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New painkiller with no apparent side effects or addictive qualities near to market

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(PhysOrg.com) -- A powerful new painkiller, which was developed on the basis of the research conducted at Stony Brook University and with no apparent side effects or addictive qualities, may now be only a year or two from the consumer market.

"This offers a major paradigm shift in the control of pain," declares Dr. Simon Halegoua, Professor of Neurobiology & Behavior at Stony Brook who in the 1990s, teamed up with fellow Stony Brook professors Dr. Gail Mandel and Dr. Paul Brehm to identify a novel sodium ion channel involved in the transmission of pain. They predicted that a drug aimed at blocking this channel, PN1/Nav 1.7, would control pain. PN1 (Peripheral Neuron 1), is uniquely expressed in peripheral nerves such as those involved in pain transduction.

"When a patient is given an opiate like morphine, pain signals are still transmitted from sensory nerves to the central nervous system. Morphine action throughout the brain reduces and alters pain perception, but it also impairs judgement and results in drug dependence," explains Halegoua, also director of the Center for Nervous System Disorders at Stony Brook University. "With drugs targeting the PN1/Nav1.7 sodium ion channel, the pain signals would not be transmitted, even by the sensory nerves. And since the central nervous system is taken out of the equation, there would be no side effects and no addictive qualities."

The potential for such drugs is enormous – the reduction or elimination of pain for patients with cancer, arthritis, migraine headaches, muscle

pain, pain from burns, and pain from other debilitating diseases.

He notes that drugs in both oral and topical ointment forms, based on the research he conducted in a basement laboratory at Stony Brook with Mandel, a molecular biologist, and Brehm, an electrophysiologist, are currently in Phase II clinical trials in England and Canada.

The Research Foundation of the State University of New York is the holder of the various patents originating from the work of the Stony Brook researchers. Icagen Inc., now in partnership with Pfizer, holds the exclusive license to these patents and has announced their own drug has now entered Phase I clinical trials in the U.S.

Provided by Stony Brook University