

عنوان مقاله:

Alteration of immunoregulatory genes expression in mesenchymal stromal cells upon priming with B1AR as an interferon binding protein

محل انتشار:

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خلاصه مقاله:

Objective(s): The B1AR protein encoded by the Vaccinia virus decoys Type 1 interferons and inhibits the activity of several type I IFN members. In vitro transcription protocols benefit from this molecule's involvement in enhancing cell viability by inhibiting interferon signal transduction. As a result of their immunomodulatory properties and potential to regenerate, mesenchymal stromal cells (MSCs) are increasingly considered an alternative treatment for a wide range of immune disorders. In this study, we investigated the modification of expression of several genes involved in immune-related pathways after preconditioning MSCs with two immune stimuli, including poly(I:C) and LPS. **Materials and Methods:** ASCs were isolated and primed with B1AR, and after exposure to poly(I:C) and LPS, the expression of the same sets of genes as in the previous experiment was evaluated. Following total RNA isolation from primed cells and cDNA preparation, real-time quantitative PCR was performed for several immunomodulatory and immune-related genes, including IDO1, TDO2, COX-2, TGF-β1, TNF-α, IL-1β, IL-6, TLR3, TLR4, and MCP-1. **Results:** Pretreatment of MSCs with poly(I:C) and LPS significantly increased the expression of all mentioned genes, while upon the B1AR challenge followed by poly(I:C) and LPS treatment, they were down-regulated. Finally, it was observed that the relative expression level of IFN-β has significantly decreased in MSCs+B1AR+poly(I:C) and LPS in comparison with these groups without B1AR. **Conclusion:** The data indicated that the presence of B1AR prevents the overexpression of several immune-related genes, which are overexpressed in the in vitro inflammatory environment.

کلمات کلیدی:

(B1AR, Gene expression, Immune-related genes, Interleukin, Lipopolysaccharide, Mesenchymal stromal cells, poly(I:C)

