Biomarkers for Neurogenerative Disease

EXECUTIVE SUMMARY

TEAM

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Clinical Lead

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Proteomics Lead

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FUNDING

$300K NIH Foundation
$3.3M Goizueta Foundation
$21.9M NIH/NIA

INTELLECTUAL PROPERTY

Patent pending

Technology available for licensing and partnership

STATUS

Biomarker identification/validation

TECHNOLOGY

Using their propriety mass spectrometry approach the team is able to quickly and precisely assess a multitude of biomarkers from a single cerebral spinal fluid sample. Using their novel mass spectrometry approach, the team is developing an immunoassay that can detect and track biomarkers that can determine progression of neurodegenerative disease earlier and more reliably than clinical manifestation of symptoms.

The technology could be used to:

1. Clinically identify patients needing treatment
2. Stratify patient populations for clinical studies
3. Monitor target engagement & determine therapeutic effect

MARKET NEED

Alzheimer's Disease (AD) alone afflicts roughly 5.4 million individuals in the US and 24 million worldwide, and the prevalence is increasing with longer lifespans and the absence of effective disease-modifying therapies. The failures of several large phase III trials of β-amyloid (Aβ) based approaches highlight the need for a fuller understanding of AD as a complex disease involving mechanisms beyond Aβ and Tau aggregation in brain. However, these various pathophysiological processes cannot be identified and measured in living individuals as will be necessary for progress with diagnosis, and most importantly, for monitoring disease progression and treatment. Synapse and neuron loss, neuroinflammation, transcriptional and translational abnormalities, and other cellular, molecular and biochemical changes are now being discovered as likely causes of degeneration and symptoms. Ways to identify and track these molecular changes prior to functional decline could shift the treatment paradigm for AD and other neurodegenerative disease.

STATUS

This technology is being developed out of the Emory Alzheimer's Disease Research Center. To date, the team has created a peptide reference library of 1500+ biomarkers and validated their assay against currently available ELISAs. The team has identified panels for Tau, Aβ, and neuroinflammation in CSF that have been validated in brain. Next steps include validation of their peptide panel in blood.

For more information on this technology email biolocity@gatech.edu or contact:
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