Supplementary Table 1: Common Lipid Species Between Normotensive and Hypertensive Female DBA/2J Aqueous Humor

Lipid Species[a]	Theoretical m/z[b]	m/z	Error (Da)	Normotensive		Hypertensive		Fold change[c]
				Average normalized lipid amount (pmol per species/µg protein)	Standard error of mean	Average normalized lipid amount (pmol per species/µg protein)	Standard error of mean	
Sphingomyelin								
SM(d16:1/17:0)	689.6	689.3	-0.3	2.5	0.9	6.9	2.4	1.5
SM(d16:1/22:0)[d]	759.6	760.4	0.8	3.8	1.4	44.8	15.8	3.5
SM(d16:1/25:0)[d]	801.7	801.9	0.2	2.0	0.7	1.9	0.7	-0.1
SM(d17:0/27:0)[d]	845.7	845.5	-0.2	26.5	9.4	3.0	1.1	-3.1
SM(d17:1/17:0)[d]	703.6	703.2	-0.4	63.3	22.4	4.4	1.6	-3.8
SM(d17:1/22:0)[d]	773.7	774.3	0.7	11.8	4.2	1.7	0.6	-2.8
SM(d17:1/24:1)[d]	799.7	799.1	-0.6	156.0	55.2	147.2	52.0	-0.1
SM(d18:0/12:0)[d]	649.5	649.9	0.4	144.1	50.9	112.6	39.8	-0.4
SM(d18:0/13:0)[d]	663.5	663.1	-0.4	347.3	122.8	5.1	1.8	-6.1 *
SM(d18:0/14:0)	677.6	677.6	0.0	29.9	10.6	5.1	1.8	-2.5
SM(d18:0/15:0)	691.6	690.7	-0.9	43.9	15.5	4.8	1.7	-3.2
SM(d18:0/16:0)[d]	705.6	705.0	-0.6	11.2	4.0	2.7	1.0	-2.0
SM(d18:0/17:0)[d]	719.6	720.3	0.7	30.8	10.9	6.1	2.2	-2.3
SM(d18:0/18:1(9Z))[d]	731.6	732.3	0.7	59.0	20.9	46.5	16.4	-0.3
SM(d18:0/24:1(15Z))	815.7	816.1	0.4	110.3	39.0	5.9	2.1	-4.2
SM(d18:1/12:0)[d]	647.5	647.3	-0.2	32.1	11.4	4.0	1.4	-3.0
SM(d18:1/16:1)[d]	701.6	702.0	0.5	7.5	2.6	20.0	7.1	1.4
SM(d18:1/17:0)[d]	717.6	717.3	-0.3	31.3	11.1	103.6	36.6	1.7
SM(d18:1/19:0)[d]	745.6	746.1	0.5	19.2	6.8	12.6	4.4	-0.6
SM(d18:1/22:0)	787.7	786.3	-1.4	28.9	10.2	4.1	1.5	-2.8
SM(d18:1/24:1(15Z))[d]	813.7	813.9	0.2	0.2	0.1	2.2	0.8	3.7
SM(d18:1/26:1(17Z))[d]	841.7	840.8	-0.9	15.2	5.4	7.5	2.6	-1.0
SM(d18:2/14:0)[d]	673.5	673.4	-0.2	109.6	38.7	8.6	3.1	-3.7
SM(d18:2/15:0)[d]	687.5	686.9	-0.7	34.9	12.3	10.3	3.6	-1.8
SM(d18:2/18:1)[d]	727.6	727.7	0.1	15.9	5.6	7.0	2.5	-1.2
SM(d18:2/20:1)[d]	755.6	755.1	-0.5	23.6	8.3	5.8	2.1	-2.0
SM(d18:2/21:0)[d]	771.6	771.6	0.0	775.4	274.2	10.2	3.6	-6.3 *
SM(d18:2/24:1)[d]	811.7	811.3	-0.3	30.0	10.6	90.2	31.9	1.6
SM(d19:1/24:1)[d]	827.7	828.5	0.8	26.0	9.2	10.2	3.6	-1.3
SM(d20:0/24:1)	843.7	843.8	0.0	86.4	30.6	0.4	0.1	-7.7 *
Sphingoid base								
(4E,6E,d14:2) sphingosine[d]	242.2	242.8	0.6	8.8	3.1	19.7	6.9	1.2
(4E,8E,10E-d18:3)sphingosine[d]	296.3	297.2	0.9	7.3	2.6	3.6	1.3	-1.0
6-hydroxysphingosine[d]	316.3	316.5	0.3	0.7	0.2	0.4	0.1	-0.7
C16 Sphinganine[d]	274.3	273.9	-0.3	0.3	0.1	0.5	0.2	0.9
C17 Sphinganine[d]	288.3	287.6	-0.7	2.5	0.9	3.4	1.2	0.4
Calyxinin[d]	487.4	486.8	-0.7	4.3	1.5	1.1	0.4	-2.0
Capnine[d]	352.3	352.2	-0.1	8.2	2.9	6.3	2.2	-0.4
Fumonisin B2[d]	706.4	706.6	0.2	15.5	5.5	0.4	0.1	-5.2 *
Fumonisin B4[d]	690.4	689.6	-0.9	15.5	5.5	0.5	0.2	-5.0 *
Fumonisin C1	708.4	708.6	0.2	7.7	2.7	2.0	0.7	-2.0
Fumonisin C3	692.4	693.3	0.9	5.4	1.9	2.6	0.9	-1.1
Hemsleyin imine A[d]	606.6	606.5	-0.1	0.2	0.1	0.1	0.0	-1.1
iso (4E,15-methyl-d16:1) sphingosine[d]	286.3	287.2	0.9	0.3	0.1	0.0	0.0	-8.4 *
N,N,N-trimethyl-sphingosine[d]	343.3	343.4	0.0	1.6	0.6	0.5	0.2	-1.6
N,N-dimethylsphingosine[d]	328.3	328.3	0.0	6.2	2.2	21.3	7.5	1.8
Obscuraminol A[d]	278.2	278.6	0.4	3.6	1.3	1.9	0.7	-0.9

