

Certificate of Analysis

Folic Acid-[¹³C₅]

Compound: Folic Acid-[¹³C₅]

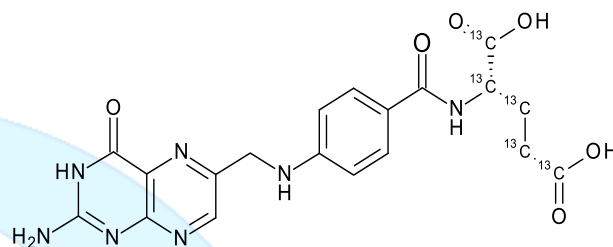
Catalog Number: 14139

Lot Number: SJ5-2016-148A1

Date of Analysis: January 29, 2016

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 : 446.35

Molecular Formula : ¹³C₅C₁₄H₁₉N₇O₆

Analysis Method	Product Specification	Product Result
Chemical Purity by HPLC/UV	≥ 95 %	99.6 %
Identity by ¹ H NMR	Conforms to Structure	PASS
Identity by ¹³ C NMR	Conforms to Structure	PASS
Identity by Mass Spectrometry	Conforms to Structure	PASS
Isotope Incorporation by Mass Spectrometry	≥ 99 % ¹³ C/Molecule	99.3 % 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

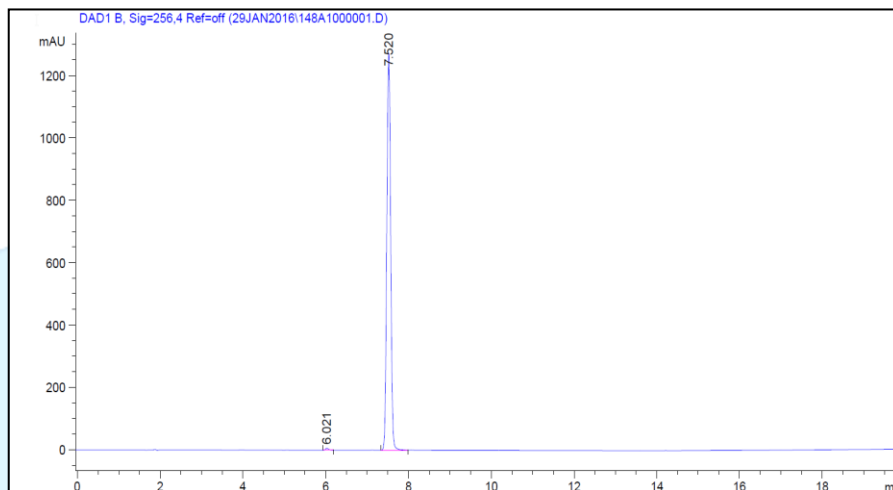
January 29, 2016

Date

Analytical Data

1. HPLC/UV

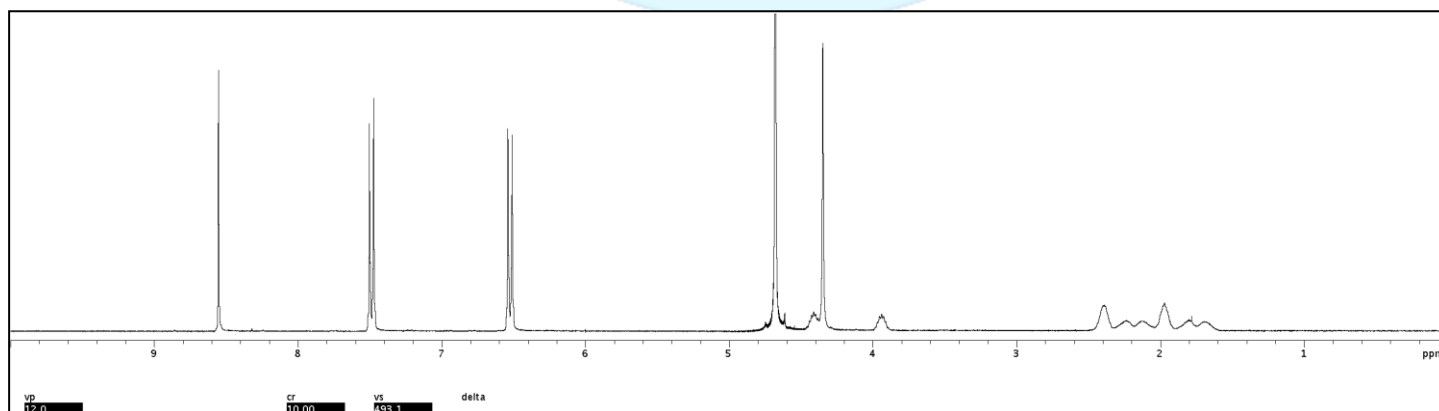
Instrument:	Agilent 1100
Column:	Eclipse XDB C18 4.6 x 150 mm, 3.5 μ m
Mobile Phase:	A: 0.1% Formic Acid in Water B: 0.1% Formic Acid in Acetonitrile
Gradient:	5-20%B over 10 min, 20-90%B over 10 min
Flow Rate:	1.0 mL/min
Wavelength:	256 nm
Acquisition Date:	January 29, 2016



