

## Streptolysin O (Hemolytic *streptococcus*)

01-531      20 u g

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

**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](#)

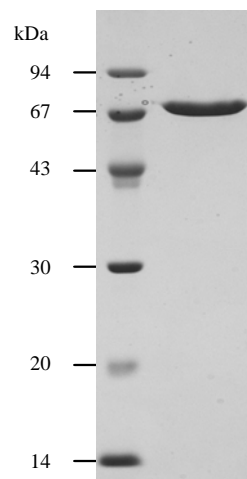


Fig1. Purified SLO analysed by SDS-PAGE.

**\*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. **Material Safety Data Sheet next page.**

## 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

### Responsible Party

Company Name: BioAcademia Inc.

Address: 7-7-18 Saito-Asagi, Ibaraki City, Osaka 567-0085, Japan

Tel: 81-72-643-4660

### 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  
NOT YET FULLY TESTED.