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Ketamine/Amitriptyline NP-H Cream

National Cancer Institute

Source

National Cancer Institute. *Ketamine/Amitriptyline NP-H Cream*. NCI Thesaurus. Code C67250.

A topical preparation containing the antidepressant amitriptyline and the excitatory amino acid antagonist ketamine with potential topical analgesic activity. In addition to activating adenosine A1 receptors and inhibiting the neuronal reuptake of norepinephrine and serotonin, amitriptyline produces antinociceptive effects, which appear to be mediated through the modulation of multiple subtypes of glutamate receptors including the N-methyl D-aspartate (NMDA) receptor. Ketamine inhibits biogenic amine uptake, agonistically binds to mu-opioid receptors, and inhibits NMDA receptors. NMDA receptor antagonists such as amitriptyline and ketamine interfere with the role of NMDA receptors in the process of central sensitization in which NMDA receptors on spinal dorsal horn neurons are activated, resulting in an increase in synaptic efficacy and so an amplification of the response to sensory input.