THE BIOLOGICAL SIGNIFICANCE OF A 96 GENE EXPRESSION ASSAY DEVELOPED TO AID THE DIAGNOSIS OF ALZHEIMER'S DISEASE

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Introduction: A blood-based gene expression test for the early detection of Alzheimer's disease (AD) has been developed [1,2]. The test is intended to aid in the diagnosis of mild to moderate AD by detecting systemic effects of the disease as a specific gene expression pattern in peripheral blood. The ADtect® is a gene expression assay evaluated by an algorithm resulting in a test score indicating the presence or absence of AD. The signature was selected based on the predictive value of the algorithm and not on a presumed association with AD pathology.

Aims: The presentation aims at demonstrating the biological significance of the 96 gene expression signature of ADtect®.

Methods: The 96 gene expression signature was investigated, including database and literature search.

Results: Although the 96 gene expression signature was selected based on predictive value in the algorithm and not on a presumed association with AD pathology, still there are 32 genes encoding proteins with a biological function associated with AD, brain or neuronal function [1]. The presentation will investigate the biological significance of the ADtect® gene expression signature.

Conclusions: In the ADtect® 96 gene expression signature, 32 genes encode proteins with biological functions associated with AD pathology. These include processing of APP, amyloid-beta, tau, and mitochondria as well as inflammation, calcium regulation and ubiquitin-associated protein processing suggesting an association between the genes included in ADtect® and the biology of AD.

References:

[1] Booij et al., J Alzheimers Dis, in press