



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant sfGFP-SARA-CoV2 Spike RBD-11R fusion Protein
Catalog Number: VRP-3078
Manufacturer: LD Biopharma, Inc. USA

Introduction

Coronaviruses are a group of enveloped positive-stranded RNA viruses that consist of four structural proteins including **spike** (S) glycoprotein, envelope (E) protein, membrane (M) protein, and nucleocapsid (N) protein. Spike glycoprotein is the most important surface protein of coronavirus, which can mediate the entrance to human respiratory epithelial cells by interacting with cell surface receptor **angiotensin-converting enzyme 2** (ACE2) and CLEC4M/DC-SIGNR. Spike protein 333-520aa region was defined as Receptor-Binding domain (RBD).

Full-length SARA-CoV2 spike RBD cDNA (333 – 520aa) was constructed with codon optimization gene synthesis and expressed with a SuperGFP Protein N-terminal (sfGFP; 257aa) fusion at target protein N-terminal and 11 arginine (11R tag) at its C-terminal 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: Spike-RBD
Accession Number: QHD43416
Species: Coronavirus
Size: 45 µg / 30ul / Vial
Composition: 1.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References

Wu, F. et al., 2020: *A new coronavirus associated with human respiratory disease in China*. Nature 579(7798): 265-269.



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Tian, X. et al.2019. *Potent binding of 2019 novel coronavirus spike protein by a SARS coronavirus-specific human monoclonal antibody.* bioRxiv. doi: <https://doi.org/10.1101/2020.01.28.923011>.

Shang J. et al.2019. *Cryo-EM structure of infectious bronchitis coronavirus spike protein reveals structural and functional evolution of coronavirus spike proteins.* PLOS pathogens. 14(4): e1007009. <https://doi.org/10.1371/journal.ppat.1007009>.

Applications

1. May be used for mapping Spike RBD protein-protein interaction as functional screening assays when combined with recombinant human ACE2 protein.
2. As native viral Spike RBD immunogen for its specific antibody production.

Quality Control

- Purity: > 93 % by SDS-PAGE.
- SuperGFP protein: **Ex λ** = 485, and **Em λ** = 510.

Recombinant sfGFP- Spike-RBD-11R Fusion Protein Sequence (52.8 kD)

**MKHHHHHHQVSKGEELFTGVVPIVVELDGDVNGHKFSVRGEGEGDATNGKLTTLKFICTTGKLPV
PWPTLVTTLTLYGVQCFSRYPDHMKRHDFFKSAMPEGYVQERTISFKDDGTYKTRAEVKFEGLTL
VNRIELKIDFKEDGNILGHKLEYNFNHNVYITADKQKNGIKANFKIRHNVEDGQSVQLADHYQ
QNTPIGDGPVLLPDNHYLSTQSVLSKDPNEKRDHMLLEFVTAAGITHGMDELYKSGLRSGGSG
GEGESTNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLYNSASFSTFKCYGVSPTKLNDLC
FTNVYADSFVIRGDEVRQIAPGQTGKIADYNYKLPDDFTGCVIAWNSNNLDSKVGGNVNYLYRL
FRKSNLKPFRDISTEIQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLVLSFELLH
ALESGGGSPGRRRRRRRRRRR**