



**IMD**

# **2022 CATALOG**

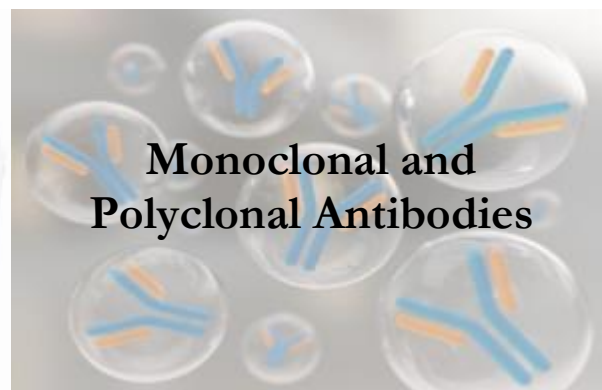
## **RECOMBINANT PROTEINS**

Research Topics: Diabetes, Obesity, Metabolism, Cardiovascular Disease,  
Renal Disease, Inflammation, Infection

## About Us

**ImmunoDiagnostics Limited (IMD)** is a spin-off biotech company from The University of Hong Kong, and has R&D activities in both Toronto, Canada and Hong Kong. The founders of IMD are academic professoriates with strong research background in immunology, metabolism, cardiovascular medicine, and antibody and protein engineering. The company has over 13 years of experience in biomarker discovery and development of highly-specific immunoassays for both research & *in vitro* diagnostics (IVD) for major infectious diseases, cardiometabolic disorders and autoimmune diseases.

IMD has established state-of-the-art platforms for expression, purification and functional characterization of bioactive proteins from different sources (*E. coli*, yeast, insect cells and mammalian cells), generation and validation of both polyclonal and monoclonal antibodies, identification and cloning of genes encoding monoclonal antibodies specific to a target of interest using Next Generation Sequencing. Furthermore, our immunoassays have been validated in a large number of unique clinical biobanks in Asia, Europe and North America. Thus far, IMD has developed several hundreds of research products, including bioactive proteins, validated antibodies and immunoassays, which have been widely used in over 30 countries, such as the United States, Canada, United Kingdom, China, Australia and Singapore. IMD products have been cited by many publications in prestigious journals including *Cell*, *Cell Metabolism*, *Nature Series*, *JCI*, *PNAS*.



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## Human Retinol Binding Protein 4 (RBP4)

(Cat. No.: 41060)

Type:	Recombinant	Cat. No.:	41060
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	RBP4	Species:	Human

### Introduction to the Molecule:

Retinol binding protein 4(RBP4), originally known as a specific transport of retinol in blood, is also a novel inflammatory and insulin resistance marker. Serum levels of RBP4 increased in insulin resistant and diabetes. Studies both in human and animal suggested that serum levels of RBP4 plays a key role in the link between obesity, insulin resistant and diabetes. Animal experiments found that increased secretion of RBP4 might reduce insulin-dependent glucose uptake by muscle tissue by reducing the activity of PI(3)K (phosphoinositide 3-kinase), and increased hepatic glucose output by increasing the expression of the enzyme PEPCCK. However, whether serum RBP4 could be a biomarker of type 2 diabetes risk still remain unclear.

### Description:

Total 211 AA. Mw: 24.4 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAMGSEKDCRVSSFRVKNFDFKARFSGTWYAMAKKDPEGL  
FLQDNIVAEFSDVDETGQMSATAKGRVRLNNDVDCADMVGTFTDTEPAKFKMKYWGVASFLQ  
KGNDDHWIVDTDYDYAVQYSCRLNLDGTCADSYSFVFSRDPNGLPPEAQKIVRQRQEELCLAR  
QYRLIVHNGYCDGRSERNLL

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing/thawing cycles.

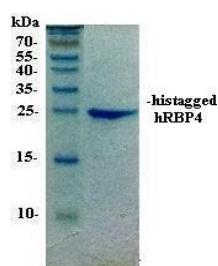
### Applications:

ELISA and Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Fibroblast Growth Factor 23 (R179Q)

(Cat. No.: 41295)

Origin:	Recombinant	Cat. No.:	41295
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	FGF23	Species:	Human

### Introduction to the Molecule:

FGF-23 is a bone-derived hormone that acts in the kidney to regulate phosphate homeostasis and vitamin D metabolism. The signaling receptor for FGF-23, a Klotho-FGFR1 (IIIc) complex, is an essential regulator of the renal sodium phosphate co-transporter and key vitamin D-metabolizing enzymes CYP27B1 and CYP24A1. Mature human FGF•23 contains an atypical (very low affinity) heparin binding site (aa 134•162), a proteolytic cleavage site (Arg179•Ser180), and multiple O•linked glycosylation sites with Thr178 being of particular importance. O•linked glycosylation at Thr178 blocks the cleavage of FGF•23, thereby preventing loss of FGF•23 activity. This recombinant human FGF23 bears mutation at 179th aa from arginine to glutamine preventing proteolytic cleavage.

### Description:

Expressed in E. coli with total 271 AA. Mw: 30.4 KDa (calculated).

N-terminal 6xHis-tag, EK and TEV cleavage site, 44 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSENLYFQGAYPNASPLLGSSWGGLIHLTYA  
TARNSYHLQIHKNGHVDGAPHQTIYSALMIRSEDAGFVVITGVMSRRYLCMDFRGNIFGSHYFDPENCR  
FQHQTLENGYDVYHSPQYHFLVSLGRAKRAFLPGMNPPPYSQLSRRNEIPLHFNTPIPRRHTQSAED  
DSERDPLNVLKPRARMTPAPASCSQELPSAEDNSPMASDPLGVVVRGGRVNTTHAGGTGPEGCRPFA  
KFI

### Applications:

Standard ELISA test, Western Blot.

### Formulation:

Lyophilized at 1 mg/mL in 50mM Tris, 300mM NaCl, 400mM arginine.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

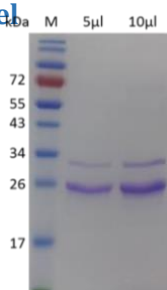
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse Major Urinary Protein-1 (MUP-1) (Cat. No.: 42150)

Type:	Recombinant	Cat. No.:	42150
Tag:	His	Size:	0.1 mg
Source:	E.Coli	Purity:	>95%
Other names:	Mup7, Up-1, Ltn-1, Mup-1, Mup- a, Mup10, Lvtn-1	Species:	Mouse

### Introduction to the Molecule:

Major urinary protein 1 (Mup1), also known as Mup7, Up-1, Ltn-1, Mup-1, Mup-a, Mup10 and Lvtn-1, is a low molecular weight secreted protein produced predominantly from the liver. Structurally it belongs to the lipocalin family, which carries small hydrophobic ligands such as pheromones. Mup1 is an important player in regulating energy expenditure and metabolism in mice, and its deficiency might contribute to the metabolic dysregulation in obese/diabetic mice.

### Description:

Total 190 AA. Mw: 22 KDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAMGSEEASSTGRNFNVEKINGEWHTIILASDKREKIEDNGN  
FRLFLEQIHVLENSLVLFHTVRDEECSELSMVADKTEKAGEYSVTYDGFNTFTIPKTDYDNFLMA  
HLINEKDGETFQLMGLYGREPDLSSDIKERFAQLCEKHGILRENIIDLSNANRCLQARE

### Formulation:

Lyophilized in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

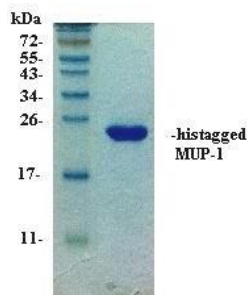
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### Applications:

ELISA and Western blotting.

### SDS-PAGE Gel



## Human GDF15

(Cat. No.: 41980)

Origin:	Recombinant	Cat. No.:	41980
Tag:	N-terminal 6xHis	Size:	20 g
Source:	E. coli	Purity:	>90%
Other names:	MIC-1, PDF	Species:	Human

### Introduction to the Molecule:

GDF-15 plays an important role in tumorigenesis and metastasis. It has been observed that in many types of cancers, such as colorectal, breast, and prostate, the expression of GDF-15 is dramatically increased.

Additionally, in cancer patients, serum levels of GDF-15 are elevated, which are of value in disease diagnosis and stratification. GDF-15 is strongly induced by the tumor suppressor gene p53 and other anti-tumorigenic agents, such as the non-steroidal anti-inflammatory drugs and peroxisome proliferators activated receptor  $\gamma$ . These findings suggest that GDF-15 may be a downstream target of those signaling pathways that regulate cell cycle arrest and apoptosis. Through the modulation of neuronal pathways important in the regulation of appetite and energy homeostasis, GDF-15 mediates cancer-induced anorexia and weight loss.

### Description:

Expressed in HEK293 cells with total 155 AA. Mw: 17.2 KDa (calculated).

N-terminal 6xHis-tag, EK recognition site and TEV cleavage site, 43 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQMQGRDLYDDDDKDRWGSENYLFQGARNGDHCPLGPGRCRLHTVRSASLE  
DLGWADWVLSPREVQVTMCIGACPSQFRAANMHAQIKTSLHRLKPDTVPAPCCVPASYNPMVLIQKTDTG  
VSLQTYDDLLAKDCHCI

### Applications:

Functional study, standard ELISA test, Western Blot.

### Formulation:

Stored in 50mM NaH<sub>2</sub>PO<sub>4</sub>, 20% glycerol, pH 7.4 at 0.1mg/ml.

### Storage:

Store at -80°C. Avoid repeated freezing /thawing cycles.

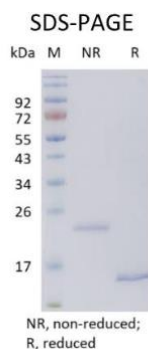
### Quality Control Test:

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

### Bioactivity Test:

Recombinant hGDF15 is able to activate ERK phosphorylation in HEK293 cells co-transfected with GFRAL and RET51, which are receptor and co-receptor of GDF15.

