

# PRODUCT INFORMATION



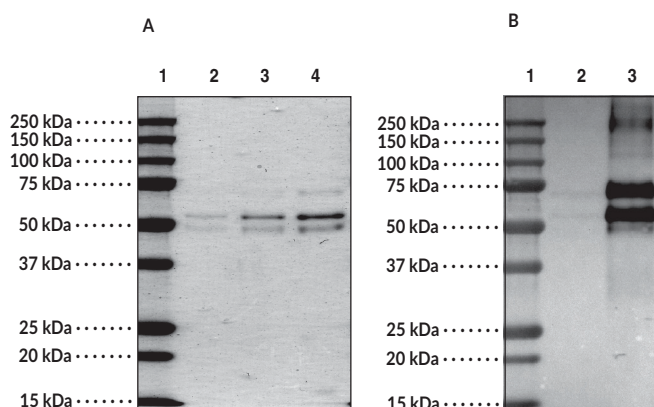
## Carbamylated Human Fibrinogen

Item No. 21370

### Overview and Properties

**Synonym:** Ca-Fibrinogen  
**Source:** Fibrinogen purified from human plasma and modified with potassium cyanate  
**Molecular Weight:**  $\alpha$  chain isoform 1 (95 kDa),  $\alpha$  chain isoform 2 (69.8 kDa),  $\beta$  chain (55.9 kDa), and isoform  $\gamma$ -B chain (51.5 kDa)  
**Storage:** 4°C (as supplied)  
**Stability:**  $\geq 2$  years  
**Supplied in:** A solution in PBS, pH 7.4

### Images



**Panel A:** Analysis of carbamylated human fibrinogen stained with coomassie on 12% SDS-PAGE.

**Lane 1:** MW Markers

**Lane 2:** Human fibrinogen (1  $\mu$ g)

**Lane 3:** Human fibrinogen (2  $\mu$ g)

**Lane 4:** Human fibrinogen (4  $\mu$ g)

**Panel B:** Western blot analysis of human fibrinogen carbamylation.

**Lane 1:** MW Markers

**Lane 2:** Human fibrinogen

**Lane 3:** Carbamylated human fibrinogen

Human fibrinogen (lane 2) and carbamylated human fibrinogen (lane 3) were reacted with a biotin labeled probe specific for carbamylated lysines and run on 12% SDS-PAGE alongside MW markers (lane 1). The proteins were blotted to nitrocellulose and detected using streptavidin-HRP.

**Representative gel image shown; actual purity may vary between each batch but protein will be  $\geq 95\%$  pure.**

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  
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## Description

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Citrullination and carbamylation are two post-translational modifications that result in the generation of citrulline and homocitrulline, two highly related, non-standard amino acids. While citrullination of arginine is catalyzed by peptidylarginine deiminases (PADs), homocitrulline results from the non-enzymic reaction of cyanate with lysine. Carbamylation occurs at low levels in healthy individuals, but at higher levels in several clinical conditions such as atherosclerosis, kidney disease, and inflammation.<sup>1-3</sup> Carbamylation can lead to changes in protein function, cellular function, and generation of an immune response to homocitrulline containing proteins.<sup>1-3</sup> This product contains carbamylated human fibrinogen ( $\alpha$ ,  $\beta$  and  $\gamma$  chains).

## References

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1. Shi, J., van Veelen, P.A., Mahler, M., *et al.* Carbamylation and antibodies against carbamylated proteins in autoimmunity and other pathologies. *Autoimmun. Rev.* **13(3)**, 225-230 (2014).
2. Pruijn, G.J.M. Citrullination and carbamylation in the pathophysiology of rheumatoid arthritis. *Front. Immunol.* **6**, 192 (2015).
2. Mastrangelo, A., Colasanti, T., Barbati, C., *et al.* The role of posttranslational protein modifications in rheumatological diseases: Focus on rheumatoid arthritis. *J. Immunol. Res.* **2015** 712490 (2015).

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