**Supplementary spectroscopic data**

Gregoritza et al. Design of hydrogels for delayed antibody release utilizing hydrophobic association and Diels-Alder chemistry in tandem

8armPEG40k-furan
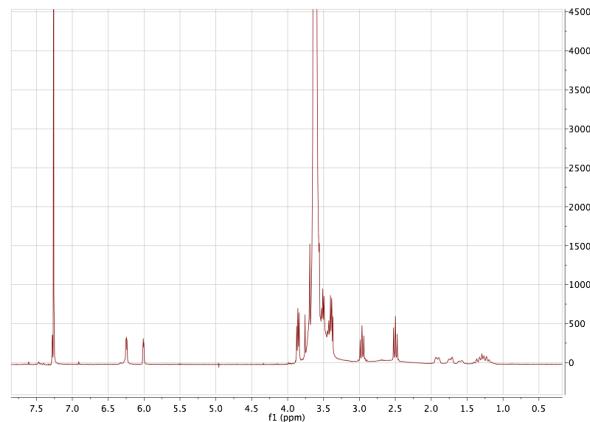
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 2.47 (t, 16H, –C(O)C*H*$_2$CH$_2$Ar), 2.97 (t, 16H, –C(O)CH$_2$C*H*$_2$Ar), 3.62 (s, –OC*H*$_2$C*H*$_2$–), 6.01 (s, 8H, Ar), 6.24 (s, 8H, Ar), 7.28 (s, 8H, Ar).

8armPEG40k-maleimide
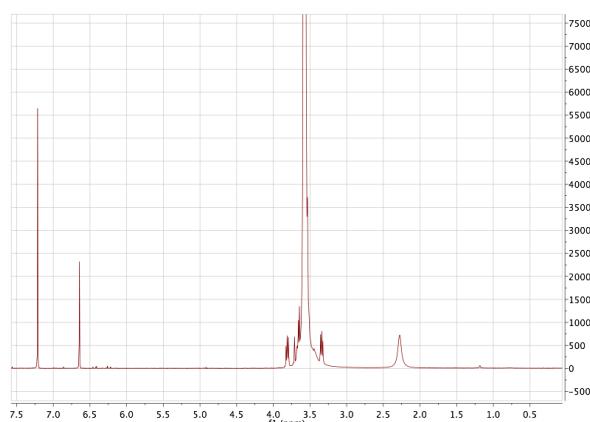
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 3.62 (s, –OC*H*$_2$C*H*$_2$–), 6.64 (s, 16H, –C(O)C*H*=C*H*C(O)–).

8armPEG40k-C$_6$-NH-Boc
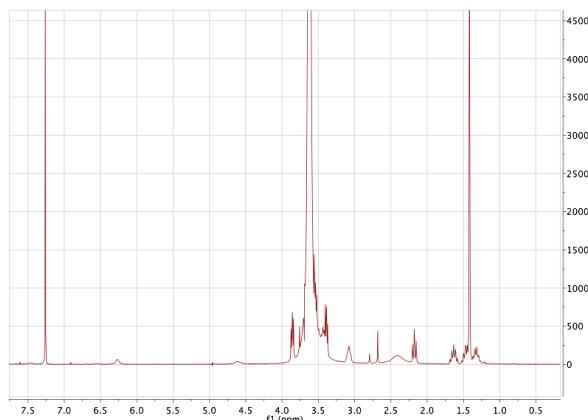
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.32 (m, 16H, –C(O)CH$_2$CH_2CH$_2$CH$_2$CH$_2$NH–), 1.42 (s, 72H, –NHC(O)OC(CH_3)$_3$), 1.47 (m, 16H, –C(O)CH$_2$CH$_2$CH_2CH$_2$CH$_2$NH), 1.63 (m, 16H, –C(O)CH$_2$CH$_2$CH$_2$CH_2CH$_2$NH–), 2.17 (m, 16H, –C(O)CH_2CH$_2$CH$_2$CH$_2$CH$_2$NH–), 3.08 (m, 16H, –C(O)CH$_2$CH$_2$CH$_2$CH$_2$CH_2NH–), 3.62 (s, –OCH_2CH$_2$–).

