

## GRK2 Protein, Human (sf9, His-GST)

Cat. No.:	HY-P75155
Synonyms:	Beta-adrenergic receptor kinase 1; Beta-ARK-1; ADRBK1; BARK; BARK1
Species:	Human
Source:	Sf9 insect cells
Accession:	P25098 (M1-L689)
Gene ID:	156
Molecular Weight:	Approximately 110 kDa

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 50 mM Tris, 500 mM NaCl, 0.5 mM GSH, pH 8.0. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

GRK2 protein demonstrates a high degree of specificity as it selectively phosphorylates the agonist-occupied form of beta-adrenergic and closely related receptors, provoking their desensitization. This phosphorylation activity serves as a pivotal regulatory mechanism in receptor signaling. Additionally, GRK2 acts as a key modulator in LPAR1 signaling, engaging in competition with RALA for LPAR1 binding and influencing the receptor's signaling properties. Notably, GRK2 exhibits a phosphorylation-independent desensitization of LPAR1 and LPAR2. Beyond its role in G protein-coupled receptor desensitization, GRK2 plays a significant positive regulatory role in the ciliary Smoothed (SMO)-dependent Hedgehog (Hh) signaling pathway by facilitating SMO trafficking into the cilium and enhancing SMO activity. Furthermore, GRK2's involvement in the regulation of airway smooth muscle relaxation in response to blue light adds another layer to its diverse functional repertoire.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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