ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

CABP9K (CALB3 or CABP1) Antibodies

Cat. # D9K12-S	Rabbit Anti-Human D9K antiserum # 2	**SIZE**: 100 ul
Cat. # D9K12-A	Rabbit Anti-Human D9K IgG # 2 (aff pure)	**SIZE**: 100 ug
Cat. # D9K12-P	Human D9K Control/blocking peptide # 2	**SIZE**: 100 ug
Cat. # D9K12-C	Purified, Porcine D9K protein control for WB	**SIZE**: 100 ul

Calcium (Ca+2 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 Ca+-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) Ca^{++} entry across apical membrane, (2) cytosolic transport of Ca^{++} across the cell form apical to basolateral membrane facilitated by a family of low mol wt Calcium binding proteins (CABPs) that include vitamin D3-dependent **Ca^{++} binding proteins (calbindin-D9k, Calbindin-28k, Calretinin, Parvalbumin, S100, calmodulin)** and finally (3) an active extrusion of Ca^{++} through basolateral membrane mediated by **Ca^{++}-ATPase** and **Na^{+}-Ca^{++} exchangers (NCX).** Ca^{++} absorption in intestine and its reabsorption in kidney are carried out by Ca^{++} 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. **CABP9K (CALB3 or CABP1**; mouse, rat, and human 79 aa; chromosome Xp; ~9 kDa) is a cytosolic Ca-binding protein initially found in rat pancreas. It is also expressed in intestine, placenta, uterus and kidney. Its expression is controlled by vitamin D and sex hormone in a tissue specific manner. In keeping with its role in Ca-transport, its expression is highest in duodenal villus enterocytes. It is further shown that CABP9K is only expressed in differentiated enterocytes. CABP9K gene also contains Cdx2-homeoprotein binding sites, and that Cdx2 may play a crucial role in CABP9K transcription.

Source of Antigen and Antibodies

Antigen	A 14-aa peptide sequence (designated **D9K12-P or control peptide**), Epitope location ~ N-terminal Ca-binding domain of **Human D9K** (1) cat # **D9K12-P**
Ab Host/type	Rabbit, polyclonal unpurified antiserum cat # **D9K12-S** Aff pure IgG1 (**cat # D9K12-A**) purified over the antigen column
2-ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control
+ve Control	**Cat. # D9K12-C** Purified, Porcine D9K protein control for WB

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at 20°C and powder at 4°C or -20°C..

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

Stability: 6-12 months at –20°C or below.
Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique). D9K is ~9 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 D9K12-P peptide is 78% conserved in mouse, rat, bovine, and pig D9K. No significant sequence homology of D9K12-P is seen with D28K or other CABPs. Antibody reactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: the web site).

General References: (1) Perret C et al (1988) Eur. J. Biochem. 172, 43-51; Howard A et al (1992) BBRC 185, 663-669; Jeung EB et al (1992) FEBS Lett. 307, 224-228; Jeung EB et al (1994) J. Mol. Biol. 235, 1231-1238; Colnot S et al (1998) JBC 273, 31939-31946;

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

Related materials available from ADI

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

D9K12- S-A-P-C 71216S

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