

Supplementary material

Concept design, development and preliminary physical and chemical characterization of Tamoxifen-guided-mesoporous silica nanoparticles

Candace M. Day ¹, Martin J. Sweetman ^{1,2}, Shane M. Hickey ¹, Yunmei Song ¹, Yongjun Liu ³, Na Zhang ³, Sally E. Plush ^{1,2*} and Sanjay Garg ^{1,2*}

¹ University of South Australia: Clinical and Health Sciences, North Terrace, Adelaide SA 5000; Candace.Day@mymail.unisa.edu.au, Martin.Sweetman@unisa.edu.edu.au, Shane.Hickey@unisa.edu.au, May.Song@unisa.edu.au, Sally.Plush@unisa.edu.au, Sanjay.Garg@unisa.edu.au.

² Future Industry Institute, University of South Australia, Mawson Lakes SA 5095.

³ School of Pharmaceutical Science, Shandong University, Ji'nan, China; Liuyongjun@sdu.edu.cn, Zhangnancy9@sdu.edu.cn.

* Correspondence: Sally.Plush@unisa.edu.au; Tel.: +61-8-8302-2586; Sanjay.Garg@unisa.edu.au; Tel.: +61-8-8302-1575

Table of Contents

Figures

Figure S1: ¹ H NMR (500 MHz) spectrum of NMDT 1 in CD ₃ OD.....	1
Figure S2: ¹ H NMR (500 MHz) spectrum 2 in CDCl ₃	1
Figure S3: ¹ H NMR (500 MHz) spectrum of 3 in CDCl ₃	2
Figure S4: ¹ H NMR (500 MHz) spectrum of 4 in CD ₃ OD	2
Figure S5: ¹³ C NMR (500 MHz) spectrum of 4 in CD ₃ OD	3
Figure S6. RP-HPLC chromatogram of TAM-TEG-OMs 4	3
Table S1: RP-HPLC peak table with integrations for TAM-TEG-OMs 4	4

