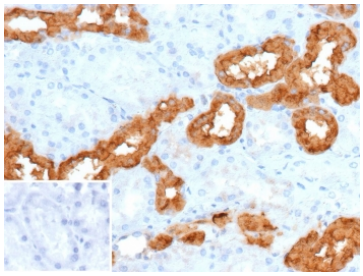
CALB1 Antibody / Calbindin [clone rKR6] (V5810)

Catalog No.	Formulation	Size
V5810-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V5810-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V5810SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

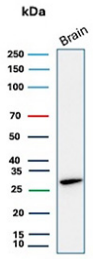
Recombinant MOUSE MONOCLONAL

Bulk quote request

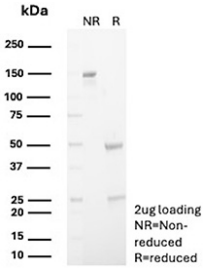
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	rKR6
Purity	Protein G affinity
UniProt	P05937
Localization	Nucleus, Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml Western Blot : 2-4ug/ml
Limitations	This CALB1 antibody is available for research use only.



Immunohistochemistry analysis of CALB1 / Calbindin antibody (clone rKR6) in human tonsil tissue. Formalin-fixed, paraffin-embedded human tonsil shows cytoplasmic HRP-DAB brown staining in subsets of lymphoid and stromal cells, consistent with Calbindin expression, while surrounding cells remain largely negative. Nuclear counterstain highlights tissue architecture. The inset shows PBS used in place of primary antibody as a negative control, demonstrating absence of specific staining. Heat-induced epitope retrieval was performed by boiling sections in pH 9 10 mM Tris with 1 mM EDTA for 20 minutes followed by cooling prior to staining.



Western blot analysis of CALB1 / Calbindin antibody (clone rKR6) in human brain tissue lysate. A distinct band is observed at approximately 28 kDa, consistent with the predicted molecular weight of Calbindin-D28k. The result supports detection of endogenous CALB1 protein in human brain under reducing conditions.



SDS-PAGE Analysis of Purified Calbindin / CALB1 antibody (rKR6). Confirmation of Purity and Integrity of Antibody.

Description

CALB1 antibody, also known as Calbindin antibody, recognizes Calbindin, a calcium-binding protein encoded by the CALB1 gene and commonly referred to as Calbindin-D28k in the literature. Calbindin belongs to the EF-hand calcium-binding protein family and functions as an intracellular calcium buffer that modulates calcium signaling dynamics in excitable and secretory cells. The protein is predominantly localized to the cytoplasm, where it binds calcium ions through multiple EF-hand domains, thereby regulating intracellular calcium homeostasis and protecting cells from calcium-mediated cytotoxicity.

Calbindin is highly expressed in specific neuronal populations, particularly in cerebellar Purkinje cells, cortical interneurons, and hippocampal neurons. It is also detected in endocrine tissues, including pancreatic islets and certain epithelial cell populations in the kidney and intestine. In these contexts, Calbindin contributes to calcium-dependent signaling cascades that influence neurotransmission, hormone secretion, and epithelial transport processes. CALB1 antibody is widely used by researchers to investigate calcium buffering mechanisms, neuronal subtype identification, and tissue-specific expression patterns in both normal physiology and disease models.

Calbindin-D28k plays a critical role in shaping intracellular calcium transients by binding free Ca2+ and facilitating calcium diffusion within the cytosol. Through this buffering activity, Calbindin modulates synaptic plasticity, neuronal excitability, and resistance to calcium overload. In the cerebellum, its expression in Purkinje cells makes it a well-established marker for these neurons, while in the hippocampus and cortex it marks distinct interneuron subtypes. Alterations in CALB1 expression have been associated with neurodegenerative conditions, including Alzheimer's disease and Parkinson's disease, where disrupted calcium homeostasis contributes to neuronal vulnerability. In addition, changes in Calbindin levels have been reported in certain cancers and metabolic disorders, highlighting its broader biological relevance beyond the nervous system.

Structurally, Calbindin contains six EF-hand motifs, four of which are functional calcium-binding sites. The protein undergoes conformational changes upon calcium binding, enabling interactions with target proteins and influencing downstream signaling pathways. CALB1 is located on human chromosome 8q21, and its expression is developmentally regulated, with dynamic patterns observed during embryogenesis and postnatal brain maturation. Given its stable and cell type-restricted expression, CALB1 antibody serves as a reliable tool for identifying specific neuronal populations and studying calcium-dependent cellular processes. Clone KR6 is designed to recognize Calbindin in research applications and can be used to detect Calbindin expression in diverse experimental settings where calcium signaling and neuronal characterization are of interest.

Application Notes

Optimal dilution of the CALB1 antibody should be determined by the researcher.

Immunogen

A portion of amino acids 7-96 from human Calbindin protein was used as the immunogen for the CALB1 antibody.

Storage

Aliquot the CALB1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.