

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IFN- $\gamma$ in Western blots. In Western blots, this antibody does not cross-react with recombinant human (rh) IFN- $\gamma$ , rIFN- $\gamma$ , rplIFN- $\gamma$ , rrmIFN- $\gamma$ , rfeIFN- $\gamma$ , or rcalIFN- $\gamma$ .
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 37895R
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse IFN- $\gamma$
<b>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

#### 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>Intracellular Staining by Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	Mouse splenocytes stimulated to induce Th1 cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005)

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</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 pro-inflammatory cytokine (1, 2). Mature mouse IFN- $\gamma$  exists as a noncovalently linked homodimer of 20-25 kDa variably glycosylated subunits (3). It shares 86% amino acid sequence identity with rat IFN- $\gamma$  and 38-44% with bovine, canine, cotton rat, equine, feline, human, porcine, and rhesus macaque 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 anti-viral, anti-proliferative, 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:

- Billiau, A. and P. Matthys (2009) Cytokine Growth Factor Rev. **20**:97.
- Pestka, S. *et al.* (2004) Immunol. Rev. **202**:8.
- Gray, P.W. and D.V. Goeddel (1983) Proc. Natl. Acad. Sci. USA **80**:5842.
- Marsters, S.A. *et al.* (1995) Proc. Natl. Acad. Sci. **92**:5401.
- Krause, C.D. *et al.* (2000) J. Biol. Chem. **275**:22995.
- Schroder, K. *et al.* (2004) J. Leukoc. Biol. **75**:163.
- McLaren, J.E. and D.P. Ramji (2009) Cytokine Growth Factor Rev. **20**:125.
- Muhl, H. and J. Pfeilschifter (2003) Int. Immunopharmacol. **3**:1247.
- Kelchtermans, H. *et al.* (2008) Trends Immunol. **29**:479.

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