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Enzymatic Synthesis and Self-Assembly of Glycolipids: Robust Self-healing and Wound Closure Performance of Assembled Soft Materials

Yadavali Siva Prasad,[a] Balasubramani Saritha,[a] Ayyapillai Tamizhanban,[a] Krishnamoorthy Lalitha,[a] Sakthivel Kabilan,[a] C. Uma Maheswari,[a] Vellaisamy Sridharan,[b] and Subbiah Nagarajan[a,c]*

[a] *Department of Chemistry, School of Chemical and Biotechnology, SASTRA Deemed University, Thanjavur – 613401, Tamil Nadu, India*

[b] *Department of Chemistry and Chemical Sciences, Central University of Jammu, Rahya-Suchani (Bagla), District-Samba, Jammu-181143, Jammu and Kashmir, India.*

[c] *Department of Chemistry, National Institute of Technology Warangal, Warangal -506004, Telangana, India.*

Contents

Table S1. Solvents/ oils used for gelation studies.

Entry	Oil/solvent	Gelation of glycolipids				
		3a	**3b**	**3c**	**3d**	**3e**
1	Olive oil	S	S	S	S	S
2	Eucalyptus oil	S	S	S	G (2%)	G (2%)
3	Hazelnut oil	S	S	S	S	S
4	Jojoba oil	S	S	S	S	S
5	Sesame oil	S	S	S	S	S
6	Soya bean oil	S	S	S	S	S
7	Linseed oil	S	S	S	PG	PG
8	Paraffin oil	-	-	PG	G (1% w/v)	G (1.2% w/v)
9	Neem oil	S	S	S	S	S
10	Castor oil	S	S	S	S	S
11	Dichlorobenzene	S	P	P	P	P
12	Benzene	P	P	P	P	P
13	Cyclohexane	I	I	I	P	P
14	N-Heptane	I	I	I	I	I
15	1,4- dioxane	I	I	I	I	I
16	1-Butanol	P	P	P	P	P
17	Toluene	P	P	P	P	P
18	Xylene	P	P	P	P	P
19	Dimethylformamide	S	S	S	P	P
20	DMSO+Water (1:4)	P	P	P	G (2.5% w/v)	G (2.5% w/v)
S = solution; P = precipitate; I = insoluble; G = gel; PG = partial gel. Critical gelation concentration (CGC) is presented in parentheses [% (w/v)]						

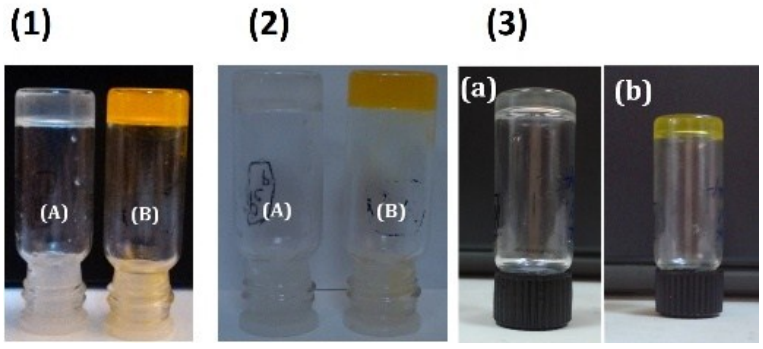


Figure S1. (1,2) Image of oleogel (A) and composite gel (B) formed in paraffin oil and (3) images of gel (a) and composite gel (b) formed in DMSO+Water (1:4).

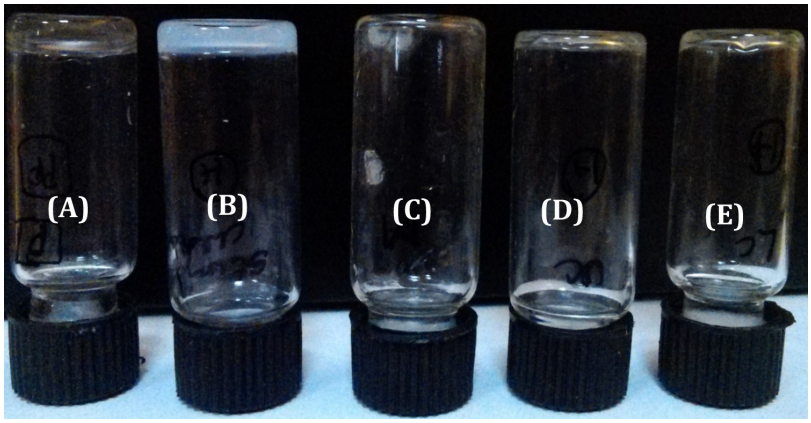


Figure S2. (A & B) Image of oleogel formed by compound **3d & 3e** in Eucalyptus oil (C, D & E) Gel not formed by compounds **3a, 3b** and **3c.**

