## **Nerve growth factor**

Zhao et al. tested whether the nerve growth factor (NGF)-P-focal adhesion kinase (FAK) signaling pathway for associations with angiogenesis plays a key role in post-acute cerebral ischemia of rats. Firstly, they implanted the Matrigel, a carrier of basement membrane matrix, into the abdominal skin of rats to identify the relevant components of the NGF-P-FAK signaling pathway related to angiogenesis. Secondly, they used a model established by ligation of the middle cerebral artery (MCA) to observe the effect of the same signal pathway on angiogenesis in the subventricular and subgranular zones of the dentate gyrus(SVG and SGZ). The results showed that the tissue scores as to invading the Matrigel was significantly increased by NGF. However, the tissue scores was significantly decreased by FAK inhibitor TAE226. Furthermore, CD31 and  $\alpha$ -SMA were significantly increased by NGF and were decreased by TAE226 in Matrigel. The P-FAK protein expression was markedly increased by NGF and decreased by TAE226. In the SVZ and SVG of cerebral ischemia, the number of BrdU-positive cells was significantly reduced by NGF and was significantly decreased by TAE226.

The findings suggest that the therapy targeting the NGF-P-FAK signaling pathway may be an option for patients suffering from cerebral ischemia <sup>1)</sup>.

Schwann cells play an important role in not only producing neurotrophic factors such as nerve growth factor (NGF) and ciliary neurotrophic factor (CNTF), which promote growth, of both the damaged nerve and supporting Schwann cells, but also producing neurite promoting factors, which guide the growing axon.

Findings indicate that neurons of the degenerating brain retain the ability to respond to growth factors with axonal sprouting, cell hypertrophy, and activation of functional markers. Sprouting induced by NGF persists for 10 years after gene transfer. Growth factor therapy appears safe over extended periods and merits continued testing as a means of treating neurodegenerative disorders <sup>2)</sup>.

## 1)

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