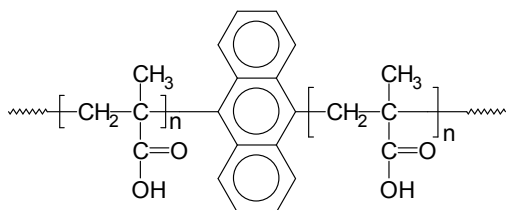


Sample Name:
Anthracene Labeled Poly(methacrylic acid)

Sample #: P2998-MAAAnMAA

Structure:

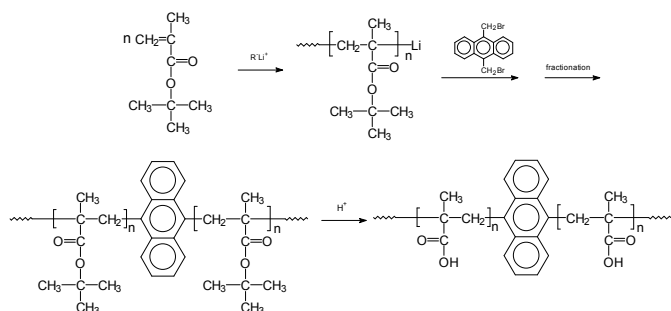


Composition:

Mn x 10 ³	PDI
8.0	1.10

Synthesis Procedure:

Polymer bearing anthracene moiety in the center of polymer chain was prepared by anionic living polymerization of t-butyl methacrylate in THF followed by linking (termination) with the stoichiometric amount of dibromomethyl anthracene. The acid-form polymer was converted from its butyl ester by hydrolysis under acid condition. The scheme of the reaction is illustrated below:



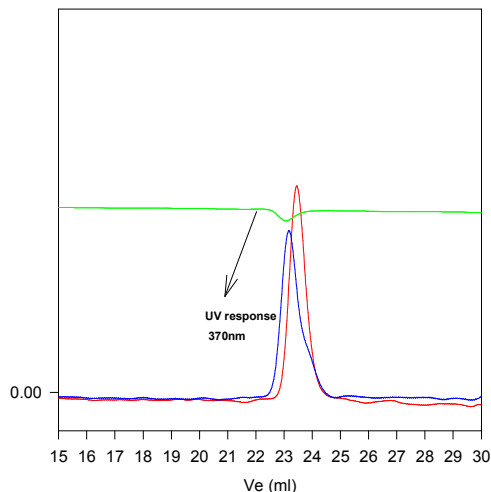
Characterization:

Molecular Weight: Size exclusion chromatography (SEC): Varian liquid chromatograph equipped with UV and refractive detector. SEC columns from Supelco were used with THF as the eluent. The columns were calibrated with monodisperse poly(methyl methacrylate). The molecular weights and the polydispersity indices for polymer precursor were calculated. The UV spectroscopy was carried out on a hp spectrometer in CHCl₃. The functionality was calculated from the absorbance at 370 nm, the extinction coefficient 6800 obtained from pure anthracene, the polymer concentration and the number average molecular weight from SEC.

Solubility: Polymer is soluble in THF, Dioxane, and methanol.

SEC of Sample:

P2998-MAAAnMAA



Size exclusion chromatography of anthracene labeled polymethacrylic acid

- Isolated polytert.butyl methacrylate before coupling, $M_n=6500$, $M_w/M_n=1.09$
 - Polymer obtained by coupling PtBuMA-Li with 9,10-bis(bromomethyl) anthracene
 - Final polymer after fractionation, $M_n=13000$, $M_w/M_n=1.10$
- After Hydrolysis of tert.butyl ester: Poly methacrylic acid: Mn: 8000 Mw/Mn 1.10