

Fluorescence time-resolved macroimaging

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While laser scanning fluorescence lifetime imaging (FLIM) is a powerful approach for cell biology, its small field of view (typically less than 1 mm) makes it impractical for imaging of large biological samples that is often required for biomedical applications. Here we present a system that allows to perform FLIM on macroscopic samples as large as 18mm with a lateral resolution of 15 μ m. The performance of the system is verified with FLIM of endogenous metabolic cofactor reduced nicotinamide adenine dinucleotide (phosphate), NAD(P)H, and genetically encoded fluorescent protein mKate2 in a mouse tumor *in vivo*.