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# Diacylglycerol produced through phospholipase D pathway is involved in amyloid β-induced reduction of sAPPα secretion in SH-SY5Y neuroblastoma cells

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Phospholipase D (PLD) has been reported to be associated with pathogenesis of alzheimer's disease. In this study, Aβ (1-42) peptide was shown to enhance Diacylglycerol (DAG) production by PLD activation in SH-SY5Y neuroblastoma cells. It was also found that 2 μM CAY10593, which selectively inhibits PLD2, ameliorated Aβ-induced reduction of sAPPα secretion, whereas 50 nM CAY10593, which selectively inhibits PLD1, did not. Moreover, 50 nM propranolol, a phosphatidic acid phosphohydrolase inhibitor also ameliorated Aβ-induced reduction of sAPPα secretion, suggesting that DAG may be responsible for Aβ-induced reduction of sAPPα. An analog of DAG also reduced sAPPα secretion in these cells. In addition, DAG enhanced ceramide production by stimulating neutral sphingomyelinase (N-SMase) activity. Inhibitor of PLD2 by 2 μM CAY10593 suppressed Aβ-induced N-SMase activation. Taken together, these data suggest that DAG produced through the PLD pathway is involved in Aβ-induced reduction of sAPPα secretion in SH-SY5Y cells.

## Biography

Fuminori Tanabe has completed his PhD from Graduate School of Fukushima Medical University, Fukushima, Japan. He is the Professor of Graduate Faculty of Interdisciplinary Research, University of Yamanashi, Japan. He has published more than 34 papers in reputed journals.

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