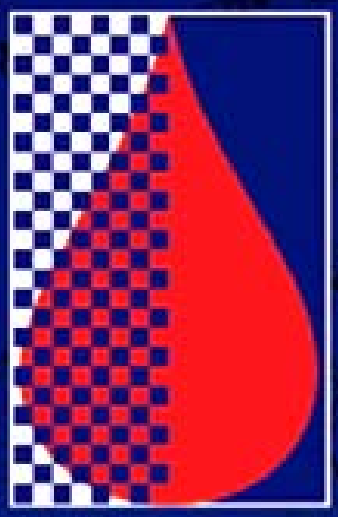
Catalog X



Enzyme Research Laboratories

Global Coag

ISO 9001:2000
Certified

1801 Commerce Drive • South Bend, Indiana 46628 • 800-729-5270 • www.enzymeresearch.com

Human Coagulation

Zymogens

- Human Prothrombin
- Human Factor VII
- Human Protein C
- Human Factor IX
- Human Factor X
- Human Factor XI
- Human Factor XII
- Human Factor XIII
- Human Prekallikrein
- Sing. Chain High Molecular Wt. Kininogen
- Two Chain High Molecular Wt. Kininogen
- Human Glu-Plasminogen
- Human Lys-Plasminogen

Enzymes

- Human Alpha Thrombin
- Human Gamma Thrombin
- Human Factor VIIa
- Human Activated Protein C
- Human Factor IXa Alpha
- Human Factor IXa Beta
- Human Factor Xa
- Human Factor XIa
- Human Factor Alpha-XIIa
- Human Factor XIIIa
- Human Kallikrein
- Human Plasmin

CoFactors

- Human Protein S
- Human Protein Z
- Human Fibronectin

Inhibitors

- Human Antithrombin
- Human Heparin CoFactor II
- Corn Trypsin Inhibitor
- a2 Antiplasmin
- TAFI

Platelets & Plasma Proteins

- Human Fibrinogen 1 2 & 3
- Human GPIIbIIIa
- Apolipoprotein
- Platelet Factor 4

Des-Gla & Inactivated Proteins

- Des-Gla Proteins
- Inactivated Proteins

Bovine Coagulation

Zymogens

- Bovine Protein C
- Bovine Prothrombin
- Bovine Factor IX
- Bovine Factor X
- Bovine Plasminogen

Enzymes

- Bovine Activated Protein C
- Bovine Alpha-Thrombin
- Bovine Factor IXa Alpha
- Bovine Factor IXa Beta
- Bovine Factor Xa
- Bovine Factor XIa

CoFactors

- Bovine Factor V/Va

Inhibitors

- Bovine Antithrombin

Platelets and Plasma Proteins

- Bovine Fibrinogen, Plasminogen Depleted

Antibodies

- Monoclonal
- Polyclonal
- Paired Antibodies

Venoms

- Russell's Viper Venom

Other Species Proteins

- Canine Proteins
- Murine Proteins
- Porcine Proteins
- Rabbit Proteins
- Rat Proteins

Worldwide Distributors

Technical Information

For orders in the United States, please contact our U.S. office. All other orders may be placed through the nearest distributor listed below.

United States
Enzyme Research Laboratories, Inc.
1801 Commerce Drive, South Bend, IN 46628
Tel: 574-288-2268 • Fax: 574-288-2272
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Fax France: 0380 20 69 94
Email: kordia@kordia.nl
Website: www.kordia.fr

TECHNICAL INFORMATION

Protein Handling

Enzyme Research Laboratories, Inc. makes the following suggestions for the storage and handling of purified proteins

1. Most purified proteins are stable at low temperatures and should be **stored at <-60°C.**
2. **Lyophilized proteins** should be reconstituted using a good laboratory quality H2O. After reconstitution the protein should be aliquoted into a useful (one time use) size and **stored at <-60°C.**
3. Freeze proteins in a concentrated form and as soon as possible. When dilution is necessary, dilute immediately prior to use. When possible, dilution buffers should contain stabilizers such as albumin.
4. Limit thawing and refreezing. Multiple thaw/freezes can reduce protein activity and cause degradation. We always suggest aliquoting the protein into a single use size.
5. Refrigerate thawed proteins or store on ice. Proteins warmed even to room temperature may degrade quickly. Refreeze proteins as soon as possible.
6. One **exception** to # 5 is **Fibrinogen**. After thawing Fibrinogen, keep at room temperature. Fibrinogen will come out of solution if it is cooled.
7. Products provided in **Glycerol/buffer** solutions should be stored at -20°C. Temperatures below -30°C can cause phase transitions and need to be avoided.

Unit Definition

1 PEU is equal to the amount of activity found in mL of plasma as determined in factor deficient clotting assay.
All extinction coefficients are reported for 280 nm using 1 cm path length.

Shipping Information

Unless otherwise noted, all the coagulation factors are stored at <-60°C and shipped on dry ice by overnight carrier.
Shipping will be billed to customer for orders under $2000.

All Human Source material is tested and found negative for all communicable diseases, including HIV-1 and HIV-2 antibodies, HCV, Rapid Plasma Reagin and Hepatitis B Surface Antigen. Because no test method can offer complete assurance that Human Immunodeficiency Virus (HIV), Hepatitis B virus or other infectious agents are absent, all human proteins should be handled as suggested in the U.S. Department of Health and Human Services Manual on Biosafety in Microbiological & Biomedical Laboratories.

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Human Prothrombin

HP 1002 Human Prothrombin (Factor II)

Prepared from fresh frozen human plasma. Human Prothrombin is a glycoprotein of molecular weight 72,000, and consists of a single polypeptide chain. Activation of Prothrombin by Factor Va, Xa and phospholipids yields the serine protease Thrombin. Prothrombin purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 13.6
One unit = 90 µg
Molecular Weight =72,000 daltons

Also available: des-Gla-Human Prothrombin and Prothrombin Fragment 1 and 2

Human Factor VII

HFVII 1007 Human Factor VII (Proconvertin)

Prepared from fresh frozen human plasma. Human Factor VII is a single-chain vitamin K dependent glycoprotein found in trace quantities in plasma (0.5 mg/Liter). In the Tissue Factor Pathway of coagulation, Human Factor VIIa, in the presence of calcium ions and tissue factor, activates Factors IX and X to their enzymatically active forms, Factor IXa and Xa.

Buffer composition =20 mM Tris-HCl/0.1 M NaCl/1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 13.9
Molecular Weight = 50,000 daltons

Human Protein C

HPC 1001 Human Protein C

Purified from fresh frozen human plasma using a combination of salt precipitations and column chromatography. The protein purity is determined by SDS-PAGE and shows total reduction upon incubation with 2-mercaptoethanol. Protein C is activated to the serine protease, Activated Protein C (APC), by a-thrombin or the complex of a-thrombin/thrombomodulin and is a potent anticoagulant through the selective inactivation of Factors Va and VIIIa.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 14.5
Molecular Weight = 62,000 daltons

Also available: des-Gla-Human Protein C

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Human Factor IX

HFIX 1009 Human Factor IX (Christmas Factor)

Prepared from fresh frozen human plasma. This protein purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol. Activity is determined via clotting assay. Human Factor IX, activated by either the Contact or Tissue Factor Pathway, is responsible for the activation of Factor X to Xa.

Buffer composition: 20 mM Tris-HCl/0.1 M NaCl /1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 13.2
One unit = 5 µg
Molecular Weight = 56,000 daltons

Human Factor X

HFX 1010 Human Factor X (Stuart Prower Factor)

Prepared from fresh frozen human plasma. The purity of this Vitamin K dependent protein is determined by SDS-PAGE and shows total reduction upon incubation with 2-mercaptoethanol. Activity is determined via clotting assay. Human Factor X, once activated via the Contact Factor Pathway or the Tissue Factor Pathway, is responsible for the conversion of Prothrombin to Thrombin.

