

# PRODUCT INFORMATION



## Coagulation Factor IX (human, recombinant)

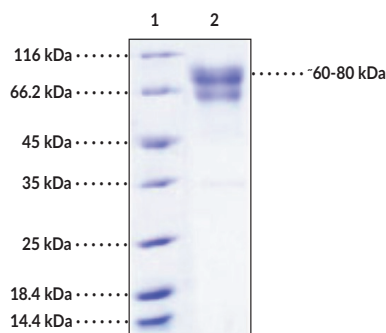
Item No. 31838

### Overview and Properties

<b>Synonyms:</b>	Christmas Factor, Coagulation Factor 9, Factor IX, FIX, Plasma Thromboplastin Component, PTC
<b>Source:</b>	Active recombinant human C-terminal His-tagged coagulation factor IX expressed in HEK293 cells
<b>Amino Acids:</b>	29-461
<b>Uniprot No.:</b>	P00740
<b>Molecular Weight:</b>	50 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥95% estimated by SDS-PAGE
<b>Supplied in:</b>	Lyophilized from sterile PBS, pH 7.4
<b>Endotoxin Testing:</b>	<1.0 EU/μg, determined by the LAL endotoxin assay
<b>Specific Activity:</b>	Measured by its ability to cleave the peptide substrate Z-D-Arg-Gly-Arg-pNA. The specific activity is >20 pmols/min/μg.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2: Coagulation Factor IX

**SDS-PAGE Analysis of Coagulation Factor IX.** This protein has a calculated molecular weight of 50 kDa. It has an apparent molecular weight of approximately 60-80 kDa by SDS-PAGE under reducing conditions due to glycosylation.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/16/2023

**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

Coagulation Factor IX is a vitamin K-dependent plasma serine protease involved in the intrinsic and extrinsic pathways of the blood coagulation cascade.<sup>1,2</sup> It is composed of an N-terminal domain containing carboxylated glutamic acid residues (Gla domain), two EGF-like domains, a linker module, and a C-terminal trypsin-like catalytic peptidase domain.<sup>3</sup> Coagulation Factor IX is produced as an inactive precursor, which is activated to Factor IXa $\beta$  following signal peptide cleavage, glycosylation, and further cleavage by Factor XIa or VIIa.<sup>3</sup> In its activated form, Factor IXa $\beta$ , in complex with Factor VIIIa, converts Factor X to Factor Xa, the activated form.<sup>4</sup> Mutations in *F9*, the gene encoding Factor IX, are responsible for the X-linked bleeding disorder hemophilia B, characterized by mild to severe deficits in blood coagulation.<sup>1</sup> Cayman's Coagulation Factor IX (human, recombinant) protein can be used for enzyme activity applications. This protein consists of 444 amino acids, has a calculated molecular weight of 50 kDa, and a predicted N-terminus of Thr29 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 60-80 kDa due to glycosylation.

## References

---

1. Tjärnlund-Wolf, A. and Lassila, R. Phenotypic characterization of haemophilia B - Understanding the underlying biology of coagulation factor IX. *Haemophilia* **25(4)**, 56-574 (2019).
2. Vermeer, C. Vitamin K: The effect on health beyond coagulation - An overview. *Food Nutr. Res.* **56(1)**, (2012).
3. Brandstetter, H., Bauer, M., Huber, R., *et al.* X-ray structure of clotting factor IXa: Active site and module structure related to Xase activity and hemophilia B. *Proc. Natl. Acad. Sci. USA* **92(21)**, 9796-800 (1995).
4. Schenone, M., Furie, B.C., and Furie, B. The blood coagulation cascade. *Curr. Opin. Hematol.* **11(4)**, 272-277 (2004).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM