Supplemental Material

Table S1. Pathway Analysis of brain tissue comparing control with cardiac arrest.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Aminoacyl-tRNA biosynthesis	75	18	0.0015988	6.4385	0.086336	0.056429	1.25	0.22536
D-Arginine and D-ornithine metabolism	8	2	0.0031192	5.7702	0.16532	0.056429	1.25	0
Valine, leucine and isoleucine biosynthesis	27	4	0.0057138	5.1649	0.29712	0.056429	1.25	0.0265
Arginine and proline metabolism	77	8	0.0068467	4.984	0.34918	0.056429	1.25	0.41398
Glyoxylate and dicarboxylate metabolism	50	4	0.0072827	4.9223	0.36413	0.056429	1.25	0.02984
Valine, leucine and isoleucine degradation	40	3	0.0081805	4.806	0.40084	0.056429	1.25	0.0713
Citrate cycle (TCA cycle)	20	5	0.0086167	4.7541	0.4136	0.056429	1.25	0.17318
Cysteine and methionine metabolism	56	4	0.0087825	4.735	0.4136	0.056429	1.25	0.05003
Pantothenate and CoA biosynthesis	27	3	0.0094048	4.6665	0.43262	0.056429	1.25	0.00854
Sphingolipid metabolism	25	1	0.015619	4.1593	0.70287	0.076676	1.12	0
Sulfur metabolism	18	1	0.015619	4.1593	0.70287	0.076676	1.12	0
Biotin metabolism	11	1	0.051784	2.9607	1	0.21675	0.66	0
Histidine metabolism	44	3	0.060211	2.8099	1	0.21675	0.66	0.14039
Glycine, serine and threonine metabolism	48	5	0.060977	2.7973	1	0.21675	0.66	0.42039
Propanoate metabolism	35	3	0.063113	2.7628	1	0.21675	0.66	0.05474
Cyanoamino acid metabolism	16	4	0.064222	2.7454	1	0.21675	0.66	0
Linoleic acid metabolism	15	1	0.072347	2.6263	1	0.22981	0.64	0.65625
Purine metabolism	92	7	0.093434	2.3705	1	0.2803	0.55	0.14975
Methane metabolism	34	3	0.11281	2.1821	1	0.31754	0.50	0.05444
beta-Alanine metabolism	28	3	0.11761	2.1404	1	0.31754	0.50	0.01119
Lysine degradation	47	3	0.13461	2.0054	1	0.3347	0.48	0.14675
Nitrogen metabolism	39	10	0.13636	1.9925	1	0.3347	0.48	0.0083
alpha-Linolenic acid metabolism	29	1	0.14809	1.91	1	0.33809	0.47	0.20335
Tyrosine metabolism	76	3	0.15429	1.8689	1	0.33809	0.47	0.04724
Phenylalanine metabolism	45	4	0.15652	1.8545	1	0.33809	0.47	0.11906
Riboflavin metabolism	21	2	0.17263	1.7566	1	0.35855	0.45	0
Lysine biosynthesis	32	4	0.18201	1.7037	1	0.36401	0.44	0.15084
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.18932	1.6643	1	0.36513	0.44	0
Folate biosynthesis	42	1	0.20929	1.564	1	0.37367	0.43	0
Fatty acid metabolism	50	3	0.21664	1.5295	1	0.37367	0.43	0.2426
Butanoate metabolism	40	4	0.24922	1.3894	1	0.37367	0.43	0.10672

Synthesis and degradation of ketone bodies	6	1	0.25935	1.3496	1	0.37367	0.43	0
Inositol phosphate metabolism	39	1	0.25935	1.3496	1	0.37367	0.43	0
Terpenoid backbone biosynthesis	33	1	0.25935	1.3496	1	0.37367	0.43	0
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.27407	1.2944	1	0.37367	0.43	0.008
Porphyrin and chlorophyll metabolism	104	3	0.2757	1.2884	1	0.37367	0.43	0
Taurine and hypotaurine metabolism	20	2	0.27959	1.2744	1	0.37367	0.43	0.03237
Pyruvate metabolism	32	2	0.28167	1.267	1	0.37367	0.43	0.24876
Glycolysis or Gluconeogenesis	31	2	0.28188	1.2663	1	0.37367	0.43	0.04202
Tryptophan metabolism	79	2	0.28209	1.2655	1	0.37367	0.43	0.10853
Thiamine metabolism	24	2	0.28371	1.2598	1	0.37367	0.43	0
Fatty acid elongation in mitochondria	27	2	0.36359	1.0117	1	0.46747	0.33	0.26765
Alanine, aspartate and glutamate metabolism	24	7	0.42249	0.86159	1	0.53057	0.28	0.75404
Fatty acid biosynthesis	49	6	0.4651	0.76551	1	0.57005	0.24	0.0218
Glutathione metabolism	38	5	0.47504	0.74436	1	0.57005	0.24	0.02214
Selenoamino acid metabolism	22	1	0.51559	0.66244	1	0.57347	0.24	0
Starch and sucrose metabolism	50	1	0.53711	0.62155	1	0.57347	0.24	0.01703
Galactose metabolism	41	1	0.53711	0.62155	1	0.57347	0.24	0.00276
Pentose phosphate pathway	32	1	0.53711	0.62155	1	0.57347	0.24	0
Amino sugar and nucleotide sugar metabolism	88	1	0.53711	0.62155	1	0.57347	0.24	0
Primary bile acid biosynthesis	47	1	0.54161	0.6132	1	0.57347	0.24	0.00822
Nicotinate and nicotinamide metabolism	44	4	0.76801	0.26395	1	0.79755	0.10	0.0015
Pyrimidine metabolism	60	1	0.92166	0.081574	1	0.93905	0.03	0
D-Glutamine and D-glutamate metabolism	11	2	0.97721	0.023056	1	0.97721	0.01	0.13904

