

Rev09  
Update: Jan,07,2025

## DATASHEET

# SARS-CoV-2 (Omicron) Neutralizing Antibody Standard

Cat. No.: A02161

## Overview

<b>Specificity</b>	The product is specific for SARS-CoV-2 RBD domain. <i>The product can neutralize Wild-Type SARS-CoV-2 and Variants of Concern (VOC) including Alpha, Beta, Gamma, Delta, Omicron BA.1, Omicron BA.2 and Omicron BA.4/BA.5.</i>
<b>Immunogen</b>	Recombinant SARS-CoV-2 RBD Protein
<b>Conjugate</b>	Unconjugated

## Applications

Working concentrations for specific applications should be determined by the investigators. The appropriate concentrations may be affected by secondary antibody affinity, antigen concentration, the sensitivity of the method of detection, temperature, the length of the incubations, and other factors. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

<b>Application</b>	<b>Recommended Usage</b>
ELISA	10 U/ml - 1,200 U/ml
Pseudovirus Neutralization Test (pVNT)	User-optimized
Plaque Reduction Neutralization Test (PRNT)	User-optimized
SARS-CoV-2 Surrogate Virus Neutralization Test (sVNT) Kit	See the protocol 《Application Note- Use of A02161 as positive control for L00847-A V1》 for details on usage.

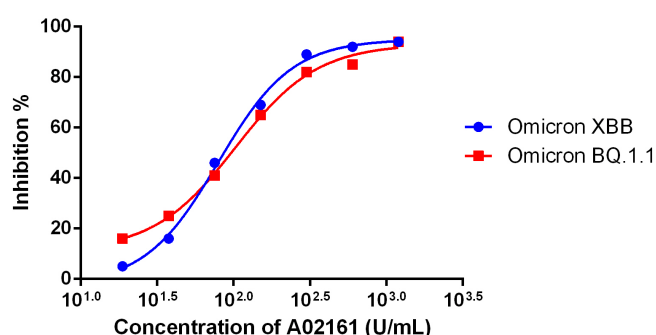
## Properties

<b>Form</b>	Liquid
<b>Storage Buffer</b>	0.2 $\mu$ m filtered PBS, pH 7.2.
<b>Concentration</b>	800,000 U/ml

<b>Unitage</b>	The unitage of this product is an arbitrary unit (U) of measurement of neutralizing antibody to SARS-CoV-2 Omicron
<b>Storage Instructions</b>	The unopened product is stable to the stated expiration date in COA when stored at -20 °C. The opened product is stable for 1 month from the date of opening when stored at 2°C to 8°C. Avoid repeated freezing and thawing cycles.
<b>Purification</b>	Protein A affinity column
<b>Isotype</b>	IgG
<b>Clonality</b>	Cocktail

## Examples

### Neutralization activity against SARS-CoV-2 Omicron XBB and BQ.1.1 Variants by A02161

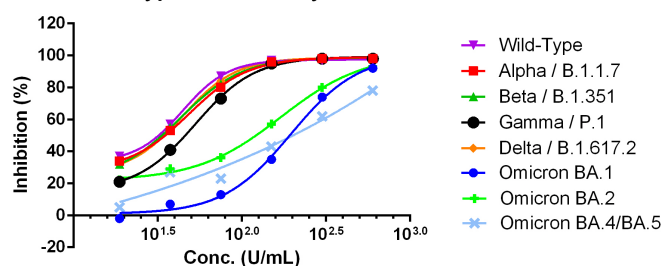


Dose-response curve of Omicron NAb standard (GenScript, A02161) on SARS-CoV-2 Multiplex sVNT.

The final concentration of RBD recombinant proteins were 60 ng/mL. The Omicron NAb standard (GenScript, A02161) dilutions started from 1200 U/mL.

SARS-CoV-2 (Omicron) Neutralizing Antibody Standard (GenScript, A02161) can block the binding of SARS-CoV-2 omicron variant XBB sublineage and BQ.1.1 sublineage to Human ACE2.

### Neutralization activity against SARS-CoV-2 Wild-Type and VOCs by A02161



Dose-response curve of SARS-CoV-2 Omicron NAb standard (GenScript, A02161) on SARS-CoV-2 Multiplex sVNT.

