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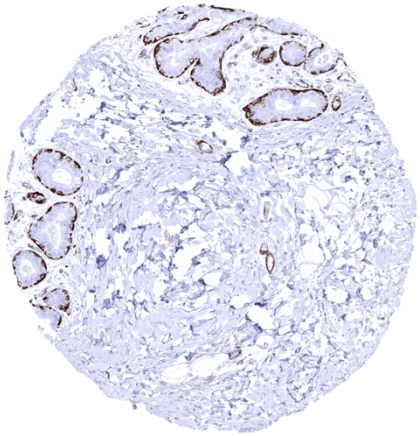
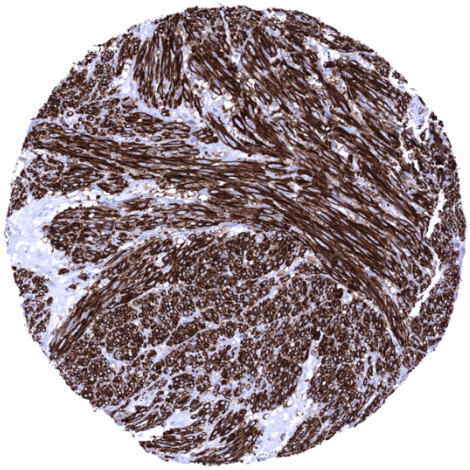
Anti- Caldesmon Antibody
MSVA-538R / Recombinant Rabbit monoclonal

Human SwissProt	Q05682
Human Gene Symbol	CALD1
Synonyms	CAD; CALD1; Caldesmon 1 Isoform 1; Caldesmon 1 Isoform 2; Caldesmon 1 Isoform 3; Caldesmon 1 Isoform 4; Caldesmon 1 Isoform 5; CDM; HCAD; LCAD; NAG22
Specificity	Caldesmon
Immunogen	Recombinant human XXX fragment
Isotype	Rabbit / IgG
Species Reactivity	Human
Localization	Cytoplasmic

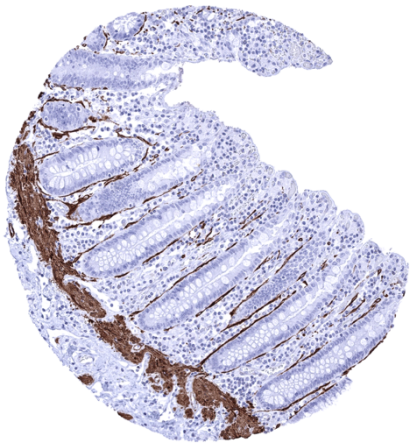
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	200ug/ml of Ab Purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available without BSA
Positive Control	Colon: A strong caldesmon staining should be seen of the muscularis mucosa and of a membrane-like layer along the basement membranes of crypts (intestinal subepithelial myofibroblasts).
Negative Control	Colon: Normal epithelial cells must not show caldesmon staining.



Caldesmon positive breast myoepithelial cells.



Leiomyosarcoma of the uterus showing intense Caldesmon staining of tumor cells.



Intense Caldesmon staining of intestinal subepithelial myofibroblasts and the muscularis mucosae in the appendix.

Biology

Caldesmon is a particularly long (75 nm) and flexible molecule that is coded by the CALD1 gene located at chromosome 7q33. Together with tropomyosin, it regulates the binding of myosin to actin. In relaxed smooth muscle the actin binding site on myosin is blocked by the caldesmon-tropomyosin complex. Stimulation of smooth muscle results in ERK-dependent phosphorylation of caldesmon and subsequent removal of the caldesmon-tropomyosin complex from the myosin binding site on actin and consequently in muscle contraction. Two alternatively spliced isoforms of caldesmon occur. The heavy isoform (h-Caldesmon) is largely restricted to differentiated contractile smooth muscle cells but the light isoform (L-Caldesmon) also exists in other cell types. The antibody MSVA-538R recognizes h-caldesmon. In normal tissues, caldesmon staining is seen in the cytoplasm and cell membrane of smooth muscles in various organs including the walls of small, medium sized, and large vessels, the aortic media and smooth muscle elements of the ovarian stroma. Myoepithelial cells and basal cells of excretion ducts in salivary glands as well as myoepithelial cells of the breast are also caldesmon positive. In the colorectum, caldesmon-h stains intestinal subepithelial myofibroblasts (ISEMFs) which form a thin membrane-like layer around the colon crypts. In tumors, caldesmon immunostaining can be seen in the vast majority of leiomyomas and leiomyosarcomas as well as in other more rare smooth muscle tumors such as myopericytomas or Glomus tumors.

Potential Research Applications

H-Caldesmon expression has been suggested to occur in non-smooth muscle tumors such as mesotheliomas, gastrointestinal stromal tumors, or granulosa cell tumors. A study analyzing caldesmon expression in a broad spectrum of tumors is desirable.

Protocol Suggestions

Dilution: 1:400. pH 7,8 is optimal. Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.