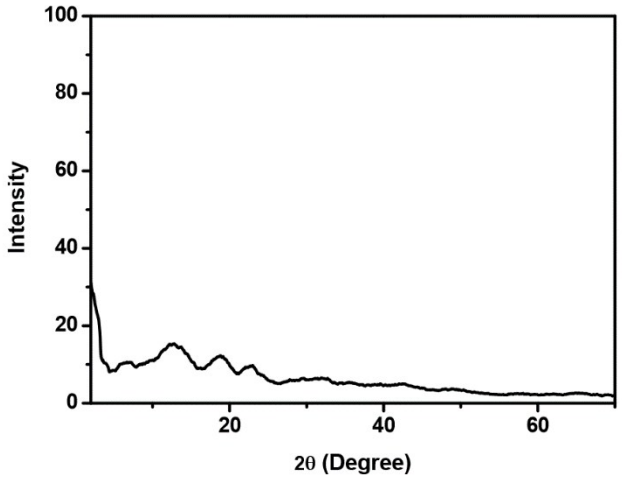


Figure S3. SAXD patterns of xerogel derived from compound **3d**.

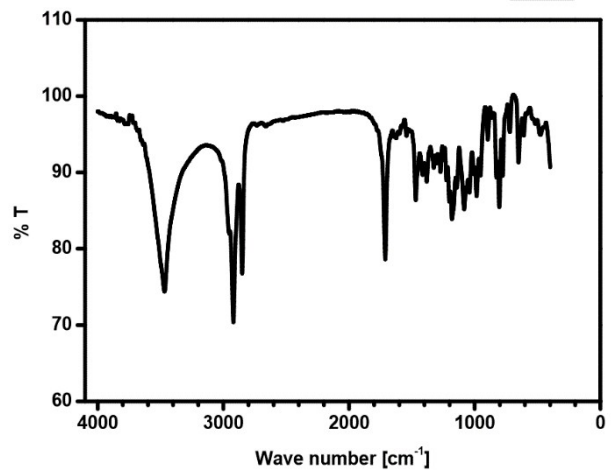


Figure S4. FTIR spectra of xerogel derived from compound **3d**.

