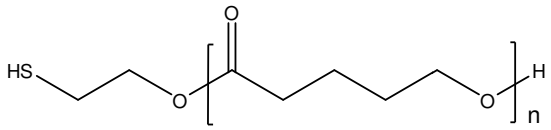
Sample Name: α–Thiol–ω–Hydroxy–terminated Poly(δ–valerolactone)

Sample #: P20059-VL-OHSH

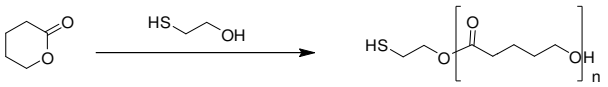


Composition:

$M_n \times 10^3$ HS–PVL	PDI
2.5 (NMR)	1.3 (SEC–LS)
SH functionality >85% (NMR)	
Contains DTT as a stabilizer	

Synthetic Procedure:

HS–PVL is prepared by ring–opening polymerization of δ–valerolactone using mercaptoethanol as an initiator. The scheme of the reaction is illustrated below:



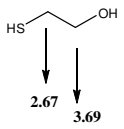
Solubility:

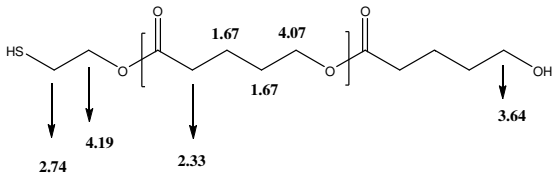
Poly(δ–valerolactone) is soluble in $CHCl_3$, Acetone, THF, insoluble in methanol, ethanol, ether. Precipitated from Acetone or DCM into hexane or ether.

Characterization:

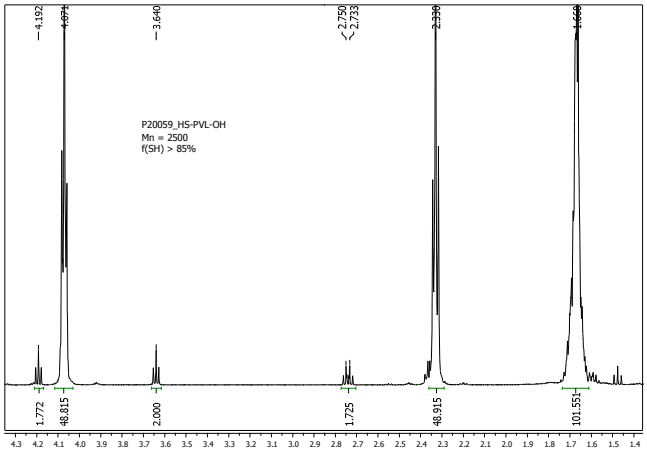
PVL bearing free thiol end was analyzed by size exclusion chromatography (SEC) to obtain the polydispersity index (PDI). M_n was determined by NMR. Percentage of thiol functionality was determined from the integrals ratio of the peaks at 3.64 and 2.75 ppm.

Chemical shifts assignments

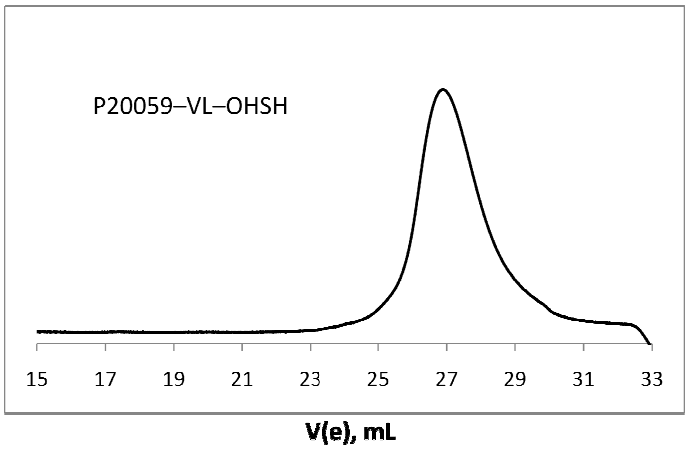




PVL with free Thiol End group



SEC of the polymer:



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