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Non-Pressurized Topical Spray of Antimicrobial and Antifungal Drug

The current research goal is to create a design, development and evaluation of non-pressurized topical spray of antimicrobial and antifungal drug for skin disease. Various concentration ranges of Miconazole (4.0, 6.0, 8.0, 10.0, and 12.0 µg/ml) were evaluated in ethanol, and the mean percent accuracy was found to be 103, 100.16, 100.25, 99.80, 98.83 percentage while investigated at max 246 nm, and for Neomycin concentration ranges of 10, 20, 30, 40, 50 µg/ml were examined at max 224 nm, and the mean percent accuracy was found 100.2, 99.9, 100.23, 99.45, 100.24 percent. Miconazole and Neomycin had LODs of 0.28 µg/ml and 0.59 µg/ml, respectively. The LOQ of Miconazole and Neomycin, which were observed to be 1.493 µg/ml and 0.7385 µg/ml, respectively. Drug content for F4, F8, F13 and F20 formulation was calculated, it shows 100%, 101%, 101% and 99%. Average extractable weight of formulation F4 was 99.17 ml, formulation F8 was 99.40 ml, formulation F13 was 99.82 ml and F20 was 99.73 ml. F13 generated uniform, smooth, spherical, and well formed nanoparticles, according to TEM examination. There was no agglomeration between the particles, showing that they were separate entities. In-vitro Miconazole and neomycin was found to be 95.31% which is very good and more than marketed formulation. In-vitro release of Miconazole nitrate powder in aerosol spray form, 2% Miconazole nitrate powder were found to be 60.36% in 300 minutes. In-vitro release of Cutaneous Spray, Suspention Neomycin 1.172 % were found to be 50.85% in 300 minutes. It was found that the compositions F13 is perfectly suitable for application by spraying from a pump spray container. The Cytotoxicity study was assessed on HACAT cells for 24 hours at a concentration of 6.25 microlitre per ml, 12.5 microlitre per ml, 0.465 microlitre per ml, 0.411 microlitre per ml, 0.364 microlitre per ml and 0.34 to microlitre per ml. Percentage of inhibition was found to be less than 50% which shows the concentration of non prescribed topical Nano spray was non toxic and showed no significant Cytotoxicity. Non-pressurized spray system when sprayed on topical site forms a stable, breathable film, preferably over a fixed surface area.

Keywords: Miconazole, Neomycin, Non-pressurized Topical Spray, Microbiological Evaluation, Gas Chromatography Mass Spectrophotometer Analysis, Cytotoxicity Activity.

Biography:

Neelam Pawar, She has pursing Phd from Baba Masth Nath University, Rohtak, Haryana. Since 2013 She has 9 years professional experience of teaching & research in different Institute, Industries, and University. Presently she is working as Assistance Professor in Chaudhary Bansilal Universitiy, Bhiwani, Haryana. She has published many good quality review and research article in various journals. She has guided 18 students of M. Pharm.

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