



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.: 2110600

Molecular Formula: C₁₇H₁₉NO₅

Molecular Weight: 317.34

Melting Point: 121-125°C

Appearance: Off white powder

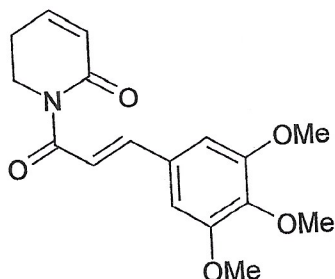
Solubility: Soluble in Chloroform

NMR Spectrum: Enclosed (conforms to the structure)

TLC: Hexane:Ethyl acetate (7:3)

Water content(KF): 0.08%

Purity(HPLC): 99.91%



Prepared by:
Ramesh Mandadi
Ramesh Mandadi
Director of Operations

Reviewed and Approved by:
Sujata Moton
Sujata Moton
VP



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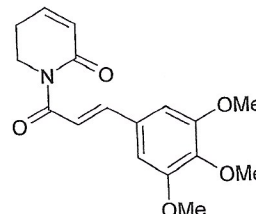
e-mail: chemical@indofinechemical.com

HPLC ANALYSIS

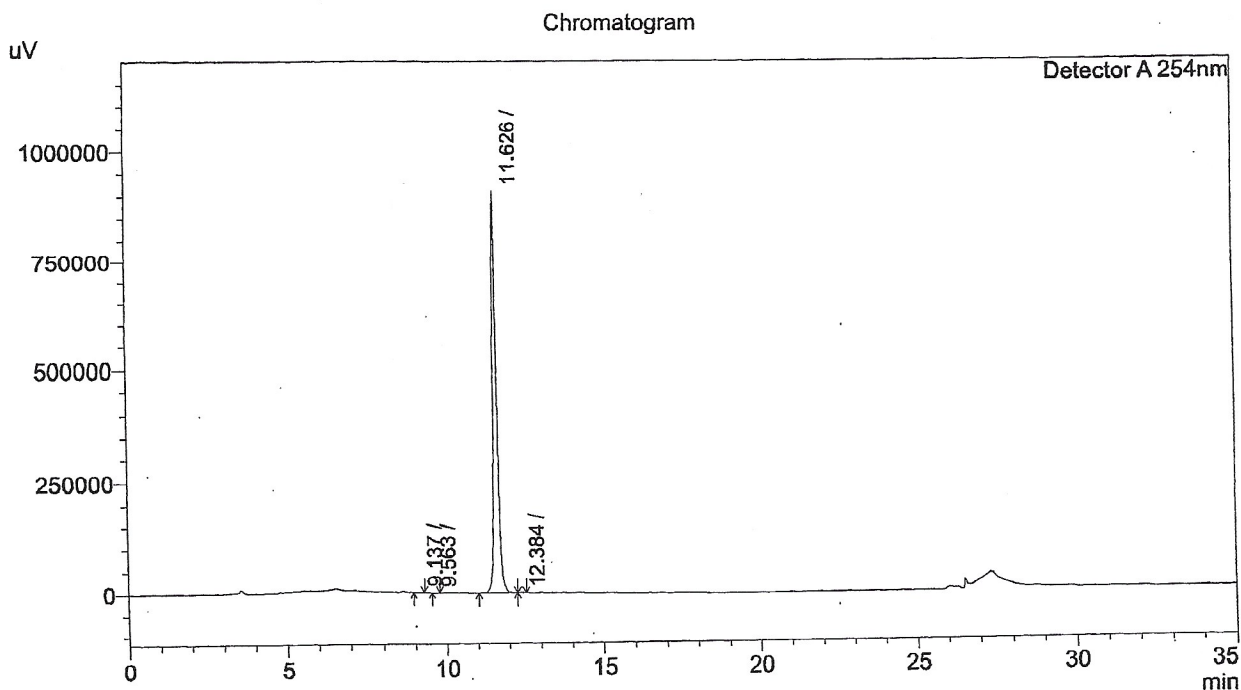
Sample ID :
Data Filename : 04102021038.lcd
Method Filename : Piperlongumine.lcm
Vial # : 1-1
Injection Volume : 10 uL

