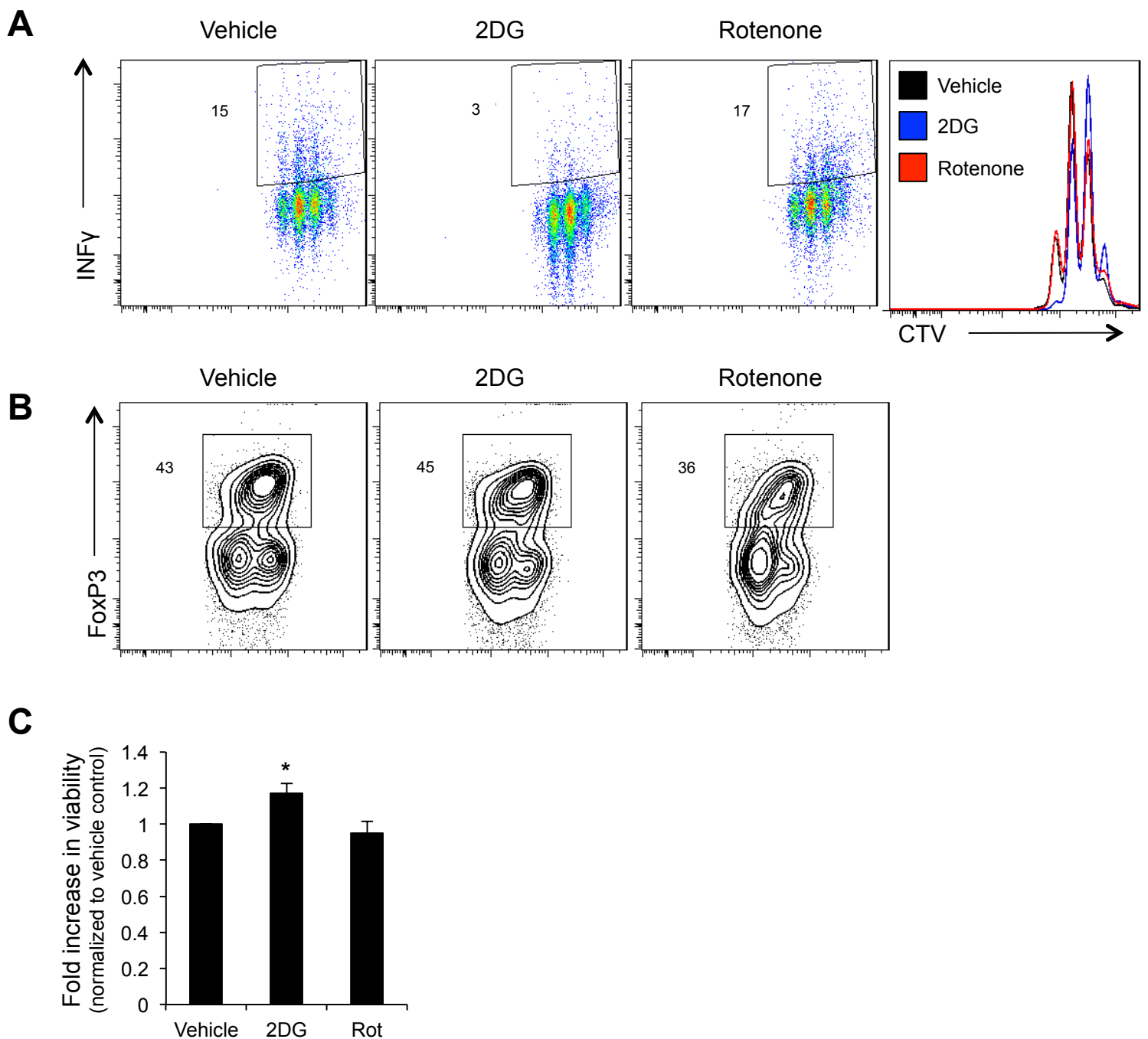


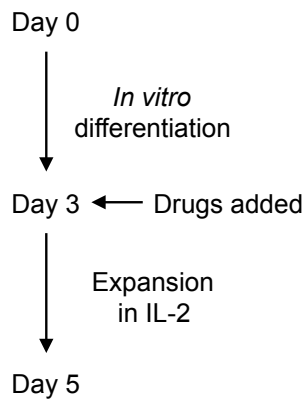
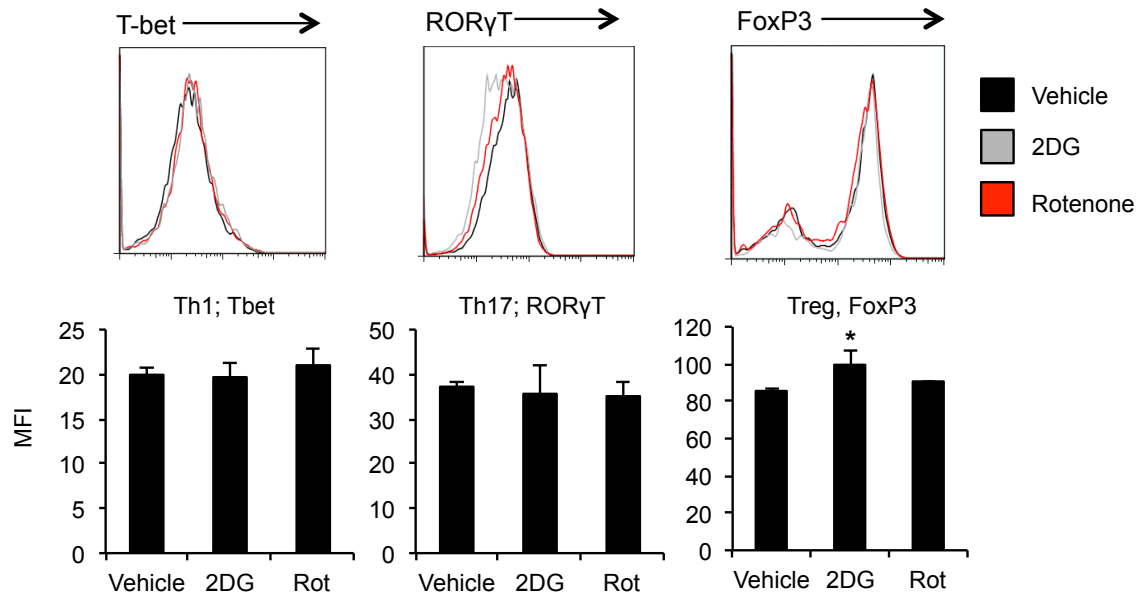
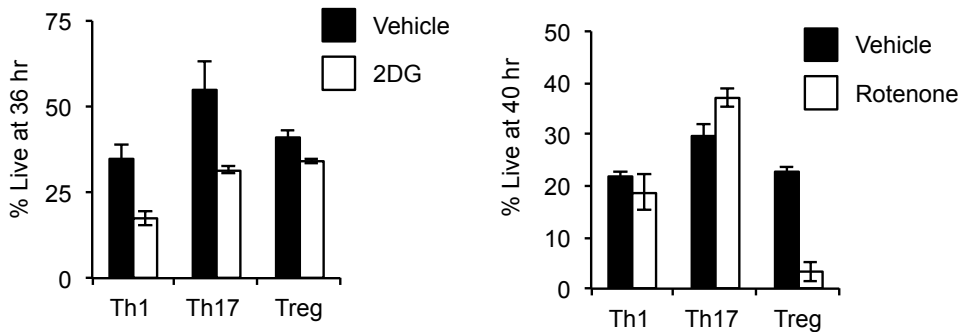
**Supplemental Figure 1. Moderate metabolic inhibition impacts Teff proliferation and function.**

(A) CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th17 cells. The rate of extracellular acidification (ECAR) and oxygen consumption (OCR) was assessed following injection of 2DG and rotenone. (B) CD4<sup>+</sup>CD25<sup>-</sup> T cells were labeled with CellTrace Violet (CTV) and polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th1, Th17 or Treg cells. Cells were treated with 250 $\mu$ M 2-deoxyglucose (2DG) or 5nM rotenone and proliferation was assessed by CTV dilution and intracellular cytokine staining for IFN $\gamma$  (Th1) or IL-17 (Th17) was performed after 72 hours. Data is shown as mean  $\pm$  SD of triplicate samples (A) and all data are representative of 3 independent experiments. \* indicates  $p < 0.05$ .



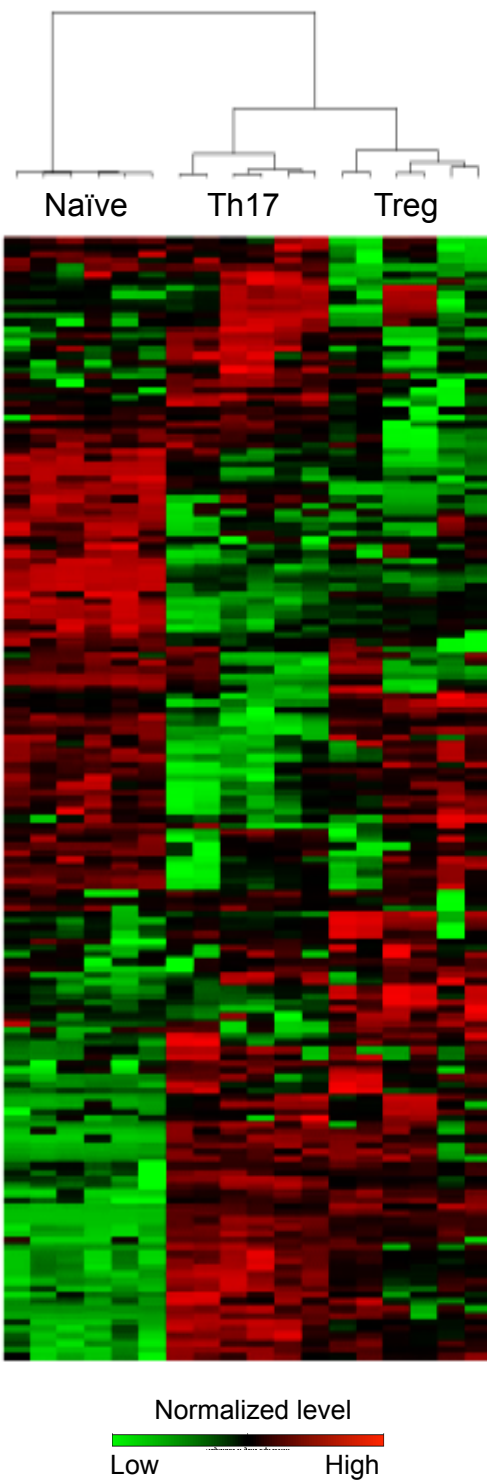
**Supplemental Figure 2. Inhibition of different metabolic pathways selectively impacts T cell cytokine production and FoxP3<sup>+</sup> natural Tregs.**

(A) CD4<sup>+</sup>CD25<sup>-</sup> T cells were labeled with CellTrace Violet (CTV) and activated in the presence of 250 $\mu$ M 2-deoxyglucose (2DG) or 5nM rotenone. Proliferation was assessed by CTV dilution and intracellular cytokine staining for IFN $\gamma$  was performed after 72 hours. (B, C) CD4<sup>+</sup>CD25<sup>+</sup> natural Treg cells were labeled with CellTrace Violet (CTV) and activated in the presence of 250 $\mu$ M 2-deoxyglucose (2DG) or 5nM rotenone. (B) Transcription factor staining for FoxP3 was performed after 72 hours and (C) cell viability was determined by propidium iodide exclusion. Data is shown as mean  $\pm$  SD of triplicate samples (C) and all data are representative of 2 independent experiments. \* indicates  $p < 0.05$ .

**A****B****C**

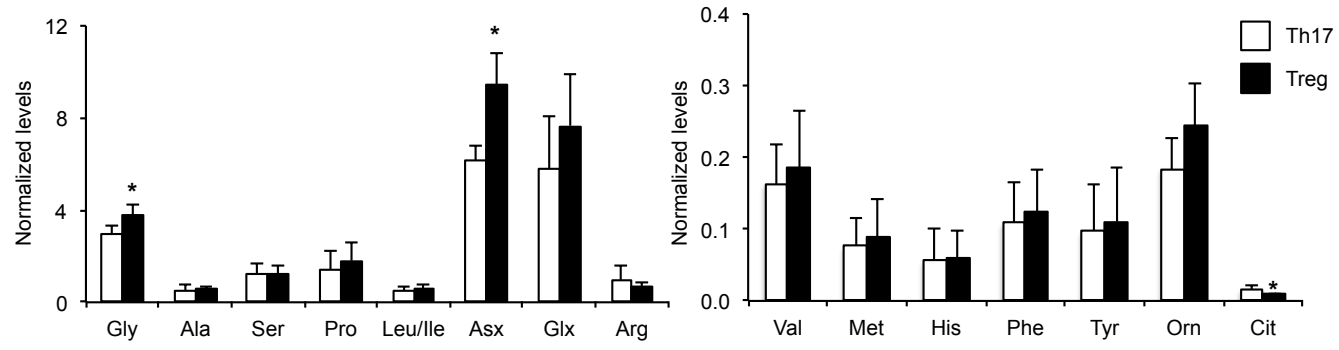
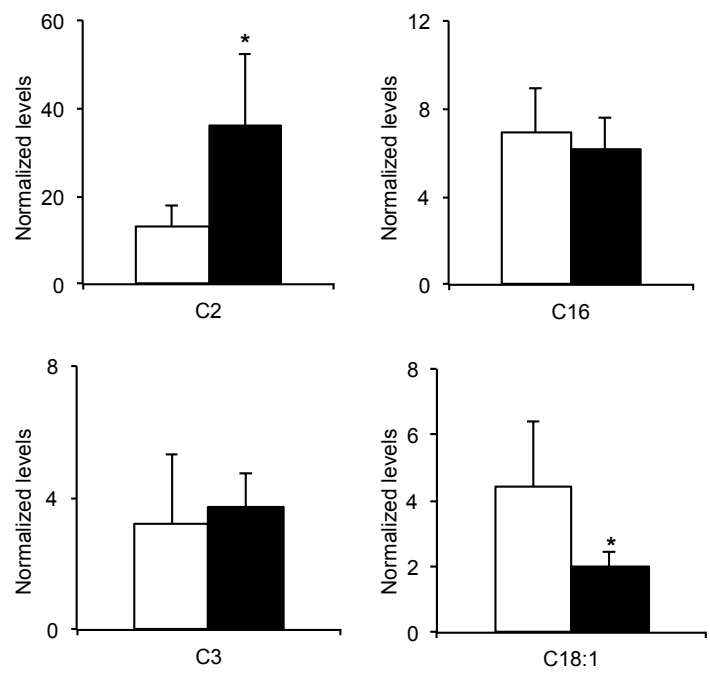
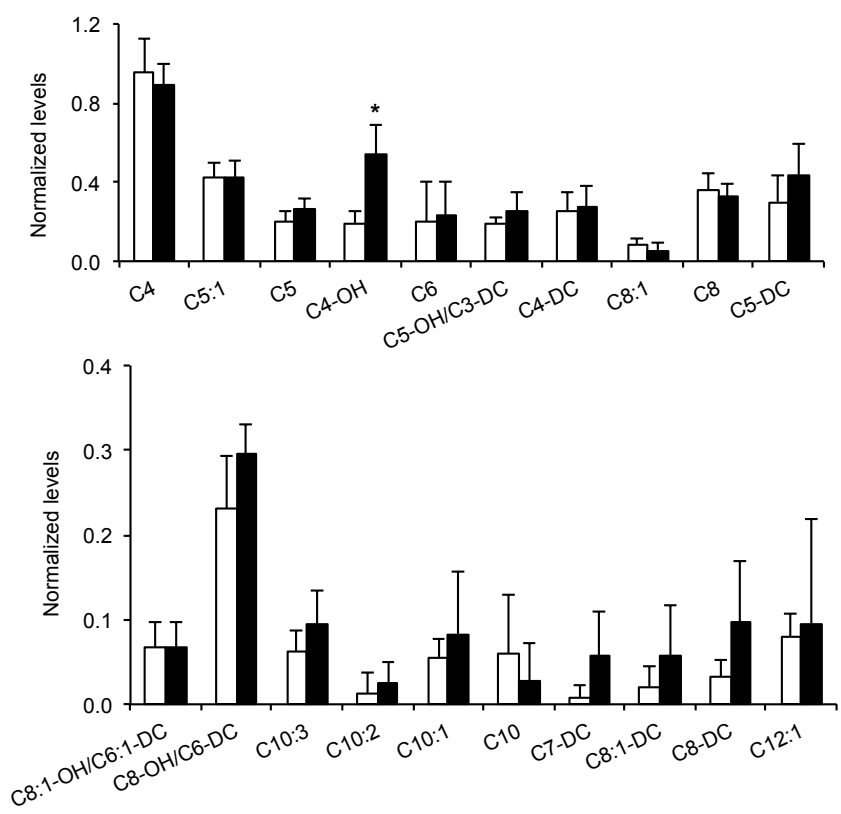
### Supplemental Figure 3. Inhibition of different metabolic pathways selectively impacts established Teff or Treg survival.

(A) Schematic of drug treatments for (B). (B) CD4<sup>+</sup>CD25<sup>-</sup> T cells polarized *in vitro* for 3 days to generate Th1, Th17 or Treg cells. Cells were then treated with 250 $\mu$ M 2-deoxyglucose (2DG) or 5nM rotenone and cultured for an additional 2 days in IL-2 alone. Transcription factor staining was determined by flow cytometry. (C) CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized *in vitro* for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days and then incubated with 250 $\mu$ M 2DG or 5nM rotenone and survival was determined by propidium iodide exclusion. Data is shown as mean  $\pm$  SD of triplicate samples and data are representative of 2 (B) or 3 (C) independent experiments. \* indicates  $p < 0.05$ .



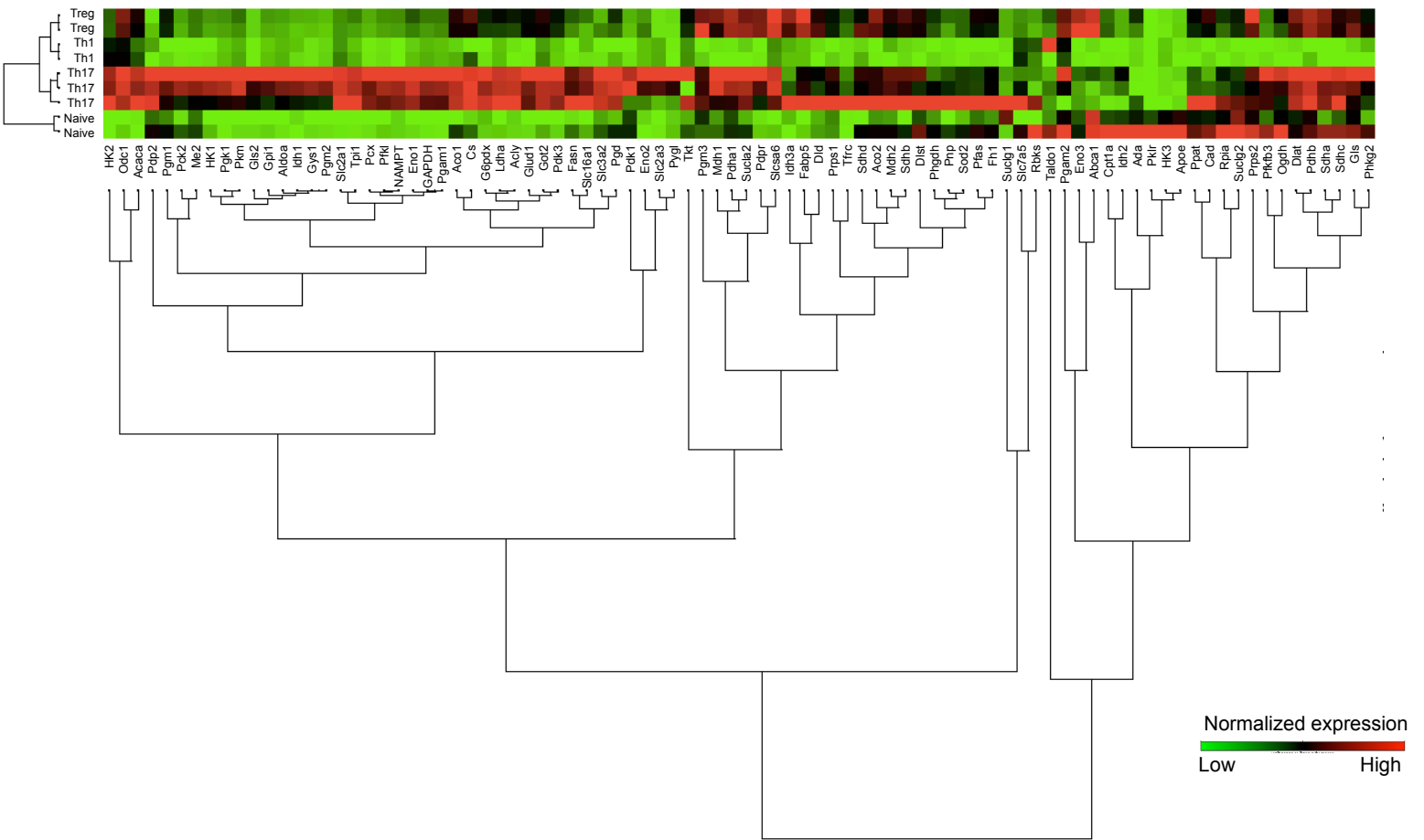
#### Supplemental Figure 4. CD4 T cell subsets have distinct metabolic profiles

CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th1, Th17 or Treg cells. T cell subset lysates from 6 replicate samples were extracted and split into equal parts for analysis on GC/MS and LC/MS/MS platforms for determination of cellular metabolites. A heat map with relative levels of each metabolite and unsupervised hierarchical clustering is shown.

**A****B****C**

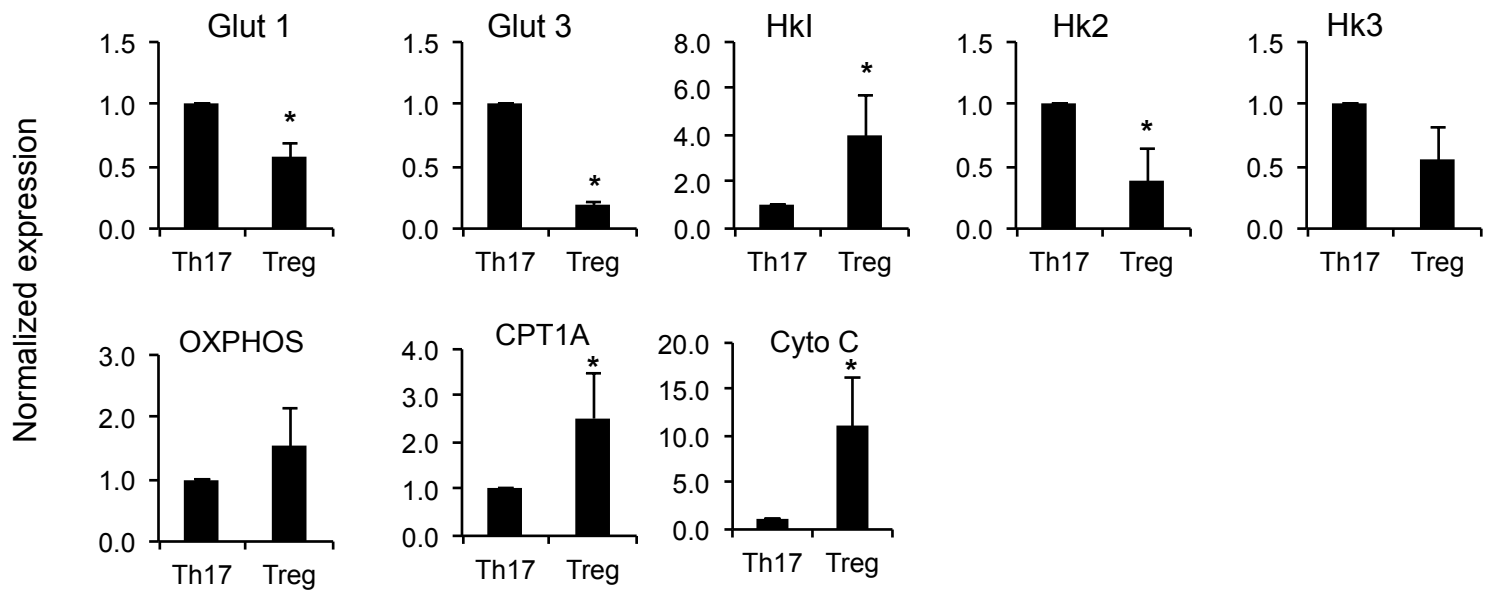
**Supplemental Figure 5. CD4 T cell subsets have different acyl-carnitine and amino acid profiles.**

CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th17 or Treg cells. T cell subset lysates were extracted and GC/MS was performed to determine relative levels of cellular metabolites. Relative levels of (A) amino acids and (B, C) acyl carnitines are shown. Data is shown as mean ± SD of triplicate samples and represents 2 independent experiments. \* indicates p < 0.05.



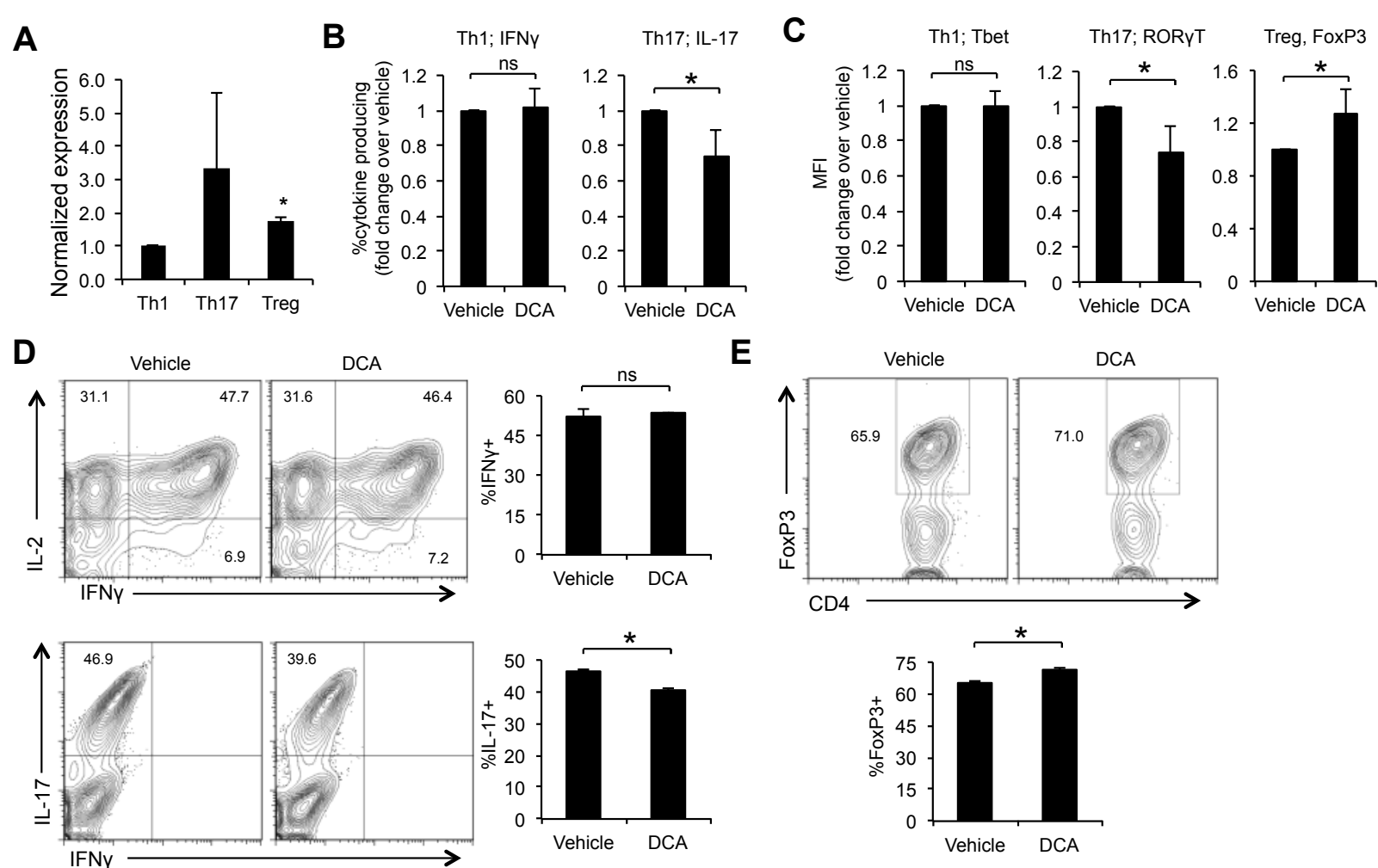
**Supplemental Figure 6. Profiling of metabolic gene expression in Th17 and Treg.**

CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th1, Th17 or Treg cells for real-time PCR using a custom PCR array. A heatmap is shown with relative levels of each metabolite using unsupervised hierarchical clustering. Data is representative of 2 independent experiments.



