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

A synthetic peptide corresponding to the N-terminus of the human Caldesmon protein.

Summary and Explanation

Caldesmon 1, also known as CALD1, is a human gene. Caldesmon is a calmodulin-binding protein. Like Calponin, Caldesmon tonically inhibits the ATPase activity of myosin in smooth muscle. This gene encodes a Calmodulin and actin-binding protein that play an essential role in the regulation of smooth muscle and nonmuscle contraction.

Two closely-related variants of human Caldesmon have been identified. The h-Caldesmon variant (120–150 kD) is predominantly expressed in smooth muscle, whereas I-Caldesmon (70–80 kD) is found in non-muscle tissue and cells. Neither of the two variants has been detected in skeletal muscle. Anti-Caldesmon recognizes only the h-Caldesmon variant. Anti-Caldesmon antibody labels smooth muscle and tumors of smooth muscle, myofibroblastic, and myoepithelial differentiation. Anti-Caldesmon has also been used to differentiate Epithelioid Mesothelioma from Serous Papillary Carcinoma of the ovary.

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.

Presentation

Anti-Caldesmon (CALD-31) is a mouse 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.
**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.

**Recommended IHC Protocol**

<table>
<thead>
<tr>
<th>Step</th>
<th>ImmunoDetector</th>
<th>PolyDetector</th>
<th>PolyDetector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AP/HRP</td>
<td>AP/HRP</td>
<td>Plus HRP</td>
</tr>
<tr>
<td>Peroxidase/AP Blocker</td>
<td>5 min.</td>
<td>5 min.</td>
<td>5 min</td>
</tr>
<tr>
<td>Primary Antibody</td>
<td>30-60 min.</td>
<td>30-60 min.</td>
<td>30-60 min.</td>
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<tr>
<td>1st Step Detection</td>
<td>10 min.</td>
<td>30-45 min.</td>
<td>15 min.</td>
</tr>
<tr>
<td>2nd Step Detection</td>
<td>10 min.</td>
<td>Not Applicable</td>
<td>15 min.</td>
</tr>
<tr>
<td>Substrate-Chromogen</td>
<td>5-10 min.</td>
<td>5-10 min.</td>
<td>5-10 min.</td>
</tr>
<tr>
<td>Counterstain</td>
<td>Varies</td>
<td>Varies</td>
<td>Varies</td>
</tr>
</tbody>
</table>

**Performance Characteristics**

### Normal Tissues

<table>
<thead>
<tr>
<th></th>
<th>Positive (+)</th>
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<tbody>
<tr>
<td>Appendix</td>
<td>15/15 (100%)</td>
</tr>
<tr>
<td>Uterus</td>
<td>12/12 (100%)</td>
</tr>
</tbody>
</table>

### Abnormal Tissues

<table>
<thead>
<tr>
<th></th>
<th>Positive (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leiomyoma</td>
<td>19/19 (100%)</td>
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</tbody>
</table>

**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**