

**\*\*REPRESENTATIVE DATASHEET\*\*****Sheep anti-Fibrinogen gamma prime (Fg- $\gamma'$ )  
Peroxidase Conjugated IgG  
0.2 mg**

**Product #:** SAFGP-HRP  
**Lot #:** XXXX  
**Expiry date:** XXXX

Store at -10 to -20°C

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

**Description of Fibrinogen (Fg)**

Human fibrinogen is a 340 kDa plasma protein produced in the liver. Plasma concentrations are typically 1.7 – 3.5 g/L (5-10  $\mu$ M). The intact fibrinogen molecule consists of two identical subunits, each consisting of three non-identical polypeptide chains denoted as  $\text{A}\alpha$ ,  $\text{B}\beta$  and  $\gamma$ . The letters A and B in the  $\text{A}\alpha$  and  $\text{B}\beta$  chains designate, respectively, fibrinopeptide A (FpA, residues 1-16), and fibrinopeptide B (FpB, residues 1-14), which are cleaved by thrombin upon conversion of fibrinogen to fibrin. The fibrin monomers polymerize in a half-overlap fashion to form insoluble fibrin fibrils. The polymerised fibrin is subsequently stabilized by activated Factor XIII that forms amide linkages between  $\gamma$  chains and, to a lesser extent,  $\alpha$  chains of the fibrin molecules.

Proteolysis of fibrinogen by plasmin initially liberates C-terminal residues from the  $\text{A}\alpha$  chain to produce fragment X (intact D-E-D, which is still clottable). Fragment X is further degraded to non-clottable fragments Y (D-E) and D. Fragment Y can be digested into its constituent D and E fragments. Proteolysis of crosslinked fibrin by plasmin results in fragment DD (D-Dimer consisting of the D domains of 2 fibrin molecules crosslinked via the  $\gamma$  chains), fragment E (central E domain) as well as DDE in which fragment E is non-covalently associated with DD. The molecular weights of the cleavage fragments produced from human crosslinked fibrin are: 184 kDa for fragment DD, 92 kDa for D, 50 kDa for E, 1.54 kDa for FpA and 1.57 kDa for FpB.

Most of the fibrinogen in the circulation consists of 2 copies of each chain ( $\text{A}\alpha_2$ ,  $\text{B}\beta_2$ ,  $\gamma_{A2}$ ), but in normal plasma approximately 10% of the fibrinogen molecules contain one  $\gamma_A$  chain and one variant  $\gamma$  chain (termed  $\gamma'$ ), in which the c-terminal AGDV residues are replaced with the amino acid sequence VRPEHPAETEDSLYPEDDL. This variant fibrinogen is commonly referred to as fibrinogen gamma prime ( $\gamma_A/\gamma'$ ) but has also been called fibrinogen 2 or peak 2 fibrinogen because it elutes separately from fibrinogen 1 ( $\gamma_{A2}$ ) by ion exchange chromatography. Residues 414-427 of the  $\gamma'$  chain of fibrin gamma prime (contain a high-affinity binding site for exosite II of thrombin, which allows the active site of bound thrombin to remain available to interact with substrates while demonstrating resistance to heparin mediated inhibition by antithrombin<sup>1-4</sup>).

**REFERENCES and REVIEWS**

1. Hantgan RR, Francis CW, Marder VJ; Fibrinogen Structure and Physiology; in Hemostasis and Thrombosis, 3<sup>rd</sup> Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp 277-300, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
2. Binnie CG, Lord ST; The Fibrinogen Sequences that Interact with Thrombin; Blood 81, pp 3186-3192, 1993.
3. Pospisil CH, Stafford AR, Fredenburgh JC, Weitz JI; Evidence that both Exosites on Thrombin Participate in Its High Affinity Interaction with Fibrin; JBC 278, pp 21584-21591, 2003.
4. Medved L, Weisel JW; Recommendations for Nomenclature on Fibrinogen and Fibrin; JTH 7, pp 355-359, 2009.

**Product Specifications****Description:**

Vial containing XXXX ml of whole IgG conjugated to horseradish peroxidase (HRP) through carbohydrate groups. Total protein is 0.2 mg.

**Format:**

IgG-HRP conjugate as a clear, slightly red-brown liquid.

**Host Animal:**

Sheep

**Immunogen:**

A synthetic peptide containing the sequence unique to the  $\gamma'$  chain (VRPEHPAETEDSLYPEDDL) conjugated to keyhole limpet hemocyanin carrier.

**Concentration:**

IgG-HRP concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient ( $E^{1\%_{280}}$ ) of 14.

**Buffer:**

A buffered stabilizer solution containing 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. Avoid exposure to sodium azide as this is an inhibitor of peroxidase activity.

**Specificity:**

Prior to conjugation, this antibody was specific for  $\gamma'$ -containing forms of fibrinogen (as demonstrated by immunoelectrophoresis and immunoblotting).

**Applications:**

Suitable as a source of peroxidase labeled antibodies to  $\gamma'$ -containing forms of human fibrinogen.

**Rz Ratio (Reinheitszahl,  $A_{403}/A_{280}$ ):**

XXXX as determined spectrophotometrically.

**Related Products:**

Cat #: <b>SAFGP-IG</b>	Sheep anti-Fibrinogen gamma prime, purified IgG
Cat #: <b>SAFG-IG</b>	Sheep anti-human Fibrinogen, purified IgG
Cat #: <b>SAFG-AP</b>	Sheep anti-human Fibrinogen, affinity purified IgG
Cat #: <b>SAFG-HRP</b>	Sheep anti-human Fibrinogen, peroxidase labelled IgG
Cat #: <b>SAFG-APHRP</b>	Sheep anti-human Fibrinogen, peroxidase labelled APiGg
Cat #: <b>FG-EIA</b>	Paired antibody set for ELISA of Fibrinogen, 5 x 96 wells
Cat #: <b>FG-DP</b>	Human plasma deficient in Fibrinogen, frozen, 1mL→bulk
Cat #: <b>FG-CP</b>	High fibrinogen control plasma, frozen, 1mL→bulk
Cat #: <b>SARFG-IG</b>	Sheep anti-rabbit Fibrinogen, whole IgG from antiserum
Cat #: <b>SARFG-AP</b>	Sheep anti-rabbit Fibrinogen, affinity purified IgG
Cat #: <b>SARFG-HRP</b>	Sheep anti-rabbit Fibrinogen, peroxidase labelled IgG
Cat #: <b>RBFG-EIA</b>	Paired antibody set for ELISA of Rabbit Fg, 4 x 96 wells
Cat #: <b>SAFNE-IG</b>	Sheep anti-Fibrin Fragment E, whole IgG from antiserum
Cat #: <b>SAFNE-AP</b>	Sheep anti-Fibrin Fragment E, affinity purified IgG
Cat #: <b>SAFNE-HRP</b>	Sheep anti-Fibrin Fragment E, peroxidase labelled IgG
Cat #: <b>SAFPA-IG</b>	Sheep anti-Fibrinopeptide A, whole IgG from antiserum
Cat #: <b>SAFPA-AP</b>	Sheep anti-Fibrinopeptide A, affinity purified IgG
Cat #: <b>SAFPA-HRP</b>	Sheep anti-Fibrinopeptide A, peroxidase labelled IgG

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