

General

BK current (Large-conductance Ca Activated K) "Activation of BK is both voltage and Ca dependent, so that deactivation of this outward conductance can be very rapid and complete on membrane hyperpolarization" [1]

"BK channels have large conductance, so that their activation can produce strong membrane hyperpolarization" [1]

What activates I_{BK}? As I_T and I_L play important role in spontaneous bursting, both might provide both - depolarization and intracellular Ca elevation for BK channel activation. In this case, BK should play a role in terminating LTS. Alternatively, I_T and I_L might be insufficient to increase intracellular Ca for BK channel activation within the voltage range of depolarizing envelope. In this case, transient sodium (I_{NaT})-mediated action potentials rather than I_L I_T mediated LTS might be required to activate BK channels because, in addition to strong depolarization, action potentials can also increase intracellular Ca by activating HVA Ca channels. [1]

For ET cells, depolarizing voltage and Ca associated with I_T and I_L are insufficient to activate I_{BK}. [1]

I_{HVA} is required for BK channel activation. BK channels are likely activated by both intracellular Ca increase and strong depolarization during action potentials [1]

BK and HVA Ca currents contribute to repolarization of action potentials [1]

BK current regulates burst duration by contributing to burst termination [1]

After inactivation of I_T, the outward current generated by I_{BK} may override the residual inward currents attributable to I_{NaP} and/or I_L. The resulting hyperpolarization would deactivate these two inward currents and drive the membrane toward the MMP. [1]