### SDS-PAGE Gel



## Human Annexin A8 (ANXA8)

(Cat. No.: 41720)

Origin:	Recombinant	Cat. No.:	41720
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other Names:	ANXA8	Species:	Human

### Introduction to the Molecule:

Annexin A8 (ANXA8) belongs to the annexin family of evolutionally conserved Ca<sup>2+</sup> and phospholipid binding proteins. ANXA8 may function as an anticoagulant which inhibits the function of thromboplastin- specific complex in an indirect way. Overexpression of this gene has been shown to be associated with acute myelocytic leukemia.

Human ANXA8 shares 92.661% sequence identity with rat ANXA8 and 92.094% with mouse ANXA8.

### Description:

Expressed in E. coli cells with total 392 AA. Mw: 44.35 KDa (calculated).

N-terminal 6xHis-tag, EK and TEV cleavage site, 46 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDD  
DDKDRWGSLEENLYFQGAAWWKSWEQEG  
VTVKSSSHFNPDPAETLYKAMETKGIGTNE  
QAIIDVLTKRSNTQRQQAISFKAQFGKDLTE  
TLKSELGKFERLIVALMETYPPYRYEAKELH  
DAMETKGLGTKEGVIIELASRTKNQLREIME  
TKAYEEDYGSSLEEDIQADTSGYLERILVCLLQ  
GSRDDVSSFVDPGLALQDAQDLYAAGEKIRG  
TDEMETFITILCTRSATHLLRVFEEYEKIAN

KSIEDSIKSETHGSLEEAMETLTVVKCTQNLH  
SYFAERLYAMETKGAGTRDGTLRNIVSRSE  
IDLNLIKCHFCKMETYGKTLSSMETIMETEDT  
SGDY KNALLSLVGSDP

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in storage buffer (50mM Tris, 300-500mM NaCl, 10% Glycerol, PH8.0).

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

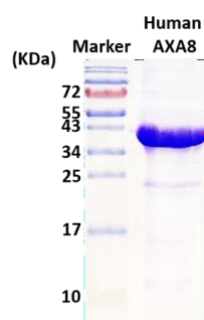
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel





## Mouse Autotaxin (ATX)

(Cat. No.: 42771)

Origin:	Recombinant	Cat. No.:	42771
Tag:	C-terminal 6xHis	Size:	0.1 mg
Source:	HEK293	Purity:	>90%
Other Names:	ATX, ENPP2	Species:	Mouse

### Introduction to the Molecule:

Autotaxin (ATX, ENPP2) is a secreted glycoprotein with phosphodiesterase (PDE) activity. It is one of the members in the nucleotide pyrophosphatase/phosphodiesterase family (NPPs) family. ATX has lysophospholipase D activity that converts lysophosphatidylcholine into LPA, and it was originally identified as a tumor cell-motility-stimulating factor. LPA, which specifically binds to G protein-coupled receptors (GPCR), plays a wide range of biological activities, including cell hyperproliferation, which may contribute to oncogenesis and metastasis.

ATX has been to be overexpressed in many tumor cells, and thus plays an important role in tumor development and metastasis. In addition, ATX also plays an important role in nervous and immune systems.

### Description:

Expressed in HEK293 cells with total 907 AA. Mw: 104.26 KDa (calculated). C-terminal 6xHis-tag, 9 extra AA (highlighted).

Recombinant protein for research use or manufacturing only.

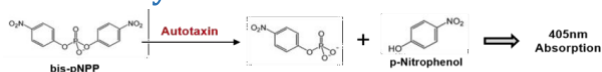
### Amino Acid Sequence:

METARQGCFGSYQVISLFTFAIGVNLCLGFTASRIKRAE  
 WDEGPPTVLSDSPWTNTSGSCKGRCFELQEVGPPDCR  
 CDNLCKSYSSCCHDFDELCLKTARGWECTKDRCGEVR  
 NEENACHCEDCLSRGDCTNYQVVCKGESHVDDDD  
 CEEIRVPECPAGFVRPPLIIFSVDGFRASYMETKKGSKV  
 METPNIEKLRSCTHAPYMETRPVYPTKTFPNLYTLA  
 TGLYPESHGIVGNSMETYDPVFDATFHLRGREKFNHR  
 WWGGQPLWITATKQGVRACTFFWSVSIPHERRILTIL  
 QWLSLPDNERPSVYAFYSEQPDFSGHKYGPFGPEMET  
 TNPLREIDKTVGQLMETDGLKQLKLRVNVIFVGDH  
 GMETEDVTCDRTEFLSNYLTNVDDITLVPGLGRIRPK  
 IPNNLKYPD

### Endotoxin Level:

<0.01 EU per 1 µg of the protein by the LAL method.

### Bioactivity Test:



Measured by enzymatic ability to cleave Bis (p- Nitrophenyl) Phosphate (BPNPP).

The specific activity of mouse ATX is > 5,000 pmol/min/µg

\* Specific Activity (pmol/min/µg) = Adjusted Vmax\* (OD/min) x Conversion Factor (pmol/OD)/Amount of Enzyme (µg)

### Formulation:

Lyophilized at 1 mg/mL in storage buffer (10mM Na<sub>2</sub>HPO<sub>4</sub>, 2 mM KH<sub>2</sub>PO<sub>4</sub>, 300-500mM NaCl, 2.7 mM KCl, PH7.4).

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Autotaxin/ENPP2 (ATX)

(Cat. No: 41771)

Origin:	Recombinant	Cat. No.:	41771
Tag:	C-terminal 6xHis	Size:	0.1 mg
Source:	HEK293	Purity:	>90%
Other Names:	ATX, ENPP2	Species:	Human

### Introduction to the Molecule:

Autotaxin (ATX, ENPP2) is a secreted glycoprotein with phosphodiesterase (PDE) activity. It is one of the members in the nucleotide pyrophosphatase/phosphodiesterase family (NPPs) family.

ATX has lysophospholipase D activity that converts lysophosphatidylcholine into LPA, and it was originally identified as a tumor cell-motility-stimulating factor. LPA, which specifically binds to G protein-coupled receptors (GPCR), plays a wide range of biological activities, including cell hyperproliferation, which may contribute to oncogenesis and metastasis. ATX has been to be overexpressed in many tumor cells, and thus plays an important role in tumor development and metastasis. In addition, ATX also plays an important role in nervous and immune systems.

### Description:

Expressed in HEK293 cells with total 908 AA. Mw: 104.37 KDa (calculated).

C-terminal 6xHis-tag, 9 extra AA (highlighted). Recombinant protein for research use or manufacturing only.

### Amino Acid Sequence:

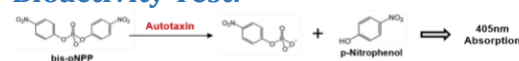
METARRSSFQSCQIISLFTFAVGVNICLGFTAHRIK  
 RAEGWEEGPPTVLSDSPWTNISGCKGRCFELQE  
 AGPPDCRCDNLCKSYTSCCHDFDELCLKTARGWE  
 CTKDRCGEVRNEENACHCEDCLARGDCCTNYQ  
 VVCKGESHVDDDDCEEIKAAECPAGFVRPPLIIFS  
 VDFRASMETKKGSKVMETPNIEKLRSCGTHSP  
 YMETRPVYPTKTFPNLYTLATGLYPESHGIVGNS  
 METYDPVFDATFHRLRGREKFNHRWWGGQPLWI  
 TATKQGVKAGTFFWSVVIPHERRILTILQWLTLPL  
 DHERPSVYAFYSEQPDFSGHKYGFPGPEMETTNP

LREIDKIVGQLMETDGLKQLKLRVCVNVFVGDH  
 GMETEDVTCDRTEFLS

### Endotoxin Level:

<0.01 EU per 1 µg of the protein by the LAL method.

### Bioactivity Test:



Measured by enzymatic ability to cleave Bis (p- Nitrophenyl) Phosphate (BPNPP).

**The specific activity of human ATX is > 30,000 pmol/min/µg.**

Specific Activity (pmol/min/µg) = Adjusted Vmax\* (OD/min) x Conversion Factor (pmol/OD)/Amount of Enzyme (µg)

See protocol of activity assay on [www.immunodiagnostics.com.hk](http://www.immunodiagnostics.com.hk).

### Formulation:

Lyophilized at 1 mg/mL in storage buffer (10mM Na2HPO4, 2 mM KH2PO4, 300-500mM NaCl, 2.7 mM KCl, PH7.4).

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

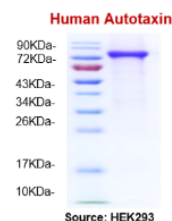
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse N-fatty-acyl-amino Acid Synthase/ Hydrolase PM20D1

(Cat. No.: 42701)

Origin:	Recombinant	Cat. No.:	42701
Tag:	C-terminal 6xHis	Size:	0.1 mg
Source:	HEK293	Purity:	>95%
Other names:	PM20D1	Species:	Mouse

### Introduction to the Molecule:

PM20D1 is a bidirectional N-fatty-acyl amino acid synthase/hydrolase that regulates the production of N-fatty-acyl amino acids. These metabolites are endogenous chemical uncouplers of mitochondrial respiration.

In an UCP1-independent manner, maybe through interaction with mitochondrial transporters, they promote proton leakage into the mitochondrial matrix. PM20D1 may indirectly regulate the bodily dissipation of chemical energy as heat through thermogenic respiration.

### Description:

Expressed in HEK293 cells with total 544 AA. Mw: 60.56 KDa (calculated).

C-terminal 6xHis-tag and TEV cleavage site, 13 extra AA (highlighted).

Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

METAELLASLPAAVAVLLFFATVSGSTGPRSR  
ENRGASRIPSQFSEEERVAIKEALKGAIQIPTVSF  
SHEESNTTALA EFG EYIRKAFPTVFHSSLVQHE  
VVAKYSHLFTIQGSDPSLQPYMETLMETAHIDV  
VPAPEEGWEVPPFSGLERNGFIYGRGALDNKN  
SVMETAILHALELLLRNYSPKRSFFIALGHDEE  
VSGEKGAQKI

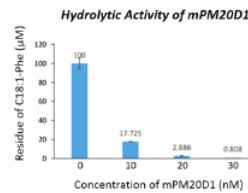
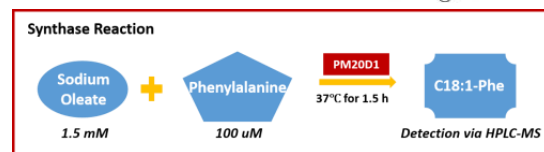
### Formulation:

Lyophilized at 1 mg/mL in NaCl 500mM, KCl 2.7mM, Na<sub>2</sub>HPO<sub>4</sub> 10mM, KH<sub>2</sub>PO<sub>4</sub> 1.8mM, pH 8.0.

