Leinco Technologies, Inc.
excellence in early discovery research™

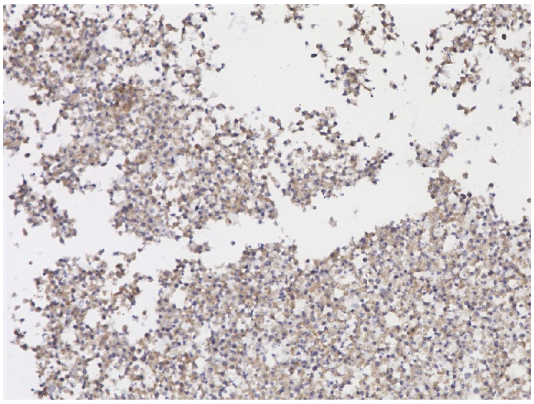
SARS-CoV-2 Spike RBD Antibody

Purified No Carrier Protein

Recombinant Monoclonal Antibody

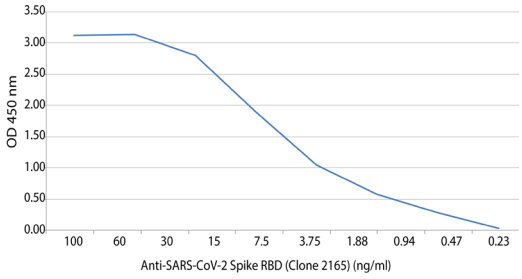
Product Information

Product No.: LT1900
Clone: 2165
RRID: AB_2893932
Isotype: Human IgG1
Storage: Sterile 2° to 8°C



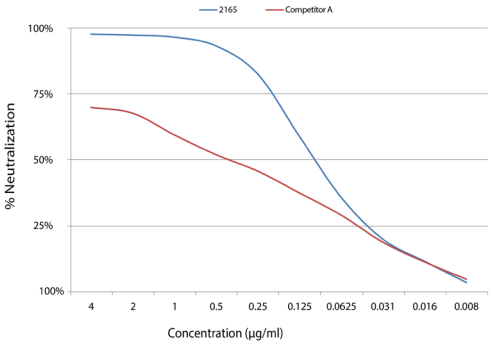
SARS-CoV-2 Spike RBD Antibody (clone 2165) IHC Data using infected cell pellets. Leinco Prod. No.: LT1900.

Anti-SARS CoV-2 RBD (Clone 2165) ELISA - Reactivity Against rSARS CoV-2 Receptor Binding Domain (RBD) Protein



Coating: Purified Recombinant SARS-CoV-2 Spike RBD (Prod. No. S851), concentration of 1 ug/ml, 100 ul/well overnight at 2-8°C.
Detection: Anti-SARS-CoV-2 RBD (Clone 2165) conjugated to HRP was serially diluted starting at 25 ng/ml down to 0.23 ng/ml, 100 ul/well for 1 hour at 37°C.
Substrate: TMB (Leinco T118), 100 ul/well for 15 min. at room temperature followed by Leinco 450 nm Stop Solution (Leinco T125), 50 ul/well.

Anti-SARS-CoV-2 RBD (Clone 2165) Neutralizing Antibody



Leinco's Anti-SARS-CoV-2 Antibody to the Receptor Binding Domain (RBD) (Clone 2165). Antibody binds to RBD and blocks binding to the ACE2 receptor on coated plates using Leinco's patent pending COVID-19 ImmunoRank™ Neutralization MICRO-ELISA Assay (Prod. No. S2000).

Product Description

Specificity:

Anti-SARS-CoV-2 Spike RBD, clone 2165, specifically targets an epitope on the SARS-CoV-2 spike protein receptor-binding domain (RBD).

Antigen Distribution:

The spike RBD is expressed on the surface of SARS-CoV-2.

Background:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), is an enveloped, single-stranded, positive-sense RNA virus that belongs to the Coronaviridae family [1]. The SARS-CoV-2 genome, which shares 79.6% identity with SARS-CoV, encodes four essential structural proteins: the spike (S), envelope (E), membrane (M), and nucleocapsid protein (N) [2]. The S protein is a transmembrane, homotrimeric, class I fusion glycoprotein that mediates viral attachment, fusion, and entry into host cells [3]. Each ~180 kDa monomer contains two functional subunits, S1 (~700 a.a) and S2 (~600 a.a), that mediate viral attachment and membrane fusion, respectively. S1 contains two major domains, the N-terminal (NTD) and C-terminal domains (CTD). The CTD contains the receptor-binding domain (RBD), which binds to the angiotensin-converting enzyme 2 (ACE2)

receptor on host cells [3-5]. Although both SARS-CoV and SARS-CoV-2 bind the ACE2 receptor, the RBDs only share ~73% amino acid identity, and the SARS-CoV-2 RBD binds with a higher affinity compared to SARS-CoV [3, 6]. The RBD is dynamic and undergoes hinge-like conformational changes, referred to as the “down” or “up” conformations, which hide or expose the receptor-binding motifs, respectively [7]. Following receptor binding, S1 destabilizes, and TMPRSS2 cleaves S2, which undergoes a pre- to post-fusion conformation transition, allowing for membrane fusion [8, 9].

Polyclonal RBD-specific antibodies can block ACE2 binding [10, 11], and anti-RBD neutralizing antibodies are present in the sera of convalescent COVID19 patients [12], identifying the RBD as an attractive candidate for vaccines and therapeutics. In addition, the RBD is poorly conserved, making it a promising antigen for diagnostic tests [13 14]. Serologic tests for the RBD are highly sensitive and specific for detecting SARS-CoV-2 antibodies in COVID19 patients [13 15]. Furthermore, the levels of anti-RBD antibodies correlated with SARS-CoV-2 neutralizing antibodies, suggesting the RBD could be used to predict an individual's risk of disease [13].

Known Reactivity Species:
SARS-CoV-2, Virus

Expression Host:
HEK-293 Cells

Format:
Purified No Carrier Protein

Immunogen:
Sequenced from human survivors of COVID-19 (SARS-CoV-2)

Formulation
This recombinant monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity
≥90% monomer by analytical SEC and SDS-Page

Storage and Stability
This antibody may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.

Avoid Repeated Freeze Thaw Cycles

Product Preparation
Recombinant antibodies are manufactured in an animal free facility using only *in vitro* protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Applications
Applications and Recommended Usage (Quality Tested By Leinco):

ELISA

Other Applications Reported in Literature:

N

IHC

Country of Origin
USA

References
1) Zhou, P., Yang, X., Wang, X. et al. Nature 579, 270–273. 2020.
2) Wu, F., Zhao, S., Yu, B. et al. Nature 579, 265–269. 2020.
3) Wrapp D, Wang N, Corbett KS, et al. bioRxiv. 2020.02.11.944462. 2020.
4) Walls AC, Park YJ, Tortorici MA, Wall A, McGuire AT, Veesler D. Cell. 181(2):281-292.e6. 2020.
5) Li W, Zhang C, Sui J, et al. EMBO J. 24(8):1634-1643. 2005.

Additional References Available on Product Page