

Goat Anti-Complement C3 antibody

SL0367G

Product Name	Complement C3
Chinese Name	补体 C3 抗体
Alias	Acylation stimulating protein cleavage product; Acylation-stimulating protein cleavage product; AHUS5; ARMD9; ASP; ASP; C3 and PZP-like alpha-2-macroglobulin domain-containing protein 1 antibody C3 antibody C3a anaphylatoxin; CO3_HUMAN; Complement C3 alpha chain; Complement C3; Complement C3 beta chain; Complement C3 precursor; Complement C3b alpha chain; Complement C3c alpha' chain fragment 2; Complement C3c fragment; Complement C3d fragment; Complement C3f fragment; Complement C3g fragment; Complement component 3; Complement component 3 precursor; Complement component C3; Complement factor 3; CPAMD1; Plp.
Research Area	Cell biology immunology Neurobiology
Immunogen Species	Goat
Clonality	Polyclonal
React Species	(predicted: Human,) ELISA=1:5000-10000
Applications	not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	187kDa
Cellular localization	Secretory protein
Form	Liquid
Concentration	1mg/ml
immunogen	human Complement C3 purified from human plasma: full length
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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The complement factor C3 consists of an alpha and a beta chain. C3 is a central factor in the complement cascade. It is central to the alternative pathway that leads to the C3 convertase C3bBb. The classical mannose binding lectin activation pathway leads to the C3 convertase C4b2a. These convertases cleave C3 resulting in C3a and C3b. Further degradation leads to the formation of the alpha chain products C3d, C3g and C3c. C3 is an acute phase protein that is produced by a wide range of tissues, including renal epithelial cells and hepatocytes.

Function:

C3 plays a central role in the activation of the complement system. Its processing by C3 convertase is the central reaction in both classical and alternative complement pathways. After activation C3b can bind covalently, via its reactive thioester, to cell surface carbohydrates or immune aggregates. Derived from proteolytic degradation of complement C3, C3a anaphylatoxin is a mediator of local inflammatory process. It induces the contraction of smooth muscle, increases vascular permeability and causes histamine release from mast cells and basophilic leukocytes.

Product Detail

Acylation stimulating protein (ASP): adipogenic hormone that stimulates triglyceride (TG) synthesis and glucose transport in adipocytes, regulating fat storage and playing a role in postprandial TG clearance. Appears to stimulate TG synthesis via activation of the PLC, MAPK and AKT signaling pathways. Ligand for GPR77. Promotes the phosphorylation, ARRB2-mediated internalization and recycling of GPR77.

Subunit:

C3 precursor is first processed by the removal of 4 Arg residues, forming two chains, beta and alpha, linked by a disulfide bond. C3 convertase activates C3 by cleaving the alpha chain, releasing C3a anaphylatoxin and generating C3b (beta chain + alpha' chain). C3dg interacts with CR2 (via the N-terminal Sushi domains 1 and 2). During pregnancy, C3dg exists as a complex (probably a 2:2:2 heterohexamers) with AGT and the proform of PRG2. Interacts with VSIG4. C3b interacts with herpes simplex virus 1 (HHV-1) and herpes simplex virus 2 (HHV-2) envelope glycoprotein C; this interaction inhibits the activation of the complement system. Interacts with S.aureus immunoglobulin-binding protein sbi, this prevents interaction between C3dg and CR2. Interacts with S.aureus fib. Interacts (both C3a and ASP) with GPR77; the interaction occurs with higher affinity for ASP, enhancing the phosphorylation and activation of GPR77, recruitment of ARRB2 to the cell surface and endocytosis of GRP77.

Subcellular Location:

Secreted.

Tissue Specificity:

Plasma. The acylation stimulating protein (ASP) is expressed in adipocytes and released into the plasma during both the fasting and postprandial periods.

Post-translational modifications:

C3b is rapidly split in two positions by factor I and a cofactor to form iC3b (inactivated C3b) and C3f which is released. Then iC3b is slowly cleaved (possibly by factor I) to form C3c (beta chain + alpha' chain fragment 1 + alpha' chain fragment 2), C3dg and C3f. Other proteases produce other fragments such as C3d or C3g. C3a is further processed by carboxypeptidases to release the C-terminal arginine residue generating the acylation stimulating protein (ASP). Levels of ASP are increased in adipocytes in the postprandial period and by insulin and dietary chylomicrons.

Phosphorylation sites are present in the extracellular medium.

DISEASE:

Defects in C3 are the cause of complement component 3 deficiency (C3D) [MIM:613779]. A rare defect of the complement classical pathway. Patients develop recurrent, severe, pyogenic infections because of ineffective opsonization of pathogens. Some patients may also develop autoimmune disorders, such as arthralgia and vasculitic rashes, lupus-like syndrome and membranoproliferative glomerulonephritis.

Genetic variation in C3 is associated with susceptibility to age-related macular degeneration type 9 (ARMD9) [MIM:611378]. ARMD is a multifactorial eye disease and the most common cause of irreversible vision loss in the developed world. In most patients, the disease is manifest as ophthalmoscopically visible yellowish accumulations of protein and lipid that lie beneath the retinal pigment epithelium and within an elastin-containing structure known as Bruch membrane.

Defects in C3 are a cause of susceptibility to hemolytic uremic syndrome atypical type 5 (AHUS5) [MIM:612925]. An atypical form of hemolytic uremic syndrome. It is a complex genetic disease characterized by microangiopathic hemolytic anemia, thrombocytopenia, renal failure and absence of episodes of enterocolitis and diarrhea. In contrast to typical hemolytic uremic syndrome, atypical forms have a poorer prognosis, with higher death rates and frequent progression to end-stage renal disease. Note=Susceptibility to the development of atypical hemolytic uremic syndrome can be conferred by mutations in various components of or regulatory factors in the complement cascade system. Other genes may play a role in modifying the phenotype.

Note=Increased levels of C3 and its cleavage product ASP, are associated with obesity, diabetes and coronary heart disease. Short-term endurance training reduces baseline ASP levels and subsequently fat storage.

Similarity:

Contains 1 anaphylatoxin-like domain.

Contains 1 NTR domain.

SWISS:

P01024

Gene ID:

718

Database links:

[Entrez Gene: 718](#) Human

[Omid: 120700](#) Human

[SwissProt: P01024](#) Human

补体(complement, C)是由近 20 种不同血清蛋白组成的多分子系统, 约占血清球蛋白总量的 10%。补体在血清中的含量相对稳定, 不因免疫应答而增加, 仅在某些病理情况下才会发生波动。补体系统的基本组成包括 9 种血清蛋白成分, 按发现的先后顺序而分别命名为 C1-9。C3 是一种 β 球蛋白, 是补体中含量最多、作用最重要的一个组分, 是补体两条主要激活途径的中心环节, 有重要的生物活性作用, 可在肝脏中产生。C3 蛋白由 α 、 β 2 条肽链经二硫键连接而成, 本产品能特异性的识别 C3 的 β 链。