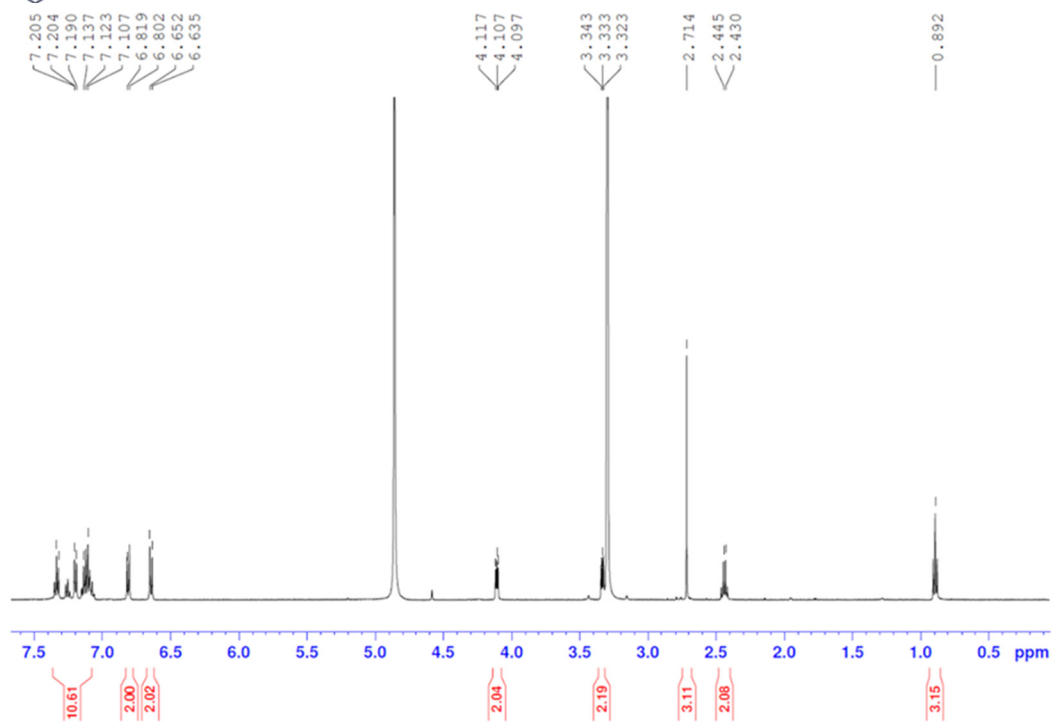


Figure 1. ^1H -NMR (500 MHz) spectrum of 1 in CD_3OD .

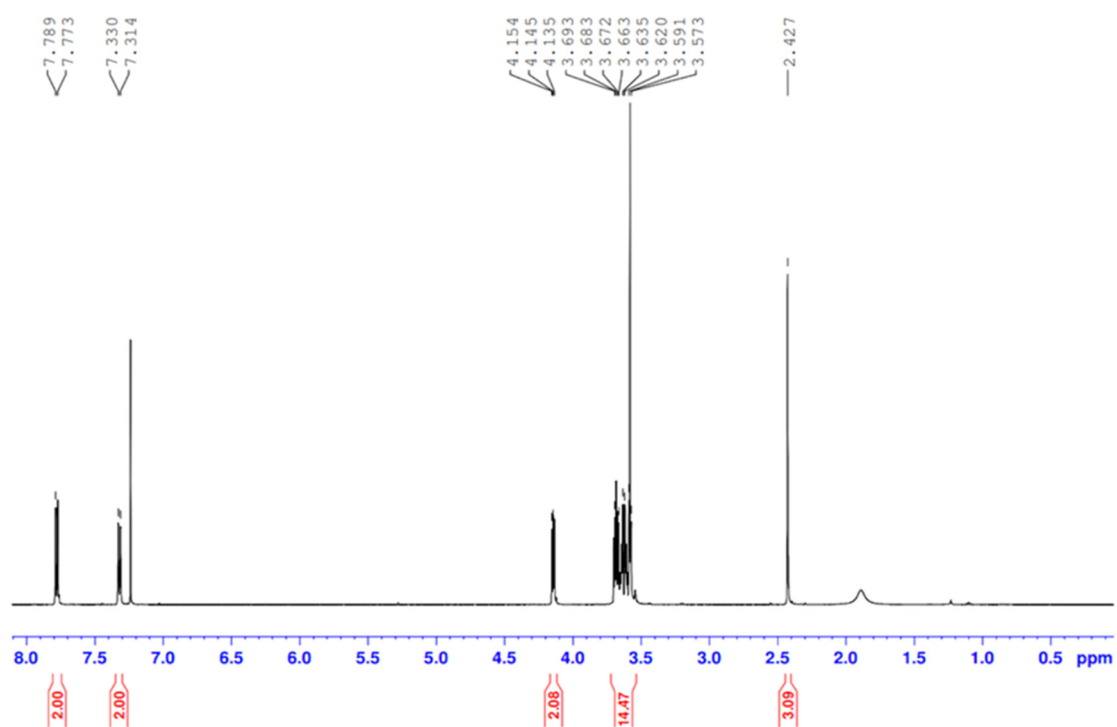


Figure 2. ^1H -NMR (500 MHz) spectrum of 2 in CDCl_3 .

