PRODUCT INFORMATION

SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant (rabbit IgG1 Fc-tagged)

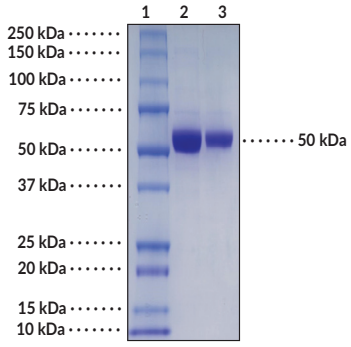
Item No. 34837

Overview and Properties

Synonyms:	Delta Variant, SARS-CoV-2 Spike RBD, SARS-CoV-2 Spike Receptor Binding Domain, Severe Acute Respiratory Syndrome Coronavirus 2 Spike Glycoprotein Receptor Binding Domain, Spike S1 RBD
Source:	Active recombinant C-terminal rabbit IgG1 Fc-tagged SARS-CoV-2 spike glycoprotein receptor binding domain L452R, T478K variant expressed in HEK293 cells
Amino Acids:	21-243, 319-541 of P0DTC2
Uniprot No.:	P0DTC2
Molecular Weight:	50.4 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	PBS, pH 7.4, with 5% mannitol, 5% D-(+)-trehalose, 0.01% Tween 20, and 10% glycerol
Protein Concentration:	***batch specific*** mg/ml
Bioactivity:	SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant (rabbit IgG1 Fc-tagged) (Item No. 34837) was captured on an S series Protein G chip and tested for binding with gradient concentrations of ACE2 (12.5, 25, 50, 100, and 200 mM) in 10 mM HEPES, pH 7.4, 150 mM sodium chloride, 0.05% surfactant P20 at 25°C. The k_D value was calculated using the 1:1 (Langmuir) binding model.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

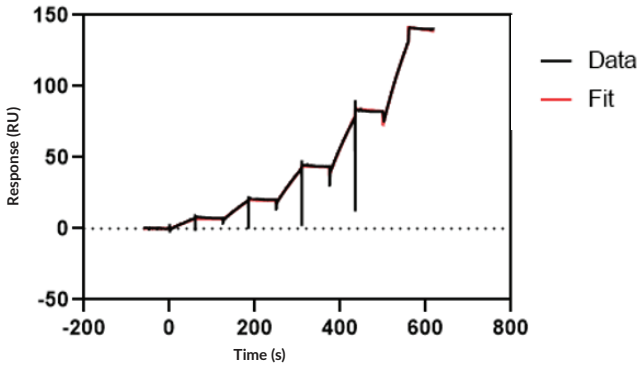


Lane 1: MW Markers
Lane 2: SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant (4 µg)
Lane 2: SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant (2 µg)

SDS-PAGE Analysis of SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant.

Representative gel image shown; actual purity may vary between each batch.

SPR of ACE2 binding to immobilized L452R/T478K SARS-CoV-2 Spike S1 RBS-rFc



SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K Specifically Binds ACE2. SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K was captured on a Protein G Chip S series and SPR analysis was used to determine ACE2 (human, recombinant; Item No. 30587) binding affinity on a Biacore T200, using single cycle kinetics with five concentrations of ACE2.

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Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an enveloped positive-stranded RNA virus, a member of the *Betacoronavirus* genus, and the causative agent of COVID-19.[1-5] The SARS-CoV-2 spike glycoprotein, also known as the surface glycoprotein, is located on the outer envelope of the virion.[3] It is composed of an S1 and S2 subunit divided by a furin S-cleavage site not found in other SARS-CoVs.[6,7] The S1 subunit contains the receptor-binding domain (RBD), which binds to the carboxypeptidase angiotensin-converting enzyme 2 (ACE2), and the S1 and S2 subunits are cleaved by the protease TMPRSS2 to facilitate viral fusion with the host cell membrane.[8-10] In this way, ACE2 acts as the functional receptor for SARS-CoV-2. The SARS-CoV-2 variant of concern (VOC) B.1.617.2, also known as the delta variant, that was originally identified in India, contains the L452R and T478K substitutions.[13] The leucine-to-arginine substitution at position 452 (L452R) increases SARS-CoV-2 affinity for human ACE2, decreases serum neutralization and binding with monoclonal antibodies, and promotes viral infectivity and replication.[11,13] The threonine-to-lysine substitution at position 478 (T478K) also induces structural changes in the receptor- and antibody-binding interfaces.[12] Cayman's SARS-CoV-2 Spike Glycoprotein Receptor Binding Domain L452R, T478K variant (rabbit IgG1 Fc-tagged) protein can be used for ELISA and surface plasmon resonance (SPR) applications.

References

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