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# GABARAPL1 (GEC1) mRNA Expression Levels in Patients with Alzheimer's Disease

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**Abstract :** The GABARAP (GABAA-receptor-associated protein) family consists of GABARAP, GABARAPL1 (GABARAP-like 1) and GABARAPL2 (GABARAP-like 2). GABARAPL1, like GABARAP, was described to interact with both GABAA receptor and tubulin, and to be involved in intracellular GABAA receptor trafficking and promoting tubulin polymerization. In addition, GABARAPL1 is thought to be involved in various physiological (autophagosome closure, regulation of circadian rhythms) and/or pathological mechanisms (cancer, neurodegeneration). Alzheimer's disease (AD) is a progressive neuro degenerative disorder characterized with impaired cognitive functions. Disruption of the GABAergic neuro transmission as well as cholinergic and glutamatergic interactions, may also be involved in the pathogenesis of AD. GABARAPL1 presents a regulated tissue expression and is the most expressed gene among the GABARAP family members in the central nervous system. We, herein, conducted a study to investigate the GABARAPL1 mRNA expression levels in patients with AD. 50 patients with AD and 49 control patients were enrolled to the present study. Messenger RNA expression levels of GABARAPL1 were detected by real-time polymerase chain reaction. GABARAPL1 mRNA expression in AD / control patients was 0,495 (95% confidence interval: 0,404-0,607), p= 0,00000002646. Reduced activity of GABARAPL1 gene might play a role, at least partly, in the pathophysiology of AD.

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