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Bioactivity Test:



### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

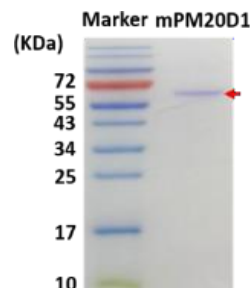
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human N-fatty-acyl-amino Acid Synthase/ Hydrolase PM20D1

(Cat. No.: 41700)

Origin:	Recombinant	Cat. No.:	41700
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	PM20D1	Species:	Human

### Introduction to the Molecule:

PM20D1 is a bidirectional N-fatty-acyl amino acid synthase/hydrolase that regulates the production of N-fatty-acyl amino acids. These metabolites are endogenous chemical uncouplers of mitochondrial respiration. In an UCP1- independent manner, maybe through interaction with mitochondrial transporters, they promote proton leakage into the mitochondrial matrix. PM20D1 may indirectly regulate the bodily dissipation of chemical energy as heat through thermogenic respiration.

### Description:

Expressed in E. coli with total 521 AA. Mw: 58.1 KDa (calculated).

N-terminal 6xHis-tag, EK recognition site and TEV cleavage site, 44 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSENLYFQGAMGPRSGEHQRASRIPSQFSKEER  
VAMKEALKGAIQIPTVTFSSSEKSNTTALAEFGKYIHKVFPTVVSTSFIQHEVVVEEYSHLFTIQGSDPSLQPYL  
LMAHFDVVPAPPEEGWEVPPFSGLERDGIYGRGTLDDKNSVMALLQALELLLIRKYIPRRSFFISLGHDEES  
SGTGAQRISALLQSRGVQLAFIVDEGGF

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in NaCl 500mM, KCl 2.7mM, Na<sub>2</sub>HPO<sub>4</sub> 10mM, KH<sub>2</sub>PO<sub>4</sub> 1.8mM, pH 8.0.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

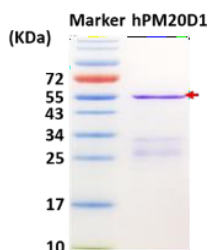
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Galectin-3

(Cat. No.: 41690)

Origin:	Recombinant	Cat. No.:	41690
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	Gal-3, MAC-2, CBP 35, lectin, L-29, AGER 3	Species:	Human

### Introduction to the Molecule:

Galectin-3 is expressed by a wide range of cell types including activated T cells, tumor cells, macrophages, osteoclasts, fibroblasts, and epithelial cells.

Galectin-3 has specific binding affinity for beta-galactoside sugar moieties and has functional roles during development, innate immunity, cell apoptosis, and tumor metastasis. Galectin-3 is associated with cancer, heart failure, stroke, and inflammation.

### Description:

Expressed in E. coli with total 293AA. Mw: 31.1 KDa (calculated).

N-terminal 6xHis-tag, EK recognition site and TEV cleavage site, 44 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSENLYFQGAADNFSLHDALSGSGNPNPQGWP  
GAWGNQPAGAGGYPGASYPGAYPGQAPPGAYPGQAPPGAYPGAPGAYPGAPAPGVYPGPPSGGAYPSSG  
QPSATGAYPATGPYGAAGPLIVPYNLPLPGVVPRMLITILGTVKPNANRIALDFQRGNDVAFHFNPRFN  
ENRRRIVVCNTKLDNNWGREERQSVFPFESGKPFKIQVLVEPDHFKVAVNDAHLLQYNHRVKKLNEISKL  
GISGDIDLTSASYTMI

### Endotoxin Level:

<0.01 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

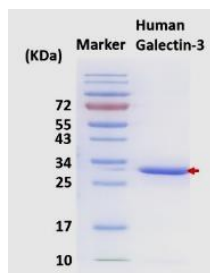
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human N-terminal B-type Natriuretic Peptide (NT-proBNP)

(Cat. No.: 41660)

Origin:	Recombinant	Cat. No.:	41660
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	Amino terminal brain natriuretic peptide Precursor	Species:	Human

### Introduction to the Molecule:

N-terminal pro-brain (or B-type) natriuretic peptide (NT-proBNP) is produced predominately by the cardiac ventricular myocytes. NT-proBNP is released in response to volume expansion and filling pressure and is involved in maintaining intravascular volume homeostasis. Elevated plasma levels of BNP and NT-proBNP have been observed at times of cardiac stress and damage.

### Description:

Expressed in E. coli with total 112 AA. Mw: 12.6 KDa (calculated).

N-terminal 6xHis-tag and TEV cleavage site, 36 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSHPGSPGSASDLETSGLQEQRNHLQGKLSSELQVEQ TSLEPLQESPRPTGVWKSREVATEGIRGHRKMVLYTLRAPR

### Endotoxin Level:

<0.2 EU/ug.

### Applications:

Standard ELISA test, Western Blot.

### Formulation:

Lyophilized at 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

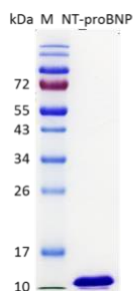
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Procalcitonin (PCT)

(Cat. No.: 41670)

Origin:	Recombinant	Cat. No.:	41670
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	PCT	Species:	Human

### Introduction to the Molecule:

Procalcitonin is a prohormone of calcitonin. Levels of unprocessed procalcitonin rise significantly after bacterial infection, trauma or shock. Procalcitonin is also associated with systemic complications in humans suffering from acute pancreatitis.

### Description:

Expressed in E. coli with total 152 AA. Mw: 16.9 KDa (calculated).

N-terminal 6xHis-tag and TEV cleavage site, 36 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSAPFRSALESSPADPATLSEDEARLLLLAALVQD  
YVQMKASELEQEEREGSSLDSPRSKRCGNLSTCMLGTYTQDFNKFHTFPQTAIGVGAPGKKRDMSSDLE  
RDHRPHVS MPQNaN

### Endotoxin Level:

<0.2 EU/ug.

### Applications:

Standard ELISA test, Western Blot.

### Formulation:

Lyophilized at 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

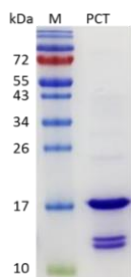
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Asprosin

(Cat. No.: 41460)

Origin:	Recombinant	Cat. No.:	41460
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other Names:		Species:	Human

### Introduction to the Molecule:

Asprosin is a fasting-induced glucogenic protein that responds to low dietary glucose by stimulating hepatic glucose release. It is secreted by white adipose tissue and circulates in the plasma at nanomolar levels. Asprosin-induced hepatic glucose production is mediated by G protein-cAMP-protein kinase A pathway and is shown to be pathologically related with human and mouse insulin resistance.

### Description:

Expressed in E. coli with total 176 AA. Mw: 20.0 KDa (calculated).

N-terminal 6xHis-tag and EK cleavage site, 36 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYDDDDKDRWGSSTNETDASNIEDQSETEANVSLASWDVEKTA  
IFAFNI  
SHVSNKVRILELLPALTTLTNHNRYLIESGNEDGFFKINQKEGISYLHFTKKKPVAGTYSLQISSTPLYKKKE  
LNQLE DKYDKDYLSGELGDNLKMKIQVLLH

### Endotoxin Level:

<0.2 EU/ug.

### Applications:

ELISA and Western blotting.

### Formulation:

Lyophilized at 1 mg/mL in NaCl 500mM, KCl 2.7mM, Na<sub>2</sub>HPO<sub>4</sub> 10mM, KH<sub>2</sub>PO<sub>4</sub> 1.8mM, pH 8.0.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

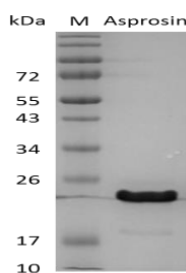
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel





## Mouse Interleukin-33

(Cat. No.: 41750)

Origin:	Recombinant	Cat. No.:	41750
Tag:	No tag	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	IL-33, IL-1F11	Species:	Mouse

### Introduction to the Molecule:

IL-33 was identified based on sequence and structural homology with IL-1 family cytokines. The N-terminal portion of full-length IL-33 contains a predicted bipartite nuclear localization sequence and a homeodomain-like helix-turn-helix DNA binding domain. The C-terminal fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1R4/ST2L, a longtime orphan receptor involved in the augmentation of Th2 cell responses. A ternary signaling complex is formed by the subsequent association of IL-33 and ST2L with IL-1R AcP. Stimulation of Th2 polarized lymphocytes with mature IL-33 in vitro induces IL-5 and IL-13 secretion. In vivo administration of mature IL-33 promotes increased production of IL-5, IL-13, IgE, and IgA, as well as splenomegaly and inflammatory infiltration of mucosal tissues.

### Description:

Expressed in E. coli with total 160 AA. Mw: 17.7 KDa (calculated).  
No tag, but with 2 extra AA at N-terminal (highlighted).  
Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

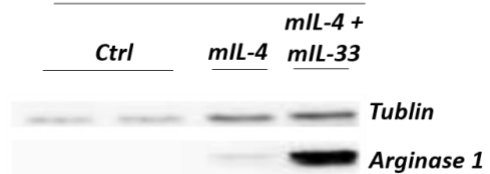
GASIQGTSLLTQSPASLSTYNDQSVSFVLENGCY  
VINVDDSGKDQEQDQVLLRYYESPCPASQSGDG  
VDGKKLMVNMSPIKDTDIWLHANDKDYSVEL  
QRGDVSPPEQAFFVLHKKSSDFVSFECKNLPGT  
YIGVKDN QLALVEEKDESCNNIMFKLSKI

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Bioactivity:

#### Bone-marrow-derived macrophages (BMDMs)



### Formulation:

Lyophilized at 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

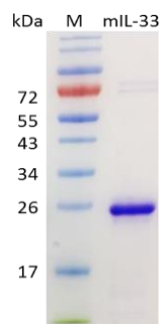
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Interleukin-33

(Cat. No.: 42750)

Origin:	Recombinant	Cat. No.:	42750
Tag:	No tag	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	IL-33	Species:	Human

### Introduction to the Molecule:

IL-33 was identified based on sequence and structural homology with IL-1 family cytokines. The N-terminal portion of full-length IL-33 contains a predicted bipartite nuclear localization sequence and a homeodomain-like helix-turn-helix DNA binding domain. The C-terminal fragment, corresponding to mature IL-33, binds and triggers signaling through mast cell IL-1 R4/ST2L, a longtime orphan receptor involved in the augmentation of Th2 cell responses. A ternary signaling complex is formed by the subsequent association of IL-33 and ST2L with IL-1R AcP. Stimulation of Th2 polarized lymphocytes with mature IL-33 in vitro induces IL-5 and IL-13 secretion. In vivo administration of mature IL-33 promotes increased production of IL-5, IL-13, IgE, and IgA, as well as splenomegaly and inflammatory infiltration of mucosal tissues.

