This Month in *AJP*

**Promoting Heart Protection**

The anti-inflammatory cytokine transforming growth factor β1 (TGF-β1) is released endogenously upon infection or tissue injury; however, the underlying pathogenesis of ischemia reperfusion injury is unclear. Using a mouse model of myocardial ischemia (MI) and reperfusion, Redgrave et al (*Am J Pathol* 2024, *562* e574) studied the protective effects of TGF-β1 when administered exogenously following MI. Administration of TGF-β1 as well as its mimic, *Heli-gmosomoides polygyrus* TGM (HpTGM), resulted in a reduction in infarct size and inflammatory cytokines. HpTGM may offer protection to the heart following cardiac infarction.

**Preventing Proinflammatory Mediator—Induced Capillary Regression**

The mechanisms underlying capillary assembly processes are unclear. Using human umbilical vein endothelial cell (EC) cultures, Lin et al (*Am J Pathol* 2024, *575*–*599) studied some of the key molecules and signals implicated in vascular morphogenesis to understand the underlying mechanisms. The effects of overexpression of active kRas, Mek1, PIK3CA, Akt1, Rheb, Jak2, and Stat3 on EC lumen creation, EC tip cell sprouting, pericyte recruitment, and pericyte-induced capillary basement membrane deposition were studied. EC-expressed oncogenic activating mutations may predispose stimuli for the development of vascular malformations.

**Targeting Atherosclerosis**

The expression of the SH3 domain-containing protein dedicator of cytokinesis 2 (DOCK2) is induced in atherosclerosis; however, its specific role remains unclear. Using mouse models, human tissue samples, and cultured human umbilical vein endothelial cells, Qian et al (*Am J Pathol* 2024, *600*–*612) studied this role. Higher DOCK2 expression was seen in atherosclerotic lesions. DOCK2 promoted high-fat diet—induced atherosclerosis via induction of VCAM1 and ICAM1 gene expression through NF-κB signaling, and increase in endothelial cell inflammation. DOCK2 may be targeted to treat atherosclerosis.

**Understanding the Blood—Brain Barrier Permeability**

The glycosylated transmembrane molecule basigin is essential for the opening of blood–brain barrier; however, its role in regulating the blood–brain barrier is unclear. Using mouse brain microvascular endothelial cell cultures and a mouse model, Cui et al (*Am J Pathol* 2024, *613*–*626) studied this role. Basigin is expressed in two different N-glycoforms, high-mannose and complex, on endothelial cells at the blood–brain barrier. The high-mannose form regulates claudin-5 as well as the barrier permeability. Studying the molecules associated with basigin with high-mannose—type glycan may improve our understanding of the underlying mechanisms.