Peak #	Ret. Time (min.)	Width (min)	Area (mAU)	Height (mAU)	Area %
1	6.02	0.09	34.9	6.1	0.4
2	7.52	0.10	8280.2	1274.6	99.6

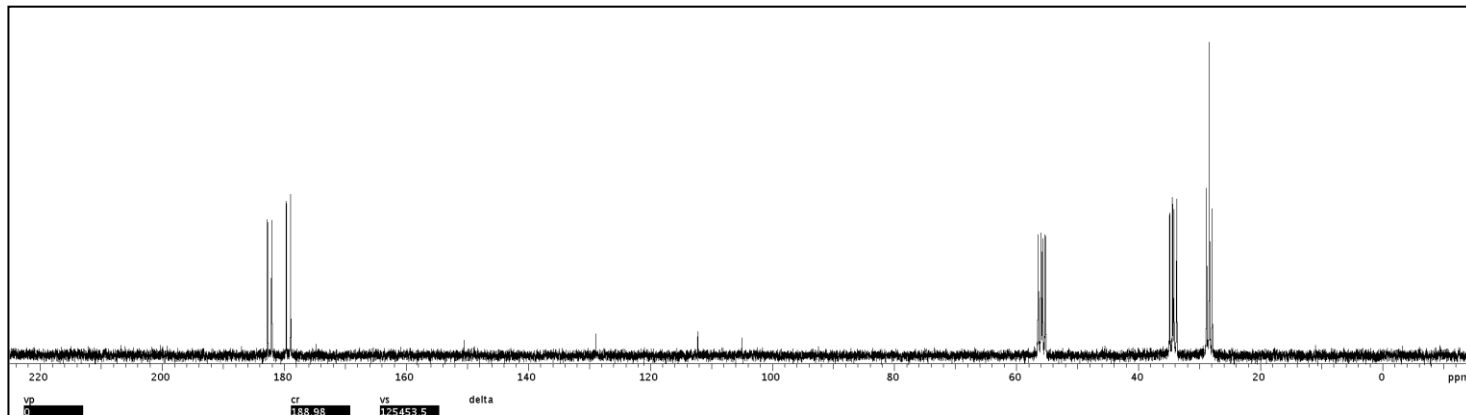
2. ^1H NMR

Instrument:	Varian Mercury 300 MHz
Solvent:	D ₂ O
Acquisition Date:	January 29, 2016



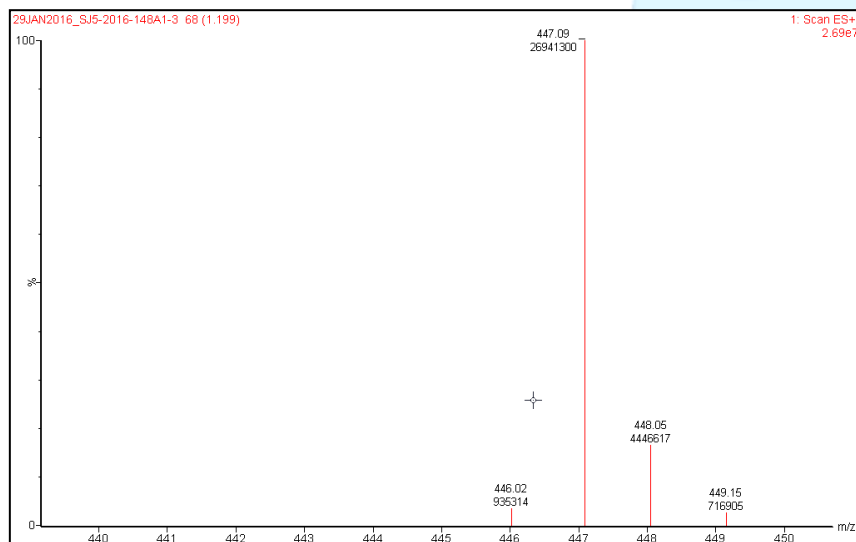
3. ^{13}C NMR

Instrument:	Varian Mercury 300 MHz
Solvent:	D ₂ O
Acquisition Date:	January 29, 2016



4. Mass Spectrometry

a. Identity



Instrument:	Waters Acquity TQD
Column:	Acquity UPLC BEH C18 2.1 x 75mm, 1.7 μ m
Mobile Phase:	A: 0.1% Formic Acid in Water B: 0.1% Formic Acid in Acetonitrile
Gradient:	5% - 95%B over 8 mins., hold 95%B 1 min.
Flow Rate:	0.6 mL/min
Ionization:	Electrospray positive
Acquisition Date:	January 29, 2016

b. Isotope Incorporation

	Percent	Isotope Enhancement
M+0	0.00 %	0.00
M+1	0.00 %	0.00
M+2	0.00 %	0.00
M+3	0.00 %	0.00
M+4	3.37 %	0.13
M+5	96.63 %	4.83
	% ¹³C/Molecule:	99.3 %