Buffer composition 20 mM Tris-HCl/0.1 M NaCl /1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) =11.6
One unit =8 µg
Molecular Weight =58,800 daltons

Also available: des-Gla-Human Factor

Human Factor XI

HFXI 1111 Human Factor XI (Plasma Thromboplastin Antecedent)

Prepared from fresh frozen human plasma. Human Factor XI is a two-chain glycoprotein with molecular weight of 160,000 daltons. The two chains are identical disulfide bonded polypeptides with molecular weights of 80,000 daltons. Factor XI is activated to Factor XIa by Factor Xlla. Purity of Factor XI is assessed by SDS-PAGE. Activity is determined by clotting assay.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 13.1
Molecular Weight = 160,000 daltons

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Human Factor XII

HFXII 1212 Human Factor XII (Hageman Factor)

Purified from fresh frozen human plasma. Human Factor XII is part of the contact activation system. Human Factor XII is a single chain glycoprotein with a molecular weight of about 80,000. Once activated, principally from the action of kallikrein, Factor XII is converted into an active serine protease (Factor α-Xlla) that functions in the *in vivo* initiation of blood coagulation, fibrinolysis, and kinin formation. Human Factor XII has been purified by ion exchange chromatography. Protein purity is determined by SDS-PAGE and activity is determined via clotting assay.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) =14.1
Molecular Weight = 80,000 daltons

Human Factor XIII

HFXIII 1313 Human Factor XIII (Fibrin Stabilizing Factor)

Human Factor XIII is a tetramer composed of two pairs of chains held together by noncovalent bonds. After activation of the zymogen via Thrombin to its active enzyme form, Factor XIIIa is responsible for catalyzing the formation of covalent bridges between fibrin units to increase the elasticity of the clot network. The resulting cross-linked fibrin is very insoluble and resistant to lysis. ERL offers the zymogen form of Human Factor XIII(α2β2).

Buffer composition =50 mM Tris-HCl/0.1 M NaCl/1 mM EDTA/10u/mL Trasylol/20% glycerol/pH 7.5
*Extinction Coefficient (1%)=13.8
Molecular Weight = 320,000 daltons

Human Prekallikrein

HPK 1302 Human Prekallikrein

Purified from fresh frozen human plasma. Human Prekallikrein is a single chain gamma globulin glycoprotein that participates in the early phase of contact activation, kinin formation and fibrinolysis. Prekallikrein purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol. Activity is determined via clotting assay.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) =11.7
Molecular Weight = 86,000 daltons

Also Available: Prekallikrein Activator

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Single Chain High Molecular Wt. Kininogen

HK 1300 Single Chain High Molecular Wt. Kininogen (Fitzgerald Factor)

High Molecular Weight Kininogen (HK) is a nonenzymatic cofactor of the contact activation system. HK is thought to have two functions in the contact activation system. First, HK links prekallikrein to a negatively charged surface thereby allowing activation to kallikrein by surface bound Factor α-Xlla. HK also forms a complex with Factor XI and accelerates its activation to XIa by α-Xlla. Also HK serves as a source of Bradykinin, a potent Vasoactive peptide important in hypotension studies. The protein purity is determined by SDS-PAGE

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 7.01
Molecular Weight = 120,000 daltons

Two Chain High Molecular Wt. Kininogen

2HK 1301 Two Chain High Molecular Weight Kininogen

ERL offers the two chain Kinin-free form of Kininogen. This is prepared by Kallikrein digestion of Kininogen which is then repurified to remove traces of Kallikrein.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 7.01
Molecular Weight = 110,000 daltons

Human Glu-Plasminogen

HPg 2001 Human Glu-Plasminogen

Purified from fresh frozen human plasma. The protein purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol. No Plasmin activity is detected using the chromogenic substrate S-2251. Plasminogen is activated to the serine protease plasmin via urokinase, streptokinase or tissue plasminogen activator.

Buffer composition = 50 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 17.0
Molecular Weight = 90,000 daltons

Also available: Forms 1 and 2

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Human Lys-Plasminogen

LPg 2002 Human Lys-Plasminogen

Purified from homogeneous glu-plasminogen by activation with Plasmin. This activation results in the release of a 76 amino acid residue peptide (Glu-Lys76). This Lys77-Plasminogen can be readily converted to Lys77-Plasmin by any of the common plasminogen activators. The protein purity is determined by SDS-PAGE.

Buffer composition =50 mM Tris-HCl/0.1 M NaCl /pH 7.4
*Extinction Coefficient (1%) = 17.0
Molecular Weight = 83,000 daltons

Human α-Thrombin

HT 1002a Human α-Thrombin (Factor IIa)

Prepared from homogeneous human prothrombin by activation with Factor Xa, Factor Va, and phospholipid. Human Thrombin purity is determined by SDS-PAGE. This activated enzyme has a minimum activity of 2,700 NIH units/mg when compared to NIH standard thrombin.

Buffer composition = 50 mM Sodium Citrate/0.2 M NaCl/0.1% PEG-8000/pH 6.5
*Extinction Coefficient (1%) = 18.3
Molecular Weight = 37,000 daltons

Also available: Human Thrombin Inactivated

Human γ-Thrombin

HGT Human γ-Thrombin

A non-clotting derivative thrombin produced from Human α-Thrombin by controlled incubation with Trypsin-Sepharose. Gamma-thrombin is a noncoagulant form of thrombin that retains much of its platelet-activating capacity. Gamma-thrombin purity is determined by SDS-PAGE.

Buffer Composition = 10 mM Sodium Acetate/0.75 M NaCl/pH 6.0
Molecular Weight = 12,000 daltons
Concentration determined by BCA

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Human Factor VIIa

HFVIIa Human Factor VIIa

Prepared from purified Human Factor VII using Human Factor XIIa. The Factor Xlla is removed using affinity chromatography. Purity is determined by SDS-PAGE. Human Factor VIIa reduces to 29,500 and 23,500 with the addition of 2-mercaptoethanol. Activity is determined via clotting assay. Factor VIIa, in the presence of calcium ions and Tissue factor, activates Factors IX and X to their enzymatically active forms, Factor IXa and Xa.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 13.9
Molecular Weight = 50,000 daltons

Also available: des-Gla-Human Factor VIIa and Factor VIIa inactivated

Human Activated Protein C

APC Human Activated Protein C

Activated Protein C (APC) is a serine protease derived from the two chain vitamin K dependent zymogen, Protein C. APC inhibits blood coagulation through the selective inactivation of the cofactors Va and VIIIa. APC is prepared from protein C by activation with purified thrombin. This thrombin is removed after activation by ion exchange chromatography. Activated Protein C purity is determined by SDS-PAGE and shows complete reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/ pH 7.4
*Extinction Coefficient (1%) = 14.5
Molecular Weight = 56,000 daltons

Also available: des-Gla-Human Activated Protein C

Human Factor IXa α

HFIXa 1070 Human Factor IXa α

Prepared from Human Factor IX by activation with Russell's Viper Venom. This RVV-X cleaves a single internal Arg-Val peptide bond in the Factor IX. The RVV-X is removed after activation. Complete activation is observed by SDS-PAGE. This protein purity is determined by SDS-PAGE and shows total reduction upon incubation with 2-mercaptoethanol. This form of activated Factor IX has about 50% of the coagulant activity of Human Factor IXaβ.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl /pH 7.4
*Extinction Coefficient (1%) =14.9
One unit = 5 µg
Molecular Weight = 56,000 daltons

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Human Factor IXa β

HFIXa 1080 Human Factor IXa β

Prepared from Human Factor IX by activation with Bovine Factor XIa. This Bovine Factor XIa is removed after activation. Complete activation is observed by SDS-PAGE. The Factor XIa activates Factor IX in a two-step reaction. In the first step, an internal Arg-Ala bond is cleaved, and in the second step, an Arg-Val bond is cleaved. The second cleavage leads to the liberation of an activation peptide from the NH2-terminal portion of the heavy chain to produce Factor IXaβ.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl /pH 7.4
*Extinction Coefficient (1%) = 14.3
One unit =5 µg
Molecular Weight = 45,000 daltons

Human Factor Xa

HFXa 1011 Human Factor Xa

Human Factor Xa is prepared from Human Factor X by activation with Russell's Viper Venom. This RVV-X is removed after activation. Complete activation is observed by SDS-PAGE. Factor Xa along with cofactor Va, phospholipids and calcium ions, (the prothrombinase complex) catalyzes the rapid conversion of prothrombin to thrombin.

