

## DESCRIPTION

<b>Species Reactivity</b>	Bovine
<b>Specificity</b>	Detects bovine IFN- $\gamma$ in direct ELISAs and Western blots. In Western blots, 100% cross-reactivity with IFN- $\gamma$ from equine, canine, or feline systems is observed and no cross-reactivity with human, cotton rat, mouse, porcine, or rat IFN- $\gamma$ is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 345025
<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>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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	Bovine peripheral blood mononuclear cells treated with PMA and Calcium 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 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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