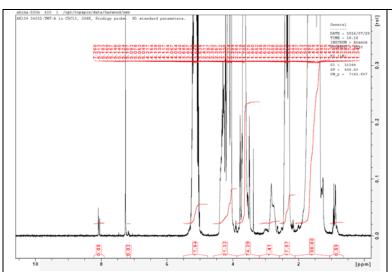
## No. AK109

## Certificate of Analysis

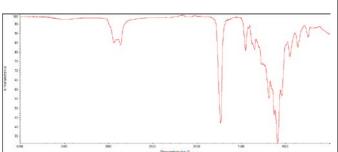


Product Name: Poly(lactide-co-caprolactone)-b-Poly(ethylene glycol)

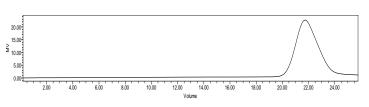
-b-Poly(lactide-co-caprolactone) (Mw~1700-1500-1700 Da, 60:40 CL:LA) (Lot# 240722TMT-A)



H-NMR Spectrum of copolymers in CDCl3 (Bruker ≥300 MHz, PINMRF) NMR of PLCL-PEG-PLCL copolymer: EG/LA-CL =33\*/21-19 (Mn EG/LA:CL 1454\*/1527-2162 Da) LA:CL 53%:47% \*- from MFG data



FTIR Analysis: Collected from IS5 ID7-ATR spectrometer (Thermo Scientific) and analyzed in transmission mode.

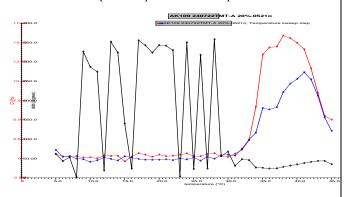


GPC-ES Analysis Method: Waters Breeze 2 system with 1 ml/min THF flow across three GPC columns. Detection via refractive index, calibrated against polystyrene standards.

Polymer	$M_n$ (from	M <sub>w</sub> (from	PDI
	GPC)	GPC)	
PLCL-PEG-PLCL	5301	7284	1.37
PEG precursor*	1472*		

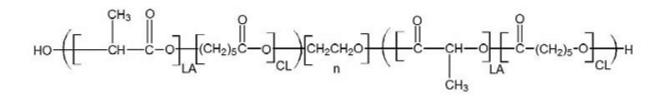
<sup>\*-</sup> from MFG data

Rheology performed on AR2000 (TA instruments) with 60mm 2degree cone on 20% w/v polymer in water dissolved over 3 days with stirring at 23°C. Viscosity of solution at 0.1 (sec¹) and 5°C was measured (1minute peak hold 5 second test intervals). Rheology performed by oscillating at constant 6.283 rad/s, 0.1% strain, in increments of 1°C ranging from 5-45°C with 1 minutes of temperature equilibration at each point.



Viscosity 20% w/v solution at 5°C 0.01965 Pa/s

## Structure of PLCL-PEG-PLCL copolymers



Approved By: Amie Tyler Quality Manager