



INDOFINE Chemical Company, Inc.

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

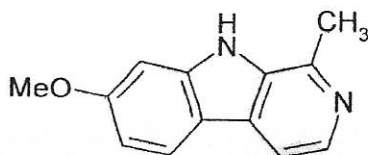
Phone: (908) 359-6778 • FAX: (908) 359-1179

website: www.indofinechemical.com

e-mail: chemical@indofinechemical.com

CERTIFICATE OF ANALYSIS

<u>Catalog Number:</u>	H-005
<u>Product Name:</u>	HARMINE
<u>CAS Number:</u>	[442-51-3]
<u>Lot No.:</u>	1410517
<u>Molecular Formula:</u>	C ₁₃ H ₁₂ N ₂ O
<u>Molecular Weight:</u>	212.25
<u>Appearance:</u>	Deep Cream Powder
<u>Melting Point:</u>	260-263°C
<u>Moisture (KF):</u>	0.68%
<u>TLC:</u>	Chloroform:Methanol (9:1)
<u>Solubility:</u>	Soluble in DMSO
<u>NMR Spectrum:</u>	Enclosed (Conforms to the structure)
<u>MASS:</u>	Complies (M ⁺ -213.31)
<u>Purity (HPLC):</u>	99.13%





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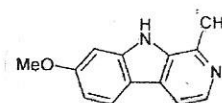
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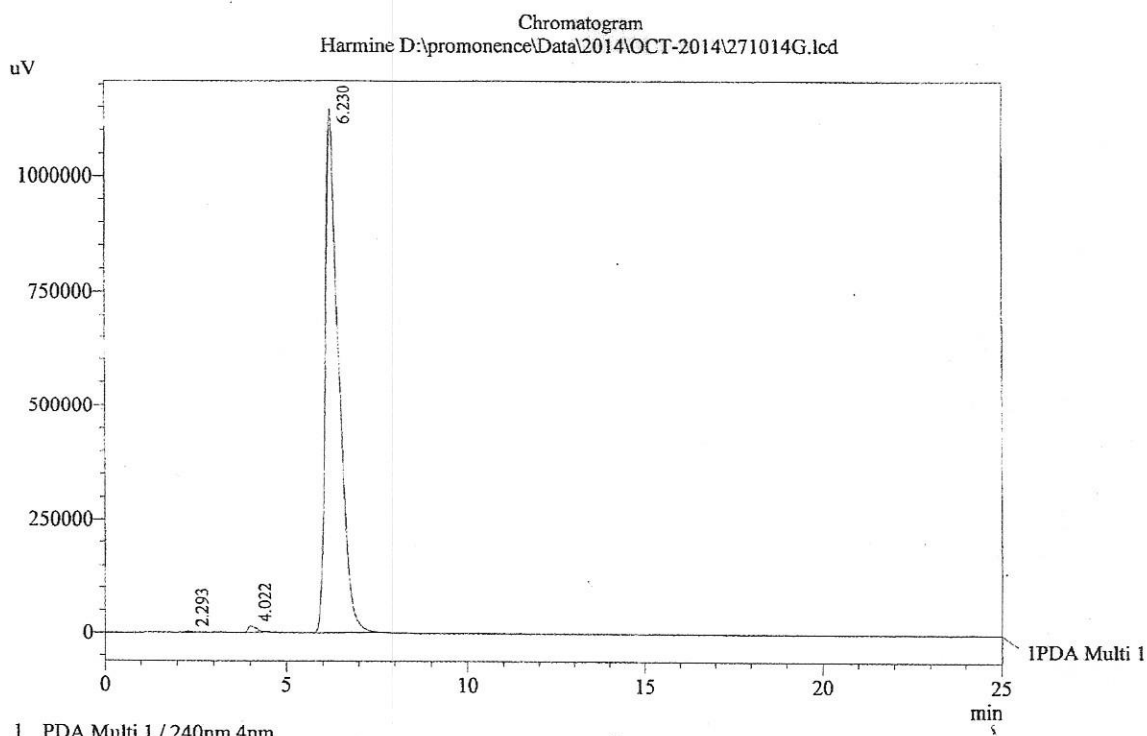
HPLC ANALYSIS

Acquired by : Sanjeev
Sample Name : Harmine
Sample ID : 1.0 Kg Lot
Injection Volume : 20 uL
Data Filename : 271014G.lcd
Method Filename : Linear Isocratic.M.lcm