**Supplemental Figure 7. CD4 T cell subsets have different expression patterns of metabolic proteins.**

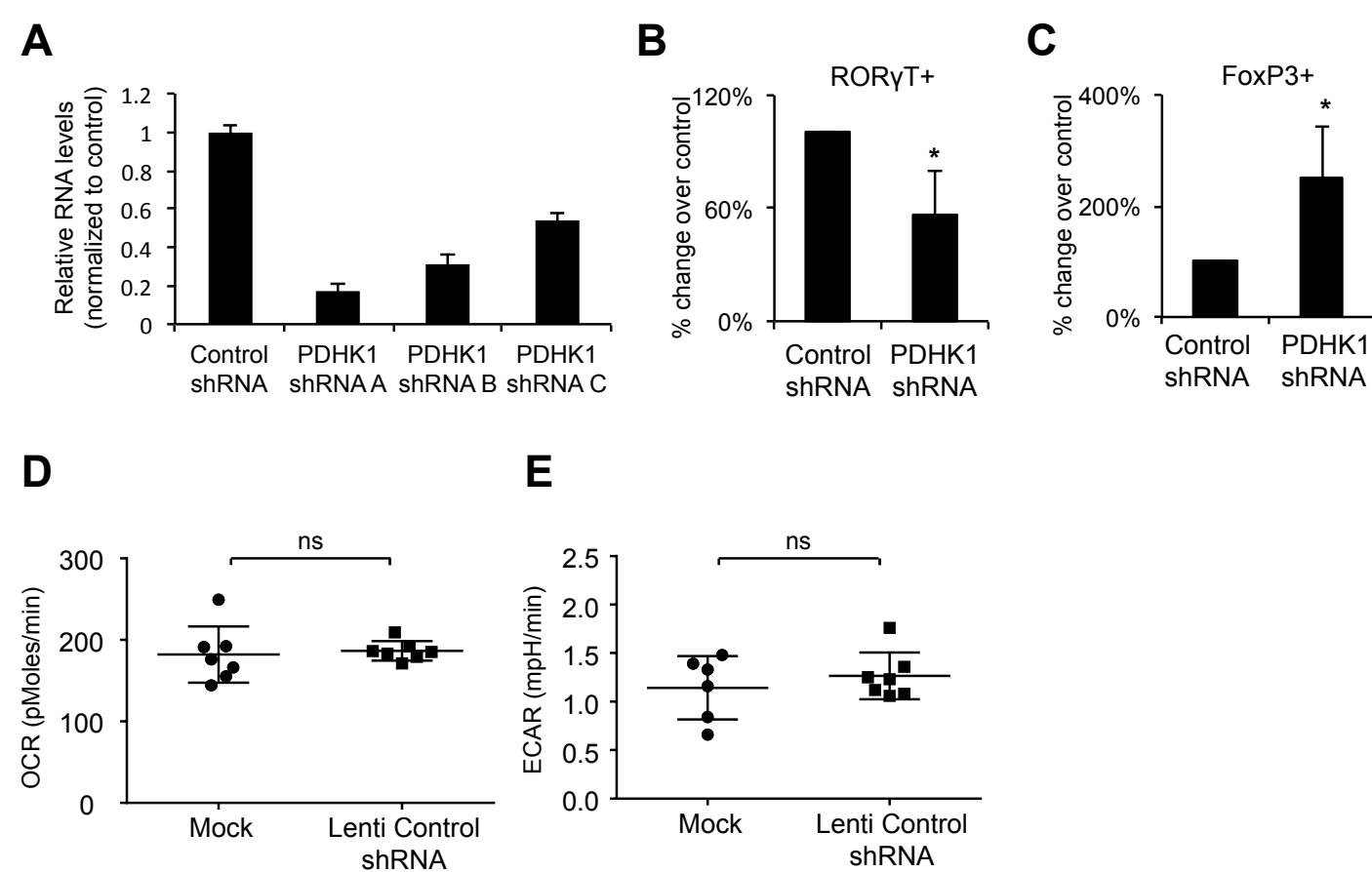
CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th17 or Treg cells for immunoblot. Data is shown as mean  $\pm$  SD of 2 (HK3), 3 (Glut1, Glut3, HK1, HK2, OxPhos), 4 (Cyto C), or 5 (CPT1a) independent experiments. \* indicates  $p < 0.05$ .



**Supplemental Figure 8. Inhibition of PDHK selectively impacts T cell differentiation.**

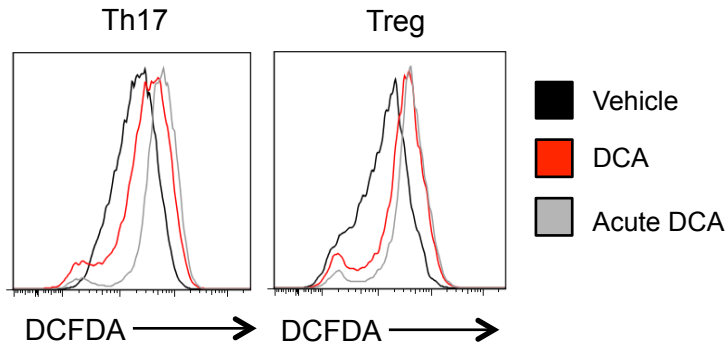
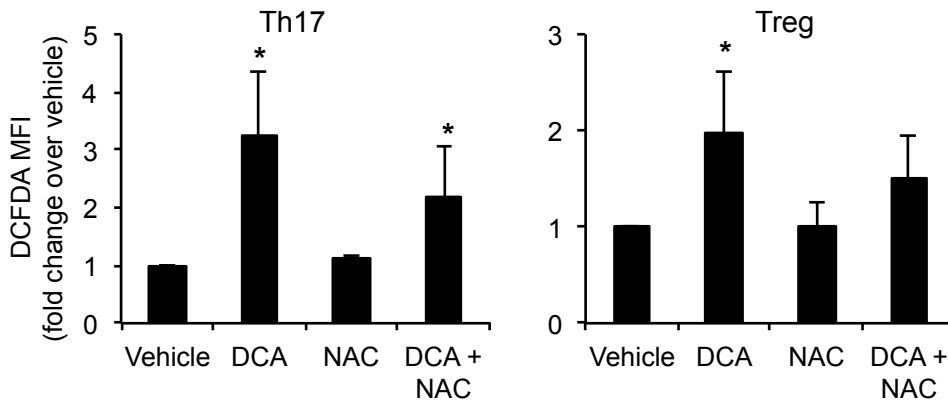
CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th1, Th17 or Treg cells for (A) quantitation of mean  $\pm$  SD of PDHK1 immunoblots from 4 independent experiments. (B, C) Cells were treated with 10mM dichloroacetate (DCA) on Day 0 and then (B) cytokine production and (C) transcription factor staining were determined by flow cytometry on Day 5. (D, E) T cells were polarized for 3 days and treated with DCA on Day 3 for 2 days in the presence of IL-2 alone. (D) Cytokine production and (E) FoxP3 expression were determined by flow cytometry. Data is shown as mean  $\pm$  SD and all data are representative of at least 2 independent experiments. \* indicates  $p < 0.05$ .





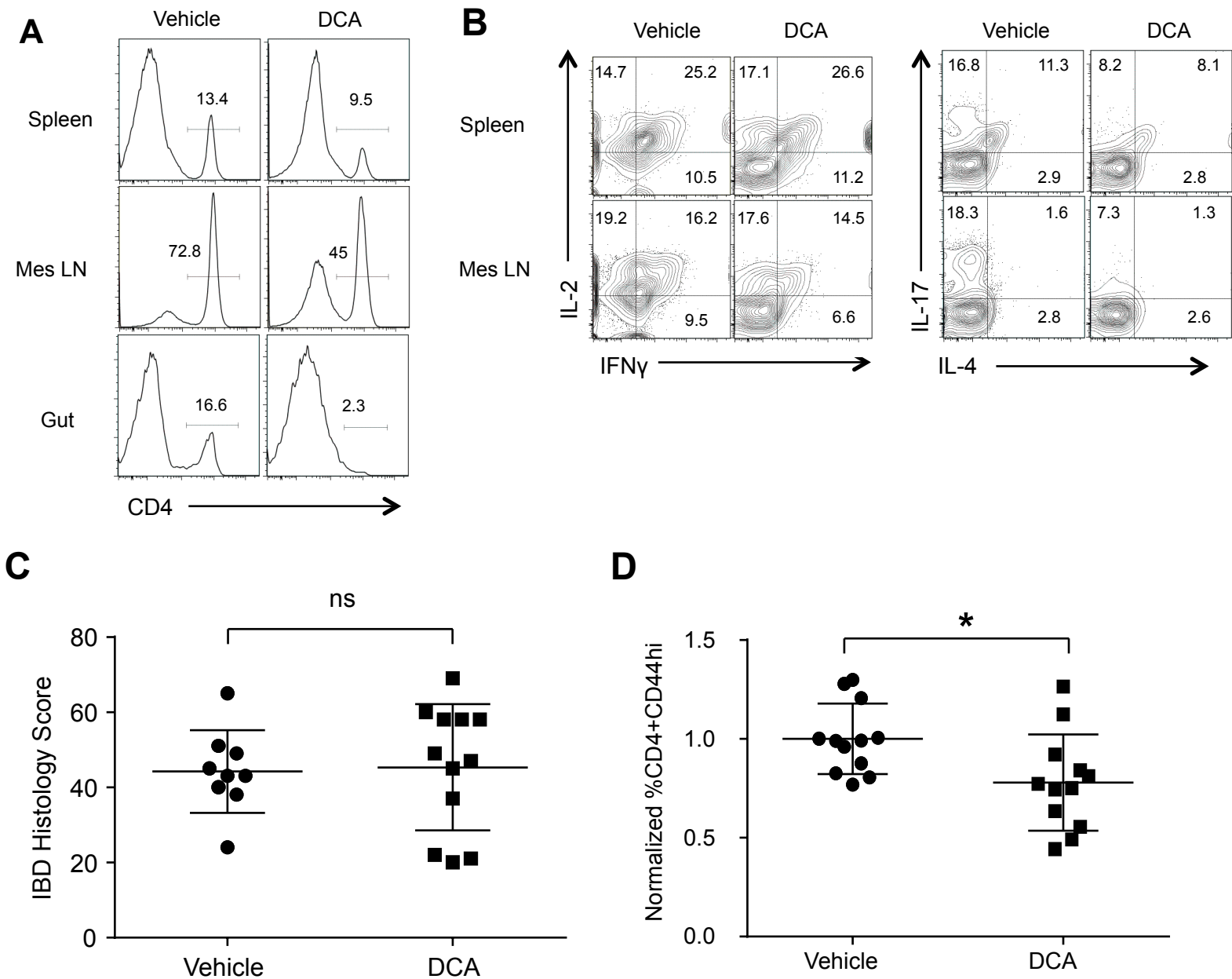
**Supplemental Figure 9. Knockdown of PDHK1 inhibits proliferation and cytokine production in Th17.**

(A) CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th1, Th17 or Treg cells for immunoblot. (B-F) CD4 T cells were activated and infected with lentiviruses expressing PDHK1 shRNA and (B) qRT-PCR for *Pdhk1* is shown. (C, D) CD4<sup>+</sup> T cells were polarized and infected with lentiviruses expressing PDHK1 shRNA 24 hours post activation. After 72 hours, transcription factor staining was assessed by flow cytometry. (E, F) Extracellular flux analyses of mock and control lentivirus-infected CD4 T cells. Data is shown as mean  $\pm$  SD and all data are representative of at least 2 independent experiments. \* indicates  $p < 0.05$ .

**A****B**

**Supplemental Figure 10. DCA promotes ROS production that can be rescued with N-acetyl cysteine addition.**

CD4<sup>+</sup>CD25<sup>-</sup> T cells were polarized in vitro for 3 days, split 1:2 and cultured with IL-2 alone for an additional 2 days to generate Th17 or Treg cells. **(A)** Cells were treated with vehicle (black) or DCA on Day 0 (red) or treated acutely with DCA for 30 minutes prior to flow cytometric analysis (gray). ROS production was measured by flow cytometry using the indicator dye DCFDA. **(B)** Th17 and Treg cells were treated with 10mM DCA, 1mM N-acetyl cysteine (N-AC) or both in combination and ROS production was measured by flow cytometry using the indicator dye DCFDA. Data is shown as mean ± SD **(B)** and all data are representative of at least 2 independent experiments. \* indicates  $p < 0.05$ .



**Supplemental Figure 11. DCA inhibits T cell cytokine production in inflammatory disease.**

RAG1<sup>-/-</sup> mice were injected with naïve effector (CD4<sup>+</sup>CD25<sup>-</sup>CD45RB<sup>hi</sup>) T cells and colitis was induced. Mice were given 2g/L of dichloroacetate (DCA, n=10) or vehicle (n=10) in the drinking water for the duration of the experiment. **(A)** The percentage of CD4 T cells in the spleen, mesenteric lymph nodes and gut or **(B)** the percentage of IL-17 or IFN $\gamma$  producing cells in the spleen and mesenteric lymph nodes was determined using flow cytometry. **(C)** Tissues were fixed and a board-certified pathologist blindly scored the severity of colonic inflammation in H&E stained sections. Histology scores are shown for vehicle and DCA-treated mice. **(D)** EAE was induced in wildtype mice with or without DCA treatment and the percentage of CD4<sup>+</sup>CD44<sup>+</sup> T cells in the draining lymph nodes on day 9 were determined using flow cytometry. Data is representative of 3 independent experiments. \* indicates p < 0.05.

Supplemental Table 1. Metabolomics of CD4 T cell subsets for Figure 4

ID	Naïve A	Naïve B	Naïve C	Th1 A	Th1 B	Th1 C	Th17 A	Th17 B	Th17 C	Treg A	Treg B	Treg C	HMDB
2-aminoacrylic acid	669128.7108	493271.3893	648664.1429	977376.181	957370.5322	918600.7274	884851.0823	777339.6404	668081.1862	633839.4351	682471.2671	651840.6853	HMDB03609
L-serine	3069254.596	2407223.607	3389725.919	4282681.539	3841893.629	3888529.466	2944176.88	2620085.923	3101792.272	2522982.447	2892657.585	2983800.397	HMDB00187
N-Methylethanolamine phosphate	61803.0262	94810.25555	96717.32645	233273.4801	291230.8802	341815.8754	442889.3851	493266.996	316365.4373	799071.1876	931761.348	855287.0614	NA
cytosine	630783.6182	370677.7603	775221.9289	1146104.772	706523.0291	678399.3297	666843.4492	503751.3745	980213.6938	416386.2088	612419.2792	503091.7555	HMDB00630
creatinine	39441340.09	31811989.53	46904309.19	67721143.1	37590370.22	37260146.36	35747377.04	31169201.25	40570005.76	30318000.83	31977089.32	32029164.85	HMDB00562
creatine	17475551.04	13365360.54	15326411.19	49737460.52	83258278.03	86284959.87	134850185.6	137098508.4	146063143.3	30329910.97	30777672.21	31615225.81	HMDB00064
Phosphodimethylethanolamine	58679.1227	75331.6661	61079.64025	242571.6503	411740.2357	517569.842	681958.6766	953394.7837	798238.3171	318533.17	361099.5221	316239.8616	HMDB060244
56-dihydrothymine	690279.6983	528462.4234	804530.8308	1704234.273	1826112.263	1764073.249	2256655.975	2168120.761	3983085.538	1145015.991	1169480.572	1329652.999	HMDB00079
2-deoxy-D-ribose	38443.42225	32855.168	44885.0112	60300.8054	66798.14445	77339.61165	34354.4004	32463.2861	41022.1094	35219.49075	34026.29735	47681.31135	HMDB03224
adenine	65463.2623	111585.7405	130081.2694	103348.2788	109680.4979	121407.1342	148133.8846	174631.3293	162603.1491	138566.6576	144295.7721	174974.8312	HMDB00034
Hypoxanthine	186384.815	1158490.073	138191.6201	135749.0904	173475.7087	150433.14	263503.2581	168632.6112	43998312.13	67604.3033	93788.4803	184690.5253	HMDB00157
2-keto-4-methylthiobutyrate	44617.41155	39424.57845	64080.03255	111783.5465	86247.623	82403.2782	59739.54475	45052.4616	74348.7947	55352.5149	79024.43575	83091.3013	HMDB01553
L-cysteinylglycine	13972.346	55448.5539	1508.98035	1632.85785	178329.4192	224222.6452	452722.6632	499273.8988	555538.7996	225110.2791	167499.9607	182645.1505	HMDB00078
choline phosphate(1-)	2287336.983	5228047.556	4460712.91	7357510.933	8017765.819	8008405.174	16102582.45	18162913.23	20081839.65	19954103.03	19917455.12	22715529.49	HMDB01565
Nicotinamide	4436802.213	3338050.346	5066688.251	7403198.362	4748095.029	4473870.526	6444650.104	5794064.27	6229055.223	4232500.204	4736108.487	4864077.022	HMDB01406
N-acetylputrescine	1045534.38	1824830.131	2601005.983	1816135.02	2145739.169	2498795.165	1693855.571	2051822.159	2641974.857	1832919.682	2417884.754	2835138.579	HMDB02064
Urocanate	548680.3424	349432.7562	872829.4574	929552.5272	575128.389	214075.4208	346544.0913	183888.6555	292064.2131	168041.9875	308725.4886	199614.4469	HMDB00301
Methylimidazoleacetic acid	158369.5358	152969.2729	193325.8313	215606.5645	182181.9307	182957.9074	147058.0804	168320.8487	263786.4588	143458.7343	153752.8809	179254.9189	HMDB02820
4-Imidazolone-5-propanoate	162325.3219	135519.6418	131650.9132	262610.7248	303088.5063	326232.9549	340569.1178	349274.404	290082.5335	219922.0335	220860.0759	216384.5681	HMDB01014
D-Alanyl-D-alanine	94441.7266	113599.3022	112621.0096	66363.79515	63388.5139	67032.00565	31862.8869	39670.89825	53284.9716	54977.48975	66558.48775	78141.5186	HMDB03459
N-acetyl-L-asparagine	87803.38795	61812.2568	82617.7111	121596.4953	78713.1021	74595.902	78526.62575	71938.4897	61571.534	62666.7765	69356.22715	70504.72865	HMDB06028
citr_L[e]	673891.3813	565241.2566	765611.1199	929713.7498	544379.9703	497891.0584	625523.6694	527752.8773	2450162.516	448384.333	495492.1841	526129.3237	NA
D-Glucosamine	218065.063	189692.136	237534.2315	395749.1983	200811.5083	144214.0482	164004.063	133199.3114	106456.1891	194842.8651	194441.4618	205103.1232	HMDB01514
benzoate	255456.3404	183965.9587	241799.0092	250275.8675	207248.8249	211090.421	186175.5966	175980.4556	199434.7597	167225.693	186115.7	197709.6806	HMDB01870
1-methylnicotinamide	13486.4438	14456.32825	12808.25245	11670.79655	10106.0683	10401.91975	10576.8131	12004.91475	13204.546	11398.2189	12583.00135	10224.11765	HMDB00699
anthranilate	451721.9077	634257.4141	487636.2038	457429.2164	677711.105	595567.5182	593268.6602	666836.442	705460.4741	630780.8906	702554.1089	522655.7848	HMDB01123
3-methylcrotonoylglycine	118886.1887	84976.60395	153873.5676	232024.2925	111437.3327	85122.3252	112839.9788	82361.78485	104069.1998	76990.91015	93645.8686	103423.4038	HMDB00459
(R)-carnitine	86556106.34	72913771.83	65336157.65	17808972.68	21940452.21	21576123.92	48869793.51	54341367.12	67879969.75	43223621.01	41442142.85	35820208.73	HMDB00062

N(2)-acetyl-L-ornithine	563095.8583	409942.2027	686652.7408	667998.6275	453699.815	404884.7435	231869.6773	217203.0454	264841.1921	343676.2694	419889.0843	455513.4962	HMDB03357
2-phenylethanamine	1031648.449	987885.7739	802637.0248	654519.4888	1727441.067	1779993.407	1808620.182	1593764.629	974408.0419	1759178.246	1822947.069	1837199.743	HMDB12275
tyramine	4964819.644	5073529.391	3508281.092	2270842.465	7355768.947	7728526.793	7154392.194	6469076.714	5449236.714	7331103.359	7857224.571	8475841.926	HMDB00306
dopaminochrome	118734.7305	104951.7405	93941.8967	158381.275	154984.2708	169216.7468	251551.4551	275659.1644	363611.1928	126883.4752	124304.8568	115356.7463	NA
Pyridoxal	80329.43405	86204.36335	67156.00515	136494.6897	152068.0202	171557.1305	240565.0721	270428.155	363516.1356	131281.4974	118257.989	116025.9934	HMDB01545
N-acetyl-D-glucosamine	101178.1852	60117.4881	118110.9012	219738.5823	237983.5753	227146.6486	237758.366	191542.3247	303086.2515	78165.11375	131966.1657	122460.4496	HMDB00215
sn-Glycero-3-phosphocholine	58105177	48159001.27	44305549.62	108249385.9	128097335.3	137662949.7	116807250.9	119641422	140367139.8	100517443.5	99178707.69	81286865.12	HMDB00086
5-amino-1-(5-phospho-D-ribose)imidazole	6057.6565	6991.7556	1000	16488.8732	9838.4257	22592.0561	19237.9781	23564.16955	7089.92425	32061.0419	23059.59175	18881.53425	HMDB01235
coumarin	124903.6732	83305.8833	121154.1039	147817.3785	100541.8722	125143.2566	93819.63585	88749.06735	91168.37665	90375.84275	79625.0429	85100.33835	HMDB01218
N6N6N6-Trimethyl-L-lysine	635730.7337	462376.7585	1023583.101	1235718.376	1110849.399	1187747.353	742258.8718	732199.0874	1251497.925	596868.8311	854721.0017	900524.265	HMDB01325
L-Alanyl-L-leucine	92333.894	67350.6805	99204.8771	170316.226	168516.3358	163055.6314	98190.1645	104523.2454	83145.9722	113257.4893	112258.5784	165506.3174	HMDB28691
O-acetylcarnitine	39582344.4	34374618.71	32210745.72	5957270.641	7163641.78	7282702.216	12461986.94	12426211.37	24530287.59	19602799.39	20290893.64	21182751.16	HMDB00201
2-deoxycytidine	73250.3702	35075.8395	95226.361	144991.8633	76639.1617	64216.18255	63635.61875	40152.80125	104606.2472	36571.5901	65368.0097	51429.11655	HMDB00014
C9H13N5O3(4)	26950642.93	22207554.11	28540058.1	33113127.65	25933442.6	23383943.09	22963415.49	19910130.61	21147046.44	22352420.98	24538522.38	25044976.06	NA
naphthalene	50170.55605	48777.3592	50815.28035	42788.6315	51164.3404	57788.04595	45214.7289	44257.3826	50445.788	49062.48415	47928.17395	48904.7531	HMDB29751
perillyl aldehyde	625449.0741	579102.4659	585793.7488	509223.5846	564657.3005	553659.7446	488929.7575	499526.8288	548060.4427	520737.8349	526030.6289	576232.55	HMDB03647
5-Hydroxyindoleacetate	31074.34245	11013.03705	38653.0481	111152.9689	110007.7126	112845.5062	33915.2138	27315.20135	47412.4371	16527.4709	32523.2793	24893.9083	HMDB00763
N-methyl-467-trihydroxy-1234-tetrahydroisoquinoline	186880.0601	161498.229	228837.1005	484054.9371	557527.2992	567207.4715	321542.1257	329301.5764	469585.1683	394219.8414	380239.379	392352.9683	HMDB60065
propionyl-carnitine	3079793.228	2099913.318	2395899.298	1297819.063	927773.321	894008.2275	1572662.941	1449594.425	2237700.466	1510323.961	1682932.355	2190703.03	HMDB00824
2-deoxyguanosine/adenosine	14369.7748	12171.34245	34014.45555	49231.52375	20570.2631	22396.1545	78271.1983	52665.8903	54818.38275	22233.90295	46219.0557	41834.25315	HMDB00050
xanthosine	19808.9045	21501.18775	19966.6656	31411.66575	23407.0782	23660.77565	30433.3403	57605.71025	61789.98755	19964.956	20314.141	18719.8451	HMDB00299
glutathionate(1-)	1212936.774	3975233.085	398455.7062	292070.9245	12120611.59	14899430.58	30298684.32	32183474.73	36615452.75	15096475.74	11592278.96	12509130.9	HMDB00125
beta-carboline	8858.81065	84547.4887	8233.5123	3622.7048	11783.61335	13667.4527	1000	3129.53775	1000	15706.63965	15274.5568	17628.60635	HMDB12897
butyryl carnitine	2496716.107	1593929.489	2326311.503	2911855.303	2107075.317	2059862.199	5037696.821	4453351.611	10541875.31	1756996.951	2069772.037	1664423.669	HMDB02013
3-Hydroxybutyrylcarnitine	593847.1152	472969.487	441246.6296	119979.7426	110317.9433	104725.8808	207374.1413	190860.6627	326761.0828	198322.318	192348.6375	179947.1825	HMDB13127
N-Ribosylnicotinamide	40088.128	34289.60385	32748.24955	32928.90165	32699.8921	30739.95615	38900.77525	34491.2954	35235.8873	38669.81755	33841.2464	30075.1659	HMDB00855
succinyl carnitine	375565.5728	306784.8905	453086.7811	477900.751	321075.6531	325383.1804	300552.018	265950.9159	322781.467	380875.5231	418091.5526	459064.9212	NA
35-dihydroxy-34-dihydro-14-benzothiazine	1000	1000	1818.10645	20775.41535	16249.7384	18045.50175	48635.31125	38115.3636	68058.99495	2397.75185	6681.20485	1727.50785	NA
5-Methylthioadenosine	228516.5659	137860.8743	307284.5659	575548.3776	212158.5119	196525.4683	487477.6945	356066.4355	530131.1732	142935.0121	154831.8746	364923.6028	HMDB01173
N-acetylneuraminic acid	321344.3495	235757.7101	365068.1792	695115.6302	509519.3487	472380.9648	737362.6129	575021.9376	652211.9877	441985.9024	510518.2854	521541.3687	HMDB00230

