سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها
گواهی ثبت مقاله در سیویلیکا
CIVILICA.com

عنوان مقاله:

The co-effect of shikonin and metformin on breast cancer cell survival

محل انتشار:

چهاردهمین کنگره بین المللی سرطان پستان (سال: 1397)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Pegah Ghavidel - *Dept. of Stem Cell and Regenerative Medicine, Faculty of Medical Biotechnology, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.*

Zahra Nayeri - *Dept. of Stem Cell and Regenerative Medicine, Faculty of Medical Biotechnology, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.*

Mossa Gardaneh - *Dept. of Stem Cell and Regenerative Medicine, Faculty of Medical Biotechnology, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.*

خلاصه مقاله:

Introduction & Aims: Brest cancer is the most prevalent type of malignancies among women worldwide. It occurs as a result of interactions between environmental factors and genetic/epigenetic elements. Shikonin (SHKN) is a naturally occurring naphthoquinine isolated from the dried root of L. erythrorhizon, an herb used in traditional Chinese medicine. The compound and its derivatives have been used as a medicine for antimicrobial, anti-inflammatory and anti-tumor purposes. They also have shown ability to heal wounds and burns. Metformin (MTFN) belongs to the bi-guanide class of compounds utilized as the first line medication treatment in Diabetes Mellitus Type 2 (DM-2). The use of MTFN has been associated with reduced rate of tumor growth in cancer. In this study we investigated the single treatments and co-treatment effects of SHKN and MTFN on MCF-7 cell line. Methods: Primarily, we determined the half maximal inhibitory concentrations (IC50s) of SHKN and MTFN single treatments on BC cell line MCF-7 using a viability assay. We then optimized the dose of their co-treatment. The results were applied for modeling and analyses by the use of Response Surface Methodology (RSM). Next, changes at expression levels of genes involved in cell survival and apoptosis were examined by RT PCR. Effects of SHKN/MTFN co-treatment on migration inhibition, cell morphology and apoptotic hallmarks were assessed, respectively, by scratch assay, AO/EB cell staining and flow cytometry.Results: The IC50 of SHKN and MTFN single treatments on MCF-7 cell survival stood, respectively, at 12 μM and 60 mM. When we co-treated the cells with SHKN and MTFN, these figures were reduced to 4 μM and 20 mM, respectively, suggesting a synergistic effect on cell death induced by SHKN/MTFN co-treatment. These changes were statistically significant ($P<0.05$). The co-treated samples demonstrated increased levels of inhibition in their migration. We are currently analyzing changes in expression levels of genes involved in cell apoptosis, survival, growth and proliferation to examine the impact of each treatment and co-treatment on gene expression.Conclusion: We have concluded that SHKN and MTFN co-treatment might have synergistic effects on induction of death in BC cell line. This co-treatment also reduces the migratory capabilities on the cell line.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/912425