



## BDG SYNTHESIS

### Certificate of Analysis

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

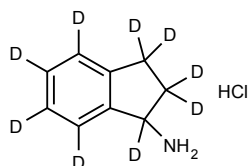
*Barry Dent*

Barry R. Dent, PhD, Director  
8 September 2013

**Name:** 1-Aminoindane-d<sub>9</sub> HCl

**CAS Number:** 70146-15-5 (unlabelled)

**Structure:**



**Molecular Weight:** C<sub>9</sub>H<sub>2</sub>D<sub>9</sub>N·HCl = 178.71

**Lot Number:** BDG 12840.3

**Appearance:** White, crystalline solid

**Corrected Purity:** 99.7 % (HPLC) - 0.5 % (ethyl acetate) = 99.2 %

**Isotopic Purity:** Under 0.5 % d<sub>0</sub>

**Re-test Date:** 8 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.

Isotopic Labelling: signals at the sites of deuteration are greatly diminished compared with the spectrum of unlabelled material, indicating clean deuteration, except for two of the aromatic protons, which show a small amount of label loss.

Residual Solvents: a small amount of ethyl acetate (0.5 % w/w) and a trace (under 0.1 % w/w) of methanol 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.

Isotopic Labelling: signals at the sites of deuteration have collapsed to small multiplets compared with the spectrum of unlabelled material, indicating clean deuteration, except for two of the aromatic carbons which indicate some label loss.

### High-resolution Mass Spectrum (ESI+)

Found  $m/z$  143.1527.  $C_9H_3D_9N$   $[M+H]^+$  requires  $m/z$  143.1535. The deviation of 5.6 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. No signal for  $d_0$  material was seen (detection limit about 0.5 %). Some  $d_8$ ,  $d_7$  and  $d_6$  species were observed.

### HPLC

A somewhat broadened, slightly tailing 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

$C_9H_2D_9N \cdot HCl$	Found:	C 60.96, H 1.58, D 10.54, N 7.88 %
	Requires:	C 60.49, H 1.69, D 10.14, N 7.84 %

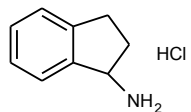
The elemental analyses fall within generally accepted limits for establishing the molecular formula given, except the result for carbon, which is due to the small amount of incompletely deuterated material. The results may also be taken to imply the absence of significant quantities of water or inorganic 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.

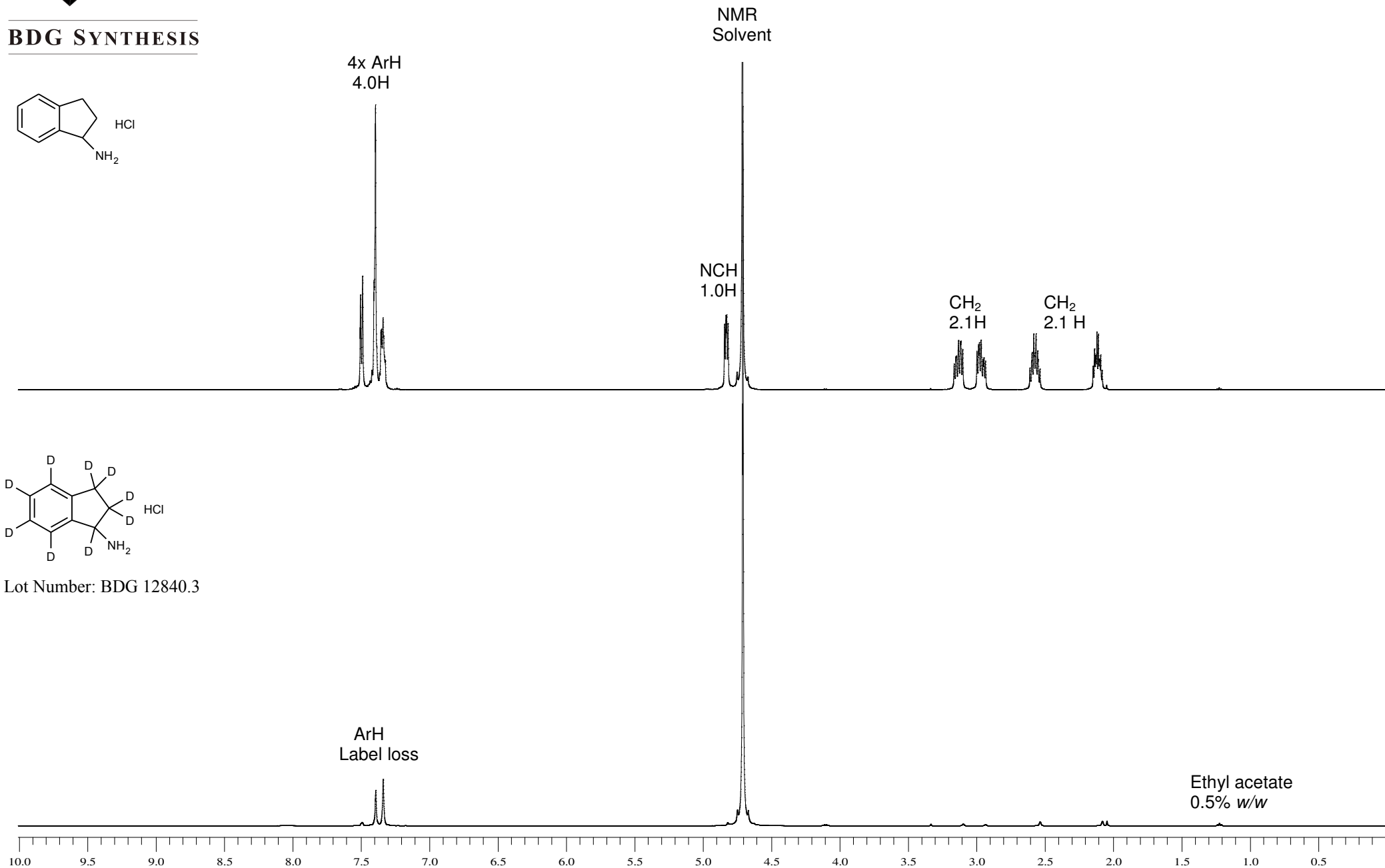
The re-test date is assigned from experience gained with the material in the laboratory and/or on storage. It is not possible to perform formal storage studies because of the small amount of material available.



