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Formulation and Development of Transdermal Drug delivery system of Ethinylestradiol and Medroxyprogesterone acetate for Antifertility Treatment

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Abstract: The combination therapy of Ethinylestradiol (EE) andMedroxyprogesterone acetate (MPA) transdermal patch has shown efficacy in antifertility treatment. The present studies were designed to develop a suitable matrix type Transdermal Drug delivery system (TDDS) of EE and MPA using various polymers. Nine formulations (F1-F9) were developed by varying the concentration of polymers HPMC, Ethylcellulose and Polyvinylpyrrolidone (PVP) and keeping the drug load constant. Propylene glycol (PG) was used as penetration enhancer. Physical parameters and drug excipient interaction studies were evaluated in all the formulations were simultaneously characterized in a thermostatically controlled modified Franz Diffusion cell. Based on physical parameters and *in vitro* skin permeation profile formulation F8 was found to be the best and chosen as final patch formulation for further studies. Stability profile of formulation F8 depicted stability up to 3 months.

Keywords: Ethinylestradiol, Medroxyprogesterone Acetate, Transdermal matrix patches,Antifertility treatment.

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