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2017 Part the Cloud: Translational Research Funding for Alzheimer's Disease (PTC)

Phase 1 Study of MW150: Novel Stress Kinase Inhibitor Candidate

Can a novel pleiotropic compound that targets synaptic loss and neuroinflammation prove to be safe and tolerable in humans?

PI

- Ph.D., Physiology and Biochemistry, Karl-Franzens University Graz, Austria
- CEO of NeuroScios GmbH, specializing in consulting work for drug development in neuroscience indications, specializing in Alzheimer's disease.

Research Category

- Translational Research & Clinical Interventions

Awards

- This is Dr. Windisch's first Association award

Background

Many brain disorders, including Alzheimer's disease, involve two key hallmarks: dysfunctional synapses and abnormal inflammation. Synapses are specialized structures through which brain cells send and receive chemical messages. Loss of synaptic function hinders cell-to-cell communication and promotes memory decline in dementia. Abnormal inflammation can lead to nerve cell damage and neuronal loss. One protein in the brain, known as p38alpha mitogen-activating protein kinase (p38alpha MAPK) has been shown to play role in synaptic damage and the release of toxic inflammatory molecules.

In recent years, a drug compound called MW150 has been shown to inhibit the activities of p38alphaMAPK in animals engineered to develop Alzheimer's-like brain changes. The compound has also been shown to slow memory loss and brain changes in these animal models. Such promising results make MW150 a strong candidate for use in human clinical trials.

Research Plan

Manfred Windisch, Ph.D., and colleagues will devote their research grant to conducting a phase 1 human clinical trial of MW150. The trial will determine what dosage levels of the drug are safe and tolerated with an ascending dose study in humans. It will also clarify how the drug is absorbed and metabolized in the human body. For this effort, the investigators will test their drug on older human volunteers without dementia. The participants will be grouped in cohorts of 10. Eight people in each group will receive the drug, while the other two will receive a placebo.

Impact

The results of this trial will offer important information on the safety and tolerability of MW150 in people. With no problems regarding safety in this trial will lead to a future phase 1b and 2a trials to further confirm the drug is safe and test the drug's effectiveness at inhibiting p38alphaMAPK. MW150 could offer a novel drug therapy for many types of dementia by inhibiting common mechanisms of neurodegeneration.

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