Table S2. Pathway Analysis of brain tissue comparing control with CPB-resuscitation.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Alanine, aspartate, and glutamate metabolism	24	7	3.04E-08	17.31	1.64E-06	8.22E-07	6.09	0.75404
Histidine metabolism	44	3	3.04E-08	17.307	1.64E-06	8.22E-07	6.09	0.14039
Arginine and proline metabolism	77	8	5.05E-08	16.801	2.63E-06	9.09E-07	6.04	0.41398
Nitrogen metabolism	39	10	1.64E-07	15.621	8.38E-06	2.22E-06	5.65	0.0083
Pantothenate and CoA biosynthesis	27	3	6.14E-07	14.304	3.07E-05	5.49E-06	5.26	0.00854
D-Glutamine and D-glutamate metabolism	11	2	6.49E-07	14.247	3.18E-05	5.49E-06	5.26	0.13904
Aminoacyl-tRNA biosynthesis	75	18	7.11E-07	14.156	3.41E-05	5.49E-06	5.26	0.22536
Phenylalanine metabolism	45	4	3.12E-06	12.677	0.00014675	2.11E-05	4.68	0.11906
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	3.97E-06	12.437	0.00018248	2.22E-05	4.65	0.008
Valine, leucine and isoleucine degradation	40	3	4.11E-06	12.403	0.00018473	2.22E-05	4.65	0.0713
Valine, leucine and isoleucine biosynthesis	27	4	5.81E-06	12.056	0.00025573	2.85E-05	4.54	0.0265
Porphyrin and chlorophyll metabolism	104	3	2.17E-05	10.74	0.00093113	9.74E-05	4.01	0
Glycine, serine and threonine metabolism	48	5	7.57E-05	9.4892	0.0031778	0.00031429	3.50	0.42039
Pyrimidine metabolism	60	1	9.27E-05	9.2861	0.003801	0.00034339	3.46	0
beta-Alanine metabolism	28	3	9.54E-05	9.2576	0.0038154	0.00034339	3.46	0.01119
D-Arginine and D-ornithine metabolism	8	2	0.0001725	8.6653	0.0067262	0.00058207	3.24	0
Propanoate metabolism	35	3	0.0001857	8.5912	0.0070579	0.00058998	3.23	0.05474
Cyanoamino acid metabolism	16	4	0.0002083	8.4765	0.0077074	0.00062492	3.20	0
Cysteine and methionine metabolism	56	4	0.0005912	7.4334	0.021283	0.0016802	2.77	0.05003
Sphingolipid metabolism	25	1	0.0020402	6.1947	0.071409	0.0052463	2.28	0
Sulfur metabolism	18	1	0.0020402	6.1947	0.071409	0.0052463	2.28	0
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.0021408	6.1466	0.071409	0.0052546	2.28	0
Thiamine metabolism	24	2	0.0026805	5.9217	0.085777	0.0062934	2.20	0
Biotin metabolism	11	1	0.0041962	5.4736	0.13008	0.0094415	2.02	0
alpha-Linolenic acid metabolism	29	1	0.0071137	4.9457	0.21341	0.014865	1.83	0.20335
Tyrosine metabolism	76	3	0.0071573	4.9396	0.21341	0.014865	1.83	0.04724
Glutathione metabolism	38	5	0.0080413	4.8232	0.22516	0.016083	1.79	0.02214
Lysine biosynthesis	32	4	0.0084714	4.7711	0.22873	0.016338	1.79	0.15084
Purine metabolism	92	7	0.010977	4.5119	0.28541	0.020441	1.69	0.14975
Primary bile acid biosynthesis	47	1	0.015356	4.1762	0.3839	0.027641	1.56	0.00822
Fatty acid metabolism	50	3	0.027515	3.593	0.66035	0.047929	1.32	0.2426

Lysine degradation	47	3	0.029995	3.5067	0.68989	0.050617	1.30	0.14675
Methane metabolism	34	3	0.047709	3.0426	1	0.07807	1.11	0.05444
Linoleic acid metabolism	15	1	0.053804	2.9224	1	0.085454	1.07	0.65625
Butanoate metabolism	40	4	0.080677	2.5173	1	0.12447	0.90	0.10672
Nicotinate and nicotinamide metabolism	44	4	0.10798	2.2258	1	0.16197	0.79	0.0015
Selenoamino acid metabolism	22	1	0.11581	2.1558	1	0.16902	0.77	0
Riboflavin metabolism	21	2	0.12698	2.0637	1	0.18044	0.74	0
Folate biosynthesis	42	1	0.14637	1.9216	1	0.20267	0.69	0
Tryptophan metabolism	79	2	0.17739	1.7294	1	0.23948	0.62	0.10853
Starch and sucrose metabolism	50	1	0.35529	1.0348	1	0.43603	0.36	0.01703
Galactose metabolism	41	1	0.35529	1.0348	1	0.43603	0.36	0.00276
Pentose phosphate pathway	32	1	0.35529	1.0348	1	0.43603	0.36	0
Amino sugar and nucleotide sugar metabolism	88	1	0.35529	1.0348	1	0.43603	0.36	0
Pyruvate metabolism	32	2	0.3971	0.92357	1	0.47652	0.32	0.24876
Taurine and hypotaurine metabolism	20	2	0.52013	0.65368	1	0.61059	0.21	0.03237
Citrate cycle (TCA cycle)	20	5	0.57655	0.5507	1	0.66242	0.18	0.17318
Glycolysis or Gluconeogenesis	31	2	0.73106	0.31326	1	0.77708	0.11	0.04202
Synthesis and degradation of ketone bodies	6	1	0.73391	0.30937	1	0.77708	0.11	0
Inositol phosphate metabolism	39	1	0.73391	0.30937	1	0.77708	0.11	0
Terpenoid backbone biosynthesis	33	1	0.73391	0.30937	1	0.77708	0.11	0
Glyoxylate and dicarboxylate metabolism	50	4	0.76612	0.26642	1	0.79558	0.10	0.02984
Fatty acid biosynthesis	49	6	0.83257	0.18324	1	0.84669	0.07	0.0218
Fatty acid elongation in mitochondria	27	2	0.84669	0.16642	1	0.84669	0.07	0.26765

