ISSN (ONLINE) : 2395-695X
ISSN (PRINT) : 2395-695X
Available online at www.ijarbest.com

International Journal of Advanced Research in Biology, Engineering, Science and Technology (IJARBEST)
Vol. 2, Special Issue 8, February 2016 in association with
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY, VIRUDHUNAGAR
DEPARTMENT OF BIOTECHNOLOGY
ORGANIZES
DBT, NEW DELHI SPONSORED NATIONAL LEVEL CONFERENCE ON CONTEMPORARY TRENDS IN BIOENERGY AND GREEN TECHNOLOGY: CHALLENGES AND OPPORTUNITIES [ORA-2016]
(25-26TH FEBRUARY 2016)

HYDROXYL APAPTITE LOADED DOXORUBICIN FOR TREATMENT OF HUMAN OSETOSARCOMA

Aiswarya Ramesh[1], Parvathy R[1], Sumesh soman[2], Rajesh ramachandran[2]
[1]Udaya School of Engineering, Vellamudi, Nagercoil
[2]Biogenix research center, Thiruvananthapuram
*Corresponding author- info@biogenixresearchcenter.com

Abstract:

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells and it precedes CVD's as the most common cause of mortality in the world. Despite the advances in prevention and early detection with newer treatment protocols the increase in mortality rates put forward the need for new drugs. Doxorubicin, an anthracycline cytostatic antibiotic is being used to treat a variety of malignancies especially in the treatment of soft tissue and bone sarcoma. The limitations of classical administration route of doxorubicin are undesirable because of severe side effects. In this aspect the present study envisages the effect of hydroxyl apatite loaded doxorubicin on human osteosarcoma. Doxorubicin was incorporated to hydroxyl apatite (HADOX) by sol gel method and characterized by FTIR analysis. HA-DOX shown significant loading capacity and sustained drug release upto 48 hours. Human osteosarcoma cells (HOS) was employed to determine the anti cancer activity of HADOX in comparison with DOX alone. MTT and SRB cell viability assays shown dose dependent activity of HA DOX which was comparable with that of DOX alone. HA DOX induced apoptosis and cell death in HOS cells when determined by Fluorescent microscopy. HA DOX was relatively non toxic to human keratinocytes over DOX which was significant. The overall findings postulate potent anti cancer activity of HA in corporate DOX over doxorubicin alone. The study suggests application of Hydroxyapaptite as a carrier material for delivery of doxorubicin in human osteosarcoma.

Keywords: Doxorubicin, Human osteosarcoma, Hydroxyl apatite, FTIR