



BDG SYNTHESIS

Certificate of Analysis

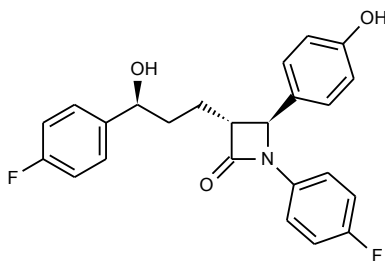
BDG Synthesis certifies that this reference material meets or exceeds the specifications stated herein.

Barry Dent

Barry R. Dent, PhD, Director
26 July 2012

Name: Ezetimibe
CAS Number: 163222-33-1

Structure:



Molecular Weight: $C_{24}H_{21}F_2NO_3 = 409.43$
Lot Number: BDG 2918
Appearance: White, crystalline solid
Corrected Purity: 99.7 % (HPLC) - 4.2 % (water) = 95.5 %
Re-test Date: 26 July 2017

Storage and Handling: Temperature: refrigerate for prolonged storage; may be handled and shipped at ambient temperature.
Humidity: not believed to be hygroscopic; may be handled in normal laboratory atmosphere.
Light: protect from strong sunlight.
Caution: only experienced laboratory personnel should handle the material.

Identity and Purity

Proton NMR Spectrum

Identity: the signals are consistent with the proposed structure and in accord with literature where available.
Residual Solvents: a trace (under 0.1 % w/w) of 2-propanol is observed.
Impurities: no significant impurities are evident in the spectrum.

Carbon-13 NMR Spectrum

Identity: the signals are consistent with the proposed structure and in accord with literature where available.

High-resolution Mass Spectrum (ESI+)

Found m/z 410.1593. $C_{24}H_{22}F_2NO_3$ $[M+H]^+$ requires m/z 410.1563. The deviation of 7.4 ppm is somewhat outside normally accepted limits for the establishment of identity by HRMS, and the mass spectral data should be considered in conjunction with other identity criteria.

HPLC

A sharp, symmetrical peak is observed (99.7 %). Note: in the absence of reference materials for preparing calibration curves, it is assumed that all peaks have the same detector response. Where possible, the conditions of analysis follow a pharmacopeial or literature method, or have been adapted from same.

Elemental Analysis

	Found:	C 67.54, H 5.19, N 3.30 %
$C_{24}H_{21}F_2NO_3 \cdot 1.0H_2O$	Requires:	C 67.44, H 5.42, N 3.28 %
$C_{24}H_{21}F_2NO_3$	Requires:	C 70.41, H 5.17, N 3.42 %

The elemental analyses fall substantially outside those expected for anhydrous material; the presence of water is reasonably expected from the method of purification and/or the type of material, and the "best-fit" hydrated molecular formula is given.

Karl-Fischer Analysis

	Found:	H ₂ O 4.2 %
$C_{24}H_{21}F_2NO_3 \cdot 1.0H_2O$	Requires:	H ₂ O 4.2 %

Of necessity, only a small sample could be used and only a single or duplicate analysis performed. We are unable to state what the errors in the reported water content are, but recommend that the result be used, as the best available, when determining corrected purity.

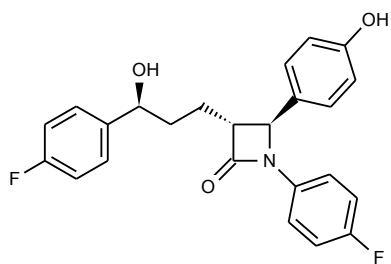
The available quantity of custom-synthesised material is always small, and this limits the extent and type of analytical data which can be obtained. This Certificate is presented in descriptive format for use by analytical chemists who are trained in the use of custom-synthesised materials. Custom materials often contain higher levels of residual solvents and/or water, and we urge you to use the corrected purity where needed rather than the raw HPLC purity. This compound is intended for use as an analytical reference material and it is not for human administration. Structures are shown with relative stereochemistry unless otherwise specified.

The re-test date is assigned from experience gained with the material in the laboratory and/or on storage. It is not possible to perform formal storage studies because of the small amount of material available.

