

# Dyrk2 (T-16): sc-31972

## 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, Dyrk1C, Dyrk2, Dyrk3, Dyrk4A and Dyrk4B, are thought to be involved in diverse cellular functions. Dyrk1A is a candidate gene that may be involved in Down syndrome, and it has been found to be somewhat over-expressed in Down syndrome. Two isoforms of human fetal brain Dyrk2 exist: a deduced 528-amino acid protein and a protein containing 73 additional amino acids at the amino terminus. Dyrk3 is strongly expressed in testis, only after the onset of spermatogenesis, and very weakly expressed in spleen and adrenal gland. The genes which encode Dyrk2 and Dyrk3 map to human chromosomes 12q15 and 1q32, respectively.

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: DYRK2 (human) mapping to 12q15; Dyrk2 (mouse) mapping to 10 D2.

## SOURCE

Dyrk2 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dyrk2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31972 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

Dyrk2 (T-16) is recommended for detection of Dyrk2 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).

Dyrk2 (T-16) is also recommended for detection of Dyrk2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Dyrk2 siRNA (h): sc-39009, Dyrk2 siRNA (m): sc-44588, Dyrk2 shRNA Plasmid (h): sc-39009-SH, Dyrk2 shRNA Plasmid (m): sc-44588-SH, Dyrk2 shRNA (h) Lentiviral Particles: sc-39009-V and Dyrk2 shRNA (m) Lentiviral Particles: sc-44588-V.

Molecular Weight of Dyrk2 isoform 1: 67 kDa.

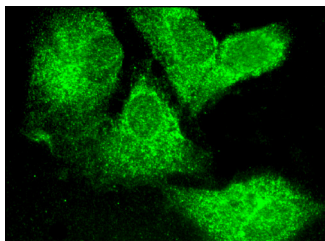
Molecular Weight of Dyrk2 isoform 2: 60 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, PC-3 cell lysate: sc-2220 or SK-MEL-28 cell lysate: sc-2236.

## 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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: 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™ Mounting Medium: sc-24941.

## DATA



Dyrk2 (T-16): sc-31972. Immunofluorescence staining of formalin-fixed HepG2 cells showing cytoplasmic and nuclear localization.

## RESEARCH USE

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

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Try **Dyrk2 (6E2): sc-293487**, our highly recommended monoclonal alternative to Dyrk2 (T-16).