

### Sample Name:

$\alpha$  pyran  $\omega$ - mesylate end functionalized

Poly(ethylene glycol)

Sample #: P9774A- EGPyMS

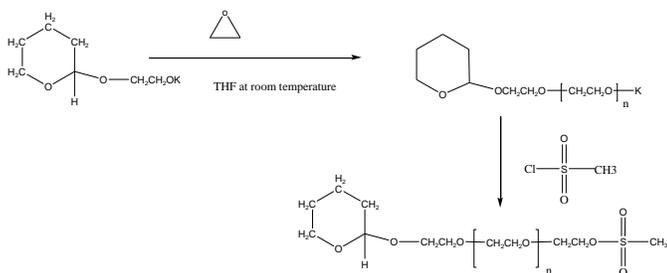
### Structure:

### Composition:

$M_n \times 10^3$	PDI
38.0	1.10

### Synthesis Procedure:

Mesylate functionalized Poly(ethylene oxide) is prepared by living anionic polymerization of ethylene oxide. The scheme of the reaction is illustrated below:



### Characterization:

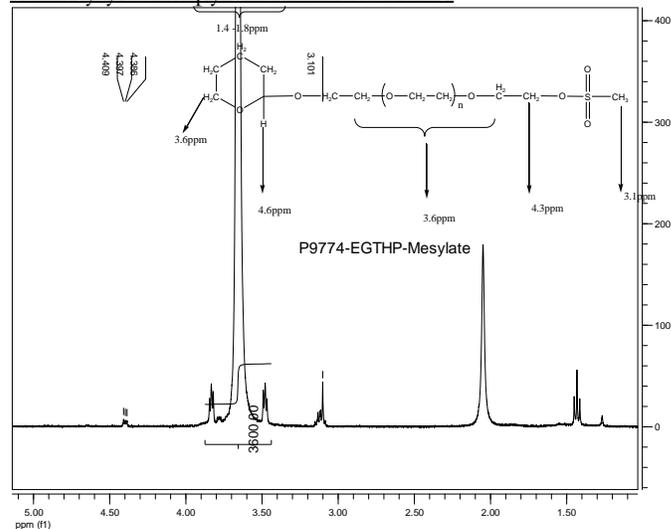
An aliquot of the poly(ethylene oxide) before addition of mesyl chloride was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The polymer obtained at each step and the final block copolymer composition was calculated from  $^1\text{H-NMR}$  spectroscopy.

### Solubility:

N3 end functionalized poly(ethylene oxide) is soluble in  $\text{CHCl}_3$ , THF, and precipitated out from cold ethanol, diethyl ether.

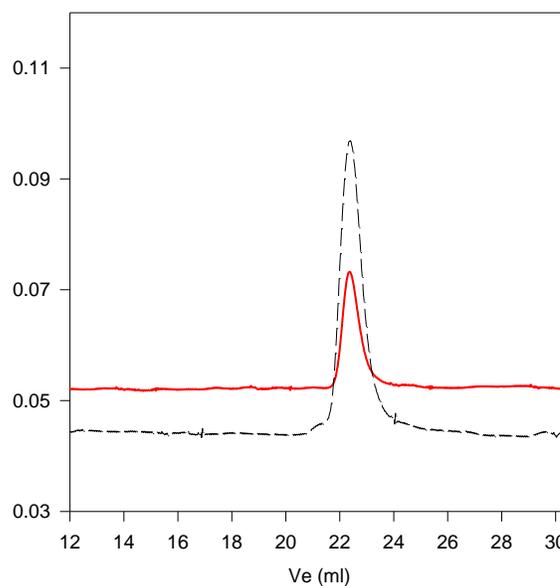
### $^1\text{H-NMR}$ Spectrum of the polymer and the final block copolymer at different stages:

$\alpha$ -Mesylate- $\omega$ -pyran terminated PEG



### SEC of the polymer :

P9774-EGPyMS



Size exclusion chromatography of  $\alpha$ -hydroxy- $\omega$ -thiol poly(ethylene glycol):

- EGTHPOH  $M_n=38,000$ ,  $M_w=41,500$ ,  $M_w/M_n=1.10$
- EGTHP-MS