

Conferencia: Treatment of Chronic Pain Using HSV Vectors

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Abstract: Treatment of Chronic Pain Using HSV Vectors

Pain is an adaptive warning for impending tissue damage however chronic pain is a pathological condition that is no longer adaptive and can have severe negative effects on the quality of life. In this US alone, it has been estimated that more 60 million people will experience long lasting painful conditions during their lifetime that limits the ability to work, travel and participate in leisure activities. Chronic pain most often arises as a secondary response to inflammation and nerve damage and is commonly associated with diseases such cancer, arthritis, radiculopathy, infections and diabetes. For most painful conditions, there is no long-term treatment and the standard of care using pharmacological approaches are ameliorative at best. Moreover, drug therapy is systemically administered and can have highly undesirable side effects. Oxycodone for example has become a dangerous addictive drug. Gene therapy holds promise as a treatment alternative for chronic pain conditions. Viral vectors such as HSV can be used to introduce products that can relieve pain long term. I will describe progress in the engineering of safe, long-term HSV expression vectors for modifying the activity of sensory neurons and strategies to treat chronic pain using natural cellular products and engineered ligand gated ion channels that can be regulated by systemically administered drugs.

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Biography

Dr. Glorioso began his career as a professor in the Microbiology and Immunology and Laboratory Animal Medicine at the University of Michigan School of Medicine in 1976 and later in 1989, he moved to the University of Pittsburgh School of Medicine as the W.S McEllroy Professor and Chair of the Department of Microbiology and Molecular Genetics. He has established a 40-year history of research related to the basic biology and genetics of herpes simplex virus. His contributions to the field include defining antiviral immune responses to infection, the genetics of viral pathogenesis and latency, and mechanisms of viral infection. He has been a pioneer in the design and application of HSV gene vectors for the treatment of nervous system diseases such as peripheral neuropathies, chronic pain, and brain tumors. . His research has launched two Biotech companies, Oncorus Inc. in Cambridge, MA and Coda Biotherapeutics Inc in San Francisco, CA. Oncorus utilizes oncolytic HSV vectors for the treatment of solid tumors by tumor lysis combined with immunomodulatory arming genes for induction of anti-tumor immunity. Coda Bio is a neuromodulation company that employs chemical genetics to silence painful conditions such as trigeminal and post-herpetic neuralgia and for treatment of neurogenic bladder, tremor and epilepsy.