

Neuropathic Pain Research

SPECIALISTS IN CHRONIC PAIN / NEUROIMMUNOLOGY RESEARCH

Background: The research group is part of the Translational Neuroscience Facility and is interested in neuro-immune interactions in health and disease.

Current research focuses on the role of immune cells and their mediators in neurodegeneration and neuropathic pain caused by peripheral nerve injury, autoimmune diseases of the nervous system such as multiple sclerosis (MS), and chemotherapy-induced peripheral neuropathy (CIPN).

SELECTED RECENT PROJECTS

Potential applications of our research:

- Developing immunotherapy using adoptive transfer of immunosuppressive regulatory T cells
- Developing immunotherapy using treatment with a novel anti-inflammatory cytokine (intereukin-35; IL-35)
- Characterising electrophysical changes *in vivo* following neuropathic injury
- Identifying neuroprotective drugs for the treatment of CIPN
- Characterising novel cytokine and chemokine release following neuropathic injury

TRACK RECORD

- List of publications:

<https://research.unsw.edu.au/people/dr-gila-moalem-taylor/publications>

THE TOOLS OF OUR TRADE

Resources:

An animal model of neuropathic pain due to peripheral nerve injury

- An animal model of multiple sclerosis
- An animal model of chemotherapy-induced peripheral neuropathy
- Novel immunotherapeutic approaches
- *In vitro* culturing systems for whole dorsal root ganglion (DRG) explants and dissociated DRG sensory neurons.

COMPETITIVE ADVANTAGES OF OUR TECHNOLOGIES

The current standard and the advantages of our technologies:

- Well-established animal models of neuropathic pain including nerve injury, MS, and CIPN that enable quick testing of potential therapy
- *In vitro* assay of sensory neurons that enables large throughput testing of neuroprotective candidate drugs
- Ability to combine *in vitro* and *in vivo* neuroprotective assays for integrated and comprehensive preclinical testing.

OUR EXPERTS

Key personnel:

Dr Gila Moalem-Taylor – An expert neuro-immunologist

Dr Justin Less – An expert in *in vitro* neuronal assays and animal models of CIPN



Neuropathic Pain Research group - 2017