SANTA CRUZ BIOTECHNOLOGY, INC.

GRK 4 (81-150): sc-4451 WB

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 are the second messenger-regulated kinases such as c-AMP dependent protein kinase A and protein kinase C. The second are 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 (βARK, βARK1) and GRK 3 (βARK2); 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., Caron, M.G., and Lefkowitz, R.J. 1990. Turning off the signal: desensitization of β-adrenergic receptor function. FASEB J. 4: 2881-2889.
2. Benovic, J.L., Onorato, J.J., Arriza, J.L., Stone, W.C., Lohse, M., Jenkins, N.A., Gilbert, D.J., Copeland, N.G., Caron, M.G., and Lefkowitz, R.J. 1991. Cloning, expression, and chromosomal localization of β-adrenergic receptor kinase 2. J. Biol. Chem. 266: 14939-14946.
3. Lorenz, W., Inglese, J., Palczewski, K., Onorato, J.J., Caron, M.G., and Lefkowitz, R.J. 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.
4. Inglese, J., Freedman, N.J., Koch, W.J., and Lefkowitz, R.J. 1993. Structure and mechanism of the G protein-coupled receptor kinases. J. Biol. Chem. 268: 23735-23738.
5. Liggett, S.B., Freedman, N.J., Schwinn, D.A., and Lefkowitz, R.J. 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.
6. Premont, R.T., Koch, W.J., Inglese, J., and Lefkowitz, R.J. 1994. Identification, purification, and characterization of GRK5, a member of the family of G protein-coupled receptor kinases. J. Biol. Chem. 269: 6832-6841.
7. Pei, G., Tiberi, M., Caron, M.G., and Lefkowitz, R.J. 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 Gβγ subunits. Proc. Natl. Acad. Sci. USA 91: 3633-3636.
8. Inglese, J., Luttrell, L.M., Iñiguez-Lluhi, J.A., Touhara, K., Koch, W.J., and Lefkowitz, R.J. 1994. Functionally active targeting domain of the β-adrenergic receptor kinase: an inhibitor of Gβγ-mediated stimulation of type II adenylyl cyclase. Proc. Natl. Acad. Sci. USA 91: 3637-3641.

SOURCE

GRK 4 (81-150) is expressed in *E. coli* as a 35 kDa tagged fusion protein corresponding to amino acids 81-150 of GRK 4 of human origin.

PRODUCT

GRK 4 (81-150) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

GRK 4 (81-150) is suitable as a Western blotting control for sc-13079.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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