Data Sheet (Cat.No.TMPY-02549)

TargetMol

GBP1 Protein, Human, Recombinant (His)

General Information

Synonyms:	guanylate binding protein 1;GBP1
Protein Construction:	A DNA sequence encoding the human GBP1 (AAA35871.1) (Met 1-Cys 589) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Met 1
Species:	Human
Expression Host:	HEK293 Cells
Accession:	AAA35871.1
Molecular Weight:	69 kDa (predicted); 65 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:	> 95 % 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 PBS, pH 7.4. 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

Guanylate-binding protein 1 (GBP-1) is a member of the GBP family whose members are GTPases induced in response to interferon-λ (IFN-λ), with seven highly homologous members in humans, termed HuGBP-1 to HuGBP-7. GBP-1 expression is induced by type1 and type2 interferons, including IFN-λ and also by interleukin-1β (IL-1β), IL-1α, and tumor necrosis factor-α (TNF-α). GBP-1 is key to the protective immunity against microbial and viral pathogens. GBP-1 was only secreted from endothelial cells. Secretion occurred without the presence of a leader

peptide. Secretion procession is a nonclassical, likely ABC transporter-dependent, pathway and independent of GBP-1 GTPase activity and isoprenylation, and did not require additional interferon-λ-induced factors. Clinically most important was the detection of significantly increased GBP-1 concentrations in the cerebrospinal fluid of patients with bacterial meningitis as compared to control patients.

Reference

Tripal P,et al.(2007) Unique features of different members of the human guanylate-binding protein family. J Interferon Cytokine Res. 27(1): 44-52.

Naschberger E,et al.(2006) Human Guanylate Binding Protein-1 Is a Secreted GTPase Present in Increased Concentrations in the Cerebrospinal Fluid of Patients with Bacterial Meningitis. Am J Pathol. 169(3): 1088-99.

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