

EXPRESSION OF ADIPONECTIN RECEPTORS BY VASCULAR SMOOTH MUSCLE CELLS

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ABSTRACT

Adiponectin (APN) is a 30-kDA insulin-sensitizing protein with strong effects on the vasculature. It binds three receptors: AdipoR1, AdipoR2, and T-cadherin. APN and AdipoRs are well-studied in the vascular endothelium, but studies describing the expression of AdipoRs in other vascular cells, particularly the vascular smooth muscle cells (VSMC), are lacking. Here, we show that cultured human coronary vascular smooth muscle cells (HCAVSMC) express AdipoR genes and protein, and that AdipoR genes are expressed *in vivo* by porcine coronary artery and murine aortic VSMC. APN reduces plasminogen activator inhibitor, type 1 (PAI-1) expression by adipocytes, so we tested the functionality of the AdipoRs expressed by HCAVSMC by measuring the expression of PAI-1 mRNA expression in cells treated with recombinant human APN (rhAPN) or phosphate-buffered saline (PBS) control. There was no change in PAI-1 mRNA expression in rhAPN-treated cells vs. PBS-control treated cells over 48 hours (n=8, p=0.41). Therefore, we conclude that VSMC express AdipoRs but APN does not influence PAI-1 mRNA expression via a direct, receptor-mediated mechanism in HCAVSMC.