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Author <b>Henrik Sjölander</b>		
Title (English) <b>Fluorescent and electrophysiological study of a hyperpolarization-activated ion channel</b>		
Title (Swedish)		
Abstract The gating mechanism of the hyperpolarization-activated cyclic nucleotide-gated potassium channel SPIH was studied. Membrane impermeable reagents were used to probe external accessibility of introduced cysteines in the voltage sensor of SPIH. The interpretation of these data is that the sensor undergoes a voltage dependent transmembrane movement. A voltage clamp fluorometry technique was used to correlate this movement of the sensor to the opening of the channel. Together these data lead to a new hypothesis of the gating mechanism for SPIH. The channel is closed at positive potentials, when the voltage sensor is in its outermost position. Stepping to negative voltages leads to an inward movement of the sensor that triggers opening of the channel, resulting in an inward current.		
Keywords SPIH, HCN, hyperpolarization, channel, potassium, gating mechanism		
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