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Product Information

Anti-GRK2

produced in rabbit, affinity isolated antibody

Catalog Number **G0296**

Product Description

Anti-GRK2 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 674-689 located at the C-terminus of human GRK2/ β ARK1 (GeneID: 156), conjugated to KLH. This sequence is specific to GRK2 (not found in human GRK1, and GRK3-7). It is identical in dog GRK2 and highly conserved (single amino acid substitution) in rat, mouse and bovine GRK2/ β ARK1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-GRK2 specifically recognizes human GRK2 by immunoblotting, ~80 kDa. Staining of the GRK2 band in immunoblotting is specifically inhibited by the immunizing peptide.

G protein-coupled receptor kinases (GRKs) are important regulators of G protein-coupled receptors (GPCRs). GRK2, (also termed β -adrenergic receptor kinase-1, β -ARK1 and ADRBK1) is a member of the GRK family that includes seven known GRKs, GRK1-7.¹⁻³ Activation of GPCRs by various ligands results in GPCRs interaction with heterotrimeric G proteins and subsequent phosphorylation of GPCRs by GRKs. GRKs mediate the uncoupling of GPCRs from G proteins, and participate directly in receptor endocytosis and trafficking, and modulation of ERK/MAPK cascade by GPCRs.² GRK2 is ubiquitously expressed and specifically phosphorylates the activated form of the β_2 -adrenergic receptor (β_2 -AR) and related GPCRs. GRK2 appears to mediate the agonist-specific desensitization observed at high agonist concentrations. Its activity is tightly controlled by different mechanisms including phosphorylation by kinases such as PKC, src, ERK1/2 and p38MAPK. ERK phosphorylates and thus inactivates GRK2 on Ser⁶⁷⁰ in a negative feedback mechanism.^{4,5} GRK2/ β -ARK1 levels are elevated in failing human heart tissue, suggesting that GRK2 is involved in the pathogenesis of chronic heart failure.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~2.0 mg/ml

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1 μ g/ml is recommended using HEK-293T cells expressing human GRK2, or using Jurkat cell lysate.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working concentrations by titration test.

References

1. Pitcher, J.A., et al., *Ann. Rev. Biochem.*, **67**, 653-692 (1998).
2. Penela, P., et al., *Cell Signal.*, **15**, 973-981 (2003).
3. Ren, X-R., et al., *Proc. Natl. Acad. Sci., USA*, **102**, 1448-1453 (2005).
4. Pitcher, J.A., et al., *J. Biol. Chem.*, **274**, 34531-34534 (1999).
5. Aragay, A.M., et al., *FEBS Lett.*, **430**, 37-40 (1998).

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