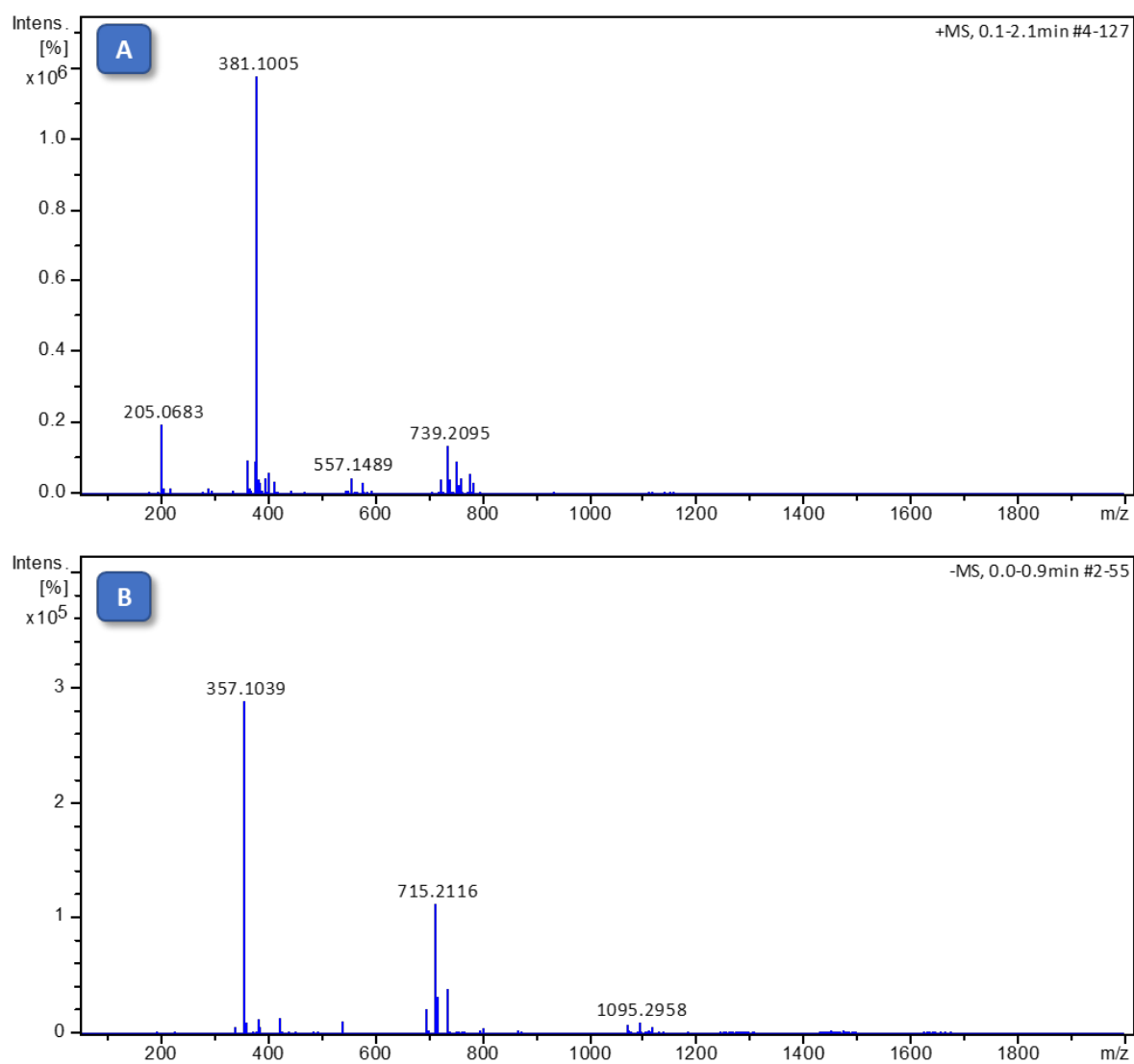
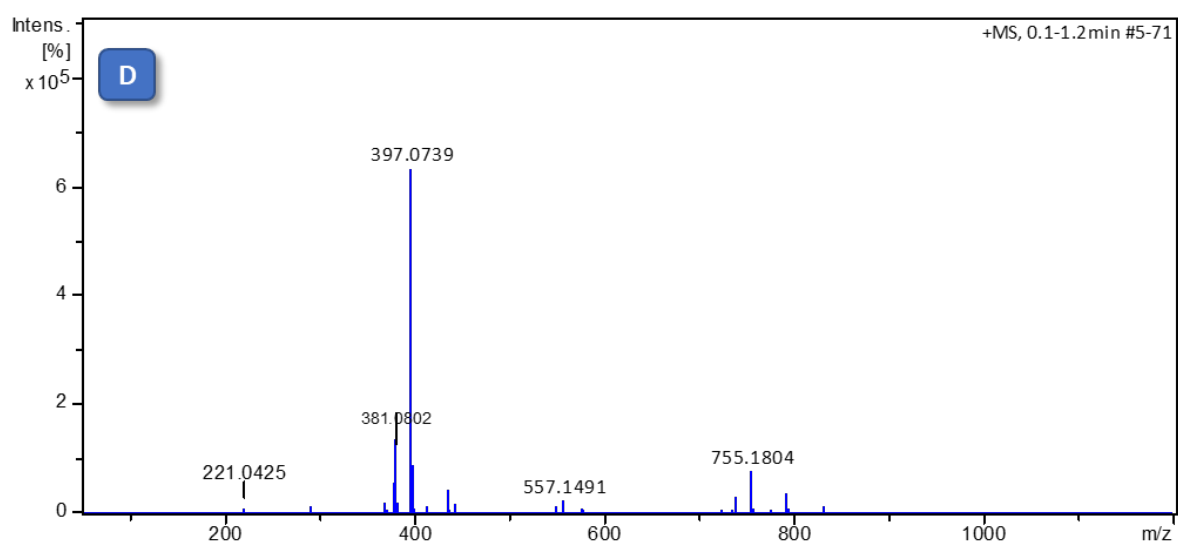
