

International Conference on Significant Advances in Biomedical Engineering

April 27-29, 2015 Philadelphia, USA

Design and evaluation of nanoparticulate drug delivery systems for imaging and treatment of malignant brain tumor

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Malignant brain tumours are one of the most devastating human cancers associated with high mortality and morbidity rates. The median survival of malignant glioma patients ranges between 3 and 16 months and has virtually remained unchanged during the last 3 decades. Difficulties in early detection, local recurrence, and resistance to conventional therapies are the major reasons for failure in malignant brain tumour treatment. The therapy of malignant gliomas is further limited by the inadequate delivery of therapeutic agents to the brain due to the presence of the blood-brain barrier, blood-brain-tumor barrier as well as non-specificity targeting. Nanoparticles (NPs) have drawn increased interest in treating malignant brain tumours due to their potential to act as a vector for brain delivery and to provide tumourspecific detection and treatment. If designed appropriately, NPs may act as a drug vehicle able to target tumor tissues or cells, and protect the drug from inactivation during its transport. The aim of this article was to provide brief overview of nanoparticulate drug delivery systems for imaging and treatment of brain cancer and to evaluate their safety in clinical use. Besides invasive physical methods to bypass or disrupt the BBB and/or BBTB, other methods like pharmacological and physio-logic approach are possible.

Biography

Jimma Likisa Lenjisa completed his MSc at the age of 28 years from Jimma University and Bachelor study from Mekelle University School of Pharmacy. She is the Head of Clinical Pharmacy Department, and the Founder of School of Pharmacy at Ambo University. She has published more than 25 papers in reputed journals and serving as an editor and reviewer in many scientific journals.

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