

Product Specification Sheet

**CABP9K (D9K/CALB3 or CABP1) Antibodies**

Cat. # D9K11-S	Rabbit Anti-Mouse D9K antiserum # 1	<b>SIZE:</b> 100 ul
Cat. # D9K11-A	Rabbit Anti-Mouse D9K IgG # 1 (aff pure)	<b>SIZE:</b> 100 ug
Cat. # D9K11-P	Mouse D9K Control/blocking peptide # 1	<b>SIZE:</b> 100 ug

Calcium (Ca<sup>2+</sup> 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<sup>2+</sup>-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<sup>2+</sup> entry across apical membrane, (2) cytosolic transport of Ca<sup>2+</sup> 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 **Ca<sup>2+</sup> binding proteins (calbindin-D9k, Calbindin-28k, Calretinin, Parvalbumin, S100, calmodulin)** and finally (3) an active extrusion of Ca<sup>2+</sup> through basolateral membrane mediated by **Ca<sup>2+</sup>-ATPase** and **Na<sup>+</sup>-Ca<sup>2+</sup> exchangers (NCX)**. Ca<sup>2+</sup> absorption in intestine and its reabsorption in kidney are carried out by **Ca<sup>2+</sup> 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 Ca<sup>2+</sup> 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**

<b>Antigen</b>	A 16-aa peptide sequence (designated <b>D9K11-P or control peptide</b> ), Epitope location ~N-terminal Ca-binding domain of <b>mouse D9K (1)</b>
<b>Ab Host/type</b>	Rabbit Polyclonal Unpurified antiserum <b>Cat. # D9K11-S</b> , and IgG purified over the antigen column <b>Cat # D9K11-A</b>
<b>2-ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

**Antiserum / Purified Antibodies/Peptide Control**  
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 1 mg/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 D9K11-P peptide is 82% conserved in rat, 75% in pig, 62% in bovine, and 56% in human D9K. No significant sequence homology of D9K11-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

D9K11-S-A-P 71216S

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