ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Life Technologies™ Your Molecular & Cell Technology Partner

Calcineurin Antibodies

Cat. # CALN11-A	Rabbit Anti-Bovine Calcineurin IgG #1 (aff pure)	**SIZE**: 100 ug
Cat. # CALN11-C	Purified Bovine Calcineurin protein WB +Ve control	**SIZE**: 100 ul

Calcineurin is a Ca/calmodulin-dependent serine-threonine phosphatase that plays an important role in transducing Ca-dependent signals in a variety of cell types. Calcineurin has also been shown to have a profound influence on the properties of striated muscle cells, including cardiac muscle. A novel family of striated muscle-specific calcineurin-interacting proteins called **calsarcins** or **myozenins** has been identified that interact and colocalizes with the Z-disc protein alpha-actinin. Two isoform of calsarcins, **Calsarcin-1** and **Calsarcin-2**, with specific expression pattern have been identified in human, rat and mouse. Calsarcins tether calcineurin to the sarcomere of cardiac and skeletal muscle. Besides calcineurin and □-actinin, calsarcins interact with other Z-disc proteins □-filamin, telethonin and TCAP. Because calcineurin responds to sustained, low amplitude calcium signals, calsarcins may serve to localize calcineurin in the vicinity of unique intracellular pool, where it can interact with specific upstream activators or downstream substrates. Therefore, calsarcins may play an important role in modulating the function and substrate specificity of calcineurin in striated muscle cells.

Calcineurin (also known as CALNA or CALNA1, Calcineurin-alpha, Protein phosphatase 2B or PP2B) is the Ca+/calmodulin-regulated protein phosphatase, first detected in skeletal muscle and brain, has been found in from yeast to mammals. It is a heterodimers of two subunits: **Calcineurin B/CnB**, the 19-kda Ca+-binding and regulatory subunit, and **Calcineurin A/CnA,** ~61-kda catalytic subunit that is highly homologous with PP1 and PP2A. . Multiple catalytic subunits of calcineurin are derived from at least 2 structural genes, type 1 (calcineurin A-alpha) and type 2 (calcineurin A-beta, CALNA2), each of which can produce additional alternatively spliced transcripts. CnB belongs to the family of EF-hand Ca-binding proteins. Both CnB and calmodulin are important for the activation of the phosphatase activity of calcineurin. Calcineurin controls the production of many cytokines including IL-2, TNF-alpha in the T-cell activation pathway. Calcineurin mediated dephosphorylation of the nuclear factor of activated T-cells (NF-AT) is required for NF-AT activation, nuclear translocation, and subsequent gene expression in T-cells. The immunosuppressive drugs, such as FK506, inhibit activation of NF-AT by calcineurin.

Source of Antigen and Antibodies

Antigen	Calcineurin was purified from **bovine brain** (contains both A and B subunits)
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (**cat # CALN11-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

Bovine brain calcineurin (A+B subunits) was purified >95%. For **western blot +ve control (Cat # CALN11-C)**, it is supplied in SDS-PAGE sample buffer (reduced). Load ~10 ul/lane to visualize with antibodies (Cat # CALN11-A). Store at –20oC or below in suitable aliquots. Avoid repeated freeing, thawing, and heating.
SDS may crystallize in cold conditions. It should redissolve by warming before taking it from the stock. It should be heated once prior to loading on gels. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the **CALN11**-C solution prior to heating and loading on gels. This preparation is not biologically active. It is not suitable for ELISA or other applications where native protein is required. This preparation is intended for qualitative purpose and not to serve as standard of known concentration. Do not freeze, thaw, or hear repeatedly

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in Buffer: 100 mM Tris, pH 7.5, 0.5% BSA, 0.05% azide
Reconstitute powder in PBS at 1 mg/ml

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 (1-10 ug/ml for affinity pure using Chemiluminescence technique). A subunit is ~61 kDa and B subunit ~19 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 antibody is expected to react with mouse, rat, and human calcineurin A and B subunits. Antibody reactivity in various species is not known. The use of purified bovine brain calcineurin (Cat # CALN11-C) is recommended for the identification of appropriate bands in Western. We recommend the use of cat # CALNA12-A and CALNB21-S for the A and B subunits specific identification of calcineurin.

General References: (1) Giri; P et al (1991) BBRC 181, 252-258; Guerinin D et al (1989) PNAS 86, 9183-9187; Maleeret G et al (2001) Cell 104, 675-686; Rothermel BA et al (2001) PNAS 98, 3328-3333; Weitz DP et al (2002) Ivest. Opthal. Vis. Sci. 43, 15-21

*This product is for In vitro research use only.

Related materials available from ADI
Antibodies: CaT-1/2; Calbindins, S100, Calretinin, Calsarcins

CALNA11-A 71216S

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