

<b>Product Name:</b>	Dihydrostreptomycin sulfate
<b>Product Number:</b>	D003
<b>CAS Number:</b>	5490-27-7
<b>Molecular Formula:</b>	$(C_{21}H_{41}N_7O_{12})_2 \cdot 3 H_2SO_4$
<b>Molecular Weight:</b>	1461.42
<b>Form:</b>	Powder
<b>Appearance:</b>	White or almost white powder
<b>Solubility:</b>	freely soluble in aqueous solution.
<b>Source:</b>	Semi-synthetic
<b>pH:</b>	4.5-7.0
<b>Storage Conditions:</b>	2-8°C
<b>Description:</b>	Dihydrostreptomycin sulfate, a derivative of streptomycin, is a semi-synthetic aminoglycoside with bactericidal properties. The antibiotic interferes with bacterial protein synthesis and is commonly used to study aminoglycoside uptake. It is freely soluble in aqueous solution.
<b>Mechanism of Action:</b>	<p>Aminoglycosides target the 30S ribosomal subunit (irreversible binding to S12 protein) resulting in an inability to read mRNA since this interferes with the initiation complex between the mRNA and the bacterial ribosome. This leads to the synthesis of faulty proteins which results in death of the bacterial cell.</p> <p>Dihydrostreptomycin inhibited the induction of beta-galactosidase in <i>E. coli</i>. It also caused accumulation of pyruvate, similar to known inhibitors of terminal respiration (Bragg and Polglase 1963).</p>
<b>Spectrum:</b>	Active against most Gram-positive and Gram-negative organisms, and <i>Mycobacterium</i> .

### Microbiology Applications

#### Media Supplements

Dihydrostreptomycin can be used as a selective agent in several types of isolation media:

STAA Agar - STAA Selective Supplement

STAA Agar - STA Selective Supplement

**References:**

Bragg, PD and Polglase WJ (1963) Action of dihydrostreptomycin and antagonism by cations." J. Bacteriol. 85(3): 590-94 PMID 14042936

Fountain MW, Weiss SJ, Fountain AG, Shen A, Lenk RP (1985) Treatment of *Brucella canis* and *Brucella abortus* *in vitro* and *in vivo* by stable plurilamellar vesicle-encapsulated Aminoglycosides. J. Infect. Dis 152(3):529-535 PMID 2411828

Richardson, D et al (1977) Evaluation of a cell culture assay for determination of water quality of oil-refinery. Environ. Contam. Toxicol. (1977) 18: 683-690 PMID 597623

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