Catalog No.: H-005
Product Name: Harmine
Lot No.: 1410517



Column : Inertsil ODS-3V, (250mm x4.6mm 5.0μ)
Flow : 1.500 mL/min.
Mobile Phase : Phosphate Buffer : Acetonitrile (550:450)
Diluent : Methanol : Water (9:1)



PeakTable

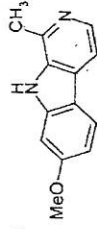
PDA Ch1 240nm 4nm

Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	RT:2.293	2.293	34714	0.12	0.37
2	Harmaline	4.022	223189	0.75	0.65
3	Harmine	6.230	29348993	99.13	1.00
Total			29606896	100.00	

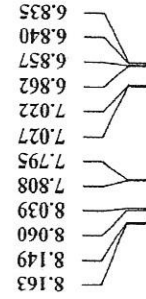


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Catalog No.: H-005
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Lot No.: 1410517

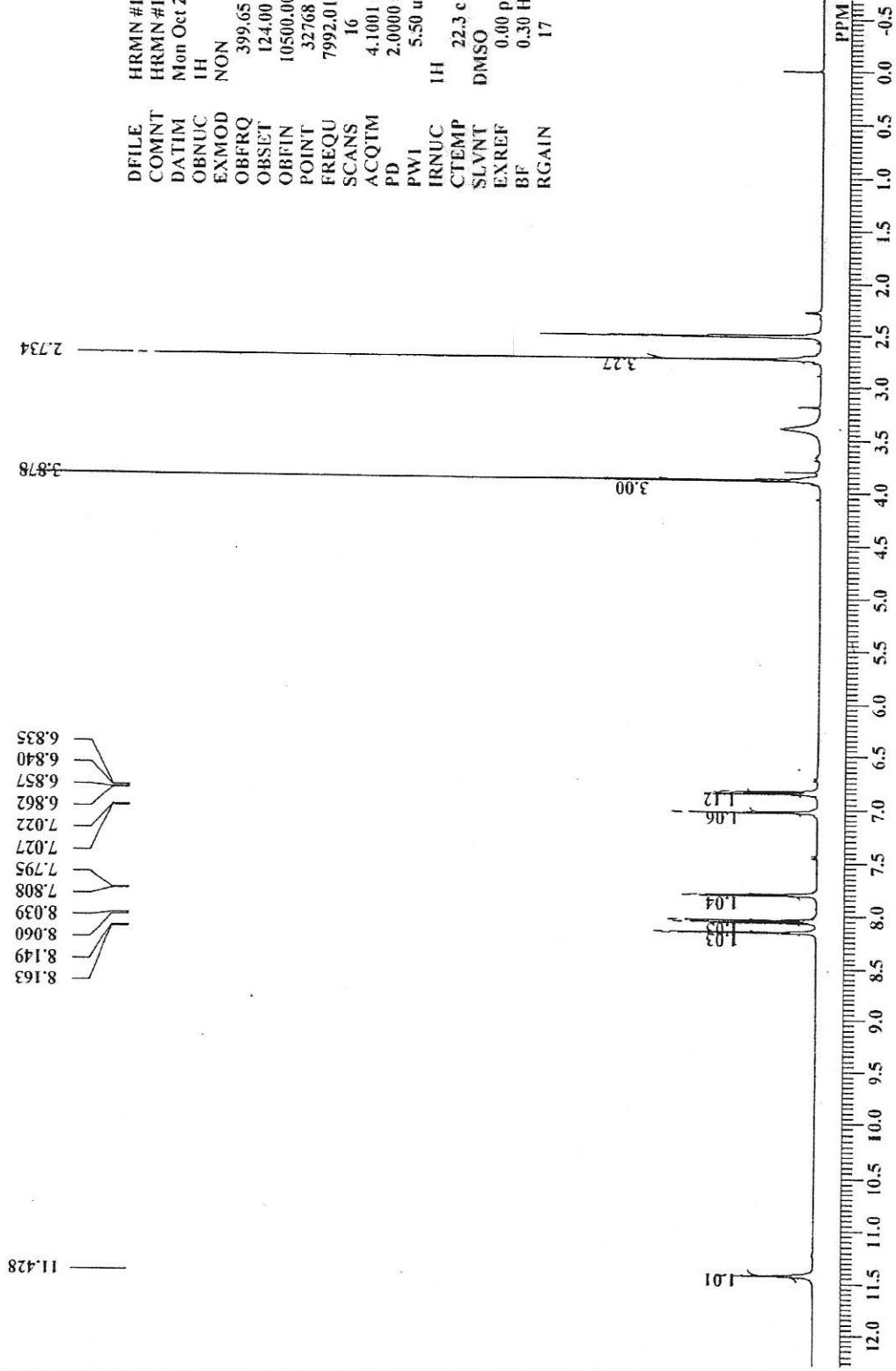


HRMN #1 KgLot 1H NMR DMSO-d6
Analysed By : MSR



DFILE
COMINT
DATIM
OBNUC
EXMOD
OBFREQ
OBSET
OBFIN
POINT
FREQU
SCANS
ACQTM
PWI
IRNUC
CTEMP
SLVNT
EXREF
BF
RGAIN

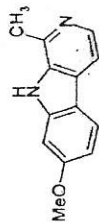
HRMN #1 KgLot 1H,als
