

#### DESCRIPTION

<b>Species Reactivity</b>	Bovine
<b>Specificity</b>	Detects bovine IFN- $\gamma$ in ELISAs. In sandwich immunoassays, no cross-reactivity with recombinant IFN- $\gamma$ from human, mouse or porcine is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 345001
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant bovine IFN- $\gamma$ Gln24-Thr166 Accession # NP_776511
<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 either lyophilized or 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>Bovine IFN-<math>\gamma</math> Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Bovine IFN- $\gamma$ Antibody (Catalog # MAB23001)
<b>ELISA Detection</b>	0.1-0.4 $\mu$ g/mL	Bovine IFN- $\gamma$ Biotinylated Antibody (Catalog # BAF2300)
<b>Standard</b>		Recombinant Bovine IFN- $\gamma$ (Catalog # 2300-BG)

#### 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 bovine IFN- $\gamma$  exists as a noncovalently linked homodimer of 20-25 kDa variably glycosylated subunits (3). It shares 78%-80% amino acid (aa) sequence identity with canine, feline, equine, and porcine IFN- $\gamma$  and 42%-59% 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, up-regulation 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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3. Cerretti, D.P. *et al.* (1986) *J. Immunol.* **136**:4561.
4. Marsters, S.A. *et al.* (1995) *Proc. Natl. Acad. Sci.* **92**:5401.
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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.