Table S3. Pathway Analysis of heart tissue comparing control with cardiac arrest.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Tyrosine metabolism	76	3	0.00050009	7.6007	0.027005	0.014416	1.84	0.04724
Phenylalanine metabolism	45	4	0.00077928	7.1571	0.041302	0.014416	1.84	0.11906
Alanine, aspartate and glutamate metabolism	24	7	0.00080088	7.1298	0.041646	0.014416	1.84	0.75404
Citrate cycle (TCA cycle)	20	5	0.0011822	6.7404	0.060292	0.01596	1.80	0.17318
Butanoate metabolism	40	4	0.0016825	6.3875	0.084126	0.018171	1.74	0.10672
Nicotinate and nicotinamide metabolism	44	4	0.0022504	6.0966	0.11027	0.020254	1.69	0.0015
Glyoxylate and dicarboxylate metabolism	50	4	0.0031708	5.7538	0.1522	0.024387	1.61	0.02984
Propanoate metabolism	35	3	0.0036129	5.6233	0.1698	0.024387	1.61	0.05474
Folate biosynthesis	42	1	0.0076924	4.8675	0.35385	0.046154	1.34	0
Arginine and proline metabolism	77	8	0.016139	4.1265	0.72626	0.087151	1.06	0.41398
Riboflavin metabolism	21	2	0.031855	3.4466	1	0.15638	0.81	0
Glycine, serine and threonine metabolism	48	5	0.042672	3.1542	1	0.16665	0.78	0.42039
Lysine biosynthesis	32	4	0.044959	3.102	1	0.16665	0.78	0.15084
Histidine metabolism	44	3	0.045349	3.0934	1	0.16665	0.78	0.14039
Porphyrin and chlorophyll metabolism	104	3	0.047422	3.0487	1	0.16665	0.78	0
Aminoacyl-tRNA biosynthesis	75	18	0.049734	3.0011	1	0.16665	0.78	0.22536
Pantothenate and CoA biosynthesis	27	3	0.052463	2.9476	1	0.16665	0.78	0.00854
Fatty acid biosynthesis	49	6	0.060572	2.8039	1	0.18171	0.74	0.0218
Valine, leucine and isoleucine biosynthesis	27	4	0.070053	2.6585	1	0.1991	0.70	0.0265
Purine metabolism	92	7	0.083485	2.4831	1	0.22541	0.65	0.14975
Cysteine and methionine metabolism	56	4	0.092977	2.3754	1	0.23802	0.62	0.05003
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.1	2.3026	1	0.23802	0.62	0.008
Pyruvate metabolism	32	2	0.10138	2.2889	1	0.23802	0.62	0.24876
Glutathione metabolism	38	5	0.1102	2.2055	1	0.24795	0.61	0.02214
beta-Alanine metabolism	28	3	0.14264	1.9475	1	0.28327	0.55	0.01119
Selenoamino acid metabolism	22	1	0.14519	1.9297	1	0.28327	0.55	0
Valine, leucine and isoleucine degradation	40	3	0.14551	1.9275	1	0.28327	0.55	0.0713
D-Arginine and D-ornithine metabolism	8	2	0.14688	1.9181	1	0.28327	0.55	0
Fatty acid elongation in mitochondria	27	2	0.15625	1.8563	1	0.29094	0.54	0.26765
Fatty acid metabolism	50	3	0.16499	1.8019	1	0.29699	0.53	0.2426
Tryptophan metabolism	79	2	0.21296	1.5466	1	0.37097	0.43	0.10853

Taurine and hypotaurine metabolism	20	2	0.23192	1.4613	1	0.38209	0.42	0.03237
Cyanoamino acid metabolism	16	4	0.24901	1.3902	1	0.38209	0.42	0
Linoleic acid metabolism	15	1	0.25259	1.376	1	0.38209	0.42	0.65625
Glycolysis or Gluconeogenesis	31	2	0.27066	1.3069	1	0.38209	0.42	0.04202
Synthesis and degradation of ketone bodies	6	1	0.2709	1.306	1	0.38209	0.42	0
Inositol phosphate metabolism	39	1	0.2709	1.306	1	0.38209	0.42	0
Terpenoid backbone biosynthesis	33	1	0.2709	1.306	1	0.38209	0.42	0
Nitrogen metabolism	39	10	0.28481	1.2559	1	0.38209	0.42	0.0083
Starch and sucrose metabolism	50	1	0.30425	1.1899	1	0.38209	0.42	0.01703
Galactose metabolism	41	1	0.30425	1.1899	1	0.38209	0.42	0.00276
Pentose phosphate pathway	32	1	0.30425	1.1899	1	0.38209	0.42	0
Amino sugar and nucleotide sugar metabolism	88	1	0.30425	1.1899	1	0.38209	0.42	0
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.33483	1.0941	1	0.41093	0.39	0
Lysine degradation	47	3	0.36126	1.0182	1	0.43351	0.36	0.14675
Methane metabolism	34	3	0.40722	0.89839	1	0.47804	0.32	0.05444
D-Glutamine and D-glutamate metabolism	11	2	0.45129	0.79565	1	0.5185	0.29	0.13904
Primary bile acid biosynthesis	47	1	0.46768	0.75997	1	0.52614	0.28	0.00822
Thiamine metabolism	24	2	0.5079	0.67746	1	0.54974	0.26	0
Sphingolipid metabolism	25	1	0.5192	0.65547	1	0.54974	0.26	0
Sulfur metabolism	18	1	0.5192	0.65547	1	0.54974	0.26	0
Biotin metabolism	11	1	0.65132	0.42875	1	0.67637	0.17	0
alpha-Linolenic acid metabolism	29	1	0.79122	0.23419	1	0.80614	0.09	0.20335
Pyrimidine metabolism	60	1	0.84144	0.17264	1	0.84144	0.07	0

