



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant SV5 V-11R Protein
Catalog Number: vRP-1528
Manufacturer: LD Biopharma, Inc.

Introduction

Intracellular delivery of synthetic mRNA becomes a powerful tool for regulating gene transcription in specific stage of cell differentiation process as integration-free method. Human iPS cells can be generated very efficiently in vitro using mRNA delivery of OSKM (4 TFs). Like all viral infection, upon infection of cells or intracellular delivery synthetic mRNA are subjected to a variety of intracellular antiviral responses, including the IFN response. Blocking type-I interferon pathway enables increased cell viability during mRNA transfection protocol; such as recombinant B18R protein acts as decoy receptor. Further blocking IFN response intracellular may benefits mRNA delivery efficiency specially in RNA mediated cancer vaccine development in both in vitro or even in vivo.

Like all viruses, upon infection of cells, paramyxoviruses are subjected to a variety of intracellular antiviral responses, including the IFN response. Now, it has become clear that protein products of the P_V_C gene of viruses within the Paramyxovirinae subfamily specifically reduce the effectiveness of the IFN response. For example, the V protein of SV5 targets signal transducer and activator of transcription 1 (STAT1) for degradation, thereby blocking both IFN-a/b and IFN-g signaling within infected cells. The block on IFN-b production is at the level of transcription, because very little IFN-b mRNA is induced in cells infected with SV5.

Full-length Paromyxorirus Protein V cDNA (222 aa) was constructed with full-length gene synthesis using codon optimization technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal, and a 11 arginine (11R) tag was added at its C-terminal. This protein was expressed in E. coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: SV5 V protein
Accession Number: YP_138513.1
Species: Parainfluenza virus 5
Size: 40 µg / Vial
Composition: 0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.



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Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.

Key References

J.andrejeva., et al. *The V protein of paramyxoviruses bind the IFN-inducible RNA helicases, mda-5, and inhibit its activation of the INF-b promoter.* PNAS. Vol 101, No: 49.17264-17269. (2004)

Linda Andrus., et al. *Expression of paramyxovirus V protein promoters replication and spread of Hepatitis C virus in cultures of primary human fetal cells.* HEPATPLOGY. Vol 54. No.6. pp1901-1912 (2011)

Goodbourn S, et al. *The regulation of Type I interferon production by paramyxoviruses.* J Interferon Cytokine Res. 29: 539-547. (2009)

He,B., et al. *Recovery of infectious SV5 from cloned DNA and expression of a foreign gene.* Virology 237 (2), 249-260 (1997)

Applications

1. Could be used for in vitro SV5 V Protein mediated gene transcription repression in STAT1 pathway for blocking interferon production study by intracellularly delivery this protein.
2. May be used for mapping SV5 V Protein-protein interaction.
3. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGDPTDLSFSPDEINKLIETGLNTVEYFTSQQVTGTSSLG
KNTIIPPGVTGLLTNAAEAKIQESTNHQKGSVGGGAKPKKPRPKIAIIVPADDKTVPGKPIPNPLL
GLDSTPSTQTVLDSLGSKTLPSGSYKGVKLAKFGKENLMTRFIEEPRENPIATSSPIDFKRGRDT
GGFHRREYSIGWVGDEVKVTWCNPNPSCSPITAAARRFECTCHQCPVTCSECERDTESGGGGSPG
RRRRRRRRRRR