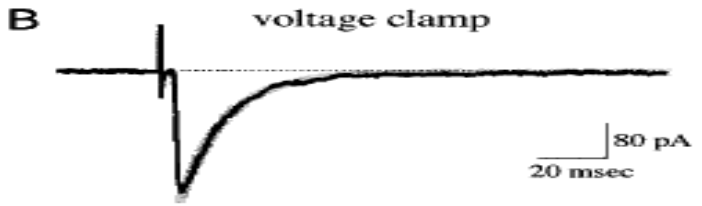

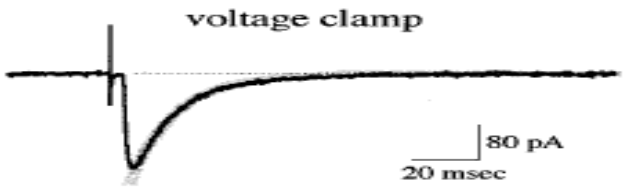

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Sodium-activated potassium current in mouse diaphragm

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The mouse diaphragm muscle fiber was studied using the loose patch clamp technique. The voltage gated sodium currents were evoked by step pulses from a holding potential of about −70 mV. Following the activation of the sodium current, a very large and fast outward current was evoked. The sensitivity of this current to 4-aminopyridine and tetraethylammonium indicates the potassium ion as the possible carrier for the channel. Furthermore, the sensitivity to tetrodotoxin and extracellular sodium demonstrated the sodium dependence of this current.

Potassium channel; Loose patch clamp; Mouse diaphragm

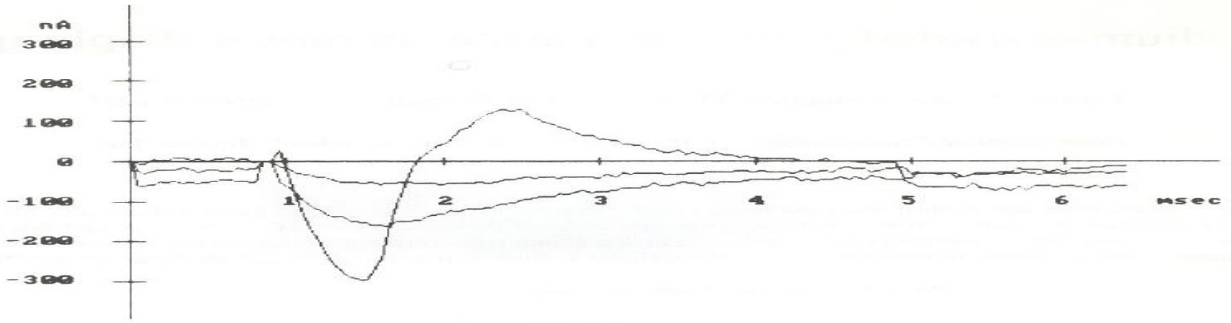

Fig. 1. Inward and outward currents elicited by different depolarizing pulses. The loose patch clamp method was used. The holding potential was held at the resting value (mean value −68 mV ± 1 SEM; 25 fibers). The voltage was stepped up to −38, −28 and −18 mV for 4 ms and the evoked currents recorded. Only the 50 mV step pulse activates the outward current.

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For K^+ channels, Na^+ is the new Ca^{2+}

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Two genes encoding these channels, *Slick* and *Slack*, are expressed throughout the brain. The spatial localization of K_{Na} channels along axons, dendrites and somata appears to be highly cell-type specific. Their molecular properties also suggest that these channels contribute to the response of neurons to hypoxia.

expressed in neurons [7–20]. K_{Na} channels are also found in cardiac cells from some species [21], in diaphragm muscle fibers [22], in developing myoblasts [23] and in *Xenopus* oocytes [24]. In fact, the existence of K_{Na} currents

22 Re, L. *et al.* (1990) Sodium activated potassium current in mouse diaphragm. *FEBS Lett.* 270, 195–197