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Implementing a recent nano-medical strategy in respiratory infections

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Respiratory infections are among the most common causes of death worldwide, especially due to coronavirus. There are major challenges in combating infectious diseases such as COVID-19, including the fact that there are no effective drugs available. Hence, it is necessary to accelerate the development of antiviral drugs to help mitigate this pandemic. So, nanoparticles can be used as antiviral agents for the treatment of various viral infections. Nanoparticles show great potential for biomedical applications, especially in patients who relapse after completing conventional antiviral therapy. Recently, Nano and Nano mediated combination therapy (nanoparticles plus antiviral drugs) have shown immense promise in Nanomedicine. Metal nanoparticles are known to be extremely effective against microbes and viruses due to their unique property, the controlled release of ions. Nano materials have been used to adjust the immune response, bringing it to an optimal level, and could be used to limit the cytokine storm. The investigation of stem cells based on nanotechnology could provide new methods for stem cell therapy and tissue engineering. Mesenchymal Stem Cells (MSCs) have been reported to be promising treatments for lung diseases. Application of nanotechnology in the Nanomedicine field has shown exciting prospects for development of novel drug delivery systems. Furthermore, Nano-based approaches are feasible, cost effective, non-toxic, biocompatible and a convenient strategy to deal with various types of viral infections, particularly SARS-CoV-2/COVID-19. Nanomaterials are able to deliver the drug at suitable concentrations in a precise manner, to the proper place and at the proper time.

Nanotechnology could provide advanced biomaterials which can create a nanoscale extracellular environment capable of promoting the adhesion and proliferation of stem cells and accelerating stem cell differentiation in a controlled manner. Nanotechnology has great potential to be of enormous help in the treatment of COVID-19.

Recent Publication

1. Montaser LM. (30 Aug 2022-b). 3D Bioprinting for Tissue Engineering Amidst the Century Cataclysm. *J Reg Med Bio Res.* 2022; 3(2): 1-12.
2. Montaser LM (25 July 2022-a). Could stem cell study in space avail patients and researchers on Earth? *Adv Tissue Eng Regen Med* 2022; 8(1): 1-5
3. Montaser LM (28 Oct 2021-d). Editorial: Could Stem Cells Drive Research and Entrepreneurship in Egypt? *J Embryology & Stem Cell Res*, 5(2): 1-7. DOI: 10.23880/jes-16000155

Biography

Montaser LM is a Prof. of Clinical Pathology. She served as the Chair Emeritus, Founder leader of Clinical Pathology Department, Faculty of Medicine, Menoufia University, Egypt. Montaser is an internationally recognized stem cell technology professional. She has key competence in stem cell technology and regenerative medicine policy reinforced by global level and international experience in research, formulation and capacity building. In the era of COVID-19, she was awarded thirty four certificates of appreciation for successfully presenting 48 Global Webinars 34/48 (70.8 %) from her home office amid the lockdown of COVID-19 pandemic crisis.

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