

OCM (N-19): sc-7446

BACKGROUND

The family of EF-hand type Ca²⁺-binding proteins includes calbindin (previously designated vitamin D-dependent Ca²⁺-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 OCML. 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 Ca²⁺-binding proteins parvalbumin, Calbindin D-28k, 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. *Prec. Natl. Acad. Sci. USA* 92: 6504-6508.
4. Pauls, T.L., et al. 1996. The Ca²⁺-binding proteins parvalbumin and oncomodulin and their genes: new structural and functional findings. *Biochim. Biophys. Acta* 1306: 39-54.

CHROMOSOMAL LOCATION

Genetic locus: OCM (human) mapping to 7p22.1, OCM2 (human) mapping to 7q21.3; Ocm (mouse) mapping to 5 G2.

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-7446 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

OCM (N-19) is recommended for detection of OCM and OCML of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

OCM (N-19) is also recommended for detection of OCM and OCML in additional species, including equine, canine and porcine.

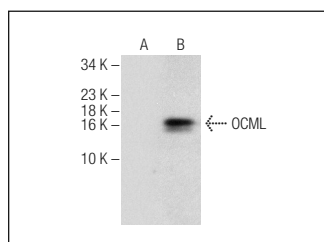
Molecular Weight of OCM: 12 kDa.

Positive Controls: OCML (h): 293T Lysate: sc-372089.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



OCM (N-19): sc-7446. Western blot analysis of OCML expression in non-transfected: sc-117752 (A) and human OCML transfected: sc-372089 (B) 293T whole cell lysates.



OCM (N-19): sc-7446. Immunofluorescence staining of methanol-fixed ZR-75-1 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Devarajan, K., et al. 2005. Circadian and light regulation of Oxytocin and parvalbumin protein levels in the ciliated ependymal layer of the third ventricle in the C57 mouse. *Neuroscience* 134: 539-547.
2. Csillik, B., et al. 2009. Upregulated expression of oncomodulin, the β isoform of parvalbumin, in perikarya and axons in the diencephalon of parvalbumin knockout mice. *Neuroscience* 165: 749-757.

STORAGE

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