Supplemental Table 1. List of abbreviations.

KEGG ID	Metabolite	Abbreviation
C02946	4-Acetamidobutanoate	N-acetyl GABA
C00791	Creatinine	Creatinine
C00019	S-Adenosyl-L-methionine	SAM
C05663	6-Hydroxykynurenic acid	6-OH-kynurenate
C01157	trans-4-Hydroxy-L-proline	4-Hydroxyproline
C00108	Anthranilate	Anthranilate
C00049	Aspartate	Aspartate
C03410	N-Glycoloyl-neuraminate	GcNeu
C00037	Glycine	Glycine
C00123	Leucine/isoleucine	Leucine
C00148	Proline	Proline
C00300	Creatine	Creatine
C00127	Glutathione disulfide	GSSG
C00041	Alanine	Alanine
C00183	Valine	Valine
C00327	Citrulline	Citrulline
C00051	Glutathione	GSH
C00025	Glutamate	Glutamate
C02220	2-Aminomuconate	2-Aminomuconate
C00073	Methionine	Methionine
C00331	Indolepyruvate	Indolepyruvate
C01419	Cys-Gly	Cys-Gly
C00082	Tyrosine	Tyrosine
C15699	Gamma-L-Glutamylputrescine	g-Glu-Put
C00077	Ornithine	Ornithine
C00047	Lysine	Lysine
C00062	Arginine	Arginine
C03406	Argininosuccinate	Argininosuccinate
C00864	Pantothenate	Pantothenate
C00013	Diphosphate	Diphosphate
C00009	Phosphate	Phosphate
C00003	NAD+	NAD+
C00212	Adenosine	Adenosine
C00029	UDP-glucose	UDP-glucose
C01159	2/3-Phospho-D-glycerate	BPG
C00620	Alpha-D-Ribose 1-phosphate	Ribose phosphate
C00042	Succinate	Succinate
C00149	Malate	Malate
C00121	D-Ribose	Ribose
C00026	2-Oxoglutarate	aKG
C00345	6-Phospho-D-gluconate	6-Phosphogluconate
C00015	UDP	UDP
C01236	D-Glucono-1-5-lactone 6-phosphate	6-PGDL
C00392	Mannitol	Mannitol
C00114	Choline	Choline
NA	Hexadecenoyl-carnitine (acyl-C16:1)	AcCa 16:1
NA	Tetradecenoyl Carnitine (acyl-C14:1)	AcCa 14:1
NA	O-octadecenoyl-L-carnitine (acyl-C18:1)	AcCa 18:1
NA	O-Decenoyl-L-carnitine (acyl-C10:1)	AcCa 10:1
NA	O-dodecenoyl-carnitine (acyl-C12:1)	AcCa 12:1
NA	Acyl-C4-OH	AcCa 4:0-OH
NA	O-dodecanoyl-carnitine (acyl-C12)	AcCa 12:0
C02862	Butanoyl-l-carnitine (acyl-C4)	AcCa 4:0
C02838	Octanoylcarnitine (acyl-C8)	AcCa 8:0
C00319	Sphingosine	Sphingosine
NA	Acyl-C5:1	AcCa 5:1
C00346	Ethanolamine phosphate	EAP
NA	Octenoyl-l-carnitine (acyl-C8:1)	AcCa 8:1
C02678	Dodecanedioic acid	Dodecanedioate
C01571	Decanoic acid (caprate)	FA 10:0
C01601	Nonanoic acid (pelargonate)	FA 9:0
C02571	Acetyl-carnitine (acyl-C2)	AcCa 2:0
C00246	Butanoic/Butyric acid	FA 4:0
C06428	Eicosapentaenoic acid	EPA
NA	Acyl-C5-OH	AcCa 5:0-OH
C03017	Propionyl-carnitine (acyl-C3)	AcCa 3:0
NA	Acyl-C4-DC	AcCa 4-DC
C02350	(S)(+)-Allantoin	Allantoin
C00262	Hypoxanthine	Hypoxanthine
C00106	Uracil	Uracil
C01904	D-Arabitol	Arabitol
C00906	5-6-Dihydrothymine	Dihydrothymine
C00364	dTMP	dTMP
C00239	dCMP	dCMP
C00294	Inosine	Inosine
C01684	D-Rhamnose	Rhamnose
C00214	Thymidine	Thymidine
C00055	CMP	CMP
C00242	Guanine	Guanine
C04376	5'-Phosphoribosyl-N-formylglycinamide	FGAR
C00788	L-Adrenaline	Epinephrine

