

Summary of Supplemental Figures and Tables

Supplemental Figure 1. Lipodystrophic *Bscl2*^{-/-} mice develop cardiac hypertrophy and age-dependent cardiomyopathy.

Supplemental Figure 2. Global lipidomic analysis of ventricles from nonfasting 6 months old male *Bscl2*^{+/+} and *Bscl2*^{-/-} mice by shotgun mass spectrometry.

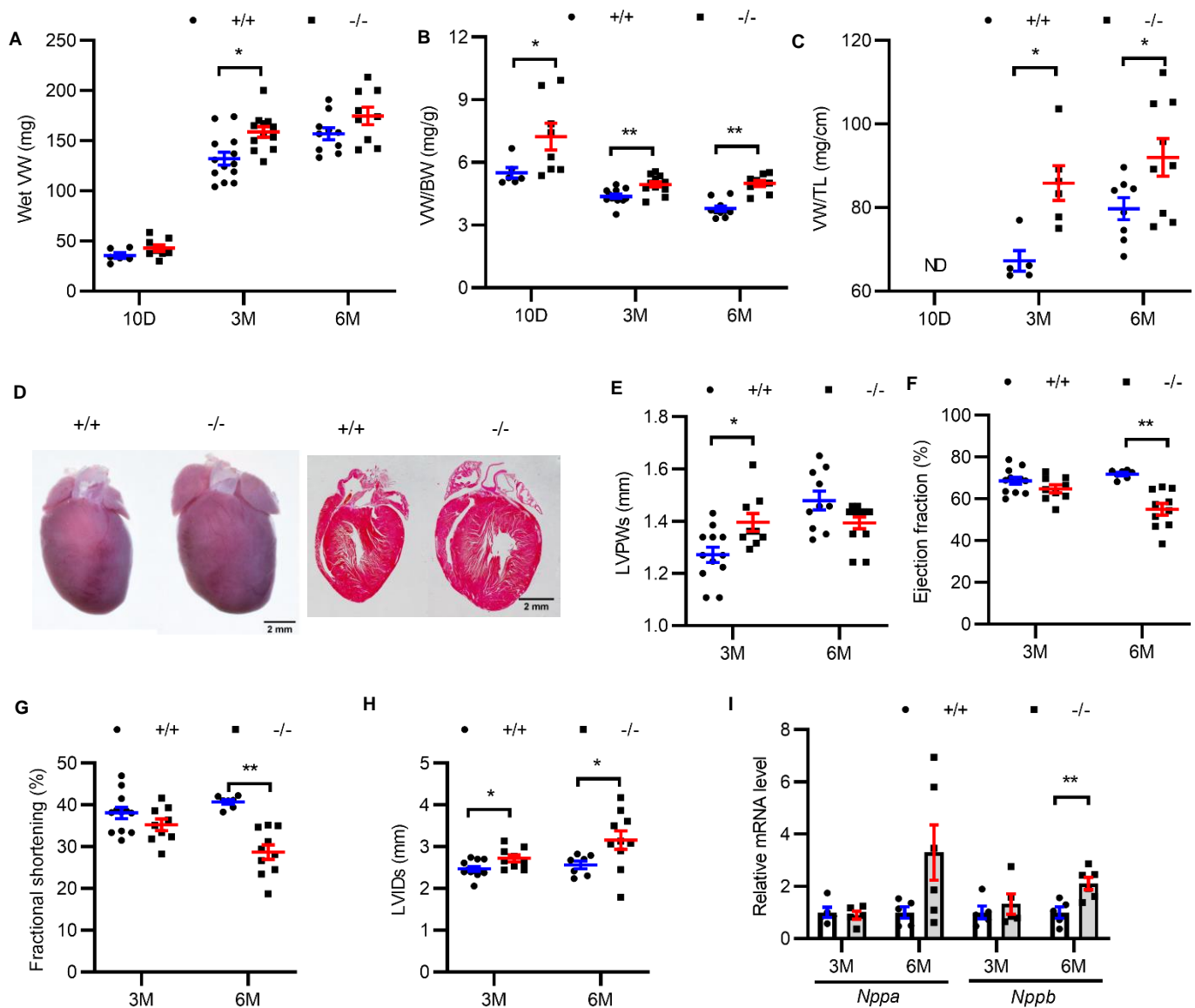
Supplemental Figure 3. BSCL2 deletion did not induce mitochondrial biogenesis, oxidative stress and ceramide-mediated lipotoxicity in hearts.

Supplemental Figure 4. ATGL inactivation ameliorates metabolic disorders in *Bscl2*^{-/-} mice.

