

## Rheumatology Department: Arthritis Australia Grants

Well done to the Rheumatology Department, TQEH, who has been awarded two grants from Arthritis Australia for 2010.

### Project Grant 2010 \$15,000

Investigators: Dr Hai Tran, Dr Petra Neufing, Dr Maureen Rischmueller

Title: "Novel autoantibodies target purinergic receptors in patients with Sjogren's syndrome"

The first, for \$15,000, with Chief Investigator Dr Hai Tran, is to investigate novel P2X7 autoantibodies in rheumatological diseases.

Patients with chronic inflammatory rheumatological autoimmune diseases commonly have severe sicca (i.e. lack of saliva and tears), which may be classified as primary (Sjögren's syndrome) or secondary to other rheumatological diseases such as rheumatoid arthritis. These patients may also have other symptoms of nervous system dysfunction.

Purinergic receptors constitute one of the signalling systems used by cells in the body to enable proper function of the immune and nervous systems, as well as for the flow of saliva and tears. Among the purinergic receptors, the P2X7 receptor is unique in its capability to trigger a pro-inflammatory response and consequently cell death when being excessively stimulated, and in the nervous system, it is important in the regulation of salivary secretion.

In a previous study, supported under TQEH Research Foundation's 2008 Project Grant round, Dr Tran has identified a completely new autoantibody in the serum of patients with Sjögren's syndrome, which binds to both P2X7 receptor protein and a synthetic peptide derived from it. The funding from Arthritis Australia is to investigate how frequent these antibodies are in patients with Sjögren's syndrome, rheumatoid arthritis and healthy subjects; and how they correlate with the severity of mouth and eye

dryness, nervous system dysfunction and immune parameters. Further basic questions, which may potentially have a therapeutic impact, are how these antibodies may disrupt the normal function of cells, and what part of the receptors are being targeted by the antibodies.

This research will be integrated into the Centre for Chronic Inflammatory Diseases Research (CIDR) program, which is currently funded the TQEH Research Foundation, and may provide insight into inflammatory processes in other diseases.

### Project Grant 2010 \$35,000

Investigators: A/Prof Catherine Hill, Prof Les Cleland, Prof Graeme Jones, A/Prof Lyn March

Title: "Association of n-3 fatty acid levels and serum COMP levels with inflammation, symptoms and cartilage volume in knee osteoarthritis"

The second Arthritis Australia grant of \$35,000 was awarded to A/Prof Catherine Hill, Chief Investigator of the NHMRC funded FOSTAR study, which is a clinical trial to evaluate the benefits of fish oil supplementation in patients with knee osteoarthritis. The additional funding is to enable further studies, not covered by the NHMRC funding, into biochemical, lipid and genetic profiles which may indicate differences in response to fish oil supplementation between patients. This, in turn, may influence the effectiveness of fish oil supplementation in reducing inflammation and preventing osteoarthritis progression. These studies will provide important information as to how individuals may differ in their response to fish oil, how fish oil works and may ultimately enable individual tailoring of an appropriate fish oil dose.

Congratulations to Catherine Hill on her recent appointment to Associate Professor, School of Medicine, University of Adelaide