

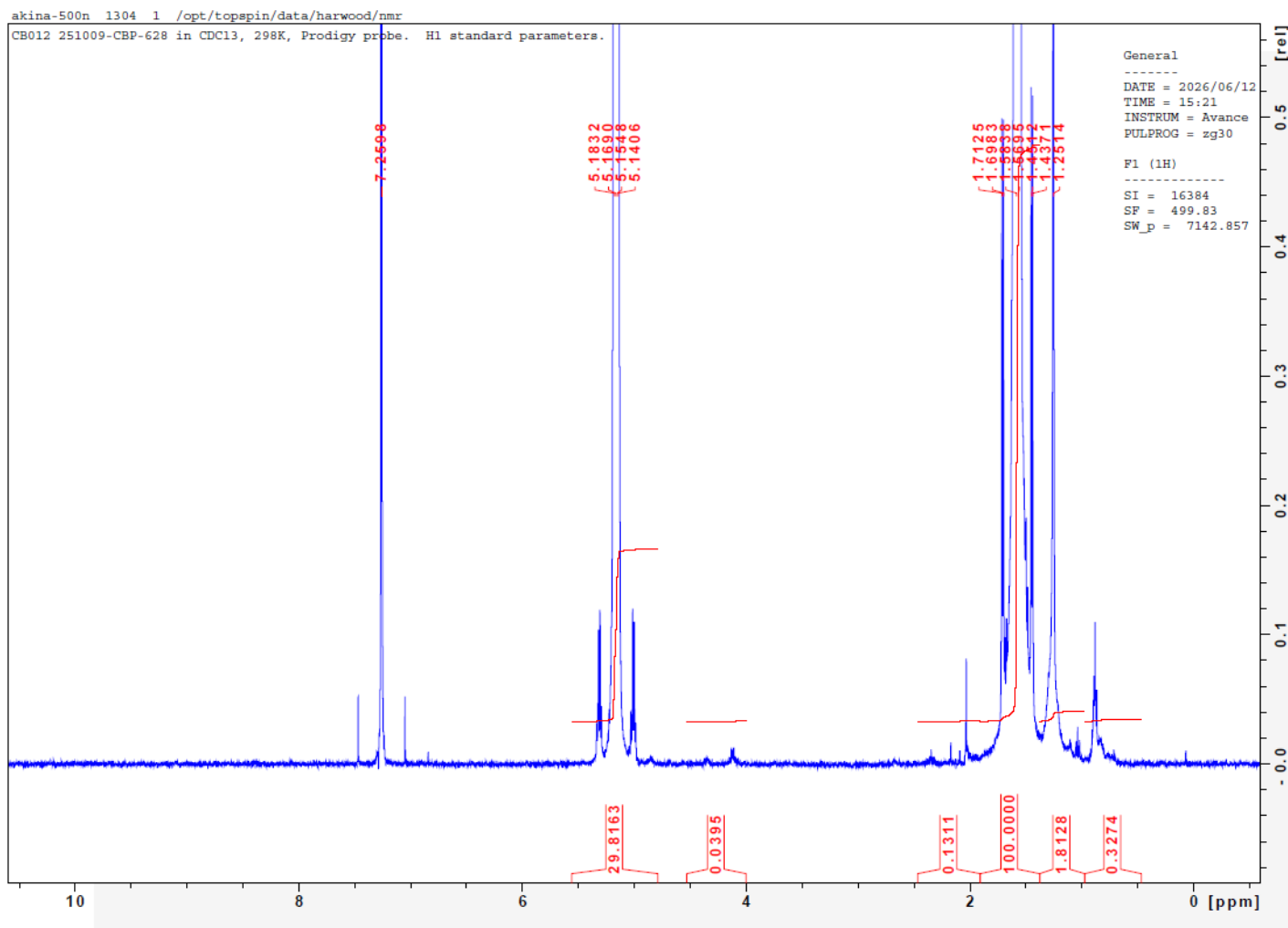
No. CB012

# Certificate of Analysis



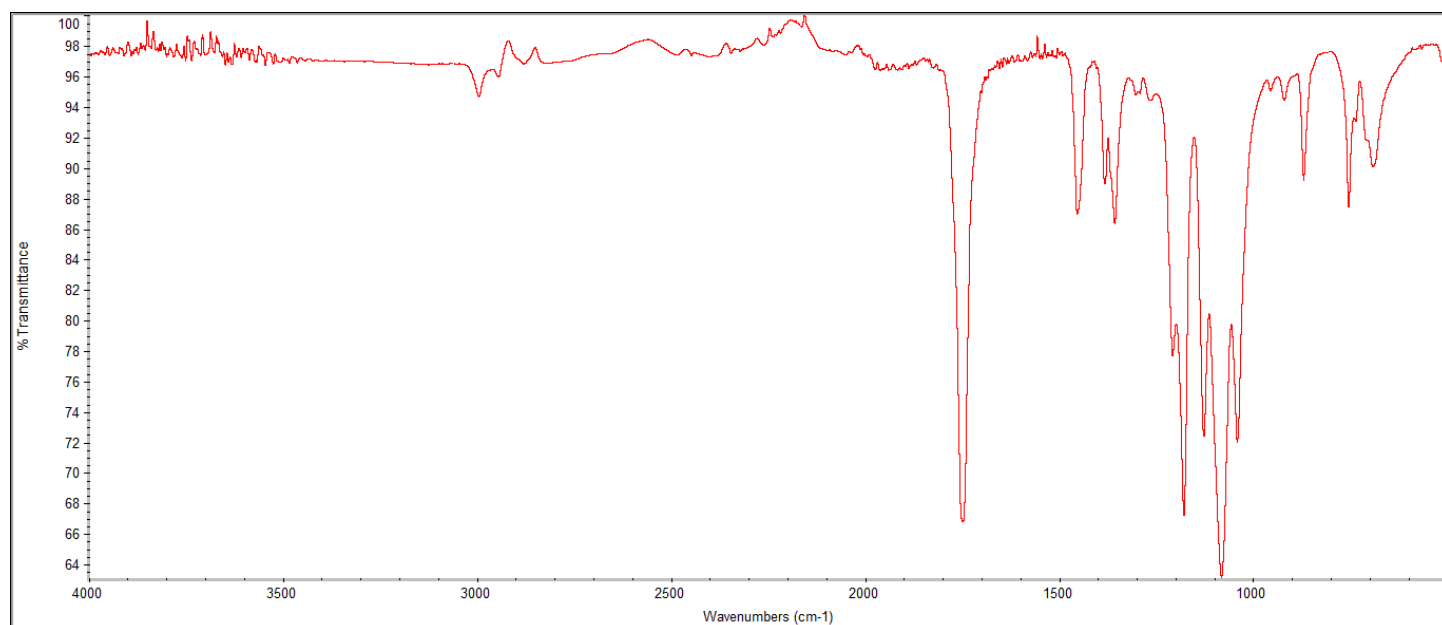
Product Name: Poly(L-Lactide) I.V. 3.2 – 4.3 dl/g, ester endcap (PL 38)  
(Lot # 251009CBP-628)

## H-NMR



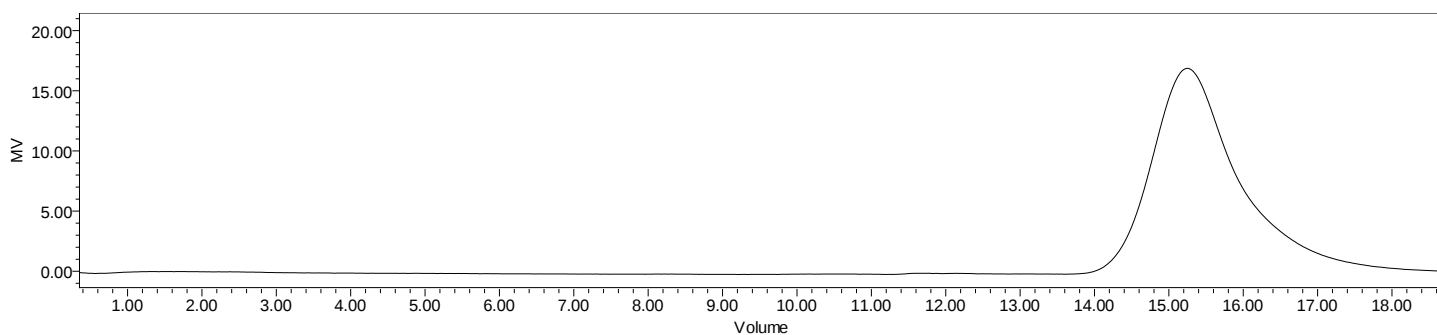
H-NMR Spectrum of copolymers in CDCl<sub>3</sub> (NMReady-60e, Nanalysis 60 MHz) NMR of PLLA copolymer

## FTIR



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

## GPC-ES



| Polymer | M <sub>n</sub> (from GPC) | M <sub>w</sub> (from GPC) | PDI  |
|---------|---------------------------|---------------------------|------|
| PLLA    | 229,712                   | 322,115                   | 1.40 |

**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.

**Manufacturer Provided Data**

| Assay                           | Specification  | Result         |
|---------------------------------|----------------|----------------|
| Tin content                     | <50ppm         | 8 ppm          |
| Water content <sup>1</sup>      | <0.50 %        | 0.08 %         |
| Residual monomer, L Lactide     | <0.10 %        | 0.0 %          |
| Inherent Viscosity <sup>2</sup> | 3.20-4.30 dL/g | 3.85 dL/g      |
| DSC, melting onset-peak         | 170.0-200.0 °C | 176.5-190.0 °C |
| Elemental impurities            | <10 ppm        | <10 ppm        |
| Residual solvent, total         | <0.010 %       | 0.003 %        |
| Residual solvent, Acetone       | <5000 ppm      | 24             |
| Residual solvent, Toluene       | <890 ppm       | 0 ppm          |

1 – Measured by titration

2 – Measured at 25 °C in Chloroform c=0.1 g/dL