Supporting information for

Tripod facial surfactants with benzene as central core: design, synthesis and self-assembly study

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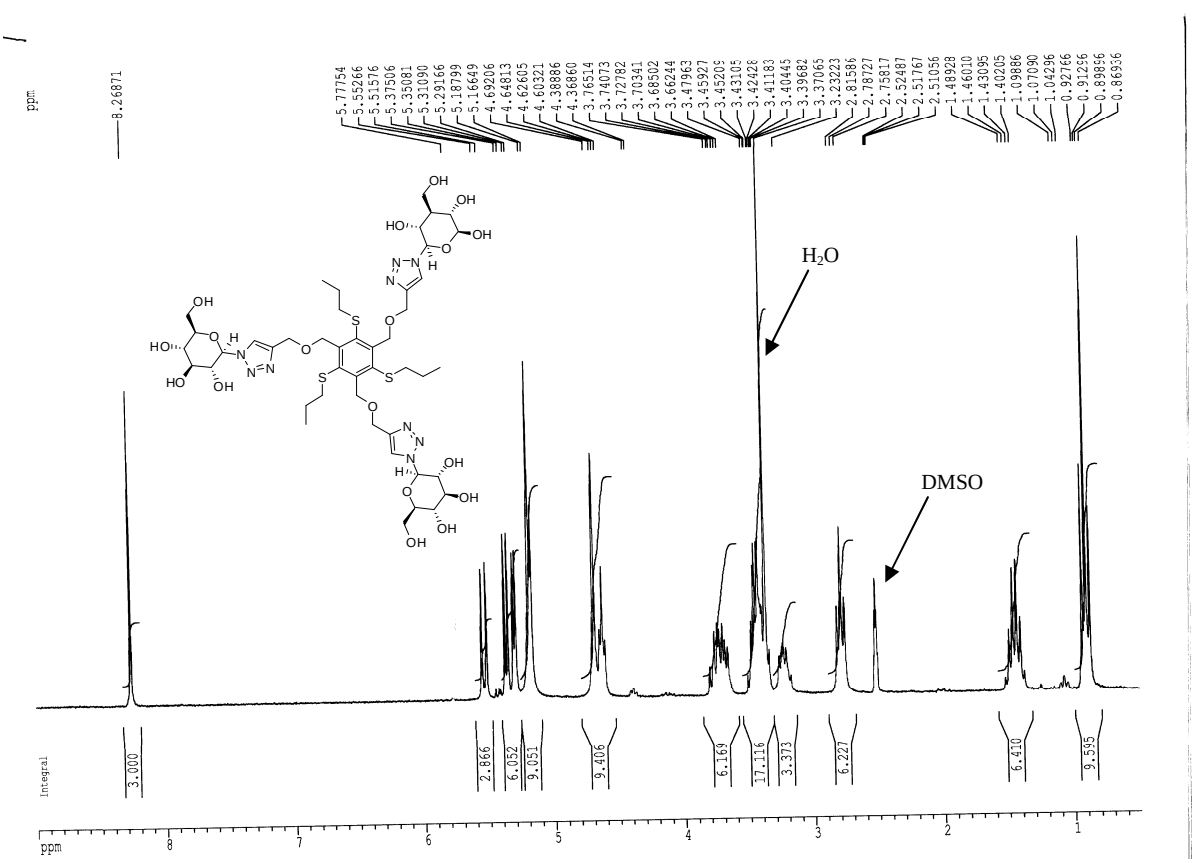
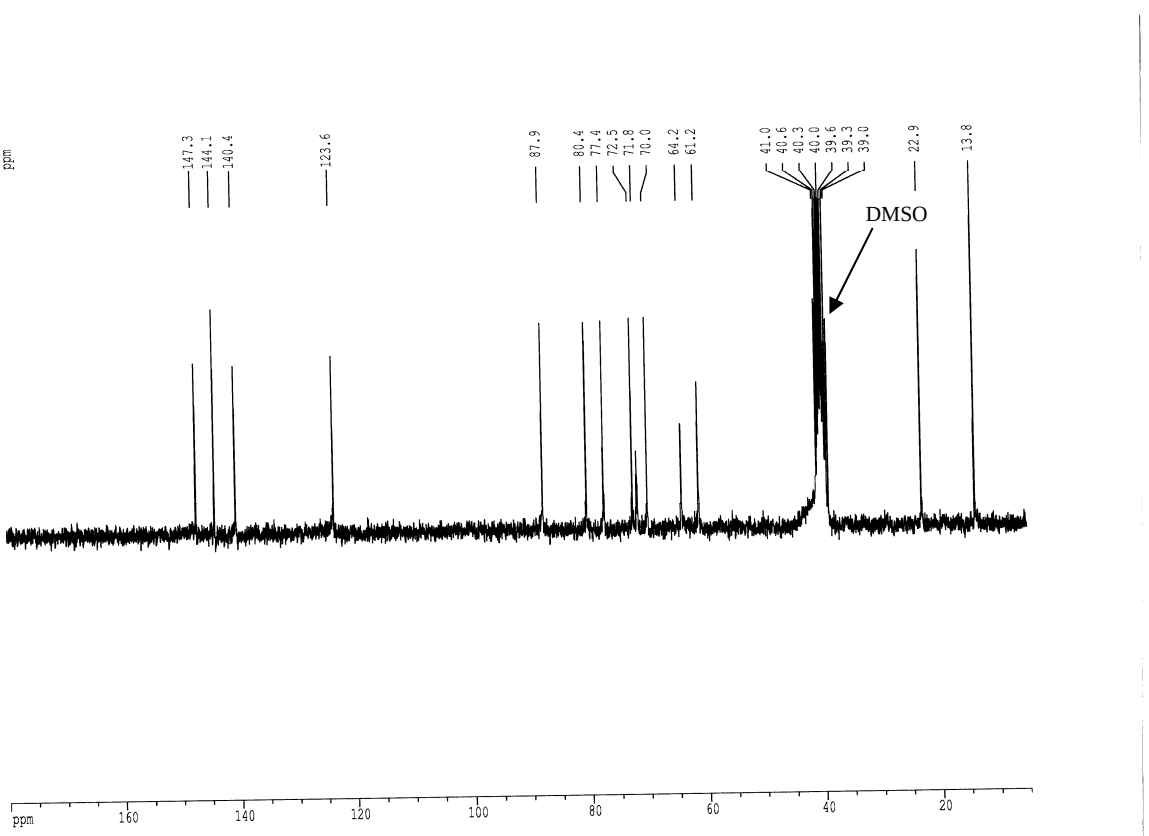
^{1}H NMR and ^{13}C NMR spectra scanned



^{1}H NMR (DMSO) for compound **C3Glu3**.



