

pmol lipid per mg protein	Cer(d18:0/16:0)	Cer(d18:0/16:0)	Cer(d18:0/16:0)	Cer(d18:0/18:0)	Cer(d18:0/18:0)	Cer(d18:0/18:0)
	Labeled	Total	Total	Labeled	Total	Total
Spns2ECKO	6.080	43.222	1786.074	0.480	6.786	169.934
Spns2ECKO	4.128	32.110	1394.153	0.536	5.311	134.944
Spns2ECKO	4.953	32.931	1383.171	0.801	5.795	127.955
Spns2ECKO	5.082	32.795	1486.998	0.421	5.960	133.404
Spns2ECKO	6.063	41.771	1583.708	0.614	6.437	153.702
Spns2iff	3.186	43.819	702.289	0.788	12.073	241.440
Spns2iff	4.174	51.181	722.252	1.354	11.809	247.665
Spns2iff	3.137	41.831	716.769	0.845	14.381	253.724
Spns2iff	2.377	41.214	570.788	0.901	13.421	201.787
Spns2iff	4.053	45.457	659.676	1.111	13.284	233.524

Cer(d18:0/20:0)	Cer(d18:0/20:0)	Cer(d18:0/22:0)	Cer(d18:0/22:0)	Cer(d18:0/24:0)	Cer(d18:0/24:0)
Total	Total	Total	Total	Total	Total
2.867	84.177	4.881	420.309	5.472	782.531
2.168	57.710	2.335	258.663	2.184	538.156
2.051	53.814	2.629	266.848	2.270	492.219
2.682	60.147	2.601	275.490	2.789	530.553
3.127	71.469	3.560	333.465	4.172	654.881
7.349	128.153	6.452	441.164	4.694	489.212
8.410	144.297	7.216	419.750	4.488	505.925
5.969	123.666	6.868	385.579	4.666	509.010
5.524	130.004	6.276	379.988	4.431	427.234
7.137	125.133	6.311	408.426	4.304	450.703

Cer(d18:0/24:1)	Cer(d18:0/24:1)	Cer(d18:1/14:0)	Cer(d18:1/16:0)	Cer(d18:1/18:0)	Cer(d18:1/20:0)
Total	Total	Total	Total	Total	Total
7.181	1665.784	5.223	1360.610	137.049	62.216
3.529	1094.067	3.792	1016.814	110.642	42.852
3.277	1094.937	4.313	1013.006	104.292	39.042
3.348	1087.303	4.116	1111.538	107.403	43.810
5.805	1330.205	4.586	1177.648	124.925	52.108
6.203	1275.359	2.830	584.527	207.681	99.770
7.840	1309.884	3.099	600.118	212.431	112.299
6.205	1223.611	2.550	601.270	220.169	98.229
6.264	1056.434	2.288	471.491	173.202	109.161
6.959	1176.901	2.597	545.538	203.374	99.885

Cer(d18:1/22:0)	Cer(d18:1/24:0)	Cer(d18:1/24:1)	Cer(d18:1/24:1)	Cer(d18:1/26:0)	Cer(d18:1/26:1)
Total	Total	Labeled	Total	Total	Total
320.836	510.548	134.533	1159.027	6.169	16.081
188.464	326.006	99.901	717.996	3.137	11.787
196.303	303.649	106.632	687.190	3.368	11.493
201.402	328.436	105.369	721.943	3.549	11.026
249.782	414.043	117.634	903.883	4.697	14.092
385.995	422.747	145.918	1108.401	2.915	7.424
360.526	431.270	146.738	1157.547	3.214	9.128
334.456	431.589	144.350	1077.863	3.279	8.643
334.051	367.092	118.813	929.564	2.431	6.474
356.360	384.784	140.758	1023.107	2.618	6.526

Cer(d18:2/16:0)	Cer(d18:2/18:0)	Cer(d18:2/20:0)	Cer(d18:2/22:0)	Cer(d18:2/24:0)	Cer(d18:2/24:1)	Total
Total	Total	Total	Total	Total	Total	Total
382.242	26.099	19.094	94.591	266.511	499.576	4936.283
345.228	18.990	12.690	67.864	209.966	372.542	3496.409
337.234	17.869	12.721	67.917	186.301	404.470	3438.121
342.665	20.041	13.654	71.487	199.328	362.012	3592.586
364.289	22.340	16.234	80.124	236.666	420.518	4150.805
73.943	21.687	21.033	48.717	61.770	160.755	3290.785
70.954	23.425	23.588	52.009	70.167	144.497	3365.216
73.668	19.174	19.468	44.254	72.755	139.544	3226.832
58.083	15.164	15.319	39.661	55.711	120.606	2777.427
68.681	16.866	18.112	45.755	61.615	146.835	3066.106

