



BDG SYNTHESIS

Certificate of Analysis

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

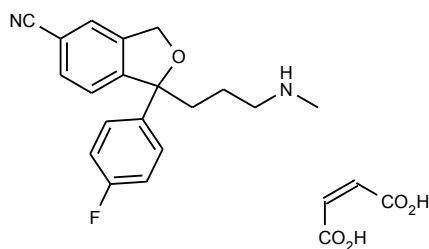
Barry Dent

Barry R. Dent, PhD, Director
29 June 2010

Name: *N*-Desmethycitalopram Maleate

CAS Number: 62498-67-3 (free base)

Structure:



Molecular Weight: $C_{19}H_{19}FN_2O \cdot C_4H_4O_4 = 426.44$

Lot Number: BDG 7206.2

Appearance: White powder

Purity By HPLC: 99.3 %

Re-test Date: 29 June 2011

Storage and Handling:

Temperature:	ambient laboratory temperature; may be refrigerated.
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: no residual solvents are 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 311.1554. $C_{19}H_{20}FN_2O$ $[M+H]^+$ requires m/z 311.1542. The deviation of 4.1 ppm is within normally accepted limits for the establishment of identity by HRMS.

HPLC

A somewhat broadened, slightly tailing peak is observed (99.3 %). The signal at 2.5 minutes was confirmed as maleic acid and is excluded from HPLC purity calculations. 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

$C_{19}H_{19}FN_2O \cdot C_4H_4O_4$	Found:	C 65.03, H 5.50, N 6.62 %
	Requires:	C 64.78, H 5.44, N 6.57 %

The elemental analyses fall within generally accepted limits for establishing the molecular formula given. The results may also be taken to imply the absence of significant quantities of water or inorganic salts (which have not been elsewhere tested for because of sample size limitations).

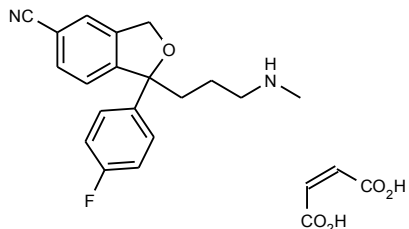
The available quantity of custom-synthesised material is always small, and this limits the extent and type of analytical data which can be obtained. This Certificate is presented in descriptive format for use by analytical chemists who are trained in the use of custom-synthesised materials. Custom materials 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.

