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Globular adiponectin-mediated vascular remodeling by affecting the secretion of adventitial-derived tumor necrosis factor-α induced by urotensin II

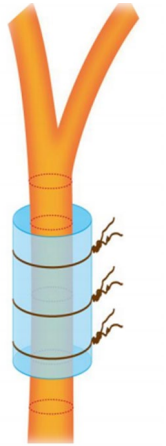
Keywords: Urotensin II; Adiponectin; Signal Transduction; Adventitial Fibroblasts; RNAi; APN-KO

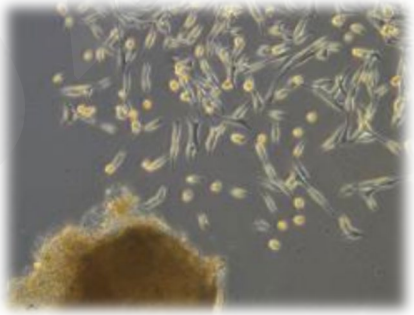
Research Summary

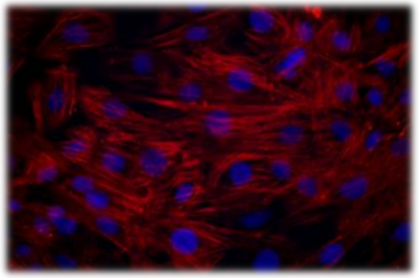
This study mainly focused on how adiponectin mediated UII-induced TNF-α and α-SMA expression and ensuing intracellular signaling pathways in AFs.



- Expression of TNF-α/ adiponectin and its receptor in AFs
- Cell signal transduction pathway
- Carotid adventitia inflammation model in knockout mice

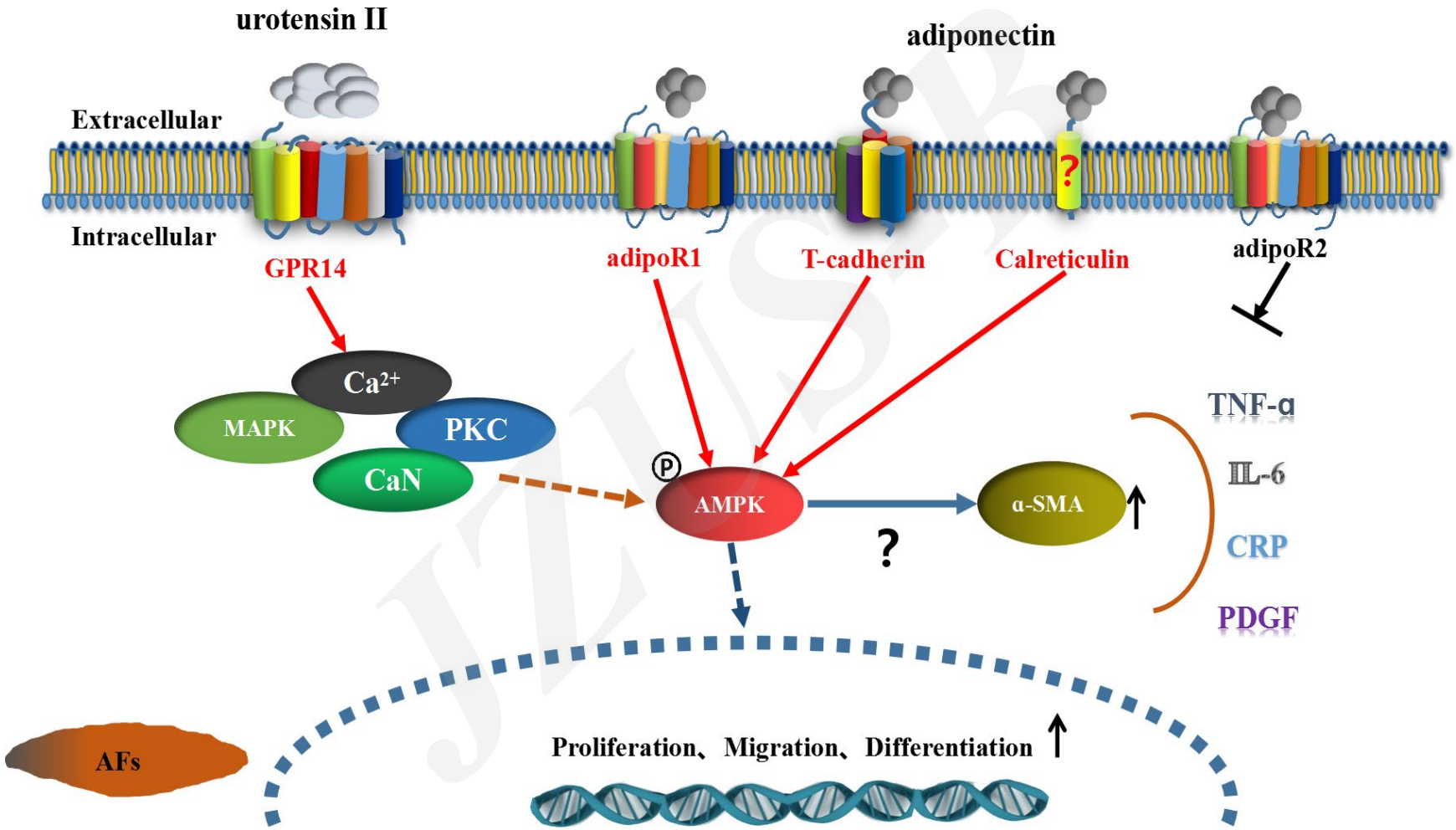






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Mechanism of action of adiponectin and UII



Innovation points

◆TNF-α receptors were expressed on the tunica adventitia of vessels and AF and UII were capable of regulating the expression of TNF-α receptor mRNA in a time-and-concentration dependent manner.

◆UII stimulated TNF-α protein secretion and TNF-α receptor mRNA expression in the tunica adventitia of vessels and AFs via the Rho/PKC pathway

◆Adiponectin synergy with UII induced AFS synthesis with α-SMA and TNF-α via the AdipoR1/T-cadherin/Calreticulin/AMPK pathway

◆Adiponectin synergy with UII induced phosphorylation of AMPK in AFs

◆APN deficiency up-regulated expression of α-SMA, UT, and UII in an adventitial inflammation model, but inhibited expression of TNF-α

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