Multiphoton microscopy in the biomedical sciences - 21-23 January 2001, San Jose, USA

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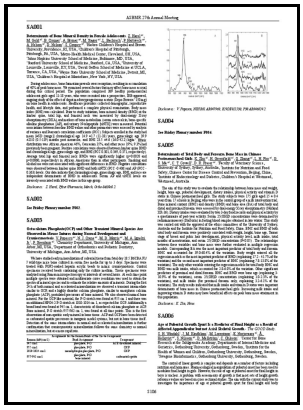

Description: -
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Hazardous wastes -- Illinois -- Marion region.
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Imaging systems in medicine -- Congresses.
Multiphoton processes -- Congresses.
Medical microscopy -- Congresses.
Fluorescence microscopy -- Congresses.Multiphoton microscopy in the biomedical sciences - 21-23 January 2001, San Jose, USA
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Tags: #Femto #Lab

Prof. Ammasi Periasamy Profile

Keck Center for Cellular Imaging KCCI , an internationally known center in advanced optical and microscopy imaging, particularly in the area of protein-protein interactions in living and fixed specimens.

What is the effect on E% of NWASP-actin by IQGAP1 or E% of IQGAP1-actin by N-WASP? Specimens positively labeled for either cytochrome c or caspase-3 demonstrated FRET efficiencies greater than 10%. In our current work, we integrated the MEFIM system with one-photon laser scanning confocal microscope coupled to a verdi pumped tunable femtosecond pulsed ti- sapphire laser.

Femto Lab

Cells respond to environmental cues or developmental programs by modifying protein complexes in the nucleus to alter patterns of gene transcription.

Femto Lab

The current advances in fluorescence microscopy coupled with the development of new fluorescent probes provide the tools to study protein interactions in living specimens.

Femto Lab

The fluorophore molecule used for FRET imaging has a characteristic absorption and emission spectrum that should be considered for characterizing the FRET signal acquired using one- and two-photon excitation FRET microscopy. We have used Alexa488 and Alexa568 as a FRET pair.

Multiphoton microscopy in the biomedical sciences : 21

Furthermore, we have developed a method to manipulate the Two-Photon FRET data post-acquisition to remove the remaining contaminating signal, i. Upon energy transfer, donor fluorescence is quenched and acceptor fluorescence is increased sensitized , resulting in a decrease in donor excitation intensity or lifetime. While the transport pathways crossing are thought to be understood, the actual morphology of this endosome has not been completely characterized.

Multiphoton microscopy in the biomedical sciences (San Jose CA, 21

Different from the subcellular co-localization provided by fluorescence microscopy, fluorescence resonance energy transfer FRET microscopy provided the spatial relationship of AT1R with Rab4 and Rab11 in the nanometer-range proximity during the entire course of AT1R recycling. Together with our rigorous FLIM analysis approach including image segmentation, multi-exponential decay fitting and detailed statistical analysis we are able to detect metabolic changes in cancer xenografts human pancreatic cancer MPanc96 cells injected subcutaneously into the ear of an immunodeficient nude mouse , relative to surrounding healthy tissue. This simplified assay will also make it more suitable to be applied in a clinical setting.