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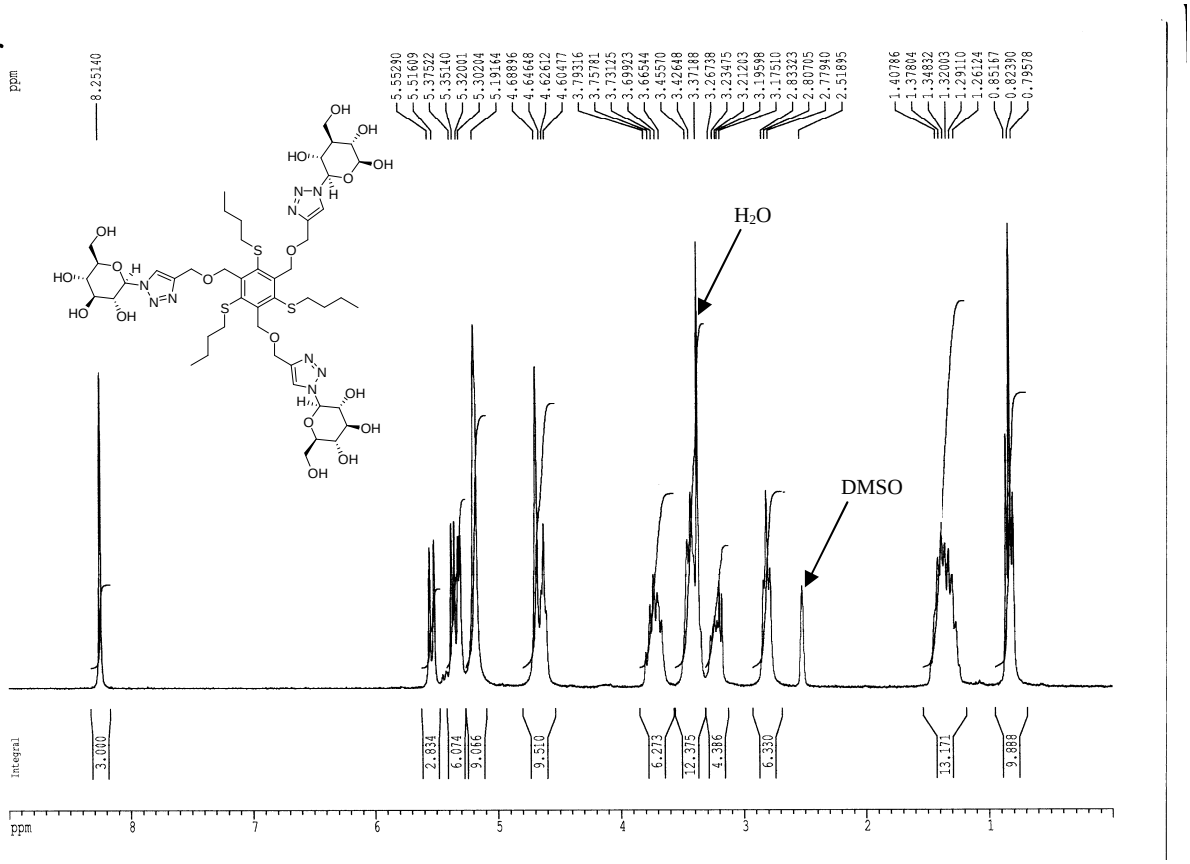

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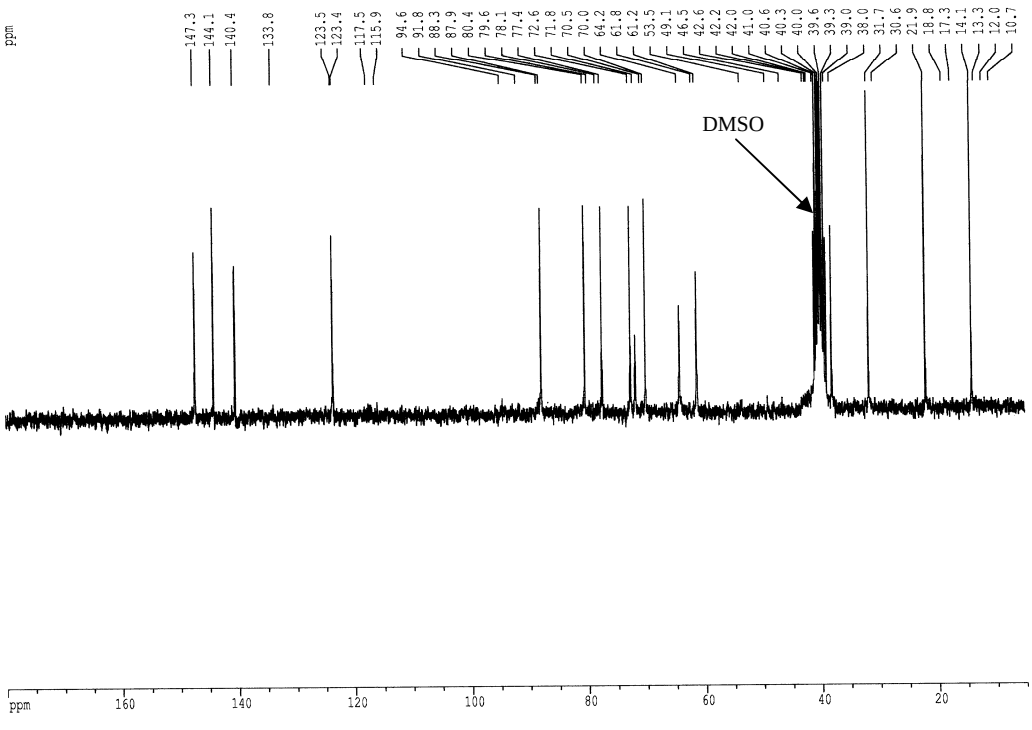

