

Frontier BioPharm LLC

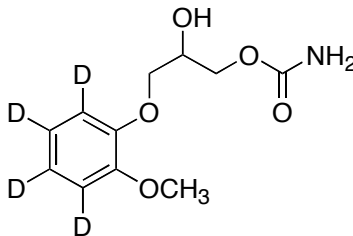
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CERTIFICATE OF ANALYSIS

Methocarbamol-d₄ 0.100 mg/mL in Methanol

Sample Identity: ME-4501
Lot No.: 10210018

Chemical or Trade Name: 1,2-Propanediol, 3-(2-methoxyphenoxy-d₄), 1-carbamate
Empirical Formula: C₁₁H₁₁D₄NO₅
Solvent: Methanol
Volume per Ampule: 1 mL
Storage Condition: Protect from light, refrigerate or freeze
Chemical Purity: 99.4% by HPLC UV
Residual solvents (¹H-NMR): None detected
Isotopic Purity: 89.3% d₄, 10.7% d₃, 0% d₀
Solution Preparation: December 16, 2011
Date of Solution Analysis: October 21, 2013
Expiration/Reanalysis Date: October 21, 1016




Purity (HPLC)	Prepared Concentration*	Analyzed Concentration**
99.4%	0.100 mg/mL (± 0.003 mg/mL)	NA

Concentrations are reported as the free base.

* Masses are determined using balances calibrated with NIST traceable weights. The prepared concentration is corrected for residual solvents, chromatographic purity.

** This compound has not been sufficiently characterized for purity and concentration to be used as a quantitative standard. For usage only as an internal standard.

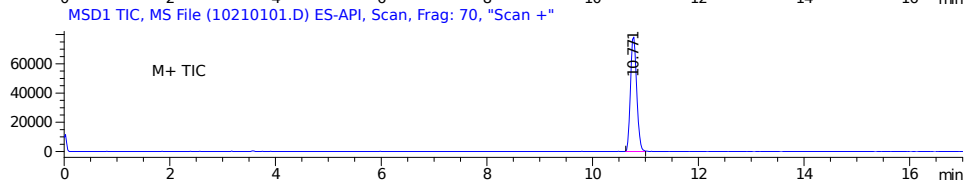
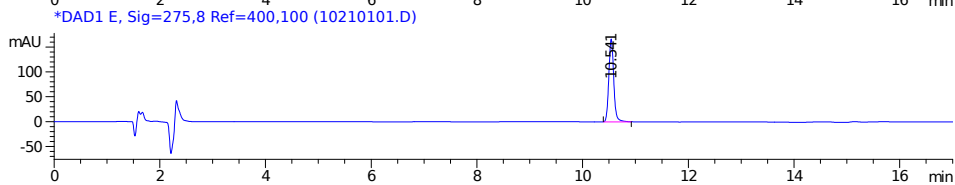
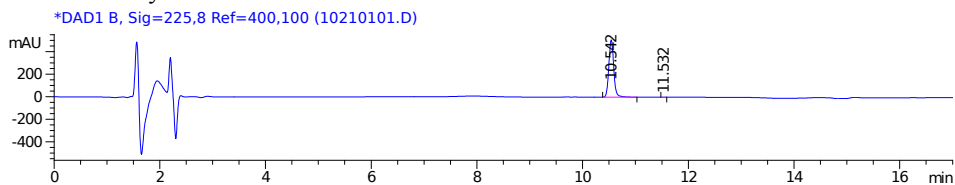
Approved: 
Rodney L. Eisenberg, Ph.D.
Director

10-21-2013
Date

Version History. 1.0 12-16-2011 1.0.1 Fixed Expiration date typo. 03-09-2012.
1.1. Solution analyzed for spectroscopic purity, expiration updated. 10-21-2013.

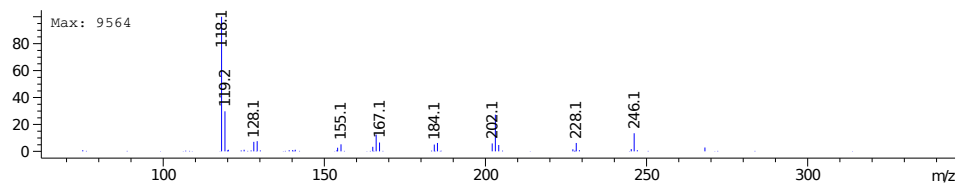
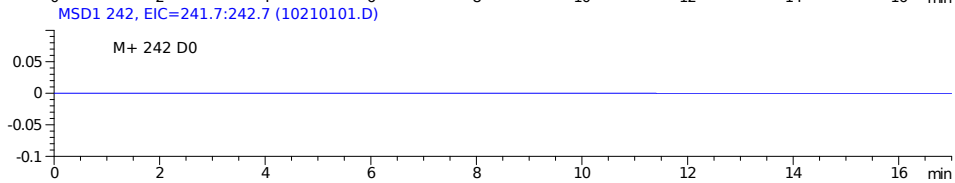
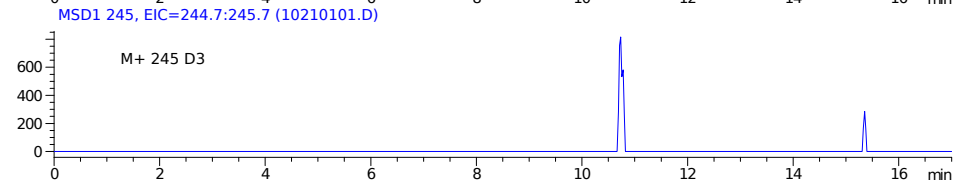
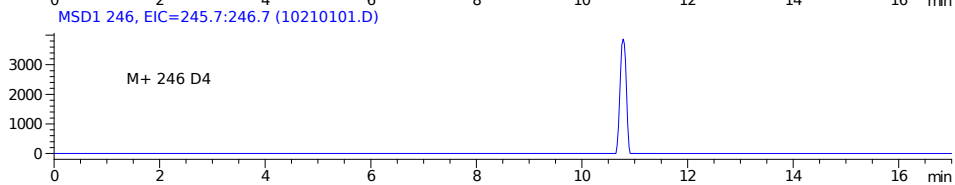
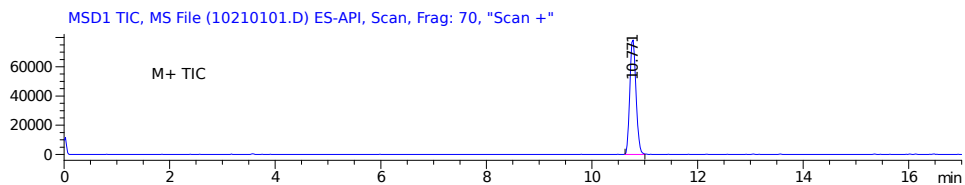
Spectral and Physical Data

Chemical Purity:



Signal 1: DAD1 B, Sig=225,8 Ref=400,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.542	BB	0.1012	3272.16675	507.96524	99.4877
2	11.532	MM	0.1064	16.84900	2.63839	0.5123
Totals :				3289.01575	510.60363	



¹H-NMR: conforms to structure. ¹³C-NMR: Conforms to structure