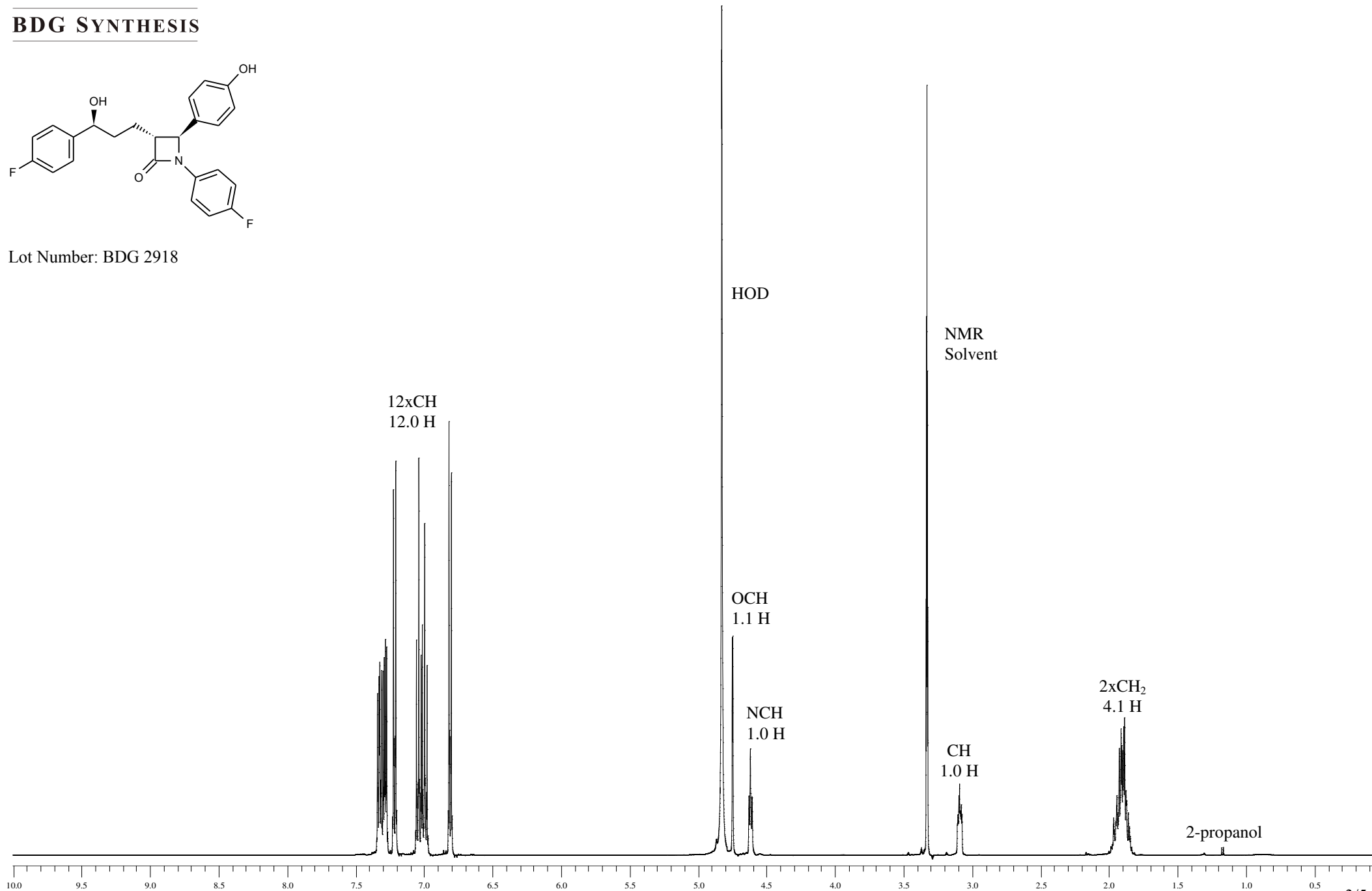


Proton NMR Spectrum of Ezetimibe in Methanol-d₄

BDG SYNTHESIS



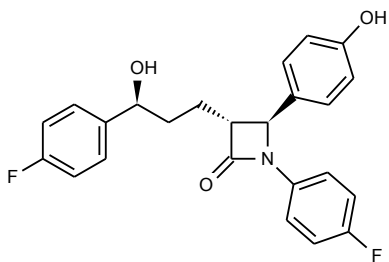
Lot Number: BDG 2918



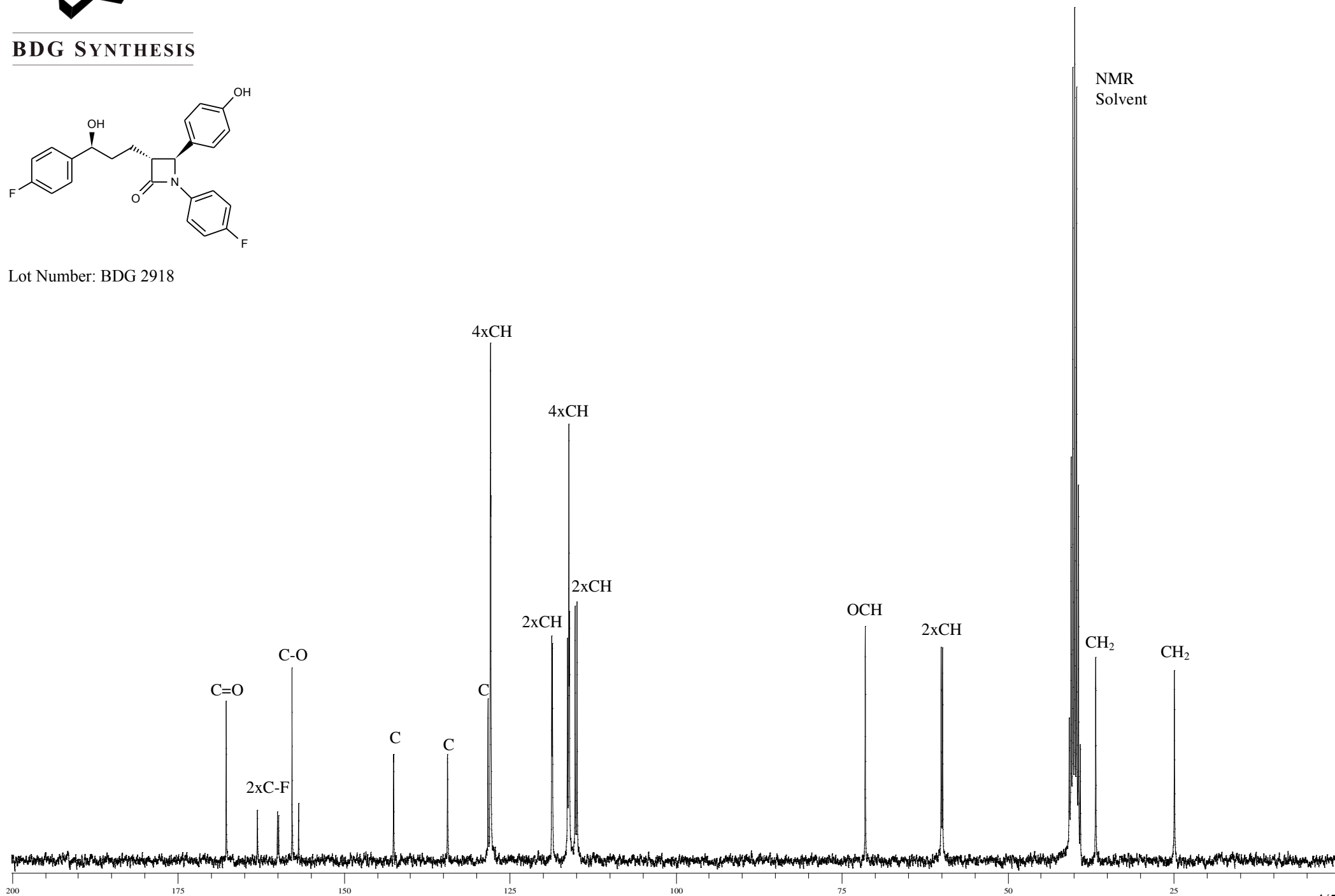


Carbon-13 NMR Spectrum of Ezetimibe in Methanol-d₄

BDG SYNTHESIS



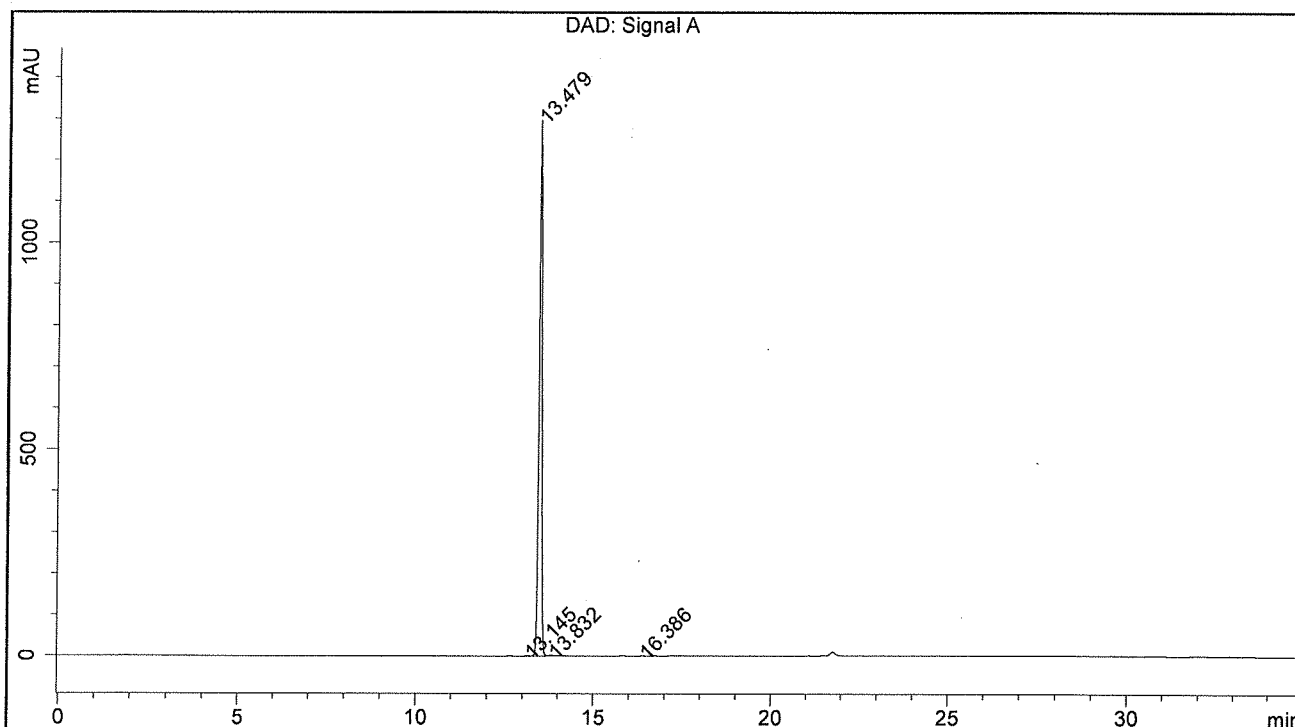
Lot Number: BDG 2918



BDG - Analysis of Ezetimibe

Column : Phenomenex Luna C18(2) 5um 250 x 4.6 mm
