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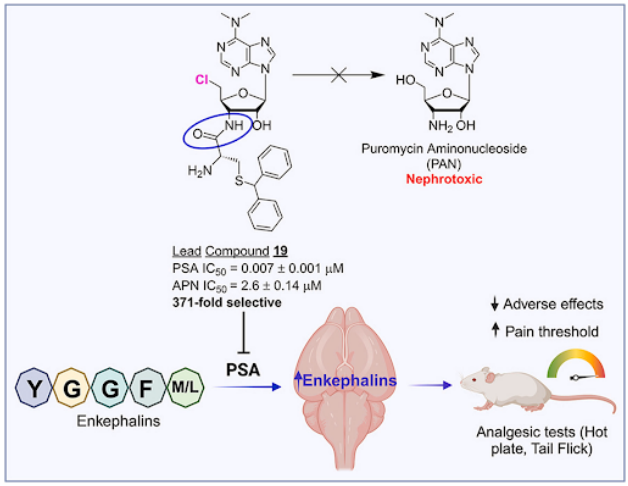
Puromycin-sensitive aminopeptidase inhibitors for effective pain management

Novel puromycin-sensitive aminopeptidase (PSA) inhibitors with analgesic properties.



IP Status: Provisional Patent Application Filed

Applications

- Pain management

Key Benefits & Differentiators

- **Avoids opioid use:** These compounds provide a non-opioid alternative for pain management
- **Increased efficacy:** Other non-opioid agents provide insufficient pain relief, limiting their applications
- **Reduced toxicity:** Unlike previously studied PSA inhibitors, these compounds do not metabolize to toxic byproducts

Technology Overview

Chronic pain affects millions of individuals worldwide, leading to a substantial impact on quality of life and significant healthcare costs. Traditional opioid medications, while effective at managing pain, come with severe side effects, including the risk of addiction and overdose. Attempts have been made to address these problems with non-opioid agents such as non-steroidal anti-inflammatory agents and local anesthetics, however insufficient pain relief greatly limits their clinical impact. As a result, there is a critical need for safer and more effective pain management strategies.

Researchers at the University of Minnesota have developed novel puromycin-sensitive aminopeptidase (PSA) inhibitors that have analgesic properties. By targeting the inhibition of

Technology ID

2024-237

Category

Life Sciences/Biochemicals & Small Molecules
Life Sciences/Human Health
Life Sciences/Pharmaceuticals

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PSA, enkephalin degradation is reduced, leading to increased levels of endogenous opioid peptides in the body, which offers increased pain relief and a promising alternative to traditional opioid therapies. This solution avoids opioid receptor overstimulation, thus dependence and addiction are avoided.

Phase of Development

TRL: 3-4

In vitro and in vivo data has been collected on the efficacy, stability, and toxicity of these compounds.

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

Please contact our office to share your business' needs and learn more.

Researchers

- **Robert Vince, PhD** Professor and Director, Center for Drug Design
- **Swati S. More, PhD** Professor, Center for Drug Design

References

1. Rohit Singh, Rongrong Jiang, Jessica Williams, Prakashkumar Dobariya, Filip Hanak, Jiashu Xie, Patrick E. Rothwell, Robert Vince, Swati S. More(2024) , https://www.sciencedirect.com/science/article/abs/pii/S0223523424004847?via%3Dihub, European Journal of Medicinal Chemistry