Penazetidine A[d]	370.4	370.1	-0.3	0.2	0.1	7.1	2.5	5.3 *
Phytosphingosine[d]	318.3	318.6	0.3	0.7	0.2	2.1	0.7	1.6
Plakoside A[d]	948.8	949.5	0.8	5.7	2.0	7.9	2.8	0.5
Prosafrinine[d]	284.3	284.5	0.2	0.4	0.1	0.1	0.0	-2.0
R-Dysidazirine[d]	308.3	308.1	-0.1	3.9	1.4	0.1	0.0	-6.9 *
Rhizochalinin D[d]	647.5	648.4	0.9	2.2	0.8	0.2	0.1	-3.7
Sphinganine[d]	302.3	302.4	0.1	0.1	0.0	0.1	0.0	-1.2
Sphingofungin A[d]	432.3	433.2	0.9	1.2	0.4	0.2	0.1	-2.3
Sphingofungin E[d]	418.3	417.7	-0.6	0.6	0.2	0.2	0.1	-1.8
Sulfamisterin[d]	462.2	461.7	-0.5	1.3	0.4	0.7	0.2	-0.9
Termitomycesphin A[d]	744.6	744.4	-0.2	0.1	0.0	5.2	1.9	6.4 *
Xestoaminol C[d]	230.2	229.6	-0.6	0.2	0.1	15.0	5.3	6.2 *
Sphingoid base-1-phosphate								
C16 Sphinganine-1-phosphate[d]	352.2	352.3	0.1	1.8	0.6	58.5	20.7	5.0 *
C17 Sphinganine-1-phosphate[d]	366.2	365.6	-0.6	1.2	0.4	114.8	40.6	6.6 *
C17 Sphingosine-1-phosphate[d]	364.2	364.6	0.3	0.1	0.0	3.3	1.2	6.5 *
C19 Sphingosine-1-phosphate[d]	392.3	391.5	-0.8	0.3	0.1	1.9	0.7	2.7
Phytosphingosine 1-phosphate[d]	396.3	396.0	-0.3	0.1	0.0	39.8	14.1	12.2 *
Ceramides								
Cer(d16:1/17:0)[d]	522.5	521.6	-0.9	4.8	1.7	38.3	13.5	3.0
Cer(d16:1/22:0)	592.6	591.8	-0.8	4.5	1.6	11.4	4.0	1.3
Cer(d18:0/13:0)[d]	496.5	496.4	-0.1	4.3	1.5	23.1	8.2	2.4
Cer(d18:0/14:0)[d]	510.5	511.4	0.9	254.7	90.1	351.7	124.4	0.5
Cer(d18:0/16:0)[d]	538.5	538.7	0.1	756.4	267.4	427.3	151.1	-0.8
Cer(d18:0/17:0)[d]	552.5	553.1	0.6	0.1	0.0	20.6	7.3	10.5 *
Cer(d18:0/h17:0)[d]	568.5	569.3	0.7	9.3	3.3	11.8	4.2	0.3
Cer(d18:0/h24:0)[d]	666.6	667.4	0.8	0.2	0.1	1.0	0.3	2.3
Cer(d18:1/22:0)	620.6	620.1	-0.5	7.5	2.7	0.1	0.1	-7.5 *
Cer(d18:1/26:0)[d]	676.7	677.0	0.3	4.8	1.7	2.1	0.7	-1.2
Cer(d18:1/26:1(17Z))[d]	674.6	674.2	-0.4	3.6	1.3	0.1	0.0	-9.1 *
Cer(d18:2/14:0)[d]	506.5	506.9	0.5	43.7	15.4	48.2	17.0	0.1
Cer(d18:2/16:0)[d]	534.5	535.3	0.8	70.3	24.9	211.3	74.7	1.6
Cer(d18:2/20:0)[d]	590.6	591.0	0.4	6.7	2.4	0.1	0.0	-13.1 *
Cer(d18:2/21:0)[d]	604.6	604.6	0.1	1.7	0.6	0.1	0.0	-4.9
Cer(d18:2/23:0)[d]	632.6	631.7	-0.9	2.9	1.0	6.8	2.4	1.2
Cer(t18:0/26:0)	694.7	694.1	-0.6	2.9	1.0	0.1	0.0	-8.2 *
CerP(d18:0/16:0)[d]	618.5	618.9	0.4	2.0	0.7	2.4	0.9	0.3
CerP(d18:1/14:0)[d]	588.4	588.2	-0.2	12.8	4.5	2.1	0.8	-2.6
CerP(d18:1/22:0)	700.6	700.7	0.2	0.1	0.0	0.1	0.0	-2.2
CerP(d18:1/24:0)	728.6	728.2	-0.4	0.8	0.3	12.9	4.6	4.0
CerP(d18:1/24:1(15Z))[d]	726.6	726.4	-0.2	3.1	1.1	8.0	2.8	1.4
Ins-1-P-Cer(d18:1/22:0)[d]	862.6	863.3	0.7	1.1	0.4	2.7	1.0	1.3
SM(d16:1/24:0)[d]	785.7	785.5	-0.1	0.2	0.1	0.1	0.0	-4.1
SM(d16:1/24:1)	783.6	783.3	-0.3	2.0	0.7	1.7	0.6	-0.2
SM(d16:1/25:0)[d]	799.7	800.5	0.8	3.5	1.2	0.1	0.0	-13.3 *
SM(d17:1/24:1)[d]	797.7	796.8	-0.9	2.3	0.8	0.1	0.0	-6.4 *
SM(d18:0/13:0)[d]	661.5	661.9	0.3	2.5	0.9	0.8	0.3	-1.6
SM(d18:0/16:0)[d]	703.6	702.7	-0.9	0.2	0.1	0.1	0.1	-2.1
SM(d18:0/26:0)[d]	843.7	844.0	0.3	1.0	0.4	2.8	1.0	1.5
SM(d18:0/26:1(17Z))	841.7	841.0	-0.7	0.2	0.1	1.2	0.4	2.8
SM(d18:1/12:0)[d]	645.5	645.9	0.4	0.1	0.0	4.8	1.7	5.2 *
SM(d18:1/14:0)[d]	673.5	674.0	0.5	0.2	0.1	1.4	0.5	3.0
SM(d18:1/16:1)[d]	699.5	700.4	0.8	7.8	2.7	0.1	0.0	-10.2 *
SM(d18:1/17:0)[d]	715.6	715.8	0.2	2.5	0.9	39.1	13.8	4.0
SM(d18:1/24:0)[d]	813.7	813.1	-0.5	38.4	13.6	1.6	0.6	-4.6
SM(d18:1/24:1(15Z))[d]	811.7	811.4	-0.3	7.5	2.6	11.5	4.1	0.6
SM(d18:1/25:0)	827.7	827.5	-0.2	0.6	0.2	2.3	0.8	2.0
SM(d18:1/26:1(17Z))[d]	839.7	840.6	0.9	1.3	0.5	0.1	0.0	-4.2

