



Fig. S1. The high resolution ESI mass spectra of phosphatidylethanolamines isolated from *Leishmania infantum* (a), CFAS expressing (+CFAS) *L. Major* (b) and from *L. major* (mock) (c).

Table s2a. High resolution MS<sup>2</sup> analysis of the [M - H]<sup>-</sup> ions of m/z 742.5

measured m/z Da	Theo. Mass Da	Deviat. mDa	Composition C14 H27 O2	Rel. Int. %	structures
227.2019	227.2017	0.21	C16 H29 O2	0.07	C <sub>13</sub> H <sub>27</sub> CO <sub>2</sub> <sup>-</sup>
253.2173	253.2173	0.03	C17 H33 O	0.09	C <sub>15</sub> H <sub>29</sub> CO <sub>2</sub> <sup>-</sup>
253.2538	253.2537	0.07	C17 H31 O2	0.08	C <sub>17</sub> H <sub>33</sub> O <sup>-</sup>
267.2329	267.2330	-0.01	C18 H35 O	0.42	C <sub>16</sub> H <sub>31</sub> CO <sub>2</sub> <sup>-</sup>
267.2694	267.2693	0.09	C18 H27 O2	0.02	C <sub>18</sub> H <sub>35</sub> O <sup>-</sup>
277.2173	277.2173	0	C18 H29 O2	0.76	C <sub>17</sub> H <sub>29</sub> CO <sub>2</sub> <sup>-</sup>
279.2329	279.2330	-0.04	C18 H31 O2	100	C <sub>17</sub> H <sub>31</sub> CO <sub>2</sub> <sup>-</sup>
281.2485	281.2486	-0.06	C18 H33 O2	55.06	C <sub>17</sub> H <sub>33</sub> CO <sub>2</sub> <sup>-</sup>
283.2642	283.2643	-0.06	C18 H35 O2	31.76	C <sub>17</sub> H <sub>35</sub> CO <sub>2</sub> <sup>-</sup>
295.2642	295.2643	-0.06	C19 H35 O2	63.42	C <sub>18</sub> H <sub>35</sub> CO <sub>2</sub> <sup>-</sup>
307.2641	307.2643	-0.12	C20 H35 O2	1.84	C <sub>19</sub> H <sub>35</sub> CO <sub>2</sub> <sup>-</sup>
375.2304	375.2306	-0.2	C19 H36 O5 P	1.6	b - 19:1-ketene - dimethylethanolamine
389.2460	389.2462	-0.24	C20 H38 O5 P	2.81	b - 18:1-ketene - dimethylethanolamine
391.2253	391.2255	-0.25	C19 H36 O6 P	0.35	480 - dimethylethanolamine
403.2616	403.2619	-0.25	C21 H40 O5 P	0.08	b - 19:1-ketene - ethanolamine
415.2253	415.2255	-0.22	C21 H36 O6 P	0.21	476 - ethanolamine
417.2408	417.2411	-0.32	C21 H38 O6 P	0.19	a - 18:1-ketene -ethanoamine
419.2565	419.2568	-0.26	C21 H40 O6 P	0.16	480 - ethanolamine
446.2675	446.2677	-0.2	C22 H41 O6 N P	0.14	a - 19:1-FA
446.3039	446.3041	-0.21	C23 H45 O5 N P	1.69	b - 19:1-FA
452.2780	452.2783	-0.22	C21 H43 O7 N P	0.5	a - 20:2-ketene
458.2675	458.2677	-0.16	C23 H41 O6 N P	1	a - 18:0-FA
460.2831	460.2833	-0.26	C23 H43 O6 N P	1.61	a - 18:1-FA
462.2988	462.2990	-0.24	C23 H45 O6 N P	1.67	a - 18:2-FA
464.2781	464.2783	-0.18	C22 H43 O7 N P	0.55	a - 19:1-ketene
464.3145	464.3146	-0.17	C23 H47 O6 N P	5.23	b - 19:1-ketene
476.2780	476.2783	-0.22	C23 H43 O7 N P	1.51	a - 18:0-ketene
478.2937	478.2939	-0.17	C23 H45 O7 N P	7.82	a - 18:1-ketene
478.3300	478.3303	-0.25	C24 H49 O6 N P	0.43	b - 18:1-ketene
480.3094	480.3096	-0.16	C23 H47 O7 N P	18.47	a - 18:2-ketene
504.3093	504.3096	-0.22	C25 H47 O7 N P	0.2	a - 16:0-ketene
742.5385	742.5392	-0.75	C41 H77 O8 N P	15.15	[M - H] <sup>-</sup> (a)
742.5748	742.5756	-0.77	C42 H81 O7 N P	4.81	[M - H] <sup>-</sup> (b)

Table s2b. High resolution MS<sup>3</sup> analysis of m/z 464.31 (742.5 → 464.31)

