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Product Information

Monoclonal Anti-Factor X
clone HX-1, purified immunoglobulin

Product Number **F8396**

Product Description

Monoclonal Anti-Factor X (mouse IgG2b isotype) is derived from the HX-1 hybridoma[1] produced by the fusion of mouse Sp2/0-Ag14 myeloma cells and splenocytes from BALB/c mice immunized with factor X purified from human plasma. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Factor X, a divalent cation-independent antibody, recognizes an epitope on the light chain of human Factor X (~68 kDa) and active Factor Xa (~55 kDa). This antibody inhibits the activity of Factor X.[2]

Factor X is one of the vitamin K-dependent procoagulants, produced in the liver. It consists of heavy and light chains that are held together by a disulfide bond.[2-3] The primary domain of the light chain (at the N-terminal) consists of 11 γ-carboxy glutamic acid residues by which the molecule can bind to negatively charged phospholipids. The primary domain of the heavy chain (at the C-terminal) is the catalytic domain which is structurally homologous to other hemostatic serine proteases.[3] Factor X zymogen is activated by the cleavage of a peptide bond located in the heavy chain thereby clipping off a carbohydrate rich peptide.[4] Factor X activation occurs by the cleave of arginine-isoleucine peptide bond generating Factor Xa. Activation can be mediated by tissue Factor-Factor VIIa complex together with calcium ions from the extrinsic coagulation pathway, by Factor IXa in the presence of Factor VIII, and by phospholipid and calcium ions of the intrinsic coagulation pathway. Factor X can also be activated by a protease from Russell's viper venom.[3] Once activated, Factor Xa bind to Factor Va in a complex with cell surface phospholipids and in the presence of calcium ions to catalyse the conversion of prothrombin to thrombin. Hereditary Factor X deficiency is a heterogenous autosomal recessive disorder, in which most patients produce malfunctioning Factor X molecules with low activity, as measured by clotting or chromogenic assays.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.125-0.25 μg/mL is recommended using of non-denatured, non-reduced natural human Factor X protein.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. The antibody producing clone was developed by JP. Miletich and colleagues at Washington University, School of Medicine, St. Louis, MO.
2. Waddington SN., et al*., Cell*., **132**, 397-409 (2008).
3. Davie EW., et al*., Adv Enzymol Relat Areas Mol Biol.*, **48**, 277-318 (1979).
4. Di Scipio RG., et al., Biochemistry, **16**, 5253-60 (1977).

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