
Formulation and Evaluation of Topical Spray of Anti Acne Agent**Submitted By**

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Abstract

The aim of present work was to develop a topical spray formulation of anti acne agent, which would form a clear transparent thin film at the site of application, effectively delivering the drug without pain or irritation. Aerosol solution contained Eudragit E100 as a polymer, propylene glycol (PG) as a plasticizer, ethanol as a solvent and Isopropyl alcohol (IPA) as a co-solvent. Solutions for topical sprays were filled in aluminium containers fitted with continuous spray valve. Evaluations for the Adapalene topical spray included determination of delivery rate, delivery amount, pressure test, drug content, minimum fill, leakage test, flammability, spray patterns, particles size, thickness of formed film and diffusion release profile etc. Glass containers were used to study physical incompatibility between the aerosol concentrate and propellant (LPG) due to the ease of visible inspection. Formulation with eudragit E100 (0.5%), IPA (1.5%) and PG (2.0%) concentration was found to give higher release profile. Accelerated stability studies were conducted as per ICH guidelines at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ temperature and $75\% \pm 5\%$ RH for 20 days and indicated that optimized formulations were stable. Skin irritation studies of optimized formulations were performed using rabbit as an animal model for 24 h and no erythema and edema were recorded after 24 h. The result obtained shows that topical spray of Adapalene can be used as effective topical system for treatment of Acne.

Keywords: - Topical spray, Adapalene, Aerosol, Eudragit E100.