



VANDERBILT
School of Medicine Basic Sciences
Department of Pharmacology

2023 - 2024 Seminar Series

“Vascular Aging and Dementia”

Vascular aging affects multiple organ systems, topic including the brain, where it can lead to vascular dementia. Our findings demonstrate that aging is associated with a marked decline in Notch3 signaling in both murine and human brain vessels. We found that Notch3 regulates calcium levels and contractile function in smooth muscle cells impacting vascular reactivity. Inactivation of Notch3 results in dilation, tortuosity, and microaneurysms in small vessels with resulting decrease in cerebral blood flow. Combined, these vascular impairments hinder glymphatic flow and lead to buildup of glycosaminoglycans within the brain parenchyma. Remarkably, this phenomenon mirrors a key pathological feature found in brains of patients with CADASIL, a hereditary vascular dementia associated with NOTCH3 missense mutations.



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VANDERBILT UNIVERSITY
MEDICAL CENTER

2 April 2024

4:00 PM

214 Light Hall

Host : Heidi Hamm

CE/CME Credits Available