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| (51) International classification             | :A61K0009000000,<br>A61K0036610000,<br>A61K0009060000,<br>A61K0047220000,<br>A61K0047100000 | (71)Name of Applicant :<br><b>1)Chitkara University</b><br>Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India Rajpura Punjab India<br><b>2)Chitkara Innovation Incubator Foundation</b> |
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(57) Abstract :

The present disclosure relates to a topical pharmaceutical formulation comprising Bexarotene-loaded nanostructured lipid carriers (NLCs) incorporated into a carbopol gel for the treatment of psoriasis. The NLCs are prepared using glyceryl monostearate as solid lipid, tea tree oil as liquid lipid, and d- $\alpha$ -tocopheryl polyethylene glycol succinate (TPGS) as surfactant, yielding nanoparticles of ~151 nm with high entrapment efficiency (~72%). The gel exhibits suitable viscosity and spreadability at pH 6.0–6.8. In-vitro and ex-vivo studies confirm sustained release, enhanced skin permeation, and improved drug retention. The formulation ensures stability, reduced irritation, and therapeutic benefits of tea tree oil. Reference Fig 1

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