

Quantitative image analysis and Stereology

Why is it important?

- The pre-clinical phase in drug R&D projects often culminates in studies aimed to evaluate their efficacy on biomarkers for mechanistic mode of action and pathology in cell-based and animal models of the targeted disease state. Conducting studies that generate data with the required reliability and sensitivity is of paramount importance for correct stop/go decisions. This is however a challenging task where technically flawed studies may easily lead to erroneous decisions regarding the presence and nature of the drug effect, with potentially serious consequences to the project and the company.

How do we do it?

- We have extensive experience designing and executing such studies, both from our former work as internal support unit within a pharmaceutical company and from studies conducted on behalf of our current clients.
- We design these studies with careful **adherence to principles for stereological sampling** of data representing the entire 3D volume of the analysed tissue. This optimizes the ability to detect true group differences with minimized risk of bias. The extent of sampling is scaled, based on data extracted in pilot studies, to meet customer requirements regarding reliability and sensitivity to detect group dependent differences.
- We are apt to deal with more demanding studies (e.g. where tissues from large numbers of animals are required) via implemented procedures for effective co-processing of tissues, robotics-assisted staining and fast image acquisition with state-of-the-art digital slide scanning.
- We work with an advanced software package from Visiopharm to generate strong data in a fast, reliable and reproductive manner.

