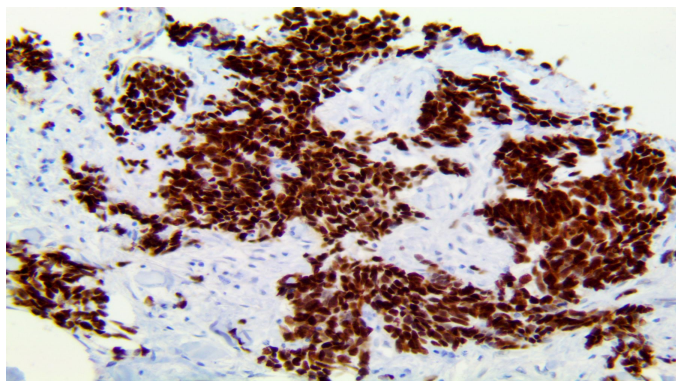


INSM1

Clone: RBT-INSM1
Rabbit Monoclonal



Inset: IHC of INSM1 on a FFPE Lung Neuroendocrine Carcinoma 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 to residues from the N-terminal domain of the human INSM1 protein.

Summary and Explanation

Insulinoma-associated 1 (*INSM1*) gene encodes a protein containing both a zinc finger DNA-binding domain and a putative prohormone domain, originally isolated from a human insulinoma-glucagonoma subtraction library.

INSM1 is abundantly expressed in fetal neuroendocrine developmental tissues and expressed in normal adult neuroendocrine (NE) tissues (adrenal medulla, pineal gland, pituitary gland, gastrointestinal enterochromaffin cells, pancreatic islet cells, thyroid C cells) and developing neurons. However there is also a high occurrence of INSM1 found in NE tumors, such as small cell lung cancer (SCLC), pituitary tumors, medullary thyroid carcinoma, Merkel cell carcinoma, olfactory neuroblastoma and pheochromocytoma. It has been reported that INSM1 expresses exclusively in SCLC specimens using immunohistochemistry, and first elucidated that INSM1 regulates the NE differentiation pathway in lung cancer. In addition, it has demonstrated an increased sensitivity and specificity compared to other NE biomarkers (Chromogranin A, Synaptophysin and CD56) in lung cancer specimens. In addition, it's been shown to be involved in NE differentiation in medullary thyroid carcinoma, pheochromocytoma, intestinal NE carcinoma, islet cell tumor, pituitary tumor, and SCLC cell lines.

Antibody Type	Rabbit Monoclonal	Clone	RBT-INSM1
Isotype	IgG	Reactivity	Paraffin, Frozen
Localization	Nuclear	Species Reactivity	Human
Control	Pancreas, Colon, Tonsil, Neuroendocrine Lung Cancer, Endometrial & Colon Carcinomas		
Application	Lung Cancer, Neural & Neuroendocrine Cancer, Pituitary, Colon & Gastrointestinal Cancer		

Presentation

Anti-INSM1 is a Rabbit 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.

<i>Catalog No.</i>	<i>Presentation</i>	<i>Dilution</i>	<i>Volume</i>
BSB-3780-3	Predilute	Ready-to-Use	3.0 mL
BSB-3780-7	Predilute	Ready-to-Use	7.0 mL
BSB-3780-15	Predilute	Ready-to-Use	15.0 mL
BSB-3780-01	Concentrate	1:25-1:100	0.1 mL
BSB-3780-05	Concentrate	1:25-1:100	0.5 mL
BSB-3780-1	Concentrate	1:25-1:100	1.0 mL

Control Slides Available

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9246-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 (NaN₃) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as a laboratory coat, goggles, and gloves when handling reagents.
4. Dispose of unused solution with copious amounts 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). 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 PermaMunter (BSB 0169-0174) or organic solvent based resin such as PermaMunter (BSB 0094-0097), refer to PI0174 or PI0097.

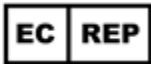







Product Limitations

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. Goto Y, De Silva MG, Toscani A, Prabhakar BS, Notkins AL, Lan MS. A novel human insulinoma-associated cDNA, IA-1, encodes a protein with "zinc-finger" DNA-binding motifs. *J Biol Chem.* 1992;267(21):15252-15257.
2. Lan MS, Breslin MB. Structure, expression, and biological function of INSM1 transcription factor in neuroendocrine differentiation. *FASEB J.* 2009;23(7):2024-2033. doi:10.1096/fj.08-125971
3. Rosenbaum JN, Guo Z, Baus RM, Werner H, Rehrauer WM, Lloyd RV. INSM1: A Novel Immunohistochemical and Molecular Marker for Neuroendocrine and Neuroepithelial Neoplasms. *Am J Clin Pathol.* 2015;144(4):579-591. doi:10.1309/AJCPGWXXBSNL4VD
4. Fujino K, Motooka Y, Hassan WA, et al. Insulinoma-Associated Protein 1 Is a Crucial Regulator of Neuroendocrine Differentiation in Lung Cancer. *Am J Pathol.* 2015;185(12):3164-3177. doi:10.1016/j.ajpath.2015.08.018
5. 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. <https://www.cdc.gov/mmwr/pdf/other/su6101.pdf>

Symbol Key / Légende des symboles/Erläuterung der Symbole

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