Buffer composition = 20 mM Tris-HCl/0.7 M NaCl/pH 7.4
*Extinction Coefficient (1%) =11.6
One unit = 8 µg
Molecular Weight = 46,000 daltons

Also available: Human Factor Xaβ, des-Gla Xaβ and Xa inactivated

Human Factor XIa

HFXIa 1111a Human Factor XIa

Prepared from Human Factor XI using Human Factor Xlla. This Xlla was removed using a corn trypsin inhibitor column. Complete activation is observed by SDS-PAGE. Factor XI, through the contact factor pathway cascade, is activated to Factor XIa via Factor Xlla and High Molecular Weight Kininogen. During activation by Factor Xlla and HK, FXI undergoes proteolytic cleavage in which the Mr=80,000 chain reportedly is cleaved to a heavy and light chain with Mr of about 48,000 and 33,000. This Factor XIa is responsible for the activation of Factor IX to Factor IXa. Unlike other examples of activation of Vitamin K-dependent blood-clotting proteins, Factor XIa proteolysis of Factor IX does not require membrane surfaces.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 13.1
Molecular Weight = 160,000 daltons

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Human Factor αXIIa

HFXIIa 1212a Human Factor αXIIa (Activated Hageman Factor)

Human Factor α-XIIa is a serine protease responsible for the activation of Factor XI to XIa in the contact activation system. Human Factor XII and prekallikrein are thought to be involved in a reciprocal activation mechanism in which Factor XIIa activates prekallikrein to kallikrein, which in turn converts Factor XII to XIIa. Factor XIIa activates Factor XI to XIa thereby triggering the Contact Factor cascade. ERL offers Factor α-XIIa which is activated by the autoactivation process with Dextran Sulfate and re-purified to remove the activator. The protein purity is determined by SDS-PAGE and activity is determined via clotting assay.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 14.1
Molecular Weight = 80,000 daltons

Also available: Human Factor XIIa beta.

Human Factor XIIIa

HFXIIIa 1314 Human Factor XIIIa

Human Factor XIII is cleaved with human alpha thrombin. The thrombin is subsequently removed via chromatography. The above protein was purified from Human plasma that was tested and found negative by FDA accepted methods fro Anti-HIV1/2, Anti-HTLV I & II, HBsAg, Anti-HCV, Syphilis, ABC ab, HIV-1 p24 Ag or HIV-1 RNA, HCV RNA and HBV RNA. Donors are screened for CJD (Creutzfeldt-Jakob Disease).

Buffer composition = 50 mM Tris/ 100 mM NaCl/ 1 mM EDTA/ 10 u/mL Trasylol/ 50 uM DTT/50% glycerol/ pH 7.5
*Extinction Coefficient (1%)=13.8
Molecular Weight = 312,000 daltons

Human Kallikrein

HPKa 1303 Human Kallikrein

Activation of Prekallikrein with Factor α-XIIa produces the enzymatically active Kallikrein. Kallikrein is a serine protease which consists of a heavy chain (Mr 52kD) and light chains (Mr either 36 or 33 kD) linked by disulfide bridges. Kallikrein possesses enzymatic activity toward Factor XII, HK, Plasminogen, Factors XI, IX, and VII, prorenin and the complement system. After activation, the activating enzyme Factor XIIa is removed by affinity chromatography. Human Kallikrein purity is determined by SDS-PAGE and shows complete reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 4 mM Sodium Acetate-HCl/0.15 M NaCl/pH 5.3
*Extinction Coefficient (1%) = 11.7
Molecular Weight = ~86,000 daltons

Also Available: Prekallikrein Activator

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Human Plasmin

HPlasmin Human Plasmin

Prepared from Glu-Plasminogen using urokinase, which is not removed after activation. Purity is judged by SDS-PAGE. Plasmin is a two-chain serine protease linked by 2 disulfide bonds. Among other roles, plasmin is responsible for the lysis of the fibrin clot, thus producing fibrin degradation products (FDP's).

Buffer composition = 0.1 M HEPES-HCl/0.1 M Sodium Acetate /pH 8.5
*Extinction Coefficient (1%) = 17.0
Molecular Weight = 83,000 daltons

Human Protein S

HPS Human Protein S

Protein S exists in two forms in human plasma, as the free protein and in complex with C4b-binding protein. Enzyme Research Laboratories offers the free protein from plasma which serves as a cofactor for the anticoagulant activity of activated protein C. Human protein S is a single-chain glycoprotein with a molecular weight of 69,000. HPS purity is determined by SDS-PAGE.

Buffer composition = 20 mM Tris-HCl/ /0.1 M NaCl /1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 9.5
One unit = 10 µg
Molecular Weight = 69,000 daltons

Human Protein Z

HPZ Human Protein Z

The human protein Z is purified from plasma via a combination of precipitations and column chromatography. HPZ purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 50mM Tris-HCl/0.1 M NaCl/pH 7.5
*Extinction Coefficient (1%) = 12.0
Molecular Weight = 62,000 daltons

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Human Fibronectin

FN **Human Fibronectin**

At 300µ g/mL, plasma fibronectin is second to fibrinogen in abundance. It is a glycoprotein, composed of two subunits of approximately 220 kD each and participates in several cell-substratum adhesive interactions. Among other roles, Fibronectin binds to collagen, fibrinogen, fibrin and heparin. ERL offers fibronectin purified by gelatin affinity chromatography followed by heparin chromatography.

Buffer composition = 10 mM HEPES/0.15 M NaCl/pH 7.5
*Extinction Coefficient (1%)= 12.8
Molecular Weight =440,000 daltons

Human Antithrombin

HAT **Human Antithrombin**

Purified from fresh frozen human plasma. AT is a single-chain glycoprotein which is considered to be the main physiological inhibitor of thrombin and Factor Xa. In the presence of heparin, the inhibition of thrombin and factor Xa is enhanced from 300 to 1,000 fold. AT purity is >95% pure by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer composition= 20 mM Tris-HCl/0.1 M Citric Acid/0.15 M NaCl/pH 8.3
*Extinction Coefficient (1%) = 6.5
Molecular Weight = 58,000 daltons

Human Heparin CoFactor

HCII **Human Heparin Cofactor (HCII)**

Prepared from fresh frozen human plasma. Heparin Cofactor II is a single chain glycoprotein with a MW of 65,600 daltons. HCII is a specific inhibitor of thrombin with increased activity in the presence of heparin. Heparin Cofactor II purity is determined by SDS-PAGE and the activity is measured by the ability to inhibit thrombin in the presence of saturating concentrations of heparin.

