



Streptolysin O (Hemolytic *streptococcus*)

BACKGROUND

Streptolysin O (SLO) is a membrane-damaging extracellular toxin produced by hemolytic *streptococci*. The membrane-damaging activity is measured by hemolysis of red-blood cells. SLO is easily inactivated in the presence of oxygen but can be reactivated by thiol compounds, so it is also called thiol-activated cytolysin (2). SLO is produced not only by Group A hemolytic *streptococci* but also by Group C and Group G strains. The amino acid sequences are highly conserved among them and their homology is over 98%.

The product was highly purified from *E.coli* over-expressing SLO of Group C hemolytic *streptococci*. The specific activity is as high as 1,900,000 hemolytic units (HU) /mg and the product forms a big hole on the cell membrane, which enables the introduction of protein inside the cells *in vivo* (1).

Applications

- 1) Antigen for the measurement of anti-streptolysin O antibody (ASO) (diagnostic reagent)
- 2) Reagent for membrane pore formation to introduce small-to-macromolecules into living cells

Specification

Measurement of the activity: Definition of 1HU is activation of 50% hemolysis using 3% sheep red blood cells

Purity: Over 98% by SDS-PAGE

Form: 1 mg/ml in PBS (-), 1 mM DTT, 50% glycerol, sterilized by filtration

Size: 20 ug

Storage: -20°C(long period, -70°C). Inactivated SLO can be reactivated by thiol reagents such as 20 mM cysteine or 10 mM DTT (2)

Data Link Swiss-Prot [Streptolysin O](#)

References : This product has been used in Ref. 3.

1. Walev I *et al* "Delivery of proteins into living cells by reversible membrane permeabilization with streptolysin-O." *PNAS* **98**: 3185-3190 (2001) PMID: [11248053](#)
2. Palmer M "The family of thiol-activated, cholesterol-binding cytolysins." *Toxicon* **39**: 1681-1689 (2001) PMID: [11595631](#)
3. Maeda, Y. *et al*. "GPHR is a novel anion channel critical for acidification and functions of the Golgi apparatus." *Nat. Cell Biol.* **10**: 1135-45 (2008) PMID: [18794847](#)

***This product is only for research use, not for human use.**

It should be handled carefully because of high toxicity (mouse LD50, 8ug/kg).
Be careful not to inject it to yourself.

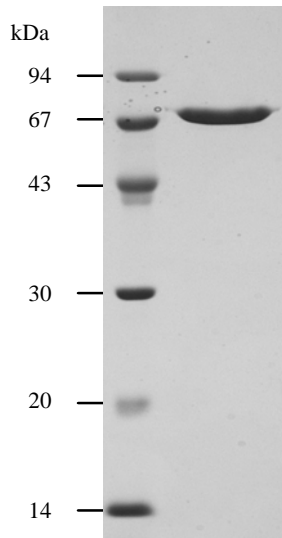


Fig1. Purified SLO analysed
by SDS-PAGE.

For research use only. Not for clinical diagnosis.

Manufactured by BioAcademia, Inc.



COSMO BIO Co., LTD.
Inspiration for Life Science

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Material Safety Data Sheet

Product name: Streptolysin O of group C streptococcus expressed as His6-tagged recombinant protein in E. coli and highly purified (>95%)

MSDS Date: May 3, 2012

MSDS Number: 01-531

Information about health hazards

Target: Cholesterol on human and animal cell membrane

Health Hazards: May be fatal if enters bloodstream.

LD50 - Lethal dose (50 percent kill) intravenous,

Rabbit, 1500 ng/kg (Ref :PHTHDT Pharmacology and Therapeutics. (Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 0BW, UK) Vol.(Issue) 11, Page 661,1981)

Guinea pig, 12 ug/kg (Ref: BICMBE Biochimie. (SPPIF, B.P.22, F-41353 Vineuil, France, Vol.(Issue)55,Page 1187, 1973)

Toxicity is much less when introduced via other routes of entry like Interdermal injection

First Aid Measures

Ingestion: Wash out with large amount of water. When swallowed, get medical attention if any discomfort arises.

Eye contact: Wash with large amounts of water while lifting eye lids. Call medical doctor if irritation continues.

Skin contact: Wash off with soap and plenty of water.

Spill release: Wear glove and sweep up the spill and then wash spill site. All the contaminants should be autoclaved at 121°C for 20 min before disposal.

Handling and Storage

Handling and Storage Precautions: BIOHAZARD. DO NOT USE IF SKIN IS CUT OR SCRATCHED.

Other Precautions: CAUTION: SUBSTANCE NOT YET FULLY TESTED.

Exposure Controls/Personal Protection

Protective Gloves: COMPATIBLE CHEMICAL-RESISTANT GLOVES.

Eye Protection: ANSI APPROVED CHEMICAL WORKERS GOGGLES .

Other Protective Equipment: EYE WASH AND DELUGE SHOWER MEETING ANSI DESIGN CRITERIA .

Work Hygienic Practices: WASH THOROUGHLY AFTER HANDLING.

Disposal Considerations

Waste Disposal Methods: Autoclave the waste at 121°C for 20 min.

Regulatory Information

Federal Regulatory Information: EUROPEAN INFORMATION: CAUTION: SUBSTANCE

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