

Dyrk1A (G-19): sc-12568

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 (dual specificity tyrosine-phosphorylation-regulated kinase 1A), Dyrk1B, Dyrk1C, Dyrk2, Dyrk3, Dyrk4A and Dyrk4B, are thought to be involved in diverse cellular functions. Localized to the nucleus and highly expressed in testis, muscle and the developing nervous system, Dyrk1A, also known as MNB or MNBH, functions to phosphorylate serine, threonine and tyrosine residues on various substrates involved in signaling pathways that regulate cell proliferation. Dyrk1A is a candidate gene for learning defects that are involved in Down syndrome (DS), suggesting a possible role for Dyrk1A in the development of DS. Four isoforms of Dyrk1A exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: DYRK1A (human) mapping to 21q22.13; Dyrk1a (mouse) mapping to 16 C4.

SOURCE

Dyrk1A (G-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dyrk1A 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-12568 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Dyrk1A (G-19) is recommended for detection of Dyrk1A 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Dyrk1A (G-19) is also recommended for detection of Dyrk1A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Dyrk1A siRNA (h): sc-39007, Dyrk1A siRNA (m): sc-39008, Dyrk1A shRNA Plasmid (h): sc-39007-SH, Dyrk1A shRNA Plasmid (m): sc-39008-SH, Dyrk1A shRNA (h) Lentiviral Particles: sc-39007-V and Dyrk1A shRNA (m) Lentiviral Particles: sc-39008-V.

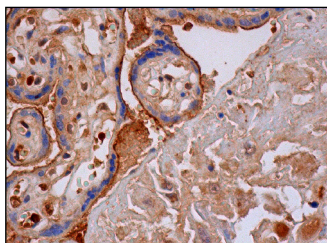
Molecular Weight of Dyrk1A: 86 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



Dyrk1A (G-19): sc-12568. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of trophoblastic cells and cytoplasmic and nuclear staining of decidual cells.

SELECT PRODUCT CITATIONS

1. Fotaki, V., et al. 2002. Dyrk1A haploinsufficiency affects viability and causes developmental delay and abnormal brain morphology in mice. *Mol. Cell. Biol.* 22: 6636-6647.
2. Wegiel, J., et al. 2008. The role of overexpressed DYRK1A protein in the early onset of neurofibrillary degeneration in Down syndrome. *Acta Neuropathol.* 116: 391-407.
3. Seifert, A., et al. 2008. DYRK1A phosphorylates caspase 9 at an inhibitory site and is potently inhibited in human cells by harmine. *FEBS J.* 275: 6268-6280.

STORAGE

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

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **Dyrk1A (RR.7): sc-100376**, our highly recommended monoclonal alternative to Dyrk1A (G-19).