

HOW DO GLIA SHAPE NEURONAL CIRCUITS IN HEALTH AND DISEASE?

Synapses are the basic functional units of the central nervous system (CNS). Synaptic dysfunction and synapse loss are hallmarks of neurological disorders. Recent studies have shown that glial cells are important regulators of synapse formation, maintenance, and function in the brain. In the Koh lab, we study how Muller glia (MG), the major perisynaptic glial cell type of the retina, regulate neuronal connectivity and contribute to retina degeneration (RD) such as retinitis pigmentosa and age-related macular degeneration. Toward this goal, we have previously demonstrated that glial activation and synapse loss precedes photoreceptor death in animal models of RD. Furthermore, we identified that MG produce a strong synaptogenic factor called Thrombospondin 1 (TSP1) to modulate neuronal circuit-specific synapse formation that works through another neuronal receptor Integrin Beta 1. Understanding of how glial control synaptic function would facilitate the development of novel therapeutic strategy to repair impaired synaptic circuits.

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Tue. December 7
15:30-17:30

ONLINE

If you would like to take this seminar,
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This seminar will be held as a part of the class
"World Science Leaders' Seminar" in Human Biology Program

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