

Supplemental Table 1

Biometric health indices and circulating sphingolipid abundance in health and impaired groups of animals at time of diagnosis (draw 2) or two years prior when all animals were insulin sensitive (draw 1), (n= 8 animals per group per time point).

measure	variable	med.healthy	med.impaired	impaired.minu	X25th.pcntl.he	X25th.pcntl.im	X75th.pcntl.he	X75th.pcntl.im	p.val.w	Odds.ratio	CI.OR	OR.unit	pcnt.pred.OR	p.value.OR
draw1	Age	12.955	14.395	1.44	11.855	12.87	18.148	19.89	0.7209	1.269 (0.369, 4.661)		5.51	50 0.7018	
draw2	Age	14.955	16.39	1.435	13.867	14.883	20.12	21.887	0.7209	1.272 (0.369, 4.69)		5.52	50 0.7001	
draw1	Wt.kg	13.085	13.195	0.11	12.253	12.875	14.615	15.835	0.7209	1.051 (0.537, 2.106)		1.64	50 0.8795	
draw2	Wt.kg	14.235	15.505	1.27	12.393	13.335	15.692	16.802	0.7984	1.147 (0.39, 3.53)		3.02	62 0.7993	
draw1	TB.Fat	4274	4392.5	118.5	3065.75	3744.5	5691.25	5438.5	0.7984	1.139 (0.344, 3.983)		2062.3	44 0.8260	
draw2	TB.Fat	4986	5651	665	2845.5	4270.75	6074.5	6096.75	0.5054	1.577 (0.554, 5.146)	1698.32	56 0.3968		
draw1	TB.pcnt.Fat	30.655	32.275	1.62	25.095	27.922	33.323	34.052	0.6454	0.989 (0.374, 2.605)		7.72	44 0.9819	
draw2	TB.pcnt.Fat	29.985	32.975	2.99	24.122	27.97	38.237	36.633	0.7984	1.298 (0.333, 5.415)		9.58	50 0.7038	
draw1	Ab.Circ	54	56.5	2.5	52.125	50.625	60.5	62.625	0.9999	1.081 (0.489, 2.473)		8.9	62 0.8429	
draw2	Ab.Circ	56.25	58.5	2.25	47.5	56.25	62.625	59.25	0.5632	1.014 (0.618, 1.677)		4.08	62 0.9535	
draw1	Abd.Fat	1646.5	1952	305.5	1401.75	1572.75	2549.75	2216	0.8785	1.05 (0.325, 3.449)	875.48	62 0.9328		
draw2	Abd.Fat	2136.5	2212	75.5	1321	1781	2650.25	2513	0.7984	1.408 (0.415, 5.295)	824.33	56 0.5812		
draw1	Gb	59.5	62	2.5	56.25	60.75	64	66.5	0.2470	1.993 (0.871, 7.455)		5.19	62 0.1127	
draw2	Gb	61	66.5	5.5	57.75	61.5	65.75	50	0.1146	1.662 (0.987, 6.36)		7.41	69 0.0598	
draw1	lb	29	45.5	16.5	22.75	37.25	46.25	58.75	0.1559	2.843 (0.922, 13.768)		18.53	62 0.0709	
draw2	lb	37	133.5	96.5	26	88.75	59	169.75	0.0047	15.95 (2.076, 1130.8)		52.63	81 0.0009	
draw1	SI.E.04.	2.435	1.595	-0.84	1.44	1.425	5.285	2.103	0.5054	0.855 (0.529, 1.243)		0.99	62 0.4169	
draw2	SI.E.04.	2.245	0.115	-2.13	1.518	0	4.91	0.538	0.0036	0.015 (0, 0.356)		0.98	81 0.0002	
draw1	adip.hmw	792	749.333	-42.667	665.333	657.333	1160	837	0.5737	0.684 (0.272, 1.51)		172.97	62 0.3512	
draw2	adip.hmw	714.667	582	-132.667	580	532.667	865.333	708	0.1304	0.515 (0.16, 1.116)		128.49	56 0.1018	
draw1	adip.ratio	34.261	34.136	-0.125	28.898	28.771	37.432	43.84	0.9591	1.197 (0.569, 2.846)		8.16	50 0.6303	
draw2	adip.ratio	40.501	53.525	13.024	33.309	37.955	46.397	57.602	0.2786	2.399 (0.685, 10.986)		15.65	69 0.1766	
draw1	adip.total	2147.333	2140.667	-6.667	1962.667	1540	3423.333	2965.666	0.5737	0.98 (0.46, 2.059)		947.88	50 0.9542	
draw2	adip.total	1946	1144	-802	1392.333	942.333	2574.666	1724	0.1304	0.339 (0.064, 1.092)		840.14	69 0.0724	
draw1	leptin	36.884	33.716	-3.168	32.396	29.447	40.562	36.431	0.3282	0.447 (0.083, 1.889)		7.45	50 0.2784	
draw2	leptin	36.335	36.086	-0.25	32.11	35.083	40.677	36.349	0.9591	0.881 (0.221, 3.361)		5.09	50 0.8494	
