



Sheep Anti-Human Prothrombin (F.II) Affinity-Purified IgG 0.5 mg

Catalogue: SAFII-AP
Lot No: SAMPLE
Expiry date: **/****
Store at -10 to -20°C.

For Research Use Only ~ Not for use in diagnostic procedures.

DESCRIPTION OF PROTHROMBIN (F.II)

Prothrombin (factor II, F.II) is a vitamin K-dependent glycoprotein produced in the liver. The concentration of prothrombin in plasma is ~100 µg/mL (~1.4 µM). Prothrombin is a single chain molecule with a molecular weight of 72 kDa. Prothrombin consists of a catalytic domain followed by two kringle structures and an amino-terminal domain containing 10 γ-carboxy-glutamic acid (gla) residues. These gla residues allow prothrombin to bind to membranes that contain acidic phospholipids in a calcium dependent manner. The binding to membranes is required for effective presentation of prothrombin as a substrate for activation by the prothrombinase complex, which consists of activated factor X, activated cofactor V and calcium on phospholipid membrane. Activation by prothrombinase occurs by sequential cleavage after residue Arg³²⁰ then after Arg²⁷¹ to produce the active protease α-thrombin (37 kDa) and the by-product prothrombin fragment 1.2 (35 kDa). The product thrombin further cleaves prothrombin fragment 1.2 after residue Arg¹⁵⁵ into individual prothrombin fragments 1 and 2. The activity of α-thrombin in plasma is inhibited primarily by antithrombin and the rate of inhibition is accelerated 1000-fold in the presence of optimal concentrations of heparin. Other physiological inhibitors of thrombin in the absence of heparin include α₂macroglobulin and α₁antitrypsin¹⁻³.

REFERENCES and REVIEWS

1. Mann KG; Prothrombin and Thrombin; in Haemostasis and Thrombosis, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 184-199, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
2. Mann KG; Prothrombin; Methods in Enzymology **45**, pp 123-156, 1976.
3. Downing MW, Bloom JW, Mann KG; Comparison of the Inhibition of Thrombin by Three Plasma Protease Inhibitors; Biochemistry **17**, pp 2649-2653, 1978.

PRODUCT SPECIFICATIONS

Description:

Vial containing 0.250 mL of whole IgG purified by affinity-chromatography on immobilized F.II. Total protein is 0.5 mg.

Format:

Affinity-purified IgG (APIgG), clear liquid.

Host Animal:

Sheep

Immunogen:

Human prothrombin purified from plasma.

Concentration:

APIgG concentration is 2.00 mg/mL, determined by absorbance using an extinction coefficient ($E_{280}^{1\%}$) of 13.4.

Buffer:

10 mM HEPES, 0.15 M NaCl, 50% (v/v) glycerol, pH 7.4.

Storage:

Store between -10 and -20 °C. Product will become viscous but will not freeze. Avoid storage in frost-free freezers. Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use.

Specificity:

This antibody is specific for prothrombin as demonstrated by immunoelectrophoresis and ELISA. This product is intended for use in procedures that require high specificity and high titre characteristics of affinity purified polyclonal antibodies. Techniques include ELISA and immunoblotting. IgG can be radiolabelled directly using the iodobead procedure as recommended by the manufacturer. Iodination using the lactoperoxidase method will require prior dialysis.

Applications:

Suitable as a source of enriched antibodies to human prothrombin.

Neutralizing activity:

Not determined.

RELATED PRODUCTS

SAFII-IG Sheep Anti-Human F.II, IgG from antiserum
SAFII-HRP Sheep Anti-Human F.II, IgG-peroxidase conjugate
FII-EIA Paired antibodies set for ELISA of F.II, 5 x 96 wells
FII-DP Human plasma deficient in F.II, immune depleted

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