MALDI Mass Spectrometric Imaging of Cardiac Tissue Following Myocardial Infarction in a Rat Coronary Artery Ligation Model

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Robert F. Menger;[†] Whitney L. Stutts; [†] Dhanam S. Anbukumar;[‡] John A. Bowden; [‡] David A. Ford; [‡] Richard A. Yost[†]

Department of Chemistry, University of Florida, Gainesville, FL;[†] Department of Biochemistry and Molecular Biology, and Center for Cardiovascular Research, Saint Louis University, St. Louis, MO[‡]

- Author to whom correspondence should be sent – ryost@ufl.edu (352) 392-0557 Department of Chemistry, University of Florida, Gainesville, FL 32611-7200

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Figure S-5. MS^2 spectrum using CID of *m/z* 546 **(a)** and MS^3 spectrum using CID of *m/z* 546 → 487 **(b)** from infarcted cardiac tissue. The structure of LPC 18:0 and an MS^2 image of *m/z* 546→487 from cardiac tissue following LAD coronary artery ligation is shown as an inset in **(a)**.

Figure S-6. MS^2 spectrum of *m/z* 848 using PQD from infarcted cardiac tissue. The structure of PC (18:0/20:4) and an MS^2 image of *m/z* 848 → 789 from cardiac tissue following LAD ligation are shown as an inset.

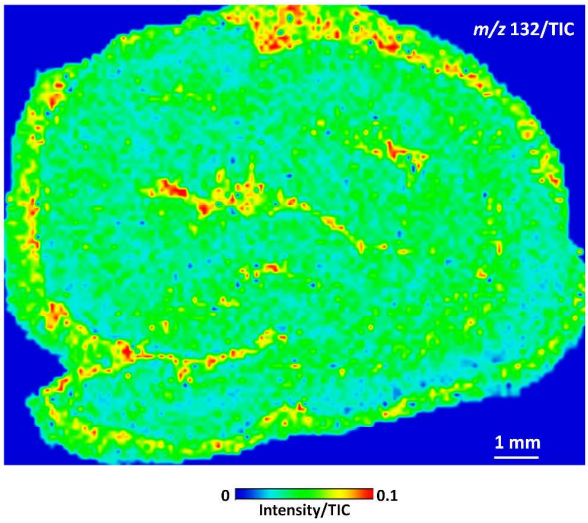

Figure S-1. MS image of *m/z* 132 intensity divided by the TIC from control cardiac tissue.

