



Pacific Center for
Emerging Infectious Diseases
Research



UNIVERSITY
of HAWAII
MĀNOA

Department of Tropical Medicine, Medical Microbiology & Pharmacology

JOHN A BURNS SCHOOL OF MEDICINE, UNIVERSITY OF HAWAII AT MANOA

Unblinded by the Light: NIR Photobiomodulation in Retinal Disease

Mitochondrial dysfunction and oxidative damage to the retina and its components, including photoreceptors, retinal pigment epithelium and retinal ganglion cells, has been implicated in many forms of retinal injury and degeneration including methanol intoxication, light-induced retinal damage, retinopathy of prematurity, age-related macular degeneration (AMD), retinitis pigmentosa and diabetic retinopathy. Mitochondrial repair and attenuation of oxidative stress are key to the long-term survival of the retina. Therapeutic strategies directed towards improving mitochondrial integrity and function and reducing oxidative stress have considerable potential for the treatment of retinal disease. Low-intensity far-red to near-infrared (FR/NIR) light has been shown to act on mitochondria-mediated signaling pathways to preserve mitochondrial function, attenuate oxidative stress, stimulate the production of cytoprotective factors and prevent cell death. FR/NIR photons penetrate the brain, retina and optic nerve and this treatment, commonly known as photobiomodulation (PBM) has documented efficacy in the treatment of retinal injury and disease. This seminar will focus on investigations into the mechanism of action and therapeutic efficacy of PBM in experimental and clinical retinal disease.

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Wednesday, May 2, 2018 at 12:00 noon
John A. Burns School of Medicine, Kaka'ako Campus
Medical Education Building Auditorium (Room 315)
For further information, contact (808) 692-1654

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