

# Dyrk1B (B-9): sc-377137

## BACKGROUND

Dyrk (for dual specificity tyrosine phosphorylation regulated kinase) is the homolog of the *Drosophila mnb* (minibrain) gene which is required for neurogenesis. Dyrk is a dual-specificity tyrosine kinase and serine/threonine kinase, which is self regulated by tyrosine phosphorylation. Several related mammalian proteins compose the Dyrk family of dual specificity protein kinases, including Dyrk1A, Dyrk1B, Dyrk1C, Dyrk2, Dyrk3, Dyrk4A and Dyrk4B. The Dyrk family members are thought to be involved in the regulation of cellular growth and/or development. Dyrk1B localizes to the nucleus in muscle and testis. Specifically, Dyrk1B plays a critical role in muscle differentiation by regulating motility, transcription, cell cycle progression and cell survival. Dyrk1B is also found in several solid tumors, where it acts as a downstream effector of Rac1 or K-Ras to mediate cell survival.

## REFERENCES

1. Becker, W., et al. 1998. Sequence characteristics, subcellular localization, and substrate specificity of DYRK-related kinases, a novel family of dual specificity protein kinases. *J. Biol. Chem.* 273: 25893-25902.
2. Leder, S., et al. 1999. Cloning and characterization of Dyrk1B, a novel member of the DYRK family of protein kinases. *Biochem. Biophys. Res. Commun.* 254: 474-479.
3. Becker, W., et al. 1999. Structural and functional characteristics of Dyrk, a novel subfamily of protein kinases with dual specificity. *Prog. Nucleic Acid Res. Mol. Biol.* 62: 1-17.
4. Jin, K., et al. 2005. The survival kinase Mirk/ Dyrk1B is activated through Rac1-MKK3 signaling. *J. Biol. Chem.* 280: 42097-42105.
5. Mercer, S.E., et al. 2006. Mirk/Dyrk1B: a multifunctional dual-specificity kinase involved in growth arrest, differentiation, and cell survival. *Cell Biochem. Biophys.* 45: 303-315.
6. Jin, K., et al. 2007. The survival kinase Mirk/Dyrk1B is a downstream effector of oncogenic K-Ras in pancreatic cancer. *Cancer Res.* 67: 7247-7255.
7. Jin, K., et al. 2009. Mirk regulates the exit of colon cancer cells from quiescence. *J. Biol. Chem.* 284: 22916-22925.

## CHROMOSOMAL LOCATION

Genetic locus: DYRK1B (human) mapping to 19q13.2; Dyrk1b (mouse) mapping to 7 A3.

## SOURCE

Dyrk1B (B-9) is a mouse monoclonal antibody raised against amino acids 1-45 mapping at the N-terminus of Dyrk1B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

Dyrk1B (B-9) is recommended for detection of Dyrk1B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Dyrk1B (B-9) is also recommended for detection of Dyrk1B in additional species, including canine and porcine.

Suitable for use as control antibody for Dyrk1B siRNA (h): sc-77210, Dyrk1B siRNA (m): sc-77211, Dyrk1B shRNA Plasmid (h): sc-77210-SH, Dyrk1B shRNA Plasmid (m): sc-77211-SH, Dyrk1B shRNA (h) Lentiviral Particles: sc-77210-V and Dyrk1B shRNA (m) Lentiviral Particles: sc-77211-V.

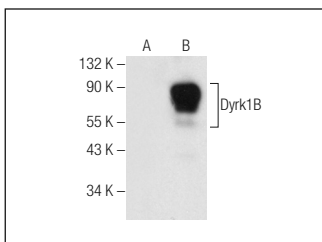
Molecular Weight of Dyrk1B isoforms: 69/66/65 kDa.

Positive Controls: Dyrk1B (h3): 293T Lysate: sc-158463.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Dyrk1B (B-9): sc-377137. Western blot analysis of Dyrk1B expression in non-transfected: sc-117752 (A) and human Dyrk1B transfected: sc-158463 (B) 293T whole cell lysates.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.