Exploring the Intertwined Roles of APOE and ABC Genes in the Cognitive Decline of Alzheimers

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***Abstract*—Alzheimer disease (AD)is one of the most common causes of dementia in individuals older than 60 years. Several susceptibility genes for AD have been reported earlier, but by far,the strongest genetic risk factor for late onset Alzheimer disease (LOAD) is apolipoprotein E (APOE) genotype, with the ε4 allele being an AD risk factor and the ε2 allele being protective. Therapeutic strategies based on APOE and APOE receptors should aim to target influencing APOE/Aβ interactions, APOE structure, APOE lipidation, LDLR receptor family member function, and signaling. This paper will explain the intertwined roles of ABCA1 and APOE in understanding the molecular and pathophysiological mechanisms of Alzheimers disease. It will extensively describe the normal and disease-related biology connecting APOE, APOE receptors in AD and provide novel insights into AD prognosis and treatment.**

***Key Words*—Alzheimers disease, ABC gene, APOE gene**

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