Supplementary Information

Investigation of Heart Lipids Changes in Acute β-AR activation Induced Sudden Cardiac Death by Time-of-Flight Secondary Ion Mass Spectrometry

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Note added after first publication: This Supplementary Information file replaces that originally published on 25th June in which there were errors in Table S1.

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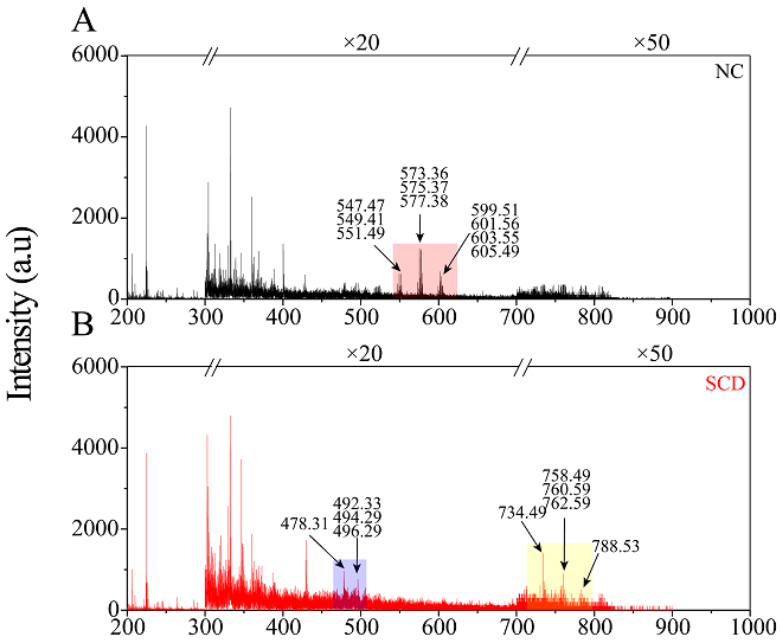

Fig.S1 Supplementary positive ToF-SIMS spectra of myocardium in NC (A) and SCD (B) mice.

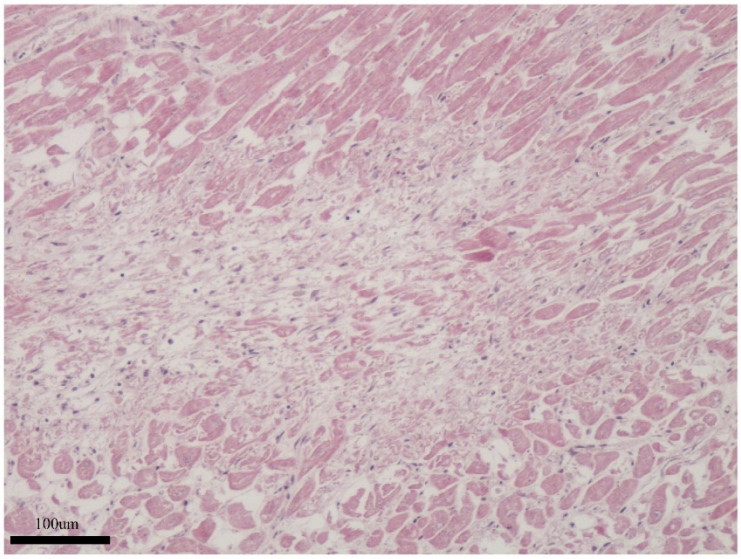

Fig.S2 Micrographs of heart from human case indicated myocardial degeneration.

Table.S1 Lipid positive and negative ion species assigned by ToF-SIMS analysis.

