Mouse anti-Rat, Human CaMKII Monoclonal Antibody | anti-Camk2a antibody

CaMKII Antibody: Biotin

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA102945	**Mouse**	**Rat, Human**	**Western Blot, Immunoprecipitation, Immunofluorescence, ELISA**

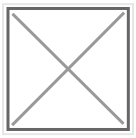
PRODUCT SYNONYMS

CaMKII; Monoclonal Antibody; CaMKII Antibody: Biotin; CamK2; CamK2A; CamK2B; CamK2D; CamK2G; CAMKA; anti-Camk2a antibody

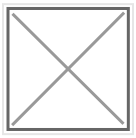
PRODUCT SPECIFICATIONS

Host	Mouse
Reactivity	Rat, Human
Clonality	Monoclonal
Isotype	IgG1 Kappa
Clone Number	22B1
Form/Format	Protein G Purified
Concentration	1mg/mL (varies by lot)
Sequence Length	478
Applicable Applications for anti-Camk2a antibody	WB (Western Blot), IP (Immunoprecipitation), IF (Immunofluorescence), ELISA
Conjugate	Biotin
Storage Buffer	PBS pH7.4, 50% glycerol, 0.09% sodium azide
Preparation and Storage	-20 degree C

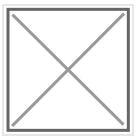
IMAGES



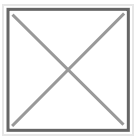
WB (Western Blot)
Western Blot analysis of Mouse Ventricle lysates showing detection of CaMKII protein using Mouse Anti-CaMKII Monoclonal Antibody, Clone 22B1. Primary Antibody: Mouse Anti-CaMKII Monoclonal Antibody at 1:1000. Analysis of CaMKII and NFAT phosphorylation in ventricles of 14 day old mice over-expressing CaMK.



IHC (Immunohistochemisry)
Immunohistochemistry analysis using Mouse Anti-CaMKII Monoclonal Antibody, Clone 22B1. Tissue: colon carcinoma. Species: Human. Fixation: Formalin. Primary Antibody: Mouse Anti-CaMKII Monoclonal Antibody at 1:5000 for 12 hours at 4 degree C. Secondary Antibody: Biotin Goat Anti-Mouse at 1:2000 for 1 hour at RT. Counterstain: Mayer Hematoxylin (purple/blue) nuclear stain at 200 ul for 2 minutes at RT. Magnification: 40x.



IHC (Immunohiostchemistry)
Immunohistochemistry analysis using Mouse Anti-CaMKII Monoclonal Antibody, Clone 22B1. Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-CaMKII Monoclonal Antibody at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Muscle, hair follicle, epidermis. Backskin obtained from transgenic mice.



ICC (Immunocytochemistry)
Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-CaMKII Monoclonal Antibody, Clone 22B1. Tissue: dissociated hippocampal neurons. Species: Rat. Fixation: Cold 4% paraformaldehyde/0.2% glutaraldehyde in 0.1M sodium phosphate buffer. Primary Antibody: Mouse Anti-CaMKII Monoclonal Antibody at 1:1000 for 12 hours at 4 degree C. Secondary Antibody: FITC Goat Anti-Mouse IgG (green) at 1:50 for 30 minutes at RT. Magnification: 10X. Courtesy of: Mary Kennedy, Caltech.

ADDITIONAL INFORMATION

Related Product Information for anti-Camk2a antibody	**Background Info:** Detects phosphorylated CaMKII from rat tissues. This antibody is specific for alpha and beta subunits of CaMKII only when they are phosphorylated at Thr-286/287 (in beta). **Scientific Background:** 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 consist of two subunits of 52 (termed alpha genes) and 60 kDa (beta 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 (8). The threonine phosphorylation state of CaMKII can be regulated through PP1/PKA. Whereas PP1 (protein phosphatase 1) dephosphorylates phospho-CaMKII at Thr286, PKA (protein kinase A) prevents this dephosphorylation (9). Autophosphorylation also enables CaMKII to attain an enhanced affinity for NMDA receptors in postsynaptic densities (10-12).
Product Categories/Family for anti-Camk2a antibody	Cell Signaling
References	1. Hughes K. et al. (2001) J. Biol. Chem. 276: 36008-36013. 2. Barria A. et al. (1997) Science 276: 2042-2045. 3. Bennet M.K. and Kennedy M.B. (1987) Proc. Natl. Acad. Sci. U.S.A. 84: 1794-1798. 4. Broke L., Srinivasan M. and Schulman H. (1995) J. Neurosci. 15: 6797-6808. 5. Nghiem P., Saati S. M., Martens C. L., Gardner P. and Schulman H. (1993) J. Biol. Chem. 268: 5471-5479. 6. Edman C.F. and Schulman H. (1994) Biochem. Biophys. Acta 1221: 90-102. 7. Tombes R.M. and Krystal G.W., (1997) Biochem. Biophys. Acta 13555: 281-292. 8. Means A.R. (2000) Mol. Endocrinol. 14: 4-12. 9. Makhinson M. et al. (1999) J. Neurosci. 19: 2500-2510. 10. Strack S. and Colbran R.J. (1998) J. Biol. Chem. 273: 20689-20692. 11. Leonard S.A., Lim I.A., Hemsworth D.E., Horne M.C. and Hell J.W. (1999) Proc. Natl. Acad. Sci. U.S.A. 96: 3239-3244. 12. Shen K. and Meyer Y. (1999) Science 284: 162-167. 1. Feng, T., Szabo, E., Dziak, E. and Opas, M. (2010). Cytoskeletal disassembly and cell rounding promotes adipogenesis from ES cells. Stem Cell Rev. 6 (1), 74-85. doi: 10.1007/s12015-010-9115-8.

NCBI AND UNIPROT INFORMATION

NCBI GI #	6978593
NCBI GeneID	25400
NCBI Accession #	NP_037052.1
NCBI GenBank Nucleotide #	NM_012920.1
UniProt Accession #	P11275
Molecular Weight	54,115 Da
NCBI Official Full Name	calcium/calmodulin-dependent protein kinase type II subunit alpha
NCBI Official Synonym Full Names	calcium/calmodulin-dependent protein kinase II alpha
NCBI Official Symbol	Camk2a
NCBI Official Synonym Symbols	PKCCD; PK2CDD

NCBI Protein Information	calcium/calmodulin-dependent protein kinase type II subunit alpha; alpha CaM kinase II; caMK-II subunit alpha; caM-kinase II alpha chain; caM kinase II subunit alpha; Ca2+/calmodulin-dependent protein kinase II alpha; calcium/calmodulin-dependent protein kinase II alpha subunit; calcium/calmodulin-dependent protein kinase type II alpha chain; calcium/calmodulin-dependent protein kinase (CaM kinase) II alpha
UniProt Protein Name	Calcium/calmodulin-dependent protein kinase type II subunit alpha
UniProt Gene Name	**Camk2a**
UniProt Synonym Gene Names	CaM kinase II subunit alpha; CaMK-II subunit alpha
UniProt Entry Name	KCC2A_RAT

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: https://stage.aaabiotech.com/monoclonal/camkii-antibody-clone-22b1-western-blot-immunoprecipitation-immunofluorescence-elisa/102945