



INDOFINE Chemical Company, Inc.

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

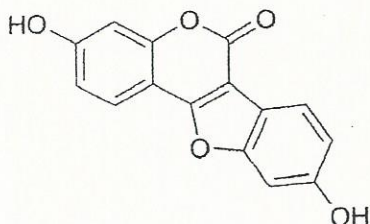
Phone: (908) 359-6778 • FAX: (908) 359-1179

website: www.indofinechemical.com

e-mail: chemical@indofinechemical.com

CERTIFICATE OF ANALYSIS

<u>Catalog number:</u>	020535
<u>Product name:</u>	COUMESTROL
<u>Cas Number:</u>	[479-13-0]
<u>Lot Number:</u>	1708854
<u>Chemical Formula:</u>	C ₁₅ H ₈ O ₅
<u>Molecular Weight:</u>	268.22
<u>Appearance:</u>	Cream color powder
<u>Solubility:</u>	Soluble in DMSO
<u>TLC:</u>	Hexane:Ethyl acetate (6:4)
<u>Moisture content:</u>	0.30%
<u>NMR Spectrum:</u>	Enclosed (Confirms to the structure)
<u>Mass Spec:</u>	Enclosed (Complies)
<u>Storage:</u>	Store in a cool dry place
<u>Purity (HPLC):</u>	99.18%





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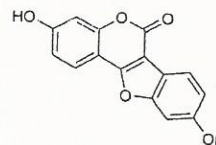
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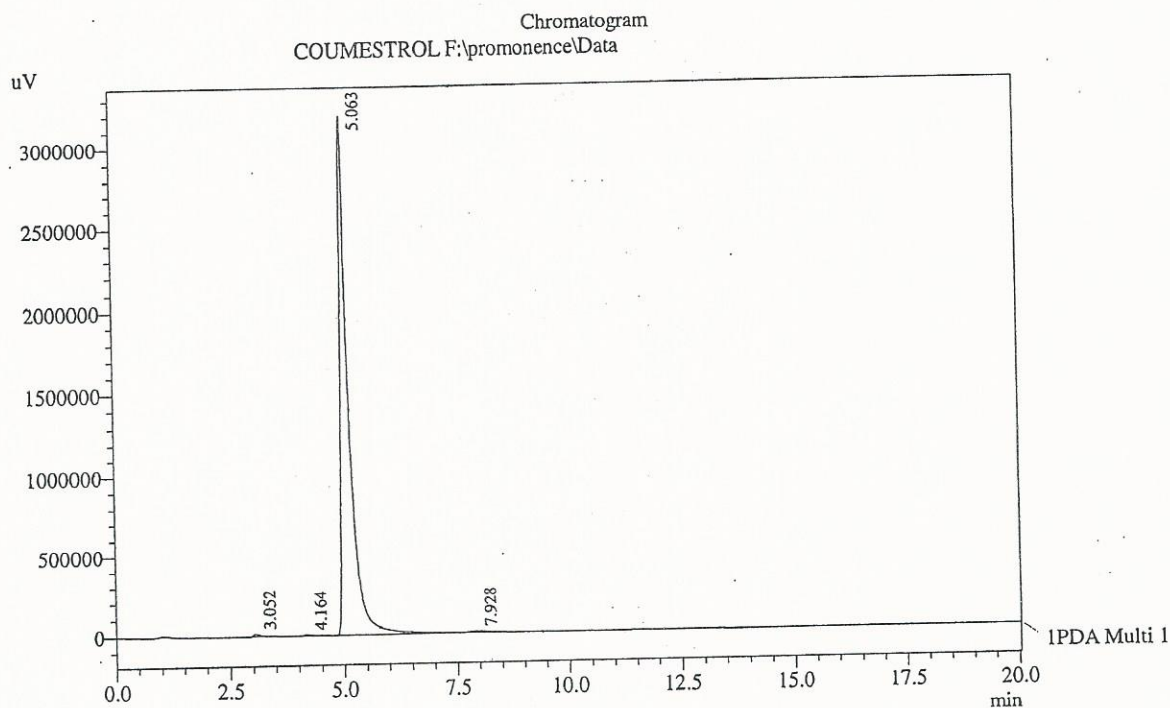
HPLC ANALYSIS

