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عنوان مقاله:

Supernatants From Human Osteosarcoma Cultured Cell Lines Induce Modifications in Growth and Differentiation of THP-1 Cells and Phosphoinositide- Specific Phospholipase C Enzymes

محل انتشار:

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خلاصه مقاله:

Introduction: Introduction: Molecular components within the microenvironment act upon cell growth, survival/apoptosis, and proliferation. Immune system cells respond to molecules produced by the tumor and released in the surrounding microenvironment, such as cytokines, chemokines, and growth factors. This study aimed to identify the effects of tumor environment on monocyte-macrophage cell lineage. Methods: We evaluated morphological and functional changes in THP-1 cells cultured in culture medium mixed with the culture supernatant of one of three different osteosarcoma (OS) cell lines, namely 143B, HS888, and MG-63. We analyzed the effect of supernatants from OS cell lines on morphology and growth of THP-1 cells, and mRNA expression of phosphoinositide-specific phospholipase C (PLC) enzymes. Results: in supernatants from each OS cell line we identified the presence of selected interleukin (TL), TNFa, and GM-CSF. Each OS-derived supernatant differently modified the growth rate of THP-l cells, depending on the cell line. OS supernatants greatly modified the expression panel of PLC enzymes expressed by THP-l cells in the in vitro microenvironment. THP-1 cells differently express PLC enzymes, depending on the origin of the supernatant. The differences in PLCs' expression induced by OS supernatants resulted in a statistically significant difference in expression of PLCBl and PLCG2 genes. Conclusions: OS supernatants induce the differentiation of THP-1 cells into macrophages. THP-1 cells cultured in OS supernatants expressed different expression panels of PLC enzymes at the mRNA level. The expression panel of PLC enzymes differs during the .differentiation of monocyte/macrophage lineage THP-1 cells

کلمات کلیدی:

Phosphoinositides, Signal Transduction, Tumour Microenvironment, Monocyte-Macrophage

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