

# Recombinant MERS-CoV Spike protein

Catalog Number: ATGP3979

## PRODUCT INFORMATION

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### Expression system

Baculovirus

### Domain

18-1296aa

### UniProt No.

K0BRG7

### NCBI Accession No.

AFS88936

### Alternative Names

Middle East respiratory syndrome coronavirus, Human betacoronavirus 2c EMC/2012, MERS-CoV, MERS, MERS-CoV SP, Spike glycoprotein, S glycoprotein, S, Spike protein

## PRODUCT SPECIFICATION

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### Molecular Weight

141.6kDa(1285aa)

### Concentration

0.25mg/ml (determined by Bradford assay)

### Formulation

Liquid. In Phosphate-Buffered Saline (pH 7.4) containing 10% glycerol

### Purity

> 85% by SDS - PAGE

### Endotoxin level

< 1 EU per 1ug of protein (determined by LAL method)

### Tag

His-Tag

### Application

SDS-PAGE

### Storage Condition

Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

## BACKGROUND

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### Description

MERS-CoV, which causes the Middle East Respiratory Syndrome (MERS), belongs to a family of viruses known as coronaviruses. MERS-CoV was first identified in the Kingdom of Saudi Arabia in 2012, which is a single and positive stranded RNA virus. Dromedary camels are widely considered as the source of the transmission of MERS-

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CoV. The rate of human transmission among household contacts of MERS patients has been approximately 5 % based on serological analysis. MERS-CoV has four structural proteins, known as the S (spike), E (envelope), M (membrane), and N (nucleocapsid) proteins. The spike protein, responsible for allowing the virus to attach to and fuse with the membrane of a host cell and is a large type I transmembrane protein containing two subunits, S1 and S2. S1 mainly contains a receptor binding domain (RBD), which is responsible for recognizing the cell surface receptor. S2 contains basic elements needed for the membrane fusion. MERS-CoV S mediates viral attachment and fusion to human cells via human cellular receptor DPP4, also known as CD26. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity. Recombinant MERS-CoV Spike, fused to His-tag at C-terminus, was expressed in insect cell and purified by using conventional chromatography techniques.

## Amino acid Sequence

YVDVGPDSVK SACIEVDIQQ TFFDKTWPRP IDVSKADGII YPQGRYSNI TITYQGLFPY QGDHGDMMYVY SAGHATGTTT  
 QKLFVANYSQ DVKQFANGFV VRIGAAANST GTVIISPSTS ATIRKIYPAF MLGSSVGNFS DGKMGRFFNH TLVLLPDGCG  
 TLLRAFYCIL EPRSGNHCPA GNSYTSFATY HTPATDCSDG NYNRNASLNS FKEYFNLRNC TFMYTYNITE DEILEWFGIT  
 QTAQGVHLFS SRYVDLYGGN MFQFATLPVY DTIKYYSIIP HSIRSIQSDR KAWAAFYVYK LQPLTFLLDF SVDGYIRRAI  
 DCGFNDSLSQL HCSYESFDVE SGVYSVSSFE AKPSGSVVEQ AEGVECDFSP LLSGTPPQVY NFKRLVFTNC NYNLTKLLSL  
 FSVNDFTCSQ ISPAAIASNC YSSLILDYFS YPLSMKSDLS VSSAGPISQF NYKQSFNSPT CLILATVPHN LTTITKPLKY  
 SYINKCSRLL SDDRTEVPQL VNAVQYSPCV SIVPSTVWED GDYRQKQLSP LEGGGWLVA GSTVAMTEQL QMGFGITVQY  
 GTDTNSVCPK LEFANDTKIA SQLGNCVEYS LYGVSGRGVF QNCTAVGVRQ QRFVYDAYQN LVGYYSDDGN YYCLRACVSV  
 PVSVIYDKET KTHATLFGSV ACEHISSTMS QYSRSTRSML KRRDSTYGPL QTPVGCVLGL VNSSLFVEDC KLPLGQSLCA  
 LPDTPSTLTP RSVRSVPGEM RLASIAFNHP IQVDQLNSSY FKLSIPTNFS FGVTEQEIQT TIQKVTVDCK QYVCNGFQKC  
 EQLLREYGQF CSKINQALHG ANLRQDDSVR NLFASVKSSQ SSPIIPGGG DFNLTLLEPV SISTGSR SAR SAIEDLLFDK  
 VTIADPGYMQ GYDDCMQQGP ASARDLICAQ YVAGYKVLPP LMDVNMEAAY TSSLLGSIAG VGWTAGLSSF AAIQFAQSIF  
 YRLNGVGITQ QVLSNQKLI ANKFNQALGA MQTGFTTNE AFQKVQDAVN NNAQALSCLA SELSNTFGAI SASIGDIIQR  
 LDVLEQDAQI DRLINGRLTT LNAFVAQLV RSESAALSAQ LAKDKVNECV KAQSKRSGFC GQGTHIVSFV VNAPNGLYFM  
 HVGYYPSNHI EVVSAYGLCD AANPTNCIAP VNGYFIKTTN TRIVDEWSYT GSSFYAPEPI TSLNTKYVAP QVTYQNIQSTN  
 LPPPLLGNST GIDFQDELDE FFKNVSTSIP NFGSLTQINT TLLDLTYEML SLQQVVKALN ESYIDLKELG NYTYYNKWP<H  
 HHHHH>

## General References

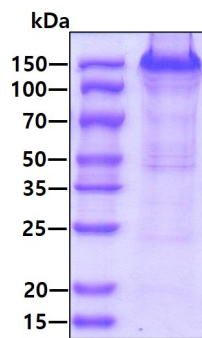
- Junghyun Goo., et al. (2020) *Virus Res.* 278:197863.
- Yan-Hua Li., et al. (2019) *Engineering.* 5:940-947.
- Lingshu Wang., et al. (2018) *J Virol.* 92:e02002-2017.
- Nicolas Papageorgiou., et al. (2016) *Acta Crystallogr D Struct Biol.* 72:192-202.
- Xiao-Yan Che., et al. (2004) *J Clin Microbiol.* 42:2629-2635.

## DATA

### SDS-PAGE

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3 $\mu$ g by SDS-PAGE under reducing condition and visualized by coomassie blue stain