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Bosch Distinguished Seminar Series

Chronic Pain is a Disease in its Own Right Demanding New Treatments

Speaker:

Professor MacDonald J Christie

Title:

Chronic Pain is a Disease in its Own Right
Demanding New Treatments

Date:

Tuesday 12 June, 2012

Time:

1.00pm - 2.00pm

Venue:

Lecture Theatre 101, New Law School
Building, University of Sydney



Professor MacDonald J Christie:

Christie is a cellular and molecular neuropharmacologist with research interests including cellular and molecular mechanisms of opioid receptor signalling in neurons and synapses in pain pathways, the biological basis of adaptations producing chronic pain and drug dependence, and preclinical development of novel pain therapeutics derived from conotoxins. He has published over 180 research papers in the field of neurological sciences, many in top ranked general and discipline based journals. His published work has received over 8,000 citations (H-Index = 46). Christie completed a PhD at The University of Sydney in 1983. He was an Australian Postdoctoral Fellow in 1985 (NHMRC), a Fogarty International Fellow at Massachusetts Institute of Technology from 1985-1987 and then Senior Research Associate at the Vollum Institute in Oregon, USA from 1987-1990. He was appointed as a tenured academic in the Department of Pharmacology, The University of Sydney in 1990, where he was Head of Department from 1998-2000, full professor (personal chair) from 1999 and Medical Foundation Senior Principal Research Fellow from 1998-2002. He has been a NHMRC Senior Principal Research Fellow since 2003. He previously served as Director of Basic Research at the Pain Management Research Institute (University of Sydney 2003-2008) and Director of Neuropharmacology at the Brain & Mind Research Institute, University of Sydney from 2008-2011. He is now Professor of Pharmacology in the Sydney Medical School and is Associate Dean (Research Strategy). He is currently a Chief Investigator on a NH&MRC Program Grant to identify novel pain therapeutics based on conopeptides (\$6.4 million over 5 years). He is a past editorial board member for Pain and currently serves on Editorial Boards of several international journals including British Journal of Pharmacology. He has served as the chair of scientific advisory boards and an Executive member of the International Narcotics Research Conference, the peak international opioid research organisation.

Summary: Pain normally signals that something is wrong or causing damage. For many individuals pain develops over time into a disease in its own right that causes serious ongoing suffering but

serves no biological purpose. Unfortunately for many this chronic pain state responds poorly to medications such as morphine that effectively alleviate “normal” pain, Although the mechanisms responsible for development of pathological chronic pain are not fully understood there is growing knowledge that aberrant plasticity in neurons and synapses develop as a result of pathological insults, particularly persistent nerve injury and inflammation. Our goal is to understand key neural targets that contribute to the pathology of these “plasticity” diseases of the brain. This work is being undertaken by integrating molecular and cellular physiological methods in nerve cells that form pain transmission and motivational pathways with animal behavioural models of these diseases. Understanding of the mechanisms of pathological plasticity in nerves and synapses in these neural systems in response to nerve injury not only advances knowledge of how the brain adapts to insult but provides new therapeutic opportunities for these largely intractable brain diseases. In a national and international collaborative program we are developing new medications (conopeptides) for treating acute and chronic pain conditions. These novel agents have a very high level of selectivity for the excitability molecules that appear to underlie chronic pain and therefore have potential as new therapeutic strategies to alleviate this burden.