Table S1. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **1** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.24 (m)	70.2	1'		175.6
	4.69 (m)		2'	4.57 (m)	72.3
2	4.79 (m)	54.6	3'	2.06 (m)	35.6
3	4.71 (m)	72.4	4'	1.69 (m)	25.9
4	5.99 (dd, 15.6, 5.0)	132.2		1.80 (m)	
5	5.91 (dd, 15.1, 5.5)	132.0	5'-13'	1.25-1.35 (m)	30.0, 29.9, 29.6
6	2.16 (2H, m)	32.9	14'	1.25 (2H, m)	32.1
7	2.20 (2H, m)	27.3	15'	1.29 (2H, m)	22.9
8	5.48 (m)	129.4	16'	0.85 (3H, t, 7.3)	14.3
9	5.48 (m)	130.6	1-*O*-Glc		
10	2.06 (2H, m)	27.6	1"	4.91 (d, 7.4)	105.7
11-15	1.25-1.35 (m)	30.0, 29.9, 29.6	2"	4.02 (m)	75.1
16	1.25 (2H, m)	32.1	3"	4.20 (m)	78.6
17	1.29 (2H, m)	22.9	4"	4.20 (m)	71.4
18	0.85 (3H, t, 7.3)	14.3	5"	3.98 (m)	78.4
NH	8.35 (d, 8.3)		6"	4.35 (dd, 11.9, 5.0)	62.6
				4.49 (m)	

Table S2. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **2** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.52 (m)	70.4	1'		175.6
	4.69 (m)		2'	4.54 (dd, 7.8, 3.6)	72.6
2	5.23 (m)	51.8	3'	2.07 (m)	35.6
3	4.32 (m)	75.9	4'	1.79 (m)	25.9
4	4.18 (m)	72.5		1.79 (m)	
5	1.88 (m)	34.0	5'-19'	1.26-1.37 (m)	30.8, 30.0, 29.9, 29.6
	2.07 (m)		20'	1.25 (2H, m)	32.1
6	1.62 (2H, m)	26.8	21'	1.29 (2H, m)	22.9
7	2.23 (2H, m)	27.9	22'	0.87 (3H, t, 6.9)	14.2
8	5.50 (m)	130.4	1-*O*-Glc		
9	5.50 (m)	130.2	1"	4.93 (d, 7.8)	105.6
10	2.23 (2H, m)	27.6	2"	3.97 (m)	75.2
11-15	1.26-1.37 (m)	30.8, 30.0, 29.9, 29.6	3"	4.16 (m)	78.5
16	1.25 (2H, m)	32.1	4"	4.16 (m)	71.6
17	1.29 (2H, m)	22.9	5"	3.84 (m)	78.4
18	0.87 (3H, t, 6.9)	14.2	6"	4.31 (dd, 11.9, 5.0)	62.7
NH	8.49 (d, 8.2)			4.51 (m)	

Table S3. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **3** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.53 (m)	70.5	1'		175.7
	4.67 (dd, 10.5, 6.8)		2'	4.55 (dd, 7.8, 3.7)	72.5
2	5.22 (m)	51.9	3'	2.07 (m)	35.6
3	4.32 (m)	76.0	4'	1.76 (m)	25.9
4	4.18 (m)	72.5		1.76 (m)	
5	1.89 (m)	34.0	5'-20'	1.26-1.36 (m)	30.8, 30.0, 29.9, 29.9, 29.6
	2.07 (m)		21'	1.26 (2H, m)	32.1
6	1.62 (2H, m)	26.8	22'	1.29 (2H, m)	22.9
7	2.23 (2H, m)	28.0	23'	0.87 (3H, t, 7.3)	14.3
8	5.49 (m)	130.4	1-*O*-Glc		
9	5.49 (m)	130.2	1"	4.93 (d, 7.4)	105.6
10	2.23 (2H, m)	27.6	2"	3.97 (m)	75.2
11-15	1.26-1.36 (m)	30.8, 30.0, 29.9, 29.9, 29.6	3"	4.16 (m)	78.5
16	1.26 (2H, m)	32.1	4"	4.16 (m)	71.6
17	1.29 (2H, m)	22.9	5"	3.84 (m)	78.5
18	0.87 (3H, t, 7.3)	14.3	6"	4.31 (dd, 11.9, 5.5)	62.8
NH	8.49 (d, 8.7)			4.46 (dd, 11.9, 2.1)	

