



# INDOFINE Chemical Company, Inc.

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

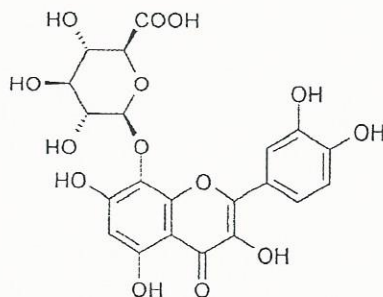
Phone: (908) 359-6778 • FAX: (908) 359-1179

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

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

## CERTIFICATE OF ANALYSIS

<u>Catalog Number:</u>	22-412
<u>Product Name:</u>	<b>HIBIFOLIN</b> (Gossypetin 8-glucuronide; 3,3',4',5,7,8-Hexahydroxyflavone 8-glucuronide)
<u>CAS Number:</u>	[55366-56-8]
<u>Lot Number:</u>	1508653
<u>Chemical Formula:</u>	494.37
<u>Molecular Weight:</u>	C <sub>21</sub> H <sub>18</sub> O <sub>14</sub>
<u>Appearance:</u>	Yellow powder
<u>Solubility:</u>	Soluble in DMSO
<u>TLC:</u>	n-Butanol:Acetic acid (1:1)
<u>NMR Spectrum:</u>	Enclosed (conforms to the structure)
<u>Mass Spec:</u>	Complies
<u>Storage:</u>	Store in a cool, dry place. Protected from light.
<u>Purity(HPLC):</u>	96.30%





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## TEST RESULTS

Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653

TEST	SPECIFICATION	RESULTS
<b>Heavy Metals</b>		
Copper	Not more than 50ppm	1.5ppm
Iron	Not more than 50ppm	1.2ppm
Aluminum	Not more than 50ppm	1.8ppm
<b>Residual solvents by GC:</b>		
Methanol	Not more than 3000ppm	BDL
Isopropyl Ether	Not more than 5000ppm	BDL

Authorized by:

The sample complies with respect to the above specification.

\*\*BDL=Below Detectable Limit



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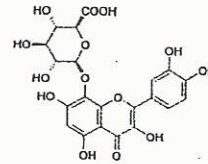
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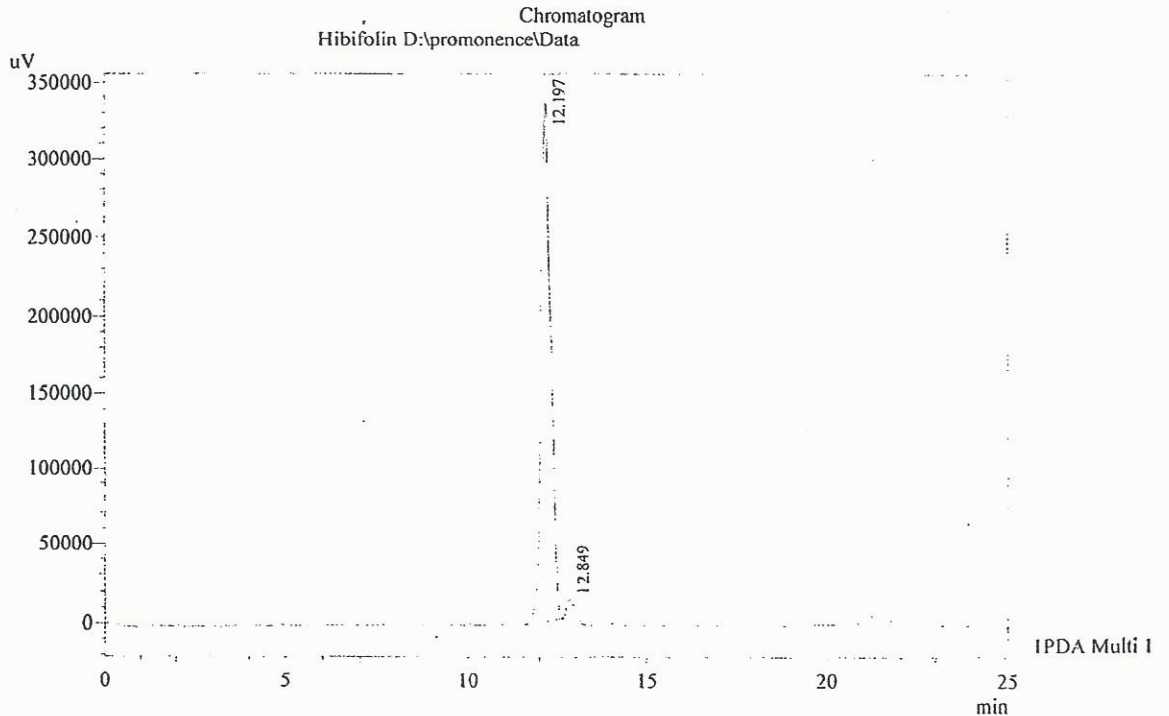
## HPLC ANALYSIS

