



INDOFINE Chemical Company, Inc.

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

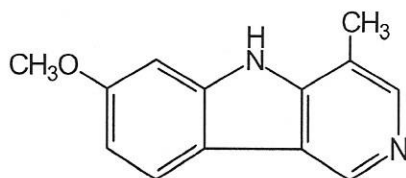
Phone: (908) 359-6778 • FAX: (908) 359-1179

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>	1503556
<u>Molecular Formula:</u>	$C_{13}H_{12}N_2O$
<u>Molecular Weight:</u>	212.25
<u>Appearance:</u>	Off-white crystalline powder
<u>Melting Point:</u>	263-266°C
<u>Moisture (KF):</u>	0.32%
<u>TLC:</u>	Chloroform:Methanol (9:1)
<u>NMR Spectrum:</u>	Enclosed (Conforms to the structure)
<u>Purity (HPLC):</u>	99.87%





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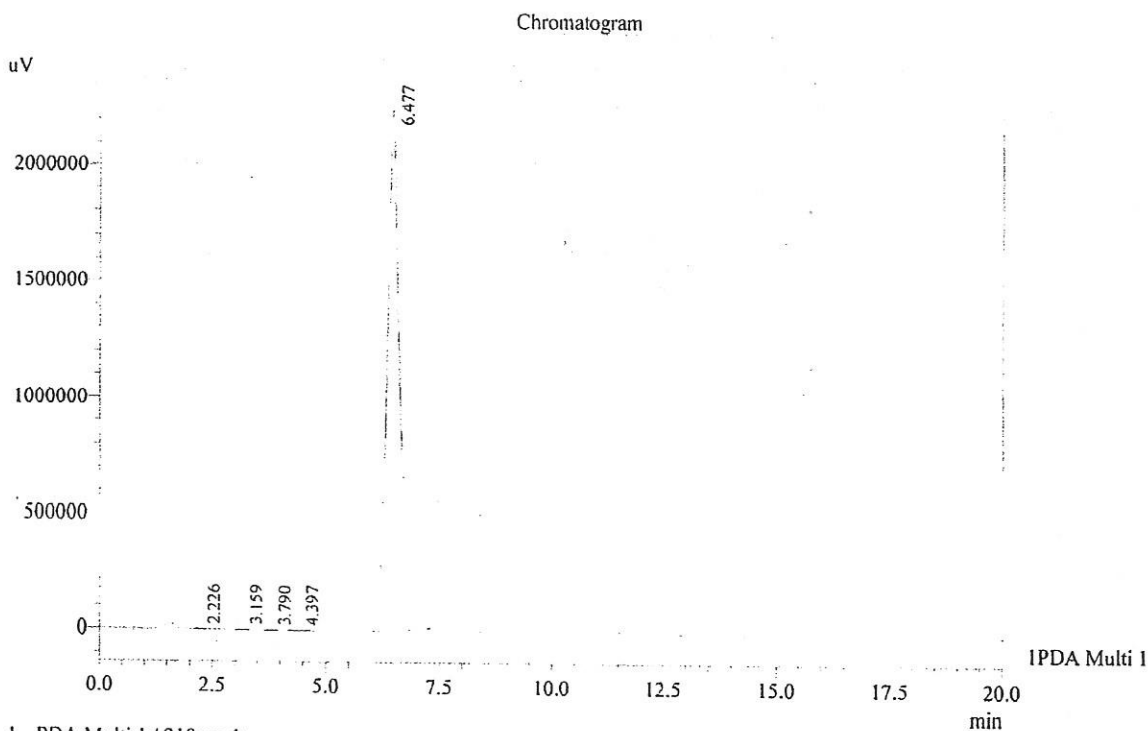
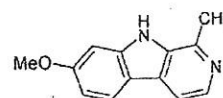
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HPLC ANALYSIS

Acquired by : Admin
Sample Name : Harmine
Sample ID : 1.1 Kg Lot
Injection Volume : 20 uL
Data Filename : 1902151.lcd
Method Filename : Linear Isocratic.M.lcm

Catalog No.: H-005
Product Name: Harmine
Lot No.: 1503556

Column : Inertsil ODS, (250mm x4.6mm 5.0μ)
Flow : 1.500 mL/min.
Mobile Phase : Phosphate buffer: Acetonitrile (550:450)



1 PDA Multi 1 / 210nm 4nm

PeakTable

Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	RT:2.226	2.226	9385	0.02	0.34
2	RT:3.159	3.159	13245	0.03	0.49
3	RT:3.790	3.790	6175	0.01	0.59
4	RT:4.397	4.397	28130	0.07	0.68
5	Harmine	6.477	42956143	99.87	1.00
Total			43013078	100.00	



