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## IFN- $\gamma$ (XMG1.2) Rat mAb (APC Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
FC-FP	M	Endogenous	Rat IgG1 kappa	#P01580	15978

### Product Usage Information

For optimal flow cytometry results, we recommend 0.06  $\mu$ g of antibody per test.

#### Application

Flow Cytometry (Fixed/Permeabilized)

#### Dilution

1:300

### Storage

Supplied in 10 mM NaH<sub>2</sub>PO<sub>4</sub>, 150 mM NaCl, 0.09% NaN<sub>3</sub>, 0.1% gelatin, pH 7.2. This product is stable for 12 months when stored at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

### Specificity/Sensitivity

IFN- $\gamma$  (XMG1.2) Rat mAb (APC Conjugate) recognizes endogenous levels of total IFN- $\gamma$  protein. This antibody detects an epitope within the intracellular domain.

### Source / Purification

This monoclonal antibody was purified from tissue culture supernatant via affinity chromatography. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation.

### Description

This Cell Signaling Technology antibody is conjugated to APC and tested in-house for direct flow cytometric analysis in mouse cells.

### Background

IFN- $\gamma$  plays key roles in both the innate and adaptive immune response. IFN- $\gamma$  activates the cytotoxic activity of innate immune cells, such as macrophages and NK cells (1,2). IFN- $\gamma$  production by NK cells and antigen presenting cells (APCs) promotes cell-mediated adaptive immunity by inducing IFN- $\gamma$  production by T lymphocytes, increasing class I and class II MHC expression, and enhancing peptide antigen presentation (1). Due to differences in the degree of glycosylation, there are three forms of IFN- $\gamma$ , with approximate molecular weights of 25, 20, and 15.5 kDa by SDS-PAGE (5). The anti-viral activity of IFN- $\gamma$  is due to its induction of PKR and other regulatory proteins. Binding of IFN- $\gamma$  to the IFNGR1/IFNGR2 complex promotes dimerization of the receptor complexes to form the (IFNGR1/IFNGR2)<sub>2</sub> -IFN- $\gamma$  dimer. Binding induces a conformational change in receptor intracellular domains and signaling involves Jak1, Jak2, and Stat1 (3). The critical role of IFN- $\gamma$  in amplification of immune surveillance and function is supported by increased susceptibility to pathogen infection by IFN- $\gamma$  or IFNGR knockout mice and in humans with inactivating mutations in *IFNGR1* or *IFNGR2*. IFN- $\gamma$  also appears to have a role in atherosclerosis (4).

### Background References

- Schroder, K. et al. (2004) *J Leukoc Biol* 75, 163-89.
- Martinez, F.O. et al. (2009) *Annu Rev Immunol* 27, 451-83.
- Kotenko, S.V. et al. (1995) *J Biol Chem* 270, 20915-21.
- McLaren, J.E. and Ramji, D.P. (2009) *Cytokine Growth Factor Rev* 20, 125-35.
- Kelker, H.C. et al. (1984) *J Biol Chem* 259, 4301-4.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Applications Key

**FC-FP:** Flow Cytometry (Fixed/Permeabilized)

### Cross-Reactivity Key

**M:** Mouse

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