NeuNGc	10988.4971	6868.8748	12189.70375	38527.13885	46722.1362	46925.59555	15652.8195	16632.6929	11544.1378	88255.6127	95910.55815	53651.3795	NA
tiglyl carnitine	100482.3284	64286.7062	96644.1712	85976.47165	57167.05415	47809.75705	95308.5441	91487.65065	107566.6079	97657.85395	109727.8476	115086.586	HMDB02366
3-hydroxy-isovaleryl carnitine	174902.2349	153935.605	122175.5015	28859.21315	47921.70655	38772.30825	156675.1936	153651.4912	211151.6622	128196.6914	132353.3365	123982.0382	NA
thiamine(1+)	5644248.623	3562392.86	6568238.024	7631434.324	4551548.122	4307933.616	3976955.196	2892077.886	3266923.857	3258478.43	4057395.579	4465615.52	HMDB00235
glutaryl carnitine	550237.1148	433755.674	874410.3491	1129714.979	703394.9733	696759.8509	600854.0068	492494.1479	557095.5373	587273.1735	730377.8858	792311.047	HMDB13130
S-(2-Methylpropanoyl)-dihydroliipoamide	2101670.709	1765677.369	2530213.217	2948632.718	2321006.233	2194807.836	2230866.727	1967547.374	2163090.288	2081555.326	2240512.176	2398835.568	HMDB06868
octenoyl carnitine	47351.7806	39100.49115	47238.2988	32294.7913	20317.00385	18870.7481	21065.07715	23558.1524	25242.72165	26029.2672	27198.5663	29595.08065	NA
octanoyl carnitine/L-Octanoylcarnitine	56423.7971	41748.39795	33913.2704	20892.5259	22273.2948	21825.88235	57130.35895	51924.277	37955.863	46594.5605	48142.09995	57017.09785	HMDB00791
12S-HHT	240386.0728	216153.0302	227548.5336	156156.5209	228968.2086	217990.9262	193621.325	185218.7165	233224.5617	181671.7369	187261.1955	230912.3389	HMDB12555
decenoyl carnitine	20712.87565	18196.48975	12572.58655	4480.84295	2378.19915	2745.3451	2262.3702	4686.40575	3849.6177	6747.73365	5069.0227	7872.4823	NA
decanoyl carnitine	14654.68855	6082.4593	7322.61625	6399.1583	4112.1828	3396.11885	17301.34895	17280.4816	11594.87395	14608.89245	14693.4837	15922.7561	HMDB06210
3(S)10(R)-OH-octadeca-6-trans-412-cis-trienoate	205970.132	185025.1328	185295.0869	146653.3925	192120.903	184054.9673	176487.4088	158022.5918	206489.9254	153398.8088	155424.467	178249.4375	NA
UDP(3-)	139981.4092	121374.4645	102219.808	238585.3538	306291.6041	327629.6329	439280.0106	395562.2856	450821.618	321746.9324	323222.0498	381300.3556	HMDB00295
CMP-2-aminoethylphosphonate	5820.96255	4808.8948	2696.6979	3681.91815	1000	1399.5533	7354.81185	3224.70905	1000	70646.39685	74127.10495	100450.0138	HMDB60067
CDP-ethanolamine(1-)	537095.6681	421188.1075	352548.0496	195360.5215	244483.9561	212907.4479	215197.5979	262535.638	94122.66635	453149.8032	443656.7969	559397.8352	HMDB01564
beta-1-4-mannose-N-acetylglucosamine	12774.8886	12785.7069	8616.596	16543.6989	23065.6904	21922.35305	61022.6732	64303.9535	91390.0245	21005.41445	25604.52555	16924.71605	HMDB06535
CMP-N-trimethyl-2-aminoethylphosphonate	19725.0963	16346.52645	15690.0003	15122.38125	12291.38145	15642.3583	23936.676	19359.74505	3362.5934	80239.8743	77392.33095	107067.6494	HMDB60072
CDPcholine	346670.5033	224599.1959	203369.8006	188096.7902	151837.8877	150257.4174	188124.9985	191011.2935	21307.2802	750474.0459	725794.9547	278435.2629	HMDB01413
GSSG	853186.6392	423703.1609	504784.3696	2520133.76	3141820.674	2770194.592	3905443.717	4320667.296	2674852.903	3164390.986	3696465.435	3747916.193	HMDB03337
CMP-N-acetyl-beta-neuraminate	69310.5043	28567.8191	40545.7656	232522.5756	365059.3203	315371.1875	509119.0362	504243.1149	346937.2607	330068.9625	370991.645	371123.0495	NA
tetradecenoyl carnitine	123696.5854	110695.8208	104897.3692	93518.70525	109902.5126	110115.9106	153693.1475	171330.9019	158944.5997	141673.5208	119476.8071	161348.4378	HMDB13329
NAD(1-)	560891.2625	401430.6641	340394.8254	644475.2034	1119309.6	1132919.237	1804694.479	1730508.357	2551315.398	578682.2291	582954.2768	880136.583	HMDB00902
NADP+(3-)	126174.3379	108648.9257	78422.67835	157072.838	135126.2503	150821.089	263172.2324	234342.7514	312205.2712	246132.3175	232103.9903	198696.6958	HMDB00217
pendtadenoyl carnitine	29853.97165	24412.01355	16270.3142	36324.3774	38167.11505	46520.0427	71426.05065	90041.505	44507.378	102425.5901	92443.2903	100242.1545	NA
L-palmitoylcarnitine	529540.2466	366806.1505	298815.5804	637395.0695	768082.6682	850210.9902	2460806.699	2614238.95	1075706.883	1593915.498	1597781.133	1859196.879	HMDB00222
3-hydroxyhexadecenoylcarnitine	18938.88545	17741.63405	14608.1878	7156.5703	15261.15825	16081.963	15838.0456	21761.46925	21947.1904	15567.05875	14282.2005	17354.29045	HMDB13333
3-hydroxyhexadecanoylcarnitine	15766.0983	7957.1416	7756.8177	3937.8178	2808.3873	2725.36755	11057.60445	11284.2446	11630.6357	23500.59755	24004.30775	29093.41285	HMDB13336
heptadecanoyl carnitine	11917.70655	10617.00505	9191.48745	19304.74405	20110.41115	26930.73225	37503.29345	46765.65715	29072.85985	54276.7853	57668.9387	75708.62665	HMDB06210

stearoylcarnitine	142318.0386	115598.4058	102784.6394	94633.33035	112773.6776	119799.5354	155512.763	182339.6522	129522.9603	308089.0511	317159.1984	362427.6508	HMDB00848
25-hydroxyvitamin D3-26-23-lactone	11955.9935	12910.68005	6338.47885	5906.98885	13993.0703	12255.6432	3011.5497	8383.06665	17058.06095	4662.6761	5259.966	13039.35835	HMDB00969
24-oxo-1alpha-23-25-trihydroxyvitamin D3	1000	1000	1000	6466.76205	34082.21965	39535.23505	10282.6177	8475.536	25500.79815	1323.666	2897.9481	6471.5584	HMDB60129
bilirubin(2-)	52747.45815	43136.77855	49982.1492	6495.3052	25307.78145	21419.8224	4602.9407	4221.33725	26789.557	10683.37035	14123.04525	1000	HMDB00054
C4H9NO2(4)	486080.9656	417269.8699	436181.6745	1032408.038	1278707.663	1303846.477	2954805.286	3136613.889	5257438.504	709197.2857	690611.6919	717198.5942	NA
Ureidopropionic acid/Glycylglycine	8269864.866	5921243.926	9042857.969	11755406.67	12423909.42	12699509.6	6841170.598	5723291.658	7474719.868	6574079.167	7431288.389	8075331.903	HMDB00026
histamine	160639.8291	159788.4107	188681.9898	208762.3058	134800.6499	137250.1452	133497.5067	129533.2798	107443.4675	121541.1031	129512.2523	140869.0039	HMDB00870
1-pyrroline-2-carboxylate/1-Pyrroline-5-carboxylate	463927.2818	399012.9524	509224.4908	578119.7815	624147.217	640854.8928	496878.4602	482450.0696	751871.2106	354906.8041	410002.5988	477156.6053	HMDB01301
acetamidopropanal	38559542.78	30575067.61	41047074.62	51737413.41	70087990.65	66508301.75	64940247.36	66381151.05	126691787.3	44427576.73	47001606.16	60680666.64	HMDB12880
thymine/imidazol-4-ylacetate	211655.5127	204274.2096	243400.4405	367462.16	362271.4214	374901.443	696016.4456	666242.3606	684339.6708	401183.1631	388963.7548	374831.8838	HMDB00262
Ornithine	148218.0249	140729.4406	220879.4508	346299.808	376057.6413	430745.7339	443414.1486	418070.5569	577432.5609	269336.6144	321187.4939	351878.1979	HMDB00214
3-Ureidoisobutyrate/Glycylsarcosine	108537862.8	77718872.73	119870802.1	117630203.6	95284590.03	93590738.79	57713639.02	45413283.43	48434444.86	62616132.31	72588313.83	80474168.98	HMDB02031
4-acetamidobutanal-1	414505.2334	341905.4328	348574.5195	352052.5584	337683.1153	304365.5498	311152.8381	314917.0436	297236.7302	334196.5253	295763.4752	331181.4677	HMDB00716
L-pipecolic acid-2	2115584.515	1583130.598	2443783.854	3438842.834	2255492.15	2248321.56	1663664.955	1471361.889	1659633.636	1658755.565	1946988.154	1955598.437	HMDB00716
C6H11NO3(4)	691238.4564	605724.3414	556274.2195	852753.5658	1101764.48	1084534.413	855846.041	919747.136	982879.3924	938820.1301	871620.4048	828595.8683	NA
(R)-mevalonate	683343.3881	484950.7728	764943.4707	705282.5765	596784.9752	564682.3223	346632.3792	283956.245	288262.2747	371234.5839	443851.0994	502880.1309	HMDB59629
spermidine dialdehyde-1	435901.6166	296114.0573	348057.5614	1079899.155	279973.4013	147165.1906	168742.86	178618.0441	174657.2403	153827.0794	212555.5662	162444.9531	HMDB13076
spermidine dialdehyde-2	190782.8389	147859.7643	202645.5548	308879.5855	257304.7293	240806.7569	324889.2572	318857.5779	415997.1781	341379.814	328825.054	337539.7678	HMDB13076
acetylcholine/4-(trimethylammonio)butanoate	3522672.096	3355403.951	2506053.713	6389161.609	10025972.47	10840262.91	6718007.55	7219744.232	8254453.137	6356589.067	5855177.738	4332626.25	HMDB00895
2-methylbutrylglycine/isovalerylglycine	350924.1578	339303.4747	277739.6907	96131.1255	99045.7498	104359.8486	179316.2729	185936.9758	215968.9976	183266.305	174371.8734	177250.5699	HMDB00339
isoputrescine/putrescine	159558.3548	115025.8486	202840.5806	414050.8472	344197.1626	397979.4432	400795.4416	413628.0616	361388.2523	253356.2786	320565.2843	304928.0765	HMDB06009
Glycylproline/L-Prolylglycine	51285.42125	73417.51055	93508.6774	88790.6546	109730.6735	113014.4319	97570.4131	108626.6558	131719.8441	64762.16315	73752.41575	85433.4696	HMDB00721
N-Acetylmethionine	34437.971	14995.5336	43122.0937	101504.239	52120.5368	44589.15025	33414.64885	26049.1497	41970.0544	10452.26185	22962.5742	17301.76155	HMDB11745
leukoaminochrome/dopamine o-quinone-1	1924443.517	1319265.721	1953201.283	2193568.861	1917584.601	1824706.299	1787382.633	1381810.177	1693229.673	1361571.448	1649400.475	1644056.54	HMDB12992
leukoaminochrome/dopamine o-quinone-2	378156.9368	218507.9067	436377.5818	693922.5131	502044.2766	416095.0889	419773.8241	264514.7488	486253.7797	252132.7002	349407.6043	342847.2084	HMDB12992
Pyridoxine/Norepinephrine-1	17987191	12613562.11	18558256.83	20284534.79	17107774.38	16189505.23	16197745.06	12332876.41	14200901.93	12543025.16	15583287.99	15445382.54	HMDB00239

Glycylleucine	212289.2666	192058.8495	224446.0427	205145.2921	157355.0243	158309.4429	127554.4517	128694.6038	131288.8738	184294.9876	206666.7114	216951.6443	HMDB00759
gama-L-glutamyl-L-alanine/5-L-Glutamyl-L-alanine-1	20436.17525	3220.92105	27283.658	61958.6414	130670.4723	79139.1993	96487.9867	36388.09925	175119.5194	3456.01165	10969.1181	17293.2803	HMDB06248
gama-L-glutamyl-L-alanine/5-L-Glutamyl-L-alanine-2	332777.174	233850.2715	409772.0196	390920.1608	229215.2674	218448.0303	233470.5747	199578.2707	397610.3755	133090.6539	165561.3761	184635.5395	HMDB06248
C9H8O3(3)	667464.9324	520407.8154	663897.6786	687483.1804	604099.6116	523487.9445	488014.1466	488332.7949	573527.739	448973.2317	499420.4576	515218.1745	NA
Adrenaline/L-Normetanephrine	142401.5827	98573.6744	131881.1166	215165.8531	253521.6008	226673.9087	104735.7673	88162.9004	160209.7587	138651.3417	176029.0105	145853.8341	HMDB00068
pseudoecgonine/ecgonine	53378.13145	53775.3036	49191.65985	37251.728	33847.18005	28716.3734	41364.02015	39131.34905	40556.5387	42500.24325	37685.26005	47629.3269	HMDB06348
N(8)-acetylspermidine/N(1)-acetylspermidine	1190767.227	3300105.777	2081215.32	2360177.204	2336025.047	1473144.493	2671453.608	2034076.084	955057.8947	3208488.107	2060412.262	1088090.802	HMDB02189
limonene/(+)-alpha-pinene	343276.7045	323551.1125	313384.3317	261781.5305	311718.3291	321686.0908	277307.6398	271939.5704	310814.4357	272678.0335	274662.6541	342409.3905	HMDB03375
C10H16O(3)	352759.1855	306875.8029	315726.8971	278993.5297	313918.2582	314573.412	286736.0302	293044.2138	301761.5294	287133.9751	300668.5923	317320.8656	NA
indole-3-acetate/(5-hydroxyindol-3-yl)acetaldehyde	14567599.46	10173336.44	16055014.59	18257380.15	12537416.11	11192306.1	11927679.97	9153007.557	9566987.044	9853423.223	11572421.12	11146633.42	HMDB00197
5-hydroxytryptophol/12-dehydrosalsolinol/NN-dimethylindoliumolate-1	87352.15095	53498.8578	35320.99035	66438.28925	44563.1693	25287.56535	47930.1288	28520.4259	15414.7589	45595.1185	30112.18375	22003.68235	HMDB01855
5-hydroxytryptophol/12-dehydrosalsolinol/NN-dimethylindoliumolate-2	100105.5635	64181.40605	46445.96755	80215.05565	54531.4328	38459.8817	74884.3378	49215.54305	30042.8575	63490.33465	46652.90905	32010.8257	HMDB01855
(-)-Salsolinol/NN-dimethyldopaminequinone-1	221960.0276	166607.8092	240939.4183	383451.427	386294.3537	368659.968	332781.8367	302870.3784	507812.21	254932.2833	262693.6939	262331.6247	HMDB42012
(-)-Salsolinol/NN-dimethyldopaminequinone-2	3074966.162	2558533.73	3428266.764	6010259.815	10756549.63	10936149.93	5997460.812	5552187.643	7669706.134	6215972.269	6957706.146	6721343.27	HMDB42012
L-kynurenine/Formyl-5-hydroxykynurenamine	155073.2769	80346.34655	201361.4304	444330.7291	457709.6844	447861.7386	159258.6081	124933.0359	206139.1999	92892.3711	134352.8461	130039.5819	HMDB00684
methyl indole-3-acetate	165600.1444	112330.1889	186406.9789	228584.1544	172457.7635	169801.5496	156451.8955	132730.0789	168903.9069	117836.5117	150078.5272	145915.7241	HMDB29738
3-oxo-10(R)-hydroxy-octadeca-6E8E12Z-trienoate/3-oxo-10(S)-hydroxy-octadeca-6E8E12Z-trienoate	588121.2256	531911.5916	539442.847	373685.4663	585707.7784	610630.3989	411445.1049	385571.873	591285.6534	409791.0547	406398.4008	612417.0632	NA
C18H32O4(3)	334324.4211	442951.8972	386197.8217	268434.5331	308385.5117	245495.0626	266707.2751	304745.6378	250578.2175	280490.52	284501.1737	267141.438	NA
C20H28O2(7)	26577.22265	28592.73285	23638.43115	19266.55375	35197.34035	21092.59435	22766.59675	26015.5713	18505.44975	22745.14915	23700.9779	20647.9009	NA
ADP/dGDP/PAP	737762.88	613552.1821	582902.1346	1357889.147	1002432.262	1057329.138	2850855.537	1993290.115	961186.704	1287111.368	1361223.599	1356937	HMDB01341
ATP/dGTP	3570950.858	4725251.972	2522775.382	4657630.883	10317668.29	7131618.032	7467061.86	8663605.224	7477705.532	6142711.25	4614728.173	3766125.364	HMDB00538
tetradecanoyl carnitine(myristoyl carnitine)	101326.7501	52521.6108	52798.24925	159592.6987	210873.4816	259707.0156	979797.6905	1059614.642	580100.2827	236687.4012	236533.889	257293.0189	HMDB05066
trans-Hexadec-2-enoyl carnitine	52279.1964	43818.284	39781.8682	106385.5219	184169.5922	208928.219	689951.5522	749675.2516	377196.9176	129523.3995	131947.5944	149021.1326	HMDB06317



Linoleyl carnitine/Linoelaidyl carnitine	135353.5281	102818.463	59578.35025	31829.57695	41449.9363	46507.92685	56753.6162	69675.87505	24768.50135	67697.11575	62956.7195	66785.65305	HMDB06469
Elaidic carnitine/Vaccenyl carnitine	278116.44	228672.5183	168126.5155	538750.2732	827816.4754	918313.17	1370505.011	1535662.711	649696.5091	567268.5561	566898.7458	688814.1655	HMDB06464
C27H44O2(5)	144462.0716	103159.115	85067.5253	175142.1475	234261.1371	295017.5537	654288.9563	720119.114	371607.0078	432907.5639	429567.372	487572.164	NA
C27H44O3(5)	38801.05295	43882.4602	42012.6642	19429.07845	41476.49515	47747.1664	34631.44565	47927.4847	49192.34	37995.3242	40982.9258	38349.71615	NA
C27H42O4(3)	1979.1243	1878.11975	4237.92455	3939.1969	17765.96585	14750.23935	8152.38525	10409.58365	21956.9884	3679.4537	4666.09035	4529.99445	
imidazole-4-acetaldehyde	141465.9111	122447.1975	143917.2113	148556.0801	131023.0782	133058.2728	140303.4685	131076.4451	133033.7689	131876.2002	127953.0816	137439.9981	HMDB03905
5-guanidino-2-oxopentanoic acid	211207.1552	299837.5915	335916.721	292071.2131	256357.9593	273200.0355	224243.0985	251730.8432	274878.668	249086.098	263481.6062	295608.9204	HMDB04225
phenylacetaldehyde	16975.18885	13492.77415	16351.8321	14153.7712	17654.7251	9265.2647	13153.65305	10557.6005	7830.68125	15776.65435	15408.8991	10197.7538	HMDB06236
Chitobiose	3356.1733	1634.2888	1786.35765	3904.89255	3161.2814	7418.90585	4501.5955	1748.95815	7361.63835	6331.7155	1432.65775	2806.4361	HMDB03556
L-cysteine	10652.8297	15114.8579	14552.99515	6373.55725	14074.53085	12201.8908	12450.13295	9187.02785	10818.33765	17669.8902	17835.5098	24162.6894	HMDB00574
NN-dimethylglycine	367570.8495	320417.6544	334992.7376	390069.8324	362661.5339	322046.8443	314178.5473	276042.9231	334607.2937	302446.7981	293926.3555	311028.2999	HMDB00092
L-asparagine	8268920.156	5921061.787	9034871.96	11744524.1	12423909.42	12699509.6	6840826.039	5723291.658	7473870.873	6573853.852	7427886.138	8075059.421	HMDB00168
choline	1556855.757	1420694.497	1237633.08	1215885.239	1365429.782	1492743.626	1151436.386	1432226.361	1182574.786	1444181.171	1410338.422	1421642.747	HMDB00097
L-methionine	6373605.939	4292501.322	7362884.532	7947223.399	5576669.365	5255978.197	4530470.917	3653015.566	4193960.791	3765169.569	4800402.961	4746143.099	HMDB00696
Guanine	7125.9057	9280.63195	10454.8253	20032.7925	26809.49185	28858.05075	41744.4333	40535.3449	54319.4314	20428.13455	22279.988	12349.76165	HMDB00132
L-histidine	4226797.086	3386917.201	6292962.117	7634544.023	5766146.225	6243186.497	5060370.458	4241065.864	5907852.58	3624096.311	4738652.457	5705914.521	HMDB00177
spermidine(3+)	73473.0983	46025.6396	74259.2974	72883.77585	27862.29615	35190.1724	49573.55325	23930.6119	19157.85405	51234.0107	36191.94405	56904.15985	HMDB01257
L-phenylalanine	38996236.33	25102718.59	44340852.47	55992445.51	40104488.04	38163465.35	35684677.1	29836305.13	37525689.41	25902057.16	33431889.64	33170058.99	HMDB00159
Biotin	72074.84855	30067.1448	84684.89435	168121.1847	134606.6008	120081.4625	129154.2778	67834.17305	158201.0852	33028.5236	60802.6094	52582.6596	HMDB00030
S-Adenosyl-L-homocysteine	1458.0441	1000	1607.48805	7834.45635	7734.04375	9211.02795	31818.2183	24854.51735	18028.67365	5181.7963	3092.17925	4448.32835	HMDB00939
S-adenosyl-L-methionine	4205.47035	9819.83755	5277.1859	7564.2617	9851.7829	7966.16125	28171.0593	27787.75205	28726.89125	49879.68935	43544.83315	49390.0319	HMDB01185
Riboflavin	301353.9259	198535.4269	312539.3407	275326.0614	244867.0865	228234.3349	225637.6498	161533.6564	227521.5864	192472.841	245897.3644	243124.9681	HMDB00244
Folate	15123.6052	12797.20455	17584.4319	16858.22835	9329.87145	13051.81265	4907.13795	2389.94535	6660.4994	7156.9562	7732.42645	6734.13025	HMDB00121
Coenzyme A	1000	1000	1000	1000	1463.98395	2623.6323	3493.79435	9938.79235	32587.85985	3040.9245	1000	1000	HMDB01423
L-threonine	3833326.895	2632377.558	4568312.391	6421617.737	5955058.533	5732782.559	2849733.894	2485173.209	2616447.243	3005712.428	3653723.028	3833952.89	HMDB00167
glycine betaine	51055831.81	39637921.94	51950782.88	71463489.73	74466574.53	74509084.6	71749244.48	68361755.33	93068935.28	69359983.72	75012332.71	64931184.32	HMDB00043
L-valine	4469939.827	5009558.536	4498191.16	3648090.137	4624898.985	4552969.891	4536577.97	4941799.49	4346606.583	4397433.927	4310558.117	4849221.2	HMDB00883
L-glutamine	108424052.7	77650167.43	119760717.4	117267891.2	95218698.73	93534993.75	57682273.9	45385526.61	48415813.74	62569477.71	72542619.84	80431915.98	HMDB00641
L-tyrosine	2805391.902	2256754.092	2914111.96	3131794.263	2652117.806	2418530.843	2427694.975	2250507.14	2639115.508	2126505.293	2310974.174	2375745.919	HMDB00158
L-alanine	2318442.514	1688523.089	2254314.613	4116290.579	7041215.373	7034372.697	5907194.836	5999274.063	11828992.93	2610654.181	2807807.982	2795588.041	HMDB00161

L-proline	38559542.78	30575067.61	41047074.62	51737413.41	70087990.65	66508301.75	64940247.36	66381151.05	126691787.3	44427576.73	47001606.16	60680666.64	HMDB00162
IMP	353858.184	228351.2157	297504.9162	319385.1938	160188.0938	138971.5476	371233.6959	339110.817	161331.5746	127801.0567	161033.3643	177265.8321	HMDB00175
inosine	106289.4605	46714.1254	111581.3955	540324.0201	296924.4834	274340.7387	875491.21	548145.7985	7712274.933	116896.1976	181894.5723	130356.2622	HMDB00195
Acetyl CoA	1415.226	2254.171	1000	1000	12866.76595	8855.2672	16678.4297	36714.7142	70696.0051	9591.6572	5394.48315	11887.4207	HMDB01206
glycolate	490873.1869	494538.444	433029.5972	467915.5068	437777.4865	534260.3046	392224.5971	478076.9099	479600.791	445245.0316	531971.4651	561915.2885	HMDB00115
oxalate(2-)	1454266.811	911892.8149	1241761.756	721373.1718	664956.6103	500912.0994	415929.672	409358.9301	262157.5725	438255.0906	425400.4939	487178.5617	HMDB02329
Hypotaurine	197074.6046	100635.2476	103099.5177	389197.1148	530054.1684	492849.6966	774431.2204	793280.7056	590989.6459	356744.47	361897.5053	327517.5181	HMDB00965
Taurine	15885857.93	14199744.12	9474136.515	23211571.83	48719306.92	52143467.34	58010485.86	58800395.5	63768516.89	31508970.21	30574249.6	29377386.99	HMDB00251
C3H4O2(3)	3169596.631	2445657.78	3427527.059	3912648.326	2710598.557	2519461.913	2600902.9	2128245.832	2640249.264	2385905.843	2615676.104	2713795.249	NA
C3H6O2(4)	606840.446	503676.4863	546700.5047	634423.8814	550992.4541	493425.587	536808.1607	493483.5373	494183.236	510042.0983	513958.5466	507750.7261	NA
3-Sulfino-L-alanine	45705.554	50006.35955	24884.5047	36817.8095	37769.5344	76087.69285	29734.75245	53437.17875	34609.8984	40530.70835	29492.68575	31105.0751	HMDB00996
(S)-3-sulfonatolactate(2-)	17633.0961	17759.7745	14489.16185	17387.7399	59188.8589	53745.94375	38975.95015	43143.978	134631.0716	17281.55695	21855.6584	20923.78735	HMDB60176
Glycerol 3-phosphate	318519.8275	266153.0199	257580.0263	626462.6377	539779.0634	525728.4981	769608.0261	731768.967	1181099.893	580996.1241	592056.2214	502094.8644	HMDB00126
O-Phospho-L-serine	1000	1000	1000	3720.4128	13339.59355	13883.7764	2837.30265	5248.4218	1000	7561.83295	6085.5978	2253.34865	HMDB01721
L-2-amino-3-oxobutanoic acid	95135.66825	100186.3085	115282.7188	181091.0292	117215.1313	109250.4447	89435.93135	89871.1374	107353.5135	87073.77105	101867.6394	111275.7892	HMDB06454
3-(methylthio)propionate	165774.9392	156430.6521	152229.2801	171774.7408	158091.2789	153519.2212	151271.3235	140107.1163	138252.4581	142074.1156	157746.4644	141851.2203	HMDB01527
L-erythrulose	3096674.792	2360942.12	3275155.605	3690706.579	2482793.746	2273114.781	1980994.071	1563912.721	1800825.442	2192408.712	2516456.045	2601855.582	HMDB06293
D-aspartate(1-)	20476160.83	14889761.74	15791347.23	42105990.42	52143660.57	53923746.3	72336989.84	67947025.98	57263532.06	30178458.51	30791477.27	29688474.54	HMDB06483
(S)-malate(2-)	12511300.03	11257802.94	10246186.02	15958198.68	24005448.5	24490012.39	42885901.39	41615080.89	69107296.55	16196891.25	15707219.9	22402817.89	HMDB00156
L-threonate	11862107.28	6823337.451	13554058.27	14397454.24	12092017.2	10983528.59	12819955.44	10472567.54	18283539.01	5969601.096	7000740.428	7488726.335	HMDB00943
D-Erythrose 4-phosphate	16971.88235	13464.54285	13833.04205	35641.1459	67493.4909	67668.11715	88821.3733	100919.5312	198883.6494	29928.2902	30259.1961	41673.14795	HMDB01321
N-phosphocreatinate(2-)	111639.338	129939.8967	120757.5557	1136916.954	1089801.503	1039638.345	223998.3279	321699.6218	1111280.826	525081.3387	508273.4678	539580.9626	HMDB01511
3-methyl-2-oxobutanoate	3109945.459	2959269.42	2578070.522	2385705.401	2967556.451	3048254.1	2829061.698	3033185.329	2976792.663	3051448.355	2935096.08	3180720.972	HMDB00019
beta-hydroxy-beta-methylbutyrate	4399957.308	5080048.328	3601134.786	3391923.313	4172469.236	5251090.538	3647163.8	5111827.259	4043675.251	5268961.884	4615287.954	4686149.787	HMDB00754
C5H9NO3(5)	5193959.801	3486152.444	5380837.9	8589372.154	11642321.04	11110199.28	8427607.159	8252412.885	11970820.79	3927454.925	4604988.607	5164886.567	NA
2-oxoglutaramate	291250.8239	152776.1113	452495.1486	613902.6435	300684.2638	258178.9153	296122.9832	215314.0804	443651.2427	142452.0453	177702.4289	225734.8229	HMDB01552
2-oxoglutarate(2-)	649259.7799	430444.2144	478981.0616	815583.8748	868955.8327	809096.6966	1404530.296	1237402.96	2252216.793	988882.0252	1273678.415	954226.3595	HMDB00208
Xanthine	1528444.548	1455424.609	1576646.562	2115702.705	1659477.837	1701420.353	1629805.813	1724931.877	1550328.37	1852605.071	1534943.738	1615612.245	HMDB00292
orotate	160564.9185	192545.3578	246386.8396	239681.3757	227135.1091	227119.1053	257023.7899	258840.8597	397906.4391	178349.5472	227881.2961	227556.2168	HMDB00226
(S)-dihydroorotate	1000	1000	1000	1000	1000	1000	53799.98505	44971.66605	134798.95	1000	1000	1111.80195	HMDB03349
N-acetyl-L-cysteine	46191.8019	42157.3297	37509.42265	75308.70105	85916.9104	82489.2921	73655.4568	71922.82925	54518.2608	69043.27775	71016.72105	72378.0003	HMDB01890

