SANTA CRUZ BIOTECHNOLOGY, INC.

parvalbumin α (C-19): sc-7449

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes calbindin (previously designated vitamin D-dependent Ca^{2+}-binding protein), S-100α 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.

CHROMOSOMAL LOCATION

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

SOURCE

parvalbumin α (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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-7449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

parvalbumin α (C-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). parvalbumin α (C-19) is also recommended for detection of parvalbumin α in additional species, including equine, canine, bovine and porcine.

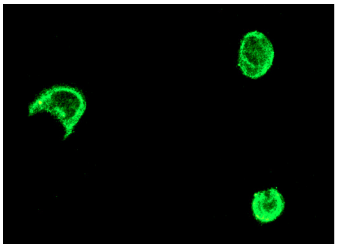
Suitable for use as control antibody for parvalbumin α siRNA (h): sc-43350, parvalbumin α siRNA (m): sc-43351, parvalbumin α shRNA Plasmid (h): sc-43350-SH, parvalbumin α shRNA Plasmid (m): sc-43351-SH, parvalbumin α shRNA (h) Lentiviral Particles: sc-43350-V and parvalbumin α shRNA (m) Lentiviral Particles: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

Molecular Weight of parvalbumin α: 12 kDa.

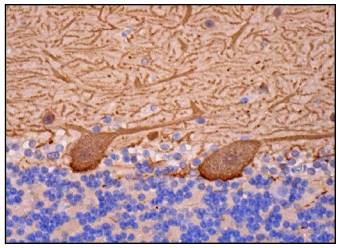
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



parvalbumin α (C-19): sc-7449. Immunofluorescence staining of methanol-fixed ZR-75-1 cells showing cytoplasmic localization.



parvalbumin α (C-19): sc-7449. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and membrane staining of Purkinje cells, cytoplasmic staining of cells in molecular layer and neuropil staining in molecular layer.

SELECT PRODUCT CITATIONS

1. Cross, S.S., et al. 2005. Expression of S100 proteins in normal human tissues and common cancers using tissue microarrays: S100A6, S100A8, S100A9 and S100A11 are all overexpressed in common cancers. Histopathology 46: 256-269.
2. Marshall, A.G., et al. 2009. Effect of gestational ethanol exposure on parvalbumin and calretinin expressing hippocampal neurons in a chick model of fetal alcohol syndrome. Alcohol 43: 147-161.
3. Miron, R.J., et al. 2011. Premature osteoblast clustering by enamel matrix proteins induces osteoblast differentiation through up-regulation of connexin 43 and N-cadherin. PLoS ONE 6: e23375.
4. Scian, R., et al. 2012. *Brucella abortus* invasion of osteoblasts inhibits bone formation. Infect. Immun. 80: 2333-2345.

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.