The Role of Kappa- and Mu-Opioid Receptors in Pruritus

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Introduction

Background
- Itch perception is transmitted from sensory neurons innervating the skin to the spinal cord; from there, spinal projection neurons relay signals to the brain, where itch sensation is perceived (Figure 1).

Methods
- A literature search of the PubMed database was conducted to identify English-language publications examining the role of opioid receptors in pruritus in the past decade (select references cited within identified publications were also incorporated)
- Search terms included "opioid receptor", "kappa", "mu", "pruritus", and "itch".
- Findings from relevant publications were summarized as a narrative review

Results

Itch Signaling Pathway and the Role of Opioid Receptors
- Kappa- and mu-opioid receptors have been identified throughout the itch signaling pathway, from skin, to spinal cord, to central nervous system (CNS), (Figure 1).

Conclusions
- Kappa- and mu-opioid receptors have emerged as important therapeutic targets in itch
- Notwithstanding these advances, the precise mechanisms by which KOR agonists and/or MOR antagonists can be employed therapeutically remains an exciting area worthy of further investigation

Disclosures
- Kappa- and mu-opioid receptors have emerged as important therapeutic targets in itch
- Notwithstanding these advances, the precise mechanisms by which KOR agonists and/or MOR antagonists can be employed therapeutically remain a key area of investigation.

References