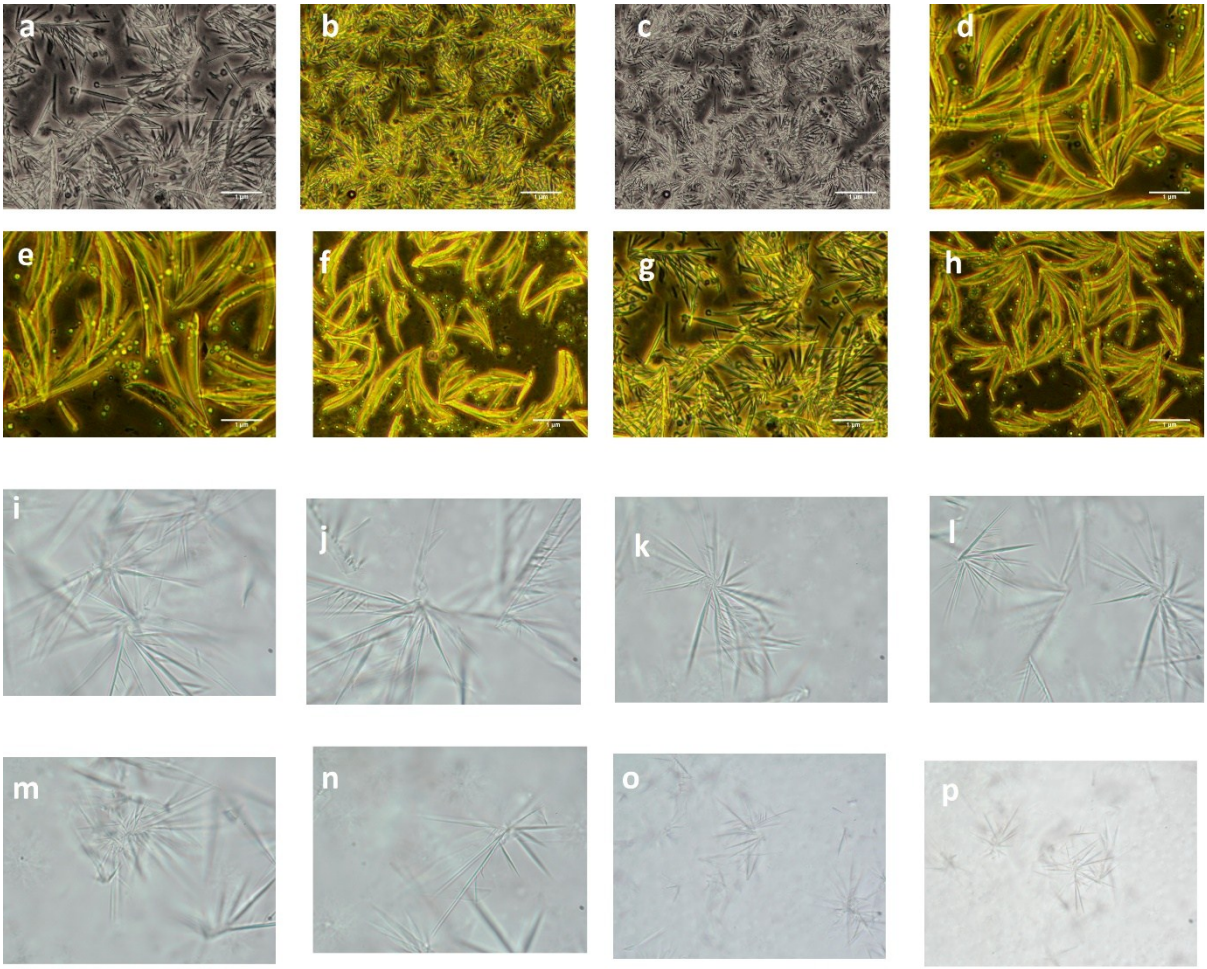


Figure S5. Optical microscopy images of (a-h) oleogel and (i-p) composite gel.

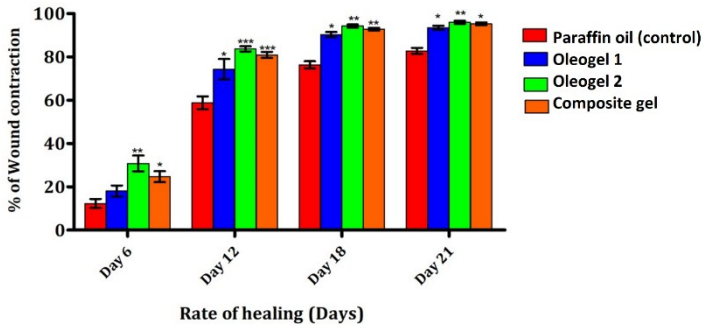


Figure S6. Effect of oleogel and composite gel on wound healing in experimental rats.

