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DYRK1A Antibody

Catalog # ASC11307

Product Information

Application	WB, ICC, E
Primary Accession	Q13627
Other Accession	NP_001387, 18765758
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	85584
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	DYRK1A antibody can be used for detection of DYRK1A by Western blot at 1 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL.

Additional Information

Gene ID	1859
Other Names	Dual specificity tyrosine-phosphorylation-regulated kinase 1A, 2.7.12.1, Dual specificity YAK1-related kinase, HP86, Protein kinase minibrain homolog, MNBH, hMNB, DYRK1A, DYRK, MNB, MNBH
Target/Specificity	DYRK1A; Multiple isoforms of DYRK1A are known to exist. DYRK1A antibody will not cross-react with other DYRK family members
Reconstitution & Storage	DYRK1A antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	DYRK1A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DYRK1A {ECO:0000303|PubMed:25620562, ECO:0000312|HGNC:HGNC:3091}
Function	Dual-specificity kinase which possesses both serine/threonine and tyrosine kinase activities (PubMed:20981014, PubMed:21127067, PubMed:23665168, PubMed:30773093, PubMed:8769099). Exhibits a substrate preference for proline at position P+1 and arginine at position P-3 (PubMed:23665168). Plays an important role in double-strand breaks (DSBs) repair following DNA damage (PubMed:31024071). Mechanistically, phosphorylates RNF169 and

	increases its ability to block accumulation of TP53BP1 at the DSB sites thereby promoting homologous recombination repair (HRR) (PubMed:30773093). Also acts as a positive regulator of transcription by acting as a CTD kinase that mediates phosphorylation of the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNAP II) POLR2A (PubMed:25620562, PubMed:29849146). May play a role in a signaling pathway regulating nuclear functions of cell proliferation (PubMed:14500717). Modulates alternative splicing by phosphorylating the splice factor SRSF6 (By similarity). Has pro-survival function and negatively regulates the apoptotic process (By similarity). Promotes cell survival upon genotoxic stress through phosphorylation of SIRT1 (By similarity). This in turn inhibits p53/TP53 activity and apoptosis (By similarity). Phosphorylates SEPTIN4, SEPTIN5 and SF3B1 at 'Thr-434' (By similarity).
Cellular Location	Nucleus. Nucleus speckle {ECO:0000250|UniProtKB:Q61214}
Tissue Location	Ubiquitous. Highest levels in skeletal muscle, testis, fetal lung and fetal kidney.

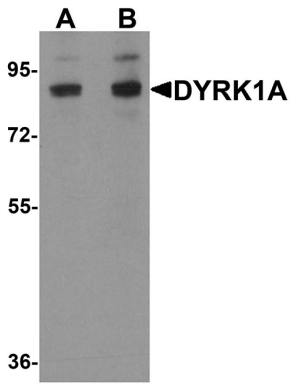
Background

DYRK1A Antibody: DYRK1A is a member of the dual-specificity tyrosine phosphorylation-regulated kinase (DYRK) family and is thought to be involved in neuronal differentiation, neurodegenerative diseases, and is considered to be a strong candidate gene for learning defects associated with Down syndrome. DYRK1A phosphorylates several transcription factors such as p53, leading to inhibition of embryonic neuronal cell proliferation. DYRK1A associates with multiple proteins, including SPRED1 and SPRED2; this association appears to inhibit the phosphorylation activity of DYRK1A. Recent evidence also suggests that DYRK1A may be involved in the replication of HIV-1.

References

Park J, Oh Y, and Chung KC. Two key genes closely implicated with the neuropathological characteristics in Down Syndrome: DYRK1A and RCAN1. BMB Reports 2009; 42:6-15.
Park J, Oh Y, You L, et al. Dyrk1A phosphorylates p53 and inhibits proliferation of embryonic neuronal cells. J. Biol. Chem. 2010; 285:31895-906
Li D, Jackson RA, Yusoff P, et al. Direct association of Sprouty-related protein with and EVH1 domain (SPRED) 1 or SPRED2 with DYRK1A modifies substrate/kinase interactions. J. Biol. Chem. 2010; 285:35374-85.

Images



Western blot analysis of DYRK1A in HeLa cell lysate with DYRK1A antibody at (A) 1 and (B) 2 µg/mL.

Immunocytochemistry of DYRK1A in HeLa cells with DYRK1A antibody at 10 µg/mL.



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