



Australian researchers search for "holy grail" of pain relief

19 October 2018

A new generation of opioids with fewer side effects is being explored by an Australian and Chinese research team.

Emeritus Professor Maree Smith of the School of Biomedical Sciences at the University of Queensland will present research on oliceridine, a novel opioid being developed internationally, as well as results from her team's CYX-6 research project at a meeting of specialist pain medicine physicians.

Local and international specialist pain medicine physicians are attending the Australian and New Zealand College of Anaesthetists' Faculty of Pain Medicine (FPM) meeting from October 19-21 in Cairns.

Professor Smith, Executive Director of the Centre for Integrated Preclinical Drug Development (CIPDD), stressed that while the research project was still in its early stages laboratory tests were promising as they had found that a newly discovered compound, CYX-6, spared laboratory rats from some of the more common side effects of opioid use – respiratory depression and constipation. (This pharmacological profile is thought to be due to the fact that CYX-6 doesn't activate the b-arrestin signalling pathway of the μ -opioid receptor.)

Strong opioids that are used for pain relief such as morphine and fentanyl can have other serious and sometimes fatal side effects such as drowsiness, respiratory depression and addiction depending on their dose and application.

"We've seen with the opioid crisis in the US there are many people who are dying as a result of taking either too many opioids or doses that are too high because they stop breathing," Professor Smith explained.

"So being able to develop an opioid with a reduced propensity for breathing difficulties would be a very positive step."

Professor Smith's laboratory is exploring the new opioid as part of a collaboration with Chinese researcher/medicinal chemist, Professor Tingyou Li from Nanjing Medical University in Nanjing, China.

Professor Smith described the search for the next generation of opioid analgesics as "the holy grail of opioid development".

"We and other international laboratories are focused on discovery of new opioid alternatives with fewer side effects. It is a hot topic in the research world at present."

Dr Meredith Craigie, the Dean of FPM, said research into opioid alternatives such as that being carried out by Professor Smith and her team were a significant step in the development of potential new treatments for pain management.