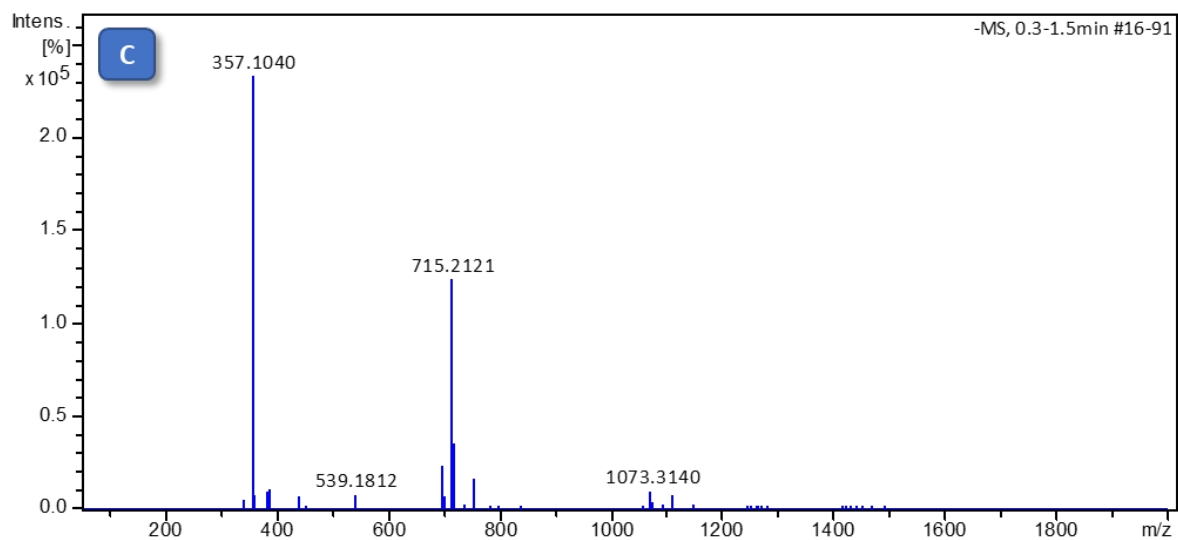


