

BIODISTRIBUTION STUDIES USING TAPE STRIPPING

Since the concentration of the active ingredients at the receptor site is proportional to the pharmacological response, the study of biodistribution is particularly important in the development of a pharmaceutical preparation in order to gather information on its effective therapeutic application. In this context, the comparison between the biodistribution of nano-encapsulated assets and those conveyed in conventional formulations is of particular interest.

Tape-stripping is a simple and scarcely invasive method that allows to evaluate the concentration of active ingredients in the stratum corneum. The quali-quantitative analysis enables to compare the penetration power of the vehicles conveyed in pharmaceutical forms for topical use.

GOALS

In this project studies of distribution of active substances conveyed in skin will be carried out through tape-stripping and fluorescence imaging. Different types of gels will be studied (eg nanoparticulate gel, organogels and liquid crystalline phases).

- The tape-stripping experiments will be conducted after approval of each protocol by the ethics committee of the University of Ferrara. The final objective is to obtain the kinetics of permeation of the active products, comparing the performances of different formulations.

INSTRUMENTS AND METHODS

For tape-stripping studies, after the application on the forearms of volunteers and the permeation of the active ingredients, the cells of the stratum corneum will be subsequently removed through adhesive strips from which the active ingredient will be extracted. The amount of active substance will be determined 1 to 6 hours after application by HPLC chromatography.

SUBJECTS

Pharmaceutical Technology, Analytical Chemistry.

WORKING GROUP

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COLLABORATIONS

The research group collaborates with international Universities (Macromolecular Chemistry II, University of Bayreuth, Germany)