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Innovative pharmacological treatment for enhancement of analgesia and prevention of morphine side effects based on a new pharmaceutical composition containing morphine combined with omega-3 fatty acids

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The treatment of acute and chronic severe pain remains a major daily challenge for health professionals in clinical practice. Chronic pain impairs the quality of life, especially of the elderly. With the increase in life expectancy, the development of chronic pain secondary to degenerative diseases or various types of cancer has also increased. Morphine is a potent analgesic mostly used to control pain. However, long term treatment develops several problems, such as loss of analgesic efficacy (tolerance), increased sensitivity to pain (hyperalgesia) and adverse effects like constipation, nausea, vomiting, sedation, drowsiness, pruritus and weight loss. These effects, together with tolerance and hyperalgesia, may require the use of increasingly higher doses to get the same analgesic effect or discontinue its use, which constitutes a failure of the treatment against pain. Also, because morphine has a short analgesic effect, doses should be administered every 4 hours, causing difficulties for the patient. This project describes a technological development with an innovative character, both in its pharmaceutical composition (morphine and omega-3 fatty acids) and in the pharmacological treatment associated with its use. The main advantage of the new pharmaceutical composition and pharmacological treatment lies in the control of pain with a sub-therapeutic dose of morphine which would eliminate or potentially decrease its adverse effects. Other important clinical benefits of using it in terminally ill patients, (such as cancer sufferers) or patients with other types of chronic diseases are the decrease in tolerance to analgesic effect and the reduction in body weight loss and constipation.

Biography

Carlos Horacio Laino received his PhD degree in Pharmacology from University of Buenos Aires, Argentina and completed his Post-graduate studies in the Laboratory of the Research Department of Neuroscience, Center for Addiction and Mental Health, Research Foundation of Toronto, Canada. Then, he joined the National University of La Rioja (Argentina) in 2005 and is currently an Associate Professor of Pharmacology and Toxicology. He further received an award for Innovative Research Work from the National Innovation Submit & Showcase Tech Connect World in 2013 and 2014. His research focuses on drug discovery in several therapeutic areas, especially pain.

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