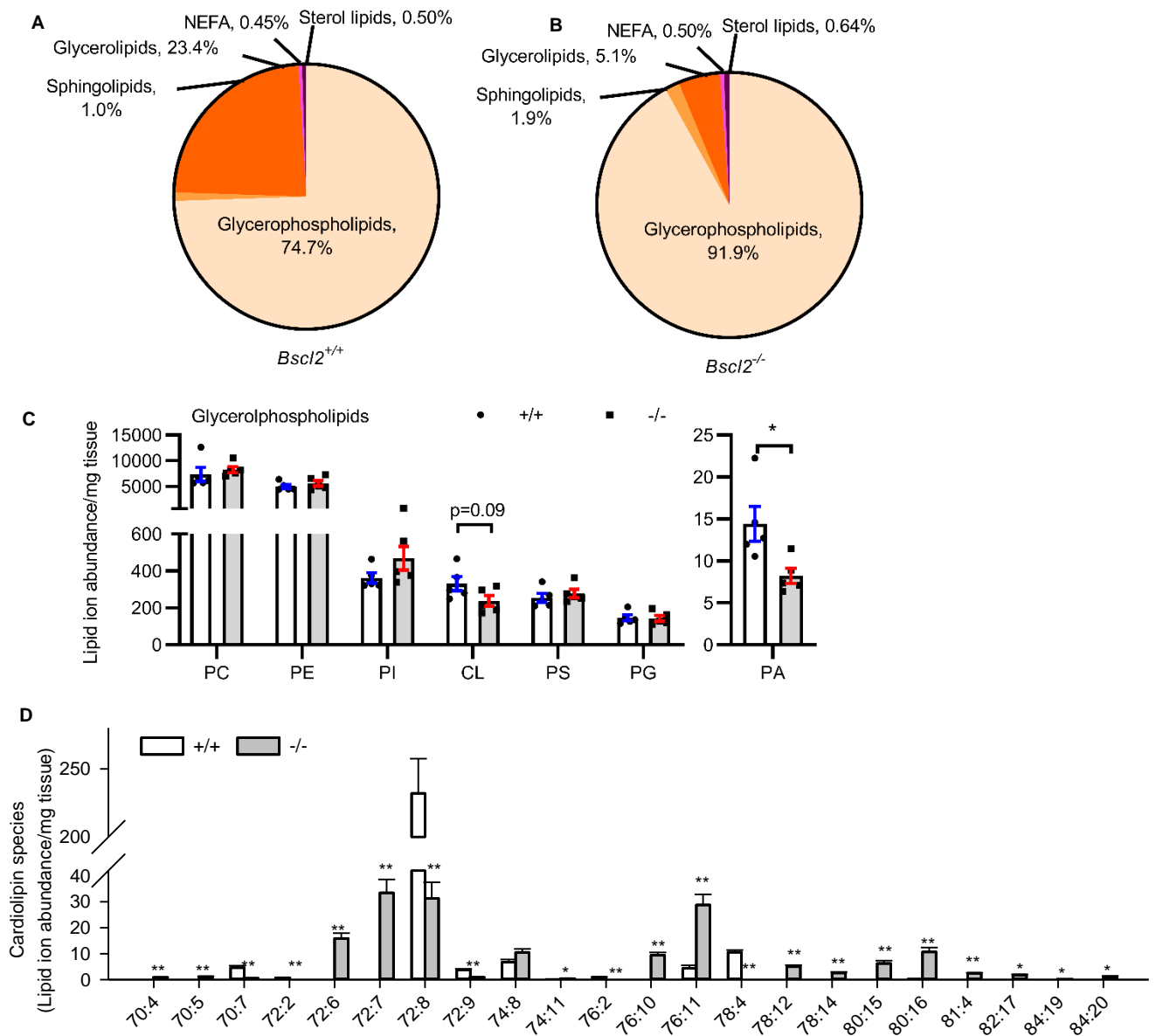
Supplemental Figure 5. Partial inactivation of ATGL ameliorates cardiac hypertrophic signaling, metabolic inflexibility and insulin resistance in *Bscl2*^{-/-} mice.

Table S1. Differentially expressed genes (267) in hearts from 10 week old 4 h fasted female *Bscl2*^{+/+} and *Bscl2*^{-/-} mice with ($0.5 < \text{Log } 2 < -0.5$), adjusted p value < 0.05 (n=3 for each group pooled from 9 animals).

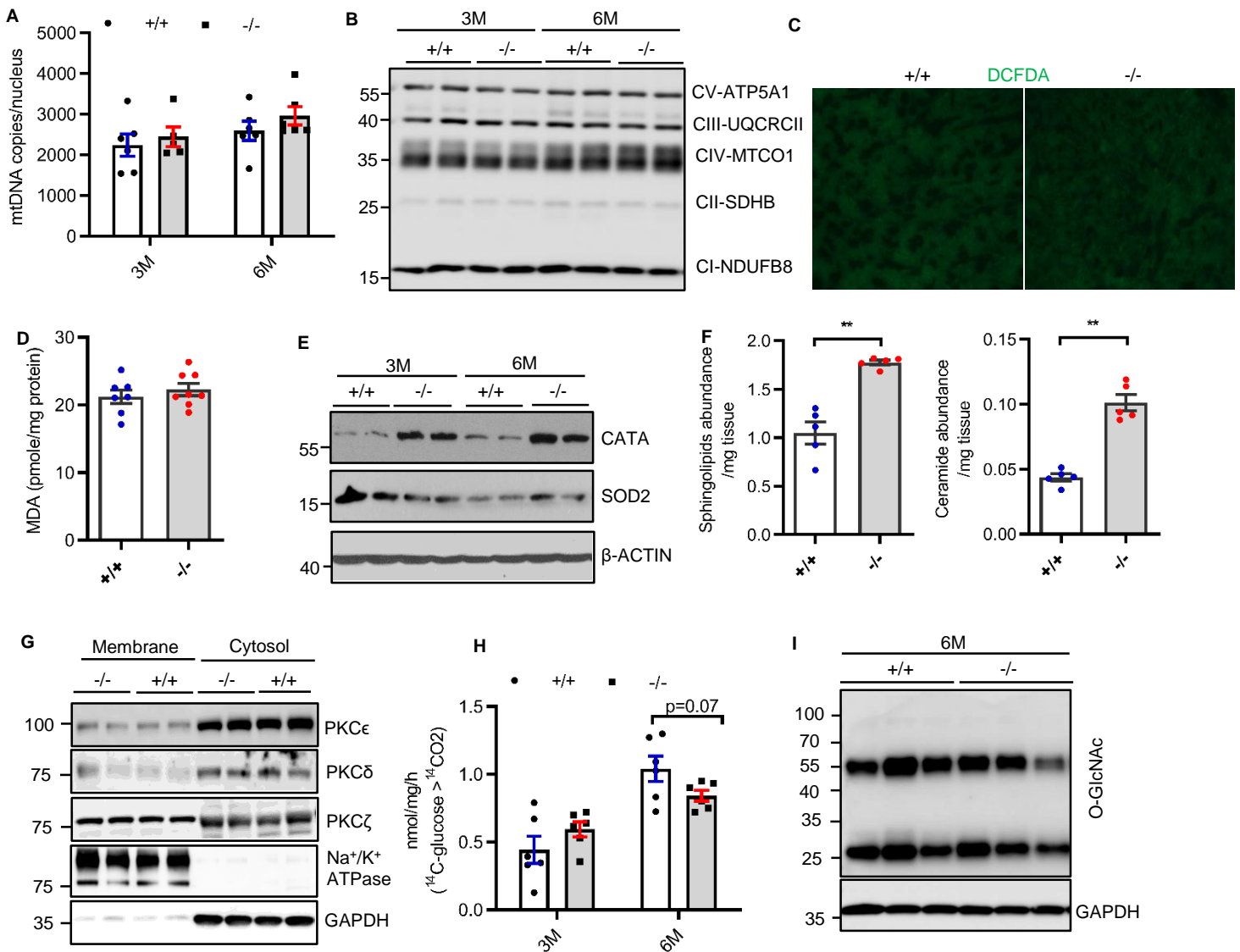
Table S2. Plasma parameters and echocardiographic variables in 6 months old male *A^wB^w*, *A^wB^k* and *A^hB^k* mice.