SM(d18:2/14:0)[d]	671.5	671.7	0.2	1.9	0.7	2.1	0.8	0.2
SM(d18:2/15:0)[d]	685.5	685.8	0.3	6.1	2.1	2.4	0.8	-1.3
SM(d18:2/25:0)[d]	825.7	826.6	1.0	2.2	0.8	2.5	0.9	0.1
SM(d19:1/18:0)[d]	743.6	744.0	0.4	4.1	1.4	3.2	1.1	-0.4

[a]The lipid species identification is based on Lipidmaps database, used as a *.csv file for bioinformatic analyses with MZmine 2.9 program. [b]The theoretical mass by charge ratio (m/z) presented from Lipidmaps is in positive ion mode [M+H]+ for sphingomyelin and sphingoid base. Whereas negative ion mode [M-H]- has been presented for sphingoid base-1-phosphate and ceramides. Error in Da has been provided from theoretical data. Average standard normalized dataset is presented here. For some lipid species identified, standard error of mean value could not be calculated due to lack of presence in all samples. Species that are known bonafide lipids of non-mammalian origin were excluded. However, where the origin in mammalian or human is unclear those entities were retained. [c]Fold change (fc) is the ratio relative to control based on a $\log_2$ scale: *$|fc| \geq 5.0$. [d]Lipids common to females and males.

Supplementary Table 2: Common Lipid Species Between Normotensive and Hypertensive Male DBA/2J Aqueous Humor