Catalog No.: P-004
Product Name: Piperlongumine
Lot No.: 2110600

Column: Inertsil ODS-2 : 250mm x 4.6mm, 5.0um
MP-A: Acetonitrile, MP-B: 10mM Ammonium acetate in water
Flow Rate: 1.0 ml/min,
Gradient program : 0.01/90, 12/10, 20/10, 23/90, 30/10 (% of A Conc)
Diluent: Acetonitrile (8 mg/25ml in diluent)
Acquired by: Sanjeev



<Chromatogram>



<Peak Table>

Detector A 254nm

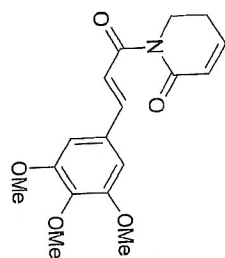
Peak#	Name	Ret. Time	Area	Area%	Relative Retention Time
1		9.137	3042	0.04	0.79
2		9.563	992	0.01	0.82
3		11.626	8172253	99.91	1.00
4		12.384	2932	0.04	1.07
Total			8179219	100.00	

Prepared by:
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Director of Operations

Reviewed and Approved by:
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VP



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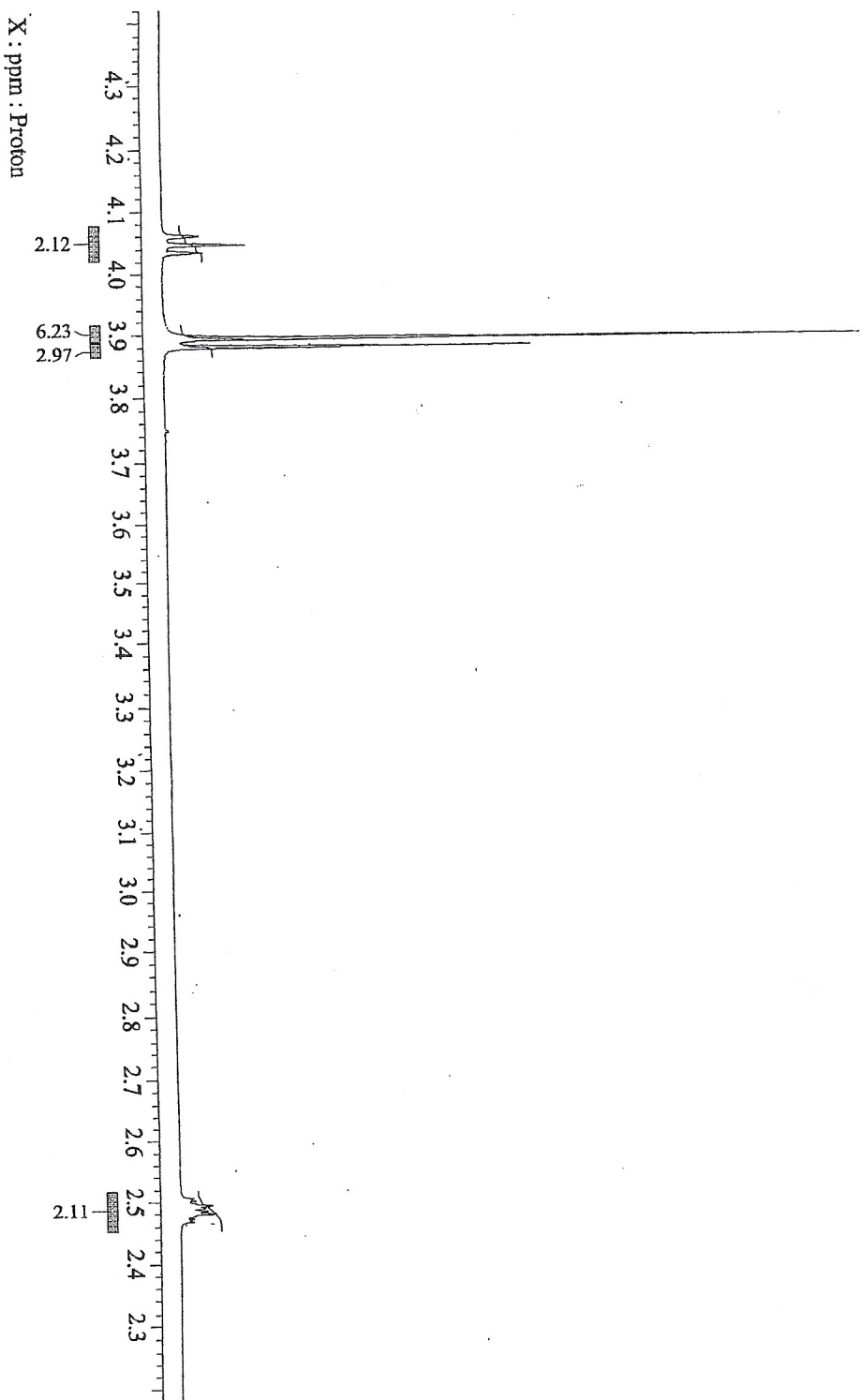
4.060
4.048
4.035
3.895
3.881

