



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

Catalog Number: P-004

Product Name: **PIPERLONGUMINE**
(Piplartine)

CAS Number: [20069-09-4]

Lot No.: 1709876

Molecular Formula: C₁₇H₁₉NO₅

Molecular Weight: 317.34

Melting Point: 100-120°C

Appearance: Off white powder

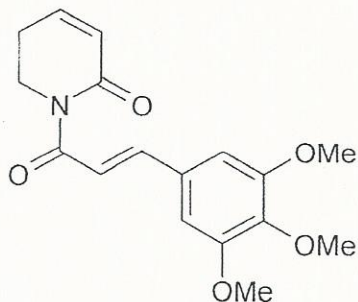
Solubility: Soluble in Chloroform

TLC: Hexane:Ethyl acetate (7:3)

NMR Spectrum: Enclosed (conforms to the structure)

Water content(KF): 0.36%

Purity(HPLC): 74.58%





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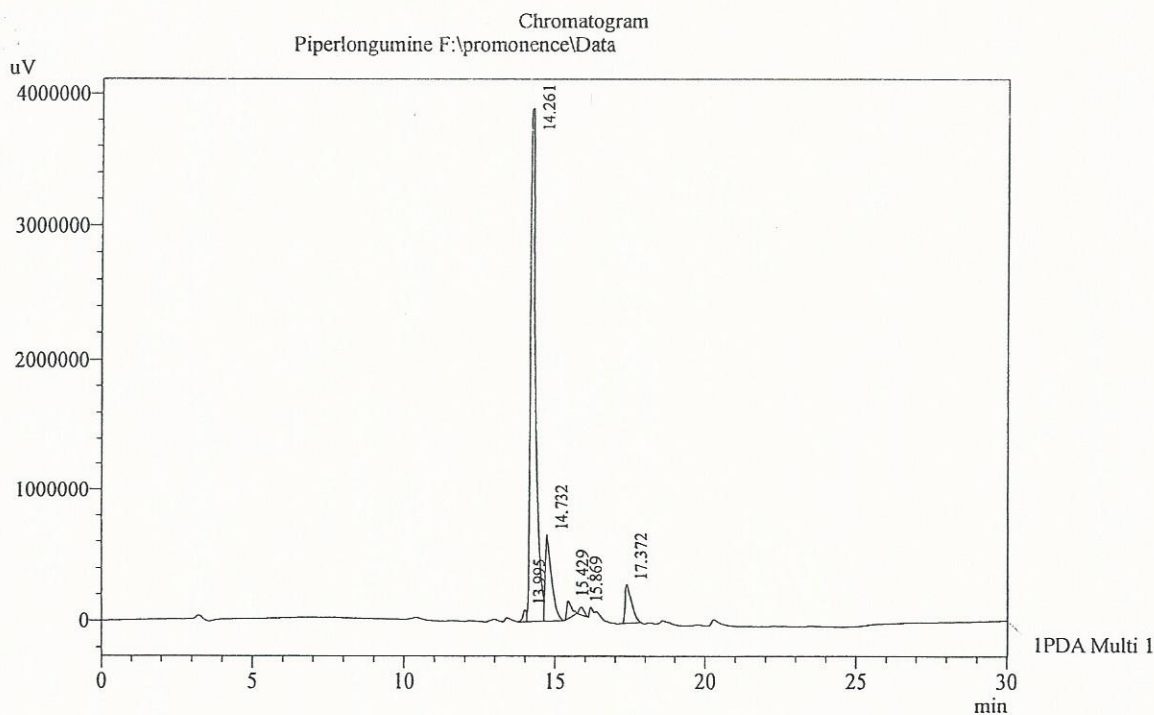
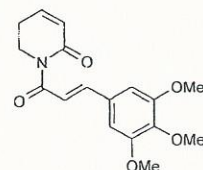
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HPLC ANALYSIS

Acquired by : Admin
Sample Name : Piperlongumine
Sample ID : 50 gm LOT-
Injection Volume : 20 uL
Data Filename : 070917B.lcd
Method Filename : Piperlongumine.lcm
Report Filename : Default.lcr