Acquired by : Admin
Sample Name : COUMESTROL
Sample ID : 2.5 gm
Injection Volume : 20 uL
Data Filename : 040817C.lcd
Method Filename : Isocratic Method.lcm
Report Filename : Default.lcr

Catalog No.: 020535
Product Name: Coumestrol
Lot No.: 1708854



Column : LUNA C-18(2), (250mm x4.6mm 5.0μ)
Flow : 1.000 mL/min.
Mobile Phase : A(50% of 0.05% TFA in water) B(50% of Acetonitrile)



1 PDA Multi 1 / 254nm 4nm

PeakTable

PDA Ch1 254nm 4nm

Peak#	Name	Ret. Time	Height	Area %	Relative Retention Time
1	RT:3.052	3.052	13347	0.27	0.60
2	RT:4.164	4.164	5406	0.13	0.82
3	RT:5.063	5.063	3197106	99.18	1.00
4	RT:7.928	7.928	7612	0.41	1.57
Total			3223471	100.00	



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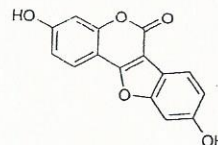
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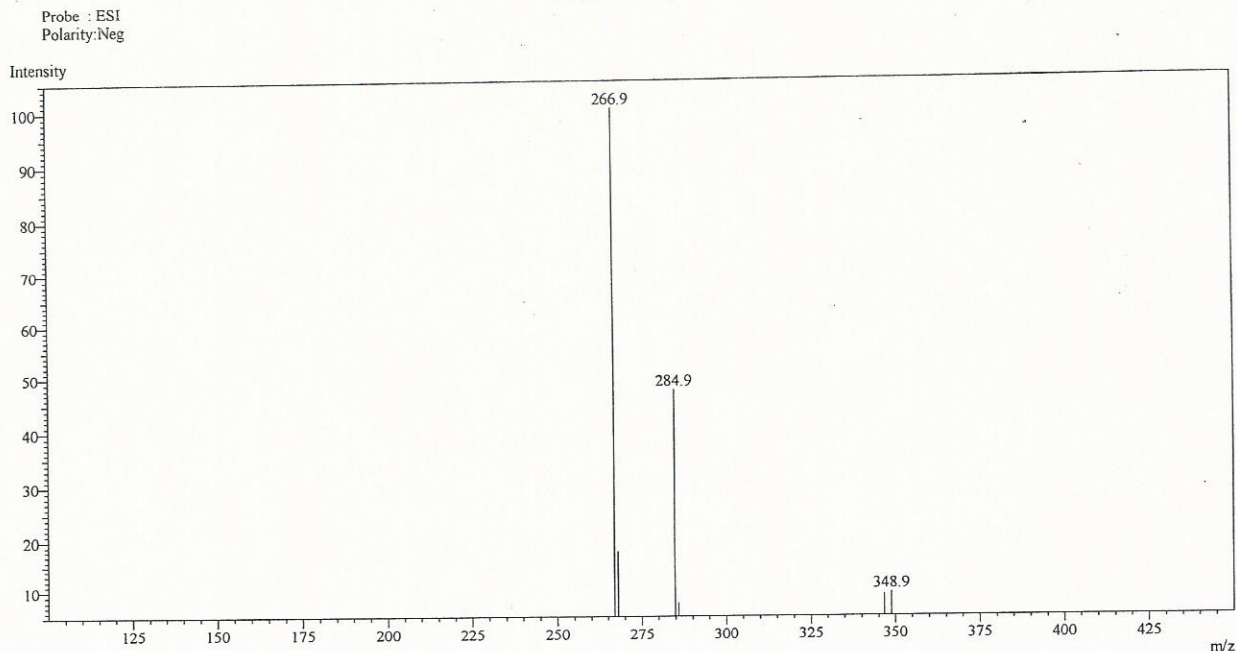
e-mail: chemical@indofinechemical.com