Buffer =20 mM Tris-HCl/0.15 M NaCl/pH 7.3, containing 0.02% NaN3 (w/v)
*Extinction Coefficient (1%) = 9.1
Molecular Weight = 65,600 daltons

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Corn Trypsin Inhibitor

CTI Corn Trypsin Inhibitor

Corn Trypsin Inhibitor (CTI) is a specific and potent inhibitor of human factor XIIa. It is purified from fresh Indiana sweet corn by solvent extraction and chromatographic methods. A suggested inhibitory concentration is 24 fold molar excess over the enzyme concentration. CTI purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer Composition = 20 mM Tris-HCl/0.03 M NaCl/pH 8.2
Molecular Weight = 14,000 daltons
Concentration determined by BCA

α2-Antiplasmin (α2AP)

α2AP α2-Antiplasmin

α2-Antiplasmin (α2AP), also known as α2Plasmin Inhibitor, is a plasma glycoprotein that is a member of the SERPIN family of proteinase inhibitors. α2AP is the primary fast-acting inhibitor of plasmin in vivo, but has also been reported to inhibit other enzymes such as trypsin, elastase, and Activated Protein C. α2AP is purified from normal human plasma using immunoaffinity and ion-exchange chromatography. Purified α2AP activity is determined by titration with purified plasmin.

Buffer Composition = 20 mM Tris-HCl/0.15 M NaCl/pH 7.3
Extinction Coefficient (1%) = 7.0
Molecular Weight = 70,000 daltons

TAFI (Procarboxypeptidase B)

TAFI TAFI (Procarboxypeptidase B)

Thrombin Activatable Fibrinolysis Inhibitor (TAFI), also known as plasma procarboxypeptidase-B and carboxypeptidase-U, is a single chain glycoprotein with a mass of 58,000 daltons. TAFI is purified from normal human plasma using immunoaffinity and ion-exchange chromatography.

Buffer composition = 20 mM HEPES/0.2 M NaCl /pH 7.4
Extinction Coefficient (1%) = 20.2
Molecular Weight = 58,000 daltons

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Human Fibrinogen (Factor I)

Human Fibrinogen

Conversion of soluble fibrinogen to the insoluble fibrin is the final step in the blood coagulation cascade. ERL offers three types of purified fibrinogen prepared by a combination of salt precipitation, affinity chromatography and immunoaffinity chromatography methods to suit the individual researcher's needs. All three forms are >95% clottable (by functional assays) and purity is >95% by SDS-PAGE.

- **FIB 1 Plasminogen Depleted**
- **FIB 2 Plasminogen and von Willebrand Factor Depleted**
- **FIB 3 Plasminogen, von Willebrand Factor and Fibronectin Depleted**

Buffer composition = 20 mM Sodium Citrate-HCl/pH 7.4
*Extinction Coefficient (1%) = 15.1
Molecular Weight = 330,000 daltons

Also available: Peak '1' and Peak '2' Fibrinogen

It has been known for many years [Mosseson MW & Finlayson]S.] Lab Clin Med 62:663, 1963] that human fibrinogen can be sufractionated chromatographically into two peaks called Peak '1' and Peak '2' Fibrinogen respectively. These fibrinogens differ from one another with respect to their gamma chain composition. Peak '1' fibrinogen accounts for 85% of the total plasma fibrinogen and has two gamma-A chains, whereas Peak '2' fibrinogen accounts for the remaining 15% and contains one gamma-A chain and one gamma chain per molecule. Peak '1' fibrinogen contains mostly intact A-alpha subunit chains, is free of plasminogen, factor XIII, fibronectin, and other non-fibrinogen protein contaminants. Peak 1' fibrinogen molecules each contain two copies of the platelet-binding gamma-A chain C-terminal sequence and are ideal substrates for factor XIII assay. Peak '2' fibrinogen contains measurable amounts of factor XIII activity because the factor XIII B subunits bind to gamma chains and bring catalytic A subunits along with them. Thus Peak '2' fibrinogen serves as a 'carrier' for factor XIII in blood. The gamma chain lacks the platelet recognition sequence but, like all gamma chains, become crosslinked to dimers by factor XIIIa.

Molecular Weights:
Peak '1' = 340,000 daltons
Peak '2' = 342,000 daltons
Extinction Coefficients:
Peak '1' = 15.1
Peak '2' = 15.1
Clottability = > 95%

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Human GPIIbIIIa

GP2b3a **Human GPIIbIIIa**

Platelet membrane glycoproteins are involved in platelet adhesion and aggregation. Glycoproteins IIb and IIIa (GPIIb and GPIIIa) constitute the fibrinogen receptor and are required for platelet aggregation. ERL offers GPIIbIIIa purified from human platelets. Glycoprotein IIb consists of 2 disulfide-linked subunits GPIIb (MW = 125,000) and GPII (MW= 23,000) while GPIIIa has only one polypeptide chain (MW= 108,000). GPIIbIIIa migrates on gels as follows: GPIIb 136,000 non-reduced and 125,000 reduced. GPIIIa is 97,000 non-reduced and 108,000 reduced. Protein concentration is determined via the Bradford method.

Buffer Composition = 20 mM Tris-HCl/0.1 M NaCl/0.1% Triton X-100/
1 mM CaCl2/0.05% NaN3/50% glycerol/ pH 7.4
*Extinction Coefficient (1%) = 9.1

Apolipoprotein-H (β2GP-1)

HAPO-H **Apolipoprotein-H(β2GP-1)**

Apolipoprotein-H, also known as β2Glycoprotein-1 (β2GP-1) is a plasma glycoprotein that circulates at a concentration of 200 µg/mL (4mM). β2GP-1 has been identified as a constituent of chylomicrons, very low density lipoproteins and high density lipoproteins in Human plasma. It has also been demonstrated to bind phospholipids, heparin and platelets where it can modulate the activity of adenylate (19%). Although the precise function(s) are as yet unknown, β2GP-1 has been shown to interfere with blood coagulation by competitively binding to phospholipids exposed during cell activation or damage. Recent evidence also implicates β2GP-1 as a cofactor recognized by some anti-phospholipid antibodies present in autoimmune disorders such as systemic lupus erythematosus (SLE).

Buffer composition = 20 mM Tris-HCl/0.3 M NaCl /pH 7.3
Extinction Coefficient (1%) = 9.4
Molecular Weight = 48,000 daltons

Platelet Factor 4 (PF4)

PF4 **Platelet Factor 4**

Platelet Factor 4 is purified from Human platelets by affinity chromatography and gel filtration. It has a molecular weight of 29,000 daltons and is made up of 4 identical subunits of 7,800 daltons each.

Buffer composition = 50 mM Tris-HCl/1.5 M NaCl /0.02% NaN3/pH 7.3
Extinction Coefficient (1%) = 2.6
Molecular Weight = 29,000 daltons

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Des-Gla Proteins

The following proteins are with the gamma-carboxyglutamic acid region removed.

- **Des-Gla-Human Protein C**
- **Des-Gla-Human Activated Protein C**
- **Des-Gla-Human Factor X**
- **Des-Gla-Human Factor Xaβ**
- **Des-Gla-Human Factor VIIa**
- **Des-Gla-Human Prothrombin**
- **Des-Gla-Bovine Prothrombin**

Inactivated Proteins

Available with their active site blocked.

