IMPROVED ALZHEIMER'S DISEASE DETECTION USING CELL-FREE RNA ANALYSIS

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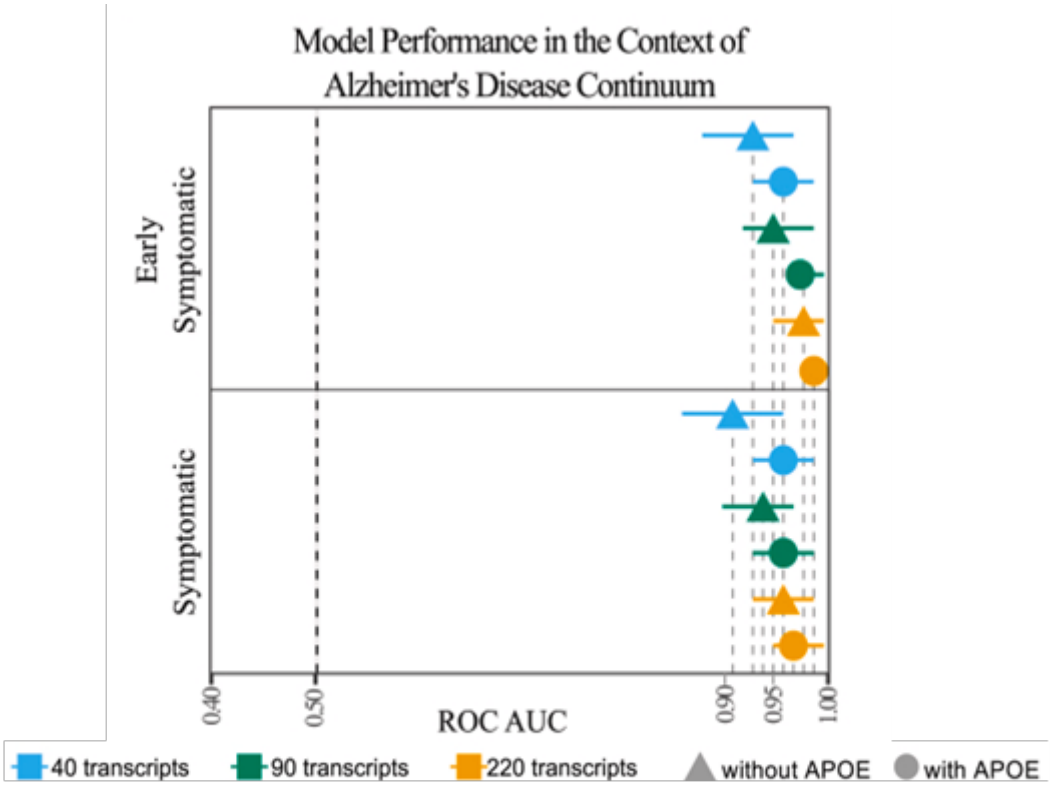
Value Proposition: *Method that uses plasma cfRNAs to differentiate Alzheimer's disease from healthy controls.*

Technology Description

Researchers at Washington University in St. Louis have developed a series of models using blood-based biomarkers to detect Alzheimer's Disease (AD) using cell-free RNA. Current methods of AD detection require expensive and invasive imaging and cerebrospinal fluid (CSF) biomarkers. This technology offers a less invasive method for the early detection of AD and can provide insight into disease progression and how well a patient is responding to treatment.



Whisker plot showing the performance of the prediction of early symptomatic AD and symptomatic AD for the three predictive models (40, 90, and 220 transcripts) with and without APOE genotype.

Stage of Research

3 models have been developed and verified with an area under the ROC curve of .90, .92, and .94.

Applications

- Early detection, including presymptomatic, of AD; monitoring of AD progression; and monitoring patient response to treatment.

Key Advantages

- Invasive procedures such as brain imaging and spinal taps are not needed to detect AD. Models are capable of distinguishing between other neurological disorders.

Publications

Cisterna-García, A., Beric, A., Ali, M., Pardo, J. A., Chen, H. H., Fernandez, M. V., Norton, J., Gentsch, J., Bergmann, K., Budde, J., Perlmutter, J. S., Morris, J. C., Cruchaga, C., Botia, J. A., & Ibanez, L. (2023). Cell-free RNA signatures predict Alzheimer's disease. iScience, 26(12), Article 108534. https://doi.org/10.1016/j.isci.2023.108534

Patents

Patent Pending

Related Web Links: Laura Ibanez Ph.D. Lab Link and Profile Link