Table S4. Pathway Analysis of heart tissue comparing control with CPB-resuscitation.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Aminoacyl-tRNA biosynthesis	75	18	0.0004338	7.7429	0.023425	0.023425	1.63	0.22536
Citrate cycle (TCA cycle)	20	5	0.001377	6.5879	0.072981	0.028344	1.55	0.17318
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.0015747	6.4537	0.081882	0.028344	1.55	0.008
Glycine, serine and threonine metabolism	48	5	0.0022435	6.0997	0.11442	0.030287	1.52	0.42039
Phenylalanine metabolism	45	4	0.0028398	5.864	0.14199	0.03067	1.51	0.11906
Tyrosine metabolism	76	3	0.0034882	5.6584	0.17092	0.031394	1.50	0.04724
Glyoxylate and dicarboxylate metabolism	50	4	0.0044446	5.4161	0.21334	0.031475	1.50	0.02984
Arginine and proline metabolism	77	8	0.0049982	5.2987	0.23492	0.031475	1.50	0.41398
Alanine, aspartate and glutamate metabolism	24	7	0.0052458	5.2503	0.24131	0.031475	1.50	0.75404
Nicotinate and nicotinamide metabolism	44	4	0.0062718	5.0717	0.28223	0.031614	1.50	0.0015
Butanoate metabolism	40	4	0.0064399	5.0452	0.28335	0.031614	1.50	0.10672
Propanoate metabolism	35	3	0.018371	3.997	0.78994	0.082668	1.08	0.05474
Histidine metabolism	44	3	0.020399	3.8923	0.85674	0.084654	1.07	0.14039
Porphyrin and chlorophyll metabolism	104	3	0.021947	3.8191	0.89984	0.084654	1.07	0
Nitrogen metabolism	39	10	0.039178	3.2396	1	0.14104	0.85	0.0083
Lysine biosynthesis	32	4	0.063211	2.7613	1	0.20437	0.69	0.15084
Fatty acid biosynthesis	49	6	0.06548	2.726	1	0.20437	0.69	0.0218
Tryptophan metabolism	79	2	0.068124	2.6864	1	0.20437	0.69	0.10853
Pyruvate metabolism	32	2	0.075766	2.5801	1	0.21533	0.67	0.24876
Valine, leucine and isoleucine biosynthesis	27	4	0.10004	2.3022	1	0.2701	0.57	0.0265
beta-Alanine metabolism	28	3	0.13293	2.0179	1	0.34182	0.47	0.01119
Purine metabolism	92	7	0.17949	1.7176	1	0.41767	0.38	0.14975
D-Arginine and D-ornithine metabolism	8	2	0.18302	1.6982	1	0.41767	0.38	0
Pantothenate and CoA biosynthesis	27	3	0.18563	1.684	1	0.41767	0.38	0.00854
Valine, leucine and isoleucine degradation	40	3	0.2139	1.5422	1	0.43785	0.36	0.0713
Fatty acid elongation in mitochondria	27	2	0.22185	1.5057	1	0.43785	0.36	0.26765
Cyanoamino acid metabolism	16	4	0.22387	1.4967	1	0.43785	0.36	0
Sphingolipid metabolism	25	1	0.23519	1.4474	1	0.43785	0.36	0
Sulfur metabolism	18	1	0.23519	1.4474	1	0.43785	0.36	0
Primary bile acid biosynthesis	47	1	0.24567	1.4038	1	0.43785	0.36	0.00822
Cysteine and methionine metabolism	56	4	0.25136	1.3809	1	0.43785	0.36	0.05003

Linoleic acid metabolism	15	1	0.26776	1.3177	1	0.45184	0.35	0.65625
Fatty acid metabolism	50	3	0.30564	1.1853	1	0.48348	0.32	0.2426
Thiamine metabolism	24	2	0.32367	1.128	1	0.48348	0.32	0
Methane metabolism	34	3	0.33081	1.1062	1	0.48348	0.32	0.05444
D-Glutamine and D-glutamate metabolism	11	2	0.33267	1.1006	1	0.48348	0.32	0.13904
Synthesis and degradation of ketone bodies	6	1	0.34918	1.0522	1	0.48348	0.32	0
Inositol phosphate metabolism	39	1	0.34918	1.0522	1	0.48348	0.32	0
Terpenoid backbone biosynthesis	33	1	0.34918	1.0522	1	0.48348	0.32	0
Selenoamino acid metabolism	22	1	0.36554	1.0064	1	0.49085	0.31	0
Taurine and hypotaurine metabolism	20	2	0.37268	0.98703	1	0.49085	0.31	0.03237
alpha-Linolenic acid metabolism	29	1	0.38472	0.95523	1	0.49464	0.31	0.20335
Glutathione metabolism	38	5	0.40752	0.89766	1	0.51177	0.29	0.02214
Glycolysis or Gluconeogenesis	31	2	0.43042	0.84299	1	0.52825	0.28	0.04202
Lysine degradation	47	3	0.44394	0.81208	1	0.53272	0.27	0.14675
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.5504	0.59712	1	0.64612	0.19	0
Pyrimidine metabolism	60	1	0.67742	0.38947	1	0.77831	0.11	0
Riboflavin metabolism	21	2	0.77618	0.25337	1	0.8732	0.06	0
Folate biosynthesis	42	1	0.8495	0.16311	1	0.93618	0.03	0
Starch and sucrose metabolism	50	1	0.98214	0.018023	1	0.99254	0.00	0.01703
Galactose metabolism	41	1	0.98214	0.018023	1	0.99254	0.00	0.00276
Pentose phosphate pathway	32	1	0.98214	0.018023	1	0.99254	0.00	0
Amino sugar and nucleotide sugar metabolism	88	1	0.98214	0.018023	1	0.99254	0.00	0
Biotin metabolism	11	1	0.99254	0.0074851	1	0.99254	0.00	0

