RESEARCH SEMINAR

Neuroinflammation – A Tale of Two Pathologies

Prof. Alan J Nimmo

When: Friday 5th July 2013
3:30pm – 4:30pm **Refreshments will be served afterwards**

Where: Medical Foundation Building Auditorium
92-94 Parramatta Road, Camperdown

Biography
Prof Alan Nimmo is currently Professor of Medical Science in the School of Medicine and Dentistry at James Cook University. He established the discipline of Pharmacology at James Cook University (JCU), and played a major role in the development of a number of professional programs, including Medicine and Dentistry.

He graduated from Edinburgh University and much of his research has focused on the role substance P, and other neuropeptides play in inflammation. Including research into asthma and urogenital disorders. Alan completed his PhD and in 1992, moved to Australia in an academic capacity to JCU. He also held the position of A/Prof in Pathology at the University of Adelaide. In 2008, Alan returned to JCU to take up the position of Prof of Medical Science.

Alan has acted as a consultant for a number of pharmaceutical companies (including Pfizer) on their programs examining inflammatory neuropeptides as novel therapeutic targets. Whilst at JCU, Alan began a productive research collaboration with Prof Robert Vink, where they worked on developing a novel therapy that targeted the inflammatory response and cerebral oedema associated with Traumatic Brain Injury (TBI). More recently, Alan has developed an interest in the role inflammatory processes may play in the invasive and metastatic progression of cancer.

Abstract
Inflammation is the most common pathological process, and whilst there are many beneficial aspects to inflammation and the innate immune response, there may also be fatal consequences. One key advance in our understanding of CNS pathologies has been the realisation that inflammation plays a key role in many acute and chronic conditions. The brain is basically no different from any other tissue in the body when it comes to inflammation, but there are elements that make it unique, and one of those is the blood-brain barrier (BBB). We have been interested in the blood-brain barrier as a potential therapeutic target, particularly in acute situations, such as traumatic brain injury. From our knowledge of the role the vasculature plays in inflammation, we primarily focused on inflammatory neuropeptides, and in particular substance P, as a potential target. Through a long-standing research collaboration with Prof Robert Vink, we have been able to develop a treatment that restores BBB function in our animal models of traumatic brain injury, producing very significant improvements in functional outcome. Currently we are on schedule to commence clinical development of that treatment in the second-half of this year.

Stemming from our work on the BBB, we began to develop an interest in the problem of cerebral metastasis. Our research, and that of others, has indicated that substance P may have a number of detrimental effects in terms of cancer progression. This may have implications in relation to therapeutic intervention in cancer, since treatments, such as radiotherapy, are known to cause substance P release. We have been able to show that blocking the action of substance P may inhibit tumour growth in an animal model of cerebral metastasis, as well as promote apoptotic tumour cell death. As such, we are interested in the use of an NK1 antagonist as a potential adjunct therapy for cerebral metastases.