PRODUCT INFORMATION

Carbamylated Core Histones (bovine)

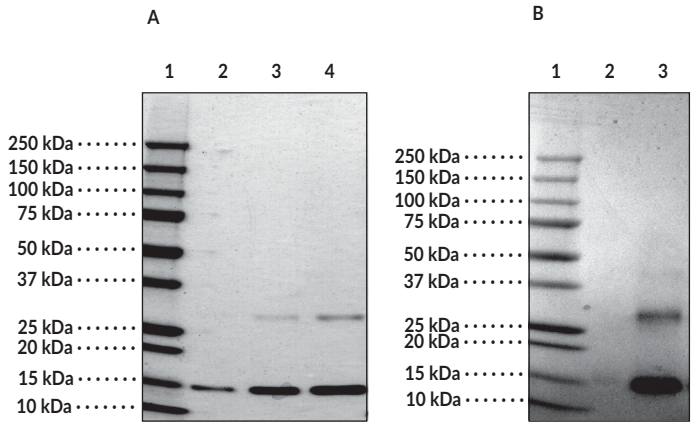
Item No. 21076

Overview and Properties

Synonym: Ca-Core Histones (bovine)
Source: Histones from calf thymus 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 calf thymus stained with coomassie on 4-20% SDS-PAGE.
Lane 1: MW Markers
Lane 2: Carbamylated calf thymus histone (1 µg)
Lane 3: Carbamylated calf thymus histone (2 µg)
Lane 4: Carbamylated calf thymus histone (4 µg)

Panel B: Western blot analysis of calf thymus histone carbamylation.
Lane 1: MW Markers
Lane 2: Calf thymus histone
Lane 3: Carbamylated calf thymus histone
Calf thymus histone (lane 2) and carbamylated calf thymus histone (lane 3) were reacted with a biotin labeled probe specific for carbamylated lysines and run on 4-20% SDS-PAGE alongside MW markers (lane 1). The proteins were blotted to PVDF and detected using streptavidin-HRP.

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

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Description

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.[1-3] Carbamylation can lead to changes in protein function, cellular function, and generation of an immune response to homocitrulline containing proteins.[1-3] This product contains a carbamylated mixture of H1, H2A, H2B, H3, and H4 histones isolated from calf thymus.

References

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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