pmol lipid per mg protein	Cer(d18:0/16:0)	Cer(d18:0/16:0)	Cer(d18:0/18:0)	Cer(d18:0/18:0)	Cer(d18:0/20:0)	Cer(d18:0/20:0)
Labeled	Labeled	Labeled	Labeled	Labeled	Labeled	Labeled
Spm2ECKO	6.680	251.084	0.480	17.111	0.494	8.211
Spm2ECKO	4.128	186.285	0.536	12.053	0.449	5.630
Spm2ECKO	4.953	192.203	0.801	13.831	0.333	5.761
Spm2ECKO	5.082	201.647	0.421	13.075	0.398	6.336
Spm2ECKO	6.383	218.341	0.614	15.129	0.332	6.532
Spm2ECKO + SIP	3.920	142.455	0.558	8.599	0.420	3.773
Spm2ECKO + SIP	3.090	138.340	0.267	8.628	0.094	3.197
Spm2ECKO + SIP	2.655	151.852	0.298	8.829	0.512	4.089
Spm2ECKO + SIP	2.899	145.809	0.528	9.291	0.244	4.182
Spm2ECKO + SIP	3.798	141.717	0.381	10.013	0.143	4.054
Spm2ECKO + SIP	2.486	140.862	0.532	8.647	0.257	3.984
Spm2ECKO + SIP	3.529	140.230	0.398	8.822	0.421	3.687
Spm2If	3.186	96.726	0.788	27.296	0.920	12.756
Spm2If	4.174	98.420	1.354	30.334	0.909	13.853
Spm2If	3.137	98.955	0.845	28.095	0.853	12.769
Spm2If	2.377	89.983	0.901	22.282	0.752	9.777
Spm2If	4.053	84.591	1.111	26.192	0.765	11.373
Spm2If + SIP	2.272	43.937	0.659	10.622	0.499	5.223
Spm2If + SIP	3.071	56.990	1.626	16.496	1.339	7.548
Spm2If + SIP	1.714	87.256	1.179	18.112	0.501	7.021
Spm2If + SIP	7.403	61.770	7.343	23.332	6.279	17.510
Spm2If + SIP	7.412	58.227	5.287	22.045	2.547	9.492
Spm2If + SIP	6.580	51.934	4.793	19.149	3.479	12.069
Spm2If + SIP	6.042	54.959	2.376	21.305	3.359	11.469

Cer(d18:0/22:0)	Cer(d18:0/22:0)	Cer(d18:0/24:0)	Cer(d18:0/24:0)	Cer(d18:0/24:1)	Cer(d18:0/24:1)
Labeled	Labeled	Labeled	Labeled	Labeled	Labeled
1.808	57.013	2.410	113.727	1.076	184.304
0.735	42.295	0.593	79.550	1.002	137.552
0.106	43.633	0.630	79.633	1.064	147.999
0.752	46.131	0.745	87.337	0.858	145.243
1.355	48.303	1.681	98.059	1.913	163.839
0.507	29.103	0.766	56.791	1.255	98.222
0.393	26.584	0.414	62.332	1.063	94.186
0.534	30.875	0.721	61.766	1.023	110.861
0.554	32.421	0.506	56.640	0.821	112.432
0.325	33.085	0.467	65.798	1.123	107.765
0.437	26.342	0.643	57.814	0.858	95.122
0.708	28.454	0.629	55.963	0.869	100.765
1.513	63.288	0.949	76.026	0.585	159.972
1.317	62.058	1.104	75.951	2.108	162.491
1.880	59.345	1.525	87.054	1.978	158.829
1.206	50.989	1.114	65.983	1.759	130.865
1.091	60.474	1.066	75.907	2.205	156.831
0.845	28.650	1.270	45.986	1.986	78.746
1.687	34.032	1.180	49.118	2.897	98.388
1.319	35.890	0.835	40.561	1.538	97.248
8.645	49.088	5.975	57.276	6.944	103.068
4.244	34.890	4.385	63.140	6.296	93.846
3.513	44.568	3.862	65.125	6.184	83.629
2.995	34.409	2.556	47.847	4.908	87.222

