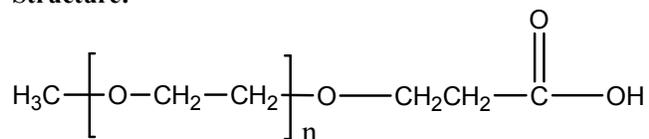


Sample Name:

**$\alpha$ -propionic acid  $\omega$ -methoxy Terminated Poly(ethylene glycol)**

Sample #: **P8881-EGOCH3COOH**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup>	PDI
1.10	1.09

**Synthesis Procedure:**

$\alpha$ -Carboxy  $\omega$ -methoxy terminated poly(ethylene glycol) was synthesized by a simple procedure discovered in our lab. The details can be found in the US patent published.<sup>1</sup>

**Characterization:**

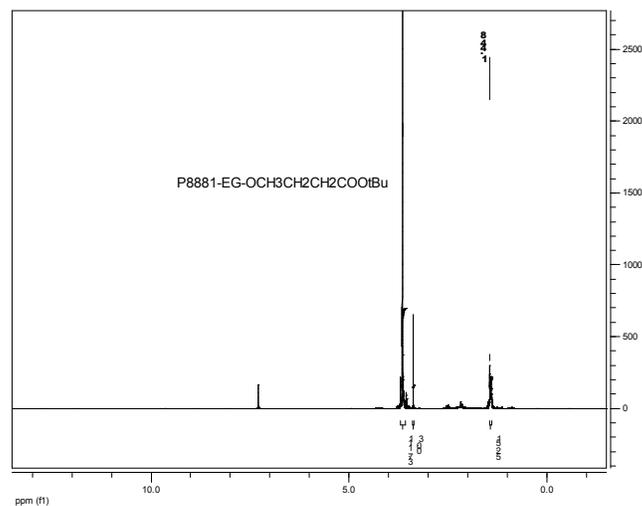
The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector.

**Functionality:** Functionality of the polymer was determined by acid base titration and from H NMR analysis.

**Solubility:**

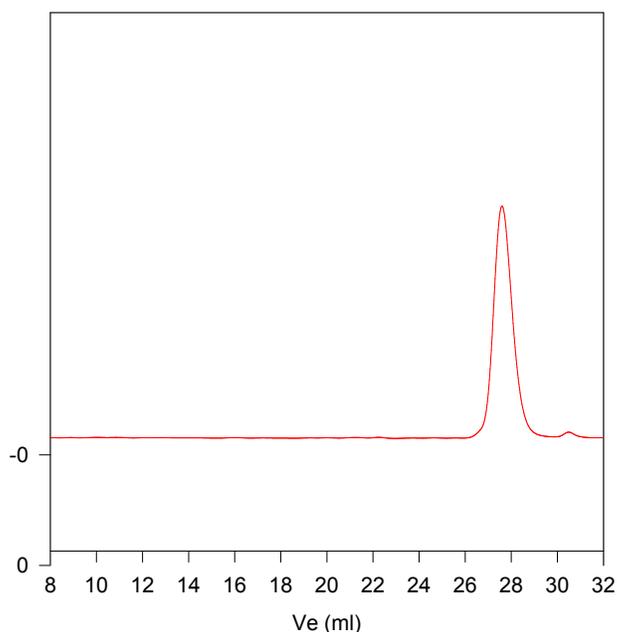
Polymer is soluble in water, methanol and ethanol, THF, CHCl<sub>3</sub>. It is precipitated out from cold ethanol, isopropanol, hexane and ether.

**NMR of the product**



SEC of the product: before converting the terminal end group to COOH

**P8881-EGOCH3**



Size exclusion chromatograph of Poly(ethylene glycol) before converting terminal OH to COOH:

M<sub>n</sub>=1100, M<sub>w</sub>=1200 Mw/Mn =1.09

**Reference (s):**

**S. K. Varshney, J.X. Zhang, US patent 7,009,033 B2, 2006. Assigned to Polymer source, Inc. Canada Heterofunctional Polyethylene glycol and Poly ethylene oxide, process for their Manufacture**