Catalog No.: P-004
Product Name: Piperlongumine
Lot No.: 1709876



1 PDA Multi 1 / 220nm 4nm

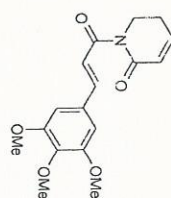
PeakTable

PDA Ch1 220nm 4nm

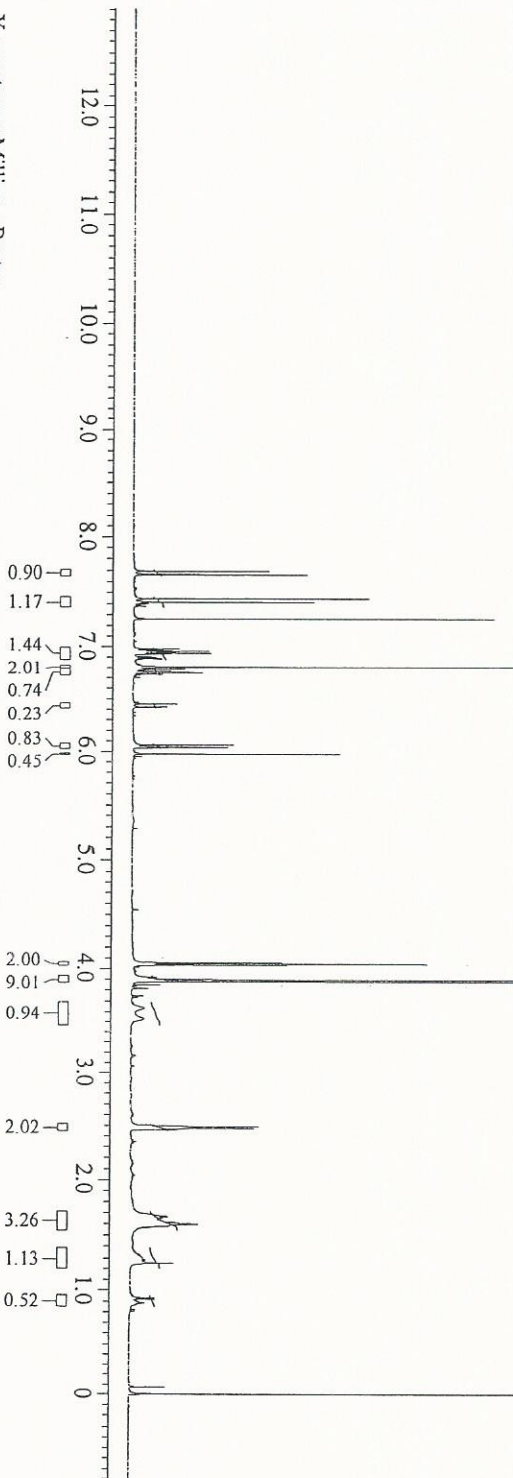
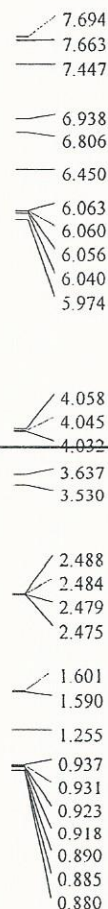
Peak#	Name	Ret. Time	Height	Area %	Relative Retention Time
1	RT: 13.995	13.995	89770	1.18	0.98
2	Piperlongumine	14.261	3899761	74.58	1.00
3	RT: 14.732	14.732	653448	14.45	1.03
4	piperine	15.429	132112	2.16	1.08
5		15.869	57162	0.95	1.11
6	RT: 17.372	17.372	297272	6.68	1.22
Total			5129526	100.00	



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PPRG-50gr with UK_proton-1-2.jdf
045216-17



----- PROCESSING PARAMETERS -----
secp (0.3[hz], 0.0[s])
trapezoid (0[%], 0[%], 80[%], 100[%])
zerofill (4)
fft (1, TRUE, TRUE)
machinephase
ppm
reference (-0.0157[ppm], 0[ppm])

Derived from: PPRG-50gr with UK_proton-1-1.jd

Filename = PPRG-50gr with UK_proton-1
Instrument = NMR-500MHz (JEOL)
Instrument id = NMR-02
Author = jmr1336
Reviewed by = Ramash Yadav
Solvent = CHLOROFORM-D
Spectrometer = JNM-EC250OR/S1
Experiment = proton.jxp

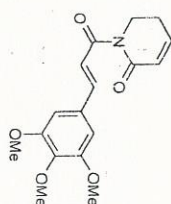
Acquisition Parameter
X Domain = 1H
X Offset = 7.0[ppm]
X Sweep = 11.2815845[kHz]
Scans = 16
Relaxation Delay = 2[s]

