

Abstract Submitted
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Photo- and bio-physical characterization of novel blue and near-infrared lipophilic fluorophores for neuronal tracing¹ JEFF TONIGES, MARIA HANSEN, Creighton University, Department of Physics, BERND FRITZSCH, Creighton University, Department of Biomedical Sciences, BRIAN GRAY, Molecular Targeting Technologies Inc., MICHAEL NICHOLS, Creighton University, Department of Physics — Lipophilic fluorescent dyes have been used to trace neuronal connections because of their ability to diffuse laterally between nerve cell membranes. Given the large number of connections that a typical neuron makes with its neighbors, a diffusion-matched set of spectrally distinct dyes is desirable. Previously, a trio of dyes was developed with well-separated green, red and far red fluorescence emission that permitted triple labeling [1]. To extend this set to five, we have been characterizing the properties of novel blue and near-infrared candidates. By combining two-photon and confocal microscopy all of these candidates can be imaged using a single Ti:S laser. Here we present measurements of the absolute two-photon excitation spectra along with single- and two-photon fluorescence recovery after photobleaching measurements of the diffusion coefficient in spinal cord samples. [1] H. Jensen-Smith et al., *Immunol. Invest.*, in press, 2007.

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