

# Calcium mediates the NO-induced potassium current in toad and rat olfactory receptor neurons

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Nitric oxide (NO) activates a K<sup>+</sup> current in dissociated amphibian olfactory receptor neurons. Using the patch-clamp technique in its whole-cell mode and stimulation with puffs of the NO-donor sodium nitroprusside, we further studied this effect and show that it was sensitive to the K<sup>+</sup>-channel blockers tetraethylammonium and iberiotoxin, indicating the activation of a Ca<sup>2+</sup>-dependent K<sup>+</sup> conductance. The Ca<sup>2+</sup>-channel blockers nifedipine and cadmium abolished the NO-induced current, and lowering external Ca<sup>2+</sup> reduced it significantly. Ca<sup>2+</sup> imaging showed a transient fluorescence increase upon stimulation with NO, and after blockade of K<sup>+</sup> currents, an NO-induced inward current could be measured, suggesting that the activation of the Ca<sup>2+</sup>-dependent K<sup>+</sup> conductance is mediated by Ca<sup>2+</sup> influx. LY83583, a blocker of the ciliary cAMP-gated channels, did not affect the current, and experiments with focal stimulation indicated that the effect is present in the soma, therefore Ca<sup>2+</sup> is unlikely to e