SARS-CoV-2 XBB.1.16.1 Omicron Variant Recombinant Spike Trimer His Tag

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Applications	Detection	Clonality	Isotype
ELISA	Anti-SARS-CoV-2 NP mAb	SARS-CoV-2	SARS-CoV-2

Format: Unconjugated

Cross Reactivity: Predicted to work with mouse, rat and other homologues.

Formulation: PBS, 0.025% NaN3

Preparation: His tag purification

Reactivity: Other

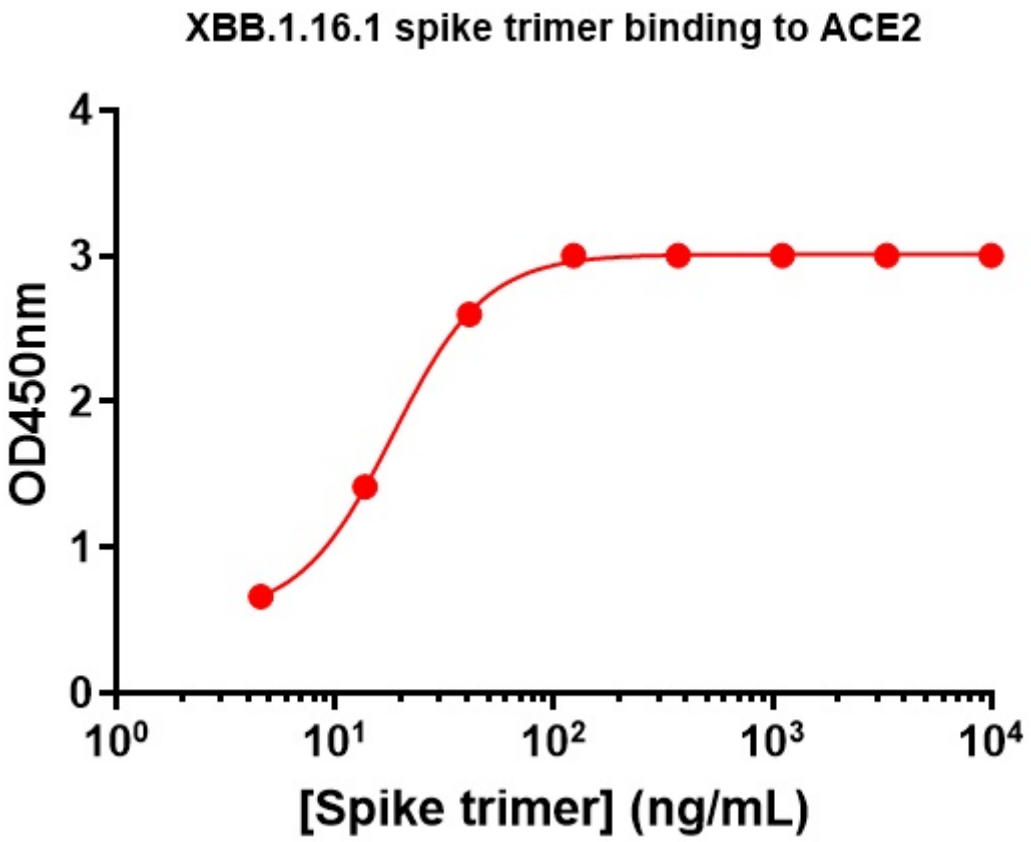
Recommended Usage: Control antigen for SARS-CoV-2 (COVID-19) diagnostic assays. Contains C-terminal His tag used for purification.

Immunogen: N/A

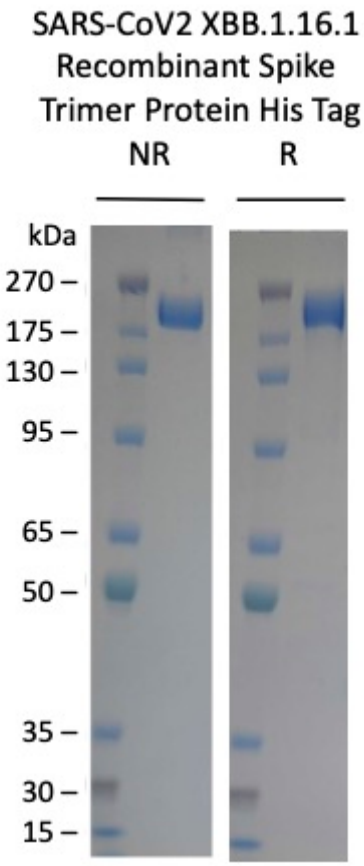
Description: Coronaviruses belong to a large family of protein enveloped positive-strand RNA viruses that are known to cause upper respiratory, gastrointestinal, central nervous system diseases in animals and human (1). One of the main proteins on viral envelop is a heavily glycosylated spike (S) protein (2). Trimeric S protein is involved in host receptor angiotensin-converting enzyme 2 (ACE2) recognition and mediates viral entry into cells. It is the principle antigenic determinant of neutralizing antibodies (3). S protein is recognized by humoral immune response during infection leading to inflammatory response. Homotrimeric S protein is a class I fusion protein that forms large protrusions from the virus surface and undergoes a significant structural rearrangement to fuse the viral membrane with the host-cell membrane once it binds to the host receptor (4).

References:

1. Walls A.C. et al., 2019 Cell, 176: 1026-1039.
2. Tang T. et al., 2020, Antiviral Res., 178:10479.
3. Jiang S et al., 2022, Trends Immunol, 41:355-359.
4. Bosch BJ, et al., 2003, J Virol 77:8801-8811.



Concentration–response curves for binding of CoV2 spike protein to human ACE2 in cell-free ELISA-type assays. Microtiter wells were coated with 100 uL of ACE2-Fc at 2 ug/mL in PBS at 4˚C overnight. The wells were washed with PBS and blocked with 200 µL of 1% BSA/PBS at RT for 1 hour. Spike trimer was serially diluted from 10 µg/mL in 1% BSA/PBS. The blocker was discarded, and the wells were incubated with 100 µL of serially diluted spike trimer at RT for 1 hour. The wells were washed with PBS and the bound spike trimer was detected with 100 µL of Peroxidase AffiniPure Rabbit Anti-His Tag (Jackson Immuno Research 300-035-240)(1:5,000 in 1% BSA/PBS) at RT for 1 hour. The wells were washed with PBS and the wells were developed with 100 µL of MB/E Ultra-Sensitive, Blue, Horseradish Peroxidase Substrate (EMD Millipore ES022-500ml) at RT for 5 min. The reaction was stopped with 100 µL of 0.6N H2SO4 and the signals were read at 450 nm using a plate reader (Biotek).



SARS-CoV-2 Spike Trimer, His Tag (XBB.1.16.1 Omicron) on SDS-PAGE under non-reducing (NR) and reducing (R) conditions. The gel was stained with Coomassie G-250 per manufacturer instructions. The purity of the protein is greater than 95% and it is between 175 and 270 kDa.