

Product Specification Sheet

CABP28K (Calbindin 1/CALB1/Spot35 protein/Cholecalciferol) Antibodies

Cat. # D28K12-M

Mouse Anti-Bovine D28K protein antibody # 2, ascites
FORM: Soln Lyophilized

SIZE: 100 ul

Calcium (Ca²⁺ or Ca) is the most abundant cation and it is required for many physiological activities such as bone formation and it acts as a second messenger in signal transduction. However only 1% of Ca is present in ionic form in biological fluids. Ca concentration is regulated by calcitropic hormones that act on bone, kidney, and intestine. Extracellular Ca²⁺-levels are sensed and regulated by Calcium Sensing receptor (CASR). When Ca levels are limiting then it must be taken up by active, transcellular pathways comprising (1) Ca²⁺ entry across apical membrane, (2) cytosolic transport of Ca²⁺ across the cell from apical to basolateral membrane facilitated by a family of low mol wt Calcium binding proteins (CABPs) that include vitamin D3-dependent **Ca²⁺ binding proteins (calbindin-D9k, Calbindin-28k, Calretinin, Parvalbumin, S100, calmodulin)** and finally (3) an active extrusion of Ca²⁺ through basolateral membrane mediated by **Ca²⁺-ATPase** and **Na⁺-Ca²⁺ exchangers (NCX)**. Ca²⁺ absorption in intestine and its reabsorption in kidney are carried out by **Ca²⁺ Transport (CaT) proteins, CaT-1, CaT-2 or Epithelial Ca Channel (ECAC1/ECAC2/CaT-Like (CaT-L) proteins.**

Calbindins are Ca-binding proteins belonging to the troponin C superfamily. There are two types of CaBPs: the "trigger"- and the "buffer"-CaBPs. The conformation of "trigger" type CaBPs changes upon Ca²⁺ binding and exposes regions on protein that interact with target molecules, thus altering their activity. The buffer-type CABP are thought to control the intracellular calcium concentration. **CALB28K/Calbindin 1/CALB1 (D28K/Spot35 protein or cholecalciferol**, rat 261 aa; mouse 261 aa; human 261-aa, chromosome 8q21.3-q22.1) was originally described as 27-kDa induced by vitamin D in the duodenum of chicken. In mammals, it is expressed in the kidney, pancreatic islets, and brain. In brain, its synthesis is independent of vitamin D. CABP28K contains 4 active and 2 inactive EF-hand Ca-binding domains. The gene for CABP28K is clustered in the same region as carbonic anhydrase. The neurons in the brains of patients with Huntington disease are CAB28K depleted. Calbindin-D-28K is found predominantly in subpopulations of central and peripheral nervous system neurons, and in certain epithelial cells involved in Ca²⁺ transport such as distal tubular cells and cortical collecting tubules of the kidney, and in enteric neuroendocrine cells.

Source of Antigen and Antibodies

Antigen	Purified bovine D28K protein
Ab Host/type	Balb/c mouse . Splenocytes were fused with Sp2/0 myeloma cells. Resulting clone (designated D28K, isotype IgG1), selected for reactivity with D28K, was expanded into mice as ascites .
2-Ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Ascites (unpurified, undiluted)

100 ul/vial solution lyophilized powder
contains 0.05% azide **Reconstitute** 100 ul PBS

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting (1:1K-5K for ascites using Chemiluminescence technique). D28K is ~28 kDa.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

The D28K12-M reacts with human, bovine, goat, sheep, porcine, rabbit, dog, cat, g. pig, rat and mouse D28K protein. Antibody reactivity in various other species is not known. The antibody does not react with other calcium binding proteins or EF-hand family proteins.

General References: (1) Nordquist DT et al (1988) J. Neurochem. 8, 4780; Takeda T et al (1994) BBRC 204, 889; Wood TL et al (1988) DNA 7, 585; Parmentier M et al (1987) Eur. J. Biochem. 170, 207; Gross MD et al (1988) JBC 263, 14426; Lomri N et al (1989) Gene 80, 87-98

**This product is for In vitro research use only.*

Related materials available from ADI

Antibodies: CaT-1/2; Calbindins, S100, Parvalbumin, Calretinin

D28K12-M

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