

# DGK-ε (AA9): sc-100372

## 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

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.

## CHROMOSOMAL LOCATION

Genetic locus: DGKE (human) mapping to 17q22; Dgke (mouse) mapping to 11 C.

## SOURCE

DGK-ε (AA9) is a mouse monoclonal antibody raised against recombinant DGK-ε of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>3</sub> lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

DGK-ε (AA9) is recommended for detection of DGK-ε of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DGK-ε siRNA (h): sc-38989, DGK-ε siRNA (m): sc-38990, DGK-ε shRNA Plasmid (h): sc-38989-SH, DGK-ε shRNA Plasmid (m): sc-38990-SH, DGK-ε shRNA (h) Lentiviral Particles: sc-38989-V and DGK-ε shRNA (m) Lentiviral Particles: sc-38990-V.

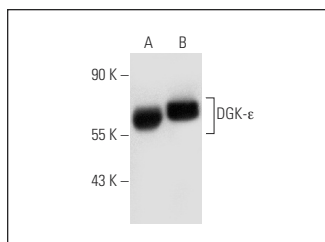
Molecular Weight of DGK-ε: 64 kDa.

Positive Controls: rat testis extract: sc-2400, HeLa whole cell lysate: sc-2200 or mouse testis extract: sc-2405.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



DGK-ε (AA9): sc-100372. Western blot analysis of DGK-ε expression in rat testis (A) and mouse testis (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Ozaltin, F., et al. 2013. DGKE variants cause a glomerular microangiopathy that mimics membranoproliferative GN. *J. Am. Soc. Nephrol.* 24: 377-384.
2. Day, P., et al. 2019. Inhibitors of diacylglycerol metabolism suppress CCR2 receptor signalling in human monocytes. *Br. J. Pharmacol.* E-published.

## 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.