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## **LaVision BioTec reports on the award-winning scientist Peter Friedl and his work imaging cancer growth**

*Bielefeld, 25<sup>th</sup> November 2014: LaVision BioTec, developers of advanced microscopy solutions for the life sciences, report on the research of Dr Peter Friedl and his imaging of cancer growth using intravital microscopy.*

Peter Friedl holds the chair for Microscopical Imaging of the Cell at the St. Radboud University Nijmegen Medical Centre, University of Nijmegen, The Netherlands. He also holds a 20% joint-appointment as head of the imaging section at the David H. Koch Center, Department of Genitourinary Oncology, MD Anderson Cancer Center, Houston, TX, USA. His research work focuses on imaging cancer growth, metastasis and therapy response in the natural tumour environment - which is the living tissue in an intact body. As it is not possible to perform microscopy of tumours in patients, he uses experimental tumour models in live mice. Here, they implant fluorescent tumours; then follow individual tumour cells over time; and draft conclusions about their aggressiveness. The goal is to try to find therapeutic strategies to inhibit cancer progression.

His work has recently been recognised with the 13<sup>th</sup> City of Florence Prize for the Molecular Sciences. This recognises Dr Friedl and his team for the discovery/invention of a new technology to observe the dynamics of metastasis and to understand how cells divide and multiply. Thanks to his experience in the field of microscopy, Dr Friedl has developed an exciting new methodology with which to obtain 3D images of living tissue through low energy fluorescence irradiation. According to the team, special treatments using radiotherapy and immunotherapy may soon be visualized to a level required to better attack cancer and achieve a cure.

To generate these images, Dr Friedl selected the TriM Scope 2-photon microscope from LaVision BioTec. He describes his reasons for this decision: "The Trim Scope was the first user-friendly system on the market combining commonly used two-photon excitation with the new approach of infrared excitation. In addition, the science-driven approach of the engineers at LaVision BioTec allowed me as biomedical researcher to develop ideas and jointly find solutions to challenges in intravital microscopy that were, and are, beyond the state-of-the-art. This instigated more technical innovations which greatly enhance multi-parameter deep tissue imaging in cancer research, in particular, the implementation of dual- or triple-beam laser in-coupling and the combined use of

fluorescence, second and third harmonic generation in live tissues. This strength and the versatility of the setup enabled my applications. None of the other systems I considered reached our needs for efficacy and flexibility.”

The Trim Scope has many features vital for Dr Friedl’s research. He lists a few: “First, the flexible placement of up to 8 detectors including specifically high-sensitivity detectors; second, the multi-laser beam capability; and third, the adaptability of the setup to different additional detectors such as a fluorescent life-time detector. The versatility of the table makes it straightforward to accommodate live animals. Lastly, I found the interaction with the LaVision instrument developers extremely positive. They listened and enabled the needs I identified.”

For more details about LaVision BioTec’s TriM Scope 2-photon Microscope and its’ applications, please contact LaVision BioTec on +49 (0)5219151390, visit the web site: [www.lavisionbiotec.com](http://www.lavisionbiotec.com).

## **Attachments:**



- 1) *Dr Peter Friedl makes his award presentation in the Salone dei Cinquecento in the Palazzo Vecchio in Florence. (photograph: Sestini/Testi: Antonio Passanese)*



- 2) *Dr Peter Friedl working on his LaVision BioTec 2-photon TriM Scope imaging system*

For high resolution copies of the images, either right click to download, or contact Jezz Leckenby at Talking Science.

## **About LaVision BioTec GmbH**

LaVision BioTec was founded in 2000 to develop and manufacture advanced microscopy solutions for the life sciences. There are currently two product lines:

TriM Scope II is a modular multi-photon/confocal microscopy platform that combines single- and multi-beam operation in one microscope. This allows for deep in-vivo imaging with Ti:Sapphire, OPO and visible lasers simultaneously with frame rates up to 60 Hz. PMTs, TCSPC and CCD detectors, multicolour imaging, spectral discrimination, FLIM/FRET capabilities and adaptive optics provide customization of the TriM Scope.

UltraMicroscope II utilizes six thin light sheets to excite samples with fluorescence light which is detected with a sCMOS-equipped microscope mounted perpendicular to the plane of illumination. Moving the sample through the light sheets generates 3D image stacks at cellular resolution.

For more details, please visit [www.lavisionbiotec.com](http://www.lavisionbiotec.com).

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