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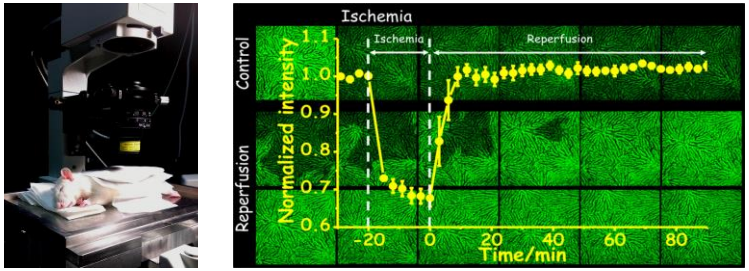
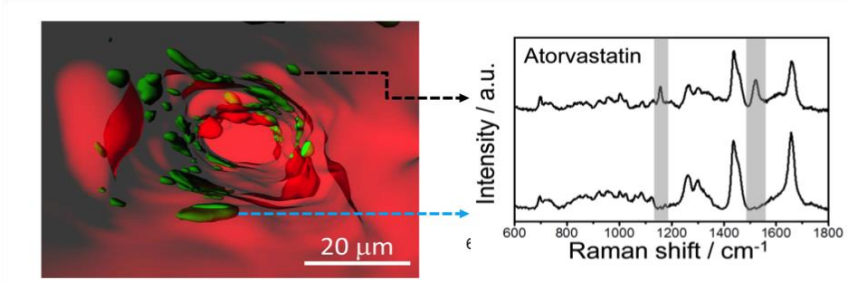
Prof. Ian Liau / Department of Applied Chemistry

Biomedical applications of microscopy/Spectroscopy/Photochemistry; Cardio-cerebrovascular diseases; Zebrafish

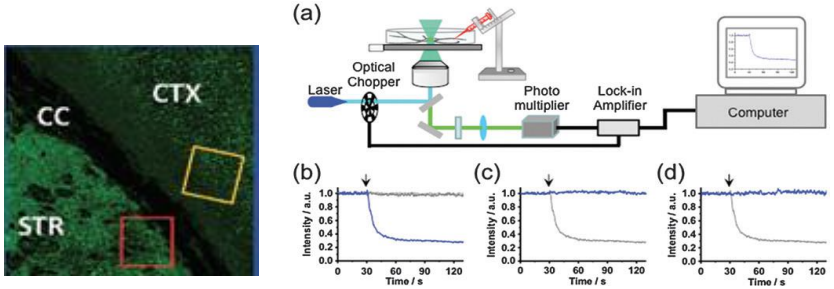
Our quest in the pathogenesis and therapies critically relies on animal models of human diseases and the ability to assess and manipulate the physiological function of these model animals. Towards this end, Prof. Ian Liau's "Biomedical Photonics Lab" at NCTU has developed a variety of cross-disciplinary approaches over the years for interrogation of, or intervention to, living organisms of varied complexity from single cells to animals. In particular, he has teamed up with clinical physicians devoting to the following research directions: ***(A) Spectroscopy/microscopy techniques to advance translational research and pharmaceutical development; (B) Zebrafish models of cardio-cerebrovascular diseases; (C) Therapeutic strategies against ischemia-reperfusion injury.*** The achievement of their research is highlighted below:



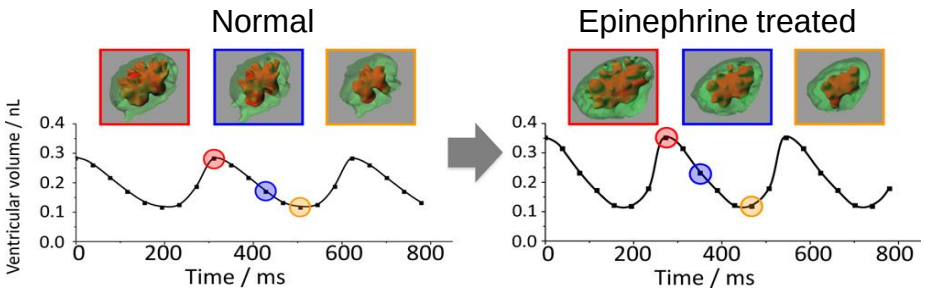
Anal Chem 2014 *Intravital imaging of hepatic ischemia-reperfusion of rats with mitochondrial autofluorescence*



Anal Chem 2014 *Raman spectral assessment of anti-atherosclerotic effect of drugs on hypercholesterolemic zebrafish*



ChemComm 2015 *Towards live-cell imaging of neurotransmission with fluorescent neurotransmitter analogues*



Anal Chem 2014 *Pseudodynamic 3D cardiac imaging for determination of cardiac function of zebrafish*