SANTA CRUZ BIOTECHNOLOGY, INC.

Calbindin D9K (D-5): sc-74462

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes Calbindin (previously designated vitamin D-dependent Ca^{2+}-binding protein), Calbindin D9K, S-100 α and β, Calgranulin A (also designated MRP8), Calgranulin B (also designated MRP14) and Calgranulin C, and the Parvalbumin family members, including Parvalbumin α and Parvalbumin β (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 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 it 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.

CHROMOSOMAL LOCATION

Genetic locus: S100G (human) mapping to Xp22.2.

SOURCE

Calbindin D9K (D-5) is a mouse monoclonal antibody raised against amino acids 1-60 mapping at the N-terminus of Calbindin D9K of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Calbindin D9K (D-5) is available conjugated to agarose (sc-74462 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74462 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74462 PE), fluorescein (sc-74462 FITC), Alexa Fluor® 488 (sc-74462 AF488), Alexa Fluor® 546 (sc-74462 AF546), Alexa Fluor® 594 (sc-74462 AF594) or Alexa Fluor® 647 (sc-74462 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74462 AF680) or Alexa Fluor® 790 (sc-74462 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Calbindin D9K (D-5) is recommended for detection of Calbindin D9K of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 Calbindin D9K siRNA (h): sc-43654, Calbindin D9K shRNA Plasmid (h): sc-43654-SH and Calbindin D9K shRNA (h) Lentiviral Particles: sc-43654-V.

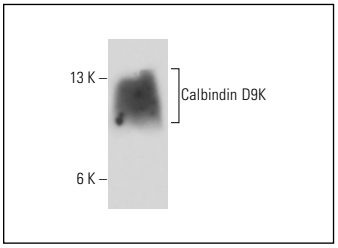
Molecular Weight of Calbindin D9K: 9 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226.

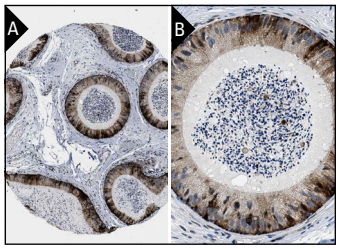
STORAGE

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

DATA



Calbindin D9K (D-5): sc-74462. Western blot analysis of pig recombinant Calbindin D9K.



Calbindin D9K (D-5): sc-74462. Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic staining of glandular cells at low (**A**) and high (**B**) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. O'Connell, D.J., et al. 2010. Integrated protein array screening and high throughput validation of 70 novel neural calmodulin-binding proteins. Mol. Cell. Proteomics 9:1118-1132.
2. Chang, H.H., et al. 2011. Intravitreal homocysteine-thiolactone injection leads to the degeneration of multiple retinal cells, including photoreceptors. Mol. Vis. 17: 1946-1956.
3. Huang, Y.F., et al. 2018. Vitamin D-binding protein enhances epithelial ovarian cancer progression by regulating the Insulin-like growth factor-1/Akt pathway and vitamin D receptor transcription. Clin. Cancer Res. 24: 3217-3228.
4. Sauter, M.M., et al. 2018. Toll-like receptors 4, 5, 6 and 7 are constitutively expressed in non-human primate retinal neurons. J. Neuroimmunol. 322: 26-35.
5. Liu, J., et al. 2020. 17β-estradiol binding to ERα promotes the progression of prolactinoma through estrogen-response element-induced CaBP-9k up-regulation. Biosci. Rep. 40: BSR20191330.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.