TRPP2 and STIM1 play a combined role in maintaining blood vessel health

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Abstract

TRPP2 and STIM1 are important proteins that facilitate the transport of calcium ions in the cell. TRPP2 is a calcium channel encoded by the PKD2 gene, which is mutated in polycystic kidney disease. STIM1, meanwhile, acts as a calcium sensor, monitoring and regulating calcium concentrations. For the first time, researchers have demonstrated that the two proteins form a functional complex in embryonic kidney cells and native vascular smooth muscle cells. Together, TRPP2 and STIM1 modulate store-operated calcium entry to maintain cellular calcium balance. In mice, that synergy protected against agonist-induced contraction of the aorta, suggesting that the TRPP2–STIM1 complex helps maintain blood vessel tone. Further studies could help clarify the full functional repertoire of the TRPP2–STIM1 complex and harness this powerful duo to keep blood vessels healthy in patients.