QUIDEL

Complement

Technical Data Sheet

Monoclonal Antibodies:

Anti-Human Factor H#1

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. 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.[1]

Recent studies have linked Factor H to hemolytic uremia syndrome (HUS),[2] age-related macular degeneration (AMD),[3] 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.[4]

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 (#1) monoclonal antibody was established via a series of immunoassays utilizing highly purified human Factor H and Factor H CCP fragments. The antibody was shown by ELISA to bind to purified Factor H immobilized in microtiter wells. Separately, 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. Similarly, using radiolabeled Factor H, this antibody was shown to immuno-precipitate Factor H using protein A-bearing bacteria.

Studies using highly pure Factor H fragments and Factor H like protein have shown that the epitope for this antibody seems to be isolated to intact Factor H only, and is not present on Factor H like proteins or on individual CCP's.

Applications

Applications of this antibody have been evaluated by various research facilities, and include EIA,[7] RIA, Western Blot,[4] IHC,[5] Flow Cytometry,[6] and Ligand Dot Blot.[6]

Specifications

- Volume/vial: 100 µL
- Storage: 2°C to 8°C* (≤ 30 days)
- Concentration: 1.0-1.2 mg/mL
- Buffer: Borate Buffered Saline
- Isotype: IgG1k

Species Cross Reactivity:

- Baboon, Horse, Cynomolgus Monkey

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

References

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

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

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

[4]Fedarko, N.S., et al. Factor H binding to bonesialoprotein and osteopontin enables tumor cell evasion of complement mediated attack. JBC 27%:22 (2000).

[5]Hageman, G.S., et al. A common haplotype in complement regulatory gene Factor H predisposes individuals to age related macular degeneration. PNAS 102:7227-7232 (2005).

[6]Dave, S., et al. Dual roles of PSPC a surface protein of streptococcus pneumoniae in binding human secretory IgA and Factor H. J Immunol 173:471-477 (2004).

[7]Fakhouri, F., et al. Treatment with human complement factor H rapidly reverses renal complement deposition in factor H-deficient mice. Kidney International 78.3 (2010): 279-86

Anti-Human Factor H#1 – Cat. #A229

Also available:

MoAbs: Anti-human Factor H#2 – Cat. # A254
Anti-human Factor H#3 – Cat. # A255
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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