Cer(d18:1/14:0)	Cer(d18:1/16:0)	Cer(d18:1/18:0)	Cer(d18:1/20:0)	Cer(d18:1/22:0)	Cer(d18:1/24:0)
Labeled	Labeled	Labeled	Labeled	Labeled	Labeled
149.841	149.841	149.841	149.841	149.841	149.841
0.185	144.181	9.893	3.767	32.355	53.885
0.229	150.033	11.535	4.167	32.640	53.097
0.230	158.724	10.936	4.537	35.301	60.419
0.261	171.947	12.813	4.443	35.437	64.457
0.237	108.444	6.468	6.287	16.217	37.605
0.067	103.146	6.913	2.023	19.711	39.810
0.178	118.390	6.942	2.594	22.899	38.370
0.213	112.531	7.334	2.761	23.464	36.888
0.104	107.818	8.319	2.792	24.145	40.179
0.167	108.607	6.758	6.236	19.444	36.730
0.179	108.639	6.994	2.110	21.212	37.660
0.335	87.386	24.428	9.941	55.052	65.283
0.374	88.418	26.650	10.561	55.682	67.319
0.243	89.530	25.771	9.921	51.195	67.577
0.283	93.856	20.024	8.658	45.092	53.462
0.266	75.482	23.597	8.781	53.585	59.033
0.198	38.157	8.623	2.996	22.412	27.748
0.429	48.453	12.799	4.007	27.990	33.068
0.394	55.424	12.723	4.979	30.081	31.395
1.212	45.359	11.703	6.359	32.547	32.709
1.072	43.170	10.625	3.925	23.630	29.751
0.876	39.914	11.961	4.196	31.355	35.473
0.688	43.610	15.901	6.033	25.308	28.958

Cer(d18:1/24:1)	Cer(d18:1/26:0)	Cer(d18:1/26:1)	Cer(d18:2/18:0)	Cer(d18:2/18:0)	Cer(d18:2/20:0)
Labeled	Labeled	Labeled	Labeled	Labeled	Labeled
134.533	0.968	3.095	45.323	2.616	1.975
99.901	0.708	2.237	37.976	1.624	1.414
106.632	0.701	2.236	37.217	1.496	1.261
105.365	0.873	2.363	37.841	1.718	1.176
117.634	0.778	2.558	40.331	1.702	1.756
70.418	0.711	1.655	31.591	1.573	1.156
69.012	0.314	1.638	32.104	1.448	1.079
77.695	0.543	1.979	30.808	1.589	0.983
78.334	0.430	1.430	30.380	1.429	1.176
75.530	0.291	2.100	29.562	1.513	1.120
67.676	0.692	1.461	29.770	1.357	1.231
71.907	0.588	1.839	28.063	1.430	1.156
145.918	0.904	1.846	5.154	2.080	1.895
146.738	1.073	1.919	5.828	2.330	2.383
144.350	0.839	1.867	6.288	1.479	1.955
118.813	0.777	1.189	4.440	1.357	1.368
140.758	0.746	1.330	5.057	1.484	1.827
67.128	0.695	1.140	3.509	1.341	1.728
83.870	1.060	1.515	5.465	2.071	2.203
86.226	0.781	0.890	5.117	2.210	1.541
81.779	5.640	4.933	9.028	4.285	4.880
73.588	3.347	3.141	7.645	6.134	3.019
76.039	3.592	2.939	5.440	2.395	4.394
71.001	2.686	1.806	5.307	3.028	2.076

Cer(d18:2/22:0)	Cer(d18:2/22:0)	Cer(d18:2/24:0)	Cer(d18:2/24:1)	Labeled
Labeled	Total	Labeled	Labeled	Labeled
13.111	94.591	35.853	48.696	833.775
9.195	87.864	28.071	36.649	483.699
10.357	87.917	25.926	40.302	486.317
10.078	71.487	26.173	39.016	503.235
11.511	80.124	31.921	44.291	553.799
7.380	76.035	18.421	26.549	341.547
6.481	74.507	22.308	24.111	325.995
7.441	82.828	22.675	31.943	370.771
8.403	81.849	19.245	32.777	383.007
8.614	87.055	25.152	31.113	364.387
6.460	72.002	21.441	26.589	324.974
6.535	80.650	17.574	27.989	340.538
5.822	48.717	9.793	12.468	437.248
5.059	52.009	7.528	13.645	446.473
6.270	44.254	17.952	12.501	447.996
4.691	39.661	11.407	10.294	352.833
5.798	43.865	15.801	13.867	411.610
5.193	47.804	16.667	9.632	214.637
4.355	67.730	14.870	11.621	285.577
4.489	56.838	8.331	9.483	256.132
7.896	55.243	18.591	14.345	323.829
6.916	60.437	29.284	13.862	289.290
9.658	61.818	25.690	11.406	293.838
6.106	53.634	16.333	11.313	262.391

