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12-8425: Anti-SARS-CoV-2 Spike RBD (Clone 2165) Biotin

Clonality :	Monoclonal
Clone Name :	2165
Application :	ELISA
Alternative Name :	COV2-2165, SARS-CoV-2 Spike RBD Antibody, Receptor Binding Domain Monoclonal Antibody
Isotype :	Human IgG1

Description

Specificity: Anti-SARS-CoV-2 Spike RBD-Biotin, 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.

Product Info

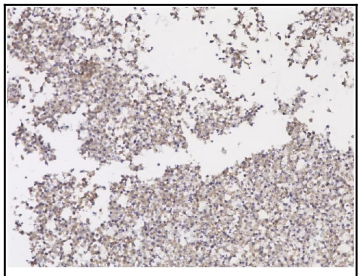
Amount :	50 µg
Content :	Concentration:0.5 mg/ml Formulation: This recombinant biotinylated antibody is formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.4, 1% BSA and 0.09% sodium azide as a preservative.
Storage condition :	This biotinylated monoclonal antibody is stable when stored at 2-8°C.?Do not freeze.

Application Note

IHC

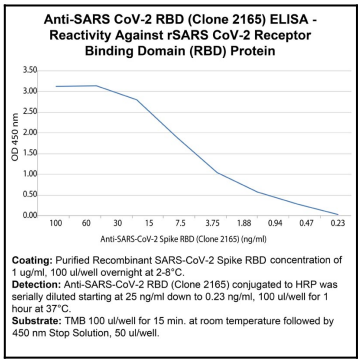
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SARS-CoV-2 Spike RBD Antibody (clone 2165) IHC Data using infected cell pellets.

Figure 1



Coating: Purified Recombinant SARS-CoV-2 Spike RBD 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 100 ul/well for 15 min. at room temperature followed by 450 nm Stop Solution, 50 ul/well.

Figure 2

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