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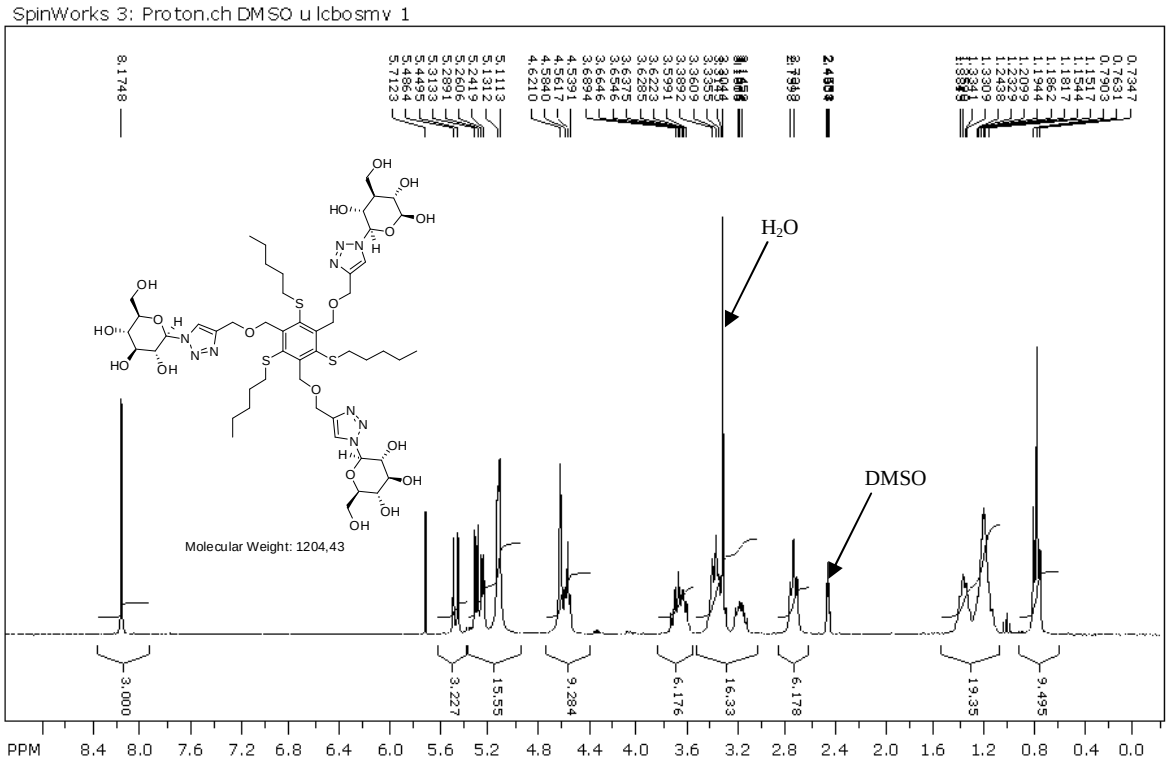

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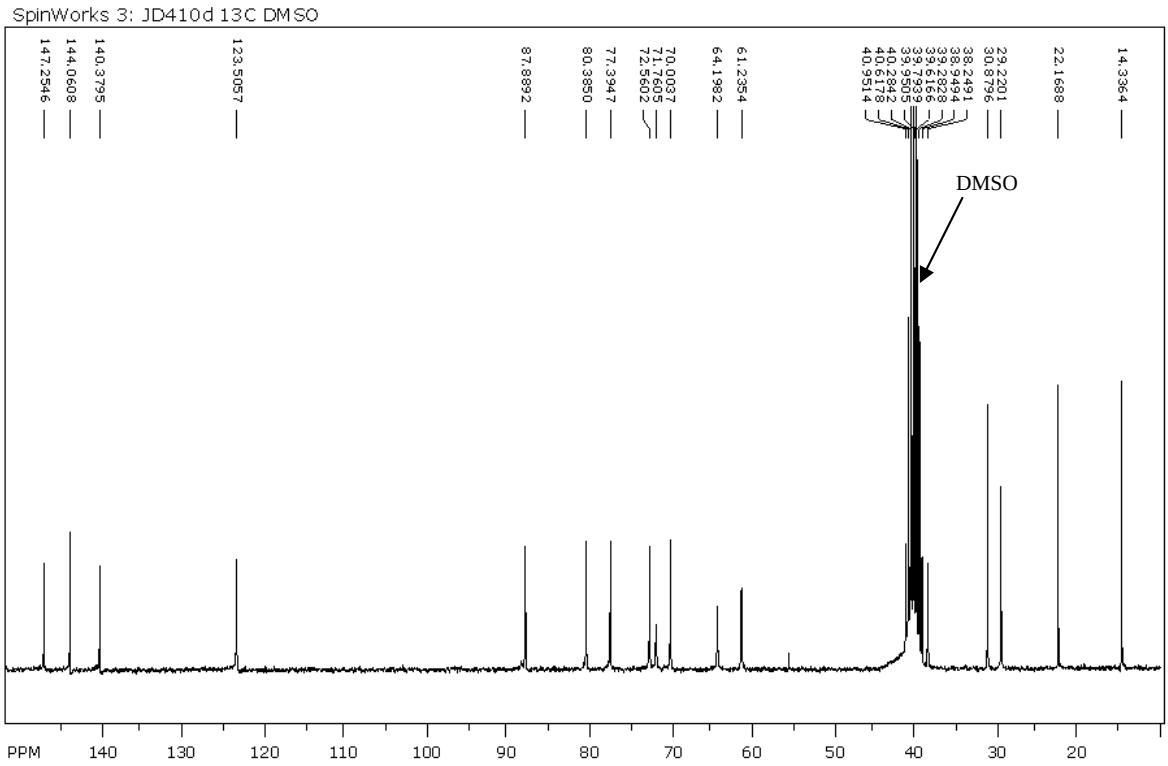

