

Purified anti-complement C3/C3b/iC3b/C3d Antibody

Catalog# / Size	846302 / 100 µg
Clone	1H8/C3b
Regulatory Status	RUO
Other Names	Complement Component 3, C3, C3b, iC3b, C3bi, C3d
Isotype	Mouse IgG2a, κ
Description	Complement component 3 (C3) is a 185 kD glycoprotein composed of two chains linked by a disulfide bond. It is the fourth complement component to react in the classical pathway and is a key protein in the alternative and the lectin complement activation pathways. C3b is proteolytically generated from C3 by cleavage of the C3a-C3b peptide bond in the protein by C3 convertase. C3b can bind covalently, via its reactive thioester, to cell surface carbohydrates or immune aggregates. Macrophages and neutrophils recognize C3b by the complement receptor 1 (CR1, CD35). Opsonization of target surfaces with C3b is central to all three pathways of complement activation. The proteolytically inactive forms of C3b, iC3b, are generated by cleavage of the alpha chain at one or two positions by factor I in the presence of co-factors, such as factor H. A ~2 kD fragment of C3b, C3f, is generated when C3b is cleaved at two positions by factor I. Although iC3b is less active than C3b, iC3b's interactions with lymphoid and phagocytic cells via CR2 (CD21) and CR3 (CD11b/CD18) can expand target-specific B and T cells. iC3b can be cleaved to form C3c and C3dg. Further proteolytic cleavage of C3dg generates C3d and C3g.

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Human iC3b coupled to sepharose 4B
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	WB - Quality tested Direct ELISA - Verified FC, ICC, ELISA Detection - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by Western blotting . For Western blotting, the suggested use of this reagent is 0.5 - 5.0 µg per ml. For Direct ELISA, the suggested use of this reagent is 0.01 - 2.0 µg per ml. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Additional reported applications (for the relevant formats) include: flow cytometry ³ , immunofluorescent staining ² , and ELISA Detection ¹ . This antibody recognizes human C3, C3b, iC3b, and C3d.
Application References	1. Tosic L, <i>et al.</i> 1989. <i>J. Immunol. Methods</i> 120:241. (ELISA) 2. Kennedy AD, <i>et al.</i> 2003. <i>Blood</i> 101:1071. (IF) 3. Lindorfer MA, <i>et al.</i> 2010. <i>Blood</i> 115:2283. (FC)
(PubMed link indicates BioLegend citation)	
Product Citations	1. Alberts A, <i>et al.</i> 2020. <i>Sci Rep.</i> 10:6391. PubMed

Antigen Details

Structure	C3 is a 185 kD glycoprotein that is cleaved to generate a 176 kD protein fragment, C3b. iC3b is proteolytically derived from C3b and exists as a mixture of 176 and 174 kD proteins. C3d is a 33.8 kD single chain proteolytic fragment of iC3b.
Distribution	Extracellular, plasma membrane, and serum.
Function	C3b is involved in all three complement pathways and is essential for effective complement activation and presentation of antigens to cells of the adaptive immune system. iC3b and C3d are less active than C3b, but the target-bound protein can expand target-specific B-cell and T-cell populations by interacting with lymphoid and phagocytic cells.
Interaction	Immune cells interact with C3b, iC3b and C3d using CR1, CR2/CR3 and CR2, respectively.
Ligand/Receptor	C3b can bind to Factor B, Factor P, Factor H, Factor I, C5, DAF (CD55), MCP (CD46), and CR1 (CD35). iC3b interacts with CR2 (CD21) and CR3 (CD11b/CD18). C3d binds to CR2.
Biology Area	Cell Biology, Complement, Immunology, Innate Immunity, Neuroinflammation, Neuroscience
Antigen References	1. Lambris JD, <i>et al.</i> 1988. <i>Immunol. Today</i> 9:387-93. 2. Dempsey PW, <i>et al.</i> 1996. <i>Science</i> 271:348-50.
Gene ID	718

Related Protocols

[Active Protocols: Sandwich ELISA - Video](#)

[Immunohistochemistry Protocol for Ultra Streptavidin Detection Kits USA](#)

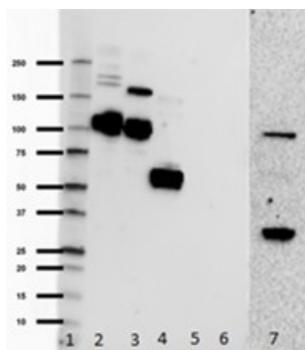
[Western Blotting Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

Other Formats

Purified anti-complement C3/C3b/iC3b/C3d

Product Data



Western blot of purified anti-complement C3/C3b/iC3b/C3d antibody (clone 1H8/C3b). Lane 1: Molecular weight marker; Lane 2: C3 protein; Lane 3: C3b protein; Lane 4: C3bi protein; Lane 5: Human liver lysate; Lane 6: BSA negative control; Lane 7: Human plasma. The blot was incubated with 1 µg/mL of the primary antibody overnight at 4°C, followed by incubation with HRP labeled goat anti-mouse IgG (Cat. No. 405306). Enhanced chemiluminescence was used as the detection system.

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