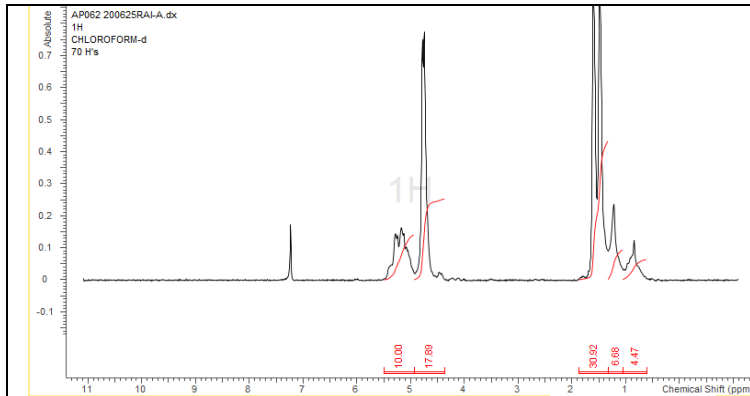


No. AP062

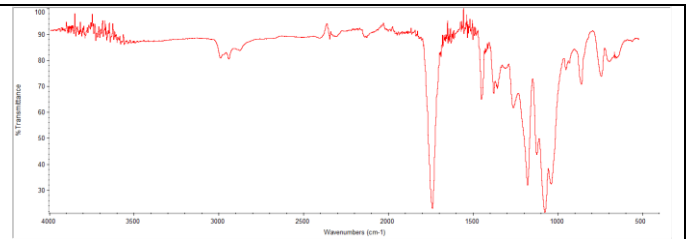
Certificate of Analysis



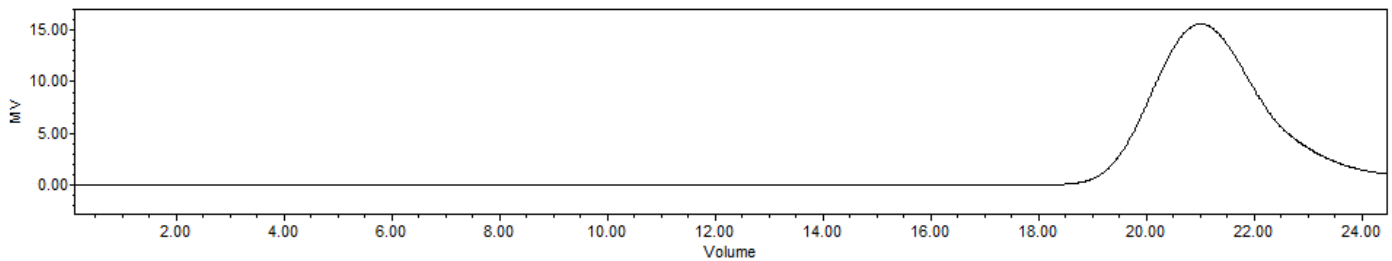
Product Name: Poly(lactic-co-glycolic acid) copolymers, ester endcap
(50:50 LA:GA, M_n : 5,000-10,000 Da) (Lot#: 200625RAI-A)



H-NMR Spectrum of copolymers in CDCl₃ (NMReady-60e, Nanalysis 60 MHz) NMR of PLGA copolymer: LA-GA = 53%-47% molar ratio (LA-GA 58%-42% w-w)

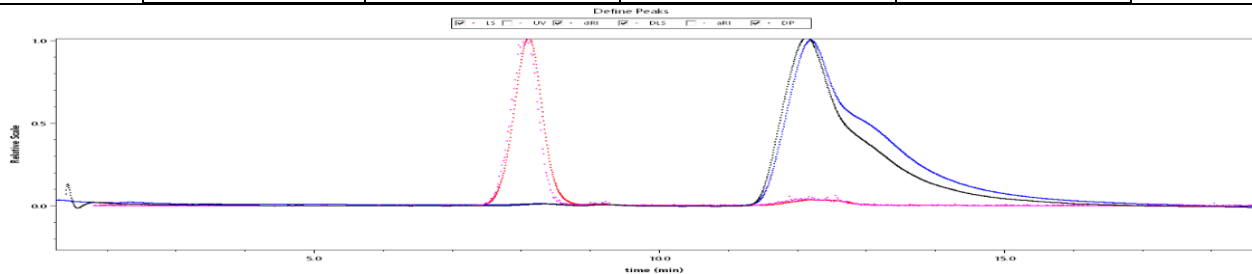


FTIR Analysis: Collected from a Nicolet Avatar 380 spectrometer with ATR Smart Orbit and analyzed in transmission mode.



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 GPC)	M_w (from GPC)	PDI
PLGA	9064	13,797	1.52



GPC-4D Analysis Method: Agilent 1260 Infinity II system 0.6 ml/min Acetone flow across TSKgel GMHHR-L, 7.8 mm x 30 cm. Detection Dawn Heleos II (MALLS), Optilab T-rex (RI), Dynapro nanostar (DLS), and Viscostar III (viscosity), universal calibration (Wyatt).

Polymer	M_n (from GPC-4D)	M_w (from GPC-4D)	M_p (from GPC-4D)	Radius (r(avg), nm)	Intrinsic viscosity ([η](avg), mL/g)	dn/dc (source)
PLGA	37,913	124,662	179,595	4.3	13.862	0.0977 **

* - Due to differences in methodology, Results from GPC-4D universal calibration will be different from those obtained from GPC-ES. The data from GPC-4D analysis is provided for customer information only. **(previous reference)

Structure of PLGA copolymers

