SUPPLEMENTAL DATA

Penitrem A as a tool to understand the role of BK channels in vascular function

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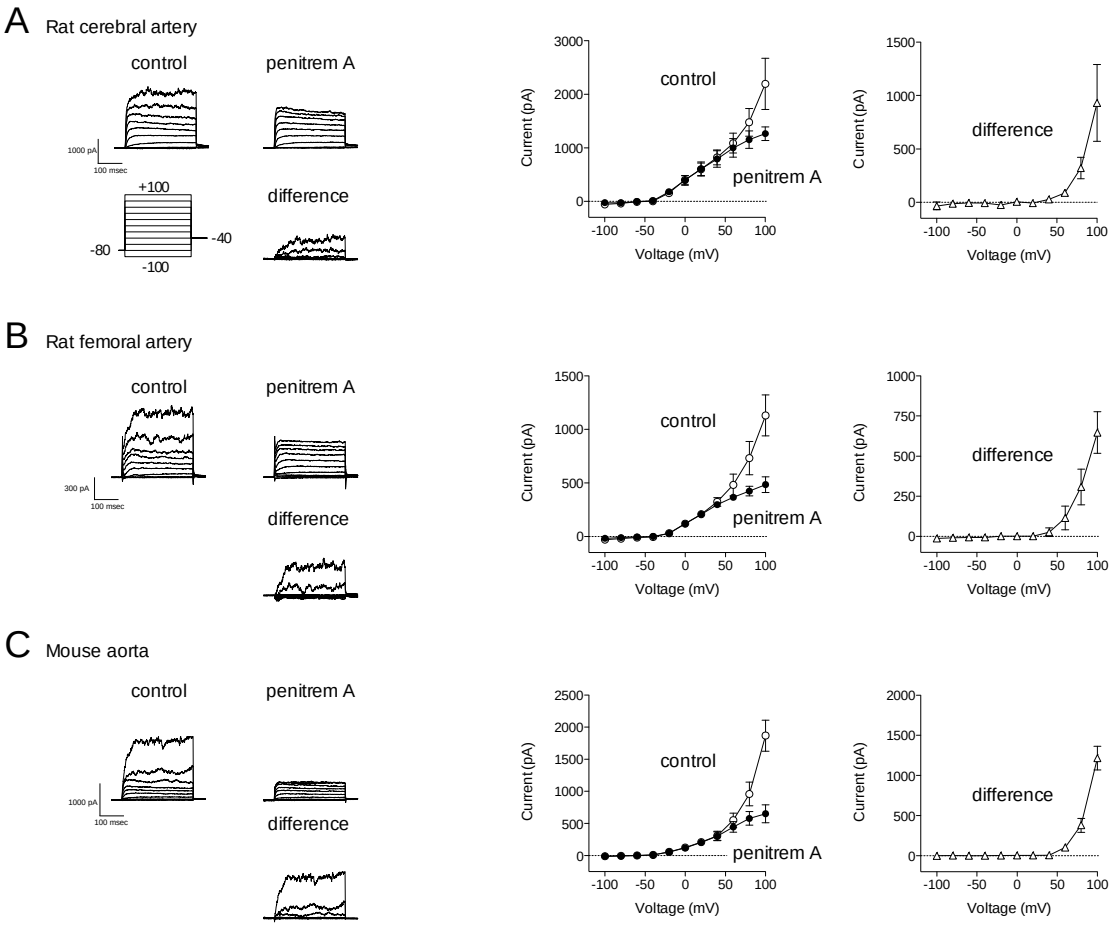
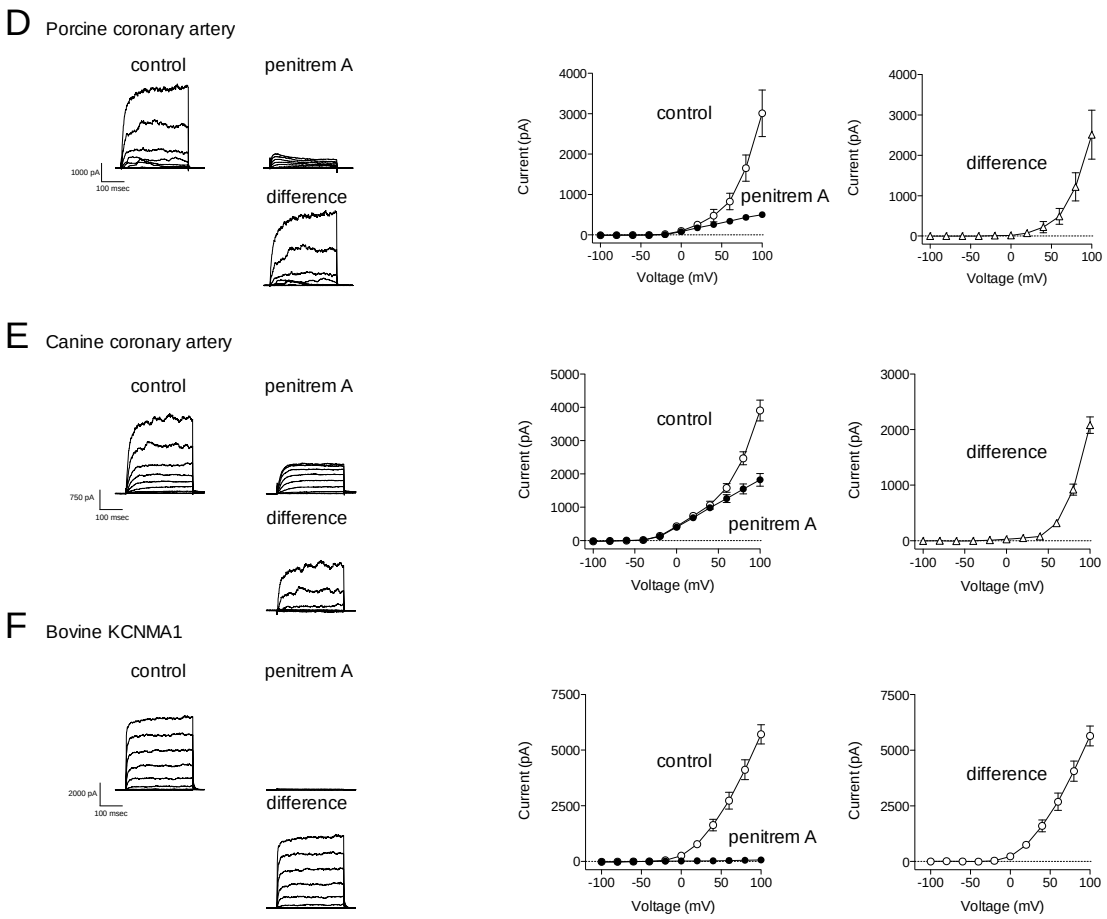
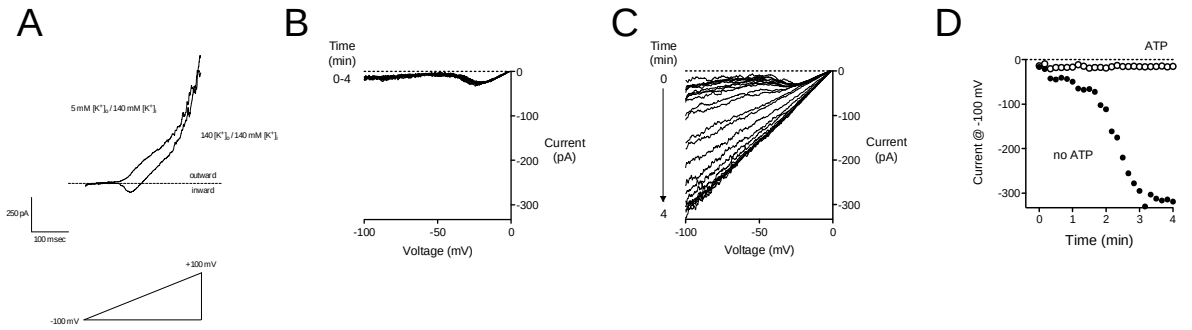


