

Supplemental Table S1 The quantity of each PL species in the X-ALD fibroblasts

Signals	CCALD ($n = 4$) ^a	AMN ($n = 3$) ^a	Control ($n = 5$) ^a
pc32:0	5625.7 ± 734.6 ^{*#}	3939.3 ± 337.3 [*]	3741.1 ± 227.8
pc32:1	6962.3 ± 1300.6	5813.5 ± 831.5	4834.7 ± 427.0
pc32:2	882.8 ± 263.7	766.6 ± 36.9 [*]	639.8 ± 59.2
pc34:0	1934.1 ± 242.3	2986.9 ± 1811.8	2453.6 ± 1280.1
pc34:1	10675.1 ± 1187.6 ^{**}	8288.8 ± 1377.7	6468.6 ± 754.3
pc34:2	6705.9 ± 1480.2	6126.8 ± 1095.2	4999.8 ± 337.8
pc34:3	871.8 ± 271.3	885.7 ± 87.0	670.9 ± 53.3
pc34:4	452.1 ± 212.0	491.9 ± 85.7	303.4 ± 43.4
pc34:5	21.4 ± 10.9	21.9 ± 10.1	13.1 ± 2.9
pc36:0	109.5 ± 28.4	337.4 ± 415.5	207.4 ± 253.6
pc36:1	8808.1 ± 1408.4 [*]	8008.9 ± 1851.7	5762.1 ± 764.6
pc36:2	9817.8 ± 1775.2	8421.2 ± 2036.4	6707.7 ± 646.7
pc36:3	4536.6 ± 843.2	4624.1 ± 768.7	3612.0 ± 280.3
pc36:4	4751.4 ± 768.2 [*]	4246.4 ± 623.3	3211.8 ± 409.1
pc36:5	1150.1 ± 373.1	1209.0 ± 301.3	863.2 ± 178.8
pc36:6	80.8 ± 29.9	85.9 ± 30.6	58.3 ± 11.5
pc38:0	24.1 ± 2.7 [#]	36.2 ± 2.5	28.9 ± 4.8
pc38:1	182.1 ± 12.2	236.9 ± 78.4	187.9 ± 20.9
pc38:2	416.7 ± 145.6	496.0 ± 170.3	279.2 ± 23.6
pc38:3	1624.0 ± 181.0	2514.7 ± 1028.4	1440.8 ± 341.7
pc38:4	5507.1 ± 671.0 [*]	4998.0 ± 803.5	3811.5 ± 412.4
pc38:5	5913.5 ± 1136.4	5388.5 ± 1185.8	4034.8 ± 530.7
pc38:6	1514.1 ± 453.5	1605.3 ± 442.9	1086.4 ± 241.7
pc38:7	181.4 ± 63.2	188.5 ± 41.8	145.7 ± 35.9
pc38:8	7.4 ± 3.8	9.0 ± 2.1	4.4 ± 0.7
pc40:0	13.6 ± 2.1	20.6 ± 6.7	6.3 ± 0.7
pc40:1	27.8 ± 2.1 [*]	41.5 ± 16.5	17.7 ± 1.5
pc40:2	43.7 ± 8.0	61.5 ± 30.8	32.7 ± 4.6
