



INDOFINE Chemical Company, Inc.

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

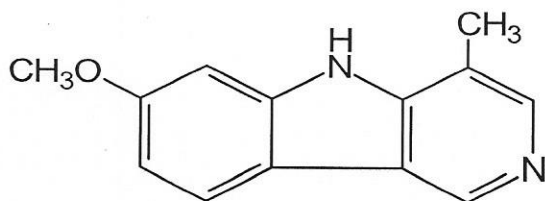
Phone: (908) 359-6778 • FAX: (908) 359-1179

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>	1505603
<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>	0.38%
<u>TLC:</u>	Chloroform:Methanol (9:1)
<u>NMR Spectrum:</u>	Enclosed (Conforms to the structure)
<u>Purity (HPLC):</u>	99.84%





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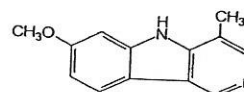
e-mail: chemical@indofinechemical.com

HPLC ANALYSIS

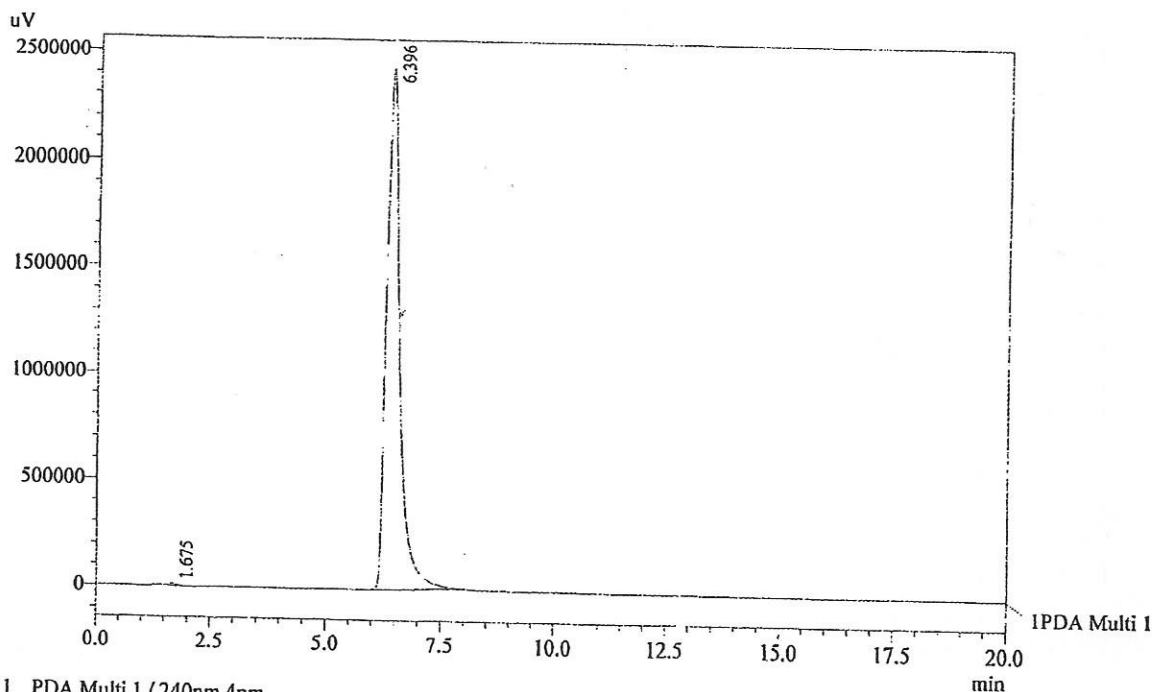
Acquired by : Admin
Sample Name : Harmine
Sample ID : 2.25 kg Lot
Injection Volume : 20 uL
Data Filename : 090515A.lcd
Method Filename : Linear Isocratic.M.lcm