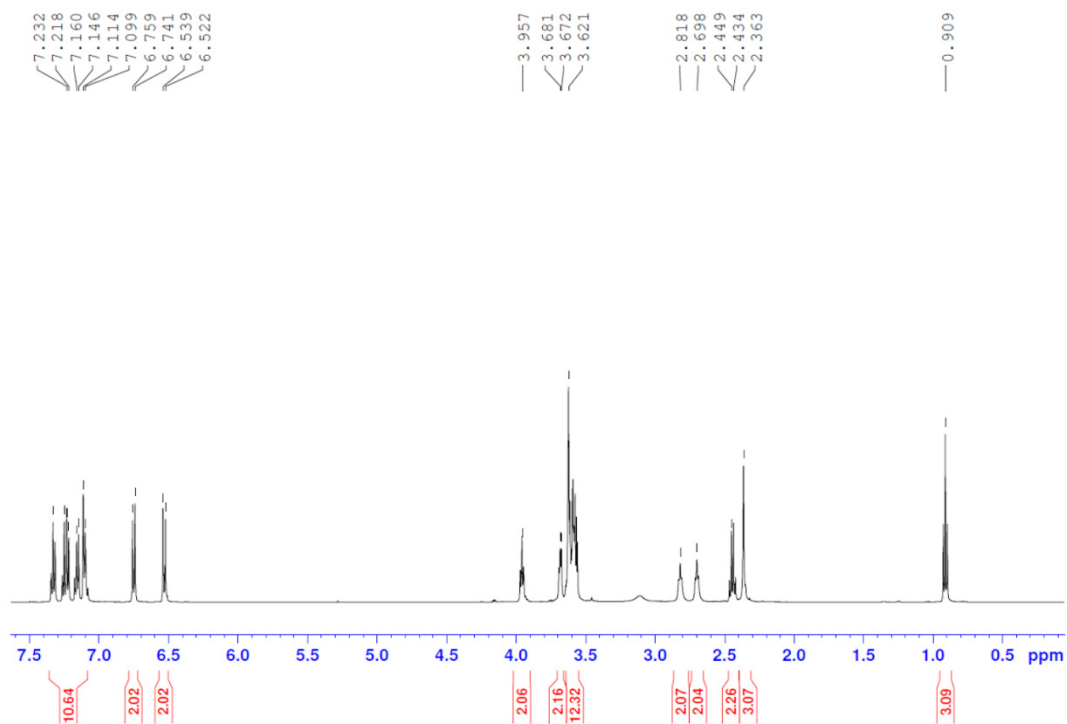


Figure 3. $^1\text{H-NMR}$ (500 MHz) spectrum of **3** in CDCl_3 .