X : parts per Million : Proton

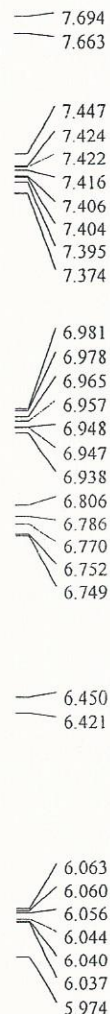
Catalog No.: P-004
Product Name: Piperlongumine
Lot No.: 1709876



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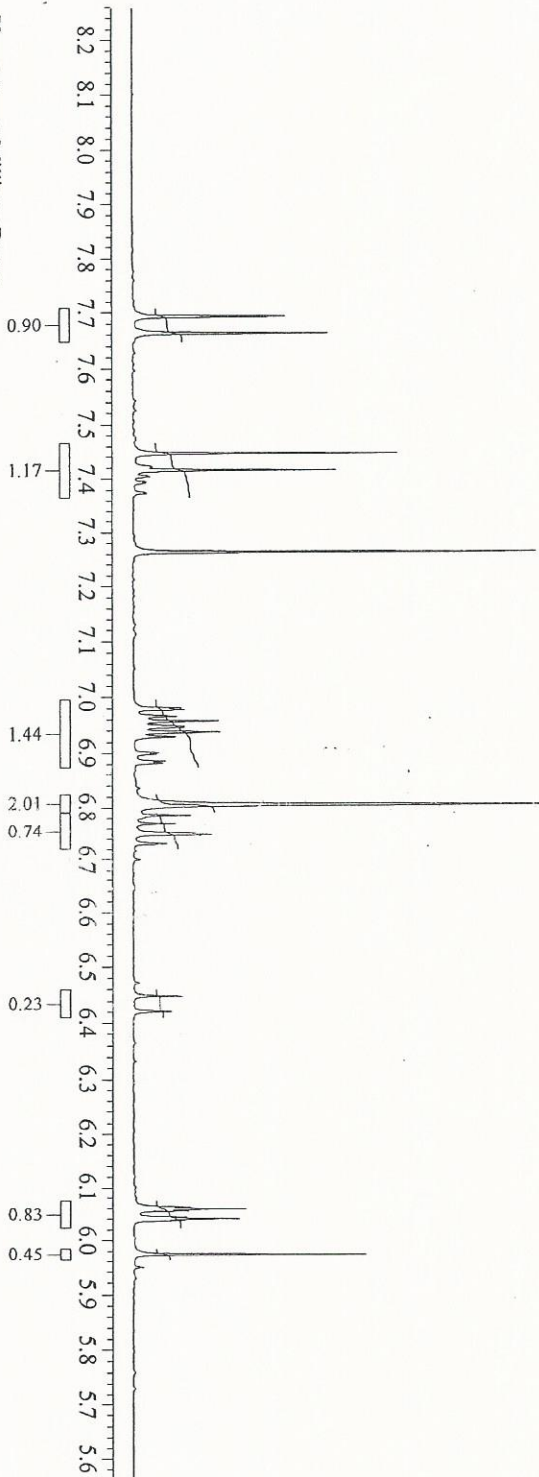


Filename = PPRG-50gr with UK_proton-1
Instrument = NMR-500MHz (JEOL)
Instrument id = NMR-02
Author = jmr1336
Reviewed by = Ramesh Yadav
Solvent = CHLOROFORM-D
Spectrometer = JNM-EZ500R/SI
Experiment = proton.jxp

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

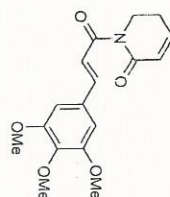
----- PROCESSING PARAMETERS -----
sepf (0.3 [Hz], 0.0 [s])
trapzoid (0 [%], 0 [%], 80 [%], 100 [%])
zerofill (4)
fft (1, TRUE, TRUE)
machinephase
ppm
reference (-0.0157 [ppm], 0 [ppm])
Derived from: PPRG-50gr with UK_proton-1-1.jd

