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Product Information

Monoclonal Anti-Factor V
clone HV-1, produced in mouse
purified immunoglobulin

Product Number F2145

Product Description

Monoclonal Anti-Factor V (mouse IgG1 isotype) is derived from the HV-1 hybridoma, produced by the fusion of mouse myeloma Sp2/0-Ag14 cells and splenocytes from BALB/c mouse immunized with Factor V, purified from human plasma. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Factor V specifically recognizes human factor V, and does not recognize factor VII, factor X or Xa, protein C and protein S. The antibody may be used in several immunochemical techniques including Dot blot and ELISA. The antibody inhibits the pro-coagulant activity of factor V.[1]

Blood coagulation factor V, also known as Activated protein C cofactor, Proaccelerin or labile factor, is an essential component of the prothrombinase complex that catalyzes the rapid conversion of prothrombin to thrombin and is involved in intrinsic and extrinsic coagulation pathways and hemostasis. About 20% of blood factor V is contained within platelets.[2] Factor V circulates in the plasma as a single chain glycoprotein with little or no intrinsic procoagulant activity. It is activated through limited proteolysis by thrombin, factor Xa, or the factor V activator from Russell's viper venom (RW-V). The activated factor V (factor Va) is a calcium-dependent heterodimer composed of heavy chain (~105 kDa) and light chain (~73 kDa) which derived from the amino- and carboxyl-terminal regions of the single chain precursor (~330 kDa), respectively.[1,3-4] Activated protein C (APC) with its cofactor protein S, inactivates factors Va and VIIIa to provide a major natural anticoagulant system. APC resistance known as Factor V Leiden (FVLeiden) is a common hereditary thrombophilia Factor V mutation, caused by Arginine substitution into glutamine at position 506 (R506Q).[5] 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 also useful for preparation of factor V depleted plasma.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Dot blot: a working concentration of 20 μg/mL is recommended to detect 0.25-0.5 μg/dot of natural human factor V.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Ortel TL., et al., *J Biol Chem.*, **269**, 15898-905 (1994)
2. Tracy PB., et al., *Blood*, **60**, 59-63 (1982)
3. Jenny RJ., et al., *PNAS*, **84**, 4846-50 (1987).
4. Kane WH., and Davie EW., *PNAS*, **83**, 6800-4 (1986).
5. Van Cott EM., et al*., Am J Hematol.*, **91**, 46-9 (2016).

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