79-dihydro-1H-purine-2688(3H)-trione	1953307.32	1503025.716	1954239.396	2079641.453	2174252.302	2528665.673	1044753.129	973027.533	1092762.616	1327738.874	1594026.982	1234386.72	NA
N-Carbamoyl-L-aspartate	9200.3973	6213.5054	6179.2905	24580.53685	31937.50025	26020.1596	2342315.243	2184925.116	5908081.722	16977.6404	16313.26325	4906.5052	HMDB00828
5-Phospho-beta-D-riboseylamine	1929.71105	1554.3216	7597.44735	18119.83105	8405.0437	6247.8697	14469.30415	10152.58885	10963.34005	3177.14065	3759.32205	4848.1907	HMDB01128
(R)-2-hydroxy-4-methylpentanoate	1798352.952	1345791.03	1422476.3	1406510.427	1535689.507	1482279.497	1437271.645	1339921.024	1509030.955	1371287.494	1382627.668	1470902.105	HMDB00624
4-nitrophenolate	139923.3226	135012.6945	152360.8381	141108.5978	149802.9009	152052.3993	150935.6894	147106.5215	150426.6623	148593.611	137644.0777	138238.0603	NA
2-methylglutaconic acid	2189137.374	1632280.442	2290712.263	2581505.864	1661656.816	1471576.687	1433298.195	1087395.204	1161782.637	1554029.552	1716863.722	1677559.089	HMDB02266
adipic acid	900747.1622	807786.057	748883.0611	576186.614	703885.9952	525663.998	550729.1538	614228.0106	684095.8221	621169.9277	701449.0169	678641.6136	HMDB00448
Lysine	3042769.642	1905258.309	3548916.325	4698373.499	3084568.119	2990128.363	2237019.846	1749566.072	2065950.389	1946175.025	2513351.11	2508501.842	HMDB00182
2-aminomuconate(2-)	20907.28515	19318.16805	21380.0458	43394.61775	54555.357	60609.285	25763.9511	39325.38035	22186.1399	37654.71205	36028.6508	26415.44035	HMDB01241
2-oxoadipate(2-)	164577.609	125905.8227	102209.7907	163004.07	123165.8145	99235.27845	138348.4719	106162.9063	101738.8995	148613.3123	117282.8223	105371.2643	HMDB00225
Arginine	8579423.332	5692834.607	10751444.53	12386352.02	7387487.14	7108670.789	5033366.352	4196182.329	4541271.666	5035752.668	6466941.913	7305798.368	HMDB00517
L-Fucose 1-phosphate	100076.0504	85196.5984	64162.82695	174890.2239	37037.14075	32842.68105	1067402.708	1067715.375	480833.8691	84675.24315	81415.0621	34919.04275	HMDB01265
D-Glucosamine 6-phosphate	27706.09215	16163.86245	19480.1863	23229.93195	32595.9165	31083.7549	34148.3414	27430.60585	52003.4393	16302.64855	17405.6021	14438.19095	HMDB01254
6-Phosphogluconic acid	73674.7123	58598.26125	63053.58365	171510.3694	227658.2421	230088.9057	282606.0931	279267.9291	532692.1388	164759.7937	176538.3326	314557.8364	HMDB01316
4-hydroxybenzoate/Gentisate aldehyde	2890837.298	1832124.449	2089028.411	2402204.916	2457918.762	2252831.828	2417337.238	2220351.533	2345799.309	1987601.28	2024998.026	2167633.905	HMDB00500
3-hydroxyanthranilate	42845.4131	54222.23475	54599.02475	45505.3749	57088.5705	42194.3296	50942.1569	51190.0418	50926.84075	59513.52	57616.4091	52404.79835	HMDB01476
quinolate(2-)	88790.19045	73825.82355	92025.71455	109733.2252	94134.4577	81855.737	80000.80055	63801.57615	109496.2639	71749.17975	79326.1414	75442.09815	HMDB00232
2-acetamido-5-oxopentanoate	36724.0975	29736.73455	44901.4727	59005.30375	30568.8221	34212.4815	25988.66155	23518.23685	29482.54115	20698.9886	23373.98135	28796.95795	HMDB06488
N-acetyl-L-glutamate(2-)	153464.7885	124140.3747	118295.5047	315669.9697	715600.5645	856436.7222	686839.2982	773918.5232	985501.9134	248627.9553	199310.419	243672.9472	HMDB01138
L-cystathionine	17479.24125	11161.75375	19233.84445	22115.24645	17476.1058	18203.38245	15771.9707	14057.09255	20253.67015	11044.7561	13884.63875	13127.85865	HMDB00099
Sedoheptulose 7-phosphate	84648.36935	59930.0665	32182.8682	339927.0619	626424.3165	615385.8719	616739.8552	615370.5072	1294802.973	285031.4653	302524.1326	283662.2868	METPA0585
sedoheptulose 17-bisphosphate(4-)	8918.07355	22519.09125	26922.80535	49758.2126	76607.04805	80056.2	257081.483	277195.3893	547262.6265	61630.264	69511.56175	111476.1722	HMDB06274
dopaminium(1+)	7389.0933	6626.01765	8240.9232	15692.74085	19555.7253	20137.23755	12682.6357	12614.5502	20961.33495	12755.6177	16478.54805	14739.2042	HMDB00073
suberic acid	43337.32535	40646.39695	45004.8937	37701.8474	41529.21475	37203.65865	32972.56395	39116.10255	29190.43215	38659.6001	38241.99955	40008.8073	HMDB00893
4-pyridoxate	86310.87795	62451.64055	93407.23725	109679.8422	63117.00105	76600.47935	62545.37495	48754.18775	52682.12855	59229.2171	68891.9778	60791.96685	HMDB00017
lipoamide	44264.24195	33008.1105	39149.9945	83143.62865	278666.5118	299003.9275	307920.3062	317834.1523	514415.3125	53246.3305	58535.893	48682.9908	HMDB00962
lipoate	106378.2109	102026.4163	108695.4113	181380.6955	148483.2734	141990.085	170766.0165	173679.8862	185058.3224	120569.3109	127746.9061	131915.0528	NA
fructoseglycine	7878.4014	4764.6801	10546.0035	41663.2305	31165.48305	33211.97265	25152.2212	22952.4535	50609.7289	6968.9246	10275.97275	9390.11625	HMDB060278
Sulfate derivative of norepinephrine	6080.057	5157.40245	5452.1508	10880.3375	32474.6241	37015.5022	44279.4964	40071.75715	77845.70095	17428.3719	17269.2786	29776.5597	NA

gamma-L-Glutamyl-L-cysteine	1502.23175	1244.3034	2219.29775	1000	14612.9347	17637.0402	41004.372	51103.4413	38380.08985	22475.9506	18395.80565	16660.97915	HMDB01049
N2-Formyl-N1-(5-phospho-D-ribose)glycinamide	8636.3631	3626.9169	3796.14175	15296.04835	14958.265	16061.5708	40688.99525	37939.91915	52411.2916	6783.60735	8784.4858	3780.28695	METPA0491
nonanoate	15339805.67	9213833.006	15106712.5	15660595.77	14162573.63	13614754.85	13653953.16	12834566.45	14206310.86	10822989.04	11192681.32	11640219.7	HMDB00847
(4-hydroxy-3-methoxyphenyl)acetaldehyde	36478.1795	35138.2345	30070.0984	30921.92735	33964.88995	31834.18685	38390.0134	36452.8457	42363.5221	32367.84925	33735.31995	30764.283	HMDB05175
4-hydroperoxy-2-nonenal	2627894.013	2336369.956	2378866.735	2175446.738	2469608.878	2265351.772	2520352.359	2282392.132	2347323.302	2269723.274	2143497.841	2332578.412	HMDB60287
Azelaic acid	837331.7288	1399432.326	933376.7471	397460.8238	878164.5875	780736.6397	779725.5421	1389017.854	445140.7296	1270906.477	1296082.125	1103690.976	HMDB00784
(R)-Pantothenate	3164109.54	2436692.313	3575120.117	4247027.421	5660303.028	7133762.587	9912189.985	11788599.29	11703213.29	7203614.862	6858167.04	8690807.234	HMDB00210
Deoxyuridine	8881.9908	26706.82935	9406.713	7096.70985	20828.8693	30586.9957	17341.77815	40887.2246	58513.20715	27920.89375	23932.9457	22789.9008	HMDB00012
gamma-L-glutamyl-L-alpha-aminobutyrate	9371.02045	3376.64755	7866.56695	13172.5429	18627.3769	26860.84245	1000	4482.6588	15647.6016	7082.4305	7820.4975	11883.05465	NA
Galactosylglycerol	113140.1997	113064.7016	70007.7502	36299.3906	64153.30325	83706.80765	49990.1027	85644.0663	78512.9681	51718.3284	29268.18905	15350.54775	HMDB06790
S-[2-carboxy-1-(1 H-imidazol-4-yl)ethyl]-L-cysteine	46730.679	36831.26115	62102.30765	118297.7878	150796.7584	172758.4978	117341.0912	83316.22475	107795.1181	87270.0892	97027.17345	124545.1644	NA
N-acetyl-seryl-aspartate	33889.0961	34332.8087	26235.198	68925.91535	147839.639	163296.4956	93443.04515	92203.6895	166391.4545	55690.03995	51344.6586	64211.4693	NA
3-Deoxy-D-glycero-D-galacto-2-nonulosonic acid	123246.5265	139153.456	133412.1254	246643.9527	344516.1066	380375.1124	393897.8447	366136.4791	487458.1272	166271.815	182651.3242	173451.535	HMDB00425
CMP(2-)	9546.02885	7944.062	6962.23155	47103.68845	35836.4134	37096.0255	83632.1662	44643.5442	41995.8891	28226.5961	31984.97105	22026.1713	HMDB00095
UMP/3-UMP	21819.55575	9631.36715	12169.857	74604.7721	55493.38705	56989.2365	285345.0244	154265.7332	91689.20075	59019.09155	61572.9359	58972.99585	HMDB00288
5-Amino-1-(5-Phospho-D-ribose)imidazole-4-carboxamide	77290.67225	50089.86505	80006.49025	77597.1058	31580.2575	27288.08295	15822.41655	13677.88535	4101.773	39868.4176	45954.78835	48341.3314	HMDB01439
2-keto-3-deoxy-D-glycero-D-galactonic acid 9-phosphate	539620.5821	334309.5887	444376.0644	581980.6921	347585.7401	315930.2462	707280.7779	587832.7082	431627.0253	224158.663	271922.0256	302183.5261	NA
Perillic acid	170353.9345	158768.1978	145399.4391	112948.0251	147500.7605	147175.9572	125556.4184	124052.354	135494.365	132960.4252	117995.6001	137370.6098	HMDB04586
trans-45-epoxy-2(E)-decenal	65694.344	54844.29095	61650.0884	51949.24175	68585.01905	66705.0224	49877.3896	44929.0941	56541.5731	57531.71365	51219.507	58614.90825	NA
caprate	6341796.03	3918361.065	6160167.701	6258326.689	6086253.461	5927092.169	5803517.395	5486385.618	6012406.701	4665575.64	4790900.044	5034851.355	HMDB00511
w-hydroxydecanoic acid	459575.1814	364894.39	311599.3627	313729.036	431373.1579	421591.9946	400208.2976	383967.2535	440204.4312	371535.0301	331556.3346	382502.0587	HMDB02203
kynurenate	10106.13495	7487.02775	10196.7848	13692.3451	12492.14925	15419.26675	8735.58455	9883.63905	9152.65565	10444.3871	12825.26295	11737.97855	HMDB00715
o-methylhippurate	50581.41135	35202.0853	50175.1679	65625.7139	52055.0908	66840.3898	49563.21105	38564.1542	52281.80695	39526.6924	51570.20345	42617.74465	NA
sebacic acid	51094.32235	62871.99405	55539.75865	35446.08275	48501.1213	52276.7386	47247.69395	55705.9726	45405.0098	57525.30655	55473.25275	54678.8283	HMDB00792
Thymidine	21718.7381	16574.5016	22710.73255	19389.75255	24770.39775	23117.5294	29310.07475	33566.92785	30935.53845	26541.1668	21412.50165	21163.9948	HMDB00273
N(omega)-(L-Arginino)succinate	33114.33445	25292.5138	25053.22015	65677.54835	128020.0963	111947.9613	117633.4648	130607.3838	203503.2085	26059.7357	30259.6139	56214.8847	HMDB00052
L-tryptophan	4413940.871	2728157.278	5193281.527	6707537.544	5165370.062	5045542.167	4906216.226	4069877.879	5410452.186	3360794.576	4025384.1	3981789.616	HMDB00929
5-Methoxyindoleacetate	56509.5788	47908.88735	60116.0973	74561.4294	62716.08765	61772.7469	53872.84345	48235.22405	56572.37505	48472.95845	63508.8101	65728.6511	HMDB04096

salsolinol 1-carboxylate	22065.74735	19557.17255	30714.05075	43946.29685	38194.5322	44479.3507	38493.4444	40271.3632	43187.3061	33077.23025	35435.096	34582.0298	HMDB13068
laurate	9682125.519	10032378.06	10055385.8	7839614.053	8128440.348	7474683.526	7836943.007	8363855.096	7604211.569	7014895.793	6848710.829	7198405.588	HMDB00638
omega hydroxy dodecanoate (n-C12:0)	217635.4996	185170.7431	162473.8399	137577.6065	189298.4481	191226.6626	159809.9493	160578.3629	179578.6087	170121.9575	156056.9365	173974.8082	NA
Dodecanedioic acid	326579.787	310844.4996	301324.9761	262362.6327	322294.8766	310026.149	292510.6909	304352.391	354087.4175	298941.6831	275246.02	299315.9475	HMDB00623
fructosyllisine	47076.59795	9748.04335	64630.4303	213840.7075	16049.3593	9444.06905	12763.59025	4654.2032	6055.61555	11377.002	10139.0551	5910.3526	NA
tetradecenoate (n-C14:1)	329100.4624	265441.2502	307604.7749	259603.7841	300689.0986	299051.3394	313746.6594	310024.8239	317102.471	252619.7658	255634.0175	283177.5711	NA
myristate	11885766.61	11730799.28	9777641.929	8510809.487	9660791.238	9621492.264	9328322.035	10210863.59	10379838.88	8999310.694	8800016.371	10842749.89	HMDB00806
6(S)-hydroxy-tetradeca-2E4E8Z-trienoate/6(R)-hydroxy-tetradeca-2E4E8Z-trienoate	488741.9706	439023.9995	405761.6432	311835.6248	399419.0279	419922.6374	349279.8032	374003.6017	362096.3309	377199.4535	353628.7894	405958.128	NA
omega hydroxy tetradecanoate (n-C14:0)	99402.4555	98010.98765	80312.4131	55658.66875	90993.418	90523.74265	78088.84885	74718.89945	94879.9833	78800.61715	72522.3207	99822.59205	NA
3(S)6(R)-dihydroxy-tetradec-8Z-enoate/3(S)6(S)-dihydroxy-tetradec-8Z-enoate	698624.5641	515149.8804	688132.1454	983815.3344	974018.7586	984685.8463	743873.0709	638449.4682	812830.0032	771720.8983	760161.7625	592173.8358	NA
pentadecanoate	2643174.09	2172565.971	2401545.855	2249670.673	2422887.238	2438686.341	2335568.151	2433653.235	2729005.374	2287814.458	2180146.837	2515939.949	HMDB00826
palmitoleate	707922.807	871732.2643	712599.1092	917974.4481	692866.948	619382.7755	889026.3457	968582.4781	887743.6527	533183.2012	555567.8534	557814.8191	HMDB03229
palmitate	61482397.28	67036783.29	48607815.73	47236004.93	55973056.07	58831357.65	76048577.16	80000930.97	81707970.97	68042330.06	62072245.19	68050587.65	HMDB00220
omega hydroxy hexadecanoate (n-C16:0)	1148840.326	1061682.211	950000.8166	736770.5611	1098198.784	1125348.037	937225.3862	942974.4198	1113883.472	933761.415	833619.365	1068914.22	HMDB06294
11'-Carboxy-alpha-chromanol	857527.6429	753815.1123	728726.9484	428317.2127	692878.0428	672546.1253	435108.4887	435422.6859	578744.4515	507003.2072	505866.5938	728834.1811	HMDB12515
Hexadecanedioic acid	324884.1752	306277.7118	290193.5786	216555.2752	292498.2495	293054.7925	271610.2562	258622.4127	288453.6564	266812.1446	245270.0207	295898.437	HMDB00672
margarate	408993.0419	394577.2737	373528.7805	358228.4729	356858.9889	337751.2853	357457.3069	376241.4406	348422.5185	380167.0322	338304.5444	356728.6491	HMDB02259
stearate	3011910.545	4382869.212	2739198.898	3217624.187	4247480.342	4764606.491	4780425.675	5399426.194	4378331.478	5549348.441	4616527.256	4593284.32	HMDB00827
12,13-epoxy-9-hydroperoxy-10E-octadecenoate	41065.7074	40989.06315	42272.7313	24186.70475	29135.4239	31050.8793	21063.6211	19660.1975	22826.23315	32439.8831	29501.47025	44056.7672	NA
8,11,14-Eicosatrienoic acid (DGLA)	53527.07125	48468.87225	68926.97695	103803.6884	51044.6825	49386.2119	31519.69155	24799.7457	22233.1673	41950.27395	49446.66445	54648.95855	HMDB02925
Eicosenoic acid	40151.96845	53658.892	44830.2564	65760.6219	69483.39585	67963.50925	41034.2935	47797.8776	37644.0385	23096.0371	23382.49035	27380.92125	HMDB02231
CTP(4-)	186915.9992	229743.7415	164161.2028	474150.5228	1349998.048	995467.6338	877767.8484	942345.9868	1413781.2	523482.8772	439683.0391	397434.9439	HMDB00082
UTP(4-)	894259.7711	1043126.641	597615.2665	1734325.935	4380498.695	3068045.083	3067397.515	3552809.56	4830860.286	1785043.031	1454838.203	1462250.382	HMDB00285
(R)-S-lactoylglutathionate(1-)	288419.2294	274225.9659	110022.4329	104300.0138	386740.7868	419510.0949	1076289.945	1132215.825	1650965.936	323508.0389	256301.7427	309694.6593	HMDB01066
UDP-alpha-D-xylose(2-)	9941.7427	6765.7792	6114.41695	24963.63965	38521.5048	45329.8255	48451.8405	46171.3866	75397.06285	28050.0714	32106.5181	29487.6216	HMDB01018
UDP-D-glucuronate	19857.4412	19217.9132	12583.82315	29929.17385	54027.7793	58498.93285	91087.6462	83606.59135	301878.917	37971.97195	35757.03955	36787.77065	HMDB00935
GDP-D-mannose	26216.3864	33795.83345	17133.36855	59897.9247	60522.54125	70755.4453	108260.6678	100348.7532	100132.6095	79955.8756	65513.19915	39395.6232	HMDB01163

NADH(2-)	19571.4114	7611.4946	12901.55435	39868.14045	51544.415	56258.45095	157981.37	140027.436	277901.5573	21127.3412	14341.91995	23555.5091	HMDB01487
docosanedioicacid	7940.39365	13655.6784	6318.33435	5186.9806	10858.47745	6593.7211	5649.2772	8980.8185	6698.2874	7088.4214	9758.4837	9091.6482	NA
glycochenodeoxycholate	42153.07335	19883.84875	45789.23935	74597.2281	44453.80125	37176.37375	37006.7309	22105.6955	34757.4153	23912.1834	33055.0045	45019.73235	HMDB00637
tauroolithocholate	27237.1345	19671.6952	28123.37805	37326.5794	27231.9432	22970.9481	19494.2945	16763.72195	13936.7929	21249.41425	21360.44675	22545.7731	HMDB00722
taurocholic acid	30645.54685	21778.29715	29372.46715	33580.09705	25459.6811	19250.4488	19434.2817	14236.0602	15976.98385	13576.494	19954.55905	25936.65475	HMDB00036
cholesterol sulfate	29570.0738	73336.50545	17082.87805	1671.7653	11830.4648	13156.8955	5424.32295	16384.21885	12887.7029	18051.759	5153.41575	13248.1948	HMDB00653
3-oxopropanoate	1139154.707	899265.5424	1158842.484	1320629.31	984697.2085	928066.1285	1308211.327	1159105.04	1304708.948	906505.4829	995810.4489	971976.4379	HMDB11111
3-hydroxypropionate/D-glyceraldehyde/glycerone	7772610.903	6028589.319	8425536.884	9606018.88	6593527.956	6082640.604	6527567.904	5437254.695	6544632.216	5795482.344	6631125.323	6786208.708	HMDB00700
Malonate/3-hydroxypyruvate	115759.5898	84463.46205	128534.7638	60468.06685	54386.45725	44145.51615	50673.0436	57103.99935	46004.95625	59317.2797	48550.55995	54813.5047	HMDB00691
D-glycerate	493281.394	354301.7529	656358.0985	760578.3416	514921.3949	415950.7501	483802.1212	331444.0703	401008.0111	367452.3787	420146.9576	492035.7558	HMDB00139
D-Glycerate 3-phosphate/D-Glycerate 2-phosphate	388643.9531	485184.4723	527680.9548	717668.1092	1028931.883	1087934.133	974402.734	2160113.774	1019406.641	923666.1163	1025659.631	1090007.77	HMDB00807
1,3-diphosphoglycerate /2,3-diphosphoglycerate /(1,3BPG or2,3BPG)	79086.9809	103011.6307	97241.0654	38150.8816	28159.86615	24295.4528	20424.75955	30780.0309	26315.5277	92299.59535	82287.7019	58549.48895	HMDB01270
C4H6O3(3)	5018656.139	3768380.829	4314577.079	5532999.074	3694668.301	3109902.127	3688594.185	2784468.724	2624628.327	3831135.164	3643191.522	3241281.625	
C4H8O3(3)	1717310.701	2383814.895	1207278.008	1501805.724	1436015.834	3414251.568	961802.2964	2079065.458	1089985.717	2598903.86	1762416.136	1882173.087	
5,6-dihydrouracil/L-3-Cyanoalanine	788810.6469	535570.5954	751862.2051	984769.5089	1128654.766	1124857.976	592231.9288	504841.7749	643551.5132	570342.2935	604454.1747	643882.2513	HMDB00076
Methylmalonate	7283043.537	3160919.76	7009363.483	8275173.493	5646668.332	2794596.389	11199887.44	4572810.049	13023945	2834673.266	3171707.738	3429917.353	HMDB00202
5-oxoproline/L-1-Pyrroline-3-hydroxy-5-carboxylate	140326555.2	45371995.71	151410949	315903937	195039427.6	144119704.4	196043087.4	99561532.89	181021836.9	95656899.28	154711454.5	184561213	HMDB00267
itaconate/Mesaconate	592442.1638	533515.3447	510301.2611	699810.7325	818253.6607	777027.7918	1387482.733	1505780.742	2493801.271	743343.0144	710666.6095	643591.6377	HMDB02092
L-4-hydroxyglutamate semialdehyde	12160764.33	8724827.85	11122351.65	25795266.01	26093321.86	28890792.17	59408387.55	51254461.39	84464872.51	15927708.88	17265908.43	19176794.35	HMDB06556
C5H10O5(6)	734562.6674	532024.7526	835585.3529	969709.3267	698603.1098	647414.5759	578087.9508	452443.6156	588893.825	564426.5845	640488.8174	683935.4922	NA
L-arabinitol/xylitol/D-ribitol	533988.9659	408129.3888	563943.8907	750310.0207	603869.1548	559465.3377	567652.058	524125.4584	895192.632	413677.3612	463438.8619	483025.1277	NA
L-xylonate/L-lyxonate	1081768.496	747911.199	1153923.172	2092773.629	2245953.669	2241397.366	1428035.018	1337242.101	2245794.738	982517.0322	1078260.821	1064652.658	HMDB60256
2-deoxy-D-ribose 5-phosphate/2-Deoxy-D-ribose 1-phosphate	9864.6358	10335.93145	11201.73435	156781.9871	77806.84355	75519.85335	169220.5184	150633.734	88283.83085	48255.3852	41616.25645	23091.20685	HMDB01031
C5H11O8P(5)	138849.0014	139833.3483	142634.1909	443470.8747	482135.593	464640.3593	913719.5854	943101.9903	2687400.496	289185.6084	306697.2395	408107.09	NA
1-piperideine-6-carboxylate/1-piperideine-2-carboxylate	41102.83185	40721.2429	45244.5698	44696.3822	37677.9834	37451.4188	46701.65765	44974.7044	44182.1782	39492.9236	38177.3175	39051.7037	NA
3-methyl-2-oxopentanoate/4-methyl-2-oxopentanoate(ketoleucine)	20069343.27	17207706.44	16943436.56	16827635.34	18943839.41	18509624.66	17788886.96	17577249.5	18847918.25	18121982.15	18144057.66	18861387.28	HMDB00491

L-2-aminoadipate(1-)	171583.5583	126888.4455	154094.8876	171578.2887	126148.4731	115082.7816	126633.2856	117034.7571	188825.7438	77576.265	75537.27585	88457.5405	HMDB00510
L-fucose/L-Fuculose	182204.1329	153849.2084	191690.6872	238589.7764	162579.7109	150141.702	142726.8902	119440.063	153680.9396	114327.2862	123360.1807	134734.3794	HMDB00174
cis-aconitate/dehydroascorbate	674700.841	491367.8866	606811.8781	1215714.253	808701.0485	681388.5072	1285420.978	875672.4214	1028023.867	962430.7293	1137294.764	772971.065	HMDB00072
N-Formimidoyl-L-glutamate	15145.71135	5763.9146	18272.27675	17897.2909	9541.1741	10344.97195	1805.81505	1484.6188	6212.3608	2599.72845	5015.95335	9176.6638	HMDB00854
N-acetyl-L-aspartate/2-Amino-3-oxoadipate	968318.2253	881883.0924	586974.0986	4714302.455	6365507.902	6931197.282	3179841.285	4253973.702	1893126.158	3503369.819	3188780.233	2205140.209	HMDB00812
D-glucurono-6,3-lactone	381830.8107	285450.7758	153716.9413	273224.994	359236.2873	342653.505	1225022.465	1136630.033	1501966.92	206447.9879	256928.4488	196308.6843	HMDB06355
3-Keto-beta-D-galactose/L-Gulonolactone	140518.2024	128815.5201	142633.7838	152953.0297	144397.1626	124627.7206	126499.7095	129395.0234	165168.0417	127726.4149	134893.0209	130790.6984	HMDB01385
C6H12O6(5)	8454741.793	6342403.894	7194987.015	9192579.015	8164149.926	8060807.166	4495972.644	4002734.116	5953487.402	12589196.33	12691132.72	10303553.1	NA
L-Iditol/D-glucitol/galactitol	1938280.846	1451313.326	1944392.827	2449130.765	1978802.96	1852189.713	2545894.23	2319468.192	2923313.332	1552363.924	1699612.874	1765226.497	NA
citrate/isocitrate/Diketogulonic acid	24357066.4	24500124.89	27990688.72	36928685.51	35843704.92	35261133.25	43794087.38	43066646.66	40928711.7	48060331.02	47361939.08	38144574.43	HMDB00094
3-dehydro-L-gulonate/D-glucuronate/L-iduronate	110664.6983	73051.34065	97149.78275	126221.0622	127148.2545	124581.4868	130248.9594	117501.5247	308984.4056	57256.06395	59004.2589	78932.85305	HMDB06334
L-gulonate	936805.0344	723610.4441	894310.5521	2392318.691	3898031.268	4103228.377	3538478.918	3404172.836	7847531.366	1019673.82	1070156.659	1143448.491	HMDB03290
D-gluconate	936805.0344	723610.4441	894310.5521	2392318.691	3898031.268	4103228.377	3538478.918	3404172.836	7847531.366	1019673.82	1070156.659	1143448.491	HMDB00625
5-Methylthio-5-deoxy-D-ribose 1-phosphate/5-Methylthio-5-deoxy-D-ribose 1-phosphate	1000	1000	1000	1000	1937.14985	2407.8986	11124.58565	14887.02985	13720.9357	1000	1000	1218.74965	HMDB01299
G6P/F6P	842045.4639	641484.5315	510513.1329	2881845.268	4325835.365	4076496.197	4714789.199	4630301.703	8631748.178	1893839.843	1944780.398	1809764.332	HMDB01401
beta-D-Fructose 1,6-bisphosphate	568347.2407	606034.5853	672151.8541	981165.9331	1064410.137	1067408.168	4319595.931	4764372.923	12810315.6	1257948.609	1375616.236	2673495.119	HMDB06044
Methylisocitric acid/2-methylcitrate	106378.2109	102026.4163	108695.4113	181380.6955	148483.2734	141990.085	170766.0165	173679.8862	185058.3224	120569.3109	127746.9061	131915.0528	HMDB06471
phenylacetate/(4-hydroxyphenyl)acetaldehyde	66826260.41	57166302.54	55047912.15	42885133	58622859.4	56511196.54	47254587.53	47339888.75	52018629.77	53636722.51	48606488.39	58462467.69	HMDB00209
4-Hydroxyphenylacetate/2-Hydroxyphenylacetate/3,4-Dihydroxyphenylacetaldehyde	514232.8331	463667.659	437737.2573	376699.9138	430579.5714	423938.1432	347725.1699	351835.3771	381338.0144	428268.2197	387069.4096	425487	HMDB00020
N-formylanthranilate/noradrenochrome	20197.28745	17571.1114	29282.1526	26893.4927	20523.3973	18268.3417	14922.73625	15139.7903	15244.53865	15308.4679	24533.7829	27777.09205	HMDB04089
C8H16NO9P(4)	59719.58415	48368.8389	39813.5987	478152.5473	916414.9838	911174.9208	691828.6534	716346.3568	1124028.571	360383.4592	374792.3119	357427.5623	NA
4-oxo-2-nonenal	201641.5597	177697.3498	180070.6833	172201.0115	207814.4856	195364.9202	178817.9395	166830.2046	189721.9947	176841.4119	166270.7628	191219.9334	HMDB060285
4-hydroxy-2-nonenal/3,4-epoxynonanal	3116545.261	1946038.149	2910267.352	2850660.899	2792333.208	2687220.266	2607107.847	2414674.285	2710946.956	2171602.75	2175903.27	2369495.774	HMDB04362
adrenochrome/N-benzoylglycinate	1199709.827	1052266.036	1282257.098	1705877.71	1645317.487	1749113.073	1488837.227	1616868.689	2510306.995	1438713.649	1558005.415	1496083.432	HMDB12884

