University of Naples Federico II
Department of Pharmacy
Doctoral Course in Pharmaceutical Sciences XL Cycle

DEVELOPMENT OF NEW FORMULATION STRATEGIES FOR THE ORAL/OROMNUCOSAL DELIVERY OF CANNABIS EXTRACTS.

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Cannabis is considered a highly promising medicinal plant due to its strong therapeutical properties. The international literature is rich with scientific evidence supporting its potential therapeutic applications. It is particularly recommended for pain therapy, multiple sclerosis, spinal cord injury, and as an antiemetic in cases of nausea and vomiting caused by chemotherapy and radiotherapy.

Currently, various pharmaceutical forms based on cannabis extracts are available on the market. For example, Sativex®, approved by AIFA in 2013, and more recently, pharmacies in Italy have been authorized to prepare magistral medicines such as oily extracts of female cannabis inflorescences, as well as papers and sachet filters. However, it is challenging to determine the precise dosage of these products, and also they often have low patient compliance due to their unpleasant appearance and organoleptic characteristics.

Therefore, as part of a broader research theme being conducted in the Pharmaceutical Technology laboratories of the Department of Pharmacy, the overall objective of this PhD project is to develop new formulation strategies for the oral/oromnucosal delivery of cannabis extracts. Particular attention will be given to self-emulsifying systems, such as nanoemulsions, capable of improving the stability, patient acceptance and bioavailability of cannabis extracts. This research aligns with the strategic goals of the PNRR health sector that aims to improve the prevention and treatment capabilities of the national health system for the benefit of all citizens.

1) d'Angelo et al. JDDST https://doi.org/10.1016/j.jddst.2022.104004

2) Esposito et al. Int J Pharm. https://doi.org/10.1016/j.ijpharm.2020.119587

3) d'Angelo et al. Int J Pharm. http://dx.doi.org/10.1016/j.ijpharm.2017.06.029