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

DYRK2 Antibody
Catalog # ASC11308

Specification

DYRK2 Antibody - Product Information

Application	**WB, ICC, IF**
Primary Accession	Q92630
Other Accession	NP_006473, 4503427
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**DYRK2 antibody can be used for detection of DYRK2 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunocytochemistry starting at 10 µg/mL. For immunofluorescence start at 20 µg/mL.**

DYRK2 Antibody - Additional Information

Gene ID **8445**

Target/Specificity
DYRK2; Two isoforms of DYRK2 are known to exist; this antibody will recognize both isoforms. DYRK2 antibody will not cross-react with other DYRK family members.

Reconstitution & Storage
DYRK2 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
DYRK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

DYRK2 Antibody - Protein Information

Name DYRK2

Function
Serine/threonine-protein kinase involved in the regulation of the mitotic cell cycle, cell proliferation, apoptosis, organization of the cytoskeleton and neurite outgrowth. Functions in part via its role in ubiquitin-dependent proteasomal protein degradation. Functions downstream of ATM and phosphorylates p53/TP53 at 'Ser-46', and thereby contributes to the induction of apoptosis in response to DNA damage. Phosphorylates NFATC1, and thereby inhibits its accumulation in the nucleus and its transcription factor activity. Phosphorylates EIF2B5 at 'Ser-544', enabling its subsequent phosphorylation and inhibition by GSK3B. Likewise, phosphorylation of NFATC1, CRMP2/DPYSL2 and CRMP4/DPYSL3 promotes their subsequent phosphorylation by GSK3B. May play a general role in the priming of GSK3 substrates. Inactivates GYS1 by phosphorylation at

'Ser-641', and potentially also a second phosphorylation site, thus regulating glycogen synthesis. Mediates EDVP E3 ligase complex formation and is required for the phosphorylation and subsequent degradation of KATNA1. Phosphorylates TERT at 'Ser-457', promoting TERT ubiquitination by the EDVP complex. Phosphorylates SIAH2, and thereby increases its ubiquitin ligase activity. Promotes the proteasomal degradation of MYC and JUN, and thereby regulates progress through the mitotic cell cycle and cell proliferation. Promotes proteasomal degradation of GLI2 and GLI3, and thereby plays a role in smoothened and sonic hedgehog signaling. Plays a role in cytoskeleton organization and neurite outgrowth via its phosphorylation of DCX and DPYSL2. Phosphorylates CRMP2/DPYSL2, CRMP4/DPYSL3, DCX, EIF2B5, EIF4EBP1, GLI2, GLI3, GYS1, JUN, MDM2, MYC, NFATC1, p53/TP53, TAU/MAPT and KATNA1. Can phosphorylate histone H1, histone H3 and histone H2B (in vitro). Can phosphorylate CARHSP1 (in vitro).

Cellular Location
Cytoplasm. Nucleus. Note=Translocates into the nucleus following DNA damage

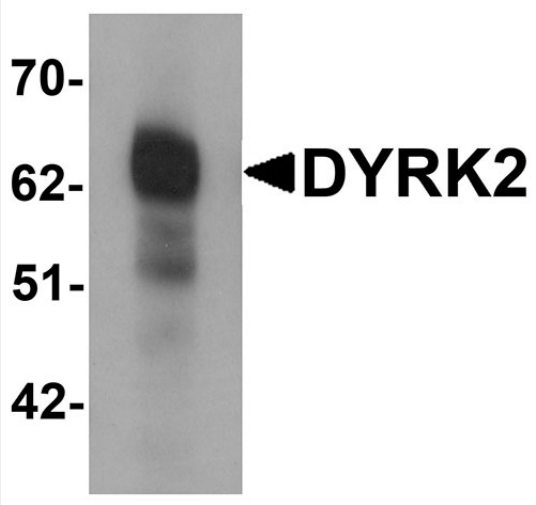
Tissue Location
Testis, after the onset of spermatogenesis.

DYRK2 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

DYRK2 Antibody - Images

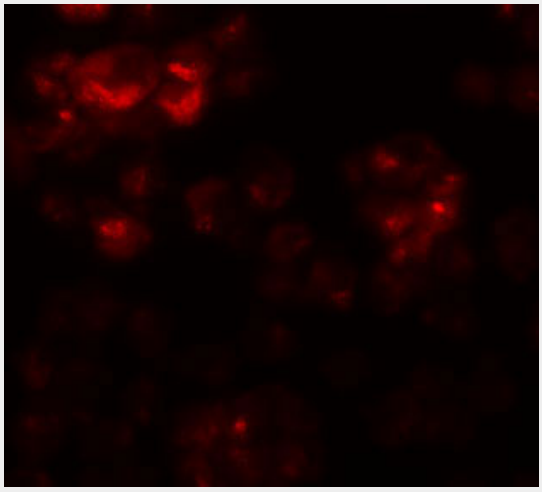


Western blot analysis of DYRK2 in 293 cell lysate with DYRK2 antibody at (A) 1 and (B) 2 µg/mL.

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



Immunocytochemistry of DYRK2 in 293 cells with DYRK2 antibody at 10 µg/mL.



Immunofluorescence of DYRK2 in 293 cells with DYRK2 antibody at 20 µg/mL.

DYRK2 Antibody - Background

DYRK2 Antibody: DYRK2 is a member of the dual-specificity tyrosine phosphorylation-regulated kinase (DYRK) family that is thought to be involved in cellular proliferation and apoptosis. Under normal conditions, nuclear but not cytoplasmic DYRK2 is ubiquitinated by MDM2, leading to its constitutive degradation. However, upon exposure to genotoxic stress, ATM phosphorylates DYRK2, leading to its dissociation from MDM2 and its phosphorylation of p53, thereby inducing apoptosis. Recent evidence also suggests that DYRK2 may serve as a scaffold that facilitates assembly of an E3 ubiquitin ligase.

DYRK2 Antibody - References

Becker W, Weber Y, Wetzel K, et al. Sequence characteristics, subcellular localization, and substrate specificity of DRYK-related kinases, a novel family of dual specificity protein kinases. J. Biol. Chem. 1998; 273:25893-902.
Yoshida K. Role for DYRK family kinases on regulation of apoptosis. Biochem. Pharmacol. 2008; 76:1389-94.
Taira N, Yamamoto H, Yamaguchi T, et al. ATM augments nuclear stabilization of DYRK2 by inhibiting MDM2 in the apoptotic response to DNA damage J. Biol. Chem. 2010; 285:4909-19.