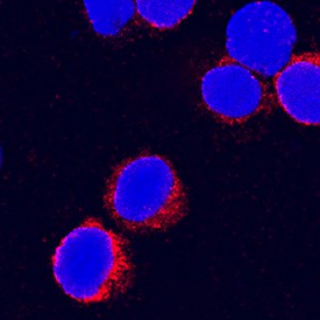


DESCRIPTION	
<b>Species Reactivity</b>	Bovine
<b>Specificity</b>	Detects bovine IFN- $\gamma$ in direct ELISAs and Western blots. In Western blots, approximately 60% cross-reactivity with recombinant canine IFN- $\gamma$ and recombinant equine IFN- $\gamma$ is observed, 40% cross-reactivity with recombinant feline IFN- $\gamma$ is observed, 10% cross-reactivity with recombinant porcine IFN- $\gamma$ is observed and less than 1% cross-reactivity with recombinant human IFN- $\gamma$ , recombinant mouse IFN- $\gamma$ , recombinant rat IFN- $\gamma$ , and recombinant cotton rat IFN- $\gamma$ is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<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 as a 0.2 $\mu$ m filtered solution in PBS.

APPLICATIONS		
<i>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.</i>		
	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Bovine IFN- $\gamma$ (Catalog # 2300-BG)
<b>Immunocytochemistry</b>	10-20 $\mu$ g/mL	See Below

DATA	
<p><b>Immunocytochemistry</b></p> 	<p><b>IFN-<math>\gamma</math> in Bovine PBMCs.</b> IFN-<math>\gamma</math> was detected in immersion fixed bovine peripheral blood mononuclear cells (PBMCs) treated with Calcium Ionomycin and PMA using Goat Anti-Bovine IFN-<math>\gamma</math> Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2300) at 15 <math>\mu</math>g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for <a href="#">Fluorescent ICC Staining of Non-adherent Cells</a>.</p>

PREPARATION AND STORAGE	
<b>Reconstitution</b>	Reconstitute at 0.2 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>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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, 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. Cerretti, D.P. *et al.* (1986) *J. Immunol.* **136**:4561.
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.
6. Schroder, K. *et al.* (2004) *J. Leukoc. Biol.* **75**:163.
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.