



# INDOFINE Chemical Company, Inc.

121 Stryker Lane, Bldg. 30, Suite 1 • Hillsborough, NJ 08844 • U.S.A.

Phone: (908) 359-6778 • FAX: (908) 359-1179

website: [www.indofinechemical.com](http://www.indofinechemical.com)

e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

## CERTIFICATE OF ANALYSIS

Catalog Number: H-008

Product Name: HARMOL HYDROCHLORIDE DIHYDRATE

Cas Number: [149022-16-2]

Lot Number: 2411104

Chemical Formula:  $C_{12}H_{10}N_2O \cdot HCl \cdot 2H_2O$

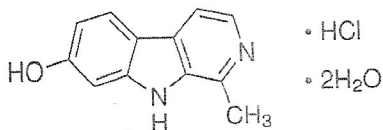
Molecular Weight: 270.72

Appearance: Off-white powder

Solubility: Soluble in DMSO

Storage: Store in a cool, dry place

Purity(HPLC) : 99.76%



Prepared by:  
Ramesh Mandadi  
Ramesh Mandadi  
Director of Operations

Reviewed and Approved by:  
Sujata Moton  
Sujata Moton  
VP



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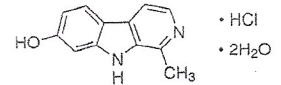
website: [www.indofinechemical.com](http://www.indofinechemical.com)

e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

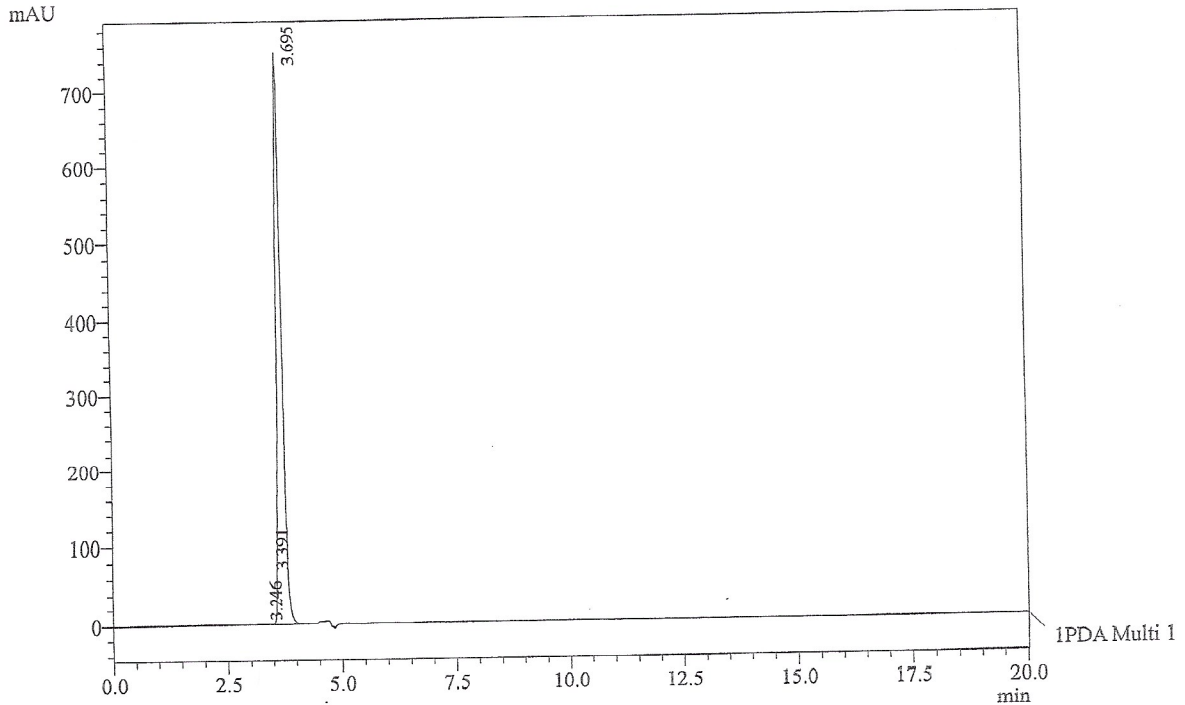
## HPLC ANALYSIS

Vial# : 7  
 Injection Volume : 10 uL  
 Column ID: HPLC-341  
 Column: Inertsil ODS 3V(250 X4.6mm,5µ)  
 MobilePhase A : Buffer:Acetonitrile(20:80)  
 Buffer: 0.05%(0.5ml) TFA is dissolved in 1000 ml of water.  
 Flowrate: 0.5 ml/min  
 Column Temp: 30°C  
 Diluent: Water  
 Sample preparation: 2.11 mg of sample is dissolved in 10 ml of diluent.