Lipid Species[a]	Theoretical m/z[b]	m/z	Error (Da)	Normotensive		Hypertensive		Fold change[c]
				Average normalized lipid amount (pmol per species/µg protein)	Standard error of mean	Average normalized lipid amount (pmol per species/µg protein)	Standard error of mean	
Sphingomyelin								
SM(d16:0/20:0)	733.6	734.0	0.4	14.5	6.5	17.9	6.3	0.3
SM(d16:0/22:0)	761.7	762.5	0.8	586.2	207.2	3.8	1.3	-7.3 *
SM(d16:1/22:0)[d]	759.6	758.7	-0.9	17.3	6.1	2.1	0.7	-3.1
SM(d16:1/25:0)[d]	801.7	802.6	0.9	13.6	4.8	20.8	7.4	0.6
SM(d17:0/27:0)[d]	845.7	846.6	0.8	21.4	7.6	39.4	13.9	0.9
SM(d17:1/17:0)[d]	703.6	702.8	-0.8	17.7	6.3	22.3	7.9	0.3
SM(d17:1/24:1)[d]	799.7	799.0	-0.7	18.0	6.3	10.5	3.7	-0.8
SM(d18:0/12:0)[d]	649.5	649.4	-0.1	115.0	40.6	240.9	85.2	1.1
SM(d18:0/13:0)[d]	663.5	663.0	-0.6	15.1	5.3	31.4	11.1	1.1
SM(d18:0/16:0)[d]	705.6	706.1	0.5	202.3	71.5	4.9	1.7	-5.4 *
SM(d18:0/17:0)[d]	719.6	720.3	0.7	8.9	3.1	5.4	1.9	-0.7
SM(d18:0/18:1(9Z))[d]	731.6	732.4	0.8	7.5	2.7	9.9	3.5	0.4
SM(d18:0/22:0)	789.7	790.4	0.7	55.2	19.5	33.5	11.8	-0.7
SM(d18:0/24:0)[d]	817.7	817.8	0.1	14.4	5.1	105.0	37.1	2.9
SM(d18:1/12:0)[d]	647.5	646.8	-0.7	136.7	48.3	37.8	13.4	-1.9
SM(d18:1/16:1)[d]	701.6	700.6	-0.9	242.6	85.8	73.2	25.9	-1.7
SM(d18:1/17:0)[d]	717.6	716.8	-0.8	43.8	15.5	17.7	6.3	-1.3
SM(d18:1/19:0)[d]	745.6	746.2	0.6	95.3	33.7	29.5	10.4	-1.7
SM(d18:1/24:1(15Z))[d]	813.7	812.9	-0.8	9.0	3.2	8.1	2.9	-0.1
SM(d18:1/26:1(17Z))[d]	841.7	841.6	-0.1	26.6	9.4	87.4	30.9	1.7
SM(d18:2/14:0)[d]	673.5	672.6	-1.0	86.7	30.6	99.4	35.2	0.2
SM(d18:2/15:0)[d]	687.5	687.0	-0.5	11.9	4.2	5.4	1.9	-1.1
SM(d18:2/18:1)[d]	727.6	728.4	0.8	18.9	6.7	39.9	14.1	1.1
SM(d18:2/20:1)[d]	755.6	754.8	-0.8	20.6	7.3	26.0	9.2	0.3
SM(d18:2/21:0)[d]	771.6	771.3	-0.4	99.6	35.2	19.3	6.8	-2.4
SM(d18:2/24:1)[d]	811.7	812.2	0.5	83.2	29.4	37.8	13.4	-1.1
SM(d19:0/24:1)	829.7	830.5	0.8	47.0	16.6	1.0	0.4	-5.5 *
SM(d19:1/24:1)[d]	827.7	827.4	-0.3	69.8	24.7	1.9	0.7	-5.2 *
Sphingoid base								
(4E,6E,d14:2) sphingosine[d]	242.2	242.7	0.5	5.7	2.0	0.8	0.3	-2.8
(4E,8E,10E-d18:3)sphingosine[d]	296.3	297.1	0.9	1.1	0.4	0.1	0.0	-14.6 *
(4E,8Z,d18:2) sphingosine	298.3	299.0	0.8	0.2	0.1	0.1	0.0	-4.4
6-hydroxysphingosine[d]	316.3	317.0	0.7	2.2	0.8	0.1	0.0	-4.2
C16 Sphinganine[d]	274.3	273.3	-0.9	0.5	0.2	0.3	0.1	-0.5
C17 Sphinganine[d]	288.3	287.5	-0.8	1.2	0.4	0.1	0.0	-5.8 *
Calyxinin[d]	487.4	487.0	-0.5	2.9	1.0	0.9	0.3	-1.7
Capnine[d]	352.3	352.5	0.2	0.8	0.3	3.6	1.3	2.1
Fumonisin B2[d]	706.4	705.5	-0.9	5.6	2.0	0.9	0.3	-2.6
Fumonisin B4[d]	690.4	690.3	-0.1	2.9	1.0	2.7	1.0	-0.1
Hemsleyin imine A[d]	606.6	605.6	-0.9	0.4	0.1	0.2	0.1	-1.0
iso (4E,15-methyl-d16:1) sphingosine[d]	286.3	288.0	1.7	0.1	0.0	0.1	0.0	-2.0
N,N,N-trimethyl-sphingosine[d]	343.3	343.6	0.2	1.2	0.4	0.3	0.1	-2.2
N,N-dimethylsphingosine[d]	328.3	328.9	0.6	7.4	2.6	1.0	0.4	-2.9
Obscuraminol A[d]	278.2	278.3	0.0	0.1	0.0	0.1	0.0	0.3
Penazetidine A[d]	370.4	371.0	0.6	0.2	0.1	1.2	0.4	2.5
Phytosphingosine[d]	318.3	319.1	0.8	0.3	0.1	0.1	0.0	-3.5
Plakoside A[d]	948.8	947.9	-0.9	0.1	0.0	0.1	0.1	0.0
Prosafrinine[d]	284.3	285.3	1.0	0.1	0.0	0.2	0.1	0.6
R-Dysidazirine[d]	308.3	307.3	-1.0	0.1	0.0	0.1	0.0	6.2 *
Rhizochalinin D[d]	647.5	647.0	-0.6	2.9	1.0	0.1	0.0	-6.4 *