pc40:3	46.7 ± 6.0	69.2 ± 20.9	42.3 ± 6.2
pc40:4	590.1 ± 105.0	700.3 ± 27.5	649.1 ± 198.9
pc40:5	1980.5 ± 184.3	2009.5 ± 313.4	1634.6 ± 364.1
pc40:6	1013.6 ± 345.5	891.9 ± 127.4	692.0 ± 115.2
pc40:7	729.5 ± 304.7	634.2 ± 156.7	427.1 ± 75.9
pc40:8	147.2 ± 65.1	163.1 ± 65.6	86.6 ± 12.3
pc40:9	15.9 ± 7.4	19.6 ± 10.7	8.6 ± 1.5
pc40:10	1.2 ± 1.7	1.6 ± 1.5	0.8 ± 0.5
pc42:0	18.6 ± 3.7	32.1 ± 16.0	1.8 ± 0.3
pc42:1	35.9 ± 5.7 ^{**}	58.4 ± 35.4	12.1 ± 3.1
pc42:2	28.7 ± 4.9 [*]	44.7 ± 27.0	13.6 ± 3.9
pc42:3	20.6 ± 3.7 [*]	28.6 ± 13.0	13.1 ± 2.6
pc42:4	38.8 ± 8.0	44.3 ± 9.7	48.3 ± 14.6
pc42:5	129.2 ± 23.3	127.7 ± 25.1	134.9 ± 35.5
pc42:6	110.5 ± 21.9	103.2 ± 20.6	102.6 ± 20.3
pc42:7	106.9 ± 34.9	99.2 ± 10.8	77.6 ± 14.6
pc42:8	113.1 ± 45.1	89.2 ± 5.4	68.1 ± 12.9
pc42:9	251.8 ± 124.2	213.3 ± 59.4	128.6 ± 27.6
pc42:10	121.0 ± 48.9	122.3 ± 62.8	68.7 ± 12.9
pc42:11	4.7 ± 1.8	5.9 ± 4.5	2.7 ± 1.0
pc44:0	6.1 ± 1.5	9.9 ± 4.7	n.q.
pc44:1	29.5 ± 12.4 [*]	45.0 ± 32.6	1.4 ± 0.9
pc44:2	23.2 ± 6.8 [*]	37.7 ± 25.4	3.0 ± 0.9
pc44:3	9.8 ± 2.3	13.4 ± 8.1	2.9 ± 1.1
pc44:4	9.8 ± 3.4	11.0 ± 4.6	5.0 ± 1.8
pc44:5	19.4 ± 5.0	19.3 ± 6.7	10.8 ± 3.3
pc44:6	15.8 ± 5.4	17.2 ± 7.4	14.4 ± 4.4
pc44:7	24.5 ± 10.3	25.0 ± 7.1	21.7 ± 6.2
pc44:8	30.1 ± 11.0	23.1 ± 4.6	27.7 ± 8.0
pc44:9	49.2 ± 15.8	39.6 ± 3.2	41.3 ± 8.1
pc44:10	52.0 ± 21.7	45.4 ± 8.6	31.3 ± 6.0
pc44:11	59.9 ± 33.5	47.2 ± 17	26.8 ± 7.2
pc44:12	9.1 ± 4.0	7.1 ± 3.5	4.6 ± 1.4
pc46:0	n.q.	1.1 ± 1.1	n.q.
pc46:1	4.7 ± 2.5	6.0 ± 4.3	n.q.
pc46:2	4.2 ± 2.1	5.3 ± 3.3	n.q.
pc46:3	3.5 ± 1.0	3.5 ± 1.6	n.q.
pc46:4	12.9 ± 4.6	12.2 ± 7.7	0.2 ± 0.5

