

## AMI – US / OA

### Combined optoacoustic & acoustic microimaging

- **High resolution combined ultrasound and optoacoustic imaging**
- **Ultrasound for imaging of anatomical structures**
- **Optoacoustic for functional or molecular imaging**
- **Ultra-fast scanning system for in-vivo 3D imaging**
- **Switchable 532/1064 nm laser for signal excitation**
- **Optional trigger module for external laser devices**
- **Combination with kibero nanoAgents for in-vivo molecular imaging**



The **AMI – US / OA** is a combined ultrasound and optoacoustic high resolution imaging system. It unites the well known advantages of high-resolution ultrasound for visualization and quantification of anatomical structures with the unique features of optoacoustic imaging which makes the system an ideal tool for research in the field of functional and molecular imaging.

#### Features:

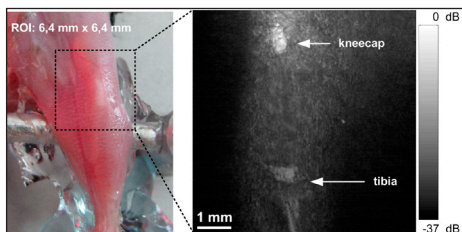
**Hybrid imaging system** - our platform enables high resolution ultrasound as well as optoacoustic imaging. With our kibero acoustical lens systems, a resolution in the range of 50  $\mu\text{m}$  is obtained.

**Confocal imaging technique** – advanced optical light delivery system based on multi-fibre circular light source for confocal optoacoustic imaging

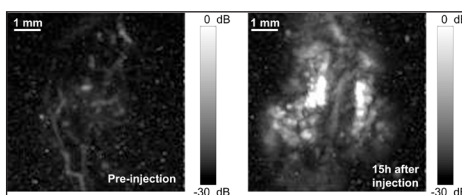
**Ultra-fast scanning** – the use of fast piezo scanners allows the acquisition of ultrasound 3D data sets within 2-3 minutes. A dual-wavelength kHz repeating Nd:YAG laser is further integrated and allows acquisition of optoacoustic data in the same time frame.

**High system versatility** – usable as benchtop scanner for small animal imaging or as handheld scanner

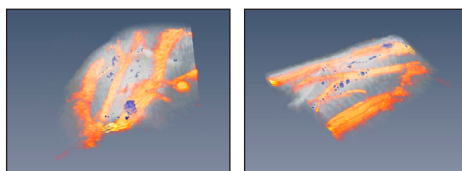
**Multiple Applications** – high-contrast 3D imaging of vasculature by using 532 nm excitation. Molecular imaging of different ligands by using kibero nanoAgents.



High resolution ultrasound of mouse knee. Anatomical structures (knee cap, tibia) used as landmarks for interpretation of optoacoustic data



Optoacoustic molecular in-vivo imaging of TNF- $\alpha$  expression in the mouse knee using kibero nanoAgents targeted with Infliximab



Combined 3D in-vivo ultrasound and optoacoustic data of mouse knee. Volume dimensions: 6.4 mm x 6.4 mm x 3 mm. Data from vasculature acquired in optoacoustic mode. Skin surface data from ultrasound signals