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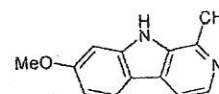
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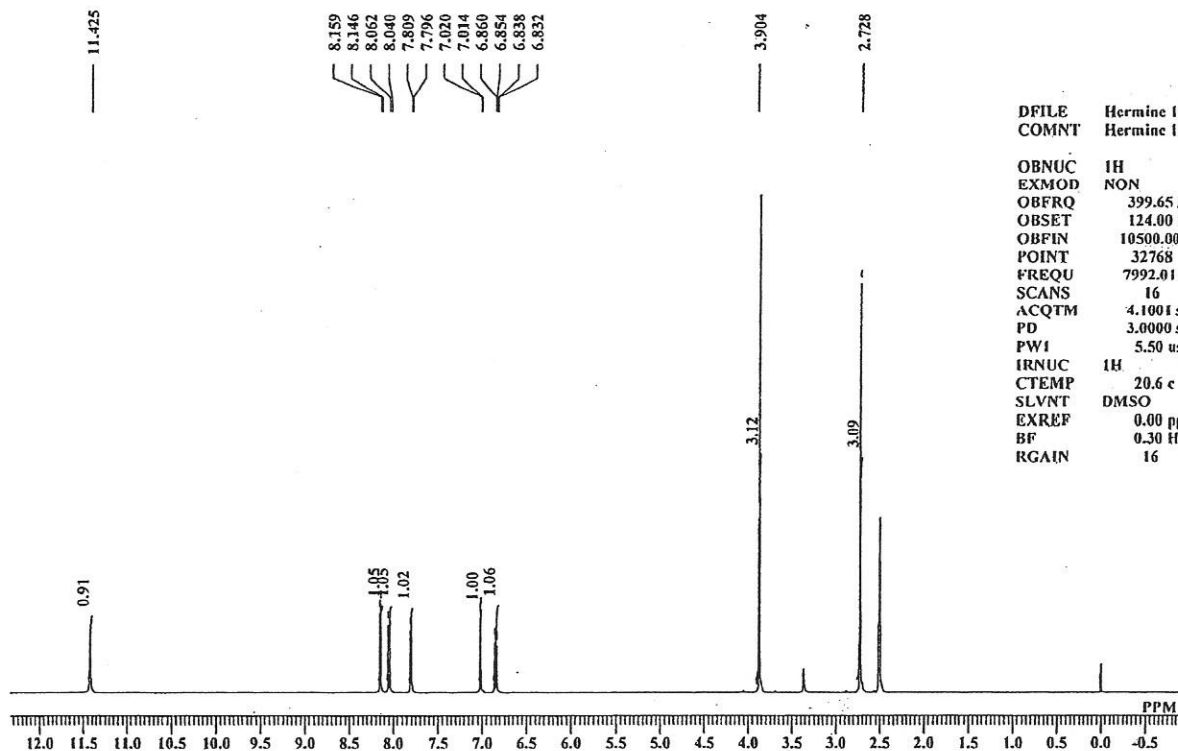
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Catalog No.: H-005
Product Name: Harmine
Lot No.: 1503556



Harmine 1H NMR DMSO-d6
Analysed By: BRR



DFILE Harmine 1Hals
COMNT Harmine 1H NMR DMSO-d6

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	3.0000 sec
PWI	5.50 usec
IRNUC	1H
CTEMP	20.6 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	16



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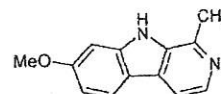
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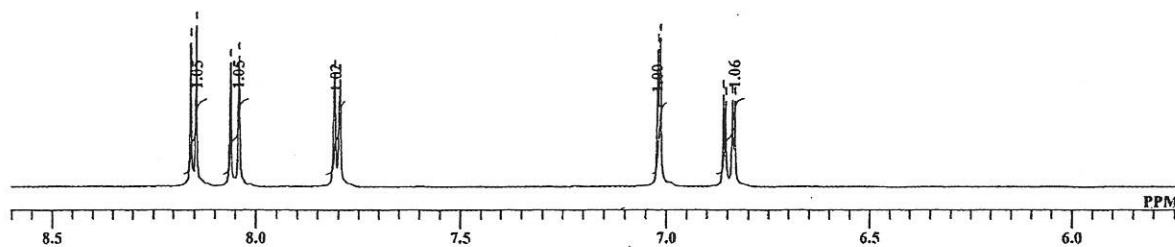
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Harmine 1H NMR DMSO-d6
Analysed By: BRR



