Treatment of Opioid Induced Constipation

Opioids are the most commonly prescribed medication for the treatment of severe pain. However, opioid use can produce multiple adverse side-effects which include drug abuse, dependence, and constipation. These side-effects are mostly attributed to opioid binding at mu opioid receptors in the central nervous system.

The technology

Researchers at Virginia Commonwealth University have developed a nanoparticle-based opioid conjugate that has increased bioavailability and carrying capacity of a peripheral nervous system selective opioid antagonist. This conjugate has excellent oral availability and half-life with the potential to treat opioid induced constipation. Nanoparticle-based delivery systems provide additional stability to the opioid ligand, and produces very low therapeutic side effects.

Benefits

» Treat constipation without compromising pain relief of opioids
   - No opioid abuse liability
   - No opioid dependence
   - Does not affect the CNS

» Low dose requirement with slow release potential

Applications

» Opioid induced constipation

Patent status:
Patent issued: U.S. rights are available. 15/998,948

License status:
This technology is available for licensing to industry for further development and commercialization.

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Biomedical

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Figure 1. P(EAMO)-NAP-PEG effects on intestinal motility in acute morphine treated mice through oral administration.