

## Goat anti-human Factor IX (FIX)

Peroxidase Conjugated IgG

0.2 mg

**Product #:** GAFIX-HRP

**Lot #:** XXXX

**Expiry date:** XXXX

Store at -10 to -20°C

For Research Use Only.

Not for use in diagnostic procedures.

### Description of Factor IX

Factor IX (FIX, Christmas Factor) is a vitamin K-dependent glycoprotein produced in the liver. Plasma concentration of FIX is normally around 5 µg/ml (87 nM) in plasma. The biological importance of FIX 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 and normal antigen) defect in FIX function.

In its proenzyme or zymogen form FIX 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 FIX to bind divalent metal ions and participate in calcium-dependent binding interactions. The activation of FIX 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 FIX<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. FIX can also be cleaved into inactive products by thrombin and by elastase.

The activity of FIX<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 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:

Goat

#### Immunogen:

Human Factor IX purified from plasma.

#### Concentration:

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

#### Applications:

Suitable as a source of peroxidase labeled antibodies to FIX.

#### Rz Ratio (Reinheitszahl, A<sub>403</sub>/A<sub>280</sub>):

XXXX as determined spectrophotometrically.