Table S5. Pathway Analysis of kidney tissue comparing control with cardiac arrest.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Lysine biosynthesis	32	4	0.00029101	8.1422	0.015714	0.01002	2.00	0.15084
Purine metabolism	92	7	0.00037111	7.899	0.019669	0.01002	2.00	0.14975
Nitrogen metabolism	39	10	0.0019227	6.254	0.099982	0.019234	1.72	0.0083
Phenylalanine metabolism	45	4	0.0019415	6.2443	0.099982	0.019234	1.72	0.11906
Arginine and proline metabolism	77	8	0.0029826	5.815	0.14913	0.019234	1.72	0.41398
D-Arginine and D-ornithine metabolism	8	2	0.003111	5.7728	0.15244	0.019234	1.72	0
Nicotinate and nicotinamide metabolism	44	4	0.0031628	5.7563	0.15244	0.019234	1.72	0.0015
Pyrimidine metabolism	60	1	0.0033124	5.7101	0.15568	0.019234	1.72	0
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.0042203	5.4678	0.19414	0.019234	1.72	0.008
Cysteine and methionine metabolism	56	4	0.0046097	5.3796	0.20744	0.019234	1.72	0.05003
Aminoacyl-tRNA biosynthesis	75	18	0.0049735	5.3036	0.21883	0.019234	1.72	0.22536
Glycine, serine and threonine metabolism	48	5	0.0051371	5.2713	0.22089	0.019234	1.72	0.42039
Sphingolipid metabolism	25	1	0.0051425	5.2702	0.22089	0.019234	1.72	0
Sulfur metabolism	18	1	0.0051425	5.2702	0.22089	0.019234	1.72	0
Cyanoamino acid metabolism	16	4	0.0053427	5.232	0.22089	0.019234	1.72	0
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.0062803	5.0703	0.24493	0.021196	1.67	0
Thiamine metabolism	24	2	0.0080993	4.816	0.30777	0.025727	1.59	0
Biotin metabolism	11	1	0.010296	4.576	0.38094	0.030358	1.52	0
D-Glutamine and D-glutamate metabolism	11	2	0.010825	4.5259	0.3897	0.030358	1.52	0.13904
Alanine, aspartate and glutamate metabolism	24	7	0.011244	4.488	0.39352	0.030358	1.52	0.75404
beta-Alanine metabolism	28	3	0.01639	4.1111	0.55728	0.042147	1.38	0.01119
Methane metabolism	34	3	0.018866	3.9704	0.62257	0.046307	1.33	0.05444
Lysine degradation	47	3	0.021418	3.8435	0.68537	0.049361	1.31	0.14675
Glutathione metabolism	38	5	0.021938	3.8195	0.68537	0.049361	1.31	0.02214
Primary bile acid biosynthesis	47	1	0.023866	3.7353	0.71597	0.05155	1.29	0.00822
Histidine metabolism	44	3	0.028995	3.5406	0.84086	0.060221	1.22	0.14039
Tryptophan metabolism	79	2	0.030189	3.5003	0.8453	0.060378	1.22	0.10853
Fatty acid metabolism	50	3	0.05956	2.8208	1	0.11219	0.95	0.2426
Tyrosine metabolism	76	3	0.06025	2.8093	1	0.11219	0.95	0.04724
Fatty acid elongation in mitochondria	27	2	0.063273	2.7603	1	0.11389	0.94	0.26765
Selenoamino acid metabolism	22	1	0.10571	2.2471	1	0.18413	0.73	0

Fatty acid biosynthesis	49	6	0.1154	2.1594	1	0.18756	0.73	0.0218
Porphyrin and chlorophyll metabolism	104	3	0.11554	2.1582	1	0.18756	0.73	0
Taurine and hypotaurine metabolism	20	2	0.11809	2.1363	1	0.18756	0.73	0.03237
Pyruvate metabolism	32	2	0.13353	2.0134	1	0.20602	0.69	0.24876
Pantothenate and CoA biosynthesis	27	3	0.17149	1.7632	1	0.24678	0.61	0.00854
Synthesis and degradation of ketone bodies	6	1	0.17823	1.7247	1	0.24678	0.61	0
Inositol phosphate metabolism	39	1	0.17823	1.7247	1	0.24678	0.61	0
Terpenoid backbone biosynthesis	33	1	0.17823	1.7247	1	0.24678	0.61	0
Valine, leucine and isoleucine biosynthesis	27	4	0.19042	1.6585	1	0.25256	0.60	0.0265
Valine, leucine and isoleucine degradation	40	3	0.19176	1.6515	1	0.25256	0.60	0.0713
Riboflavin metabolism	21	2	0.22997	1.4698	1	0.29567	0.53	0
Glycolysis or Gluconeogenesis	31	2	0.24447	1.4087	1	0.30701	0.51	0.04202
Citrate cycle (TCA cycle)	20	5	0.25874	1.3519	1	0.31755	0.50	0.17318
Glyoxylate and dicarboxylate metabolism	50	4	0.27644	1.2858	1	0.33173	0.48	0.02984
Butanoate metabolism	40	4	0.28503	1.2551	1	0.33461	0.48	0.10672
alpha-Linolenic acid metabolism	29	1	0.42994	0.84411	1	0.49398	0.31	0.20335
Folate biosynthesis	42	1	0.55557	0.58777	1	0.62501	0.20	0
Propanoate metabolism	35	3	0.63049	0.46126	1	0.69482	0.16	0.05474
Linoleic acid metabolism	15	1	0.6887	0.37295	1	0.74379	0.13	0.65625
Starch and sucrose metabolism	50	1	0.7912	0.2342	1	0.7912	0.10	0.01703
Galactose metabolism	41	1	0.7912	0.2342	1	0.7912	0.10	0.00276
Pentose phosphate pathway	32	1	0.7912	0.2342	1	0.7912	0.10	0
Amino sugar and nucleotide sugar metabolism	88	1	0.7912	0.2342	1	0.7912	0.10	0

