B18R Recombinant Protein

Catalog Number: 14-8185
Also Known As: Vaccinia Virus-Encoded Neutralizing Type I Interferon Receptor; Type I IFN inhibitor
RUO: For Research Use Only. Not for use in diagnostic procedures.

Product Information

Contents: B18R Recombinant Protein

REF **Catalog Number:** 14-8185

Handling Conditions: For best recovery, quick-spin vial prior to opening. Use in a sterile environment

Source: Insect cells infected with baculovirus: amino acids His20-Glu 351 with a His-tag attached of Vaccinia Virus B18R accession # D01019

Molecular Mass: The polypeptide has a predicted molecular mass of 38,389. The DTT-reduced protein migrates as a 48 kDa polypeptide on SDS-PAGE due to glycosylation. The non-reduced protein migrates as a 46 kDa polypeptide on SDS-PAGE due to internal cystines.

Purity: > 98%, as determined by SDS-PAGE.

Endotoxin Level: Less than 0.05 ng/ug cytokine as determined by the LAL assay.

Bioactivity: The ND50 of this protein, as measured by neutralization of Mouse IFN alpha 2 Recombinant Protein, is less than or equal to 800 pg/mL in the presence of 1 ng/mL Mouse IFN alpha 2. This corresponds to a specific activity of greater than or equal to 1.3 x 10e6 Units/mg.

Formulation: Sterile liquid; 10 mM phosphate, 0.5 M NaCl, 1% BSA, pH 7.5

Temperature Limitation: Store at less than or equal to -70°C.

LOT **Batch Code:** Refer to Vial

Use By: Refer to Vial

Description

The B18R protein is a vaccinia virus-encoded receptor with specificity for mouse, human, rabbit, pig, rat, and cow type I interferons which has potent neutralizing activity.B18R that acts as a decoy receptor for Type I Interferons (IFNa, IFNb, IFNe,k,t,d,z, w,v) . B18R was recently identified to enable increased cell viability during RNA transfection protocols designed to convert human somatic donor cells into iPSCs via direct delivery of modified synthetic mRNAs for OCT4, SOX2, KLF4 and MYC (OSKM) and Lin28 with the aim to enable highly efficient reprogramming of somatic cells to pluripotency. This allows for re-directed differentiation toward a desired lineage while removing the risk of genomic integration and insertional mutagenesis inherent to DNA-bases methodologies and eliminates the need for virus-based approaches. iPSCs represent a widely available, non-controversial and practically infinite source of pluripotent cells.
The B18R protein is a type I interferon receptor encoded by the B18R gene of the Western Reserve vaccinia virus strain. The 60-65 kD glycoprotein is related to the interleukin-1 receptors and is a member of the immunoglobulin superfamily, unlike other type I IFN-receptors, which belong to the class II cytokine receptor family. The B18R protein has a high affinity (KD, 174 pM) for human IFN alpha and, unlike other type I IFN receptors, has broad species specificity, binding to type I interferons of human, mouse, rat, rabbit, pig, and cow. Among viral host response modifiers, the B18R protein is unique in that it exists as a soluble extracellular, as well as a cell surface protein, enabling blockage of both autocrine and paracrine IFN functions. The B18R protein has been shown to inhibit the antiviral potency of IFN-alpha1, IFN-alpha2 , IFN-alpha-8/1/8, and IFN-omega on human cells. The soluble B18R protein is highly potent for neutralizing type I interferons, which include IFN-alpha, beta, delta, kappa. Please note effects on mouse IFNs vary from other species; it has been shown that B18R does not neutralize mouse IFN beta.

Applications Reported

Recombinant B18R is fully biologically active.

Applications Tested

This recombinant B18R protein (type I IFN receptor) has been tested in bioassay for neutralization of mouse and human interferons (α and β).
Human IFN: Pre-incubation of recombinant human IFN-α2a with 0.1 µg/ml B18R for 1 hr at RT was found to neutralize completely the activity of 1 ng/ml IFN-α2a.
Mouse IFN: In an assay of EMCV infection of L929 cells, pre-incubation of recombinant mouse IFN-αA with 250.0 picograms/ml B18R for 1 hr at RT was found to neutralize completely the activity of 5 pg/ml (1 Unit) mIFN-αA. The ND50 of this protein, as measured by neutralization of Mouse IFN alpha 2 Recombinant Protein, is less than or equal to 800 pg/mL in the presence of 1 ng/mL Mouse IFN alpha 2. This corresponds to a specific activity of greater than or equal to 1.3 x 10e6 Units/mg.

References

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