Acquired by : Admin  
Sample Name : Hibifolin  
Sample ID : 560 gm  
Injection Volume : 20 uL  
Data Filename : 220815C.lcd  
Method Filename : GSP-1.lcm

Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653



Column : Inertsil-ODS-3V, (150mm x4.6mm 5.0μ)  
Flow : 1.000 mL/min.  
Mobile Phase : A(0.05% TFA in Water) B(Acetonitrile)  
0.01 90 10  
1.0 90 10  
7.0 68 32  
14.0 68 32  
18.0 10 90  
20.0 10 90  
22.0 90 10  
25.0 90 10  
Diluent : Mobilephase



1 PDA Multi 1 / 277nm 4nm

PeakTable

PDA Ch1 277nm 4nm

Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	Hibifolin	12.197	6504521	96.30	0.00
2	GSP	12.849	249844	3.70	0.00
Total			6754366	100.00	



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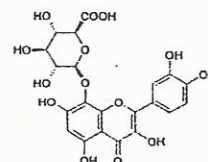
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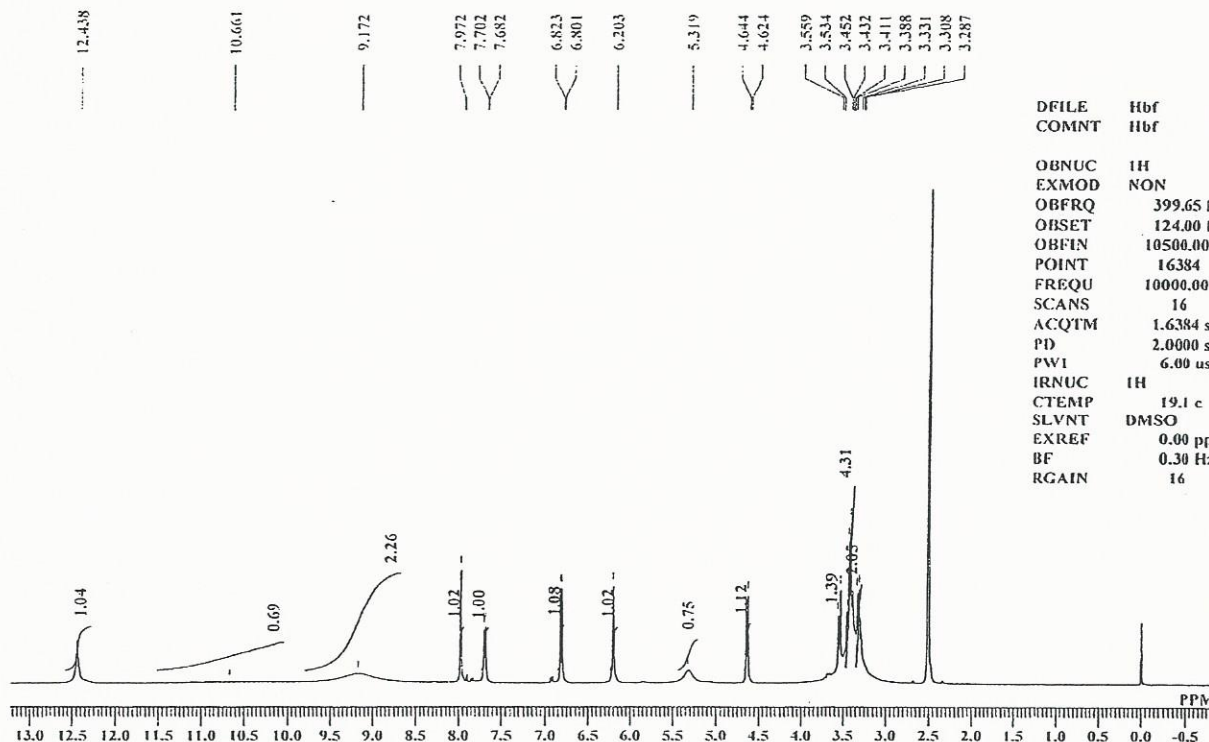
e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653



