

Product No. F-2145
Lot 047H4814

Monoclonal Anti-Human Factor V
Purified Immunoglobulin
Clone HV-1

Monoclonal Anti-Human Factor V (mouse IgG1 isotype) is derived from the HV-1 hybridoma produced by the fusion of mouse Sp2/0-Ag14 myeloma cells and splenocytes from immunized BALB/c mice. Factor V, purified from human plasma was used as the immunogen. The isotype is determined using the Sigma ImmunoType[™] Kit (Sigma Stock No. ISO-1) and by a double diffusion immunoassay, using the Mouse Monoclonal Antibody Isotyping Reagents (Sigma Stock No. ISO-2). The product is provided as purified antibody in 10 mM HEPES, 140 mM NaCl, pH 7.4, containing 0.05% sodium azide (see MSDS)* as a preservative.

Specificity

Monoclonal Anti-Factor V, recognizes factor V by using immunoblots of non-denatured, non-reduced antigen. The antibody inhibits the activity of factor V.

Description

Blood coagulation factor V is an essential constituent of the intrinsic and extrinsic coagulation pathways. It is a large asymmetric single chain glycoprotein with a molecular weight of 330,000 daltons. It is composed of 3 A domains, a B domain, and 2 C domains and (A₁ - A₂ - B - A₃ - C₁ - C₂).¹ The cDNA cloning of factor V² predicted a sequence of 2224 amino acids for factor V. Human plasma concentration of factor V is approximately 7 µg/ml (10⁻⁸M). Platelets contain stored factor V which constitutes about 20% of the total amount of factor V present in whole blood.³ Circulating factor V possesses no activity, but following limited proteolysis by thrombin expresses cofactor activity (factor Va) that is included in the prothrombinase complex. During activation of factor V, thrombin cleaves factor V in three locations to produce an NH₂-terminal-derived heavy chain (MW 94,000), a COOH-terminal-derived light chain (MW 74,000) and activation peptides

derived from the B domain. The light and the heavy chains remain combined in a non-covalent, but Ca²⁺-dependent manner and constitute the factor Va cofactor activity. Factor V can also be activated by factor Xa.

Uses

Assays of factor V levels are useful for detection of hereditary and acquired deficiency states and for studies of the mechanisms of thrombin generation by the intrinsic and extrinsic coagulation pathways. The antibody is useful for preparation of factor V depleted plasma.

Protein Concentration: 4.0 mg/ml

Antibody Performance

1. The antibody at a concentration of 5-10 µg/ml stains blots of non-denatured, non-reduced human factor V.
2. The antibody at a concentration of 10 µg/ml inhibits >90% factor V activity in human plasma as measured by the Prothrombin Time (PT) assay.

Storage

For continuous use, store at 2-8°C. For extended storage, freeze in working aliquots. Repeated freezing and thawing is **not** recommended. Storage in "frost-free" freezers is **not** recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

* Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

References

1. Jenny, R.J., et al., Proc. Natl. Acad. Sci. (USA), **84**, 4846 (1987).
2. Kane, W.H., and E.W. Davie, E.W., Proc. Natl. Acad. Sci. (USA), **83**, 6800 (1986).
3. Tracy, P.B., et al., Blood, **60**, 59 (1982).

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