TFE3, RMab
Clone: EP285
Rabbit Monoclonal

**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 TFE3 antibody, clone EP285, has been manufactured using Epitomics RabMab® technology covered under Patent No.s 5,675,063 and 7,402,409.

**Immunogen**

A synthetic peptide corresponding to residues of human TFE3 protein.

**Summary and Explanation**

Transcription factor E3 is a protein that in humans is encoded by the TFE3 gene. TFE3, a member of the helix-loop-helix family of transcription factors, binds to the mu-E3 motif of the immunoglobulin heavy-chain enhancer and is expressed in many cell types. A proportion of renal cell carcinomas (RCC) that occur in young patients are associated with translocations involving the TFE3 gene, which results in gene fusions. Subsets of papillary renal cell carcinomas, a t(X;1)(p11;q21) chromosome translocation has been repeatedly reported and is thought to be the cause of this cancer. As a result of the translocation, the transcription factor TFE3 on the X chromosome becomes fused to this gene on chromosome 1. The fused gene results in the fusion of N-terminal proline-rich region of the protein encoded by this gene to the entire TFE3 protein.

The Xp11.2 translocation represents the most common type of RCC in children, but is less frequent on a percentage basis in adults. Morphologically, these cancers frequently show papillary architecture and clear cytoplasm, frequently have associated psammoma bodies and under-express epithelial markers such as cytokeratin and anti-EMA compared with typical adult type RCC. TFE3 is the most sensitive and specific immunohistochemical marker for the RCC Xp11.2 translocation, which reflects over-expression of the resulting fusion proteins relative to native TFE3. The Xp11.2 renal cell carcinoma has been recently established as a tumor affecting 15% of RCC patients <45 years. Many patients present with advanced stage with frequent lymph node metastases. Histologically, Xp11.2 RCC is characterized by mixed papillary/alarveolar growth pattern and tumor cells with clear and/or eosinophilic, voluminous cytoplasm. Neoplastic cells show intense nuclear immunoreactivity to TFE3, while focal immunostaining for melanocytic markers, including MART-1/Melan A in some cases, are also noted. The behavior of Xp11.2 RCC in children and young adults is considered as indolent even when diagnosed at advanced stage, including lymph node metastasis. However, Xp11.2 RCC in older patients behaves in a more aggressive fashion. Therapy includes nephrectomy with extended lymphadenectomy. Alveolar soft part sarcoma (ASPS) is a malignancy with low incidence, but with poor prognosis if misdiagnosed. Immunohistochemical assay using TFE3 antibody has been shown to be a sensitive technique for ASPS diagnosis.

**Presentation**

- **Antibody Type:** Rabbit Monoclonal
- **Clone:** EP285
- **Isotype:** IgG
- **Reactivity:** Paraffin, Frozen
- **Localization:** Nuclear
- **Control:** Tests, Adrenal, Kidney, Testicular Cancer, RCC with Xp11.2 translocation, Alveolar Soft Part Sarcoma
- **Species Reactivity:** Human

**Presentations**

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<th>Antibody Type</th>
<th>Dilution</th>
<th>Volume/Qty</th>
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<td>BSB 3231</td>
<td>Control Slides</td>
<td>Not Applicable</td>
<td>5 slides</td>
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**Precautions**

1. For professional users only. Ensure results are interpreted by a medical professional.
2. This product contains sodium azide (NaN3), a toxic chemical which may react with plumbing to form highly explosive build-ups of metal azides. Upon disposal, flush with large volumes of water to prevent sodium azide build-up.
3. Ensure proper handling procedures are used with reagent. Always wear proper laboratory equipment such as laboratory coat and gloves when handling reagents.
4. Unused solution should be disposed of according to local and federal regulations.
5. Do not ingest reagent. If reagent ingested, contact a poison control center immediately.

**Storage**

Store at 2-8 °C. 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 to ensure 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 ImmunoDNA 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 positive 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 epitope retrieval 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 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 IHC wash buffer or DI water.
9. Continue IHC staining protocol.

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 medical professional.

References