8armPEG40k-C$_6$-furan
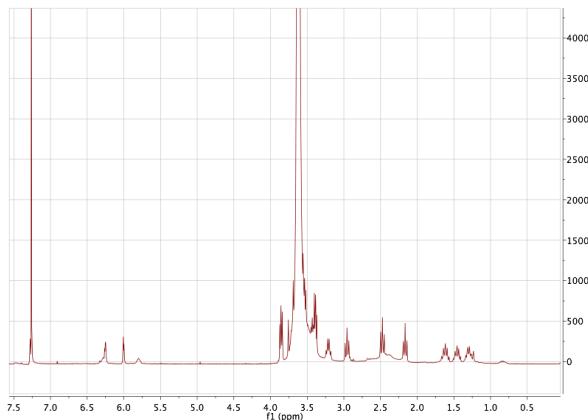
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.29 (m, 16H, –C(O)CH$_2$CH_2CH$_2$CH$_2$CH$_2$NH–), 1.46 (m, 16H, –C(O)CH$_2$CH$_2$CH_2CH$_2$CH$_2$NH–), 1.62 (m, 16H, –C(O)CH$_2$CH$_2$CH$_2$CH_2CH$_2$NH–), 2.17 (m, 16H, –C(O)CH_2CH$_2$CH$_2$CH$_2$CH$_2$NH–), 2.47 (t, 16H, –C(O)CH_2CH$_2$Ar), 2.96 (t, 16H, –C(O)CH$_2$CH_2Ar), 3.20 (m, 16H, –C(O)CH$_2$CH$_2$CH$_2$CH$_2$CH_2NH–), 3.62 (s, –OCH_2CH_2–), 6.00 (s, 8H, Ar), 6.25 (s, 8H, Ar), 7.27 (s, 8H, Ar).

8armPEG40k-C$_6$-maleimide
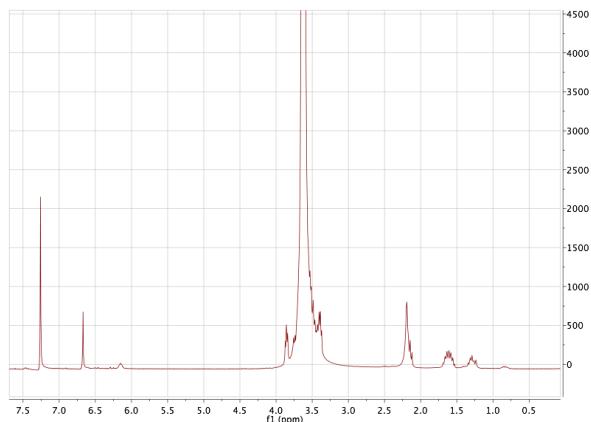
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.29 (m, 16H, –C(O)CH$_2$CH_2CH$_2$CH$_2$CH$_2$N–), 1.61 (m, 32H, –C(O)CH$_2$CH$_2$CH_2CH_2CH$_2$N–), 2.15 (m, 16H, –C(O)CH_2CH$_2$CH$_2$CH$_2$CH$_2$N–), 3.62 (s, –OCH_2CH_2–), 6.67 (s, 16H, –C(O)CH=CHC(O)–).

8armPEG40k-C$_{12}$-NH-Boc
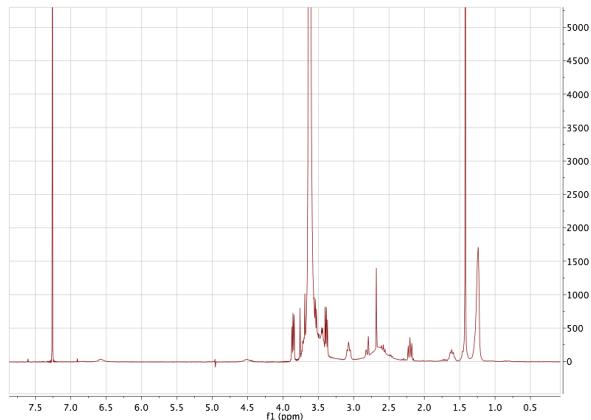
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.24 (m, 112H, –C(O)CH$_2$(CH_2)$_7$CH$_2$CH$_2$CH$_2$NH–), 1.42 (s, 72H, -NHC(O)OC(CH_3)$_3$), 1.43 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$CH_2CH$_2$CH$_2$NH), 1.60 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$CH$_2$CH_2CH$_2$NH–), 2.20 (m, 16H, –C(O)CH_2(CH$_2$)$_7$CH$_2$CH$_2$CH$_2$NH–), 3.08 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$CH$_2$CH$_2$CH_2NH–), 3.62 (s, –OCH_2CH_2–).

