

# PRODUCT INFORMATION



## Carbamylated Fetal Calf Serum

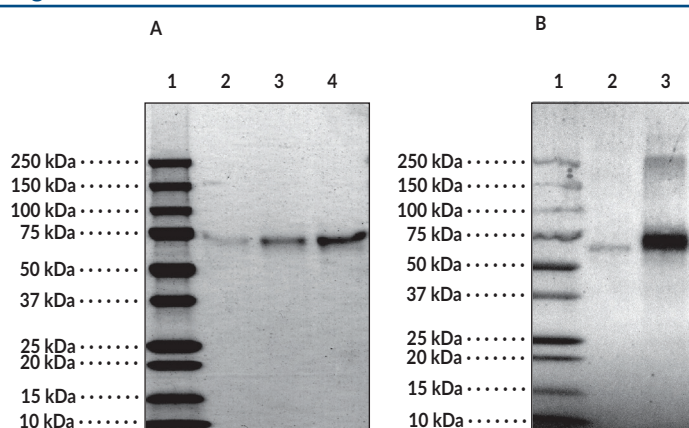
Item No. 21097

### Overview and Properties

**Synonyms:** Ca-FCS, Carbamylated FCS  
**Source:** Fetal calf serum modified with potassium cyanate  
**Storage:** -20°C (as supplied)  
**Stability:** ≥2 years  
**Purity:** ≥95% estimated by SDS-PAGE  
**Supplied in:** *batch specific*

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

### Images



**Panel A:** Analysis of carbamylated fetal calf serum (FCS) stained with coomassie on 12% SDS-PAGE.

Lane 1: MW Markers

Lane 2: Carbamylated FCS (1 µg)

Lane 3: Carbamylated FCS (2 µg)

Lane 4: Carbamylated FCS (4 µg)

**Panel B:** Western blot analysis of FCS carbamylation.

Lane 1: MW Markers

Lane 2: FCS

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 fetal calf serum.

## 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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