

DGK- ι (D-4): sc-271383

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- α influences cell activation and secretion of lethal exosomes, which in turn control cell death. DGK- β is abundant in restricted brain regions such as the caudate putamen and olfactory tubercle. DGK- γ encodes full-length and truncated transcripts that are present in a range of human tissues, with greatest expression observed in retina. DGK- δ is most abundant in skeletal muscle. DGK- ϵ shows specificity for arachidonyl-containing diacylglycerol and is expressed predominantly in testis. DGK- ζ is most abundant in brain and muscle. DGK- η is closely related to DGK- δ . DGK- θ is most abundant in the cerebellum and hippocampus. DGK- ι 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

- Schaap, D., et al. 1990. Purification, cDNA-cloning and expression of human diacylglycerol kinase. *FEBS Lett.* 275: 151-158.
- 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.
- 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.
- 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.
- 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.
- 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.
- Klauck, T.M., et al. 1996. Cloning and characterization of a glucocorticoid-induced diacylglycerol kinase. *J. Biol. Chem.* 271: 19781-19788.
- Ding, L., et al. 1998. The cloning and characterization of a novel human diacylglycerol kinase, DGKiota. *J. Biol. Chem.* 273: 32746-32752.
- 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: DGKI (human) mapping to 7q33.

RESEARCH USE

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

SOURCE

DGK- ι (D-4) is a mouse monoclonal antibody raised against amino acids 854-1019 mapping near the C-terminus of DGK- ι of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DGK- ι (D-4) is recommended for detection of DGK- ι of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for DGK- ι siRNA (h): sc-105292, DGK- ι shRNA Plasmid (h): sc-105292-SH and DGK- ι shRNA (h) Lentiviral Particles: sc-105292-V.

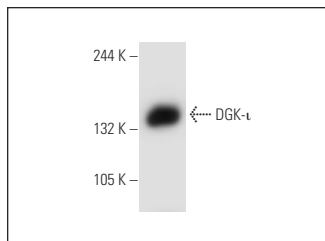
Molecular Weight of DGK- ι : 130 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

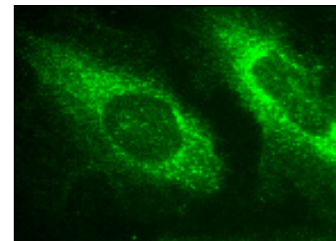
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



DGK- ι (D-4): sc-271383. Western blot analysis of DGK- ι expression in HeLa whole cell lysate.



DGK- ι (D-4): sc-271383. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

STORAGE

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