



# 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

Catalog Number: 020031S

Product Name: **BETULINIC ACID with HPLC**  
(3b-Hydroxy-20(29)-lupene-28-oic acid; Gratiolon)

CAS Number: [472-15-1]

Lot Number: 1607865

Chemical Formula: C<sub>30</sub>H<sub>48</sub>O<sub>3</sub>

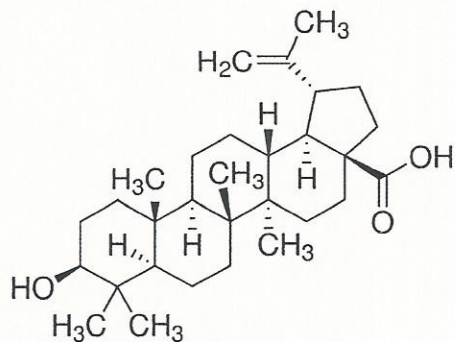
Molecular Weight: 456.70

Appearance: White powder

Loss on Drying: 0.18%

Storage: Store in a cool, dry place. Keep away from strong light and heat.

Purity(HPLC): 99.07%





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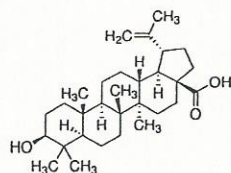
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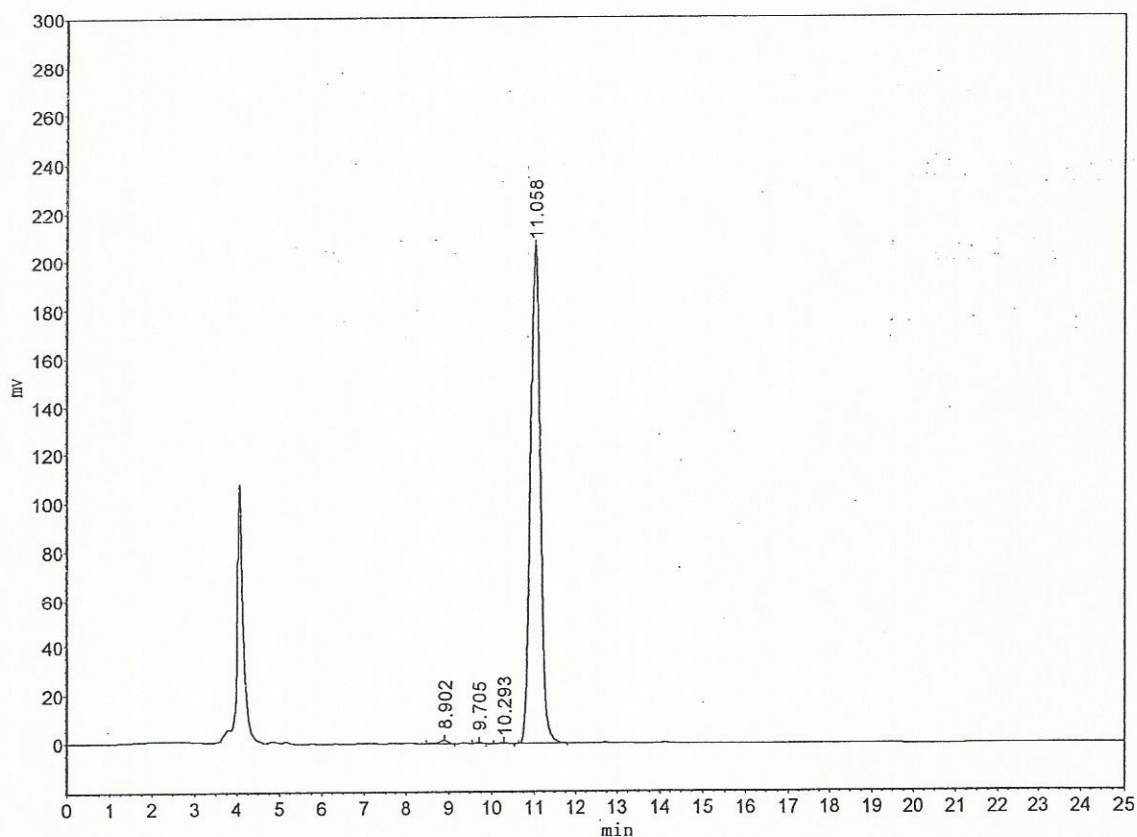
e-mail: [chemical@indofinechemical.com](mailto:chemical@indofinechemical.com)

## HPLC ANALYSIS



Catalog No.: 020031S  
Product Name: Betulinic acid  
Lot No.: 1607865

Mobile phase : Acetonitrile - Water 95:5  
Flow rate: 0.65 ml/min  
Wavelength: 210nm  
Temperature: 25°C

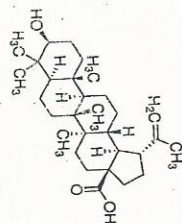


Peak Table

| Peak# | RT     | Height     | Area        | %Area    |
|-------|--------|------------|-------------|----------|
| 1     | 8.902  | 1303.439   | 19319.400   | 0.5619   |
| 2     | 9.705  | 515.487    | 5602.550    | 0.1629   |
| 3     | 10.293 | 508.596    | 6922.349    | 0.2013   |
| 4     | 11.058 | 206639.859 | 3406483.250 | 99.0738  |
|       |        | 208967.382 | 3438327.549 | 100.0000 |