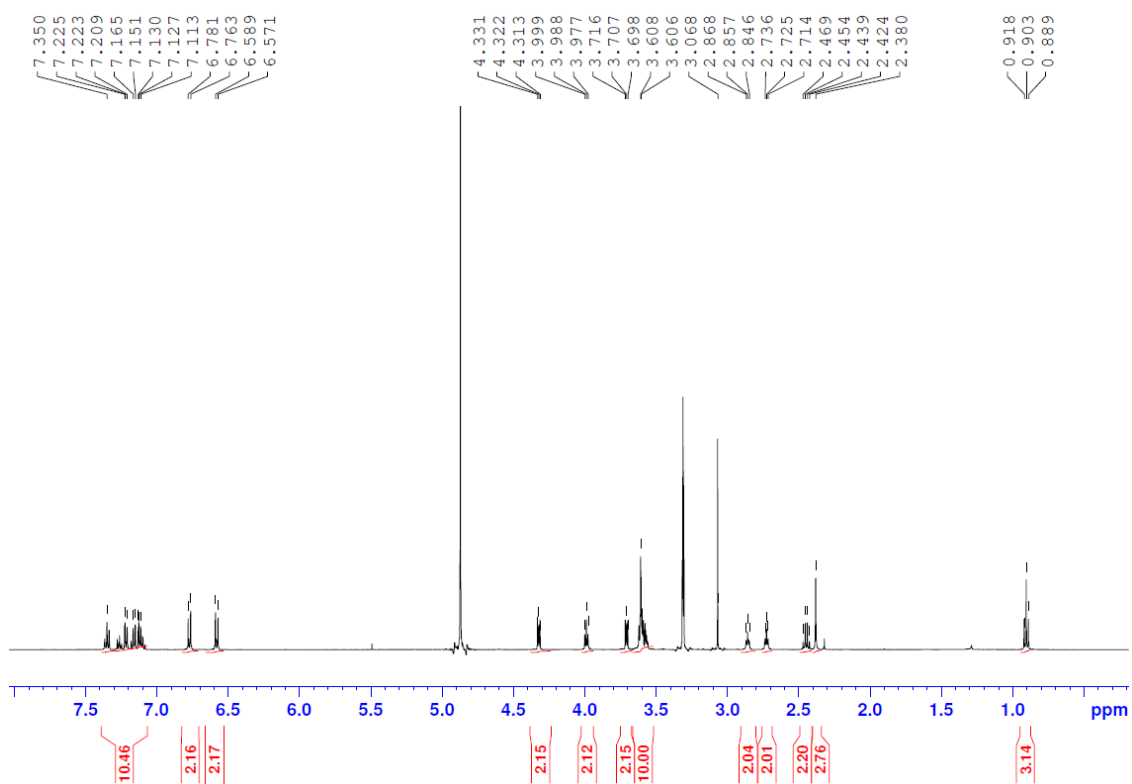


Figure 4. $^1\text{H-NMR}$ (500 MHz) spectrum of **4** in CD_3OD .

