Data Sheet (Cat.No.TMPY-06702)

TargetMol

Cortisol Binding Globulin Protein, Mouse, Recombinant (His & Avi), Biotinylated

General Information

Synonyms:	Cbg;AI265318;serpin peptidase inhibitor, clade A (α-1 antiproteinase, antitrypsin), member 6;serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin), member 6; AV104445;SerpinA6
Protein Construction:	A DNA sequence encoding the Mouse SerpinA6 (Q06770) (Met1-Ala397) was expressed with a C-terminal Avi tag followed by a His tag. The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. Predicted N terminal: Val 23
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q06770
Molecular Weight:	45.54 kDa (predicted); 68.15 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. ≥ 95 % as determined by SEC-HPLC.
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:

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.

Shipping:

In general, Lyophilized powders are shipping with blue ice.

Protein Background

Corticosteroid-binding globulin (CBG), also known as SerpinA6, is a non-inhibitory member of the serine proteinase inhibitor (serpin) superfamily. It is the high-affinity transport protein for glucocorticoids in vertebrate blood. CBG is specifically cleaved by this protease at a precise site close to its carboxy-terminus. This induces a

conformation change and disrupts the binding between glucocorticoids and CBG, and promotes a significant and local release of glucocorticoids (over 90% of them are bound to CBG in human plasma). In this context, CBG directs glucocorticoids to sites of inflammation, and plays in consequence a crucial role in efficient glucocorticoid action in physiology. The SerpinA6 protein is mainly secreted by the liver. This negative acute phase protein regulates free cortisol levels in the blood and distributes cortisol to its target tissues. SerpinA6 deficiency is an extremely rare hereditary disorder characterized by reduced corticosteroid-binding capacity with normal or low plasma corticosteroid-binding globulin concentration, and normal or low basal cortisol levels associated with hypo-/hypertension and muscle fatigue. There are three heritable, human CBG gene mutations that can reduce CBG-cortisol binding affinity and/or reduce circulating CBG levels.

Reference

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Torpy DJ,et al.(2007) Corticosteroid-binding globulin gene polymorphisms: clinical implications and links to idiopathic chronic fatigue disorders. Clin Endocrinol (Oxf). 67(2): 161-7.

Braun BC,et al.(2010) Effect of mutations of the human serpin protein corticosteroid-binding globulin on cortisol-binding, thermal and protease sensitivity. J Steroid Biochem Mol Biol. 120(1): 30-7.

Lin HY,et al.(2010) Molecular and structural basis of steroid hormone binding and release from corticosteroid-binding globulin. Mol Cell Endocrinol. 316(1): 3-12.

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