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Nanotubes impregnated human olfactory bulb neural stem cells promote neuronal differentiation in trimethyltin-induced neurodegeneration rat model

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Neural Stem Cells (NSCs) are multipotent self-renewing cells that could be used in cellular-based therapy for a wide variety of neurodegenerative diseases. Here, to assess the ability of Carbon Nanotubes (CNTs) to enhance the therapeutic potential of human Olfactory Bulb Neural Stem Cells (OBNSCs) for restoring cognitive deficits and neurodegenerative lesions, we co-engrafted CNTs and human OBNSCs in trimethyltin (TMT) -neurodegeneration rat model. The present study revealed that engrafted human OBNSCS-CNTs restored cognitive deficits, and neurodegenerative changes associated with TMT-induced rat neurodegeneration model. Moreover, the CNTs seemed to provide a support for engrafted OBNSCs with increasing their tendency to differentiate into neurons rather than into glial cells.

Biography

Hany E. S. Marei is the Project Manager of Biomedical Research Center, Qatar University since May 2015. His research interest lies in the field of neural stem cells, induced pluripotent stem cells, genomics, transcriptomics and epigenomics of Neurological diseases/disorders. He is the editorial board member/reviewer for several international journals. He served as a member for promotion committee for Professors at the Supreme Council of Universities Egypt from 2012-2015.

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