

## Factor XIIIa

Concentrated and Prediluted Monoclonal Antibody  
901-357-041218

**BIOCARE**  
M E D I C A L

<b>Catalog Number:</b>	<b>CM 357 AK, CK</b>	<b>PM 357 AA</b>	<b>IP 357 G10</b>
<b>Description:</b>	0.1, 1.0 ml, concentrated	6.0 ml, prediluted	10 ml, prediluted
<b>Dilution:</b>	1:100	Ready-to-use	Ready-to-use
<b>Diluent:</b>	Van Gogh Yellow	N/A	N/A

### Intended Use:

For In Vitro Diagnostic Use

Factor XIIIa [E980.1] is a mouse monoclonal antibody that is intended for laboratory use in the qualitative identification of Factor XIIIa protein by immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence should be complemented by morphological studies using proper controls and should be evaluated within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

### Summary and Explanation:

This is a monoclonal antibody to the A-subunit of human coagulation Factor XIII. Studies have shown it recognizes human Factor XIII A-chain in both reduced and non-reduced forms. It does not react with human Factor XIII B-chain or human Factor XII. Factor XIII is a beta-globulin found in plasma and is composed of two subunits. Factor XIII-A is the catalytic subunit and is a dimer of M.W. 160,000. According to studies, Factor XIII is present in plasma as an alpha2beta2 heterodimer (M.W. 320,000); whereas in platelets, only the alpha2 unit exists. Factor XIIIa is a dermal dendrocyte marker and shows variable reaction with these types of tumors (3,4). It can be used for histiocytic phenotyping and has been reported to mark capillary hemangiomas and tumors of the central nervous system (1-6). Factor XIIIa has also been used with CD34 to differentiate between dermatofibroma and dermatofibrosarcoma protuberans (3).

### Principle of Procedure:

Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated colorimetric reaction.

**Source:** Mouse monoclonal

**Species Reactivity:** Human; others not tested

**Clone:** E980.1

**Isotype:** IgG1

**Total Protein Concentration:** ~10 mg/ml. Call for lot specific Ig concentration

**Epitope/Antigen:** Factor XIIIa C-terminus

**Cellular Localization:** Cytoplasmic

**Positive Tissue Control:** Dermatofibroma, placenta or skin

### Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative  
Van Gogh Yellow (PD902)

### Storage and Stability:

Store at 2°C to 8°C. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

### Protocol Recommendations (intelliPATH and manual use):

**Peroxide Block:** Block for 5 minutes with Biocare's Peroxidase 1.

**Pretreatment:** Perform heat retrieval using Biocare's Diva or Reveal Decloaker. Refer to the Diva or Reveal Decloaker product data sheet for specific instructions.

### Protocol Recommendations (intelliPATH and manual use)

#### Cont'd:

**Protein Block (Optional):** Incubate for 5-10 minutes at RT with Biocare's Background Punisher.

**Primary Antibody:** Incubate for 30 minutes at RT.

**Probe:** Incubate for 10 minutes at RT with a secondary probe.

**Polymer:** Incubate for 10-20 minutes at RT with a tertiary polymer.

**Chromogen:** Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Biocare's Warp Red.

#### Counterstain:

Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

#### intelliPATH™ Automated Slide Stainer:

IP357 is intended for use on the intelliPATH™ Automated Slide Stainer. Refer to the User Manual for specific instructions for use. When using the intelliPATH, peroxide block with intelliPATH Peroxidase Blocking Reagent (IPB5000) may be performed following heat retrieval.

#### Technical Note:

This antibody has been optimized for use with Biocare's MACH 4 Universal HRP-Polymer Detection and intelliPATH Universal HRP Detection Kit. Use TBS for washing steps.

#### Limitations:

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. The clinical interpretation of any positive or negative staining should be evaluated within the context of clinical presentation, morphology and other histopathological criteria by a qualified pathologist. The clinical interpretation of any positive or negative staining should be complemented by morphological studies using proper positive and negative internal and external controls as well as other diagnostic tests.

#### Quality Control:

Refer to CLSI Quality Standards for Design and Implementation of Immunohistochemistry Assays; Approved Guideline-Second edition (I/LA28-A2) CLSI Wayne, PA USA (www.clsi.org). 2011

#### Precautions:

1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN<sub>3</sub>) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (7)

2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water. (8)

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### Precautions Cont'd:

3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at <http://biocare.net>.

### Troubleshooting:

Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002.

### References:

1. Probst-Cousin S, Rickert CH, Gullotta F. Factor XIIIa-immunoreactivity in tumors of the central nervous system. Clin Neuropathol. 1998 Mar;17(2):79-84.
2. Silverman JS, Tamsen A. High grade malignant fibrous histiocytomas have bimodal cycling populations of factor XIIIa + dendrophages and dedifferentiated mesenchymal cells possibly derived from CD34+ fibroblasts. Cell Vis. 1998 Jan;5(1):73-6.
3. Goldblum JR, Tuthill RJ. CD34 and factor-XIIIa immunoreactivity in dermatofibrosarcoma protuberans and dermatofibroma. Am J Dermatopathol. 1997 Apr;19(2):147-53.
4. Zelger BG, *et al.* Granular cell dermatofibroma. Histopathology. 1997 Sep;31(3):258-62.
5. Silverman JS, Lomvardias S. An unusual soft tissue tumor with features of angiomatoid malignant fibrous histiocytoma composed of bimodal CD34 and factor XIIIa positive dendritic cell subsets. CD34 and factor XIIIa in angiomatoid MFH. Pathol Res Pract. 1997;193(1):51-8.
6. Sanguenza OP, *et al.* Juvenile xanthogranuloma: a clinical, histopathologic and immunohistochemical study. J Cutan Pathol. 1995 Aug;22(4):327-35.
7. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
8. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.