### Description:

Expressed in E. coli with total 167 AA. Mw: 18.81 KDa (calculated). No tag, but with 2 extra AA at N-terminal (highlighted).

Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

GASITGSPITEY<sup>HL</sup>LASLSTYNDQSITFALEDES<sup>HL</sup>YEIYVEDLKKDEK<sup>HL</sup>KDKVLLSYYESQHPSNESGDGVDGKME  
 TLMETVTLSP<sup>HL</sup>TKDFWLHANNKEHSVELHKCEKPLPDQAFFVLHNMETHSNCVSFECKTDPGVFIGVKDN  
 HLALIKVDSSENLC<sup>HL</sup>TENILFKLSET

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

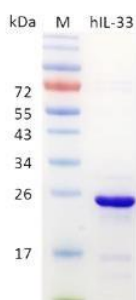
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse Interleukin-13

(Cat. No.: 42450)

Origin:	Recombinant	Cat. No.:	42450
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	IL13	Species:	Mouse

### Introduction to the Molecule:

Interleukin-13 (IL-13) is a monomeric 17 kDa immunoregulatory cytokine that plays a key role in the pathogenesis of allergy, cancer, and tissue fibrosis. It is secreted by several helper T cell subsets, NK cells, mast cells, eosinophils, basophils, and visceral smooth muscle cells. IL-13 suppresses the production of proinflammatory cytokines and other cytotoxic substances by macrophages, fibroblasts, and endothelial cells. On B cells, it promotes cellular activation, immunoglobulin class switching to IgE, and the up-regulation of CD23/Fc epsilon RII.

### Description:

Expressed in E. coli with total 135 AA. Mw: 15.2 KDa (calculated).

N-terminal 6xHis-tag and TEV cleavage site, 25 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAPVPRSVSLPLTLKELIEELS NITQDQTPLCNGSMVWSVDLAAGGFC  
VALDSL TNISNCNAIYRTQRILHGLCNRKAPT TVSSLPDTKIEVAHFITKLLSYTKQLFRHGPF

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in NaCl 500mM, KCl 2.7mM, Na<sub>2</sub>HPO<sub>4</sub> 10mM, KH<sub>2</sub>PO<sub>4</sub> 1.8mM, pH 7.0.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

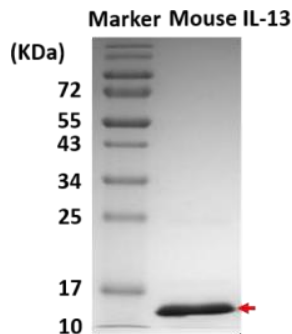
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse Interleukin-4 (IL-4)

(Cat. No.: 41370)

Origin:	Recombinant	Cat. No.:	41370
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	IL-4	Species:	Mouse

### Introduction to the Molecule:

Interleukin-4 (IL-4), also known as B cell-stimulatory factor-1, is a monomeric, approximately 13 kDa - 18 kDa Th2 cytokine that shows pleiotropic effects during immune responses. It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four alpha-helix structure. IL-4 is primarily expressed by Th2-biased CD4<sup>+</sup> T cells, mast cells, basophils, and eosinophils. It promotes cell proliferation, survival, and immunoglobulin class switch to IgG4 and IgE in human B cells, acquisition of the Th2 phenotype by naïve CD4<sup>+</sup> T cells, priming and chemotaxis of mast cells, eosinophils, and basophils, and the proliferation and activation of epithelial cells.

### Description:

Expressed in E. coli with total 169 AA. Mw: 18.5 KDa (calculated).  
N-terminal 6xHis-tag and TEV cleavage site, 30 extra AA (highlighted).  
Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAMGSGIHK  
CDITLQEIIKTLNSLTEQKTLCTELTVTDIFAAS  
KNTTEKETFCRAATVLRQFYSHHEKDRCLGA  
TAQQFHRHKQLIRFLKRLDRNLWGLAGLNSCP  
VKEANQSTLEN FLERLKTIMREKYSKCSS

### Endotoxin Level:

<0.2 EU/ug.

### Applications:

Standard ELISA test, Western Blot.

### Formulation:

Lyophilized at 1 mg/mL in NaCl 500mM, KCl 2.7mM, Na<sub>2</sub>HPO<sub>4</sub> 10mM, KH<sub>2</sub>PO<sub>4</sub> 1.8mM, pH 7.0.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE gel



## Human Irisin with His-tag

(Cat. No.: 41354)

Type:	Recombinant	Cat. No.:	41354
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	Irisin	Species:	Human

### Introduction to the Molecule:

Exercise enhances muscular endurance and strength, calories expenditure, and prevents the development of obesity and type 2 diabetes. These effects of exercise cannot be explained solely by the expenditure of calories in muscle. A recent study indicated that a novel hormone, irisin, plays an important role in the increase of total body energy expenditure by exercising muscle.

Irisin is a cleaved and secreted fragment of a membrane protein FNDC5. And its circulating concentrations are increased after regular physical activity. Exercise induces the transcriptional regulator PGC-1 $\alpha$  in the skeletal myocyte, which in turn drives the production of the FNDC5. Animal experiments suggested that irisin, cleaved form FNDC5, activates thermogenic programs in white adipose tissue (“browning”), including mitochondrial biogenesis and the expression of uncoupling protein 1 (UCP1), leading to mitochondrial heat production and energy expenditure. Irisin is highly conserved across species, and exercise also increases circulating irisin concentrations in humans.

Therefore, the role of irisin in humans may be that it links physical activity to energy metabolic homeostasis, including weight control.

### Description:

The recombinant irisin is the extracellular domain of FNDC5 (Asp16 to Thr136). Total 149 AA. Mw: 17kDa (calculated). N-

terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAMGSDSPSA  
 PVNVTVRHLKANSVVSVDVLEDEVVIGFAISQQ  
 KKDVRMLRFIQEVNTTTRSCALWDLEEDTEYIVH  
 VQAISIQQSPASEPVLFKTPREA EKMASKNKDEV  
 TMKEMGRNQQLRT

### Formulation:

Lyophilized in 1 mg/mL in PBS

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

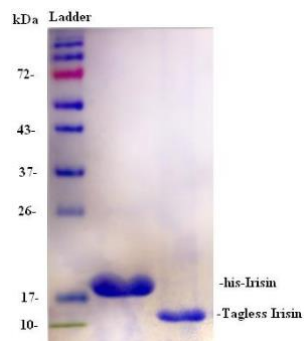
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### Applications:

ELISA and Western blotting

### SDS-PAGE Gel



## Human Irisin, Tagless

(Cat. No.: 41359)

Type:	Recombinant	Cat. No.:	41359
Tag:	Tagless (his-tag removed)	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	Irisin	Species:	Human

### Introduction to the Molecule:

Exercise enhances muscular endurance and strength, calories expenditure, and prevents the development of obesity and type 2 diabetes. These effects of exercise cannot be explained solely by the expenditure of calories in muscle. A recent study indicated that a novel hormone, irisin, plays an important role in the increase of total body energy expenditure by exercising muscle.

Irisin is a cleaved and secreted fragment of a membrane protein FNDC5. And its circulating concentrations are increased after regular physical activity. Exercise induces the transcriptional regulator PGC-1 $\alpha$  in the skeletal myocyte, which in turn drives the production of the FNDC5. Animal experiments suggested that irisin, cleaved form FNDC5, activates thermogenic programs in white adipose tissue (“browning”), including mitochondrial biogenesis and the expression of uncoupling protein 1 (UCP1), leading to mitochondrial heat production and energy expenditure. Irisin is highly conserved across species, and exercise also increases circulating irisin concentrations in humans. Therefore, the role of irisin in humans may be that it links physical activity to energy metabolic homeostasis, including weight control.

### Description:

The recombinant irisin is the extracellular domain of FNDC5 (Asp16 to Thr136). Total 126 AA. Mw: 14kDa (calculated). N-terminal His-tag removed, 5 extra AA left (highlighted).

### Amino Acid Sequence:

GAMGSDSPSAPVNVTVRHLKANSVVSWD  
VLEDEVVIGFAISQQKKDVRMLRFIQEVNT  
TTRSCALWDLEEDTEYIVHVQAISIQQQSP  
ASEPVLFKTPREA EK MASKNKDEV TMKEM  
GRNQLRT

### Formulation:

Lyophilized in 1 mg/mL in PBS

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

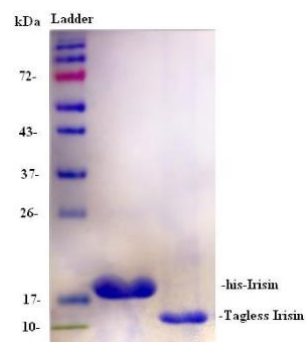
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### Applications:

ELISA and Western blotting

### SDS-PAGE Gel



## Human Fibroblast Growth Factor 2 (FGF-2)

**(Cat. No.: 41880)**

Origin:	Recombinant	Cat. No.:	41880
Tag:	N-terminal 6xHis	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	FGF acidic and ECGF	Species:	Human

### Introduction to the Molecule:

FGF2, also called FGF basic, is a member of the FGF family of at least 23 related mitogenic proteins which has been isolated from a number of sources, including neural tissue, pituitary, adrenal cortex, corpus luteum, and placenta. FGF2 stimulates the proliferation of all cells of mesodermal origin and many cells of neuroectodermal, ectodermal, and endodermal origin. Besides, FGF2 induces neuron differentiation, survival, regeneration, and also modulates embryonic development and differentiation. These observed in vitro functions of FGF2 suggest FGF2 may play a role in vivo in the modulation of such normal processes as angiogenesis, wound healing and tissue repair, embryonic development and differentiation, and neuronal function and neural degeneration. Additionally, FGF basic may participate in the production of a variety of pathological conditions resulting from excessive cell proliferation and excessive angiogenesis.

