

University of Houston - Biomedical Engineering Seminar

Friday, November 19, 2021, 12 noon

Via Zoom: <https://uh-edu-cougarnet.zoom.us/j/93512038041>

Retbindin, Vitamin B₂ and Vision



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Abstract

Inherited retinal diseases (IRD) are a leading cause of vision loss and blindness worldwide. Metabolic dysregulation is a common cause of the retinal disease pathology, thus identifying a regulator that can preserve the metabolic ecosystem is needed for future development of a treatment. The interface between the neural retina and the retinal pigment epithelium (RPE) is critical because of the important functions of metabolites exchange between the photoreceptors and RPE. Retbindin (RTBDN) is a rod-specific riboflavin binding protein, and a regulator of riboflavin-derived cofactors. It helps to maintain high levels of retinal flavins, and it is essential for retinal structure and function. RTBDN elimination leads to early-onset retinal metabolic dysregulation followed by progressive degeneration of rod and cone photoreceptors. Overall, studying the function of RTBDN, the association of RTBDN and Vitamin B₂, and the regulation of RTBDN and vision provides insight on the protective role of RTBDN in the retina.

Biosketch

Xue Zhao is a Ph.D. candidate in biomedical engineering at the university of Houston. She received her B.Sc. in Environmental Engineering from Bohai University. Her current research focuses on evaluating the physiological factors that influence retbindin levels and localization, how that affects flavin levels and the overall retinal homeostasis.