Catalog No.: H-005
Product Name: Harmine
Lot No.: 1505603

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



Chromatogram

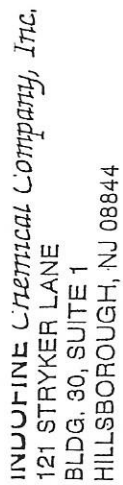


I PDA Multi 1 / 240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

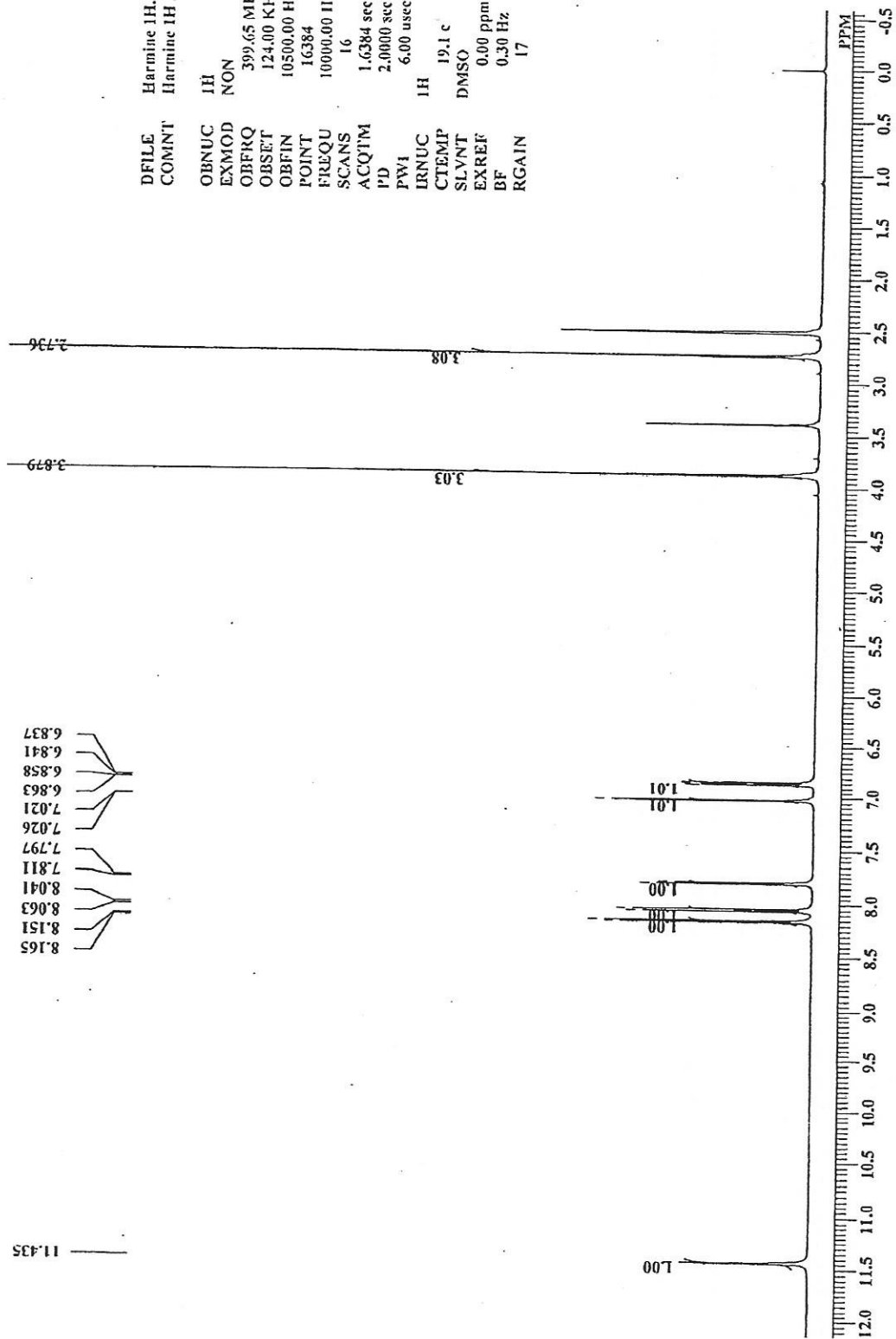
Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	RT:1.675	1.675	80115	0.16	0.26
2	Harmine	6.396	49339408	99.84	1.00
Total			49419523	100.00	

