Calbindin Antibody for IHC / CALB1 Immunohistochemistry Antibody [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

Bulk quote request

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

Calbindin Antibody for IHC Tissue Microarray (TMA). Immunohistochemistry analysis of Calbindin 1 CALB1 in formalin-fixed paraffin-embedded human normal and cancer tissue microarrays using recombinant mouse monoclonal Calbindin antibody clone MSVA-471M. Tissue microarray (TMA) staining with HRP-DAB brown chromogen demonstrates strong cytoplasmic localization in cerebellar Purkinje cells and select renal tubular epithelial cells, consistent with the known tissue-restricted expression of CALB1, while most other normal tissues show minimal to absent staining. Within tumor tissue microarrays, the majority of tumor types exhibit negative or weak staining, providing clear contrast between CALB1-positive and non-expressing tissues. Evaluation across large TMA panels enables direct comparison of Calbindin expression across diverse tissue types under standardized conditions. The observed staining patterns align with reported CALB1 expression profiles in publicly available datasets including the Human Protein Atlas, supporting reliable detection in immunohistochemistry-based tissue profiling studies.

Description

Calbindin 1 (CALB1), also known as Calbindin-D28k, is a calcium-binding protein involved in intracellular calcium homeostasis, neuronal excitability, and cell survival. It is highly expressed in defined neuronal populations, most notably cerebellar Purkinje cells, and in select epithelial and endocrine tissues. Calbindin Antibody for IHC enables precise detection of CALB1 expression in formalin-fixed, paraffin-embedded (FFPE) tissues, supporting detailed evaluation of cell-type specific differentiation and lineage identity in histological sections.

In immunohistochemistry, Calbindin antibody, also referred to as CALB1 antibody or Calbindin-D28k antibody, produces strong and well-defined cytoplasmic staining in cells with active calcium-buffering function. In normal tissue microarrays (TMAs), robust staining is consistently observed in cerebellar Purkinje neurons and other neuronal subsets, with additional signal in renal tubular epithelium and selected endocrine compartments. The use of large-scale FFPE tissue microarrays highlights the reproducibility of Calbindin staining across diverse tissue types under uniform conditions, enabling reliable cross-tissue comparison and interpretation.

Calbindin expression has significant diagnostic value in tumor pathology, where it is used as a marker to aid in tumor classification and differential diagnosis. In cancer tissue microarrays, Calbindin-positive staining is frequently observed in mesothelioma, adrenal cortical tumors, and selected neuroendocrine and ovarian neoplasms. These staining patterns provide clear contrast against most non-expressing epithelial malignancies, which typically show minimal to absent signal. The ability to identify Calbindin-positive tumor populations in TMA format supports its use in high-throughput diagnostic and biomarker evaluation studies.

Immunohistochemical analysis using Calbindin Antibody for IHC benefits from strong signal-to-background characteristics, with distinct cytoplasmic localization and minimal non-specific staining in negative tissues. Across FFPE TMAs, this results in clean visualization of positive cell populations and consistent staining intensity across cores, which is critical for accurate interpretation in both research and pathology settings. The standardized nature of tissue microarray analysis further reinforces the reliability of observed staining patterns across normal and malignant samples.

Functionally, Calbindin plays a protective role in calcium signaling by buffering intracellular calcium levels and preventing calcium-mediated cytotoxicity. Its expression is closely tied to cellular differentiation status and physiological function, particularly in neuronal systems. Altered Calbindin expression has been reported in neurological disease and tumorigenesis, further supporting its relevance as a marker in tissue-based studies.

Overall, Calbindin Antibody is well suited for immunohistochemistry applications requiring consistent, high-contrast cytoplasmic staining across FFPE tissue microarrays. Its reproducible staining patterns, diagnostic relevance, and strong performance in TMA-based analysis make it a valuable tool for studying neuronal populations, epithelial differentiation, and tumor classification.

This antibody is also part of a broader collection of IHC antibodies validated by tissue microarray analysis, supporting consistent staining across normal and cancer tissues.

Application Notes

1. Optimal dilution of the Calbindin Antibody for IHC / CALB1 Immunohistochemistry 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 121oC in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37oC 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/CALB1 antibody.

Storage

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

Alternate Names

Calbindin antibody, CALB1 antibody, Calbindin 1 antibody, D28k antibody, Calbindin IHC antibody