图片2

**Supplementary Figure 1:** Effect of nerve growth factor (NGF)-induced neurite outgrowth in PC12 cells. PC12 cells were treated for 72 h with 0, 10, 30, 50, 70 μg/L of NGF. (A) Images of the cultures at a magnification of ×400. Scale bars: 100 μm. (B) RT-PCR analysis of the neuron markers Uch-L1, NFP and MPA2. (C) The expression of MAP2 protein levels was determined by Western blotting. \**P* < 0.05, †*P* <0.01， all versus 0 μg/L group.

图片3

**Supplementary Figure 2:** HαSS protected PC12 cells from Aβ1-42 induced neurotoxicity. Cells were treated with different concentration of (A) Aβ1-42 (0, 2.5, 5, 10, 20, 40, 80 μM) or (B) HαSS (5, 10, 20, 40, 80 μM) for 12, 24, 48, 72 h, respectively. (C) Cells were pre-treated with different concentration of HαSS (2.5, 5, 10, 20, 40 μM) for 24 h and then incubated with 20 μM of Aβ1-42 for another 24 h, and cell viability was detected by CCK-8. (D) Expression of Bax and Bcl-2 protein determined by western-bloting. (E) PC12 cells were treated with different concentrations of Aβ1-42 for 24 h. Flow cytometric analysis of Aβ1-42-induced apoptosis in PC12 cells using annexin V-FITC/PI staining. †*P* <0.01, all versus 0 μmol/L group.

图片4

**Supplementary Figure 3:** HαSS reduced LDH release, MDA, NO and ROS levels in Aβ1-42 treated cells. Cells were pre-treated with or without 10 μM HαSS for 24 h before exposed to 20 μM Aβ1-42 for 24 h. The release of LDH (A), the levels of MDA (B) and the content of NO (C) were detected by reagent kits. Intracellular ROS levels (D) were examined by fluorescent dye 2,7-dichlorofluorescein-diacetate (DCFH-DA), and the fluorescent signals in the cells were assessed by flow cytometric analysis. Hoechst 33342 staining (E) showed that the percentage of apoptotic cells in media containing Aβ1-42 was dramatically increased compared with the control group. However, HαSS pretreatment significantly decreased the apoptosis rate compared with the Aβ1-42 group. The changes of mitochondrial membrane potential was detected by JC-1 staining (F), JC-1 monomer could not gather in the mitochondrial matrix and emit strong green fluorescence, indicating that the mitochondrial membrane potential of PC12 cells decreased significantly. \**P* < 0.05, †*P* <0.01, all versus the Aβ group.

**图片5Supplementary Figure 4:** HαSS altered Aβ1-42-induced autophagy related protein LC3, p62, Atg5, Beclin-1 expressions in PC12. Western blotting analysis and expression quantifications of LC3Ⅰ/Ⅱ, p62 (A), Atg5 and Beclin-1 (B). \**P* < 0.05, all,versus the Aβ group.