

****REPRESENTATIVE DATASHEET****

Sheep anti-human Prothrombin (FII)

Affinity-Purified IgG

0.5 mg

Product #: SAFII-AP

Lot #: XXXX

Expiry date: XXXX

Store at -10 to -20°C

 1348 Sandhill Drive, Ancaster, Ontario, Canada L9G 4V5
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 For Research Use Only.
 Not for use in diagnostic procedures.

Description of Prothrombin (FII)

Prothrombin (factor II, FII) 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 Hemostasis 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 XXXX ml of IgG purified by affinity-chromatography on immobilized FII. 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 XXXX mg/ml, determined by absorbance using an extinction coefficient (E^{1%₂₈₀}) of 13.4.

Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

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.

Applications:

Suitable as a source of enriched antibodies to human prothrombin.

Neutralizing activity:

Not determined

Species Cross Reactivity: (immunodiffusion vs. citrated plasma)

| | | | | | |
|---------|------|--------|------|------|------|
| Human: | XXXX | Mouse: | XXXX | Rat: | XXXX |
| Rabbit: | XXXX | Pig: | XXXX | Dog: | XXXX |

Related Products:

Cat #: **SAFII-IG** Sheep anti-human FII, IgG from antiserum
 Cat #: **SAFII-HRP** Sheep anti-human FII, IgG-peroxidase conjugate
 Cat #: **FII-EIA** Paired antibody set for ELISA of FII, 5 x 96 wells
 Cat #: **FII-DP** Human plasma deficient in FII, immune depleted

 Visit our site (www.affinitybiologicals.com) for details.

Limited Warranty: This product is warranted to perform in accordance with its labeling and literature. Affinity Biologicals Inc. disclaims any implied warranty of merchantability or fitness for any other purposes, and in no event will Affinity Biologicals Inc. be liable for any consequential damages arising out of aforesaid express warranty.

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