Recombinant Viral B19R

Catalog Number: 8185-BR

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived

MD	Human IgG_1 (Pro100-Lys300)	IEGR	Viral B19R (His20-Glu351) Accession # P25213

N-terminus C-terminus

N-terminal Sequence Analysis Met-Asp-Pro100

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 65 kDa (monomer)

SPECIFICATIONS

SDS-PAGE 80-95 kDa, reducing conditions

Activity Measured by its ability to inhibit Type-I IFN-mediated anti-viral activity. Symons, J.A. *et al.* (1995) Cell **81**:551.
The ED_{50} for this effect, as measured by inhibition of Recombinant Human IFN-α2 (Catalog # 11105-1) , is typically 0.3-1.8 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 µg/mL in PBS.

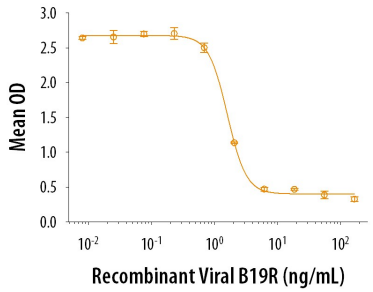
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



B19R Inhibits Type-I IFN-mediated anti-viral activity. The viral type I IFN receptor, B19R, inhibits the anti-viral activity of Recombinant Human IFN- alpha 2. The ED_{50} for this effect is typically 0.3-1.8 ng/mL.

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BACKGROUND

B19R is a 60-65 kDa protein encoded by the Vaccinia virus genome and by the genomes of other orthopoxviruses. Its function represents one of several mechanisms used by these viruses to evade the host immune response (1, 2). It is known as B19R in the Copenhagen strain of Vaccinia and as B18R in the Western Reserve (WR) strain (3). There is a structurally-unrelated, larger Vaccinia protein that is also known as B18R that contains multiple ankyrin-like repeats (4). B19R, however, contains three immunoglobulin-like domains and shows homology to human, mouse, and bovine type I interferon receptors (5). The Wyeth strain of Vaccinia virus encodes a truncated protein that lacks the C-terminal Ig-like domain, and the Lister strain of Vaccinia produces an inactive B19R (6, 7). B19R functions as a decoy binding protein for type I interferons (IFN alpha, beta, omega). It binds to type I interferons from multiple species and prevents IFN signaling through its receptors (6-8). B19R binds to the surface of virus infected and uninfected cells where it retains its capacity to bind and neutralize IFN (6, 8). It shields those cells from the antiviral effects of type I interferons, thereby enabling virus replication and pathogenicity (6-8). B19R also limits the effectiveness of IFN alpha produced following TLR activation (9), and it limits adaptive T cell responses (3).

References:

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2. Perdiguero, B. and M. Esteban (2009) J. Interferon Cytokine Res. **29**:581.
3. Gomez, C.E. *et al.* (2012) J. Virol. **86**:5026.
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6. Alcami, A. *et al.* (2000) J. Virol. **74**:11230.
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