<sup>1</sup>H NMR DMSO-d<sub>6</sub>

Analysed By: BRJ



DFILE	Hbf	1H.als
COMNT	Hbf	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	16	





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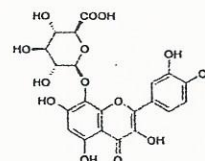
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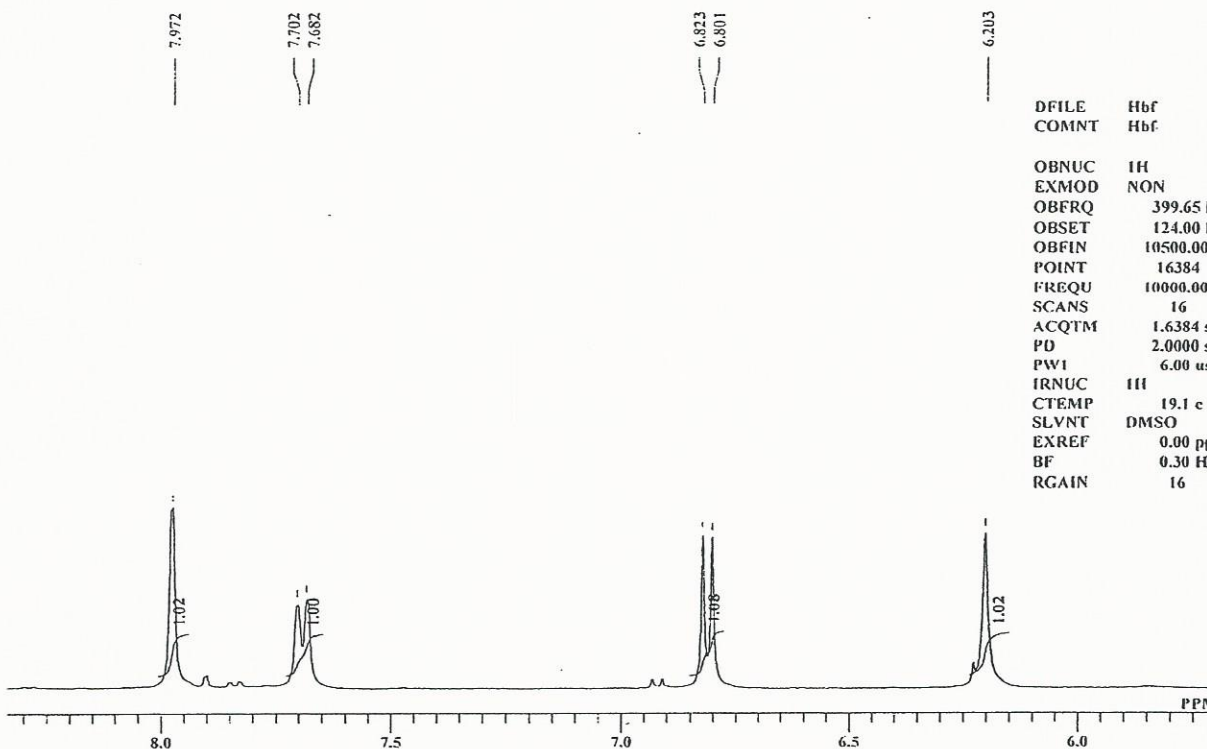
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Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653



