

## Research Project

### Purchase of a laser scanning microscope

#### Third-party funded project

**Project title** Purchase of a laser scanning microscope

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**Organisation / Research unit**

Departement Pharmazeutische Wissenschaften / Molecular and Systems Toxicology (Odermatt)

**Department**

**Project start** 01.12.2010

**Probable end** 30.11.2011

**Status** Completed

The field of microscopy applications to investigate cellular functions and disturbances that are relevant to understand disease processes and for generation of therapeutic interventions is rapidly developing. After completion of sequencing the human genome, there is a great demand to elucidate the functions of the proteins encoded by the about 40'000 genes and, furthermore, to uncover the dynamic interactions between these proteins in various pathophysiological situations.

The introduction of laser scanning microscopy opened, among other applications, the possibility to determine the intracellular distribution of proteins, their colocalization with other proteins and organelle markers, their dynamic movement upon induction by stimuli, their synthesis and degradation and their relative 3D-distributions within compartments of a cell. For these applications, conventional fluorescence microscopy is not sufficient due to the lack of sensitivity. Currently, the applicants are equipped with conventional fluorescence microscopy, fluorescence 96-well plate format readers, ArrayScan High Content Imaging, and Seahorse technology. Thus, the purchase of a high sensitivity laser scanning microscope would fill the gap and allow extended analyses of cell-based studies.

At the Department of Pharmaceutical Sciences of the University of Basel there is a rapidly increasing demand in the use of laser scanning microscopy for various applications. The recent decision for a more biological focus (novel Profs in Pharmaceutical Technology, J. Huwyler, and Biopharmacy, to be appointed in 2011) will further enhance the need for laser scanning microscopy. Currently, the research groups of the Department are highly restricted in the use of laser scanning microscopy and are fully dependent on external collaborations. Three Divisions of the Department (the applicants Prof. S. Krähenbühl, Prof. J. Huwyler, Prof. A. Odermatt) have ongoing research projects where laser scanning microscopy is required. Moreover, the new Prof. in Biopharmacy is likely to have a need for this technique. Thus, the research of the involved groups greatly benefits from the purchase of a highly sensitive laser scanning microscope.

**Keywords** Confocal Microscopy

**Financed by**

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### **Add publication**

#### **Published results**

2297357, Detampel, Pascal; Witzigmann, Dominik; Krähenbühl, Stephan; Huwyler, Jörg, Hepatocyte targeting using pegylated asialofetuin-conjugated liposomes, 1061-186X, Journal of drug targeting, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

### **Add documents**

### **Specify cooperation partners**