

IL-36RN/IL-1F5 Protein, Human, Recombinant

General Information

Synonyms:	IL1L1;IL1F5;FIL1;interleukin 36 receptor antagonist;FIL1(Delta);FIL1(δ);IL-36Ra;PSORS14;FIL1D;IL36RA;IL36RN;PSORP;IL1RP3;IL1HY1
Protein Construction:	A DNA sequence encoding the mature form of human IL1F5 (Q9UBH0) (Met1-Asp155) was expressed. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	Q9UBH0
Molecular Weight:	17.1 kDa (predicted); 18 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to inhibit IL36 α -induced IL8 secretion in A431 human epithelial carcinoma cells. The ED50 for this effect is typically 0.1-0.4 μ g/mL in the presence of 20ng/mL IL36 α .
Purity:	> 99 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Interleukin-1 family member 5 (IL-1F5), also known as interleukin 36 receptor antagonist (IL36RA), is a member of the interleukin 1 cytokine family. This cytokine was shown to specifically inhibit the activation of NF-kappaB induced by interleukin 1 family, member 6 (IL1F6). IL-1F5 is a highly and specific antagonist of the IL-1 receptor-

related protein 2-mediated response to interleukin 1 family member 9 (IL1F9). IL-1F5 could constitute part of an independent signaling system analogous to interleukin-1 alpha (IL-1A), beta (IL-1B) receptor agonist, and interleukin-1 receptor type I (IL-1R1), which is present in epithelial barriers and takes part in the local inflammatory response. It has been proved that IL-1F5 induces IL-4 mRNA and protein expression in glia in vitro and enhances hippocampal expression of IL-4 following intracerebroventricular injection. The inhibitory effect of IL-1F5 on LPS-induced IL-1 β is attenuated in cells from IL-4-defective mice. Experiment results suggest that IL-1F5 mediates anti-inflammatory effects through its ability to induce IL-4 production and that this is a consequence of its interaction with the orphan receptor, single Ig IL-1R-related molecule (SIGIRR)/TIR8, as the effects were not observed in SIGIRR $^{-/-}$ mice. In contrast to its effects in brain tissue, IL-1F5 did not attenuate LPS-induced changes, or up-regulated IL-4 in macrophages or dendritic cells, suggesting that the effect is confined to the brain.

Reference

- Nicklin MJ, et al. (1994) A physical map of the region encompassing the human interleukin-1 alpha, interleukin-1 beta, and interleukin-1 receptor antagonist genes. *Genomics*. 19 (2): 382-4.
- Debets R, et al. (2001) Two novel IL-1 family members, IL-1 delta and IL-1 epsilon, function as an antagonist and agonist of NF-kappa B activation through the orphan IL-1 receptor-related protein 2. *J Immunol*. 167 (3): 1440-6.
- Costelloe C, et al. (2008) IL-1F5 mediates anti-inflammatory activity in the brain through induction of IL-4 following interaction with SIGIRR/TIR8. *J Neurochem*. 105(5): 1960-9.

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