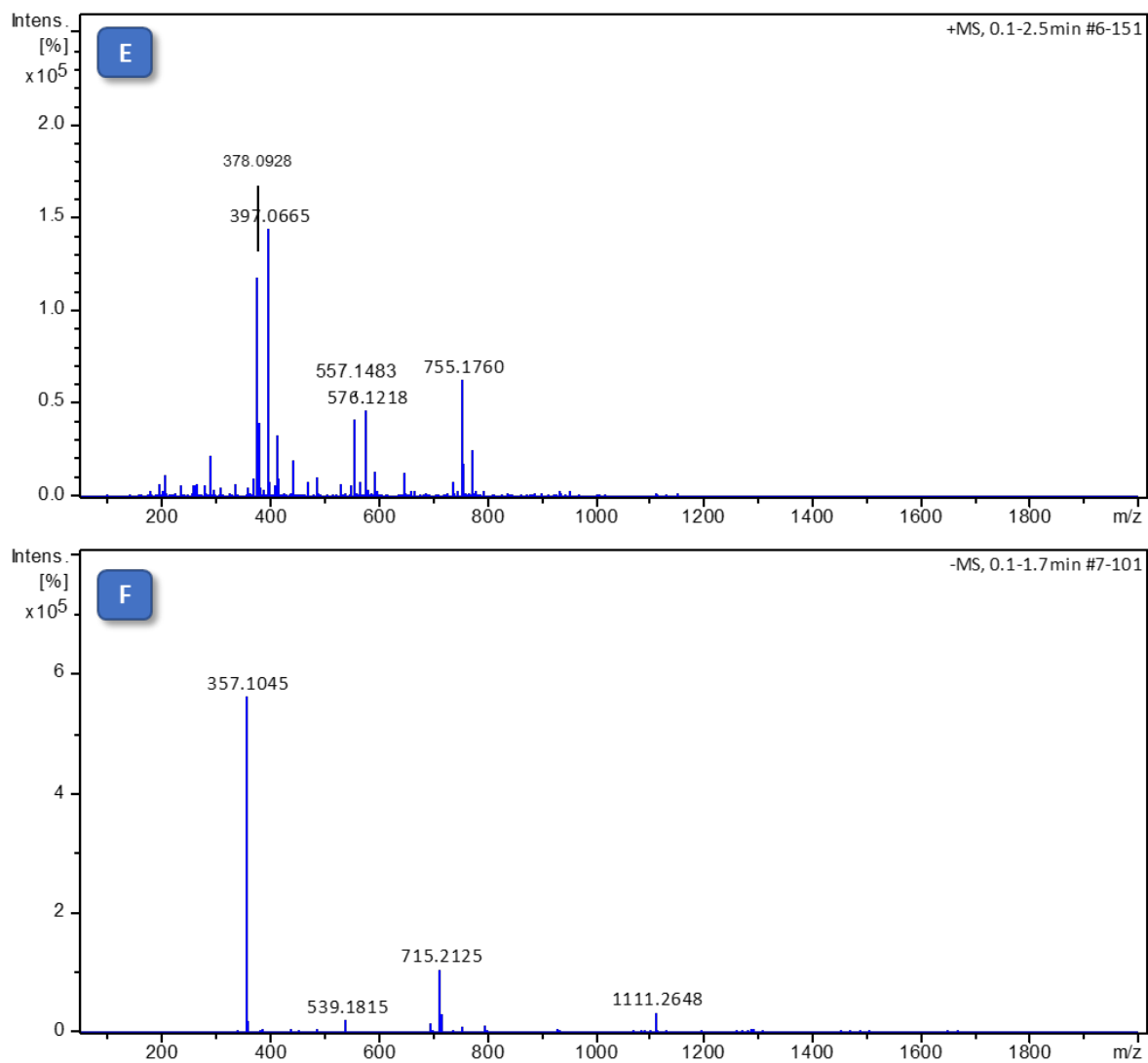
## SUPPLEMENTARY MATERIAL



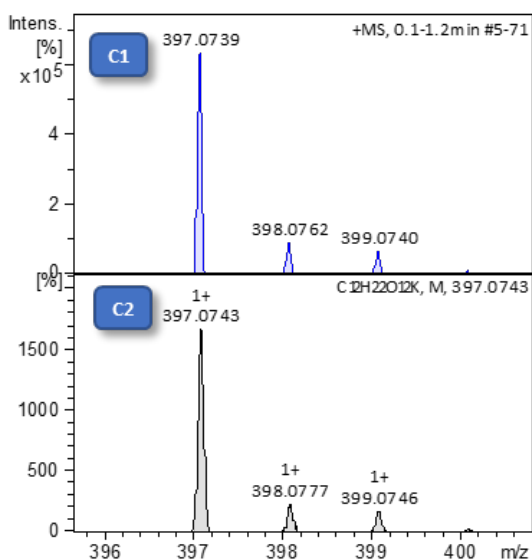
**Figure 1S.** High-resolution mass spectra in positive (A) and negative (B) mode of sodium lactobionate after purification



**Figure 2S.** High-resolution mass spectra in positive (C) and negative (D) mode of potassium lactobionate after purification

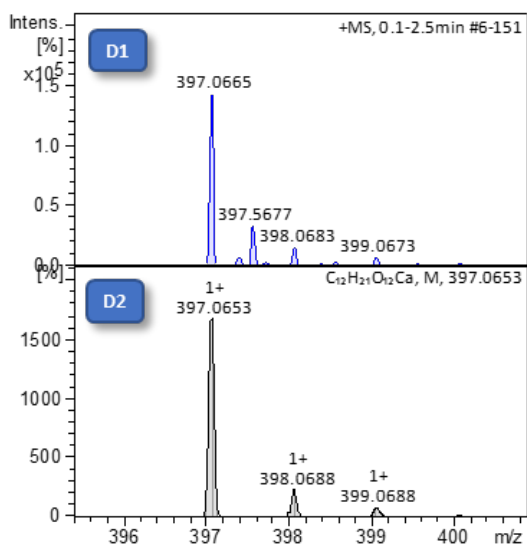


**Figure 3S.** High-resolution mass spectra in positive (E) and negative (F) mode of calcium lactobionate after purification



**Calculated  $m/z$  and abundance for  $C_{12}H_{22}O_{12}K$**

$m/z$	Abundance (%)
397.0728	100.000
398.0771	13.702
399.0745	10.551
400.0775	1.359
401.0784	0.291
402.0812	0.031
403.0828	0.004



**Calculated  $m/z$  and abundance for  $C_{12}H_{21}O_{12}Ca$**

$m/z$	Abundance (%)
397.0653	100.000
398.0688	13.678
399.0687	3.998
400.0692	2.349
440.0379	0.600
401.0585	2.214
401.0739	0.029
402.0618	0.302

**Figure 4S.** Expanded and simulated spectra showing the ion with  $m/z$  397 detected in the potassium lactobionate (C1 - expanded spectrum, C2 – simulated spectrum) analysis and calcium lactobionate (D1 - expanded spectrum, D2 – simulated spectrum) analysis