- **Human Thrombin**
- **Human Factor VIIa**
- **Human Factor IXaβ**
- **Human Factor Xa**
- **Human Activated Protein C**

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Bovine Protein C

BPC 1003 Bovine Protein C

Purified from fresh citrated bovine plasma using a combination of salt precipitations and column chromatography. Protein purity is determined by SDS-PAGE and shows total reduction upon incubation with 2-mercaptoethanol. Protein C is activated to the serine protease, Activated Protein C (APC), by α-thrombin or the complex of α-thrombin/thrombomodulin. This APC is a potent anticoagulant through the selective inactivation of Factors Va and VIIIa.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/ 1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 13.7
Molecular Weight = 54,300 daltons

Bovine Prothrombin

BP 1004 Bovine Prothrombin (Factor II)

Prepared from freshly collected bovine plasma, bovine Prothrombin is a glycoprotein of molecular weight 70,000 and consists of a single polypeptide chain. Activation of Prothrombin by the prothrombinase complex (FXa, FVa, PL and Ca++) yields the serine protease Thrombin. Prothrombin purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) =14.4
One unit = 100 µg
Molecular Weight =70,000 daltons

Also available: des-Gla-Bovine Prothrombin

Bovine Factor IX

BFIX 1005 Bovine Factor IX

Prepared from freshly collected bovine plasma. Protein purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol. Activated Factor IX via factor Xla or the factor VIIa/tissue factor/phospholipid complex,
is responsible for the activation of Factor X to Xa.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 14.9
One unit = 5 µg
Molecular Weight = 55,400 daltons

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Bovine Factor X

BFX 1006 Bovine Factor X

Prepared from freshly collected Bovine plasma. The protein purity is determined by SDS-PAGE and shows total reduction upon incubation with 2-mercaptoethanol. Bovine Factor X, when activated via the contact factor pathway or tissue factor pathway, is responsible for the conversion of Prothrombin to Thrombin.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/ 1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 12.5
One unit = 10 µg
Molecular Weight = 55,000 daltons

Bovine Plasminogen

BPG Bovine Plasminogen

Purified from freshly collected bovine plasma. The protein purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol. No Plasmin activity is detected using the chromogenic substrate S-2251. Plasminogen is activated to the serine protease plasmin via urokinase, streptokinase or tissue plasminogen activator.

Buffer composition = 50 mM Tris-HCl/0.1 M NaCl /pH 7.4
*Extinction Coefficient (1%) = 16.1
Molecular Weight = 90,000 - 94,000 daltons

Also available: Bovine Plasmin

Bovine Activated Protein C

BPCa Bovine Activated Protein C

Activated Protein C (APC) is a serine protease derived from the two chain vitamin K dependent zymogen, Protein C. APC inhibits blood coagulation through the selective inactivation of the cofactors Va and VIIIa. APC is prepared from protein C by activation with purified thrombin. This thrombin is removed after activation by ion exchange chromatography. Activated Protein C purity is determined by SDS-PAGE and shows complete reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl /pH 7.4
Extinction Coefficient (1%) = 13.7
Molecular Weight = 52,650 daltons

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Bovine α-Thrombin (Factor IIa)

BT 1002a **Bovine α-Thrombin (Factor IIa)**

Prepared from bovine prothrombin through activation via the prothrombinase complex (FXa, FVa, PL and Ca++). Bovine α-Thrombin purity is >95% by SDS-PAGE. This activated enzyme has a minimum activity of 1,800 NIH units/mg when compared to NIH standard human thrombin.

Buffer composition = 50 mM Sodium Citrate/0.2 M NaCl/0.1% PEG-8000/pH 6.5
*Extinction Coefficient (1%) = 19.5
Molecular Weight= 37,000 daltons

Bovine Factor IXaα

BFIXa 1070 **Bovine Factor IXaα**

Prepared from Bovine Factor IX by activation with Russell's' Viper Venom. This RVV-X is removed after activation. The RVV-X is responsible for converting Factor IX to an enzyme by cleavage of an internal Arg-Val peptide bond. The Factor IXa produced by RVV-X cleavage possesses a molecular weight identical to that of Factor IX but shows reduction upon incubation with 2-mercaptoethanol. This form of Factor IXa has about 50% of the coagulant activity of Factor IXaß.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 14.9
One unit = 5 µg
Molecular Weight = 55,400 daltons

Bovine Factor IXaβ

BFIXa 1080 **Bovine Factor IXaβ**

Prepared from Bovine Factor IX by activation with Bovine Factor XIa, this Bovine Factor XIa is removed after activation. Complete activation is observed by SDS-PAGE. The Factor XIa activates FIX in a two-step reaction. In the first step, an internal Arg-Ala bond is cleaved, and in the second step, an Arg-Val bond is cleaved. The second cleavage leads to the liberation of an activation peptide from the NH2-terminal portion of the heavy chain to produce factor IXaβ.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 14.3
One unit = 5 µg
Molecular Weight = 43,900 daltons

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Bovine Factor Xa

BFXa **Bovine Factor Xa**

Bovine Factor Xa is prepared from Bovine Factor X by activation with Russell's' Viper Venom. This RVV-X is removed after activation. Complete activation is observed by SDS-PAGE. Factor Xa, as part of the prothrombinase complex along with the cofactor Va, phospholipids and calcium ions, catalyzes the rapid conversion of prothrombin to thrombin.

Buffer composition = 20 mM Tris-HCl/0.7 M NaCl/pH 7.4
*Extinction Coefficient (1%) = 12.4
One unit = 10 µg
Molecular Weight = 45,300 daltons

Bovine Factor XIa

BFXIa 11a **Bovine Factor XIa**

Bovine Factor XIa is purified from freshly collected Bovine Plasma using a combination of salt precipitations and activation on a negative surface. This Factor XIa is a potent activator of both Human and Bovine Factor IX. Bovine Factor XIa purity is determined by SDS-PAGE and shows complete reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 50 mM Tris-HCl/0.1 M NaCl/pH 8.0
Protein concentration is determined by BCA

Bovine Factor V/Va

BFV/Va **Bovine Factor V/Va**

Purified from freshly collected bovine plasma using a combination of salt precipitations and column chromatography. This protein is a mixture of Factor V/Va and intermediate activation products as judged by 4-20% gradient gels. Bovine Factor Va functions as a cofactor with the serine protease Factor Xa in the activation of prothrombin. This protein may be used as a source of V/Va in the Prothrombinase complex.

Buffer composition = 20 mM HEPES-HCl/0.15 M NaCl/pH 7.4/50% glycerol
*Extinction Coefficient (1%) = 9.6/17.4
One unit = 10 µg
Molecular Weight = 330,000; 94,000; 74,000; 71,000; 31,000 daltons
Concentration determined by BCA

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Bovine Antithrombin

BAT **Bovine Antithrombin**

Purified from freshly collected bovine plasma. BAT is a single-chain glycoprotein which is considered to be the main physiological inhibitor of thrombin and Factor Xa. BAT purity is determined by SDS-PAGE and shows no reduction upon incubation with 2-mercaptoethanol.

Buffer composition = 20 mM Tris-HCl/0.1M Sodium Citrate/0.15 M NaCl/pH 8.3
*Extinction Coefficient (1%) = 6.5
Molecular Weight = 58,000 daltons

Bovine Fibrinogen, Plasminogen Depleted (Factor I)

BFIB1 **Fibrinogen, Plasminogen Depleted (Factor I)**

Purified from freshly collected bovine plasma. The protein purity is determined by SDS-PAGE and is greater than 95% clottable. Conversion of soluble fibrinogen to the insoluble clot-forming fibrin is the terminal stage of coagulation.

Buffer composition = 20 mM Sodium Citrate - HCL/pH7.4
*Extinction Coefficient (1%) = 15.1
Molecular Weight = 330,000 daltons

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MONOCLONAL ANTIBODIES TO COAGULATION PROTEINS

Anti-Human Factor V Mab HFV

Binds human factor V in solid-phase ELISA. Blots factor V and factor Va heavy chain.

Anti-Human Factor VII Mab HFVII

Binds human plasma and recombinant VII and VIIa in solid-phase ELISA. Blots the light chain of non-reduced and reduced factor VIIa in immunoblot. Specific for factor VII and does not cross-react with other vitamin k-dependent proteins. Does not inhibit plasma factor VII clotting activity in Prothrombin Time assay.

