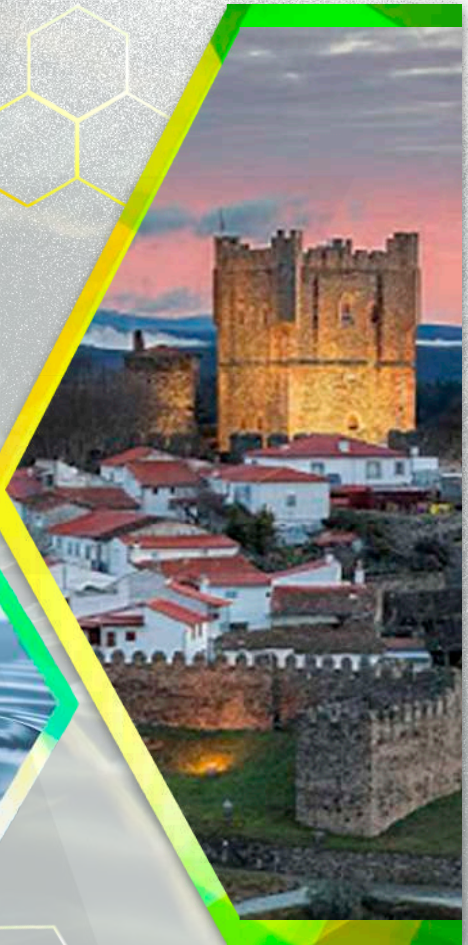




Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



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PCH-56

THE EFFECT OF A TANNIN ENRICHED TOPICAL FORMULATION ON MICE EARS FUNGAL BIODIVERSITY

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Cytinus hypocistis (L.) L. is a holoparasitic plant on various *Cistaceae* family members occurring in the Mediterranean region. This specie has long been used in European popular medicine due to their astringent and haemostatic properties. Current studies attributed its antioxidant, anti-inflammatory, and antimicrobial properties to their hydrolysable tannin content. Therefore, the extracts of these plants might be a natural alternative treatment for many skin conditions.

The main objective of the present work was to study the effect of *C. hypocistis* enriched topical formulation (EF) in mice ears fungal isolates using routine mycological techniques [1]. Three EF were prepared with different concentrations of *C. hypocistis* extracts: a) 3.1 mg extract (E)/g of cream; b) 6.2 mg E/g of cream; and c) 12.4 mg E/g of cream. The formulations were carefully mixed to guarantee sample homogeneity. A negative control (base cream) and the three EF were stored at 4 °C during the experiments. Thirty samples were collected in the ears of 30 female mice. The mice were divided in six groups of 5 mice each, to evaluate the correct dosage and toxicity of the extract for the mice, although these were accessed in another essay. Two of the groups were of wild type, one was treated with the base cream (G6) and the other with the cream with highest concentration of extract (G4), and the four others of Papillomavirus models, a positive control on which was applied the base cream (G5) and rest were treated with three creams with rising concentrations of the extract (G1, G2 and G3, respectively). The experiment procedure was approved by a Animal Ethics Committee-DGAV number 0421/000/000/2014, 24/09/2014 (020172).

Before the application, the surface of the ear was rubbed for 1 minute, using a swab and saline solution. The samples were transferred to Petri dishes with the culture medium Potato Dextrose Agar and the microscopic identification was carried out using the Lactophenol with Cotton Blue technique for staining the filamentous fungi and identification of the genera. In the entirety of samples collected on the first collection, 4 filamentous fungal genera were isolated: *Penicillium* (16.7%) in G1, G4 and G5, *Mucor* (16.7%) G1, G2, G4 and in G5, *Cladosporium* (3.33%) in G1, *Aspergillus* (3.33%) in G6. In total, fungi were isolated in 14 (46.7%) animals. Fungal genera were not identified in three mice from G1 and G5. The remaining samples exhibiting either other types of microorganisms or no growth at all. After the application of *C. hypocistis* cream for 17 days in the ears, only one fungal colony was isolated in a mouse from G4. The genus was not identified. The results obtained suggest that *C. hypocistis* reduces the presence of fungal in the ears of mice.

References

[1] Kidd, S., Halliday, C.L., Alexiou, H., Ellis, D. (2016) "Descriptions of medical fungi", 3rd Edition, University of Adelaide, Australia. ISBN: 9780646951294.

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