Catalog No.: 020535
Product Name: Coumestrol
Lot No.: 1708854



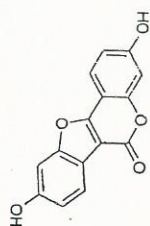
Sample Information
Sample Name : CMT- -LOT-1
Batch No : 039107/17
Data File : CMT- -LOT-1.lcd
Method File : Test1(ESI).lcm
Acquired by : Prasad
Instrument ID : LCMS-01

MS Spectrum Graph





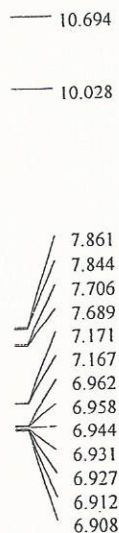
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Catalog No.: 020535
Product Name: Coumestrol
Lot No.: 1708854

039109-17

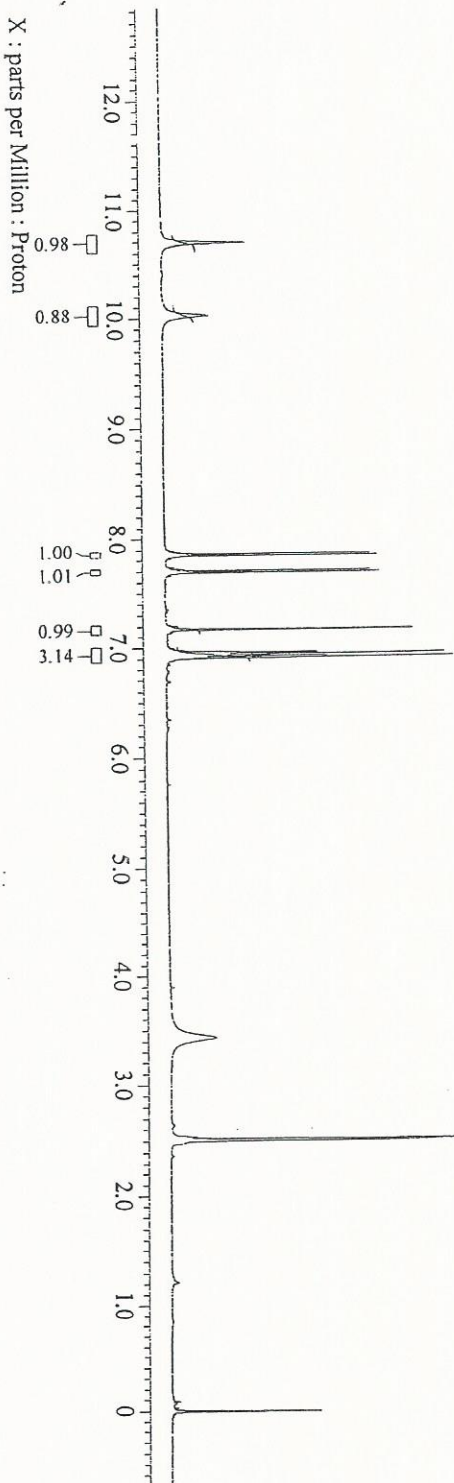
LOr-1_proton-1-2.jdf



----- PROCESSING PARAMETERS -----
sexp (0.3 [Hz], 0.0 [s])
trapezoid (0 [s], 0 [s], 80 [s], 100 [s])
zerofill (4)
fft (1, TRUE, TRUE)
machinephase
ppm
reference (-0.04839 [ppm], 0 [ppm])

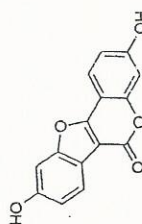
Instrument - NMR-500MHz (JEOL)
Instrument id - NMR-02
Author - gry1243
Reviewed by - Ramesh Yadav
Solvent - DMSO-D6
Spectrometer - JNM-ECZ500R/S1
Experiment - proton_jxp

