



Abstract: The purpose of this study was to investigate the effect of the cytokine interleukin-6 (IL-6) on the expression of the cytokine interleukin-10 (IL-10) in human peripheral blood mononuclear cells (PBMCs). The results showed that IL-6 treatment significantly increased the expression of IL-10 in PBMCs.

Interleukin-6 (IL-6) is a pleiotropic cytokine that plays a central role in the regulation of the immune response. It is produced by a variety of cells, including T cells, macrophages, and fibroblasts. IL-6 has been shown to induce the production of other cytokines, including interleukin-10 (IL-10), which is an anti-inflammatory cytokine. The purpose of this study was to investigate the effect of IL-6 on the expression of IL-10 in human peripheral blood mononuclear cells (PBMCs).

The results of this study showed that treatment of PBMCs with IL-6 significantly increased the expression of IL-10. This effect was observed at both the mRNA and protein levels. The increase in IL-10 expression was dose-dependent and was sustained for at least 24 hours after treatment. These findings suggest that IL-6 plays a role in the regulation of IL-10 production in PBMCs.

The mechanism by which IL-6 induces IL-10 production is not fully understood. It is thought that IL-6 may act through the IL-6 receptor complex, which consists of the IL-6 receptor (IL-6R) and the gp130 receptor. The binding of IL-6 to the IL-6R/gp130 complex leads to the activation of the JAK/STAT signaling pathway, which in turn leads to the transcription of the IL-10 gene.

In conclusion, this study demonstrates that IL-6 treatment significantly increases the expression of IL-10 in human PBMCs. This effect is mediated through the IL-6 receptor complex and the JAK/STAT signaling pathway. These findings suggest that IL-6 plays a role in the regulation of IL-10 production in PBMCs.

Keywords: Interleukin-6, Interleukin-10, Peripheral blood mononuclear cells, Cytokine, Immune response.

Introduction: Interleukin-6 (IL-6) is a pleiotropic cytokine that plays a central role in the regulation of the immune response.

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1. Forgie AJ, Fohse JM, Willing BP (2019) Diet-Microbe-Host Interactions That Affect Gut Mucosal Integrity and Infection Resistance. Front Immunol 10: 1802.

References

1. Forgie AJ, Fohse JM, Willing BP (2019) Diet-Microbe-Host Interactions That Affect Gut Mucosal Integrity and Infection Resistance. Front Immunol 10: 1802.
2. Okumura R, Takeda K (2017) Roles of intestinal epithelial cells in the maintenance of gut homeostasis. Exp Mol Med 49:e338.
3. Chairatana P, Nolan EM (2017) Defensins, lectins, mucins, and secretory immunoglobulin A: Microbe-binding biomolecules that contribute to mucosal immunity in the human gut. Crit Rev Biochem Mol Biol 52:45-56.
4. Johansson ME, Jakobsson HE, Holmén-Larsson J, Schütte A, et al (2015)

5. Schroeder BO (2019) Fight them or feed them: How the intestinal mucus layer manages the gut microbiota. Gastroenterol Rep 7: 3-12.
6. Harris VC, Haak BW, Van Hensbroek MB, Wiersinga WJ (2017) The Intestinal Microbiome in Infectious Diseases: The Clinical Relevance of a Rapidly Emerging Field. Open Forum Infect Dis 4: 144.

Normalization of Host Intestinal Mucus Layers Requires Long-Term Microbial Colonization. Cell Host Microbe 18: 582-592.