

Corticosteroid-Binding Globulin Mouse HEK293

Product Data Sheet

Type: Recombinant	Cat. No.:	
Source: HEK293	RD272464100	(0.1 mg)
Species: Mouse		
Other names: Transcortin, CBG, Serpin A6		

Description

Total 384 AA. MW: 43.5 kDa (calculated). UniProtKB acc.no. Q06770 (Val23-Ala397). C-terminal his-tag (9 extra AA). Protein identity confirmed by LC-MS/MS.

Introduction to the Molecule

Human corticosteroid binding globulin (CBG, transcortin), also referred to as SerpinA6, belongs to the serpin superfamily. Corticosteroid binding globulin is a 52 kDa secreted alpha1-glycoprotein consisting of 405 amino acids. Corticosteroid binding globulin is synthesized and secreted by hepatocytes in the liver and is present in glucocorticoid responsive cells. The concentration of corticosteroid binding globulin is regulated by estrogens. CBG is the major transport protein for progestins and glucocorticoids within the blood. Thus CBG regulates their bioavailability and metabolic clearance and protects them from absorption into cells and degradation by chemicals and enzymes. CBG contains a single steroid binding site with high affinity for cortisol and progesterone. About 80-90% of circulating cortisol is bound to CBG. Albumin bound cortisol is reported to represent 14% and free cortisol 6% of total plasma cortisol under basal conditions. The CBG bound cortisol is considered to be biologically inactive, whereas the unbound cortisol constitutes the active form of cortisol. The active fraction of plasma cortisol will thus depend on the concentration of CBG. Defects in the gene encoding CBG are the cause of corticosteroid binding globulin deficiency (CBG deficiency), a rare disorder characterized by reduced CBG production that results in hypo/hypertension and muscle fatigue. The plasma concentration of CBG shows little or no diurnal variation and no marked differences are observed in adult subjects according to age, sex or menstrual cycle. In umbilical cord blood, however, CBG is present at half of the normal adult level and prepubertal children have higher levels than adults. Plasma CBG levels increase during pregnancy and are decreased in cirrhosis. Estrogen therapy (e.g. oral hormonal contraception) or implantation during pregnancy cause a very marked increase of the CBG concentration. Decreased levels of CBG are observed in women with polycystic ovary syndrome, hypoproteinemia, Cushing's syndrome or corticoid treatment and some cases of vitamin B12 deficiency. Extremely low levels of CBG have been reported in patients with septic shock. Measurement of corticosteroid binding globulin is important to the interpretation of cortisol levels. The concentration of unbound cortisol, which is biologically active, can be calculated from the concentration of total cortisol and that of CBG on the basis of mass action.

Research topic

Immune Response, Infection and Inflammation, Steroid hormones

Amino Acid Sequence

VTDEDSSSHR DLAPTNVDFA FNLYKRLVAL NSDKNTLISP VSISMALAML SLSTRGSTQY LENLGFNMSK MSEAEIHQGF
 QYLNSSLQQS DTGLEMMNGN VMFLLQNLKL KDSFLADTKH YYESEALTIP SKDWTKAGEQ INNHVKNKTQ GKIEHVVSDL
 DSSATLILIN YIFLKGIWKL PFSPTREE DFYVNETSTV KVPMMVQSGN ISYFRDSAIP CQMVQMNYVG NGTTFIILPD
 QGQMDTVVAA LNRDTIDRWG KLMIPRQMNL YIPKFSMSDT YDLQDVLADV GIKDLFTNQS DFADTTKDTP LTLTVLHKAM
 LQLDEGNVLP AATNGPPVHL PSESFTLKYN RPFIFLAFDK YTWSSLMMSQ VMNPA **HHHHH HHHH**

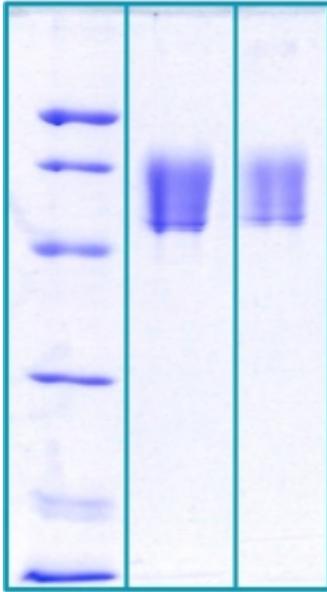
Source

HEK293

Purity

Purity as determined by densitometric image analysis: >95%

SDS-PAGE gel



14 % SDS-PAGE separation of Mouse Corticosteroid-Binding Globulin:

1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. Reduced and boiled sample, 2.5 µg/lane
3. Non-reduced and non-boiled sample, 2.5 µg/lane

Endotoxin

< 1.0 EU/µg

Formulation

Filtered (0.4 µm) and lyophilized from phosphate buffered saline pH8.0.

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store the lyophilized protein at -80 °C. Lyophilized protein remains stable until the expiry date when stored at -80 °C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80 °C for long term storage. Reconstituted protein can be stored at 4 °C for a week.

Quality Control Test

BCA to determine quantity of the protein.
SDS-PAGE to determine purity of the protein.
LAL TEST to determine endotoxin level.

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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