<sup>1</sup>H NMR DMSO-d<sub>6</sub>

Analysed By: BIL



DFILE	Hbf	1H.als
COMNT	Hbf	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	
PWI	6.00 usec	
IRNUC	1H	
CTEMP	19.1 c	
SLVNT	DMSO	
EXREF	0.00 ppm	
BF	0.30 Hz	
RGAIN	16	



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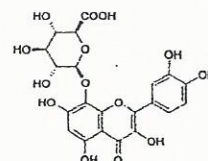
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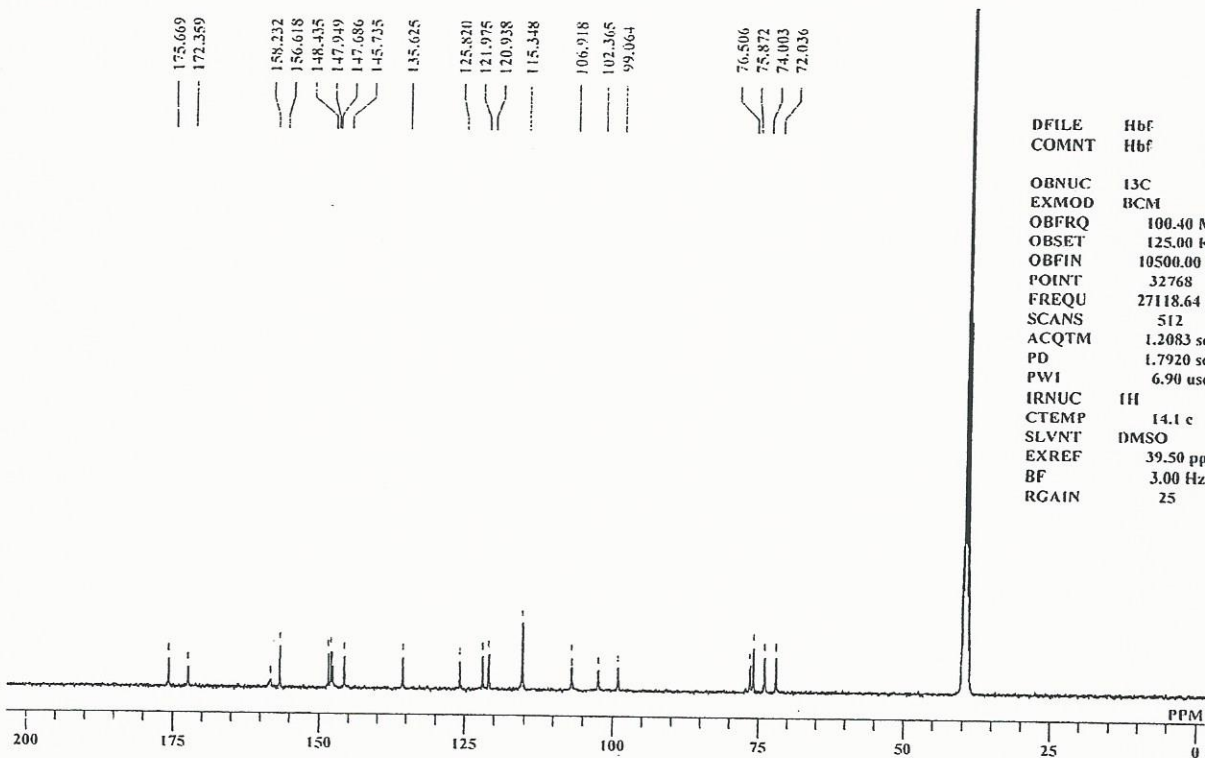
e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653



