



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: 04-2022

Product Name: **N^{α,ε}-BIS-Z-L-LYSINE**

CAS Number: [405-39-0]

Lot Number: 1410512

Chemical Formula: C₂₂H₂₆N₂O₆

Molecular Weight: 414.50

Melting Point: 76-80°C

Appearance: White powder

Solubility: Soluble in Methanol

Moisture(KF): 0.68%

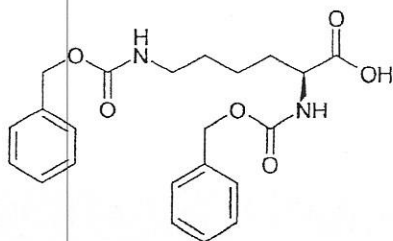
Loss on drying: 0.35%

NMR Spectrum: Enclosed (conforms to the structure)

Storage: Store at 0-8°C

Assay by titration: 98.34%

Purity(HPLC): 99.08%





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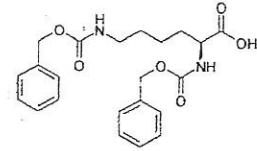
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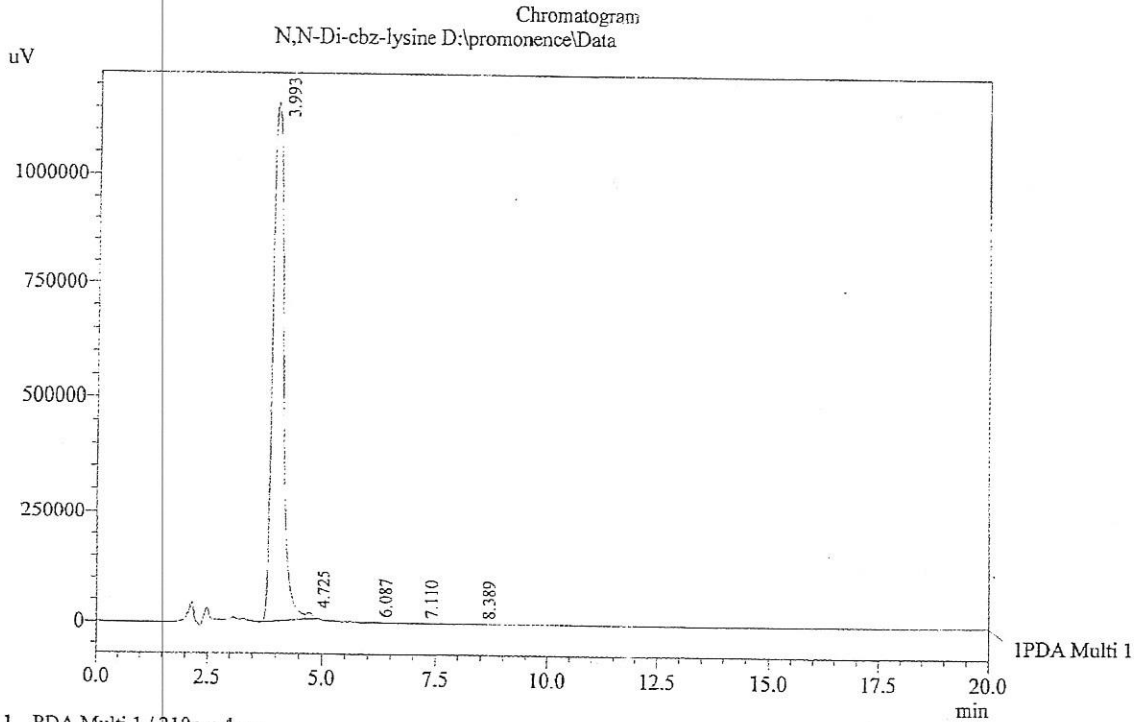
HPLC ANALYSIS

Acquired by : Sanjeev
 Sample Name : N,N-Di-cbz-lysine
 Sample ID : BBML (Unit-II)
 Injection Volume : 20 uL
 Data Filename : 200414H.lcd
 Method Filename : Linear Isocratic.M.lcm

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Column : LUNA C-18(2), (250mm x4.6mm 5.0μ)
 Flow : 1.000 mL/min.
 Mobile Phase : A(30% of 0.05% TFA in water) B(70% of Acetonitrile)
 Diluent : Acetonitrile



