

IL-18R alpha Protein, Rhesus macaque (HEK293, Fc)

Cat. No.:	HY-P77406
Synonyms:	Interleukin-18 receptor 1; IL-18R1; CDw218a; IL1RRP; IL-18R-alpha; CD218a
Species:	Rhesus Macaque
Source:	HEK293
Accession:	F7H8F9 (C22-G329)
Gene ID:	/
Molecular Weight:	70-95 kDa

PROPERTIES

Biological Activity	Immobilized Rhesus macaque IL-18 R1, hFc Tag at 1 µg/mL (100 µl/well) on the plate. Dose response curve for Biotinylated Human IL-18, No Tag with the EC ₅₀ of 0.42 µg/mL determined by ELISA.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

IL-18R alpha is expressed on CD4⁺ and CD8⁺ T cells but not expressed on naive T cells^[4]. The amino acid sequence of human IL-18R alpha protein has low homology for mouse IL-18R alpha protein. IL-18R alpha is the receptor of IL-18. IL-18 is extracellularly secreted and binds IL-18 receptor α (Rα) as well as IL-18 receptor β (Rβ) at the immunocyte plasma membrane in a stepwise manner. IL-18/IL-18Rα/IL-18Rβ ternary complex formation juxtaposes the intracellular Toll-Interleukin-1 receptor domains of IL-18Rα and IL-18Rβ. Then, the adaptor molecule myeloid differentiation factor 88 (MyD88) is recruited presumably with the aid of TRAM. MyD88 further interacts with IL-1 receptor associating kinase (IRAK) 4 and IRAK1/2 to form the large molecular assembly referred to as Myddosome, which subsequently activates IKK via TRAF6. Finally, the signal activates the NF-κB and mitogen-activated protein kinase pathways⁷, which upregulate the expression of various inflammatory cytokines^[1]. IL-18R alpha binds to IL-18 and IL-18 receptor β forms a signalling complex induces the expression of various inflammatory cytokines^[1]. IL-18R alpha inhibits the production of IFN-γ stimulated with the combination of rhIL-2 and rhIL-18^[3].

REFERENCES

- [1]. Tsutsumi N, et al. The structural basis for receptor recognition of human interleukin-18. *Nat Commun.* 2014 Dec 15;5:5340.
- [2]. Watanabe M, et al. Predominant expression of 950delCAG of IL-18R alpha chain cDNA is associated with reduced IFN-gamma production and high serum IgE levels in atopic Japanese children. *J Allergy Clin Immunol.* 2002 Apr;109(4):669-75.
- [3]. Takei S, et al. Soluble interleukin-18 receptor complex is a novel biomarker in rheumatoid arthritis. *Arthritis Res Ther.* 2011 Mar 24;13(2):R52.
- [4]. Smeltz RB, et al. Regulation of interleukin (IL)-18 receptor alpha chain expression on CD4(+) T cells during T helper (Th)1/Th2 differentiation. Critical downregulatory role of IL-4. *J Exp Med.* 2001 Jul 16;194(2):143-53.
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Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA