Revision 1

Store at -20C

#11921

# DYRK2 (D9A3K) Rabbit mAb

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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 | H M R Hm Mk | Endogenous | 60, 66 | Rabbit IgG | #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, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

DYRK2 (D9A3K) Rabbit mAb recognizes endogenous levels of total DYRK2 protein. The antibody recognizes both known isoforms, 66 and 60 kDa, of DYRK2.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly545 of human DYRK2 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).
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). Research studies have demonstrated overexpression of DYRK2 in esophageal and lung adenocarcinomas (8), with DYRK2 expression levels acting as a potential predictor 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 **Hm:** Hamster **Mk:** Monkey

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