X : parts per Million : Proton



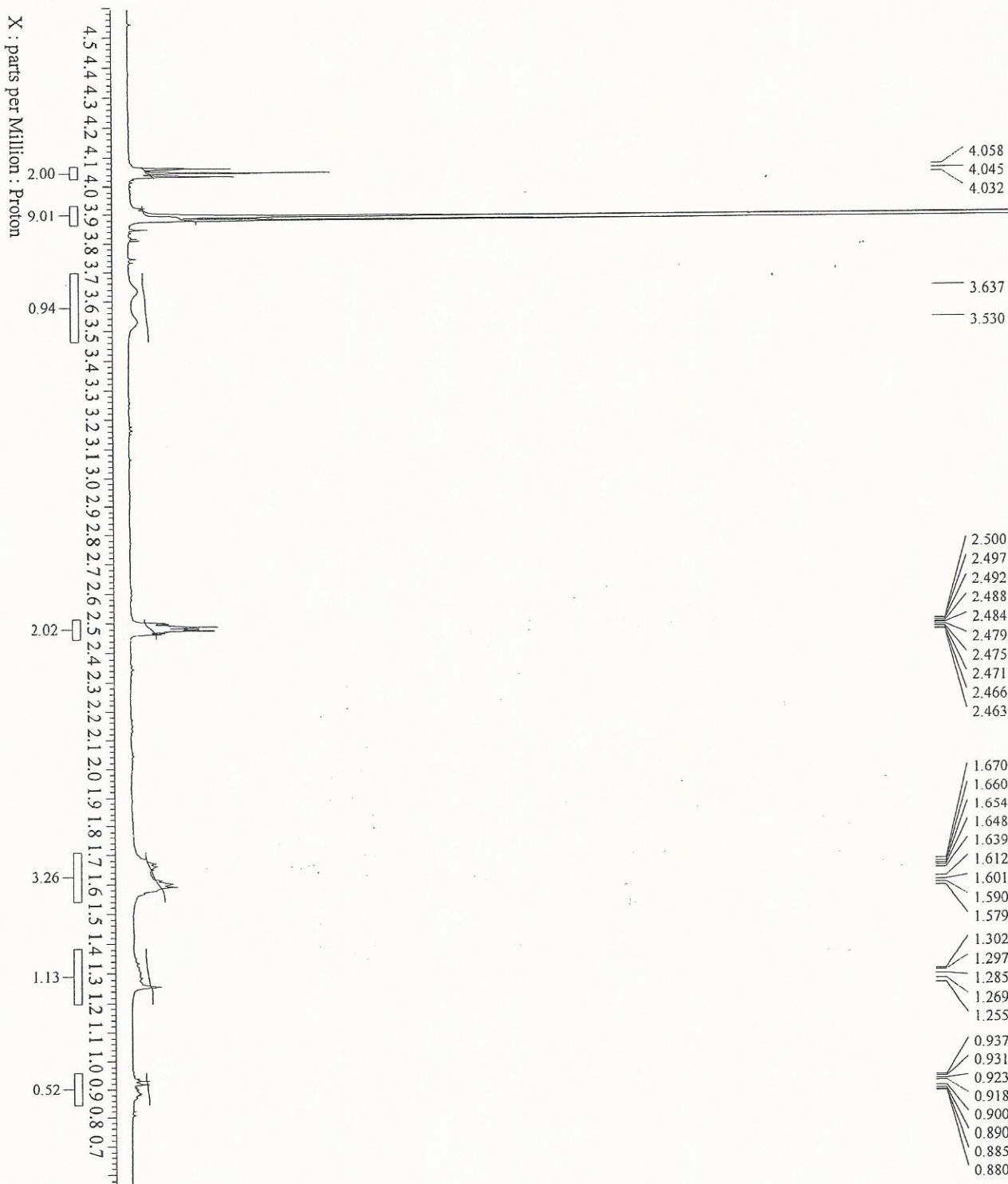


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PPRG-50gr with UK_proton-1-2.jdf
045216-17



----- PROCESSING PARAMETERS -----
sepf (0.3[Hz], 0.0[s])
trapezoid (0[*], 0[*], 80[*], 100[*])
zerofill (4)
fft (1, TRUE, TRUE)
machinephase
ppm
reference (-0.0157[ppm], 0[ppm])

Derived from: PPRG-50gr with UK_proton-1-1.jd

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X Offset = 7.0[ppm]
X Sweep = 11.28158845[Hz]
Scans = 16
Relaxation_Delay = 2[s]