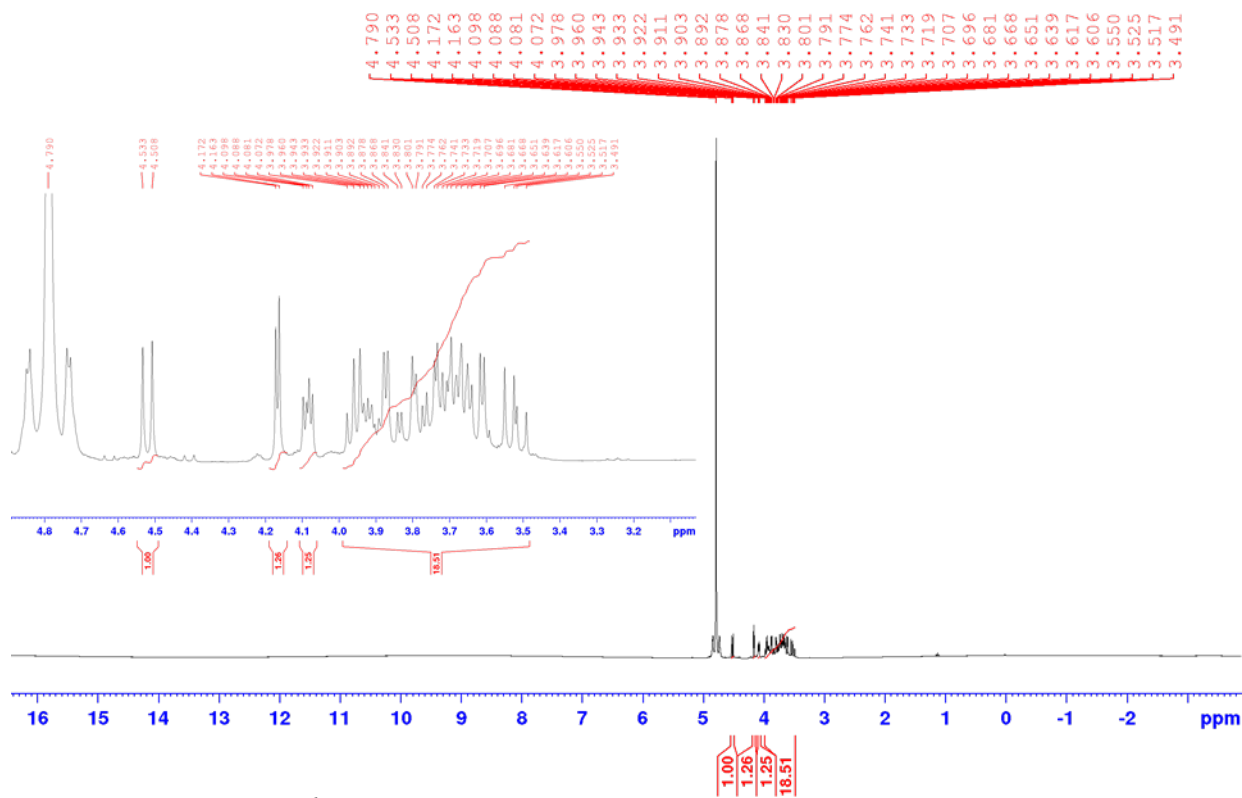


Figure 5S.  $^1\text{H}$  NMR ( $\text{D}_2\text{O}$ , 300 MHz) spectrum of sodium lactobionate

