

## Botulinum C3 Enzyme, functional

01-513 10 µg

**Storage:** Ship at 4°C or -20°C and store at -20°C (-80°C for long-term storage).

**Applications:**

- 1) For the studies on the Rho-dependent signaling pathways in animal cells in vivo and in vitro (1).
- 2) ADP-ribosylation of small GTP proteins, such as Rho and Rac proteins (2).

**Form:** 1.33 mg/ml in 5 mM sodium phosphate buffer (pH 6.0), 50% glycerol

**Purity:** More than 90 % purity by SDS-PAGE (CBB staining)

**Activity tested:** Stimulation of human keratinocytes in culture was observed at 50 ng/ml.

\* No toxic effect was observed in two mice injected with 5 µg of C3 enzyme, showing little contamination of lethal neurotoxins from the *botulinus* culture in this preparation.

**Background:** This product was highly purified from the supernatant of the culture of *Clostridium botulinum* type C by cation exchange, hydroxyapatite and gel filtration columns. This toxin ADP-ribosylates Rho and Rac, which are low-molecular weight GTP-binding proteins of animal cells, and interrupts the downstream signal transduction pathways (1). The molecular weight is 24kDa (Fig. 1).

**Data Link:** UniProtKB/Swiss-Prot [P15879](#) (ARC3\_CBDPSwiss-Prot)

**References:** This product has been used in Ref.2.

1. Fiorentini C *et al* "Bacterial toxins and the Rho GTP-binding protein: what microbes teach us about cell regulation." *Cell Death Differ* 5:720-728 (1998) [PMID: 10200530](#)
2. Moriishi K *et al* "Purification and characterization of ADP-ribosyltransferases (exoenzyme C3) of *Clostridium botulinum* type C and D strains." *J Bacteriology* 173: 6025-6029 (1991) [PMID: 1917836](#)

\*Research use only, not for human use.

\*MSDS (Material Safety Data Sheet) is in the next page.

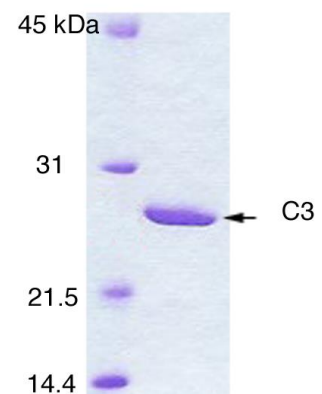


Fig.1 Polyacrylamide gel electrophoresis of C3 enzyme

## MSDS (Material Safety Data Sheet) Botulinum C3 Enzyme

**Hazardous Ingredient:** Botulinum C3 enzyme with  $\geq 90\%$  purity. It contains little lethal neurotoxin produced and excreted to culture medium by *Clostridium botulinum* type C, as examined by i.m.injection into mice. However, caution should be taken in handling the enzyme, since trace amounts of contamination of the toxin is not completely eliminated.

**Health Hazard:** The C3 enzyme has no lethal toxicity, but has cytotoxic activity and may cause irritation by skin contact, eye contact or injection.

**Emergency Procedure:** If skin pricking occurs accidentally, bleed and perform vigorous flushing of the area with large amounts of water. If injection occurs, seek a physician's advice immediately.

### Handling

It should be handled carefully. Avoid mouth pipetting. Wear protective gloves on handling the toxin. Avoid contact with open wounds. Wash thoroughly any area of the body that makes contact with the toxin.