10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

DYRK1A Antibody
Catalog # ASC11307

Specification

DYRK1A Antibody - Product Information

Application	**WB, ICC, E**
Primary Accession	Q13627
Other Accession	NP_001387, 1859
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**DYRK1A antibody can be used for detection of DYRK1A by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunocytochemistry starting at 10 µg/mL.**

DYRK1A Antibody - Additional Information

Gene ID **1859**

Target/Specificity
DYRK1A antibody was raised against a 17 amino acid synthetic peptide near the carboxy terminus of human DYRK1A.

The immunogen is located within the last 50 amino acids of DYRK1A.

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.

DYRK1A Antibody - 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}

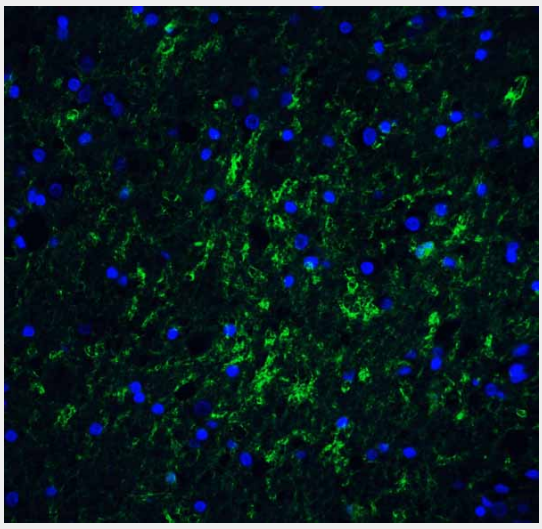
Tissue Location
Ubiquitous. Highest levels in skeletal muscle, testis, fetal lung and fetal kidney.

DYRK1A Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

DYRK1A Antibody - Images



Immunofluorescence of IRGM in Human Brain tissue with IRGM antibody at 20 µg/mL.

DYRK1A Antibody - 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.

DYRK1A Antibody - 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.