

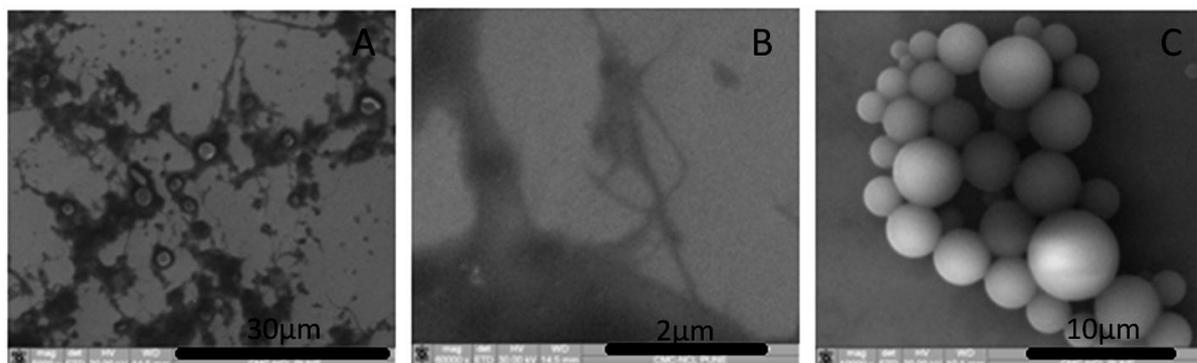
Electronic Supplementary Information (ESI)

Fluorescent sophorolipid molecular assembly and its magnetic nanoparticles loading: a pulsed laser process

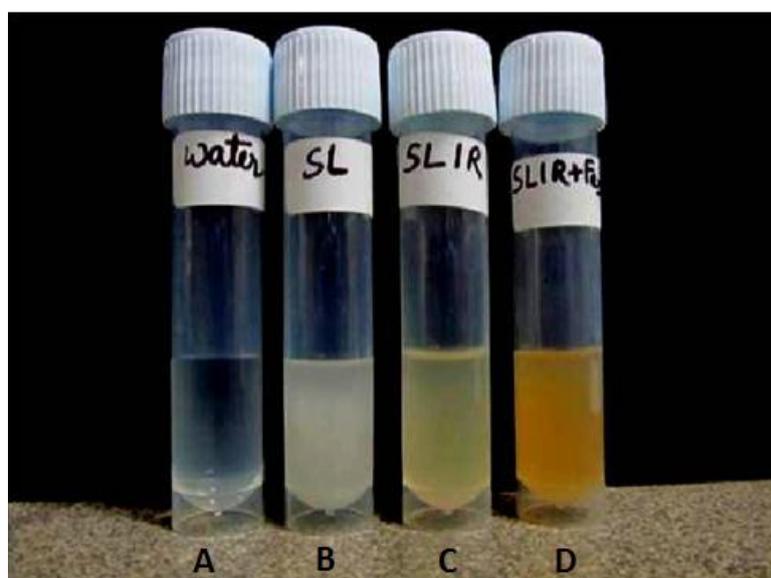
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	Page
1. Characterization Data	2-3
2. NMR Spectra	4-6
3. MALDI TOF	7
4. FTIR spectra	8
4. Pictorial Image	9



