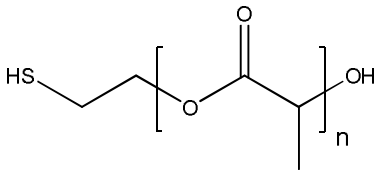
Sample Name: α–Thiol–ω–Hydroxy–terminated Poly(DL–lactide)

Sample #: P20151-DLLA-OHSH

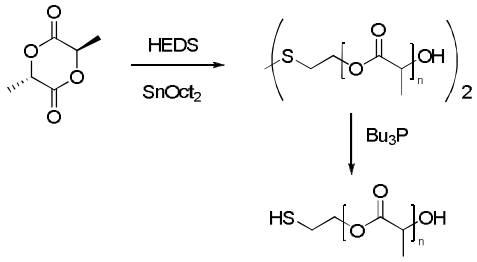


Composition:

$M_n \times 10^3$ HS–PDLLA	PDI
3.3 (NMR)	1.09
SH functionality ≥80% (NMR)	
Contains DTT as stabilizer	

Synthetic Procedure:

HS–PDLLA is prepared by ring–opening polymerization of DL-lactide by tin octoate using 2,2'-hydroxyethyl disulfide (HEDS) as an initiator, followed by a reduction of disulfide bond. The scheme of the reaction is illustrated below:



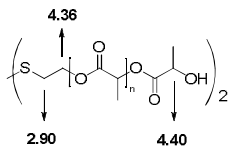
Solubility:

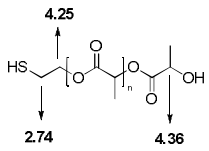
PDLLA is soluble in $CHCl_3$, Acetone, THF, insoluble in ethanol, hexane. Precipitated from Acetone or $CHCl_3$ into EtOH or hexane/EtOH.

Characterization:

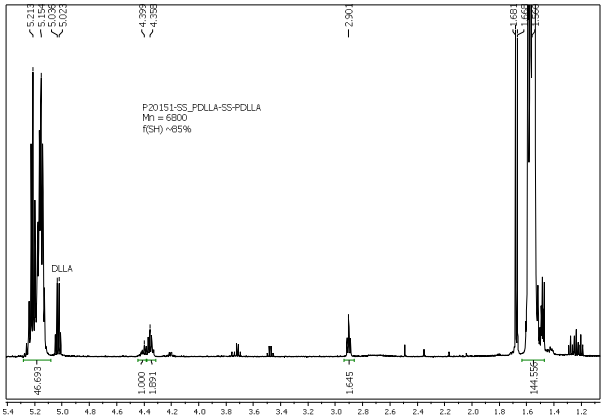
PDLLAs bearing a disulfide linkage and a free thiol were analyzed by size exclusion chromatography (SEC) to obtain the polydispersity index (PDI). M_n was estimated by NMR. Percentage of thiol functionality was determined from the integrals ratio of the peaks at 4.40 and 2.90 or 4.36 and 2.74 ppm, respectively.

Chemical shifts assignments

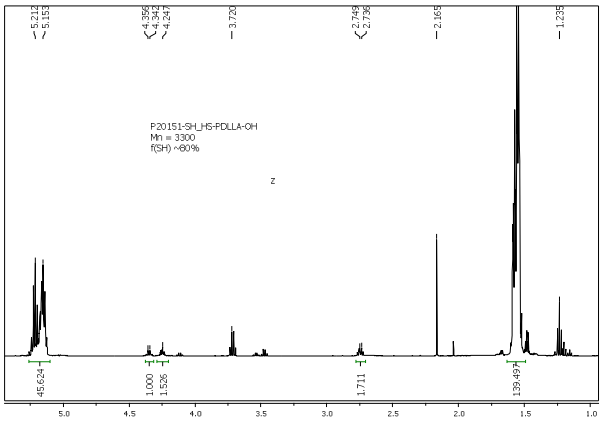




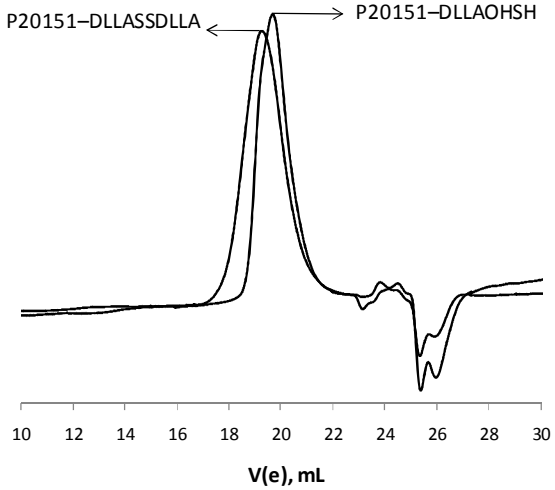
PDLLA bearing a disulfide linkage



PDLLA bearing a free thiol



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