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SM096PS Monoclonal Antibody to IFNA1 / Interferon-alpha 1 - Purified

Alternate names: IFN-alpha 1, IFNA13, Interferon alpha-D, LeIF D

Quantity: 0.1 mg

Concentration: 0.1 mg/ml

Background: The type I interferons consist of 14 different alpha isoforms (subtypes with slightly different specificities), and single beta, omega, epsilon and kappa isoforms. Homologous molecules are found in many species, including rats and mice (and most mammals), and have been identified in birds, reptiles and fish species. Interferon alpha is produced primarily by plasmacytoid dendritic cells and is a potent component of the anti viral innate immune response; it modulates adaptive immunity.
The classification of mammalian cytokines with antiviral activity, is well documented as being either Type I Interferon (IFNI) or Type II Interferon (IFNII). This is not the case for avian IFNs however, even though IFN was first detected in the chicken. A growing number of functional studies indicate similarities between chicken IFN and mammalian IFNI, revealing the conservation of cysteine residues and the existence of around ten closely related intron-less IFN alpha genes. Further research has shown that chIFN-alpha genes are strongly expressed following viral infection of monocyte-derived macrophage and embryo fibroblasts and that recombinant chicken IFN acts as a potent antiviral agent.

Uniprot ID: P01572

NCBI: NP_034632.2

GeneID: 15962

Host / Isotype: Rat / IgG1

Recommended Isotype Controls: SM25P, SM25PX

Clone: F18

Format:
State: Liquid 0.2 µm filtered Ig fraction
Purification: Protein G Chromatography
Buffer System: PBS
Stabilizers: 0.1% BSA

Applications:
Flow Cytometry: For intracellular staining of IFN-Alpha, cells can be fixed in 1% formaldehyde; blocked and permeabilized in 0.2% Saponin, 5% normal Rabbit serum for 30 minutes on ice (Ref.2).
The typical starting working dilution is 1/10.
Functional Assays: Neutralization of IFN-α by adding 1 µg antibody F18 per Mouse i.v. before treatment with 35 µg LPS *i.p.*, decreased the LPS-induced IL-1β serum response (Ref.3).
Immunoassays (Ref.1).
Western Blot.
Positive Control: Plasmacytoid dendritic cells.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody recognises most isoforms of natural and recombinant alpha Interferon. It does not cross-react with Murine beta or gamma Interferon, nor with Human alpha Interferon.
The antibody exhibits neutralizing activity of approximately 6.25 x 10e4 neutralizing units/mg.

Species Reactivity: **Tested:** Mouse.

Storage: Store undiluted at 2-8°C.
DO NOT FREEZE!
Shelf life: one year from despatch.

General Readings:

1. Dalod M, Salazar-Mather TP, Malmgaard L, Lewis C, Asselin-Paturel C, Brière F, et al. Interferon alpha/beta and interleukin 12 responses to viral infections: pathways regulating dendritic cell cytokine expression in vivo. J Exp Med. 2002 Feb 18;195(4):517-28. PubMed PMID: 11854364.
2. Diebold SS, Montoya M, Unger H, Alexopoulou L, Roy P, Haswell LE, et al. Viral infection switches non-plasmacytoid dendritic cells into high interferon producers. Nature. 2003 Jul 17;424(6946):324-8. Epub 2003 Jun 22. PubMed PMID: 12819664.
3. Joshi VD, Kalvakolanu DV, Chen W, Zhang L, Kang TJ, Thomas KE, et al. A role for Stat1 in the regulation of lipopolysaccharide-induced interleukin-1beta expression. J Interferon Cytokine Res. 2006 Oct;26(10):739-47. PubMed PMID: 17032168.