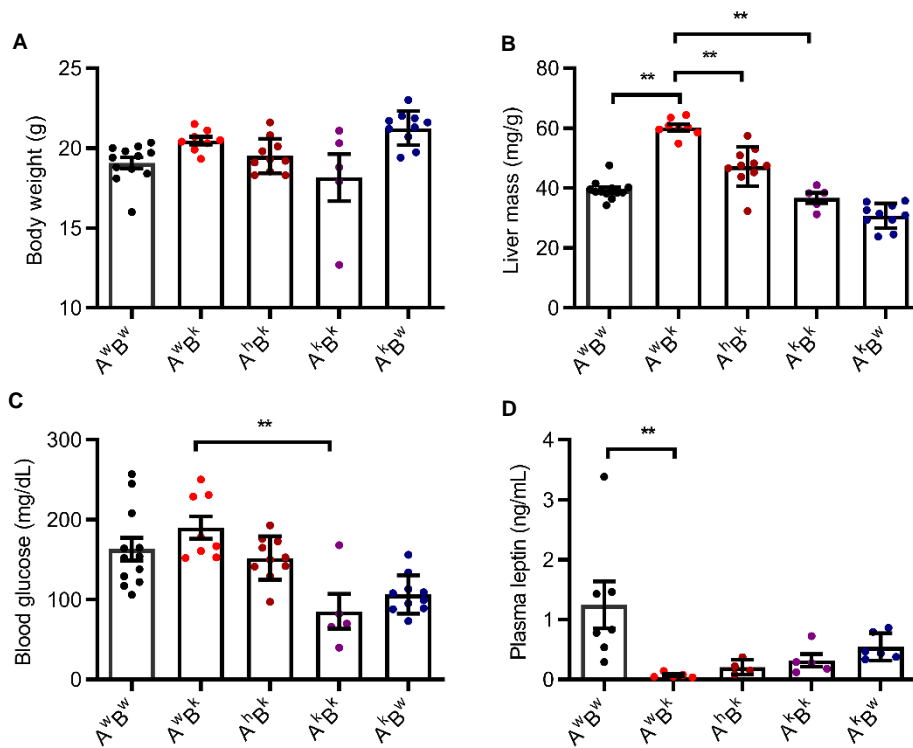
Supplemental Figure 1. Lipodystrophic $Bsc12^{-/-}$ mice develop cardiac hypertrophy and age-dependent cardiomyopathy. (A-C) Wet ventricle weight (VW), ratio of VW to BW and ratio of VW to tibia length (TL) in postnatal 10 days, 3 and 6 months (M) old male $Bsc12^{+/+}$ ($+/+$) and $Bsc12^{-/-}$ ($-/-$) mice ($n=6-10$ /group). ND: not determined. **(D)** Whole heart and the four-chamber view of the hearts showed the morphological features of ventricles in 3M old male mice. Scale bar = 2 mm. **(E-H)** Left ventricular posterior wall thickness at systole (LVPWs), ejection fraction, fractional shortening and left ventricular internal diameter at systole (LVIDs) in 3M and 6M old male mice ($n=7-10$ /group). **(I)** RT-PCR analysis of atrial natriuretic peptide ($Nppa$) and brain natriuretic peptide ($Nppb$) gene expression in ventricles of nonfasting 3M and 6M old male mice ($n=5-6$ /group). *: $p < 0.05$; **: $p < 0.005$ vs $+/+$ mice. Multiple t tests after correction using the Holm-Sidak method.



Supplemental Figure 2. Global lipidomic analysis of ventricles from nonfasting 6 months old male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice by shotgun mass spectrometry. (A-B) Pie chart representing the distribution of summed ion abundances of glycerolipid, glycerophospholipid, sphingolipid, nonesterified fatty acid (NEFA), and sterol lipid classes, for all lipids detected in (A) *Bsc12*^{+/+} and (B) *Bsc12*^{-/-} ventricles. The area of each pie chart is proportional to the total lipid ion abundance normalized to tissue weight. (C) The total lipid ion abundances for glycerophospholipids including phosphatidylcholine (PC), phosphatidylethanolamine (PE), phosphatidylinositol (PI), cardiolipin (CL), phosphatidylserine (PS), phosphatidylglycerol (PG) and phosphatidic acid (PA). (D) The lipid ion abundances for 22 CL lipid species. All the lipid ion abundances in C-D were normalized to tissue weight. n=5 with each pooled from 3 animals. *: P< 0.05; **: P< 0.005. Multiple *t* tests after correction using the Holm-Sidak method.