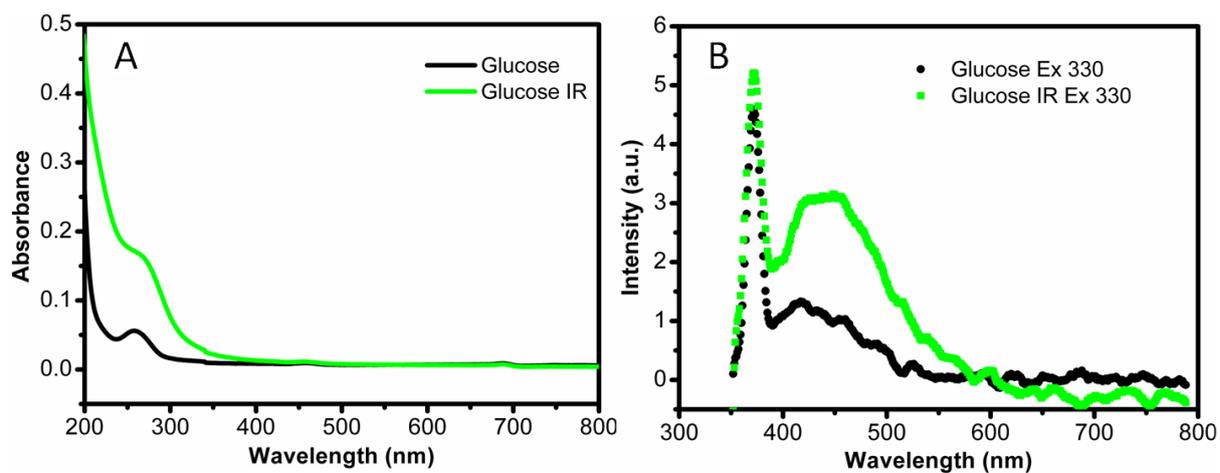
ESI Fig. S1 SEM images of laser irradiated Sophorolipid: **(A)** crude sophorolipid; **(B)** lactonic sophorolipid; **(C)** Acidic sophorolipid



ESI Fig. S2 **(A)** water, **(B)** unirradiated sophorolipid, **(C)** irradiated sophorolipid, **(D)** magnetic sophorolipid mesostructure

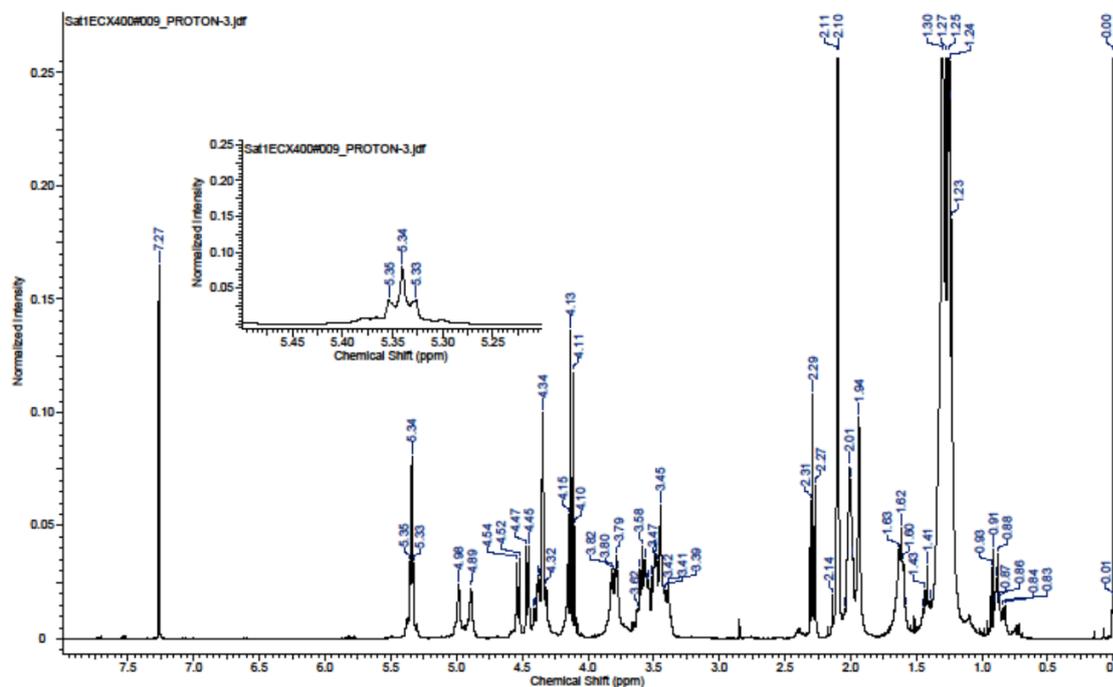
Element	wt	%At	%K-ratio	Z	A	F
C K	84.71	88.07	0.7654	1.0023	0.7954	1.0001
O K	15.29	11.93	0.0201	0.9871	0.1335	1.0000

ESI Table S1: EDAX Analysis of Laser Irradiated sophorolipid.



