NON-OPIOID PAIN RELIEF WITH CONOTOXINS

THERAPEUTICS

Peptides that inhibit nicotinic acetylcholine receptors to treat pain without use of opioids.

TECHNOLOGY SUMMARY

Drug overdose is the leading cause of accidental death in the United States, with over half of those deaths attributable to opioids. As opioid abuse increases, non-addictive alternatives are in high demand. Researchers at the University of Utah are exploring peptides derived from Conus snails for use as non-opioid analgesics. Nature-derived peptides often exhibit limitations that restrict them from direct therapeutic use, but University researchers are employing medicinal chemistry on the natural peptides to increase the stability and potency of these novel molecules. The first group of peptides, known as RgIA4 and RgIA5, inhibit α9α10 nicotinic acetylcholine receptors, which have been identified as an important non-opioid mechanism for pain relief. Additional peptides, known as C-superfamily peptides, that are naturally stable and induce unresponsive phenotypes in mice have also been developed for use in pain therapy and epilepsy treatment.

FEATURES AND BENEFITS

- Provides non-addictive pain relief by inhibiting α9α10 nAChRs.
- Reduces use of opioid drugs.
- Exhibits improved chemical stability.

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