Cc1nc2c(c3ccccc3c2n1)OC

Analyzed By: KNR

6.837
6.841
6.858
6.863
7.021
7.026
7.797
7.811
8.041
8.063
8.151
8.165

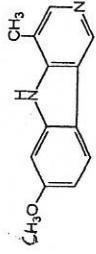
DFILE	COMINT	Harmine 1H,als	Harmine 1H NMR	DMSO-d6
OBNUC		1H		
EXMOD		NON		
OBFRQ			399.65 MHz	
OBSET			124.00 KHz	
OBFIN			10500.00 Hz	
POINT			16384	
FREQU			10000.00 Hz	
SCANS			16	
ACQTM			1.6384 sec	
			2.0000 sec	
			6.00 usec	
PWI		1H		
URNUC				
CTEMP			19.1 c	
SLVNT		DMSO		
EXREF			0.00 ppm	
BF			0.30 Hz	
RGAIN			17	





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BLDG. 30, SUITE 1
HILLSBOROUGH, NJ 08844

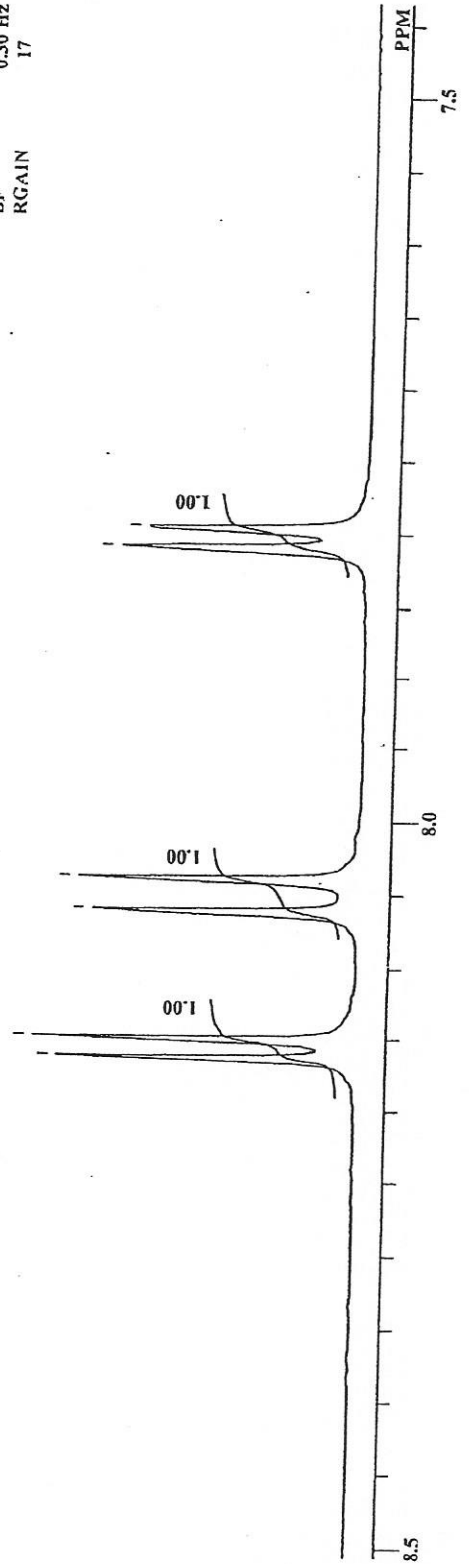
Catalog No.: H-005
Product Name: Harmine
Lot No.: 1505603



Harmine 1H NMR DMSO-d6
Analyzed By : KNR



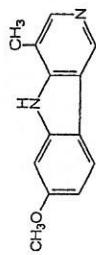
DFILE	Harmine 1H.ads
COMINT	Harmine 1H NMR DMSO-d6
OBNUC	1H
EXMOD	NON
OBFRQ	399.65 MHz
OBSET	124.00 KHz
OBFIN	10500.00 Hz
POINT	16384
FREQU	10000.00 Hz
SCANS	16
ACQTM	1.6384 sec
PD	2.0000 sec
PW1	6.00 usec
IRNUC	1H
CTEMP	19.1 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	17



