

## CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

<b>Product name</b>	C3b/iC3b, Human, clone 3E7		
<b>Catalog number</b>	HM2286-1MG		
<b>Lot number</b>	xxxxxXxxxx-X	<b>Expiry date</b>	MMM YYYY
<b>Volume</b>	xx ml	<b>Amount</b>	1 mg
<b>Formulation</b>	0.2 µm filtered in PBS	<b>Concentration</b>	>0.5 mg/ml
<b>Host Species</b>	Mouse IgG1	<b>Conjugate</b>	None
<b>Endotoxin</b>	<24 EU/mg	<b>Purification</b>	Protein G
<b>Storage</b>	4°C		

### Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #			1-3,8	1-5	1-7			
Yes			•	•	•			
No								•
N.D.	•	•				•	•	

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

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.

- FS: mAb 3E7 blocks the alternative pathway and not the classical pathway (Ref5).

### General Information

**Description** Monoclonal antibody 3E7 recognizes human complement C3b/iC3b and blocks activation of the alternative pathway (AP). The complement system plays important roles in both innate and adaptive immune response and can produce an inflammatory and protective reaction to challenges from pathogens before an adaptive response can occur. There are three pathways of complement activation. The classical pathway is initiated by Immune complexes; the lectin pathway by surface bound mannan binding lectin; and the AP by all the surfaces that are not specifically protected against it. Each generates a C3 convertase, a serine protease that cleaves the central complement protein C3, and generates the major cleavage fragment C3b. The C3 and C5 convertases are enzymatic complexes that initiate and amplify the activity of the complement pathways and ultimately generate the cytolytic MAC. Upon activation of C3 two fragments are generated. The smaller anaphylatoxin C3a and the larger short lived C3b. The latter is highly reactive and can bind to complement-activating particles or immune-complexes. Unlike the classical pathway, the AP is in state of continuous activation. The AP plays an important role in tissues damage and inflammation associated with certain autoimmune diseases and with ischemia-reperfusion injury. Increasing evidence suggests blocking activation of AP can prevent or reduce certain disease pathologies and maintain host defense afforded by CP and LP. Deposition of C3b on cell surfaces can opsonize cells for destruction. Cell bound C3b can be degraded to inactive forms, iC3b and then C3dg. Antibody 3E7 shows enhanced specificity for C3b(i) attached to a cell surface and it can bind to C3b(i)-opsonized cells in whole blood. The antibody blocks AP based on its capacity to prevent C3b deposition on the surface of a variety AP activators and also inhibits AP-promoted lysis of rabbit erythrocytes, as used in the standard AP50 test. Clone 3E7 competes with factor B and H for binding to C3b-opsonized substrates. The use of 3E7 has been shown to enhance the immunotherapeutic action of Rituximab. The CP is not affected or enhanced by this antibody.

**Immunogen** C3b(i)-Sephadex.

- References**
- Kennedy, A et al; An anti-C3b(i) mAb enhances complement activation, C3b(i) deposition and killing of CD20 cells by rituximab. *Blood* 2003, 101:3
  - Kennedy, A et al; Rituximab infusion promotes rapid complement depletion and acute CD20 loss in Chronic Lymphocytic Leukemia. *Journal of Immunology* 2004, 172:5
  - Pawluczko, A et al; Hematin promotes complement alternative pathway-mediated deposition of C3 activation fragments on human erythrocytes: Potential implications for the pathogenesis of anemia in malaria. *Journal of Immunology* 2007, 178:8
  - Risitano, AM; Paroxysmal nocturnal hemoglobinuria and other complement-mediated hematological disorders. *Immunobiology* 2012, 217:11
  - Lindorfer, M et al; A novel approach to preventing the hemolysis of paroxysmal nocturnal hemoglobinuria: both complement-mediated cytolysis and C3 deposition are blocked by a monoclonal antibody specific for the alternative pathway of complement. *Blood* 2010, 115:11

6. DiLillo, D et al; Selective and efficient inhibition of the alternative pathway of complement by a mAb that recognizes C3b/iC3b. *Molecular Immunology* 2006, *43*:7
7. Paixão-Cavalcante, D et al; A humanized antibody that regulates the alternative pathway convertase: Potential for therapy of renal disease associated with nephritic factors. *Journal of Immunology* 2014, *192*:10
8. Beum, P et al; Complement activation on B lymphocytes opsonized with rituximab or ofatumumab produces substantial changes in membrane structure preceding cell lysis. *Journal of immunology* 2008, *181*:1

**Storage&stability** Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.

**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.

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We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC

Date

Do you have any questions or comments regarding this product? Please contact us via [support@hycultbiotech.com](mailto:support@hycultbiotech.com).