HRMN #1 KgLot 1H NMR DMSO-d
Mon Oct 27 21:39:57 2014
1H
NON
399.65 MHz
124.00 KHz
10500.00 Hz
32768
7992.01 Hz
16
4.1001 sec
2.0000 sec
5.50 usec
1H
22.3 c
DMSO
0.00 ppm
0.30 Hz
17





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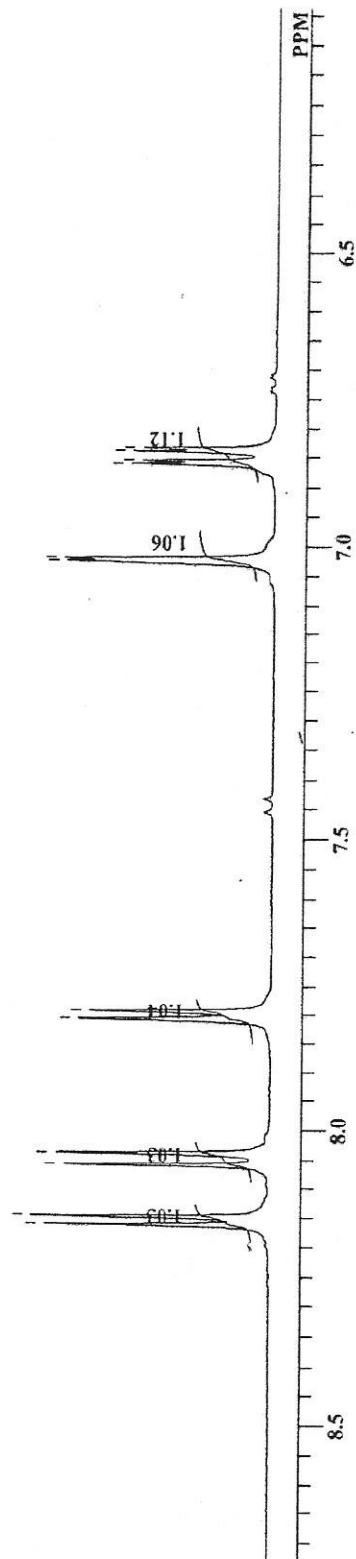


HRMN #1 KgLot 1H NMR DMSO-d6

Analysed By : MSR



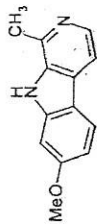
DFILE	HRMN #1 KgLot 1H.als
COMNT	HRMN #1 KgLot 1H NMR DMSO-d
DATIM	Mon Oct 27 21:39:57 2014
OBNUC	1H
EXMOD	NON
OBFRQ	399.65 MHz
OBSET	124.00 KHz
OBFIN	10500.00 Hz
POINT	32768
FREQU	7992.01 Hz
SCANS	16
ACQTM	4.1001 sec
PD	2.0000 sec
PW1	5.50 usec
IRNUC	1H
CTEMP	22.3 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	17





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27-Oct-2014

16:53:56

1: Scan ES+

9.76e7

HRMN

HRMN 10 (0.321) Cm (10:13)

100

213.31

$-\{m+1\}$

%

214.37

215.38

198.33

0 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 m/z