Sez-6 May Play an Important Role in Neurite Outgrowth through the PKC Signaling Pathways

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Seizure-related gene 6 (*sez-6*) was originally identified in a study of pentylenetetrazoletreated cortical neurons. Further studies on the structure and expression pattern suggested that Sez-6 may play an important role in neuronal development and function. In the present study, PC12 cells were used as a model to investigate the role of Sez-6 in neurite outgrowth. After a period of NGF treatment, the expression of Sez-6 in PC12 cells was increased. When Sez-6 expression was suppressed by the addition of an effective short hairpin RNA (shRNA) plasmid, the neurite outgrowth was significantly inhibited. In addition, we detected the expression level of protein kinase C (PKC), and found that the PKC protein level was reduced in the differentiated PC12 cells but increased in PC12 cells lacking Sez-6. Taken together, our results indicate that Sez-6 acts on the neurite outgrowth of PC12 cells likely through the PKC signaling pathways.

Key words: Sez-6, PKC, Neurite Outgrowth