

diffusion-fundamentals

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Drug penetration studied by FTIR methods

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Non-invasively on-line monitoring of topical drug delivery is an important subject in dermatopharmaceutical research.

The FTIR-ATR technique is an accepted and versatile method for studies of drug diffusion through artificial membranes and biological systems.

The development of a FTIR-ATR diffusion cell combines the advantages of the Franz diffusion cell with the FTIR-ATR technique. A mathematical model based on well-defined boundary conditions for estimating diffusion coefficients from experimental data was developed.

The accomplishment of a multivariate calibration of the concentration of the model drug urea in the acceptor medium was achievable.

In other experiments the lateral diffusion of dithranol in Vaseline formulations into artificial membranes has been investigated by using FTIR mapping and photothermal spectroscopy.