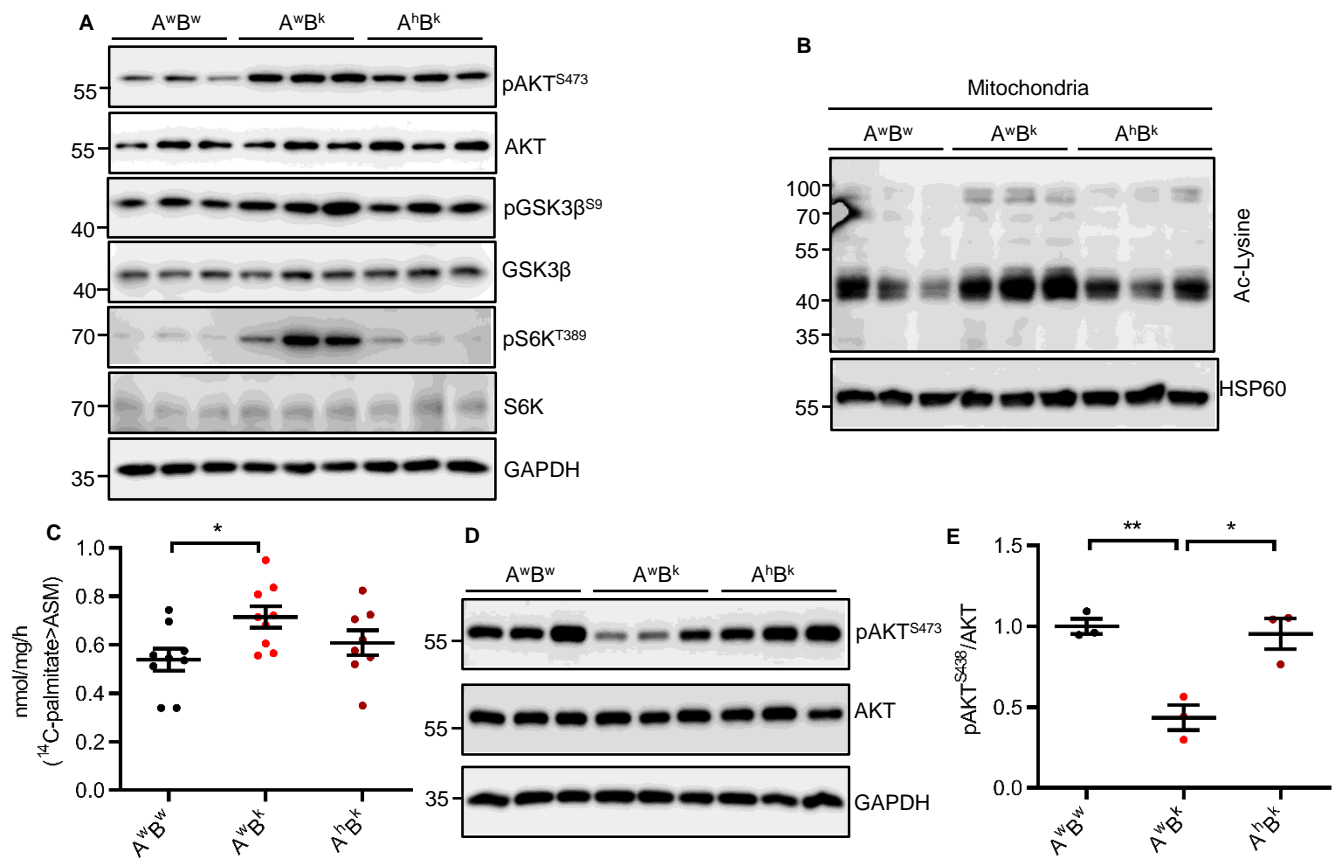


Supplemental Figure 3. BSLC2 deletion did not induce mitochondrial biogenesis, oxidative stress and ceramide-mediated lipotoxicity in hearts. (A-B) Mitochondria DNA copies/nucleus and protein expression of all five electron transport chain (ETC) complexes including NDUFB8 (complex I), SDHB (complex II), UQCRCII (complex III), MTCO1 (complex IV) and ATP5A1 (complex V) as detected by OXPHOS antibody cocktails in hearts of 3M and 6M old nonfasting male *Bsc12*^{+/+} (+/+) and *Bsc12*^{-/-} (-/-) mice. n=4-6/group. (C-D) 2',7'-dichlorofluorescein diacetate (DCFDA) staining to examine ROS production (C) and MDA measurements (D) in ventricles of 6M old male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice (n=7-8/group). (E) Representative western blot analyses of antioxidant enzymes [Catalase (CATA) and SOD2] in hearts of 3M and 6M old male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice. n=4/group. (F) The lipid ion abundances (normalized to tissue weight) for sphingomyelin and ceramide in ventricles of 6M old male mice (n=5 with each pooled from 3 animals). (G) Representative western blot of membrane translocation of PKC isoforms in 6M old nonfasting male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice. n=4/group. (H) CO₂ production after incubating heart crude mitochondrial fraction with ¹⁴C-glucose (3M and 6M old male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice. n=4/group in triplicates). (I) Representative western blot of ventricle protein o-GlcNAcylation in 6M old male *Bsc12*^{+/+} and *Bsc12*^{-/-} mice under nonfasting states (n=3/group). *: p < 0.05, **: p < 0.005 vs +/+ mice. Unpaired *t* test.



