

Product Specification Sheet

Bovine Fetuin (Fetuin A, AHSG, Alpha 2-HS), Low Endotoxins

Cat. # FETB-15-N-1 Purified bovine fetuin **SIZE:** 1 g **Form:** Powder
Country of Origin: New Zealand (TSE-free and BSE-free, Mycoplasma and bacteria tested)

The product of the AHSG gene is commonly referred to as fetuin in species other than the human. The first fetal plasma protein to be described was fetuin, which was purified from fetal and newborn calf serum by Pedersen in 1944. Fetuin was subsequently shown to be a very abundant plasma protein in fetal cattle, sheep, pig, and goat, and also to be present in humans and rodents. Fetuins are proteins, which are made in the liver and secreted into the blood. They belong to a large group of binding proteins mediating the transport and availability of a wide variety of substances (drugs, hormones, fatty acids, vitamins etc) in the blood. The best known representative of these carrier proteins is serum albumin, the most abundant protein in the blood plasma of adult animals. Fetuin is more abundant in fetal blood, hence the name fetuin (from lat. fetus). Fetal calf serum contains more fetuin than albumin, while adult serum contains more albumin than fetuin.

Human fetuin is synonymous with α 2-HS-Glycoprotein (genetic symbol AHSG), α 2-HS, A2HS, AHS, HSGA and fetuin-A. Fetuin-A exists as a single copy gene in the human and mouse genomes. A closely related gene, fetuin-B also exists in the human, rat and mouse genomes. Like fetuin-A fetuin-B is made predominantly by the liver and to a lesser extent by a number of secretory tissues. Fetuins exist in all vertebrate genomes including fish and reptiles. Thus fetuins belong to the cystatin superfamily of proteins. Fetuin relatives within this superfamily are the histidine-rich glycoprotein (HRG) and kininogen (KNG). Fetuin-A deficiency dramatically increased the calcification proneness of these mice in that all mice spontaneously calcified throughout their body even without mineral-rich diet or surgical tissue trauma. Therefore Fetuin A is regarded as a potent inhibitor of systemic calcification. Fetuins have been implicated in several diverse functions, including osteogenesis and bone resorption, regulation of the insulin and hepatocyte growth factor receptors, and response to systemic inflammation.

Fetuin is a mixture of proteins containing a wider range of growth factors and attachments factors normally found in fetal calf serum. The major protein in fetuin is ~48.5 Kda (74% protein; glycosylated). The other minor components of fetuins are alpha-1 and alpha-2 globulins and variety of growth factors such as IGF-1/2 and FGFs. Fetuins, along with Transferrin, selenium and insulin, have been used in serum-free defined media formulations to increase cell attachment and growth. Fetuin is also an effective serine protease and it may improve cellular viability by inhibiting several proteases.

Animal source

Due to the concerns of BSE, there is increasing demand of animal derived proteins from countries that are free from BSE and Scrapie. The US recognizes Australia and New Zealand as the counties free from BSE and Scrapie. Australia is also free of List A diseases as defined by the World Organization for Animal Health (OIE). Fetuin supplied by ADI is produced from selected animals in **New Zealand** that have passed USDA inspection and free from diseases.

Certificate of Analyses

Fetuin is purified from fetal calf serum using proprietary modified Pederson methods. Fetuin is dialyzed, sterile filtered and lyophilized (powder).

Physical appearance:	Slightly greenish powder
Protein:	>95%
Alpha-Globulins	>85%
pH (2% in saline)	7.1 (2% in normal saline)
Moisture	<1.5%
Endotoxin	<0.012 EU/100 ug Typical batch <0.2 EU/1mg
Virus (BVD-P13-IBR)	Negative
Mycoplasma	Negative
E. coli	Negative
C. perfringens	Negative
Salmonella	Negative
S. aureus	Negative
E. coli	Negative

Form & Storage

Stability: Store powder at -20oC for 2-3 years.

Recommended Usage

Dissolve required amount of fetuin in sterile saline or culture medium at 1% stock solution. Store stock solution at -20oC and do not freeze and thaw. The ability of fetuin to promote cell viability is maintained for at least 3-6 months.

*This product is for In vitro research use only.

Related material available from ADI

- Recombinant Human Fetuin
- Bovine Fetuins from New Zealand And Australia origins
- Bovine Transferrin from New Zealand And Australia origins
- Antibodies to human and bovine fetuins
- ELISA kits to detect human and bovine albumin, fetuins, transferrin in therapeutic products exposed to bovine serum or fetal calf serum.
- Recombinant human serum albumin and Bovine serum albumins (low endotoxins and fatty acid free)

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