**PROJECT RESUME**

**TITLE:** Identifying and targeting neuroprotective pathways in motor neurons

Motor neuron diseases are currently incurable neurological conditions that carry a significant physical, emotional, and societal burden. Efforts to identify new disease-modifying therapies are therefore critical. Given that degeneration and loss of lower motor neurons (the nerve cells connecting the spinal cord to muscles) is a common feature of disease, the ability to slow or halt degeneration in motor neurons offers a potentially powerful new disease-modifying therapeutic approach. Previous work in our laboratory has shown that some motor neurons possess an inherent ‘natural’ protective capacity that enables them to resist degeneration during MND, resulting from differences in their ability to generate and handle energy (as a result of changes in genes and proteins contributing to ‘bioenergetics’ pathways). In this proposal we will test the hypothesis that ‘*modulation of bioenergetic status is a viable therapeutic strategy to protect motor neurons from degeneration in models of motor neuron disease’*.

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