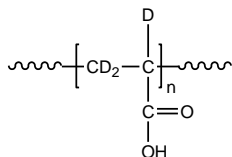


**Sample Name: Deuterated Poly (acrylic acid-d3)**

**Sample #: P42333-d3PAA**

**Structure:**



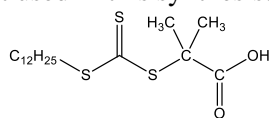
**Composition:**

Mn x 10 <sup>3</sup>	PDI
3.5	1.12

**Synthesis Procedure:**

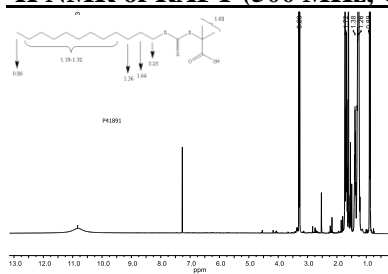
Poly (d3 acrylic acid) is obtained by the RAFT polymerization process for d3AA monomer in dioxane.

RAFT reagent used in this synthesis:



Chemical Formula: C<sub>17</sub>H<sub>12</sub>O<sub>2</sub>S<sub>2</sub>  
Molecular Weight: 364.6

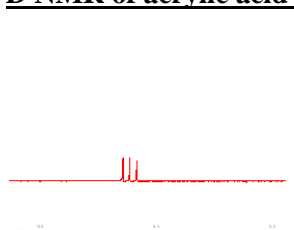
**<sup>1</sup>H NMR of RAFT (500 MHz, CDCl<sub>3</sub>):**



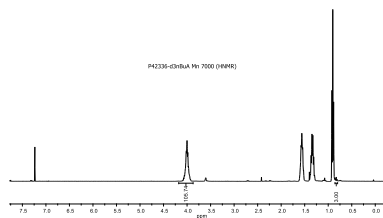
**Characterization:**

The product was characterized by size exclusion chromatography (SEC) and <sup>1</sup>H NMR. Molecular weight of the polymer was determined by converting poly acrylic acid to d3 polyn-butylacrylate by trans-esterification reaction

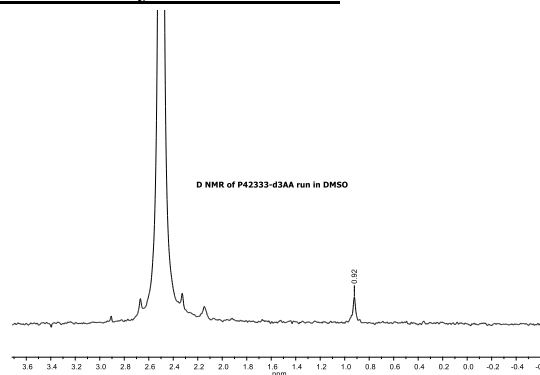
**D NMR of acrylic acid monomer:**



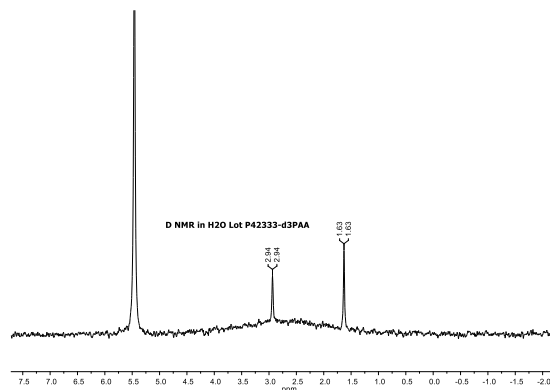
**<sup>1</sup>H NMR of the D3 n-butylacrylate in CDCl<sub>3</sub>:**



**D NMR of Polymer in DMSO:**

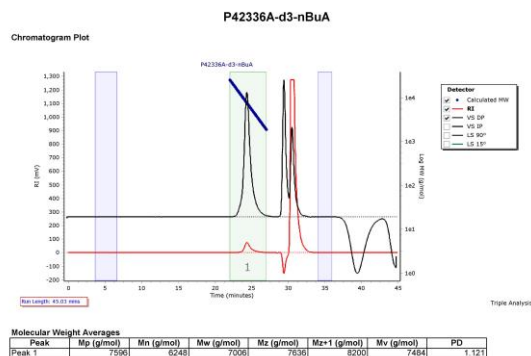


**D NMR of Polymer in H2O:**



**SEC elugram of the Poly d3nBuA in THF:**

Agilent GPC/SEC Software



Mn of Poly d3 acrylic acid: 3,500, PDI: 1.12

