



BDG SYNTHESIS

Certificate of Analysis

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

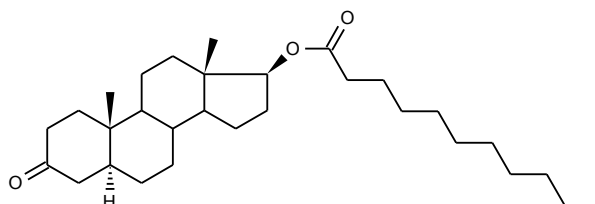
Barry Dent

Barry R. Dent, PhD, Director
5 September 2013

Name: 5 α -Dihydrotestosterone Undecanoate

CAS Number: 6804-12-2

Structure:



Molecular Weight: C₃₀H₅₀O₃ = 458.72

Lot Number: BDG 5856.4

Appearance: White, crystalline solid

Purity By HPLC: 98.8 %

Re-test Date: 5 September 2018

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: 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 481.3670. $C_{30}H_{50}NaO_3$ $[M+Na]^+$ requires m/z 481.3652. The deviation of 3.8 ppm is within normally accepted limits for the establishment of identity by HRMS.

HPLC

A sharp, symmetrical peak is observed (98.8 %). 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 78.50, H 11.09 %
$C_{30}H_{50}O_3$	Requires:	C 78.55, H 10.99 %

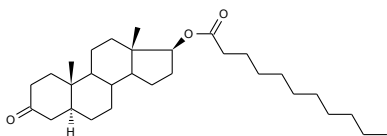
The elemental analyses fall within generally accepted limits for establishing the molecular formula given. The results may also be taken to imply the absence of significant quantities of water or inorganic salts (which have not been elsewhere tested for because of sample size limitations).

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.

