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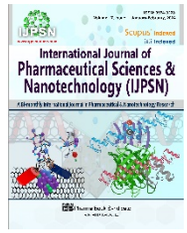

LETTER TO EDITOR

Targeting Potential of Zinc Oxide Nanoparticles and Finasteride-loaded Nano Lipidic Carriers-infused Topical Gel - *In vitro* and *In vivo* Skin Permeation Studies

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Dear Editor

I was going through the article with the above mentioned title which seems to be novel and imperative. Finasteride (FIN), an Inhibitor of the 5α reductase enzyme primarily utilized orally to treat androgenic alopecia, has been explored in a topical gel form. There options for treating androgenic alopecia are limited and the severe systemic adverse effects make things worse. This article highlighted lipidic nanocarriers offer numerous potential benefits like improved follicular permeability and solubility [1].

The development of the dosage form is guided by the fascinating principle on the favorable interaction between the lipid-based nanocarriers and the lipophilic nature of sebum. Coventional formulations like lotions, gels, ointments and creams which contain micronized active components, exhibits inadequate skin penetration for effective drug delivery.

Utilizing Zinc oxide nanoparticles as carriers represents a promising approach, demonstrating effective distribution of finasteride through the skin. Particularly Nanolipidic carriers with zinc oxide nanoparticles with smaller particle sizes helped to improved the permeability for the topical administration of finasteride [2].

The physicochemical properties of the gel and the ZnO nanoparticles, such as pH, viscosity, and spreadability, were assessed. A study on the *in –vitro* drug release of drugs was carried out to confirm the medications release from the gel. The interesting aspect of the study is *Ex-vivo* examination of drug permeation conducted on rat dorsal skin which revealed high permeability concentration for finasteride and Zno nanoparticles.

There exists an unmet clinical need for the development of topical delivery systems for finasteride to mitigate its systemic side effects while adequately managing androgenic alopecia This underscores the potential of the developed systems to address the need.

The article not covered the stability concerns, *in-vitro* toxicity studies and pharmacodynamic evaluation parameters. Additionally, the particles obtained in this study are 200 nm. However, reducing them to less than 50 nm could enhance permeability and therapeutic efficacy. This warrants the researchers to further exploration in this area that would potentially lead to the development of a successful product in market for the treatment of androgenic alopecia.

Declaration

The author discloses no conflicts of interest.

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