

GNGT1 Protein, Human, Recombinant (His)

General Information

Synonyms:	guanine nucleotide binding protein (G protein), γ transducing activity polypeptide 1;GNGT1; guanine nucleotide binding protein (G protein), gamma transducing activity polypeptide 1
Protein Construction:	A DNA sequence encoding the mature foem of human GNGT1 (P63211) (Pro 2-Cys 71) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P63211
Molecular Weight:	9.9kDa (predicted); 9.0 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.5. 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

GNGT1 is a subunit of transducin. Heterotrimeric G proteins consist of alpha, beta, and gamma subunits. They are membrane-bound GTPases that are linked to 7-TM receptors. They function as signal transducers for the 7-transmembrane-helix G protein-coupled receptors. They are involved as a modulator or transducer in various transmembrane signaling systems. G proteins are bound to GDP in the 'off' state. GNGT1 is the gamma subunit of

transducin. Ligand-receptor binding results in detachment of the G protein, switching it to an 'on' state and permitting Galpha activation of second messenger signaling cascades. There are several types of Galpha proteins; also, some Gbetagamma subunits have active functions. Gbetagamma coupled to H1 receptors can activate PLA2 and Gbetagamma coupled to M1 receptors can activate KIR channels. The beta and gamma chains are required for the GTPase activity, for replacement of GDP by GTP, and G protein-effector interaction.

Reference

- Tao L,et al. (1993) Structure of the bovine transducin gamma subunit gene and analysis of promoter function in transgenic mice. *Exp Eye Res.* 56 (4): 497-507.
- Yan K,et al. (1996) Differential ability to form the G protein betagamma complex among members of the beta and gamma subunit families. *J Biol Chem.* 271 (12): 7141-6.
- Gaudet R,et al. (1999) A molecular mechanism for the phosphorylation-dependent regulation of heterotrimeric G proteins by phosducin. *Mol Cell.* 3 (5): 649-60.

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