

# DGK- $\beta$ (T-15): sc-164176

## BACKGROUND

Diacylglycerol kinases (DGKs) phosphorylate diacylglycerol (DAG) to produce phosphatidic acid. DAG and phosphatidic acid are lipids that act as second messengers in signaling cascades. DGK- $\alpha$  influences cell activation and secretion of lethal exosomes, which in turn control cell death. DGK- $\beta$  is abundant in restricted brain regions such as the caudate putamen and olfactory tubercle. DGK- $\gamma$  encodes full-length and truncated transcripts that are present in a range of human tissues, with greatest expression observed in retina. DGK- $\delta$  is most abundant in skeletal muscle. DGK- $\epsilon$  shows specificity for arachidonoyl-containing diacylglycerol and is expressed predominantly in testis. DGK- $\zeta$  is most abundant in brain and muscle. DGK- $\eta$  is closely related to DGK- $\delta$ . DGK- $\theta$  is most abundant in the cerebellum and hippocampus. DGK- $\iota$  is present in brain and retina as a predominant transcript of more than 12 kb, including a long 3'-untranslated region, with additional low abundance transcripts of 9.5 and 7.5 kb. DGKs have structural motifs that play regulatory roles, and these motifs form the basis for dividing the DGKs into five subtypes.

## REFERENCES

1. Schaap, D., et al. 1990. Purification, cDNA-cloning and expression of human diacylglycerol kinase. *FEBS Lett.* 275: 151-158.
2. Goto, K., et al. 1993. Molecular cloning and expression of a 90-kDa diacylglycerol kinase that predominantly localizes in neurons. *Proc. Natl. Acad. Sci. USA* 90: 7598-7602.
3. Masai, I., et al. 1993. *Drosophila* retinal degeneration a gene encodes an eye-specific diacylglycerol kinase with cysteine-rich zinc-finger motifs and ankyrin repeats. *Proc. Natl. Acad. Sci. USA* 90: 11157-11161.
4. Kai, M., et al. 1994. Molecular cloning of a diacylglycerol kinase isozyme predominantly expressed in human retina with a truncated and inactive enzyme expression in most other human cells. *J. Biol. Chem.* 269: 18492-18498.
5. Sakane, F., et al. 1996. Molecular cloning of a novel diacylglycerol kinase isozyme with a Pleckstrin homology domain and a C-terminal tail similar to those of the EPH family of protein-tyrosine kinases. *J. Biol. Chem.* 271: 8394-8401.
6. Tang, W., et al. 1996. Molecular cloning of a novel human diacylglycerol kinase highly selective for arachidonate-containing substrates. *J. Biol. Chem.* 271: 10237-10241.
7. Klauck, T.M., et al. 1996. Cloning and characterization of a glucocorticoid-induced diacylglycerol kinase. *J. Biol. Chem.* 271: 19781-19788.
8. Ding, L., et al. 1998. The cloning and characterization of a novel human diacylglycerol kinase, DGK- $\iota$ . *J. Biol. Chem.* 273: 32746-32752.
9. Topham, M.K., et al. 1999. Mammalian diacylglycerol kinases, a family of lipid kinases with signaling functions. *J. Biol. Chem.* 274: 11447-11450.

## CHROMOSOMAL LOCATION

Genetic locus: DGKB (human) mapping to 7p21.2; Dgkb (mouse) mapping to 12 A3.

## SOURCE

DGK- $\beta$  (T-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DGK- $\beta$  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-164176 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DGK- $\beta$  (T-15) is recommended for detection of DGK- $\beta$  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).

DGK- $\beta$  (T-15) is also recommended for detection of DGK- $\beta$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DGK- $\beta$  siRNA (h): sc-89505, DGK- $\beta$  siRNA (m): sc-155882, DGK- $\beta$  shRNA Plasmid (h): sc-89505-SH, DGK- $\beta$  shRNA Plasmid (m): sc-155882-SH, DGK- $\beta$  shRNA (h) Lentiviral Particles: sc-89505-V and DGK- $\beta$  shRNA (m) Lentiviral Particles: sc-155882-V.

Molecular Weight of DGK- $\beta$ : 91 kDa.

Positive Controls: mouse liver extract: sc-2256.

## 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.