Table S6. Pathway Analysis of kidney tissue comparing control with CPB-resuscitation.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Nicotinate and nicotinamide metabolism	44	4	1.24E-06	13.601	6.69E-05	2.29E-05	4.64	0.0015
Phenylalanine metabolism	45	4	1.31E-06	13.549	6.92E-05	2.29E-05	4.64	0.11906
Citrate cycle (TCA cycle)	20	5	1.37E-06	13.498	7.14E-05	2.29E-05	4.64	0.17318
Glyoxylate and dicarboxylate metabolism	50	4	1.70E-06	13.288	8.65E-05	2.29E-05	4.64	0.02984
Tyrosine metabolism	76	3	5.19E-06	12.169	0.00025937	4.57E-05	4.34	0.04724
Alanine, aspartate and glutamate metabolism	24	7	6.08E-06	12.011	0.00029773	4.57E-05	4.34	0.75404
Cysteine and methionine metabolism	56	4	6.16E-06	11.998	0.00029773	4.57E-05	4.34	0.05003
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	6.77E-06	11.903	0.00031811	4.57E-05	4.34	0
Arginine and proline metabolism	77	8	7.82E-06	11.759	0.00035981	4.69E-05	4.33	0.41398
Glycine, serine and threonine metabolism	48	5	1.26E-05	11.285	0.00056494	6.78E-05	4.17	0.42039
Thiamine metabolism	24	2	2.26E-05	10.698	0.00099433	0.00011094	3.95	0
D-Arginine and D-ornithine metabolism	8	2	3.05E-05	10.399	0.00131	0.00013709	3.86	0
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	3.81E-05	10.176	0.0015984	0.00015809	3.80	0.008
Tryptophan metabolism	79	2	7.21E-05	9.538	0.0029546	0.0002635	3.58	0.10853
Aminoacyl-tRNA biosynthesis	75	18	7.32E-05	9.5224	0.0029546	0.0002635	3.58	0.22536
Cyanoamino acid metabolism	16	4	7.89E-05	9.4474	0.0030769	0.00026627	3.57	0
Nitrogen metabolism	39	10	9.54E-05	9.2572	0.003626	0.0003031	3.52	0.0083
Lysine biosynthesis	32	4	0.00013946	8.8777	0.00516	0.00041837	3.38	0.15084
Butanoate metabolism	40	4	0.00019354	8.55	0.0069676	0.00055007	3.26	0.10672
Glutathione metabolism	38	5	0.00029348	8.1337	0.010272	0.00077617	3.11	0.02214
Pyruvate metabolism	32	2	0.00031232	8.0715	0.010619	0.00077617	3.11	0.24876
Primary bile acid biosynthesis	47	1	0.00031622	8.0591	0.010619	0.00077617	3.11	0.00822
Histidine metabolism	44	3	0.00041597	7.7849	0.013311	0.00097662	3.01	0.14039
Sphingolipid metabolism	25	1	0.001126	6.7891	0.034905	0.0024321	2.61	0
Sulfur metabolism	18	1	0.001126	6.7891	0.034905	0.0024321	2.61	0
Porphyrin and chlorophyll metabolism	104	3	0.0013803	6.5855	0.040028	0.0028158	2.55	0
beta-Alanine metabolism	28	3	0.0014079	6.5656	0.040028	0.0028158	2.55	0.01119
Methane metabolism	34	3	0.001669	6.3956	0.045062	0.0031553	2.50	0.05444
Fatty acid metabolism	50	3	0.0016945	6.3804	0.045062	0.0031553	2.50	0.2426
alpha-Linolenic acid metabolism	29	1	0.0021024	6.1647	0.052559	0.0037843	2.42	0.20335
Pantothenate and CoA biosynthesis	27	3	0.0024915	5.9949	0.059796	0.0043401	2.36	0.00854

Valine, leucine and isoleucine biosynthesis	27	4	0.0032559	5.7273	0.074887	0.0054944	2.26	0.0265
Lysine degradation	47	3	0.0056789	5.171	0.12494	0.0092927	2.03	0.14675
Fatty acid elongation in mitochondria	27	2	0.0063416	5.0606	0.13317	0.010072	2.00	0.26765
Pyrimidine metabolism	60	1	0.0070059	4.961	0.14012	0.010809	1.97	0
Purine metabolism	92	7	0.0078614	4.8458	0.14937	0.011792	1.93	0.14975
Propanoate metabolism	35	3	0.0083512	4.7853	0.15032	0.012188	1.91	0.05474
D-Glutamine and D-glutamate metabolism	11	2	0.010338	4.5719	0.17574	0.014691	1.83	0.13904
Fatty acid biosynthesis	49	6	0.019007	3.9629	0.30412	0.026318	1.58	0.0218
Folate biosynthesis	42	1	0.022427	3.7975	0.3364	0.030276	1.52	0
Biotin metabolism	11	1	0.023189	3.7641	0.3364	0.030542	1.52	0
Valine, leucine and isoleucine degradation	40	3	0.02687	3.6168	0.34931	0.034547	1.46	0.0713
Linoleic acid metabolism	15	1	0.028899	3.5439	0.34931	0.036292	1.44	0.65625
Synthesis and degradation of ketone bodies	6	1	0.041945	3.1714	0.46139	0.049239	1.31	0
Inositol phosphate metabolism	39	1	0.041945	3.1714	0.46139	0.049239	1.31	0
Terpenoid backbone biosynthesis	33	1	0.041945	3.1714	0.46139	0.049239	1.31	0
Riboflavin metabolism	21	2	0.050903	2.9778	0.46139	0.058484	1.23	0
Taurine and hypotaurine metabolism	20	2	0.053481	2.9284	0.46139	0.060166	1.22	0.03237
Glycolysis or Gluconeogenesis	31	2	0.061534	2.7882	0.46139	0.067813	1.17	0.04202
Selenoamino acid metabolism	22	1	0.52693	0.64069	1	0.56908	0.24	0
Starch and sucrose metabolism	50	1	0.59928	0.51203	1	0.59928	0.22	0.01703
Galactose metabolism	41	1	0.59928	0.51203	1	0.59928	0.22	0.00276
Pentose phosphate pathway	32	1	0.59928	0.51203	1	0.59928	0.22	0
Amino sugar and nucleotide sugar metabolism	88	1	0.59928	0.51203	1	0.59928	0.22	0

