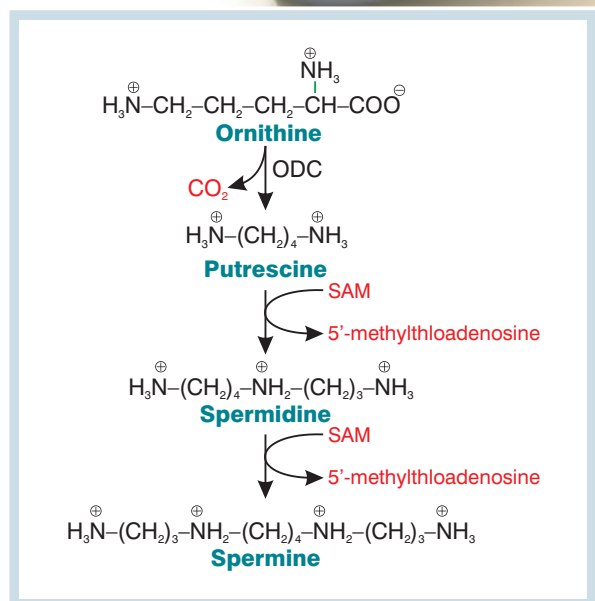


# Polyamines

## Spermine, Spermidine & Putrescine Dihydrochloride



**Polyamines** are low molecular weight, aliphatic polycations found in the cells of all living organism.

Due to their positive charge, these compounds can bind various cellular macromolecules, including DNA, RNA, chromatin and proteins by electrostatic linkages. Because of these functions these compounds have been implicated in myriad fundamental cellular processes, including regulation of gene expression, translation, cell proliferation, modulation of cell signaling, and membrane stabilization. The high purity compounds supplied by SRL are appropriate for such applications of Polyamines in research and quality control testing.

**Polyamine biosynthesis** commences with Ornithine (the amino acid), which is converted into Putrescine via the actions of an enzyme known as Ornithine Decarboxylase (ODC).

Putrescine is further activated with the addition of methyl groups to first produce Spermidine and then Spermine.

The source of these methyl groups is a molecule known as S-Adenosyl-L-Methionine, or SAM.

**Spermine** is a biogenomic Polyamine involved in cellular metabolism and found in wide variety of organisms and tissues.

It is derived from Spermidine and found as a polycation at all pH values. Spermines are essential for cell growth and can be used for DNA precipitation and crystallization of DNA. It is also involved in nucleic acid packaging or as a gene transfer agent.

**Spermine Tetrahydrochloride** is used to precipitate DNA from low salt aqueous buffers.

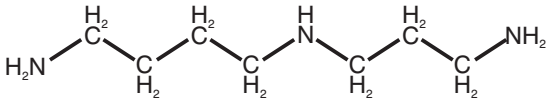
	<b>Spermine*</b> free base <b>91710</b>	<b>Spermine*</b> Tetrahydrochloride <b>22310</b>
Structure		
CAS	71-44-3	306-67-2
Synonyms	N,N'- Bis(3-aminopropyl)1,4-diaminobutane, Gerontine, Musculamine, Neuridine	N',N'-Bis(3-aminopropyl)-1,4-butanediamine tetrahydrochloride
Molecular Formula	$\text{C}_{10}\text{H}_{26}\text{N}_4$	$\text{C}_{10}\text{H}_{26}\text{N}_4 \cdot 4\text{HCl}$
Assay	min. 99%	min. 99%
Molecular Weight	202.35	348.18
Spermidine	max. 0.5%	–
Available packing	250mg, 1g & 5g	1g, 5g, 10g & 25g

# Polyamines

Spermine, Spermidine & Putrescine Dihydrochloride

## Spermidine\*

17030

Structure	
CAS	124-20-9
Synonyms	1,8-Diamino-4-azaoctane N-(3-aminopropyl)-1,4-diaminobutane
Molecular Formula	C <sub>7</sub> H <sub>19</sub> N <sub>3</sub>
Assay	min. 99%
Molecular Weight	145.25
Spermidine	max. 0.2%
Available packing	250mg, 1g & 5g

**Spermidine** is biogenic polyamine and a precursor of Spermine. It is essential for regulation and promotion of plant growth.

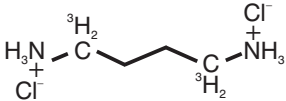
It assists in the regulation of tRNA methyltransferase activity and it stimulates T4 polynucleotide kinase activity & T7 RNA polymerase activity.

Spermidine binds to and precipitates DNA and is also utilized in purifying DNA-binding proteins.

Spermidine can be used in electroporation while transferring the DNA into the cell under the electrical impulse.

## Putrescine Dihydrochloride\*

81343

Structure	
CAS	333-93-7
Synonyms	1,4-Diaminobutane dihydrochloride Tetramethylenediamine dihydrochloride
Molecular Formula	C <sub>4</sub> H <sub>12</sub> N <sub>2</sub> ·2HCl
Assay	min. 99%
Molecular Weight	161.08
Available packing	1g, 5g, 25g & 100g

**Putrescine** is a biogenic polyamine and a precursor of Spermidine. It is synthesized in small quantities by healthy living cells by the action of Ornithine Decarboxylase (ODC).

Putrescine can bind to the polyamine modulatory site of the NMDA (N-methyl D-aspartate) receptor and potentiate NMDA-induced currents.

Putrescines are essential growth factors necessary for cell division.

\* Storage: 0-4°C

Please contact:

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