

## عنوان مقاله:

Identification of the effects of acid-resistant *Lactobacillus casei* metalloproteinase gene under colon-specific promoter on the colorectal and breast cancer cell lines

## محل انتشار:

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## خلاصه مقاله:

Objective(s): Anti-tumor effects of *Lactobacilli* as normal flora have been described. In a previous study, we identified a protein isolated from the bacterium *Lactobacillus casei* ATCC ۳۹۳۹۲ in acidic pH conditions named metalloproteinase. Therefore, we decided to evaluate the effect of the recombinant plasmid coding metalloproteinase protein on the inhibition, proliferation, or apoptosis of the colorectal and breast cancer cell lines. Materials and Methods: Identified metalloproteinase gene of *L. casei* under the specific colon cancer promoter was transferred to the Human SW۴۸۰ and MDA-MB۲۳۱ cells. Cell viability was evaluated in these two cancer cell lines via MTT assay, apoptotic changes, and expression level of p۵۳ and MAP۲K۱ genes in comparison with healthy blood cells as a control group. Results: Viability of SW۴۸۰ and MDA-MB۲۳۱ cells was identified at ۲۵% and ۷%, respectively. An increase in apoptotic cell death in the SW۴۸۰ cell line was observed as revealed by Tunnel staining. The expression assay of TP۵۳ and MAP۲K۱ genes showed that MPL protein altered gene expression in a cell type-specific manner. Tunnel analyses showed that the pronounced cytotoxic effect of pEGFP-C۲/MPL plasmid on SW۴۸۰ cells was mediated through apoptosis. Conclusion: These results suggest that endogenous recombinant MPL under colon specific promoter inhibits the proliferation of SW۴۸۰ colorectal cancer cells by increase in MAP۲K۱ and P۵۳ activation. *L. casei* metalloproteinase under the same circumstances could not affect the growth rate and viability of MDA-MB۲۳۱ breast cancer cells in vitro.

## کلمات کلیدی:

Apoptosis Cytotoxicity *Lactobacillus casei* Recombinant plasmid TP۵۳ and MAP۲K۱ genes, Expression

## لینک ثابت مقاله در پایگاه سیویلیکا:

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