

# GRK 1 (S-16): sc-84291

## 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 $\alpha$  and  $\beta$ ); 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

- Hausdorff, W.P., et al. 1990. Turning off the signal: desensitization of  $\beta$ -adrenergic receptor function. *FASEB J.* 4: 2881-2889.
- Lorenz, W., et al. 1991. The receptor kinase family: primary structure of rhodopsin kinase reveals similarities to the  $\beta$ -adrenergic receptor kinase. *Proc. Natl. Acad. Sci. USA* 88: 8715-8719.
- Benovic, J.L., et al. 1991. Cloning, expression, and chromosomal localization of  $\beta$ -adrenergic receptor kinase 2. *J. Biol. Chem.* 266: 14939-14946.
- Inglese, J., et al. 1993. Structure and mechanism of the G protein-coupled receptor kinases. *J. Biol. Chem.* 268: 23735-23738.
- Liggett, S.B., et al. 1993. Structural basis for receptor subtype-specific regulation revealed by a chimeric  $\beta_3/\beta_2$ -adrenergic receptor. *Proc. Natl. Acad. Sci. USA* 90: 3665-3669.
- Pei, G., et al. 1994. An approach to the study of G protein-coupled receptor kinases: an *in vitro*-purified membrane assay reveals differential receptor specificity and regulation by  $G_{\beta\gamma}$  subunits. *Proc. Natl. Acad. Sci. USA* 91: 3633-3636.

## CHROMOSOMAL LOCATION

Genetic locus: GRK1 (human) mapping to 13q34; Grk1 (mouse) mapping to 8 A1.1.

## SOURCE

GRK 1 (S-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of GRK 1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84291 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

GRK 1 (S-16) is recommended for detection of GRK 1 of mouse, rat and 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other GRK family members.

GRK 1 (S-16) is also recommended for detection of GRK 1 in additional species, including bovine and porcine.

Suitable for use as control antibody for GRK 1 siRNA (h): sc-29336, GRK 1 siRNA (m): sc-35512, GRK 1 shRNA Plasmid (h): sc-29336-SH, GRK 1 shRNA Plasmid (m): sc-35512-SH, GRK 1 shRNA (h) Lentiviral Particles: sc-29336-V and GRK 1 shRNA (m) Lentiviral Particles: sc-35512-V.

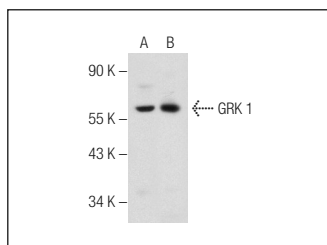
Molecular Weight of GRK 1: 70 kDa.

Positive Controls: Y79 cell lysate: sc-2240 or mouse eye extract: sc-364241.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



GRK 1 (S-16): sc-84291. Western blot analysis of GRK 1 expression in Y79 whole cell lysate (A) and mouse eye tissue extract (B).

## RESEARCH USE

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



Try **GRK 1 (D11): sc-56910**, our highly recommended monoclonal alternative to GRK 1 (S-16).