Supplemental Fig. 1

Supplemental Fig. 1 Penitrem A inhibits BK, but not K_V, channels in a variety of smooth muscle cell types. We demonstrate that penitrem A (1 μM) inhibits the same type of strongly outwardly rectifying current without effect on native delayed rectifier K^+ channels. Currents were measured in smooth muscle cells isolated from rat middle cerebral artery (Panel A; n = 3), rat femoral artery (Panel B; n = 3), mouse aorta (Panel C; n = 3), pig coronary artery (Panel D; n = 5), and dog coronary artery (Panel E; n = 7). The voltage template (shown in A) was the same for all experiments. Solutions for whole-cell currents are described in the Methods. Panel F contains data showing that penitrem A 1 μM inhibits the α subunit cloned from cow (courtesy of Dr. Michael Davis, University of Missouri) and expressed in HEK 293 cells (n = 3).



Supplemental Fig. 1 (cont)



Supplemental Fig. 2 Dialysis of smooth muscle cells with ATP-free pipette solution activates K_{ATP} current. Cells were dialyzed with an ATP-free pipette solution to activate K_{ATP} channels in symmetrical 140 mM K^+. Panel A shows current in a mouse aortic myocyte in physiological and symmetrical K^+ solutions. The delayed rectifier K^+ current becomes inward in 140 mM K^+. Panels B and C show the effect of intracellular ATP on the development of linear inward current in cells bathed in 140 mM K^+. The cell in panel B was dialyzed with a solution containing 5 mM Mg-ATP, whereas the solution dialyzing the cell in panel C contained no Mg-ATP. Note that significant inward current developed only in the cell dialyzed with an ATP-free pipette solution. Panel D contains a plot of current at -100 mV vs. time for the cells in panels B and C. Inward current in cells dialyzed with ATP-free pipette solution was abolished by glibenclamide (10 μM; see Fig. 5C & D of the manuscript). In contrast, K_{ATP} current was unaffected by penitrem A (1 μM; see Fig. 5C & D of the manuscript).