IL10 positively regulates extracellular inflammatory mediators

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

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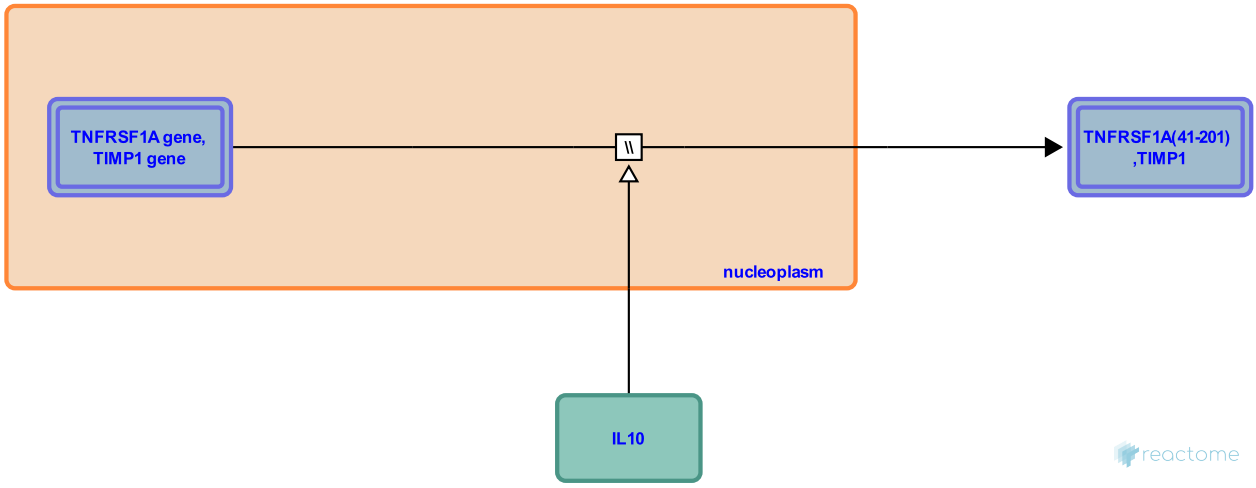
Stable identifier: R-HSA-6785047

Type: omitted

Compartments: extracellular region, nucleoplasm



IL10 enhances activated monocyte expression of the natural antagonists interleukin-1 receptor antagonist (IL1RN), TNFRSF1A (soluble p55 TNFR) and TNFRSF1B (p75 TNFR) (Cassatella et al 1994, Hart et al. 1996, Joyce & Steer 1996, Linderholm et al. 1996, Dickensheets et al. 1997).

IL10 enhances production of tissue inhibitor of metalloproteinases (TIMP1) and hyaluronectin, which bind and inhibit the angiogenic- and migration-promoting activities of hyaluronic acid (Mertz et al. 1994, Lacraz et al. 1995, Stearns et al. 1999, Girard et al. 1999).

Literature references

Settergren, B., Ahlm, C., Tärnvik, A., Waage, A., Linderholm, M. (1996). Elevated plasma levels of tumor necrosis factor (TNF)-alpha, soluble TNF receptors, interleukin (IL)-6, and IL-10 in patients with hemorrhagic fever with renal syndrome. *J. Infect. Dis., 173*, 38-43. ↗

Bonder, CS., Finlay-Jones, JJ., Watson, CJ., Hart, PH., Hunt, EK. (1996). Regulation of surface and soluble TNF receptor expression on human monocytes and synovial fluid macrophages by IL-4 and IL-10. *J. Immunol., 157*, 3672-80. ↗

Lacraz, S., Welgus, HG., Chicheportiche, R., Dayer, JM., Nicod, LP. (1995). IL-10 inhibits metalloproteinase and stimulates TIMP-1 production in human mononuclear phagocytes. *J. Clin. Invest., 96*, 2304-10. ↗

Steer, JH., Joyce, DA. (1996). IL-4, IL-10 and IFN-gamma have distinct, but interacting, effects on differentiation-induced changes in TNF-alpha and TNF receptor release by cultured human monocytes. *Cytokine, 8*, 49-57. ↗

Freeman, SL., Smith, MF., Donnelly, RP., Dickensheets, HL. (1997). Interleukin-10 upregulates tumor necrosis factor receptor type-II (p75) gene expression in endotoxin-stimulated human monocytes. *Blood, 90*, 4162-71. ↗

Editions

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