10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody

Catalog # AGI2414

Specification

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC**
Primary Accession	Q14012
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 41 kDa, observed, 41 kDa KDa**
Gene Name	**CAMK1**
Aliases	**CAMK1; Calcium/Calmodulin Dependent Protein Kinase I 2; CaMKI-Alpha; CaMKI ; Calcium/Calmodulin-Dependent Protein Kinase Type 1; CaM Kinase I Alpha; EC 2.7.11.17; CaM-KI; CaM Kinase I; EC 2.7.11**
Immunogen	**A synthesized peptide derived from human CaMKI**

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**8536**

Other Names

Calcium/calmodulin-dependent protein kinase type 1, 2.7.11.17, CaM kinase I, CaM-KI, CaM kinase I alpha, CaMKI-alpha, CAMK1

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody - Protein Information

Name CAMK1

Function

Calcium/calmodulin-dependent protein kinase that operates in the calcium-triggered CaMKK-CaMK1 signaling cascade and, upon calcium influx, regulates transcription activators activity, cell cycle, hormone production, cell differentiation, actin filament organization and neurite outgrowth. Recognizes the substrate consensus sequence [MVLIF]-x-R-x(2)-[ST]-x(3)-[MVLIF]. Regulates axonal extension and growth cone motility in hippocampal and cerebellar nerve cells. Upon NMDA receptor-mediated Ca(2+) elevation, promotes dendritic growth in hippocampal neurons and is essential in synapses for full long-term potentiation (LTP) and ERK2-dependent translational activation. Downstream of NMDA receptors, promotes the formation of spines and synapses in hippocampal neurons by phosphorylating ARHGEF7/BETAPIX on 'Ser-694', which results in the enhancement of ARHGEF7 activity and activation of RAC1. Promotes neuronal differentiation and neurite outgrowth by activation and phosphorylation of MARK2 on 'Ser-91', 'Ser-92', 'Ser-93' and 'Ser-294'. Promotes nuclear export of HDAC5 and binding to 14-3-3 by phosphorylation of 'Ser-259' and 'Ser-498' in the regulation of muscle cell differentiation. Regulates NUMB-mediated endocytosis by phosphorylation of NUMB on 'Ser-276' and 'Ser-295'. Involved in the regulation of basal and estrogen-stimulated migration of medulloblastoma cells

through ARHGEF7/BETAPIX phosphorylation (By similarity). Is required for proper activation of cyclin-D1/CDK4 complex during G1 progression in diploid fibroblasts. Plays a role in K(+) and ANG2-mediated regulation of the aldosterone synthase (CYP11B2) to produce aldosterone in the adrenal cortex. Phosphorylates EIF4G3/eIF4GII. In vitro phosphorylates CREB1, ATF1, CFTR, MYL9 and SYN1/synapsin I.

Cellular Location
Cytoplasm. Nucleus. Note=Predominantly cytoplasmic.

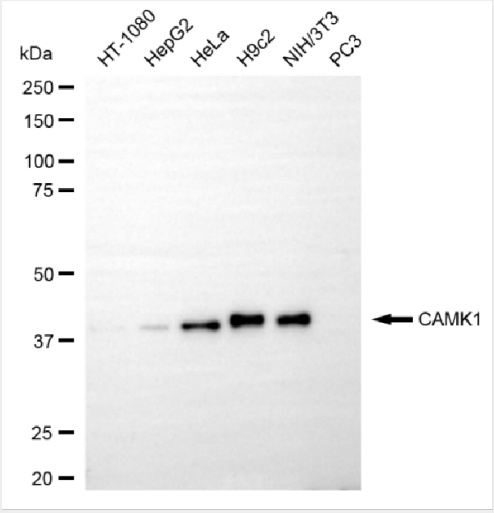
Tissue Location
Widely expressed. Expressed in cells of the zona glomerulosa of the adrenal cortex.

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

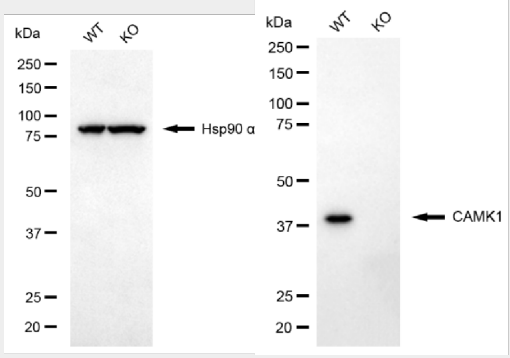
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KO Validated Anti-CAMK1 Rabbit Monoclonal Antibody - Images

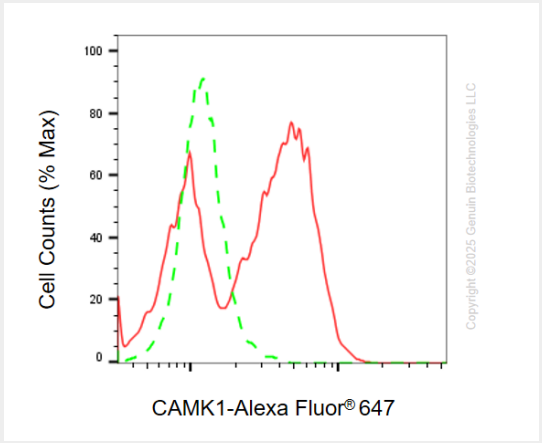


Western blotting analysis using anti-CAMK1 antibody (Cat#AGI2414). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-CAMK1 antibody (Cat#AGI2414, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



Western blotting analysis using anti-CAMK1 antibody (Cat#AGI2414). CAMK1 expression in wild-type (WT) and CAMK1 knockout (KO) 293T cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-CAMK1 antibody (Cat#AGI2414, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of CAMK1 expression in HeLa cells using anti-CAMK1 antibody (Cat# AGI2414, 1:2,000). Green, isotype control; red, CAMK1.