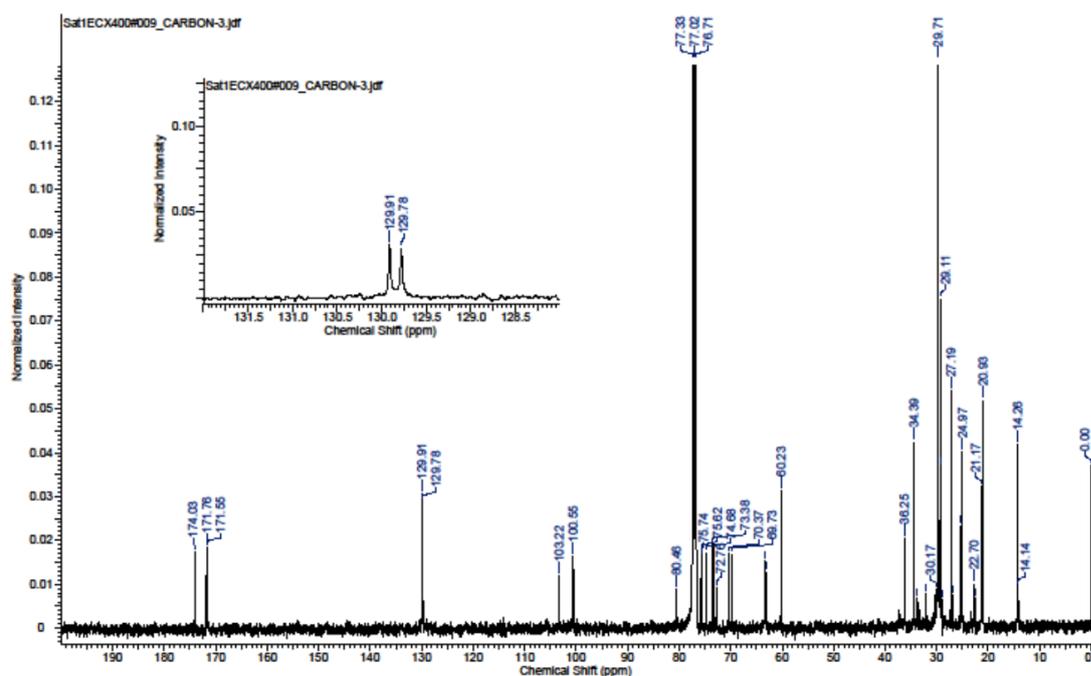
ESI Fig. S3 (A) UV –Visible spectra of unirradiated and laser irradiated glucose solution; **(B)** Photoluminescence of unirradiated and irradiated glucose solution.

¹H nmr spectra of Sophorolipid (0 minutes SLIR)