**BDG SYNTHESIS**



Proton NMR Spectrum of 1-Aminoindane HCl (top) and 1-Aminoindane-d<sub>9</sub> HCl (bottom) in D<sub>2</sub>O

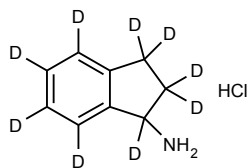
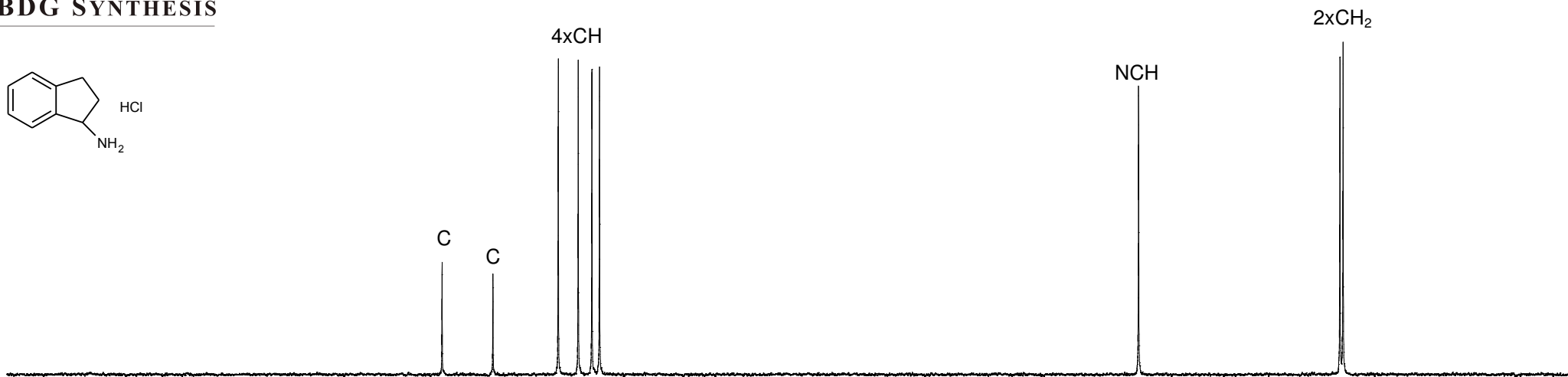
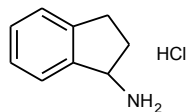


Lot Number: BDG 12840.3

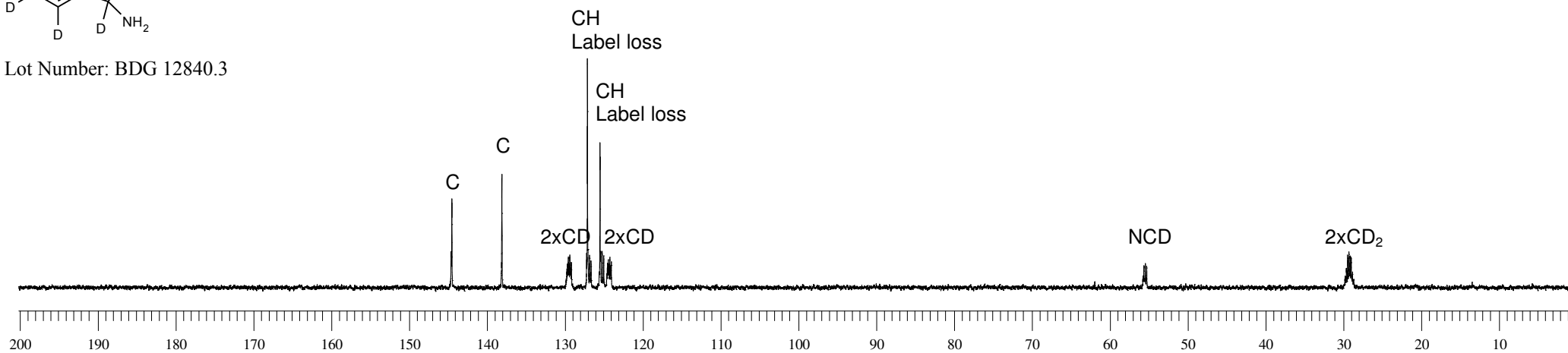


Carbon-13 NMR Spectrum of 1-Aminoindane HCl (top) and 1-Aminoindane-d<sub>9</sub> HCl (bottom) in D<sub>2</sub>O

