Low Toxicity NIR-II/SWIR Fluorescent Probes Mimicking ICG

Development and testing of new molecular/nano-bio probes is an important part of NIR-II/SWIR biological imaging and diagnostics. Research in particular is focused on finding probes of high efficiency that can be used in human/clinical applications. Previously the lab of Moungi Bawendi at MIT successfully demonstrated use of a fluorophore called indocyanine green (ICG) which is clinically approved but does not optimally emit radiation in the desired wavelength range.

In a recent article in Nature Communications researchers around Fan Zhang from Fudan University (Shanghai, China) developed molecules similar to ICG but optimized to emit in the NIR-II/SWIR wavelength range while still exhibiting low toxicity for potential clinical applications. The researchers demonstrate imaging up to 8mm into tissue as well as reliable, non-invasive measurements of pH values in mouse stomachs. Having demonstrated the basic use of this class of fluorophores opens up the path to more wider applications in biomedical sensing.

Featured Paper/Publication: Anti-quenching NIR-II molecular fluorophores for in vivo high-contrast imaging and pH sensing, Nature Communications, 2019

Reference Lab: Fan Zhang, Fudan University, Shanghai China

Featured Product: NIRvana