Revision 1

Store at -20C

#8143

DYRK2 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	66, 60	Rabbit	#Q92630	8445

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

DYRK2 Antibody recognizes endogenous levels of total DYRK2 protein. This antibody recognizes both the 66 and 60 kDa splice variants.

Species predicted to react based on 100% sequence homology

Bovine, Dog, Pig

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly545 of human DYRK2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

The DYRK family includes several **d**ual-specificity t**y**rosine-phosphorylated and **r**egulated **k**inases capable of phosphorylating proteins at both Tyr and Ser/Thr residues (1). The DYRK family was identified based on homology to the yeast Yak1 (2) and the *Drosophila* minibrain (mnb) kinases (3). Seven mammalian isoforms have been discovered, including DYRK1A, DYRK1B, DYRK1C, DYRK2, DYRK3, DYRK4, and DYRK4B. Differences in substrate specificity, expression, and subcellular localization are seen across the DYRK family (4,5). All DYRK proteins have a Tyr-X-Tyr motif in the catalytic domain activation loop; phosphorylation of the second Tyr residue (e.g. Tyr312 of DYRK1A) is necessary for kinase activity. DYRKs typically autophosphorylate the Tyr residue within their activation loop, but phosphorylate substrates at Ser and Thr residues (1,6).
DYRK2 is thought to play a role in checkpoint control of the cell cycle. DYRK2 can phosphorylate p53 at Ser46 following cellular damage, leading to activation of the apoptotic response (7). Overexpression of DYRK2 has also been reported in esophageal and lung adenocarcinomas (8), and its expression levels were shown to be predictive of chemotherapy treatment outcomes in non-small cell lung cancer (9).

Background References

1. Becker, W. and Joost, H.G. (1999) *Prog. Nucleic Acid Res. Mol. Biol.* 62, 1-17.
2. Garrett, S. and Broach, J. (1989) *Genes Dev.* 3, 1336-1348.
3. Tejedor, F. et al. (1995) *Neuron* 14, 287-301.
4. Kentrup, H. et al. (1996) *J. Biol. Chem.* 271, 3488-3495.
5. Becker, W. et al. (1998) *J. Biol. Chem.* 273, 25893-25902.
6. Lochhead, P.A. et al. (2005) *Cell* 121, 925-936.
7. Taira, N. et al. (2007) *Mol Cell* 25, 725-38.
8. Miller, C.T. et al. (2003) *Cancer Res* 63, 4136-43.
9. Yamashita, S. et al. (2009) *Anticancer Res* 29, 2753-7.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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