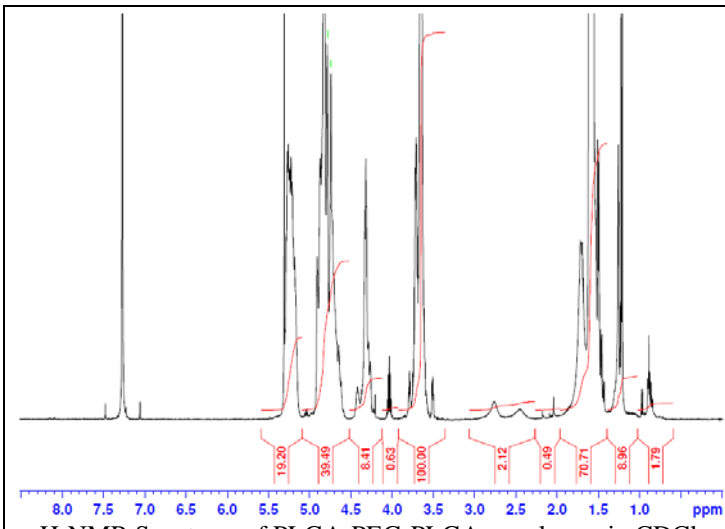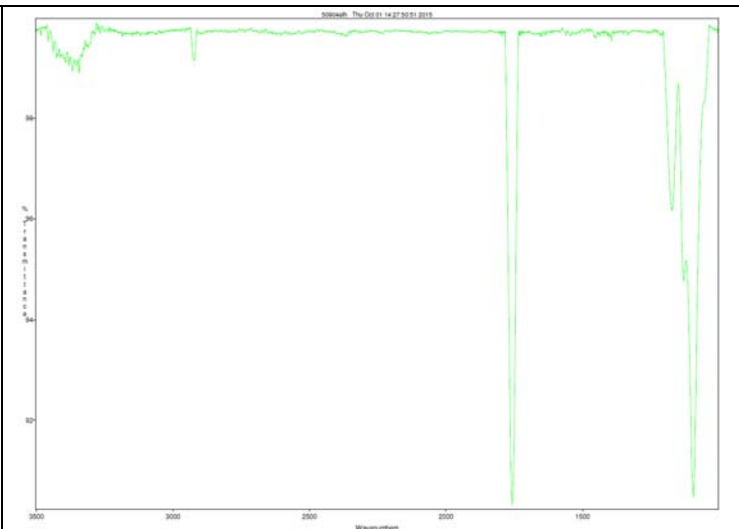# No. AK012   Certificate of Analysis
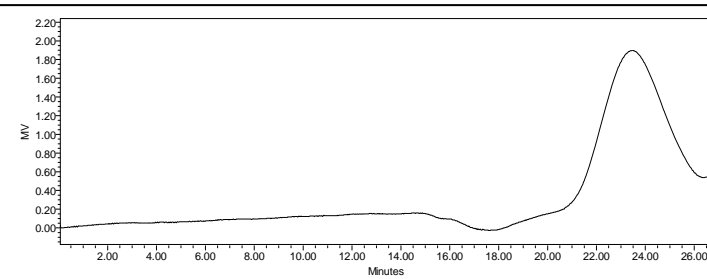
Product Name: Poly(lactic-co-glycolic acid)-*b*-Poly(ethylene glycol)-*b*-Poly(lactic-co-glycolic acid) copolymers (M$_n$ 1,000:1,000:1,000 Da) (Lot# 50904ELH)

H-NMR Spectrum of PLGA-PEG-PLGA copolymer in CDCl$_3$ (Varian Inova 500 MHz instrument), M$_n$ NMR of PLGA copolymers: EG-LA/GA: 1048-1315/1090(44-72/58), LA/GA ratio: 55%/45%

FTIR Analysis: Collected from cast-film on salt-plate placed in Satellite FTIR (Thermo-Mattson) and analyzed in transmission mode.
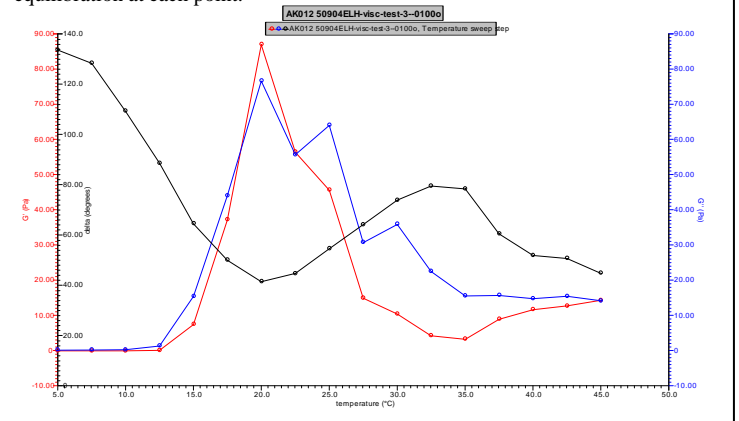

GPC Analysis Method: Waters Breeze 2 system with 1 ml/min DCM flow across three Phenogel 5um columns (Phenomenex). Detection via refractive index, calibrated against polystyrene standards.

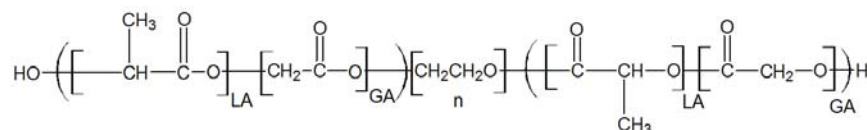| Polymer	M$_n$ (GPC)	M$_w$ (GPC)	PDI
PLGA-PEG-PLGA	3,972	5,269	1.33
PEG precursor*	Mn=950-1050		

*Data Provided by Manufacturer.

Rheology performed on AR550 (TA instruments) with 60mm 2degree cone on 20% w/v polymer in water dissolved overnight with stirring at 4°C. Viscosity of solution at 0.1 (sec^{-1}) 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 2.5°C ranging from 5-45°C with 3 minutes of temperature equilibration at each point.

Viscosity 20% w/v solution at 5°C	0.3656 Pa.s

- **Structure of PLGA-PEG-PLGA copolymer**

Material provided for research use only. Not for human use.