Dipentaerythritol hexa-pentanoate (4a)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.94-0.96 (d, *J*=6.3 Hz, 18H, $6CH_3$), 1.36-1.38 (d, *J*=6.3 Hz, 12H, $6CH_2$), 1.62 (s, 12H, $6CH_2$), 2.34 (s, 12H, $6CH_2$), 3.42-3.46 (d, *J*=11.3 Hz, 4H, $2CH_2$), 4.14 (s, 12H, $6CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.23 (CH_3), 21.80 ($CH_{2(\alpha)}(CH_3)$), 26.48 ($CH_{2(\beta)}(C=O)$), 33.35 ($CH_{2(\alpha)}(C=O)$), 42.48 (4°*C*), 61.88 ($OCH_{2(\alpha)}(4°C)$), 69.51 (CH_2OCH_2), 173.04 (*C*=O). IR/cm^{-1}: 2960, 2873, 1743, 1467, 1385, 1242, 1166, 1108, 1021, 937, 754. *m/z*(ESI-MS) :782.0 ($[M+23]^+$, 5.40%), $C_{40}H_{70}O_{13}$ requires 781.4818($M+Na^+$).

Dipentaerythritol hexa-hexanoate (4b)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.93 (s, 18H, $6CH_3$), 1.34 (s, 24H, $12CH_2$), 1.64 (s, 12H, $6CH_2$), 2.33 (s, 12H, $6CH_2$), 3.46 (s, 4H, $2CH_2$), 4.14 (s, 12H, $6CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.66 (CH_3), 21.95 ($CH_{2(\alpha)}(CH_3)$), 24.21 ($CH_{2(\beta)}(C=O)$), 30.92 ($CH_{2(\beta)}(CH_3)$), 33.63 ($CH_{2(\alpha)}(C=O)$), 42.56 (4°*C*), 61.95 ($OCH_{2(\alpha)}(4°C)$), 69.60 (CH_2OCH_2), 172.62(*C*=O). IR/cm^{-1}: 2958, 2871, 1743, 1467, 1384, 1242, 1163, 1104, 1013, 934, 733. *m/z* (ESI-MS) 865.1 ($[M+23]^+$, 18.42%), $C_{46}H_{82}O_{13}$ requires 865.5758($M+Na^+$).

Dipentaerythritol hexa-heptanoate (4c)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.90 (18H, s, $6CH_3$), 1.32 (s, 36H, $18CH_2$), 1.62 (s, 12H, $6CH_2$), 2.32 (s, 12H, $6CH_2$), 3.41 (s, 4H, $2CH_2$); 4.12 (s, 12H, $6CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.81 (CH_3), 22.31 ($CH_{2(\alpha)}(CH_3)$), 24.67 ($CH_{2(\beta)}(C=O)$), 28.63 ($CH_{2(\gamma)}(C=O)$), 31.48 ($CH_{2(\beta)}(CH_3)$), 33.88 ($CH_{2(\alpha)}(C=O)$), 42.85 (4°*C*), 62.13 ($OCH_{2(\alpha)}(4°C)$), 69.76 (CH_2OCH_2), 172.92 (*C*=O). IR/cm^{-1}: 2930, 2859, 1743, 1467, 1383, 1233, 1160, 1105, 1026, 933, 727. *m/z*(ESI-MS) 948.9 ($[M+23]^+$, 26.32%), $C_{52}H_{94}O_{13}$ requires 949.6697($M+Na^+$).

Dipentaerythritol hexa-octanoate (4d)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.86-0.88 (d, *J*=6.28 Hz, 18H, $6CH_3$), 1.28 (s, 48H, $24CH_2$), 1.58 (s, 12H, $6CH_2$), 2.27-2.30 (d, *J*=6.79 Hz, 12H, $6CH_2$), 3.37-3.40 (d, *J*=8.2 Hz, 4H, $2CH_2$), 4.09 (s, 12H, $6CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.86 (CH_3),

22.44 ($CH_{2(\alpha)}(CH_3)$), 24.72 ($CH_{2(\beta)}(C=O)$), 28.77 (CH_2-$CH_{2(\gamma \text{ and } \delta)}(C=O)$), 31.51 ($CH_{2(\beta)}(CH_3)$), 33.89 ($CH_{2(\alpha)}(C=O)$), 42.87 (4°*C*), 62.13 ($OCH_{2(\alpha)}$(4°C)), 69.79 (CH_2OCH_2), 172.90 (*C*=O). IR/cm^{-1}: 2927, 2857, 1744, 1467, 1383, 1248, 1158, 1107, 1035, 935, 725. *m/z*(ESI-MS) 1033.5 ($[M+23]^+$, 51.85%), $C_{58}H_{106}O_{13}$ requires 1033.7637($M+Na^+$).

Pentaerythritol tetra-pentanoate (5a)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.89~0.93 (t, *J* =7.2 Hz, 12H, $4CH_3$), 1.30-1.41 (d, *J* =7.5 Hz, 8H, $4CH_2$), 1.57-1.62(t, *J* =4.5 Hz, 8H, $4CH_2$), 2.32-2.36 (t, *J* =4.5 Hz, 8H, $4CH_2$), 4.12 (s, 8H, $4CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.55 (CH_3), 22.13 ($CH_{2(\alpha)}(CH_3)$), 26.82 ($CH_{2(\beta)}(C=O)$), 33.60 ($CH_{2(\alpha)}(C=O)$), 41.76 (4°*C*), 62.09 ($OCH_{2(\alpha)}$(4°C)), 173.76 (*C*=O). IR/cm^{-1}: 2961, 2935, 2874, 1744, 1468, 1387, 1242, 1168, 1095, 1022. *m/z*(ESI-MS) 495.7($[M+23]^+$, 16.24%), $C_{25}H_{44}O_8$ requires 495.3037($M+Na^+$).

