

# International Conference on Central Nervous System - Drug Effects & Novel Drug Development

September 5-7, 2012 DoubleTree by Hilton Philadelphia Center City, USA

## Functional genetics - Approach to biomarker and drug development in neurodegenerative diseases

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Alzheimer's disease (AD) is the most common neurodegenerative disorder in the world, which affects up to 50% of individuals above the age of 85. As the aging population continues to increase globally, treatment of AD and other age-associated neurodegenerative diseases is becoming increasingly important, not only from a human point of view, but also from an economic perspective. In recent years, several attempts have been made to find novel susceptibility genes for AD. Particularly genome-wide association (GWA) and meta-analysis-based studies have identified several risk variants in different genes, which significantly associate with AD in different ethnic populations. Consequently, it is estimated that these already identified risk gene variations together with the established causative mutations in APP and presenilin genes account for approximately 50% of the observed heritable aggregation of the disease. This indicates that additional susceptibility genes still exist. Finding these novel risk genes and their subsequent functional characterization are extremely important tasks as these efforts may pave the way for the development of new biomarkers in the future. More specifically, it is likely that these new surrogate markers will be applied for risk, disease progression, and early diagnosis assessments. It is also expected that the functional genetic approach will identify specific new molecular targets in AD pathogenesis underlying its clinical manifestations. This again may allow the development of novel intervention approaches to slow down or even halt the progression of AD.

### Biography

Mikko Hiltunen has completed his Ph.D from the University of Kuopio, Finland, in which after he conducted postdoctoral studies at the MGH/Harvard Medical School, USA. Currently he works as a Research Director at the University of Eastern Finland and he is responsible for genetic, epigenetic and functional studies related to Alzheimer's disease. He has published over 110 articles in the international scientific journals with referee practice. He has worked as an invited research grant reviewer and domain expert for several scientific institutions. He is an editorial board member in three international scientific journals.

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