Table S7. Pathway Analysis of liver tissue comparing control with cardiac arrest.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
alpha-Linolenic acid metabolism	29	1	0.0014237	6.5545	0.076881	0.076881	1.11	0.20335
Linoleic acid metabolism	15	1	0.0033765	5.6909	0.17895	0.086157	1.06	0.65625
Fatty acid metabolism	50	3	0.0047865	5.342	0.2489	0.086157	1.06	0.2426
Fatty acid biosynthesis	49	6	0.010908	4.5183	0.55629	0.1337	0.87	0.0218
Purine metabolism	92	7	0.01238	4.3917	0.61898	0.1337	0.87	0.14975
Fatty acid elongation in mitochondria	27	2	0.019508	3.937	0.95587	0.17557	0.76	0.26765
Riboflavin metabolism	21	2	0.023461	3.7524	1	0.18098	0.74	0
Nicotinate and nicotinamide metabolism	44	4	0.035419	3.3405	1	0.20347	0.69	0.0015
Pantothenate and CoA biosynthesis	27	3	0.039067	3.2425	1	0.20347	0.69	0.00854
Glutathione metabolism	38	5	0.046815	3.0616	1	0.20347	0.69	0.02214
Tryptophan metabolism	79	2	0.05069	2.982	1	0.20347	0.69	0.10853
Synthesis and degradation of ketone bodies	6	1	0.052752	2.9421	1	0.20347	0.69	0
Inositol phosphate metabolism	39	1	0.052752	2.9421	1	0.20347	0.69	0
Terpenoid backbone biosynthesis	33	1	0.052752	2.9421	1	0.20347	0.69	0
Glycolysis or Gluconeogenesis	31	2	0.064108	2.7472	1	0.23079	0.64	0.04202
Folate biosynthesis	42	1	0.071947	2.6318	1	0.24282	0.61	0
D-Arginine and D-ornithine metabolism	8	2	0.0914	2.3925	1	0.28787	0.54	0
Valine, leucine and isoleucine degradation	40	3	0.095956	2.3439	1	0.28787	0.54	0.0713
Pyruvate metabolism	32	2	0.11632	2.1514	1	0.3306	0.48	0.24876
Propanoate metabolism	35	3	0.14731	1.9152	1	0.38008	0.42	0.05474
Valine, leucine and isoleucine biosynthesis	27	4	0.15165	1.8862	1	0.38008	0.42	0.0265
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.15485	1.8653	1	0.38008	0.42	0
Taurine and hypotaurine metabolism	20	2	0.16667	1.7917	1	0.39132	0.41	0.03237
Pyrimidine metabolism	60	1	0.20545	1.5825	1	0.43868	0.36	0
beta-Alanine metabolism	28	3	0.20738	1.5732	1	0.43868	0.36	0.01119
Lysine degradation	47	3	0.21122	1.5549	1	0.43868	0.36	0.14675
Arginine and proline metabolism	77	8	0.24481	1.4073	1	0.48962	0.31	0.41398
Methane metabolism	34	3	0.27121	1.3049	1	0.51615	0.29	0.05444
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.279	1.2765	1	0.51615	0.29	0.008
Glyoxylate and dicarboxylate metabolism	50	4	0.29044	1.2364	1	0.51615	0.29	0.02984
Nitrogen metabolism	39	10	0.30007	1.2037	1	0.51615	0.29	0.0083

Butanoate metabolism	40	4	0.31418	1.1578	1	0.51615	0.29	0.10672
Lysine biosynthesis	32	4	0.31542	1.1538	1	0.51615	0.29	0.15084
Aminoacyl-tRNA biosynthesis	75	18	0.33769	1.0856	1	0.51927	0.28	0.22536
Thiamine metabolism	24	2	0.34435	1.0661	1	0.51927	0.28	0
Citrate cycle (TCA cycle)	20	5	0.34726	1.0577	1	0.51927	0.28	0.17318
Biotin metabolism	11	1	0.3558	1.0334	1	0.51927	0.28	0
D-Glutamine and D-glutamate metabolism	11	2	0.36666	1.0033	1	0.52104	0.28	0.13904
Tyrosine metabolism	76	3	0.41191	0.88696	1	0.56457	0.25	0.04724
Cyanoamino acid metabolism	16	4	0.43582	0.83053	1	0.56457	0.25	0
Alanine, aspartate and glutamate metabolism	24	7	0.44031	0.82028	1	0.56457	0.25	0.75404
Phenylalanine metabolism	45	4	0.44315	0.81385	1	0.56457	0.25	0.11906
Selenoamino acid metabolism	22	1	0.49087	0.71159	1	0.56457	0.25	0
Starch and sucrose metabolism	50	1	0.49139	0.71052	1	0.56457	0.25	0.01703
Galactose metabolism	41	1	0.49139	0.71052	1	0.56457	0.25	0.00276
Pentose phosphate pathway	32	1	0.49139	0.71052	1	0.56457	0.25	0
Amino sugar and nucleotide sugar metabolism	88	1	0.49139	0.71052	1	0.56457	0.25	0
Primary bile acid biosynthesis	47	1	0.51602	0.6616	1	0.58053	0.24	0.00822
Glycine, serine and threonine metabolism	48	5	0.54352	0.60969	1	0.59898	0.22	0.42039
Sphingolipid metabolism	25	1	0.58147	0.54219	1	0.61568	0.21	0
Sulfur metabolism	18	1	0.58147	0.54219	1	0.61568	0.21	0
Porphyrin and chlorophyll metabolism	104	3	0.59755	0.51492	1	0.62032	0.21	0
Cysteine and methionine metabolism	56	4	0.60883	0.49621	1	0.62032	0.21	0.05003
Histidine metabolism	44	3	0.62887	0.46384	1	0.62887	0.20	0.14039

Table S8. Pathway Analysis of liver tissue comparing control with CPB-resuscitation.