Sphinganine[d]	302.3	301.3	-1.0	0.1	0.0	0.3	0.1	4.2
Sphingofungin A[d]	432.3	433.3	1.0	3.5	1.2	4.0	1.4	0.2
Sphingofungin E[d]	418.3	419.3	1.0	2.9	1.0	0.4	0.2	-2.7
Sulfamisterin[d]	462.2	463.1	0.9	1.7	0.6	1.0	0.4	-0.8
Termitomycesphin A[d]	744.6	743.9	-0.7	0.7	0.3	0.1	0.0	-4.7
Xestoaminol C[d]	230.2	229.5	-0.7	0.8	0.3	0.8	0.3	0.0
Sphingoid base-1-phosphate								
C16 Sphinganine-1-phosphate[d]	352.2	351.3	-0.9	0.8	0.3	109.3	38.6	7.2 *
C16 Sphingosine-1-phosphate	350.2	349.3	-1.0	4.2	1.5	12.7	4.5	1.6
C17 Sphinganine-1-phosphate[d]	366.2	365.5	-0.8	19.8	7.0	3.8	1.3	-2.4
C17 Sphingosine-1-phosphate[d]	364.2	365.0	0.8	0.6	0.2	12.3	4.3	4.4
C19 Sphingosine-1-phosphate[d]	392.3	392.8	0.5	0.4	0.2	12.4	4.4	4.8
Phytosphingosine 1-phosphate[d]	396.3	395.5	-0.8	0.5	0.2	14.3	5.1	4.8
Ceramides								
Cer(d16:1/17:0)[d]	522.5	522.1	-0.3	10.2	3.6	10.1	3.6	0.0
Cer(d18:0/13:0)[d]	496.5	495.9	-0.5	3.7	1.3	11.2	4.0	1.6
Cer(d18:0/14:0)[d]	510.5	510.5	0.0	205.5	72.6	187.7	66.4	-0.1
Cer(d18:0/16:0)[d]	538.5	538.7	0.2	23.5	8.3	184.4	65.2	3.0
Cer(d18:0/17:0)[d]	552.5	551.8	-0.8	1.5	0.5	0.6	0.2	-1.3
Cer(d18:0/18:1(9Z))	564.5	563.6	-0.9	0.1	0.0	0.2	0.1	0.5
Cer(d18:0/h17:0)[d]	568.5	568.6	0.1	1.7	0.6	0.2	0.1	-2.8
Cer(d18:0/h24:0)[d]	666.6	665.7	-0.9	74.1	26.2	3.5	1.2	-4.4
Cer(d18:1/26:0)[d]	676.7	676.3	-0.3	4.1	1.4	0.1	0.0	-5.4 *
Cer(d18:2/14:0)[d]	506.5	506.7	0.2	10.3	3.7	33.0	11.7	1.7
Cer(d18:2/16:0)[d]	534.5	533.6	-0.9	72.4	25.6	130.0	45.9	0.8
Cer(d18:2/20:0)[d]	590.6	591.5	0.9	2.7	1.0	5.0	1.8	0.9
Cer(d18:2/21:0)[d]	604.6	604.1	-0.5	3.1	1.1	6.5	2.3	1.1
Cer(d18:2/23:0)[d]	632.6	631.6	-1.0	0.1	0.1	2.4	0.9	4.0
CerP(d18:0/16:0)[d]	618.5	619.3	0.8	2.9	1.0	6.8	2.4	1.2
CerP(d18:1/14:0)[d]	588.4	589.1	0.7	12.0	4.2	4.7	1.7	-1.4
CerP(d18:1/24:1(15Z))[d]	726.6	726.9	0.3	65.9	23.3	5.9	2.1	-3.5
Ins-1-P-Cer(d18:1/22:0)[d]	862.6	862.2	-0.4	6.7	2.4	2.0	0.7	-1.8
SM(d16:1/22:1)	755.6	755.9	0.3	18.9	6.7	0.4	0.1	-5.6 *
SM(d16:1/24:0)[d]	785.7	784.7	-1.0	1.1	0.4	0.8	0.3	-0.6
SM(d16:1/25:0)[d]	799.7	798.9	-0.8	1.6	0.6	0.4	0.2	-1.9
SM(d17:1/22:0)[d]	771.6	770.7	-0.9	0.7	0.3	0.1	0.0	-4.9
SM(d17:1/24:1)[d]	797.7	798.2	0.6	2.4	0.8	0.1	0.0	-5.5 *
SM(d18:0/13:0)[d]	661.5	661.6	0.1	1.5	0.5	3.3	1.2	1.1
SM(d18:0/16:0)[d]	703.6	703.8	0.3	4.4	1.6	0.2	0.1	-4.6
SM(d18:0/18:0)	731.6	730.7	-0.9	1.0	0.4	0.1	0.0	-3.0
SM(d18:0/24:0)[d]	815.7	816.3	0.6	277.7	98.2	425.0	150.3	0.6
SM(d18:0/26:0)[d]	843.7	843.1	-0.6	1.8	0.6	0.1	0.0	-4.7
SM(d18:1/12:0)[d]	645.5	646.4	0.9	0.8	0.3	0.3	0.1	-1.5
SM(d18:1/14:0)[d]	673.5	673.4	-0.1	4.3	1.5	0.1	0.0	-6.8 *
SM(d18:1/17:0)[d]	715.6	714.9	-0.6	146.8	51.9	38.9	13.8	-1.9
SM(d18:1/20:0)	757.6	758.5	0.9	1.5	0.5	3.4	1.2	1.2
SM(d18:1/24:0)[d]	813.7	813.7	0.0	7.6	2.7	81.9	29.0	3.4
SM(d18:1/24:1(15Z))[d]	811.7	811.8	0.1	20.0	7.1	0.5	0.2	-5.3 *
SM(d18:1/26:1(17Z))[d]	839.7	840.1	0.4	6.3	2.2	32.6	11.5	2.4
SM(d18:2/14:0)[d]	671.5	670.5	-1.0	1.8	0.7	1.5	0.5	-0.3
SM(d18:2/21:0)[d]	769.6	770.6	1.0	184.3	65.2	1.8	0.7	-6.6 *
SM(d18:2/22:1)	781.6	782.2	0.6	1.4	0.5	1.5	0.5	0.1
SM(d18:2/25:0)[d]	825.7	825.8	0.1	2.7	1.0	0.7	0.2	-2.0
SM(d19:1/18:0)[d]	743.6	744.6	1.0	14.7	5.2	7.3	2.6	-1.0

[a]The lipid species identification is based on Lipidmaps database, used as a *.csv file for bioinformatic analyses with MZmine 2.9 program.[b]The theoretical mass by charge ratio (m/z) presented from Lipidmaps is in positive ion mode [M+H]+ for sphingomyelin and sphingoid base. Whereas negative ion mode [M-H]- has been presented for sphingoid base-1-phosphate and ceramides. Error in Da has been provided from theoretical data. Average standard normalized dataset is presented here. For some lipid species identified, standard error of mean value could not be calculated due to lack of presence in all samples. Species that are known bonafide lipids of non-mammalian origin were excluded. However, where the origin in mammalian or human is unclear those entities were retained. [c]Fold change (fc) is the ratio relative to control based on a log2 scale: *|fc|≥ 5.0. [d]Lipids common to females and males.