140.0124	140.0118	0.61	C2 H7 O4 N P	1.1	[phosphoethanolamine - H] <sup>-</sup>
152.9964	152.9958	0.57	C5 H6 O5 P	0.61	2-hydroxy-1,3-cyclophosphoric anion
196.0384	196.038	0.37	C5 H11 O5 N P	54.09	b - 19:1-ketene - C <sub>16</sub> H <sub>33</sub> CH=CH-OH
267.2693	267.2693	-0.02	C18 H35 O	8.56	C <sub>16</sub> H <sub>33</sub> CH=CH-O <sup>-</sup>
375.2303	375.2306	-0.24	C19 H36 O5 P	6.89	b - 19:1-ketene - dimethylethanolamine
403.2618	403.2619	-0.13	C21 H40 O5 P	100	b - 19:1-ketene - ethanolamine
464.3145	464.3146	-0.14	C23 H47 O6 N P	10.86	b - 19:1-ketene

Table s1a. High resolution MS<sup>2</sup> analysis of the [M - H]<sup>-</sup> ions of m/z 714.5

measured m/z	Calcd. Mass	Deviat. (mDa)	Rel. Int. (%)	Composition	structures
255.2330	255.2330	0.07	4.54	C16 H31 O2	C <sub>15</sub> H <sub>31</sub> CO <sub>2</sub> <sup>-</sup>
267.2330	267.2330	0.03	0.63	C17 H31 O2	C <sub>16</sub> H <sub>31</sub> CO <sub>2</sub> <sup>-</sup>
279.2330	279.2330	0.02	27.69	C18 H31 O2	C <sub>17</sub> H <sub>31</sub> CO <sub>2</sub> <sup>-</sup>
281.2486	281.2486	0.02	100	C18 H33 O2	C <sub>17</sub> H <sub>33</sub> CO <sub>2</sub> <sup>-</sup>
295.2642	295.2643	-0.02	50.05	C19 H35 O2	C <sub>18</sub> H <sub>35</sub> CO <sub>2</sub> <sup>-</sup>
389.2461	389.2462	-0.14	0.04	C20 H38 O5 P	b - 18:1-ketene - ethanolamine
418.2728	418.2728	0.01	0.59	C21 H41 O5 N P	b - 19:1-FA
432.2884	432.2884	-0.05	1.35	C22 H43 O5 N P	b - 18:1-FA
436.2833	436.2833	-0.08	4.1	C21 H43 O6 N P	b - 19:1-ketene
450.2989	450.2990	-0.09	13.34	C22 H45 O6 N P	b - 18:1-ketene
452.3147	452.3146	0.1	3.1	C22 H47 O6 N P	b - 18:2-ketene
458.2675	458.2676	-0.12	0.02	C23 H41 O6 N P	a - 16:0-FA
476.2784	476.2783	0.1	0.61	C23 H43 O7 N P	a - 16:0-ketene
714.5079	714.5079	0.08	0.35	C39 H73 O8 N P	[M - H] <sup>-</sup> (a)
714.5441	714.5443	0.2	6.69	C40 H77 O7 N P	[M - H] <sup>-</sup> (b)

Table s1b. High resolution MS<sup>3</sup> analysis of m/z 450.29 (714 → 450.29)

140.0126	140.0118	0.82	0.85	C2 H7 O4 N P	[phosphoethanolamine - H] <sup>-</sup>
152.9964	152.9958	0.57	0.61	C5 H6 O5 P	2-hydroxy-1,3-cyclophosphoric anion
196.0384	196.0380	0.37	43.93	C5 H11 O5 N P	b - 18:1-ketene - C <sub>15</sub> H <sub>31</sub> CH=CH-OH
253.2538	253.2537	0.14	16.75	C17 H33 O	C <sub>15</sub> H <sub>31</sub> CH=CH-O <sup>-</sup>
389.2461	389.2462	-0.09	100	C20 H38 O5 P	b - 18:1-ketene - ethanolamine
450.2989	450.2990	-0.09	13.34	C22 H45 O6 N P	b - 18:1-ketene

Table s1c. High resolution MS<sup>3</sup> analysis of m/z 436.28 (714 → 436.28)

140.0124	140.0118	0.61	0.36	C2 H7 O4 N P	[phosphoethanolamine - H] <sup>-</sup>
152.9964	152.9958	0.57	0.31	C5 H6 O5 P	2-hydroxy-1,3-cyclophosphoric anion
196.0384	196.0380	0.4	100	C5 H11 O5 N P	b - 19:1-ketene - C <sub>14</sub> H <sub>29</sub> CH=CH-OH
239.2383	239.2380	0.25	6.91	C16 H31 O	C <sub>14</sub> H <sub>29</sub> CH=CH-O <sup>-</sup>
375.2306	375.2306	0.02	90.02	C19 H36 O5 P	b - 19:1-ketene - ethanolamine
393.2412	380.2411	-0.12	0.36	C19 H38 O6 P	b - 19:1-ketene - aziridine
436.2833	436.2833	-0.08	4.1	C21 H43 O6 N P	b - 19:1-ketene