

GRK 3 (H-43): sc-28891

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 β -adrenergic receptor kinase: GRK 2 (β ARK, β ARK1) and GRK 3 (β 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

1. Hausdorff, W.P., et al 1990. Turning off the signal: desensitization of β -adrenergic receptor function. *FASEB J.* 4: 2881-2889.
2. Lorenz, W., et al. 1991. The receptor kinase family: primary structure of rhodopsin kinase reveals similarities to the β -adrenergic receptor kinase. *Proc. Natl. Acad. Sci. USA* 88: 8715-8719.
3. Benovic, J.L., et al. 1991. Cloning, expression, and chromosomal localization of β -adrenergic receptor kinase 2. *J. Biol. Chem.* 266: 14939-14946.
4. Liggett, S.B., et al. 1993. Structural basis for receptor subtype-specific regulation revealed by a chimeric β_3/β_2 -adrenergic receptor. *Proc. Natl. Acad. Sci. USA* 90: 3665-3669.
5. Inglese, J., et al. 1993. Structure and mechanism of the G protein-coupled receptor kinases. *J. Biol. Chem.* 268: 23735-23738.
6. 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.
7. Premont, R.T., et al. 1994. Identification, purification, and characterization of GRK5, a member of the family of G protein-coupled receptor kinases. *J. Biol. Chem.* 269: 6832-6841.
8. Inglese, J., et al. 1994. Functionally active targeting domain of the β -adrenergic receptor kinase: an inhibitor of $G_{\beta\gamma}$ -mediated stimulation of type II adenylyl cyclase. *Proc. Natl. Acad. Sci. USA* 91: 3637-3641.

CHROMOSOMAL LOCATION

Genetic locus: ADRBK2 (human) mapping to 22q12.1; Adrbk2 (mouse) mapping to 5 F.

SOURCE

GRK 3 (H-43) is a rabbit polyclonal antibody raised against amino acids 646-688 mapping at the C-terminus of GRK 3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GRK 3 (H-43) is recommended for detection of GRK 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

Suitable for use as control antibody for GRK 3 siRNA (h): sc-35514, GRK 3 siRNA (m): sc-35515, GRK 3 shRNA Plasmid (h): sc-35514-SH, GRK 3 shRNA Plasmid (m): sc-35515-SH, GRK 3 shRNA (h) Lentiviral Particles: sc-35514-V and GRK 3 shRNA (m) Lentiviral Particles: sc-35515-V.

Molecular Weight of GRK 3: 83 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, Ramos cell lysate: sc-2216 or HL-60 whole cell lysate: sc-2209.

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.

SELECT PRODUCT CITATIONS

1. Gong, K., et al. 2008. A novel protein kinase A-independent, β -arrestin-1-dependent signaling pathway for p38 mitogen-activated protein kinase activation by β_2 -adrenergic receptors. *J. Biol. Chem.* 283: 29028-29036.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **GRK 3 (C-11): sc-365197**, our highly recommended monoclonal alternative to GRK 3 (H-43).