Revision 3

Store at -20C

#5672

DYRK1B (D40D1) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	70-80	Rabbit IgG	#Q9Y463	9149

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

DYRK1B (D40D1) Rabbit mAb recognizes endogenous levels of total DYRK1B protein.

Species predicted to react based on 100% sequence homology

Monkey

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human DYRK1B protein.

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).
In contrast to the ubiquitous DYRK1A, DYRK1B exhibits relatively restricted expression with highest levels found in the testis and muscle (7,8). Three major DYRK1B splice variants demonstrate distinct expression patterns and functional properties (9). DYRK1B plays a critical role in myoblast differentiation by affecting cell motility, transcription, cell cycle progression, and survival (10,11). In addition, DYRK1B contributes to the survival of certain cancer cells (7,12,13).

Background References

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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. Leder, S. et al. (1999) *Biochem Biophys Res Commun* 254, 474-9.
8. Lee, K. et al. (2000) *Cancer Res* 60, 3631-7.
9. Leder, S. et al. (2003) *Biochem J* 372, 881-8.
10. Mercer, S.E. and Friedman, E. (2006) *Cell Biochem Biophys* 45, 303-15.
11. Deng, X. et al. (2003) *J Biol Chem* 278, 41347-54.
12. Deng, X. et al. (2006) *Cancer Res* 66, 4149-58.
13. Mercer, S.E. et al. (2006) *Cancer Res* 66, 5143-50.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

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

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