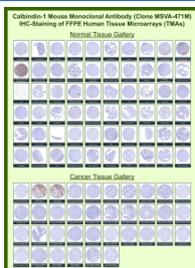


Calbindin-D28k Antibody / CALB1 [clone MSVA-471M] (V6021)

Catalog No.	Formulation	Size
V6021-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6021-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

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Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	MSVA-471M
Purity	Protein G affinity
UniProt	P05937
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1:50-1:100
Limitations	This Calbindin-D28k/CALB1 antibody is available for research use only.



Immunohistochemistry analysis of Calbindin-D28k/CALB1 antibody (clone MSVA-471M) in human tissue microarrays. Formalin-fixed, paraffin-embedded normal and cancer tissues demonstrate strong cytoplasmic HRP-DAB brown staining in cerebellar Purkinje cells and select renal tubular epithelial cells, while most other normal tissues show low or absent staining. In cancer specimens, the majority of tumor types display negative or weak staining, consistent with restricted physiologic expression patterns. The observed staining distribution aligns with publicly available expression data, supporting selective detection of CALB1 in tissues known to express Calbindin.

Description

Calbindin-D28k antibody, also known as CALB1 antibody, recognizes Calbindin-D28k, a cytoplasmic EF-hand calcium-binding protein encoded by the CALB1 gene and widely referred to as Calbindin 1. Calbindin-D28k functions as an intracellular calcium buffer that modulates calcium-dependent signaling and protects cells from calcium overload. The protein is predominantly localized in the cytoplasm and is highly expressed in cerebellar Purkinje cells, hippocampal neurons, and subsets of cortical interneurons, making Calbindin-D28k antibody a well-established marker for defined

neuronal populations.

Calbindin-D28k contains six EF-hand motifs, four of which are functional calcium-binding sites. Upon binding Ca^{2+} , the protein undergoes conformational changes that influence intracellular signaling pathways, synaptic plasticity, and neuronal excitability. Through its buffering activity, Calbindin-D28k shapes intracellular calcium transients and contributes to neuronal resilience under metabolic and excitotoxic stress. Reduced CALB1 expression has been associated with neurodegenerative disorders including Alzheimer's disease and Parkinson's disease, where disrupted calcium homeostasis contributes to neuronal vulnerability.

In addition to its central nervous system expression, Calbindin-D28k is detected in peripheral tissues such as kidney distal tubules, intestinal epithelium, and pancreatic islet cells. In these tissues, it participates in calcium transport and secretion-related functions, supporting epithelial and endocrine physiology. Developmentally, CALB1 expression is dynamically regulated, with distinct temporal and spatial patterns observed during embryogenesis and postnatal maturation. Clone rKR6 is a recombinant mouse monoclonal antibody designed to target Calbindin-D28k in research applications. Recombinant production enables defined sequence expression rather than hybridoma expansion, supporting consistent performance between lots. This Calbindin-D28k antibody can be used to detect CALB1 expression in experimental systems focused on calcium signaling, neuronal identification, and epithelial calcium transport studies.

Application Notes

1. Optimal dilution of the Calbindin-D28k/CALB1 antibody should be determined by the researcher.
2. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121°C in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37°C for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

A recombinant fragment (around amino acids 7-96) of human Calbindin 1 protein (exact sequence is proprietary) was used as the immunogen for the Calbindin-D28k/CALB1 antibody.

Storage

Calbindin-D28k/CALB1 antibody with sodium azide - store at 2 to 8°C; antibody without sodium azide - store at -20 to -80°C.