

## Product Specification Sheet

### Recombinant Human Fibrinogen Gamma Chain

□ Cat. # FIBN26-R-10      Recombinant (HEK) purified Human Fibrinogen gamma (FGG, 27-130 aa, his-tag, >95% pure)  
**SIZE:** 10 ug

Fibrinogen (factor I) is a soluble plasma glycoprotein, synthesized by the liver, that is converted by thrombin into fibrin during blood coagulation. Processes in the coagulation cascade activate the zymogen prothrombin to the serine protease thrombin, which is responsible for converting fibrinogen into fibrin. Fibrin is then cross linked by factor XIII to form a clot. FXIIIa stabilizes fibrin further by incorporation of the fibrinolysis inhibitors alpha-2-antiplasmin and TAFI (thrombin activatable fibrinolysis inhibitor, procarboxypeptidase B), and binding to several adhesive proteins of various cells. Both the activation of Factor XIII by thrombin and plasminogen activator (t-PA) are catalyzed by fibrin.

Human fibrinogen is a dimer consisting of two identical halves, each containing three different polypeptides: alpha-chain (63.5 kDa), beta-chain (56 kDa), and gamma-chain (47 kDa). The three polypeptides are joined together by disulfide bonds. At the N-terminus, the three chains are linked together by a dimeric disulfide knot (DSK), which results in a configuration of  $\alpha$ ,  $\beta$ ,  $\gamma$ . Fibrinogen is a glycoprotein containing approximately 4% carbohydrate. The concentration in blood plasma is 1.5-4.0 g/L or about 7  $\mu$ M. In its natural form, fibrinogen can form bridges between platelets, by binding to their GpIIb/IIIa surface membrane proteins; however its major function is as the precursor to fibrin. Fibrinogen is a hexamer containing two sets of three different chains ( $\alpha$ ,  $\beta$ , and  $\gamma$ ), linked to each other by disulfide bonds. On the fibrinogen  $\alpha$  and  $\beta$  chains, there is a small peptide sequence (called a fibrinopeptide). These small peptides are what prevent fibrinogen from spontaneously forming polymers with itself.

Fibrinogen  $\gamma$  Chain (FGG) contains two sets of three non-identical chains ( $\alpha$ ,  $\beta$  and  $\gamma$ ) and a long coiled coil structure connected to the central nodule to the C-terminal domains. The long C-terminal ends of the alpha chains fold back to contributing a fourth strand to the coiled coil structure. Defects in FGG lead to Congenital afibrinogenemia (CAFBN). CAFBN is a rare autosomal recessive disorder characterized by bleeding that varies from mild to severe and by the complete absence or extremely low levels of plasma and platelet fibrinogen. Patients with congenital fibrinogen abnormalities can manifest different clinical symptoms, including a tendency toward bleeding, clinically silent and predisposition for thrombosis, with or without bleeding.

#### Source of Antigen

##### FIBN26-R-10 sequence

YVATRDNCCILDERFGSYCPTTCGIADFLSTYQTKVKDKLQSLIEDILH  
QVENKTSEVKQLIKAIQLTYNPDESSKPNMIDAATLKSRLMEEIMKY  
EASILTHDVEDHHHHH

Recombinant Human Fibrinogen  $\gamma$  Chain/FGG is produced with our mammalian cell expression system in human cells (HEK). The target protein is expressed with sequence (Tyr27-Asp130) of Human FGG fused with a polyhistidine tag at the C-terminus (>95% pure).

It is supplied in as solution 20mM PB, 150mM NaCl, pH 7.4. If supplied in powder, Lyophilized protein should be stored at < -20°C, though stable at room temperature for 3 weeks. Reconstituted protein solution can be stored at 4-7°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Endotoxin:** < 0.1 ng/ $\mu$ g (1 IEU/ $\mu$ g).

**General References:** Muszbek L (2008) Cardiovascular & Hematological Agents in Medicinal Chemistry 6 (3): 190–205; Fries D (2009) Current Opinion in Anaesthesiology 22 (2): 267–74; Hermans J (1982) Semin. Thromb. Hemost. 8, 11-24

\*This product is for In vitro research use only.

#### Related material available from ADI

##### Catalog# Product Description

AD-116-B Fibrinogen (Ap90), DNA Aptamer, Biotinylated  
AD-116-F Fibrinogen (Ap90), DNA Aptamer, FITC labeled  
AD-116-U Fibrinogen (Ap90), DNA Aptamer, unlabeled

FIBN11-AAnti-Human Plasma Fibrinogen IgG  
FIBN11-BT Anti-Human Plasma Fibrinogen IgG, Biotin conjugate  
FIBN11-HRP Anti-Human Plasma Fibrinogen IgG, HRP conjugate

FIBN12-AAnti-Rat Fibrinogen, IgG, aff pure

FIBN13-M Monoclonal Anti-Human Plasma Fibrinogen, ascites  
FIBN14-AAnti-Human+Mouse Fibrinogen IgG/Y

FIBN15-N-10 Human Plasma Fibrinogen purified, >90%  
FIBN16-N-50 Human plasma Fibrinogen fragment D, purified, >90%

FIBN17-N-50 Human plasma Fibrinogen fragment E, purified, >90%  
FIBN18-N-100 Mouse plasma Fibrinogen, purified, >90% clottable

FIBN19-N-100 Rat plasma Fibrinogen, purified, >90% clottable

FIBN25-R-10 Recombinant (HEK) purified Human Fibrinogen (Aa/Bb/G chains ~340 kda) >95% clottable

MA-20348 Mouse Monoclonal Antibody to Fibrinogen beta chain (FGB)

SP-52245-1 Fibrinogen  $\gamma$ -chain dodecapeptide [His-his-Leu-Gly-Gly-Ala-Lys-Gln-Ala-Gly-Asp-Val-OH; MW: 1189.29]  
SP-52246-5 Fibrinogen-binding Peptide [Glu-His-Ile-Pro-Ala-OH; MW: 565.63]

SP-88462-1 Fibrinogen  $\beta$ -Chain (24-42) (AA: Glu-Glu-Ala-Pro-Ser-Leu-Arg-Pro-Ala-Pro-Pro-Ile-Ser-Gly-Gly-Tyr-Arg) (MW: 1951.19)

SP-88463-1 Fibrinogen Related Peptide (AA: Gly-Gln-Gln-His-His-Leu-Gly-Gly-Ala-Lys-Gln-Ala-Gly-Asp-Val) (MW: 1502.62)

SP-88975-1 Fibrinogen  $\gamma$  - Chain (117 - 133) (AA: Asn-Asn-Gln-Lys-Ile-Val-Asn-Leu-Lys-Glu-Lys-Val-Ala-Gln-Leu-Glu-Ala) (MW: 1939.26)

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