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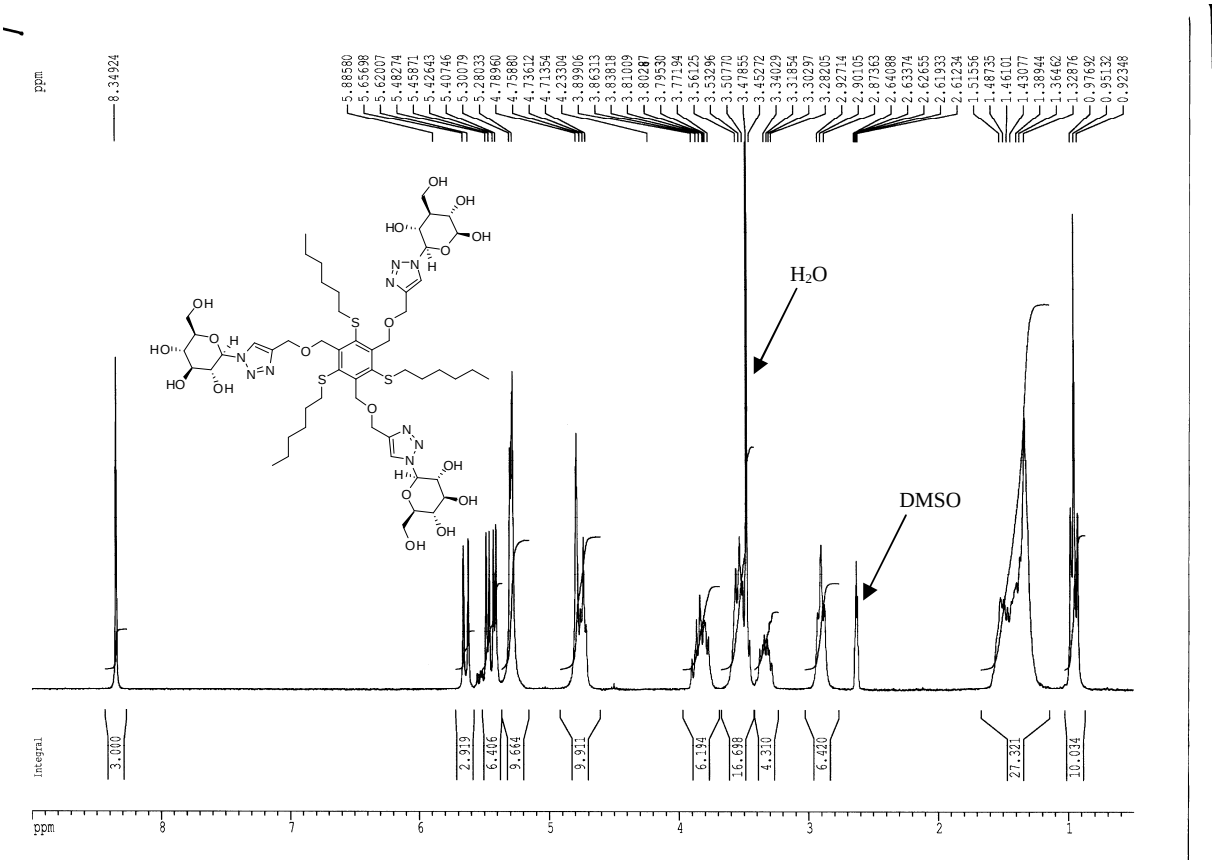

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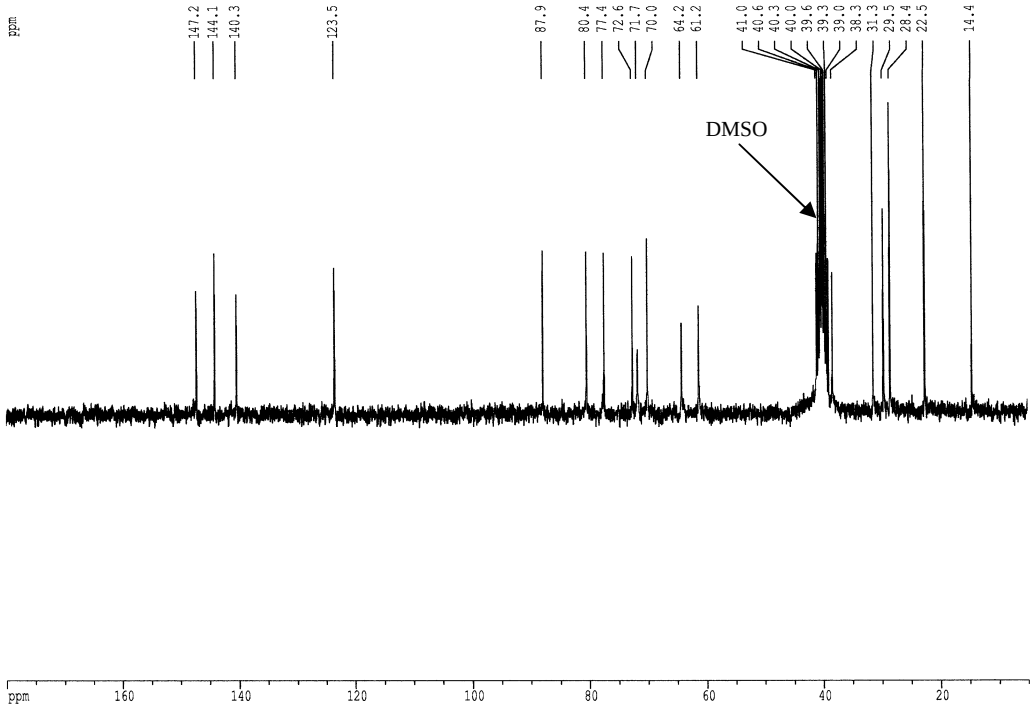

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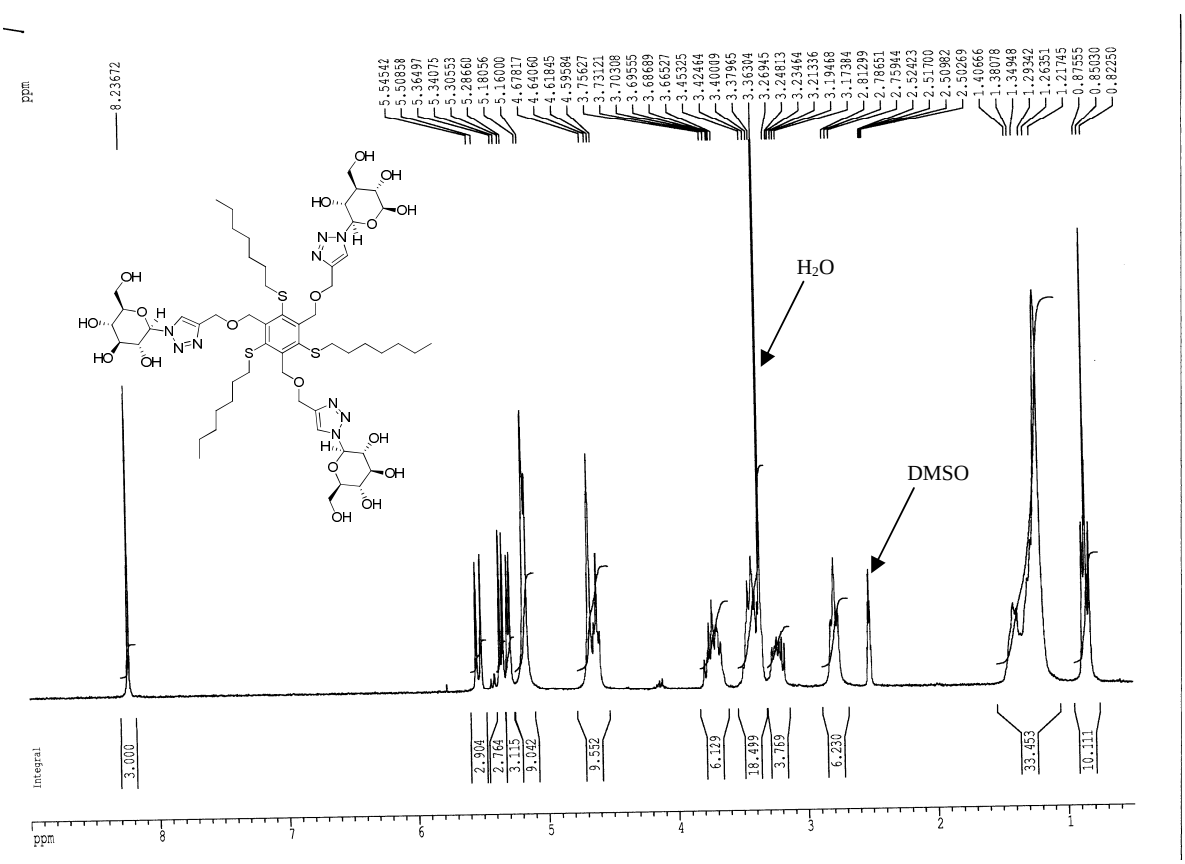

