Exendin-4

Exendin-4 is a protein of the GLP-1 family currently used to treat diabetes. Recently, a greater number of biological properties have been associated with the GLP-1 family. Our data shows that exendin-4 treatment significantly increases the cytoskeleton rearrangement, which leads to an increasingly differentiated phenotype and reduced cell migration. We also found that exendin-4 could prevent SH-SY5Y and PC12 cells from Nogo-A-Δ20 mediated spreading inhibition and neurite collapse. Western blot analysis indicated that exendin-4 treatment both reduced the expression and activation of RhoA via the PI3K signaling pathway. These data suggest that exendin-4 may protect nerve regeneration by preventing the inhibition of Nogo-A via down-regulating RhoA expression and activation [1)]

1)
Zhao F, Li J, Wang R, Xu H, Ma K, Kong X, Sun Z, Niu X, Jiang J, Liu B, Li B, Duan F, Chen X. Exendin-4 promotes actin cytoskeleton rearrangement and protects cells from Nogo-A-Δ20 mediated spreading inhibition and growth cone collapse by down-regulating RhoA expression and activation via the PI3K pathway. Biomed Pharmacother. 2018 Nov 2;109:135-143. doi: 10.1016/j.biopha.2018.10.008. [Epub ahead of print] PubMed PMID: 30396070.