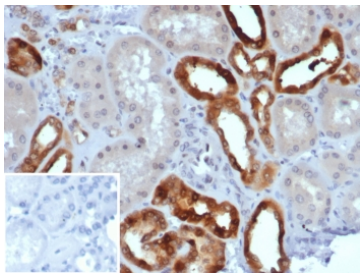
Parvalbumin Antibody / PVALB [clone PVALB/7601] (V4864)

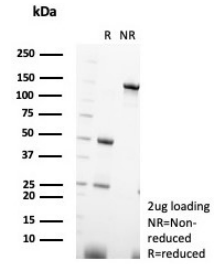
Catalog No.	Formulation	Size
V4864-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4864-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4864SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	PVALB/7601
Purity	Protein A/G affinity
UniProt	P20472
Localization	Nucleus, Cytoplasm, Cell junctions
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This Parvalbumin antibody is available for research use only.



Immunohistochemistry analysis of Parvalbumin / PVALB antibody (clone PVALB/7601) in human kidney tissue. FFPE human kidney tissue shows cytoplasmic HRP-DAB brown staining within tubular epithelial cells, consistent with Parvalbumin expression. Staining is predominantly localized to the cytoplasm of renal tubular structures, while surrounding glomerular and interstitial cells show minimal signal. The inset image represents a secondary antibody negative control in which PBS was used in place of the primary antibody and shows absence of specific staining. Heat induced epitope retrieval was performed by boiling tissue sections in 10 mM Tris with 1 mM EDTA, pH 9, for 20 minutes followed by cooling prior to immunostaining.



SDS-PAGE analysis of purified, BSA-free PVALB antibody (clone PVALB/7601) as confirmation of integrity and purity.

Description

Parvalbumin antibody, also known as PVALB antibody, recognizes a small cytosolic calcium-binding protein commonly referred to as Parvalbumin. Encoded by the human PVALB gene, Parvalbumin is a member of the EF-hand calcium-binding protein family and is predominantly localized to the cytoplasm. It is highly expressed in fast-twitch skeletal muscle fibers and in specific subsets of inhibitory GABAergic interneurons within the cerebral cortex, hippocampus, and cerebellum. In the nervous system, Parvalbumin serves as a well-established marker of fast-spiking interneurons that regulate network synchronization and inhibitory tone.

Parvalbumin functions primarily as an intracellular calcium buffer. Through its two functional EF-hand domains, it binds calcium ions with high affinity, facilitating rapid calcium sequestration following action potentials. In skeletal muscle, this buffering capacity accelerates relaxation after contraction, supporting the rapid contraction-relaxation cycles characteristic of fast-twitch fibers. In neurons, Parvalbumin shapes synaptic timing and contributes to gamma oscillations and precise inhibitory control of excitatory circuits. Expression of Parvalbumin increases during postnatal development as inhibitory interneurons mature and integrate into functional neural networks.

The PVALB gene is located on chromosome 22q12.3 in humans. Structurally, Parvalbumin contains three EF-hand motifs, of which two are functional calcium-binding sites, while the third is structurally conserved but non-functional. As a member of the parvalbumin subfamily within the broader EF-hand superfamily, it shares structural homology with other calcium-binding proteins yet demonstrates highly tissue-specific expression. Parvalbumin-positive interneurons often co-localize with proteins involved in synaptic vesicle release and cytoskeletal organization, reflecting their specialized role in fast synaptic transmission.

Altered Parvalbumin expression or interneuron density has been associated with neurological and psychiatric conditions including epilepsy, schizophrenia, and autism spectrum disorders, where impaired inhibitory signaling contributes to cortical circuit dysfunction. In muscle biology, Parvalbumin levels correlate with fiber type specification and metabolic specialization, making it useful in studies of muscle adaptation and regeneration. Clone PVALB/7601 is designed to target Parvalbumin in research applications. A Parvalbumin antibody such as clone PVALB/7601 can be used to evaluate Parvalbumin expression in neurodevelopmental, neurophysiological, and skeletal muscle studies.

Application Notes

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

Immunogen

A recombinant partial protein sequence (within amino acids 1-110) from the human protein was used as the immunogen for the Parvalbumin antibody.

Storage

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

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