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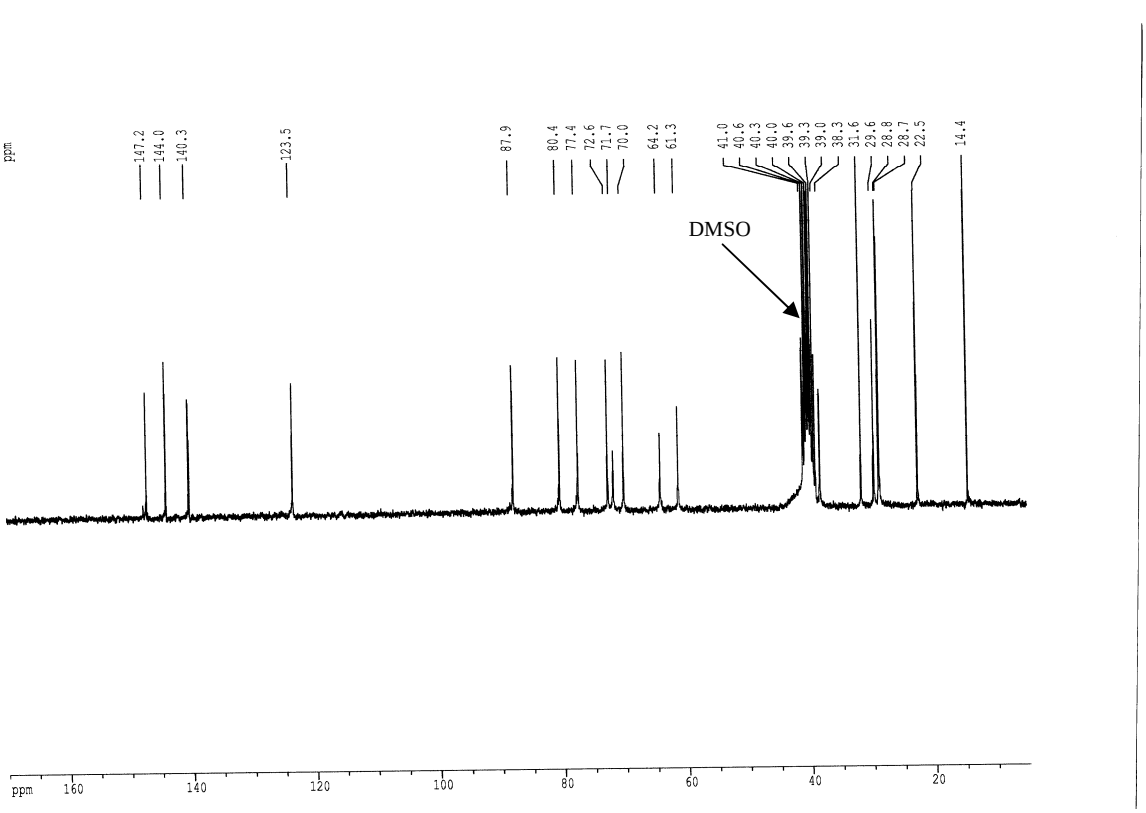