Table S4. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **4** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.51 (m)	70.4	1'		175.6
	4.69 (dd, 11.0, 6.4)		2'	4.54 (dd, 7.8, 3.6)	72.6
2	5.23 (m)	51.8	3'	2.08 (m)	35.6
3	4.31 (m)	76.0	4'	1.75 (m)	25.9
4	4.18 (m)	72.5		1.75 (m)	
5	1.89 (m)	34.0	5'-21'	1.26-1.35 (m)	30.8, 30.0, 29.9, 29.9, 29.6
	2.08 (m)		22'	1.25 (2H, m)	32.1
6	1.56 (2H, m)	26.8	23'	1.29 (2H, m)	22.9
7	2.27 (2H, m)	28.0	24'	0.87 (3H, t, 7.3)	14.3
8	5.51 (m)	130.4	1-*O*-Glc		
9	5.51 (m)	130.2	1"	4.92 (d, 7.3)	105.6
10	2.27 (2H, m)	27.6	2"	3.96 (m)	75.2
11-15	1.26-1.35 (m)	30.8, 30.0, 29.9, 29.9, 29.6	3"	4.15 (m)	78.5
16	1.25 (2H, m)	32.1	4"	4.15 (m)	71.6
17	1.29 (2H, m)	22.9	5"	3.84 (m)	78.5
18	0.87 (3H, t, 7.3)	14.3	6"	4.30 (dd, 11.4, 5.0)	62.7
NH	8.48 (d, 9.2)			4.46 (dd, 11.9, 1.9)	

Table S5. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **5** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.51 (m)	70.4	1'		175.7
	4.67 (dd, 10.5, 4.1)		2'	4.54 (dd, 7.8, 3.6)	72.6
2	5.23 (m)	51.9	3'	2.09 (m)	35.6
3	4.31 (m)	76.0	4'	1.77 (m)	25.9
4	4.18 (m)	72.5		1.77 (m)	
5	1.90 (m)	34.0	5'-22'	1.26-1.36 (m)	30.8, 30.0, 29.9, 29.9, 29.6
	2.09 (m)		23'	1.26 (2H, m)	32.1
6	1.57 (2H, m)	26.8	24'	1.29 (2H, m)	22.9
7	2.26 (2H, m)	28.0	25'	0.87 (3H, t, 6.8)	14.3
8	5.50 (m)	130.4	1-*O*-Glc		
9	5.50 (m)	130.2	1"	4.92 (d, 7.8)	105.6
10	2.26 (2H, m)	27.6	2"	3.97 (m)	75.2
11-15	1.26-1.36 (m)	30.8, 30.0, 29.9, 29.9, 29.6	3"	4.16 (m)	78.5
16	1.26 (2H, m)	32.1	4"	4.16 (m)	71.6
17	1.29 (2H, m)	22.9	5"	3.84 (m)	78.5
18	0.87 (3H, t, 6.8)	14.3	6"	4.30 (dd, 11.4, 5.0)	62.8
NH	8.49 (d, 9.2)			4.46 (dd, 11.9, 2.0)	

Table S6. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of GlcCer **6** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.51 (m)	70.4	1'		175.7
	4.67 (dd, 10.6, 6.4)		2'	4.54 (dd, 7.8, 3.6)	72.6
2	5.23 (m)	51.9	3'	2.09 (m)	35.6
3	4.31 (m)	76.0	4'	1.77 (m)	25.9
4	4.19 (m)	72.6		1.77 (m)	
5	1.89 (m)	34.0	5'-23'	1.26-1.36 (m)	30.9, 30.0, 29.9, 29.9, 29.6
	2.09 (m)		24'	1.26 (2H, m)	32.2
6	1.57 (2H, m)	26.8	25'	1.29 (2H, m)	22.9
7	2.27 (2H, m)	28.0	26'	0.87 (3H, t, 6.9)	14.3
8	5.50 (m)	130.5	1-*O*-Glc		
9	5.50 (m)	130.2	1"	4.93 (d, 7.3)	105.6
10	2.27 (2H, m)	27.6	2"	3.97 (m)	75.2
11-15	1.26-1.36 (m)	30.9, 30.0, 29.9, 29.9, 29.6	3"	4.16 (m)	78.6
16	1.26 (2H, m)	32.2	4"	4.16 (m)	71.6
17	1.29 (2H, m)	22.9	5"	3.84 (m)	78.6
18	0.87 (3H, t, 6.9)	14.3	6"	4.31 (dd, 11.9, 5.0)	62.8
NH	8.49 (d, 8.7)			4.45 (dd, 11.9, 2.3)	

