The Earthworm Squirm: Multiple Sclerosis Hypnosis Investigating the Potentiality of an Alternative, Realistic Cure of Encephalomyelitis disseminata (Multiple Sclerosis) Using the Neoblasts from Dugesia tigrina (Planaria) on Lumbricus terrestris (Earthworms)

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One-billion individuals, one in six, suffer from neurological disorders. Encephalomyelitis disseminata (MS) is primarily an immune-mediated disease of the central nervous system (CNS) where auto-aggressive T-cells cross the blood–brain barrier (BBB) inflicting demyelination, leading to disability. Planaria (Dugesia tigrina) contain Neoblast Stem Cells, allowing regeneration when cut; presently, Neoblasts have been used to regenerate a human's trachea, proving safety and applicability within humans. This study investigates if Neoblasts could be used as both a cost-effective true cure and preventative measure in neurodegenerative diseases, compared to current human-stem-cell treatments. It was hypothesized if Neoblasts were given to Earthworms as a cure and preventative measure, then healthy cells would be regenerated whilst undergoing apoptosis for degenerated cells. Experimental groups included controls, cure and preventative measure trials, and trials for the four stages of MS, respectively. Quantitative cell viability data, calculated using MTT assay, with all non-control trial groups proving to be above 90%, whilst qualitative data indicated that daily activities resumed as normal following an incubation period of Neoblasts being administered, and that cell images indicated the reversing of demyelination. Data indicates that Neoblasts could be a potential, affordable cure for Multiple Sclerosis due to their reparative properties that human-stem-cells cannot achieve (due to being from the same organism). Current studies being conducted include inflicting symptoms of Alzheimer's and Parkinson's in the model organism in an attempt to evaluate the effectiveness of the Neoblasts on other neurological conditions, and results are currently promising (>90% cell viability).

Awards Won:

First Award of $5,000

Long Island University: Presidential Scholarships