Acquisition Parameter
X_Domain = 1H
X_Offset = 7.0 [ppm]
X_Sweep = 11.2815845 [kHz]
Scans = 16
Relaxation_Delay = 2 [s]





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LOI-1_proton-1-2.jdf

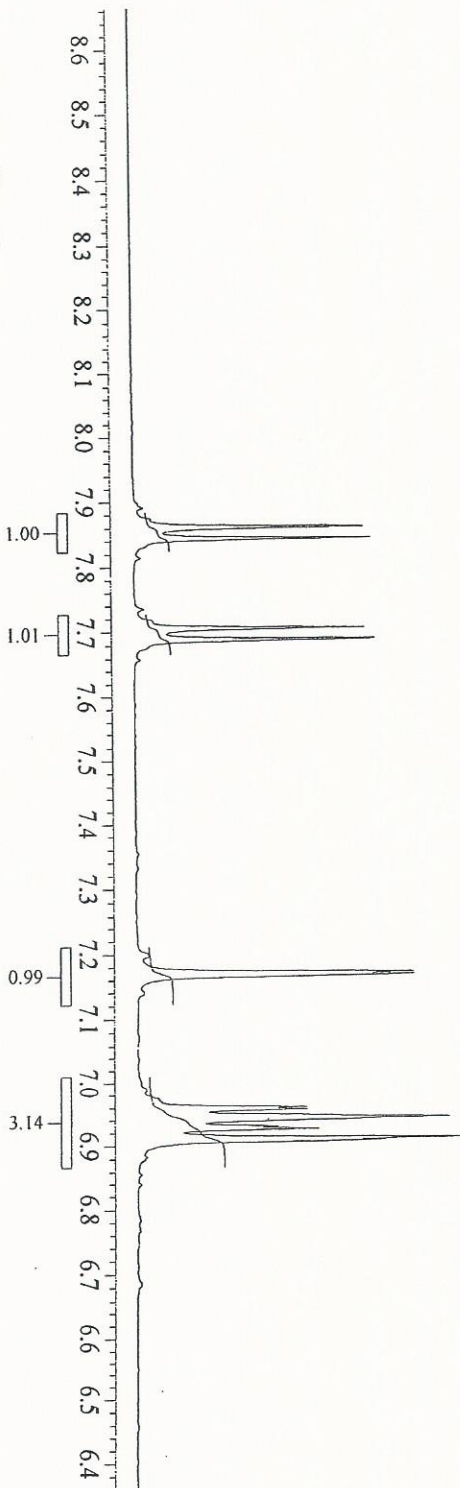
7.861
7.844
7.706
7.689

7.171
7.167
6.962
6.958
6.944
6.931
6.927
6.912
6.908

----- PROCESSING PARAMETERS -----
sweep (0.3 [Hz], 0.0 [s])
t1spacexd (0 [s], 0 [s], 80 [s], 100 [s])
zerofill (4)
fft (1, TRUE, TRUE)
machinephase
ppm
reference (-0.04839 [ppm], 0 [ppm])

Instrument : - NMR-500MHz (JEOL)
Instrument id : - NMR-02
Author : - gry1243
Reviewed by : - Ramesh Yadav
Solvent : - DMSO-D6
Spectrometer : - JNM-ECZ500R/SI
Experiment : - proton.jxp

Acquisition Parameter
X Domain : - 1H
X Offset : - 7.0 [ppm]
X Sweep : - 11.28158845 [kHz]
Scans : - 16
Relaxation_Delay : - 2 [s]



X : parts per Million : Proton



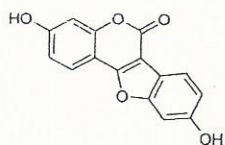
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J-Coupling Analysis Report

Path = W:\Raw Data

_proton-1-2.jdf

Position	Integral	Pattern	J
10.69[ppm]	1	s	
10.03[ppm]	1	s	
7.85[ppm]	1	d	J1 = 8.5[Hz]
7.70[ppm]	1	d	J1 = 8.3[Hz]
7.17[ppm]	1	d	J1 = 1.9[Hz]
6.93[ppm]	3	m	