The Turkish Journal of Occupational / Environmental Medicine and Safety

Vol:2, No:1 (1), 2017 Web: http://www.turjoem.com ISSN : 2149-4711

IS28. TARGETING CYCLOOXYGENASE-2 WITH A TARGETED LIPOSOMAL FORMULATION FOR COLORECTAL CANCER.

Sreeparna BANERJEE
Department of Biological Sciences, Middle East Technical University, Ankara, Turkey

Cyclooxygenase-2 (COX-2) is highly expressed in many different cancers; particularly in colorectal cancer (CRC). Liposomal drug delivery systems can be used to increase the therapeutic efficacy of CLX while minimizing its side effects. Cetuximab (anti-Epidermal Growth Factor Receptor -EGFR- monoclonal antibody) is a promising targeting ligand since EGFR is highly expressed in a wide range of solid tumors. Dual targeting of EGFR and COX-2 signaling may have additive or synergistic effects. Here, we describe an EGFR-targeted immunoliposome for enhancing the delivery of CLX to cancer cells. Cell association studies indicated that the immunoliposome uptake was higher in EGFR-overexpressing cells compared to the non-targeted liposomes. In addition, the CLX-loaded-anti-EGFR immunoliposomes were significantly more toxic compared to the non-targeted ones in cancer cells with EGFR-overexpression but not in the cells with low EGFR expression, regardless of their COX-2 expression status. Thus, selective targeting of CLX with anti-EGFR immunoliposomes appears to be a promising strategy for therapy of tumors that overexpress EGFR.

BAP-07-02-2014-004 and TÜBA-GEBİP

* banerjee@metu.edu.tr.