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12-8430: Anti-SARS-CoV-2 Spike RBD (Clone 2838) Purified No Carrier Protein

Clonality :	Monoclonal
Clone Name :	2838
Application :	ELISA
Alternative Name :	COV2-2838, SARS-CoV-2 Spike RBD Antibody, Receptor Binding Domain Antibody
Isotype :	Human IgG1

Description

Specificity: Anti-SARS-CoV-2 Spike RBD, clone 2838, 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 :	100 µg / 500 µg
Purification :	Purity :>=90% monomer by analytical SEC and SDS-Page 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.
Content :	Concentration:>=1.0 mg/ml 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.
Storage condition :	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.

For Research Use Only. Not for use in diagnostic/therapeutics procedures.