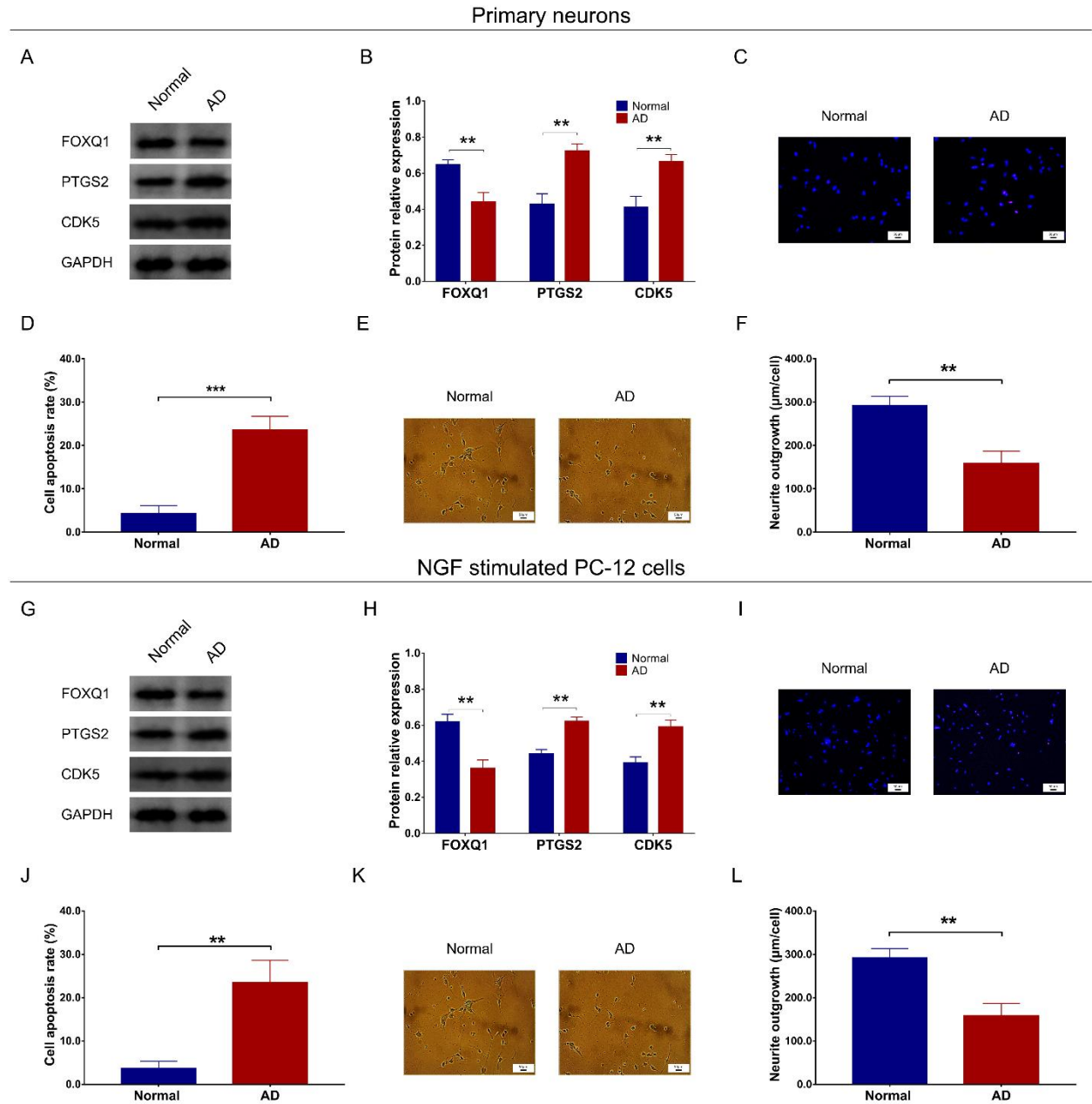
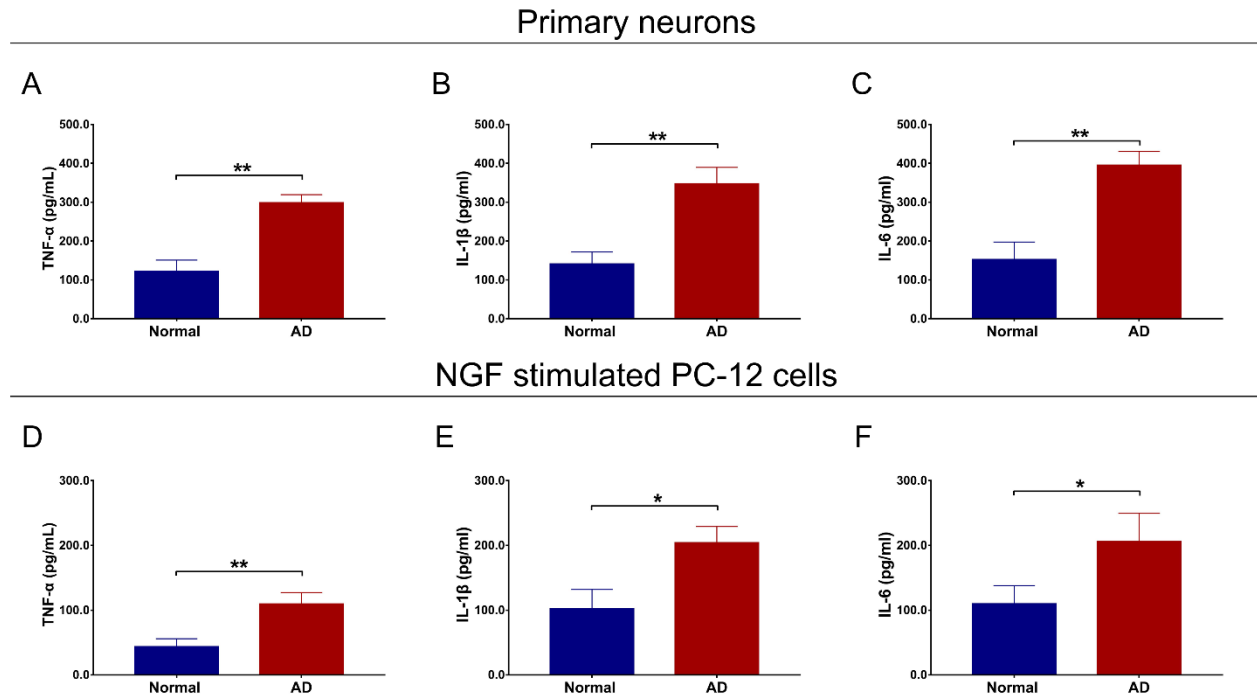


