Antimicrobial hydrodistillates from olive pomace, extraction procedure, and microencapsulation process for use in cosmetic and/or dermatological compositions

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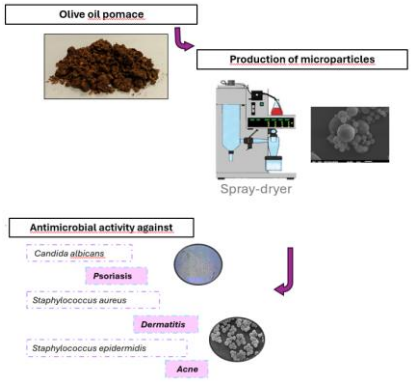
Description



The invention pertains to the development of antimicrobial hydrodistillates derived from olive oil pomace, their encapsulation in microparticles, and the formulation of cosmetic and/or dermatological compositions, such as topical aqueous mists. This technology transforms olive oil pomace waste into valuable antimicrobial compounds, promoting sustainability and resource optimization in the olive oil industry. The dermatological formulations of antimicrobial hydrodistillates address the following challenges:

Treatment of Skin Conditions and Antibiotic Resistance: Skin conditions like dermatitis, acne, and psoriasis have become more prevalent due to mask usage during the COVID-19 pandemic. This is coupled with concerns over antibiotic-resistant bacteria.

Eco-Friendly Extraction and Formulation: The process employs sustainable hydrodistillation to extract bioactive compounds, minimizing environmental impact and incorporating the use of natural polymers in accordance with sustainability principles

Valorization of Olive Oil Pomace: The method reduces olive oil pomace waste while generating valuable bioactive products for dermatological applications.

Innovative aspects and advantages

- *Skin Care Solutions with Antimicrobial Hydrodistillates***:** Hydrodistillates derived from olive oil pomace contain volatile compounds that effectively combat skin pathogens such as *Candida albicans*, *Staphylococcus aureus*, and *Staphylococcus epidermidis*.
- *Efficient Hydrodistillation Process***:** The hydrodistillation process extracts antimicrobial compounds from olive oil pomace within 10–60 minutes, offering a scalable, cost-effective method for large-scale production.

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- *Microencapsulation of Hydrodistillates*: Encapsulation using natural polymers ensures stability and release, enhancing the efficacy of cosmetic and dermatological products.
- *Use of Sustainable Natural Polymers*: The incorporation of natural polymers aligns with the demand for sustainable, eco-friendly ingredients in personal care products.
- *Cosmetic and Dermatological Formulations*: Encapsulated hydrodistillates are integrated into mists that inhibit the growth of pathogenic microorganisms involved in skin conditions.
- *Environmentally Friendly Technology*: This approach leverages undervalued resources reducing environmental impact and avoiding harmful chemicals, adhering to eco-friendly product development practices.
- *Commercialization Potential*: There is significant market potential due to rising consumer demand for natural, effective, and sustainable skin care products, positioning this technology as resource-efficient and economically viable.
- *Innovation and Competitive Edge:* The solution offers a unique, sustainable approach with eco-friendly extraction and encapsulation methods, meeting the growing demand for natural skin care products focused on well-being. This invention represents a groundbreaking advancement in sustainable skin care solutions, turning industry waste into high-value, bioactive resources for addressing pressing dermatological and environmental challenges.

Commercial applications and potential users

The invention is applicable in research centers, technological institutes, universities, companies, and industries within the cosmetic, pharmaceutical, and personal care sectors. The hydrodistillates can be formulated into aerosols, lotions, and creams to address various skin conditions.

Intellectual property status

- Patent ES2977206 A1: Spanish National patent
- Patent PCT/ES2023/070791: International patent

The invention tackles the global challenge of antimicrobial resistance by developing natural antimicrobial products suitable for cosmetic and dermatological applications.

Type of collaboration

We look for a company to commercial exploitation process or companies interested in R&D agreements for its development.

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