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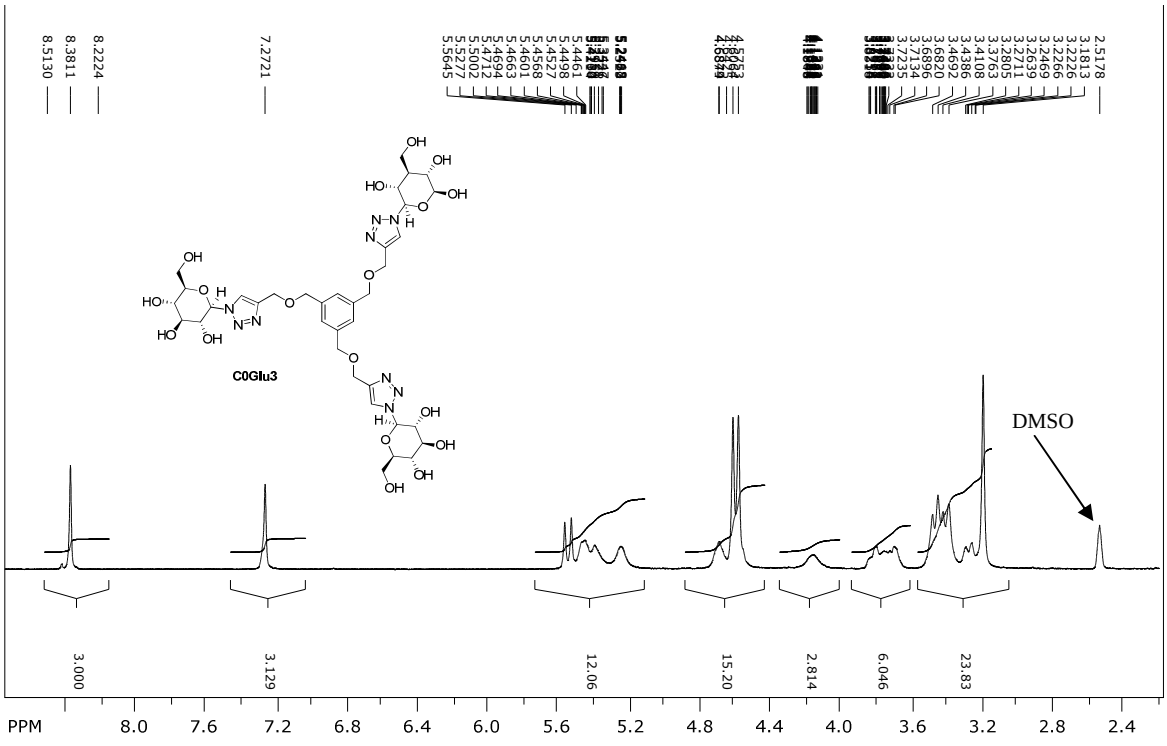
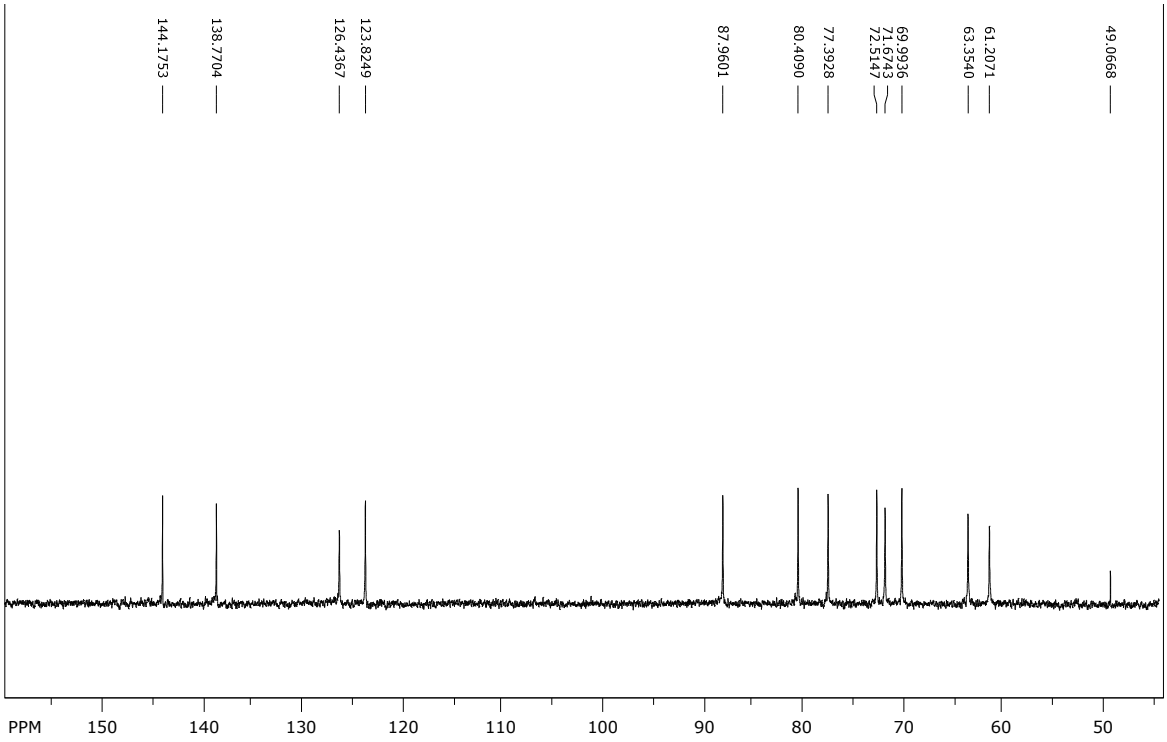


^{1}H NMR (DMSO) for compound **C0Glu3**.



^{13}C NMR (DMSO) for compound **C0Glu3.**

Electron microscopy visualisation by negative staining

A solution of the compound **C7Glu3** at 10 mg/mL was sonicated with a microprobe during 15 min and/or 1 h in a bath at 50°C to allow the formation of vesicles. The solutions were passed through a 0.45 µm filter. A drop of the sample was layed down on a metallic grid coated with a film of carbon and the excess of liquid was imbibed with a blotting paper. Then, a drop of a 3% ammonium molybdate was put on the grid. We waited 30 s to optimise the adsorption and the excess of liquid was removed again. The visualisation by electron microscopy with negative coloration was monitored on a Philips CM/2 transmission electron microscope.

