

In smooth muscle cells, potassium channels play an important role in the regulation of the membrane potential of smooth muscle cells, which is closely related to vascular tone. Four different types of K<sup>+</sup> channels have been described in vascular smooth muscle cells. Voltage-gated K<sup>+</sup> channels (K<sub>V</sub>), which can be open by depolarization. Calcium-activated potassium channels (K<sub>Ca</sub>), from the same gene family, are voltage dependent, and can be activated also by elevated concentration of intracellular Ca<sup>2+</sup>. Inward rectifying channels (K<sub>IR</sub>) display negative slope conductance. These channels amplify potassium flow and function as an extracellular K<sup>+</sup> sensor. ATP-sensitive K<sup>+</sup> channels (K<sub>ATP</sub>) channels provide a link between cell metabolism and membrane potential. Function of K<sup>+</sup> channels is also important in endothelium, which produces many vasodilators and vasoconstrictors. Abnormal expression profile of K<sup>+</sup> channels is part of vascular cell membrane remodeling.