MicroRNA expression profile for the diagnosis of Alzheimer's-type dementia

Technology #cu12162

MicroRNA expression profile for the diagnosis of Alzheimer's-type dementia

This technology identifies a microRNA signature specific to tangle-predominant dementia that enables improved diagnosis and classification of Alzheimer's-type dementia.

Unmet Need: Bioassay that differentiates Alzheimer’s-type dementia from classical Alzheimer’s disease

Currently, there is no way to clinically differentiate tangle-predominant dementia (TPD) from classical Alzheimer's disease, a critical distinction for implementing amyloid beta targeted therapies. PET-based amyloid imaging may increase recognition of TPD, but is expensive. As such, there is a need for a bioassay that can differentiate between TPD and classical Alzheimer's disease to enable improved diagnosis and selective treatment.

The Technology: MicroRNA signature enables identification of tangle-predominant dementia

This technology identifies a microRNA expression profile that is specific to tangle-predominant dementia. Using a simple bioassay, this technology enables facile clinical distinction between TPD and classical Alzheimer's disease. As patients with TPD typically exhibit low levels of amyloid beta protein, this technology will prevent patients with TPD from being treated with general Alzheimer's disease therapeutics that may pose an unnecessary risk. As such, this technology greatly improves the ability to distinguish different subtypes of dementia and may enable drug screening for therapies specific to TPD.

Applications:

- Identifies gene expression changes that confer risk for neurodegeneration
• Targeted synthetic microRNAs for treatment of neurodegeneration
• Novel in vitro assays for drug screens that target tau expression
• Novel transgenic animals for drug screens that target tau expression
• Genetic markers for Alzheimer’s disease diagnosis
• Genetic markers for assessing an individual’s risk for development of age-related tauopathy

Advantages:
• Could guide development of a highly targeted therapy
• Potential therapy may have minimal side effects, as microRNAs target specific genes for regulation
• Persistent synthetic microRNAs can be delivered to specific brain regions to avoid off-target effects in other tissues

Lead Inventor:
[John F. Crary, M.D., Ph.D.]

Patent Information:
Patent Pending (US 20150153364)

Related Publications:

Tech Ventures Reference:
• IR CU12162
• Licensing Contact: Ron Katz

Inventors
John F. Crary M.D., Ph.D.