pmol lipid per mg protein	GlcCer(d18:1/16:0)	GlcCer(d18:1/18:0)	GlcCer(d18:1/20:0)	GlcCer(d18:1/22:0)	GlcCer(d18:1/24:0)	GlcCer(d18:1/24:1)		
	Total	Total	Total	Total	Total	Total	Total	
Spns2ECKO	3751.559	584.722	514.557	956.182	1403.031	1310.746	8520.797	
Spns2ECKO	3458.671	455.779	438.332	642.385	926.479	942.997	6864.642	
Spns2ECKO	3664.832	523.726	480.836	761.068	1033.201	1145.649	7609.312	
Spns2ECKO	3211.967	431.712	421.810	700.749	912.066	1012.739	6691.043	
Spns2ECKO	3794.778	532.337	520.468	819.606	1292.760	1229.402	8189.352	
Spns2f/f	1593.542	702.001	931.091	1188.911	1056.875	1167.429	6639.850	
Spns2f/f	1627.174	711.859	988.182	1142.701	1001.344	1195.045	6666.306	
Spns2f/f	1676.562	719.875	938.561	1090.489	999.869	1293.483	6718.840	
Spns2f/f	1432.472	573.889	758.960	948.042	901.250	1124.554	5739.166	
Spns2f/f	1506.336	633.164	897.183	1052.936	946.530	1151.084	6187.233	

pmol lipid per mg protein	GlcCer(d18:1/16:0)	GlcCer(d18:1/18:0)	GlcCer(d18:1/20:0)	GlcCer(d18:1/22:0)	GlcCer(d18:1/24:0)	GlcCer(d18:1/24:1)	
	Labeled	Labeled	Labeled	Labeled	Labeled	Labeled	Labeled
Spns2ECKO	185.261	9.927	6.868	17.173	21.139	39.833	280.201
Spns2ECKO	154.539	7.265	3.978	14.401	17.142	28.749	226.073
Spns2ECKO	170.541	8.830	5.696	17.821	21.063	34.833	258.784
Spns2ECKO	160.494	6.824	5.052	15.543	17.780	29.894	235.587
Spns2ECKO	181.972	9.821	4.115	18.978	21.375	34.844	271.104
SpnsECKO + S1P	137.744	5.619	3.671	11.260	10.438	19.977	188.709
SpnsECKO + S1P	131.137	4.277	1.843	7.415	10.986	19.226	174.883
SpnsECKO + S1P	112.904	7.345	3.920	12.222	14.949	25.993	177.334
SpnsECKO + S1P	124.063	5.567	3.247	15.235	18.702	29.959	196.772
SpnsECKO + S1P	129.005	4.483	3.321	12.629	18.373	25.639	193.450
SpnsECKO + S1P	116.079	5.692	2.714	10.461	14.432	25.404	174.783
SpnsECKO + S1P	123.505	5.454	3.465	12.347	15.483	26.103	186.356
Spns2fff	43.79	8.92	4.93	18.05	9.74	19.51	104.941
Spns2fff	38.78	4.79	4.08	15.34	6.78	16.54	86.307
Spns2fff	49.39	6.35	5.84	12.79	8.88	21.95	105.209
Spns2fff	56.36	8.41	5.78	22.12	10.67	27.61	130.950
Spns2fff	52.050	7.326	5.304	17.852	9.866	19.371	111.768
Spns2fff + S1P	39.48	3.79	2.95	12.25	5.56	19.60	83.623
Spns2fff + S1P	39.88	5.50	3.87	13.10	7.14	17.57	87.066
Spns2fff + S1P	46.81	3.65	3.89	14.16	7.18	21.97	97.663
Spns2fff + S1P	41.88	4.59	3.22	7.82	6.94	15.85	80.292
Spns2fff + S1P	40.319	7.099	6.412	11.106	7.083	20.784	92.803
Spns2fff + S1P	39.562	6.702	6.286	12.331	11.532	18.376	94.789
Spns2fff + S1P	34.158	3.853	2.805	9.744	6.265	17.225	74.052