

# GRK 2 (F-9): sc-166284

## 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

- 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.
- Premont, R.T., et al. 1994. Identification, purification, and characterization of GRK 5, a member of the family of G protein-coupled receptor kinases. *J. Biol. Chem.* 269: 6832-6841.

## CHROMOSOMAL LOCATION

Genetic locus: ADRBK1 (human) mapping to 11q13.2; Adrbk1 (mouse) mapping to 19 A.

## SOURCE

GRK 2 (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 661-699 near the C-terminus of GRK 2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166284 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

GRK 2 (F-9) is recommended for detection of GRK 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

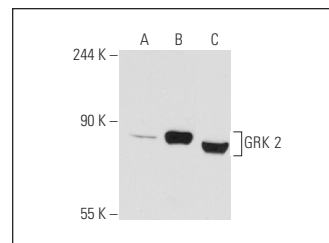
GRK 2 (F-9) is also recommended for detection of GRK 2 in additional species, including canine and porcine.

Suitable for use as control antibody for GRK 2 siRNA (h): sc-29337, GRK 2 siRNA (m): sc-35513, GRK 2 siRNA (r): sc-270408, GRK 2 shRNA Plasmid (h): sc-29337-SH, GRK 2 shRNA Plasmid (m): sc-35513-SH, GRK 2 shRNA Plasmid (r): sc-270408-SH, GRK 2 shRNA (h) Lentiviral Particles: sc-29337-V, GRK 2 shRNA (m) Lentiviral Particles: sc-35513-V and GRK 2 shRNA (r) Lentiviral Particles: sc-270408-V.

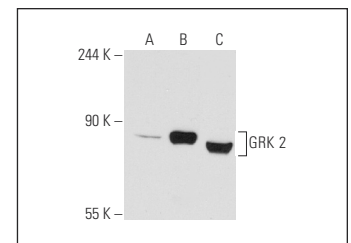
Molecular Weight of GRK 2: 80 kDa.

Positive Controls: Ramos cell lysate: sc-2216, HL-60 whole cell lysate: sc-2209 or GRK 2 (h2): 293T Lysate: sc-115352.

## DATA



GRK 2 (F-9): sc-166284. Western blot analysis of GRK 2 expression in non-transfected 293T: sc-117752 (A), human GRK 2 transfected 293T: sc-115352 (B) and Ramos (C) whole cell lysates.




GRK 2 (F-9): sc-166284. Western blot analysis of GRK 2 expression in non-transfected 293T: sc-117752 (A), human GRK 2 transfected 293T: sc-115352 (B) and Ramos (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Olianas, M.C., et al. 2012.  $\delta$ -Opioid receptors stimulate the metabolic sensor AMP-activated protein kinase through coincident signaling with G<sub>q/11</sub>-coupled receptors. *Mol. Pharmacol.* 81: 154-165.
- Chen, W., et al. 2013. Desensitization of G protein-coupled receptors induces vascular hypocontractility in response to norepinephrine in the mesenteric arteries of cirrhotic patients and rats. *Hepatobiliary Pancreat. Dis. Int.* 12: 295-304.

## RESEARCH USE

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



See **GRK 2 (C-9): sc-13143** for GRK 2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.