### Description:

Expressed in E. coli with total 193 AA. Mw: 21.8 KDa (calculated). N-terminal 6xHis-tag, EK recognition site and TEV cleavage site, 47 extra AA (highlighted). Recombinant antigen for research use or manufacturing only.

### Amino Acid Sequence:

MRGSHHHHHHGMASMTGGQQMGRDLYD  
 DDDKDRWGSELEENLYFQGAPALPEDGGS  
 GAFPPGHFKDPKRLYCKNGGFFLRIHPDGR  
 VDGVREKSDPHIKLQLQAEERGVSISKGV  
 ANRYLAMKEDGRLLASKCVTDECFFFERLE  
 SNNYNTYRSRKYTSWYVALKRTGQYKLG  
 KTGPQGKAILFLPMSAKS

### Applications:

Standard ELISA test, Western Blot, functional study.

### Formulation:

Lyophilized in 20mM phosphate, 0.01mM heparin and 500mM NaCl.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely.

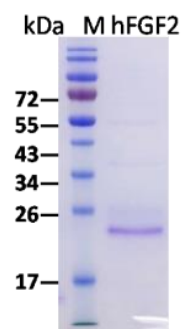
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Quality Control Test:

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

### SDS-PAGE Gel



## Human Fibroblast Growth Factor 19 (FGF-19), Tagless

(Cat. No.: 41284)

Origin:	Recombinant	Cat. No.:	41284
Tag:	No tag	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other Names:	FGF-19	Species:	Human

### Introduction to the Molecule:

Fibroblast growth factor 19 (FGF-19) is a member of a subfamily of FGFs that includes FGF-21 and FGF-23, each member functions as an important regulator of nutrient metabolism. The primary source of endocrine FGF-19 is the ileum, bile acids release into the intestine after a meal to induce expression of FGF-19. Circulating FGF-19 plays an important role in maintaining proper bile acid homeostasis. Several pharmacologic studies in hyperglycaemic, obese animal models have shown that FGF-19 can improve metabolic rate and lower serum glucose and hepatic triglyceride and cholesterol levels. Like insulin, FGF-19 functions as postprandial hormone to govern hepatic protein synthesis, glycogen synthesis and gluconeogenesis, but does not stimulate lipogenesis.

### Description:

Expressed in E. coli cells with total 194 AA. Mw: 21.6 KDa (calculated). No tag, but with 2 extra AA at N-terminal (highlighted). Recombinant protein for research use or manufacturing only.

### Amino Acid Sequence:

GALAFSDAGPHVHYGWGDP<sup>HL</sup>PIRLRHLYTSG  
 PHGLSSCF<sup>HL</sup>LRIRADGVVDCARGQSAHSLLEI  
 KAVALRTVAIKGVH<sup>HL</sup>SVRYLCMGADGKMQG  
 LLQYSEEDCAF<sup>HL</sup>EEI<sup>HL</sup>RPDGYNVYRSEKHRL  
 PVSLSAKQRQLYKNR<sup>HL</sup>GFLPLSHFLPMLPM  
 VPEEPEDLRGHLES<sup>HL</sup>DMFSSPLETDSMDPFG  
 LVTGLEAVRSP<sup>HL</sup>SFEK

### Endotoxin Level:

<0.2 EU per 1 µg of the protein by the LAL method.

### Formulation:

Lyophilized at 1 mg/mL in storage buffer (50mM Tris, 300-500mM NaCl, 10% Glycerol, PH8.0).

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

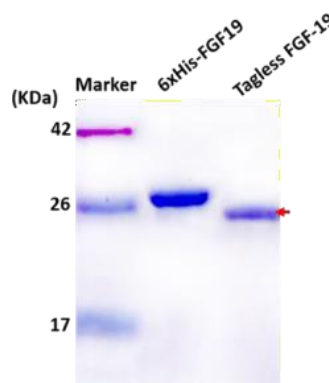
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel





## Mouse Fibroblast Growth Factor 21 (FGF-21), Tagless

(Cat. No.: 42189)

Type:	Recombinant	Cat. No.:	42189
Tag:	None (his-tag removed)	Size:	100 µg
Source:	E. coli	Purity:	>95%
Other names:	FGF21	Species:	Mouse

### Introduction to the Molecule:

FGF-21, a polypeptide with 210 amino acid residues produced mostly from the liver tissue.<sup>[1]</sup> Mouse FGF- 21 shares 75% identity as human FGF-21. Recent animal studies indicate it possesses potent beneficial effects on glucose and lipid metabolism and insulin sensitivity.<sup>[2]</sup> Increasing data shows FGF-21 can significantly stimulate glucose uptake in mature adipocytes. And The lowered LDL-cholesterol and increased HDL-cholesterol can also be observed.<sup>[2,3]</sup> FGF-21 exerts its bioactivity through interaction with membrane bound FGF receptors (FGFRs) which requires β-Klotho as a co-factor to bind and activate FGFR signaling.<sup>[4,5]</sup> The activation of FGF-21 can induce the stimulation of diverse downstream pathways mediated by MAPK,FRS-2, SHP-2, PI3K, raf, stat and other signaling molecules.<sup>[6-9]</sup> In sum, FGF-21 induces a variety of significant beneficial metabolic changes without apparent adverse effects which makes this factor a hot candidate to treat some metabolic diseases.<sup>[10]</sup>

### Description:

Total 184 AA Mw: 20kDa (calculated). N-terminal His- tag removed, 2 extra AA left (highlighted).

### Amino Acid Sequence:

GAAYPIPDSSPLLQFGGQVRQRYLYTDDDDQDTEAHL  
EIREDDGTVVGAHRSPELLELKALKPGVIQILGVKA  
SRFLCQQPDGALYGSFHDPEACSFRELLLEDGYNV  
YQSEAHGLPLRLPQKDSNPQDATSWGPVRFPLMPG  
LLHEPQDQAGFLPPEPPDVGSSDPLSMVEPLQGRSP  
SYAS

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add sterile deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

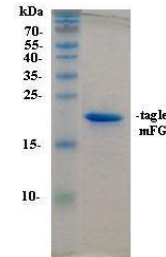
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

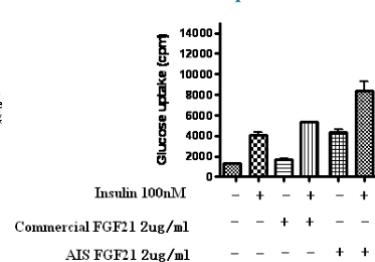
Applications

Cell culture, animal studies, ELISA and Western blotting.

### SDS-PAGE Gel



### Glucose uptake



### References:

1. Lin Z, Tian H, et al. Adiponectin mediates the metabolic effects of FGF21 on glucose homeostasis and insulin sensitivity in mice. *Cell Metab.* 2013 May 7;17(5):779-89
2. So WY, Cheng Q, et al. High Glucose Represses β-Klotho Expression and Impairs Fibroblast Growth Factor 21 Action in Mouse Pancreatic Islets: Involvement of Peroxisome Proliferator-Activated Receptor γ Signaling. *Diabetes.* 2013 Nov;62(11):3751-9.
3. Li H, Gao Z, et al. Sodium butyrate stimulates expression of fibroblast growth factor 21 in liver by inhibition of histone deacetylase 3. *Diabetes.* 2012 Apr;61(4):797-806.
4. Ge X, Chen C, et al. Fibroblast growth factor 21 induces glucose transporter-1 expression through activation of the serum response factor/Ets-like protein-1 in adipocytes. *J Biol Chem.* 2011 Oct 7;286(40):34533-41.

## Mouse Fibroblast Growth Factor 21 (FGF-21) with His-tag

(Cat. No.: 42184)

Type:	Recombinant	Cat. No.:	42184
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	FGF21	Species:	Mouse

### Introduction to the Molecule:

FGF21, a polypeptide with 210 amino acid residues produced mostly from the liver tissue.<sup>[1]</sup> Mouse FGF21 shares 75% identity as human FGF21. Recent animal studies indicate it possesses potent beneficial effects on glucose and lipid metabolism and insulin sensitivity.<sup>[2]</sup> Increasing data shows FGF21 can significantly stimulate glucose uptake in mature adipocytes. And The lowered LDL-cholesterol and increased HDL-cholesterol can also be observed.<sup>[2,3]</sup> FGF21 exerts its bioactivity through interaction with membrane bound FGF receptors (FGFRs) which requires  $\beta$ -Klotho as a co-factor to bind and activate FGFR signaling.<sup>[4,5]</sup> The activation of FGF21 can induce the stimulation of diverse downstream pathways mediated by MAPK, FRS-2, SHP-2, PI3K, raf, stat and other signaling molecules.<sup>[6-9]</sup> In sum, FGF21 induces a variety of significant beneficial metabolic changes without apparent adverse effects which makes this factor a hot candidate to treat some metabolic diseases.<sup>[10]</sup>

### Description:

Total 207AA Mw: 23kDa (calculated). N-terminal His- tag and TEV cleavage site, 25 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAAYPIPDS  
SPLLQFGGQVRQRYLYTDDDQDTEAHLEIRED  
GTVVGAHRSPESLLELKALKPGVIQILGVKASR  
FLCQQPDGALYGSPHFDPEACSFRELLLEDGYN  
VYQSEAHGLPLRLPQKDSNPQDATSWGPVRF  
PMPGLLHEPQDQAGFLPPEPPDVGSSDPLSMV  
EPLQGRSPSYAS

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

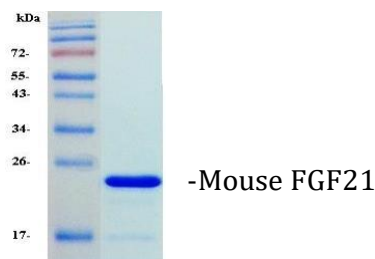
### Quality Control Test:

BCA to determine quantity of the protein.  
SDS PAGE to determine purity of the protein.