Supplementary Table 3: Identified Common Lipid Species and their integration with the Sphingolipid Synthesis Pathway

Boxed Letter	Lipid Name	Gender	State
A (Sphingomyelinase, Sphingomyelin synthase)	SM(d16:1/17:0)	Female	Both
	SM(d16:1/22:0)	Female/Male	Both
	SM(d16:1/25:0)	Female/Male	Both
	SM(d17:0/27:0)	Female/Male	Both
	SM(d17:1/17:0)	Female/Male	Both
	SM(d17:1/22:0)	Female	Both
	SM(d17:1/24:1)	Female/Male	Both
	SM(d18:0/12:0)	Female/Male	Both
	SM(d18:0/13:0)	Female/Male	Both
	SM(d18:0/14:0)	Female	Both
	SM(d18:0/15:0)	Female	Both
	SM(d18:0/16:0)	Female/Male	Both
	SM(d18:0/17:0)	Female/Male	Both
	SM(d18:0/18:1(9Z))	Female/Male	Both
	SM(d18:0/24:1(15Z))	Female	Both
	SM(d18:1/12:0)	Female/Male	Both
	SM(d18:1/16:1)	Female	Both
	SM(d18:1/17:0)	Female/Male	Both
	SM(d18:1/19:0)	Female/Male	Both
	SM(d18:1/22:0)	Female	Both
	SM(d18:1/24:1(15Z))	Female/Male	Both
	SM(d18:1/26:1(17Z))	Female/Male	Both
	SM(d18:2/14:0)	Female/Male	Both
	SM(d18:2/15:0)	Female	Both
	SM(d18:2/18:1)	Female/Male	Both
	SM(d18:2/20:1)	Female/Male	Both
	SM(d18:2/21:0)	Female	Both
	SM(d18:2/24:1)	Female/Male	Both
	SM(d19:1/24:1)	Female/Male	Both
	SM(d20:0/24:1)	Female/Male	Both
	SM(d16:0/20:0)	Male	Both
	SM(d16:0/22:0)	Male	Both
	SM(d16:1/22:0)	Female/Male	Both
	SM(d16:1/25:0)	Female/Male	Both
	SM(d17:0/27:0)	Female/Male	Both
	SM(d17:1/17:0)	Female/Male	Both
	SM(d17:1/24:1)	Female/Male	Both
	SM(d18:0/12:0)	Female/Male	Both
	SM(d18:0/13:0)	Female/Male	Both
	SM(d18:0/16:0)	Female/Male	Both
	SM(d18:0/17:0)	Female/Male	Both
	SM(d18:0/18:1(9Z))	Female/Male	Both

	SM(d18:0/22:0)	Male	Both
	SM(d18:0/24:0)	Male	Both
	SM(d18:1/12:0)	Female/Male	Both
	SM(d18:1/16:1)	Male	Both
	SM(d18:1/17:0)	Female/Male	Both
	SM(d18:1/19:0)	Female/Male	Both
	SM(d18:1/24:1(15Z))	Female/Male	Both
	SM(d18:1/26:1(17Z))	Female/Male	Both
	SM(d18:2/14:0)	Female/Male	Both
	SM(d18:2/15:0)	Male	Both
	SM(d18:2/18:1)	Female/Male	Both
	SM(d18:2/20:1)	Female/Male	Both
	SM(d18:2/21:0)	Male	Both
	SM(d18:2/24:1)	Female/Male	Both
	SM(d19:0/24:1)	Female/Male	Both
	SM(d19:1/24:1)	Female/Male	Both
B (Ceramidase, Ceramide synthase)	Cer(d16:1/17:0)	Female/Male	Both
	Cer(d16:1/22:0)	Female	Both
	Cer(d18:0/13:0)	Female/Male	Both
	Cer(d18:0/14:0)	Female/Male	Both
	Cer(d18:0/16:0)	Female/Male	Both
	Cer(d18:0/17:0)	Female/Male	Both
	Cer(d18:0/h17:0)	Female/Male	Both
	Cer(d18:0/h24:0)	Female/Male	Both
	Cer(d18:1/22:0)	Female	Both
	Cer(d18:1/26:0)	Female/Male	Both
	Cer(d18:1/26:1(17Z))	Female	Both
	Cer(d18:2/14:0)	Female/Male	Both
	Cer(d18:2/16:0)	Female/Male	Both
	Cer(d18:2/20:0)	Female/Male	Both
	Cer(d18:2/21:0)	Female/Male	Both
	Cer(d18:2/23:0)	Female/Male	Both
	Cer(t18:0/26:0)	Female	Both
	CerP(d18:0/16:0)	Female/Male	Both
	CerP(d18:1/14:0)	Female/Male	Both
	CerP(d18:1/22:0)	Female	Both
	CerP(d18:1/24:0)	Female	Both
	CerP(d18:1/24:1(15Z))	Female/Male	Both
	Ins-1-P-Cer(d18:1/22:0)	Female/Male	Both
	SM(d16:1/24:0)	Female/Male	Both
	SM(d16:1/24:1)	Female	Both
	SM(d16:1/25:0)	Female/Male	Both
	SM(d17:1/24:1)	Female/Male	Both
	SM(d18:0/13:0)	Female/Male	Both
	SM(d18:0/16:0)	Female/Male	Both
	SM(d18:0/26:0)	Female/Male	Both
	SM(d18:0/26:1(17Z))	Female	Both