Table S7. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of DGDG **7** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.45 (m)	63.4	1-*O*-Linolenoyl		
	4.72 (m)		1'''		173.3*
2	5.64 (m)	71.1	2'''	2.36 (m)	34.5*
3	4.03 (m)	68.3	3'''	1.64 (brs)	25.2
	4.31 (m)		4'''-7'''	1.26-1.36 (m)	29.8, 29.5, 29.4
3-*O*-Gal			8'''	2.08 (m)	27.5
1'	4.73 (d, 7.3)	105.5	9''', 10''', 12''', 13'''	5.48 (m)	130.6, 128.2, 127.6
2'	4.38 (m)	72.2	14'''	2.91 (m)	25.9
3'	4.07 (m)	74.6	15''', 16'''	5.48 (m), 5.44 (m)	132.2, 128.7
4'	4.60 (m)	69.9	17'''	2.08 (m)	20.9
5'	4.14 (m)	75.1	18'''	0.94 (3H, t, 7.3)	14.4
6'	4.14 (m)	68.3	2-*O*-Linolenoyl		
	4.37 (m)		1''''		173.1*
Gal-6-*O*-Gal			2''''	2.36 (m)	34.3*
1''	5.52 (d, 2.8)	101.4	3''''	1.64 (brs)	25.2
2''	4.51 (m)	68.8	4''''-7''''	1.26-1.36 (m)	29.8, 29.5, 29.4
3''	4.48 (m)	75.1	8''''	2.08 (m)	27.5
4''	4.63 (m)	68.1	9'''', 10'''', 12'''', 13'''	5.48 (m)	130.6, 128.2, 127.6
5''	4.34 (m)	72.8	14''''	2.91 (m)	25.9
6''	4.38 (m)	62.6	15'''', 16''''	5.48 (m), 5.44 (m)	132.2, 128.7
			17''''	2.08 (m)	20.9
			18''''	0.94 (3H, t, 7.3)	14.4

*Assignments may be interchangeable within the same column.

Table S8. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of DGDG **8** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.45 (m)	63.6	1-*O*-Palmitoyl		
	4.74 (m)		1'''		173.5*
2	5.64 (m)	71.3	2'''	2.36 (m)	34.7*
3	4.05 (m)	68.5	3'''	1.64 (brs)	25.5
	4.31 (m)		4'''-13'''	1.26-1.36 (m)	30.2, 30.1, 29.9, 29.7, 29.6
3-*O*-Gal			14'''	1.26 (m)	32.3
1'	4.73 (d, 7.8)	105.8	15'''	1.26 (m)	23.2
2'	4.37 (m)	72.5	16'''	0.87 (3H, t, 6.9)	14.7
3'	4.07 (m)	74.9	2-*O*-Linolenoyl		
4'	4.60 (m)	70.1	1''''		173.4*
5'	4.14 (m)	75.3	2''''	2.36 (m)	34.5*
6'	4.14 (m)	68.5	3''''	1.64 (brs)	25.8
	4.39 (m)		4''''-7''''	1.26-1.36 (m)	30.2, 30.1, 29.9, 29.7, 29.6
Gal-6-*O*-Gal			8''''	2.09 (m)	27.5
1''	5.49 (d, 3.2)	101.6	9'''', 10'''', 12'''', 13'''	5.48 (m)	130.7, 128.4, 127.9
2''	4.53 (m)	69.1	14''''	2.91 (m)	26.2
3''	4.48 (m)	75.3	15'''', 16''''	5.48 (m), 5.44 (m)	132.4, 129.0
4''	4.63 (m)	68.3	17''''	2.09 (m)	21.1
5''	4.32 (m)	73.1	18''''	0.94 (3H, t, 7.4)	14.5
6''	4.39 (m)	62.9			

*Assignments may be interchangeable within the same column.

Table S9. ^{1}H (400 MHz) and ^{13}C (100 MHz) NMR data of DGDG **9** (pyridine-d_5)

position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)	position	δ_H (multi., *J* in Hz)	δ_C (multi., *J* in Hz)
1	4.46 (m)	63.4	1-*O*-Palmitoyl		
	4.74 (m)		1'''		173.3*
2	5.64 (m)	71.1	2'''	2.36 (m)	34.5*
3	4.02 (m)	68.3	3'''	1.66 (brs)	25.3
	4.32 (m)		4'''-13'''	1.27-1.36 (m)	30.0, 29.6, 29.5, 29.4
3-*O*-Gal			14'''	1.27 (m)	32.1
1'	4.73 (d, 7.8)	105.5	15'''	1.27 (m)	22.9
2'	4.37 (m)	72.2	16'''	0.87 (3H, t, 7.0)	14.3
3'	4.08 (m)	74.6	2-*O*-Linoleoyl		
4'	4.63 (m)	69.9	1''''		173.1*
5'	4.13 (m)	75.1	2''''	2.36 (m)	34.3*
6'	4.13 (m)	68.3	3''''	1.66 (brs)	25.3
	4.39 (m)		4''''-7''''	1.27-1.36 (m)	30.0, 29.6, 29.5, 29.4
Gal-6-*O*-Gal			8''''	2.10 (m)	27.6
1''	5.49 (d, 3.3)	101.4	9'''', 10'''', 12'''', 13'''	5.48 (m)	130.5, 130.4, 128.5
2''	4.54 (m)	68.9	14''''	2.91 (m)	27.6
3''	4.50 (m)	75.1	15'''', 16''''	1.27 (m)	30.0, 29.8
4''	4.68 (m)	68.1	17''''	2.10 (m)	22.8
5''	4.34 (m)	72.8	18''''	0.87 (3H, t, 7.0)	14.2
6''	4.39 (m)	62.6			

*Assignments may be interchangeable within the same column.