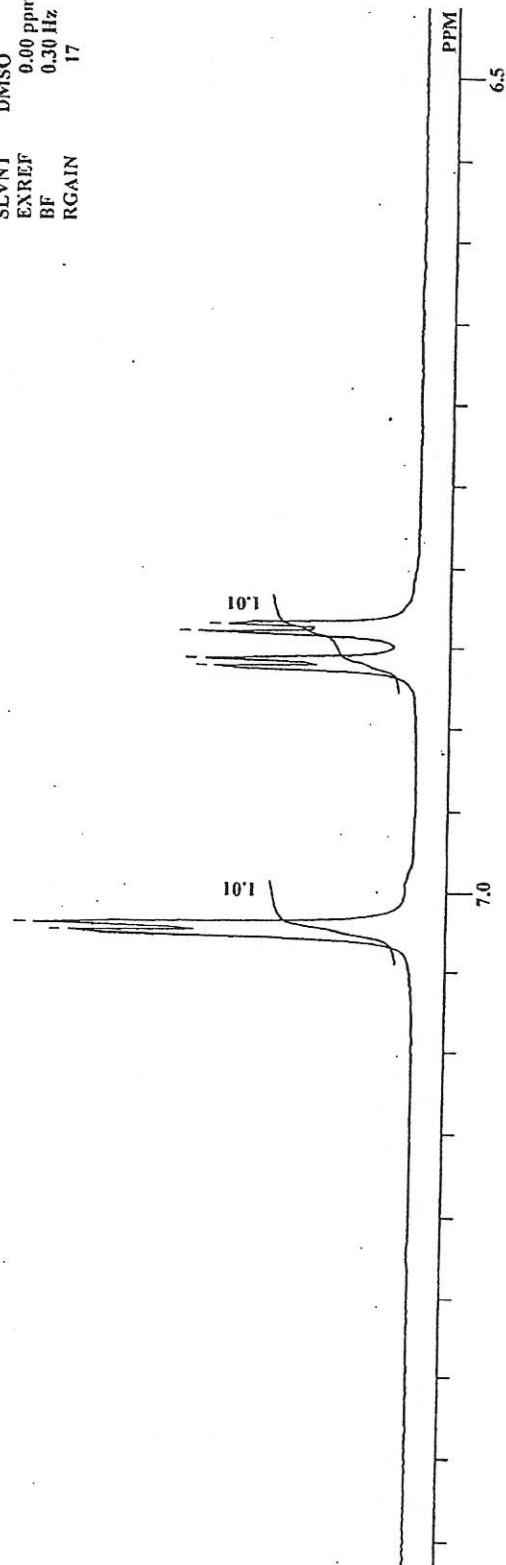


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Catalog No.: H-005
Product Name: Harmine
Lot No.: 1505603



Harmine 1H NMR DMSO-d6
Analyzed By: KNR

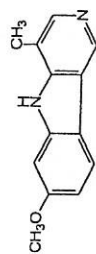


DFILE	Harmine 1H.als
COMNT	Harmine 1H NMR DMSO-d6
OBNUC	1H
EXMOD	NON
OBFRQ	399.65 MHz
OBSET	124.00 KHz
OBFIN	10500.00 Hz
POINT	16384
FREQU	10000.00 Hz
SCANS	16
ACQTM	1.6384 sec
PD	2.0000 sec
PW1	6.00 usec
IRNUC	III
CTEMP	19.1 c
SLVNT	DMSO
EXREF	9.00 ppm
BF	0.30 Hz
RGAIN	17