1 PDA Multi 1 / 210nm 4nm

PeakTable

PDA Ch1 210nm 4nm

Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	N,N-Di-cbz-lysine	3.993	18973534	99.08	1.00
2	RT:4.725	4.725	127586	0.67	1.18
3	RT:6.087	6.087	30151	0.16	1.52
4	RT:7.110	7.110	8385	0.04	1.78
5	RT:8.389	8.389	9329	0.05	2.10
Total			19148986	100.00	



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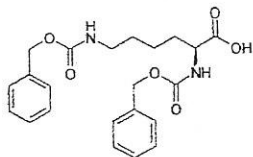
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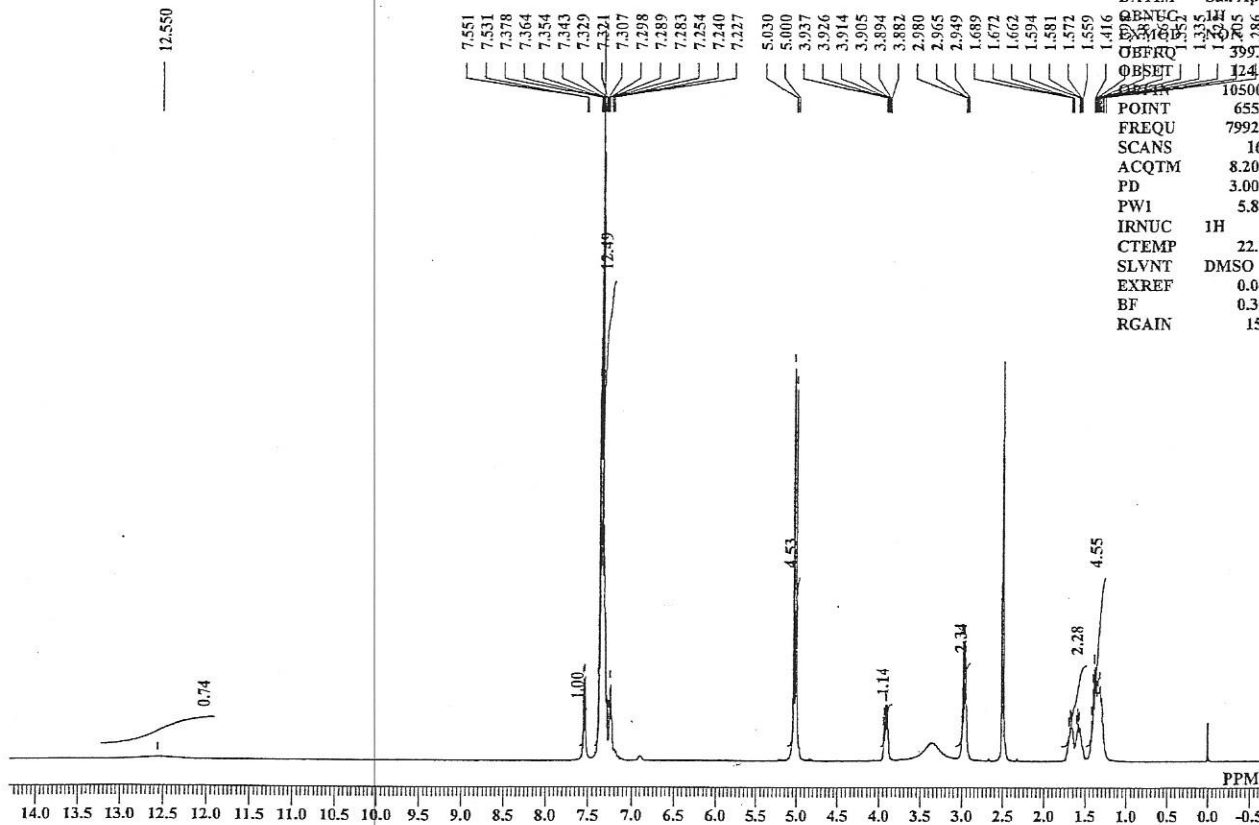
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N,N-DI-Cbz-LYSINE 1H NMR DMSO-d6
Analysed By : MSR

DFILE	N,N-DI-Cbz-LYSINE 1H.als
COMNT	N,N-DI-Cbz-LYSINE 1H NMR
DATIM	Sun Apr 20 17:04:44 2014
OBPRG	1H
OBSE	124.00 MHz
OBFRQ	399.65 MHz
OBSET	124.00 KHz
OBPRN	10500.00 Hz
POINT	65536
FREQU	7992.01 Hz
SCANS	16
ACQTM	8.2002 sec
PD	3.0000 sec
PW1	5.80 usec
IRNUC	1H
CTEMP	22.7 c
SLVNT	DMSO
EXREF	0.00 ppm
BF	0.30 Hz
RGAIN	15