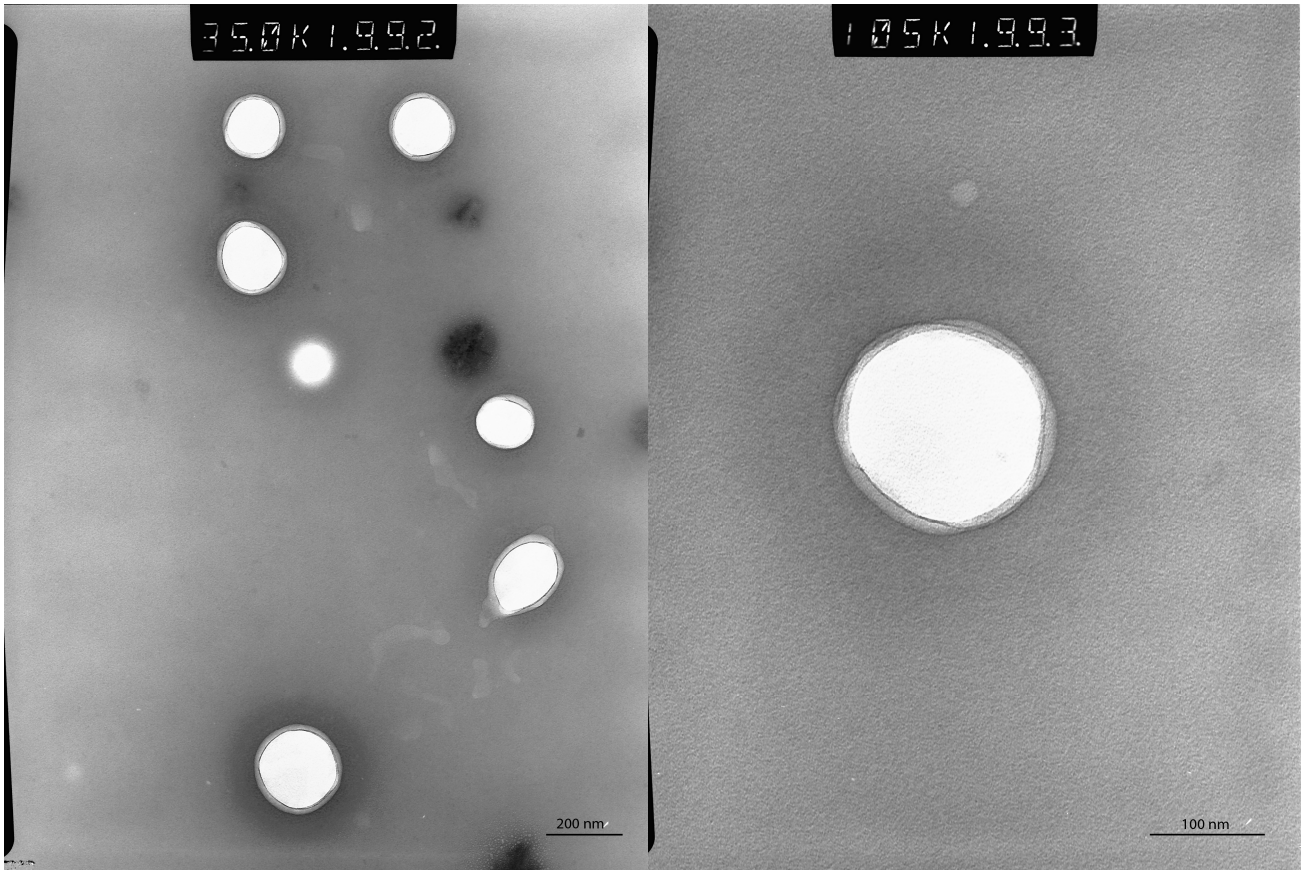


Figure 1. Pictures of compound **C7Glu3**.

The same sonicated samples was analysed by DLS. These results were collected in the table below and compared to particle sizes found by TEM.

Table 1. Data of vesicles for compound **C7Glu3** measured by DLS.

Compound	d (nm) DLS	% (volume)	d ½ (nm)	Count rate (kcps)	d (nm) MET[a]
C7Glu3	538.0	52%	149.7	269.7	167-233

[a] Values correspond to the interval between the smaller and the bigger particles observed on the pictures.

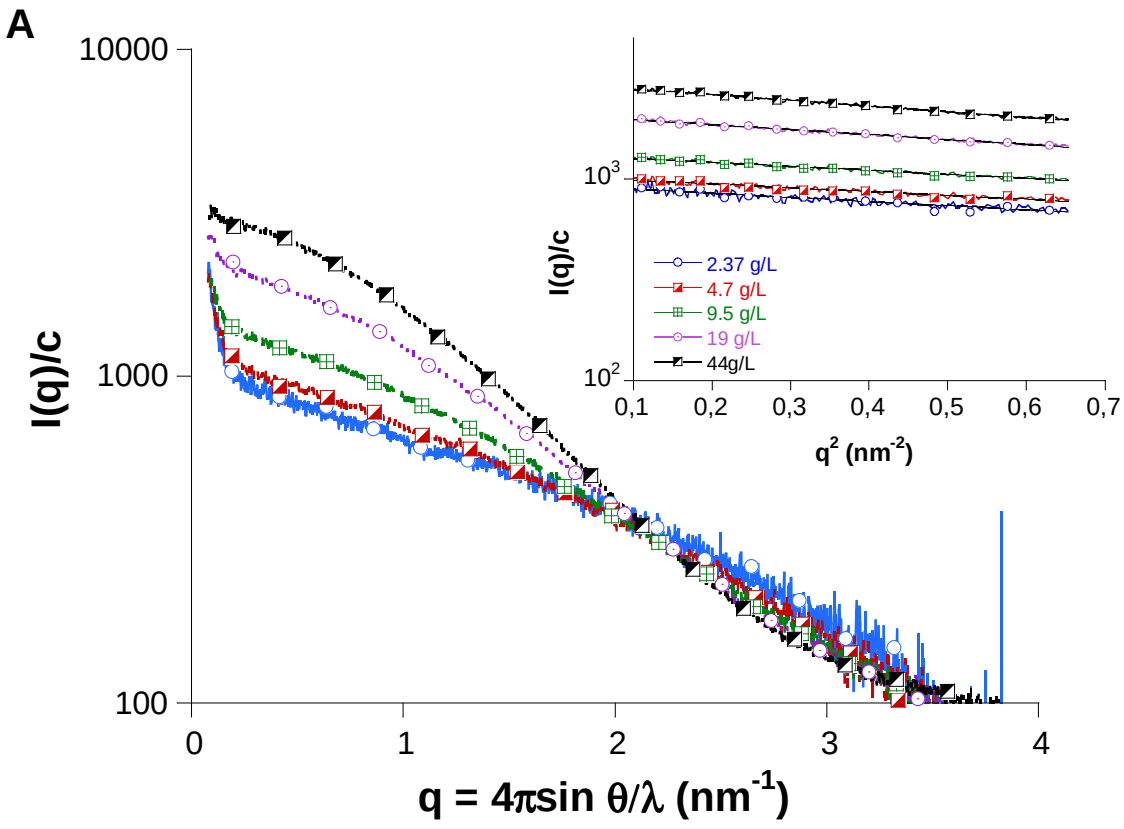
Small Angle X–Ray Scattering

Table 2 SAXS data of **CnGlu3** (n= 3, 4, 5) vs. concentration ($g.L^{-1}$):

Entry	c (g/L)	MW[#] (g/mol)	Rg [§] (nm)	H [¶] (nm)	Nagg
C3Glu3	2.4 44	941.2 3003.4	1.18 1.40	n a n a	0.8 2.7
C4Glu3	2.6* 42	2480.8 8280.0	1.56 1.93	n a 5.8	2.1* 7.1
C5Glu3	2.8 5.6 11.2 22.5 42	16244 19355 24995 32452 45513	3.61 3.76 4.19 4.85 5.67	6.4 7.9 10.5 14 19.8	13 16 20 27 38

[#] Molecular mass calculated from forward intensity; [§] Radius of gyration obtained from Guinier approximation; [¶] Height of rod obtained from SASfit models

* This value is an intermediate state between the monomer, which could be characterized at CMC or below, and the final aggregate. Measurement below CMC could not be done because of a poor SAXS signal below the CMC or CAC.