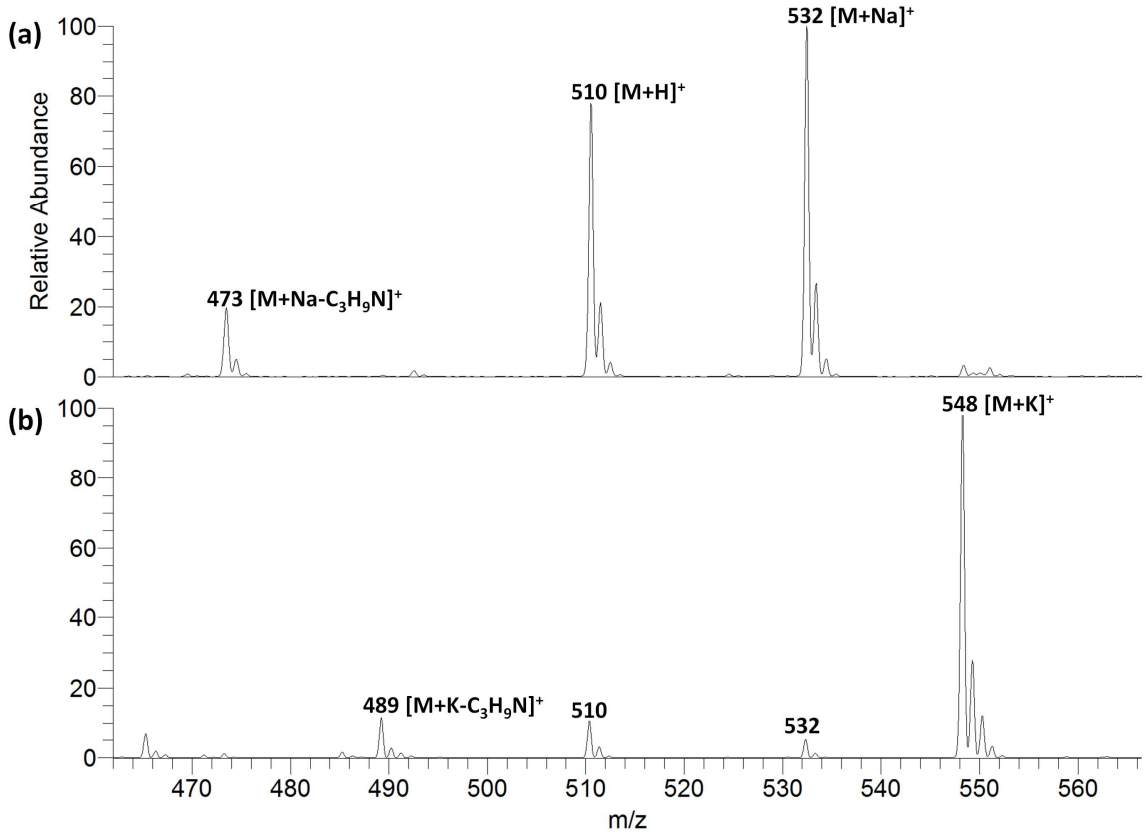

Figure S-2. MS spectra of 100 ppm LPC 17:0 synthetic standard spotted with 40 mg/mL DHB in 70:30 MeOH:H_2O (v/v) with 10 mM NaOAc **(a)** or 10 mM KOAc **(b)**.

