

# Ceramide Kinase (G-3): sc-376730

## BACKGROUND

Ceramide Kinase, also known as CERK, LK4 (lipid kinase 4) or acylsphingosine kinase, is a 537 amino acid peripheral membrane protein that localizes to both the membrane and the cytoplasm and contains one DAGHc domain. Highly expressed in brain, liver, kidney, heart and skeletal muscle, with lower expression in spleen, lung, thymus and small intestine, Ceramide Kinase uses calcium and magnesium as cofactors to catalyze the ATP-dependent conversion of Ceramide to Ceramide 1-phosphate (C1P), a sphingolipid metabolite. Ceramide Kinase functions at an optimal pH of 6-7.5 and, via its catalytic activity, plays an important role in a variety of cellular processes, including apoptosis, phagocytosis and cellular proliferation.

## REFERENCES

1. Sugiura, M., et al. 2002. Ceramide Kinase, a novel lipid kinase. Molecular cloning and functional characterization. *J. Biol. Chem.* 277: 23294-23300.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610307. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Hinkovska-Galcheva, V., et al. 2005. Ceramide 1-phosphate, a mediator of phagocytosis. *J. Biol. Chem.* 280: 26612-26621.
4. Wijesinghe, D.S., et al. 2005. Substrate specificity of human Ceramide Kinase. *J. Lipid Res.* 46: 2706-2716.

## CHROMOSOMAL LOCATION

Genetic locus: CERK (human) mapping to 22q13.31; CerK (mouse) mapping to 15 E2.

## SOURCE

Ceramide Kinase (G-3) is a mouse monoclonal antibody raised against amino acids 238-474 mapping near the C-terminus of Ceramide Kinase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ceramide Kinase (G-3) is available conjugated to agarose (sc-376730 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376730 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376730 PE), fluorescein (sc-376730 FITC), Alexa Fluor® 488 (sc-376730 AF488), Alexa Fluor® 546 (sc-376730 AF546), Alexa Fluor® 594 (sc-376730 AF594) or Alexa Fluor® 647 (sc-376730 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376730 AF680) or Alexa Fluor® 790 (sc-376730 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

Ceramide Kinase (G-3) is recommended for detection of Ceramide Kinase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 Ceramide Kinase siRNA (h): sc-72868, Ceramide Kinase siRNA (m): sc-72869, Ceramide Kinase shRNA Plasmid (h): sc-72868-SH, Ceramide Kinase shRNA Plasmid (m): sc-72869-SH, Ceramide Kinase shRNA (h) Lentiviral Particles: sc-72868-V and Ceramide Kinase shRNA (m) Lentiviral Particles: sc-72869-V.

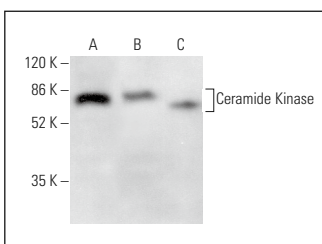
Molecular Weight of Ceramide Kinase: 60 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, HL-60 whole cell lysate: sc-2209 or Neuro-2A whole cell lysate: sc-364185.

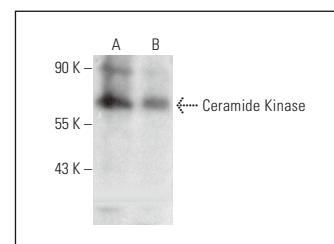
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



Ceramide Kinase (G-3): sc-376730. Western blot analysis of Ceramide Kinase expression in IMR-32 (A), HL-60 (B) and Neuro-2A (C) whole cell lysates.



Ceramide Kinase (G-3): sc-376730. Western blot analysis of Ceramide Kinase expression in CCRF-CEM (A) and Hep G2 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Hua, T., et al. 2021. Lipidomics revealed alteration of sphingolipid metabolism during the reparative phase after myocardial infarction injury. *Front. Physiol.* 12: 663480.

## RESEARCH USE

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