Supplemental Figure 4. ATGL inactivation ameliorates metabolic disorders in *Bscl2*^{-/-} mice.

(A-D) BW, liver weight as normalized to BW, blood glucose and plasma leptin levels were measured in 4h fasted five groups of 10 week old female *Atgl*^{+/+}*Bscl2*^{+/+} (A^wB^w), *Atgl*^{+/+}*Bscl2*^{-/-} (A^wB^k), *Atgl*^{+/+}*Bscl2*^{-/-} (A^hB^k), *Atgl*^{-/-}*Bscl2*^{-/-} (A^kB^k) and *Atgl*^{-/-}*Bscl2*^{+/+} (A^kB^w) littermates. n=4-12/group. Limited numbers of male A^kB^k mice were obtained. But similar extent of rescue of metabolic parameters was observed in male A^hB^k and A^kB^k mice. *: p< 0.05; **: p< 0.005. One-way ANOVA with Dunnett's multiple comparisons correction.



Supplemental Figure 5. Partial inactivation of ATGL ameliorates cardiac hypertrophic signaling, metabolic inflexibility and insulin resistance in *Bsc12*^{-/-} mice. (A-B) Representative western blotting in whole heart and isolated mitochondria (n=3/group). (C) Acid soluble metabolites (ASM) production after incubating heart crude mitochondrial fraction with ¹⁴C-palmitate. 6M old *Atgl*^{+/+}*Bsc12*^{+/+} (A^wB^w), *Atgl*^{+/+}*Bsc12*^{-/-} (A^wB^k) and *Atgl*^{-/-}*Bsc12*^{-/-} (A^hB^k) male mice were used with n# indicated in each bar. (D-E) AKT phosphorylation at Ser473 and ratio of pAKT/total AKT in hearts of 10 week old A^wB^w, A^wB^k and A^hB^k male mice after i.p. injection of Humulin for 15 min. *: p < 0.05, **: p < 0.005. One-way ANOVA with Dunnett's multiple comparisons correction.

Table S1. Differentially expressed genes (267) in hearts from 10 week old 4 h fasted female *Bsc12*^{+/+} and *Bsc12*^{-/-} mice with (0.5 < Log 2 < -0.5), adjusted p value < 0.05 (n=3 for each group pooled from 9 animals).

Entrezgene	Gene name_ID	LogFC	<i>Bsc12</i> ^{+/+} (Log10)	<i>Bsc12</i> ^{-/-} (Log10)	Adj.P.Val.
329977	Fhad1	2.518	-2.716	-0.065	0.0229028
13616	Edn3	2.445	0.163	2.669	4.92E-05
114249	Npnt	2.021	-0.493	1.299	0.04655838
18124	Nr4a3	1.739	3.679	5.513	0.004804049
20497	Slc12a3	1.505	-0.309	1.262	0.01184061
433766	Trim63	1.443	7.996	9.416	0.000133717
17389	Mmp16	1.429	-1.063	0.344	0.01583094
74574	Lvrn	1.354	0.666	2.007	0.004804049
242484	D630039A03Rik	1.276	-0.095	1.110	0.0174732
218038	Amph	1.246	0.589	1.859	0.002337585
194231	Cnksr1	1.215	4.315	5.537	0.002520509
53412	Ppp1r3c	1.149	6.395	7.587	0.00280357
108100	Baiap2	1.132	3.752	4.843	0.004804049
78321	Ankrd23 (DARP)	1.122	7.588	8.707	0.002770182
241226	Itga8	1.119	2.495	3.459	0.02454969
69784	1500009L16Rik	1.117	0.181	1.327	0.03631017
231070	Insig1	1.112	3.874	4.949	0.002967186
70556	Slc25a33	1.112	5.132	6.267	0.02403866
12583	Cdo1	1.105	1.404	2.516	0.004804049
74646	Spsb1	1.069	5.904	6.965	0.000733538
15200	Hbegf	1.068	4.020	5.070	0.000236787
17174	Masp1	1.066	2.283	3.373	0.01646861
328967	Arhgef37	1.060	2.357	3.405	0.01969438
12372	Casq1	1.054	2.581	3.679	0.02326597
384783	Irs2	1.048	4.955	6.124	0.04330626
94214	Spock2	1.028	4.473	5.464	0.03711377
223513	Abra	1.021	5.255	6.296	0.01569992
14560	Gdf10	1.011	1.052	1.989	0.02335676
237979	Sdk2	1.000	0.753	1.712	0.006618718
70652	Tmem144	0.988	5.038	5.993	0.005641247
	Gm5532	0.986	6.222	7.196	0.002839451
53623	Gria3	0.981	0.226	1.205	0.02228742
227545	Proser2	0.975	2.874	3.843	0.002967186
218215	Rnf144b	0.973	5.706	6.696	0.002967186
50709	Hist1h1e	0.964	0.140	1.093	0.03511071
107765	Ankrd1 (CARP)	0.962	9.186	10.221	0.01660574
105171	Arrdc3	0.962	6.176	7.145	0.008046806