	Metabolite	raw p value	FDR
1	(S)(+)-Allantoin	0.00000000035	0.00000006
2	Butyrylcarnitine	0.00000000261	0.00000023
3	Tiglylcarnitine	0.00000000408	0.00000024
4	Hypoxanthine	0.00000004500	0.00000197
5	Argininosuccinic acid	0.00000019900	0.00000696
6	L-Acetylcarnitine	0.00000027400	0.00000799
7	L-Valine	0.00000032300	0.00000808
8	6-Phosphogluconic acid	0.00000049200	0.00001080
9	Epinephrine	0.00000255000	0.00004960
10	5'-Phosphoribosyl-N-formylglycinamide	0.00000483000	0.00008460
11	Citrulline	0.00000722000	0.00010124
12	L-Arginine	0.00000727000	0.00010124
13	4,6-Dihydroxy-2-quinolinecarboxylic acid	0.00000752000	0.00010124
14	Cysteinylglycine	0.00000814000	0.00010181
15	2-Aminomuconic acid	0.00001270000	0.00014238
16	Lysine	0.00001300000	0.00014238
17	Creatinine	0.00001590000	0.00016334
18	Choline	0.00003000000	0.00029149
19	Ornithine	0.00003530000	0.00032490
20	4-Hydroxyproline	0.00011287000	0.00096877
21	D-Rhamnose	0.00011858000	0.00096877
22	N-Glycolylneuraminic acid	0.00012179000	0.00096877
23	Gamma-glutamyl-L-putrescine	0.00012902000	0.00098170
24	Thymidine	0.00015508000	0.00113080
25	Octanoylcarnitine	0.00029694000	0.00203400
26	Glycine	0.00030220000	0.00203400
27	4-Acetamidobutanoic acid	0.00042012000	0.00272300
28	trans-2-Tetradecenoylcarnitine	0.00046082000	0.00284840
29	Dodecenoylcarnitine	0.00047203000	0.00284840
30	Succinylcarnitine	0.00052778000	0.00307870
31	Sphingosine	0.00060535000	0.00341730
32	Glutathione	0.00077061000	0.00421430
33	Octenoyl-L-carnitine	0.00083450000	0.00434000
34	Isovalerylcarnitine	0.00084321000	0.00434000
35	Propionylcarnitine	0.00101360000	0.00506790
36	Phosphate	0.00115600000	0.00561930
37	Oxoglutaric acid	0.00179040000	0.00846810
38	Leucine	0.00188920000	0.00870030
39	L-Alanine	0.00223770000	0.00997560
40	L-Tyrosine	0.00228010000	0.00997560
41	Oxidized glutathione	0.00249320000	0.01064200
42	Indolepyruvate	0.00268200000	0.01117500
43	Ribose 1-phosphate	0.00280580000	0.01141900
44	Creatine	0.00332870000	0.01323900
45	L-Aspartic acid	0.00369260000	0.01436000
46	Proline	0.00415160000	0.01528600
47	Uridine diphosphate glucose	0.00416700000	0.01528600
48	Mannitol	0.00419280000	0.01528600
49	Succinic acid	0.00445250000	0.01590200
50	Dodecanoylcarnitine	0.00574140000	0.02009500
51	9-Hexadecenoylcarnitine	0.00636200000	0.02183000
52	Pyrophosphate	0.00699500000	0.02354100
53	NADH	0.00729160000	0.02404900
54	Guanine	0.00742080000	0.02404900
55	Malic acid	0.00764610000	0.02432800
56	Methionine	0.00784010000	0.02450000
57	N2-Acetylornithine	0.00812450000	0.02494400
58	Uridine 5'-diphosphate	0.00917170000	0.02749800
59	2-Aminobenzoic acid	0.00927070000	0.02749800
60	Glutamine	0.00943530000	0.02752000
61	Uracil	0.01076800000	0.03089200
62	Myristic acid	0.01147400000	0.03238700
63	5-Thymidylic acid	0.01259900000	0.03499800
64	NAD	0.01304200000	0.03566300
65	Uric acid	0.01379100000	0.03706900
66	Butyric acid	0.01398000000	0.03706900
67	Glutamic acid	0.01446000000	0.03776800
68	Pyroglutamic acid	0.01484800000	0.03821100
69	S-Adenosylmethionine	0.01566600000	0.03973300
70	3-Hydroxybutyrylcarnitine	0.01645800000	0.04114400
71	Oleoylcarnitine	0.01849900000	0.04559500
72	Glycerol 3-phosphate	0.02042400000	0.04964100

Supplemental Table 2: Metabolomic analysis of skeletal muscle at 24 hours. To identify significant differences specifically at 24 hours of AKI versus its two controls (i.e., normal and 24 hr-sham), one-way ANOVA of these three groups with post-hoc testing was performed. Raw p-values and FDR adjusted p values are listed. This analysis demonstrates that 72 of 175 (41%) of the annotated metabolites were significantly different (FDR <0.05).