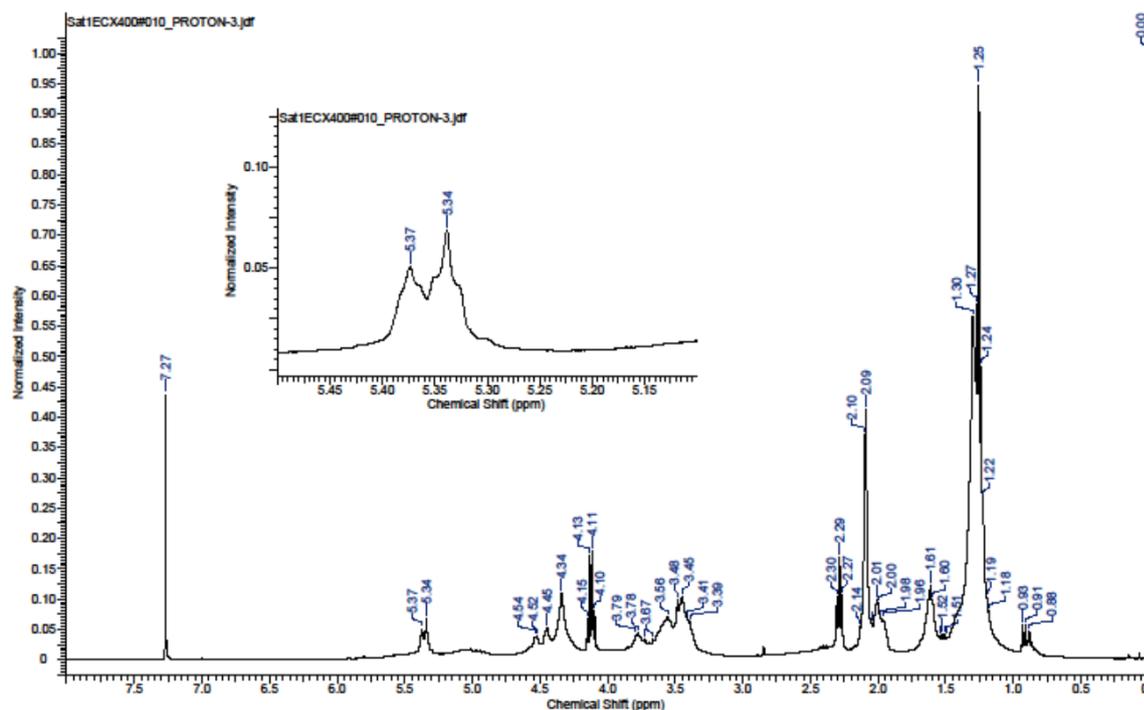
ESI Fig. S4 (A) ¹H NMR spectrum of the sophorolipid, confirming the presence of one olefin group in its structure at 5.34ppm

¹³C nmr spectra of Sophorolipid (0 minutes SLIR)



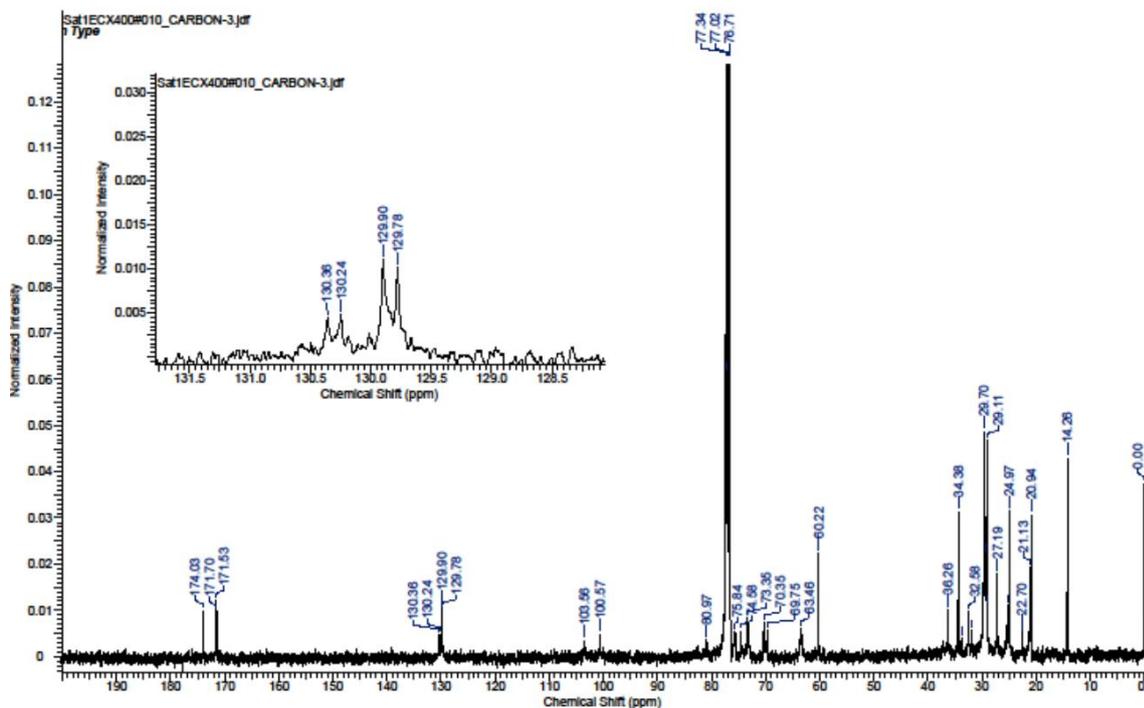
ESI Fig. S4 (B) ¹³C NMR spectrum of the sophorolipids, confirming the presence of one olefin group in its structure at 129.78, 129.91 ppm.

