Product Specification Sheet

Human C3d protein antibodies

Cat # C3D11-S **Sheep** Anti-Human C3d protein IgG, Aff pure **SIZE**: 100 ul

Human Complement component 3, C3 (alternative names include acylation-stimulating protein (ASP) C3 is encoded by gene located 19p13.3-p13.2. Because C3, C4, and C5 are strikingly similar suggesting a common evolutionary origin. C3 is an acute phase reactant. Synthesis of C3, a glycoprotein, is induced during acute inflammation. The liver is the main site of synthesis, although small amounts are also produced by activated monocytes and macrophages. A single chain precursor (pro-C3) of approximately 200 kD is found intracellularly; the cDNA shows that it comprises 1,663 amino acids. This is processed by proteolytic cleavage into alpha (~115 kda) and beta subunits (~75 kda) which in the mature protein are linked by disulfide bonds. Pro-C3 contains a signal peptide of 22 amino acid residues, the beta chain (645 residues) and the alpha chain (992 residues). The 2 chains are joined by 4 arginine residues that are not present in the mature protein. Human C3 has 79% identity to mouse C3 at the nucleotide level and 77% at the amino acid level.

Human C3 concentration in normal human serum is ~ 1.25 mg/ml. Classical and alternative activation pathways of complement converge at C3 step. Activation via either pathway can result in assembly of C3-cleaving enzymes (C3 convertases) on target surfaces. Both C3 convertases cleave the C3 a-chain at peptide bond 77 resulting in production of C3a (M.W. 9083) and C3b fragments (M.W. 180,000). Released C3a peptide is one of the three complement anaphylatoxins. The nascent C3b fragment can form a covalent ester bond with target surface. This covalent attachment of C3b to target acceptors is required for continuation of complement activation.

C3 nephritic factor, an IgG antibody against complement components, is demonstrable in some cases of partial lipodystrophy. C3-deficient homozygotes developed mesangiocapillary glomerulonephritis.

Source of Antigen and Antibodies

Antigen	Highly purified human serum C3d protein
Ab Host/type	Sheep, Polyclonal IgG # C3D11-A. Antibody (IgG) has been fractionated to enrich IgG and solid phase adsorbed to remove contaminants
2-Ab	**Rabbit Anti-Sheep IgG-HRP** cat # 50320 (AP, biotin, FITC conjugates also available)
-ve	Cat # 20006-1, sheep (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies

IgG (unpurified)
100ul solution lyophilized powder
Supplied in Glycine and NaCl, PHPBS Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Suitable for use in a variety of gel techniques including radial immunodiffusion (RID), double diffusion and immunoelectrophoresis (IEP). The use of 3% PEG 6000 with 1.2% agarose in a suitable buffer (such as TBE or Tris-barbital pH >8.2) is recommended. Each laboratory should determine an optimum working titer for use in its particular application. Other applications have not been tested but use in such assays should not necessarily be excluded.

RID: 7ul antiserum/cm^2 in gel vs 5ul plasma
Double Diffusion: 10ul antiserum vs 5ul plasma
IEP:100ul antiserum vs 5ul plasma

Gives a single arc in the alpha region when tested by IEP against aged human plasma (C3d) and a continuous double arc in the alpha and beta regions when tested against fresh plasma (C3 and C3d). Identity has been confirmed by double diffusion (Ouchterlony) against human plasma and a known anti-human C3d. A fragment of the major complement protein C3, C3d is formed as a result of the deactivation of C3d. Factor I in the presence of cofactors cleaves C3b to form iC3d and C3f, Factor I and/or other proteases then cleave iC3b to form C3c and C3dg. C3dg is then further cleaved by tryptic enzymes to C3g and C3d. The C3 fragments are then eliminated from circulation by phagocytic cells in the liver. C3d has a molecular weight of 34kDa. Normally C3d is present in trace amount in plasma; however, in disease states where rapid complement consumption is occurring levels of C3d can be elevated

References: de Bruijn MHL (1985) PNAS 82, 708-712; Alper CA (1970) J. Clin. Invest. 49, 975-1985; Ajees AA (2006) Nature 444, 221-225; Botto M (1992) PNAS 89, 1957-1961; MCLean RH (1980) Human, Hered. 30, 149-154; Muller-Eberhard HJ (1958) Adv. Immunol. 8, 1-80;

*This product is for In vitro research use only.

Mouse, Rat and Dog C3 ELISA and anti-ovalbumin IgG, IgM ELISA C3, C3a, C3b purified proteins
Adipsin and Factor D proteins and antibodies
C3D11-S 80630A

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