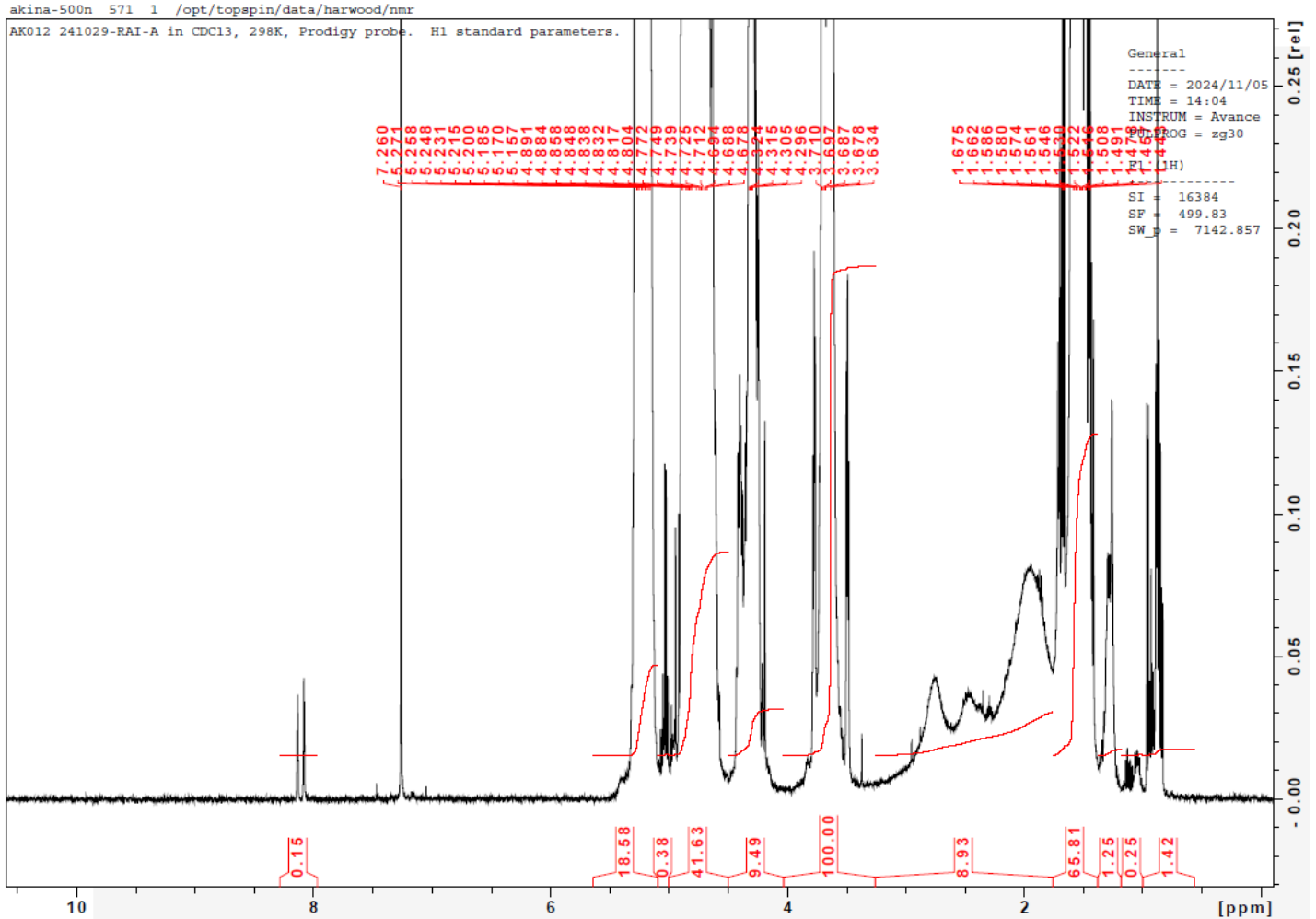Product Name: Poly(lactide-co-glycolide)-*b*-Poly(ethylene glycol)-*b*-Poly (lactide-co-glycolide) LA:GA 50:50 (M_w ~1,000:1,000:1,000 Da) (Lot#: 241029RAI-A)

H-NMR

akina-500n 571 1 /opt/topspin/data/harwood/nmr
AK012 241029-RAI-A in CDCl3, 298K, Prodigy probe. H1 standard parameters.

