

4th International Conference on Nanotek & Expo

December 01-03, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

Combined therapeutic efficacy of ¹⁸⁸Re-liposome and capecitabine in an experimental colorectal cancer liver metastases model by intrasplenic injection of the C26-*luc* murine colon cancer cell line

Ya-Jen Chang

Institute of Nuclear Energy Research, Taiwan

¹⁸⁸Re displays abundant intermediate energy β emission, and possesses an appropriate physical half-life of 16.9 hours.

Liposomes are good drug delivery system, which allow the encapsulation of drugs into vesicles for their delivery. Capecitabine is an orally-administered chemotherapeutic agent used in the treatment of numerous cancers such as breast cancer and colorectal cancers. Capecitabine (Xeloda[®]) is a prodrug, that is enzymatically converted to 5-fluorouracil. It was investigated the efficacy of the radiotherapeutics of ¹⁸⁸Re-liposome combined with capecitabine in a C26-*luc* metastatic colorectal liver tumors mice model. Liver metastases were established by intrasplenic injection of C26-*luc* murine colon cancer cells. ¹⁸⁸Re-liposome was given at day 1. In the combination therapy group, 359 mg/kg capecitabine was administered every day for five days, and the tumor growth and survival rates of the treated mice were examined. Bioluminescence images were taken using an IVIS Spectrum to monitor tumor growth. Tumor growth inhibition from ¹⁸⁸Re-liposome with capecitabine was superior to ¹⁸⁸Re-liposome alone, capecitabine alone, and the untreated normal saline groups. Further, the tumor-bearing mice treated with ¹⁸⁸Re-liposome combined with capecitabine showed longer median survival time and better life span (47.75 d; 229%) than those treated with ¹⁸⁸Re-liposome alone (40.50 d; 179%), capecitabine alone (21.25 d; 47%), and the untreated normal saline groups (14.50 d). These results support the possible use of combined radiochemotherapy of ¹⁸⁸Re-liposome with capecitabine as a viable treatment option in an adjuvant setting for colorectal cancer liver metastases.

Biography

Ya-Jen Chang has completed her master degree at the age of 24 years from National Chiao Tung University of Institute of Biochemical Engineering, Taiwan. She is Assistant Engineer (2004-until now) of Institute of Nuclear Energy Research, Taiwan. The aim of works was to investigate the drugs for cancer therapy. She has published more than 17 papers on nanomedicine and nuclear medicine journals.

yjchang@iner.gov.tw