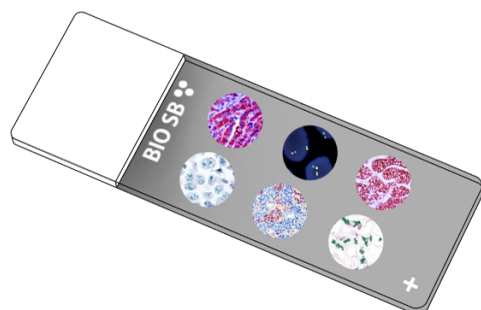


TMPRSS2 Control Slides



Intended Use

For In Vitro Diagnostic Use.

Summary and Explanation

Transmembrane Serine Protease 2 is part of the serine protease family, which is active in many physiological and pathological pathways. TMPRSS2 is a 492 amino acid protein, containing a type II transmembrane domain, a receptor class A domain, a scavenger receptor cysteine-rich domain, and a protease domain. It is upregulated by androgen hormones particularly in the prostate, where it may contribute to inflammation by activating PAR2 and prostate cancer through somatic rearrangement. TMPRSS2 is also expressed in the GI tract, stomach, kidney and in the lung epithelium, where it may cleave epithelial sodium channels. The TMPRSS2-ERG fusion pair is a common somatic gene rearrangement occurring in about 50% of primary prostate cancers. TMPRSS2-ERG fusion-positive tumors may be at higher risk for metastasis and influence from hormones, with a different androgen metabolism and higher insulin signaling than negative tumors. The protease domain also proteolytically cleaves and activates viral envelope glycoproteins, facilitating the cellular entry of human influenza and coronaviruses such as SARS-CoV-2.

Presentation

Five slides of TMPRSS2 positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

| <i>Catalog No.</i> | <i>Quantity</i> |
|--------------------|-----------------|
| BSB-9413-CS | 5 slides |
| BSB-3703-CS | 5 slides |

Storage Store at 20-25°C

Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. 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. 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.

IHC Protocol

1. 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).

2. 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.

3. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
4. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
5. Wash slides with ImmunoDNA washer or DI water.
6. 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 |

Abbreviated IF Protocol

| Step | Incubation Time |
|--|-------------------|
| Rinse slides in IF wash buffer | 5 minutes |
| Drain and wipe excess IF wash buffer off slide | |
| Conduct remaining steps in the dark | |
| Apply Antibody | 30-60 minutes |
| Rinse with 3 changes of IF wash buffer | 3x15 minutes each |
| Coverslip with IF mounting medium | |

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. Park, Youngwoo. TMPRSS2 (transmembrane protease, serine 2). Atlas Genetics Oncology. 2010, March.
http://atlasgeneticsoncology.org/Genes/GC_TMPRSS2.html
2. King, Jennifer C, et al. Cooperativity of TMPRSS2-ERG with PI3-kinase pathway activation in prostate oncogenesis. Nat Genet. 2009 May; 41(5):524-526.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2898503/>
3. Stopsack, Konrad H, et al. TMPRSS2 and COVID-19: Serendipity or Opportunity for Intervention? Cancer Discov. 2020 Jun; 10(6):779-782.
<https://pubmed.ncbi.nlm.nih.gov/32276929/>
4. Knuuttila, Matias, et al. Intratumoral androgen levels are linked to TMPRSS2-ERG fusion in prostate cancer. 2018; 25: 807-819. Endocrine-Related Cancer.
<https://erc.bioscientifica.com/view/journals/erc/25/9/ERC-18-0148.xml>
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.

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 jusqu'à Verwendbar bis | LOT | Lot Number Code du lot Chargenbezeichnung |