellulaire (LBMBPC), Département de Microbiologie et de Biochimie, Faculté des Sciences de la Nature et de la Vie, Université de Batna-2 ; [3]Laboratoire sciences des aliments (LSA), Institut des Sciences Vétérinaires et Agronomiques, Université de Batna-1, Batna ; [4]Laboratoire de Microbiologie Appliquée (LMA), Département de Microbiologie, Faculté des Sciences de la Nature et de la Vie, Université de Béjaia, Béjaia, Algeria

For correspondence: **Email: s.dassamiour@univ-batna2.dz; **Tel:** +213-670286603*

Sent for review: 24 March 2021 *Revised accepted: 17 July 2021*

Abstract

Purpose: *To determine the anti-inflammatory and anti-ulcer properties of the aerial parts of Centaurea tougourensis Boiss. & Reut.*
Methods: *The effects of n-butanol (n-BuOH) extract of the aerial part of Centaurea tougourensis on carrageenan-induced paw edema and ethanol-induced gastric mucosal damage were determined at 2 doses (200 and 400 mg/kg, po) in a mouse model. For each test, the animals were randomly divided into negative and positive control groups, as well as extract-treated groups. The mice were observed for any sign of inflammation for a period of 24h.*
Results: *Reduction of paw edema by C. tougourensis extract was highly significant ($p < 0.001$) at a dose of 400 mg/kg 24 h after carrageenan injection, with 55.26 % inhibition, followed very closely by 53.15 % inhibition at the dose of 200 mg/kg; indomethacin group showed an inhibition of 60 %. Histological examination supported the inhibition results. A significant reduction in inflammation by the extract at a dose of 400 mg/kg was also observed. No sign of ulcer was observed with C. tougourensis at the two doses (200 and 400 mg/kg). The total polyphenol content of the n-BuOH extract was 85.44 µg gallic acid equivalent/mg of extract. Tannins were the most abundant fraction (51.87 µg tannic acid equivalent/mg of extract), followed by flavonoids (25.55 µg quercetin equivalent/mg of extract).*
Conclusion: *The results indicate that C. tougourensis may have potential beneficial effects in the treatment of diseases associated with inflammation and pain, besides its protective effect on the gastrointestinal tract.*

Keywords: *Anti-inflammatory, Anti-ulcer, Centaurea tougourensis, Flavonoids, Phenolics, Tannin*

Tropical Journal of Pharmaceutical Research is indexed by Science Citation Index (SciSearch), Scopus, International Pharmaceutical Abstract, Chemical Abstracts, Embase, Index Copernicus, EBSCO, African Index Medicus, JournalSeek, Journal Citation Reports/Science Edition, Directory of Open Access Journals (DOAJ), African Journal Online, Bioline International, Open-J-Gate and Pharmacy Abstracts

INTRODUCTION

It is well known that chronic inflammation is associated with several physiological disorders, especially those that interfere with the normal functions of the immune system, leading to serious and chronic diseases. As a result, inflammatory pain is generated by these stimuli