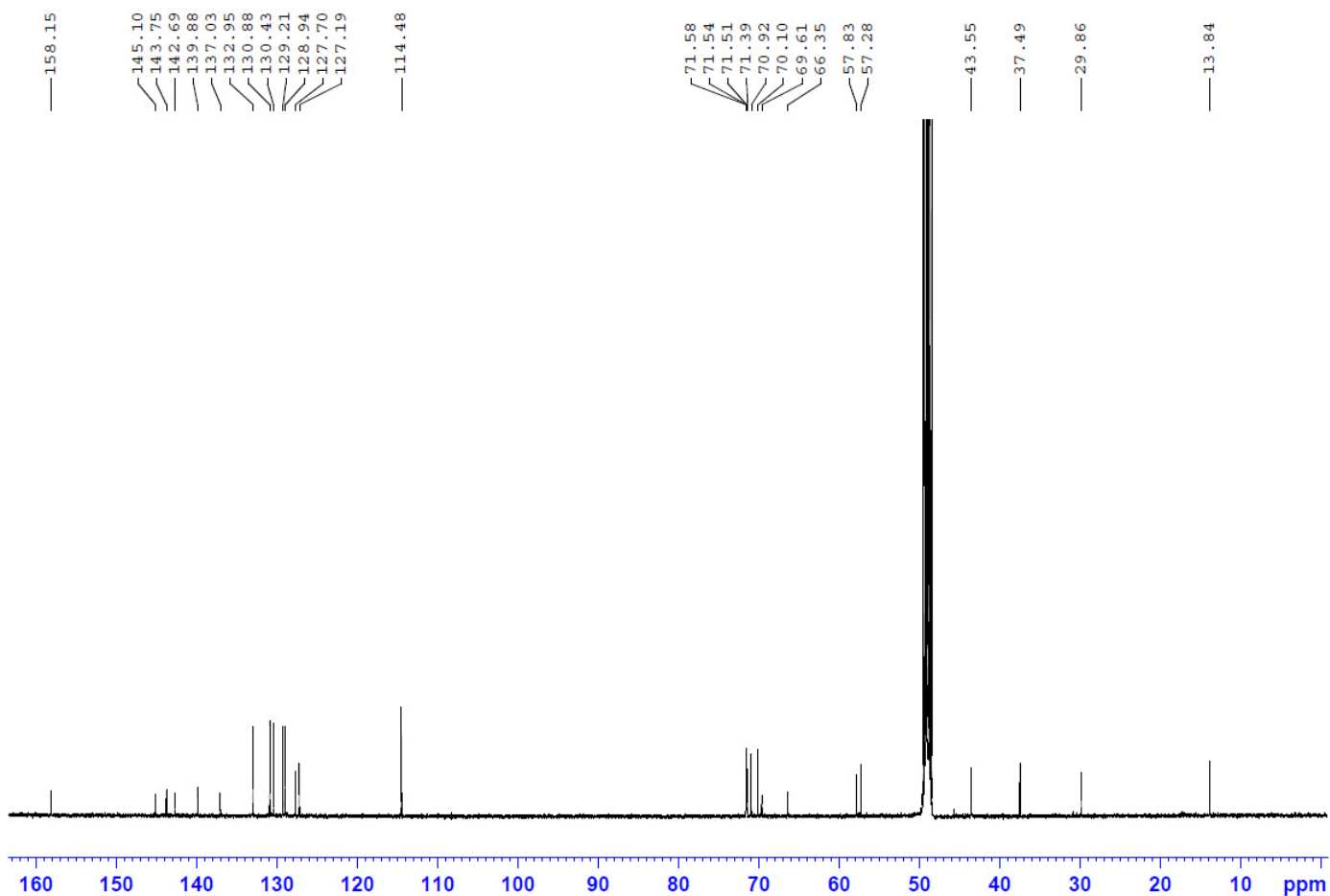


Figure 5. ^{13}C -NMR (125 MHz) spectrum of **4** in CD_3OD .

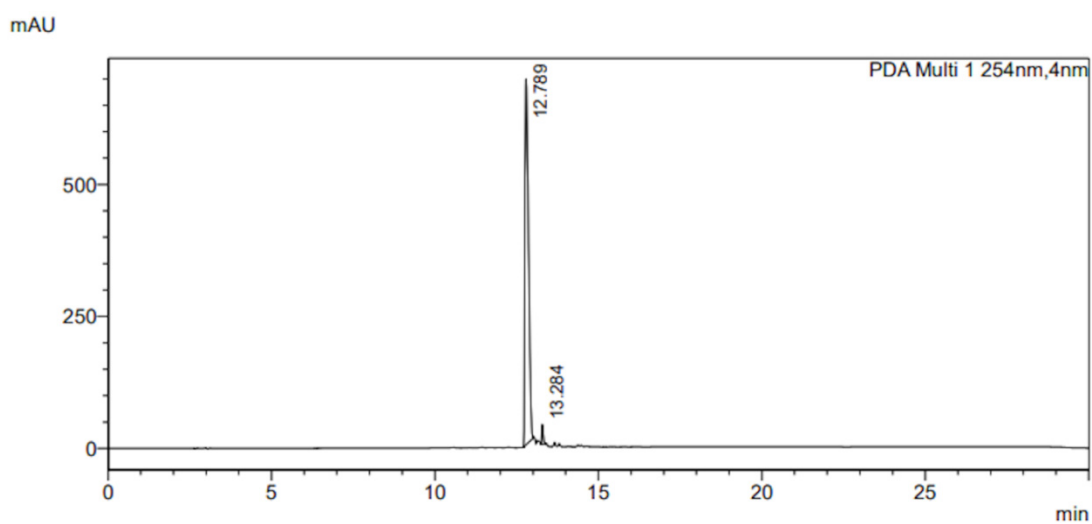


Figure 5. Analytical RP-HPLC chromatogram of TAM-TEG-OMs **4**: Chromatography was performed on a Shimadzu HPLC system (Japan), using a C18 column (4.6×150 mm, $5 \mu\text{m}$) as the stationary phase. The gradient mobile phase was 5–95% MeOH in H_2O . The total run time was 30 min, with flow rate set to 1 mL/min. The injection volume was $50 \mu\text{L}$, and the oven temperature was set to 25°C . Integrations of signals are provided in Table S1.

Table 1. Integrations of RP-HPLC signals for compound **4**.

Peak #	Retention time	Area	Height	Concentration
1	12.789	5217958	692731	97.601
2	13.284	128267	36842	2.399
Total		52346225	729574	