General

DATE = 2024/11/05
TIME = 14:04
INSTRUM = Avance
PULPROG = zg30
F1 (1H)

SI = 16384
SF = 499.83
SW_p = 7142.857

H-NMR Spectrum of copolymers in CDCl3 (Bruker ≥300 MHz, PINMRF) NMR of PLGA-PEG-PLGA copolymer: EG*/LA-GA =23*/17-19 (Mn EG*/LA:GA 1013*/1231-1111 Da) LA:GA 53%:47% *-from MFG data

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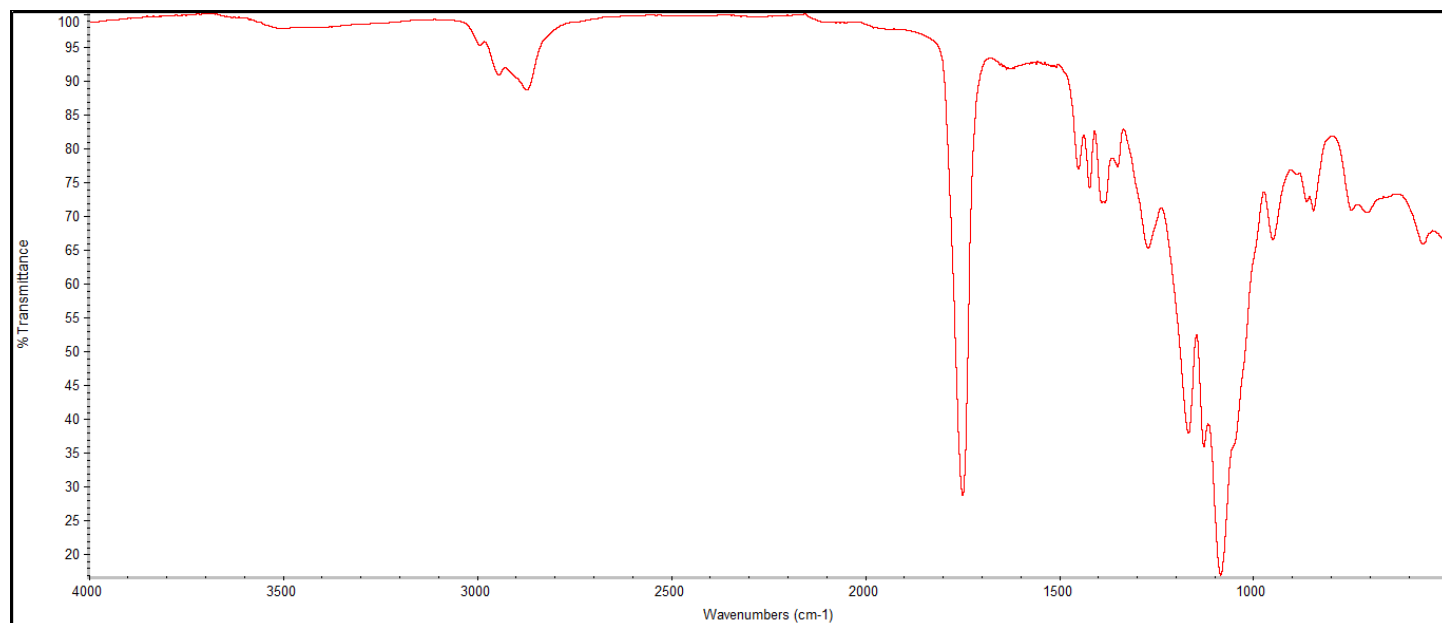
FTIR Analysis: Collected from IS5 ID7-ATR spectrometer (Thermo Scientific) and analyzed in transmission mode.

