Catalog no  HM2322 (lot number and expiry date are indicated on the label)

Description  Monoclonal antibody 10-11-37 recognizes Coagulation Factor XII (FXII, Hageman factor). FXII is a serine protease and plays a role in blood coagulation, fibrinolysis, kinin and complement systems. The protein is thezymogen of the serine protease factor XIIa (FXIIa). FXII is converted to FXIIa through autodigestion induced by contact to charged surfaces, also known as the plasma contact system. FXII is predominantly synthesized in the liver and is composed of fibronectin type I and II domains, two epidermal growth factor-like domains, a kringle region, a proline-rich domain and a catalytic domain. Its molecular weight is approximately 80kDa on SDS-PAGE gel electrophoreses. The protein circulates in the plasma at a concentration of 30-35 µg/ml. FXII forms the plasma contact system together with high molecular weight kininogen and plasma kallikrein. FXII autoactivates when these three proteins form a complex on negatively charged nonphysiological surfaces, like inorganic surfaces (eg silicon tubes) or macromolecular organic surfaces (eg heparin) bound to the surface of different cell types, including endothelial cells, platelets and neutrophils. It can trigger blood coagulation and generation of proinflammatory bradykinin. After surface complexation, FXII autoactivates into FXIII, also called factor XII fragment(XIIIc). Once small amounts of kallikrein are formed a positive feedback loop is active leading to enhanced conversion into FXIIIa. The activation leads to a series of active enzyme formation. FXIII converts prekallikrein to kallikrein and kallikrein digests kinogen to liberate proinflammatory bradykinin. Bradykinin triggers inflammatory reactions via activating endothelial cells resulting in vasodilatation, increased vascular permeability and production of other mediators like nitric oxide.

The contact system has the ability to activate the complement system via the classical pathway. Simultaneous activation of both systems may lead to pathological conditions, like hereditary angioedema in individuals with dysfunctional C1-inhibitor (C1-IHB). FXIIIa can activate complement protein C1r and to a lesser degree C1s in absence of C1-IHB. This leads to unimpeded bradykinin formation resulting in angioedema. Other interactions with complement system are found on the level of gC1qR and MASP-1. The antibody is specific for the heavy chain of FXIIa.

Aliases  FXII, Hageman factor

Immunogen  FXII adsorbed onto Al(OH)3 adjuvant and emulsified in Freund’s Incomplete Adjuvant

Species  Mouse IgG

Formulation  1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.1% bovine serum albumin and 0.02% sodium azide.

Application

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N.D. = Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot

Application notes  W: A reduced sample treatment and SDS-Page was used. The band size is 80 kDa (Ref.1). IA: the antibody can be used as coat (Ref.1)


Use  For Western blotting, 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. For functional studies, in vitro dilutions have to be optimized in user’s experimental setting.

Storage and stability  Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year. The exact expiry date is indicated on the label.
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.

Also available
HM2289  Monoclonal antibody against human alpha-1-antitrypsin, clone 2C1
HM2015  Monoclonal antibody against human gC1qR, clone 74.5.2
HM2297  Monoclonal antibody against human MASP-1, clone 4H2A9

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