

The potential anti cancer effects of L-Carnosine in MCF7 breast cancer cells



Abstract

Breast cancer a common among cancer types in women, every year more than 1,000 women (<40 age) die from breast cancer. There are many different types of breast cancers. More studies try to find specific predictive and prognostic biomarkers. L-carnosine is a dipeptide, occurring histidine and used in various cancer cell lines. Which has been shown anti-tumor effects for a variety of cells derived from different cancer. On the other hand, which plays as an antioxidant and scavenges intracellular reactive oxygen species (ROS), and then apoptosis. We aimed at investigating the potential anti-tumor effects of L-carnosine in MCF7 cancer cells. We examined different concentration to find L-carnosine's inhibitory effect.

Method: MCF-7 breast cancer cell line was cultured with L-carnosine 1mM, 25 mM, 50 mM, 100 mM for 24, 48 and 72 hours. MCF-7 cells are fairly large adherent cells. We calculated cell diameter to cell without L-carnosine and cell with L-carnosine at 24, 48 and 72 hours. Cell diameter calculated by software in microscope. The ability of the cells were determined by crystal violet fixation and staining method used to detect viable cells. Immunofluorescent staining were used to for detection GLUT 1, GLUT 3 and GLUT 12 (Abcam, 1:100). Microscopic analysis for results were examined Zeiss LSM 880 confocal microscope.

Results: In 24 and 48 hours cultured MCF7 cell lines, incubated with L-carnosine 1mM, 25 mM, 50 mM, 100 mM, according to the control reduced cell diameters shrunk and decreased

cell viability. When GLUT 1, GLUT 3 and GLUT 12 expressions evaluated according to 24, 48, and 72 hours and concentrations of L-carnosine GLUT protein expression was changed. Supported by morphological and immunofluorescence imaging.

Conclusion: This study is provided that L-carnosine may considerable effects to improve breast cancer diagnosis and therapy.

Selma Aydemir, Belma Nalbant, Nevin Ersoy, Zeynep Yüce and Başak Baykara

Dokuz Eylül University, Turkey

Biography

Selma Aydemir was born in Izmir, TURKEY. She graduated from Ege University with bachelor degree in biology as a honour student and then she graduated master degree from Dokuz Eylül University Faculty of Medicine, Department of Histology and Embryology. Now, she is an PhD student at same university. She work glucose metabolism in the placenta and histopathological disease research; role of antioxidant in kidney, heart, brain, liver and inflammatory bowel disease (IBD).



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