

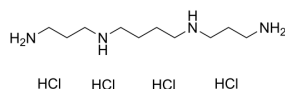
## Spermine (tetrahydrochloride)

Cat. No.: HY-B1777A  
 CAS No.: 306-67-2  
 Batch No.: 276055  
 Chemical Name: 1,4-Butanediamine, N1,N4-bis(3-aminopropyl)-, hydrochloride (1:4)

### PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula:  $C_{10}H_{30}Cl_4N_4$   
 Molecular Weight: 348.18  
 Storage: 4°C, protect from light  
 \* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

### Chemical Structure:



### ANALYTICAL DATA

Appearance: White to off-white (Solid)  
 $^1H$  NMR Spectrum: Consistent with structure  
 Purity (NMR):  $\geq 98.0\%$   
 Water(KF): 0.15%  
 Conclusion: The product has been tested and complies with the given specifications.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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