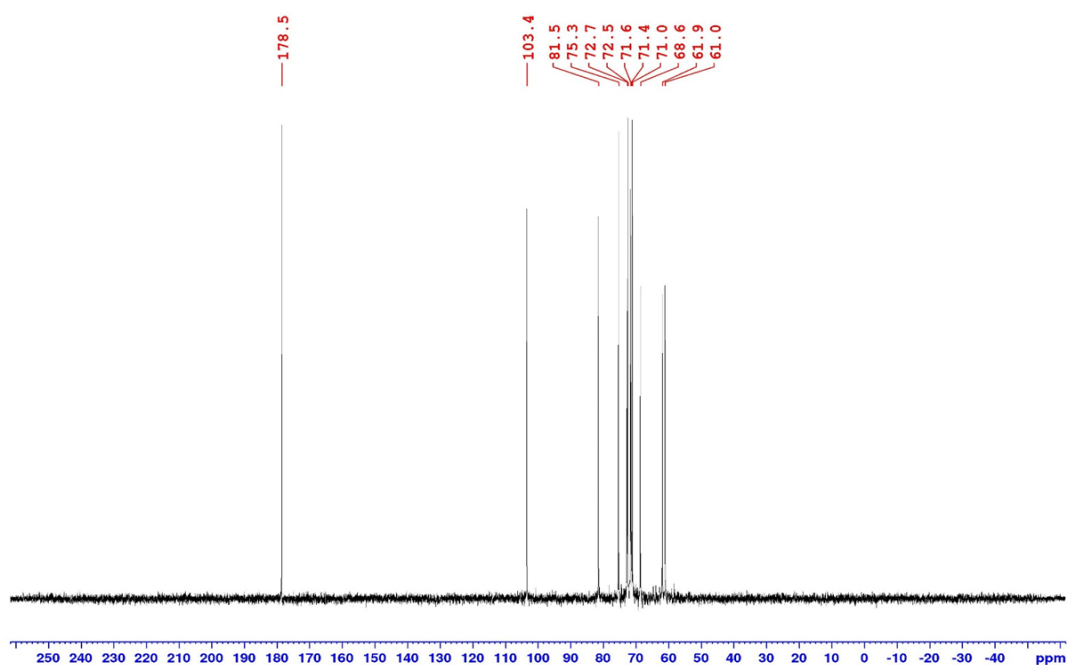


Figure 6S.  $^{13}\text{C}$  NMR spectrum ( $\text{D}_2\text{O}$ , 75 MHz) of sodium lactobionate

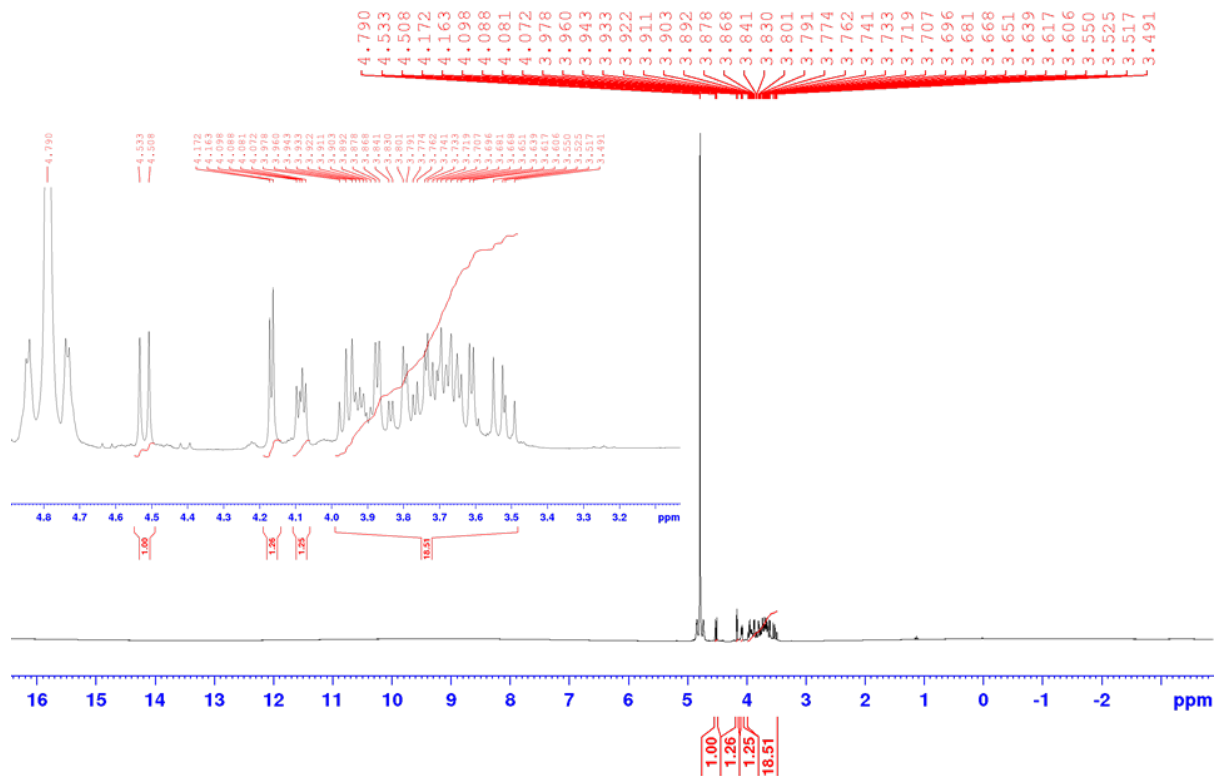


Figure 7S.  $^1\text{H}$  NMR ( $\text{D}_2\text{O}$ , 300 MHz) spectrum of potassium lactobionate