¹H nmr spectra of Sophorolipid (20 minutes SLIR)



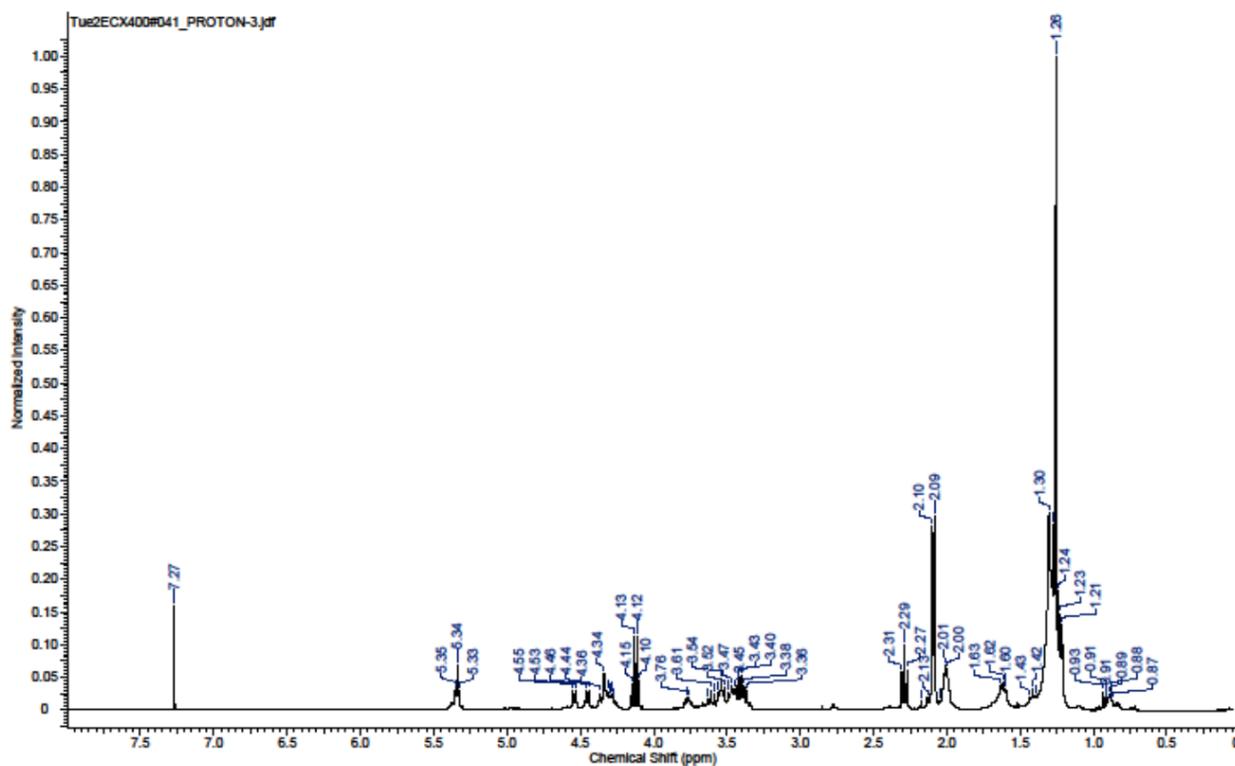
ESI Fig. S4 (C) ¹H NMR spectrum of the sophorolipids, confirming the appearance of one extra olefinic group at 5.37ppm

¹³C nmr spectra of Sophorolipid (20 minutes SLIR)