Anti-Human Factor VIII Mab HFVIII

Binds human factor VIII in solid-phase ELISA. Partial inhibition of APTT clotting assay. Binds in presence of Ca^{2+} and EDTA. Antibody if useful for depleting factor VIII from plasma. Binds thrombin- and activated protein C-treated factor VIII.

Anti-Human Factor IX Mab HFIX

Binds human factor IX in solid-phase ELISA. Blots human factor IX light chain.

Anti-Human Factor X Mab HFX

Binds human factor X (HFX) in solid-phase ELISA and immunoblotting.

Anti-Human Factor X Light Chain Mab HFX-LC

Binds human factor X and Xa in solid-phase ELISA. In immunoblotting, binds factor X light chain. Bind ^{125}I-labeled factor X. Does not bind bovine factor X. Binds factor X in presence of EDTA or CA^{2+}. Prolongs plasma prothrombin time (PT) and APTT. Partially inhibits prothrombin activation in prothrombinase assay.

Anti-Human Factor X Heavy Chain Mab HFX-HC

Binds human factor X and Xa in solid-phase ELISA. In immunoblotting, binds factor X heavy chain. Bind ^{125}I-labeled factor X or bovine factor X. Binds factor X in presence of EDTA or CA^{2+}. No effect on plasma prothrombin time (PT) and APTT. Partially inhibits prothrombin activation in prothrombinase assay.

Anti-Human Factor XI Mab HFXI

Binds human factor XI in solid-phase ELISA.

Anti-Human Factor XII Mab HFXII

Binds human factor XII in solid-phase ELISA and immunoblotting techniques.

Anti-Human Factor XIII Mab HFXIII

Binds human factor XIII in solid-phase ELISA and using immunoblotting techniques.

Anti-Human Antithrombin Mab HAT

Binds human antithrombin in solid-phase ELISA and immunoblotting techniques.

Anti-Thrombin Mab IIa

Binds human thrombin bound to polystyrene and in immunoblotting. Antibody does not bind prothrombin, prethrombin 1 or prethrombin 2, or bovine thrombin, bound to polystyrene.

Anti-Human Prothrombin Mab HFII

Binds human prothrombin, prethrombin 1 and fragment 2 (residues 156-271) in solid-phase ELISA. Blots human prothrombin in Western blot.

Anti-Human Protein C Mab HPC

Binds human Protein C in solid-phase ELISA. Blots non-reduced and heavy chain of reduced human Protein C.

Anti-Human Tissue Factor Mab TFE

Binds human tissue factor in solid-phase ELISA and immunoblotting techniques. Binds human bladder carcinoma cells.

Anti-Human vWF Mab VWF

Binds human von Willebrand factor in solid-phase ELISA and immunoblotting techniques.

Anti-Human GPIIbIIIa Mab GP2b3a

Binds glycoprotein IIb/IIIa complex from platelets and megakaryocytes. Inhibits platelet aggregation and prolongs bleeding time. Binding requires calcium ion. Useful for immunofluorescence.

Anti-Plasminogen Mab HPG

Binds Plasminogen immobilized onto plastic microtiter plates. Epitope is localized to "miniplasminogen" (residues 222-790). Antibody blocks tPA, urokinase and streptokinase activation of Plasminogen. No effect on plasmin chromogenic substrate activity.

Anti-Vitronectin Mab VN

Binds human vitronectin in solid-phase ELISA and immunoblotting techniques.

Anti-C4 Binding Protein Mab C4BP

Binds human C4b binding protein in solid-phase ELISA. Antibody coupled to sepharose can be used to purify C4bp from plasma.

Anti-PA Kringle 4 Mab PA K4

Binds human plasminogen, recombinant human angiostatin and isolated plasminogen kringle 4 in solid-phase and solution-phase ELISA, antibody binds only slightly to isolated plasminogen kringle 1-4 and does not bind plasminogen kringle fragment 1-3. Antibody binds human plasminogen and recombinant angiostatin in immunoblotting procedures.

Anti-PA Kringle 1-4 Mab PA K1-4

Binds recombinant human angiostatin and human plasminogen, specifically kringles 1-4, in solid-phase and solution-phase ELISA. This antibody binds only slightly to isolated plasminogen kringle fragment 1-3 and the isolated plasminogen kringle fragment 4. Antibody binds human plasminogen and recombinant angiostatin in immunoblotting procedures.

Anti-PA Kringle 1-3 Mab PA K1-3

Binds recombinant human angiostatin and human plasminogen, specifically kringles 1-3 and kringles 1-4, in solid-phase and solution-phase ELISA. This antibody does not bind isolated plasminogen kringle fragment 4 or isolated plasminogen kringle fragment 5. Antibody binds human plasminogen and recombinant angiostatin in immunoblotting procedures.

Anti-Human Fibrinogen Mab HFG

Binds human fibrinogen in solid-phase ELISA and immunoblotting procedures.

Anti-Tissue Plasminogen Activator Mab TPA

Binds human tissue plasminogen activator in a solid-phase ELISA. Antibody binds human tissue plasminogen activator in immunoblotting procedures.

Anti-Human Thrombin Receptor B Mab IIaB

Binds thrombin receptor peptide, SFLLRNPNDKYEPF in a solid-phase ELISA. Does not inhibit platelet activation by thrombin.

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POLYCLONAL ANTIBODIES

Number	Product
Anti-Human Fibrinogen (Fg)	
SAFG-IG	Sheep, purified IgG, 10 mg
SAFG-AP	Sheep, affinity purified, IgG, 0.5 mg
SAFG-HRP	Sheep, peroxidase conjugated. IgG, 0.2 mg
SAFG-APHRP	Sheep, affinity purified peroxidase conjugated 0.1 mg
Anti-rabbit Fibrinogen	
SARFG-IG	sheep, purified IgG, 10 mg
SARFG-AP	sheep, affinity purified IgG, 0.5 mg
SARFG-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-Human Peak 2 Fibrinogen	
SAFGP-IG	sheep, purified IgG, 10 mg
SAFGP-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-Human Fibrin fragment E (Fn-E)	
SAFNE-IG	Sheep, purified IgG, 10 mg
SAFNE-HRP	Sheep, peroxidase conjugated. IgG, 0.2 mg
Anti-Human Fibrinopeptide A (FPA: Aa 1-16 specific)	
SAFPA-IG	sheep, purified IgG, 10 mg
SAFPA-AP	sheep, affinity purified IgG, 0.5 mg
SAFPA-HRP	sheep, peroxidase conjugated IgG, 0.5 mg
Anti-human Prothrombin (F.II)	
SAFII-IG	sheep, purified IgG, 10 mg
SAFII-AP	sheep, affinity purified IgG, 0.5 mg
SAFII -HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Prothrombin Fragment 1 & 2	
SAFII-F1AP	sheep, Prothrombin Fragment-1, affinity purified IgG, 0.5 mg
SAFII-F2AP Back to Table of Contents	sheep, Prothrombin Fragment-2, affinity purified IgG, 0.5 mg

Anti-human Thrombin (F.IIa)	
SAHT-IG	sheep, purified IgG, 10 mg
SAHT-AP	sheep, affinity purified IgG, (Prothrombin Adsorbed) 0.5 mg
SAHT-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SAHT-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
Anti-bovine Thrombin (bF.IIa)	
SABT-IG	sheep, purified IgG, 10 mg
SABT-AP	sheep, affinity purified IgG, 0.5 mg
SABT-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-rabbit Thrombin (rF.IIa)	
SART-IG	sheep, purified IgG, 10 mg
SART-AP	sheep, affinity purified IgG, 0.5 mg
SART-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human F.V (F.V)	
SAFV-IG	sheep, purified IgG, 10 mg
SAFV-AP	sheep, affinity purified IgG, 0.5 mg
SAFV-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SAFV-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
Anti-bovine F.V (F.V)	
SABFV-IG	sheep, purified IgG, 10 mg
SABFV-AP	sheep, affinity purified IgG, 0.5 mg
SABFV-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human F.VII (F.VII)	
SAFVII-IG	sheep, purified IgG, 10 mg
SAFVII-AP	sheep, affinity purified IgG, 0.5 mg
SAFVII-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SAFVII-APFTC Back to Table of Contents	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg

