

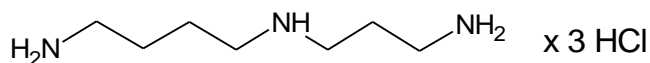


## Test Report

**Sample name:** Spermidine trihydrochloride  
**Client:** Hansen Sp. z o.o., ul. Zaborowska 8, 05-083 Zaborów, Poland  
**Purpose of test:** Verification of delivered product  
**Sample description:** Spermidine trihydrochloride  
**Brand name:** Hansen Supplements

### Description of substance:

**Sample size:** 10g  
**Property:** White powder  
**Formula:**  $\text{NH}_2(\text{CH}_2)_3\text{NH}(\text{CH}_2)_4\text{NH}_2 \cdot 3\text{HCl}$   
**CAS number:** 334-50-9  
**Structure:**



**Batch No.:** -  
**Date received:** 07.10.2021  
**Test items:** Identification of substance, purity, heavy metals  
**Summary:** The sample has been identified and found to be of high quality  
**Measured purity:** **Above 98%** according to <sup>1</sup>H NMR as well as <sup>13</sup>C analyses.  
Appropriate spectrum is shown in Fig. 1  
Authentication method: Standard and literature: D'Agostino, L. and Di Luccia, A., 2002. Polyamines interact with DNA as molecular aggregates. *European journal of biochemistry*, 269(17), pp.4317-4325; [https://hmdb.ca/spectra/nmr\\_one\\_d/1671](https://hmdb.ca/spectra/nmr_one_d/1671) and ACDLABS database.

### All values are within the relevant standards

Heavy metals: n.d.  
Pb (Lead): n.d.

Hg (Mercury): n.d.



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Cd (Cadmium): n.d.

As (Arsen): n.d.

**Comments:**

n.d. – not detected, below limit of detection on AAS spectr AA240FS + AA240Z + GTA120

**Date:** 12.10.2021

**Tested by:** Antoni Szumny

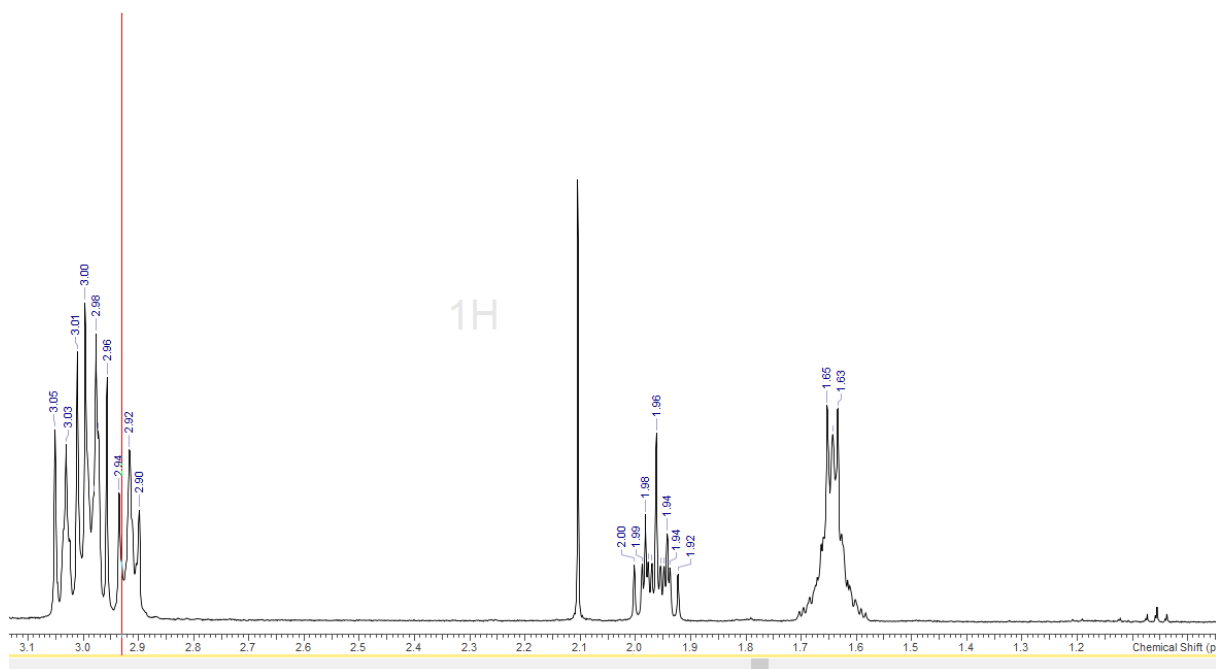


Figure 1.  $^1\text{H}$  spectrum of Spermidine trihydrochloride in  $\text{D}_2\text{O}$

12.10.2021 Antoni Szumny