



PREVENTING DIABETIC NEUROPATHY

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Although diabetes mellitus is becoming more common in the world's adult population, past decades have shown an increasingly dangerous upward trend in the younger demographic. As of 2010, there are currently 220 million people in the world living with diabetes, a suspected 32.8 million in the United States alone (WHO, 2011). Due to improper regulation of blood glucose levels individuals with diabetes mellitus live in a state of fluctuating hyperglycemia (high blood glucose levels) resulting in a myriad of health complications effecting major organs and physiological function in the body. Diabetic neuropathy (nerve damage) is one of several complications associated with this disease.

Peripheral neuropathy, the damage of periphery nerves, remains a major health concern in the millions individual living with diabetes mellitus worldwide. After diagnosis, 50% of patients will experience a degree of neuropathic disorder traced to the imperfect glycemic control indicative of this disease. There are no current treatments for nerve degeneration or sensory loss. Studies in the Calcutt lab have demonstrated the amazing potential of a molecule responsible for preventative nerve degeneration. The aim of this study is to determine the efficacy of certain compounds in in treating diabetic neuropathy.

Applications in Drug Development: A New Approach

This study does not set out to answer the question of what causes diabetic neuropathy. Instead what this study aims to achieve is to discover a more viable therapeutic alternative in preventing neuronal degeneration. Several tested compounds have been studied in The Calcutt Lab to activate the body's capacity for reparation. In the instance of peripheral nerve damage, the compound of interest in my study is used to induce this self-healing response in the body for nerve regeneration and regrowth. This compound may provide a viable treatment option for preventing neuronal damage in diabetes.