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Microgravity Experiments from Sub-Orbital to Orbital Platforms (3)

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EXTENSION OF PARKINSON'S DISEASE IN MICROGRAVITY

Abstract

Extension of Parkinson's disease in microgravity

ISS is a platform that helps us solve a lot of Earth-based problems by simply removing the restricting force of terrestrial gravity from the equation. Many biotechnology enthusiasts are on the verge of finding cures to long age diseases. One such disease that has baffled scientists for years is Parkinson's disease. This disease occurs due to the death of dopamine in brain, which is due to the death of neurons in the brain. The obvious question that arises is what causes a neuron to die? Certain assumptions were that Parkinson's is a genetic disease. However, the randomness in recent cases have hinted at the fact that it might not be genetic after all. Many researchers now believe that this disease results from a combination of genetic factors and environmental factors such as exposure to toxins. In order to get a clear understanding on the causative factors of said disease, the sole intention of which being to finding cure for it, is a NASA proposed model of monitoring protein growth in micro gravity.

What this abstract proposes is having the entire neuron cell cultured and grown in microgravity which could help us locate and mainly understand the driving force behind dopamine death or in other words why neurons that produce dopamine die thus causing Parkinson's disease. Since majority of our understanding of Parkinson's is based on assumptions, the growth of only specific proteins could be a tedious process whereas growing the entire neuron as a first step can help narrow a specific region of interest, which can then be followed by specific protein tests. The main motivation behind this abstract is to use the existing technology to better understand factors affecting human life. The entire design of the experimental setup to facilitate observations of neuron growth will be presented in the paper.