### Applications:

ELISA and Western blotting.

### SDS-PAGE Gel



### References:

1. Nishimura T, Nakatake Y, Konishi M, Itoh N: Identification of a novel FGF, FGF-21, preferentially expressed in the liver. *Biochim Biophys Acta* 1492:203-206, 2000
2. Kharitonkov A et al. FGF-21 as a novel metabolic regulator. *J Clin Invest* 115:1627-1635, 2005
3. Alexei Kharitonkov et al. The Metabolic State of Diabetic Monkeys Is Regulated by Fibroblast Growth Factor- 21. *Endocrinology* .148(2):774-781. 2007
4. Hiroshi Kurosu et al. Tissue-specific Expression of  $\beta$ Klotho and Fibroblast Growth Factor (FGF) Receptor Isoforms Determines Metabolic Activity of FGF19 and FGF21. *J Biol Chem.* 282(37): 26687-26695. 2007

## Human Fibroblast Growth Factor 21 (FGF-21), Tagless

(Cat. No.: 41189)

Type:	Recombinant	Cat. No.:	41189-01
Tag:	None (his-tag removed)	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	FGF21	Species:	Human

### Introduction to the Molecule:

FGF21, a polypeptide with 210 amino acid residues produced mostly from the liver tissue.[1] Mouse FGF21 shares 75% identity as human FGF21.

Recent animal studies indicate it possesses potent beneficial effects on glucose and lipid metabolism and insulin sensitivity.[2] Increasing data shows FGF21 can significantly stimulate glucose uptake in mature adipocytes. And The lowered LDL- cholesterol and increased HDL-cholesterol can also be observed.[2,3] FGF21 exerts its bioactivity through interaction with membrane bound FGF receptors (FGFRs) which requires  $\beta$ -Klotho as a co- factor to bind and activate FGFR signaling.[4,5] The activation of FGF21 can induce the stimulation of diverse downstream pathways mediated by MAPK,FRS-2, SHP-2, PI3K, raf, stat and other signaling molecules.[6-9] In sum, FGF21 induces a variety of significant beneficial metabolic changes without apparent adverse effects which makes this factor a hot candidate to treat some metabolic diseases.[10]

### Description:

Total 183AA Mw: 19.5kDa (calculated). N-terminal His-tag removed, 2 extra AA left (highlighted).

### Amino Acid Sequence:

GAHPIPDSSPLLQFGGQVRQRYLYTDDAQQTEAH  
LEIREDDGTGGAADQSPESLLQLKALKPGVIQILG  
VKTSRFLCQRPDGALYGSLHFDPEACSFRELLLED  
GYNVYQSEAHGLPLHLPGNKSPHRDPAPRGPARG  
LPLPGLPPALPEPPGILAPQPPDVGSSDPLSMVGP  
SQGRSPSYAS

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

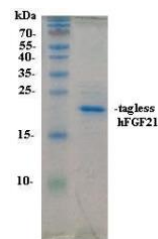
### Applications:

ELISA and Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



### References:

1. Nishimura T, Nakatake Y, Konishi M, Itoh N: Identification of a novel FGF, FGF-21, preferentially expressed in the liver. *Biochim Biophys Acta* 1492:203–206, 2000
2. Kharitonov A et al. FGF-21 as a novel metabolic regulator. *J Clin Invest* 115:1627– 1635, 2005
3. Alexei Kharitonov et al. The Metabolic State of Diabetic Monkeys Is Regulated by Fibroblast Growth Factor-21. *Endocrinology* .148(2):774–781. 2007
4. Hiroshi Kurosu et al. Tissue-specific Expression of  $\beta$ Klotho and Fibroblast Growth Factor (FGF) Receptor Isoforms Determines Metabolic Activity of FGF19 and FGF21. *J Biol Chem*. 282(37): 26687–26695. 2007
5. Ogawas Y et al. BetaKlotho is required for metabolic activity of fibroblast growth factor 21 *Proc Natl Acad Sci STAT-3 in Response to Basic Fibroblast Growth*

## Human Fibroblast Growth Factor 21 (FGF-21) with His-tag

(Cat. No.: 41184)

Type:	Recombinant	Cat. No.:	41184
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	FGF21	Species:	Human

### Introduction to the Molecule:

FGF21, a polypeptide with 210 amino acid residues produced mostly from the liver tissue.[1] Mouse FGF21 shares 75% identity as human FGF21.

Recent animal studies indicate it possesses potent beneficial effects on glucose and lipid metabolism and insulin sensitivity.[2] Increasing data shows FGF21 can significantly stimulate glucose uptake in mature adipocytes. And The lowered LDL- cholesterol and increased HDL-cholesterol can also be observed.[2,3] FGF21 exerts its bioactivity through interaction with membrane bound FGF receptors (FGFRs) which requires  $\beta$ -Klotho as a co- factor to bind and activate FGFR signaling.[4,5]The activation of FGF21 can induce the stimulation of diverse downstream pathways mediated by MAPK,FRS-2, SHP-2, PI3K, raf, stat and other signaling molecules.[6-9] In sum, FGF21 induces a variety of significant beneficial metabolic changes without apparent adverse effects which makes this factor a hot candidate to treat some metabolic diseases.[10]

### Description:

Total 206AA Mw: 22.5kDa (calculated). N-terminal His-tag and TEV cleavage site, 25extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAHPIDSSPL  
LQFGGQVRQRYLYTDDAQQTEAHLEIREDTVGG  
AADQSPESLLQLKALPGVIQILGVKTSRFLCQRP  
DGALYGLSLHFDPEACSFRELLLEDGYNVYQSEAH  
GLPLHLPGNKSPHRDPAPRGPAPFLPLPLPALP  
EPPGILAPQPPDVGSSDPLSMVGPSQGRSPSYAS

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot constituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

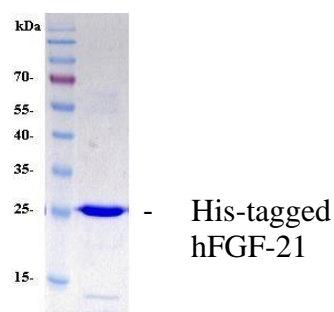
### Applications:

ELISA and Western blotting

### Quality Control Test:

BCA to determine quantity of the protein. SDS-PAGE to determine purity of the protein.

### SDS-PAGE Gel



### References:

1. Nishimura T, Nakatake Y, Konishi M, Itoh N: Identification of a novel FGF, FGF-21, preferentially expressed in the liver. *Biochim Biophys Acta* 1492:203-206, 2000
2. Kharitononkov A et al. FGF-21 as a novel metabolic regulator. *J Clin Invest* 115:1627-1635, 2005
3. Alexei Kharitononkov et al. The Metabolic State of Diabetic Monkeys Is Regulated by Fibroblast Growth Factor-21. *Endocrinology* .148(2):774-781. 2007
4. Hiroshi Kurosu et al. Tissue-specific Expression of  $\beta$ Klotho and Fibroblast Growth Factor (FGF) Receptor Isoforms Determines Metabolic Activity of FGF19 and FGF21. *J Biol Chem*. 282(37): 26687-26695. 2007
5. Ogawas Y et al. BetaKlotho is required for metabolic activity of fibroblast growth factor 21 *Proc Natl Acad Sci USA* 104: 7432-7437, 2007.

## Mouse Lipocalin 2 (LCN2)

(Cat. No.: 42050)

Type:	Recombinant	Cat. No.:	42050
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	24p3; MSFI; NGAL; LCN2	Species:	Mouse

### Introduction to the Molecule:

Lipocalin-2(LCN2), also known as neutrophil gelatinase-associated lipocalin (NGAL), 24p3, siderocalin, or neutrophil lipocalin (NL), is a secretory glycoprotein which is expressed in liver, lung, kidney, adipocytes, activated neutrophils, and macrophages. LCN2 appears to be upregulated in the case of inflammation and infection conditions. Several reports suggest that LCN2 may represent a sensitive biomarker for various renal injuries and somehow may be involved in the pathophysiological process of some chronic renal diseases. LCN2 is also highly expressed under high fat diet and obese background especially in adipose tissue and is closely associated with obesity, insulin resistance, and hyperglycemia in humans.

### Description:

Total 208AA. Mw: 24.2kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHHHDYDIPTTENLYFQGAMGSQDSTQNLIPAPSLTVP LQPDFRSDQFRGRWYV VGLAGNAV  
QKKTEGSFTMYSTIYELQENNSYNVTSILVRDQDQGCYR WIRTFVPSRAGQFTLGNMHRYPQVQSYNVQ  
VATTDY NQFAMVFRKTS ENKQYFKITLYGRTKEL SPELKERFTRFAKSLGLKDDNIIFSVPTDQCIDN

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing/thawing cycles.

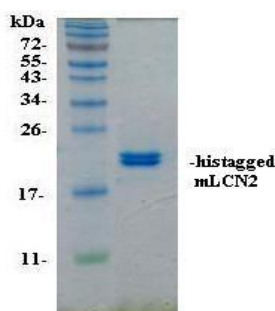
### Applications:

ELISA and Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Lipocalin 2 (LCN-2)

(Cat. No.: 41050)

Type:	Recombinant	Cat. No.:	41050
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	24p3; MSFI; NGAL; LCN2	Species:	Human

### Introduction to the Molecule:

Lipocalin-2 (LCN2), also known as neutrophil gelatinase-associated lipocalin (NGAL), 24p3, siderocalin, or neutrophil lipocalin (NL), is a secretory glycoprotein which is expressed in liver, lung, kidney, adipocytes, activated neutrophils, and macrophages. LCN2 appears to be upregulated in the case of information and infection conditions. Several reports suggest that LCN2 may represent a sensitive biomarker for various renal injuries and somehow may be involved in the pathophysiological process of some chronic renal diseases. LCN2 is also high expressed under high fat diet and obese background especially in adipose tissue and is closely associated with obesity, insulin resistance, and hyperglycemia in humans.

