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## Dysregulation In Cholesterol Homeostasis Altered App Cleavage Pattern In Fad Model; Protective Role Of Resveratrol

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Dysregulation of Cholesterol homeostasis has been linked to Alzheimer's disease (AD) pathology since several decades ago, while the fundamental molecular pathways led by cholesterol and its precursors are still unclear. Amyloid deposition is considered as the principal pathology of Alzheimer's disease, and the mechanistic link between cholesterol and its intermediates (GGPP and FPP) in amyloid formation is emerged as an unrevealed mystery in the journey of targeting its pathology. Since Amyloid precursor protein (APP) is the primary protein involved in the Ab formation, the present study tends to study the role of cholesterol and its intermediates Geranyl Geranyl pyrophosphate (GGPP) & Farnesyl pyrophosphate (FPP) on APP cleavage and processing in CHO-APP<sup>swe</sup> cell lines. Inhibition of cholesterol biosynthesis not only inhibits the function of cholesterol, but also inhibits the process of prenylation that are the major functions of GGPP and FPP and further it may disturb the cellular homeostasis and are the consequential events that are reported with statin like drugs. Therefore, our study utilized Resveratrol (RSV) as a natural polyphenolic compound that is found to exert several neuroprotective functions. Analysis on the therapeutic efficiency of Resveratrol (RSV) attenuated cholesterol and isoprenoids mediated alteration in APP cleavage patterns through its ability to promote SIRT1 activity. Further the APP cleaving enzymes were regulated decreasing total A $\beta$  and Ab<sub>42</sub> levels. Therefore, this study provides a therapeutic avenue for use of RSV as a potent drug in regulating vital.

### Biography

M.Sathya is currently working in the Department of Biochemistry at Bharathidasan University in Trichy, India. M.Sathya has published several original research papers in the reputed journals and participated in the several scientific meetings.

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