

#### DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat IFN- $\gamma$ in ELISAs. In sandwich ELISAs, observed cross-reactivities were less than 2% with recombinant mouse IFN- $\gamma$ and less than 0.1% with recombinant human IFN- $\gamma$ and recombinant porcine IFN- $\gamma$ .
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 88928
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant rat IFN- $\gamma$ Gln23-Cys156 Accession # P01581
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 $\mu$ m filtered solution in PBS.

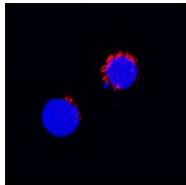
#### APPLICATIONS

**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.

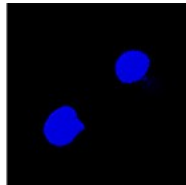
	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Immunocytochemistry</b>	8-25 $\mu$ g/mL	See Below
<b>Rat IFN-<math>\gamma</math> Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Rat IFN- $\gamma$ Antibody (Catalog # <a href="#">MAB5851</a> )
<b>ELISA Detection</b>	0.1-0.4 $\mu$ g/mL	Rat IFN- $\gamma$ Biotinylated Antibody (Catalog # <a href="#">BAF585</a> )
<b>Standard</b>		Recombinant Rat IFN- $\gamma$ (Catalog # <a href="#">585-IF</a> )

#### DATA

**Immunocytochemistry**



Treated



Untreated (control)

**IFN- $\gamma$  in Rat Splenocytes.** IFN- $\gamma$  was detected in immersion fixed rat splenocytes treated with PMA and calcium ionomycin using Mouse Anti-Rat IFN- $\gamma$  Monoclonal Antibody (Catalog # [MAB5851](#)) at 25  $\mu$ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # [NL007](#)) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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:**

1. Billiau, A. and P. Matthys (2009) *Cytokine Growth Factor Rev.* **20**:97.
2. Pestka, S. *et al.* (2004) *Immunol. Rev.* **202**:8.
3. Dijkema, R. *et al.* (1985) *EMBO J.* **4**:761.
4. Marsters, S.A. *et al.* (1995) *Proc. Natl. Acad. Sci.* **92**:5401.
5. Krause, C.D. *et al.* (2000) *J. Biol. Chem.* **275**:22995.
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8. Muhl, H. and J. Pfeilschifter (2003) *Int. Immunopharmacol.* **3**:1247.
9. Kelchtermans, H. *et al.* (2008) *Trends Immunol.* **29**:479.