

## IFNAR2 Protein, Cynomolgus, Recombinant (His)

### General Information

Synonyms:	interferon ( $\alpha$ , $\beta$ and $\Omega$ ) receptor 2;interferon (alpha, beta and omega) receptor 2
Protein Construction:	A DNA sequence encoding the cynomolgus IFNAR2 (XP_005548871.1) (Met1-Lys243) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ile 27
Species:	Cynomolgus
Expression Host:	HEK293 Cells
Accession:	XP_005548871.1
Molecular Weight:	26.3 kDa (predicted)

### QC Testing

Biological Activity:	Loaded Recombinant Cynomolgus Interferon alpha/beta receptor 2 Protein, His Tag (Cat#TMPY-00139) on NTA Biosensor, can bind Recombinant Human Interferon alpha 2/IFNA2 Protein, no Tag (Cat#TMPY-00265) with an affinity constant of 23.6 nM as determined in BLI assay (Sartorius Octet RED384) (Routinely tested).
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing PBS, pH 7.4. 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  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at  $-80^{\circ}\text{C}$ . For reconstituted protein solutions, the solution can be stored at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  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

Interferon-alpha/beta receptor beta chain (IFNAR2) is a type I membrane protein that forms one of the two chains of a receptor for interferons alpha and beta. Binding and activation of the receptor stimulate Janus protein kinases, which in turn phosphorylate several proteins, including STAT1 and STAT2. Initial cell-surface IFNAR2

expression at diagnosis assessed by flow cytometry was widely distributed but showed overall significantly higher expression in CML patients when compared with normal controls. In 15 fresh patients who subsequently received IFN $\alpha$  therapy, IFNAR2 expression at diagnosis was significantly higher in cytogenetic good responders than in poor responders. Down-regulation of IFNAR2 expression during IFN $\alpha$  therapy was observed only in good responders but not in poor responders. The encoded protein also functions as an antiviral factor. IFNAR2 may associate with IFNAR1 to form the type I interferon receptor. This protein serves as a receptor for interferons alpha and beta. IFNAR2 is also involved in IFN-mediated STAT1, STAT2, and STAT3 activation. Isoform 1 and isoform 2 are directly involved in signal transduction due to their association with the TYR kinase, JAK1. Isoform 3 is a potent inhibitor of type I IFN receptor activity. Following binding of IFN $\alpha$ 2, IFNAR2 is internalized, but, instead of being routed towards degradation as it is when complexed to IFN $\beta$ , it recycles back to the cell surface.

### Reference

- Ito K, et al. (2004) Initial expression of interferon alpha receptor 2 (IFNAR2) on CD34-positive cells and its down-regulation correlate with clinical response to interferon therapy in chronic myelogenous leukemia. *Eur J Haematol.* 73(3): 191-205.
- Kim SH, et al. (1997) Mammalian type I interferon receptors consists of two subunits: IFNAR1 and IFNAR2. *Gene.* 196(1-2): 279-86.
- Saleh AZ, et al. (2004) Regulated proteolysis of the IFNAR2 subunit of the interferon-alpha receptor. *Oncogene.* 23(42): 7076-86.

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