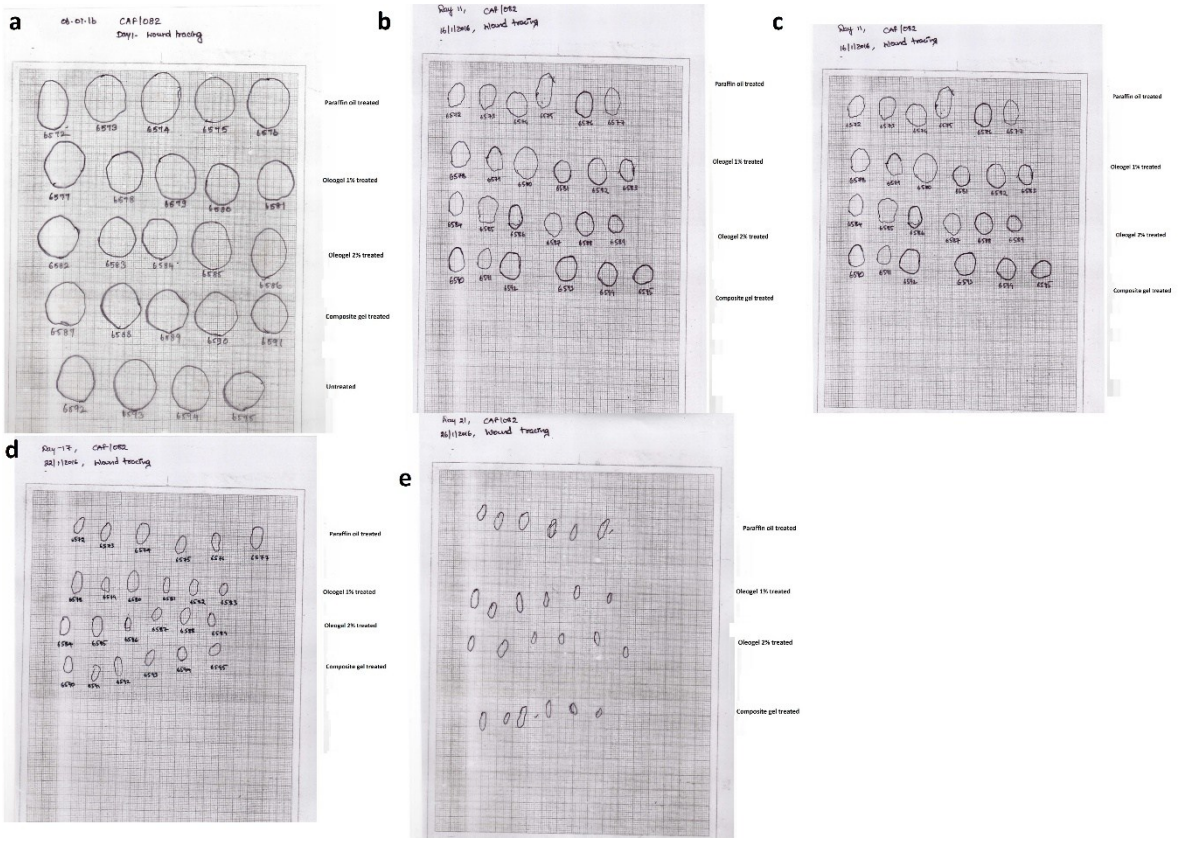


Figure S7: (a-e) Pictures displaying wound closure at day1, 11, 17 and 21 respectively.

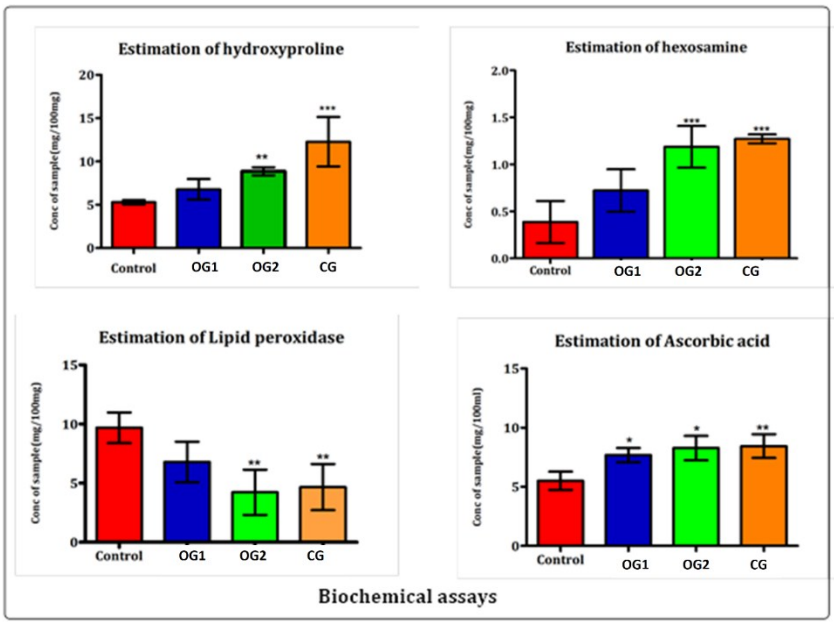


Figure S8. Biochemical profile of granulation tissue obtained from the skin-excised wound of di□erent experimental groups. Values of mean ± SE of each group. P < 0.05 (*), P<0.01 (**), P<0.001(***). Comparison of treated groups with control groups. The results were analysed statistically using one-way analysis of variance (ANOVA) followed by Dunnett's test for multiple comparisons. OG1-Organogel 1; OG2-Organogel 2 and CG-Composite gel