 Guard : Phenomenex Security Guard C18 RP 4 x 3 mm
 Mobile Phase A : 70:30 20 mM Ammonium Acetate (pH=7.0) : Acetonitrile
 Mobile Phase B : 20:80 20 mM Ammonium Acetate (pH=7.0) : Acetonitrile
 Gradient (A:B) : T0=100:0, T15=0:100, T30=0:100, T32=100:0, T35=100:0
 Flow Rate : 1.0 mL/min Sample Solvent : Initial Mobile Phase
 Column Temperature : 20C Injection Volume : 10 uL Detection : UV at 245 nm

Sample Name	BDG 2918	Instrument	AnalyticalLC01
Acquisition	26/07/2012, 20:45:39	Method (rev.)	LC10528a (4)
Sequence	BDG_26Jul2012d - Reprocessed	Vial Position	75
Operator	solvation010\cerityadmin	Injection	2 of 2



Area Percent Report

Peak#	RT	Peak Height	Peak Area	Width	Area %
1	13.14 min	1.1883	6.7384	0.0902 min	0.089 %
2	13.48 min	1297.4942	7534.2778	0.0897 min	99.726 %
3	13.83 min	1.3572	7.3775	0.0854 min	0.098 %
4	16.39 min	1.0092	6.6139	0.1005 min	0.088 %