GPC-ES
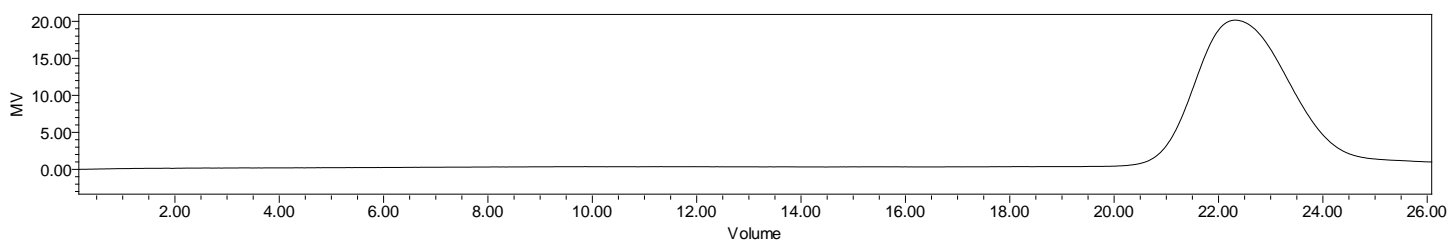
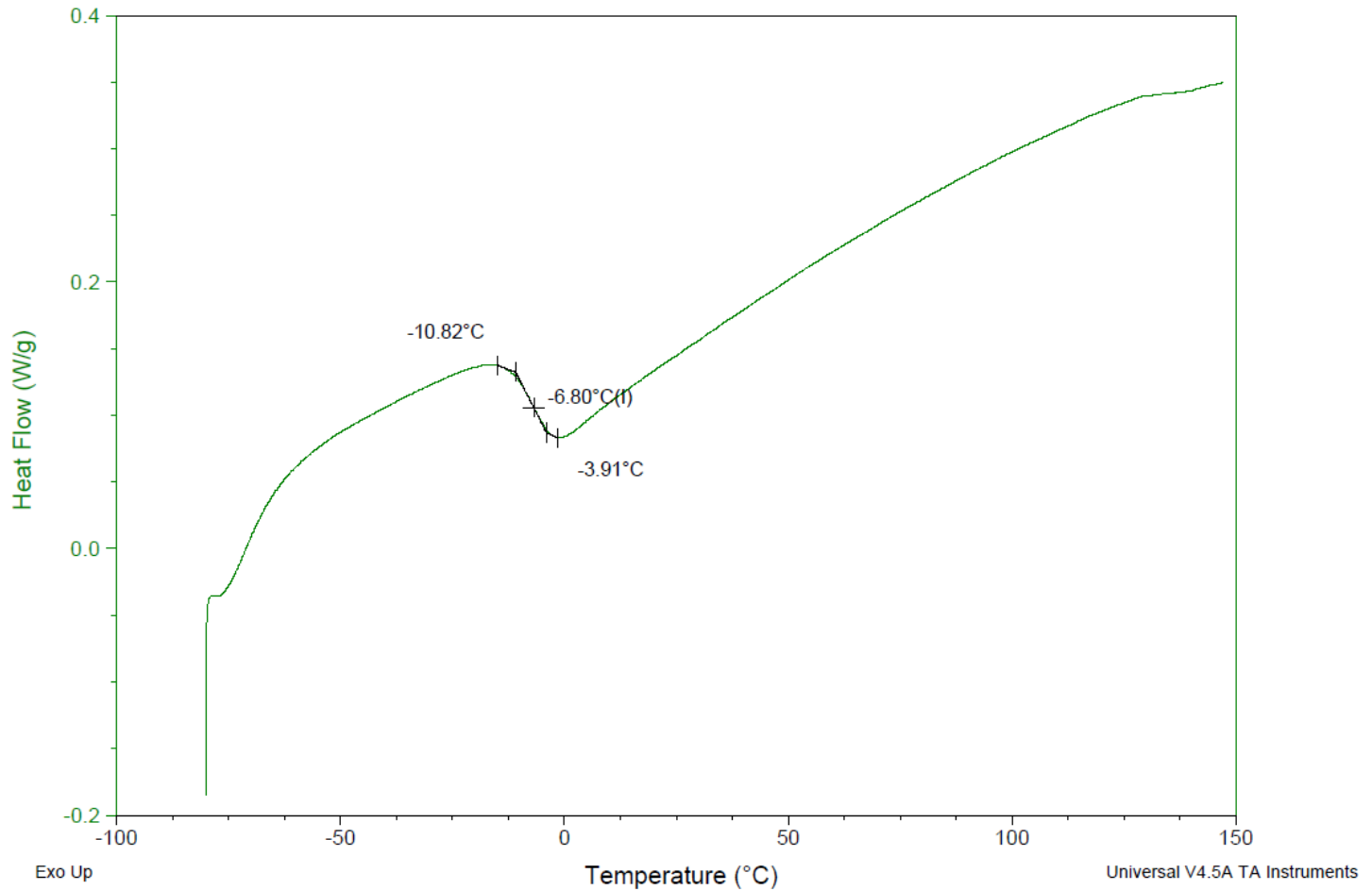| Polymer	M_n (from GPC)	M_w (from GPC)	PDI
PLGA-PEG-PLGA	3575	4693	1.31
PEG-Precursor*	1013*		

*- from MFG data

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.

