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*All materials presented at the AAPM's 25<sup>th</sup> Annual Meeting are embargoed for news or other publication until the date and time of the presentation at the meeting unless AAPM grants permission for early publication in advance.*

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#### **Study Shows Leconotide, an Investigative Calcium Channel Blocker, Has Potential as a Selective, Efficacious, Non-Opioid Pain Treatment**

**January 28, 2009, Honolulu, Hawaii ...** Results of a pre-clinical study of leconotide, an investigative calcium channel blocker, shows it has the potential to be safe, selective, and efficacious as a new non-opioid treatment for pain relief. It also holds promise in multiple drug delivery options including nasal spray, transdermal patch, and pills.

Data were presented today at the American Academy of Pain Medicine's 25<sup>th</sup> Annual Meeting.

In the study, leconotide, when given intravenously to treat neuropathic pain, was selective for calcium channels involved with pain and it did not act on other calcium channels to cause side effects, as has been seen in studies of other calcium channel blockers used for treating pain. It was efficacious alone, but more so when it was given in combination with a potassium channel opener (flupirtine). The study also

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showed that leconotide, unlike currently available treatments of this type, does not have to be administered directly into the spinal fluid to achieve pain relief, and so could have the potential to be delivered via nasal spray, transdermal patch, or pill.

Leconotide was also compared with ziconotide, an established calcium channel blocker, which was given intravenously with and without flupirtine. In this study, ziconotide was not an effective pain reliever, given alone or in combination with flupirtine.

“There is a tremendous need for non-opioid treatments for neuropathic pain, so the results of this study are exciting for researchers in the field of pain medicine, doctors whom treat pain, and patients who suffer or are under-treated because of the abuse potential and side effects associated with opioid treatments,” said Colin Goodchild, PhD, and director of the Centre for Pain Research and Palliative Care, Monash Institute of Medical Research.

To determine the efficacy and side effect profile of leconotide, researchers at Monash Institute of Medical Research studied 322 rodents in a model of induced diabetic neuropathy and hyperalgesia, or extreme sensitivity to pain. Roughly one-third of the rodents were given injections of two calcium channel blockers (leconotide or ziconotide) alone and in combination with flupirtine (a potassium channel opener). Roughly another third were given a range of doses up to the maximum that would not induce sedation. About half of the rodent’s pain was reduced in the group with leconotide compared to less than 1 percent when ziconotide was given alone.

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Leconotide in combination with flupirtine increased the reduction of pain, demonstrating selectivity – it did not act on the channels that cause the side effects seen with ziconotide treatment.

Leconotide is derived from marine hunting cone snail *Conus Catus*.

### **About Calcium Channel Blockers**

Every cell in the body is enclosed by a membrane which acts as a barrier controlling the flow of chemicals into and out of the cell. Channels through the membrane control the passage of substances into and out of the cell. Some are specialized for the flow of chemical ions such as sodium, potassium and calcium. The amount of ions of each species passing through those channels controls many functions of the cell such as force of contraction of a muscle cell in the heart or blood vessels or rate of electrical firing or production of chemical messengers in nerve cells. Calcium antagonists block calcium channels. There are many types of calcium channels. Medicines can be selective to bind just with one type (e.g. heart and blood vessels to lower blood pressure). Calcium channels in nerve cells are involved with many functions (e.g., pain, memory and control of consciousness). The goal is to find a calcium antagonist that only affects the channels involved with pain to cause pain relief without side effects like feeling sleepy.

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**Poster Session Information (Poster 181)**

Begins: 3:30 PM (Hawaiian Time), Wednesday, January 28, 2009

Ends: 10:00 AM (Hawaiian Time), Thursday, January 29, 2009

Location: Coral Ballroom Foyer, Hilton Hawaiian Village

**About the AAPM**

For more than 25 years, the American Academy of Pain Medicine (AAPM) has been the medical specialty society representing more than 2,200 physicians practicing in the field of pain medicine. The Academy is involved in education, training, advocacy and research in the specialty of pain medicine. Information is available on the practice of pain medicine at [www.painmed.org](http://www.painmed.org).

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