## Supplementary Material



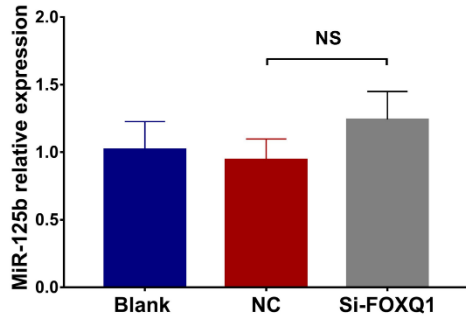
**Supplementary figure 1.** Effect of A $\beta_{1-42}$  treatment on FOXQ1, PTGS2, CDK5, cell apoptosis and neurite outgrowth. Comparisons of FOXQ1, PTGS2, CDK5 protein expressions (**A**, **B**), cell apoptosis (**C**, **D**) and neurite outgrowth (**E**, **F**) between normal cells and AD cells in primary neurons. Comparisons of FOXQ1, PTGS2, CDK5 protein expressions (**G**, **H**), cell apoptosis (**I**, **J**) and neurite outgrowth (**K**, **L**) between normal cells and AD cells in NGF stimulated PC-12 cells. FOXQ1, Forkhead box Q1; PTGS2, Prostaglandin-endoperoxide synthase 2; CDK5, Cyclin-dependent Kinase 5; AD, Alzheimer's Disease; NGF, nerve growth factor.