Figure S9. ^{1}H NMR spectrum of glycolipid **3a** in $CDCl_3$+DMSO-d_6

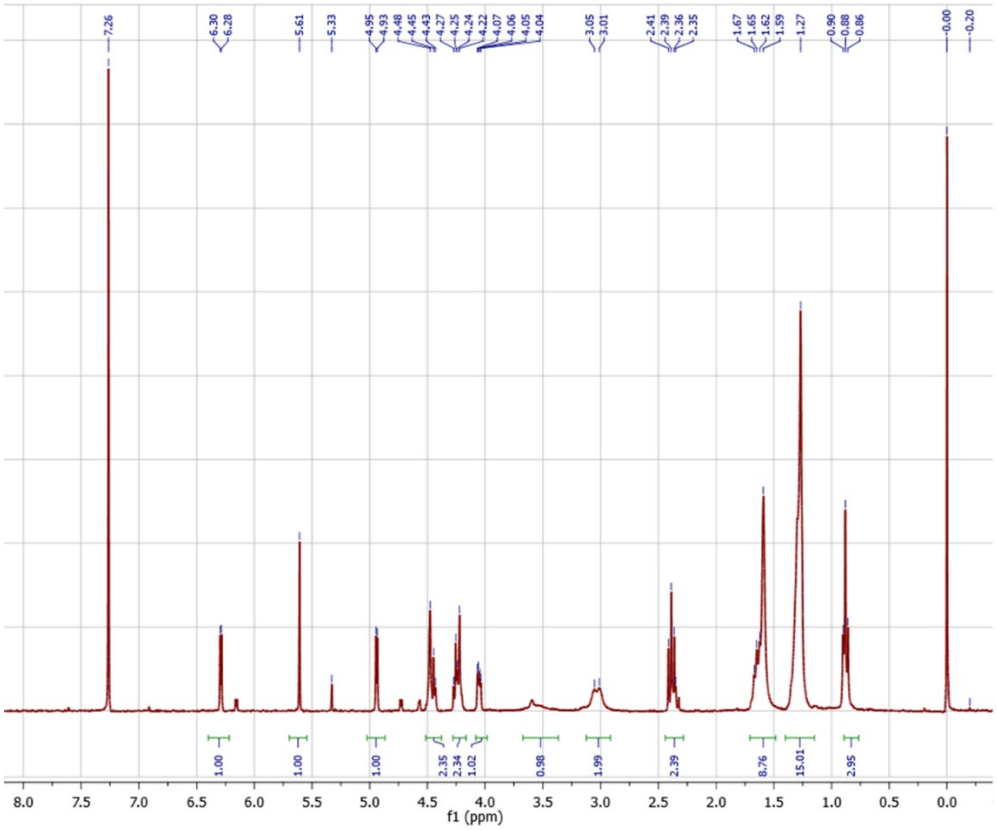


Figure S10. ^{13}C NMR spectrum of glycolipid **3a** in $CDCl_3$+DMSO-d_6

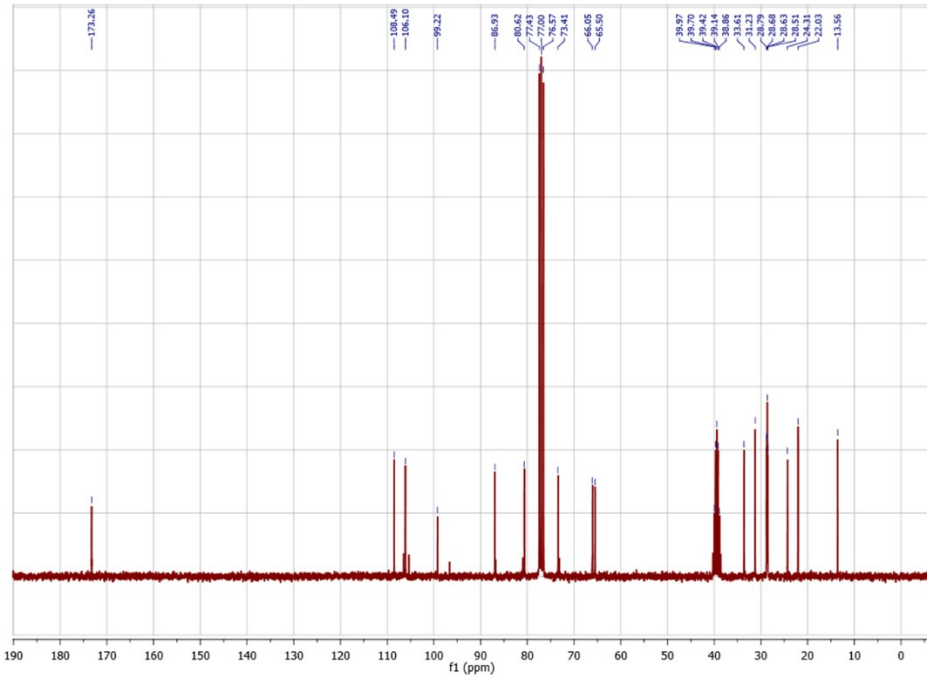


