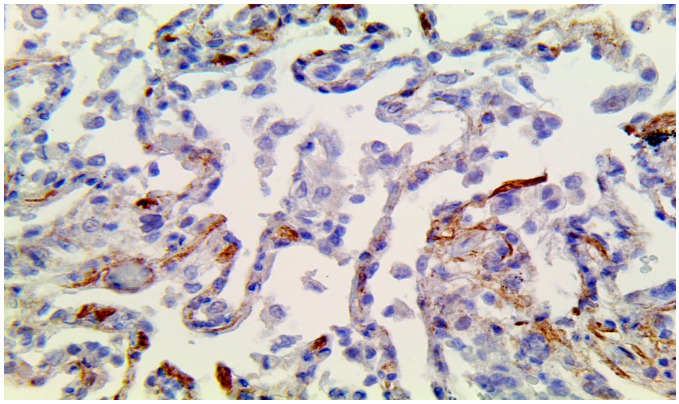
SARS-CoV-2

Clone: BSB-134
Mouse Monoclonal

RUO



Inset: IHC of SARS-CoV-2 on a FFPE SARS-CoV-2 Infected Lung Tissue

Antibody Type	Mouse Monoclonal	**Clone**	BSB-134
Isotype	IgG2b	**Reactivity**	Paraffin
Localization	Cytoplasmic	**Control**	SARS-CoV-2 Infected Tissues
	Species Reactivity	Human	

Presentation
Anti-SARS-CoV-2 is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Catalog No.	*Antibody Type*	*Dilution*	*Volume/Qty*
BSB-3701-3	Tinto Predilute	Ready-to-Use	3.0 mL
BSB-3701-7	Tinto Predilute	Ready-to-Use	7.0 mL
BSB-3701-15	Tinto Predilute	Ready-to-Use	15.0 mL
BSB-3701-01	Concentrate	1:25 -1:100	0.1 mL
BSB-3701-05	Concentrate	1:25 -1:100	0.5 mL
BSB-3701-1	Concentrate	1:25 -1:100	1.0 mL

Control Slides Available

Catalog No.	*Quantity*
BSB-9374-CS	5 slides

Storage Store at 2-8°C(Control Slides: Store at 20-25°C)

Intended Use
For Research Use Only.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE). Interpretation of results should be performed by a qualified medical professional.

Immunogen
Recombinant SARS-CoV-2 Nucleocapsid.

Summary and Explanation
The Severe Acute Respiratory Syndrome 2 virus (SARS-CoV-2) is a betacoronavirus first isolated in Wuhan, China, in late 2019. The virus has a 29.8 kbp genome, encoding the membrane, envelope, nucleocapsid, and spike glycoprotein. The spike proteins are cleaved by TMPRSS2 serine protease, then the Receptor Binding Domain of the spike protein binds with ACE2 or CD147 to enter the cell.

The SARS-CoV-2 virus has been shown to infect the tracheal and lung epithelium, GI tract, and olfactory neuron, brain, bone marrow, placenta, macrophages and possibly other organs or cells. Cough, fever, and trouble breathing are the main symptoms, although GI distress, fatigue, and neurological distress are also common. Severe symptoms are more likely to appear in patients with advanced age and/or preexisting cardiovascular disease or diabetes. The virus has a 2-11 day incubation period and mortality rate around 2.5%. Severe symptoms include diffuse alveolar damage in the lungs, hyaline membrane formation, microthrombi in the lungs, heart, and brain, and extreme inflammation as "cytokine storms" that flood the body with cytokines (elevated 1L-1b, IL-6, IL-8, and TNFa among others) and immune cells (especially CD4+ and CD8+ T cells and CD68+ and CD163+ Macrophages). This antibody cross-reacts with SARS-CoV nucleocapsid protein, weakly cross-reacts with CMV, Parainfluenza virus type 1 and Pneumocystis jirovecci, but not does not cross-react with MERS, 229E, or OC43 coronaviruses. Weak cross-reactivity may be seen on plasma cells in various tissues and should not be interpreted as a real signal.

Precautions
1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN_3) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as laboratory coat, goggles and gloves when handling reagents.
4. Dispose of unused solution with copious amount of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Stability
This product is stable up to the expiration date on the product label.
Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

Specimen Preparation

Paraffin sections: The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

IHC Protocol

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate and rehydrate tissues.
4. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).
5. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA, and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
7. For manual IHC, perform antibody incubation at ambient temperature. For automated IHC methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate- Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized and incubation time), optimal performance should be established through the use of positive and negative controls. Occasional non-specific staining can be seen on plasma cells of uninfected tissue. Results should be interpreted by a qualified medical professional.

References

1. Baig, Abdul M, et al. Evidence of the COVID-19 Virus Targeting the CNS: Tissue Distribution, Host-Virus Interaction, and Proposed Neurotropic Mechanisms. ACS Chem Neurosci. 2020; 11:995-998. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7094171/
2. Lai CC, et al. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. Int J Antimicrob Agents. 2020 Mar; 55(3):105924. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7127800/
3. Bryce, Clare, et al. Pathophysiology of SARS-CoV-2: targeting of endothelial cells renders a complex disease with thrombotic microangiopathy and aberrant immune response. The Mount Sinai COVID-19 autopsy experience. medRxiv. 2020 May 22. https://www.medrxiv.org/content/10.1101/2020.05.18.20099960v1
4. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012.

Symbol Key / Légende des symboles/Erläuterung der Symbole

Storage Temperature Limites de température Zulässiger Temperaturbereich	Manufacturer Fabricant Hersteller	REF Catalog Number Référence du catalogue Bestellnummer
Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten	Expiration Date Utiliser jusque Verwendbar bis	LOT Lot Number Code du lot Chargenbezeichnung

Bio SB
BIOSCIENCE FOR THE WORLD
5385 Hollister Avenue, Bldg 8, STE 108 Santa Barbara, CA 93111, USA
Tel. (805) 692-2768 | Tel. (800) 561-1145 | Fax. (805) 692-2769
E-mail: sales@biosb.com | Website: www.biosb.com