Catalog No.: H-008  
 Product Name: Harmol hydrochloride dihydrate  
 Lot No.: 2411104



Chromatogram



1: PDA Multi 1 / 360nm,4nm

PeakTable

PDA Ch1 360nm

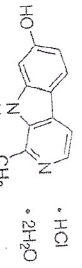
Peak#	Ret. Time	RRT	Area	Area %
1	3.246	0.879	3165	0.054
2	3.391	0.918	10755	0.183
3	3.695	1.000	5867074	99.763
Total			5880994	100.000

Prepared by:  
*Ramesh Mandadi*  
 Ramesh Mandadi  
 Director of Operations

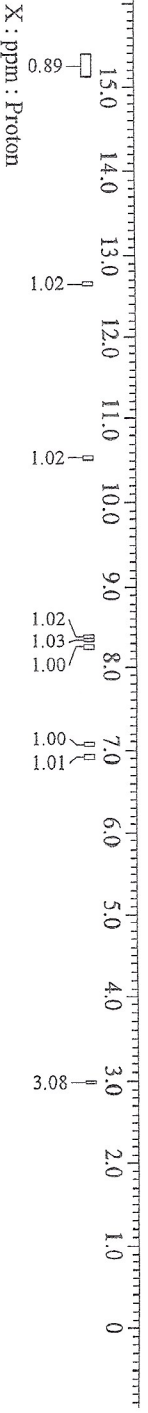
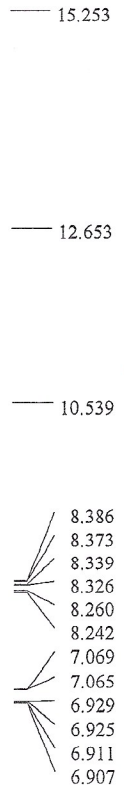
Reviewed and Approved by:  
*Sujata Moton*  
 Sujata Moton  
 VP



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 Product Name: Harmol hydrochloride dihydrate  
 Lot No.: 2411104



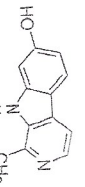
----- PROCESSING PARAMETERS -----  
 smp( 0.21Hz), 0.01s ] )  
 trapzoid( 0[Hz], 01[Hz], 80[Hz], 100[Hz] )  
 zerofill( 1 )  
 fft( 1, TRUE, TRUE )  
 machinphase  
 ppm  
 reference( -0.043231ppm], 01ppm ] )  
 phase( 0.56749, -0.83124, 91.09568[Hz] )

Instrument - NMR-500MHz (JBOU)  
 Instrument id - NMR-02  
 Author = I 658  
 Reviewed by - Ramesh  
 Solvent = DMSO-d6  
 Spectrometer = JNM-SCZ500R/S1  
 Experiment = proton\_jxp

Acquisition Parameter  
 X\_Domain = proton  
 X\_Offset = 71ppm  
 X\_Sweep = 11.281588451kHz  
 Scans = 16  
 Relaxation\_Delay = 21s



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• HCl  
 • 2H<sub>2</sub>O

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 Product Name: Harmol hydrochloride dihydrate  
 Lot No.: 2411104

8.386  
 8.373  
 8.339  
 8.326  
 8.260  
 8.242

7.069  
 7.065  
 6.929  
 6.925  
 6.911  
 6.907

```

---- PROCESSING PARAMETERS ----
secp ( 0.2[H2], 0.0[s] )
trapacid( 0[%], 0[%], 80[%], 100[%] )
zerofill( 1 )
fft( 1, TRDE, TRDE )
machinphase
ppm
reference( -0.04323[ppm], 0[ppm] )
phase( 0.56748, -0.83124, 91.095681[%] )
  
```

```

Instrument      = NMR-500MHz (JEOL)
Instrument id   = NMR-02
Author         = 1658
Reviewed by    = Ramesh
Solvent        = DMSO-D6
Spectrometer   = JNM-ECZ500R/S1
Experiment     = proton_jxp

Acquisition Parameter
X_Domain       = Proton
X_Offset       = 7[ppm]
X_Sweep        = 11.28158845[kHz]
Scans          = 16
Relaxation_Delay = 2[s]
  
```

