

## Calcium-activated potassium channel SK1 is widely expressed in the peripheral nervous system

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### Abstract

Sensory cells contain ion channels involved in the organ-specific transduction mechanisms that convert different types of stimuli into electric energy. Here we focus on small-conductance calcium-activated potassium channel 1 (SK1) which plays an important role in all excitable cells acting as feedback regulators in after-hyperpolarization. This study was undertaken to analyze the pattern of expression of SK1 in the zebrafish peripheral nervous system and sensory organs using RT-PCR, Westernblot and immunohistochemistry. Expression of SK1 mRNA was observed at all developmental stages analyzed (from 10 to 100 days post fertilization, dpf), and the antibody used identified a protein with a molecular weight of 70 kDa, at 100 dpf (regarded to be adult). Cell expressing SK1 in adult animals were neurons of dorsal root and cranial nerve sensory ganglia, sympathetic neurons, sensory cells in neuromasts of the lateral line system and taste buds, crypt olfactory neurons and photoreceptors. Present results report for the first time the expression and the distribution of SK1 in the peripheral nervous system and sensory organs of adult zebrafish, and may contribute to set zebrafish as an interesting experimental model for calcium-activated potassium channels research. Moreover these findings are of potential interest because the potential role of SK as targets for the treatment of neurological diseases and sensory disorders.

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### Biography

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Genètica The main features of such a minimal gene set, as well as the metabolic functions that must be present in the hypothetical minimal cell, are discussed.