<sup>13</sup>C NMR DMSO-d<sub>6</sub>

Analysed By: BRJ



DFILE Hbf 13C.als  
COMNT Hbf 13C NMR DMSO-d6

OBNUC 13C  
EXMOD BCM  
OBFRO 100.40 MHz  
OBSET 125.00 KHz  
OBFIN 10500.00 Hz  
POINT 32768  
FREQU 27118.64 Hz  
SCANS 512  
ACQTM 1.2083 sec  
PD 1.7920 sec  
PWI 6.90 usec  
IRNUC 1H  
CTEMP 14.1 c  
SLVNT DMSO  
EXREF 39.50 ppm  
BF 3.00 Hz  
RGAIN 25

# ICG **INDOFINE Chemical Company, Inc.**

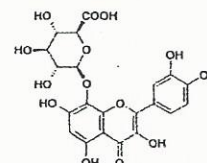
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 Product Name: Hibifolin  
 Lot No.: 1508653



<sup>13</sup>C NMR DMSO-d6

Analysed By : BRJ

175.669

172.359

158.232

156.618

148.435

147.949

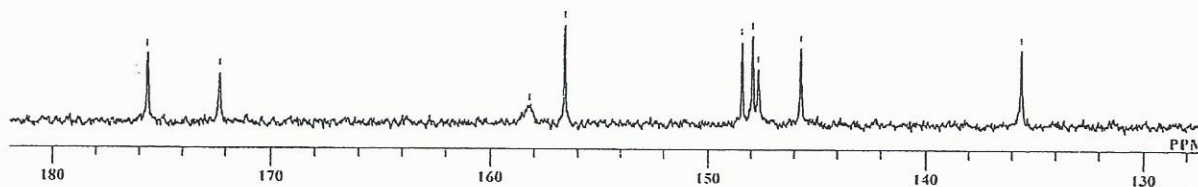
147.686

146.735

135.625

DFILE Hbf 13C.ats  
 COMNT Hbf 13C NMR DMSO-d6

OBNUC 13C  
 EXMOD BCM  
 OBFRQ 100.40 MHz  
 OBSET 125.00 KHz  
 OBFIN 10500.00 Hz  
 POINT 32768  
 FREQU 27118.64 Hz  
 SCANS 512  
 ACQTM 1.2083 sec  
 PD 1.7920 sec  
 PWI 6.90 usec  
 IRNUC III  
 CTEMP 14.1 c  
 SLVNT DMSO  
 EXREF 39.50 ppm  
 BF 3.00 Hz  
 RGAIN 25





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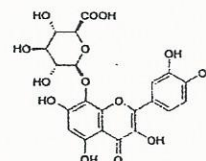
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Lot No.: 1508653

