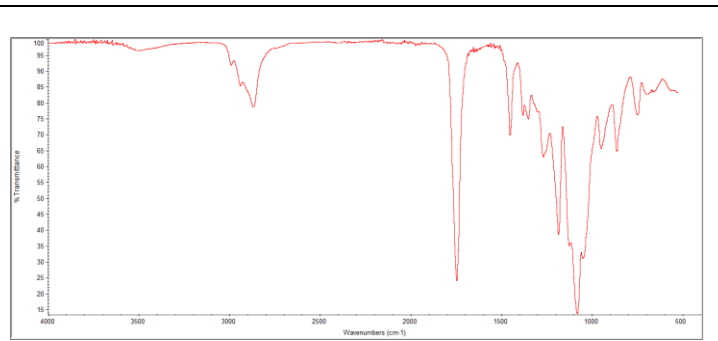
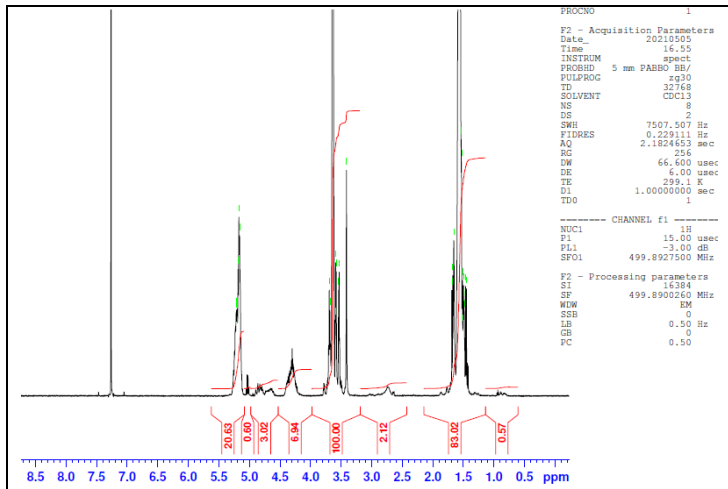


# No. AK164

# Certificate of Analysis

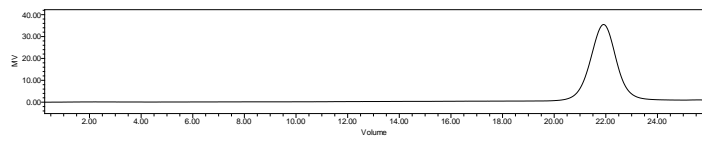


Product Name: Star-Shaped Poly(lactide-co-glycolide)-b-Poly(ethylene glycol) 4-arm copolymer (800(4-arm)-2,000 Da, 95:5 LA:GA)  
(Lot #210426AJP-A)



FTIR Analysis: Collected from Nicolet Avatar 380 spectrometer with ATR Smart Orbit and analyzed in transmission mode.

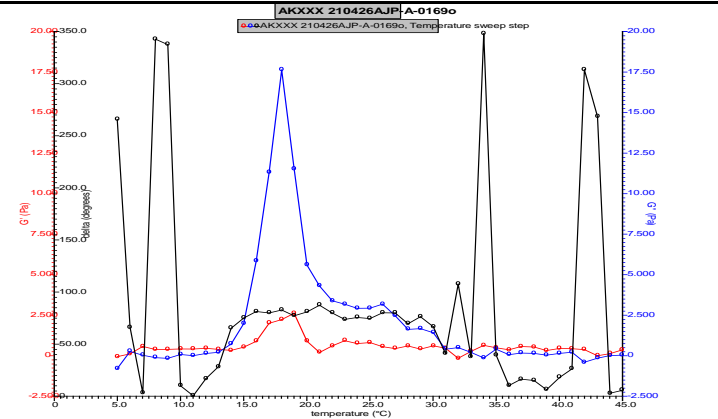
H-NMR Spectrum of copolymers in CDCl<sub>3</sub> (Bruker ≥300 MHz, PINMRF) NMR of PLGA-PEG copolymer: EG/LA-GA =49/40-3 (Mn EG/LA:GA 2159/2911:172 Da)



GPC 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 <sub>n</sub> (from GPC)	M <sub>w</sub> (from GPC)	PDI
PLGA-PEG	6405	7132	1.11
PEG precursor*		2169*	

\* - 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 4°C. Viscosity of solution at 0.1 (sec<sup>-1</sup>) 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 **3.590e<sup>-5</sup> Pa/s**

## Structure of PLGA-PEG-star polymer