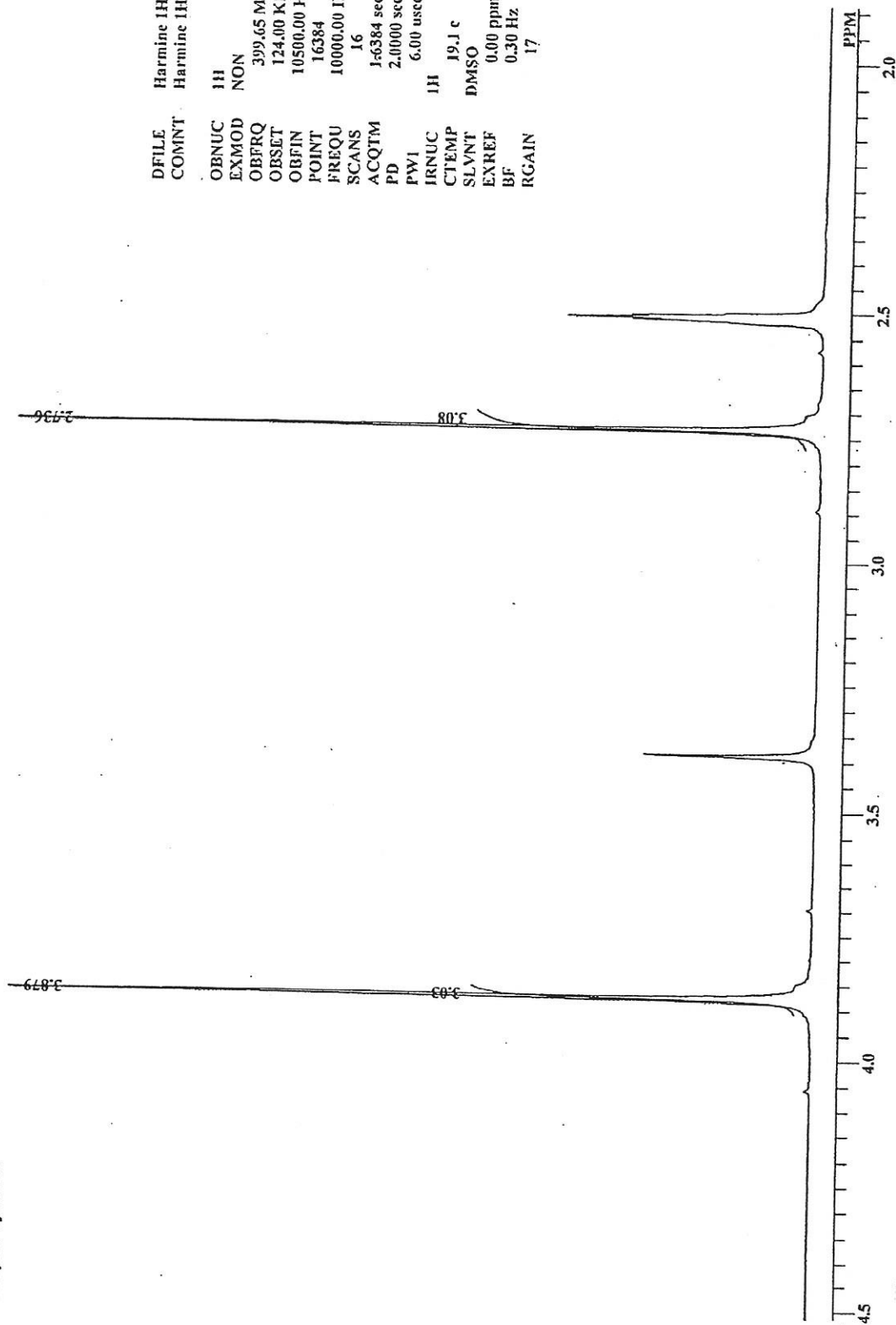
INDOFINE Chemical Company, Inc.
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Catalog No.: H-005
Product Name: Harmine
Lot No.: 1505603



