

# BIOACTIVE PROTEINS

## Calmodulin

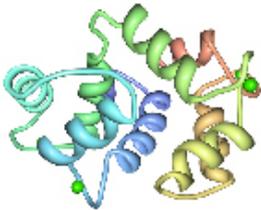


### Features

- Calcium-binding protein
- Intracellular receptor protein
- Homogenous and highly pure
- Lyophilized powder

### Product description

Calmodulin is a bioactive protein isolated from bovine testes with a molecular weight of 16,7 kDa. The material is derived from cattle born and raised in Sweden, a country where BSE is non-existing. Calmodulin is a calcium-binding protein expressed in many eukaryotic cells. By binding to and regulating various protein targets, it affects cellular processes such as metabolism, nerve growth, apoptosis, inflammation, muscle contraction and memory.



**Figure 1:** Crystal structure of bovine Ca<sup>2+</sup> calmodulin (1)

Many proteins use Calmodulin as a calcium sensor and signal transducer, as the proteins themselves are not able to bind calcium. The molecule can bind a maximum of four calcium ions and by undergoing post-translational modifications such as acetylation, phosphorylation, proteolytic cleavage and methylation, its functions can potentially be altered.

Medicago's Calmodulin is supplied as a lyophilized white powder from 50 mM NH<sub>4</sub>HCO<sub>3</sub> with 10 μM CaCl<sub>2</sub>. No preservatives are added. The protein content is analyzed by amino acid assay and is never less than 80 % of weighed substance.

### Applications

- Protein calcium-binding studies on the regulation of a multitude of different protein targets.
- Activation of cyclic nucleotide-dependent phosphodiesterase
- Co-factor/activator for kinase studies
- Studies of edema factor toxin and anthrax bacteria

### Specifications

Appearance	White lyophilized powder
Source	Bovine testes
Molecular weight	16,7 kDa
Binding specificity	Calcium
Activity	The material is subjected to an acid treatment <= pH 5.5 for at least 30 min.
Microorganisms	< 100 CFU/g
Protein content	> 80%
Identity	SDS-PAGE, one single band < 20 kDa
Shelf life	> Five years when stored at -20°C

### Directions for use

The product is shipped at -20°C however for over-the-day transport it may be shipped at ambient temperature. The protein may be reconstituted with 2 ml of deionized water before use, spin the vial gently until full dissolution.



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## Shipping and storage

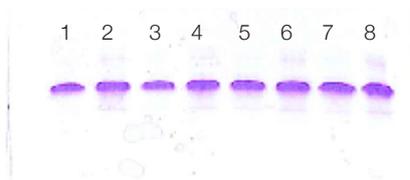
The product may be shipped at ambient temperature. The lyophilized powder is stable for more than five years from production date when stored at -20°C in closed container. After reconstitution with deionized water, the solution may be stored frozen in working aliquots for up to 12 months.

## Tips and hints

Avoid repeated freezing and thawing.

## Certifications

Medicago's laboratories and manufacturing site in Uppsala are ISO 9001:2008 and ISO 13485:2003 certified. Each stage of the manufacturing process is controlled and monitored by stringent quality control procedures to guarantee the highest possible quality and lot-to-lot reproducibility.



**Figure 2:** SDS-PAGE, Calmodulin.

Lane 1, 3, 5, 7: Reference sample.

Lane 2, 4, 6, 8: Lot specific sample.

## Ordering information

Article no.	Product name	Pack size
05-0103-2	Calmodulin	2.5 mg
05-0103-1	Calmodulin	1 mg

## References

(1) A closed compact structure of native ca (2+)-calmodulin. Fallon, J.L., Quijcho, F.A. (2003) Structure 11: 1303–7.