

parvalbumin α (N-19): sc-7447

BACKGROUND

The family of EF-hand type Ca^{2+} -binding proteins includes calbindin (previously designated vitamin D-dependent Ca^{2+} -binding protein), S-100 α and β , calgranulins A (also designated MRP8), B (also designated MRP14) and C (S-100 like proteins) and the parvalbumin family members, including parvalbumin α and parvalbumin β , also designated oncomodulin (OCM). Structurally and evolutionarily conserved, parvalbumin α and OCM proteins are distinct in expression and function. Parvalbumin α , also designated parvalbumin (PV), is most abundantly expressed in fast-contracting muscles with lower expression levels in brain and some endocrine tissues, including kidney and parathyroid. Research indicates that parvalbumin α plays a significant role in muscle relaxation. OCM was originally thought to have expression restricted to neoplastic tissues, early embryonic cells and certain tumor cell lines. Recent research shows that OCM is also expressed and secreted by macrophages where, in the retina it binds to retinal ganglion cells (RGCs) and functions to promote axon regeneration. OCM has also been detected in the auditory sensory cells of the organ of Corti in mammals. In humans, two different loci on chromosome 7 have been identified as OCM and OCM-like (LOC4951). These genes encode proteins 109 amino acids in length which share 99% sequence identity.

REFERENCES

1. Pfyffer, G.E., et al. 1987. Developmental and functional studies of parvalbumin and Calbindin D28K in hypothalamic neurons grown in serum-free medium. *J. Neurochem.* 49: 442-451.
2. Kagi, U., et al. 1988. Developmental appearance of the Ca^{2+} -binding proteins parvalbumin, Calbindin D28K, S-100 proteins and Calmodulin during testicular development in the rat. *Cell Tissue Res.* 252: 359-365.
3. Muntener, M., et al. 1995. Increase of skeletal muscle relaxation speed by direct injection of parvalbumin cDNA. *Proc. Natl. Acad. Sci. USA* 92: 6504-6508.
4. Pauls, T.L., et al. 1996. The Ca^{2+} -binding proteins parvalbumin and oncomodulin and their genes: new structural and functional findings. *Biochim. Biophys. Acta* 1306: 39-54.

CHROMOSOMAL LOCATION

Genetic locus: PVALB (human) mapping to 22q12.3; Pvalb (mouse) mapping to 15 E1.

SOURCE

parvalbumin α (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of parvalbumin α of human origin.

PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7447 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

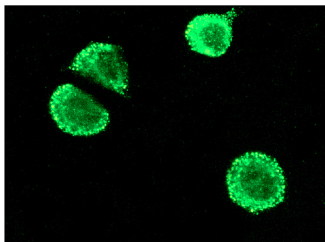
parvalbumin α (N-19) is recommended for detection of parvalbumin α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for parvalbumin α siRNA (h): sc-43350, parvalbumin α siRNA (m): sc-43351, parvalbumin α shRNA Plasmid (h): sc-43350-SH, parvalbumin α shRNA Plasmid (m): sc-43351-SH, parvalbumin α shRNA (h) Lentiviral Particles: sc-43350-V and parvalbumin α shRNA (m) Lentiviral Particles: sc-43351-V.

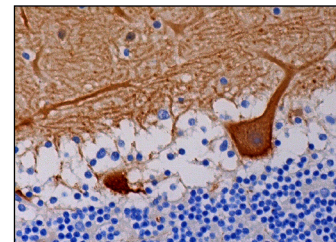
Molecular Weight of parvalbumin α : 12 kDa.

Positive Controls: ZR-75-1 cell lysate: sc-2241.

DATA



parvalbumin α (N-19): sc-7447. Immunofluorescence staining of methanol-fixed ZR-75-1 cells showing cytoplasmic localization.



parvalbumin α Antibody (N-19): sc-7447. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and membrane staining of Purkinje cells and neuropil staining in molecular layer.

SELECT PRODUCT CITATIONS

1. Young, A.N., et al. 2001. Expression profiling of renal epithelial neoplasms: a method for tumor classification and discovery of diagnostic molecular markers. *Am. J. Pathol.* 158: 1639-1651.
2. Young, A.N., et al. 2003. β -defensin 1, parvalbumin, and vimentin: a panel of diagnostic immunohistochemical markers for renal tumors derived from gene expression profiling studies using cDNA microarrays. *Am. J. Surg. Pathol.* 27: 199-205.
3. Csillik, B., et al. 2006. Calcium-binding proteins in GABAergic calyciform synapses of the reticular nucleus. *Neuroreport* 17: 575-578.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.