

Product Information

Streptolysin O from *Streptococcus pyogenes*

≥ 1,000,000 units/mg protein, recombinant, lyophilized powder, expressed in *E. coli*

SAE0089

CAS Registry Number: 98072-47-0

Synonyms: SLO

Molecular mass (calculated): 60,144 Da

Product Description

Streptolysin O (SLO) is an immunogenic, oxygen-labile hemolytic exotoxin. SLO is released extracellularly along with other toxins, including streptolysin S, during the growth of most strains of group A and many strains of groups C and G *Streptococci*, particularly those causing human infections. SLO is the major streptococcal toxin responsible for cardiomyocyte dysfunction and cardiotoxic and neurotoxic effects.^{1,2} SLO and Streptolysin S differ from each other in that SLO is immunogenic and oxygen-labile, while Streptolysin S is oxygen-stable and nonimmunogenic, and only active when associated with a carrier protein.³ The hemolytic activity of SLO is mediated by formation of multimeric nanopores in cholesterol-containing lipid membranes. Dithiothreitol reversibly activates SLO.¹

SLO may be used for cell permeabilization or hemolysis. The susceptibility of hemolysis by SLO varies significantly for erythrocytes from different animal species.¹ Permeabilization of cells using SLO has been performed on multiple cell types and for various applications, such as introducing antisense oligonucleotides into cultured eukaryotic cells,³ investigating the effect of guanine nucleotide analogues on phosphatidylinositol metabolism, and protein kinase C (PKC) activation in live human T lymphocytes,⁴ monitoring cholesterol oxidation within a membrane lipid bilayer,⁵ and labeling proteins inside living cells using external fluorophores.⁶

Several research publications⁸⁻¹¹ and theses¹² have cited use of SAE0089 in their protocols.

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Product

This product is produced by recombinant expression in *E. coli* and contains the complete native protein sequence of SLO (UniProt ID P0DF96, aa 34-571) without added purification tags. This product is lyophilized from a solution containing 20 mM sodium HEPES (pH 7.5), with 150 mM NaCl and 2 mM EDTA.

Specific activity: ≥ 1,000,000 units/mg protein

Unit Definition: One unit will cause 50% lysis of 50 µL of a 2% human red blood cell suspension in phosphate buffered saline (pH 7.4) at 37 °C for 30 minutes.

Storage/Stability

The lyophilized product should be stored at 2-8 °C.

Preparation Instructions

Reconstitute by adding water or buffer of neutral pH into the vial. Gently rotate the vial. It is recommended to reconstitute the vial contents to a concentration of 0.2-1 million units/mL (0.1-0.5 mL for a 100 KU vial).

After reconstitution, the product can be stored at 2-8 °C for up to 1 month. Solutions of SLO may be stored longer-term in aliquots at -20 °C. Addition of reducing agents, such as 20 mM cysteine² or 10 mM DTT,⁷ can preserve SLO activity in solution.

References

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