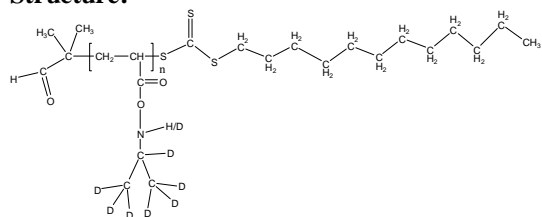


**Sample Name:** COOH terminated Deuterated Poly(N-isopropyl acrylamide) (d7)

**Sample #:** P14501-d7NIPAMCOOH

#### Structure:



#### Composition:

Mn x 10 <sup>3</sup>	PDI
7.0	1.10

#### Synthesis Procedure:

Polymer is obtained by RAFT control radical polymerization.

#### Characterization:

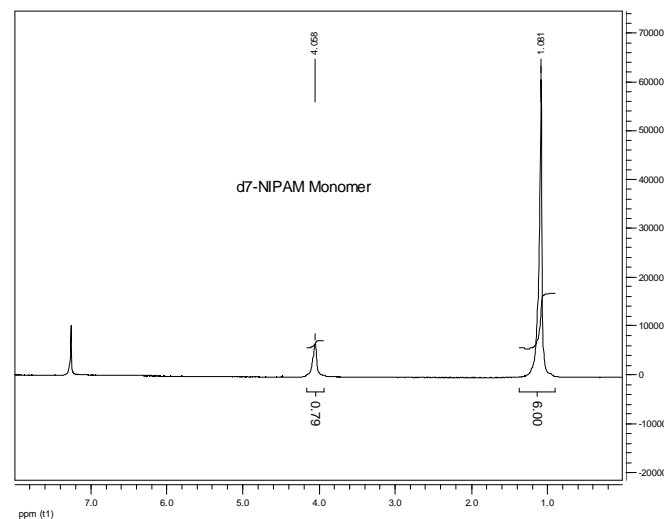
Size exclusion chromatography (SEC) was carried out on a Varian liquid chromatograph equipped with a refractive index detector. A Shodex 806L GPC columns from Supelco was used with DMF(0.01M LiBr) as the eluent. The columns were calibrated with monodisperse polystyrene standards. The polydispersity index was calculated.

Viscosity measurement was carried out in a Ubbelohde viscometer at 25°C. Four solutions in methanol of different concentrations were measured. The intrinsic viscosity was obtained by extrapolation to c=0. From viscosity-molecular weight relationship  $[\eta] = 2.99 \times 10^{-2} M^{0.64}$  (Makromolecular Chem. V180, P969, 1979), the viscosity average molecular weight was calculated accordingly.

The molecular weights of end functionalized PNIPAM polymer eluted in DMF in presence of LiBr, the comparison with Polystyrene or poly ethylene glycol as reference material are not effective for molecular weights lower than 25,000. The following is the table illustrate such results: Molecular weight for such End functionalized POLY NIPAM COOH can be determined more accurately by acid base titration in CHCL3. The Mw/Mn was calculated from SEC using PEG as reference material.

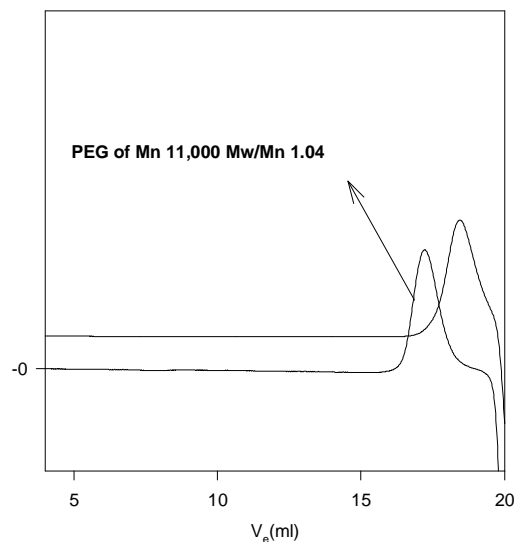
Reference Polymer	Mn of PNIPAMCOOH
Polystyrene	11,000
Poly(ethylene glycol)	6,800
By titration	7,000

#### 1H NMR spectrum of the monomer:



#### SEC of the polymer:

**P14501-d7NIPAMCOOH**



Size exclusion chromatography of d7-N-Isopropyl Acrylamide in DMF/LiBr(0.05M)  
Molecular Weight Distribution with respect to Poly ethylene glycol Standards:

Mn: 7,000 Mw: 7,700  $M_w/M_n = 1.10$