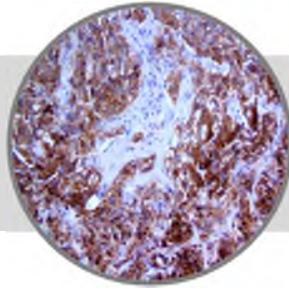


ROS1, RMAb

Clone: EP282

Rabbit Monoclonal



RUO

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Inset: IHC of ROS1 on a FFPE Non-Small Cell Lung Cancer Tissue
Intended Use

For Research Use Only.

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.

* The ROS1 antibody, clone EP282, has been manufactured using Epitomics RabMab® technology covered under Patent No.'s 5,675,063 and 7,402,409.

Immunogen

Synthetic peptide corresponding to residues of human ROS1 protein

Summary and Explanation

Repressor of Silencing 1 (ROS1) is a receptor tyrosine kinase that undergoes genetic rearrangements in various human cancers and in humans is encoded by the *ROS1* gene. The protein encoded by this gene is a type I integral membrane protein with tyrosine kinase activity with structural similarity to the anaplastic lymphoma kinase (ALK) protein. The protein may function as a growth or differentiation factor receptor. ROS1 expression is limited in normal tissues to occasional staining cerebellum, stomach, small intestine, colon and kidney.

Gene rearrangements involving the ROS1 gene were first detected in glioblastoma tumors and cell lines. ROS1 fusion partners include CD74, SLC34A2 and SDC4, leading to oncogenic transformation. ROS1 rearrangement was identified in a cell line derived from a lung adenocarcinoma patient and multiple studies have demonstrated its incidence in lung cancers. While ROS1 is undetectable in the normal lung, studies have described ROS1 rearrangements in 1-2% of NSCLC by FISH. Recent reports have demonstrated strong correlation between ROS1 IHC with FISH positivity. ROS1 fusions have been detected in multiple other tumors, including glioblastoma, non-small cell lung cancer (NSCLC), cholangiocarcinoma, ovarian cancer, gastric adenocarcinoma, colorectal cancer, inflammatory myofibroblastic tumor, angiosarcoma, and epithelioid hemangioendothelioma.

Antibody Type	Rabbit Monoclonal	Clone	EP282
Isotype	IgG	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic	Control	Placenta, Lung, SiHa Cells, NSCL ROS1 +
Species Reactivity		Human	

Presentation

ROS-1 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.

Catalog No.	Antibody Type	Dilution	Volume/Qty
BSB 3623	Tinto Prediluted	Ready-to-Use	3.0 mL
BSB 3624	Tinto Prediluted	Ready-to-Use	7.0 mL
BSB 3625	Tinto Prediluted	Ready-to-Use	15.0 mL
BSB 3626	Concentrated	1:50 - 1:200	0.1 mL
BSB 3627	Concentrated	1:50 - 1:200	0.5 mL
BSB 3628	Concentrated	1:50 - 1:200	1.0 mL

Control Slides Available

Catalog No.	Quantity
BSB 3629	5 slides

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 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).

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

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), 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 for labeling acetone-fixed frozen sections and acetone-fixed cell preparations.

Staining Procedure

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 staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC staining 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. "Entrez Gene: ROS1 v-ros UR2 sarcoma virus oncogene homolog 1 (avian)".
2. Rabin M, Birnbaum D, Young D, Birchmeier C, Wigler M, Ruddle FH. "Human ros1 and mas1 oncogenes located in regions of chromosome 6 associated with tumor-specific rearrangements". *Oncogene Research*. 1987; 1 (2): 169-78.
3. Birchmeier C, Sharma S, Wigler M. "Expression and rearrangement of the ROS1 gene in human glioblastoma cells". *Proceedings of the National Academy of Sciences of the United States of America*. 1987; 84 (24): 9270-4.
4. Rikova K, et al. "Global survey of phosphotyrosine signaling identifies oncogenic kinases in lung cancer". *Cell*. 2007; 131 (6): 1190-203.
5. Davies KD, Doebele RC. "Molecular pathways: ROS1 fusion proteins in cancer". *Clinical Cancer Research*. 2013; 19 (15): 4040-5.
6. Sholl LM, et al. ROS1 immunohistochemistry for detection of ROS1-rearranged lung adenocarcinomas. *Am J Surg Pathol*. 2013 Sep;37(9):1441-9.
7. Luk P, et al. Biomarkers for ALK and ROS1 in Lung Cancer Immunohistochemistry and Fluorescent In Situ Hybridization. *Arch Pathol Lab Med*. 2018;142:922-928
8. 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		Catalog Number Référence du catalogue Bestellnummer
	Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten		Expiration Date Utiliser jusque Verwendbar bis		Lot Number Code du lot Chargenbezeichnung

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