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EXMOD	NON
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OBSET	124.00 KHz
OBFIN	10500.00 Hz
POINT	32768
FREQU	7992.01 Hz
SCANS	16
ACQTM	4.1001 sec
PD	3.0000 sec
PWI	5.50 usec
IRNUC	1H
CTEMP	20.6 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	16





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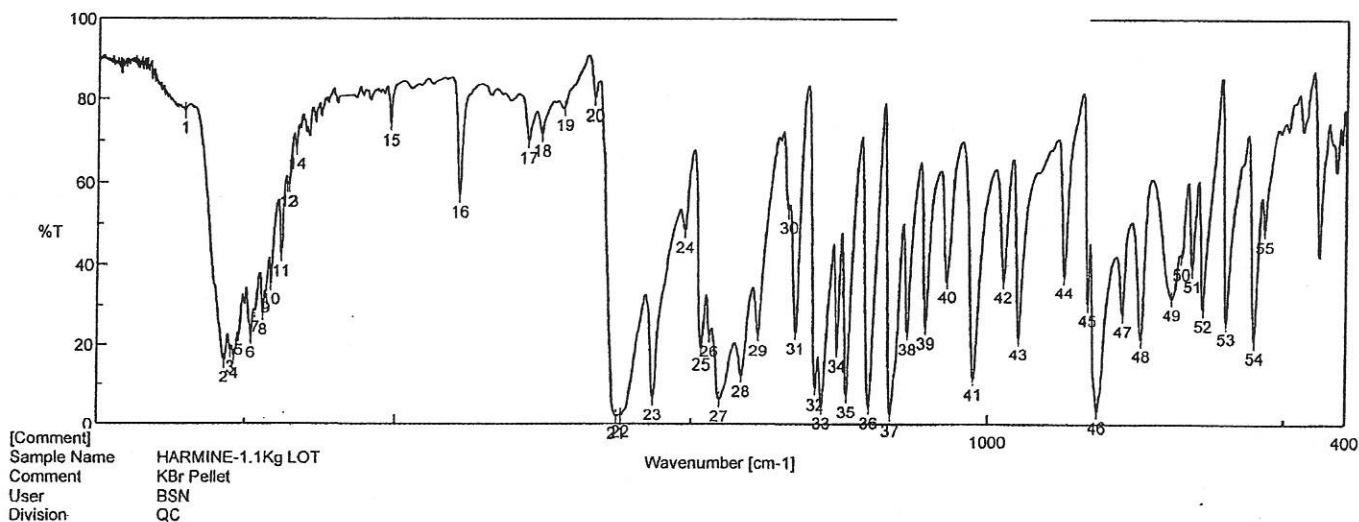
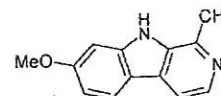
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Product Name: Harmine
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[Data Information]

Data array type		Result of Peak Picking									
Linear data array		No. Position	Intensity	No. Position	Intensity	No. Position	Intensity	No. Position	Intensity	No. Position	Intensity
Horizontal	Wavenumber [cm-1]	1 3417.2	77.207	2 3142.4	15.972	3 3100.0	18.424	4 3075.9	17.048	5 3044.1	22.571
Vertical	%T	6 2965.0	21.971	7 2937.1	28.511	8 2886.0	27.913	9 2866.7	33.334	10 2832.9	35.586
Start	348.053 cm-1	11 2763.5	42.578	12 2724.0	59.360	13 2713.4	59.442	14 2667.1	68.565	15 2041.3	74.231
End	7800.65 cm-1	16 1891.8	56.894	17 1777.1	70.049	18 1754.9	71.636	19 1716.3	77.909	20 1665.2	80.236
Data pitch	0.964233 cm-1	21 1626.7	1.996	22 1618.9	2.339	23 1565.0	6.564	24 1511.9	48.438	25 1484.0	19.080
Data points	7729	26 1470.5	22.362	27 1453.1	6.227	28 1415.5	12.327	29 1387.5	22.484	30 1338.4	53.229
		31 1325.8	23.006	32 1291.1	9.114	33 1280.5	4.404	34 1253.5	18.773	35 1237.1	7.285
		36 1200.5	4.513	37 1163.8	2.672	38 1135.9	22.916	39 1105.0	24.531	40 1069.3	36.329
		41 1025.0	11.568	42 974.8	36.210	43 948.8	21.613	44 872.6	37.410	45 833.1	30.296
		46 815.7	3.402	47 773.3	27.572	48 742.5	21.222	49 690.4	31.662	50 674.0	42.072
		51 654.7	39.111	52 636.4	29.008	53 596.9	25.708	54 550.6	20.745	55 534.2	48.874