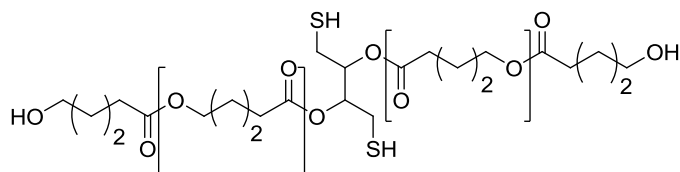


**Sample Name:** Dithiol functionalized Poly( $\delta$ -valerolactone), thiols located in the middle of the backbone

**Sample #:** P20104-VL2SH

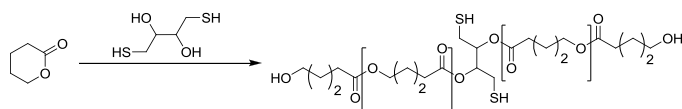


### Composition:

$M_n \times 10^3$ PVL-2SH	PDI
5.4 (NMR)	1.3
SH functionality $\geq 98\%$ (NMR)	

### Synthetic Procedure:

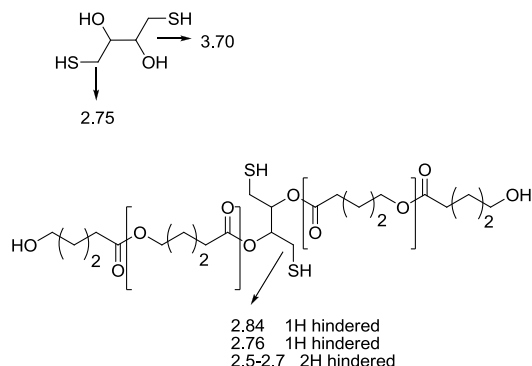
PVL-2SH is prepared by ring-opening polymerization of  $\delta$ -valerolactone using dithiothreitol (DTT) as an initiator. The scheme of the reaction is illustrated below:



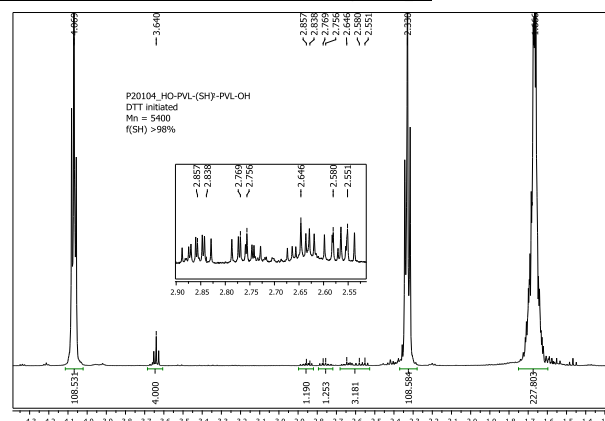
### Characterization:

PVL bearing free thiols was analyzed by size exclusion chromatography (SEC) to obtain the polydispersity (PDI).  $M_n$  was estimated by NMR. Percentage of thiol functionality was determined from the integrals ratio of the peaks at 3.64 and 2.84 ppm.

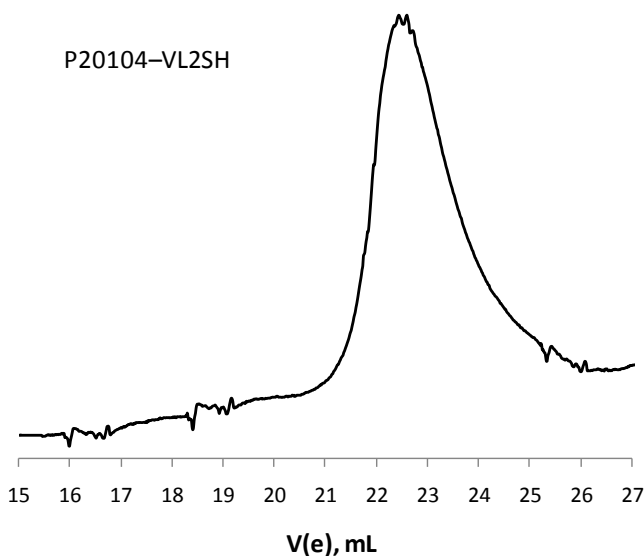
### Chemical shift assignments



### NMR of PVL with free Thiol groups



### SEC of the polymer:



N.B.: Certain broadening of the elugram might be due to the strong interaction of SH-groups with the column packing material

### Solubility:

Poly( $\delta$ -valerolactone) is soluble in  $\text{CHCl}_3$ , Acetone, THF, insoluble in methanol, ethanol. Precipitated from Acetone or  $\text{CHCl}_3$  into hexane/EtOH or ether/EtOH.