

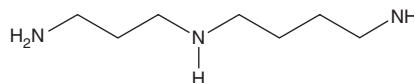
# PRODUCT INFORMATION



## Spermidine

Item No. 14918

CAS Registry No.: 124-20-9  
Formal Name: N<sup>1</sup>-(3-aminopropyl)-1,4-butanediamine  
Synonyms: 1,8-Diamino-4-azaoctane,  
1,5,10-Triazadecane  
MF: C<sub>7</sub>H<sub>19</sub>N<sub>3</sub>  
FW: 145.3  
Purity: ≥98%  
Supplied as: A neat oil  
Storage: -20°C  
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Spermidine is supplied as a neat oil. A stock solution may be made by dissolving the spermidine in water. The solubility of spermidine in water is approximately 50 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Spermidine is an endogenous polyamine.<sup>1</sup> It is formed from putrescine by spermidine synthase. Spermidine (25 μM) inhibits the activity of the human inward-rectifying potassium channel K<sub>ir</sub>2.3 in a patch-clamp assay.<sup>2</sup> It induces autophagy in HeLa cells when used at a concentration of 100 μM and increases the lifespan of *D. melanogaster*, yeast, and *C. elegans*.<sup>3</sup> Spermidine (30 mM in the drinking water) reduces demyelination of the optic nerve and disease severity in a mouse model of experimental autoimmune encephalomyelitis (EAE).<sup>4</sup> It reduces increases in blood pressure, left ventricular posterior wall thickness, and heart weight in salt-sensitive Dahl rats fed a high-salt diet, a model of hypertension-induced congestive heart failure.<sup>5</sup> Formulations containing spermidine have been used as dietary supplements.

### References

1. Madeo, F., Eisenberg, T., Pietrocola, F., *et al.* Spermidine in health and disease. *Science* **359**(6374), ean2788 (2018).
2. Lopatin, A.N., Makhina, E.N., and Nichols, C.G. Potassium channel block by cytoplasmic polyamines as the mechanism of intrinsic rectification. *Nature* **372**(6504), 366-369 (1994).
3. Eisenberg, T., Knauer, H., Schauer, A., *et al.* Induction of autophagy by spermidine promotes longevity. *Nat. Cell Biol.* **11**(11), 1305-1314 (2009).
4. Guo, X., Harada, C., Namekata, K., *et al.* Spermidine alleviates severity of murine experimental autoimmune encephalomyelitis. *Invest. Ophthalmol. Vis. Sci.* **52**(5), 2696-2703 (2011).
5. Eisenberg, T., Abdellatif, M., Schroeder, S., *et al.* Cardioprotection and lifespan extension by the natural polyamine spermidine. *Nat. Med.* **22**(12), 1428-1438 (2016).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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