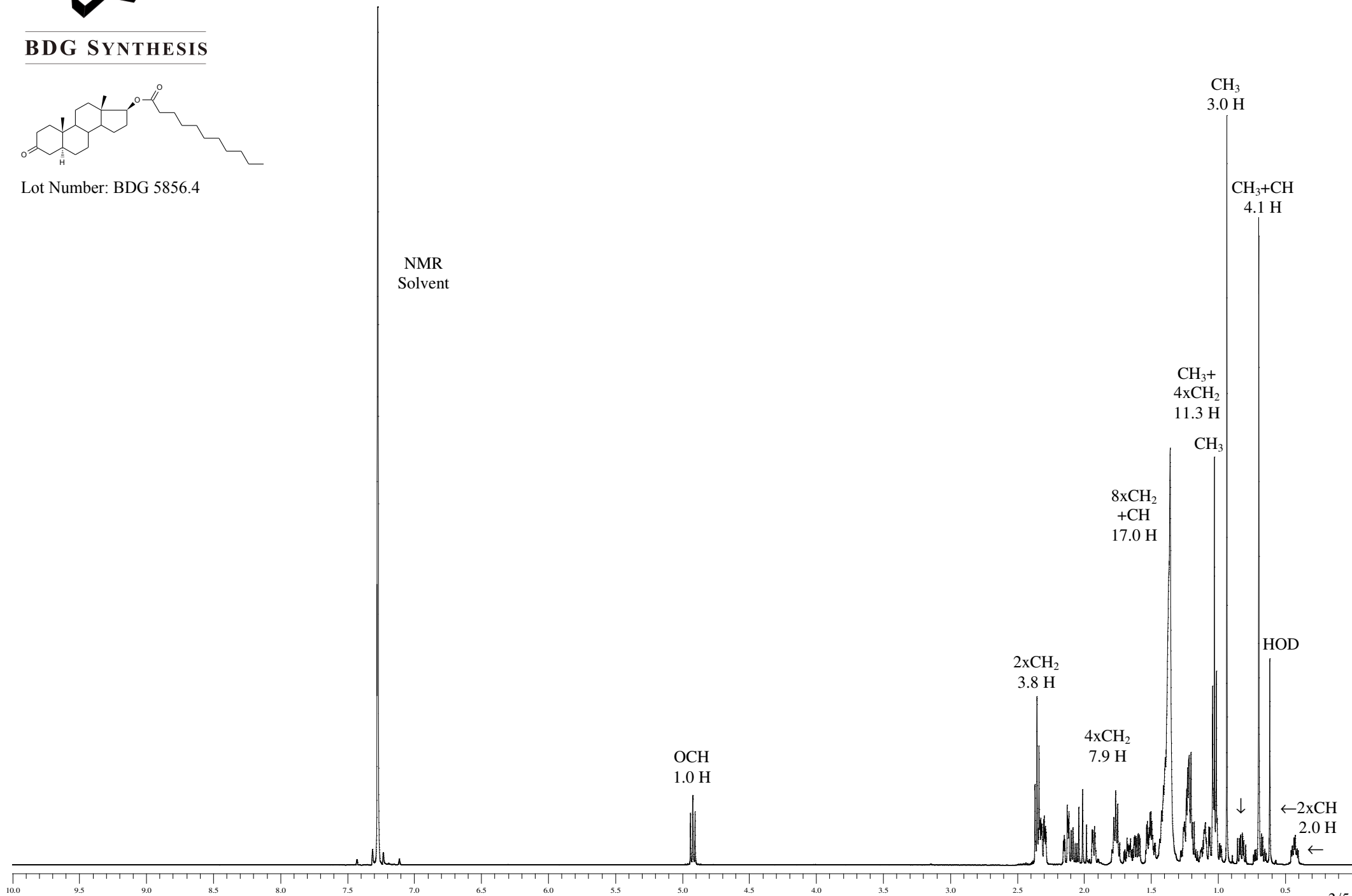


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Lot Number: BDG 5856.4

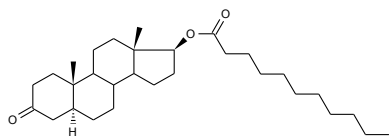
Proton NMR Spectrum of 5 α -Dihydrotestosterone Undecanoate in C₆D₆



