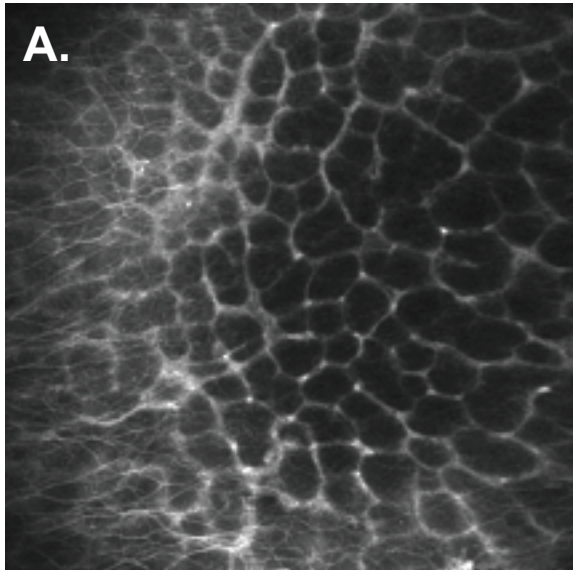
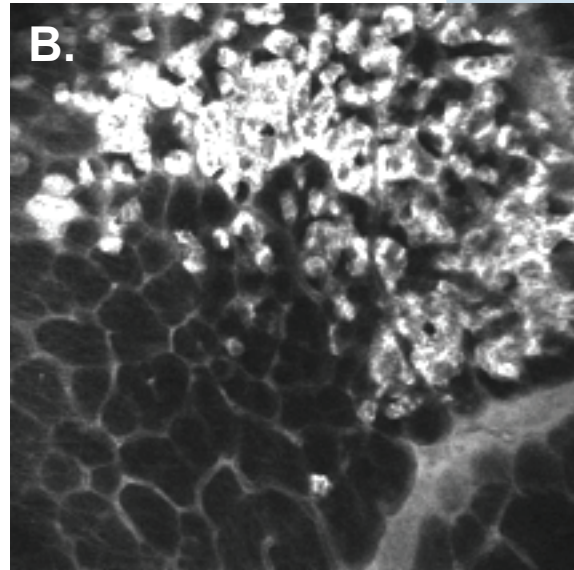


Molecular and Receptor Targeted Imaging

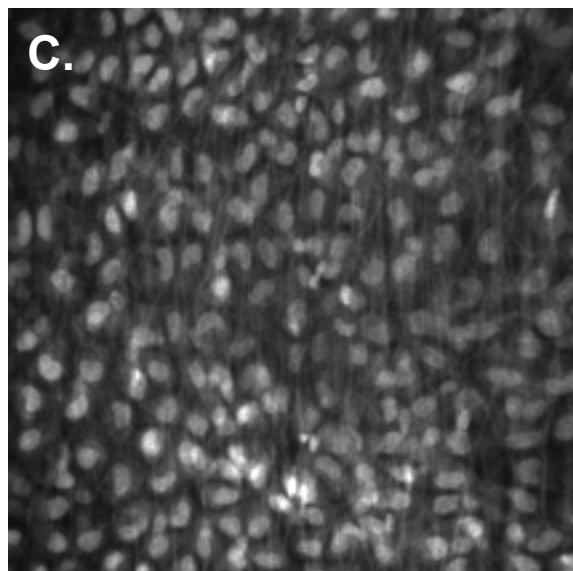
Non-invasive microscopy enables longitudinal studies of molecular and microvascular events



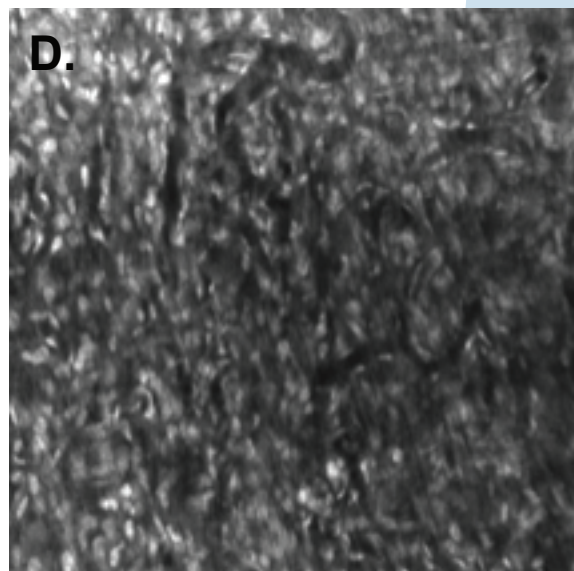
The ViewnVivo also enables non-invasive *in vivo* imaging of normal pancreatic microvasculature.



Molecular staining of rat pancreatic islet cells can be imaged using the ViewnVivo by targeting the somatostatin receptor with 5-carboxyfluorescein-labeled octreotate.



Fluorescent staining of rat body wall shows a confluent layer of healthy cells.



In a rat model of pancreatic cancer, body wall metastases can be visualised using the ViewnVivo.

Experimental Methods

Octreotate was synthesized via Fmoc solid phase peptide synthesis (Schirmacher et al., 2003). The labelling with 5-carboxyfluorescein was performed on solid phase with N,N'-diisopropyl-carbodiimide and 1-hydroxybenzotriazole. Active labelling of somatostatin receptor bearing cells was examined using confocal microscopy (488 nm excitation, detection above 515 nm) following intravenous injection of the fluorescently labelled octreotate (Figures A & B).

A rat model of spontaneous pancreatic cancer was used to perform a longitudinal study of body wall metastases. Initially, cells of healthy body wall (Figure C) were examined in experimental rats through a small abdominal incision. The incision was then sutured closed and the rats were allowed to recover from surgery to enable the development of body wall metastases (Figure D). Confocal imaging was performed as described above.

Reference:

Schirmacher, E, Schirmacher R, Beck C, Mier W, Trautmann N, Rösch F. Tetrahedron Letters 44: 9143 - 9145 (2003).