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DYRK1A Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7555a

Product Information

Application	IHC-P, WB, E
Primary Accession	Q13627
Other Accession	Q2TAE3, Q63470, Q61214
Reactivity	Human, Mouse
Predicted	Mouse, Rat, Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB13055
Calculated MW	85584
Antigen Region	107-136

Additional Information

Gene ID	1859
Other Names	Dual specificity tyrosine-phosphorylation-regulated kinase 1A, Dual specificity YAK1-related kinase, HP86, Protein kinase minibrain homolog, MNBH, hMNB, DYRK1A, DYRK, MNB, MNBH
Target/Specificity	This DYRK1A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 107-136 amino acids from the N-terminal region of human DYRK1A.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DYRK1A Antibody (N-term) 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.

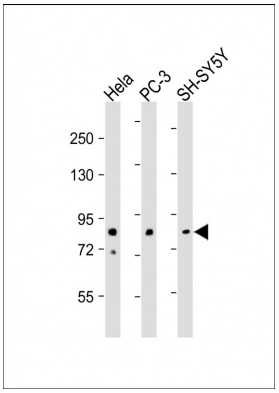
Background

DYRK1A is a member of the Dual-specificity tyrosine phosphorylation-regulated kinase (DYRK) family. This member contains a nuclear targeting signal sequence, a protein kinase domain, a leucine zipper motif, and a highly conservative 13-consecutive-histidine repeat. It catalyzes its autophosphorylation on serine/threonine and tyrosine residues. It may play a significant role in a signaling pathway regulating cell proliferation and may be involved in brain development. The DYRK1A gene is a homolog of Drosophila mnb (minibrain) gene and rat Dyrk gene. It is localized in the Down syndrome critical region of chromosome 21, and is considered to be a strong candidate gene for learning defects associated with Down syndrome.

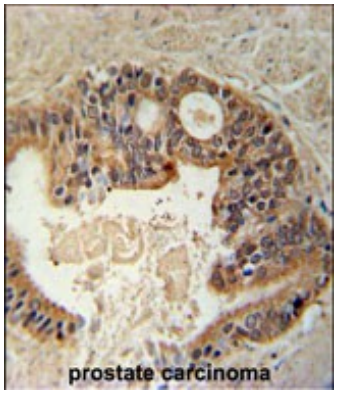
References

Adayev,T., Biochemistry 46 (25), 7614-7624 (2007)
Chang,H.S., Int. J. Cancer 120 (11), 2377-2385 (2007)
Alvarez,M., Mol. Biol. Cell 18 (4), 1167-1178 (2007)
Wissing,J., Mol. Cell Proteomics 6 (3), 537-547 (2007)

Images



All lanes : Anti-DYRK1A Antibody (N-term) at 1:500-1:2000 dilution Lane 1: Hela whole cell lysate Lane 2: PC-3 whole cell lysate Lane 3: SH-SY5Y whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 86 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



DYRK1A Antiboty (N-term) (Cat.#AP7555a) immunohistochemistry analysis in formalin fixed and paraffin embedded human prostate carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the DYRK1A Antiboty (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.