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RECEPTOR AGONISTS AS ANALGESICS

Technology Offer

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Branch
neuroscience, drug therapy, analgesia

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EP patent application filed
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Offer
license or co-development

Key Words
Receptor agonist, inflammatory pain, neuropathic pain

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Introduction

Despite the existence of a variety of marketed analgesics, several forms of pain remain inadequately treatable with drugs. This is particularly true for chronic and neuropathic pain. Improved understanding of the mechanisms of nociception (the neuronal process in pain sensation) has led to the identification of novel targets for potential analgesics. The development of drugs acting at these novel targets offers the opportunity for new approaches to pain therapy.

Invention

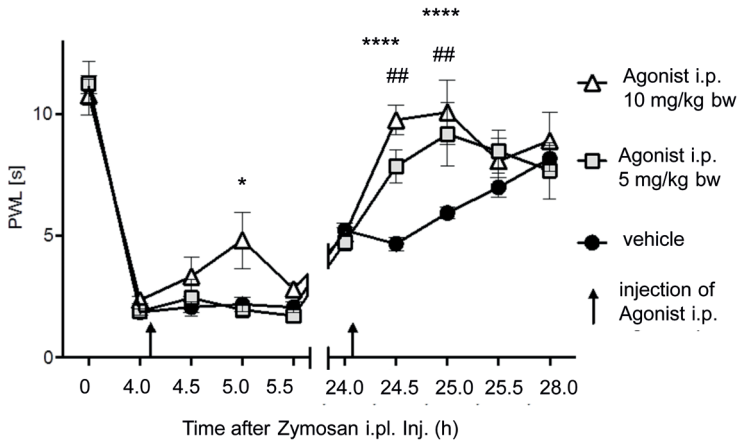
Many lipid mediators of inflammation act on multiple receptors to stimulate inflammatory cells. One of these mediators also acts at low affinity at receptors that are highly expressed in ganglion cells in the spinal cord. The invention relates to the finding that agonists at the low affinity lipid receptor downregulate sensitization of nociceptive neurons in the spinal cord and therefore, offer a novel approach to the relief of pain.

Market Potential

These receptor agonists may be developed for the treatment of inflammatory as well as neuropathic pain, such as that arising during diabetes, in response to cytotoxic drugs and infections or due to nerve injury.

Development Status

The invention has been proven at the level of cellular responses and in animal models.



Receptor agonist increases thermal pain threshold during zymosan-induced inflammtion. Thermal paw withdrawal latency (PWL) was measured. Agonist (10 or 5 mg/kg) or vehicle was injected i.p.twice, 4 and 24 h after zymosan (3 mg/ml injection into the right paw; n=6 per group; data are means ± S.E.M. * $p > 0.05$ and **** $p < 0{,}0001$ (agonist 10 mg/ kg vs vehicle); ## $p < 0.01$ (agonist 5 mg/kg vs vehicle); two way ANOVA, Bonferroni post hoc test.