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CSNK2A2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1755a

Product Information

Application	WB, FC, E
Primary Accession	P19784
Reactivity	Human, Mouse
Host	Mouse
Clonality	Monoclonal
Clone Names	1E1
Isotype	IgG1
Calculated MW	41213
Description	Casein kinase II (CK2) is a constitutively active, ubiquitously expressed serine/threonine protein kinasethat is thought to have a regulatory function in cell proliferation, cell differentiation and apoptosis. CK2functions as a tetrameric complex consisting of two regulatory beta-subunits and two catalytic units (alphaand alpha') in a homomeric or heteromeric conformation. Whilst the alpha- and alpha'-subunits arecatalytically identical, proteins that regulate CK2, such as cdc2 and Hsp90, preferentially bind to thealpha and not the alpha'-subunit. CK2 can phosphorylate a number of key intracellular signaling proteinsimplicated in tumor suppression (p53 and PTEN) and tumorigenesis (myc, jun, NF-kappaB). CK2 is also thoughtto influence Wnt signaling via beta-catenin phosphorylation and the PI 3-K signaling pathway via thephosphorylation of Akt.
Immunogen	Purified recombinant fragment of human CSNK2A2 (AA: 194-350) expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	1459
Other Names	Casein kinase II subunit alpha', CK II alpha', 2.7.11.1, CSNK2A2, CK2A2
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CSNK2A2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

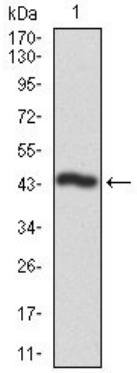
Name	CSNK2A2
Synonyms	CK2A2
Function	Catalytic subunit of a constitutively active serine/threonine-protein kinase complex that phosphorylates a large number of substrates containing acidic residues C-terminal to the phosphorylated serine or threonine (PubMed:11239457, PubMed:11704824, PubMed:16193064, PubMed:30898438). Regulates numerous cellular processes, such as cell cycle progression, apoptosis and transcription, as well as viral infection (PubMed:11704824, PubMed:16193064, PubMed:30898438). May act as a regulatory node which integrates and coordinates numerous signals leading to an appropriate cellular response (PubMed:12631575, PubMed:19387551, PubMed:19387552). During mitosis, functions as a component of the p53/TP53-dependent spindle assembly checkpoint (SAC) that maintains cyclin-B-CDK1 activity and G2 arrest in response to spindle damage (PubMed:12631575, PubMed:19387551, PubMed:19387552). Also required for p53/TP53-mediated apoptosis, phosphorylating 'Ser-392' of p53/TP53 following UV irradiation (PubMed:11239457). Phosphorylates a number of DNA repair proteins in response to DNA damage, such as MDC1, RAD9A, RAD51 and HTATSF1, promoting their recruitment to DNA damage sites (PubMed:20545769, PubMed:21482717, PubMed:22325354, PubMed:26811421, PubMed:30898438, PubMed:35597237). Can also negatively regulate apoptosis (PubMed:19387551, PubMed:19387552). Phosphorylates the caspases CASP9 and CASP2 and the apoptotic regulator NOL3 (PubMed:12631575, PubMed:19387551, PubMed:19387552). Phosphorylation protects CASP9 from cleavage and activation by CASP8, and inhibits the dimerization of CASP2 and activation of CASP8 (PubMed:12631575, PubMed:19387551, PubMed:19387552). Regulates transcription by direct phosphorylation of RNA polymerases I, II, III and IV (PubMed:12631575, PubMed:19387551, PubMed:19387552). Also phosphorylates and regulates numerous transcription factors including NF-kappa-B, STAT1, CREB1, IRF1, IRF2, ATF1, SRF, MAX, JUN, FOS, MYC and MYB (PubMed:12631575, PubMed:19387551, PubMed:19387552). Phosphorylates Hsp90 and its co- chaperones FKBP4 and CDC37, which is essential for chaperone function (PubMed:19387550). Regulates Wnt signaling by phosphorylating CTNNB1 and the transcription factor LEF1 (PubMed:19387549). Acts as an ectokinase that phosphorylates several extracellular proteins (PubMed:12631575, PubMed:19387551, PubMed:19387552). During viral infection, phosphorylates various proteins involved in the viral life cycles of EBV, HSV, HBV, HCV, HIV, CMV and HPV (PubMed:12631575, PubMed:19387551, PubMed:19387552). May phosphorylate histone H2A on 'Ser-1' (PubMed:38334665).
Cellular Location	Nucleus {ECO:0000250|UniProtKB:O54833}. Cytoplasm {ECO:0000250|UniProtKB:O54833}. Note=Interaction with SIRT6 prevents translocation into the nucleus. {ECO:0000250|UniProtKB:O54833}

References

1.Eur J Immunol. 2009 Jan;39(1):267-79.2.Cell Mol Life Sci. 2009 Jan;66(2):339-49.

Images

Figure 1: Western blot analysis using CSNK2A2 mAb against



human CSNK2A2 recombinant protein. (Expected MW is 44 kDa)

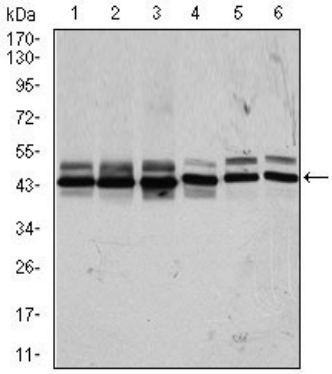


Figure 2: Western blot analysis using CSNK2A2 mouse mAb against HeLa (1), MCF-7 (2), HepG2 (3), Jurkat (4), NIH3T3 (5), and PC-12 (6) cell lysate.

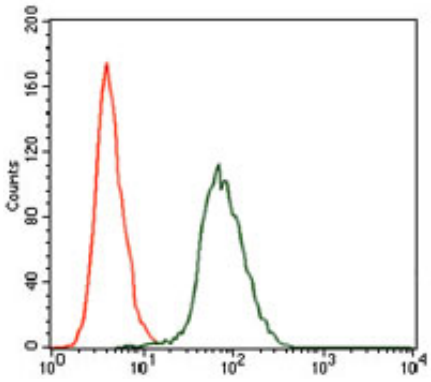


Figure 3: Flow cytometric analysis of HepG2 cells using CSNK2A2 mouse mAb (green) and negative control (red).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.