Circulating microRNA Biomarkers for Early Frontotemporal Dementia Diagnosis

Diagnostics

Reference Number: **2037** \ Principal Investigator: **Prof. Eran Hornstein** \ Patent Status: **US20220364175A1, EP4077731A1**

Frontotemporal dementia (FTD) is difficult to diagnose due to overlapping symptoms with other neurodegenerative disorders, often leading to delays in treatment and clinical trial enrollment. This technology identifies a unique panel of 13 circulating microRNAs (miRNAs) in blood plasma, which serve as biomarkers for FTD. Using next-generation sequencing and machine learning, the method enables early, accurate diagnosis and improves patient selection for clinical trials.

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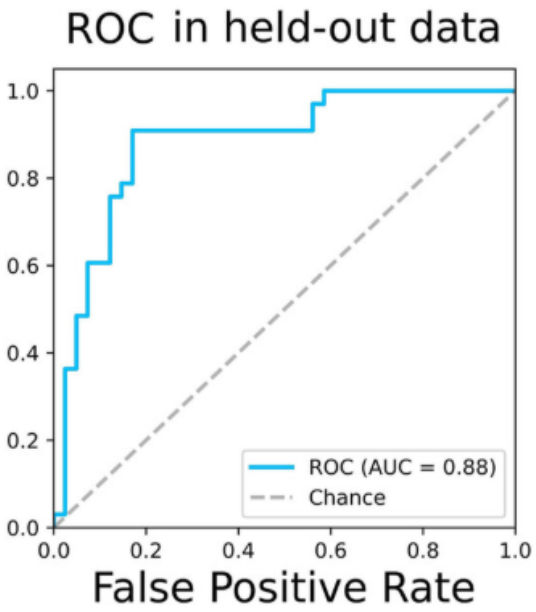

APPLICATIONS

- Early and accurate FTD diagnosis – Reduces misdiagnosis and diagnostic delays
- Clinical trial stratification – Identifies FTD patients for drug development studies
- Monitoring drug response – miRNA biomarkers serve as pharmacodynamic indicators

DEVELOPMENT STAGE

The technology has been validated in a cohort of 168 FTD patients and 125 controls using next-generation sequencing and machine learning, demonstrating high diagnostic accuracy. It is in the preclinical stage with strong potential for clinical translation

DIFFERENTIATION

Non-invasive and cost-effective

High accuracy, ~90% classification accuracy

Supports clinical decision-making and trial enrollment

REFERENCES

- Magen et al, Neuropathol Appl Neurobiol, 2023