



“In vitro” penetration studies

There are several reasons for performing penetration studies. In studies where the membranes used are of biological origin the expectation is to acquire information on the “in vivo” performance of the product. When artificial membranes are used the purpose is often to study properties of the formulations such as solubility, emulsification and manufacturing process variables

Zelmic offer the following specific types of penetration studies:

Artificial membranes in Franz cells

By this method we determine the release of the active from a topical formulation. This type of study does not give much information on the skin penetration of the active but is a good indicator on the quality and batch to batch variation and is therefore useful in the development work.

Cadaver skin, pig or human, studies in Franz or in Bronaugh cells

Since most drugs have similar penetration behavior in pig and in human cadaver skin we prefer to use pig skin due to the more consistent properties. We can use full thickness skin and by heat dissection we can use stratum corneum on its own.

Bovine hoof plate studies in Franz cell

The penetration into and through hoof plate is an indicator of the properties in the human nail although the rate of penetration is 30 to 100 times faster in hoof plates. The affinity of antifungal drugs for the keratin in the hoof is similar to the affinity for human nail keratin.

Human nail studies in Franz cell with nail adaptors

The commercially available equipment for nail penetration has been further developed to allow early estimation of product performance on the nail.

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Deliverables

Report containing

- Feasibility study if needed
- Assay methods used
- Membrane integrity
- Absorption of the active to the equipment
- Results, conclusions and recommendations
- Quality statement

Raw data

Sample of solutions (if desired)

The real time for performing a study, delivery of a report subject to client approval, including one formulation is four weeks.

- Introduction of assay methods (literature)
- Feasibility study
- Study
- Report
- Report approval by client

If you would like more information please e-mail, al@Zelmic.se or use the contact details below.

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