MONOCLONAL ANTIBODY TO MOUSE C1Q clone JL-1

Catalog no  HM1096 (lot number and expiry date are indicated on the label)

Description  The monoclonal antibody JL-1 recognizes the collagen-like region (CLR) of mouse C1q, a 459 kDa molecule consisting of three individual polypeptide chains. The antibody has been generated by immunization of C1q-/C57BL/6 mice with purified mouse C1q. C1q forms together with C1r and C1s the C1 macromolecule, the first component of the classical complement pathway. Interaction of immune complexes with C1q induces a conformational change within the C1 complex, which results in activation of the classical pathway. C1q functions as recognition unit by binding to the heavy chain of IgG or IgM (Fc gamma and Fc micro) provided that the immunoglobulins are bound to their antigen. Furthermore, C1q can also recognize molecular patterns associated with pathogens and it can bind to apoptotic blebs, where it activates the classical complement pathway and mediates phagocytosis. As such, C1q promotes the clearance of apoptotic cells and subsequent exposure of auto antigens, thereby preventing stimulation of the immune system.

C1q is predominantly produced by macrophages but also by follicular dendritic cells, interdigitating cells and cells of the monocyte-macrophage lineage. C1q deficiency has a profound effect on host defence and clearance of immune complexes. Absence of C1q may cause autoimmunity by impairment of the clearance of apoptotic cells. Inherited C1q deficiency is also associated with the development of systemic lupus erythematosus (SLE).

The monoclonal antibody JL-1 is reactive with the collagen-like region (CLR) only, which is the same region to which autoantibodies in mice and humans are binding. Anti-C1q autoantibodies deposit in glomeruli together with C1q but induce overt renal disease only in the context of glomerular immune complex disease. This provides an explanation why anti-C1q antibodies are especially pathogenic in patients with SLE.

Aliases  Complement C1q subcomponent subunit A

Immunogen  Purified mouse C1q

Species  Mouse IgG2b

Cross reactivity  Cross reactant  Reactivity
Human  Yes
Rat  Yes

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 FC and IF are based on personal communication.

Application notes

IHC-F: Antibody JL-1 was used to stain tissue sections which were fixed in acetone. As positive control a polyclonal anti-C1q antibody was used and as negative control an isotype matched monoclonal antibody (Ref.1).

FS: Antibody JL-1 was administered to mice resulting in depletion of circulating C1q, glomerular deposition of C1q and induction of anti-C1q autoantibodies in susceptible mice. As a negative control an isotype matched monoclonal antibody was used (Ref.1).
References

1. Trouw, L et al; Anti-C1q autoantibodies deposit in glomeruli but are only pathogenic in combination with glomerular C1q-containing immune complexes. J Clin Invest 2004, 114: 679

Use

For immunohistochemistry, and 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
Spleen and kidney tissue of wild-type mice (Ref.1)

Negative control
Spleen and kidney tissue of C1q -/- mice (Ref.1)

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
HM1096BT Biotinylated monoclonal antibody against Mouse C1q, clone JL-1
HM1096F FITC conjugated monoclonal antibody against Mouse C1q, clone JL-1
HM1044 Monoclonal antibody against Mouse C1q, clone 7H8
HM1035 Monoclonal antibody against Mouse MBL-A, clone 8G6
HM1038 Monoclonal antibody against Mouse MBL-C, clone 14D12