Streptolysin O (Hemolytic *streptococcus*)

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
   (See Ref 2 for Protocol)

Specification

Measurement of the activity: Definition of 1HU is activation of 50% hemolysis by incubating 3% sheep red blood cells at 37°C for 30 min.

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.


*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)
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° 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.