



Thursday, 15 August 2013

SCORPION TOXIN COULD BE THE NEXT HERO OF SCIENCE

Queensland Tropical Health Alliance (QTHA) researchers at James Cook University in Cairns have taken delivery of a new weapon in their efforts to develop new treatments for cancer.

Professor Norelle Daly and Dr David Wilson will use their new, state-of-the-art, 1.2 million-dollar, Nuclear Magnetic Resonance (NMR) spectrometer to investigate the structure of promising molecules, including those found in the venom of scorpions.

Professor Daly and Dr Wilson will unveil the spectrometer at JCU's campus today (Thursday August 15th).

Media are welcome to tour the facility at 10.00am.

Dr Wilson will milk a scorpion in the QTHA laboratory at 10.15am and will demonstrate using the spectrometer to analyse the venom.

In 2012 QTHA researchers at James Cook University and The University of Queensland won an Australian Research Council LIEF grant worth \$630,000 to support the acquisition of a high-resolution and high-throughput Nuclear Magnetic Resonance (NMR) facility.

QTHA researchers at James Cook University and The University of Queensland will use nuclear magnetic resonance spectrometers with cryogenically cooled probes to investigate the structures of novel biomolecules from spiders, hookworms, plants and synthetic drugs.

Professor Norelle Daly is a program leader in the Centre for Biodiscovery and Molecular Development of Therapeutics (BMDT) based at QTHA laboratories at James Cook University. She is researching the venom from scorpions as a tumour-imaging agent and will use the NMR facility to study the structure of these molecules.

"The aim of this project is to develop a tool for visualising tumours during surgery," Professor Daly said.

"Surgical removal of tumours remains the foundation of cancer treatment, but the ability to distinguish the margin between cancerous and healthy cells is imprecise.



“We will explore the structure of molecules in scorpion toxin, looking for features that we hope might one day help surgeons more accurately target cancers, including brain tumours.

The project is a collaboration with Professor David Craik (The University of Queensland) and Dr Jim Olson from the Fred Hutchinson Cancer Research Center (Seattle).

Dr David Wilson captured footage of the three-week installation of the NMR machine, which can be viewed online at QTHA’s YouTube channel http://www.youtube.com/watch?v=TZxzKtrELiU&feature=em-upload_owner.

“Nuclear magnetic resonance occurs when the nuclei of certain atoms are placed in magnetic fields,” Dr Wilson said.

“Some nuclei experience this phenomenon, and others do not, so we can measure this to try and understand the structure of these molecules, including those in scorpion venom,” Dr Wilson said.

“It has been very exciting to be involved in installing the spectrometer. We’re already using it to analyse molecules that might lead to new drugs for cancer and pain, as well as inflammatory and tropical diseases.”

For interviews please contact Lisa Jones 07 4232 1311 or 0405 620 747 or email lisa.jones1@jcu.edu.au

IMPORTANT NOTE: To join the NMR facility tour media must be wearing closed in shoes. Visitors should not have any metallic implants and in particular no visitors with pacemakers. A lab coat will be issued for the tour.

LOCATION: The QTHA building is in the E cluster of buildings at the Cairns campus of JCU. Drive into the university grounds and turn left after the carpark. Follow the road right to the end and look for the signs for QTHA parking.

The QTHA is a unique collaboration between Queensland universities and research institutes, creating a wealth of tropical health and medical research expertise in the tropics. QTHA brings together, within one network, world-class researchers focused on the common goal of reducing the burden of tropical diseases in tropical regions. Research is conducted within three broad programs discovery, new product development and trialling of drugs, diagnostics and vaccines; Indigenous health; disease surveillance and control.

TROPICAL HEALTH SOLUTIONS
THROUGH SCIENCE



www.qtha.org.au