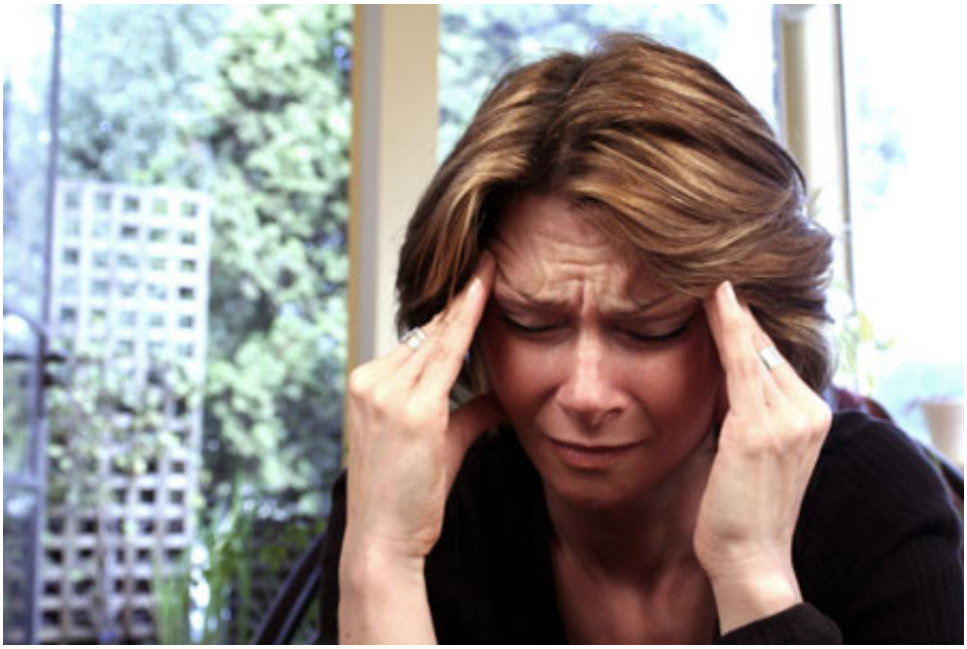
Medical Xpress

Designing a new drug for chronic pain

August 24 2012



(Medical Xpress)—Scientists at the University of Liverpool and the Royal Liverpool University Hospital have been awarded £1.4 million to design a new drug for the treatment of chronic pain.

The project funded by the Medical Research Council (MRC), addresses the long-standing and urgent need for effective therapies for chronic pain which affects around 20% of adults in Europe and the US, and more than eight million adult patients in the UK alone. Medication currently available to treat the condition is effective in only around 40%

of sufferers and even these patients often struggle to maintain the balance between adequate pain relief and the adverse effects of current therapies.

Targeting the glycine receptor

The research team is examining compounds which target the glycine receptor, one of the principal inhibitory neuronal receptors in the central nervous system and crucial in the sensation of chronic pain. Through medicinal chemistry, computational methods and experimental testing, scientists successfully identified novel compounds which could be used for the treatment of chronic pain without unwanted sedative effects.

Professor Martin Leuwer, from the University's Department of Molecular and Clinical Pharmacology in the Institute of Translational Medicine, said: "This is an exciting project that expands our drug discovery portfolio into a new therapeutic area with a huge unmet medical need. Our collaborative team of medicinal chemists, molecular modellers and neurobiologists have made significant advances in this area and this funding provides us with the opportunity to drive the project forward towards an entirely new class of drug for the treatment of chronic pain conditions.

"We're aiming to develop molecules that target the glycine receptor, into a drug that can be administered as a tablet. Our project concept has been shown to work but further improvements are required if we are to reach the goal of generating a drug which is safe, effective and orally viable. Our ultimate aim is to allow chronic pain patients to regain a dramatically improved quality of life."

He added: "In view of the huge numbers of patients worldwide whose lives are wrecked by chronic pain, the fact that current treatment options are clearly insufficient and the dramatic toll on economies caused by

millions of lost working hours, our causal treatment option has the potential to have a tremendous beneficial impact on individuals and societies."

Provided by University of Liverpool