

## Publication

## A cluster of cholesterol-related genes confers susceptibility for Alzheimer's disease

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 149548**Author(s)** Papassotiropoulos, Andreas; Wollmer, M Axel; Tsolaki, Magdalini; Brunner, Fabienne; Molyva, Dimitra; Lütjohann, Dieter; Nitsch, Roger M; Hock, Christoph**Author(s) at UniBasel** [Papassotiropoulos, Andreas](#) ;**Year** 2005**Title** A cluster of cholesterol-related genes confers susceptibility for Alzheimer's disease**Journal** The Journal of clinical psychiatry**Volume** 66**Number** 7**Pages / Article-Number** 940-7

**OBJECTIVE:** Polygenic diseases are related to the complex interplay of genetic variations. We evaluated whether clusters of cholesterol- and lipid-related genetic variations are associated with Alzheimer's disease. **METHOD:** We analyzed 12 cholesterol-related single nucleotide polymorphisms and 48 control polymorphisms in 545 study participants (Alzheimer's disease group N = 284; control group N = 261). Diagnoses of Alzheimer's disease were made according to the NINCDS-ADRDA criteria. Multi-locus genetic association analysis was done with the set-association method. Dates of data collection were from January 2000 to December 2003. **RESULTS:** We identified a cluster of polymorphisms in APOE, SOAT1, APOE 5'-untranslated region, OLR1, CYP46A1, LPL, LIPA, and APOA4 conferring significant ( $p = .0002$ ) susceptibility for Alzheimer's disease. This gene cluster reached a diagnostic accuracy of 74% and correlated significantly ( $p = .018$ ) with the levels of the brain cholesterol catabolite 24S-hydroxycholesterol in the cerebrospinal fluid. **CONCLUSION:** Our results establish a novel approach for the identification of disease-related genetic clusters and demonstrate the need for multi-locus methods in the genetics of complex diseases.

**Publisher** Physicians Postgraduate Press**ISSN/ISBN** 0160-6689**edoc-URL** <http://edoc.unibas.ch/dok/A5257170>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.4088/JCP.v66n0720**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/16013913>**ISI-Number** WOS:000230663800020**Document type (ISI)** Journal Article