Anti-human F.VIII:C (F.VIII:C)	
SAF8C-IG	sheep, purified IgG, 10 mg
SAF8C-AP	sheep, affinity purified IgG, 0.5 mg
SAF8C-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SAF8C-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
Anti-human Factor IX (F.IX)	
GAFIX-IG	goat, purified IgG, 10 mg
GAFIX-AP	goat, affinity purified IgG, 0.5 mg
GAFIX-HRP	goat, peroxidase conjugated IgG, 0.2 mg
GAFIX-APHRP	goat, peroxidase conjugated affinity purified IgG, 0.1 mg
GAFIX-APFTC	goat, affinity purified IgG Fluorescein Conjugate, 0.1mg
SAFIX-IG	sheep, purified IgG, 10 mg
SAFIX-AP	sheep, affinity purified IgG, 0.5 mg
SAFIX-APHRP	sheep, peroxidase conjugated affinity purified IgG, 0.1 mg
Anti-human Factor X (F.X)	
GAFX-IG	goat, purified IgG, 10 mg
GAFX-AP	goat, affinity purified IgG, 0.5 mg
GAFX-HRP	goat, peroxidase conjugated IgG, 0.2 mg
SAFX-AP	sheep, affinity purified IgG, 0.5 mg
SAFX-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
RAFX-HRP	rabbit, peroxidase conjugated IgG, 0.2 mg
Anti-human Factor XI (F.XI)	
GAFXI-IG	goat, purified IgG, 5 mg
GAFXI-AP	goat, affinity purified IgG, 0.5 mg
GAFXI-HRP	goat, peroxidase conjugated IgG, 0.2 mg
GAFXI-APFTC	goat, affinity purified IgG Fluorescein Conjugate, 0.1 mg
SAFXI-IG	sheep, purified IgG, 5.0 mg
SAFXI-AP Back to Table of Contents	sheep, affinity purified IgG, 0.5 mg

Anti-human Factor XII (F.XII)	
GAFXII-IG	goat, purified IgG, 5 mg
GAFXII-AP	goat, affinity purified IgG, 0.5 mg
GAFXII-HRP	goat peroxidase conjugated IgG, 0.2 mg
SAFXII-IG	sheep, purified IgG, 5 mg
SAFXII-AP	sheep, affinity purified IgG, 0.5 mg
Anti-human Factor XIII (F.XIII)	
SAFXIII-IG	sheep, purified IgG, 10 mg
SAFXIII-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Factor XIII (A subunit)	
SAF13A-IG	sheep, purified IgG, 10 mg
SAF13A-AP	sheep, affinity purified IgG, 0.5 mg
SAF13A-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SAF13A-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
Anti-human Prekallikrein (PK)	
SAPK-IG	sheep, purified IgG, 10 mg
SAPK-AP	sheep, affinity purified IgG, 0.5 mg
SAPK-APHRP	sheep, peroxidase conjugated affinity purified IgG, 0.1 mg
Anti-human Kininogen (KN)	
SAKN-IG	sheep, purified IgG, 10 mg
SAKN-AP	sheep, affinity purified IgG, 0.5 mg
SAKN-APHRP	sheep, peroxidase conjugated affinity purified IgG, 0.1 mg
Anti-human Protein C (PC)	
GAPC-IG	goat, purified IgG, 5 mg
GAPC-AP	goat, affinity purified IgG, 0.5 mg
SAPC-IG	sheep, purified IgG, 10 mg
SAPC-AP	sheep, affinity purified IgG, 0.5 mg
SAPC-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
MAPC-IG Back to Table of Contents	mouse monoclonal, 0.5 mg

Anti-human Protein S (PS)	
GAPS-IG	goat, purified IgG, 5 mg
GAPS-HRP	goat, peroxidase conjugated IgG, 0.2 mg
SAPS-IG	sheep, purified IgG, 10 mg
SAPS-AP	sheep, affinity purified IgG, 0.5 mg
SAPS-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Protein Z	
SAPZ-IG	sheep, purified IgG, 10 mg
SAPZ-AP	sheep, affinity purified IgG, 0.5 mg
SAPZ-HRP	sheep, peroxidase conjugated, 0.2 mg
Anti-human Plasminogen (Pg)	
GAPG-IG	goat, purified IgG, 5 mg
GAPG-AP	goat, affinity purified IgG, 0.5 mg
GAPG-APHRP	goat, peroxidase conjugated affinity purified IgG, 0.1 mg
SAPG-IG	sheep, purified IgG, 5 mg
SAPG-AP	sheep, affinity purified IgG, 0.5 mg
Anti-Plasminogen Activator Inhibitor type 1 (PAI-1)	
SAPAI-IG	sheep, purified IgG, 10 mg
SAPAI-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Thrombin Activatable Fibrinolysis Inhibitor (TAFI)	
SATAFI-IG	sheep, purified IgG, 10 mg
SATAFI-AP	sheep, affinity purified IgG, 0.5 mg
SATAFI-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-Tissue type Plasminogen Activator (tPA)	
SATPA-IG	sheep, purified IgG, 10 mg
SATPA-AP	sheep, affinity purified IgG, 0.5 mg
SATPA-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
SATPA-APFTC Back to Table of Contents	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg

Anti-human Neutrophil Elastase (HNE)	
SANE-IG	sheep, purified IgG, 10 mg
SANE-AP	sheep, affinity purified IgG, 0.5 mg
SANE-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Antithrombin III (ATIII)	
SAAT-IG	sheep, purified IgG, 10 mg
SAAT-AP	sheep, affinity purified IgG, 0.5 mg
SAAT-APHRP	sheep, peroxidase conjugated affinity purified IgG, 0.1 mg
SAAT-APFTC	sheep, affinity purified IgG Fluorescein Conjugate, 0.1 mg
GAAT-IG	goat, purified IgG, 10 mg
GAAT-AP	goat, affinity purified IgG, 0.5 mg
Anti-rabbit Antithrombin III (ATIII)	
SARAT-IG	sheep, purified IgG, 10 mg
SARAT-AP	sheep, affinity purified IgG, 0.5 mg
SARAT-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human Heparin Cofactor-II (HCII)	
GAHC2-IG	goat, purified IgG, 5 mg
GAHC2-AP	goat, affinity purified IgG, 0.5 mg
GAHC2-APHRP	goat, peroxidase conjugated affinity purified IgG, 0.2 mg
Anti-human Protein C Inhibitor (PCI)	
GAPCI-IG	goat, purified IgG, 10 mg
GAPCI-AP	goat, affinity purified IgG, 0.5 mg
GAPCI-HRP	goat, peroxidase conjugated IgG, 0.2 mg
Anti-human a2Antiplasmin (a2AP)	
GA2AP-IG	goat, purified IgG, 5 mg
GA2AP-AP	goat, affinity purified IgG, 0.5 mg
GA2AP-HRP	goat, peroxidase conjugated IgG, 0.2 mg
SA2AP-IG Back to Table of Contents	sheep, purified IgG, 10 mg

