PRODUCT INFORMATION

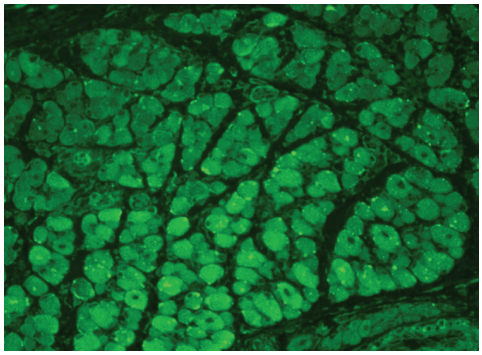
CaMKII (Phospho-Thr^{286}/Thr^{287}) Monoclonal Antibody (Clone 22B1)

Item No. 10011438

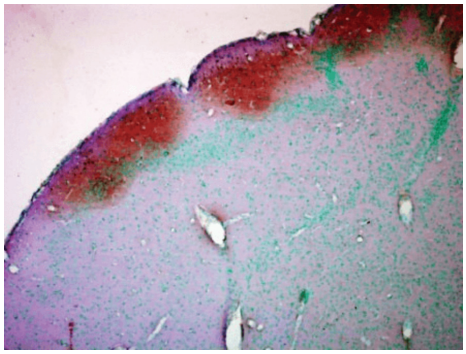
Overview and Properties

Contents:	This vial contains 25 or 100 µg of protein G-affinity purified monoclonal antibody.
Synonym:	Calcium/Calmodulin-dependent Protein Kinase II
Immunogen:	Synthetic peptide
Cross Reactivity:	(+) Human, mouse, rat; other species not tested
Uniprot No.:	P11275
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, pH. 7.4, with 50% glycerol and 0.09% sodium azide
Concentration:	1 mg/ml
Clone:	22B1
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Immunocytochemistry (ICC), Immunofluorescence (IF), Immunohistochemistry (IHC), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution is 1:1,000 for ICC, IF, and WB, and 1:100 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Immunohistochemical labeling of mouse backskin tissue. Tissue was fixed with Bouin's Fixative and embedded in paraffin and incubated with CaMKII (Phospho-Thr^{286}/Thr^{287}) Monoclonal Antibody (Clone 22B1) at a 1:100 dilution for one hour at room temperature. Then tissues were labeled with FITC Goat Anti-Mouse (green) at 1:50 for one hour at room temperature. Positive staining was localized to muscle, hair follicle, epidermis.



Immunohistochemical staining of formailin-fixed human colon carcinoma tissue using CaMKII (Phospho-Thr^{286}/Thr^{287}) Monoclonal Antibody (Clone 22B1) at a 1:5,000 dilution for 12 hours at 4°C. Following incubation with Biotin Goat Anti-Mouse at a dilution of 1:2,000 for one hour at room temperature and counterstained with 200 µl Mayer Hematoxylin (purple/blue) nuclear stain for two minutes at room temperature.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

CaMKII is an important member of the calcium/calmodulin-activated protein kinase family, functioning in neural synaptic stimulation and T-cell receptor signaling.[1,2] CaMKII is expressed in many different tissues but is specifically found in the neurons of the forebrain and its mRNA is found within the dendrites and the soma of the neuron. The CaMKII that is found in the neurons consists of two subunits of 52 (termed α genes) and 60 kDa (β genes). CaMKII has catalytic and regulatory domains, as well as an ATP-binding domain, and a consensus phosphorylation site.[3-7] The binding of Ca2+/calmodulin to its regulatory domain releases its auto inhibitory effect and activates the kinase.[8] This kinase activation results in autophosphorylation at threonine 286 (Thr^{286}).[8] The threonine phosphorylation state of CaMKII can be regulated through protein phosphatase 1 (PP1)/protein kinase A (PKA). Whereas PP1 dephosphorylates phospho-CaMKII at Thr^{286}, PKA prevents this dephosphorylation.[9] Autophosphorylation also enables CaMKII to attain an enhanced affinity for NMDA receptors in postsynaptic densities.[10-12]

References

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