QUIDEL

Complement

Technical Data Sheet

Monoclonal Antibodies:

Anti-Human Factor H#3

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

Background

Factor H is a fluid phase complement regulatory protein consisting of a single peptide chain of 20 short consensus repeat segments or CCP's with a molecular weight of approximately 155 KD.[1] Factor H regulates the alternative pathway of the complement system by modifying activity of the "feedback loop." It does this in three ways. First, it is a co-factor for the serine protease Factor I, which cleaves C3b to iC3b. iC3b has no hemolytic or amplification function, but may be bound by complement receptors. Second, Factor H prevents the formation of and accelerates the disassociation of the alternative pathway C3 convertase, C3bBb from cell surfaces. Finally, Factor H binds to polyanions on host cell surfaces and tissue matrices, such as basement membranes, blocking deposition of C3b. This later activity is leveraged by many pathogens as a mode of complement evasion.[2]

Recent studies have linked Factor H to hemolytic uremia syndrome (HUS),[3] age-related macular degeneration (AMD),[4] and membrano-proliferative glomerulonephritis. Factor H may also be elevated in certain cancers, including bladder cancer, potentially as a protective measure used by tumor cells to evade complement attack.

Characterization

All of Quidel's monoclonal antibodies to complement antigens were prepared using intact complement proteins and are purified from mouse ascites fluid via protein A affinity chromatography. The prepared monoclonal antibodies are buffer exchanged in Borate Buffered Saline containing 0.02% NaN_3.

The specificity of the Factor H (#3) (clone 131X) monoclonal antibody was established via a series of assays utilizing highly purified human Factor H and Factor H CCP fragments.[4] First, the antibody was shown by ELISA to bind to purified Factor H immobilized in microtiter wells. Free (unbound) Factor H and human serum but not other complement proteins were shown (via inhibition EIA) to inhibit the binding of this antibody to immobilized Factor H via Western Blot. This antibody was shown to bind specifically to CCP8-15a of Factor H. This antibody does not bind to Factor H Like Protein 1.

Applications

Applications of this antibody have been evaluated by various research facilities, and include EIA,[5] Western Blot,[4] and FACS. Studies have shown that this antibody functionally inhibits Factor H and can be used to deplete Factor H from Human Serum.[6,7]

Specifications

- Volume/vial: 100 µL
- Storage: 2°C to 8°C* (≤ 30 days)
- Concentration: 1.0-1.2 mg/mL
- Buffer: Phosphate Buffered Saline
- Isotype: IgG2bk

Species Cross Reactivity:

- Baboon, Cynomolgus Monkey

*For long-term storage (> 30 days), aliquot and store at ≤ –20°C. Avoid repeated freeze-thaw.

References

[1]Pangburn, M.K. Differences between the binding sites of the complement regulatory proteins DAF, CR1 and Factor H on C3 Convertases. J Immunol 136:6 (1986).

[2]Kraiczy, P., Würrzner, R. Complement escape of human pathogenic bacteria by acquisition of complement regulators. Mol Immunol 43:21-44 (2006).

[3]Atkinson, J.P., et al. Complement factor H and the hemolytic uremic syndrome. JEM Vol. 204, No. 6, June 11, 20071245–1248.

[4]Sivaprasad, S. and Chong, N.V. The complement system and age related macular degeneration. Eye (2006), 1-6.

[5]Jokiranta, T.S., et al. Analysis of the recognition mechanism of the alternative pathway of complement by monoclonal anti-factor H antibodies: evidence for multiple interactions between H and surface bound C3b. FEBS Ltr 393(2-3):297-302 (1996).

[8]Cheng,Z.,et al. Complement Factor H as a Marker for Detection of Bladder Cancer. Clin Chem 51:5 (2005).

[7]Junnikkala, S., et al. Exceptional resistance of Human H2 Glioblastoma Cells to Complement Mediated Killing by Expression and Utilization of Factor H and Factor H Like Protein I. J Immunol 164 (2000).

[8]On file at Quidel Corporation.

Also available:

MoAbs: Anti-human Factor H#1 – Cat. # A229
Anti-human Factor H#2 – Cat. # A254
Anti-human Factor H Antisera – Cat. # A312

Factor H Protein – Cat. #A410
MicroVue Factor H EIA – Cat. #A039
Cat. #A040 (CE)

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