Method of Reducing Pain and Inflamation

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Technology description

General anesthetics (GA) have transformed surgery through their actions to depress the central nervous system but they cause irritation at the infusion site or in the airways by activating so called “pain-sensing” or nociceptive nerve cells on the peripheral nervous system – in fact, anesthesiologists often first use a drug to suppress inflammation and pain before delivering the anesthesia to put the patient to sleep. Georgetown researchers demonstrate that GA excites sensory neurons by selectively activating TRPA1 and TRPV1 in the pain pathway. The present invention utilizes small molecules or nucleic acids to selectively antagonize these TRP ion channels. The present invention has the potential to be an effective treatment strategy for preventing pro-nociceptive effects of GA during surgery.
Proof-of-concept studies showing that GA’s excite sensory neurons by selectively activating TRPA1 in the pain pathway have been demonstrated in knock out mice. Studies indicate potential direct TRP1 activation by VGA’s following stimulation of protein kinase C and furthermore that VGA’s may interact with a common binding sites on TRPV1 and TRPA1 channels.

Application area

A novel method for reducing pain and inflammation

Advantages

A novel treatment that can reduce pain and inflammation caused by anesthetics.
The treatment can be used in conjunction with anesthetics

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