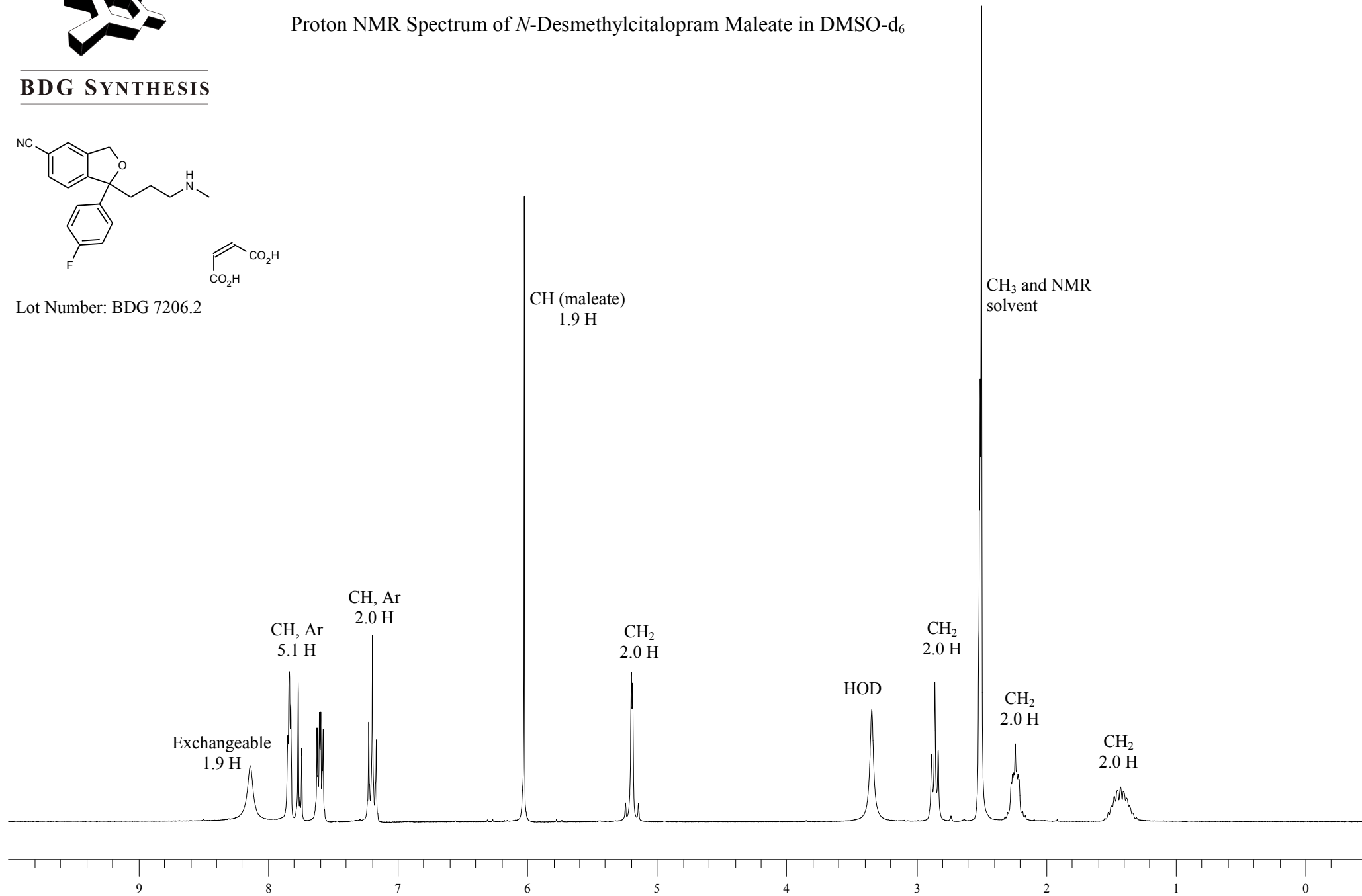


Proton NMR Spectrum of *N*-Desmethylcitalopram Maleate in DMSO-d₆

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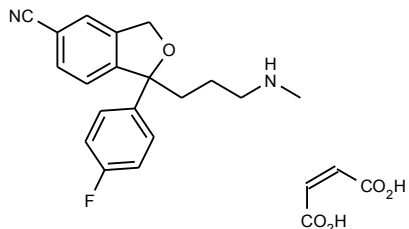
Lot Number: BDG 7206.2



