Miltenyi Biotec

Recombinant SARS-CoV-2 Spike-Trimer (HEK)

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1. Description

Products Recombinant SARS-CoV-2 Spike-Trimer (HEK) or Recombinant SARS-CoV-2 Spike-Trimer (HEK)-Biotin.

Productname	Content	Order no.
Recombinant SARS-CoV-2 Spike-Trimer (HEK)	10 µg	130-127-684
Recombinant SARS-CoV-2 Spike-Trimer (HEK)	50 µg	130-127-683
Recombinant SARS-CoV-2 Spike-Trimer (HEK)-Biotin	25 µg	130-127-685

Functional testing Functionality was tested in an flow assay by analyzing the binding of biotinylated spike to ACE2-expressing cells.

Primary structure Recombinant SARS-CoV-2 Spike-Trimer (HEK):
Homotrimeric, glycosylated polypetides chain (3×1262 amino acid residues) without N-terminal methionine. C-terminal trimerization domain, C-terminal His-tag and AviTag™.

Recombinant SARS-CoV-2 Spike-Trimer (HEK)-Biotin:
Monobiotinylated, glycosylated polypeptide chain (1262 amino acid residues) without N-terminal methionine. C-terminal trimerization domain, C-terminal His-tag and AviTag.

Molecular mass 418.0 kDa (trimer).

Source Produced in human embryonic kidney cells.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >90% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<0.1 EU/µg protein) as determined by Limulus Amebocyte Lysate (LAL) assay.

For Recombinant SARS-CoV-2 Spike-Trimer (HEK)-Biotin: Low endotoxin (<0.25 EU/µg protein) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized SARS-CoV-2 Spike-Trimer (HEK) should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized SARS-CoV-2 Spike-Trimer (HEK) with deionized, sterile-filtered water to a final concentration of 0.02–0.25 mg/mL in a minimal volume of 200 µL.

1.1 Background information

The SARS-CoV-2 spike (S) glycoprotein mediates the entry of the virus into target cells via its interaction with the angiotensin-converting enzyme 2 (ACE2) receptor, thereby initiating the infection. It forms a homotrimeric structure on the surface of the SARS-CoV-2 virus and represents the major target for diagnostic and therapeutic agents. The ectodomain of the S glycoprotein comprises the N-terminal S1 subunit, including the receptor binding domain, and, the C-terminal S2 subunit.
The Recombinant SARS-CoV-2 Spike-Trimer (HEK) protein covers the ectodomain of the viral surface protein including amino acids V16 to K1211 and contains the stabilizing proline substitutions at position K986P and V987P as well as a mutated Furin cleavage site (RRAR to GSAS substitution at residues 682–685). A T4 fibritin trimerization motif induces the conformation of a highly stable native-like homotrimer. The protein is extended at its C-terminus with a His-tag and an AviTag.
Recombinant SARS-CoV-2 Spike-Trimer (HEK)-Biotin is specifically biotinylated at a single site, preserving full functionality of the protein.

1.2 Applications

The product can be used for a variety of applications, including:

- Analysis of SARS-CoV-2 immune responses
- Detection and characterization of SARS-CoV-2–specific antibodies
- Studying SARS-CoV-2 cell binding, infection, and viral life cycle

The optimal concentration for a specific application should be determined by a dose-response experiment.

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