

CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name C5a/C5a-desArg/C5, Mouse, mAb HB4D2

Catalog number HM1161-20UG

Lot number

Expiry date

Volume 200 µl

Amount 20 µg

Formulation 0.2 µm filtered in PBS+0.02%NaN3+0.1%BSA

Concentration 100 µg/ml

Host Species Mouse IgG2b

Conjugate None

Endotoxin N.A.

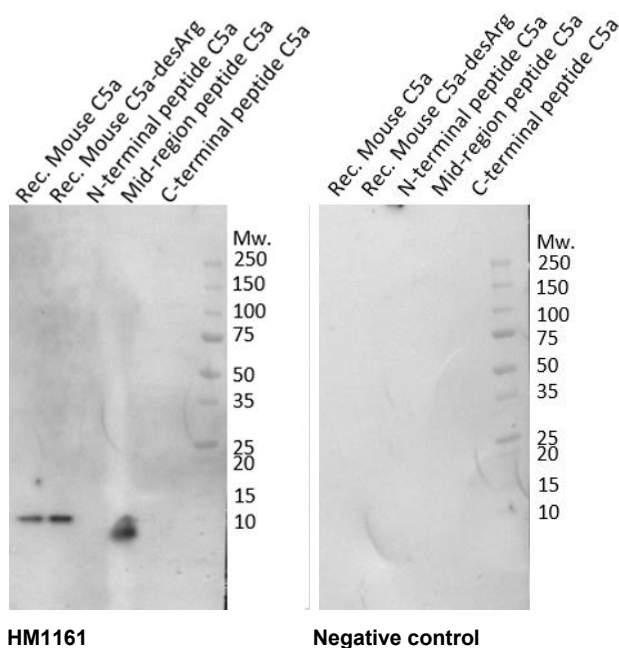
Purification Protein A

Storage 4°C

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	BLI	W
Reference #									
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; BLI = Bio-layer Interferometry; W = Western blot



W: Western blot analysis performed with recombinant mouse C5a (HC1101), recombinant mouse C5a-desArg (HC1102) and C5a peptides (N-terminal, C-terminal and Mid-region) under reduced conditions with antibody HB4D2 (HM1161) at 2 µg/ml. The expected band size for recombinant C5a and C5a-desArg is ~10 kDa, for the peptides the expected band size is <5 kDa.

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.

- IA: Antibody HB4D2 can be used as capture and/or detection antibody in ELISA.
- W: A reduced sample treatment and SDS-Page was used to visualize C5a. The expected band size is ~10 kDa

General comment: Please notice that under given conditions it is known that C5 can expose epitopes normally only found in the cleaved activation products (ref. 1, 2).

General Information

Description	Antibody HM1161 clone HB4D2 recognizes mouse C5a and C5a-desArg and is also reactive with C5. The epitope is located within 11 amino acids of the middle part of the C5a protein. The complement system is a key component of innate immunity and consists of more than 30 plasma and membrane-associated proteins that cooperate to detect and eliminate pathogens, damaged cells, and immune complexes. Activation occurs through the classical, lectin, or alternative pathway. Despite their different initiation mechanisms, all three pathways converge at the cleavage of complement component C3 and subsequently lead to the formation of C5 convertases and cleavage of C5, a 190 kDa circulating glycoprotein primarily synthesized in the liver. C5 consists of a disulfide-linked α-chain (~111 kDa) and β-chain (~75 kDa). Proteolytic cleavage of C5 produces the fragments C5a and C5b. Whereas C5b initiates formation of the membrane attack complex (MAC; TCC, C5b-9), which forms cytolytic pores in target membranes, C5a functions as a potent inflammatory mediator that orchestrates immune cell recruitment and activation. C5a is a 74-amino acid polypeptide (9.8 kDa) derived from the N-terminus of the C5 α-chain and represents one of the most potent anaphylatoxins generated during complement activation. In circulation, C5a is rapidly converted by serum carboxypeptidases into the more stable but still biologically active derivative C5a-desArg. In humans C5a exerts its biological effects primarily through two seven-transmembrane receptors: C5aR1 (CD88) and C5aR2 (C5L2/GPR77). These receptors are widely expressed, particularly on immune cells such as neutrophils, macrophages, monocytes, and T cells. Activation of C5aR1 initiates G-protein-coupled signaling pathways that stimulate the production of pro-inflammatory cytokines including TNF-α, IL-1β, IL-6, and IL-8. Through these signaling pathways, C5a induces smooth muscle contraction, increases vascular permeability, promotes mast cell and basophil degranulation, and stimulates the release of lysosomal enzymes. In addition, it acts as a powerful chemoattractant, directing these cells to migrate to sites of inflammation. Although these responses are essential for host defense, excessive C5a generation contributes to the pathogenesis of numerous inflammatory and immune-mediated diseases, including sepsis, ischemia-reperfusion injury, autoimmune disorders, and cardiovascular disease. Consequently, the C5-C5a axis has emerged as an important therapeutic target. Inhibition of complement activation at the level of C5, using e.g. eculizumab, prevents the generation of C5a and the formation of the terminal complement complex. This makes complement inhibition a promising strategy for controlling complement-driven inflammation. Antibody HM1161 is, at least but not limited to, applicable in the following applications: ELISA and western blotting. Please, contact Hycult Biotech for further information.
Immunogen	C5a amino acid sequence: YDGARVNFYETC
Aliases	C5a, Complement component 5a, Mouse C5a.
References	1. Oppermann, M., et Al; A sensitive enzyme immunoassay for the quantitation of human C5a/C5a(des Arg) anaphylatoxin using a monoclonal antibody with specificity for a neotope, 1991. Complement Inflamm. 8(1):13-24 2. Nilsson, P., et Al; A novel human whole blood model preventing fibrin formation reveals that thrombin does not cleave C5 under physiological conditions, 2018. Abstract Mol Immunol 102: 194
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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Date

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