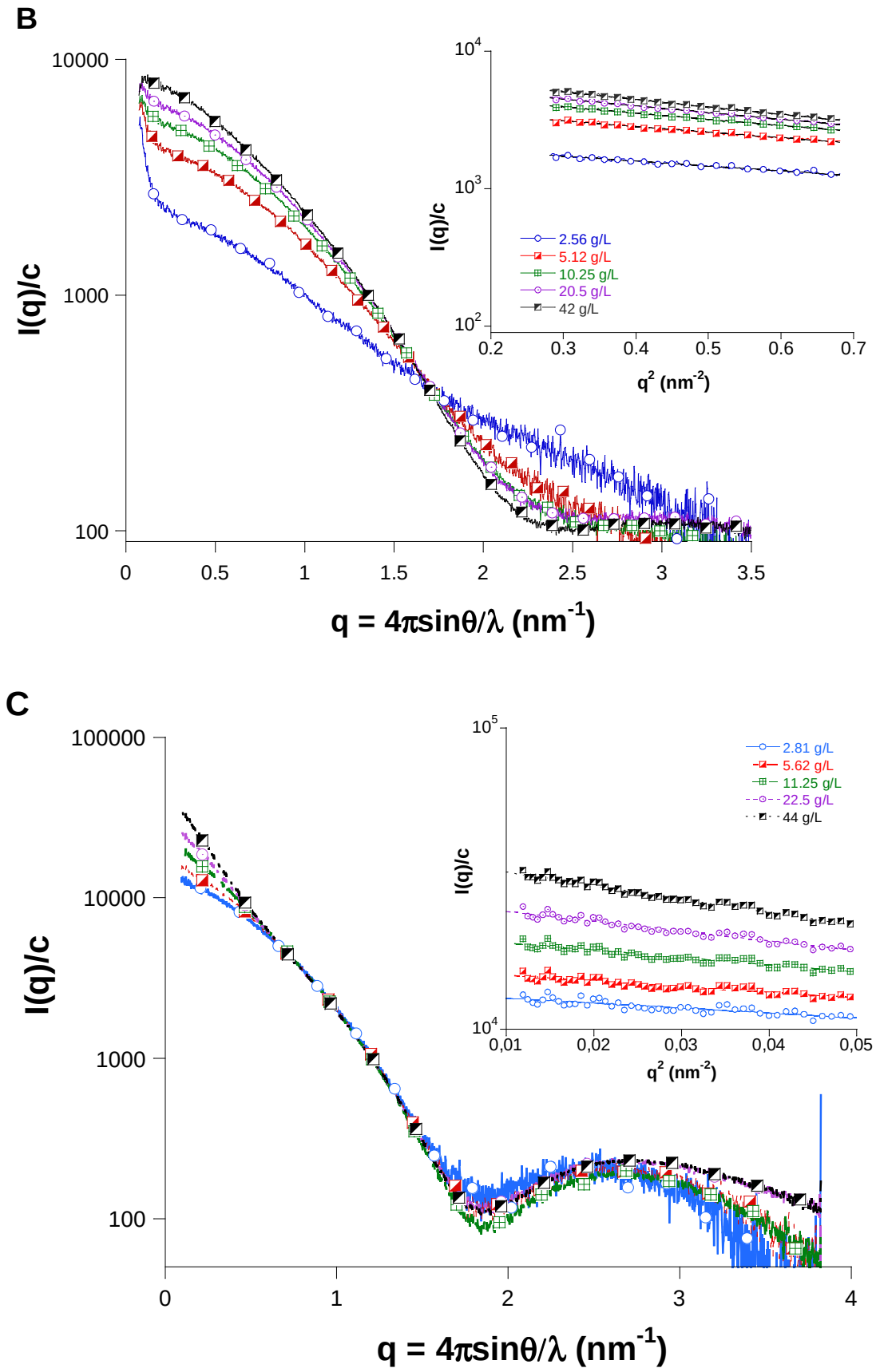


Figure 2. SAXS patterns of **C3Glu3** (A) **C4Glu3** (B) and **C5Glu3** (C) as a function of concentration. Guinier plots are shown in insert.

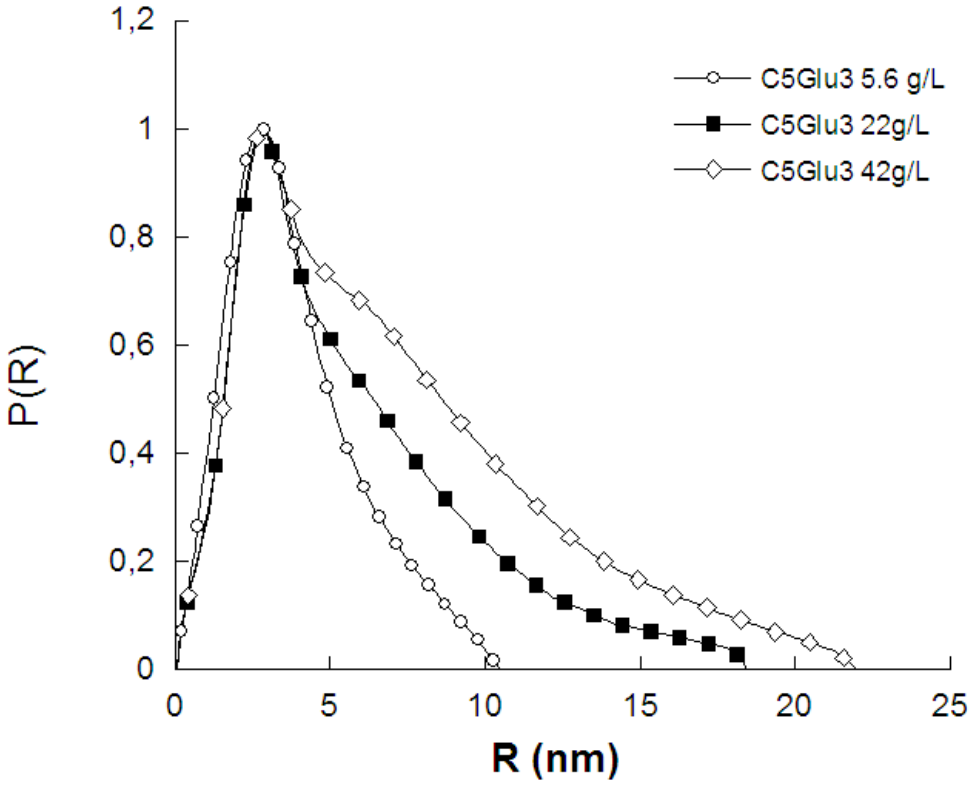


Figure 3. Pair distribution function of **C5Glu3** at different concentrations