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CKIIalpha (5F9) Mouse mAb

Catalog # AP53513

Product Information

Application	WB, IHC-P, FC
Primary Accession	P19784
Reactivity	Rat, Human, Mouse, Rabbit, Monkey
Host	Mouse
Clonality	Monoclonal Antibody
Isotype	IgG1
Conjugate	Unconjugated
Immunogen	Purified recombinant fragment of human CSNK2A2 expressed in E. Coli.
Purification	Ascitic Fluid
Calculated MW	41213

Additional Information

Gene ID	1459
Other Names	CK2A2; CSNK2A1; FLJ43934
Dilution	WB~~1:2000 IHC-P~~N/A FC~~1:10~50
Format	Liquid in Purified antibody in PBS with 0.05% sodium azide.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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).

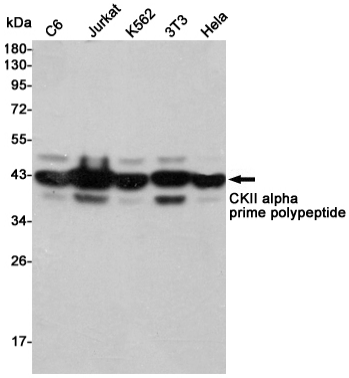
Cellular Location

Nucleus {ECO:0000250|UniProtKB:O54833}. Cytoplasm {ECO:0000250|UniProtKB:O54833}. Note=Interaction with SIRT6 prevents translocation into the nucleus. {ECO:0000250|UniProtKB:O54833}

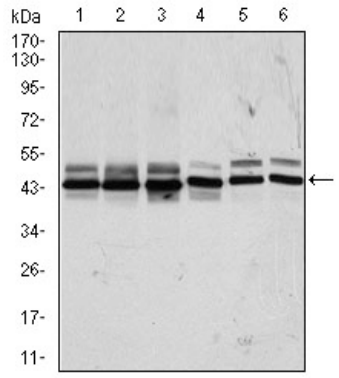
Background

Swiss-Prot Acc.P19784.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.

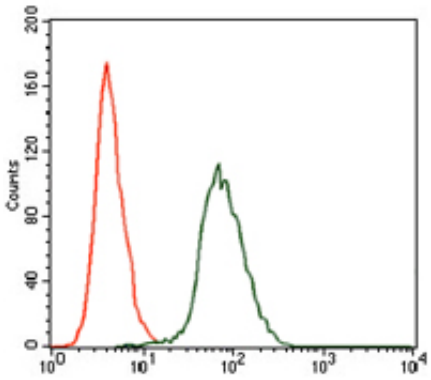
Images



Western blot detection of CKII alpha prime polypeptide in C6,Jurkat,K562,3T3 and Hela cell lysates using CKII alpha prime polypeptide mouse mAb (1:2000 diluted).Predicted band size:41KDa.Observed band size:41KDa.



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.



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

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