2.506
2.501
2.497
2.492
2.489
2.484
2.479
2.475
2.471
2.467

----- PROCESSING PARAMETERS -----
sexp (0.2 [Hz], 0.0 [s])
trapzoid (0 [%], 0 [%], 80 [%], 100 [%])
zerofill (1)
fft (1, TRUE, TRUE)
machinphase
ppm
auto_reference (5 [%], TRUE)
phase (0.48173, 0, 96.26888 [%])

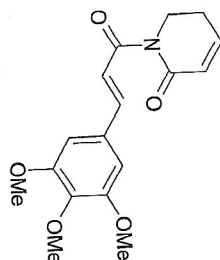
Instrument - JEOL 500MHz NMR
Instrument Id - NMR-02
Author - dm1440
Reviewed by - Kishore
Solvent - CHLOROFORM-D
Spectrometer - JNM-ECZ500R/SL
Experiment - proton.jxp

Acquisition Parameter
X_Domain = Proton
X_Offset = 7.0 [ppm]
X_Sweep = 11.26158845 [kHz]
Scans = 16
Relaxation_Delay = 2 [s]





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7.697
7.666

7.445
7.414

6.972
6.963
6.955
6.952
6.944
6.936

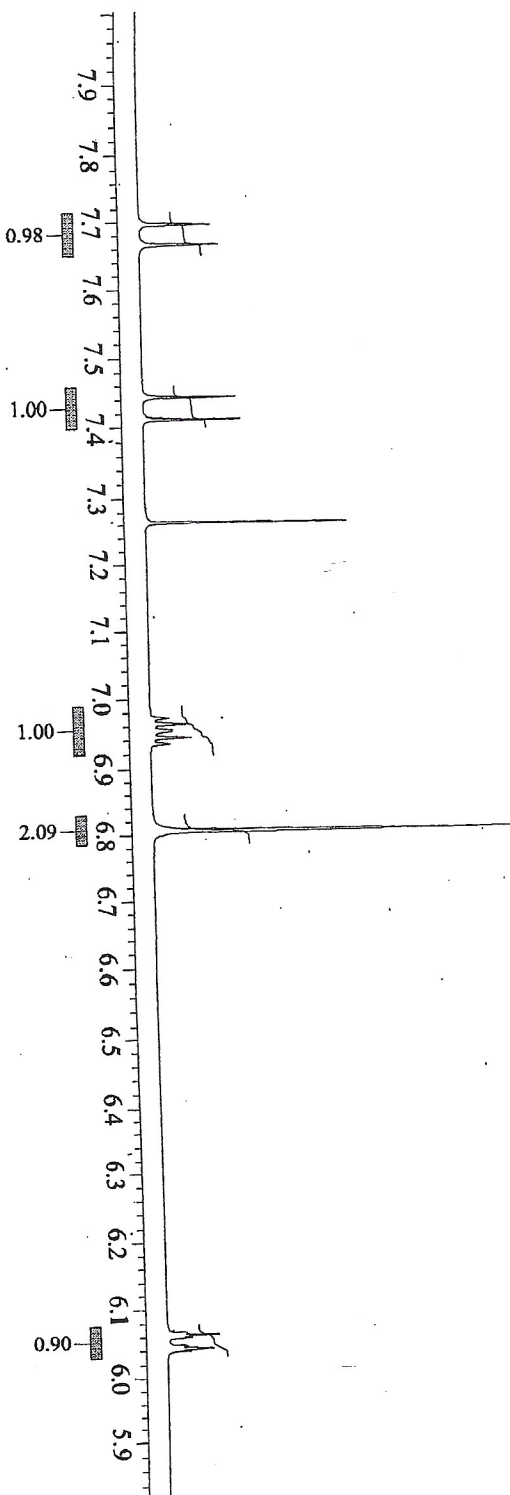
6.806

6.066
6.063
6.059
6.046
6.044
6.040

----- PROCESSING PARAMETERS -----
sawp(0.2[Hz], 0.0[s])
trapasoid(0[%], 0[%], 80[%], 100[%])
zeroc11(1)
frc(1, TRUE, TRUE)
machphase
ppm
auto_reference(51[%], TRUE)
phase(0.48173, 0, 96.26888[%])