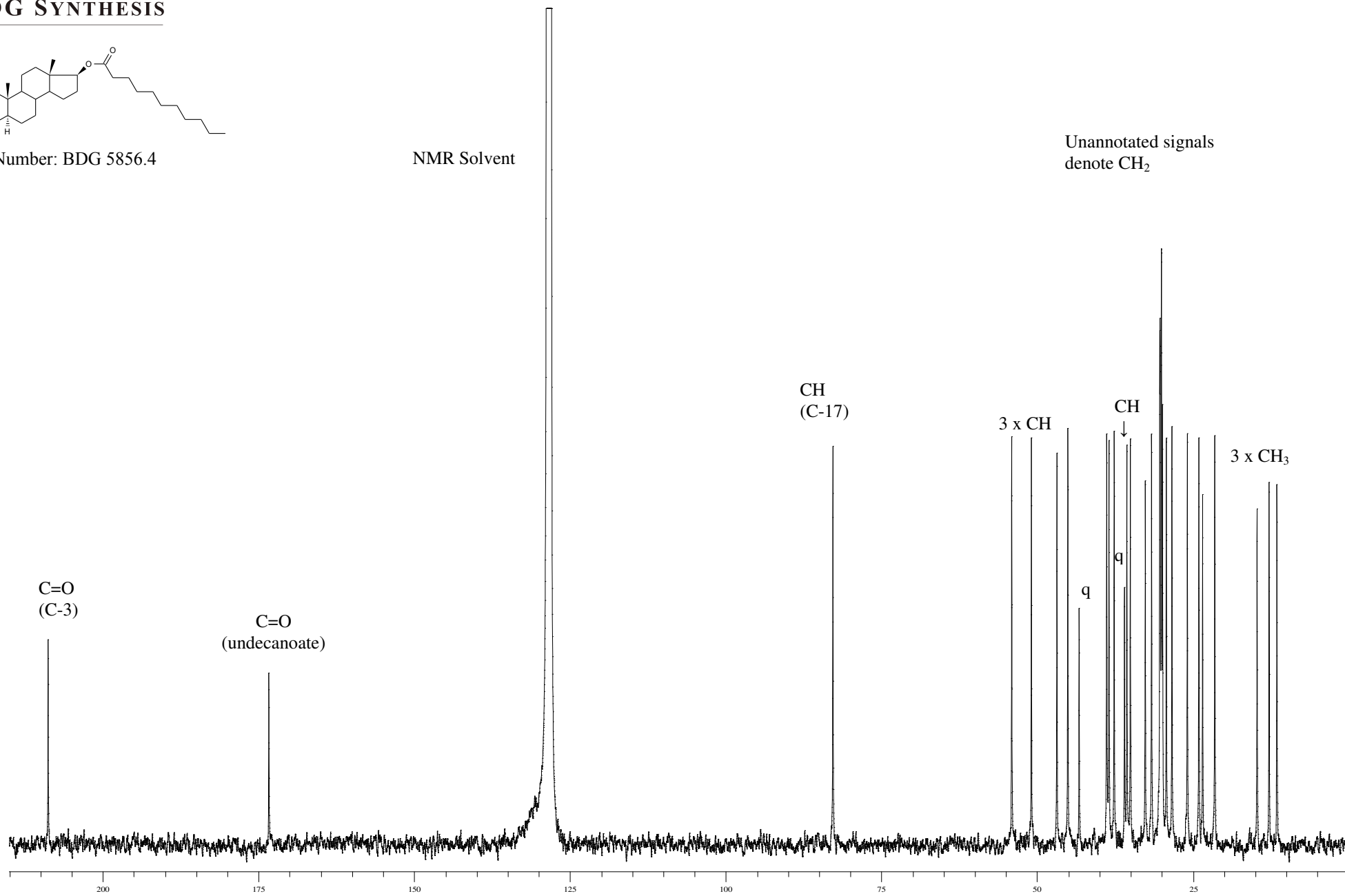


Carbon-13 NMR Spectrum of 5 α -Dihydrotestosterone Undecanoate in C₆D₆

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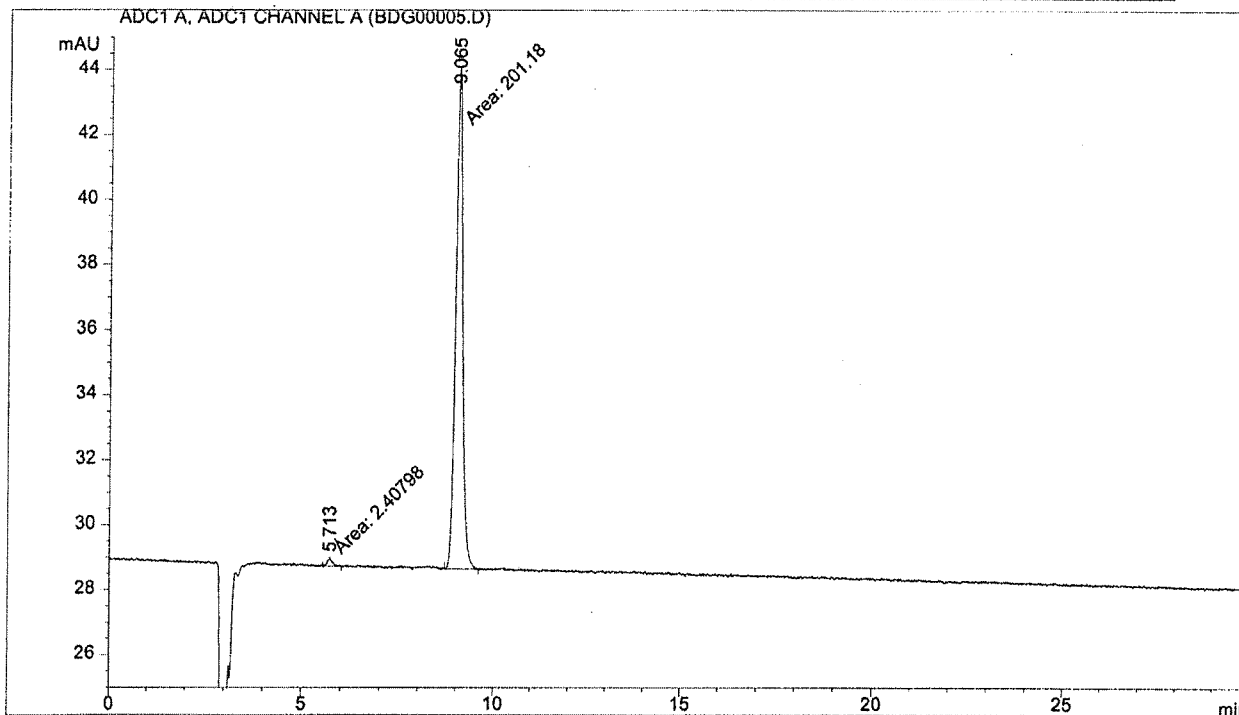
Lot Number: BDG 5856.4



BDG - Analysis of 5alpha-Dihydrotestosterone Undecanoate

Column : Phenomenex Luna C8(2) 5um 250 x 4.6 mm
 Guard : Phenomenex Security Guard C8 RP 4 x 3 mm
 Mobile Phase : 5:95 Water : Acetonitrile
 Flow Rate : 1.0 mL/min
 Sample Solvent : Acetonitrile
 Column Temperature : 40C
 Injection Volume : 25 uL
 Detection : RI

Sample Name	BDG 5856.4	Instrument	AnalyticalLC01
Acquisition	05/09/2013, 09:54:13	Method (rev.)	LC10341a (9)
Sequence	BDG_05Sep2013b	Vial Position	1
Operator	solvation010\cerityadmin	Injection	1 of 1



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 Area Percent Report
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Sorted By : Signal
 Multiplier : 1.0000
 Dilution : 1.0000

Signal 1: ADC1 A, ADC1 CHANNEL A

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.713	MM	0.1433	2.40798	2.80003e-1	1.1828
2	9.065	MM	0.2173	201.18044	15.42960	98.8172

Totals : 203.58842 15.70960

Results obtained with enhanced integrator!

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 *** End of Report ***