MONOCLONAL ANTIBODY TO HUMAN C5/C5A
clone 557

Catalog no HM2077 (lot number and expiry date are indicated on the label)

Description The monoclonal antibody 557 recognizes an epitope of complement factor 5 (C5) and C5a. The complement system is composed of over 30 proteins, activated in response to tissue injury, invading pathogens or other foreign surfaces. The complement pathways can be divided in the activation pathways and lytic pathway.

The activation pathways lead via C3 to the cleavage of the fifth complement component C5. C5a was first described as a cleavage product of C5 with chemotactic and anaphylatoxic properties. Further characterization revealed that C5a is an essential part of the innate immune response and evidence now suggests that it may also play a role in adaptive immunity. Complement fragment C5a is a 74 residue pro-inflammatory polypeptide. C5a induces smooth muscle contraction, increases vascular permeability, causes degranulation of mast cells and basophils, and release of lysosomal enzymes. In addition C5a stimulates the directed migration of neutrophils, eosinophils, basophils and monocytes. C5a binds to at least two seven-transmembrane domain receptors, C5aR (C5R1, CD88) and C5L2 (gp77), expressed ubiquitously on a wide variety of cells but particularly on the surface of immune cells like macrophages, neutrophils and T cells. The former is a well-established receptor that initiates G-protein-coupled signaling via mitogen-activated protein kinase pathways, thereby by inducing synthesis of cytokines such as TNF-alpha, IL-1beta, IL-6 and IL-8. Its in vivo blockade greatly reduces inflammatory injury. Much less is known about C5L2, occupancy of which by C5a does not initiate increased intracellular Ca(2+). The widespread expression of C5a receptors throughout the body allows C5a to elicit a broad range of effects. Thus, C5a has been found to be a significant pathogenic driver in a number of immuno-inflammatory diseases. Nowadays C5a is also implicated in non-immunological functions associated with developmental biology, CNS development and neurodegeneration, tissue regeneration, and haematopoiesis.

The antibody 557 is capable to inhibit the binding of C5a to the C5a receptor through a competitive mechanism, it does not block the cleavage of C5 into C5a and C5b.

Aliases CPAMD4, FLJ17816, FLJ17822, MGC142298

Immunogen BALB/c mice were immunized with human C5

Species Mouse IgG2a

Formulation 1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.1% bovine serum albumin.

Application

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N.D. = Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot

Application notes IA: antibody was used as detection antibody in ELISA. (Ref.1)

W: used as ascites at a 1/1000 dilution. Incubation 2h on nitrocellulose blotted samples. (Ref.1)

References


2. Kola, A et al. Epitope mapping of a C5a neutralizing mAb using a combined approach of phage display, synthetic peptides and site-directed mutagenesis. Immunotechnology 1996, 2: 115


Use For Western blotting, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50. For functional studies, in vitro dilutions have to be optimized in user’s experimental setting.
**Positive control**
Recombinant C5

**Negative control**
C3

**Storage and stability**
Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year. The exact expiry date is indicated on the label.

**Precautions**
For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

**Also available**
- HM2076 Monoclonal antibody against Human C5/C5a (N-terminus), clone 561
- HM2078 Monoclonal antibody against Human C5a/C5a des-Arg (neo-epitope), clone 2942
- HM2079 Monoclonal antibody against Human C5a/C5a des-Arg (neo-epitope), clone 2952
- HM2080 Monoclonal antibody against Human C5/C5b, clone 568