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## **New perspectives of skin penetration testing methods**

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Modelling penetration through the skin is a specific challenge. In the permeation analysis of dermal formulations, human skin is defined as a standard by regulatory agencies. However, there are artificial membranes which can replace human skin to some degree. Academicians and pharmaceutical firms are focusing on developing structured procedures and safe, effective alternatives to human skin in permeability studies. In my research work, I examined specific *in vitro* experiments to test semisolid preparations. In this study hydrogel and two forms of creams have been investigated as the most widely used dermal preparations. The parallel artificial membrane permeability assay (PAMPA) and Raman mapping methods were compared to the gold standard Franz cell process. The diffused amount of drug showed similar results for the different formulations. These findings are well aligned with the results of the Raman mapping. Our results indicate that any early screening experiments can be carried out using model tool Skin PAMPA complemented by method Raman mapping as a semi-quantitative process.

### References

- 1 Zsikó, S. et al. *Pharmaceutics*. 11(07), 310 (2019)
- 2 Zsikó, S. et al. *Sci. Pharm.*, 87(3), 19 (2019)
- 3 Zsikó, S. et al. *Pharmaceutics*. 12(9), 803 (2020)

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