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Anti-CaM Kinase IV (RABBIT) Antibody
CaM Kinase IV Antibody
Catalog # ASR3708

Specification

Anti-CaM Kinase IV (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Rat, Human, Mouse**
Clonality	**Polyclonal**
Application	**WB, IHC, E, I, LCI**
Application Note	**This antiserum has been tested for use in ELISA, IHC, and western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band ~ 52 kDa in size corresponding to CaM Kinase IV by western blotting in the appropriate cell lysate or extract.**
Physical State	**Lyophilized**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This antiserum was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an internal region near amino acids 300-325 of Human CaM Kinase IV protein.**
Reconstitution Volume	**100 µL**
Reconstitution Buffer	**Restore with deionized water (or equivalent)**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-CaM Kinase IV (RABBIT) Antibody - Additional Information

Gene ID 814

Other Names
814

Purity
This antiserum is directed against human CaM Kinase IV protein. The product was delipidated, defibrinated followed by buffering and clarification. A BLAST analysis was used to suggest reactivity with this protein from human, mouse, and rat based on 100% homology for the immunogen sequence. Cross reactivity with CaM Kinase IV homologues from other sources has not been determined.

Storage Condition
Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after

standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-CaM Kinase IV (RABBIT) Antibody - Protein Information

Name CAMK4

Synonyms CAMK, CAMK-GR, CAMKIV

Function
Calcium/calmodulin-dependent protein kinase that operates in the calcium-triggered CaMKK-CaMK4 signaling cascade and regulates, mainly by phosphorylation, the activity of several transcription activators, such as CREB1, MEF2D, JUN and RORA, which play pivotal roles in immune response, inflammation, and memory consolidation. In the thymus, regulates the CD4(+)/CD8(+) double positive thymocytes selection threshold during T-cell ontogeny. In CD4 memory T-cells, is required to link T-cell antigen receptor (TCR) signaling to the production of IL2, IFNG and IL4 (through the regulation of CREB and MEF2). Regulates the differentiation and survival phases of osteoclasts and dendritic cells (DCs). Mediates DCs survival by linking TLR4 and the regulation of temporal expression of BCL2. Phosphorylates the transcription activator CREB1 on 'Ser-133' in hippocampal neuron nuclei and contribute to memory consolidation and long term potentiation (LTP) in the hippocampus. Can activate the MAP kinases MAPK1/ERK2, MAPK8/JNK1 and MAPK14/p38 and stimulate transcription through the phosphorylation of ELK1 and ATF2. Can also phosphorylate in vitro CREBBP, PRM2, MEF2A and STMN1/OP18.

Cellular Location
Cytoplasm. Nucleus. Note=Localized in hippocampal neuron nuclei. In spermatids, associated with chromatin and nuclear matrix (By similarity).

Tissue Location
Expressed in brain, thymus, CD4 T-cells, testis and epithelial ovarian cancer tissue.

Anti-CaM Kinase IV (RABBIT) 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

Anti-CaM Kinase IV (RABBIT) Antibody - Images

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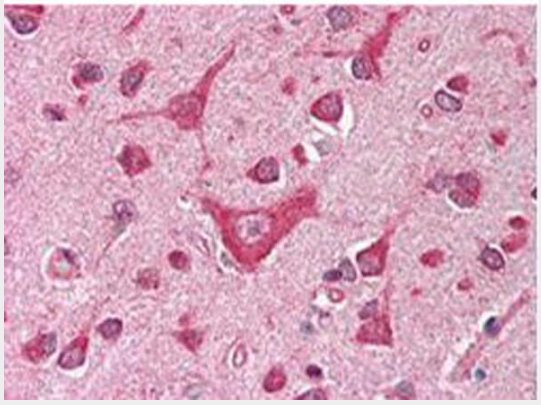

Immunohistochemistry of Anti-CAMK4 antibody. Tissue: human brain cortex was formalin fixed and paraffin embedded. No pre-treatment of sample was required. Primary Antibody: Anti-CaM Kinase IV was diluted 1:500. The image shows the localization of antibody as the precipitated red signal, with a hematoxylin purple nuclear counter stain.

Anti-CaM Kinase IV (RABBIT) Antibody - Background

CaM Kinase IV (also known as CAM kinase-GR and CaMK IV) is a calcium/ calmodulin-dependent protein kinase belonging to a proposed calcium-triggered signaling cascade. This kinase may be involved in the transcriptional regulation of microtubule dynamics. In vitro, CaMK IV phosphorylates CREB1, CREBBP, PRM2, MEF2A, MEF2D and STMN1/OP18. CaMK IV may also be involved in spermatogenesis and may play a role in the consolidation/ retention of hippocampus-dependent long-term memory. CaMK IV must be phosphorylated to be maximally active and is phosphorylated by CAMKK1 or CAMKK2. In addition autophosphorylation of the N-terminus is required for full activation. Autophosphorylation of Ser-336 allows the kinase to switch to a Ca(2+)/calmodulin-independent state. Most likely the kinase is inactivated by the serine/ threonine protein phosphatase 2A. CaMK IV is a monomer that is located within the cytoplasm and nucleus and substantial localization occurs in certain neuronal nuclei. In spermatids CaMK IV is associated with chromatin and the nuclear matrix. CaMK IV is also specifically expressed in epithelial ovarian cancer tissue.