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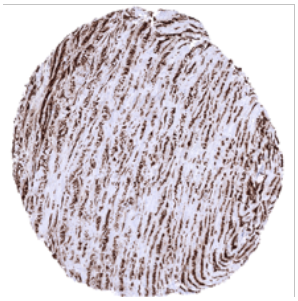
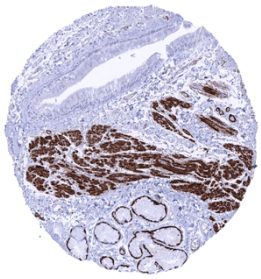
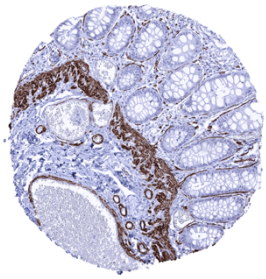


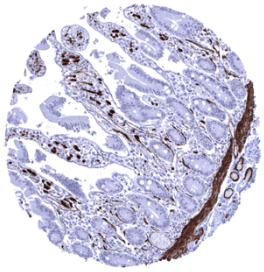
Aorta, media - Intense caldesmon-h staining of smooth muscle cells



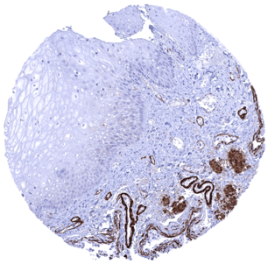
Bronchus, mucosa - Caldesmon-h staining of smooth muscle and of myoepithelial cells



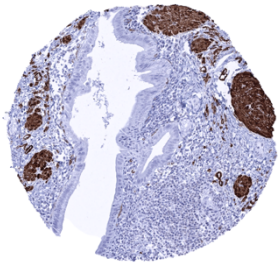
Colon descendens, mucosa - Caldesmon-h staining of intestinal subepithelial myofibroblasts (ISEMFs), muscular vessels, and of the muscularis mucosae



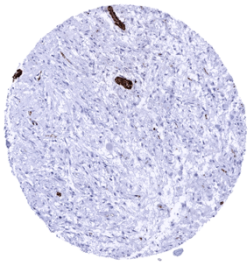
Duodenum, mucosa - Caldesmon-h staining of smooth muscle cells in small vessels, pericryptal, and of the muscularis mucosae



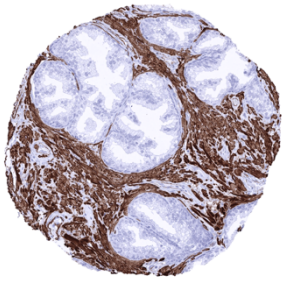
Esophagus, squamous epithelium



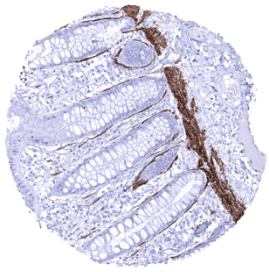
Gallbladder, epithelium



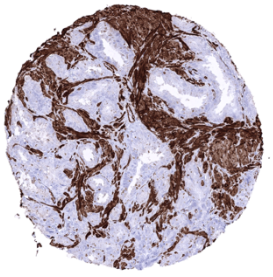
Pituitary gland, posterior lobe



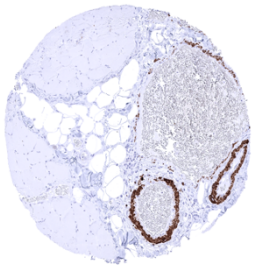
Prostate - Intense caldesmon-h positivity of smooth muscle cells of the prostatic stroma



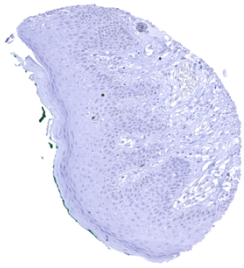
Rectum, mucosa



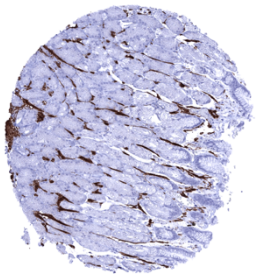
Seminal vesicle - Intense caldesmon-h positivity of stromal smooth muscle cells



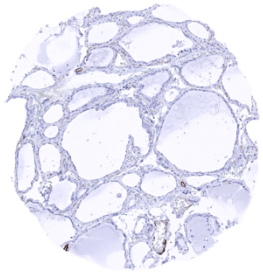
Skeletal muscle - Caldesmon-h staining of vascular smooth muscle cells



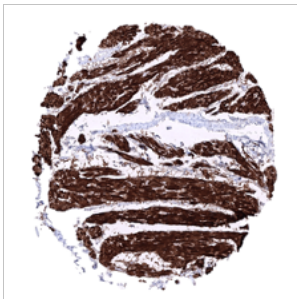
Skin



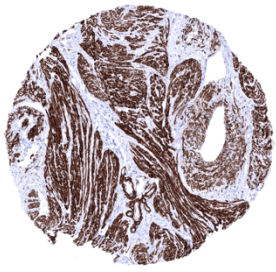
Stomach, antrum - Caldesmon-h positivity of smooth muscles around stomach glands



Thyroid gland



Urinary bladder, muscular wall - Intense caldesmon-h staining of smooth muscle cells



Uterus, myometrium - Strong caldesmon-h positivity of all smooth muscle cells