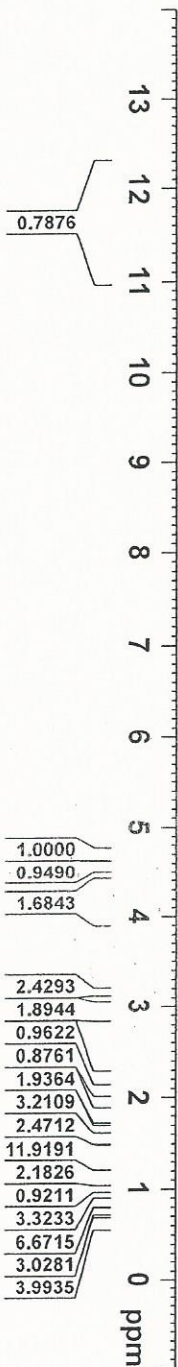


**INDOFINE Chemical Company, Inc.**  
 121 STRYKER LANE  
 BLDG. 30, SUITE 1  
 HILLSBOROUGH, NJ 08844



11.716  
 11.689

4.689  
 4.685  
 4.559  
 4.274  
 4.104  
 3.333  
 3.167  
 2.986  
 2.969  
 2.952  
 2.947  
 2.506  
 2.502  
 2.498  
 2.223  
 2.217  
 2.123  
 1.812  
 1.801  
 1.784  
 1.643  
 1.600  
 1.571  
 1.539  
 1.511  
 1.483  
 1.432  
 1.407  
 1.396  
 1.375  
 1.348  
 1.336  
 1.320  
 1.298



Current Data Parameters

F2 - Acquisition Parameters  
 Date\_ 20150723  
 Time 21:47  
 Operator  
 PROBHD 5 mm PABBO  
 PULPROG zgpg30  
 TD 65536  
 SFO 400.1417523 MHz  
 SOLVENT DMSO  
 NS 2  
 DS 2  
 SWH 9223.655 Hz  
 AQ 0.112453 Hz  
 AT 0.12443 Hz  
 RG 3.12949 deg  
 DM 60.000 usec  
 DE 2.000 usec  
 TE 30.2 deg  
 D1 1.00000000 sec  
 TDO 1

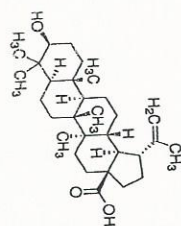
\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 12.73 usec  
 PD1 35.8489999 M  
 SFO1 400.1417523 MHz

F2 - Processing parameters  
 SI 65536  
 MDW 100.160000 MHz  
 SSB 0  
 LB 0 0.30 Hz  
 PC 1.00

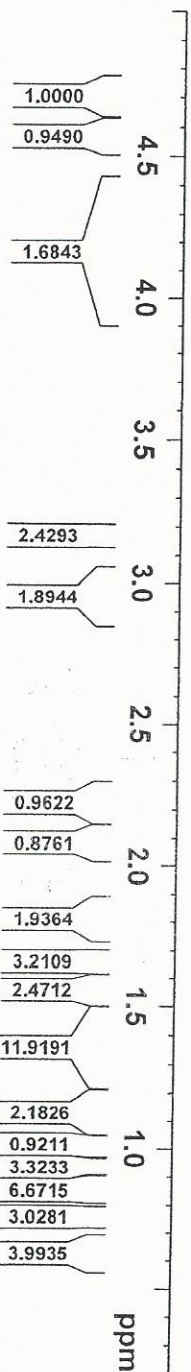
Catalog No.: 020031S  
 Product Name: Betulinic acid  
 Lot No.: 1607865



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- 4.689
- 4.685
- 4.559
- 4.274
- 4.104
- 3.333
- 3.167
- 2.986
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- 2.952
- 2.947
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- 2.498
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- 2.123
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- 1.801
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- 1.600
- 1.571
- 1.539
- 1.511
- 1.483
- 1.432
- 1.407
- 1.396
- 1.375
- 1.348
- 1.336
- 1.320
- 1.298
- 1.268
- 1.236
- 1.105
- 1.097
- 1.075
- 0.954
- 0.928
- 0.865
- 0.829
- 0.760
- 0.647



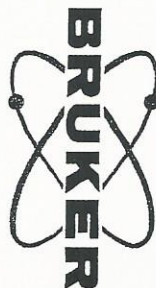
Current Data Parameters

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F2 - Acquisition Parameters
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Date_   2012
Time    21.47
INSTRUM spect
PROBHD  5 mm PABBO BBI/
PULPROG zgpg30
TD      65536
SOLVENT DMSO
NS      16
DS      4
SWH     8321.615 Hz
AQ      0.125493 Hz
RG      3.9845297 sec
DE      1.00 usec
TE      325.8 K
D1      1.00000000 sec
TD0     1

===== CHANNEL f1 =====
NUC1    13
P1      12.14 usec
PL1     15.00 dB
PLW1    15.00 dB
SFO1    400.1632013 MHz

F2 - Processing parameters
-----
SI      32768
SF      400.1600024 MHz
AQ      0.125493 sec
RG      3.9845297 sec
DE      1.00 usec
TE      325.8 K
D1      1.00000000 sec
TD0     1
  
```



Catalog No.: 020031S  
 Product Name: Betulinic acid  
 Lot No.: 1607865