Pathways	Total Compounds	Hits	Raw p	neg log p-value	Holm adjust.	FDR	neg log FDR	Impact
Fatty acid metabolism	50	3	0.01064	4.5431	0.57458	0.16246	0.79	0.2426
Synthesis and degradation of ketone bodies	6	1	0.014841	4.2104	0.78657	0.16246	0.79	0
Inositol phosphate metabolism	39	1	0.014841	4.2104	0.78657	0.16246	0.79	0
Terpenoid backbone biosynthesis	33	1	0.014841	4.2104	0.78657	0.16246	0.79	0
Glycolysis or Gluconeogenesis	31	2	0.015043	4.1968	0.78657	0.16246	0.79	0.04202
Fatty acid elongation in mitochondria	27	2	0.024819	3.6962	1	0.22337	0.65	0.26765
Tryptophan metabolism	79	2	0.029732	3.5155	1	0.22936	0.64	0.10853
Pyruvate metabolism	32	2	0.045312	3.0942	1	0.30586	0.51	0.24876
Glutathione metabolism	38	5	0.064768	2.737	1	0.36958	0.43	0.02214
Purine metabolism	92	7	0.068441	2.6818	1	0.36958	0.43	0.14975
Nicotinate and nicotinamide metabolism	44	4	0.085561	2.4585	1	0.39219	0.41	0.0015
Lysine biosynthesis	32	4	0.087153	2.4401	1	0.39219	0.41	0.15084
D-Arginine and D-ornithine metabolism	8	2	0.10233	2.2795	1	0.40591	0.39	0
Glyoxylate and dicarboxylate metabolism	50	4	0.10563	2.2478	1	0.40591	0.39	0.02984
Taurine and hypotaurine metabolism	20	2	0.11275	2.1825	1	0.40591	0.39	0.03237
Propanoate metabolism	35	3	0.12048	2.1163	1	0.40662	0.39	0.05474
Fatty acid biosynthesis	49	6	0.12968	2.0427	1	0.40754	0.39	0.0218
Butanoate metabolism	40	4	0.15285	1.8783	1	0.40754	0.39	0.10672
Citrate cycle (TCA cycle)	20	5	0.16016	1.8316	1	0.40754	0.39	0.17318
Pantothenate and CoA biosynthesis	27	3	0.16054	1.8292	1	0.40754	0.39	0.00854
Riboflavin metabolism	21	2	0.16108	1.8258	1	0.40754	0.39	0
beta-Alanine metabolism	28	3	0.16604	1.7956	1	0.40754	0.39	0.01119
Valine, leucine and isoleucine degradation	40	3	0.20352	1.592	1	0.47784	0.32	0.0713
Folate biosynthesis	42	1	0.23501	1.4481	1	0.52878	0.28	0
Lysine degradation	47	3	0.25994	1.3473	1	0.56147	0.25	0.14675
Methane metabolism	34	3	0.29328	1.2266	1	0.56257	0.25	0.05444
Valine, leucine and isoleucine biosynthesis	27	4	0.29833	1.2095	1	0.56257	0.25	0.0265
Tyrosine metabolism	76	3	0.31333	1.1605	1	0.56257	0.25	0.04724
Starch and sucrose metabolism	50	1	0.34847	1.0542	1	0.56257	0.25	0.01703
Galactose metabolism	41	1	0.34847	1.0542	1	0.56257	0.25	0.00276
Pentose phosphate pathway	32	1	0.34847	1.0542	1	0.56257	0.25	0

Amino sugar and nucleotide sugar metabolism	88	1	0.34847	1.0542	1	0.56257	0.25	0
Arginine and proline metabolism	77	8	0.3494	1.0515	1	0.56257	0.25	0.41398
Phenylalanine metabolism	45	4	0.36201	1.0161	1	0.56257	0.25	0.11906
Pyrimidine metabolism	60	1	0.36703	1.0023	1	0.56257	0.25	0
Alanine, aspartate and glutamate metabolism	24	7	0.37505	0.98071	1	0.56257	0.25	0.75404
Selenoamino acid metabolism	22	1	0.40696	0.89904	1	0.59394	0.23	0
Nitrogen metabolism	39	10	0.45861	0.77955	1	0.64116	0.19	0.0083
D-Glutamine and D-glutamate metabolism	11	2	0.46306	0.76989	1	0.64116	0.19	0.13904
Histidine metabolism	44	3	0.51073	0.67191	1	0.66771	0.18	0.14039
alpha-Linolenic acid metabolism	29	1	0.51908	0.6557	1	0.66771	0.18	0.20335
Aminoacyl-tRNA biosynthesis	75	18	0.51933	0.65521	1	0.66771	0.18	0.22536
Cysteine and methionine metabolism	56	4	0.56733	0.56681	1	0.70514	0.15	0.05003
Primary bile acid biosynthesis	47	1	0.58115	0.54275	1	0.70514	0.15	0.00822
Cyanoamino acid metabolism	16	4	0.58762	0.53167	1	0.70514	0.15	0
Thiamine metabolism	24	2	0.64893	0.43243	1	0.75685	0.12	0
Porphyrin and chlorophyll metabolism	104	3	0.6657	0.40692	1	0.75685	0.12	0
Glycine, serine and threonine metabolism	48	5	0.67276	0.39637	1	0.75685	0.12	0.42039
Linoleic acid metabolism	15	1	0.72639	0.31967	1	0.80051	0.10	0.65625
Phenylalanine, tyrosine and tryptophan biosynthesis	27	3	0.76367	0.26962	1	0.82214	0.09	0.008
Biotin metabolism	11	1	0.77646	0.25301	1	0.82214	0.09	0
Ubiquinone and other terpenoid-quinone biosynthesis	36	1	0.85527	0.15634	1	0.87066	0.06	0
Sphingolipid metabolism	25	1	0.87066	0.1385	1	0.87066	0.06	0
Sulfur metabolism	18	1	0.87066	0.1385	1	0.87066	0.06	0