

Certificate of Analysis

Menaquinone-4-[¹³C₆]

(MK-4-[¹³C₆])

Compound: Menaquinone-4-[¹³C₆]

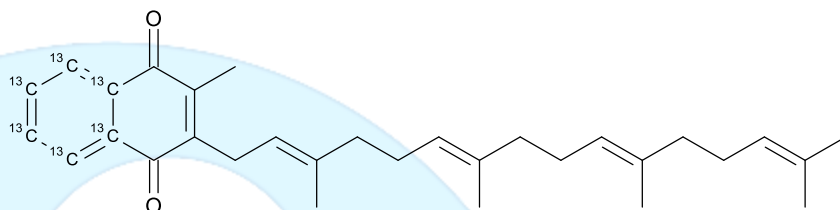
Catalog Number: 15277

Lot Number: SR5-2015-175A1

Date of Analysis: December 2, 2015

Certificate Expiration: 36 months from Date of Receipt (Proper Storage and Handling Required).

Long-Term Storage: The compound should be stored at ≤ -20 °C, in the dark, in a tightly sealed container.



Molecular Weight : 450.60
 Molecular Formula : ¹³C₆C₂₅H₄₀O₂

Analysis Method	Product Specification	Product Result
Chemical Purity by HPLC/UV	≥ 95 %	98.85 %
Identity by ¹ H NMR	Conforms to Structure	PASS
Identity by ¹³ C NMR	Conforms to Structure	PASS
Isotope Incorporation by ¹ H NMR	≥ 99 % ¹³ C/Molecule	≥ 99 % ¹³ C/Molecule

Intended Use

This material is intended only for laboratory use in analytical and R+D applications. It not suitable for human/animal consumption or for household use.

Hazards

Read Material Safety Data Sheet (MSDS) and understand any potential hazard(s) prior to the use of this product. All chemicals should be considered potentially hazardous in nature and should only be handled by qualified personnel using established good laboratory practices.



Peter Greenbacker, IsoSciences LLC

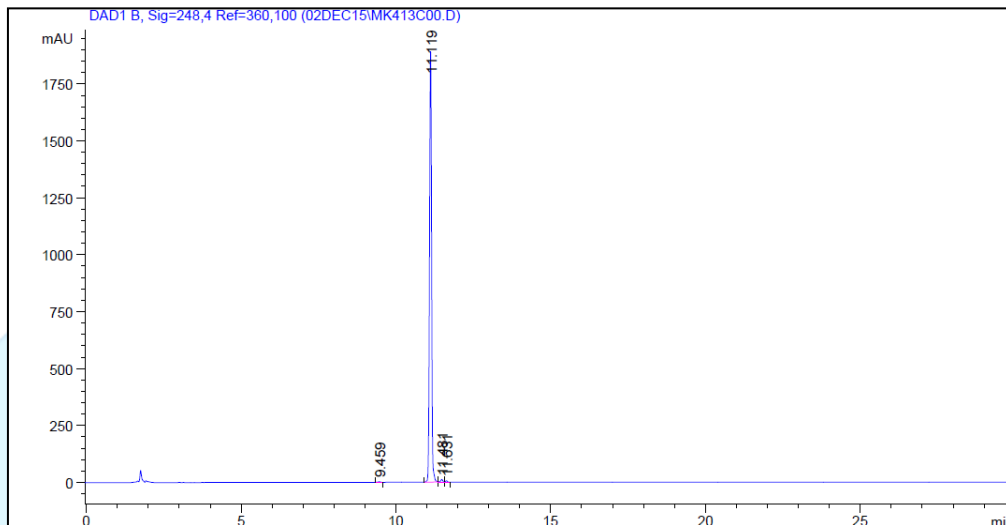
December 7, 2015

Date

Analytical Data

1. HPLC/UV

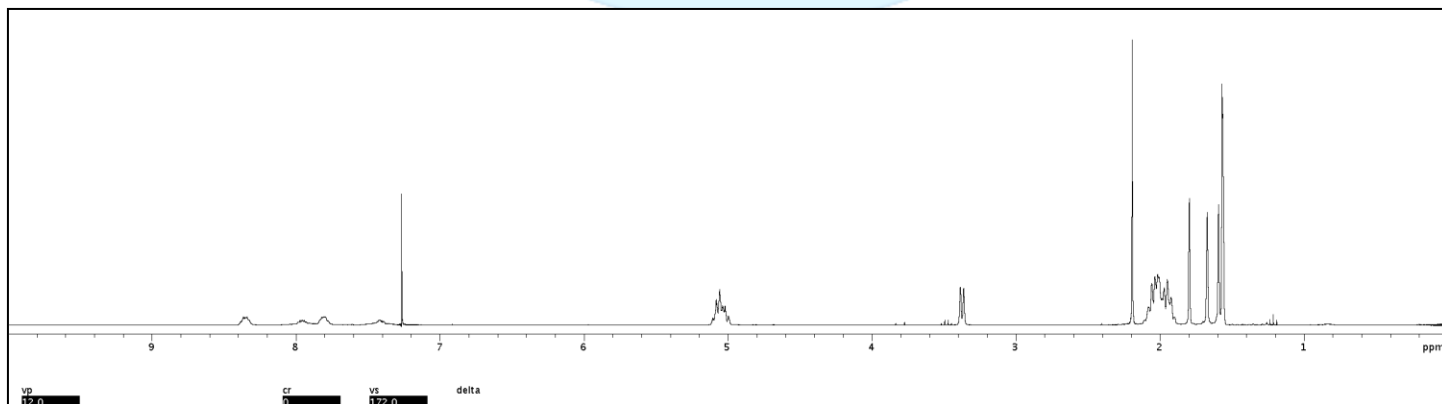
Instrument:	Agilent 1100
Column:	Zorbax SB-Phenyl 4.6 x 150mm, 3.5 μ m
Mobile Phase:	A: Water B: Acetonitrile
Gradient:	55% - 95%B over 10 mins.
Flow Rate:	1.0 mL/min
Wavelength:	248 nm
Acquisition Date:	December 2, 2015



Peak #	Ret. Time (min.)	Width (min)	Area (mAU)	Height (mAU)	Area %
1	9.459	0.0759	15.14679	3.05371	0.1679
2	11.119	0.0750	8918.44629	1892.77100	98.8543
3	11.481	0.0756	61.38927	12.02101	0.6805
4	11.631	0.0682	26.82902	5.99322	0.2974

2. ^1H NMR

Instrument:	Varian Mercury 300 MHz
Solvent:	CDCl_3
Acquisition Date:	December 2, 2015



3. ^{13}C NMR

Instrument:	Varian Mercury 300 MHz
Solvent:	CDCl_3
Acquisition Date:	December 2, 2015

