



# Frontier BioPharm

LLC

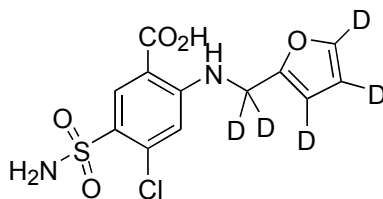
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## CERTIFICATE OF ANALYSIS

### Furosemide-D<sub>5</sub> 0.102 mg/mL in Methanol

Product Number: FD-3010  
Lot No.: 10280126

Chemical Identity: Chemical Name: 5-(Aminosulfonyl)-4-chloro-2-[(2-furanyl-d<sub>3</sub>-methyl-d<sub>2</sub>)amino]- benzoic acid  
Molecular Formula: C<sub>12</sub>H<sub>6</sub>D<sub>5</sub>ClN<sub>2</sub>O<sub>5</sub>S. FW: 335.77  
Solvent: Methanol  
Volume per Ampule: 1 mL  
Storage Condition: Protect from light, refrigerate or freeze  
Melting Point: 207-208 °C  
Loss on Drying (TGA): <0.2%  
Isotopic Purity: 85% D<sub>5</sub>, 14% D<sub>4</sub>  
Chemical Purity: 98.1% by HPLC/UV  
Date of Analysis (solution): October 30, 2013  
Expiration Date: October 30, 2016



Purity (HPLC)	Prepared Concentration*	Analyzed Concentration**
98.1%	0.102 mg/mL (±0.005 mg/mL)	0.101 mg/mL±0.005 mg/mL)

\* Masses are determined using balances calibrated with NIST traceable weights. The prepared concentration is corrected for residual solvents, and chromatographic purity. This compound has not been characterized sufficiently to be used as a quantitative standard. For use as an internal standard only.

\*\* The concentration was analyzed using an independent spectroscopic method, it is suggested that the prepared concentration be used.

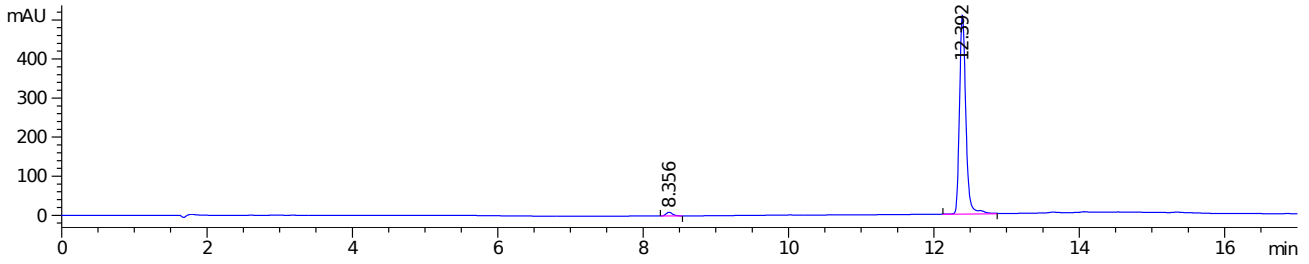
Approved: Rodney L. Eisenberg, Ph.D.  
Director

10/30/2013  
Date

Spectral Data

HPLC UV(265 nm)

DAD1 C, Sig=265,8 Ref=400,100 (10280278.D)

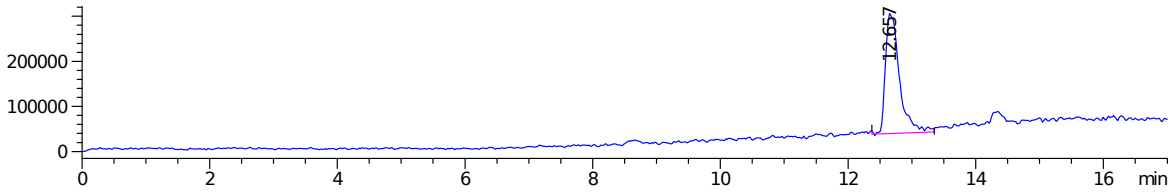


Signal 4: DAD1 C, Sig=265,8 Ref=400,100

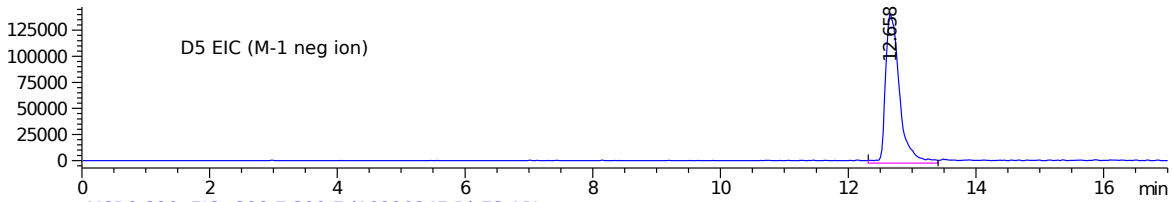
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.356	BB	0.0972	58.96719	9.39494	1.8615
2	12.392	BB	0.1014	3108.79419	510.85620	98.1385
Totals :				3167.76138	520.25114	

HPLC MS ESI, negative ion mode

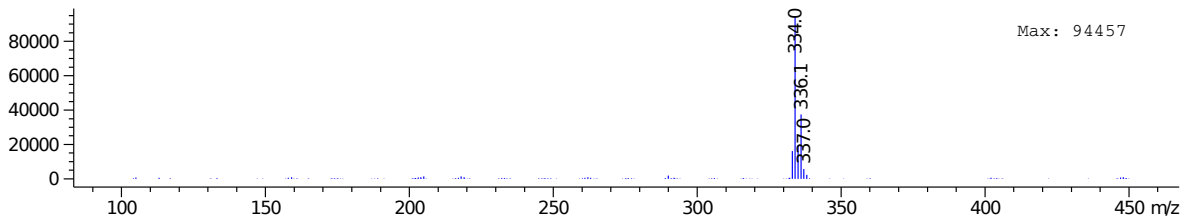
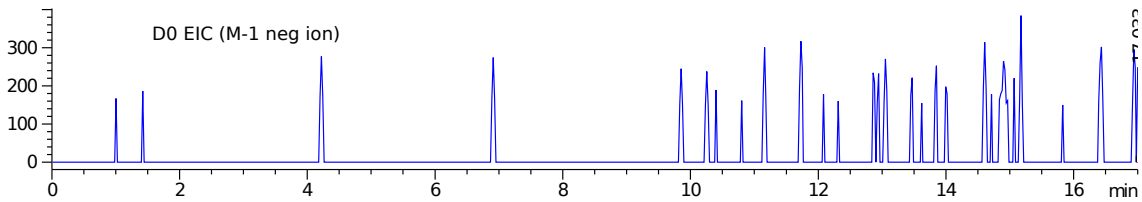
MSD2 TIC, MSfile (10220345.D) ES-API, Scan, Frag: 70, "Scan -"



MSD2 334, EIC=333.7:334.7 (10220345.D) ES-API



MSD2 329, EIC=328.7:329.7 (10220345.D) ES-API



Lot to lot concentration comparison:

Lot 10150128: 0.103 mg/mL  
 Lot 10220112: 0.102 mg/mL  
 Lot 10280126: 0.102 mg/mL