

## Zinc-Alpha-2-Glycoprotein NATIVE, Human serum

### Product Data Sheet

**Type:** Native  
**Source:** Human serum  
**Species:** Human  
**Other names:** ZA2G, ZAG, AZGP1, Zn-alpha-2-glycoprotein, Zn-alpha-2-GP, ZNGP1

**Cat. No.:** RD162093025 (0.025 mg)

### Description

Native protein isolated from pooled human serum, 278 AA, MW 32,14 kDa (calculated without glycosylation). Protein identity confirmed by LC-MS/MS.

### 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.

### Research topic

Energy metabolism and body weight regulation, Oncology

### Amino Acid Sequence

QENQDGRYSL TYIYTGLSKH VEDVPAFQAL GSLNDLQFFR YNSKDRKSQP MGLWRQVEGM EDWKQDSQLQ KAREDIFMET  
LKDIVEYYND SNGSHVLQGR FGCEIENNRS SGAFWKYYDD GKDYIEFNKE IPAWVPFDPA AQITKQKWEA EPVYVQRAKA  
YLEEECPATL RKYLKYSKNI LDRQDPPSVV VTSHQAPGEK KKLKCLAYDF YPGKIDVHWT RAGEVQEPEL RGDVLHNGNG  
TYQSWVVAV PPQDTAPYSC HVQHSSLAQP LVVVPWEAS

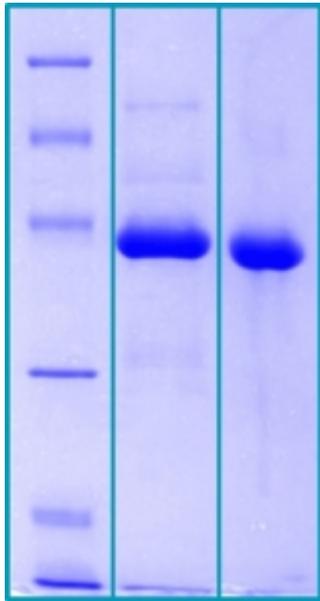
### Source

Human serum

### Purity

80%

## SDS-PAGE gel



SDS-PAGE analysis of Human Zinc-alpha-2-Glycoprotein native protein  
12% gel stained with Coomassie Brilliant Blue R250

1) M.W. marker - 14, 21, 31, 45, 66, 97 kDa

2) reduced and heated sample, 2.5µg/lane

3) non-reduced and non-heated sample, 2.5µg/lane

## Endotoxin

< 1.0 EU/ug

## Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 20mM TRIS, 50mM NaCl, pH 8.0

## Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

## Shipping

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

## Storage, Stability/Shelf Life

Store 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 to determine quantity of endotoxin.

## Applications

Cell culture and/or animal studies, ELISA, Immunological methods, Western blotting

## Note

All blood samples used for protein preparation were tested and found negative for HBsAg, anti-HCV, HIV Ag/Ab, and syphilis. Since no test can absolutely assure the absence of all infectious agents, this product should be handled as a potential biohazard. This product is intended for research use only.

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