Signals	CCALD ($n = 4$) ^a	AMN ($n = 3$) ^a	Control ($n = 5$) ^a
pc46:5	14.4 ± 4.0	14.3 ± 6.9	1.9 ± 0.5
pc46:6	7.3 ± 2.0	8.4 ± 4.6	2.7 ± 1.1
pc46:7	2.6 ± 1.9	3.0 ± 1.3	2.3 ± 1.3
pc46:8	8.4 ± 3.6	7.0 ± 3.1	9.5 ± 4.4
pc46:9	7.2 ± 3.2	4.6 ± 0.7	6.5 ± 2.4
pc46:10	7.9 ± 3.1	6.1 ± 2.0	7.4 ± 2.9
pc46:11	2.4 ± 1.9	2.0 ± 0.6	1.9 ± 0.7
pc48:4	2.0 ± 1.9	1.5 ± 1.5	n.q.
pc48:5	5.6 ± 2.2	5.2 ± 2.9	n.q.
pc48:6	1.5 ± 1.1	1.9 ± 0.7	n.q.
pc48:10	1.2 ± 1.4	0.8 ± 0.8	1.3 ± 0.8
pe32:0	382.3 ± 131.4	253.6 ± 47.6	355.1 ± 170.2
pe32:1	860.5 ± 181.8	911.0 ± 112.0	828.1 ± 175.0
pe32:2	72.5 ± 20.0	84.5 ± 10.0	69.5 ± 13.8
pe34:0	556.4 ± 170.7	539.5 ± 82.5	628.6 ± 214.4
pe34:1	8837.3 ± 1774.1	11493.7 ± 3386	8192.4 ± 1358.2
pe34:2	1917.4 ± 460.0	2419.7 ± 421.9	1782.2 ± 237.2
pe34:4	83.4 ± 28.6	106.0 ± 13.6	67 ± 12.4
pe34:5	2.3 ± 1.2	3.5 ± 1.6	2.0 ± 0.7
pe36:0	29.6 ± 7.3	37.4 ± 10.9	31.6 ± 10.8
pe36:1	13922.4 ± 2513.5	18709.6 ± 3210.3	12814.5 ± 2693.5
pe36:2	8602.3 ± 1458.7	12374.0 ± 3173.9	8199.3 ± 876.6
pe36:3	1755.8 ± 317.3	2619.7 ± 481.7	1799.6 ± 253.1
pe36:4	1682.4 ± 349.1	2249.5 ± 626.5	1622.9 ± 229.9
pe36:5	229.7 ± 76.3	321.7 ± 109.4	223.3 ± 51.8
pe36:6	38.4 ± 9.7	53.8 ± 12.5	43.6 ± 6.3
pe36:7	n.q.	1.9 ± 0.8	0.8 ± 0.7
pe38:0	3.1 ± 0.7	3.8 ± 2.0	2.9 ± 1.0
pe38:1	331.4 ± 43.5	408.3 ± 64.5	322.3 ± 68.0
pe38:2	344.4 ± 64.5	558.4 ± 112.2	351.8 ± 61.3
pe38:3	2318.7 ± 675.3	4483.6 ± 1380.2	2873.6 ± 833.4
pe38:4	12768.6 ± 1304.7	16222.0 ± 4100.8	12409.2 ± 500.2
pe38:5	6158.7 ± 1271.9	8561.6 ± 2276.5	5741.9 ± 488.8
pe38:6	2474.6 ± 693.8	2885.2 ± 636.2	2238.5 ± 513.3
pe38:7	483.8 ± 238.2	422.8 ± 68.2	323.2 ± 43.7
pe38:8	2.0 ± 2.2	2.1 ± 2.8	2.7 ± 3.1
pe40:0	3.4 ± 1.0	3.5 ± 1.6	1.8 ± 1.1
pe40:1	142.2 ± 50.1	159.5 ± 69.3	157.9 ± 37.7
pe40:2	184.6 ± 45.0	213.0 ± 46.7	186.2 ± 50.2
pe40:3	86.3 ± 19.7	166.2 ± 18.2	101.4 ± 34.7
pe40:4	4144.6 ± 1443.9	4581.9 ± 840.1	3959.6 ± 1555.3
pe40:5	6328.9 ± 1758.0	6925.2 ± 656.5	6111.2 ± 2206.2
pe40:6	4781.3 ± 1493.2	3840.2 ± 770.6	3401.8 ± 1059.9
pe40:7	2462.9 ± 744.2	2508.0 ± 489.0	1961.9 ± 540.7
pe40:8	157.0 ± 86.6	194.2 ± 47.4	101.4 ± 23.4
pe40:9	18.8 ± 13.8	25.3 ± 9.0	10.8 ± 3.2
pe40:10	1.8 ± 2.5	2.7 ± 1.0	1.0 ± 1.0
pe42:0	0.6 ± 0.7	2.2 ± 1.9	n.q.
pe42:1	159.6 ± 47.4	186.2 ± 113.4	108.9 ± 34.4
pe42:2	117.4 ± 26.1	120.7 ± 41.7	83.6 ± 29.1
pe42:3	42.9 ± 12.9	50.5 ± 19.0	38.1 ± 12.5
pe42:4	48.5 ± 20.0	70.2 ± 13.4	77.5 ± 36.0
pe42:5	172.2 ± 45.5	219.0 ± 15.9	210.6 ± 60.4
pe42:6	113.9 ± 33.0	163.1 ± 13.5	125.5 ± 38.4
pe42:7	143.1 ± 41.6	172.6 ± 22.5	123.9 ± 41.9
pe42:8	88.6 ± 22.7	138.2 ± 1.2	80.7 ± 26.3
pe42:9	33.6 ± 13.9	51.6 ± 8.1	28.5 ± 6.8
pe42:10	45.9 ± 21.8	56.3 ± 14.6	34.2 ± 7.9
pe42:11	1.3 ± 2.1	1.7 ± 1.5	1.0 ± 0.6
pe44:1	54.6 ± 23.5	61.2 ± 36.7	5.1 ± 1.5
pe44:2	30.4 ± 13.0	33.3 ± 16.2	6.0 ± 2.1
pe44:3	13.3 ± 5.3	16.0 ± 7.9	7.3 ± 2.5
pe44:4	7.0 ± 5.2	7.5 ± 2.9	6.4 ± 4.5
pe44:5	34.2 ± 14.0	41.1 ± 21.2	27.5 ± 14.4

