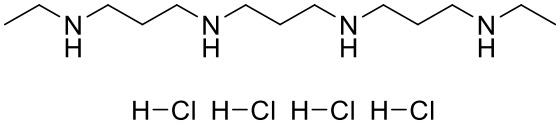




Certificate of Analysis

MedKoo Cat#:	Product Name:	Lot#:
581386	Diethylnorspermine HCl	T21O03R19

Chemical name	
1,11-Bis(ethylamino)-4,8-diazaundecan tetrahydrochloride	
Synonyms	
BE-333 HCl; BE-333 tetrahydrochloride; N(1),N(11)-Diethylnorspermine; DE 333; DE-333; DE333; BE 3-3-3; BE 333; BE333; BE-333; BENSPM; DENSPM; Diethyl-norspermine; N1,N11-Bis(ethyl)norspermine; N1,N11-Diethylnorspermine;	
Chemical structure	CAS# and Theoretical analysis
 H-Cl H-Cl H-Cl H-Cl	MedKoo Cat#: 581386 Name: Diethylnorspermine HCl CAS#: 156886-85-0 (4HCl) Lot#: T21O03R19 Chemical Formula: C ₁₃ H ₃₆ C ₁₄ N ₄ Exact Mass: 244.2627 Molecular Weight: 390.26

Analysis item	Specifications / Results												
Appearance	White to off-white solid powder												
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.												
Microanalysis	<table><thead><tr><th></th><th>Carbon</th><th>Hydrogen</th><th>Nitrogen</th></tr></thead><tbody><tr><td>Theoretical</td><td>40.01</td><td>9.3</td><td>14.35</td></tr><tr><td>Found</td><td>39.85</td><td>9.4</td><td>14.21</td></tr></tbody></table>		Carbon	Hydrogen	Nitrogen	Theoretical	40.01	9.3	14.35	Found	39.85	9.4	14.21
	Carbon	Hydrogen	Nitrogen										
Theoretical	40.01	9.3	14.35										
Found	39.85	9.4	14.21										
Solubility	Soluble in water to 100mM												
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 5 years if properly stored.												

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