

# HGK (3C7B5): sc-135813

## BACKGROUND

HGK (HPK/GC kinase-like kinase), also known as mitogen-activated protein kinase kinase kinase kinase 4, MAPK/ERK kinase kinase kinase 4, MEKKK 4 or NCK-interacting kinase (NIK), is a member of the serine/threonine kinase subfamily, Ste20. This subfamily is comprised of several mammalian kinases which exhibit sequence similarity to the *Saccharomyces cerevisiae* serine/threonine kinase, Ste20. Members of this subfamily include KHS, GLK, YSK1, HPK1, Krs-1, Krs-2, GC kinase and HGK. HGK, like many of the Ste20-like kinases, has been shown to activate the SAPK/JNK stress response pathway. HGK interacts with MEK kinase-1 and is thought to act upstream of MEK kinase-1 in the SAPK/JNK signaling pathway. Both the kinase domain and the C-terminal regulatory domain of HGK are required for full activation.

## REFERENCES

1. Leberer, E., et al. 1992. The protein kinase homologue Ste20p is required to link the yeast pheromone response G-protein  $\beta\gamma$  subunits to downstream signalling components. *EMBO J.* 11: 4815-4824.
2. Wu, C., et al. 1995. Molecular characterization of Ste20p, a potential mitogen-activated protein or extracellular signal-regulated kinase kinase (MEK) kinase kinase from *Saccharomyces cerevisiae*. *J. Biol. Chem.* 270: 15984-15992.
3. Hu, M.C., et al. 1996. Human HPK1, a novel human hematopoietic progenitor kinase that activates the JNK/SAPK kinase cascade. *Genes Dev.* 10: 2251-2264.
4. Su, Y.C., et al. 1997. NIK is a new Ste20-related kinase that binds NCK and MEKK1 and activates the SAPK/JNK cascade via a conserved regulatory domain. *EMBO J.* 16: 1279-1290.
5. Diener, K., et al. 1997. Activation of the c-Jun N-terminal kinase pathway by a novel protein kinase related to human germinal center kinase. *Proc. Natl. Acad. Sci. USA* 94: 9687-9692.
6. Yao, Z., et al. 1999. A novel human Ste20-related protein kinase, HGK, that specifically activates the c-Jun N-terminal kinase signaling pathway. *J. Biol. Chem.* 274: 2118-2125.
7. Luan, Z., et al. 2002. A novel GTP-binding protein hGBP3 interacts with NIK/HGK. *FEBS Lett.* 530: 233-238.
8. Wright, J.H., et al. 2003. The Ste20 kinase HGK is broadly expressed in human tumor cells and can modulate cellular transformation, invasion, and adhesion. *Mol. Cell. Biol.* 23: 2068-2082.

## CHROMOSOMAL LOCATION

Genetic locus: MAP4K4 (human) mapping to 2q11.2; Map4k4 (mouse) mapping to 1 B.

## SOURCE

HGK (3C7B5) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 400-500 of HGK of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100  $\mu\text{g}$  IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

HGK (3C7B5) is recommended for detection of HGK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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 HGK siRNA (h): sc-39243, HGK siRNA (m): sc-39244, HGK shRNA Plasmid (h): sc-39243-SH, HGK shRNA Plasmid (m): sc-39244-SH, HGK shRNA (h) Lentiviral Particles: sc-39243-V and HGK shRNA (m) Lentiviral Particles: sc-39244-V.

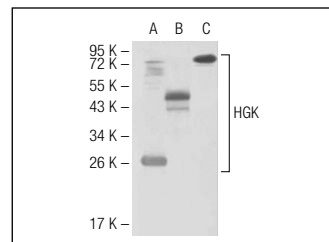
Molecular Weight of HGK: 130 kDa.

Positive Controls: MDA-MB-468 cell lysate: sc-2282 or human HGK (aa 194-436)-hlgFc transfected CHO-K1 whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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).

## DATA



HGK (3C7B5): sc-135813. Western blot analysis of HGK expression against truncated Trx-HGK recombinant protein (A) MBP-HGK (aa 300-400) recombinant protein (B) and human HGK (aa 194-436)-hlgFc transfected CHO-K1 whole cell lysate (C).

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