Pentaerythritol tetra–hexanoate (5b)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.84-0.88 (t, *J* =6.9 Hz, 12H, $4CH_3$), 1.22-1.27 (d, *J* =3.4 Hz, 16H, $8CH_2$), 1.55-1.59 (t, *J* =6.9 Hz, 8H, $4CH_2$), 2.24-2.31 (t, *J* =7.5 Hz, 8H, $4CH_2$), 4.0 (s, 8H, $4CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.75 (CH_3), 22.17 ($CH_{2(\alpha)}(CH_3)$), 24.49 ($CH_{2(\beta)}(C=O)$), 31.16 ($CH_{2(\beta)}(CH_3)$), 34.03 ($CH_{2(\alpha)}(C=O)$), 41.77 (4°*C*), 62.07 ($OCH_{2(\alpha)}$(4°C)), 173.65 (*C*=O). IR/cm^{-1}: 2958, 2933, 2871, 1744, 1467, 1385, 1242, 1163, 1100, 1015. *m/z*(ESI-MS) 551.3 ($[M+23]^+$, 57.61%), $C_{29}H_{52}O_8$ requires 551.3664($M+Na^+$).

Pentaerythritol tetra–heptanoate (5c)

δ_H (300 MH_Z; $CDCl_3$; Me_4Si): 0.86-0.91 (t, *J* =6.9 Hz, 12H, $4CH_3$), 1.29 (s, 24H, $12CH_2$), 1.55-1.62 (t, *J* =7.2 Hz, 8H, $4CH_2$), 2.28-2.35 (t, *J* =7.2 Hz, 8H, $4CH_2$), 4.11 (s, 8H, $4CH_2$). δ_C (300 MH_Z; $CDCl_3$; Me_4Si): 13.86 (CH_3), 22.35 ($CH_{2(\alpha)}(CH_3)$), 24.72 ($CH_{2(\beta)}(C=O)$), 28.67 ($CH_{2(\gamma)}(C=O)$), 31.30 ($CH_{2\,(\beta)}(CH_3)$), 33.80 ($CH_{2\,(\alpha)}(C=O)$), 41.77 (4°*C*), 62.07 ($OCH_{2\,(\alpha)}$(4°C)), 173.11 (*C*=O). IR/cm^{-1}: 2957, 2931, 2860, 1744, 1467, 1387, 1232, 1161, 1104, 1027. *m/z*(ESI-MS) 608.0 ($[M+23]^+$, 32.07%), $C_{33}H_{60}O_8$ requires 607.4290($M+Na^+$).

Pentaerythritol tetra -octanoate (5d)

δ_H (300 $MH_{Z;}$ $CDCl_3$; Me_4Si): 0.86-0.88 (d, *J* =6.6 Hz, 12H, $4CH_3$), 1.28 (s, 32H, $16CH_2$), 1.60 (s, 8H, $4CH_2$), 2.28-2.34 (t, *J* =7.2 Hz, 8H, $4CH_2$), 4.12 (s, 8H, $4CH_2$). δ_C (300 $MH_{Z;}$ $CDCl_3$; Me_4Si): 13.93 (*C*H_3), 22.76 (*C*$H_{2(\alpha)}$(CH_3)), 24.81 (*C*$H_{2(\beta)}$(C=O)), 28.98 (*C*H_2-*C*$H_{2(\gamma \text{ and } \delta)}$(C=O)), 31.54 (*C*$H_{2(\beta)}$($CH_3$)), 33.98 (*C*$H_{2(\alpha)}$(C=O)), 41.78 (4°*C*), 61.98 (O*C*$H_{2(\alpha)}$(4°C)), 173.36 (*C*=O). IR/cm^{-1}: 2956, 2928, 2857, 1744, 1467, 1387, 1167, 1105,1019. *m/z*(ESI-MS) 663.8 ($[M+23]^+$, 31.28%), $C_{37}H_{68}O_8$ requires 663.4916($M+Na^+$).

Pentaerythritol tetra-nonanoate (5e)

δ_H (300 $MH_{Z;}$ $CDCl_3$; Me_4Si): 0.86-0.89 (d, *J*=6.9 Hz, 12H, $4CH_3$), 1.29 (s, 40 H, $20CH_2$), 1.62 (s, 8H, $4CH_2$), 2.28-2.36 (t, *J*=7.2 Hz, 8H, $4CH_2$), 4.13 (s, 8H, $4CH_2$). δ_C (300 $MH_{Z;}$ $CDCl_3$; Me_4Si): 13.83 (*C*H_3), 22.66 (*C*$H_{2(\alpha)}$(CH_3)), 24.86 (*C*$H_{2(\beta)}$(C=O)), 28.95 (*C*H_2-*C*H_2-*C*$H_{2(\gamma,\ \delta \text{ and } \varepsilon)}$(C=O)), 31.64 (*C*$H_{2(\beta)}$($CH_3$)), 33.90 (*C*$H_{2(\alpha)}$(C=O)), 41.75 (4°*C*), 62.08 (O*C*$H_{2(\alpha)}$(4°C)), 173.38 (*C*=O). IR/cm^{-1}: 2958, 2925, 2856, 1744, 1467, 1387, 1167, 1105, 1019. *m/z*(ESI-MS) 719.2 ($[M+23]^+$, 25.00%), $C_{41}H_{76}O_8$ requires 719.5542($M+Na^+$).