SM(d18:1/12:0)	Female/Male	Both
SM(d18:1/14:0)	Female/Male	Both
SM(d18:1/16:1)	Female	Both
SM(d18:1/17:0)	Female/Male	Both
SM(d18:1/24:0)	Female/Male	Both
SM(d18:1/24:1(15Z))	Female/Male	Both
SM(d18:1/25:0)	Female	Both
SM(d18:1/26:1(17Z))	Female	Both
SM(d18:2/14:0)	Female/Male	Both
SM(d18:2/15:0)	Female	Both
SM(d18:2/25:0)	Female/Male	Both
SM(d19:1/18:0)	Female/Male	Both
Cer(d16:1/17:0)	Female/Male	Both
Cer(d18:0/13:0)	Female/Male	Both
Cer(d18:0/14:0)	Female/Male	Both
Cer(d18:0/16:0)	Female/Male	Both
Cer(d18:0/17:0)	Female/Male	Both
Cer(d18:0/18:1(9Z))	Male	Both
Cer(d18:0/h17:0)	Female/Male	Both
Cer(d18:0/h24:0)	Female/Male	Both
Cer(d18:1/26:0)	Female/Male	Both
Cer(d18:2/14:0)	Female/Male	Both
Cer(d18:2/16:0)	Female/Male	Both
Cer(d18:2/20:0)	Female/Male	Both
Cer(d18:2/21:0)	Female/Male	Both
Cer(d18:2/23:0)	Female/Male	Both
CerP(d18:0/16:0)	Female/Male	Both
CerP(d18:1/14:0)	Female/Male	Both
CerP(d18:1/24:1(15Z))	Female/Male	Both
Ins-1-P-Cer(d18:1/22:0)	Female/Male	Both
SM(d16:1/22:1)	Male	Both
SM(d16:1/24:0)	Female/Male	Both
SM(d16:1/25:0)	Female/Male	Both
SM(d17:1/22:0)	Male	Both
SM(d17:1/24:1)	Female/Male	Both
SM(d18:0/13:0)	Female/Male	Both
SM(d18:0/16:0)	Female/Male	Both
SM(d18:0/18:0)	Male	Both
SM(d18:0/24:0)	Male	Both
SM(d18:0/26:0)	Female/Male	Both
SM(d18:1/12:0)	Female/Male	Both
SM(d18:1/14:0)	Female/Male	Both
SM(d18:1/17:0)	Female/Male	Both
SM(d18:1/20:0)	Male	Both
SM(d18:1/24:0)	Female/Male	Both
SM(d18:1/24:1(15Z))	Female/Male	Both
SM(d18:1/26:1(17Z))	Female/Male	Both

	SM(d18:2/14:0)	Female/Male	Both
	SM(d18:2/21:0)	Male	Both
	SM(d18:2/22:1)	Male	Both
	SM(d18:2/25:0)	Female/Male	Both
	SM(d19:1/18:0)	Female/Male	Both
C (Sphingosine kinase, S-1-P phosphatase)	C16 Sphinganine-1-phosphate	Female/Male	Both
	C17 Sphinganine-1-phosphate	Female/Male	Both
	C17 Sphingosine-1-phosphate	Female/Male	Both
	C19 Sphingosine-1-phosphate	Female/Male	Both
	Phytosphingosine 1-phosphate	Female/Male	Both
	(4E,6E,d14:2) sphingosine	Female/Male	Both
	(4E,8E,10E-d18:3)sphingosine	Female/Male	Both
	6-hydroxysphingosine	Female/Male	Both
	C16 Sphinganine	Female/Male	Both
	C17 Sphinganine	Female/Male	Both
	Calyxinin	Female/Male	Both
	Capnine	Female/Male	Both
	Fumonisin B2	Female/Male	Both
	Fumonisin B4	Female/Male	Both
	Fumonisin C1	Female	Both
	Fumonisin C3	Female	Both
	Hemsleyin imine A	Female/Male	Both
	iso (4E,15-methyl-d16:1) sphingosine[a]	Female	Both
	N,N,N-trimethyl-sphingosine	Female/Male	Both
	N,N-dimethylsphingosine	Female/Male	Both
	Obscuraminol A	Female/Male	Both
	Penazetidine A	Female/Male	Both
	Phytosphingosine	Female/Male	Both
	Plakoside A	Female/Male	Both
	Prosafrinine	Female/Male	Both
	R-Dysidazirine	Female/Male	Both
	Rhizochalinin D	Female/Male	Both
	Sphinganine	Female/Male	Both
	Sphingofungin A	Female/Male	Both
	Sphingofungin E	Female/Male	Both
	Sulfamisterin	Female/Male	Both
	Termitomycesphin A	Female/Male	Both
	Xestoaminol C	Female/Male	Both
	(4E,6E,d14:2) sphingosine	Female/Male	Both
	(4E,8E,10E-d18:3)sphingosine	Female/Male	Both
	(4E,8Z,d18:2) sphingosine	Male	Both
	6-hydroxysphingosine	Female/Male	Both
	C16 Sphinganine	Female/Male	Both
	C17 Sphinganine	Female/Male	Both
	Calyxinin	Female/Male	Both
	Capnine	Female/Male	Both

