

## Product Information

### B18R from vaccinia virus

recombinant, expressed in HEK 293 cells  
cell culture tested, endotoxin tested, carrier-free

Catalog Number **GF197**

Storage Temperature  $-70\text{ }^{\circ}\text{C}$

Synonyms: Soluble interferon alpha/beta receptor, B18

### Product Description

Recombinant B18R from vaccinia virus is expressed in human HEK 293 cells as an N-terminally His-tagged glycoprotein with a calculated molecular mass of 38.4 kDa. The DTT-reduced protein migrates as a ~50 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.

B18R is a vaccinia virus gene product that acts as a decoy receptor for Type I Interferons (IFNs).<sup>1</sup> B18R binds type I IFNs more avidly than their receptor.<sup>2</sup> This protein has been shown to inhibit all IFN- $\alpha$  subtypes and IFN- $\beta$ , but not type II or III IFNs.<sup>3</sup> B18R enables increased cell viability during RNA transfection protocols designed to convert human somatic donor cells into iPSCs via direct delivery of synthetic mRNAs. As a type I IFN receptor, B18R has a broad species specificity. It has significant regions of homology with the alpha subunits of the mouse, human, and bovine type I IFN receptors.<sup>1</sup> Binding of soluble recombinant B18R to cells protected the cultures from IFN and allowed vaccinia virus replication.<sup>4</sup> B18R can be used with the Simplicon™ RNA Reprogramming Kit (Catalog Number SCR550) to create “foot-print” free human iPSC cells at the highest efficiency without unwanted RNA degradation caused by cellular IFN responses.

This protein is produced in human cells, without the use of serum. The human cells expression system allows human-like glycosylation and folding, and often supports better stability of the protein in culture. This product is supplied as a solution containing 10 mM phosphate and 0.5 M NaCl, pH 7.5. It is aseptically filled.

The biological activity of recombinant B18R was tested by its ability to support transfection of RNA.

Purity:  $\geq 98\%$  (SDS-PAGE)

Endotoxin level:  $\leq 0.5$  EU/ $\mu\text{g}$  B18R (LAL)

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Preparation Instructions

Briefly centrifuge the vial before opening. It is recommended to aliquot the B18R protein solution into sterile, nuclease-free, low protein-binding microtubes and store at  $-70\text{ }^{\circ}\text{C}$ . Limit repeated freeze and thaw cycles.

### Storage/Stability

Store the unopened product at  $-70\text{ }^{\circ}\text{C}$ . The product is stable for at least 2 years as supplied. Upon opening, it is recommended to store the protein in working aliquots at  $-70\text{ }^{\circ}\text{C}$ .

### References

1. Colamonici, O.R. et al., Vaccinia virus B18R gene encodes a type I interferon-binding protein that blocks interferon alpha transmembrane signaling. *J. Biol. Chem.*, **270(27)**, 15974-8 (1995).
2. Symons J.A. et al., Vaccinia virus encodes a soluble type I interferon receptor of novel structure and broad species specificity. *Cell*, **81(4)**, 551-60 (1995).
3. Huang J. et al., Inhibition of type I and type III interferons by a secreted glycoprotein from Yaba-like disease virus. *Proc. Natl. Acad. Sci. USA*, **104(23)**, 9822-9827 (2007).
4. Alcami, A. et al., The Vaccinia Virus Soluble Alpha/Beta Interferon (IFN) Receptor Binds to the Cell Surface and Protects Cells from the Antiviral Effects of IFN. *J Virol.* **74(23)**, 11230-11239 (2000).

RC,NA,MAM 01/18-1