S-RBD wild type (GenScript, [Z03483](#))

S-RBD Alpha (GenScript, [Z03533](#))

S-RBD Beta (GenScript, [Z03537](#))

S-RBD Gamma (GenScript, [Z03600](#))

S-RBD Delta (GenScript, [Z03613](#))

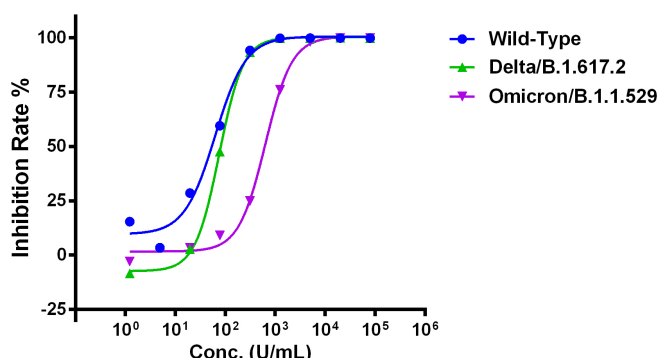
S-RBD Omicron BA.1 (GenScript, [Z03728](#))

S-RBD Omicron BA.2 (GenScript, [Z03740](#))

S-RBD Omicron BA.4/BA.5 (GenScript, [Z03745](#))

SARS-CoV-2 (Omicron) Neutralizing Antibody Standard (GenScript, A02161) can neutralize Wild-Type SARS-CoV-2 and Variants of Concern (VOC) including Alpha, Beta, Gamma, Delta, Omicron BA.1, Omicron BA.2 and Omicron BA.4/BA.5.

Dose response curves of A02161 on pVNT

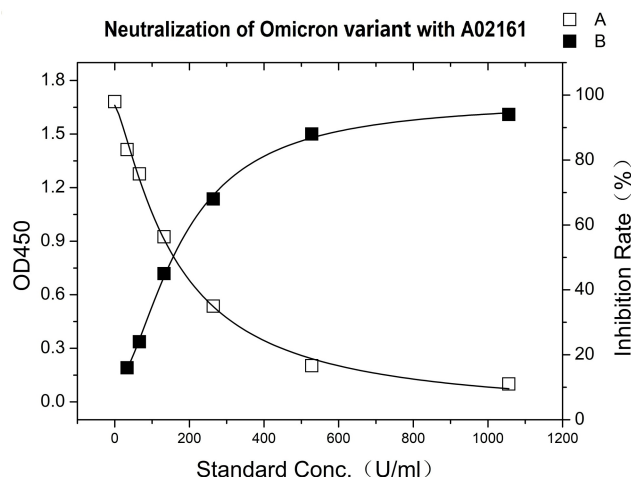


Pseudovirus Neutralization Test of SARS-CoV-2 pseudovirus-hACE2 interaction with SARS-CoV-2 (Omicron) Neutralizing Antibody Standard (GenScript, A02161).

Control: HEK293/ACE2 cells were infected with SARS-CoV-2 pseudovirus  
SARS-CoV-2 Pseudovirus Neutralization Assay kit\_Luc reporter (GenScript, [SC2087A](#))  
SARS-CoV-2 B.1.617.2 (Delta) Pseudovirus Neutralization Assay kit\_Luc reporter (GenScript, [SC2087V](#))  
SARS-CoV-2 B.1.1.529 (Omicron) Pseudovirus Neutralization Assay kit\_Luc reporter (GenScript, [SC2087-027](#))

SARS-CoV-2 (Omicron) Neutralizing Antibody Standard (GenScript, A02161) dilutions start from 80,000 U/ml.

Neutralization of Omicron variant with A02161



Standard curve of assay results of SARS-CoV-2 (Omicron) Neutralizing Antibody Standard (GenScript, A02161) against Omicron/B.1.1.529 created by SARS-CoV-2 Multiplex sVNT.

Concentration gradient represents X, OD450 and inhibition rate represent Y to create the standard curve which was calculated by 4PL.

A: OD450 values of standards at each concentration;  
B: Inhibition rate of standards at each concentration.

## Background

**Target Background :** SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2) is a positive-sense single-stranded RNA virus. It caused coronavirus disease 2019 (COVID-19). The B.1.1.529 variant was first reported to WHO from South Africa on 24 November 2021. WHO has designated B.1.1.529 as a VOC, named Omicron.

SARS-CoV-2 contains glycosylated spike (S) protein, which is composed of S1 subunit and S2 subunit. The S1 contains a receptor-binding domain (RBD) that can bind to ACE2 receptor on target cells. Neutralizing antibodies against SARS-CoV-2 can block the interaction between SARS-CoV-2 RBD and ACE2. The blocking ability of SARS-CoV-2 neutralizing antibodies is affected by the quantity.

This standard product is intended for the calibration of SARS-CoV-2 Omicron neutralizing antibodies. It can be used in the assessment and development of assays for the detection and quantitation of SARS-CoV-2 Omicron neutralizing antibodies. The neutralizing antibody standard binds to multiple neutralizing epitopes in the receptor-binding domain.

**Synonyms :** SARS-CoV-2 B.1.1.529 variant neutralizing antibody standard; COVID19 Omicron neutralizing antibody standard

**Reference :** 1. [Tracking SARS-CoV-2 variants.](#)  
2. [Classification of Omicron \(B.1.1.529\): SARS-CoV-2 Variant of Concern.](#)

**For laboratory research use only. Direct human use, including taking orally and injection and clinical use are forbidden.**

Manufacturer: Nanjing GenScript Biotech Co., Ltd. No. 28Yongxi Road, Jiangning District, Nanjing, Jiangsu, China