trans-caffeate/3-(4-hydroxyphenyl)pyruvate	21183.2291	34476.69305	19215.8352	17118.73725	18036.465	22952.85645	13087.31045	28639.39355	14107.8079	27500.2944	25307.8756	25208.18335	HMDB03501
Homovanillate/3-(4-hydroxyphenyl)lactate/3-Methoxy-4-hydroxyphenylglycolaldehyde	147387.3269	141293.1011	141726.8269	179894.4934	213100.7927	238062.5853	196455.8312	224770.1823	467176.1199	158757.9728	151043.5554	163375.5852	HMDB00118
2-Carboxy-2,3-dihydro-5,6-dihydroxyindole/L-dopaquinone	6480.44125	12693.8481	10478.72175	19660.86995	8451.09065	47289.2875	3390.0561	11906.0949	2338.3621	21588.6108	10034.382	11963.25645	HMDB04067
cytidine	201695.883	128954.6634	199121.2092	379118.341	496243.4385	529067.382	471669.5447	327528.1583	662802.9018	185904.4294	221429.84	209865.2037	HMDB00089
AMP/dGMP/3-AMP	147217.9723	93710.78115	113329.7729	374088.3998	165510.4236	189839.7358	928046.7183	547378.6922	161628.4719	274166.5955	283698.3584	289269.7385	HMDB00045
4(R)-hydroxy-dodec-6Z-enoate/4(S)-hydroxy-dodec-6Z-enoate	1034044.399	890940.0666	878316.9681	791264.6267	1035254.662	1094075.067	954051.2491	965930.3333	1081790.067	907912.0653	802208.8568	989052.5741	NA
C12H22O11(6)	172837.4788	146852.3909	82374.7859	56908.98475	48423.5112	32543.6091	61542.4858	94888.76855	29587.0511	93965.51995	44321.0199	52410.689	NA
C14H24O3(4)	131015.7875	116630.5595	117342.8811	83921.85005	126835.103	130419.9064	90753.9916	101721.741	122101.5353	111341.8896	99073.2138	125945.7689	NA
3-oxo-6(R)-hydroxy-tetradec-8-cis-enoate/3-oxo-6(S)-hydroxy-tetradec-8Z-enoate	680398.9768	614431.6412	587689.4446	441795.8767	597150.1319	626030.8834	518064.9037	537752.3386	559681.5962	540379.6651	518294.0309	621452.5488	NA
8(R)-hydroxy-hexadeca-2E4E6E10Z-tetraenoate/8(S)-hydroxy-hexadeca-2E4E6E10Z-tetraenoate	21076.1507	20262.18335	22931.2365	12798.22415	24048.4312	24339.0216	12524.8211	15064.84755	20856.08535	11058.18155	13934.73915	22639.9288	NA
C16H26O3(4)	25199.5763	21326.40425	28034.8791	17453.19275	36498.67285	34372.3582	32329.73245	23647.8664	65776.93915	19297.33545	23289.5411	26197.6549	NA
3-oxo-8(R)-hydroxy-hexadeca-6E10Z-dienoate/3-oxo-8(S)-hydroxy-hexadeca-6E10Z-dienoate	81299.08125	77412.8087	69469.0241	53686.1112	79344.8681	84529.7239	52753.5633	59344.5434	60259.03685	69685.3592	54881.78385	67606.0677	NA
linoleic acid/linoelaidic acid (all trans C18:2)/octadecadienoate (n-C18:2)	4286740.937	9002440.067	6256892.233	3722826.711	2650358.66	1383719.857	2492887.262	4377315.434	1306369.824	3228006.845	3045549.669	1606913.797	HMDB00673
oleic acid/elaidate/trans-vaccenate	2501420.888	3822742.741	2843482.747	2888089.177	2394284.147	1869920.009	2631964.56	3149780.53	2002833.55	1734341.424	1641596.574	1324810.648	HMDB00207
9(10)-EpOME/12(13)-EpOME	163023.5644	197725.4317	158916.9177	125285.3227	129949.7632	117846.6419	108948.2366	141966.9024	117577.1068	133418.8269	117090.3909	135654.8291	HMDB04701
9,10-hydroxyoctadec-12(Z)-enoate/12,13-hydroxyoctadec-9(Z)-enoate	296812.2084	294006.9406	276345.7848	185438.3129	231810.9572	212993.0381	192240.863	216207.0701	222859.4572	210681.0799	202229.1501	245467.2235	HMDB04704
pristanic acid	120494.698	108618.0661	117619.457	85193.40815	90535.8448	82052.791	77506.4385	75668.07265	88036.1853	83978.9326	87301.16445	104870.4172	HMDB00795
C20H30O2(4)	51953.97425	34959.7534	48993.7165	84043.9756	47666.4023	56586.56175	27020.6358	28874.9991	27529.5098	55490.92755	49890.7957	60966.4223	NA
arachidonic acid	295578.6344	260333.6337	382259.1718	379499.0384	220687.7368	185411.4179	159942.162	140753.9164	113635.2694	389690.9686	395182.9068	384444.6455	HMDB01043



phytanic acid/arachidic acid	79479.05375	75872.65785	76458.3069	59357.05295	58450.4207	57524.9027	48996.31485	56358.4265	48754.14865	64022.58525	57886.2397	70833.5996	HMDB00801
C20H32O3(12)	13598.90585	14371.5134	17765.74015	16534.3898	10245.12645	12580.67085	7608.8071	15928.5204	11160.7291	12216.26455	17678.30735	13965.87535	NA
C20H32O4(21)	44155.19175	52854.95575	51602.4435	32137.78395	31732.09455	23307.32145	28311.6851	43987.22445	57649.15165	26269.1629	69139.23525	74386.79275	NA
C20H34O4(4)	17261.4202	25044.0908	7450.22055	21960.7	19357.6478	31746.87535	29135.35665	36171.314	44094.92455	39729.1049	34263.26295	27906.91125	NA
C20H30O5(11)	37310.96715	27258.3255	52027.6492	36578.80325	16965.5477	10210.24095	26778.92185	70241.14625	17437.5924	38817.24975	49798.0567	37355.30835	NA
C20H32O5(15)	46901.674	52907.00835	44724.05655	33868.85445	46217.2962	26865.8167	50544.818	65003.767	53839.0087	47274.40085	52804.1286	89985.06625	NA
docosaheptaenoate(DHA)	234419.2483	230647.7685	305903.7962	354159.8891	197299.0567	198100.9412	155693.4647	134669.8195	89296.38235	289082.5054	309715.8402	296112.0993	HMDB02183
clupanodonic acid/docosa-4,7,10,13,16-pentaenoic acid	61611.81465	71592.002	90141.63495	156094.2978	87888.2718	81898.66315	66868.14815	47238.84395	30427.3933	133093.4512	146168.0293	130460.8522	HMDB06528
UDP-D-glucose/UDP-D-galactose	276844.8673	254923.9811	186314.6978	563027.9524	972054.8096	1033353.375	1217896.356	1130710.434	2215780.691	721085.0625	734568.2377	907789.0592	HMDB00286
ADP-mannose/GDP-L-fucose/ADP alpha-D-glucoside	14347.61525	16934.683	13576.2107	28207.2698	33698.40225	36341.6305	64969.6073	56409.29935	85875.885	38433.76375	36900.0996	34995.1377	HMDB06369
UDP-N-acetyl-alpha-D-glucosamine/UDP-N-acetyl-alpha-D-galactosamine	651420.1697	538735.8696	419554.9943	3014576.234	5957082.616	6734291.741	7447838.324	7562955.906	11100381.25	3389219.143	3549323.494	3020371.758	HMDB00290
deoxycholate/chenodeoxycholate	77772.58635	84523.75525	53878.0048	43919.66995	68787.01315	64053.4091	76105.98735	80049.4166	75284.99675	81737.54595	71270.88175	74206.37705	HMDB00626
Taurodeoxycholic acid/taurochenodeoxycholate	417046.0923	326505.9529	403001.2832	465699.2573	370180.9254	350510.7908	271967.5246	244122.3796	237810.809	284838.8085	286173.6194	396070.1849	HMDB00896
C27H46O4(3)	23035.3272	26623.9027	32918.92445	9662.0996	12887.68815	10092.4559	8273.9271	21004.62595	16448.0257	26091.9004	16616.4199	20023.5678	
L-isoleucine/L-leucine	75227070.58	53056186.7	83125814.17	104084032	75138894.15	72414727.53	65511687.97	55460529.11	66219442.81	53127966.23	64053347.11	65634908.26	HMDB00172
thiosulfate(2-)	97886.07075	129609.4903	87009.5934	116616.1181	146910.5537	132385.2591	105970.7693	124851.5365	76825.03635	102263.6957	109463.7357	113344.1029	HMDB00257
Diphosphate	5364364.574	3650775.81	8240325.537	10796939.29	5738236.029	5550469.323	7260810.837	5214344.324	5638855.157	5024338.437	6199216.608	6175358.646	HMDB00250
glyoxylate	399172.8619	313903.2931	351343.8349	400415.4534	339859.6554	313211.6156	358597.9125	330042.2834	394096.6178	307717.5767	306474.8684	315586.8658	HMDB00119
ethamp[c]	5782683.376	5061124.85	5204921.565	1824502.202	1865408.179	1849763.224	1270849.406	1317165.915	603708.1225	7466384.273	8457046.371	6719202.147	NA
L-cysteate(1-)	7218.2025	9726.4973	5359.4736	11619.01815	12019.43045	11077.5556	5190.2411	1560.5352	7256.85455	7478.13835	9538.8159	8335.94935	HMDB02757
Oxaloacetate	12666.2755	15095.9829	12471.979	12831.36825	15648.567	12492.4319	18260.2221	16393.6802	13425.9088	21204.16635	20389.84735	16277.8579	HMDB00223
Picolinic acid/Nicotinate	142003.1442	135331.6777	151370.2214	170396.9827	140784.9042	129352.2243	143293.3077	131279.0062	154713.3848	129019.6141	127052.0944	129247.0506	HMDB02243
D-glucaric acid	148685.161	115509.3564	112272.6323	80401.8831	84130.2175	69405.59885	54132.68535	46802.5766	85380.4991	51403.09405	48282.1169	55102.57465	HMDB00663
D-Glucuronate 1-phosphate	1000	1000	1000	1000	1000	2483.5466	83285.4329	101417.0656	160434.5259	1627.07735	2492.32535	1287.2463	HMDB03976
dCTP	1000	1516.71285	1049.5861	4358.4684	11539.8361	17763.37845	22079.8763	28326.27985	34683.51505	9104.8703	11524.8384	17615.2338	HMDB00998
pyruvate	2578785.778	2183473.189	1746934.993	1968811.984	2888470.422	2922614.037	4484049.136	4382198.225	4939935.585	2817339.954	2858760.541	2509406.527	HMDB00243
sarcosine	91122.35385	84900.74325	78635.246	111039.504	111775.805	110795.5547	123790.5137	123311.4487	147488.081	104820.9576	96743.2751	120573.3724	HMDB00271
(R,s)-lactate	89905872.98	60995572.37	87304028.96	150250622.4	112186694.5	111638243.4	268837097.2	231707804.8	358296195.1	71652143.78	78062152.74	78447534.12	HMDB00190

acetoacetate	1335588.213	1037966.601	827427.2333	1228306.479	933099.9376	767882.7188	1115868.212	889959.5714	759966.5634	1011448.424	821063.8169	682682.2407	HMDB00060
L-glutamate(1-)	12160764.33	8724827.85	11122351.65	25795266.01	26093321.86	28890792.17	59408387.55	51254461.39	84464872.51	15927708.88	17265908.43	19176794.35	HMDB00148
alpha-D-glucose	16541934.41	12173094.35	18200401.2	19938604.49	12459683.03	11625381.56	10115605.83	7677605.029	8935231.052	11264089.17	13326584.34	13653230.62	HMDB03345
myo-inositol	8547579.527	6409698.432	7265332.805	9322863.3	8214198.188	8108382.686	4533724.421	4040035.374	6011305.404	12614362.04	12702103.97	10326763.16	HMDB00211
uridine	665872.8707	404546.0092	595566.0958	766186.9547	761766.2876	755631.1098	780327.0677	590631.492	994688.7074	437102.4974	574028.8614	568686.1972	HMDB00296
uracil	197941.476	220272.8178	243908.8095	276964.3884	275159.3497	271937.511	2222835.447	2278224.478	6507010.323	236768.1895	255936.1819	255461.0551	HMDB00300
Fumarate	1652791.06	1379680.963	1309224.338	2494295.696	3446241.321	3517633.681	5658064.279	5488108.243	8176858.931	2162566.799	2161509.429	2700158.422	HMDB00134
L-aspartate(1-)	20476160.83	14889761.74	15791347.23	42105990.42	52143660.57	53923746.3	72336989.84	67947025.98	57263532.06	30178458.51	30791477.27	29688474.54	HMDB00191
L-ascorbate	3743411.259	1239967.463	1146039.953	264332.777	349884.2412	336196.6025	1198419.234	1145308.055	1478550.391	197691.2066	249035.8745	187386.4351	HMDB00044
glycine	1255573.015	1020067.822	1124612.439	2342242.849	3935962.307	3860230.895	2800772.229	2746978.577	4346025.824	2277009.068	2251733.281	2235177.015	HMDB00123
succinate(2-)	8040022.418	3531080.678	9092964.164	13748345.72	7533494.436	6144632.247	12348078.76	6736877.93	13120127.56	3965068.79	5065316.554	5515306.149	HMDB00254
Dihydroxyacetone phosphate	93133.0483	125836.6654	95557.2862	197346.4489	323006.8344	307874.087	785594.9911	912045.2106	2058800.454	140735.9686	128302.9788	247405.7781	HMDB01473
Phosphoenolpyruvate	155013.7819	157792.5758	184812.6563	203837.0407	135926.1297	91707.46125	45946.16	107828.5761	118873.5889	226636.7553	198162.4845	214624.4575	HMDB00263
Guanosine	1854.12195	1497.6149	2438.6538	36567.5349	93915.8249	101066.4012	67610.78555	52990.38455	986536.1289	15508.07135	15265.6172	18090.5362	HMDB00133

Supplemental Table 2. Metabolomics of CD4 T cell subsets for Supplemental Figure 4

ID	Naïve A	Naïve B	Naïve C	Naïve D	Naïve E	Naïve F	Th17 A	Th17 B	Th17 C	Th17 D	Th17 E	Th17 F	Treg A	Treg B	Treg C	Treg D	Treg E	Treg F	HMD B
1,2-dipalmitoylglycerol	0.42185 2	0.42185 2	0.42185 2	0.42185 2	0.42185 2	0.42185 2	1.00000 0	0.42185 2	1.93268 0	2.07258 7	1.33746 1	1.49112 6	0.42185 2	0.42185 2	0.85984 8	0.42185 2	0.42185 2	0.42185 2	HMDB 07098
1-arachidonoylglycerophosphoethanolamine*	1.50184 9	1.26032 8	1.64900 7	0.87399 4	1.33626 2	1.35297 7	0.74331 3	0.59932 3	0.42691 3	0.47258 5	0.97389 9	1.02610 1	1.73305 2	1.43989 5	1.72613 2	3.05887 9	2.44325 2	2.22480 5	HMDB 11517
1-arachidonoylglycerophosphoinositol*	0.93448 8	0.69782 2	0.43637 0	0.79967 4	0.36448 0	1.00000 0	1.18668 8	1.24477 1	0.36448 0	0.63403 0	1.24977 1	1.19963 9	2.71769 5	3.03398 2	0.36448 0	0.46978 7	1.16535 5	0.36448 0	
1-myristoylglycerophosphocholine	0.18958 7	0.18958 7	0.18958 7	0.18958 7	0.18958 7	0.18958 7	0.18958 7	0.18958 7	1.17190 2	1.03559 0	1.31687 9	1.13214 1	0.18958 7	0.18958 7	0.18958 7	0.18958 7	1.55862 4	1.68595 9	HMDB 10379
1-oleoylglycerol (1-monolein)	0.45787 0	1.05100 3	0.45787 0	0.74788 9	0.45787 0	0.45787 0	0.94899 7	0.45787 0	1.10830 7	1.29696 3	1.24609 3	0.91145 5	0.76677 4	0.89133 6	0.45787 0	0.45787 0	1.69631 3	0.45787 0	HMDB 11567
1-oleoylglycerophosphocholine	0.06853 0	0.06853 0	0.06853 0	0.06853 0	0.06853 0	0.06853 0	0.08134 7	0.12673 4	1.06984 6	1.00108 0	1.53129 0	1.24563 8	0.06853 0	0.06853 0	0.06853 0	0.06853 0	0.99892 1	1.23864 7	
1-oleoylglycerophosphoethanolamine	1.49588 7	0.90384 2	0.85657 0	0.35141 3	0.35141 3	0.71818 0	1.31030 1	0.80544 7	0.35141 3	1.00000 0	1.70516 3	0.82450 0	1.46693 1	1.03917 9	0.35141 3	0.66150 4	1.16228 9	1.47002 7	HMDB 11506
1-oleoylglycerophosphoinositol*	0.29942 4	0.29942 4	0.29942 4	0.29942 4	0.29942 4	0.29942 4	1.58253 9	0.99211 2	1.62521 1	2.36709 9	1.98676 5	1.54572 4	0.29942 4	0.29942 4	0.29942 4	0.53038 3	0.29942 4	0.29942 4	
1-palmitoleoylglycerophosphocholine*	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	1.27022 9	0.75220 6	1.23163 4	1.43904 0	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	0.52661 1	
1-palmitoylglycerol (1-monopalmitin)	1.18504 2	0.84159 4	1.22516 0	0.65133 3	0.99134 5	1.32148 9	0.79287 9	0.43028 0	0.67427 1	1.02716 8	1.25817 7	0.66289 5	0.91182 0	0.90703 3	1.10828 8	1.34980 7	2.40151 3	1.40643 3	
1-palmitoylglycerophosphocholine	0.48798 8	0.52520 0	1.00000 0	0.67921 9	0.93516 7	0.77246 3	0.50713 2	0.59549 3	6.38104 1	6.07198 2	8.64129 9	7.66921 4	0.61957 1	0.32224 4	0.28700 0	0.58508 7	9.22483 8	##### ##	
1-palmitoylglycerophosphoethanolamine	0.20296 3	0.20296 3	0.71500 8	0.84290 6	0.20296 3	1.36028 1	1.13335 8	1.01750 5	0.60816 4	1.31462 4	0.94991 2	0.53924 9	2.01006 1	1.75348 0	0.20296 3	1.05658 8	0.99114 6	1.55671 2	HMDB 11503
1-palmitoylglycerophosphoinositol*	0.45009 6	0.45009 6	0.45009 6	0.45009 6	0.45009 6	0.45009 6	1.81282 2	1.30821 2	1.78474 7	2.53010 8	2.13004 8	1.34721 1	0.83882 7	0.56144 6	0.45009 6	1.17567 3	0.45009 6	0.45009 6	
1-palmitoylplasmylethanolamine*	0.20449 1	0.20449 1	0.20449 1	0.20449 1	0.20449 1	0.20449 1	1.96474 4	0.87146 1	0.68084 8	2.08435 6	2.64310 8	2.09614 6	1.67191 9	1.84462 5	0.32678 1	0.30345 6	1.00000 0	1.34095 3	
1-stearoylglycerol (1-monostearin)	1.02624 1	1.15571 1	1.30335 4	0.60092 8	1.14919 7	1.06122 1	0.96120 9	0.50921 0	0.86285 5	0.87343 6	1.28970 6	1.02842 1	1.36337 7	0.93461 8	1.15679 0	0.87831 2	2.19590 5	1.75690 8	
1-stearoylglycerophosphocholine	0.10643 0	0.10643 0	0.10643 0	0.26099 7	0.10643 0	0.10643 0	0.10643 0	0.23030 7	1.66282 5	1.45783 4	2.32355 4	2.32006 3	0.20165 7	0.11992 3	0.20946 6	0.10643 0	4.32155 8	5.98187 0	
1-stearoylglycerophosphoethanolamine	0.22604 0	0.22604 0	0.22604 0	0.22604 0	0.22604 0	0.22604 0	0.22604 0	0.22604 0	1.12811 6	0.97304 9	0.88557 2	0.88401 8	0.22604 0	0.22604 0	0.22604 0	0.22604 0	2.54418 4	3.30765 3	HMDB 11130
1-stearoylglycerophosphoinositol	0.32792 6	0.37374 1	0.28551 3	0.21393 5	0.20433 5	0.20433 5	1.76415 5	1.41253 6	1.87199 1	2.35310 1	2.78617 5	1.84568 6	0.51444 0	0.67024 3	0.30087 6	0.59106 4	0.82402 2	0.90650 4	
10-heptadecenoate (17:1n7)	0.65511 8	0.42611 7	0.69723 5	0.28662 7	0.64271 9	0.28662 7	0.87323 4	0.67038 5	0.66387 7	0.69215 7	0.96040 8	1.16230 9	1.00427 2	1.00653 1	0.81776 4	1.01765 4	1.01348 4	1.25786 0	
10-nonadecenoate (19:1n9)	0.33151 4	0.33151 4	0.83200 0	0.33208 1	0.33151 4	0.44453 9	0.91736 2	0.85167 6	0.95393 3	0.85326 1	1.43634 7	1.43899 6	0.72252 7	0.91858 7	0.48668 2	0.69541 5	0.62046 6	0.95561 2	
13-methylmyristic acid	1.53004 8	1.93786 0	1.80417 4	1.40570 6	2.19175 6	2.07101 2	0.59206 0	0.58216 3	0.67191 4	0.62434 7	1.01049 7	1.37911 9	0.98950 3	0.98409 9	1.93011 3	1.62399 6	1.96130 2	1.88151 5	
2'-deoxycytidine	0.45509 5	0.45509 5	0.62807 2	0.45509 5	0.45509 5	0.45509 5	1.08411 0	0.76181 3	0.76911 0	1.11773 4	1.87198 4	1.32478 8	1.43776 8	2.11448 0	1.39585 7	1.80492 7	1.73607 3	1.83157 6	HMDB 00014
2'-deoxyinosine	0.44357 4	0.44357 4	0.44357 4	0.44357 4	0.44357 4	0.44357 4	3.29934 8	2.90472 5	0.70165 3	0.90309 6	1.16356 3	0.44357 4	2.47753 0	2.34916 2	0.44357 4	0.44357 4	0.44357 4	0.44357 4	HMDB 00071
2-arachidonoylglycerophosphocholine*	0.15003 0	0.15003 0	0.15003 0	0.15003 0	0.37397 5	0.15003 0	0.15003 0	0.29224 0	1.82439 6	1.09572 0	2.65647 6	3.47389 8	0.15003 0	0.15003 0	0.15003 0	0.15003 0	7.56454 3	8.75881 2	
2-arachidonoylglycerophosphoethanolamine*	0.64230 8	1.01076 2	0.79818 6	0.81672 6	0.40654 6	0.53518 1	0.13874 0	0.24241 2	6.09633 9	3.82114 7	9.14556 3	##### ##	0.22665 8	0.13375 5	0.38428 2	0.29191 9	##### ##	##### ##	

2-docosaenoylglycerophosphocholine*	0.14477 5	0.14477 5	0.14477 5	0.14477 5	0.14477 5	0.14477 5	0.14477 5	0.14477 5	0.14477 5	1.10774 5	0.78717 2	1.34687 0	1.40729 2	0.14477 5	0.45504 5	0.14477 5	0.14477 5	3.15115 6	3.66195 1	
2-docosaenoylglycerophosphoethanolamine*	0.45225 0	0.60824 6	0.33538 6	0.42259 0	0.27378 0	0.26341 7	0.07424 4	0.12277 7	3.51259 1	2.49449 7	4.33116 2	5.92300 4	0.05935 7	0.05935 7	0.05935 7	0.12938 8	4.89655 3	5.72720 2		
2-docosapentaenoylglycerophosphoethanolamine*	0.29199 7	0.36687 5	0.24867 0	0.14807 7	0.04954 0	0.04954 0	0.04954 0	0.07769 1	2.73518 3	1.66309 8	3.18559 2	4.42042 5	0.15488 0	0.04954 0	0.04954 0	0.26015 0	4.69586 3	4.14118 3		
2-hydroxyglutarate	1.10650 0	0.28968 1	0.42894 3	0.49406 9	0.48445 5	0.64933 7	1.55984 7	0.78265 9	1.98090 9	2.15385 4	1.70790 0	0.75587 8	0.64603 9	0.50847 9	0.99051 4	0.44446 8	0.28968 1	0.28968 1	HMDB 00606	
2-hydroxypalmitate	1.00380 9	0.96177 3	1.43801 1	0.58998 6	1.25865 0	1.35348 0	1.13376 5	0.87147 6	0.78493 6	0.49317 4	1.74668 7	2.79919 6	0.98372 3	1.08938 6	1.24276 3	1.17294 5	1.94313 5	2.16589 0		
2-myristoylglycerophosphocholine*	0.23772 1	0.23772 1	0.23772 1	0.23772 1	0.23772 1	0.23772 1	0.23772 1	0.24488 4	2.42488 0	1.68702 8	2.58183 0	2.79316 2	0.23772 1	0.23772 1	0.96566 5	0.23772 1	1.16473 8	1.07047 5		
2-oleoylglycerophosphocholine*	0.07842 4	0.07842 4	0.07842 4	0.07842 4	0.07842 4	0.07842 4	0.08209 7	0.23820 7	1.63930 8	1.15570 8	2.08090 1	1.92855 2	0.07842 4	0.07842 4	0.07842 4	0.07842 4	0.80745 6	0.87690 8		
2-oleoylglycerophosphoethanolamine*	0.05497 9	0.05497 9	0.05497 9	0.11679 0	0.05497 9	0.31393 0	0.05497 9	0.09552 5	1.81255 9	1.40552 8	2.69283 2	3.09183 9	0.05497 9	0.05497 9	0.05497 9	0.05497 9	0.67770 7	0.72689 4		
2-palmitoleoylglycerophosphocholine*	0.24595 5	0.24595 5	0.24595 5	0.24595 5	0.24595 5	0.24595 5	0.30322 3	0.51127 7	2.63772 7	1.69021 1	2.49991 8	2.33855 8	0.24595 5	0.24595 5	0.24595 5	0.24595 5	0.24595 5	1.00000 0		
2-palmitoleoylglycerophosphoethanolamine*	0.19660 5	0.19660 5	0.19660 5	0.19660 5	0.19660 5	0.19660 5	0.19660 5	0.19660 5	1.76270 9	1.18826 7	1.60195 2	2.00979 6	0.19660 5	0.19660 5	1.00000 0	0.19660 5	0.57815 7	0.79296 1		
2-palmitoylglycerophosphocholine*	0.08966 3	0.08966 3	0.08966 3	0.08966 3	0.08966 3	0.08966 3	0.14411 2	0.16721 0	2.01070 9	1.40285 9	2.68890 4	2.65265 0	0.08966 3	0.08966 3	0.08966 3	0.35589 5	2.51306 4	2.68740 4		
2-palmitoylglycerophosphoethanolamine*	0.60543 1	0.60543 1	0.60543 1	0.60543 1	0.60543 1	0.60543 1	0.76266 2	0.83456 6	1.00000 0	0.97334 1	0.60543 1	0.60543 1	0.60543 1	1.36946 3	0.60543 1	2.55174 4	3.21654 9	2.34078 6		
2-stearoylglycerophosphoinositol*	0.58114 9	0.58114 9	0.58114 9	0.58114 9	0.58114 9	0.58114 9	1.34793 2	0.87421 0	1.20384 4	1.36008 7	1.68830 1	1.45118 8	0.58114 9	0.58114 9	0.58114 9	0.58114 9	0.58114 9	0.58114 9		
3'-dephosphocoenzyme A	0.27924 3	0.27924 3	0.27924 3	0.27924 3	0.27924 3	0.27924 3	0.27924 3	0.32042 8	0.74392 3	0.94288 4	1.50519 7	1.02724 1	0.57369 7	1.05013 9	0.27924 3	0.27924 3	0.27924 3	0.27924 3	HMDB 01373	
3-(4-hydroxyphenyl)lactate	0.35204 3	0.35204 3	0.35204 3	0.35204 3	0.35204 3	0.35204 3	0.40077 2	0.35204 3	0.91383 5	0.91168 5	1.10550 8	1.38679 8	0.35204 3	0.35204 3	0.35204 3	0.35204 3	0.35204 3	0.35204 3	HMDB 00755	
3-dehydrocarnitine*	##### ###	##### ###	##### ###	8.70845 6	##### ###	##### ###	0.68930 4	0.95766 1	1.04233 9	0.53785 2	0.87644 9	1.17453 2	0.70529 3	1.08595 8	1.23174 6	1.96776 2	1.66354 8	1.13916 6	HMDB 12154	
3-phosphoglycerate	3.68827 2	1.91479 1	3.44687 6	1.68809 9	2.26974 2	3.86524 6	0.50174 5	0.39010 4	1.52652 0	0.99544 5	2.19682 7	1.78627 1	0.65547 5	0.85462 3	1.27286 7	0.72582 8	0.75845 9	0.79421 6	HMDB 00807	
4-guanidinobutanoate	0.81887 7	0.57129 0	1.12368 8	0.91306 9	1.44933 9	0.59874 4	1.26941 6	0.87967 6	0.90810 0	0.90694 6	2.37713 6	2.65511 9	1.00000 0	1.13681 2	3.42463 0	2.10601 2	5.98658 9	5.67318 5	HMDB 03464	
5-hydroxymethylfurfural	0.51114 7	0.51114 7	0.51114 7	0.51114 7	0.51114 7	0.51114 7	0.51114 7	0.51114 7	0.74664 3	0.88735 9	0.51114 7	0.51114 7	1.16872 1	1.75531 7	2.83174 2	0.51114 7	0.51114 7	0.51114 7		
5-methylcytosine	0.37748 5	0.37748 5	0.37748 5	0.37748 5	0.37748 5	0.37748 5	0.37748 5	0.41622 4	0.37748 5	0.37748 5	0.37748 5	0.37748 5	##### ##	0.37748 5	0.37748 5	0.37748 5	0.37748 5	0.37748 5	HMDB 02894	
5-methylthioadenosine (MTA)	2.36322 8	2.26078 0	1.70197 1	1.51446 8	2.42237 0	2.12371 4	1.62324 0	1.67211 3	1.04868 6	0.91012 7	1.03978 2	1.35246 3	1.38435 3	1.44073 7	2.35034 7	1.88433 9	0.89877 3	0.80268 6	HMDB 01173	
5-oxoproline	1.04913 4	1.08656 8	0.99688 1	0.66548 4	1.28015 1	1.11475 1	0.26427 5	0.23493 0	0.55743 4	0.69491 2	1.17470 0	1.35840 1	0.29577 1	0.43412 9	2.48266 9	1.07620 2	1.56527 2	1.47227 8	HMDB 00267	
5-phosphoribosyl diphosphate (PRPP)	0.89342 5	1.03951 6	0.96048 3	0.70403 6	1.40130 2	1.46867 1	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	0.70403 6	HMDB 00280	
6'-sialyllactose	0.33031 1	1.07306 3	0.33031 1	0.33031 1	0.75346 2	0.33031 1	1.00000 0	0.80813 4	0.80902 9	0.65106 7	1.05891 9	0.96170 6	1.01526 3	0.50594 6	1.17435 5	0.33031 1	0.98809 5	1.01816 0	HMDB 06562	
7-alpha-hydroxycholesterol	0.87236 0	0.33469 5	0.33469 5	0.33469 5	0.33469 5	0.33469 5	1.59235 8	0.38433 4	1.00000 0	0.82034 2	1.63829 8	1.63241 2	1.12060 5	1.08750 4	0.33469 5	1.29825 5	2.42360 6	0.98789 4	HMDB 01496	