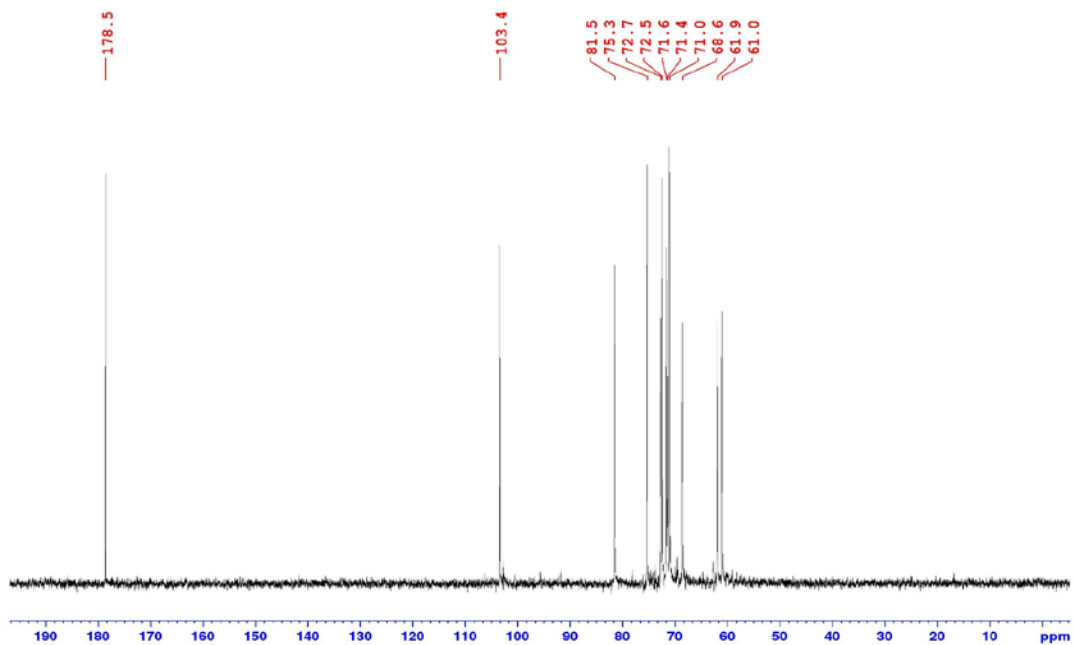


Figure 8S.  $^{13}\text{C}$  NMR ( $\text{D}_2\text{O}$ , 75 MHz) spectrum of potassium lactobionate

