INNO-LIPA ND-TAGS: A NEW TOOL FOR SPECIFIC DETECTION OF SNPS ASSOCIATED WITH AD OR PD

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Introduction: A line probe assay (LiPA) has been developed to detect single nucleotide polymorphisms (SNPs) that combines well-established genetic risk factors for Alzheimer's disease (AD) such as ApoE and CLU genotyping with SNPs in tau and GSK3 for Alzheimer biological pathways with some highly relevant SNPs for tau and α-synuclein associated with Parkinson's disease (PD).

Aim: The aim is to provide a specific and user-friendly tool for addressing well-defined SNPs associated with AD or PD.

Method: The INNO-LiPA ND-Tags assay consists of a multiplex amplification amplifying the 5 genes simultaneously, followed by a reverse hybridization reaction on the INNO-LiPA strip. The strip contains 18 specific probes targeting the minor and major alleles of the SNPs.

Results: A research prototype of the INNO-LiPA ND-Tags has been developed. More than 700 DNA samples from the prospective Tübingen study for Risk Factors for the Early Detection of Neurodegeneration (TRED) will be genotyped. Results will be presented.

Conclusions: This tool is user-friendly, cost-effective and detects specific SNPs associated with AD or PD. It can be used for patient stratification in clinical trials or for monitoring possible effects of the selected SNPs on drugs targeting the addressed pathways during clinical trials. Moreover, it can be used as an ApoE 'plus' AD risk-assessing tool, i.e. to assess if this combination of SNPs is diagnostically more relevant than ApoE alone. In contrast to genome-wide association studies a small number of well-defined SNPs can be addressed in one simple run not requiring sophisticated statistical analysis and quality control.