Institute of Pharmaceutical Technology and Regulatory Affairs

Faculty of Pharmacy

University of Szeged

I. Symposium of Young Researchers on Pharmaceutical Technology, Biotechnology and Regulatory Science

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Skin penetration investigational methods

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The number of dermal formulations has increased in recent years. Topical semi-solid products are complex formulations with complex structure. Clinical human skin tests give the most relevant information, however, because of its high cost, it is advisable to choose simpler methods in the early stages of preparation development. Modelling of penetration through the skin is a complex challenge. Not only the device and the membrane, but also the properties of the product itself influence how the particular system can be most effectively tested. The released amount of active ingredient in vitro is an important quality attribute of the products. The diffusion and penetration of drug from different carrier systems can be studied with many types of equipment. In my PhD work, different in vitro drug release methods have been used. Two types of vertical Franz diffusion cell are tested with 3 different membranes and the Skin-PAMPA method, too. Based on our results, cellulose membranes can be used to study the drug release only. For modelling the skin penetration we should use other membranes. My further aim is to optimize the in vitro tests for modelling the human skin penetration.

References:

1. OECD, Guidance notes on dermal absorption, No. 156 (2011)