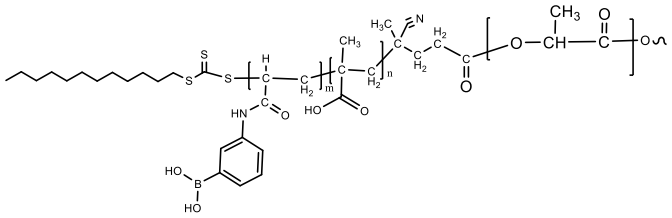
Product Profile

Identification

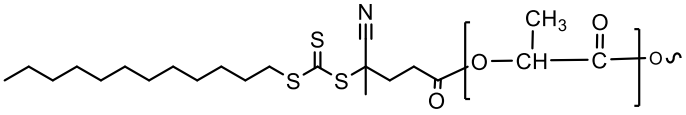
Product Name: Poly(dl-lactide)-b-poly(methacrylic acid-co-3-acrylamidophenylboronic acid)
Sample #: P45689-LAMAAPBA
Structure:



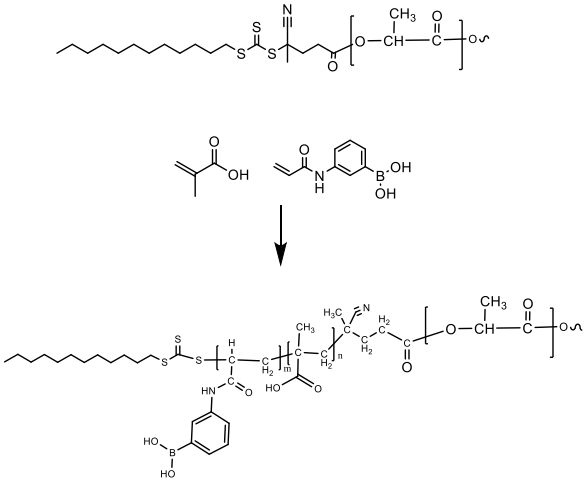
Composition:

Mn x 10^3 PDLLA-b-MAAPBA	Mw/Mn (PDI)	Dp of copolymer by HNMR
5.0-b-16.0	1.3	$PDLLA_{70}$-b-$MAA_{130}PBA_{18}$

Method of Synthesis. 2 step synthesis 1. RAFT macroinitiator of Poly(dl LA) of Mn 5000



2. Reaction of RAFT macroinitiator with MAA and PBA monomer **in Dioxan** with trace amount of water



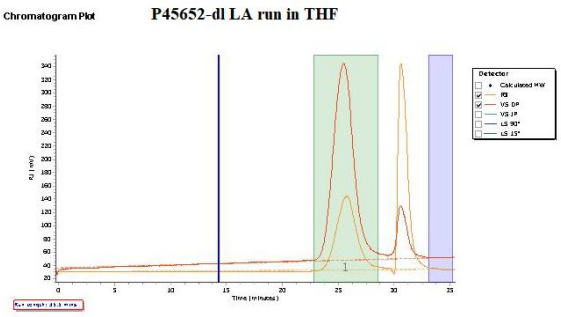
Solubility in different solvents : depending on the compositions

THF	**X**	Methanol	√	Acetone	× Cloudy soft heterogeneous solution
water	Opaque soft heterogeneous solution	DMSO	√	Aceton:Methanol 5:5	√
Opaqueness solution	**Acetone> water>methanol**				

Purification of Polymer By Soxhlet in Hexane :acetone: to remove any traces amount of PDLLA and unreacted RAFT and traces amount of MAA and PBA monomer.