draw1	resistin	15.993	13.473	-2.52	11.393	11.697	16.64	14.793	0.5737	1.025 (0.657, 1.644)		3.41	31 0.9035	
draw2	resistin	12.533	12.7	0.167	11.483	11.223	21.27	13.457	0.9591	0.907 (0.589, 1.33)		2.23	62 0.6146	
draw1	Ceramide140	4207.996	4207.996	0	2717.664	3155.997	7451.66	5347.662	0.9999	0.774 (0.32, 1.346)	2339.54	56 0.3824		
draw2	Ceramide140	3681.997	3331.33	-350.667	2629.998	2454.664	5873.662	4909.329	0.9999	0.975 (0.489, 1.927)	1559.69	56 0.9401		
draw1	Ceramide160	11593.92	11616.51	22.59	7037.897	7290.71	20618.818	19007.81	0.8785	0.812 (0.34, 1.176)	9041.96	44 0.3098		
draw2	Ceramide160	9542.361	8938.839	-603.522	6986.796	7442.936	12053.828	16731.947	0.7209	1.487 (0.682, 4.337)	5172.53	50 0.3310		
draw1	Ceramide18	7197.803	6434.897	-762.906	2917.493	3215.75	10601.632	7842.424	0.6454	0.72 (0.296, 1.112)	5071.42	62 0.1563		
draw2	Ceramide18	3490.805	4160.894	670.089	2592.635	3902.253	5938.555	5471.078	0.3823	1.082 (0.592, 2.081)	1943.32	50 0.7899		
draw1	Ceramide20	17211.95	21943.805	4731.855	10434.324	9274.825	21463.257	24612.677	0.7209	1.467 (0.497, 5.4)	11563.26	56 0.4894		
draw2	Ceramide20	14997.49	23111.62	8114.13	8112.948	11659.17	16006.11	27936.743	0.0830	3.716 (1.053, 25.524)	9451.4	75 0.0397		
draw1	Ceramide22	257750.6	307845.05	50094.45	232503.65	203952.95	319591.4	412559.55	0.6454	1.235 (0.659, 2.589)	101486.19	56 0.5110		
draw2	Ceramide22	235515.65	361909.55	126393.9	204714.35	326676.65	255256.725	424985.15	0.0281	4.523 (1.332, 32.645)	102795.77	88 0.0109		
draw1	Ceramide24:0	1224222.5	1121967.5	-102255	1067762.775	970517.175	1356095.5	1493932	0.7209	0.984 (0.528, 1.816)	336158.72	44 0.9568		
draw2	Ceramide24:0	1047628.65	1252319.5	204690.85	928579.125	1035143.525	1166717.25	1582401.75	0.4418	1.789 (0.641, 6.255)	380882.09	62 0.2736		
draw1	Ceramide241	401413.15	380889.15	-20524	320574.7	247046.125	445543.975	527097.275	0.8785	1.001 (0.48, 2.091)	127903.16	50 0.9970		
draw2	Ceramide241	353605.6	428939.1	75333.5	268219.5	351601.05	379481.55	509984.325	0.1049	2.155 (1.014, 8.253)	85705.75	62 0.0453		
draw1	Dhydro160	1594.915	1496.65	-98.265	986.969	882.764	2214.2	2142.391	0.7209	0.768 (0.284, 1.297)	1063.04	44 0.3503		
draw2	Dhydro160	1491.251	2224.458	733.207	1111.149	1428.621	1763.369	2791.371	0.0650	3.365 (1.091, 20.025)	725.24	69 0.0320		
draw1	Dhydro180	1839.501	1125.716	-713.785	1098.481	433.491	3201.822	1634.103	0.2268	0.458 (0.084, 1.124)	1334.18	62 0.0976		
draw2	Dhydro180	728.538	877.196	148.658	667.259	730.24	916.346	1201.179	0.4418	1.553 (0.85, 4.414)	228.81	56 0.1756		
draw1	Dhydro220	8906.915	6562.99	-2343.925	7266.167	5391.028	9961.681	14180.745	0.6733	1.267 (0.749, 2.974)	3475.1	50 0.3936		
draw2	Dhydro220	7734.953	14532.33	6797.377	5977.009	12071.212	10664.859	15704.292	0.0404	5.666 (1.296, 52.699)	5560.16	81 0.0162		
draw1	Dhydro240	32427.765	24128.775	-8298.99	24930.893	21983.265	38821.895	54497.77	0.8785	1.23 (0.659, 2.616)	10544.42	50 0.5157		
draw2	Dhydro240	29619.7	48596.655	18976.955	26932.278	39731.612	34012.442	55387.923	0.0207	4.746 (1.212, 41.624)	15430.86	88 0.0198		
