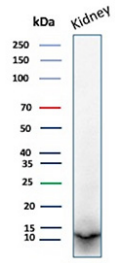
PVALB Antibody / Parvalbumin [clone r2E11] (V5981)

Catalog No.	Formulation	Size
V5981-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5981-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5981SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

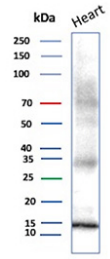
Recombinant MOUSE MONOCLONAL

Bulk quote request

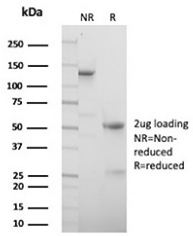
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	r2E11
UniProt	P20472
Localization	Nucleus, Cytoplasm, Cell junctions
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml Western Blot : 2-4ug/ml
Limitations	This PVALB/Parvalbumin antibody is available for research use only.



Western blot analysis of Parvalbumin / PVALB antibody (clone r2E11) in human kidney tissue lysate. A distinct immunoreactive band is observed at approximately 12 kDa, consistent with the predicted molecular weight of Parvalbumin based on its amino acid sequence. The detected band migrates in the low molecular weight range as expected for this small cytosolic EF-hand calcium-binding protein. The observed size aligns with the predicted molecular weight, with no prominent higher molecular weight non-specific bands detected under the conditions tested.



Western blot analysis of Parvalbumin / PVALB antibody (clone r2E11) in human heart tissue lysate. A clear immunoreactive band is detected at approximately 12 kDa, consistent with the predicted molecular weight of Parvalbumin based on its amino acid sequence. The band migrates in the low molecular weight range as expected for this small cytosolic EF-hand calcium-binding protein. Faint higher molecular weight background bands are visible above 25 kDa, but the predominant signal corresponds to the predicted molecular weight, supporting specific detection of Parvalbumin in human heart tissue lysate.



SDS-PAGE Analysis of Purified PVALB/Parvalbumin antibody (r2E11). Confirmation of Purity and Integrity of Antibody.

Description

PVALB antibody, also known as Parvalbumin antibody, recognizes a small cytosolic EF-hand calcium-binding protein commonly referred to as Parvalbumin. Encoded by the human PVALB gene on chromosome 22q12.3, Parvalbumin is predominantly localized to the cytoplasm and is highly expressed in fast-twitch skeletal muscle fibers and in distinct populations of inhibitory GABAergic interneurons in the cerebral cortex, hippocampus, and cerebellum. Within the central nervous system, Parvalbumin-positive interneurons are widely studied for their role in fast-spiking activity and synchronization of neuronal networks.

Parvalbumin functions as an intracellular calcium buffer. It contains three EF-hand motifs, two of which are functional calcium-binding domains that bind calcium with high affinity. By rapidly sequestering calcium following depolarization, Parvalbumin accelerates muscle relaxation in fast-twitch fibers and shapes the timing and precision of synaptic transmission in inhibitory neurons. This buffering activity contributes to gamma oscillations and tight control of excitatory signaling. During postnatal brain development, Parvalbumin expression increases as inhibitory circuits mature, making it a useful marker of interneuron differentiation and circuit refinement.

In skeletal muscle, Parvalbumin levels correlate with fiber type specification and metabolic specialization. Its expression is enriched in glycolytic, fast-contracting fibers and is lower in slow-twitch oxidative fibers. In the kidney and other peripheral tissues, Parvalbumin expression is more restricted but detectable in specific epithelial populations. Dysregulation of Parvalbumin-positive interneurons has been associated with neurological and psychiatric disorders including epilepsy, schizophrenia, and autism spectrum disorders, where altered inhibitory tone and network synchronization are implicated.

PVALB antibody is commonly used to identify Parvalbumin-expressing interneurons in brain tissue and to characterize muscle fiber composition. Recombinant monoclonal clone r2E11 is generated by recombinant expression systems to ensure consistent antibody production and batch-to-batch reproducibility. A Parvalbumin antibody such as clone r2E11 is suitable for detecting Parvalbumin expression in neurobiological, developmental, and muscle physiology research applications.

Application Notes

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

2. This PVALB/Parvalbumin antibody is recombinantly produced by expression in CHO cells.

Immunogen

Prokaryotic recombinant fusion protein corresponding to the majority of the parvalbumin alpha molecule was used as the immunogen for the PVALB/Parvalbumin antibody.

Storage

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