Figure S11. ^{1}H NMR spectrum of glycolipid **3b** in $CDCl_3$+DMSO-d_6

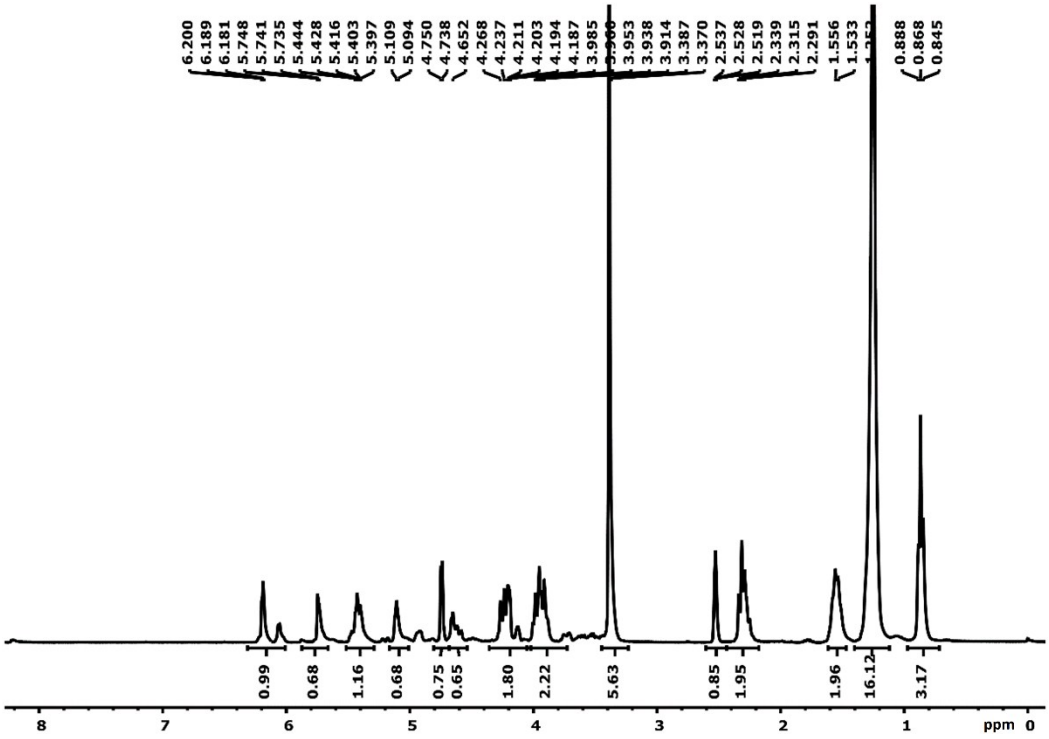


Figure S12. ^{13}C NMR spectrum of glycolipid **3b** in $CDCl_3$+DMSO-d_6

