Human Casein Kinase 2α Antibody

Monoclonal Mouse IgG_1 Clone # 844720

Catalog Number: MAB7957

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Casein Kinase 2α in ELISAs and Western blots. Detects mouse and rat Casein Kinase 2α in Western blots
Source	Monoclonal Mouse IgG_1 Clone # 844720
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Casein Kinase 2α Asp253-Gln391 Accession # P68400
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

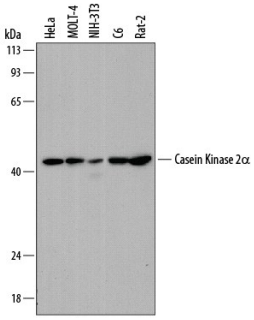
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	5-25 µg/mL	See Below
Simple Western	10 µg/mL	See Below

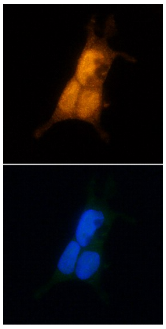
DATA

Western Blot



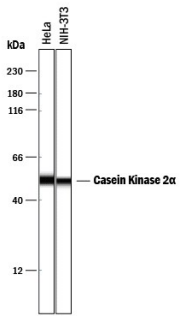
Detection of Human, Mouse, and Rat Casein Kinase 2α by Western Blot. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line, MOLT-4 human acute lymphoblastic leukemia cell line, NIH-3T3 mouse embryonic fibroblast cell line, C6 rat glioma cell line, and Rat-2 rat embryonic fibroblast cell line. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human Casein Kinase 2α Monoclonal Antibody (Catalog # MAB7957) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for Casein Kinase 2α at approximately 42 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



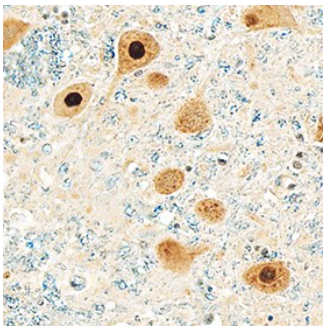
Casein Kinase 2α in HEK293 Human Cell Line. Casein Kinase 2α was detected in immersion fixed HEK293 human embryonic kidney cell line using Mouse Anti-Human Casein Kinase 2α Monoclonal Antibody (Catalog # MAB7957) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (yellow, upper panel; Catalog # NL007) and counterstained with DAPI (blue, lower panel). Specific staining was localized to nuclei. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Simple Western



Detection of Human and Mouse Casein Kinase 2α by Simple Western™. Simple Western lane view shows lysates of HeLa human cervical epithelial carcinoma cell line and NIH-3T3 mouse embryonic fibroblast cell line, loaded at 0.5 mg/mL. A specific band was detected for Casein Kinase 2α at approximately 50-52 kDa (as indicated) using 10 µg/mL of Mouse Anti-Human Casein Kinase 2α Monoclonal Antibody (Catalog # MAB7957) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

Immunohistochemistry



Casein Kinase 2α in Human Brain. Casein Kinase 2α was detected in immersion fixed paraffin-embedded sections of human brain (substantia nigra) using Mouse Anti-Human Casein Kinase 2α Monoclonal Antibody (Catalog # MAB7957) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to nuclei in neurons. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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BACKGROUND

Casein kinase 2 (CK2) is a ubiquitous and constitutively active tetrameric serine/threonine kinase that is comprised of two catalytic subunits (CK2α and/or CK2α') and two identical regulatory subunits (CK2β). CK2 has been implicated in numerous cellular processes, including signal transduction, transcription, translation, replication, and metabolic pathways. CK2 is known to phosphorylate more than 300 different substrates. Phosphorylation of cell-cycle proteins such as p53, p34cdc2, p27KIP1, and MDM-2 account for the ability of CK2 to induce proliferation, while the phosphorylation of HS1, Bid, and Max account for its antiapoptotic role. The human CK2α and CK2α' subunits are the products of two different genes. They have highly conserved catyalytic domains but divergent C-terminal regions. Within aa 253-391 (including the region of divergence between CK2α and CK2α'), the 35-45 kDa human CK2α shares 96% aa sequence identity with mouse and rat CK2α. An alternatively spliced isoform of human CK2α lacks the N-terminal 136 amino acids including a portion of the kinase domain. CK2β plays dual roles in the regulation of CK2 acivity. Its C-terminal domain is responsible for stable interactions with the catalytic subunit and increased catalytic activity following tetramer formation, while the N-terminal domain exerts negative regulation on the catalytic activity of CK2.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956