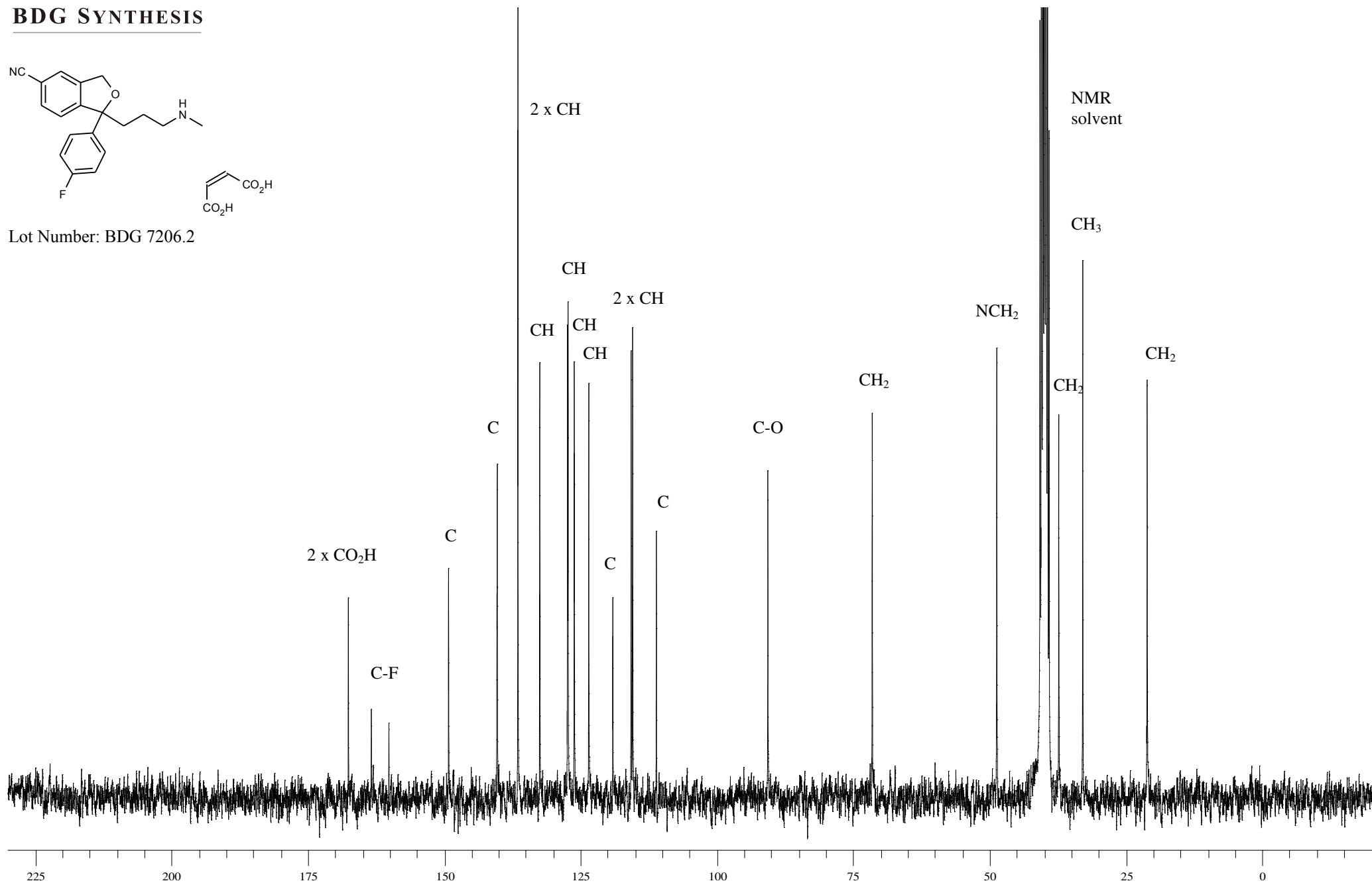


Carbon-13 NMR Spectrum of *N*-Desmethylocitalopram Maleate in DMSO-d₆

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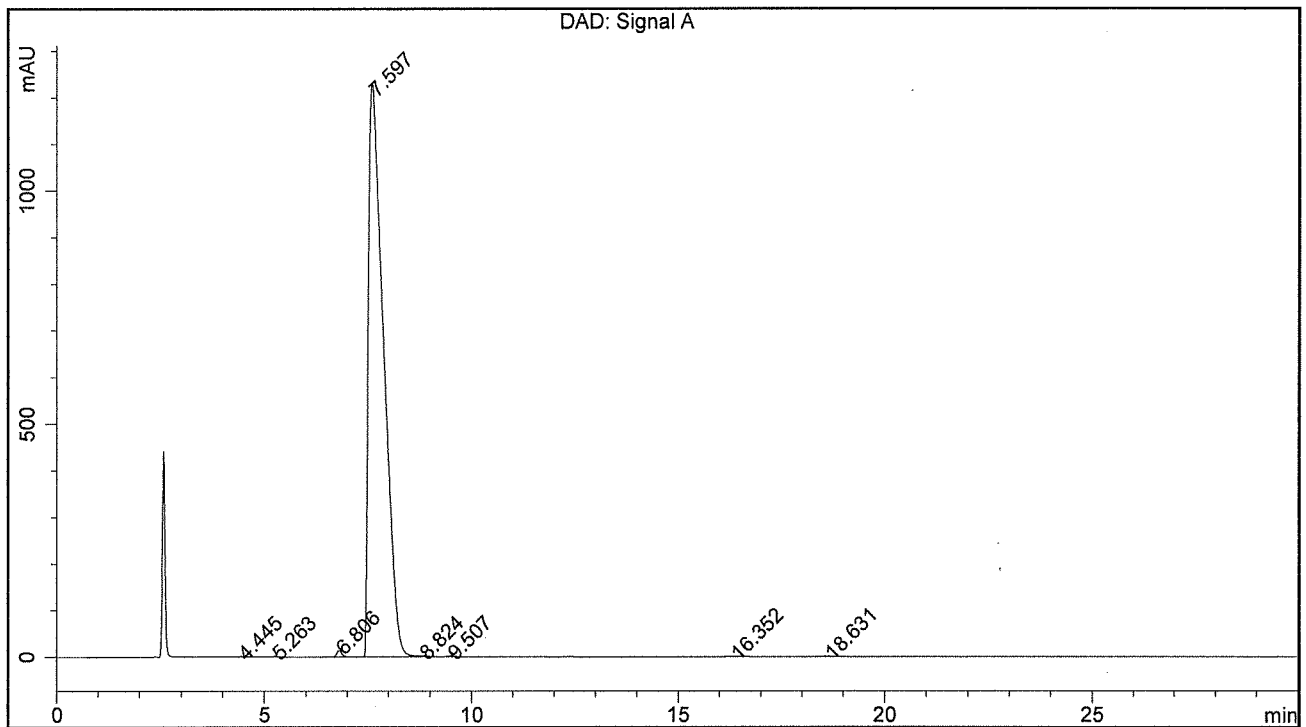
Lot Number: BDG 7206.2



BDG - Analysis of N-Desmethylcitalopram maleate

Column : Phenomenex Luna C18(2) 5um 250 x 4.6 mm
 Guard : Phenomenex Security Guard C18 RP 4 x 3 mm
 Mobile Phase : 65:35 Water + 0.05% Trifluoroacetic Acid : Acetonitrile + 0.05% Trifluoroacetic Acid
 Flow Rate : 1.0 mL/min
 Sample Solvent : Mobile Phase
 Column Temperature : 20C
 Injection Volume : 10 uL
 Detection : UV at 240 nm

Sample Name	BDG 7206.2	Instrument	AnalyticalLC01
Acquisition	29/06/2010, 10:10:28	Method (rev.)	LC10109b (10)
Sequence	BDG_29Jun2010b	Vial Position	1
Operator	solvation010\cerityadmin	Injection	1 of 1



Area Percent Report

Peak#	RT	Peak Height	Peak Area	Width	Area %
1	4.45 min	1.4357	11.2922	0.1198 min	0.036 %
2	5.26 min	1.7332	14.3545	0.1246 min	0.046 %
3	6.81 min	13.6182	114.9846	0.1305 min	0.367 %
4	7.60 min	1231.7788	31074.9864	0.3663 min	99.312 %
5	8.82 min	1.0694	13.4371	0.1946 min	0.043 %
6	9.51 min	1.9732	25.7343	0.2002 min	0.082 %
7	16.35 min	0.6085	15.4917	0.3810 min	0.050 %
8	18.63 min	0.8663	20.0383	0.3499 min	0.064 %