57436	Gabarapl1	0.960	6.837	7.746	0.01380389
320802	Ifitm10	0.952	-0.575	0.348	0.03449257
13197	Gadd45a	0.934	3.257	4.117	0.01608785
103988	Gck	0.928	4.905	5.848	0.02249787
67434	Ankrd33b	0.920	5.403	6.316	0.004804049
107869	Cth	0.908	1.302	2.175	0.01608785
66270	Fam134b	0.896	8.204	9.067	0.001207942
14229	Fkbp5	0.888	6.400	7.279	0.03660511
20817	Srpk2	0.887	5.992	6.952	0.02882628
55990	Fmo2	0.879	5.964	6.835	0.009109733
140742	Sesn1	0.872	7.605	8.472	0.000189148
11668	Aldh1a1	0.867	4.426	5.239	0.01036277
78943	Ern1	0.858	4.981	5.805	0.001312146
64209	Herpud1	0.854	8.792	9.608	0.00527106
237560	Lrrc10	0.854	7.363	8.232	0.000209586
15982	Ifrd1	0.853	5.357	6.198	0.02238151
50934	Slc7a8	0.835	2.426	3.262	0.04237831
22190	Ubc	0.829	6.516	7.291	0.005878584
68732	Carmil1	0.829	2.223	3.059	0.009710378
223272	Itgbl1	0.818	2.653	3.486	0.0272806
242700	Ifnlr1	0.809	2.341	3.061	0.01801309
13143	Dapk2	0.789	1.753	2.565	0.006574791
13078	Cyp1b1	0.780	2.610	3.354	0.04201207
228564	Frmf5	0.760	6.989	7.792	0.006318217
234878	Map3k21	0.759	1.157	1.803	0.04600798
58220	Pard6b	0.757	1.245	1.940	0.0278308
19017	Ppargc1a	0.752	7.342	8.088	0.02732345
240817	Teddm2	0.751	1.050	1.809	0.04713166
17872	Ppp1r15a	0.748	4.611	5.356	0.03449257
16011	Igfbp5	0.745	6.975	7.721	0.02025857
15939	Ier5	0.735	4.796	5.571	0.02241572
216805	Fln	0.735	6.220	6.963	0.002840315
77864	Ypel2	0.726	4.349	5.037	0.00280357
17748	Mt1	0.723	8.400	9.060	0.04364039
17901	Myl1 (Mlc1)	0.712	3.064	3.752	0.02025857
71862	Gpr160	0.711	1.968	2.620	0.01958252
15360	Hmgcs2	0.708	4.126	4.852	0.006276771
12323	Camk2b	0.708	3.466	4.209	0.000666055
14645	Glul	0.705	9.470	10.133	0.001546806
18583	Pde7a	0.703	6.412	7.119	0.01082946
93677	Lmod2	0.696	9.698	10.406	0.009109733
23972	Papss2	0.692	3.909	4.567	0.008495516
14325	Ftl1	0.687	4.244	4.887	0.03346039
70892	Ttll7	0.673	3.854	4.530	0.004804049
243362	Stard13	0.661	5.770	6.430	0.000733538

77057	Ston1	0.652	3.911	4.540	0.01655162
72961	Slc17a7	0.645	3.941	4.552	0.0187436
58909	Fam13a	0.641	4.874	5.523	0.02460853
209268	Igsf1	0.639	3.342	4.040	0.01546733
235493	Fam214a	0.638	6.263	6.871	0.02377718
66277	Klf15	0.635	6.673	7.307	0.01241928
19885	Rorc	0.634	5.050	5.705	0.01130875
18760	Prkd1	0.631	2.579	3.216	0.006574791
19122	Prnp	0.622	6.842	7.480	0.00527106
21817	Tgm2	0.617	7.939	8.559	0.004804049
239017	Ogdhl	0.616	7.291	7.955	0.03449257
12013	Bach1	0.614	6.066	6.665	0.006574791
235661	Dync1li1	0.614	5.940	6.566	0.004804049
18640	Pfkfb2	0.611	6.388	7.021	0.04466122
108767	Pnrc1	0.608	6.677	7.265	0.01660762
54630	Prickle3	0.608	5.289	5.939	0.01183097
233977	Ppfia1	0.606	6.049	6.677	0.01703651
27494	Amot	0.603	3.774	4.433	0.03392254
72401	Slc43a1	0.602	1.664	2.249	0.04237831
16476	Jun	0.600	5.625	6.180	0.004804049
67216	Mboat2	0.596	3.183	3.816	0.03392763
271424	Ip6k3	0.596	3.487	4.127	0.02241784
18712	Pim1	0.588	3.589	4.116	0.04330626
12778	Ackr3	0.584	6.042	6.634	0.02299809
99929	Tiparp	0.582	4.161	4.747	0.008163069
71371	Arid5b	0.582	4.741	5.319	0.00674268
56772	Mllt11	0.578	2.858	3.439	0.008388528
229906	Gtf2b	0.574	3.401	3.970	0.04115766
13190	Dct	0.572	2.712	3.219	0.04566755
20648	Snta1	0.566	6.664	7.232	0.001546806
71393	Kctd6	0.564	3.131	3.673	0.01928051
105859	Csdc2	0.559	6.252	6.829	0.03447596
	Zfp469	0.558	1.786	2.342	0.01958252
22436	Xdh	0.547	7.701	8.233	0.001514647
330267	Thsd7a	0.545	3.544	4.063	0.0324013
71865	Fbxo30	0.545	4.895	5.424	0.008340809
76820	Fam49a	0.542	3.230	3.754	0.02669578
19228	Pth1r	0.540	3.102	3.633	0.02193354
269604	Gpr157	0.535	6.446	6.995	0.00280357
78754	Galnt15	0.535	5.475	5.969	0.02018545
17470	Cd200	0.533	5.361	5.906	0.000864215
14245	Lpin1	0.532	8.185	8.710	0.01184061
18081	Ninj1	0.532	5.338	5.856	0.002208084
67731	Fbxo32	0.530	8.582	9.093	0.04630743
215113	Slc43a2	0.527	4.839	5.303	0.0241564

