



Zinc-Alpha-2-Glycoprotein Human, Rabbit Polyclonal Antibody

Product Data Sheet

Source of Antigen: 293 cell line (Human embryonic kidney)

Cat. No.:

Host: Rabbit

RD181093100 (0.1 mg)

Other names: ZA2G, ZAG, AZGP1, Zn-alpha-2-glycoprotein, Zn-alpha-2-GP, ZNGP1

Research topic

Animal studies, Energy metabolism and body weight regulation, Oncology

Preparation

The antibody was raised in rabbits by immunization with the recombinant Human ZA2G.

Amino Acid Sequence

The immunization antigen is a protein containing 290 AA of recombinant Human ZA2G. The AA sequence (AA 13-290) is identical to Swiss-Prot-P25311 (AA 18-295, mature Zinc-Alpha-2- Glycoprotein). 12 extra AA were fused with the N-terminus (highlighted).

ASWSHPQFEK GSQENQDGRY SLTYIYTGLS KHVEDVPAFQ ALGSLNDLQF FRYNSKDRKS QPMGLWRQVE GMEDWKQDSQ
LQKAREDIFM ETLKDIVEYY NDSNGSHVLQ GRFGCEIENN RSSGAFWKYY YDGKDYIEFN KEIPAWVPFD PAAQITKQKW
EAEPVYVQRA KAYLEEECPA TLRKYLKYSK NILDRQDPPS VVVTSHQAPG EKKKLKCLAY DFYPGKIDVH WTRAGEVQEP
ELRGDVLHNG NGTYQSWVVV AVPPQDTAPY SCHVQHSSLA QPLVVPWEAS

Ala 1 to His 5 were confirmed by N-terminal sequencing.

Species Reactivity

Human

Not yet tested in other species.

Purification Method

Immunoaffinity chromatography on a column with immobilized recombinant Human ZA2G.

Antibody Content

0.1 mg (determined by BCA method, BSA was used as a standard)

Formulation

The antibody is lyophilized in 0.05 M phosphate buffer, 0.1 M NaCl, pH 7.2. **AZIDE FREE.**

Reconstitution

Add 0.1 ml of deionized water and let the lyophilized pellet dissolve completely. Slight turbidity may occur after reconstitution, which does not affect activity of the antibody. In this case clarify the solution by centrifugation.

Shipping

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

Storage/Stability

The lyophilized antibody remains stable and fully active until the expiry date when stored at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles and store frozen at -80°C. Reconstituted antibody can be stored at 4°C for a limited period of time; it does not show decline in activity after one week at 4°C.

Expiration

See vial label.

Lot Number

See vial label.

Quality Control Test

Indirect ELISA - to determine titer of the antibody

SDS PAGE - to determine purity of the antibody

Applications

ELISA, Western blotting

Introduction to the Molecule

Zinc-alpha-2-glycoprotein (ZAG) is found in body fluids such as serum, sweat, and seminal and breast cyst fluids. It is identical in amino acid sequence to tumor-derived lipid mobilizing factor (LMF), a protein associated with the dramatic loss of adipose body stores in cancer cachexia, and has been shown to stimulate lipolysis by adipocytes in vivo and in vitro. A role for ZAG has been proposed in the regulation of body weight, and age-dependent changes in genetically influenced obesity, and also it regulates melanin production by normal and malignant melanocytes. It has also recently been classified as a novel adipokine in that it is produced by both white and brown fat adipocytes and may act in a local autocrine fashion in the reduction of adiposity in cachexia. Controlling ZAG/LMF's activity could be life-saving in the management of certain cancers and other cachexia-inducing conditions, and its possible normal role in body fat store homeostasis is deserving of understanding in its own right. ZAG exhibits a class I major histocompatibility complex (MHC) fold but is a soluble protein rather than being anchored to plasma membranes and does not associate with alpha-2-microglobulin in humans. Like antigen-presenting MHC class I proteins, ZAG has an open apical groove, and X-ray crystallography of human-derived ZAG revealed an unidentifiable electron density in a similar position to that occupied by antigenic peptides in classical MHC proteins and glycolipids in isoforms of CD1. This presumptive ligand is not a peptide, and the groove is too small to hold a glycolipid such as is presented by CD1 isoforms. By analogy with all other MHC class I-related proteins that have an open apical groove [some do not], occupancy by a ligand is probably crucial to ZAG's biological function. Despite all of the structural and biochemical evidence that ZAG binds a ligand, none has so far been found by extraction from protein isolated from biological fluids. This difficulty could be because the ligand is labile, heterogeneous, or readily lost during purification procedures. Knowing more about how ZAG interacts with the compounds it has been found to bind, both natural and artificial, will inform searches for the elusive ligand(s) and its/their role in ZAG's signaling function.

References to this Product

- Kong B, Michalski CW, Hong X, Valkovskaya N, Rieder S, Abiatari I, Streit S, Erkan M, Esposito I, Friess H, Kleeff J. *AZGP1 is a tumor suppressor in pancreatic cancer inducing mesenchymal-to-epithelial transdifferentiation by inhibiting TGF-beta-mediated ERK signaling.* Oncogene. 2010 Jun 28;
- Vanni H, Kazeros A, Wang R, Harvey BG, Ferris B, De BP, Carolan BJ, Hubner RH, O'Connor TP, Crystal RG. *Cigarette smoking induces overexpression of a fat-depleting gene AZGP1 in the human.* Chest. 2009 May;135 (5):1197-208
- Brettschneider J, Mogel H, Lehmsiek V, Ahlert T, Sussmuth S, Ludolph AC, Tumani H. *Proteome Analysis of Cerebrospinal Fluid in Amyotrophic Lateral Sclerosis (ALS).* Neurochem Res. 2008 May 15;

Note

This product is for research use only.

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