8armPEG40k-C$_{12}$-furan
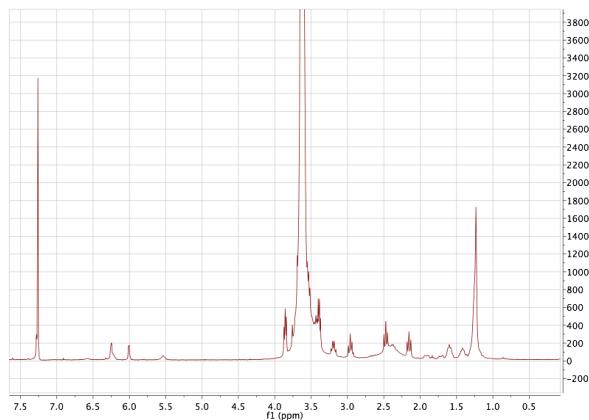
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.23 (m, 112H, –C(O)CH$_2$(C*H$_2$*)$_7$CH$_2$CH$_2$CH$_2$NH–), 1.42 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$C*H$_2$*CH$_2$CH$_2$NH–), 1.60 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$CH$_2$C*H$_2$*CH$_2$NH–), 2.15 (m, 16H, –C(O)C*H$_2$*(CH$_2$)$_7$CH$_2$CH$_2$CH$_2$NH–), 2.47 (t, 16H, –C(O)C*H$_2$*CH$_2$Ar), 2.96 (t, 16H, –C(O)CH$_2$C*H$_2$*Ar), 3.20 (m, 16H, –C(O)CH$_2$(CH$_2$)$_7$CH$_2$CH$_2$C*H$_2$*NH–), 3.62 (s, –OC*H$_2$*C*H$_2$*–), 6.00 (s, 8H, Ar), 6.26 (s, 8H, Ar), 7.26 (s, 8H, Ar).

8armPEG40k-C$_{12}$-maleimide
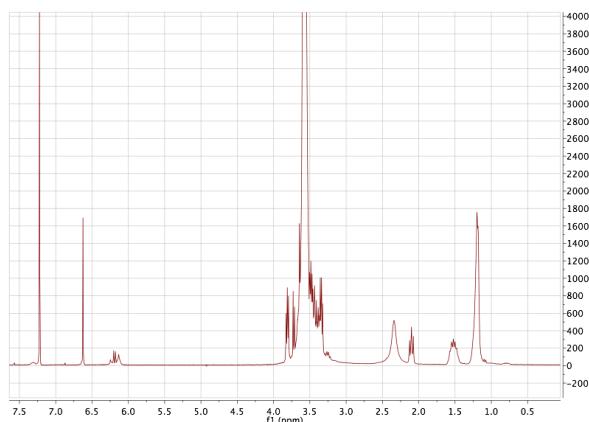
^{1}H-NMR (CDCl$_3$, 300 MHz): δ (ppm) = 1.23 (m, 112H, –C(O)CH$_2$(C*H$_2$*)$_7$CH$_2$CH$_2$CH$_2$N–), 1.56 (m, 32H, –C(O)CH$_2$(CH$_2$)$_7$C*H$_2$*C*H$_2$*CH$_2$N–), 2.14 (m, 16H, –C(O)C*H$_2$*(CH$_2$)$_7$CH$_2$CH$_2$CH$_2$N–), 3.62 (s, –OC*H$_2$*C*H$_2$*–), 6.66 (s, 16H, –C(O)C*H*=C*H*C(O)–).