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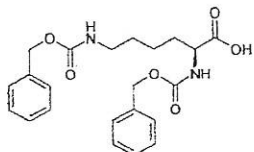
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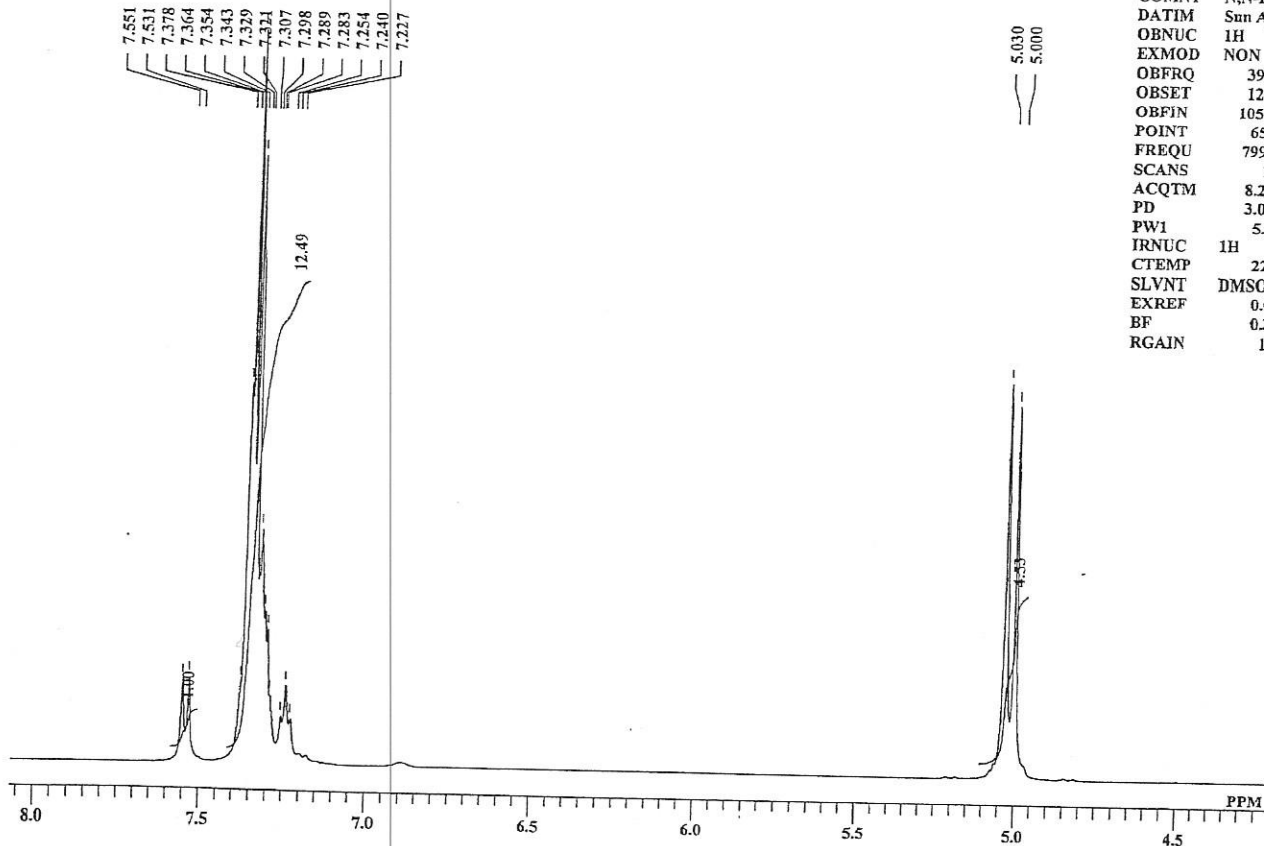
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OBSET	124.00 KHz
OBFIN	10500.00 Hz
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FREQU	7992.01 Hz
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ACQTM	8.2002 sec
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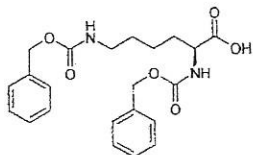
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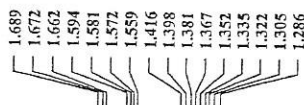
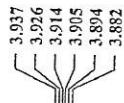
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