Keywords: Alzheimer's disease; Amyloid beta; PI3K; Neurons; Neural stem cells

Abbreviations: PI3K: Phosphatidylinositol 3-kinase; GSK-3β: Glycogen synthase kinas-3β; VEGF: Vascular endothelial growth factor; GS: Glycogen synthase; CoQ10: Coenzyme Q10;

***Corresponding author:** Seong-Ho Koh, Department of Neurology, Hanyang University Guri Hospital, 153, Gyeongchun-ro, Guri-si, Gyeonggi-do, 11923 Korea, Tel: +82-31-560-2260; E-mail: ksh213@hanyang.ac.kr

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cells (ESCs) and activation of this pathway is signi cant for maintaining pluripotency in ESCs [15]. Several studies showed that the phosphatase and tensin homolog deleted on chromosome 10 (PTEN), an antagonist of PI3K, negatively regulates NSCs proliferation, survival, and self-renewal both in vivo and in vitro. Contrary to PTEN, components of the PI3K pathway were reported to be involved in the self-renewal of NSCs [16,17] (Figure 1).

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