

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat IFN- $\gamma$ in ELISAs and Western blots. In sandwich immunoassays, less than 2% cross-reactivity with recombinant mouse IFN- $\gamma$ is observed and less than 0.1% cross-reactivity with recombinant human IFN- $\gamma$ and recombinant porcine IFN- $\gamma$ is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant rat IFN- $\gamma$ (R&D Systems, Catalog # 585-IF) Gln23-Cys156 Accession # P01581
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Rat IFN- $\gamma$ (Catalog # 585-IF)
<b>Rat IFN-<math>\gamma</math> Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Rat IFN- $\gamma$ Antibody (Catalog # MAB5851)
<b>ELISA Detection</b>	0.1-0.4 $\mu$ g/mL	Rat IFN- $\gamma$ Biotinylated Antibody (Catalog # BAF585)
<b>Standard</b>		Recombinant Rat IFN- $\gamma$ (Catalog # 585-IF)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Interferon-gamma (IFN- $\gamma$ ), also known as type II or immune interferon, exerts a wide range of immunoregulatory activities and is considered to be the prototype proinflammatory cytokine (1, 2). Mature rat IFN- $\gamma$  exists as a noncovalently linked homodimer of 20 - 25 kDa variably glycosylated subunits (3). It shares 86% amino acid sequence identity with mouse IFN- $\gamma$  and 37% - 45% with bovine, canine, cotton rat, equine, feline, human, porcine, and rhesus IFN- $\gamma$ . IFN- $\gamma$  dimers bind to IFN- $\gamma$  RI (alpha subunits) which then interact with IFN- $\gamma$  RII (beta subunits) to form the functional receptor complex of two  $\alpha$  and two  $\beta$  subunits. Inclusion of IFN- $\gamma$  RII increases the binding affinity for ligand and the efficiency of signal transduction (4, 5). IFN- $\gamma$  is produced by a variety of immune cells under inflammatory conditions, notably by T cells and NK cells (6). It plays a key role in host defense by promoting the development and activation of Th1 cells, chemoattraction and activation of monocytes and macrophages, upregulation of antigen presentation molecules, and immunoglobulin class switching in B cells. It also exhibits antiviral, antiproliferative, and apoptotic effects (6, 7). In addition, IFN- $\gamma$  functions as an anti-inflammatory mediator by promoting the development of regulatory T cells and inhibiting Th17 cell differentiation (8, 9). The pleiotropic effects of IFN- $\gamma$  contribute to the development of multiple aspects of atherosclerosis (7).

### References:

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