Unveiling the Potential of Raspberry Leaves for Cosmetic and Dermatological Formulations

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INTRODUCTION

- Raspberry leaves, despite their potential health benefits, often face wastage on a global scale, leading to their classification as bio-waste. However, recent advancements have shed light on the significant bioactive compounds present in these leaves. Studies have unveiled their high phenolic content and potent antioxidant activity, sparking interest across various industries.
- The present study delves into recent advancements and applications concerning raspberry leaves, focusing on their dermatological, antioxidant, antimicrobial, and antibiofilm activities.

THE AIM OF THE STUDY

- To explore the potential dermatological benefits of raspberry, antioxidant capacity, antimicrobial efficacy against relevant skin pathogens
- Check their ability to hinder biofilm formation.

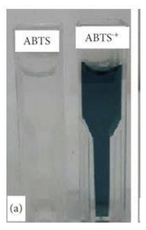
METHODOLOGY

Evaluation of the antioxidant, anti-ageing and lightening properties of extracts

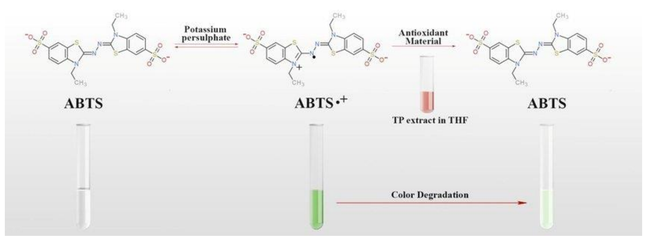
Preparation of the raspberry's extracts (1.0 mg/mL)

Tyrosinase, elastase and hyaluronidase inhibition assay by colorimetric method

Antioxidant activity using the ABTS method



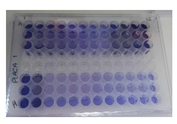
1. Preparation of the ABTS+ radical cation
2. Preparation of ABTS+ working solution
3. Preparation of stock and working Trolox solutions and standard curve
4. Determination of Antioxidant Capacity



Antibiofilm activity

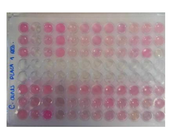
Mass quantification

Using the crystal violet method



Inhibition metabolic activity

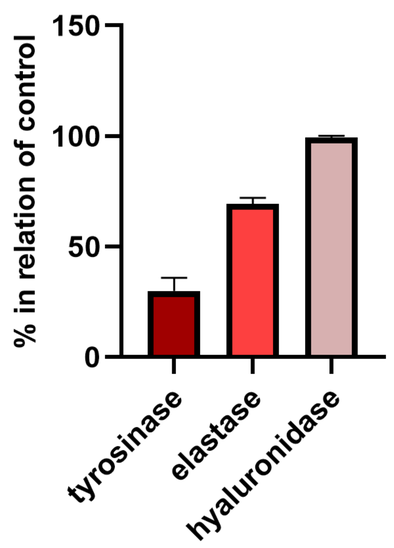
Using resazurin reagent



Use of *Cutibacterium acnes* and *Staphylococcus aureus*

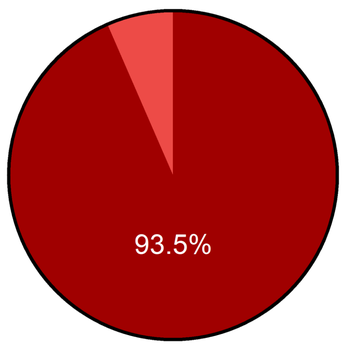
RESULTS

Graph 1- Enzimatic inhibition activity



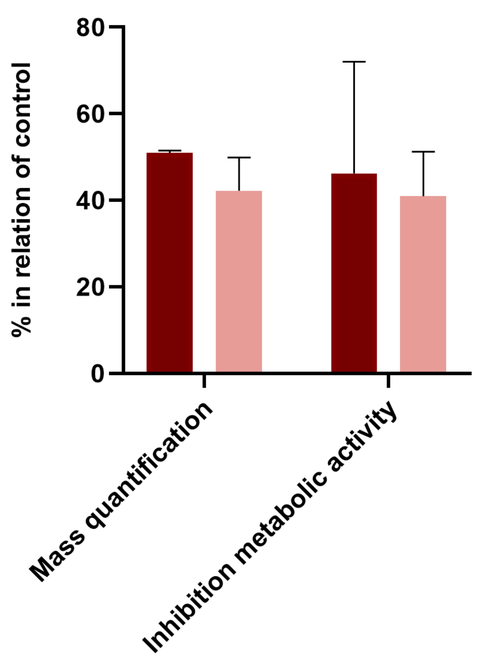
Graph 1- Enzyme inhibition activity for aqueous raspberry leaf extracts. Mean values ± SD for three independent experiments are illustrated.

Graph 2- Antioxidant activity



Graph 2- 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid (ABTS) Aqueous extracts of raspberry extracts.

Graph 3- Antibiofilm activity



Graph 3- Effect of extracts at biofilms of *Cutibacterium acnes* and *Staphylococcus aureus* with the percentage of quantification of biofilm mass and quantification of inhibition of metabolic activity. Mean values ± SD for three independent experiments are illustrated.

CONCLUSIONS

This study underscores the remarkable potential of raspberry leaves for dermatological applications, emphasizing their antioxidative, antimicrobial, and antibiofilm properties.
These findings suggest their promising role in skincare and cosmetic formulations.

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