**BDG SYNTHESIS**



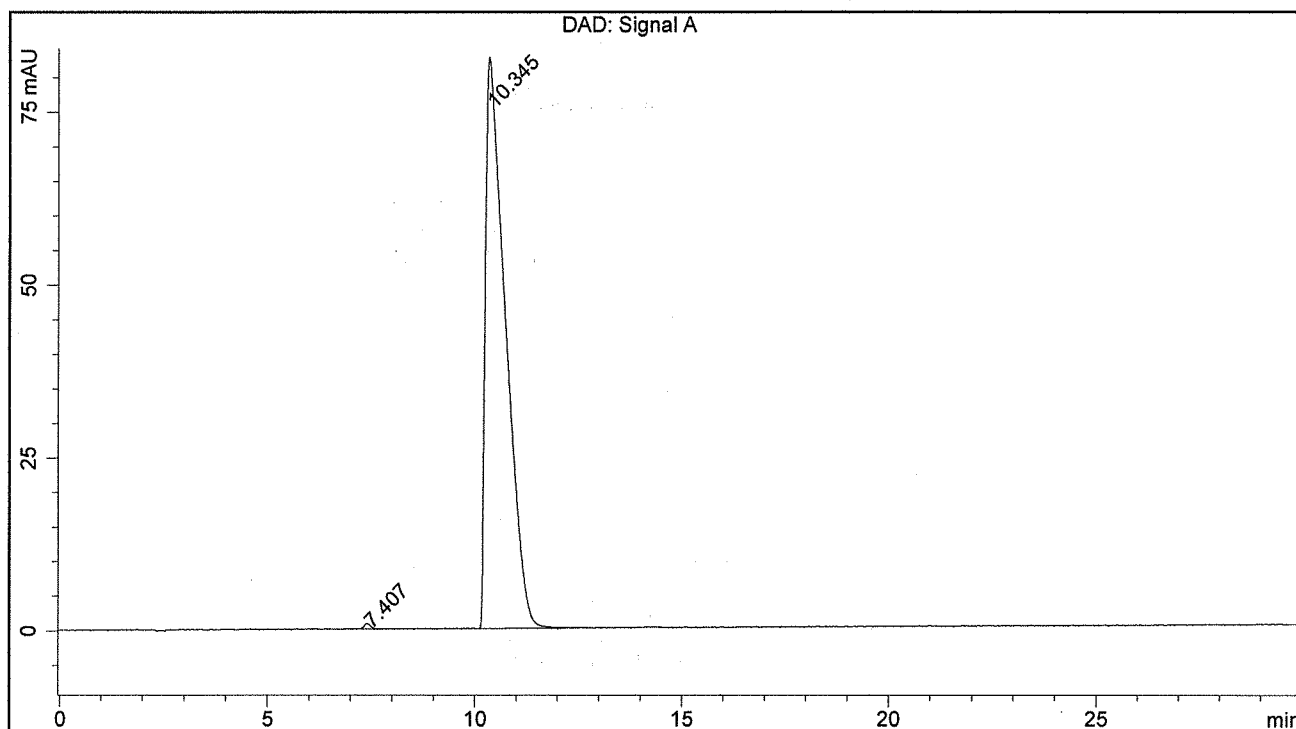
Lot Number: BDG 12840.3



BDG - Analysis of 1-Aminoindane-d9 HCl

Column : Phenomenex Luna C18(2) 5um 250 x 4.6 mm  
 Guard : Phenomenex Security Guard C18 RP 4 x 3 mm  
 Mobile Phase : 92:8 20mM Potassium diHydrogen Phosphate pH=3.0 : Acetonitrile  
 Flow Rate : 1.0 mL/min  
 Sample Solvent : 90:10 Water : Acetonitrile  
 Column Temperature : 20C  
 Injection Volume : 10 uL  
 Detection : UV at 264 nm

Sample Name	BDG 12840.3	Instrument	AnalyticalLC01
Acquisition	08/09/2013, 11:22:46	Method (rev.)	LC10586a ( 6)
Sequence	BDG_08Sep2013b - Reprocessed	Vial Position	2
Operator	solvation010\cerityadmin	Injection	1 of 1



Area Percent Report

Peak#	RT	Peak Height	Peak Area	Width	Area %
1	7.41 min	0.7803	9.0698	0.1796 min	0.323 %
2	10.35 min	82.3520	2797.0511	0.5043 min	99.677 %