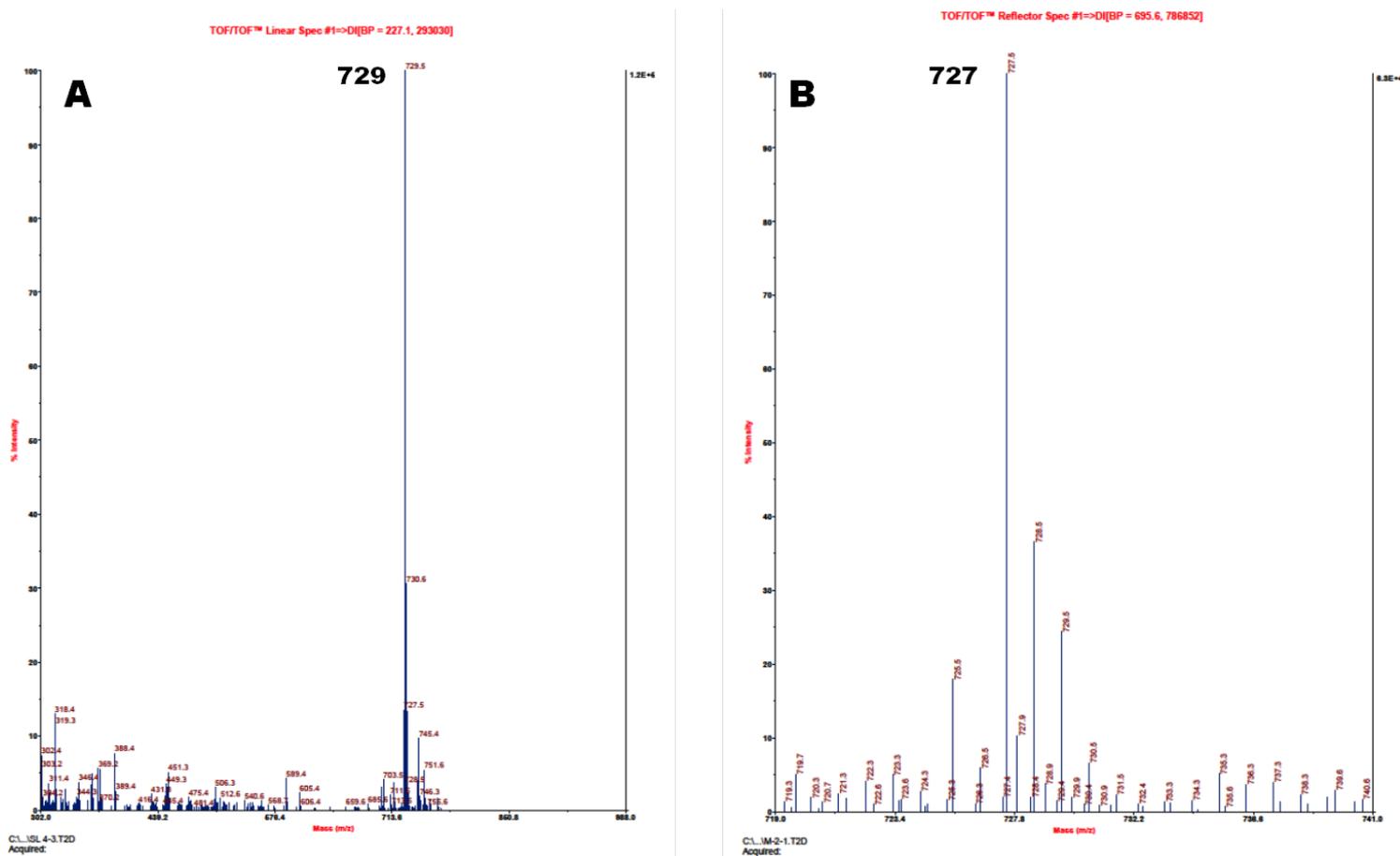
ESI Fig. S4 (D) ¹³C NMR spectrum of the sophorolipids after laser irradiation, confirming the appearance of one extra olefin group at 130.24, 130.36ppm

D₂O exchange nmr spectra of Sophorolipid (0 minutes SLIR)

