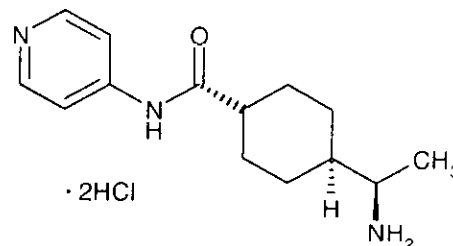


LC Laboratories[®]

CERTIFICATE OF ANALYSIS

Y-27632, Dihydrochloride Salt, >99%

LC LABS CAT. NO. Y-5301
FORMULA C₁₄H₂₁N₃O•2HCl
M.W. 320.26
CAS NO. [129830-38-2]
STORAGE Store at or below -20 °C***
SOLUBILITY Soluble in DMSO at 160 mg/mL;
soluble in ethanol at 12 mg/mL with warming; soluble in water at
90 mg/mL; buffers, serum or other additives may increase or
decrease the aqueous solubility.



ANALYTICAL DATA

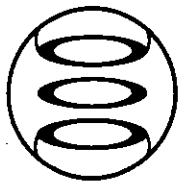
LOT NUMBER YXX-105
FORM Crystalline solid; granular or powder
COLOR White to Off-white
HPLC PURITY >99% (see attached chromatogram)
TLC PURITY >99% (see attached chromatogram)
PROTON NMR (see attached spectrum)

<u>ELEMENTAL ANALYSIS</u>	For: C ₁₄ H ₂₁ N ₃ O•2HCl•0.2H ₂ O:	<u>Calculated</u>	<u>Found</u>
		C 51.92%	51.90%
		H 7.28%	6.96%
		N 12.97%	12.89%
		Cl 21.89%	21.68%

***This product is stable at ambient temperature for several weeks during ordinary shipping and time spent in Customs or other delay. We recommend storage at -20 °C for long-term storage.