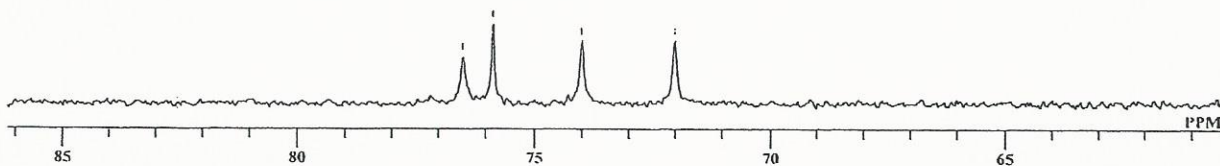


<sup>13</sup>C NMR DMSO-d<sub>6</sub>

Analysed By: BRJ



DFILE	Hbf	13C.als
COMNT	Hbf	13C NMR DMSO-d6
OBNUC	13C	
EXMOD	BCM	
OBFRQ	100.40 MHz	
OBSET	125.00 kHz	
OBFIN	10500.00 Hz	
POINT	32768	
FREQU	27118.64 Hz	
SCANS	512	
ACQTM	1.2083 sec	
PD	1.7920 sec	
PW1	6.90 usec	
IRNUC	1H	
CTEMP	14.1 c	
SLVNT	DMSO	
EXREF	39.50 ppm	
BF	3.00 Hz	
RGAIN	25	



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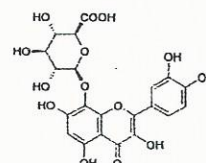
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Product Name: Hibifolin  
Lot No.: 1508653



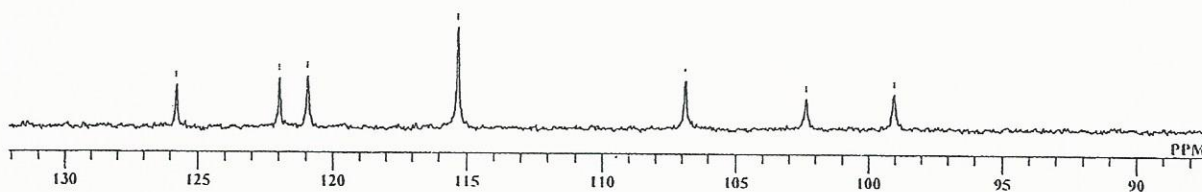
<sup>13</sup>C NMR DMSO-d6

Analysed By: BRJ



DFILE Hbf 13C.at5  
COMNT Hbf 13C NMR DMSO-d6

OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.00 Hz  
POINT 32768  
FREQU 27118.64 Hz  
SCANS 512  
ACQTM 1.2083 sec  
PD 1.7920 sec  
PWI 6.90 usec  
IRNUC 1H  
CTEMP 14.1 c  
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EXREF 39.50 ppm  
BF 3.00 Hz  
RGAIN 25





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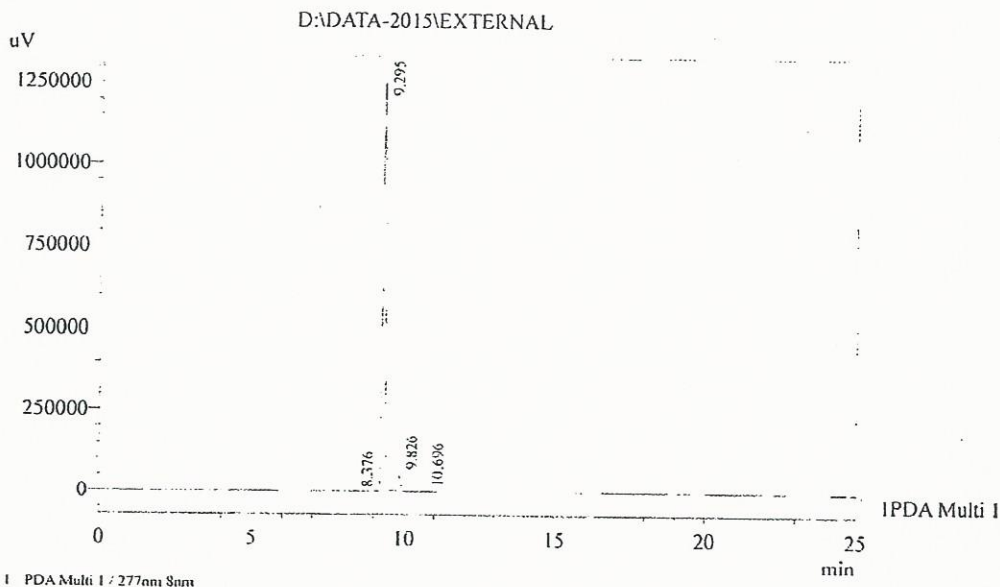
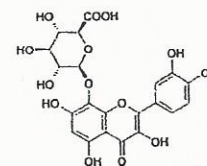
e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