### Description:

Total 206AA. Mw: 23.9kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHDYDIPTTENLYFQGAMGSQDSTSDLIPAPPLSKVPLQQNFQDNQFQGKWWVGLAGNAI  
LREDKDPQKMYATIYELKEDKSYNVTSVLFRRKKKCDYWIRTFVPGCQPGEFTLGNIKSYPLTSYLVRVVS  
TNYNQHAMVFFKKVSQNREYFKITLYGRTKELTSELKENFIRFSKSLGLPENHIVFPVPIDQCIDG

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot the reconstituted protein and store at  $-80^{\circ}\text{C}$  for long term storage.

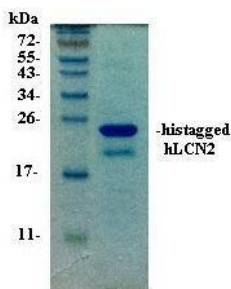
### Applications:

ELISA and Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse Fatty Acid Binding Protein 5 (FABP5)

(Cat. No.: 42040)

Type:	Recombinant	Cat. No.:	42040
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	E-FABP; PA-FABP	Species:	Mouse

### Introduction to the Molecule:

The fatty-acid-binding proteins (FABPs) are a family of carrier proteins for fatty acids and other lipophilic substances such as eicosanoids and retinoids.

These proteins are thought to facilitate the transfer of fatty acids between extra- and intracellular membranes. The fatty acid binding protein 4 (FABP-4) and fatty acid binding protein 5 (FABP5) are closely related and both are expressed in adipocytes. Mice with targeted disruption of FABP-4 accompany FABP-5 almost completely protect against diet-induced obesity, insulin resistance, dyslipidemia, type 2 diabetes, and fatty liver disease. While mice over expressing FABP5 in adipose have reduced insulin sensitivity.

### Description:

Total 163 AA. Mw:18.5 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHDYDIPTTENLYFQGAMGS  
 MASLKDLEGKWRLMESHGFEEYMKELGV  
 GLALRKMAAMAKPDCIITCDGNNITVKTES  
 TVKTTVFSCNLGEKFDETTADGRKTETVCT  
 FQDGALVQHQQWDGKESTITRKLKDGKMI  
 VECVMNNATCTRVYEKVQ

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

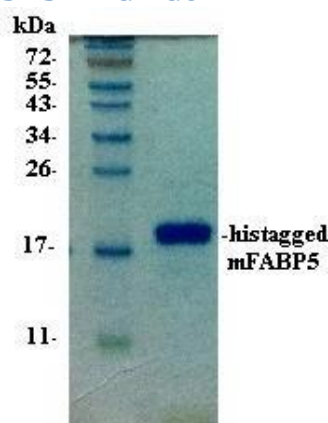
### Applications:

Western blotting

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Fatty Acid Binding Protein 5 (FABP5)

(Cat. No.: 41040)

Type:	Recombinant	Cat. No.:	41040
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	E-FABP; PA-FABP	Species:	Human

### Introduction to the Molecule:

The fatty-acid-binding proteins (FABPs) are a family of carrier proteins for fatty acids and other lipophilic substances such as eicosanoids and retinoids. These proteins are thought to facilitate the transfer of fatty acids between extra- and intracellular membranes. The fatty acid binding protein 4 (FABP-4) and fatty acid binding protein 5 (FABP5) are closely related and both are expressed in adipocytes. Mice with targeted disruption of FABP-4 accompany FABP-5 almost completely protect against diet-induced obesity, insulin resistance, dyslipidemia, type 2 diabetes, and fatty liver disease. While mice over expressing FABP5 in adipose have reduced insulin sensitivity.

### Description:

Total 162 AA. Mw: 18.4 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHDYDIPTTENLYFQGAMGSATVQQLEGRWRLVDSKGFDEYMKELGVGIALRKMGAMAKPDCIITCDG  
KNLTIKTESTLKTTFQFSCTLGEKFEETTADGRKTQTVCNFTDGALVQHQEWDGKESTITRKLKDGKLVVECMNNVT  
CTRIYEKVE

### Formulation:

Filtered (0.22 µm) and lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

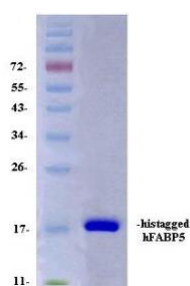
### Applications:

Western blotting

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel





## Mouse Fatty Acid Binding Protein 4 (FABP4)

(Cat. No.: 42030)

Type:	Recombinant	Cat. No.:	42030
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	aP2; A-FABP;	Species:	Mouse

### Introduction to the Molecule:

Fatty-acid binding protein 4(FABP4), also termed adipocyte fatty-acid binding protein (A-FABP), or aP2, is a novel adipocyte-expressed factor which accounted for ~6% of total cellular proteins. Several animal experiments suggested that FABP-4 plays a key role in the link between obesity and various features of metabolic syndrome. Mice with targeted disruption of FABP-4 accompany FABP-5 almost completely protect against diet-induced obesity, insulin resistance, dyslipidemia, type 2 diabetes, and fatty liver disease. Studies in human found FABP-4 serum levels were significantly increased in overweight and obese subjects, which predicted the risk to develop metabolic syndrome and type 2 diabetes. Additionally, serum FABP-4 levels were associated with carotid atherosclerosis and coronary artery disease.

### Description:

Total 160 AA. Mw: 18 KDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHDYDIPTTENLYFQGAMGSMCDFVGTWKLVSSENFDDYMKEVGVGFATRKVA  
GMAKPNMIISVNGDLVTIRSESTFKNTEISFKLGVFEITADDRKVKSIITLDGGALVQVQKWDG  
KSTTIKRKRDRGDKLVVECVMKGVSTRVYE RA

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

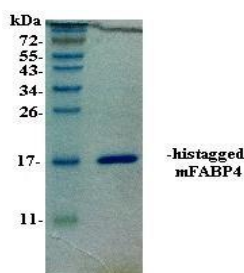
### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

### Applications:

ELISA and Western blotting.

### SDS-PAGE Gel



## Human Fatty Acid Binding Protein 4 (FABP4)

(Cat. No.: 41030)

Type:	Recombinant	Cat. No.:	41030
Tag:	N-terminal 6xHis tag	Size:	0.1 mg
Source:	E. coli	Purity:	>95%
Other names:	aP2; A-FABP;	Species:	Human

### Introduction to the Molecule:

Fatty-acid binding protein 4 (FABP4), also termed adipocyte fatty-acid binding protein (A-FABP), or aP2, is a novel adipocyte-expressed factor which accounted for ~6% of total cellular proteins. Several animal experiments suggested that FABP-4 plays a key role in the link between obesity and various features of metabolic syndrome. Mice with targeted disruption of FABP-4 accompany FABP-5 almost completely protect against diet-induced obesity, insulin resistance, dyslipidemia, type 2 diabetes, and fatty liver disease. Studies in human found FABP-4 serum levels were significantly increased in overweight and obese subjects, which predicted the risk to develop metabolic syndrome and type 2 diabetes. Additionally, serum FABP-4 levels were associated with carotid atherosclerosis and coronary artery disease.

### Description:

Total 160 AA. Mw: 18 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

MSYYHHHHHDYDIPTTENLYFQGAMGSMCDAFVGTWKLVSSENFDYMKVGVGFATRQVAGMAKP  
 NMHISVNGDVITIKSESTFKNTEISFILGQEFDEVTAADDRKVKSTITLDGGVLVHVQKWDGKSTTIKRRKRED  
 DKLVVECVMKGVSTRVYERA

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing/thawing cycles.

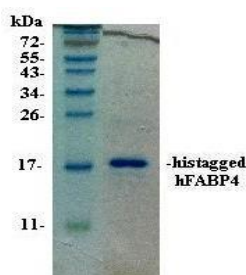
### Applications:

ELISA and Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Human Adiponectin with Flag Tag

(Cat. No.: 41013)

Type:	Recombinant	Cat. No.:	41013
Tag:	Flag	Size:	0.1 mg
Source:	HEK293	Purity:	>98%
Other names:	Acrp30, GBP28, AdipoQ	Species:	Human

### Introduction to the Molecule:

Adiponectin, also known as apM1, Acrp30, GBP28 and adipoQ, is a circulating hormone predominantly produced from adipose tissue. Many pharmacological studies demonstrated that this protein possesses potent anti-diabetic, anti-atherogenic and anti-inflammatory functions.

Supplement of adiponectin protein can decrease blood glucose, improve insulin sensitivity, alleviate fatty liver and prevent atherosclerosis. The protein is post-translationally modified by hydroxylation and glycosylation, and forms three different oligomeric complexes in the circulation.

Many clinical studies demonstrated that plasma adiponectin is an useful biomarker for metabolic syndrome, nonalcoholic steatohepatitis and certain type of cancers. Decreased circulating levels of plasma adiponectin (hypo adiponectinaemia) are associated with increased body mass index (BMI), decreased insulin sensitivity, less favourable plasma lipid profiles, increased levels of inflammatory markers and increased risk for the development of type 2 diabetes, hypertension, and coronary heart diseases. Low adiponectin concentrations were found to be predictive of a future reduction in insulin sensitivity and cardiovascular disorders.

Administration of the anti-diabetic drugs thiazolidinediones (TZDs) raises circulating adiponectin levels. In addition, low plasma adiponectin levels are also associated with

nonalcoholic steatohepatitis (NASH) and certain types of cancers.

### Description:

Total 234 AA. Mw: 25.5kDa (calculated). C-terminal flag-tag, 8 extra AA (highlighted).

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

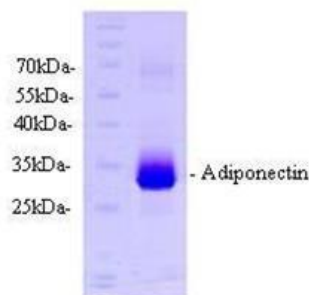
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### Applications:

Cell culture, ELISA and Western blotting.