November 14, 2017

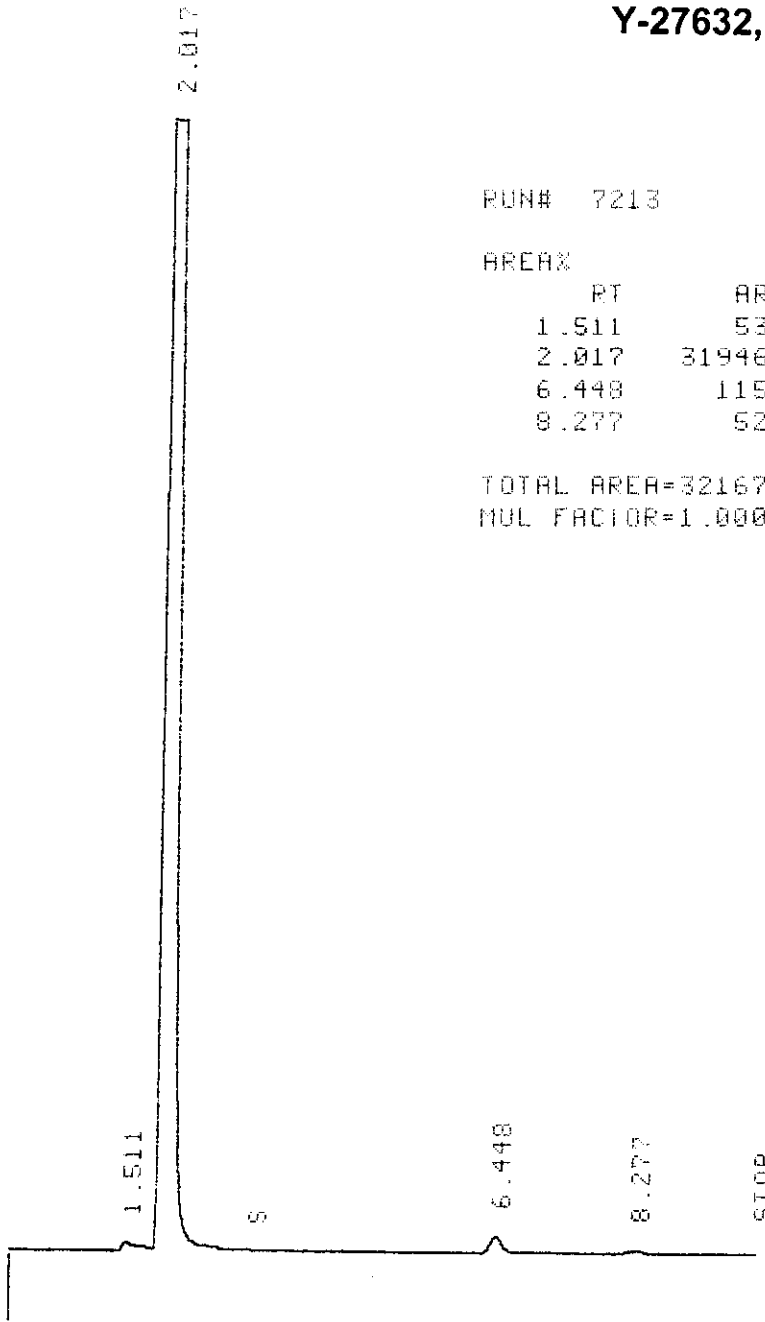
Tommy.D:\COFA-BIZ\N-2-COFA\YXX105FL WPD



LC Laboratories®

Cat. No. Y-5301
Y-27632, Dihydrochloride Salt
 Lot YXX-105
 >99%

*CAT. No. Y-5301 Y27632, DI HCl SALT LOT No. YXX-105 BREAK
 * RUN # 7213 NOV 16, 2017 10:53:18
 START

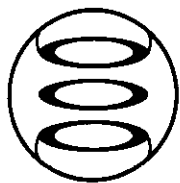


RUN# 7213 NOV 16, 2017 10:53:18

RT	AREA	TYPE	WIDTH	AREA%
1.511	5325	UV	.174	.16554
2.017	3194624	SHB	.108	99.31139
6.448	11579	PV	.181	.35996
8.277	5247	UV	.289	.16311

TOTAL AREA=3216774
 MUL FACTOR=1.0000E+00

HPLC: C₁₈ Column, 4.6 mm x 30 cm
 Acetonitrile/Methanol/Water/Trifluoroacetic acid 13/13/74/0.1
 2 mL/min
 UV₂₅₄ Detection