Signals	CCALD ($n = 4$) ^a	AMN ($n = 3$) ^a	Control ($n = 5$) ^a
pe44:6	14.1 ± 7.1	12.1 ± 3.1	18.0 ± 9.6
pe44:7	12.7 ± 6.0	3.1 ± 2.8	8.0 ± 6.2
pe44:8	13.6 ± 5.3	16.4 ± 6.3	16.2 ± 5.4
pe44:9	17.0 ± 6.3	24.8 ± 4.3	21.4 ± 3.7
pe44:10	11.0 ± 4.7	15.7 ± 0.8	10.6 ± 3.1
pe44:11	5.6 ± 3.1	9.8 ± 2.5	6.1 ± 1.8
pe44:12	2.7 ± 1.8	5.4 ± 2.6	3.1 ± 0.8
pe46:1	0.2 ± 0.4	1.6 ± 1.4	n.q.
pe46:2	0.6 ± 1.2	1.4 ± 1.3	n.q.
pe46:3	n.q.	1.6 ± 1.6	n.q.
pe46:5	14.1 ± 7.7	14.8 ± 3.8	7.0 ± 5.1
pe46:6	12.8 ± 6.8	9.3 ± 0.4	7.1 ± 5.7
pe46:7	8.8 ± 5.4	5.6 ± 1.5	4.2 ± 2.7
pe46:10	1.6 ± 1.2	2.4 ± 0.3	3.1 ± 1.4
pe46:11	1.2 ± 1.9	0.7 ± 1.2	1.6 ± 0.9
pe48:5	2.9 ± 2.1	1.3 ± 1.1	n.q.
pe48:6	1.3 ± 1.5	1.1 ± 0.9	n.q.
sm32:0	373.0 ± 30.7	423.6 ± 195.1	360.5 ± 43.9
sm32:1	1503.9 ± 226.5	1563.2 ± 80.7 ^{**}	1135.2 ± 111.3
sm32:2	31.8 ± 5.7	40.1 ± 6.7	24.5 ± 5.2
sm34:0	4753.4 ± 1001.0	3196.5 ± 2545.1	4010.7 ± 594.0
sm34:1	20207.5 ± 2496.3 ^{**}	13219.1 ± 2755.5	11768.5 ± 1048.5
sm34:2	2294.6 ± 202.9	3138.9 ± 387.8 [#]	2098.5 ± 412.7
sm36:0	206.8 ± 41.4	161.5 ± 138.5	225.7 ± 53.5
sm36:1	2064.6 ± 494.6	1959.6 ± 812.6	2029.6 ± 186.2
sm36:2	517.4 ± 190.9	635.5 ± 248.1	424.9 ± 73.0
sm36:3	32.0 ± 8.8	35.2 ± 9.4	25.8 ± 5.2
sm38:0	61.6 ± 9.7	80.0 ± 14.2	75.5 ± 13.2
sm38:1	366.4 ± 66.5 [*]	579.1 ± 347.9	547.3 ± 99.5
sm38:2	48.3 ± 5.6	85.5 ± 63.2	55.2 ± 12.5
sm38:3	31.9 ± 7.4	23.9 ± 3.0	19.7 ± 4.5
sm40:0	161.7 ± 62.6	96.6 ± 91.6	173.8 ± 55.3
sm40:1	2496.2 ± 625.8	2460.8 ± 449.4	3494.5 ± 600.4
sm40:2	1044.5 ± 175.3	1407.9 ± 389.6	1347.2 ± 223.1
sm40:3	7.9 ± 15.8	38.5 ± 66.8	15.7 ± 35.0
sm42:0	78.6 ± 14.7	71.6 ± 70.6	78.8 ± 16.9
sm42:1	4925.8 ± 1227.5	4577.2 ± 655.4	5027.6 ± 852.6
sm42:2	9785.3 ± 2823.5	10046.7 ± 1290.7	9760.5 ± 944.0
sm42:3	2819.7 ± 772.5	2839.5 ± 412.3	3072.2 ± 370.2
sm44:1	248.2 ± 77.4 [*]	193.3 ± 21.8 ^{**}	42.0 ± 9.0
sm44:2	420.6 ± 129.4	355.6 ± 37.9 [*]	153.6 ± 22.8
sm44:3	258.3 ± 86.7	232.1 ± 30.8 [*]	136.2 ± 18.9
sm46:1	1.4 ± 1.2	0.6 ± 1	n.q.
sm46:2	2.6 ± 1.5	2.0 ± 0.8	n.q.
sm46:3	2.1 ± 1.6	2.1 ± 0.5	0.4 ± 0.5

^apmol/mg protein, n.q. below the quantitation range

^{*} $p < 0.05$, ^{**} $p < 0.01$ vs. control (Dunnett T3 post hoc test)

[#] $p < 0.05$ vs. AMN (Dunnett T3 post hoc test)