216505	Pik3ip1	0.523	6.154	6.643	0.04630743
63955	Cables1	0.521	2.909	3.431	0.03288852
70598	Filip1	0.521	7.175	7.723	0.006204502
319876	Cobll1	0.521	7.227	7.729	0.008554261
18175	Nrap	0.519	9.741	10.268	0.004804049
14681	Gnao1	0.518	4.820	5.315	0.008595151
208449	Sgms1	0.516	6.264	6.781	0.004804049
19821	Rnf2	0.514	4.180	4.699	0.01592996
107701	Sf3b4	0.512	1.586	2.050	0.027111718
330812	Rnf150	-0.503	5.766	5.324	0.0264835
232089	Elmod3	-0.506	4.610	4.110	0.005878584
193736	Zbtb12	-0.506	2.674	2.200	0.04120065
80906	Kcnip2	-0.510	7.768	7.243	0.008163069
78619	Zfp449	-0.512	2.766	2.311	0.04075728
70021	Nt5dc2	-0.518	3.629	3.098	0.006276771
14584	Gfpt2	-0.527	3.855	3.359	0.03392763
20520	Slc22a5	-0.529	4.682	4.118	0.008349744
66412	Arrdc4	-0.530	3.179	2.698	0.03449257
	A430046D13Rik	-0.532	3.978	3.474	0.007336289
230837	Asap3	-0.532	4.055	3.517	0.0132319
60425	Doc2g	-0.535	6.183	5.667	0.01415787
30963	Hacd1	-0.537	4.111	3.580	0.02614695
11554	Adrb1	-0.540	4.161	3.634	0.01726525
56752	Aldh9a1	-0.543	5.647	5.088	0.004804049
77521	Mtus2	-0.545	7.323	6.779	0.00973912
14370	Fzd8	-0.549	3.401	2.837	0.02193354
14872	Gstt2	-0.552	2.751	2.175	0.0349696
72421	Ttc30b	-0.552	3.603	3.032	0.01574645
244416	Ppp1r3b	-0.554	4.458	3.901	0.03578611
50916	Irx4	-0.555	4.582	4.021	0.04119556
20667	Sox12	-0.564	4.338	3.840	0.004804049
67468	Mmd	-0.569	5.341	4.749	0.005123964
19294	Nectin2	-0.571	4.733	4.135	0.01566957
22317	Vamp1	-0.572	3.887	3.285	0.03149533
	Mir99ahg	-0.577	3.684	3.109	0.01958252
17286	Meox2	-0.584	3.760	3.217	0.03392763
14373	G0s2	-0.585	4.375	3.736	0.03449257
14453	Gas2	-0.589	2.028	1.474	0.02403866
110639	Prps2	-0.590	3.836	3.218	0.001865608
20787	Srebf1	-0.593	5.635	5.050	0.000193945
228966	Ppp1r3d	-0.594	4.072	3.437	0.0174732
246707	Emilin2	-0.596	6.092	5.519	0.01582507
	1010001N08Rik	-0.618	3.176	2.578	0.006318217
228019	Mettl8	-0.621	2.383	1.760	0.0110831
230157	Tmeff1	-0.624	2.880	2.244	0.008163069

71091	Cdkl1	-0.626	3.289	2.712	0.02403866
353169	Slc2a12	-0.626	2.833	2.246	0.01181867
66528	Smim5	-0.628	3.000	2.379	0.04797793
170826	Ppargc1b	-0.640	5.372	4.770	0.03770677
11419	Asic1	-0.645	1.813	1.175	0.04370804
17385	Mmp11	-0.648	2.310	1.713	0.01138986
73750	Whrn	-0.656	5.724	5.041	0.006533397
	Gm26795	-0.665	2.528	1.916	0.02403866
18208	Ntn1	-0.673	7.272	6.606	0.000209586
18559	Pctp	-0.675	1.979	1.367	0.04330626
70083	Metrn	-0.678	1.669	0.929	0.03347302
18575	Pde1c	-0.678	6.159	5.532	0.02241572
108153	Adamts7	-0.681	5.316	4.647	0.01577118
70445	Cd248	-0.686	3.968	3.313	0.007223075
22418	Wnt5a	-0.686	3.367	2.689	0.01577118
65079	Rtn4r	-0.696	2.331	1.726	0.04056746
71532	Fam217b	-0.698	4.352	3.661	0.003903393
56279	Fam69b	-0.705	3.683	2.954	0.000624478
11624	Ahrr	-0.708	2.466	1.844	0.03548647
11496	Adam22	-0.709	4.743	4.020	0.01040721
107895	Mgat5	-0.715	4.611	3.939	0.00527106
14349	Fv1	-0.716	3.341	2.664	0.01660762
243937	Zfp536	-0.716	2.629	1.838	0.02454969
242721	Klhdc7a	-0.719	2.144	1.488	0.008495516
73112	Abrac1	-0.733	2.834	2.034	0.006276771
13170	Dbp	-0.735	6.410	5.706	0.00527106
75216	Cep128	-0.738	3.648	2.911	0.006574791
105727	Slc38a1	-0.745	5.336	4.589	0.01082946
278507	Wfikkn2	-0.750	3.105	2.467	0.008980202
270190	Ephb1	-0.761	2.262	1.492	0.04620217
353208	Zfp931	-0.770	1.929	1.157	0.02249787
545276	Gal3st3	-0.779	3.772	3.021	0.03808889
68267	Slc25a22	-0.780	6.000	5.216	0.000209586
30878	Apln	-0.784	3.650	2.906	0.01504272
53871	Pkd2l2	-0.798	3.145	2.345	0.008163069
80903	Fgf16	-0.800	2.929	2.235	0.02154198
218763	Lrrc3b	-0.808	3.649	2.779	0.008984791
235611	Plxnb1	-0.830	6.735	5.945	0.000291976
282619	Sbsn	-0.833	1.673	0.910	0.04215561
19713	Ret	-0.834	2.758	1.999	0.02718017
217303	Cd300a	-0.840	1.322	0.460	0.04518618
21847	Klf10	-0.849	4.045	3.244	0.006908424
21788	Tfpi	-0.854	6.299	5.478	0.000566816
15490	Hsd17b7	-0.856	3.964	3.079	0.04201207
	4921504A21Rik	-0.867	1.699	0.873	0.0382407

