abcam

ab17456

Anti-C3 antibody [12E2]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS, 2.9% Sodium chloride
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	12E2
Purification technique	Affinity purification Protein G
Light chain type	kappa
Concentration	1.04 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Expected

Species	Rat
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

ELISA

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information C3

Function

Precursor of non-enzymatic components of the classical, alternative, lectin and GZMK complement pathways, which consist in a cascade of proteins that leads to phagocytosis and breakdown of pathogens and signaling that strengthens the adaptive immune system. Complement C3b. Non-enzymatic component of C5 convertase. Generated following cleavage by C3 convertase, it covalently attaches to the surface of pathogens, where it acts as an opsonin that marks the surface of antigens for removal. Complement C3b binds covalently via its reactive thioester, to cell surface carbohydrates or immune aggregates. Together with complement C4b, it then recruits the serine protease complement C2b to form the C5 convertase, which cleaves and activate C5, the next component of the complement pathways. In the alternative complement pathway, recruits the serine protease CFB to form the C5 convertase that cleaves and activates C5. C3a anaphylatoxin. Mediator of local inflammatory process released following cleavage by C3 convertase (By similarity). Acts by binding to its receptor, C3AR1, activating G protein-coupled receptor signaling, promoting the phosphorylation, ARRB2-mediated internalization and endocytosis of C3AR1 (By similarity). C3a anaphylatoxin stimulates the activation of immune cells such as mast cells and basophilic leukocytes to release inflammation agents, such as cytokines, chemokines and histamine, which promote inflammation development (By similarity). Also acts as potent chemoattractant for the migration of macrophages and neutrophils to the inflamed tissues, resulting in neutralization of the inflammatory triggers by multiple ways, such as phagocytosis and generation of reactive oxidants (PubMed:8352775). Acylation stimulating protein. Adipogenic hormone that stimulates triglyceride synthesis and glucose transport in adipocytes, regulating fat storage and playing a role in postprandial triglyceride

clearance. Appears to stimulate triglyceride synthesis via activation of the PLC, MAPK and AKT signaling pathways. Acts by binding to its receptor, C5AR2, activating G protein-coupled receptor signaling, promoting the phosphorylation, ARRB2-mediated internalization and endocytosis of C5AR2. In contrast to C3a anaphylatoxin peptide, does not show pro-inflammatory activity. C3-beta-c. Acts as a chemoattractant for neutrophils in chronic inflammation.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Complement component 3 (C3) commonly known as C3 complement is a central protein in the complement system which plays a significant role in immune response. C3b a fragment of C3 is produced when C3 undergoes cleavage. C3 is a large protein with a mass of approximately 185 kDa. The liver primarily secretes C3 into the bloodstream. It circulates in the plasma and is found in high concentration making it one of the most abundant components of the complement system.
Biological function summary	Complement component C3 forms part of the innate immune system by promoting opsonization which enhances phagocytosis of pathogens. C3b binds to pathogens' surfaces facilitating their recognition by phagocytes. C3 as part of a complex with C3 convertase also has a role in amplifying the activation of the complement cascade. The proteolytic cleavage of C3 into C3b and C3a leads to the activation of other components forming the membrane attack complex and orchestrating inflammation.
Pathways	The complement component C3 functions within both the classical and alternative complement pathways. It acts as a convergence point where the complement activation pathways meet. C3 is activated into C3b and C3a which are key to amplifying the cascade. Furthermore C3 interacts with proteins such as factor B and factor D in the alternative pathway and C4 and C2 in the classical pathway facilitating the formation of C3 convertase necessary for pathway progression.
Associated diseases and disorders	Complement C3 shows associations with immune-related and inflammatory diseases. Deficiencies or malfunctions of complement C3 can lead to increased susceptibility to infections due to impaired opsonization and clearance of

pathogens. Additionally overactivation of the complement system involving C3 can contribute to autoimmune disorders such as systemic lupus erythematosus. Other proteins linked to these diseases include C4 in lupus and factor H in age-related macular degeneration which controls complement pathway activation.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

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