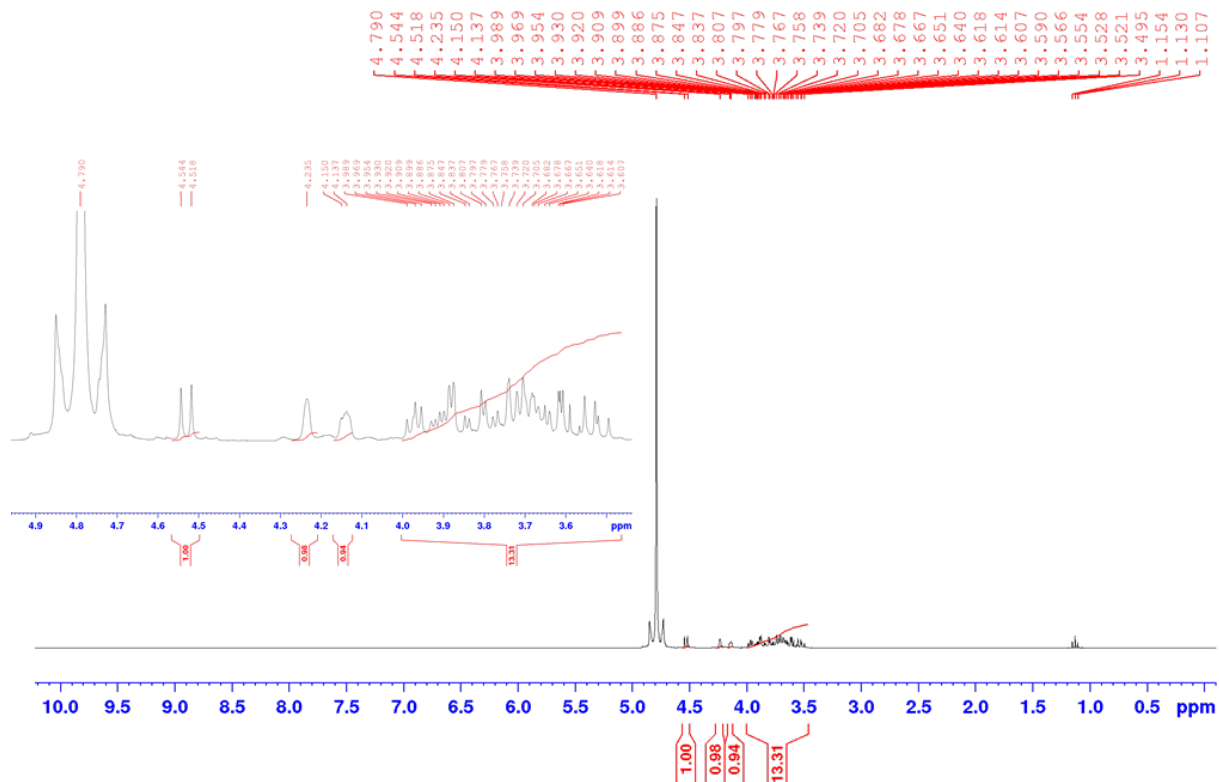


Figure 9S.  $^1\text{H}$  NMR ( $\text{D}_2\text{O}$ , 300 MHz) spectrum of calcium lactobionate

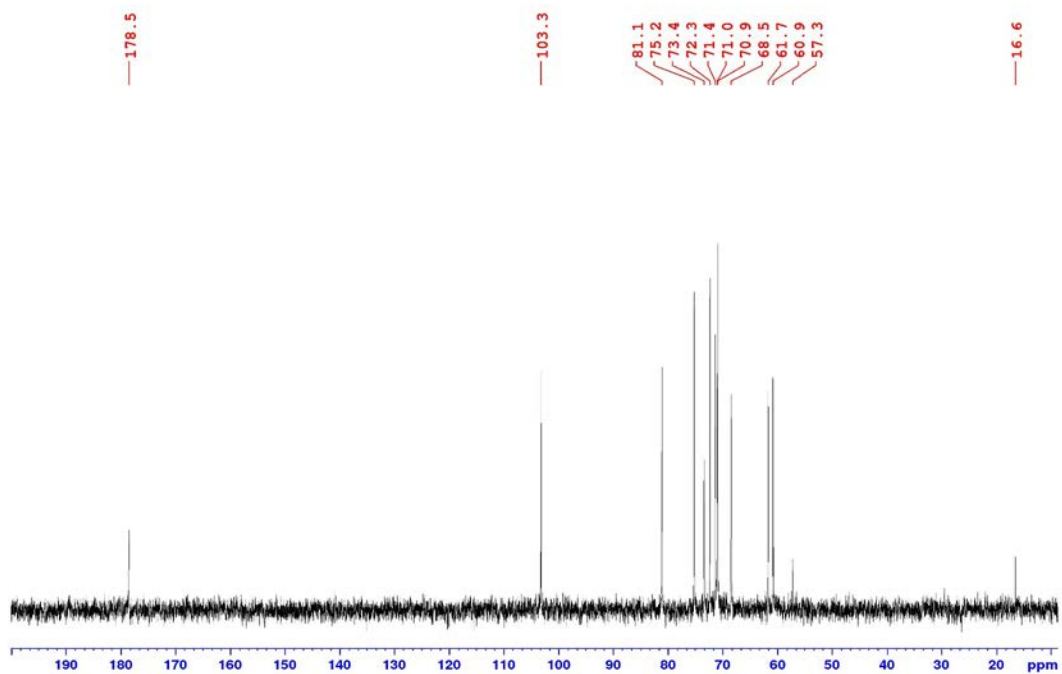


Figure 10S.  $^{13}\text{C}$  NMR ( $\text{D}_2\text{O}$ , 75 MHz) spectrum of calcium lactobionate