World Academy of Science, Engineering and Technology
International Journal of Materials and Metallurgical Engineering
Vol:16, No:01, 2022

The Using of Hybrid Superparamagnetic Magnetite Nanoparticles (Fe_3O_4)-Graphene Oxide Functionalized Surface with Collagen, to Target the Cancer Stem Cell

Authors : Ahmed Khalaf Reyad Raslan

Abstract : Cancer stem cells (CSCs) describe a class of pluripotent cancer cells that behave analogously to normal stem cells in their ability to differentiate into the spectrum of cell types observed in tumors. The de-differentiation processes, such as an epithelial-mesenchymal transition (EMT), are known to enhance cellular plasticity. Here, we demonstrate a new hypothesis to use hybrid superparamagnetic magnetite nanoparticles (Fe_3O_4)- graphene oxide functionalized surface with Collagen to target the cancer stem cell as an early detection tool for cancer. We think that with the use of magnetic resonance imaging (MRI) and the new hybrid system would be possible to track the cancer stem cells.

Keywords : hydrogel, alginate, reduced graphene oxide, collagen
Conference Title : ICABMNA 2022 : International Conference on Applied Biosensors, Micro and Nanoscale Applications
Conference Location : Tokyo, Japan
Conference Dates : January 07-08, 2022