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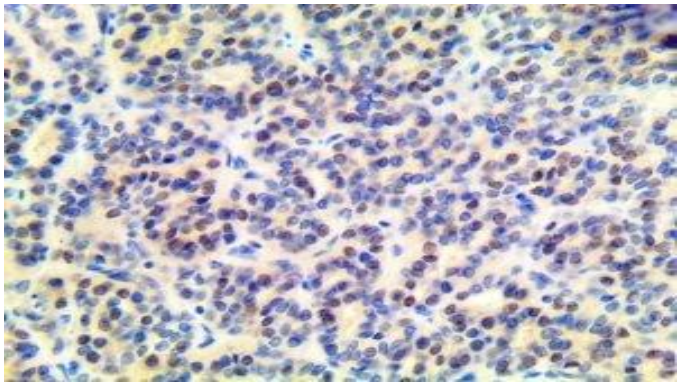
BIOSCIENCE FOR THE WORLD

pan-TRK

Clone: RBT-TRK
Rabbit Monoclonal

CE IVD



Inset: IHC of panTRK on a FFPE Papillary Thyroid 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 the C-terminal residues of human pan TRK protein.

Summary and Explanation
TRK (tropomyosin receptor kinase) A, B, and C are encoded by NTRK1, NTRK2, and NTRK3 genes respectively. Each protein is activated by different neurotrophins: TRKA is activated by Nerve growth factor, TRKB by brain-derived neurotrophic factor, and TRKC by NT-3. The TRK receptors are a family of tyrosine kinases that regulate synaptic strength and plasticity in the mammalian nervous system. The activation of TRK receptors by neurotrophin binding may lead to activation of signal cascades resulting in promoting survival and other functional regulation of cells. TRK family of receptor tyrosine kinases are of interest as the NTRK genes that encode them are involved in gene fusions identified in a wide range of adult and pediatric tumors. TRK, was initially identified in a colon carcinoma, is frequently activated in thyroid papillary carcinomas.

Pan-TRK IHC has shown to be positive in most cases with NTRK fusion transcripts confirmed by Archer. One study established the Pan-TRK IHC sensitivity and specificity for transcribed NTRK fusions to be 95.2% and 100%, respectively. All positive IHC cases had cytoplasmic staining while the following fusion partner-specific patterns were discovered: all LMNA-NTRK1 fusions displayed nuclear membrane accentuation, all TPM3/4 fusions displayed cellular membrane accentuation, and half of ETV6-NTRK3 fusions displayed nuclear staining. In another study, Immunohistochemistry screening in 1043 various solid tumors showed TRKA expression in 1.6% of samples, including Colorectal, Lung Cancer, Biliary Carcinoma and Thyroid Cancers. NTRK gene fusions have been identified in both pediatric and adult primary central nervous system tumors, including Glioblastoma Multiforme, Pediatric Gliomas and Astrocytomas. Various translocations involving NTRK1 or NTRK3 have been reported in Spitzoid melanocytic neoplasms, as well as in compound Spitz Nevi. TRK fusions have also been reported in Intrahepatic Cholangiocarcinomas, Breast Cancer, quadruple wild-type (ETV6-NTRK3) Gastrointestinal Stromal Tumors, Gallbladder Adenocarcinomas, Pancreatic Carcinomas, Sinus-Nasal Low-Grade Non-Intestinal-type Adenocarcinomas and Neuroendocrine Tumors of the small bowel. In addition to being present in solid tumors, NTRK gene fusions have been also detected in Acute Lymphoblastic Leukemia and Acute Myeloid Leukemia.

Antibody Type	Rabbit Monoclonal	**Clone**	RBT-TRK
Isotype	IgG	**Reactivity**	Paraffin, Frozen
Localization	Cytoplasmic, Nuclear	**Species Reactivity**	Human
Control	Brain, Lung Neuroendocrine		
Application	Lung Cancer, Neural & Neuroendocrine Cancer, Thyroid & Parathyroid Cancer		

Presentation
Anti-panTRK 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.	*Presentation*	*Dilution*	*Volume*
BSB-2376-3	Predilute	Ready-to-Use	3.0 mL
BSB-2376-7	Predilute	Ready-to-Use	7.0 mL
BSB-2376-15	Predilute	Ready-to-Use	15.0 mL
BSB-2376-01	Concentrate	1:10-1:50	0.1 mL
BSB-2376-05	Concentrate	1:10-1:50	0.5 mL
BSB-2376-1	Concentrate	1:10-1:50	1.0 mL

Control Slides Available

Catalog No.	*Quantity*
BSB-9328-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 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 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

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Symbol Key/Légende des symboles/Erläuterung der Symbole

EC REP QAdvis EAR AB Ideon Science Park Scheelevägen 17 SE-223 70 Lund, Sweden	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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