**Supplementary figure 2.** Effect of A $\beta_{1-42}$  treatment on inflammation. Comparisons of TNF- $\alpha$  (**A**), IL-1 $\beta$  (**B**) and IL-6 (**C**) levels between normal cells and AD cells in primary neurons. Comparisons of TNF- $\alpha$  (**D**), IL-1 $\beta$  (**E**) and IL-6 (**F**) levels between normal cells and AD cells in NGF stimulated PC-12 cells. TNF- $\alpha$ , tumor necrosis factor- $\alpha$ ; IL-1 $\beta$ , interleukin-1 $\beta$ ; IL-6, interleukin-6; AD, Alzheimer's Disease; NGF, nerve growth factor.

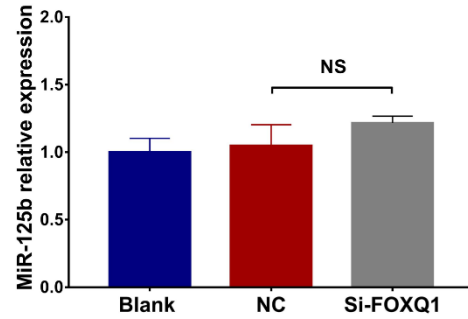
### Primary neuron AD model

A

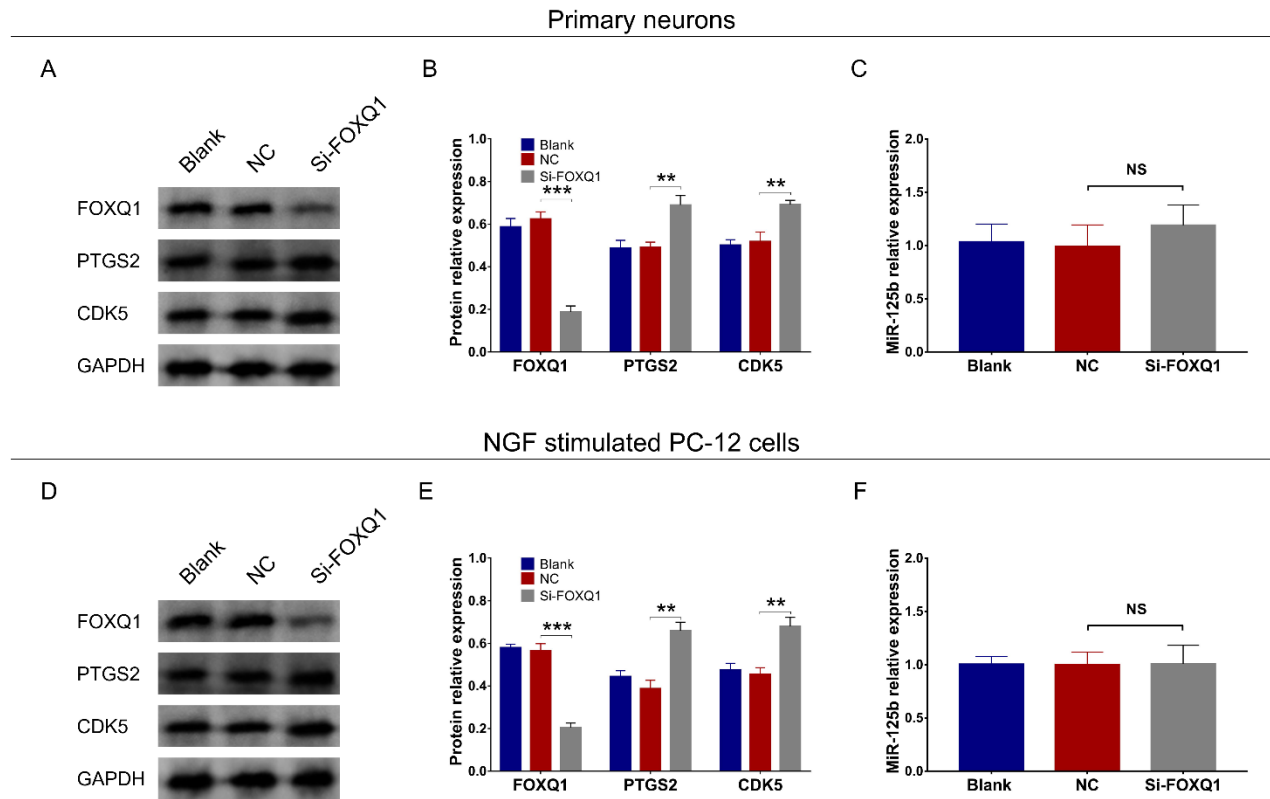


### PC-12 cellular AD model

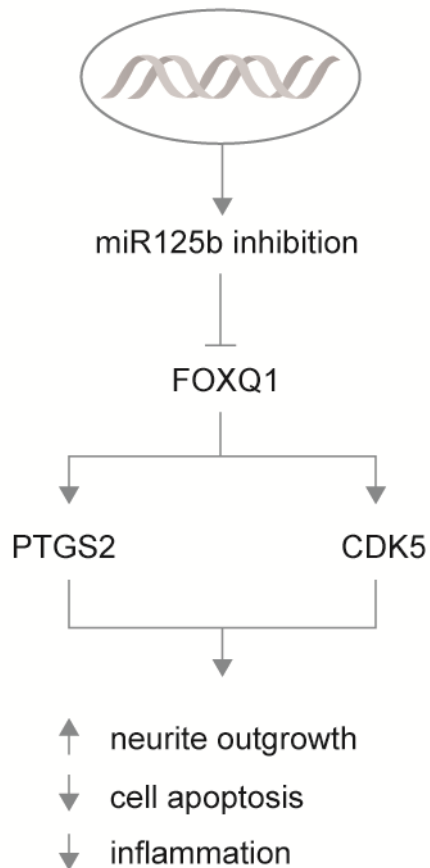
B



**Supplementary figure 3.** Effect of FOXQ1 inhibition on miR-125b expression in AD cellular models. Comparison of miR-125b expression among blank, NC and Si-FOXQ1 cells in primary neuron AD model (A). Comparison of miR-125b expression among blank, NC and Si-FOXQ1 cells in PC-12 cellular AD model (B). FOXQ1, Forkhead box Q1; miR-125b, microRNA-125b; NC, negative control; AD, Alzheimer's Disease.



**Supplementary figure 4.** Effect of FOXQ1 inhibition on PTGS2, CDK5 and miR-125b expressions in primary neurons and NGF stimulated PC-12 cells. Comparisons of PTGS2, CDK5 protein expressions (**A**, **B**) and miR-125b expression (**C**) among blank, NC and Si-FOXQ1 cells in primary neurons. Comparisons of PTGS2 and CDK5 protein expressions (**D**, **E**) and miR-125b expression (**F**) among blank, NC and Si-FOXQ1 cells in NGF stimulated PC-12 cells. FOXQ1, Forkhead box Q1; PTGS2, Prostaglandin-endoperoxide synthase 2; CDK5, Cyclin-dependent Kinase 5; AD, Alzheimer's Disease; NC, negative control; NGF, nerve growth factor.



**Supplementary figure 5.** Cartoon depicting the molecular network among miR-125b, FOXQ1, PTGS2 and CDK5 on regulating cell apoptosis, neurite outgrowth and inflammation in AD. MiR-125b, microRNA-125b; FOXQ1, Forkhead box Q1; PTGS2, Prostaglandin-endoperoxide synthase 2; CDK5, Cyclin-dependent Kinase 5; AD, Alzheimer's Disease.