

# GRK 7 (C-15): sc-47030

## BACKGROUND

Heterotrimeric G protein-mediated signal transduction is a dynamically regulated process with the intensity of signal decreasing over time despite the continued presence of the agonist. This phenomenon, referred to as agonist-mediated desensitization, involves phosphorylation of the receptor by two classes of enzymes. The first class is comprised of the second messenger-regulated kinases, such as c-AMP dependent protein kinase A and protein kinase C. The second class includes the G protein-coupled receptor kinases (GRKs). At least seven members of the GRK family have been identified. These include rhodopsin kinase (GRK 1), two forms of  $\beta$ -adrenergic receptor kinase: GRK 2 ( $\beta$ ARK,  $\beta$ ARK1) and GRK 3 ( $\beta$ ARK2), IT-11 (GRK 4), GRK 5, GRK 6 and GRK 7. Phosphorylation of receptors by GRKs appears to be strictly dependent on the receptor being in its agonist-activated state.

## REFERENCES

- Hisatomi, O., Matsuda, S., Satoh, T., Kaotaka, S., Imanishi, Y. and Tokunaga, F. 1998. A novel subtype of G protein-coupled receptor kinase, GRK7, in teleost cone photoreceptors. *FEBS Lett.* 424: 159-164.
- Weiss, E.R., Raman, D., Shirakawa, S., Ducceschi, M.H., Bertram, P.T., Wong, F., Kraft, T.W. and Osawa, S. 1998. The cloning of GRK7, a candidate cone opsin kinase, from cone- and rod-dominant mammalian retinas. *Mol. Vis.* 4: 27.
- Chen, C.K., Zhang, K., Church-Kopish, J., Huang, W., Zhang, H., Chen, Y.J., Frederick, J.M. and Baehr, W. 2001. Characterization of human GRK7 as a potential cone opsin kinase. *Mol. Vis.* 7: 305-313.
- Weiss, E.R., Ducceschi, M.H., Horner, T.J., Li, A., Craft, C.M. and Osawa, S. 2001. Species-specific differences in expression of G protein-coupled receptor kinase (GRK) 7 and GRK1 in mammalian cone photoreceptor cells: implications for cone cell phototransduction. *J. Neurosci.* 21: 9175-9184.
- Dzimiri, N., Muiya, P., Andres, E. and Al-Halees, Z. 2004. Differential functional expression of human myocardial G protein receptor kinases in left ventricular cardiac diseases. *Eur. J. Pharmacol.* 489: 167-177.
- Liu, P., Osawa, S. and Weiss, E.R. 2005. M opsin phosphorylation in intact mammalian retinas. *J. Neurochem.* 93: 135-144.
- Norton, A.W., Hosier, S., Terew, J.M., Li, N., Dhingra, A., Vardi, N., Baehr, W. and Cote, R.H. 2005. Evaluation of the 17 kDa prenyl-binding protein as a regulatory protein for phototransduction in retinal photoreceptors. *J. Biol. Chem.* 280: 1248-1256.

## CHROMOSOMAL LOCATION

Genetic locus: GRK7 (human) mapping to 3q23.

## SOURCE

GRK 7 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GRK 7 of human origin.

## STORAGE

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

## 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-47030 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GRK 7 (C-18) is recommended for detection of GRK 7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

GRK 7 (C-15) is also recommended for detection of GRK 7 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GRK 7 siRNA (h): sc-60767, GRK 7 shRNA Plasmid (h): sc-60767-SH and GRK 7 shRNA (h) Lentiviral Particles: sc-60767-V.

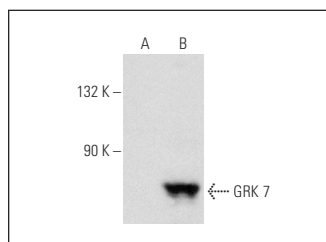
Molecular Weight of GRK 7: 62 kDa.

Positive Controls: A-375 cell lysate: sc-3811, HL-60 whole cell lysate: sc-2209 or GRK 7 (h): 293T Lysate: sc-128738.

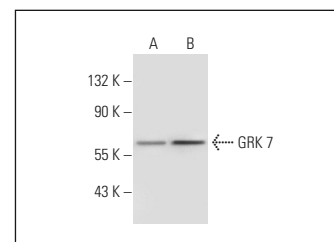
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



GRK 7 (C-15): sc-47030. Western blot analysis of GRK 7 expression in non-transfected: sc-117752 (A) and human GRK 7 transfected: sc-128738 (B) 293T whole cell lysates.



GRK 7 (C-15): sc-47030. Western blot analysis of GRK 7 expression in A-375 (A) and HL-60 (B) whole cell lysates.

## RESEARCH USE

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