OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Nanotek & Expo

December 2-4, 2013 Las Vegas, USA

Dual drug loaded magnetic nanoparticles for glioblastoma therapy

Fahima Dilnawaz

Laboratory of Nanomedicine, India

Abstract

Glioblastomas are one of the most aggressive forms of brain tumors having high mortality rate which is a challenging disease to treat. The current therapy includes surgical resection, followed by the combination of chemotherapy and radiotherapy. The therapeutic limitation of glioblastoma is the presence of the blood brain barrier (BBB), which creates obstacles for many essential drugs to reach to the target site. Moreover, the common challenge of the drug delivery approach is to achieve a good therapeutic index. Currently nanotechnology mediated drug delivery system, especially magnetic nanoparticles (MNPs) based drug delivery approach has been implemented to increase the therapeutic efficacy of the drugs at the site of action owing to its magnetic inclination. Apart from that combination chemotherapy has been developed mainly in cancer treatment to minimize the dose and simultaneously to overcome the side effects of the high doses of the single drug. Therefore, in the present study for an effective treatment option of glioblastoma Curcumin, a herbal drug and DNA methylating agent, Temozolomide was chosen for combinational therapy. The above two drugs were successfully encapsulated in a single formulation of the MNPs and the therapeutic efficacy was evaluated in 2-D and 3-D model of glioblastoma cell line (T-98G).

Biography

Fahima Dilnawaz is currently working as Women Scientist at Institute of Life Sciences, Bhubaneswar, Odisha, India. She has completed her Ph.D from Utkal University and has 3 years of postgraduate teaching and more than 7 years of postdoctoral research experience. She has been working with different polymeric nanoparticle, magnetic nanoparticle based drug delivery system for the cancer therapy. Her current focus is towards theranostic approach of magnetic nanoparticles for an effective management of cancer especially the glioblastoma. To her credit she has published more than 15 papers and 5 book chapters in reputed journals and publishing house. She is also serving as reviewer for various nanomedicinal journals.