

#### DESCRIPTION

<b>Species Reactivity</b>	Porcine
<b>Specificity</b>	Detects porcine IFN- $\gamma$ in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 154007
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant porcine IFN- $\gamma$ Ser21-Lys166 Accession # P17803
<b>Conjugate</b>	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Intracellular Staining by Flow Cytometry</b>	0.25-1 $\mu$ g/10 <sup>6</sup> cells	Porcine peripheral blood mononuclear cells treated with PMA and Ca <sup>2+</sup> ionomycin, fixed with paraformaldehyde, and permeabilized with saponin

#### 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 proinflammatory cytokine (1, 2). Mature porcine IFN- $\gamma$  exists as a noncovalently linked homodimer of 20-25 kDa variably glycosylated subunits (3). It shares 72%-79% amino acid sequence identity with bovine, canine, equine, and feline IFN- $\gamma$  and 41%-57% with cotton rat, human, mouse, rat, 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, 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:

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2. Pestka, S. *et al.* (2004) *Immunol. Rev.* **202**:8.
3. Dijkmans, R. *et al.* (1990) *Nucl. Acids Res.* **18**:4259.
4. Marsters, S.A. *et al.* (1995) *Proc. Natl. Acad. Sci.* **92**:5401.
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7. McLaren, J.E. and D.P. Ramji (2009) *Cytokine Growth Factor Rev.* **20**:125.
8. Muhl, H. and J. Pfeilschifter (2003) *Int. Immunopharmacol.* **3**:1247.
9. Kelchtermans, H. *et al.* (2008) *Trends Immunol.* **29**:479.

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