KEGG	Metabolite	Fold change (AKI/sham)	p-value	FDR
C02946	N-acetyl GABA	29.58	0.005	0.034
C02350	Allantoin	8.45	0.000001	0.0002
C00791	Creatinine	2.92	0.0007	0.008
C00262	Hypoxanthine	2.52	0.00002	0.001
C00114	Choline	2.29	0.0005	0.007
NA	AcCa 18:0	1.94	0.042	0.16
C00106	Uracil	1.71	0.004	0.03
NA	AcCa 14:1	1.61	0.045	0.17
C16513	FA 22:5	1.55	0.023	0.12
C00029	UDP-glucose	1.53	0.005	0.034
C01904	Arabitol	1.47	0.024	0.12
C00009	Phosphate	0.86	0.047	0.17
C02571	AcCa 2:0	0.84	0.033	0.15
C06424	FA 14:0	0.83	0.043	0.16
C00122	Fumarate	0.83	0.038	0.16
C00300	Creatine	0.83	0.007	0.047
C00149	Malate	0.82	0.015	0.08
C00041	Alanine	0.80	0.003	0.03
C00183	Valine	0.80	0.009	0.06
C00147	Adenine	0.78	0.043	0.16
C00003	NAD+	0.76	0.004	0.03
C00121	Ribose	0.75	0.043	0.16
NA	AcCa 5:0-OH	0.75	0.013	0.08
C00065	Serine	0.72	0.028	0.13
C00327	Citrulline	0.72	0.003	0.03
C00051	GSH	0.68	0.0005	0.007
C00025	Glutamate	0.68	0.037	0.16
C02220	2-Aminomuconate	0.68	0.008	0.05
C00437	N-Acetylornithine	0.68	0.003	0.03
C00015	UDP	0.66	0.013	0.08
C00212	Adenosine	0.65	0.046	0.17
C00004	NADH	0.65	0.042	0.16
C00073	Methionine	0.65	0.0007	0.008
C03017	AcCa 3:0	0.64	0.0007	0.008
C00242	Guanine	0.62	0.0004	0.007

C00750	Spermine	0.62	0.019	0.10
C01236	6-PGDL	0.58	0.029	0.14
NA	AcCa 4-DC	0.56	0.025	0.12
C00331	Indolepyruvate	0.56	0.004	0.03
C00392	Mannitol	0.55	0.005	0.034
NA	AcCa 20:0	0.54	0.018	0.10
C01419	Cys-Gly	0.52	0.00003	0.001
C00082	Tyrosine	0.50	0.0008	0.009
C15699	g-Glu-Put	0.37	0.0005	0.007
C00077	Ornithine	0.36	0.00004	0.001
C00047	Lysine	0.36	0.0004	0.007
C00062	Arginine	0.35	0.0003	0.007
C00788	Epinephrine	0.33	0.000004	0.0004
C03406	Argininosuccinate	0.30	0.00003	0.001

Supplemental Table 3. Analytes with most significant fold change (AKI vs sham) in skeletal muscle 24 hours after AKI. Metabolites that are significantly different 24 hours after AKI compared to sham controls by raw p-value ≤0.05. Statistically significant metabolites for 24-hr sham versus 24-hr AKI based on a raw p-value ≤0.05 are listed in the table based on fold change (AKI relative to sham). Metabolites that were higher in AKI are in red, and metabolites that were lower in AKI are in blue. Both raw p-values and FDR p values are listed. N-acetyl GABA, allantoin, and creatinine exhibited the highest fold change; whereas argininosuccinate, epinephrine, and arginine showed the lowest fold change (i.e., these metabolites are depleted in AKI compared to sham controls). Statistical analyses were performed in MetaboAnalyst 6.0. Some names have been abbreviated from original nomenclature, which can be referenced in Supplemental Table 1.