Fumonisin B2	Female/Male	Both
Fumonisin B4	Female/Male	Both
Hemsleyin imine A	Female/Male	Both
iso (4E,15-methyl-d16:1) sphingosine[a]	Male	Both
N,N,N-trimethyl-sphingosine	Female/Male	Both
N,N-dimethylsphingosine	Female/Male	Both
Obscuraminol A	Female/Male	Both
Penazetidine A	Female/Male	Both
Phytosphingosine	Female/Male	Both
Plakoside A	Female/Male	Both
Prosafrinine	Female/Male	Both
R-Dysidazirine	Female/Male	Both
Rhizochalinin D	Female/Male	Both
Sphinganine	Female/Male	Both
Sphingofungin A	Female/Male	Both
Sphingofungin E	Female/Male	Both
Sulfamisterin	Female/Male	Both
Termitomycesphin A	Female/Male	Both
Xestoaminol C	Female/Male	Both
C16 Sphinganine-1-phosphate	Female/Male	Both
C16 Sphingosine-1-phosphate	Female/Male	Both
C17 Sphinganine-1-phosphate	Female/Male	Both
C17 Sphingosine-1-phosphate	Female/Male	Both
C19 Sphingosine-1-phosphate	Female/Male	Both
Phytosphingosine 1-phosphate	Female/Male	Both

Letters **A**, **B** and **C** indicates the location of the enzyme responsible for conversion of the identified lipid speciesas depicted in Figure 1. Common lipids have been indicated as Female/Male.

Supplementary Table 4: Human Metabolome Database Comparison of Unique Sphingolipid and Ceramide Species in Normotensive and Hypertensive DBA/2J Mouse Aqueous Humor

Lipid Species[a]	Theoretical m/z[b]	m/z	Average lipid amount (pmol per species/µg protein)[c]	LIPIDMAPS ID	PUBCHEM ID	HMDB Accession[d]
CerP(d18:1/24:0)	728.6	727.7	1.4	LMSP02050008	7850645	HMDB10704
Cer(d18:1/22:0)	620.6	621.2	0.5	LMSP02010008	7850626	HMDB04952
Cer(d18:0/24:1(15Z))	648.6	649.3	0.0	LMSP02020011	7850635	HMDB11769
Cer(d18:1/18:1(9Z))	562.5	563.3	47.0	LMSP02010003	4266351	HMDB04948
Cer(d18:1/26:1(17Z))	674.6	675.6	2.0	LMSP02010010	7850628	HMDB04954
Sphinganine-phosphate	380.3	380.8	53.9	LMSP01050002	7850620	HMDB01383
Cer(d18:0/18:1(9Z))	564.5	565.2	3.4	LMSP02020015	49703627	HMDB11763
Cer(d18:1/18:1(9Z))	562.5	563.3	0.0	LMSP02010003	4266351	HMDB04948
Cer(d18:0/24:1(15Z))	648.6	649.6	4.1	LMSP02020011	7850635	HMDB11769

	Localization	Function
HMDB10704	Extracellular, membrane, all tissues	Cell signaling, energy source, fuel and energy storage, fuel or energy source, membrane component, membrane integrity/stability
HMDB04952	Extracellular, membrane, Muscle, Skeletal Muscle, Fibroblasts, Intestine, Neuron, Pancreas, Placenta, Teste, Kidney, Liver. Thyroid Gland, Brain, Myelin, Skin, Nerve Cells, Platelet, Spleen, Stratum Corneum, Keratinocyte	Cell signaling, Component of Glycerolipid metabolism, Component of Glycerophospholipid metabolism, Component of Glycosphingolipid metabolism, Component of Prostaglandin and leukotriene metabolism, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability, Second messenger
HMDB11769	Extracellular, membrane	Cell signaling, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability
HMDB04948	Extracellular, membrane	Cell signaling, Component of Glycerolipid metabolism, Component of Glycerophospholipid metabolism, Component of Glycosphingolipid metabolism, Component of Prostaglandin and leukotriene metabolism, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability, Second messenger
HMDB01383	Cytoplasm Extracellular, Membrane, Endoplasmic reticulum	Cell signaling, Component of Glycosphingolipid metabolism, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability
HMDB11763	Extracellular, Membrane	Cell signaling, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability

HMDB04948	Extracellular, Membrane	Cell signaling, Component of Glycerolipid metabolism, Component of Glycerophospholipid metabolism, Component of Glycosphingolipid metabolism, Component of Prostaglandin and leukotriene metabolism, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability, Second messenger
HMDB11769	Extracellular, Membrane	Cell signaling, Fuel and energy storage, Fuel or energy source, Membrane integrity/stability

[a]The lipid species identification is based on Lipidmaps database, used as a *.csv file for bioinformatic analyses with MZmine 2.9 program. [b]The theoretical mass by charge ratio (m/z) presented from Lipidmaps is in positive ion mode [M+H]+ for sphingomyelin and sphingoid base. Whereas negative ion mode [M-H]- has been presented for sphingoid base-1-phosphate and ceramides. [c]Average standard normalized dataset found to have an [d]HMDB identifier is presented here. Species that are known bonafide lipids of non-mammalian origin were excluded. However, where the origin in mammalian or human is unclear those entities were retained