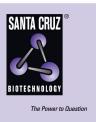
# SANTA CRUZ BIOTECHNOLOGY, INC.

# Dyrk4 (D-18): sc-51274



## 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 itself regulated by tyrosine phosphorylation. Several mammalian Dyrk related proteins have been identified and are thought to compose a family of dual specificity protein kinases. Dyrk family members, including Dyrk1A (originally Dyrk), Dyrk1B, Dryk1C, Dyrk2, Dyrk3 and Dyrk4, are thought to be involved in diverse cellular functions. Dyrk4 is a testis-specific kinase found mainly in post-meoitic spermatids, but has also been implicated in neuronal differentiation. It exists as two isoforms, named Dyrk4A and Dyrk4B, which share greater than 95% sequence homology. Dyrk4 deficiency has been shown to have no effect on male fertility, indicating a possible redundancy in the spermiogenesis pathway.

## REFERENCES

- Kentrup, H., Becker, W., Heukelbach, J., Wilmes, A., Schurmann, A., Huppertz, C., Kainulainen, H. and Joost, H.G. 1996. Dyrk, a dual specificity protein kinase with unique structural features whose activity is dependent on tyrosine residues between subdomains VII and VIII. J. Biol. Chem. 271: 3488-3495.
- Song, W.J., Sternberg, L.R., Kasten-Sportes, C., Keuren, M.L., Chung, S.H., Slack, A.C., Miller, D.E., Glover, T.W., Chiang, P.W., Lou, L. and Kurnit, D.M. 1996. Isolation of human and murine homologues of the *Drosophila* minibrain gene: human homologue maps to 21q22.2 in the Down syndrome "critical region". Genomics 38: 331-339.
- Shindoh, N., Kudoh, J., Maeda, H., Yamaki, A., Minoshima, S., Shimizu, Y. and Shimizu, N. 1996. Cloning of a human homolog of the *Drosophila* minibrain/rat Dyrk gene from "the Down syndrome critical region" of chromosome 21. Biochem. Biophys. Res. Commun. 225: 92-99.
- Becker, W., Weber, Y., Wetzel, K., Eirmbter, K., Tejedor, F.J. and Joost, H.G. 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.
- Leypoldt, F., Lewerenz, J. and Methner, A. 2001. Identification of genes upregulated by retinoic-acid-induced differentiation of the human neuronal precursor cell line NTERA-2 cl.D1. J. Neurochem. 76: 806-814.
- Sacher, F., Möller, C., Bone, W., Gottwald, U. and Fritsch, M. 2007. The expression of the testis-specific Dyrk4 kinase is highly restricted to step 8 spermatids but is not required for male fertility in mice. Mol. Cell. Endocrinol. 267: 80-88.

#### CHROMOSOMAL LOCATION

Genetic locus: DYRK4 (human) mapping to 12p13.32; Dyrk4 (mouse) mapping to 6 F3.

## SOURCE

Dyrk4 (D-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dyrk4 of human origin.

# PRODUCT

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-51274 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

Dyrk4 (D-18) is recommended for detection of Dyrk4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Dyrk4 (D-18) is also recommended for detection of Dyrk4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Dyrk4 siRNA (h): sc-72231, Dyrk4 siRNA (m): sc-72232, Dyrk4 shRNA Plasmid (h): sc-72231-SH, Dyrk4 shRNA Plasmid (m): sc-72232-SH, Dyrk4 shRNA (h) Lentiviral Particles: sc-72231-V and Dyrk4 shRNA (m) Lentiviral Particles: sc-72232-V.

Molecular Weight of Dyrk4: 60 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

## **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluo-rescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## **STORAGE**

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

### **RESEARCH USE**

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

#### **PROTOCOLS**

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS Satisfation Guaranteed

Try **Dyrk4 (C-5): sc-393479** or **Dyrk4 (E-2): sc-390973**, our highly recommended monoclonal alternatives to Dyrk4 (D-18).