CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	Coagulation factor XII, Human, clone 10-11-37		
Catalog number	HM2322-20UG		
Lot number	-	**Expiry date**	-
Volume	200 µl	**Amount**	20 µg
Formulation	0.2 µm filtered in PBS+1%BSA+0.02%NaN3	**Concentration**	100 µg/ml
Host Species	Mouse IgG2a	**Conjugate**	None
Endotoxin	N.A.	**Purification**	Protein G
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #						1		1
Yes						●		●
No								
N.D.	●	●	●	●	●		●	

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

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.

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

General Information

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 the zymogen of the serine protease factor XIIa (FXIIa). FXII is converted to FXIIa through autoactivation 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 electroforeses. 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 kalikrein. 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 FXIIa, also called factor XII fragment(XIIf). Once small amounts of kalikrein are formed a positive feedback loop is active leading to enhanced conversion into FXIIa. The activation leads to a series of active enzyme formation. FXIIa 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). FXIIa 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.

Immunogen

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

Aliases

FXII, Hageman factor

References

1. Madsen DE, Sidelmann JJ, Overgaard K, Koch C, Gram JB. ELISA for determination of total coagulation factor XII concentration in human plasma J Immunol Methods. 2013, *394*:32

Storage&stability	Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.
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.

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC	Date
Brenda Teunissen	28/12/2020

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.