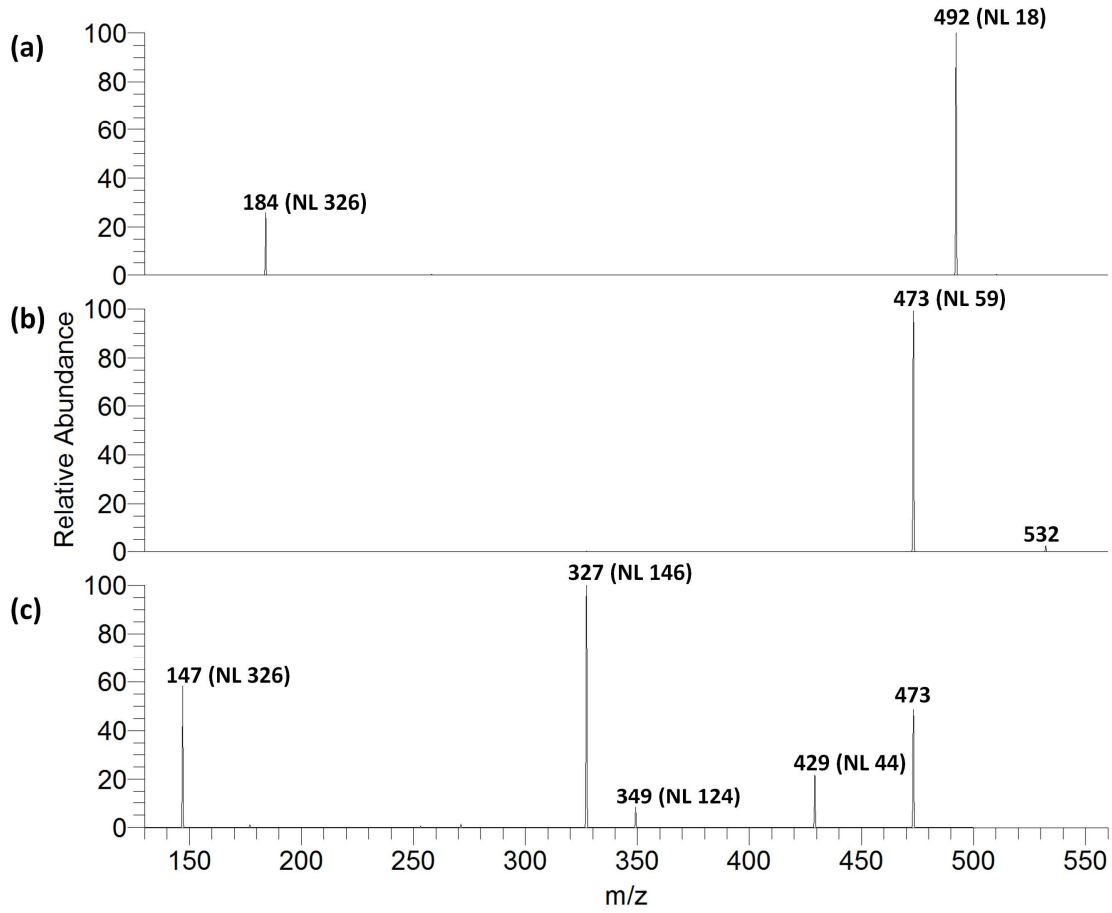

Figure S-3. MS^2 spectra of the $[M+H]^+$ at *m/z* 510 **(a)** and the $[M+Na]^+$ at *m/z* 532 **(b)** and MS^3 spectrum of *m/z* 532→473 **(c)**. All spectra were acquired from a 100 ppm standard of LPC 17:0 spotted with 40 mg/mL DHB in 70:30 MeOH:H_2O (v/v) with 10 mM NaOAc.

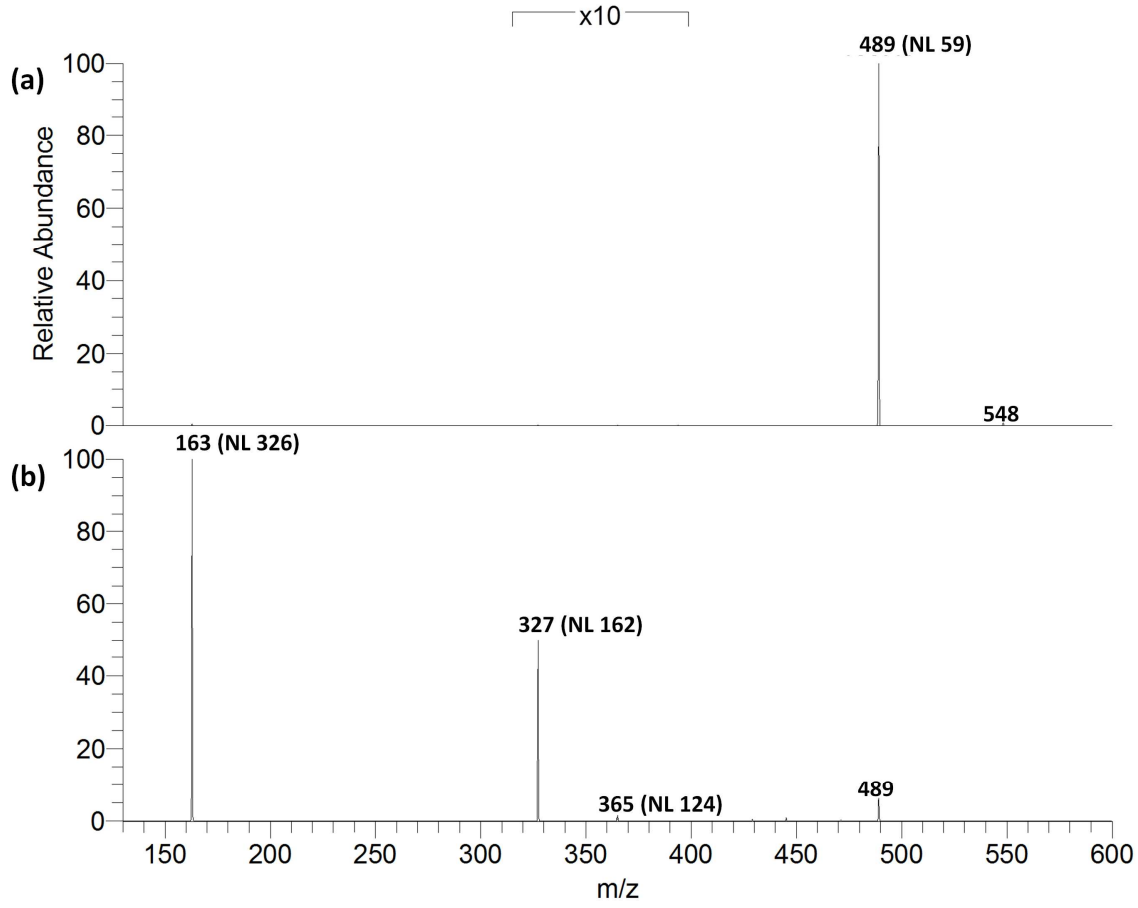

Figure S-4. MS^2 spectra of the $[M+K]^+$ at *m/z* 548 **(a)** and MS^3 spectrum of *m/z* 548 → 489 **(b)**. All spectra were acquired from a 100 ppm standard of LPC 17:0 spotted with 40 mg/mL DHB in 70:30 MeOH:H_2O (v/v) with 10 mM KOAc.