Anti-human a1-Antitrypsin (a1AT)	
SA1AT-IG	sheep, purified IgG, 10 mg
SA1AT-AP	sheep, affinity purified IgG, 0.5 mg
SA1AT-APHRP	sheep, peroxidase conjugated -affinity purified IgG, 0.1 mg
GA1AT-IG	goat, purified IgG, 10 mg
GA1AT-AP	goat, affinity purified IgG, 0.5 mg
Anti-human a2-Macroglobulin (a2M)	
GAA2M-IG	goat, purified IgG, 10 mg
GAA2M-AP	goat, affinity purified IgG, 0.5 mg
GAA2M-APHRP	goat, peroxidase conjugated-affinity purified IgG, 0.1 mg
Anti-human Platelet Factor 4 (PF4)	
SAPF4-IG	sheep, purified IgG, 10 mg
SAPF4-AP	sheep, affinity purified IgG, 0.5 mg
SAPF4-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-human B2-Glycoprotein-1 (APOLIPOPROTEIN-H)	
GAB2G-IG	goat, purified IgG, 5 mg
GAB2G-AP	goat, affinity purified IgG, 0.5 mg
GAB2G-HRP	goat, peroxidase conjugated IgG, 0.2 mg
Anti-human von Willebrand Factor (vWF)	
GAVWF-IG	goat, affinity adsorbed IgG, 2.5 mg
GAVWF-AP	goat, affinity purified IgG, 0.5 mg
GAVWF-HRP	goat, peroxidase conjugated IgG, 0.15 mg
GAVWF-APFTC	goat, affinity purified IgG Fluorescein Conjugate, 0.1 mg
Anti-canine von Willebrand Factor (CvWF)	
SACWF-IG	sheep, purified IgG, 5 mg
SACWF-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-Rat von Willebrand Factor (RvWF)	
SARTW-IG	sheep, purified IgG, 5 mg
SARTW-HRP Back to Table of Contents	sheep, peroxidase conjugated IgG, 0.2 mg

Anti-human Tissue Factor (TF)	
SATF-IG	sheep, purified IgG, 10 mg
SATF-HRP	sheep, peroxidase conjugated, 0.2 mg
MATF-FITC	mouse, FITC, 0.1 mg
Anti-human Tissue Factor Pathway Inhibitor (TFPI)	
SATFPI-IG	sheep, purified IgG, 10 mg
Anti-human Vitronectin (Vn)	
SAVN-IG	sheep, purified IgG, 10 mg
SAVN-AP	sheep, affinity purified IgG, 0.5 mg
SAVN-APHRP	sheep, peroxidase conjugated affinity purified, 0.1 mg
Anti-human Vimentin (Vm)	
SAVM-IG	sheep, purified IgG, 10 mg
SAVM-AP	sheep, affinity purified IgG, 0.5 mg
SAVM-APHRP	sheep, peroxidase conjugated affinity purified, 0.1 mg
Anti-human C1-Inhibitor (C1 esterase inhibitor)	
GACINH-IG	goat, purified IgG, 5 mg
GACINH-AP	goat, affinity purified IgG, 0.5 mg
GACINH-HRP	goat, peroxidase conjugated IgG, 0.2 mg
Anti-human Glycoprotein IIb/IIIa (GPIIbIIIa)	
SA2B3A-IG	sheep, purified IgG, 10 mg
Anti-Hirudin	
SAHD-IG	sheep, purified IgG, 10 mg
SAHD-AP	sheep, affinity purified IgG, 0.5 mg
SAHD-HRP	sheep, peroxidase conjugated IgG, 0.2 mg
Anti-Mouse Immunoglobulin (IgG:H&L)	
GAM-APHRP	goat, peroxidase conjugated affinity purified IgG, 0.5 mg
Anti-Rabbit Immunoglobulin (IgG:H&L)	
SAR-APHRP Back to Table of Contents	sheep, peroxidase conjugated affinity purified IgG, 0.5 mg

Purified IgG from Non-Immune Sera	
NIR-IG	- Rabbit non-immune IgG, 10 mg
NIS-IG	- Sheep non-immune IgG, 20 mg
NIS-FITC	- Sheep non-immune FITC, 0.1 mg
NIG-IG	- Goat non-immune IgG, 10 mg
NIG-FITC	- Goat non-immune FITC, 0.1 mg
Anti-Sheep Immunoglobulin (IgG:H&L)	
DAS-APHRP	donkey, peroxidase conjugated affinity purified IgG, 0.5 mg
DAS-APFTC	donkey, affinity purified IgG Fluorescein Conjugate, 0.5 mg

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Paired Captured & Detecting Antibodies for EIA

ERL offers a wide selection of paired antibodies for the detection of coagulation factors. These paired antibodies are supplied with full step-by-step instructions for performing sandwich ELISAs for both clinical and research purposes.

Prothrombin	FII-EIA	5 plate
Factor V	FV-EIA	5 plate
Factor VII	FVII-EIA	5 plate
Factor VIII:C	FVIII:C-EIA	4 plate
Factor IX	FIX-EIA	5 plate
Factor X	FX-EIA	5 plate
Factor XI	FXI-EIA	5 plate
Factor XII	FXII-EIA	5 plate
Factor XIII	FXIII-EIA	5 plate
von Willebrand Factor	VWF-EIA	5 Plate
Protein S	PS-EIA	5 plate
Protein C	PC-EIA	5 plate
APC-Protein C Inhibitor Complex	APCPCI-EIA	5 plate
Alpha 1 Antitrypsin	A1AT-EIA	5 plate
APC-a1Antitrypsin Complex	APCAT-EIA	5 plate
Protein C Inhibitor	PCI-EIA	5 plate
Heparin Cofactor II	HCII-EIA	4 plate
Antithrombin III	ATIII-EIA	5 plate
Thrombin-Antithrombin Complex	TAT-EIA	5 plate
Thrombin-HCII Complex	THCII-EIA	5 plate
Plasminogen	PG-EIA	5 plate
Tissue Plasminogen Activator	TPA-EIA	5 plate
Fibrinogen	FG-EIA	5 plate
TAFI	TAFI-EIA	4 plate
Rabbit Fibrinogen	RBFG-EIA	4 plate
Apolipoprotein-H (B2-Glycoprotein)	APOH-EIA	5 plate
Canine Factor VIII	CAFVIII-EIA	4 plate
Canine Factor IX	CFIX-EIA	4 plate
Murine Fibrinogen	MFG-EIA	4 plate
Murine Antithrombin	MATIII-EIA	4 plate
Murine Plasminogen	MPG-EIA	4 plate
Murine Factor X	MFX-EIA	4 plate
Kininogen	KN-EIA	4 plate
Prekallikrein	PK-EIA	4 plate

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Russell's Viper Venom

RVV-X **Russell's Viper Venom**

RVV-X is purified from venom obtained from the Russell's Viper. The enzyme purity is determined by SDS-PAGE and possesses high specific clotting activity. RVV-X is used in activating both Human and Bovine Factor X to Xa and can be used to activate Factor IX to IXaα.

Buffer composition = 20 mM Tris-HCl/0.1 M NaCl/1 mM Benzamidine/pH 7.4
*Extinction Coefficient (1%) = 13.4
Molecular Weight = 70,000 daltons

Other Species Proteins

Product	Catalogue Number
Canine Fibrinogen	CFib
Canine Thrombin	CIIa
Canine Factor IX	CFIX
Canine Factor X	CFX
Canine Factor Xa	CFXa
Murine Fibrinogen	MFg
Murine Antithrombin III	MAT
Murine Thrombin	MIIa
Murine Factor XIII	MFXIII
Murine Plasminogen	MPg
Porcine Factor Xa	PFXa
Porcine Thrombin	PIIa
Porcine Fibrinogen	PFib
Rabbit Fibrinogen	RbFg
Rabbit Factor Xa	RbXa
Rabbit Factor X	RbX
Rabbit Thrombin	RbIIa
Rat Fibrinogen	RFib
Rat Thrombin	RIIa
Rat Factor Xa	RFXa

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