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# Vimentin protein is a factor for decreasing breast cancer cell proliferation co-culture with human bone marrow-derived mesenchymal stem cells pre-treated with thiazolidinedione solutions

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## Abstract

### Background

Our previous study investigated the levels of soluble growth factors in the conditioned media of bone marrow-derived mesenchymal stem cells (BMSCs) pre-treated with thiazolidinedione solutions. The present study aimed to investigate the complex intracellular proteins extracted from BMSCs pre-treated with pioglitazone and/or rosiglitazone using proteomics.

### Methods

The proliferative effect of the identified protein on MCF-7 cells that interacted non-adhesively with BMSCs pre-treated with pioglitazone and/or rosiglitazone was evaluated using cell culture inserts and conditioned media. The mRNA expression of proliferation and lipid accumulation markers was also evaluated in the interacted MCF-7 cells by reverse transcription-quantitative PCR. Finally, the correlation between the identified protein and fibroblast growth factor 4 (FGF-4) protein in the conditioned media of the pre-treated BMSCs was evaluated by ELISA.