Human IFN-α/β R2 Antibody

Monoclonal Mouse IgG_{2B} Clone # 493715

Catalog Number: MAB4015

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IFN-α/β R2 in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 493715
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived recombinant human IFN-α/β R2 Ile27-Lys243 Accession # P48551
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm 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 µm filtered solution in PBS.

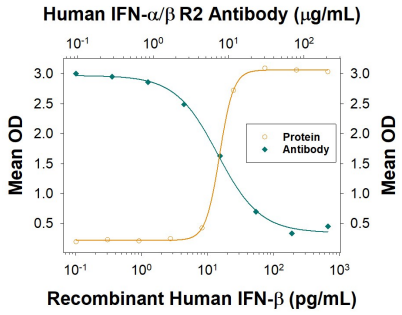
APPLICATIONS

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.*

Neutralization	Measured by its ability to neutralize IFN-β inhibition of EMCV-induced cytopathy in the HeLa human cervical epithelial carcinoma cell line. The Neutralization Dose (ND_{50}) is typically 4-20 µg/mL in the presence of 30 pg/mL Recombinant Human IFN-β.

DATA

Neutralization



IFN-β Inhibition of EMCV-induced Cytopathy and Neutralization by Human IFN-α/ β R2 Antibody. Recombinant Human IFN-β (Catalog # 8499-IF) reduces the Encephalomyocarditis Virus (EMCV)-induced cytopathy in the HeLa human cervical epithelial carcinoma cell line in a dose-dependent manner (orange line), as measured by crystal violet staining. Inhibition of EMCV activity elicited by Recombinant Human IFN-β (30 pg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IFN-α/β R2 Monoclonal Antibody (Catalog # MAB4015). The ND_{50} is typically 4-20 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

IFN-α/β R2, also known as IFNAR2, is a 100 kDa glycoprotein in the class II cytokine receptor family. These proteins form heterodimeric receptor complexes that transduce signals from the interferon, IL-10, and IL-28 families of cytokines (1, 2). IFN-α/β R2, in association with IFN-α/β R1, is required for mediating the antiviral, antiproliferative, and apoptotic effects of the type I interferons IFN-α and IFN-β. IFN-α/β R2 is the principal ligand binding subunit of the receptor. Ligand binding is stabilized by the subsequent association with IFN-α/β R1, resulting in the formation of a signaling ternary receptor complex (3, 4). Mature human IFN-α/β R2 consists of a 217 amino acid (aa) extracellular domain (ECD) with two fibronectin type III repeats, a 21 aa transmembrane segment, and a 251 aa cytoplasmic domain. Alternate splicing generates a secreted isoform that corresponds to the ECD and a 50 kDa transmembrane isoform with a substituted and truncated cytoplasmic region (5, 6). The short isoform is impaired in its ability to activate signaling molecules and functions as a dominant negative receptor subunit (7-9). IFN-α/β R2 is also subject to presenilin-dependent intramembrane proteolysis, resulting in the liberation of nearly the entire ECD as well as the cytoplasmic domain which migrates to the nucleus and can inhibit gene transcription (10). High concentrations of soluble IFN-α/β R2 bind and neutralize IFN-α and IFN-β, while lower concentrations prolong the antiviral activity of circulating IFN-β but not IFN-α (11). Human but not mouse IFN-α/β R2 constitutively associates with STAT4, which may account for species specific differences observed in type I interferon responses (12). Within the ECD, human IFN-α/β R2 shares 63%, 60%, and 48% aa sequence identity with bovine, mouse, and ovine IFN-α/β R2, respectively.

References:

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