The Effect of Insulin on Schwann Cell Differentiation of Rat Epidermal Neural Crest Stem Cells

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Abstract

Schwann cells (SCs) play a crucial role in successful nerve repair and regeneration in both the peripheral and central nervous systems and promise to be a useful tool for cell-based therapies, disease modelling and drug discovery. Therefore, establishment of a procedure to obtain activated, highly proliferative SCs, in an appropriate time for clinical applications, is a prerequisite. However, the sources of SCs are limited both for studies of SC development and biology and for the development of treatments for SC-associated diseases. It is previously showed that epidermal neural crest stem cells (EPI-NCSCs) are a biologically relevant source for generating large and highly pure populations of SCs. Insulin is a peptide growth factor that regulates the transport, synthesis and storage of substances required for growth and differentiation of various kinds of developing cells. Regarding to the role of insulin in myelinating SC differentiation, in present study, we aim to examine the impact of insulin, on the cell viability and SC differentiation of EPI-NCSCs, isolated from bulge of rat hair follicles, through MTT and real-time quantitative PCR analysis, respectively.

Biography:
Pariya Khodabakhsh has completed her doctorate in pharmacy at the age of 25 years from Islamic Azad University of Pharmaceutical Sciences in 2014. She is a fifth-year Ph.D candidate in pharmacology at Shahid Beheshti University of Medical Sciences. She has authored numerous papers in national and international journals and conferences. Her current areas of research interest include neurodegenerative diseases, regenerative medicines and neuropharmacology.

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