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Resiniferatoxin

National Cancer Institute

Source

National Cancer Institute. *Resiniferatoxin*. NCI Thesaurus. Code C1214.

A naturally occurring capsaicin analog found in the latex of the cactus *Euphorbia resinifera* with analgesic activity. Resiniferatoxin (RTX) binds to and activates the transient receptor potential vanilloid 1 (TRPV1), a non-selective cation channel in the plasma membrane of primary afferent sensory neurons. This increases the permeability to cations, and leads to an influx of calcium and sodium ions. This results in membrane depolarization, causing an irritant effect, followed by desensitization of the sensory neurons thereby inhibiting signal conduction in afferent pain pathways and causing analgesia. TRPV1, a member of the transient receptor potential channel (TRP) superfamily, is a heat- and chemo-sensitive calcium/sodium ion channel that is selectively expressed in a subpopulation of pain-sensing primary afferent neurons.