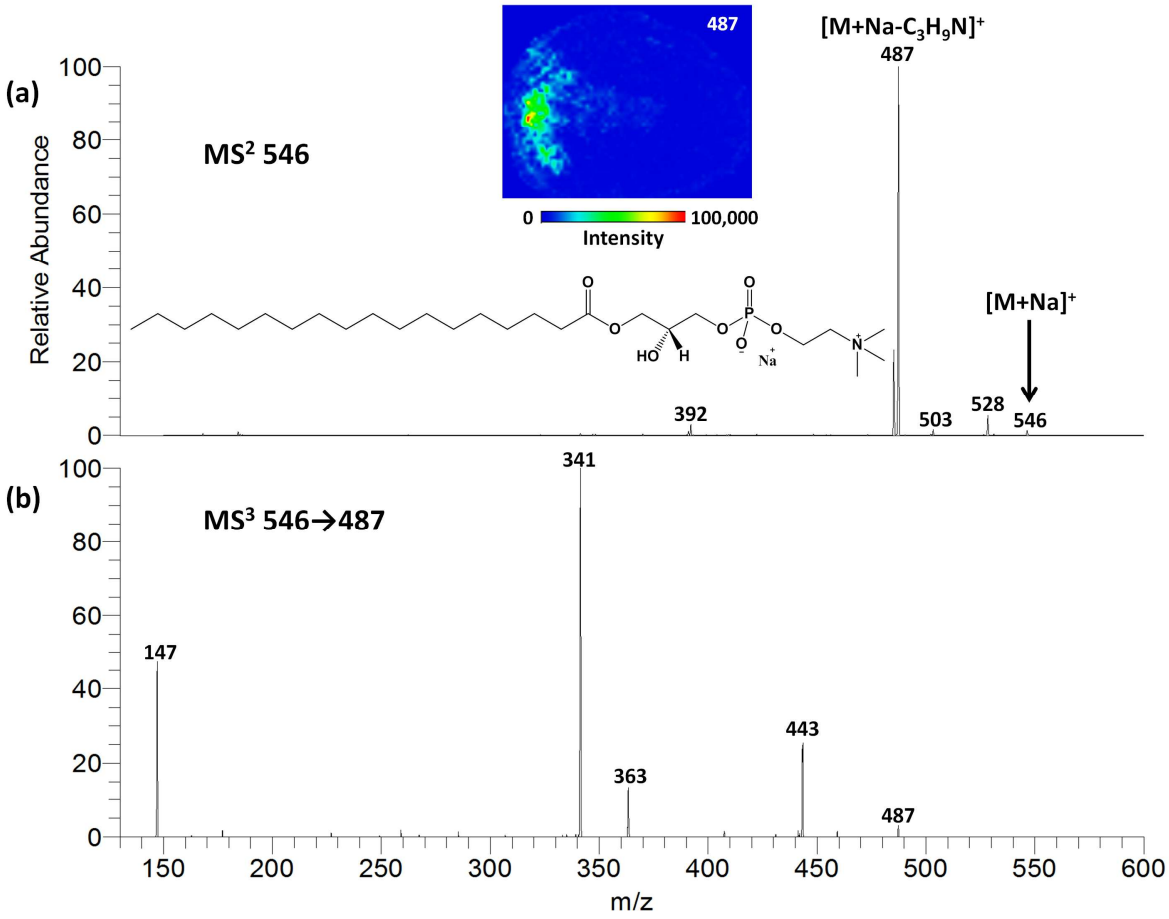

Figure S-5. MS^2 spectrum using CID of *m/z* 546 **(a)** and MS^3 spectrum using CID of *m/z* 546 → 487 **(b)** from infarcted cardiac tissue. The major fragment in **(a)** is a NL of 59, indicating an alkali metal adduct of a PC. Furthermore, in **(b)**, the 22 Da difference between *m/z* 363 and 341 indicate a sodiated PC. Also, the fragment ion at *m/z* 147 is indicative of sodiated cyclophosphane, a characteristic ion of sodiated PCs. The ion was identified as the $[M+Na]^+$ of LPC 18:0. The structure and an MS^2 image of *m/z* 546→487 from cardiac tissue following LAD coronary artery ligation is shown as an inset in **(a)**.