Validation of Architecture:

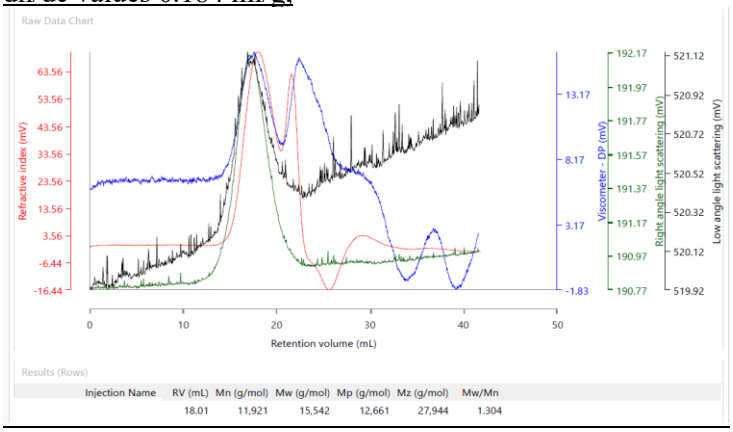
A. Gel Permeation Chromatography (GPC), SEC- Profile



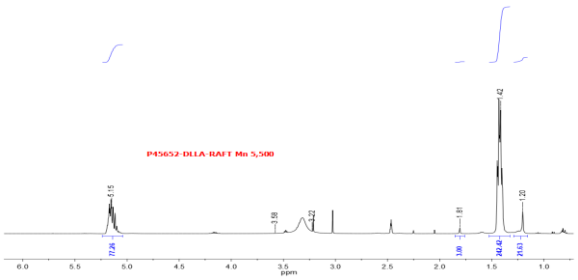
Mn from HNM'R and MW/MN by GPC 1.15

GPC profile for Block copolymer;

In DMF:DMSO 5/5 v/V solvent mixture inpresence of LiBr as additive. Temperature of column 50oc flow rate -.7 ml. The values are arbitory with respect to polystyrene dn/dc values 0.184 ml/g;



B. HNMR of DlLA RAFT

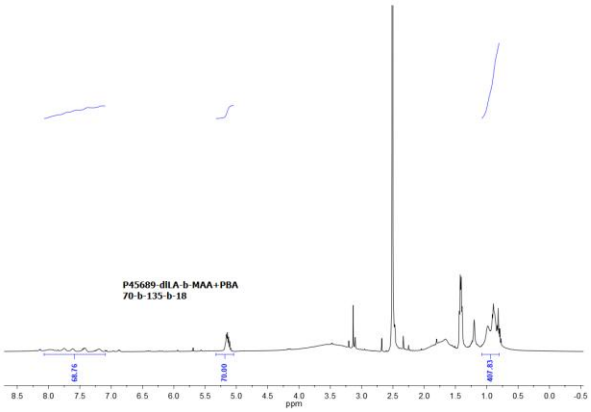


C. NMR (HNMR) of polymer: RAFT Macroinitiator PDLLA

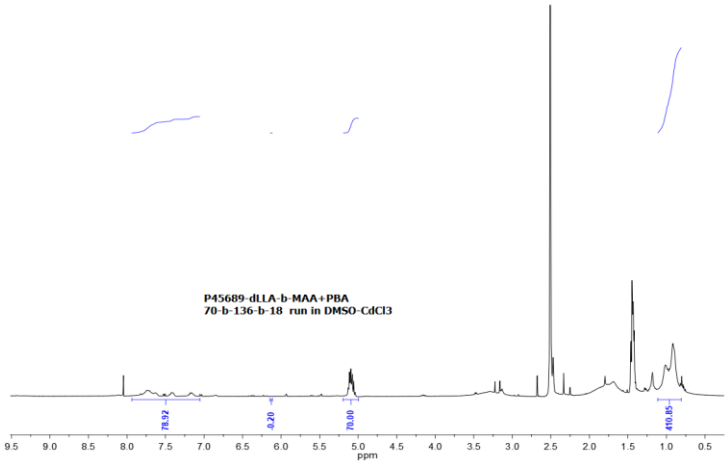
	Chemical shift C-(H)	C(CH3)	Calculated Mn
In acetone	**5.43**	**1,53**	**4,800**
In CdCl3	**5.05**	**1.60**	**5,500**
In DMSO	**5.43**	**1,45**	**4,000**
			Average 5,000

D. **HNMR of Block copolymer**

1. Run from d6 DMSO



Run from 5:5 CdCl3 and d6DMSO 5: % V/V mixture



E. **TGA of the polymer run at 10 ºC heating rate:**