

Open flow microperfusion (OFM) is a probe-based method that is used to evaluate the pharmacokinetics and pharmacodynamics of drugs directly in skin, adipose and brain tissue. The use of the OFM probes allows small amounts of interstitial fluid (ISF) to be collected from target tissues for analysis. OFM is particularly suitable for the analysis of large, lipophilic substances. OFM experiments deliver time resolved compound profiles and provides therefore a series of data points from one animal that is unparalleled.

In the field of dermatology the OFM technology provides a higher data quality compared to standard methods like skin biopsy that provide a benefit in the power calculation and therefore leads to a reduction in required animals.

This high data quality enables a data modelling and extrapolation approach based on bootstrap, PBKD and T-cat algorithms that allow to further reduce or even replace animal experiments.

The talk will illustrate this topic with practical examples and published data.