caprylate (8:0)	2.26598 4	2.45979 9	0.27046 0	1.54902 6	0.27046 0	2.68562 4	0.37726 2	0.45617 3	0.47329 9	0.41728 6	1.30780 5	1.44089 2	1.00440 4	1.46749 7	0.27046 0	2.47483 0	0.27046 0	1.79777 2	HMDB 00482
carnitine	##### ##	##### ##	##### ##	9.85514 1	##### ##	##### ##	1.47609 0	1.23052 2	0.89251 5	0.74742 5	1.47059 8	1.55504 8	1.48030 9	1.31935 1	1.29590 2	0.93205 1	0.94348 6	1.08487 1	
cholesterol	0.98230 2	1.19864 0	0.82700 2	0.65018 2	1.07190 2	0.99047 5	0.86740 9	0.56739 6	0.53534 6	0.66004 2	0.99960 9	1.02244 6	1.34206 8	1.16683 4	1.24762 3	1.58327 5	2.36107 3	2.24733 9	HMDB 00067
choline	2.33502 2	2.09242 3	2.12888 9	1.32749 0	2.68658 2	2.78477 5	0.94227 7	0.83141 1	0.56000 5	0.52527 7	0.98221 0	1.18794 5	1.33553 6	1.46117 0	1.80103 2	1.48397 0	1.96546 4	2.28762 3	
choline phosphate	3.67181 8	3.77000 9	3.74431 5	2.55624 4	5.29892 2	4.37149 7	1.63720 4	1.51510 5	0.58487 2	0.52360 6	0.86644 6	0.93563 0	1.48728 4	1.61431 9	1.52282 3	1.06437 0	0.64093 8	0.67872 1	
cis-aconitate	2.06003 2	3.61675 0	2.03449 9	2.00729 0	3.83389 1	2.66975 2	0.51519 5	0.50670 6	0.72274 7	0.76408 5	1.09695 0	0.93931 7	0.81738 4	1.07756 4	2.55720 1	1.65301 5	0.84337 2	0.89035 5	HMDB 00072
cis-vaccenate (18:1n7)	0.78632 7	0.94175 0	0.33665 6	0.84786 3	0.62499 6	1.06316 9	0.73812 8	0.53418 3	1.08707 9	1.37398 4	1.81721 7	1.50603 5	0.40041 9	0.42707 7	0.65393 4	0.91269 2	1.59758 3	1.23730 3	
citrate	2.13154 0	3.00245 7	2.07390 9	1.72913 5	3.64784 7	2.08017 2	0.63476 2	0.52466 1	1.08464 7	1.20429 6	1.15480 6	1.14511 4	0.63779 9	0.87577 4	2.23741 1	1.26007 0	1.02882 6	0.93657 7	HMDB 00094
coenzyme A	2.05075 5	1.55006 9	2.25171 5	1.60349 5	2.39337 1	2.69478 9	1.73159 4	1.28201 0	1.10404 2	0.92207 0	1.05101 9	1.51339 6	0.65113 7	1.55048 5	0.77886 2	0.68489 4	0.36307 8	0.36909 3	HMDB 01423
creatine	1.24038 7	1.29958 3	1.42275 6	0.87433 8	1.65105 2	1.55841 7	0.83934 6	0.80189 4	0.69886 8	0.70658 8	1.32709 1	1.40345 9	0.95193 6	1.06120 6	1.74953 9	1.10991 5	1.18639 7	1.34594 2	HMDB 00064
cysteine	1.09770 2	0.85080 1	0.89378 4	0.81326 2	1.16707 9	1.64155 3	2.17639 7	0.31211 9	0.42973 6	0.34874 2	1.51992 4	0.97642 8	0.93654 7	1.71551 4	0.82651 3	0.45143 4	0.82850 3	0.85846 2	HMDB 00574
cysteine-glutathione disulfide	1.00000 0	2.15909 6	1.18356 2	0.66346 2	1.96133 6	1.36391 2	0.41514 2	0.44063 1	0.17993 5	0.17993 5	0.80474 1	0.93817 1	0.98505 5	0.99844 5	2.66180 4	2.18047 6	2.94181 2	3.22980 5	HMDB 00656
cytidine	0.77814 8	0.69411 5	0.88312 0	0.58476 4	1.01404 9	0.87580 9	1.57020 2	1.28512 0	1.42930 7	1.24764 6	1.49862 1	1.85696 0	0.98595 1	1.22402 7	1.76733 2	1.45146 0	1.10743 0	1.29542 3	HMDB 00089
cytidine 5'-diphosphocholine	1.75015 2	1.00000 0	2.15588 5	1.08462 1	1.37546 6	2.34761 9	2.07715 4	2.06943 1	0.50551 2	0.26124 5	0.80704 5	0.72108 3	2.04222 0	2.15451 2	0.17794 4	0.17794 4	0.24425 9	0.30015 6	
cytidine 5'-monophosphate (5'-CMP)	5.27691 7	4.79609 1	5.53179 5	3.50349 3	6.93642 6	5.89090 5	0.68467 1	0.61223 0	0.62788 3	0.53325 8	0.71854 2	0.88957 6	0.61476 4	0.70880 3	1.02878 3	0.70837 1	0.74450 5	0.97121 7	HMDB 00095
cytidine-5'-diphosphoethanolamine	1.93203 5	2.19221 5	2.47865 5	1.73534 9	2.96007 4	2.53052 1	0.68872 0	0.60352 0	0.57727 2	0.89650 5	1.13603 5	1.01741 1	1.04345 9	1.36893 2	1.45807 0	1.28268 5	1.05970 5	1.01040 5	HMDB 01564
cytosine	0.09863 5	0.09863 5	0.09863 5	0.09863 5	2.40734 4	0.09863 5	5.30754 5	1.19048 9	0.15206 6	0.09863 5	0.09863 5	0.09863 5	##### ##	0.09863 5	0.09863 5	0.45736 5	0.09863 5	0.09863 5	HMDB 00630
deoxycarnitine	2.34035 2	2.20493 3	3.03296 9	1.82860 2	3.65504 7	3.14857 4	0.73585 3	0.55957 6	0.59070 2	0.51753 0	1.14182 2	1.51173 5	0.85559 9	0.95361 9	1.97407 0	1.15716 3	1.88621 6	1.47969 2	HMDB 01161
desmosterol	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	0.43111 8	HMDB 02719
dihomo-linoleate (20:2n6)	1.36331 0	1.63667 7	1.31160 3	1.03805 0	0.83628 8	1.28471 2	0.97054 1	0.76324 9	0.85352 0	0.76377 6	0.99000 8	1.00999 2	0.82151 9	0.90039 4	0.36775 5	0.73429 6	0.78647 3	0.88302 4	
dihomo-linolenate (20:3n3 or n6)	0.85847 0	0.98440 6	0.78011 5	0.66890 5	0.69288 9	0.88018 2	1.01559 4	0.94212 7	0.67378 6	0.73404 9	0.83051 7	1.07753 0	1.74651 9	1.63689 0	0.37555 9	0.93684 1	1.35339 9	1.49312 1	HMDB 02925
dihydrocholesterol	0.85230 4	0.94277 2	0.48959 2	0.32378 0	0.42605 6	0.85008 5	0.32378 0	0.73359 5	0.42443 3	0.40383 3	1.03112 6	1.25368 6	1.20566 4	1.12512 0	0.96887 4	1.54949 8	2.77275 6	2.54568 3	HMDB 00908
dihydroxyacetone phosphate (DHAP)	0.32132 0	0.32132 0	0.32132 0	0.32132 0	0.32132 0	0.32132 0	1.89125 6	1.00072 3	4.09125 6	3.93558 1	3.48088 7	3.26554 2	0.84447 3	0.67260 6	1.93042 8	1.35723 4	1.21624 6	2.14695 5	HMDB 01473
docosadienoate (22:2n6)	1.03708 6	1.18587 5	0.94573 2	0.91097 2	1.17798 0	0.34922 2	1.11138 2	0.64372 8	0.64840 7	0.54289 4	0.60499 3	1.28953 6	0.56886 8	1.07806 9	0.34922 2	0.92755 6	0.68915 2	0.34922 2	
docosahexaenoate (DHA; 22:6n3)	1.21039 5	1.32917 1	0.80282 6	0.66834 1	0.88425 4	0.96957 3	0.78961 4	0.81949 5	0.54906 0	0.61104 2	1.03042 7	1.13317 4	1.86023 7	1.88699 8	0.32786 1	1.39553 9	1.83769 4	1.95627 7	HMDB 02183
docosapentaenoate (n3 DPA; 22:5n3)	0.97955 7	0.94496 5	0.75970 4	0.78193 9	0.87725 7	0.70595 4	1.01177 6	0.98822 4	0.64368 5	0.67708 5	1.12402 9	1.33530 2	2.72145 3	2.69578 4	0.73895 2	1.83623 5	2.54451 7	2.63540 0	HMDB 01976
docosapentaenoate (n6 DPA; 22:5n6)	0.18565 2	0.18565 2	0.18565 2	0.18565 2	0.18565 2	0.18565 2	0.99944 3	0.40731 4	0.44042 7	0.61249 4	0.35783 4	1.78581 0	1.00055 7	1.45323 8	0.18565 2	0.69592 8	1.00345 0	1.66218 2	HMDB 13123
eicosenoate (20:1n9 or 11)	0.57215 0	0.62891 9	0.67969 8	0.49669 0	0.50351 1	0.74198 8	1.02376 8	0.86738 6	0.97623 2	0.73259 0	1.15133 3	1.53650 2	0.33003 7	0.60001 6	0.23805 5	0.41741 4	0.49192 6	0.38851 5	HMDB 02331
ergothioneine	0.67639 6	2.49280 1	0.84732 3	1.15267 7	3.05268 8	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	0.44276 1	HMDB 03045
erythritol	2.28644 5	1.74577 2	1.65876 1	1.11180 7	2.38013 0	2.39358 3	0.49611 6	0.62891 9	0.89872 5	1.15927 1	1.49051 3	1.67996 7	0.67061 6	0.88298 2	2.73414 8	1.13175 7	1.64793 2	1.58793 4	HMDB 02994

erythronate*	0.38695 7	0.71884 9	0.31533 7	0.31533 7	0.90895 1	0.66660 6	1.12863 0	1.07264 9	1.20502 3	1.25289 7	1.24978 6	1.02954 1	0.43123 9	0.60148 1	0.31533 7	0.46630 8	0.36958 3	0.61680 9	HMDB 00613
ethanolamine	2.62501 6	1.93149 3	1.87554 2	1.33248 2	3.86134 3	3.55578 6	1.32487 0	1.01329 5	0.53768 8	0.64711 6	0.98670 5	0.74637 8	0.71662 7	1.06562 7	0.63485 8	1.06902 2	1.09575 6	1.45180 8	HMDB 00149
flavin adenine dinucleotide (FAD)	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.71674 7	0.89989 0	1.35185 4	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	0.35608 2	HMDB 01248
fructose	2.57809 8	3.05418 5	2.34406 5	1.42400 3	4.28955 1	2.17311 4	0.14569 6	0.19012 3	0.64648 4	0.75688 5	1.17124 4	1.65466 9	0.29796 0	0.50215 0	3.87963 9	3.63704 2	2.17311 4	2.21403 0	HMDB 00660
fructose-6-phosphate	0.37866 7	0.25844 0	0.37068 1	0.12544 1	0.45944 3	0.32664 5	1.30019 3	1.36794 8	1.19093 7	2.07325 5	1.14339 6	1.42559 8	0.66665 1	0.75836 1	0.77724 1	0.61669 5	0.86248 9	0.68247 3	HMDB 00124
fumarate	1.44806 6	1.52216 1	2.17555 7	1.02975 2	1.80760 9	1.71017 8	1.62762 4	0.92575 0	0.83683 5	0.97024 8	1.14853 9	0.82570 0	1.20170 7	0.96599 6	0.73875 8	0.61977 1	0.45104 5	0.44765 7	HMDB 00134
gamma-glutamylglutamate	1.24843 1	1.50624 4	1.33631 8	0.77352 6	1.43331 6	1.24862 3	1.37085 4	1.03124 3	0.80112 0	0.68809 7	1.24745 2	1.41322 3	0.74646 8	0.95120 9	0.67358 0	0.80450 5	0.62994 2	0.96875 7	
gamma-glutamylglutamine	1.13001 2	1.87453 8	1.00762 0	0.27105 0	0.27105 0	0.27105 0	0.27105 0	0.63746 0	0.33927 0	0.86658 0	1.62995 5	1.51500 4	0.27105 0	0.52349 2	2.51376 9	1.57339 0	1.65395 4	1.81838 1	HMDB 11738
gamma-glutamylleucine	0.38350 7	0.38350 7	0.38350 7	0.38350 7	0.38350 7	0.38350 7	1.03812 6	0.42759 6	0.59648 8	0.38350 7	0.71121 0	0.79948 0	0.38350 7	0.38350 7	0.38350 7	1.12090 7	0.88721 8	0.38350 7	HMDB 11171
glucose	6.53446 1	8.91656 2	5.33900 5	3.19504 5	##### #	5.45484 4	0.16866 4	0.14007 0	0.24320 6	0.37095 9	0.67266 7	1.66867 2	0.36334 8	0.66387 2	##### #	3.11325 4	6.17637 1	5.62179 7	HMDB 00122
glucose 1-phosphate	0.30432 9	0.30432 9	0.30432 9	0.30432 9	0.30432 9	0.30432 9	1.16974 7	0.97421 7	1.21419 7	1.36568 7	1.48703 1	1.09035 3	0.56206 0	0.64799 0	0.30432 9	1.00000 0	0.30432 9	0.30432 9	HMDB 01586
glucose-6-phosphate (G6P)	0.45336 9	0.32689 2	0.44192 8	0.18422 0	0.61565 9	0.30172 0	1.13919 3	1.00260 6	1.19694 6	2.29185 3	1.52260 5	1.52749 2	0.90708 5	1.01977 8	0.87731 3	0.94131 7	0.97662 2	1.07654 3	HMDB 01401
glutamate	0.94644 1	0.99726 1	1.04069 6	0.68523 2	1.25582 9	1.10536 3	1.47197 2	1.37922 9	0.73212 0	0.62171 6	0.95769 8	1.08590 2	2.00250 8	1.91931 8	1.48836 0	1.01388 4	1.00273 9	1.15223 8	HMDB 03339
glutamate, gamma-methyl ester	0.30409 5	0.30409 5	2.39442 0	0.30409 5	2.92238 0	0.30409 5	1.66381 3	1.32340 0	0.49776 1	0.71215 1	0.74138 9	0.30409 5	0.94363 7	0.91440 6	0.30409 5	0.30409 5	0.30409 5	0.30409 5	
glutamine	1.10237 2	1.37863 7	1.04628 4	0.73417 8	1.59009 7	1.16551 7	0.59265 0	0.67458 8	0.31159 2	0.41798 3	0.58403 1	0.59124 4	1.05670 2	1.22697 5	3.07986 0	1.65064 9	1.59741 1	1.55790 4	HMDB 00641
glutathione, oxidized (GSSG)	3.10634 8	3.40979 9	3.48595 6	2.07327 7	5.13067 7	3.22519 4	0.80837 2	0.83438 3	0.97171 4	0.78576 0	1.43608 4	1.55349 7	2.48816 6	2.87429 4	8.36846 3	6.27663 5	5.44547 0	6.86375 9	HMDB 03337
glutathione, reduced (GSH)	1.84905 6	1.42885 6	1.94647 9	1.15944 4	2.39775 6	2.33683 2	1.16056 0	1.09517 2	0.86153 2	0.66998 6	0.88404 0	1.02684 6	1.75950 6	2.03382 8	1.90861 7	1.25399 6	1.01145 3	0.95238 2	HMDB 00125
glycerol 2-phosphate	2.00446 8	1.65744 7	1.95418 0	1.27133 0	2.15510 8	2.77372 9	1.19945 3	0.86414 9	0.89251 4	1.12129 0	1.68199 6	1.54316 8	0.80470 4	0.52445 3	1.06958 6	0.79970 1	1.53816 8	1.89499 7	HMDB 02520
glycerol 3-phosphate (G3P)	1.55706 3	1.49290 6	1.66332 8	0.96756 4	1.92202 3	1.75176 8	1.47991 0	1.01936 6	0.96392 2	1.08712 4	2.58619 4	2.16225 1	0.68875 9	0.62666 3	0.63037 7	0.66702 0	1.93284 3	1.72706 4	HMDB 00126
glycerophosphorylcholine (GPC)	2.02242 7	1.96562 6	2.27392 9	1.38149 3	2.73659 3	2.47656 6	1.25876 1	1.17403 4	0.95372 7	0.86002 1	2.11033 2	2.40110 7	0.72841 2	0.74549 7	1.04627 3	0.84246 4	2.13272 1	2.30984 0	HMDB 00086
glycine	0.88391 9	0.88063 4	0.89506 6	0.54570 2	1.17175 1	0.91071 9	1.24302 8	0.99771 9	0.64350 9	0.65270 1	1.28382 5	1.06138 4	0.98699 7	1.22719 8	0.86537 3	0.87962 1	1.00228 1	0.95402 0	HMDB 00123
glycylleucine	1.00000 0	1.35804 3	2.48195 6	0.72633 3	1.57329 2	1.19964 8	1.09339 6	0.77593 2	0.57321 2	0.56642 8	0.58191 0	0.76818 0	1.10383 8	0.53949 9	0.50615 5	1.19510 6	1.56684 7	2.85429 5	HMDB 00759
guanine	0.45828 1	0.35483 3	0.93779 1	0.40026 9	0.77589 6	0.64233 6	2.74255 6	2.45476 7	1.27045 0	0.95068 0	2.04150 1	2.29622 2	0.81874 3	0.98851 9	1.39109 0	0.64660 5	0.50110 3	1.12389 2	HMDB 00132
guanosine	0.45881 7	0.32587 6	0.41607 2	0.22040 0	0.37950 5	0.45179 3	2.16885 4	2.07054 0	1.86317 9	1.31567 1	1.72962 2	2.23138 3	0.87832 8	0.97128 0	1.44209 6	0.74886 1	0.82560 5	0.84334 9	HMDB 00133
guanosine 5'- monophosphate (5'-GMP)	6.45144 8	5.51071 3	6.18065 4	3.78921 6	8.81091 5	7.89701 2	0.10861 5	0.07257 4	0.03755 7	0.03755 7	0.04768 2	0.03755 7	0.12131 0	0.09164 9	0.03755 7	0.03755 7	0.03755 7	0.03755 7	
gulono-1,4-lactone	0.09621 9	0.09621 9	0.09621 9	0.09621 9	0.09621 9	0.09621 9	0.49449 4	0.63155 0	0.09621 9	0.60229 9	0.09621 9	0.24912 8	0.09621 9	0.09621 9	0.09621 9	0.09621 9	0.09621 9	0.09621 9	HMDB 03466
HEPES	2.20921 8	2.34825 7	2.36226 5	1.53740 7	3.04228 1	2.79321 1	0.60502 0	0.53907 3	0.82039 0	0.74502 7	1.33818 8	1.56963 3	0.59479 5	0.79663 1	3.19510 9	1.47263 5	1.98862 0	2.05152 5	
hippurate	1.60021 7	1.84569 8	0.39093 4	1.10410 7	0.39093 4	2.55686 6	0.39093 4	0.39093 4	0.59479 3	0.49527 8	1.25937 6	1.27366 7	0.39093 4	0.39093 4	3.67641 6	0.39093 4	0.39093 4	1.68422 5	HMDB 00714
histidine	0.93371 1	1.15695 1	1.11322 0	0.92362 7	1.56079 8	1.31409 1	0.80156 2	0.63883 9	0.66229 5	0.60142 2	0.92762 8	1.07970 1	0.71242 8	0.75379 7	1.58810 2	1.20355 2	1.36116 6	1.46999 3	HMDB 00177

hydroxyisovaleroyl carnitine	3.42666 1	3.14372 3	1.93624 8	1.00000	3.10538 3	3.61590 3	0.31220 3	0.62450 0	0.31220 3	0.49337 9	0.31220 3	1.08563 9	0.31220 3	0.60466 2	1.19210 9	0.31220 3	0.31220 3	0.31220 3		
hypotaurine	0.56341 0	0.61031 7	0.42458 4	0.41727 6	1.07450 7	0.61541 3	2.22986 8	1.49596 7	1.18227 2	1.66765 5	2.41589 6	1.48858 1	0.59434 9	0.92549 3	1.12436 8	1.45291 2	1.66592 6	1.41417 5	HMDB 00965	
hypoxanthine	0.73915 6	0.58002 2	0.72143 0	0.43863 9	0.76671 0	0.80523 8	1.27372 7	1.07775 9	1.03013 9	1.04394 1	1.65899 0	1.63759 0	0.99710 1	1.17966 5	1.71581 9	1.29097 8	1.42561 1	1.55310 8	HMDB 00157	
inosine	0.43166 6	0.38411 6	0.43552 4	0.24311 9	0.41313 0	0.48280 2	1.24774 0	1.01302 8	1.22412 9	1.12547 8	1.18999 6	1.41326 2	0.92371 0	1.07601 6	1.76129 0	1.16121 7	1.12045 9	1.15779 5		
inosine 5'-monophosphate (IMP)	2.37607 9	2.38587 2	2.37141 4	1.70910 8	3.41447 6	2.61949 0	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	0.09400 7	HMDB 00175
inositol 1-phosphate (IIP)	0.67533 6	0.98321 2	0.61677 6	0.48670 1	0.89782 3	0.62194 8	2.53350 1	1.83085 6	0.52977 9	0.69966 3	0.78745 4	1.00044 0	3.67099 5	2.90534 6	0.91751 0	1.66072 9	1.72402 7	1.46960 5	HMDB 00213	
Isobar: 2-propylpentanoate, 2-ethylhexanoate	0.39037 1	3.22592 3	0.39037 1	0.39037 1	0.39037 1	0.39037 1	0.90437 8	0.86190 8	0.39037 1	0.56415 0	0.39037 1	0.39037 1	1.00246 6	1.67872 7	2.77846 6	1.20681 3	1.95695 7	1.69607 2		
Isobar: fructose 1,6-diphosphate, glucose 1,6-diphosphate, myo-inositol 1,4 or 1,3-diphosphate	0.71103 0	0.98186 6	1.10453 4	0.68071 0	1.21182 9	0.87471 4	1.03302 1	0.79852 0	5.32147 4	3.25207 9	2.15664 5	3.55318 4	0.83922 9	1.15740 8	1.51342 9	1.62196 7	0.86435 4	0.97969 4		
Isobar: ribulose 5-phosphate, xylulose 5-phosphate	1.48558 1	1.72788 8	1.02649 7	0.48864 1	0.97350 3	1.27576 7	0.96251 0	0.66459 4	2.04621 1	1.92904 9	1.62124 4	3.23122 2	0.62860 1	0.90897 8	5.95318 7	1.69263 4	2.56822 5	2.48985 1		
Isobar: UDP-acetylglucosamine, UDP-acetylgalactosamine	1.12955 2	1.17254 3	1.46284 6	0.76796 6	1.50803 0	1.57359 4	0.07901 8	0.08246 4	1.09687 3	1.46234 7	1.08930 2	1.30606 8	0.06926 2	0.20781 5	0.82568 3	0.45224 4	0.61182 3	0.52531 1		
isoleucine	1.34963 7	1.35599 3	1.26935 5	0.81836 9	1.72584 0	1.39319 2	0.56940 0	0.50516 8	0.60703 9	0.67078 6	1.01449 7	1.23150 4	0.44314 5	0.56827 4	1.92207 8	0.98550 3	1.44877 3	1.51163 3	HMDB 00172	
isoleucylglycine	2.54770 2	0.48943 7	1.55832 0	2.81733 6	4.66710 2	0.48943 7	1.08374 2	0.69081 2	0.82485 7	0.75932 6	0.48943 7	0.48943 7	0.98768 2	0.76266 9	0.48943 7	2.50481 5	2.71357 9	2.31609 1		
isoleucylleucine	0.19895 5	0.19895 5	0.94745 5	0.64171 9	0.19895 5	0.89550 9	1.53108 5	1.44070 4	0.19895 5	0.19895 5	0.19895 5	0.19895 5	1.05254 6	1.16921 9	0.19895 5	0.19895 5	0.19895 5	0.19895 5	0.62104 5	
kynurenine	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	1.31117 4	0.75476 1	0.37442 6	0.46480 3	0.49694 5	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	0.37442 6	HMDB 00684
lactate	1.21733 7	1.45612 3	1.05762 3	0.89669 3	1.62981 9	1.36218 1	0.86654 7	0.72606 2	0.91039 4	1.41318 2	1.79638 1	1.58305 4	0.51543 6	0.74690 2	1.68862 2	0.79358 2	0.93543 3	0.98627 9	HMDB 00190	
laurate (12:0)	1.96754 7	2.08528 2	2.04388 5	1.38672 2	2.42198 0	2.19532 0	0.42545 9	0.40190 5	0.50377 0	0.57434 9	0.96943 2	1.19857 5	0.96269 5	1.29559 7	2.25674 7	1.53834 4	1.68607 0	1.63572 9	HMDB 00638	
leucine	1.22103 5	1.30429 0	1.05268 9	0.77677 0	1.64370 2	1.34791 6	0.83390 3	0.75207 2	0.53998 8	0.61994 8	0.86221 4	1.10290 2	0.60065 2	0.80048 5	1.67363 1	0.98410 2	1.37158 5	1.48506 6	HMDB 00687	
leucylaspartate	0.26195 0	1.47378 9	0.26195 0	0.26195 0	0.26195 0	0.26195 0	2.26063 2	1.86536 7	0.26195 0	0.26195 0	0.26195 0	0.26195 0	1.00000 0	0.90243 3	0.26195 0	0.26195 0	0.26195 0	0.26195 0		
leucylglycine	1.07349 5	0.20083 7	1.10776 1	1.34191 8	4.26692 6	0.20083 7	1.00000 0	0.59673 8	0.20083 7	0.20083 7	0.20083 7	0.20083 7	1.58285 1	0.68574 7	0.20083 7	1.54616 5	1.14888 3	0.20083 7		
leucylleucine	0.47778 6	0.47778 6	0.47778 6	0.47778 6	0.47778 6	0.47778 6	4.15440 7	2.80570 6	0.52631 5	0.47778 6	0.54821 1	0.47778 6	0.47778 6	0.47778 6	4.15412 3	0.47778 6	2.35168 4	4.11757 2		
leucylphenylalanine	0.43262 9	0.43262 9	1.00000 0	0.43262 9	0.43262 9	0.43262 9	1.69574 2	1.28065 7	0.43262 9	0.43262 9	0.43262 9	0.43262 9	0.43262 9	1.41617 6	0.43262 9	0.43262 9	0.43262 9	0.43262 9		
lignocerate (24:0)	1.13302 0	1.07326 9	0.75954 1	0.95344 6	0.39005 5	0.55492 9	0.58767 2	0.49645 1	0.39005 5	1.05193 9	1.31851 6	0.72971 4	1.10689 3	0.39005 5	0.86672 7	0.39005 5	1.56074 8	0.89795 6	HMDB 02003	
linoleate (18:2n6)	1.14360 8	1.47927 5	1.28880 2	0.91474 9	1.12978 5	1.32437 5	0.74594 2	0.63105 8	0.63258 1	0.69060 7	1.02188 2	0.77750 6	1.15881 0	1.12414 2	0.42780 1	0.81295 9	0.98601 5	1.01398 5	HMDB 00673	
lysine	1.80136 4	2.22300 9	1.02165 5	1.47028 8	1.75620 2	1.99792 3	0.50308 3	0.44062 5	0.42139 7	0.44597 4	0.92887 0	1.12951 2	0.54707 9	1.91332 5	2.53854 1	1.40185 6	1.66759 7	1.81497 9	HMDB 00182	
malate	2.19242 8	1.95607 9	2.08540 2	1.15503 2	2.59376 0	2.48313 0	1.09281 8	0.84685 5	1.04424 4	1.16548 4	1.50024 6	1.19642 3	0.62440 0	0.86165 2	0.76053 7	0.57297 6	0.31024 5	0.28300 5	HMDB 00156	
maltotetraose	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.76981 8	0.74140 9	0.31955 7	0.30424 2	1.48994 6	0.87006 1	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.30424 2	0.30424 2	HMDB 01296
mannose-6-phosphate	0.52593 4	0.39604 0	0.47892 7	0.21813 1	0.68106 6	0.36077 6	1.32884 5	0.96524 1	1.16670 5	1.74214 9	1.64069 2	1.56178 7	0.83364 5	1.07550 3	0.75397 4	0.91252 1	0.97611 9	1.09517 0	HMDB 01078	
mead acid (20:3n9)	0.49330 1	0.49330 1	0.49330 1	0.49330 1	0.49330 1	0.49330 1	0.73220 4	0.77720 9	0.75315 5	0.75609 5	1.63648 0	0.86001 2	0.96798 1	0.55053 0	0.49330 1	0.96618 8	1.30699 3	1.16903 0	HMDB 10378	



