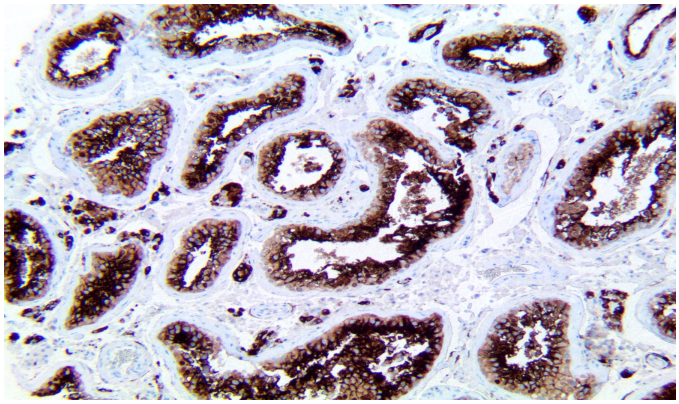
ACE2

Clone: BSB-135
Mouse Monoclonal

CE IVD



Inset: IHC of ACE2 on a FFPE SARS-CoV-2 Infected Testis Tissue

Intended Use
For In Vitro Diagnostic Use.

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

Immunogen
Synthetic Peptide corresponding the C-terminal of ACE2 of human origin.

Summary and Explanation
Angiotensin Converting Enzyme 2 is a dipeptidyl carboxydipeptidase active in the renin-angiotensin pathway, which helps regulate cardiovascular and renal functions. ACE2 is a secreted protein that cleaves angiotensin I (AngI) into angiotensin 1-9, and angiotensin II (AngII) into vasodilator angiotensin 1-7. ACE2 is expressed in the heart and kidney, where it may counteract vasoconstriction by inactivating Ang II. It is also found in the Gastrointestinal tract, lungs, and testis, in endothelial cells and less in vascular smooth muscle cells. ACE2 can contribute to tumor inhibition by inactivating AngII, which has been found to participate in tumor proliferation, angiogenesis, and metastasis.

ACE2 has shown inhibitory effects on lung, prostate, breast, and liver cancer through various signaling mechanisms, and its expression may be correlated with immune cell penetration into the tissue. ACE2 also functions as the main receptor for the spike glycoprotein of human coronaviruses HCoV-NL63, SARS-CoV and SARS-CoV-2.

Antibody Type	Mouse Monoclonal	**Clone**	BSB-135
Isotype	IgG1	**Reactivity**	Paraffin, Frozen
Localization	Membranous, Cytoplasmic	**Species Reactivity**	Human, Mouse, Rat
Control	Kidney, Testis, Brain, Colon, Fallopian tube		
Application	Infectious Disease, Breast Cancer, Lung Cancer, Prostate Cancer, Liver Cancer, Kidney Cancer, Colon & Gastrointestinal Cancer		

Presentation
Anti-ACE2 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*
BSB-3702-3	Tinto Predilute	Ready-to-Use	3.0 mL
BSB-3702-7	Tinto Predilute	Ready-to-Use	7.0 mL
BSB-3702-15	Tinto Predilute	Ready-to-Use	15.0 mL
BSB-3702-01	Concentrate	1:25 -1:100	0.1 mL
BSB-3702-05	Concentrate	1:25 -1:100	0.5 mL
BSB-3702-1	Concentrate	1:25 -1:100	1.0 mL

Control Slides Available

Catalog No.	*Quantity*
BSB-9002-CS	5 slides

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

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 the 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), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033) or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

Frozen sections and cell preparations: The antibody can be used on acetone-fixed frozen sections and acetone-fixed cell preparations.

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. Results should be interpreted by a qualified medical professional.

References

1. ACE2 angiotensin I converting enzyme 2 [Homo sapiens (human)]. NCBI Gene:https://www.ncbi.nlm.nih.gov/gene/59272
2. Burrell, Louise M, et al. ACE2, a new regulator of the renin–angiotensin system. Trends Endocrinol Metab. 2004 May; 15(4): 166-169. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7128798/
3. Zhang, Qi, et al. ACE2 inhibits breast cancer angiogenesis via suppressing the VEGFa/VEGFR2/ERK pathway. J Exp Clin Cancer Res. 2019 Apr 25; 38:173. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6482513/
4. Ahmadi M, et al. Colon Cancer and SARS-CoV-2: Impact of ACE2 Expression in Susceptibility to COVID-19. bioRxiv. 2020 June 13. https://www.biorxiv.org/content/10.1101/2020.06.11.146878v1
5. U.S. Department of Health and Human Services: Centers forDisease Control and Prevention. Guidelines for Safe WorkPractices in Human and Animal Medical DiagnosticLaboratories. Supplement / Vol. 61, January 6, 2012. https://www.cdc.gov/mmwr/pdf/other/su6101.pdf

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP — EMERGO EUROPE Prinsessegracht 20 2514 AP The Hague The Netherlands	Storage Temperature / Limites de température / Zulässiger Temperaturbereich	Manufacturer / Fabricant / Hersteller	REF — Catalog Number / Référence du catalogue / Bestellnummer
IVD — In Vitro Diagnostic Medical Device / Dispositif médical de diagnostic in vitro / In-Vitro-Diagnostikum	Read Instructions for Use / Consulter les instructions d'utilisation / Gebrauchsanweisung beachten	Expiration Date / Utiliser jusque / Verwendbar bis	LOT — Lot Number / Code du lot / Chargenbezeichnung

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