



## Product Information

### Streptolysin O from *Streptococcus pyogenes*

Product Numbers **S 5265** and **S 0149**

Storage Temperature 2–8 °C

CAS# 98072-47-0

Synonym: SLO

#### Product Description

Streptolysin O (SLO) is a single polypeptide chain that is not glycosylated. It has an approximate molecular weight of 69 kDa<sup>1,3</sup> and an isoelectric point (pI) of 6.0-6.4.<sup>1</sup>

Streptolysin O is an immunogenic, oxygen-labile toxin, which is reversibly activated by dithiothreitol.<sup>3</sup> It is released into the extracellular medium 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*.<sup>2,3</sup> Streptolysin S differs from SLO in that it is oxygen-stable, nonimmunogenic, and only active when associated with a carrier protein.<sup>4</sup> SLO may be used for cell permeabilization or hemolysis. Erythrocytes from different animal species have significantly different susceptibility to hemolysis by SLO.<sup>3</sup>

SLO has been used to introduce oligonucleotides into cultured eukaryotic cells by permeabilization. Mouse kidney cells were first trypsinized, then pelleted, and resuspended in a buffered SLO solution. After 5 minutes, permeabilization was stopped.<sup>4</sup> SLO has also been used to permeabilize human T lymphocytes.<sup>5</sup>

Kinetic studies have been performed on partially purified SLO. Cholesterol was found to inhibit hemolytic activity when added prior to the incubation of SLO with rabbit erythrocytes; however, no inhibition was observed when cholesterol was added after the initiation of hemolysis.<sup>6</sup>

The products are lyophilized from a 10 mM Tris buffer solution containing 3 mM sodium azide, 5 mM EDTA, and 1 mM PMSF. The protein content is 3-9% (Lowry) and each vial contains approximately 0.7 mg solid. S 0149 has been  $\gamma$ -irradiated.

Specific Activity: 2,000–10,000 units/mg protein

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

#### Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

SLO is soluble in cold water (1 mg/ml). SLO is readily oxidized in solution. The enzyme activity is significantly increased in the presence of reducing agents, 20 mM cysteine or 100 mM dithiothreitol.<sup>2</sup>

After reconstitution, the solution should be stored at –20 °C in aliquots and any unused portions should be discarded. A SLO solution will lose approximately 50% activity within 10 days when stored at 2-8 °C. It is recommended to freeze solutions at a minimal concentration of 0.2 mg/ml.

#### Storage/Stability

It is recommended to store streptolysin O at 2-8 °C. The lyophilized products are stable for up to three years when stored properly.

## References

1. Bhakdi, S. et al., Infection and Immunity, **46**, 394 (1984).
2. Alouf, J.E., and Geoffroy, C., Methods in Enzymology, **165**, 52 (1988).
3. Alouf, J.E., Pharmacol. Ther., **11**, 661-717 (1980).
4. Barry, E. et al., Biotechniques, **15**, 1016 (1993).
5. Graves, J.D. et al., Biochem. J., **265**, 407-413 (1990).
6. Kanbayashi, Y. et al., J. Biochem., **71**, 227-237 (1972).

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