methionine	2.05956 0	2.40039 9	2.01241 6	1.46281 7	2.93569 5	2.60353 0	0.88172 9	0.77462 7	0.68853 2	0.60047 8	1.00343 1	1.36778 6	0.90705 5	1.05816 7	2.62411 9	1.64270 3	2.03362 0	2.04958 7	HMDB 00696
methyl palmitate (15 or 2)	1.63910 1	1.87053 2	1.70063 8	1.33449 3	1.94839 5	1.97217 0	0.55490 3	0.51556 2	0.66262 1	0.60352 1	1.01743 1	1.31214 4	1.04529 3	0.95145 0	2.21985 1	1.55508 6	1.85302 5	2.00979 3	
methylphosphate	1.36624 8	1.88462 8	0.79195 5	1.00000 0	1.81272 2	1.43813 7	1.10536 7	0.69902 0	0.86315 0	1.00838 6	1.48863 0	1.02925 0	0.60651 7	0.47561 5	0.47561 5	1.01195 2	2.14980 1	1.63527 0	
myo-inositol	7.02074 0	5.28586 9	5.79242 2	2.43099 6	9.29877 1	5.17657 1	0.61905 9	0.47976 1	0.62794 2	0.81003 6	0.71592 7	1.14501 1	1.35738 5	1.73968 7	2.75303 7	1.90220 1	3.27271 4	3.62287 2	HMDB 00211
myo-inositol pentakisphosphate (1,2,4,5,6 or 1,3,4,5,6)	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	1.00000 0	1.12396 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	0.53935 7	
myristate (14:0)	1.36617 2	1.61593 8	1.68324 1	1.17446 5	1.55982 8	1.48541 5	0.59626 8	0.50122 5	0.59203 5	0.61178 3	1.06312 0	1.20748 6	0.95095 7	0.95041 6	1.65296 3	1.04904 2	1.35266 1	1.71932 1	HMDB 00806
myristoleate (14:1n5)	1.37241 2	1.54119 9	1.96033 5	1.08013 1	2.61619 9	1.84564 3	0.57350 6	0.51097 7	0.56932 0	0.54860 9	1.14757 7	0.95200 4	0.90867 1	1.00490 5	1.47156 9	1.12897 0	1.13307 1	1.40083 0	HMDB 02000
N-acetyllalanine	0.41335 0	0.41335 0	0.41335 0	0.41335 0	0.41335 0	0.41335 0	1.20984 6	1.04380 6	0.82559 2	0.74811 3	1.28353 8	1.00000 0	0.41335 0	0.67025 1	0.41335 0	0.41335 0	0.41335 0	0.41335 0	HMDB 00766
N-acetylmethionine	0.66098 7	0.60230 9	0.62150 7	0.48150 2	0.77349 2	0.48150 2	1.09981 8	0.87492 7	1.08874 2	1.01715 4	1.91639 7	1.59090 1	0.72583 8	1.00798 0	0.83266 3	1.00000 0	1.17885 0	1.42152 6	HMDB 11745
N-acetylneuramate	0.24288 9	0.24288 9	0.24288 9	0.24288 9	0.24288 9	0.24288 9	1.91455 2	2.08410 5	0.87651 9	0.97353 0	1.40694 0	1.44045 2	1.52462 9	1.54172 5	0.58130 0	1.10284 1	1.16914 5	0.24288 9	HMDB 00230
N-acetylmethionine	2.99477 4	2.76696 3	3.34892 0	2.27865 8	3.94844 9	4.27329 2	0.33628 2	0.33628 2	0.68608 3	0.66005 1	1.24075 8	1.59189 2	0.47767 6	0.33628 8	2.53455 8	1.17288 8	0.33628 2	1.65451 6	HMDB 03357
N-acetylserine	1.25699 1	1.12876 4	1.18592 3	0.61404 8	1.81702 6	1.66692 4	0.80563 7	0.70440 3	0.80560 0	0.96522 7	1.00016 7	1.18375 2	0.43827 1	0.71091 2	1.01190 3	0.99983 3	0.88364 9	0.43827 1	HMDB 02931
N-acetylthreonine	0.59407 9	0.59407 9	0.59407 9	0.59407 9	0.59407 9	0.59407 9	1.12464 2	1.04091 7	0.97900 1	0.77717 1	1.25895 0	1.04500 1	0.59407 9	0.67896 2	0.59407 9	0.59407 9	0.59407 9	0.59407 9	
N-carbamoylaspartate	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	3.63726 2	2.31159 0	0.86204 0	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	0.40004 1	HMDB 00828
N-glycolylneuramate	0.43265 1	0.43265 1	0.43265 1	0.43265 1	0.58965 0	0.43265 1	2.56348 4	2.19426 5	0.92267 5	1.89130 7	2.09694 7	0.43265 1	1.41915 6	0.43265 1	0.43265 1	1.58443 5	0.43265 1	2.75799 8	HMDB 00833
NI-methyladenosine	4.11383 4	1.85319 7	2.21209 0	2.07095 2	4.19856 3	4.18606 4	0.34497 2	0.79754 6	0.55043 9	1.00000 0	1.03942 7	0.34497 2	0.86379 4	0.34497 2	0.34497 2	0.34497 2	0.34497 2	0.34497 2	HMDB 03331
nicotinamide	1.89289 3	1.74259 8	1.79944 3	1.22100 2	2.61424 0	2.39391 9	1.19206 1	1.11568 2	0.70028 3	0.64299 9	1.00526 2	1.18348 4	0.80362 5	1.07802 9	1.22467 9	0.92814 4	1.08747 9	0.99473 8	HMDB 01406
nicotinamide adenine dinucleotide (NAD+)	0.49082 2	0.49082 2	1.31492 1	1.05101 3	0.49082 2	0.49082 2	1.31979 5	1.06163 1	1.10384 8	1.16941 9	1.64675 2	0.90486 0	0.98550 5	1.08633 8	0.49082 2	0.49082 2	0.49082 2	0.49082 2	HMDB 00902
oleate (18:1n9)	0.77915 4	1.11037 6	0.62083 8	1.58515 3	1.15853 3	0.73445 4	0.86923 8	0.50071 4	1.07815 9	1.51278 2	1.75544 9	1.17202 9	0.37297 3	0.37981 7	0.58985 7	0.61421 1	0.92319 9	0.82160 5	HMDB 00207
ornithine	0.75887 1	1.74666 1	0.76092 0	0.66849 9	1.01229 1	0.95958 9	0.70907 9	0.72809 9	1.34482 7	1.65673 3	1.71581 3	2.16415 0	0.50115 7	0.96572 7	2.37522 1	1.82726 1	1.91175 8	1.69996 9	HMDB 03374
orotate	0.15995 5	0.52636 6	1.23534 9	0.15995 5	1.00456 9	1.36610 7	1.35341 0	0.91758 0	2.67885 3	2.73142 8	0.40364 5	0.99543 1	1.21980 6	0.31780 2	1.30512 2	0.72316 4	0.15995 5	0.15995 5	HMDB 00226
palmitate (16:0)	1.33979 8	1.48499 1	2.10167 4	1.05213 3	1.78778 6	1.61697 5	0.59989 0	0.52111 9	0.57180 0	0.63520 5	0.85686 8	1.06011 8	1.01381 0	1.03154 2	1.92818 2	1.33616 7	1.35934 5	1.51173 6	HMDB 00220
palmitoleate (16:1n7)	0.79791 8	1.68653 9	1.08930 4	0.78370 1	1.50258 9	1.36108 1	0.79455 1	0.68651 3	0.65003 9	0.77955 6	1.02345 2	1.01413 5	0.76241 0	0.81562 9	1.07135 6	1.06302 4	1.19548 2	0.97618 7	HMDB 03229
palmitoyl sphingomyelin	0.80289 7	1.10486 0	0.72172 3	0.54076 1	0.89514 0	0.78418 4	0.67465 6	0.43077 0	0.39954 7	0.44495 1	0.82104 3	0.65036 3	1.59422 4	1.29306 5	0.83513 9	1.73271 0	3.19662 8	2.44513 2	
pantothenate	0.82404 3	1.05445 4	0.96855 5	0.66142 8	1.26843 5	1.10405 4	1.56722 1	1.23036 7	1.28640 3	1.14324 2	0.79030 3	1.07987 8	2.01241 7	2.37353 7	2.20341 9	1.75939 6	1.40798 8	1.52728 0	HMDB 00210
pelargonate (9:0)	1.63056 1	2.12834 3	1.55376 9	1.59383 0	2.13514 0	1.84355 7	0.65436 1	0.55052 4	0.52714 9	0.36614 7	0.93444 4	1.22250 9	0.89044 4	1.30544 6	1.56577 2	1.42196 9	1.56952 2	1.79631 4	HMDB 00847
penicillin G	5.18405 0	5.90082 0	5.85872 7	3.84393 4	7.49033 2	6.62924 4	0.33722 0	0.32008 6	1.18180 9	1.16152 0	0.78647 8	0.83848 0	0.46946 9	0.77582 3	6.29200 3	2.33692 8	1.06668 8	1.60270 6	
pentadecanoate (15:0)	1.39382 9	1.67955 3	1.53945 4	1.05828 0	1.84687 8	1.76728 2	0.50831 2	0.44541 0	0.51889 6	0.53388 7	1.05992 4	1.18395 9	0.97676 1	1.02323 9	1.19700 2	1.54431 3	1.98263 7	1.78879 5	HMDB 00826
phenol red	2.24587 0	2.17011 1	2.11819 8	1.53513 8	2.80363 5	2.64998 1	0.11456 1	0.12742 6	0.50787 9	0.51504 5	0.87640 9	1.12359 0	0.27461 9	0.50177 0	2.99836 0	1.23307 1	2.12705 1	2.32642 2	

phenylacetyl glycine	0.34532 9	0.34532 9	0.34532 9	0.34532 9	0.34532 9	0.34532 9	0.52234 7	0.47718 8	0.72259 7	0.66725 1	2.17454 8	2.87298 7	0.34993 7	0.60908 6	1.91042 0	1.11727 0	3.39439 0	3.45789 7	HMDB 00821
phenylalanine	0.94308 0	1.04714 3	0.97147 5	0.67207 5	1.30705 7	1.03315 2	1.18859 3	1.01208 4	0.58568 5	0.56309 0	0.94549 5	1.06666 4	0.81969 2	1.03096 1	1.18293 4	1.05888 4	1.25043 7	1.33410 3	HMDB 00159
phosphate	3.36240 7	3.89973 9	2.79766 2	2.20201 5	4.50755 5	3.91700 1	0.55410 7	0.42349 6	0.84021 7	0.87351 3	1.47813 5	1.81223 2	0.65433 2	0.77827 7	3.75177 2	1.87701 9	2.68009 7	2.55712 9	HMDB 01429
phosphoenolpyruvate (PEP)	7.46427 2	0.22739 0	5.48528 3	1.75714 9	3.83947 1	4.95910 4	0.95533 4	0.66890 3	2.72350 8	1.76891 2	2.86319 3	3.49938 6	0.90479 7	0.99800 7	0.22739 0	0.32414 6	0.88976 2	0.22739 0	HMDB 00263
phosphoethanolamine	6.38709 8	5.48399 8	6.78378 3	4.11138 8	8.36891 8	7.51334 4	0.53898 0	0.50143 4	0.09530 3	0.15022 5	0.25147 2	0.43543 9	4.38971 2	4.52685 7	3.07387 9	2.93962 3	2.56655 0	2.77200 9	HMDB 00224
phosphopantetheine	0.42666 2	0.42666 2	0.42666 2	0.42666 2	0.42666 2	0.42666 2	1.58300 7	1.14358 0	1.27007 2	1.00599 0	0.99401 0	1.36204 6	0.98449 0	1.06153 0	0.42666 2	0.92603 7	0.42666 2	0.94347 6	HMDB 01416
proline	0.91396 5	0.73898 1	1.15285 9	0.74537 9	1.24921 0	1.00912 0	1.01080 0	0.86826 5	1.06386 9	1.11861 1	1.39493 1	1.38579 2	0.75150 7	0.89825 2	0.95737 1	0.65852 6	0.70505 4	0.76944 9	HMDB 00162
propionylcarnitine	##### ##	##### ##	##### ##	9.06589 3	##### ##	##### ##	0.55022 9	0.44661 1	0.68977 5	0.64063 4	0.95223 9	1.62624 8	1.25322 2	1.16015 7	2.96843 0	2.05371 3	2.70977 1	2.49528 5	HMDB 00824
pseudouridine	1.62730 8	0.46057 3	2.34539 6	1.24654 0	2.75346 4	0.46057 3	0.60172 9	0.65430 2	0.93749 7	0.74757 0	1.19790 8	2.30028 3	0.74208 6	1.09820 2	1.54403 1	1.98894 2	1.32849 4	1.47211 2	HMDB 00767
putrescine	1.32505 7	2.30952 9	1.18018 7	1.03718 9	3.01620 8	2.67260 3	4.67029 5	4.31498 8	2.82557 0	3.59259 9	1.71664 3	1.82674 2	0.49352 8	1.14387 3	1.36555 9	0.93046 6	0.17143 8	0.41107 7	HMDB 01414
pyroglutamine*	0.56058 8	1.57859 3	0.56058 8	2.29917 4	0.56058 8	2.41865 0	0.92979 0	0.56058 8	0.66000 8	0.76063 7	1.65414 6	1.59261 6	0.56058 8	1.06314 7	3.00424 6	0.56058 8	1.70313 5	2.10265 3	
pyrophosphate (PPi)	1.54230 7	3.52187 9	2.51364 4	3.68084 0	8.93022 7	2.51449 2	0.80981 7	0.53769 0	0.89219 7	0.61935 7	1.16635 2	0.76302 7	2.43944 4	0.65165 8	1.07631 5	1.84465 4	3.73766 2	1.64855 6	HMDB 00250
ribitol	0.65411 7	2.15756 0	0.15079 7	1.29696 5	3.23617 2	1.50614 3	1.22428 8	1.17212 4	1.05683 8	1.44124 2	1.27175 3	1.59020 8	0.15079 7	0.15079 7	0.15079 7	0.15079 7	0.15079 7	0.15079 7	HMDB 00508
riboflavin (Vitamin B2)	0.63842 3	0.63842 3	0.63842 3	0.63842 3	0.63842 3	0.63842 3	1.24337 7	1.03855 7	0.69450 0	0.80543 6	1.83846 3	1.07191 3	1.22076 2	1.15466 0	0.63842 3	0.63842 3	2.42314 7	1.43418 1	HMDB 00244
ribose	0.43873 6	0.43873 6	0.43873 6	0.43873 6	0.43873 6	0.43873 6	1.53797 0	1.02536 2	1.53694 2	2.38974 0	0.80618 3	1.44169 3	0.61057 2	1.33551 2	1.00000 0	0.43873 6	1.79106 6	0.43873 6	HMDB 00283
ribose 5-phosphate	1.24471 7	1.65259 2	0.97883 0	0.84279 8	2.05213 9	1.21714 4	0.68059 6	0.34693 1	1.71660 1	1.78905 0	1.61030 4	2.94279 9	0.75035 9	1.02117 0	4.96500 7	1.52407 8	2.36720 9	1.86935 8	HMDB 00618
S-adenosylhomocysteine (SAH)	1.58586 7	1.20086 5	1.18899 3	0.89697 1	1.58887 1	1.53308 1	0.93943 9	0.77167 4	0.89523 6	0.61023 6	0.97485 3	1.35793 2	0.75752 5	1.02256 5	1.36195 3	1.28667 8	1.00397 3	0.83143 7	HMDB 00939
S-lactoylglutathione	0.17401 5	0.17401 5	0.17401 5	0.17401 5	0.17401 5	0.17401 5	0.17401 5	0.17401 5	2.20737 5	1.22295 1	0.86755 7	1.00000 0	2.70867 6	3.27931 4	0.17401 1	1.41017 1	0.17401 5	0.17401 5	HMDB 01066
scyllo-inositol	##### ##	7.95524 4	8.12903 1	3.64927 6	##### ##	5.52198 3	0.82591 7	0.62381 8	0.52427 8	0.90227 3	0.70639 8	0.95895 0	1.00000 0	2.20061 7	1.66778 5	0.11660 2	2.89583 6	2.88614 0	HMDB 06088
sedoheptulose-7-phosphate	0.26162 4	0.26162 4	0.26162 4	0.26162 4	0.26162 4	0.26162 4	1.00000 0	0.72942 3	1.07632 7	1.13569 8	0.46599 7	1.54118 8	0.26162 4	0.60235 1	0.26162 4	0.84315 1	1.26418 9	1.07466 3	HMDB 01068
serine	0.56394 5	1.01316 6	0.65162 6	0.41031 2	0.92230 1	0.53264 3	0.98683 3	0.74610 2	0.63680 7	0.83157 6	1.13615 3	0.88622 6	0.65020 3	0.94675 2	1.27826 0	1.11692 1	1.05696 2	1.10954 2	HMDB 03406
serotonin (5HT)	1.17389 2	1.77951 6	1.37488 5	0.68223 2	1.39343 9	1.74347 0	1.00396 8	0.71107 7	0.57256 8	0.55746 2	0.93695 8	1.13406 8	1.76368 3	2.22436 0	4.25371 6	4.66260 3	8.23003 3	7.55619 7	HMDB 00259
serylleucine	2.10053 9	2.54252 7	2.95806 1	1.00000 0	2.22392 5	0.18277 7	1.40248 2	1.22457 3	0.18277 7	0.18277 7	0.18277 7	0.18277 7	1.03536 9	1.01753 6	0.18277 7	0.18277 7	0.18277 7	0.18277 7	
sorbitol	1.74686 8	1.43527 4	1.39124 6	0.77230 5	3.29409 2	1.02401 9	2.98181 1	3.68107 2	2.60823 9	4.03207 7	0.97598 0	3.18552 4	0.95722 4	1.38034 2	1.99850 4	1.09036 8	0.93896 4	0.54101 4	HMDB 00247
spermidine	1.56852 9	1.73716 7	1.14579 5	1.05808 2	2.45279 7	1.84917 7	9.57088 7	9.32497 3	0.61900 5	0.31846 0	0.40470 4	0.70719 0	4.99290 2	5.03627 6	1.47324 9	0.94191 8	0.38697 4	0.50210 7	HMDB 01257
spermine	0.27007 8	0.27007 8	0.27007 8	0.27007 8	0.27007 8	0.27007 8	1.22042 3	1.24006 4	0.27007 8	0.27007 8	0.27007 8	0.27007 8	1.48510 7	1.41851 8	0.27007 8	0.27007 8	0.27007 8	0.27007 8	HMDB 01256
sphingosine	0.21071 4	0.21071 4	0.21071 4	0.21071 4	0.21071 4	0.21071 4	0.21071 4	0.21071 4	0.94326 1	0.49030 8	1.44893 8	1.13753 0	0.21071 4	0.21071 4	0.21071 4	0.21071 4	1.05673 9	1.11301 6	HMDB 00252
stearate (18:0)	1.60944 0	1.96617 7	2.68780 6	1.14798 3	2.36027 1	1.86579 5	0.67446 1	0.44667 7	0.68852 1	0.91978 5	1.62003 9	1.08021 4	0.77649 1	0.88257 3	2.74621 4	1.87011 9	2.37478 6	1.90340 5	HMDB 00827
stearyl sphingomyelin	1.92635 0	2.13213 6	1.05254 2	1.17584 9	1.32739 2	1.89682 4	0.39936 4	0.30365 4	0.22483 8	0.28042 6	0.61472 0	0.41928 5	1.58750 3	0.94745 8	0.59384 8	1.16944 7	1.91395 3	0.77290 0	HMDB 01348
streptomycin	0.76277 3	0.76277 3	0.76277 3	0.76277 3	0.76277 3	0.76277 3	1.04347 1	0.95652 9	0.76277 3	0.76277 3	0.76277 3	0.76277 3	1.78464 9	1.82537 1	0.76277 3	0.76277 3	0.76277 3	0.76277 3	



Supplemental Table 3: Glucose Metabolism qPCR Array Ct values for Figure 5A

Gene Symbol	Naïve	Naïve	Naïve	Th17	Th17	Th17	Treg	Treg	Treg
Acly	25.5130005	25.4979992	25.3199997	23.073	23.559	23.2649994	23.6210003	23.6009998	23.1930008
Aco1	28.3640003	28.1509991	28.1389999	26.3390007	26.5440006	26.8619995	26.2390003	26.2140007	26.3460007
Aco2	26.5179996	26.3600006	26.2420006	24.9659996	25.2619991	25.3010006	24.7199993	24.4920006	24.6669998
Agl	31.0990009	31.3069992	30.7549992	27.3689995	27.7350006	27.1700001	28.8649998	28.7049999	28.4029999
Aldoa	23.2600002	23.2670002	23.2479992	18.4349995	18.7439995	18.2320004	20.5629997	20.0370007	19.9829998
Aldob	37.1409988	32.3730011	Undetermined	37.6549988	32.598999	Undetermined	Undetermined	37.4290009	35.4430008
Aldoc	31.2049999	31.3519993	30.8729992	22.6760006	22.5860004	21.9890003	27.1060009	25.9960003	25.9220009
Bpgm	28.2970009	28.3799992	28.0599995	26.9599991	26.7290001	26.4309998	26.1170006	25.6790009	25.4979992
Cs	31.3069992	31.7299995	30.8710003	28.3269997	29.0849991	29.2679996	29.1599998	28.8339996	28.8719997
Dlat	28.2919998	28.0450001	28.1089993	26.5839996	26.7950001	26.4500008	26.5620003	26.2970009	26.0300007
Dld	27.3110008	27.2889996	26.7800007	25.5170002	25.3169994	25.2989998	25.3080006	24.9109993	24.7719994
Dlst	26.2059994	26.0310001	25.8239994	24.8150005	25.177	24.8470001	24.4239998	24.5359993	24.4169998
Eno1	23.2099991	23.1119995	23.0499992	19.2819996	19.4400005	19.3150005	20.4209995	19.9920006	20.1240005
Eno2	35.7280006	34.0680008	33.5750008	29.9960003	28.9839993	29.3369999	30.7380009	29.7460003	29.8850002
Eno3	29.0109997	28.7159996	28.7280006	28.8859997	28.3719997	27.9279995	27.1049995	26.6790009	26.2660007
Fbp1	34.3330002	34.8709984	34.4350014	34.5419998	32.8330002	33.5849991	32.6689987	33.4420013	34.2529984
Fbp2	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Fh1	27.6049995	27.2889996	27.4029999	25.5079994	25.7460003	25.8400002	25.6210003	25.4470005	25.2649994
G6pc	34.8540001	39.6080017	37.5489998	Undetermined	38.0410004	35.6529999	Undetermined	36.8740005	33.3829994
G6pc3	27.8859997	28.0219994	27.9200001	27.0380001	26.8600006	26.8789997	26.9729996	26.9160004	26.882
G6pdx	27.3080006	27.2420006	27.0760002	25.4659996	25.5830002	25.0650005	25.9799995	25.5109997	25.1340008
Galm	28.9029999	28.9419994	28.7479992	25.9920006	25.9209995	25.8059998	25.5620003	25.0849991	25.125
Gapdhs	33.1730003	33.5880013	33.4620018	35.1650009	34.3660011	34.3139992	35.1559982	34.8359985	34.8959999
Gbe1	27.7029991	27.9619999	27.4589996	25.4729996	25.9599991	25.2849998	28.5389996	28.4009991	28.0620003
Gck	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Gpi1	24.3600006	24.2509995	24.0219994	21.1509991	21.1879997	20.7199993	22.3649998	21.8129997	21.7229996
Gsk3a	25.9899998	25.9039993	25.8299999	24.9349995	25.4150009	24.7579994	24.9379997	24.5990009	24.3360004

Supplemental Table 3: Glucose Metabolism qPCR Array Ct values for Figure 5A

Gsk3b	26.3059998	26.0629997	25.9139996	24.7539997	25.2019997	24.9689999	24.5610008	24.823	24.5349998
Gys1	29.2789993	29.3349991	28.9279995	24.9710007	24.9349995	24.9750004	27.1919994	26.6490002	26.9559994
Gys2	Undetermined	Undetermined	33.4599991	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
H6pd	27.1459999	27.1270008	26.8600006	25.9920006	26.2339993	26.1030006	25.9950008	25.9629993	25.8719997
Hk2	32.118	32.2169991	31.8810005	25.1280003	25.3309994	25.3250008	26.1730003	26.2380009	26.4659996
Hk3	32.0289993	32.2599983	31.2609997	32.9990005	33.980999	32.5130005	32.3370018	32.8110008	32.1679993
Idh1	29.6149998	29.4290009	29.1030006	26.9060001	26.7549992	26.9370003	28.1830006	27.5869999	27.5909996
Idh2	26.0839996	26.1040001	25.9629993	25.5949993	25.5629997	25.1049995	25.5799999	25.3799992	25.1369991
Idh3a	26.6189995	26.5559998	26.3810005	25.698	25.2679996	25.1079998	25.2840004	24.2719994	24
Idh3b	25.2989998	25.2049999	24.9309998	23.6210003	23.9330006	23.5130005	23.5419998	23.3980007	23.1560001
Idh3g	25.0650005	25.0620003	24.8780003	23.2140007	23.9139996	23.1429996	23.2110004	23.5970001	23.1299992
Mdh1	25.9009991	25.7810001	25.5440006	23.9669991	23.8859997	23.4920006	24.0820007	23.5119991	23.2520008
Mdh1b	Undetermined	38.362999	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Mdh2	24.9470005	24.8470001	24.7299995	23.0799999	23.1639996	23.007	23.0279999	22.6940002	22.5249996
Ogdh	24.9190006	25.0160007	24.6539993	24.9619999	24.1200008	23.8139992	24.8659992	23.6720009	23.3990002
Pck1	Undetermined	Undetermined	Undetermined	Undetermined	37.9959984	31.7959995	Undetermined	34.3050003	Undetermined
Pck2	27.7709999	27.9349995	28.0960007	25.6259995	25.4169998	25.0230007	26.5699997	26.0240002	25.8290005
Pcx	30.2900009	30.7420006	30.3470001	25.7259998	25.868	25.2150002	28.1690006	27.7929993	27.3239994
Pdha1	25.9050007	25.9080009	25.7169991	24.2900009	24.2560005	24.2180004	23.9969997	23.6800003	23.8199997
Pdhb	26.3379993	26.1930008	26.0960007	24.8869991	24.9549999	24.7140007	24.6130009	24.316	24.1599998
Pdk1	25.6079998	25.5990009	25.0569992	24.5680008	24.0489998	24.3339996	26.2749996	25.3199997	25.9559994
Pdk2	32.512001	33.7179985	33.3950005	30.0060005	32.0530014	31.3059998	31.382	32.118	31.0680008
Pdk3	28.2059994	28.2099991	28.0569992	24.4990005	25.2579994	25.0349998	25.0639992	25.4640007	25.2310009
Pdk4	32.7519989	34.3880005	32.1660004	32.2019997	32.973999	34.6310005	34.8320007	32.7599983	34.269001
Pdp2	28.1159992	28.1060009	27.9769993	26.9169998	27.1410007	26.9650002	27.9619999	27.6900005	27.6100006
Pdpr	29.3010006	28.934	28.8939991	27.7700005	27.4669991	27.2670002	27.0550003	26.9330006	26.5949993
Pfkl	26.4440002	26.3110008	26.1459999	22.9839993	22.8040009	22.6359997	24.7390003	23.6800003	23.9829998
Pgam2	29.0319996	28.4069996	28.6590004	28.5389996	28.5459995	28.2749996	27.5380001	27.9029999	27.941

