

## Sheep anti-human Factor IX (F.IX)

Whole IgG from antiserum

10 mg

**Product #:** SAFIX-IG

**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 Factor IX

Factor IX (F.IX, Christmas Factor) is a vitamin K-dependent glycoprotein produced in the liver. Plasma concentration of F.IX is normally around 5 µg/ml (87 nM) in plasma. The biological importance of F.IX is demonstrated in Haemophilia B (Christmas disease), an X-linked congenital bleeding disease resulting from a quantitative (low activity and low antigen) or qualitative (low activity, normal antigen) defect in F.IX function.

In its proenzyme or zymogen form F.IX is a single chain molecule of 55,000 daltons. It contains two EGF-like domains and an amino-terminal domain containing 12 γ-carboxy-glutamic acid (Gla) residues. These Gla residues allow F.IX to bind divalent metal ions and participate in calcium-dependent binding interactions. The activation of F.IX occurs by limited proteolysis in the presence of calcium by activated factor XI (FXI<sup>a</sup>) and/or by a complex of VII<sup>a</sup>/tissue factor/phospholipid and activated Factor X between residues Arg<sup>146</sup>-Ala<sup>147</sup> and between Arg<sup>180</sup>-Val<sup>181</sup>. The terminal activated product in either case is F.IX<sup>a</sup><sub>β</sub>, a two-chain enzyme consisting of a heavy chain (28,000 daltons), a light chain (18,000 daltons) and an activation peptide product of 11,000 daltons. F.IX can also be cleaved into inactive products by thrombin and by elastase.

The activity of F.IX<sup>a</sup><sub>β</sub> in plasma is inhibited by antithrombin and this inhibition is accelerated 1000-fold in the presence of optimal concentrations of heparin<sup>1-3</sup>.

### REFERENCES and REVIEWS

1. Lawson, JH, Mann KG; Cooperative Activation of Human F.IX by the Human Extrinsic Pathway of Coagulation; JBC 266 pp11317-11327, 10991.
2. Enfield DL, Thompson AR; Cleavage and Activation of Factor IX by Serine Proteases; Blood 64, pp 821-831, 1984.
3. Limentani SA, Furie BC, Furie B, in **Hemostasis and Thrombosis**, 3<sup>rd</sup> Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 94-108, J.B. Lippincott Co., Philadelphia PA, USA, 1994.

## Product Specifications

### Description:

Vial containing XXXX ml of whole IgG representing approximately 1 ml of antiserum. Total protein is 10 mg.

### Format:

Whole IgG, clear liquid.

### Host Animal:

Sheep

### Immunogen:

Human Factor IX purified from plasma.

### Concentration:

IgG concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient (E<sup>1%<sub>280</sub></sup>) 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 F.IX as demonstrated by immunoelectrophoresis and ELISA.

### Applications:

Suitable for use as a source of antibodies to F.IX.

### Neutralizing activity:

XXXX Bethesda Units/ml IgG against normal plasma. One Bethesda unit/ml is defined as the amount of inhibitor that resulted in 50% residual F.IX activity after 2 hours at 37°C (Kasper CK *et al*, Thromb Diath Haemorrh **34**:869, 1975).

### Species Cross Reactivity: (immunodiffusion vs. citrated plasma)

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

### Related Products:

Cat #: <b>GAFIX-IG</b>	Goat anti-human F.IX, IgG from antiserum
Cat #: <b>GAFIX-AP</b>	Goat anti-human F.IX, affinity purified IgG
Cat #: <b>GAFIX-HRP</b>	Goat anti-human F.IX, IgG-peroxidase
Cat #: <b>GAFIX-APHRP</b>	Goat anti-human F.IX, APiIgG-peroxidase
Cat #: <b>SAFIX-AP</b>	Sheep anti-human F.IX, affinity purified IgG
Cat #: <b>SAFIX-APHRP</b>	Sheep anti-human F.IX, APiIgG-peroxidase
Cat #: <b>FIX-EIA</b>	Paired antibody set for ELISA of F.IX, 5 x 96 wells
Cat #: <b>FIX-DP</b>	Human plasma deficient in F.IX, immune depleted

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