

**Technology:** [Mu opioid receptor agonist analogs of the endomorphins](#)

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**Location:** New Orleans, LA

**Topic:** Pain/Inflammation/Arthritis

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The VA has joint ownership with The Administrators of the Tulane Educational Fund

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**Abstract:** The invention relates to cyclic peptide agonists that bind to the mu (morphine) opioid receptor and their use in the treatment of acute and/or chronic pain. Embodiments of the invention are directed to cyclic pentapeptide and hexapeptide analogs of endomorphin that have (i) a carboxy-terminal extension with an amidated hydrophilic amino acid and (ii) a substitution in amino acid position 2. These peptide analogs exhibit decreased tolerance relative to morphine, increased solubility compared to similar tetrapeptide analogs, while maintaining favorable or improved therapeutic ratios of analgesia to side effects.