LC Laboratories®

Cat. No. Y-5301

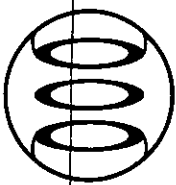
Y-27632, Dihydrochloride Salt

Lot YXX-105

>99%

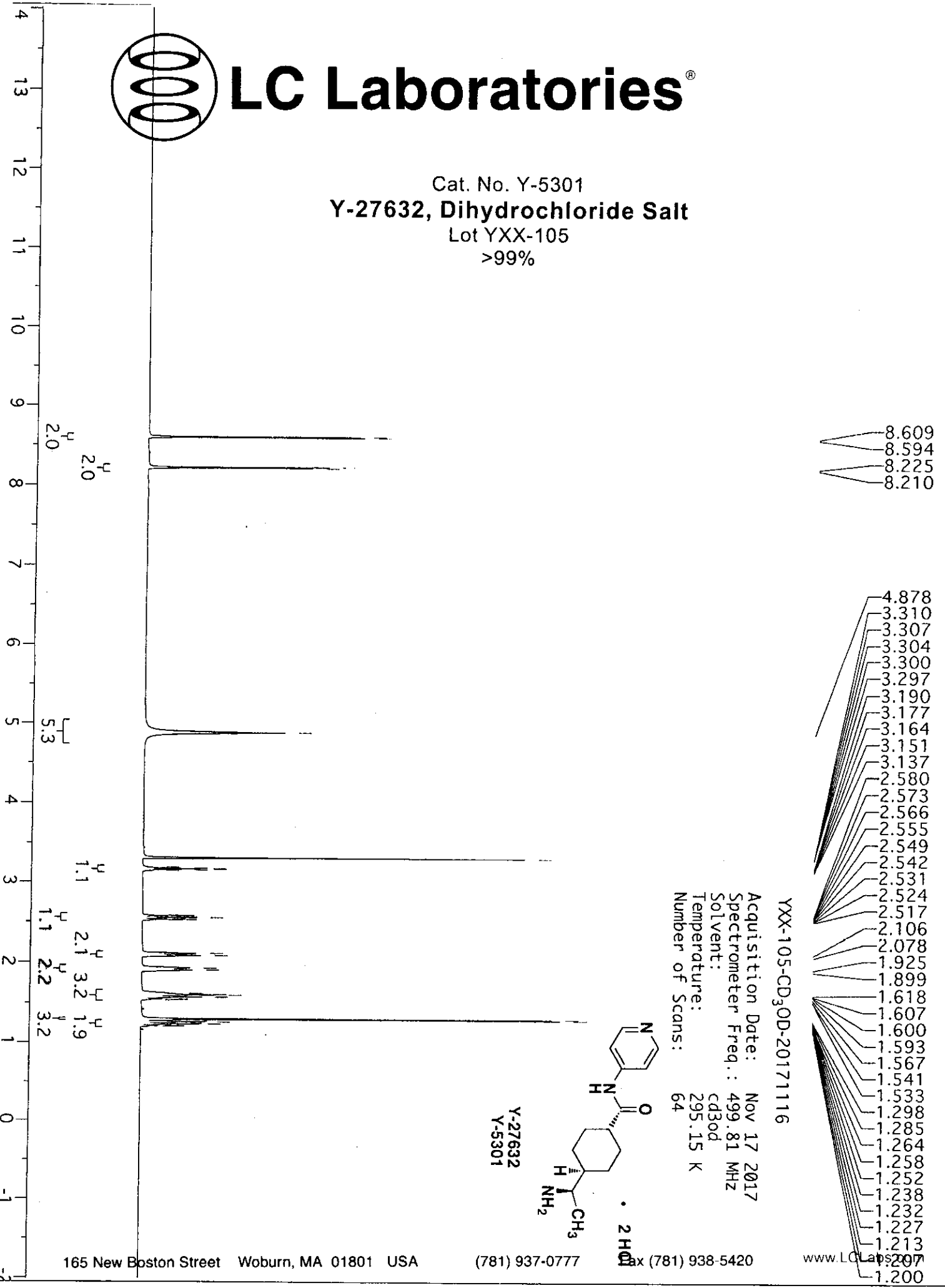


- TLC: 60 Å silica gel plates with fluorescent indicator
- Develop with Chloroform/Methanol/conc.NH₄OH 35/65/3
- Visualize via UV fluorescence quenching
- Also visualize by exposure to iodine vapor



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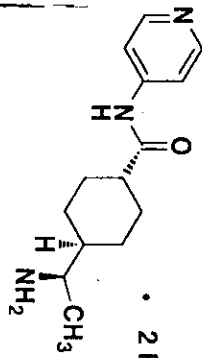
Cat. No. Y-5301
Y-27632, Dihydrochloride Salt
 Lot YXX-105
 >99%



8.609
 8.594
 8.225
 8.210

4.878
 3.310
 3.307
 3.304
 3.300
 3.297
 3.190
 3.177
 3.164
 3.151
 3.137
 2.580
 2.573
 2.566
 2.555
 2.549
 2.542
 2.531
 2.524
 2.517
 2.106
 2.078
 1.925
 1.899
 1.618
 1.607
 1.600
 1.593
 1.567
 1.541
 1.533
 1.298
 1.285
 1.264
 1.258
 1.252
 1.238
 1.232
 1.227
 1.213
 1.200

YXX-105-CD₃OD-20171116
 Acquisition Date: Nov 17 2017
 Spectrometer Freq.: 499.81 MHz
 Solvent: cd3od
 Temperature: 295.15 K
 Number of Scans: 64



Y-27632
 Y-5301