Experimental Value(m/z)	Theoretical Value (m/z)	Tentative identification	Ions	Formula
184.08	184.1[1]	PC fragment		$C_5H_{15}NPO_4^+$
206.08	206.1[2]	PC fragment		$C_5H_{14}NPO_4Na^+$
224.11	224.1[2]	PC fragment		$C_8H_{19}NPO_4^+$
246.07	246.1[2]	PC fragment		$C_8H_{18}NPO_4Na^+$
264.25	264.32[3-5]	SG fragment		$C_{18}H_{32}O^+$
302.80	302.76[6]	SA	$[M + H]^+$	$C_{18}H_{39}NO_2^+$
309.20	309.34[7]	MAG 16:2	$[M - OH]^+$	$C_{19}H_{33}O_3^+$
311.27	311.26[7]	MAG 16:1	$[M - OH]^+$	$C_{19}H_{35}O_3^+$
313.27	313.27[7]	MAG 16:0	$[M - OH]^+$	$C_{19}H_{37}O_3^+$
339.27	339.29[7]	MAG 18:1	$[M - OH]^+$	$C_{21}H_{39}O_3^+$
341.30	341.31[7]	MAG 18:0	$[M - OH]^+$	$C_{21}H_{41}O_3^+$
369.31	369.35[7]	Cholesterol	$[M - OH]^+$	$C_{27}H_{45}^+$
385.31	385.35[7]	Cholesterol	$[M - H]^+$	$C_{27}H_{45}O^+$
430.37	430.38[7]	Vitamin E	M^+	$C_{29}H_{50}O_2^+$
478.31	478.33[8]	LysoPC 16:0	$[M - OH]^+$	$C_{24}H_{48}NPO_6^+$
492.33	492.33[8]	LysoPC 16:2	$[M + H]^+$	$C_{24}H_{46}NPO_7^+$
494.29	494.33[8]	LysoPC 16:1	$[M + H]^+$	$C_{24}H_{48}NPO_7^+$
496.29	496.34[8]	LysoPC 16:0	$[M + H]^+$	$C_{24}H_{50}NPO_7^+$
519.33	519.44[7]	DAG 30:2	$[M - OH]^+$	$C_{33}H_{59}O_4^+$
521.31	521.46[7]	DAG 30:1	$[M - OH]^+$	$C_{33}H_{61}O_4^+$
523.34	523.47[7]	DAG 30:0	$[M - OH]^+$	$C_{33}H_{63}O_4^+$
547.47	547.47[7]	DAG 32:2	$[M - OH]^+$	$C_{35}H_{63}O_4^+$
549.41	549.49[7]	DAG 32:1	$[M - OH]^+$	$C_{35}H_{65}O_4^+$
551.49	551.50[7]	DAG 32:0	$[M - OH]^+$	$C_{35}H_{67}O_4^+$
573.36	573.49[7]	DAG 34:2	$[M - OH]^+$	$C_{37}H_{65}O_4^+$
575.37	575.5[7]	DAG 34:1	$[M - OH]^+$	$C_{37}H_{67}O_4^+$
577.38	577.52[7]	DAG 34:0	$[M - OH]^+$	$C_{37}H_{69}O_4^+$
599.51	599.50[7]	DAG 36:4	$[M - OH]^+$	$C_{39}H_{67}O_4^+$
601.56	601.52[7]	DAG 36:3	$[M - OH]^+$	$C_{39}H_{69}O_4^+$
603.55	603.54[7]	DAG 36:2	$[M - OH]^+$	$C_{39}H_{71}O_4^+$

605.49	605.55[7]	DAG 36:1	$[M - OH]^+$	$C_{39}H_{73}O_4^+$
734.49	734.57[7]	PC 32:0	$[M + H]^+$	$C_{40}H_{81}NPO_8^+$
758.49	758.57[7]	PC 34:2	$[M + H]^+$	$C_{42}H_{81}NPO_8^+$
760.59	760.59[7]	PC 34:1	$[M + H]^+$	$C_{42}H_{83}NPO_8^+$
762.59	762.59[7]	PC 34:0	$[M + H]^+$	$C_{42}H_{85}NPO_8^+$
788.53	788.6[9]	PC 36:1	$[M + H]^+$	$C_{44}H_{87}NPO_8^+$
807.44	807.64[9]	SM d18:1/22:1	$[M + Na]^+$	$C_{45}H_{90}N_2PO_6Na^+$
809.44	809.64[9]	SM d18:1/22:0	$[M + Na]^+$	$C_{45}H_{92}N_2PO_6Na^+$

Table.S2 Comparison of lipids in positive mode between human and mice samples.

	NC	SCD	H-NC	H-CASE
PC Fragment	+	+	+	+
MAG 16:0	+	+	+	+
MAG 16:1	+	+	+	+
MAG 16:2	+	+	+	+
Cholesterol	+	+	+	+
Vita-E	+	+	+	+
LysoPC 16:0	-	+	-	+
LysoPC 16:1	-	+	-	+
LysoPC 16:2	-	+	-	+
DAG 30:0	+	+	-	+
DAG 30:1	+	+	-	+
DAG 30:2	+	+	-	+
DAG 32:0	+	-	+	-
DAG 32:1	+	+	+	-
DAG 32:2	+	-	+	-
DAG 34:0	+	-	+	-
DAG 34:1	+	-	+	-
DAG 34:2	+	-	+	-
DAG 36:1	+	-	+	-
DAG 36:2	+	-	+	-
DAG 36:3	+	-	+	-
DAG 36:4	+	-	+	-
PC 32:0	-	+	+	+
PC 34:2	-	+	+	+
PC 34:1	-	+	+	+
PC 34:0	-	+	+	+
PC 36:1	-	+	+	+
SM 40:1	-	+	-	-
SM 40:2	-	+	-	-

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