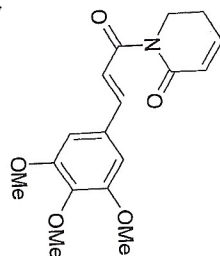
Instrument - JEOL 500MHz NMR
Instrument id - NMR-02
Author - bml440
Reviewed by - Kishore
Solvent - CHLOROFORM-D
Spectrometer - JNM-ECA500R/S1
Experiment - proton.jxp
Acquisition Parameter
X Domain = Proton
X Offset = 7.01ppm
X Sweep = 11.28158845[kHz]
Scans = 16
Relaxation_Delay = 2[s]

X : ppm : Proton





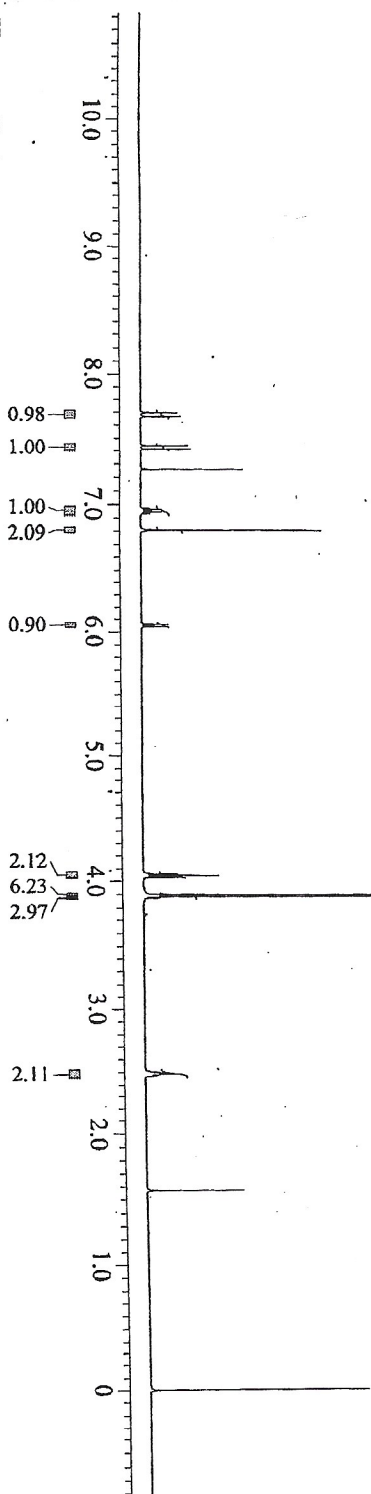
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7.697
7.666
7.445
7.414
6.963
6.944
6.806
6.066
6.063
6.059
6.046
6.044
6.040

4.060
4.048
4.035
3.895
3.881

2.506
2.501
2.497
2.492
2.489
2.484
2.479
2.475
2.471
2.467



----- PROCESSING PARAMETERS -----
sexp (0.21Hz, 0.01s)
traprdd (01%, 01%, 801%, 1001%)
zerofill (1)
fft (1, TRUE, TRUE)
machephase
ppm
auto_reference (51%, TRUE)
phase (0.48173, 0, 96.268881%)

Instrument = JEOL 500MHz NMR
Instrument id = NMR-02
Author = bml440
Reviewed by = Kishore
Solvent = CHLOROFORM-D
Spectrometer = JNM-ECZ500R/SL
Experiment = proton.jxp
Acquisition Parameter
X_Domain = Proton
X_Offset = 7.01ppm
X_Sweep = 11.281588451kHz
Scans = 16
Relaxation_Delay = 21s

Catalog No.: P-004
Product Name: Piperlongumine
Lot No.: 2110600