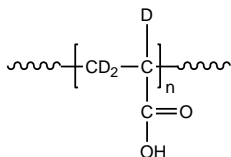


Sample Name: Deuterated Poly (acrylic acid-d3)

Sample #: P43590A-d3PAA

Structure:



Composition:

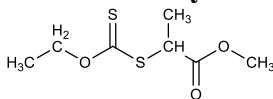
Mn x 10 ³	PDI
9.0	1.09

d3 AA monomer d% : 75%

Synthesis Procedure:

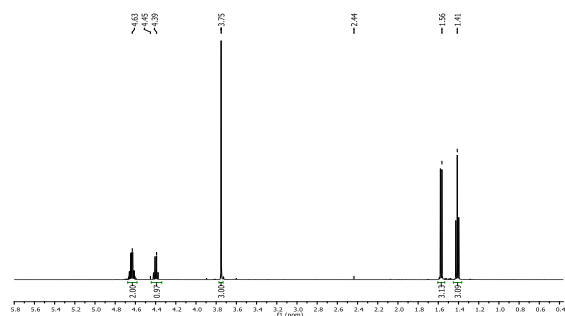
Poly (d3 acrylic acid) is obtained by the RAFT polymerization process for d3AA monomer in D₂O.

RAFT reagent used in this synthesis:



Chemical Formula: $C_7H_{12}O_3S_2$
Molecular Weight: 208.3

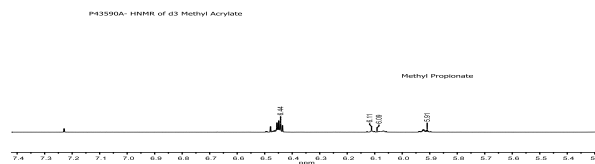
¹H NMR spectrum of RAFT (400 MHz, CDCl₃):



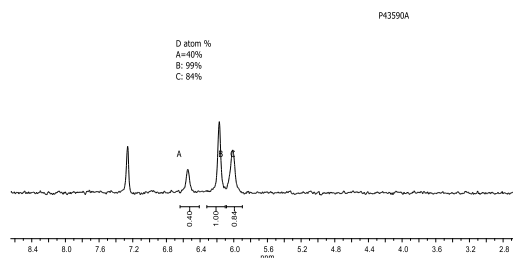
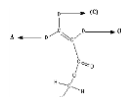
Characterization:

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

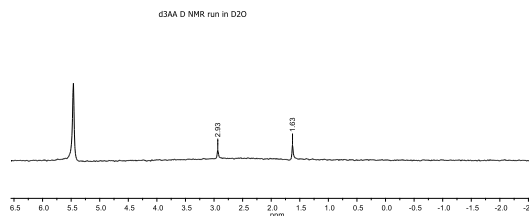
D NMR of Methyl acrylate monomer before hydrolysis of ester to acid)



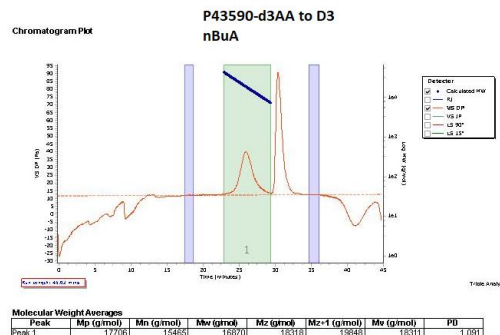
HNMR of the D3 Methyl acrylate (before hydrolysis to acid):



D NMR spectrum of Polymer in H₂O:



SEC elugram of the Poly d3nBuA in THF:
Pd3 AA was converted to d3 nBuA by
transesaterfication to determine Mn of the polymer
(Mn of PAA will be calculated accordingly):



Mn: 9,000