Supplemental Table 3: Glucose Metabolism qPCR Array Ct values for Figure 5A

Pgk1	25.1800003	24.8490009	24.6019993	19.0879993	19.4650002	19.1790009	21.0680008	20.7630005	20.9020004
Pgk2	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Pgm1	26.8239994	27.177	26.9220009	24.809	24.9090004	25.1229992	24.9650002	24.9979992	24.9680004
Pgm2	28.4899998	28.4169998	28.198	24.0249996	24.5009995	24.1089993	26.4050007	26.2870007	26.1940002
Pgm3	29.5610008	29.4720001	29.4960003	29.1259995	28.8449993	28.2730007	28.0480003	27.8560009	27.7689991
Phka1	32.2050018	32.6650009	31.6049995	34.2809982	33.4480019	35.9780006	34.9729996	34.4370003	32.7669983
Phkb	29.1049995	29.0119991	29.0020008	28.066	27.8360004	27.4209995	27.5230007	27.3260002	26.9230003
Phkg1	31.4139996	30.9500008	30.2740002	33.7200012	33.5950012	32.2869987	31.5149994	30.5139999	31.1200008
Phkg2	26.5400009	26.4349995	26.2770004	25.7800007	25.6860008	25.2999992	25.8050003	25.3850002	25.1350002
Pklr	27.6399994	27.8460007	28.8889999	Undetermined	34.4980011	Undetermined	34.1119995	Undetermined	34.0009995
Prps1	25.6110001	25.8659992	25.4850006	24.3999996	24.4500008	24.3129997	24.2929993	24.2040005	23.9669991
Prps11	34.2529984	Undetermined	34.5089989	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Prps2	26.1159992	26.2169991	26.0499992	25.493	25.8889999	25.3910007	24.9920006	24.9279995	24.8269997
Pygl	31.0690002	31.2180004	31.7679996	27.4050007	27.9060001	27.0569992	29.9810009	29.8969994	29.8050003
Pygm	29.0310001	29.1229992	28.8269997	30.882	30.9810009	30.2560005	29.8439999	30.1229992	29.2709999
Rbks	28.6970005	28.3349991	28.4009991	27.5380001	27.507	27.3889999	27.4519997	27.1709995	27.0189991
Rpe	26.3959999	26.3400002	26.1000004	25.0249996	25.5020008	25.2749996	24.8050003	24.9939995	24.7959995
Rpia	26.8169994	26.8799992	26.6040001	25.4419994	25.6200008	25.7240009	25.1580009	25.0799999	25.1620007
Sdha	25.4169998	25.4009991	25.1340008	24.2390003	24.4120007	24.2180004	24.0459995	23.684	23.4729996
Sdhb	26.2560005	26.2240009	26.1369991	24.5170002	24.6329994	24.8209991	24.2950001	24.132	24.1879997
Sdhc	25.6599998	25.8929996	25.6310005	24.0849991	24.5820007	24.0739994	24.2789993	24.1270008	23.9109993
Sdhd	30.9330006	30.7619991	30.2299995	28.7539997	28.9920006	28.9400005	28.6259995	28.2670002	28.1480007
Sucla2	27.6749992	27.9370003	27.5610008	25.9200001	25.8999996	25.5580006	25.6159992	25.3600006	25.0189991
Suclg1	28.7929993	29.0540009	28.3899994	27.3139992	26.5949993	26.3929996	27.4260006	25.618	25.9750004
Suclg2	26.9029999	26.9169998	26.5970001	26.6459999	26.8759995	26.6790009	26.4029999	26.2380009	26.0559998
Taldo1	28.1679993	28.1270008	28.4190006	27.1119995	28.2730007	27.3309994	26.9239998	28.1439991	26.6879997
Tkt	24.7439995	24.7709999	24.7849998	22.3220005	22.2600002	22.0410004	22.9790001	22.3209991	22.3400002
Tpi1	27.0709991	27.1450005	27.5489998	21.1140003	20.9729996	21.2600002	23.0130005	22.4510002	22.9440002

Supplemental Table 3: Glucose Metabolism qPCR Array Ct values for Figure 5A

Ugp2	27.5949993	27.0709991	26.9419994	25.5410004	25.309	25.2630005	25.493	25.1380005	25.0510006
Actb	19.0370007	19.1490002	18.5909996	17.8610001	18.0919991	17.7000008	17.6200008	17.2010002	17.0400009
B2m	21.1580009	21.0440006	20.8250008	20.2819996	20.5760002	20.2719994	20.4230003	20.2900009	20.191
Gapdh	22.934	22.9890003	22.8339996	18.5779991	18.052	17.7490005	20.2619991	18.9610004	19.2910004
Gusb	27.9360008	27.9979992	27.882	26.9850006	27.316	27.2719994	26.5419998	26.4769993	26.2870007
Hsp90ab1	22.2329998	22.1380005	22.118	20.3460007	20.4009991	20.2150002	20.7070007	20.3430004	20.3840008
MGDC	Undetermined	Undetermined	Undetermined	Undetermined	39.3790016	Undetermined	Undetermined	39.1310005	Undetermined
RTC	23.2199993	23.3059998	22.7819996	22.5860004	22.5680008	22.2530003	22.6389999	22.1429996	22.4029999
RTC	23.1879997	23.0949993	22.7280006	22.7439995	22.3500004	22.2520008	22.5879993	22.1459999	22.3540001
Tbp	26.9150009	26.9039993	26.9080009	26.2479992	25.9720001	26.2019997	26.1259995	25.618	25.8040009
PPC	20.1560001	20.7119999	20.4699993	20.7800007	20.9209995	21.0039997	20.7450008	21.0020008	20.7299995
PPC	20.4860001	20.7639999	20.4750004	20.6130009	21.2789993	20.6940002	20.4990005	21.0820007	20.5550003
PPC	20.3540001	20.6809998	20.8010006	20.7250004	21.5620003	20.7859993	20.6590004	21.0440006	20.5930004

Supplemental Table 4: Mitochondrial Metabolism qPCR Array Ct values for Figure 5D

Gene Symbol	Naive	Naive	Naive	Naive	Th17	Th17	Th17	Treg	Treg	Treg
Atp12a	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Atp4a	33.8269997	33.8619995	33.1520004	Undetermined	34.3089981	31.8999996	34.2070007	34.9949989	34.6469994	Undetermined
Atp4b	34.8689995	34.7939987	35.8880005	38.9280014	34.4480019	35.4980011	31.8460007	35.2169991	34.9959984	33.8889999
Atp5a1	23.6919994	23.9060001	23.2520008	39.3110008	22.5990009	22.5410004	22.8619995	22.302	22.3080006	21.9029999
Atp5b	23.368	23.1620007	22.9869995	38.1599998	22.1749992	22.0610008	22.4190006	21.9370003	21.9039993	21.3490009
Atp5c1	24.6849995	24.4860001	24.2649994	38.4700012	23.1359997	23.1599998	23.1410007	23.0130005	23.1030006	22.5629997
Atp5d	24.9589996	24.8320007	24.7329998	Undetermined	23.0820007	22.9729996	22.9780006	23.4890003	23.2390003	22.8430004
Atp5f1	24.125	23.9860001	23.677	39.6619987	22.5960007	22.5249996	22.9519997	22.4519997	22.2539997	21.9510002
Atp5g1	24.9419994	24.7439995	24.7269993	37.9290009	24.2350006	23.9680004	24.3470001	23.5049992	23.3659992	23.125
Atp5g2	24.5559998	24.3810005	23.9969997	Undetermined	23.0450001	23.0690002	23.073	22.7059994	22.8519993	22.4020004
Atp5g3	24.4029999	23.9130001	23.8649998	Undetermined	22.1779995	22.1499996	22.6959991	21.9109993	21.9640007	21.7029991
Atp5h	23.7399998	23.3990002	23.0699997	37.0159988	22.3209991	22.2089996	22.1790009	21.9890003	21.8810005	21.191
Atp5j	24.5900002	24.2029991	23.9880009	Undetermined	22.8799992	22.0139999	22.8479996	22.4619999	21.9519997	21.9960003
Atp5j2	24.493	24.5389996	24.2350006	Undetermined	22.7789993	22.6450005	22.9440002	22.5160007	22.2849998	21.9659996
Atp5o	25.2229996	25.0489998	24.6040001	Undetermined	23.7929993	23.8610001	23.9839993	23.6790009	23.6639996	23.1760006
Atp6v0a2	26.059	25.7630005	25.2849998	Undetermined	25.7719994	25.7210007	25.9650002	25.0020008	25.0459995	24.6949997
Atp6v0d2	32.6549988	32.1300011	31.8990002	Undetermined	24.3369999	24.3980007	24.7929993	26.2940006	26.0900002	26.4650002
Atp6v1c2	32.9609985	31.9069996	32.3199997	Undetermined	32.6269989	32.9939995	34.0449982	31.9419994	34.8610001	33.9959984
Atp6v1e2	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	34.7340012	Undetermined
Atp6v1g3	35.4090004	36.1809998	34.2900009	Undetermined	35.4529991	35.5139999	35.6329994	34.6860008	38.1020012	31.7399998
Bcs1l	28.5410004	28.5760002	28.2549992	Undetermined	27.8780003	27.9570007	27.8959999	28.1340008	28.0380001	27.4810009
Cox11	29.9839993	29.7940006	29.3059998	Undetermined	29.8339996	29.3799992	29.6520004	29.9820004	29.6459999	29.2099991
Cox4i1	23.6299992	23.4829998	23.1450005	Undetermined	22.1189995	22.2150002	22.3659992	22.0270004	22.1849995	21.7080002
Cox4i2	Undetermined	32.4830017	34.5289993	Undetermined	28.7099991	28.8129997	28.2679996	33.7550011	32.8440018	31.5799999
Cox5a	25.5189991	25.0090008	24.8509998	Undetermined	23.6019993	23.0580006	23.6450005	23.4920006	22.9689999	22.9969997
Cox5b	32.6199989	32.5680008	33.1570015	Undetermined	31.7259998	32.8790016	31.5330009	30.7089996	31.7159996	30.3770008
Cox6a1	23.8719997	23.3920002	23.2520008	Undetermined	22.0909996	21.9430008	22.3290005	21.9120007	21.9349995	21.3419991



Supplemental Table 4: Mitochondrial Metabolism qPCR Array Ct values for Figure 5D

Cox6a2	35.6990013	35.5060005	35.3209991	Undetermined	33.401001	33.118	34.1189995	39.2150002	35.3860016	Undetermined
Cox6b1	24.7639999	24.368	24.2660007	Undetermined	23.2460003	22.7700005	23.0380001	22.9549999	22.4290009	22.0990009
Cox6b2	28.3959999	28.2740002	29.0760002	Undetermined	29.3239994	29.1210003	29.6369991	28.9689999	29.1420002	29.1119995
Cox6c	24.7549992	24.2619991	24.0410004	Undetermined	22.4209995	22.1310005	22.6310005	22.1259995	22.0779991	21.7320004
Cox7a2	33.8380013	32.5709991	32.8849983	Undetermined	33.4910011	33.5159988	33.3429985	33.0060005	33.9329987	32.9620018
Cox7a2l	24.2420006	23.8799992	23.3889999	Undetermined	22.9750004	22.9610004	22.8899994	22.7259998	22.7189999	22.1289997
Cox7b	26.2709999	26.1669998	25.9589996	39.0270004	24.5650005	24.316	24.7029991	24.323	23.9220009	23.7040005
Cox8a	26.0230007	26.2870007	25.7600002	Undetermined	24.1499996	24.1049995	24.7029991	23.8670006	23.8670006	23.6809998
Cox8c	38.6240005	Undetermined	30.8239994	38.3429985	38.9500008	Undetermined	Undetermined	35.7459984	38.0089989	36.4469986
Cyc1	26.1490002	25.8759995	25.7439995	39.1220016	25.3600006	24.9279995	25.1119995	25.0990009	24.7870007	24.0550003
Lhpp	29.243	28.8540001	28.7709999	Undetermined	29.3320007	29.7269993	29.6709995	28.9130001	29.2469997	28.2390003
Ndufa1	25.9710007	25.4430008	25.2089996	Undetermined	24.1100006	23.368	24.1240005	23.6469994	23.2660007	23.0380001
Ndufa10	25.6350002	25.4580002	25.0979996	Undetermined	24.6630001	24.7070007	24.9680004	24.0480003	24.1650009	23.5939999
Ndufa11	26.1420002	25.8059998	25.8190002	39.3510017	24.3850002	24.5389996	24.6690006	23.9769993	23.9640007	23.8929996
Ndufa2	26.6849995	26.5410004	26.1800003	Undetermined	25.1399994	25.0970001	25.3190002	24.8279991	24.8659992	24.3400002
Ndufa3	25.1860008	25.2229996	24.7970009	Undetermined	24.243	23.5410004	24.066	23.8729992	23.4020004	23.2059994
Ndufa4	24.3369999	24.0909996	23.7409992	Undetermined	23.5410004	23.1060009	23.6720009	22.6679993	22.4330006	22.1240005
Ndufa5	26.7910004	26.3560009	26.1669998	Undetermined	25.7840004	25.1369991	26.0690002	25.1009998	24.9699993	24.7140007
Ndufa6	24.3150005	24.0900002	23.7339993	Undetermined	22.9629993	22.8239994	22.8570004	23.0939999	23.0890007	22.5060005
Ndufa7	25.7070007	25.3939991	25.198	Undetermined	23.9920006	23.5149994	23.6860008	23.7770004	23.5139999	22.993
Ndufa8	25.8330002	25.6000004	25.3980007	Undetermined	24.3439999	23.8509998	24.1490002	24.118	23.7240009	23.5090008
Ndufab1	31.198	30.9659996	30.9720001	Undetermined	31.0049992	31.1790009	31.2730007	30.9599991	31.2119999	30.6720009
Ndufb10	26.5799999	26.3279991	26.5750008	Undetermined	25.8279991	25.9650002	25.6189995	25.9839993	25.8279991	25.6469994
Ndufb2	26.9009991	26.4559994	26.2450008	Undetermined	25.3869991	24.8479996	25.1949997	25.073	24.5119991	24.1359997
Ndufb3	26.9080009	26.0400009	26.1650009	Undetermined	25.6720009	25.2250004	25.5039997	25.1720009	24.8630009	24.6790009
Ndufb4	24.8010006	24.2180004	24.2229996	35.4500008	25.3099995	24.9969997	25.4060001	24.9039993	24.6630001	23.9880009
Ndufb5	26.243	25.927	25.493	Undetermined	24.4920006	24.4360008	24.6000004	24.0109997	24.2259998	23.8740005
Ndufb6	26.9850006	26.3950005	26.4549999	Undetermined	24.9610004	24.6350002	24.9160004	24.5529995	24.2339993	24.073

Supplemental Table 4: Mitochondrial Metabolism qPCR Array Ct values for Figure 5D

Ndufb7	25.559	25.4360008	25.2010002	Undetermined	24.3239994	24.0820007	24.5130005	23.9510002	23.882	23.5130005
Ndufb8	25.3390007	25.2110004	24.9120007	Undetermined	23.4239998	23.3689995	23.8419991	23.1970005	23.3419991	22.9009991
Ndufb9	25.2280006	25.1219997	25.1299992	Undetermined	23.3640003	22.9430008	23.4969997	23.1940002	23.184	22.7959995
Ndufc1	27.5170002	27.1919994	26.8929996	Undetermined	25.302	24.5340004	25.1410007	24.9890003	24.5319996	24.2660007
Ndufc2	26.0639992	25.8169994	25.8129997	Undetermined	23.9869995	23.7950001	24.0030003	23.9659996	23.9190006	23.4680004
Ndufs1	27.1819992	26.7530003	26.5130005	Undetermined	26.0900002	25.9039993	26.3810005	25.5809994	25.5760002	25.4130001
Ndufs2	25.6860008	25.5039997	25.0100002	Undetermined	23.7649994	23.7439995	23.8899994	23.6760006	23.5709991	23.2900009
Ndufs3	25.7719994	25.302	24.9699993	Undetermined	24.3169994	24.1779995	24.3689995	24.1140003	24.066	23.5830002
Ndufs4	26.8269997	26.1590004	25.9750004	Undetermined	24.8990002	24.7770004	24.8339996	25.0820007	24.8080006	24.0830002
Ndufs5	26.4589996	25.625	25.6350002	Undetermined	24.6359997	24.0569992	24.2520008	24.2679996	23.8579998	23.3969994
Ndufs6	25.9799995	25.7660007	25.5310001	Undetermined	24.2210007	23.7870007	23.9249992	23.9820004	23.5330009	23.1359997
Ndufs7	25.7859993	25.7040005	25.6879997	Undetermined	25.2970009	25.1399994	25.2229996	25.0330009	25.0419998	24.7810001
Ndufs8	26.9729996	26.9190006	27.0960007	Undetermined	25.9640007	25.5739994	25.691	25.9659996	25.3689995	25.6170006
Ndufv1	26.6490002	26.1870003	26.0869999	Undetermined	25.493	25.2220001	25.7269993	25.0970001	24.8320007	24.7509995
Ndufv2	26.2409992	25.9489994	25.8610001	Undetermined	24.8120003	24.2420006	24.2250004	24.7999992	24.184	23.7140007
Ndufv3	26.3059998	26.0599995	25.8309994	Undetermined	23.2670002	22.9589996	23.1900005	24.2460003	23.9659996	23.7220001
Oxa1l	26.5559998	26.1469994	25.9559994	Undetermined	25.6429996	25.9239998	25.8729992	25.6809998	25.7290001	25.2479992
Ppa1	27.8689995	27.3889999	27.3120003	Undetermined	26.4720001	26.1550007	26.6609993	25.8099995	25.5540009	25.0039997
Ppa2	27.3449993	26.8829994	26.4939995	Undetermined	25.9489994	25.6089993	25.9860001	25.6270008	25.4090004	24.8840008
Sdha	25.3519993	25.0049992	24.802	Undetermined	24.552	24.3969994	24.9039993	24.0949993	24.2360001	23.7700005
Sdhb	26.5960007	26.3659992	26.2759991	Undetermined	24.9440002	24.8339996	25.1439991	24.7169991	24.368	24.125
Sdhc	25.7740002	25.7259998	25.5860004	Undetermined	24.3239994	24.6469994	24.7059994	24.2159996	24.2560005	23.9979992
Sdhd	30.9220009	30.3619995	30.3689995	Undetermined	29.0209999	28.6970005	29.3840008	28.4349995	28.2439995	28.1030006
Uqcr11	28.5760002	28.2859993	28.0739994	Undetermined	26.9790001	26.9459991	27.2029991	26.6410007	26.4120007	26.2630005
Uqcrc1	24.5149994	24.3969994	24.1380005	Undetermined	23.4540005	23.5060005	23.5970001	23.2000008	23.2049999	22.6690006
Uqcrc2	25.632	25.4459991	25.4029999	Undetermined	24.3110008	24.0860004	24.3099995	24.2719994	24.0219994	23.8789997
Uqcrcs1	25.1870003	24.7390003	24.4090004	Undetermined	22.9669991	23.1459999	23.3920002	22.9909992	23.184	22.9599991
Uqcrcs2	27.6110001	27.1870003	26.8910007	38.1500015	25.8460007	25.7439995	26.0860004	25.177	25.2129993	24.7619991

Supplemental Table 4: Mitochondrial Metabolism qPCR Array Ct values for Figure 5D

Uqcrg	25.8509998	25.4080009	25.3899994	Undetermined	24.073	23.7929993	24.2129993	23.8959999	23.5400009	23.2549992
Actb	19.1569996	19.0109997	18.4680004	Undetermined	18.2250004	18.0629997	18.3309994	17.7870007	17.6450005	17.3990002
B2m	21.1989994	20.3460007	19.9939995	39.5680008	20.6830006	20.4430008	20.7660007	20.6219997	20.4249992	20.2479992
Gapdh	23.7679996	23.4610004	23.0380001	Undetermined	18.7350006	18.6100006	18.8589993	20.2709999	19.9699993	19.5970001
Gusb	28.0030003	27.8859997	27.7460003	Undetermined	27.368	27.0699997	27.7290001	26.8409996	26.2950001	25.9769993
Hsp90ab1	22.5569992	22.2740002	22.1019993	Undetermined	20.7660007	20.6690006	20.875	20.9629993	20.9829998	20.5499992
MGDC	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
RTC	23.1329994	22.7350006	22.198	Undetermined	22.5629997	22.3950005	22.7369995	22.4290009	22.368	22.4290009
RTC	23.0419998	22.6709995	22.2469997	Undetermined	22.5990009	22.5219994	22.8810005	22.4559994	22.4150009	22.507
Tbp	27.0060005	26.5300007	26.4440002	Undetermined	26.4139996	25.9810009	26.5139999	25.9960003	25.9799995	26.0039997
PPC	20.9190006	20.9680004	20.6189995	20.3239994	20.9160004	20.8850002	20.9470005	20.8010006	20.6130009	20.7830009
PPC	20.6380005	20.8659992	20.5559998	20.3850002	20.9850006	20.7800007	20.8449993	20.8150005	20.7709999	20.4500008
PPC	20.7329998	20.8390007	20.6959991	20.4829998	21.0930004	21.0450001	20.9360008	20.7169991	20.7520008	20.5090008

Supplemental Table 5: T cell Metabolism qPCR Array Ct values for Supplemental Figure 6

Gene symbol	naïve	naïve	Th1	Th1	Th17	Th17	Th17	Treg	Treg
Slc7a5	25.69	25.80	24.54	24.65	24.97	25.92	24.634396	25.48	25.61
Slc3a2	24.69	23.81	23.51	23.54	23.39	23.86	23.690067	23.94	24.11
Phgdh	26.22	25.81	25.73	25.91	25.31	26.27	24.980423	25.69	25.66
Gls	24.04	23.30	23.56	23.51	23.18	23.48	23.675243	23.25	23.45
Gls2	30.01	30.47	29.80	29.84	25.90	25.75	26.57876	28.96	28.99
Got2	23.96	23.42	22.35	22.48	21.71	22.11	22.016165	22.30	22.28
Glud1	24.14	23.33	22.88	22.92	21.66	21.88	22.035048	22.16	22.27
Odc1	23.78	23.32	20.80	20.90	20.56	21.02	20.986616	21.03	20.99
Gapdh	21.90	21.30	19.21	19.33	17.44	17.67	17.953527	19.43	19.14
Pfas	26.17	25.83	26.12	26.25	25.71	26.22	25.049198	25.58	25.53
Pck2	25.87	25.69	25.37	25.44	24.07	24.39	25.043112	25.55	25.52
Pdk1	24.88	24.00	24.92	25.11	22.99	23.65	24.821732	25.14	25.11
Pdk3	26.44	25.77	24.97	24.94	23.51	23.88	23.920898	24.44	24.41
Pdp2	26.78	26.19	26.34	26.01	25.49	25.90	25.705465	26.72	26.97
Pdpr	28.09	27.18	26.79	26.83	26.36	26.57	26.961267	26.35	26.44
Pfkfb3	29.42	28.99	28.88	28.94	28.68	28.89	28.986393	29.26	29.29
Slc2a1	26.89	26.09	24.13	24.36	23.03	23.50	23.263779	24.91	24.96
Slc2a3	26.69	26.23	23.24	23.38	21.64	21.61	24.313131	25.60	25.55
Slc2a6	28.70	28.83	26.59	26.49	25.01	25.59	25.74978	25.13	25.15
Gys1	27.80	27.40	26.61	26.59	23.83	24.07	24.992134	26.35	26.25
Pnp	25.00	24.70	24.24	24.26	24.00	24.68	23.637732	24.55	24.40
Pygl	29.33	28.54	29.25	29.05	26.16	25.98	28.014265	29.26	29.13
Ppat	25.91	25.26	25.84	25.76	25.65	26.13	24.980137	25.50	25.47
Cad	25.20	24.78	25.43	25.68	25.26	26.17	24.35022	24.87	24.70
Phkg2	25.44	25.20	24.99	24.81	24.67	24.73	25.203356	24.73	24.94
Aldoa	22.21	21.68	19.67	19.77	17.98	18.11	18.811472	20.26	20.05
Ada	27.84	27.63	28.24	28.30	28.96	29.43	28.31427	28.30	27.98
Eno1	22.06	21.48	20.27	20.45	18.40	18.84	18.881927	20.11	19.88

Supplemental Table 5: T cell Metabolism qPCR Array Ct values for Supplemental Figure 6

Eno2	33.00	31.04	30.14	30.17	28.36	28.29	30.009653	29.68	30.15
Eno3	27.87	27.10	27.66	27.73	27.64	27.80	27.897144	26.20	26.46
Gpi1	22.91	22.35	21.29	21.41	20.03	20.07	20.950727	21.64	21.54
Hk2	30.58	29.47	24.63	24.83	24.52	24.96	24.504145	26.01	26.06
Hk3	29.10	29.02	30.79	30.83	31.99	32.56	33.097363	32.53	32.30
Pfkl	24.98	24.61	23.90	23.97	21.78	22.10	22.314909	23.66	23.56
Pgam2	28.23	27.76	27.65	27.42	27.88	27.86	29.176302	27.61	27.79
Pgk1	23.99	23.25	21.00	21.16	18.60	18.91	19.46935	20.97	20.78
Pgk2	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Pgm1	25.76	25.17	25.12	25.25	24.53	24.77	25.03659	25.03	25.08
Pgm2	27.39	26.96	25.59	25.64	23.22	23.39	24.429161	25.96	25.75
Pgm3	28.72	27.51	27.73	27.90	27.31	27.80	27.52053	26.99	27.33
Pklr	26.36	26.91	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	34.77	36.58
Tpi1	26.23	25.95	22.97	23.37	20.80	21.22	20.917797	23.20	22.80
Hk1	24.29	23.86	23.28	23.46	21.66	21.98	22.551363	23.33	23.26
Pgam1	25.29	24.59	22.65	22.79	20.63	20.88	21.190928	22.53	22.40
Abca1	27.16	26.20	27.18	27.10	27.56	27.55	27.735128	26.32	26.47
Apoe	25.57	25.28	28.85	28.43	28.95	28.62	28.680513	27.99	28.27
Fabp5	26.35	26.31	24.77	24.80	23.23	23.89	22.865398	22.85	22.72
Cpt1a	24.99	25.02	25.63	25.70	25.56	25.82	26.439365	25.29	25.46
Fasn	23.69	23.33	22.99	23.05	22.08	22.52	21.973028	23.02	22.86
Acaca	27.23	26.19	25.19	25.32	25.09	25.51	25.213793	25.51	25.53
Nampt	26.23	25.24	25.11	25.10	23.57	23.88	23.972778	25.00	24.98
G6pdx	26.42	25.34	25.11	25.17	24.38	24.73	24.576538	25.04	25.03
Pkm	22.32	21.91	19.92	20.10	18.18	18.63	19.106892	20.21	19.95
Prps1	25.46	24.41	24.39	24.61	23.90	24.27	23.627214	24.17	24.20
Prps2	25.49	24.78	24.90	24.92	24.91	25.26	25.098734	24.83	24.72
Rbks	27.00	26.96	26.29	26.19	26.98	27.32	26.549116	27.00	27.02

Supplemental Table 5: T cell Metabolism qPCR Array Ct values for Supplemental Figure 6

Rpia	24.41	24.03	24.71	24.63	24.43	24.72	24.035124	24.61	24.47
Taldo1	27.04	27.01	27.11	25.43	27.00	27.79	27.459816	27.20	27.04
Tkt	22.99	22.61	21.94	21.98	23.38	21.39	21.308762	21.96	21.87
Pgd	24.89	24.53	24.08	24.38	23.31	23.78	23.707796	24.33	24.18
Pcx	29.37	29.19	28.41	28.52	25.12	25.22	25.366539	27.59	27.42
Ldha	21.84	21.37	20.27	20.38	18.72	19.20	18.896986	19.87	19.66
Slc16a1	27.72	26.94	26.48	26.37	26.06	26.52	26.143938	26.95	26.80
Me2	25.07	24.40	25.08	25.22	23.34	23.59	24.135546	24.65	24.72
Acly	24.43	23.42	23.12	23.08	22.45	22.95	22.689234	23.16	23.12
Aco1	27.45	27.04	26.40	26.53	25.98	26.41	26.285929	26.42	26.45
Aco2	25.06	24.66	24.71	24.75	24.06	24.58	23.889244	24.01	23.97
Cs	29.83	29.22	28.36	28.94	28.09	28.63	28.41055	28.65	28.56
Dlat	26.97	26.10	26.42	26.36	25.73	26.11	25.997734	26.01	25.98
Dld	26.37	25.45	25.31	25.24	25.13	25.47	24.703274	24.81	25.01
Dlst	24.10	23.52	23.59	23.55	23.54	23.71	23.27473	23.46	23.52
Fh1	25.00	24.71	24.82	24.93	24.11	24.65	23.776833	24.35	24.26
ldh1	28.80	27.61	27.22	27.07	26.10	26.35	26.949442	27.66	27.56
ldh2	24.11	24.00	24.57	24.60	24.32	24.40	25.318464	24.75	24.83
ldh3a	26.04	24.83	24.45	24.41	24.60	25.36	24.125422	24.24	24.16
Mdh1	24.52	23.67	23.61	23.56	22.79	23.28	23.495216	23.28	23.15
Mdh2	23.84	23.31	23.19	22.99	22.79	23.26	22.79984	23.09	23.04
Ogdh	24.20	23.48	23.44	23.44	23.51	23.84	23.937874	23.79	23.75
Pdha1	24.61	23.70	24.03	23.99	23.12	23.49	23.722767	23.22	23.28
Pdhb	25.17	24.31	24.55	24.74	24.03	24.49	24.29106	24.21	24.27
Sdha	23.45	23.25	23.06	23.07	22.60	22.90	22.87806	22.70	22.73
Sdhb	24.70	24.41	23.91	23.91	23.55	23.95	23.467802	23.68	23.66
Sdhc	24.26	23.87	23.98	23.99	23.39	23.72	23.485441	23.70	23.76
Sdhd	28.72	28.68	27.96	28.16	27.82	28.22	27.579449	27.66	28.05

Supplemental Table 5: T cell Metabolism qPCR Array Ct values for Supplemental Figure 6

Sucla2	25.69	25.11	24.93	24.81	24.24	24.64	24.669216	24.37	24.53
Suclg1	26.85	23.50	26.06	25.81	25.55	25.74	23.492407	25.54	25.63
Suclg2	26.15	25.41	26.73	26.89	26.11	26.74	25.90316	26.24	26.25
Sod2	25.18	25.02	24.91	24.95	24.38	24.90	23.78847	24.67	24.75
Tfrc	27.68	26.46	25.56	25.62	23.69	24.62	22.33322	23.95	23.72
Actb	18.28	17.48	17.07	17.20	17.03	17.63	17.464876	17.00	17.00
B2m	19.72	18.51	18.11	18.00	19.15	19.59	19.332092	19.36	19.53
MGDC	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
RTC	21.97	22.39	22.26	22.39	22.10	22.35	22.024311	22.44	22.51
RTC	22.00	22.54	22.39	22.51	22.27	22.47	22.159761	22.60	22.62
PPC	22.39	21.94	21.43	21.29	21.66	21.37	21.1523	21.41	21.54
PPC	22.03	21.60	21.12	20.98	21.20	21.01	20.679144	20.96	21.06