

Monoclonal Antibodies:

Murine Monoclonal Anti-Human C3/C3d Protein

For **Research Use Only**. Not for use in diagnostic procedures

Background

The human complement component C3 consists of two disulfide bonded subunits (Alpha 115 kD and Beta 75 kD). The concentration of C3 in serum is approximately 1.25 +/- 0.52 mg/mL. Under normal conditions, activation of either of the complement pathways leads to C3 convertases, which cleave C3 into two fragments C3a, an anaphylatoxin, and C3b. The C3b fragment has many biologic functions including promotion of phagocytosis and participation as a structural component of both the C3 and C5 convertase enzymes. These processes are under stringent control in vivo.

One control mechanism involves a two-site cleavage of C3b by Factor I with the cooperation of Factor H or CR1 as cofactors. When cleaved in this way the biologic functions of C3b are lost. The resulting protein is termed iC3b. iC3b can remain covalently bound to a target cell or bind CR3 receptors. It can be further broken down to C3c and C3d. C3d can interact with CR2 receptors.¹

Quidel's monoclonal antibodies to complement antigens were prepared using standard techniques. They are purified from mouse ascites fluid via protein A affinity chromatography. Quidel's Monoclonal Anti-Human C3d was raised against highly pure, human C3 using standard techniques.

The specificity of the monoclonal antibody was established via a series of immunoassays utilizing highly purified C3 and C3 fragments. Firstly, the antibody was shown by ELISA to bind to purified C3, iC3b and C3d immobilized in microtiter wells, but not other complement proteins nor C3 fragments. Secondly, free (unbound) C3, iC3b, C3d and human serum but not other C3 fragments were shown (via inhibition EIA) to inhibit the binding of this antibody to immobilized C3.

Applications

Please contact Quidel Technical Support for application-specific information.

EIA	RIA	IHC ²	WB ^{3,4}	FACS ⁵
>1:10500	N/T	>1:600	>1:5000	>1:25

N/T = Not tested

Specifications

- Catalog number: A207
- Concentration: ≥1.0 mg/mL
- Volume/vial: 100 µL
- Storage: Store at ≤-20°C
- Buffer: Borate Buffered Saline (pH 8.4 ± 0.2)
- Isotype: IgG₁k

References

- ¹ Barilla-LaBarca, M.L. et al. "Role of Membrane Cofactor Protein (CD46) in regulation of C4b and C3b Deposited Cells" *J Immunol* (2002) 168:6298-6304.
- ² Pascher A, Poehlein C, Storck M, Prestel R, Mueller-Hoecker J, White D.J.G., Abendroth D, Hammer C., "Immunopathological Observations After Xenogeneic Liver Perfusion Using Donor Pigs Transgenic for Human Decay-Accelerating Factor 1,2" *Transplantation* 64(3):384-91, 1997.
- ³ Yasojima K, Schwab C, McGeer E.G., McGeer P.L., "Up-Regulated Production and

Activation of the Complement System in Alzheimer's Disease Brain" *Am J Pathol* 154(3):927-36, 1999.

⁴ Yasojima K, Schwab C, McGeer E.G., McGeer P.L., "Generation of C-Reactive Protein and Complement Components in Atherosclerotic Plaques" *Am J Pathol* 158(3):1039-51, 2001.

⁵ Gemmell C.H. "A Flow Cytometric Immunoassay to Quantify Adsorption of Complement Activation Products (iC3b, C3d, SC5b-9) on Artificial Surfaces" *J Biomed Mater Res* 37(4):474-80, 1997.