### SDS-PAGE Gel



SDS-PAGE Gel analysis of adiponectin

## Mouse Globular Domain Adiponectin

(Cat. No.: 42012)

Type:	Recombinant	Cat. No.:	42012
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	Acrp30, GBP28, AdipoQ	Species:	Mouse

### Introduction to the Molecule:

Adiponectin, also known as apM1, Acrp30, GBP28 and adipoQ, is a circulating hormone predominantly produced from adipose tissue. Many pharmacological studies demonstrated that this protein possesses potent anti-diabetic, anti-atherogenic and anti-inflammatory functions. Supplement of adiponectin protein can decrease blood glucose, improve insulin sensitivity, alleviate fatty liver and prevent atherosclerosis. The protein is post-translationally modified by hydroxylation and glycosylation, and forms three different oligomeric complexes in the circulation. Many clinical studies demonstrated that plasma adiponectin is a useful biomarker for metabolic syndrome, nonalcoholic steatohepatitis and certain type of cancers. Decreased circulating levels of plasma adiponectin (hypoadiponectinaemia) are associated with increased body mass index (BMI), decreased insulin sensitivity, less favourable plasma lipid profiles, increased levels of inflammatory markers and increased risk for the development of type 2 diabetes, hypertension, and coronary heart diseases. Low adiponectin concentrations were found to be predictive of a future reduction in insulin sensitivity and cardiovascular disorders. Administration of the anti-diabetic drugs thiazolidinediones (TZDs) raises circulating adiponectin levels. In addition, low plasma adiponectin levels are also associated with nonalcoholic steatohepatitis (NASH) and certain types of cancers.

### Description:

Mw: 19.6 KDa (calculated). N-terminal His-tag

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

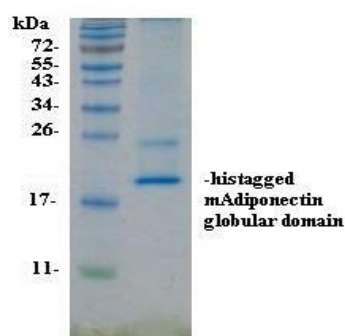
### Applications:

Cell culture and/or animal studies, ELISA, Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



## Mouse Adiponectin with Flag Tag (Cat. No.: 42011)

Type:	Recombinant	Cat. No.:	42011
Tag:	Flag	Size:	0.1 mg
Source:	HEK293	Purity:	>98%
Other names:	Acrp30, GBP28, AdipoQ	Species:	Mouse

### Introduction to the Molecule:

Adiponectin, also known as apM1, Acrp30, GBP28 and adipoQ, is a circulating hormone predominantly produced from adipose tissue. Many pharmacological studies demonstrated that this protein possesses potent anti-diabetic, anti-atherogenic and anti-inflammatory functions. Supplement of adiponectin protein can decrease blood glucose, improve insulin sensitivity, alleviate fatty liver and prevent atherosclerosis. The protein is post-translationally modified by hydroxylation and glycosylation, and forms three different oligomeric complexes in the circulation. Many clinical studies demonstrated that plasma adiponectin is a useful biomarker for metabolic syndrome, nonalcoholic steatohepatitis and certain type of cancers. Decreased circulating levels of plasma adiponectin (hypo adiponectinaemia) are associated with increased body mass index (BMI), decreased insulin sensitivity, less favourable plasma lipid profiles, increased levels of inflammatory markers and increased risk for the development of type 2 diabetes, hypertension, and coronary heart diseases. Low adiponectin concentrations were found to be predictive of a future reduction in insulin sensitivity and cardiovascular disorders. Administration of the anti-diabetic drugs thiazolidinediones (TZDs) raises circulating adiponectin levels. In addition, low plasma adiponectin levels are also associated with nonalcoholic steatohepatitis (NASH) and certain types of cancers.

### Description:

Total 238 AA. Mw: 25.9 kDa (calculated). C-terminal flag-tag, 8 extra AA (highlighted).

### Amino Acid Sequence:

```
EDDVTTTEELAPALVPPPKGTCAGWMAGIPGHPGH
NGTPGRDGRDGTPEKGEKGDAGLLGPKGETGDVG
MTGAEGRGFPPTGPRKGEPEAAAYMYRSAFSVGL
ETRVTVPNVPIRFTKIFYNQNHYDGTGKFCNIP
GLYYFSYHITVYMKDVKVSLFKKDKAVLFTYDQYQE
KNVDQASGSVLLHLEVGQVWLQVYGDGDHNGLY
ADNVNDSTFTGFLLYHDTNDYKDDDDDK
```

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add sterile deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

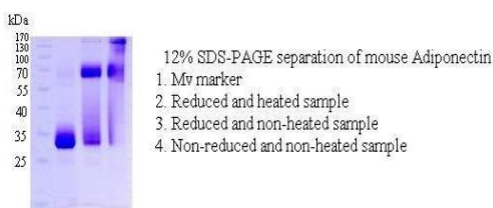
### Quality Control Test:

BCA to determine quantity of the protein.  
SDS PAGE to determine purity of the protein.

### Applications:

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

### SDS-PAGE Gel



## Mouse Adiponectin with His Tag

(Cat. No.: 42010)

Type:	Recombinant	Cat. No.:	42010
Tag:	His	Size:	0.1 mg
Source:	E. coli	Purity:	>90%
Other names:	Acrp30, GBP28, AdipoQ	Species:	Mouse

### Introduction to the Molecule:

Adiponectin, also known as apM1, Acrp30, GBP28 and adipoQ, is a circulating hormone predominantly produced from adipose tissue. Many pharmacological studies demonstrated that this protein possesses potent anti-diabetic, anti-atherogenic and anti-inflammatory functions. Supplement of adiponectin protein can decrease blood glucose, improve insulin sensitivity, alleviate fatty liver and prevent atherosclerosis. The protein is post-translationally modified by hydroxylation and glycosylation, and forms three different oligomeric complexes in the circulation. Many clinical studies demonstrated that plasma adiponectin is a useful biomarker for metabolic syndrome, nonalcoholic steatohepatitis and certain type of cancers. Decreased circulating levels of plasma adiponectin (hypo adiponectinaemia) are associated with increased body mass index (BMI), decreased insulin sensitivity, less favourable plasma lipid profiles, increased levels of inflammatory markers and increased risk for the development of type 2 diabetes, hypertension, and coronary heart diseases. Low adiponectin concentrations were found to be predictive of a future reduction in insulin sensitivity and cardiovascular disorders. Administration of the anti-diabetic drugs thiazolidinediones (TZDs) raises circulating adiponectin levels. In addition, low plasma adiponectin levels are also associated with nonalcoholic steatohepatitis (NASH) and certain types of cancers.

### Description:

Total 258 AA. Mw: 28.3 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence:

```
MSYYHHHHHHHDYDIPTTENLYFQGAMGSEDDVTT
TEELAPALVPPPKGTCAGWMAGIPGHPGHNGTPGR
DGRDGTGPEKGEKGDAGLLGPKGETGDVGMTGAEG
PRGFPGTPGRKGEPEAAAYMYRSAFSVGLTRVTV
NVPIRFTKIFYNQNHYDGGSTGKFYCNIPGLYYFSYH
ITVY
```

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

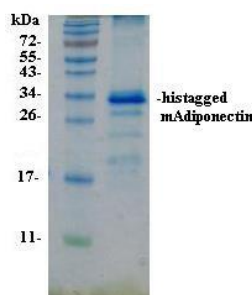
### Quality Control Test:

BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein.

### Applications:

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

### SDS-PAGE Gel



## Mouse Adiponectin (trimer)

(Cat. No.: 42013)

Type:	Recombinant	Cat. No.:	42013
Tag:	Flag	Size:	0.1 mg
Source:	HEK293	Purity:	>90%
Other names:	Acrp30, GBP28, AdipoQ	Species:	Mouse

### Introduction to the Molecule:

Adiponectin, also known as apM1, Acrp30, GBP28 and adipoQ, is a circulating hormone predominantly produced from adipose tissue. Many pharmacological studies demonstrated that this protein possesses potent anti-diabetic, anti-atherogenic and anti-inflammatory functions. Supplement of adiponectin protein can decrease blood glucose, improve insulin sensitivity, alleviate fatty liver and prevent atherosclerosis. The protein is post-translationally modified by hydroxylation and glycosylation, and forms three different oligomeric complexes in the circulation. Many clinical studies demonstrated that plasma adiponectin is a useful biomarker for metabolic syndrome, nonalcoholic steatohepatitis and certain type of cancers. Decreased circulating levels of plasma adiponectin (hypoadiponectinaemia) are associated with increased body mass index (BMI), decreased insulin sensitivity, less favourable plasma lipid profiles, increased levels of inflammatory markers and increased risk for the development of type 2 diabetes, hypertension, and coronary heart diseases. Low adiponectin concentrations were found to be predictive of a future reduction in insulin sensitivity and cardiovascular disorders. Administration of the anti-diabetic drugs thiazolidinediones (TZDs) raises circulating adiponectin levels. In addition, low plasma adiponectin levels are also associated with nonalcoholic steatohepatitis (NASH) and certain types of cancers.

### Description:

Total 238 AA. Mw: 25.9kDa (calculated). C-terminal flag-tag, 8 extra AA (highlighted). The cysteine 39 was replaced with alanine (C39A). mAd-C39A can only form trimer, but not hexamer or HMW form.

### Amino Acid Sequence:

EDDVTTTEELAPALVPPPKGTAAGWMAGIPGHPGHN  
GTPGRDGRDGTGPEKGEKGDAGLLGPKGETGDVGMT  
GAEGPRGFGTTPGRKGEPEAAAYMYRSAFSVGLETRV  
TVPNVPIRFTKIFYNQNHVDGSGTKFYCNIPGLYYFSY  
HITVYMKDVKVSLFKKDKAVLFTYDQYQEKVNDQASG  
SVLLHLEVGDVWLQVYGDGDHNGLYADNVNDSTFT  
GFLLYHDTNDYKDDDDK

### Formulation:

Lyophilized in 1 mg/mL in PBS.

### Endotoxin Level:

<0.2 EU/ug.

### Reconstitution:

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage:

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

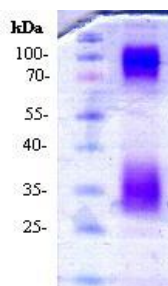
### Applications:

Binding assay, ELISA, Ex vivo and in vivo activity analysis, Western blotting.

### Quality Control Test:

BCA to determine quantity of the protein.  
SDS PAGE to determine purity of the protein.

### SDS-PAGE Gel



12%SDS-PAGE separation of Mouse Adiponectin, Trimeric form  
1. M.W. marker  
2. non-reduced and non-heated sample

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