draw1	Dhydro241	9624.272	8783.026	-841.246	8405.961	7205.202	9946.73	12787.72	0.9163	1.111 (0.647, 2.069)	3022.66	62 0.6954		
draw2	Dhydro241	8626.999	9736.092	1109.093	7857.916	8680.309	10180.77	14654.847	0.3442	1.96 (0.729, 7.327)	3205.79	56 0.1906		
draw1	Hexosyl140	4300.44	3822.613	-477.827	2389.133	2389.133	4897.724	4300.44	0.3620	0.591 (0.175, 1.606)	1416.85	56 0.3095		
draw2	Hexosyl140	3822.613	2866.96	-955.653	2747.503	2389.133	4897.724	3464.243	0.2645	0.493 (0.137, 1.306)	1062.64	62 0.1618		
draw1	Hexosyl16	258131.7	281553.7	23422	183704.05	213447.375	464855.95	325482.625	0.9591	0.778 (0.37, 1.286)	120697.21	50 0.3391		
draw2	Hexosyl16	241280.3	223846.5	-17433.8	213145.7	174033.025	281702.075	281254.8	0.7984	0.798 (0.267, 2.181)	85492.28	50 0.6558		
draw1	Hexosyl18	3631.733	3678.331	46.598	2765.301	3085.662	13426.782	8084.028	0.7209	0.783 (0.399, 1.154)	2987.98	50 0.2427		
draw2	Hexosyl18	4884.055	2699.773	-2184.282	2381.596	1822.419	6475.668	4116.644	0.1605	0.367 (0.063, 1.175)	2666.3	69 0.1003		
draw1	Hexosyl20	6233.61	6233.61	0	3896.006	3701.206	13246.423	8181.631	0.5615	0.672 (0.237, 1.207)	4043.35	56 0.2097		
draw2	Hexosyl20	5844.009	3506.405	-2337.604	3116.805	2337.604	7792.012	3896.006	0.1225	0.342 (0.054, 0.901)	1732.87	81 0.0244		
draw1	Hexosyl22	178153	198407.3	20254.3	127553.25	130535.6	353191.15	239544.825	0.7209	0.672 (0.211, 1.678)	111119.54	56 0.4010		
draw2	Hexosyl22	174075.15	157991.25	-16083.9	114428.105	125080.675	218712.6	193506.075	0.7984	0.734 (0.254, 1.786)	67773.5	50 0.4969		
draw1	Hexosyl240	260238.85	285068.4	24829.55	200365.075	244838.25	457303.8	321055.6	0.9581	0.664 (0.207, 1.238)	113232.83	56 0.2274		
draw2	Hexosyl240	261496.05	254581.5	-6914.55	211208.35	178521.375	424773.975	287740	0.4418	0.53 (0.16, 1.266)	96923.49	56 0.1611		
draw1	Hexosyl241	73623.085	63161.295	-10461.79	45929.155	54377.503	130869.675	86599.045	0.7984	0.654 (0.251, 1.341)	28580.35	56 0.2578		
draw2	Hexosyl241	61879.495	48429.545	-13449.95	42539.118	33981.38	80002.29	67067.448	0.4418	0.592 (0.176, 1.542)	25411.43	56 0.2922		
draw1	Lactosyl14	29349.25	21562.715	-7786.535	14974.108	35338.893	26953.395	0.0653		0.265 (0.037, 0.871)	8880.24	62 0.0249		
draw2	Lactosyl14	2552.36	16771	-10781.36	18867.378	14075.66	38034.235	17369.965	0.0649	0.344 (0.057, 0.84)	6216.17	75 0.0131		
draw1	Lactosyl16	74660.02	549665.15	-96335.05	432796.425	397045.15	1251885	837975.4	0.5054	0.573 (0.171, 1.233)	361983.39	56 0.1714		
draw2	Lactosyl16	522154.7	442683.9	-79470.8	459110.175	376306.25	897213.4	501931.3	0.1605	0.564 (0.2, 1.045)	145457	56 0.0724		
draw1	Lactosyl18	39633.6	26209.32	-13424.28	23013.06	18857.923	93650.365	54975.64	0.2254	0.629 (0.239, 1.1)	21798.35	56 0.1178		
draw2	Lactosyl18	31323.33	20456.055	-10867.275	22373.805	16940.173	47304.628	24930.815	0.1949	0.516 (0.153, 1.121)	12320.81	62 0.1012		
draw1	Lactosyl22	35001.365	32308.955	-2692.41	19116.13	18846.888	93965.205	46847.982	0.5629	0.658 (0.261, 1.163)	21555.57	56 0.1661		
draw2	Lactosyl22	34462.88	19923.855	-14539.025	24770.2									