Harmine 1H NMR DMSO-d6
Analyzed By : KNR

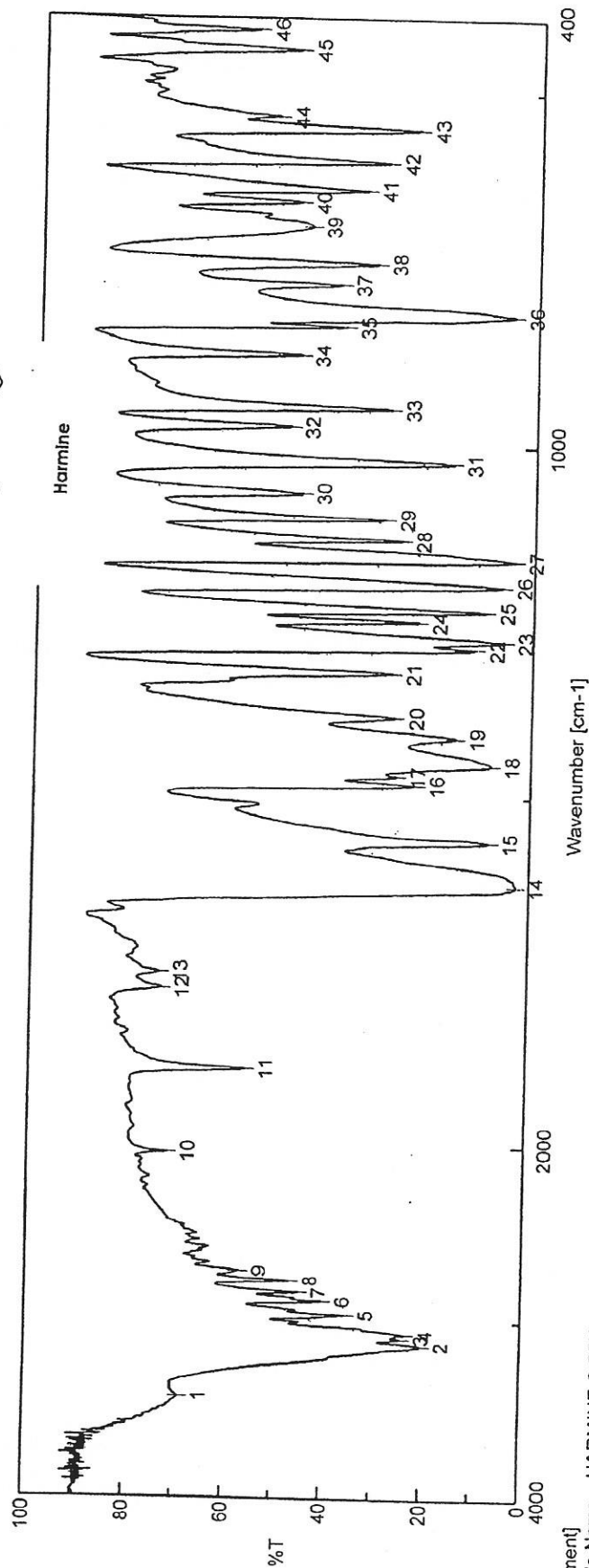
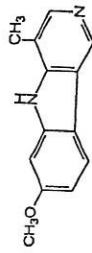
DFILE	Harmine 1H.a1s
COMNT	Harmine 1H NMR DMSO-d6
OBNUC	1H
EXMOD	NON
OBFRQ	399.65 MHz
OBSET	124.00 KHz
OBFIN	10500.00 Hz
POINT	16384
FREQU	10000.00 Hz
SCANS	16
ACQTM	1-6384 sec
PD	2.0000 sec
PW1	6.00 usec
IRNUC	1H
CTEMP	19.1 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	17





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Catalog No.: H-005
Product Name: Harmine
Lot No.: 1505603



[Comment]
Sample Name HARMINE 2.25Kg
Comment KBr Pellet
User DRNP
Division QC

[Data Information]

Data array type Linear data array
Horizontal Wavenumber [cm-1]
Vertical %T
Start 349.053 cm-1
End 7800.65 cm-1
Data pitch 0.964233 cm-1
Data points 7729

No.	Position	Intensity
1	3419.2	68.661
6	2885.0	39.912
11	1891.8	56.352
16	1484.0	22.927
21	1325.8	27.922
26	1200.5	6.083
31	1024.0	16.496
36	815.7	4.736
41	636.4	34.729
46	416.5	57.220

No.	Position	Intensity
2	3144.4	19.915
7	2832.9	44.744
12	1777.1	73.480
17	1470.5	26.763
22	1291.1	11.376
27	1163.8	3.874
32	974.8	49.218
37	773.3	39.550
42	596.9	30.276

No.	Position	Intensity
4	3076.9	23.235
9	2711.4	56.888
14	1626.7	2.560
19	1415.5	15.080
24	1253.5	22.910
29	1105.0	29.824
34	872.6	47.494
39	690.4	45.725
44	534.2	52.704

No.	Position	Intensity
5	2965.0	35.218
10	2041.3	71.641
15	1565.0	8.032
20	1387.5	27.276
25	1237.1	9.475
30	1069.3	46.727
35	833.1	38.439
40	654.7	47.946
45	443.5	48.438