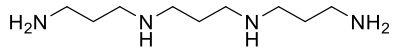




Certificate of Analysis

MedKoo Cat#:	Product Name:	Lot#:
573618	Norspermine	C23B05B16

Chemical name	
1,3-Propanediamine, N,N'-bis(3-aminopropyl)-	
Synonyms	
AI3-61617, Norspermine, Norspermidine	
Chemical structure	CAS# and Theoretical analysis
	MedKoo Cat#: 573618 Name: Norspermine CAS#: 4605-14-5 Lot#: C23B05B16 Chemical Formula: C ₉ H ₂₄ N ₄ Exact Mass: 188.2001 Molecular Weight: 188.319

Analysis item	Specifications / Results
Appearance	Colorless to light yellow liquid
Structure	¹ H-NMR analysis matches the structure. MS analysis gives the correct molecule weight. Both NMR and MS data are consistent with those reported in the literature.
Purity (HPLC)	>97.0%
Conclusion	This product conforms with MedKoo's quality standards
Shipping condition	Shipped under ambient temperature as non-hazardous chemical. This product is stable for a few weeks during ordinary shipping and time spent in customs.
Storage condition	Short term storage (weeks): 0 – 4 °C under dry condition Long term storage (months): -20 °C under dry condition
Shelf life	At least 3 years if properly stored.

CAUTION: NOT FULLY TESTED. FOR RESEARCH ONLY, NOT FOR HUMAN USE