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Version: 1.0

Application Note: Use of A02087 with sVNT Kit and pVNT Kit

Description

SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2), also known as 2019-nCoV, is a positive-sense single-stranded RNA virus. It caused coronavirus disease in 2019 (COVID-19). 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 its quantity. This standard product is intended for the calibration of SARS-CoV-2 neutralizing antibodies in the materials or samples. It can be used in the assessment and development of assays for the detection and quantitation of SARS-CoV-2 neutralizing antibodies. The neutralizing antibody standard binds to multiple neutralizing epitopes in the receptor-binding domain. This product has been verified to calibrate the quantitative assay of SARS-CoV-2 neutralizing antibody with the Surrogate Virus Neutralization Test (sVNT) (GenScript, Cat.No L00847-A), plaque reduction neutralization test (PRNT) and pseudovirus neutralization test (pVNT) (GenScript, Cat.No SC2087). Users can design assays to detect and evaluate the quantitation of SARS-CoV-2 neutralizing antibodies by this product.

Unitage

The unitage of this product has been defined as an arbitrary unit of 100,000 U.

Concentration

1,000,000 U/ml

Recommended dilution procedure of this product for SARS-CoV-2 Surrogate Virus Neutralization Test Kit (sVNT) (GenScript, Cat.No L00847-A)

1. Remove the standard from -20 °C and gently open the bottle to prevent the reagent in the tube from spilling.
2. Dilute the standard with a two steps method. First, dilute the standard with a 10:990 dilution ratio with Sample Dilution Buffer in the kit to prepare a solution of 10,000 U/mL. Second, dilute the middle concentration with a 60:40 dilution ratio with the Sample Dilution Buffer to prepare a working solution of 6000 U/mL.
3. Separately label eight 1.5 mL Eppendorf tubes with '6000 U/mL', '3000 U/mL', '1500 U/mL', '750 U/mL', '375 U/mL', '187.5 U/mL', '93.75 U/mL', '0 U/mL'. The operator can also adjust the dilution ratio according to the individual need.

4. Only add Sample Dilution Buffer to the tube of '0 U/mL'.

Note: The kit requires a 10-fold dilution in samples and controls, so the initial working concentration of the standard is '600 U/mL'.

Recommended dilution procedure of this product for SARS-CoV-2 Pseudovirus Neutralization Kit (GenScript, Cat.No SC2087)

1. Remove the standard from -20 °C and gently open the bottle to prevent the reagent in the tube from spilling.
2. Dilute the standard with a 4:96 dilution ratio with Opti-MEM (Thermo Fisher, Cat.No 31985-070) to prepare a solution of 40,000 U/mL.
3. Separately label twelve 1.5 mL Eppendorf tubes with '40,000 U/mL', '20,000 U/mL', '10000 U/mL', '5000 U/mL', '2500 U/mL', '1250 U/mL', '625 U/mL', '312.5 U/mL', '156.25 U/mL', '78.13 U/mL', '39.06 U/mL', '0 U/mL'. The operator can also adjust the dilution ratio according to the individual need.
4. Only add Opti-MEM to the tube of '0 U/mL'.

Caution

For Research Use Only. Not for Use in Diagnostic Procedures.

1. If this product requires handling of human specimens, it is recommended that all human sourced materials and all consumables contaminated with potentially infectious materials will be considered potentially infectious and handled in accordance with standard precaution for infection control.
2. The user of this product is advised to carefully read the package insert.
3. Do not use the product beyond the stated expiration date.
4. Do not mix this product with standards from other manufacturers.
5. Decontaminate and dispose of all discarded materials in accordance with local, state, and federal regulations.
6. All materials should be handled in a manner that minimizes the chance of potential contamination of the work area.

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