



## TRPV4 channels mediate the infrared laser-evoked response in sensory neurons

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Résumé en anglais	Infrared laser irradiation has been established as an appropriate stimulus for primary sensory neurons under conditions where sensory receptor cells are impaired or lost. Yet, development of clinical applications has been impeded by lack of information about the molecular mechanisms underlying the laser-induced neural response. Here, we directly address this question through pharmacological characterization of the biological response evoked by midinfrared irradiation of isolated retinal and vestibular ganglion cells from rodents. Whole cell patch-clamp recordings reveal that both voltage-gated calcium and sodium channels contribute to the laser-evoked neuronal voltage variations (LEVV). In addition, selective blockade of the LEVV by micromolar concentrations of ruthenium red and RN 1734 identifies thermosensitive transient receptor potential vanilloid channels as the primary effectors of the chain reaction triggered by midinfrared laser irradiation. These results have the potential to facilitate greatly the design of future prosthetic devices aimed at restoring neurosensory capacities in disabled patients.
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