Project Title: The development of a blood based biomarker for motor neuron disease

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Location of Project: 6E140, Human Physiology, Flinders Medical Centre

Outline of Project:
Motor Neuron Disease (MND) is a devastating neurodegenerative disorder, causing relentless and incapacitating motor disability and death. There are no effective treatment or cure placing tremendous burden on families, carers and the health system.

We have developed a urinary biomarker called p75ECD for motor neuron disease\(^1\). p75ECD is shed from diseased neurons as MND progresses. We have been able to show that urinary p75ECD is a candidate progression and prognostic marker that can be used to follow treatments. We now wish to show that serum/plasma p75ECD is also a biomarker for MND in both mice and humans living with MND.

The honours project will be involved in testing the level of p75ECD in serum/plasma from mice and humans living with MND. This will involve developing an Enzyme-Linked Immunosorbent assay (ELISA) for serum/plasma p75ECD (above) and measuring p75ECD in serum/plasma of humans and mice with MND.

Key Reference:
1. Shepheard, S; Chataway T; Schultz D; Rush R.A, and Rogers M.-L 2014. The Extracellular Domain of Neurotrophin Receptor p75 As a Candidate Biomarker For ALS. PLOS One. 9 (1) e87398
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