DSC

DSC Testing: 1-5 mg sample tested in crimped aluminum pan on a TA Instruments Model Q2000 with procedure equilibraion 100 °C, isothermal 5 minutes, equilibrate -80 °C, data on, ramp 10 °C/min to 150 °C. Tg = -6.80 °C

RHEOLOGY

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^{-1}) and 5°C was measured (1 minute 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.
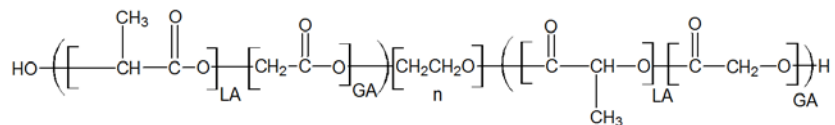

AK012 241029RAI-A-0018o
AK012 241029RAI-A-0018o, Temperature sweep step
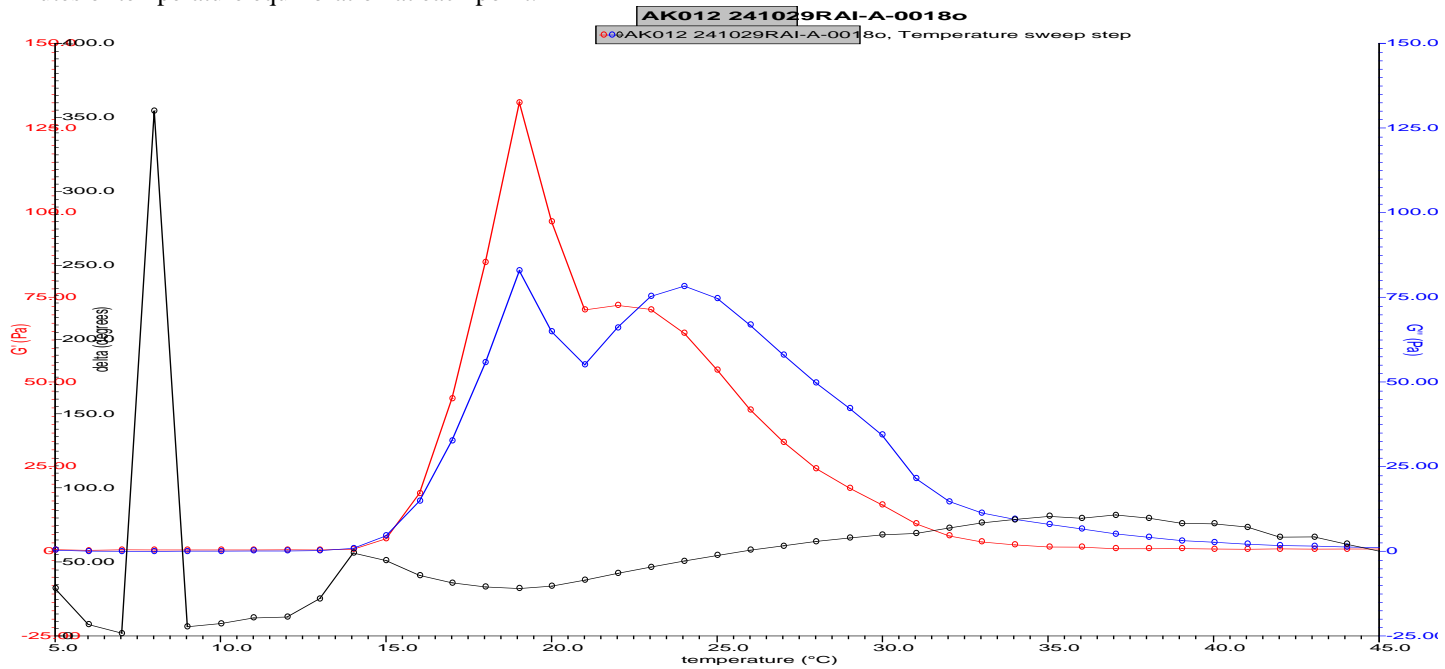
Viscosity 20% w/v solution at 5°C	0.06885 Pa/s

IV

Inherent Viscosity: 0.075 dL/g (calculated from kinematic viscosity at 2% w/v Acetone on Rheosense microVISC, n=3) at 25ºC.

Structure of PLGA-PEG-PLGA copolymers

Approved By:
Amie Tyler
Quality Manager