71911	Bdh1	-0.877	6.370	5.454	0.03961031
	2310001H17Rik	-0.881	1.464	0.595	0.01629943
12477	Ctla4	-0.886	1.867	0.975	0.0272806
107934	Celsr3	-0.886	2.862	1.968	0.006276771
19735	Rgs2	-0.892	5.615	4.787	0.0459982
72514	Fgfbp3	-0.905	1.549	0.617	0.03515121
11987	Slc7a1	-0.910	6.319	5.466	0.000133717
56338	Txnip	-0.912	9.366	8.459	0.04219979
	B430212C06Rik	-0.920	1.657	0.762	0.02377718
11600	Angpt1	-0.945	5.080	4.125	0.03781937
74488	Lrrc15	-0.953	4.715	3.795	0.006574791
13637	Efna2	-0.954	0.584	-0.413	0.02229697
12143	Blk	-0.964	1.442	0.579	0.03192593
56437	Rrad	-0.969	6.504	5.601	0.04031603
213236	Dnd1	-0.977	1.155	0.179	0.01377631
242022	Frem2	-1.019	4.943	3.975	0.009343039
12571	Cdk6	-1.027	2.900	2.023	0.003074969
15451	Hpn	-1.063	1.585	0.658	0.01502046
11550	Adra1d	-1.085	1.681	0.677	0.007304421
240660	Slc35g1	-1.094	1.517	0.371	0.006276771
78593	Nrip3	-1.107	-0.724	-1.819	0.04031603
216166	Plk5	-1.124	0.974	-0.035	0.02377718
14695	Gnb3	-1.132	3.353	2.303	0.003903393
16855	Lgals4	-1.135	6.146	5.072	0.02977441
212190	Ubxn10	-1.136	2.754	1.776	0.03449257
	Gm10435	-1.136	5.391	4.244	0.009527504
19286	Pts	-1.140	4.294	3.043	0.008163069
16780	Lamb3	-1.150	3.628	2.502	0.000133717
	Gm10603	-1.151	2.587	1.442	0.000424927
	Gm12381	-1.187	1.252	0.014	0.03392254
383787	Ankrd63	-1.215	1.922	0.667	0.04199571
227058	Dnah7b	-1.238	0.633	-0.495	0.01731211
226922	Kcnq5	-1.324	0.299	-1.113	0.04201207
57875	Angptl4	-1.343	3.375	2.019	0.004804049
280667	Adam1b	-1.356	0.696	-0.532	0.04370804
14705	Bscl2	-1.427	4.066	2.607	1.57E-07
338417	Scgb1c1	-1.431	2.741	1.441	0.01759372
330938	Dixdc1	-1.473	4.349	2.602	0.02377718
20503	Slc16a7	-1.490	2.810	1.211	0.001207942
19734	Rgs16	-1.528	0.420	-1.046	0.01352704
193003	Pirt	-1.579	3.695	2.099	0.004804049
71756	Cpn2	-1.650	1.662	-0.046	0.00674268
108000	Cenpf	-1.659	5.008	3.355	0.001262084
20264	Scn10a	-1.664	0.491	-1.012	0.006843893
78774	Cfap61	-1.697	1.190	-0.417	0.001570376

22229	Ucp3	-1.788	7.015	5.250	9.46E-08
381101	Dnph1	-2.065	0.922	-1.224	0.004804049
13489	Drd2	-2.070	0.433	-1.433	0.01608785
19329	Rab17	-2.147	0.388	-1.811	0.02390765
	Gm14403	-3.878	2.174	-2.075	0.02496651

Table S2. Plasma parameters and echocardiographic variables in 6 months old male A^wB^w , A^wB^k and A^hB^k mice.

	A^wB^w (n=6)	A^wB^k (n=6)	A^hB^k (n=8)
Body weight (g)	36.6±1.8	36.1±1.1	34.1±0.86
Plasma glucose (mg/dL)	176±7.7	351±38**	241±25*#
Cardiac TG (µg/mg)^a	1.11±0.23	0.38±0.01**	0.46±0.03**#
Heart rate (bpm)	634±4	610±8	619±5
LV mass (mg)	100±3.3	111±6.2	117±4.9
Ejection fraction (%)	71.2±1.12	55.7±2.3**	67.1±2.1#
LVPWd (mm)	0.88±0.04	0.92±0.02	0.92±0.03
LVPWs (mm)	1.51±0.04	1.34±0.05*	1.51±0.04#
LVAWd (mm)	0.79±0.02	0.73±0.04	0.78±0.04
LVAWs (mm)	1.43±0.02	1.27±0.05**	1.45±0.05#
LVIDd (mm)	4.0±0.15	4.16±0.11	4.16±0.07

Nonfasting mice were used. Data are mean values ± SEM. TG, triglyceride; LVPWd, LV posterior wall thickness in end-diastole; LVPWs, LV posterior wall thickness in end-systole; LVAWd, LV anterior wall thickness in end-diastole; LVAWs, LV anterior wall thickness in end-systole; LVIDd, LV internal diameter in end-diastole. *: $p < 0.05$ and **: $p < 0.005$ vs. A^wB^w mice; #: $p < 0.05$ vs A^wB^k mice. a: data were obtained in 10 week old female mice after a 4 h fast.