

Monoclonal Antibodies: Murine Anti-Human Factor B (Bb) Protein

For Research Use Only. Not for use in Diagnostic Procedures.

Background

Factor B is one of the complement proteins which is unique to the Alternative Pathway. It is a single-chain glycoprotein with a molecular weight of approximately 98 kD. The concentration of Factor B in human serum/plasma is ~200 µg/ml.

The Alternative Complement Pathway provides innate protection against microbial agents in the absence of specific antibodies. The activation of this complement pathway can be triggered by a variety of substances, including microbial polysaccharides or lipids, gram-negative bacterial lipopolysaccharides, and surface determinants present on some viruses, parasites, virally infected mammalian cells, and cancer cells. In autoimmune diseases, the Alternative Complement Pathway may contribute directly to tissue damage.

A centrally important reaction that occurs during alternative pathway activation is the conversion of the 93 kD molecular weight Factor B zymogen to an active proteolytic enzyme. This is accomplished in a two-step reaction. During the first reaction step, Factor B forms a magnesium-dependent complex with C3(H₂O) or C3b. The C3(H₂O),B complex is formed only in fluid phase, while the C3b,B complex can be formed either in fluid phase or on a target surface. Factor B, present in either complex, is cleaved into the Ba (33 kD) and Bb (60 kD) fragments in the second reaction step by the Alternative Pathway enzyme, Factor D. The C3b,Bb bimolecular complex constitutes the C3 convertase enzyme of the Alternative Pathway, while the Ba fragment is released into the fluid phase.

Specificity

The specificity of the monoclonal antibody for the Factor B (Bb) protein was established by ELISA. The antibody was shown to bind highly purified Factor B and its Bb fragment, but not to the Ba fragment. The antibody binds a non-neoantigen in the Bb domain of native Factor B, since highly purified, functionally active Factor B and normal human plasma blocked binding of the antibody to both Factor B and Bb fragments coated in microtiter wells. Zymosan activated human serum was not more effective than the corresponding non-activated plasma in blocking the binding of this antibody.

Applications

EIA ¹	RIA	IHC ³⁻⁵	WB ²	FACS ⁶⁻⁷
>1:10,000	N/T	N/T	>1:500	N/T

N/T = Not tested.

Specifications

Catalog Number:	A227
Concentration:	1.0-1.2 mg/ml
Purity:	≥ 95% by SDS PAGE
Volume/Vial:	100 µl
Storage:	
≤ 30 Days	2-8 °C
> 30 Days	≤ -20 °C
Buffer:	Borate Buffered Saline (pH 8.4 ± 0.2)
Isotype:	IgG ₁ k

Species Cross Reactivity:

None tested.

References

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