Data Sheet (Cat.No.TMPY-04562)

TargetMol

GRK2 Protein, Human, Recombinant (His & GST)

General Information

Synonyms:	β;adrenergic, beta, receptor kinase 1
Protein Construction:	A DNA sequence encoding the human ADRBK1 (NP_001610.2) (Met 1-Leu 689) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P25098
Molecular Weight:	107 kDa (predicted); 110 kDa (reducing conditions)

QC Testing

Biological Activity:	No Kinase Activity
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 500 mM NaCl, 0.5 mM GSH, pH 8.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

G-protein coupled receptor kinase 2 (GRK2), also referred as Adrenergic, beta, receptor kinase 1 (ADRBK1), is a ubiquitous member of the G protein-coupled receptor kinase (GRK) family that appears to play a central, integrative role in signal transduction cascades. GRK2 can phosphorylate a growing number of non-GPCR substrates and associate with a variety of proteins related to signal transduction, thus suggesting that this kinase could also have diverse 'effector' functions. GRK2 has been reported to interact with a variety of signal

transduction proteins related to cell migration such as MEK, Akt, PI3Kgamma or GIT. Interestingly, the levels of expression and activity of this kinase are altered in a number of inflammatory disorders (as rheumatoid arthritis or multiple sclerosis), thus suggesting that GRK2 may play an important role in the onset or development of these pathologies. The important physiological function of GRK2 as a modulator of the efficacy of GPCR signal transduction systems is exemplified by its relevance in cardiovascular physiopathology as well as by its emerging role in the regulation of chemokine receptors. Besides its canonical role in the modulation of the signalling mediated by many G protein-coupled receptors (GPCR), this protein can display a very complex network of functional interactions with a variety of signal transduction partners, in a stimulus, cell type, or context-specific way.

Reference

Penela P,et al.(2010) The complex G protein-coupled receptor kinase 2 (GRK2) interactome unveils new physiopathological targets. Br J Pharmacol. 160(4): 821-32.
Penela P,et al.(2008) G protein-coupled receptor kinase 2 (GRK2) in migration and inflammation. Arch Physiol Biochem. 114(3): 195-200.
Aragay AM,et al.(1998) protein-coupled receptor kinase 2 (GRK2): mechanisms of regulation and physiological functions. FEBS Lett. 430(1-2): 37-40.

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