## LC-MS ANALYSIS

Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653

Sample Name : HBF  
AR Number : #HBF  
User Id : TJR

Method : D:\Methods\External  
Method Parameters : Column : Inertsil ODS-3V, 150 X 4.6 mm, 5.0  $\mu$ m  
Mobile Phase : A: 0.1% TFA in Water B: Acetonitrile Flow Rate: 1.0 mL/min  
T(min) : 0.01, 1.0, 7.0, 14.0, 18.0, 20.0, 22.0, 25.0  
A(%) : 90, 90, 68, 68, 10, 10, 90, 90  
Sample Preparation : In mobile phase A:B (1:1)



I PDA Multi I / 277nm 8nm

PDA Ch1 277nm 8nm

Peak#	Ret. Time	Area	Resolution	Theoretical Plate#	Area %
1	8.376	12063	0.000	28716.235	0.141
2	9.295	8075585	4.780	39705.555	94.443
3	9.826	404843	2.642	33268.135	4.735
4	10.696	58245	3.643	26611.528	0.681
Total		8550735			100.000

# ICC **INDOFINE Chemical Company, Inc.**

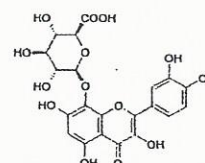
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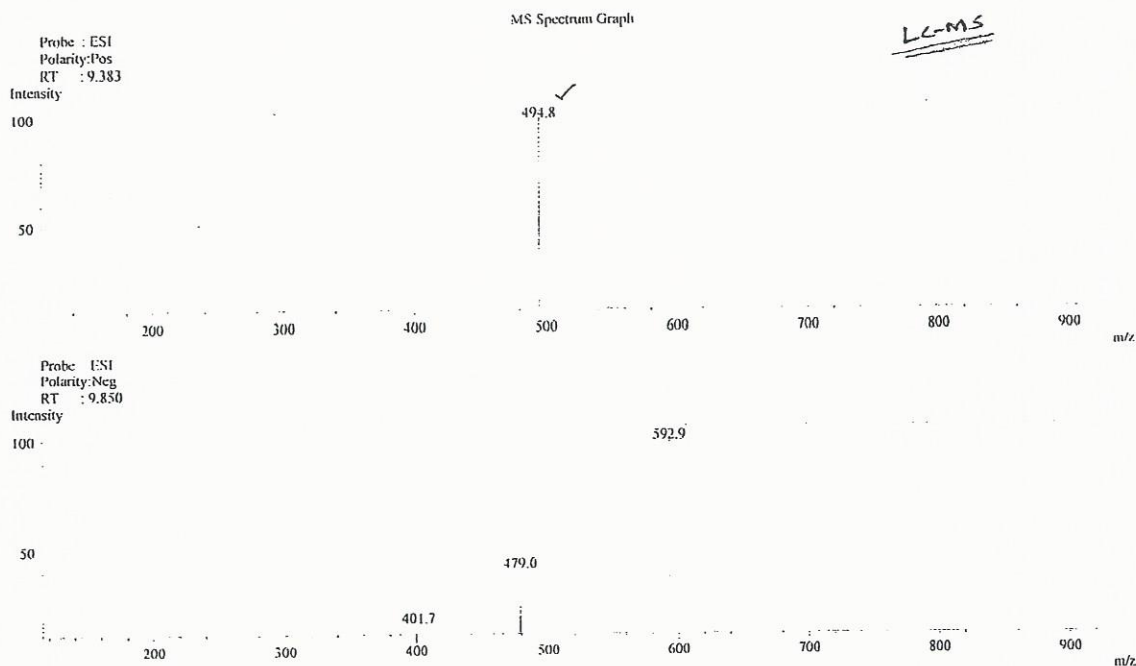
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Catalog No.: 22-412  
Product Name: Hibifolin  
Lot No.: 1508653



