

DESCRIPTION

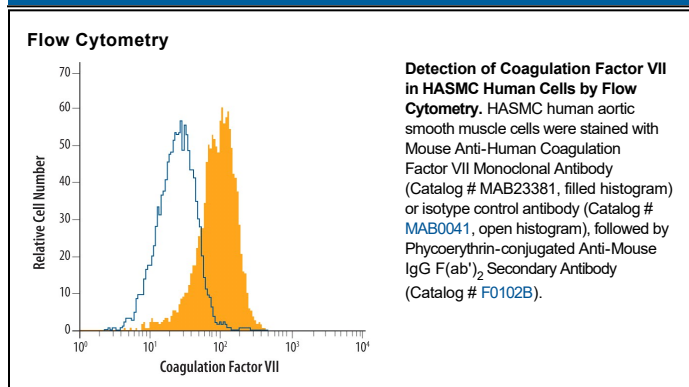
Species Reactivity	Human
Specificity	Detects human Coagulation Factor VII in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) Kallikrein-1, -2, -3, -4, -5, -7, -8, -9, -10, -11, -12, -13, -14, -15, -B1, rhHGFA, rhFactor X, rhFactor XI, rhThrombin, rhuPA, or rhPROC is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 321605
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Coagulation Factor VII Ala39-Pro444 Accession # NP_062562
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Coagulation Factors VII and VIIa refer to the pro and active forms of the same protease, respectively (1). Factor VII is synthesized in the liver and circulates in the plasma where it binds to tissue factor (TF), an integral membrane protein found in a variety of cell types. Upon binding of TF, Factor VII is rapidly converted into VIIa. The resulting 1:1 complex of VIIa and TF initiates the coagulation pathway and has also important coagulation-independent functions such as angiogenesis (2). The cleavage and activation of Coagulation Factors VII, IX and X by VIIa:TF is phospholipid-dependent whereas the cleavage of small peptide substrates is not (1). The predominant splicing variant of Factor VII in normal liver corresponds to the 444 amino acid precursor (3, 4). After a signal peptide (residues 1-38), the mature chain can be further processed into the light chain (residues 39-190) and the heavy chain (residues 191-444). The purified rhFactor VII corresponds to the mature chain, which can be processed and activated by treatment with thermolysin and binding with rhTissue Factor (R&D Systems, Catalog # 2339-PA) under the conditions described above.

References:

1. Morrissey, J.H. (2004) in *Handbook of Proteolytic Enzymes*, Barrett, A.J. et al. eds. p. 1659.
2. Versteeg, H.H. et al. (2003) *Carcinogenesis* **24**:1009.
3. Hagen, F.S. et al. (1986) *Proc. Natl. Acad. Sci. USA* **83**:2412.
4. O'Hara, P.J. et al. (1987) *Proc. Natl. Acad. Sci. USA* **84**:5158.