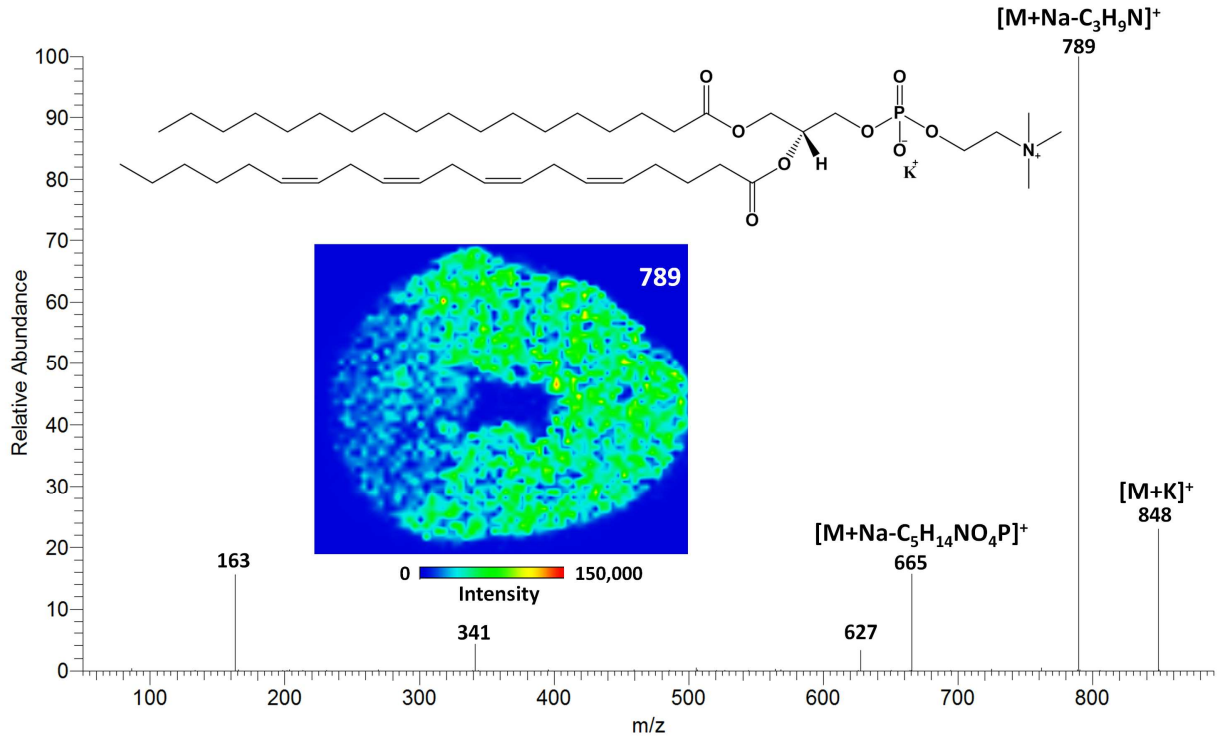

Figure S-6. MS^2 spectrum of *m/z* 848 using PQD from infarcted cardiac tissue. A NL of 59 indicates an alkali metal adduct of a PC. The 38 Da difference between *m/z* 655 and 627 and the fragment ion at *m/z* 163 (potassiated cyclophosphane) indicate a potassiated PC. MS^3 demonstrated a minor NL of 284, indicating a stearic fatty acid tail in the *sn*-1 position of the glycerol backbone (data not shown). Therefore, the ion was identified as the $[M+K]^+$ of PC (18:0/20:4). The structure and an MS^2 image of *m/z* 848→789 from cardiac tissue following LAD ligation are shown as an inset. Unlike CID, PQD is not hindered by a LMCO, providing the potential for a larger number of characteristic ions within one MS^2 experiment. For example, when isolating the ion at *m/z* 848, the typical LMCO for CID on a linear ion trap is *m/z* 230, excluding the characteristic potassiated cyclophosphane ion (*m/z* 163).