Sample Information  
Sample Name : HRF  
AR Number : #11BF  
Data File : 11BF-  
Acquired by : FJR





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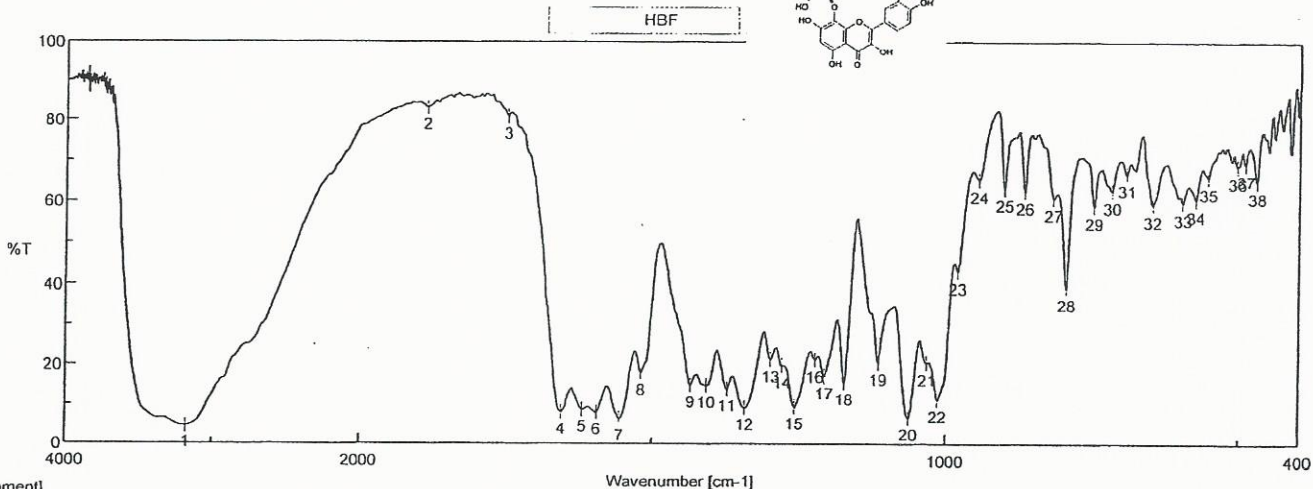
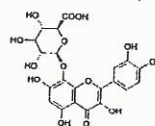
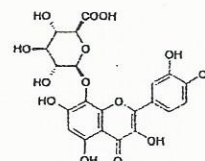
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Product Name: Hibifolin  
Lot No.: 1508653



[Comment]  
 Sample Name HBF  
 Comment KBr Pellet  
 User DRNP  
 Division QC

[Data Information]

		: Picking									
No.	Position	Intensity	No.	Position	Intensity	No.	Position	Intensity	No.	Position	Intensity
1	3180.0	4.541	2	1886.0	82.967	3	1748.2	80.756	4	1654.6	8.074
6	1595.8	7.931	7	1556.3	6.377	8	1519.6	17.877	9	1434.8	14.852
11	1372.1	13.896	12	1341.2	9.144	13	1297.9	21.104	14	1277.6	19.630
16	1221.7	21.017	17	1206.3	17.015	18	1172.5	15.468	19	1114.7	20.379
21	1031.7	20.256	22	1013.4	11.100	23	980.6	43.094	24	945.9	65.174
26	866.8	62.443	27	817.7	60.737	28	794.5	38.933	29	748.2	58.785
31	692.3	66.725	32	648.0	59.214	33	596.9	59.654	34	574.7	60.446
36	504.3	68.775	37	490.8	69.275	38	471.5	65.039			