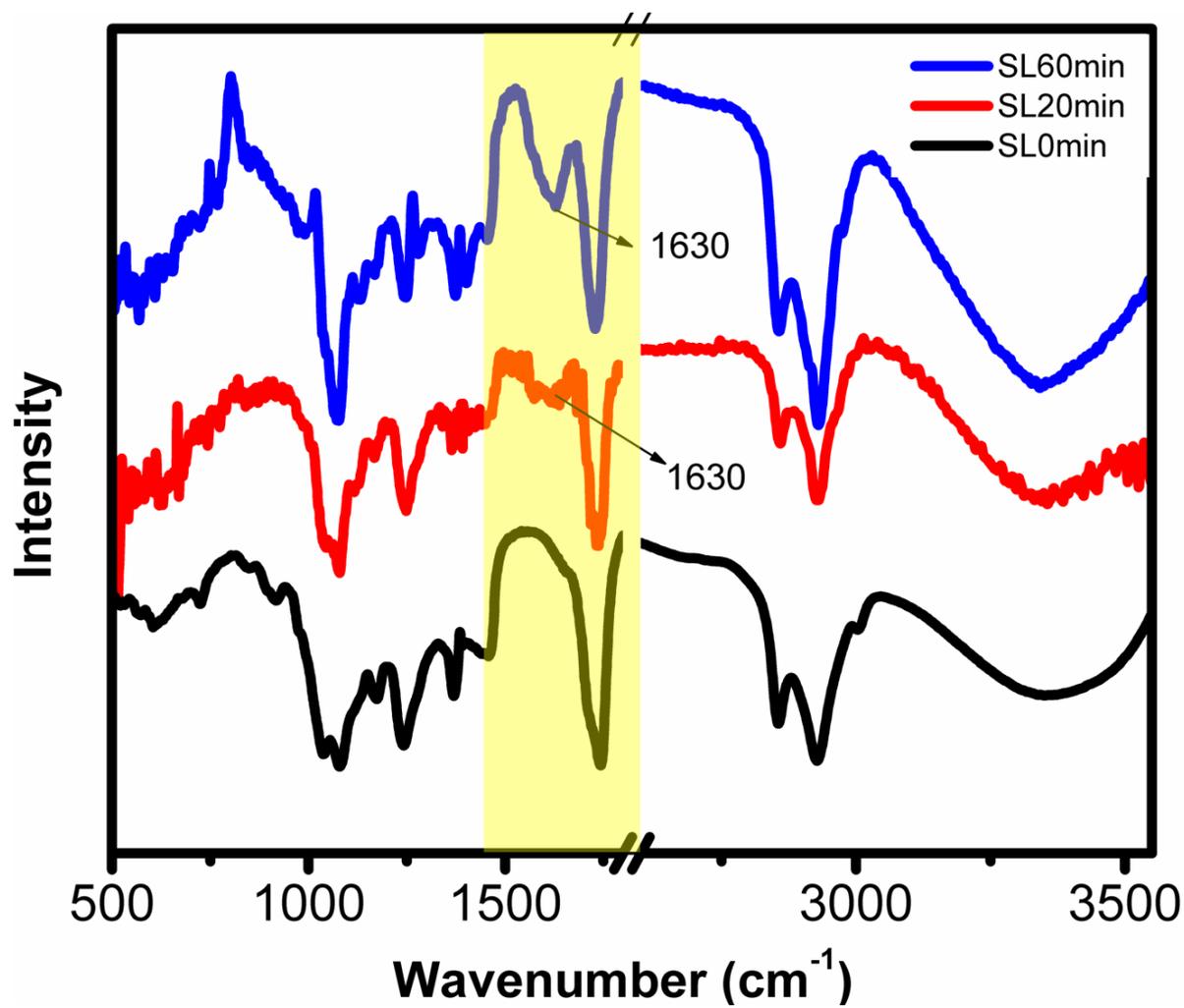


ESI Fig. S4 (E) D₂O exchange NMR spectrum of the sophorolipids, confirming that –OH group at 4.89, 4.98 ppm participating in assembly formation

Maldi MS spectra of Sophorolipid



ESI Fig. S5 MALDI-TOFMS mass spectra of the acidic sophorolipids. (A) sample collected at 0 min. (B) sample collected at 20 min. Assignments for the $[M+Na]^+$ molecular adduct ions



ESI Fig. S6 shows FTIR data for the unirradiated and irradiated (20 and 60 min) sophorolipid.