



# Calbindin D9K (A-16): sc-18037

## BACKGROUND

The family of EF-hand type  $\text{Ca}^{2+}$ -binding proteins includes Calbindin (previously designated vitamin D-dependent  $\text{Ca}^{2+}$ -binding protein), Calbindin D9K, S-100  $\alpha$  and  $\beta$ , Calgranulins A (also designated MRP8), B (also designated MRP14) and C, and the parvalbumin family members, including parvalbumin  $\alpha$  and parvalbumin  $\beta$  (also designated oncomodulin). The gene encoding human Calbindin D9K is located on the X-chromosome and consists of three exons and contains four Alu repeats. Calbindin D9K protein, which has a molecular mass of 9 kDa, is present in cartilage, bone and certain teeth, such as the ameloblasts of incisors and molars. In addition, Calbindin D9K mRNA is detected in proximal small intestine, but not in human kidney, uterus or placenta (however, the protein is present in these tissues in other species). Rat Calbindin D9K binds the estrogen receptor because the gene encoding contains an estrogen response element downstream from its promoter. In contrast, the homologous human sequence differs by two essential nucleotides and does not bind the estrogen receptor, suggesting that this change suppresses gene expression in human tissues, such as uterus and possibly placenta.

## REFERENCES

1. Bruns, M.E., et al. 1977. Control of vitamin D-dependent calcium-binding protein in rat intestine by growth and fasting. *J. Biol. Chem.* 252: 4145-4150.
2. Bruns, M.E., et al. 1978. Placental calcium binding protein in rats. Apparent identity with vitamin D-dependent calcium binding protein from rat intestine. *J. Biol. Chem.* 253: 3186-3190.
3. Marche, P., et al. 1978. Intestinal and placental calcium-binding proteins in vitamin D-deprived or -supplemented rats. *Life Sci.* 23: 2555-2561.
4. Bruns, M.E., et al. 1985. Immunochemical localization of vitamin D-dependent calcium-binding protein in mouse placenta and yolk sac. *Anat. Rec.* 213: 514-517, 532-535.
5. Heizmann, C.W. 1988. Calcium-binding proteins of the EF-type. *J. Cardiovasc. Pharmacol.* 5: 30-37.
6. Mathieu, C.L., et al. 1989. Gestational changes in Calbindin D9K in rat uterus, yolk sac, and placenta: implications for maternal-fetal calcium transport and uterine muscle function. *Proc. Natl. Acad. Sci. USA* 86: 3433-3437.
7. Balmain, N. 1991. Calbindin-D9k. A vitamin-D-dependent, calcium-binding protein in mineralized tissues. *Clin. Orthop.* 265-276.
8. Jeung, E.B., et al. 1994. The human Calbindin-D9K gene. Complete structure and implications on steroid hormone regulation. *J. Mol. Biol.* 235: 1231-1238.

## CHROMOSOMAL LOCATION

Genetic locus: S100G (human) mapping to Xp22.2; S100g (mouse) mapping to X F4.

## RESEARCH USE

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

## SOURCE

Calbindin D9K (A-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Calbindin D9K of mouse origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18037 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Calbindin D9K (A-16) is recommended for detection of Calbindin D9K of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Calbindin D9K siRNA (m): sc-45865.

Molecular Weight of Calbindin D9K: 9 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.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.