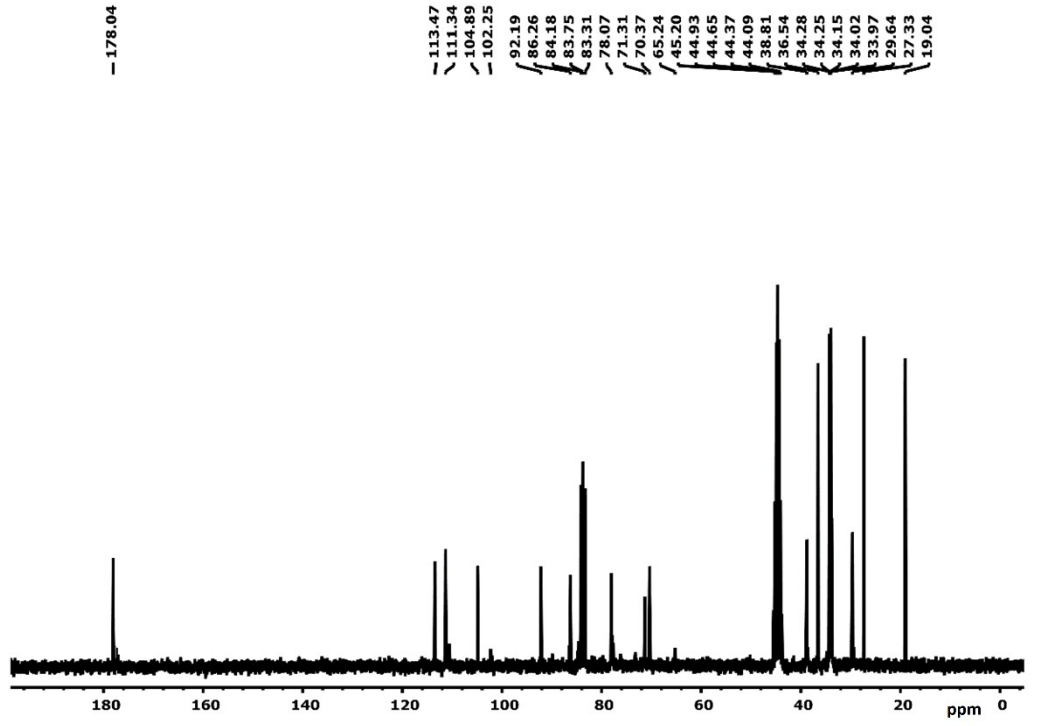


Figure S13. ^{1}H NMR spectrum of glycolipid **3c** in $CDCl_3$+DMSO-d_6

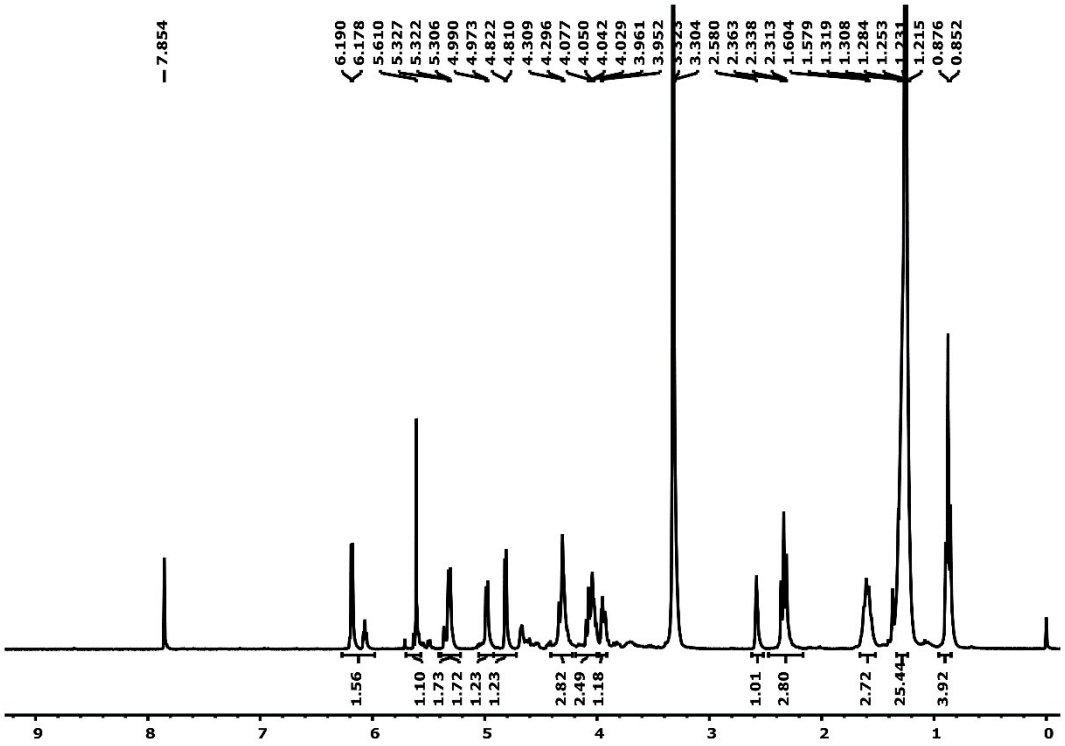


Figure S14. ^{13}C NMR spectrum of glycolipid **3c** in $CDCl_3$+DMSO-d_6

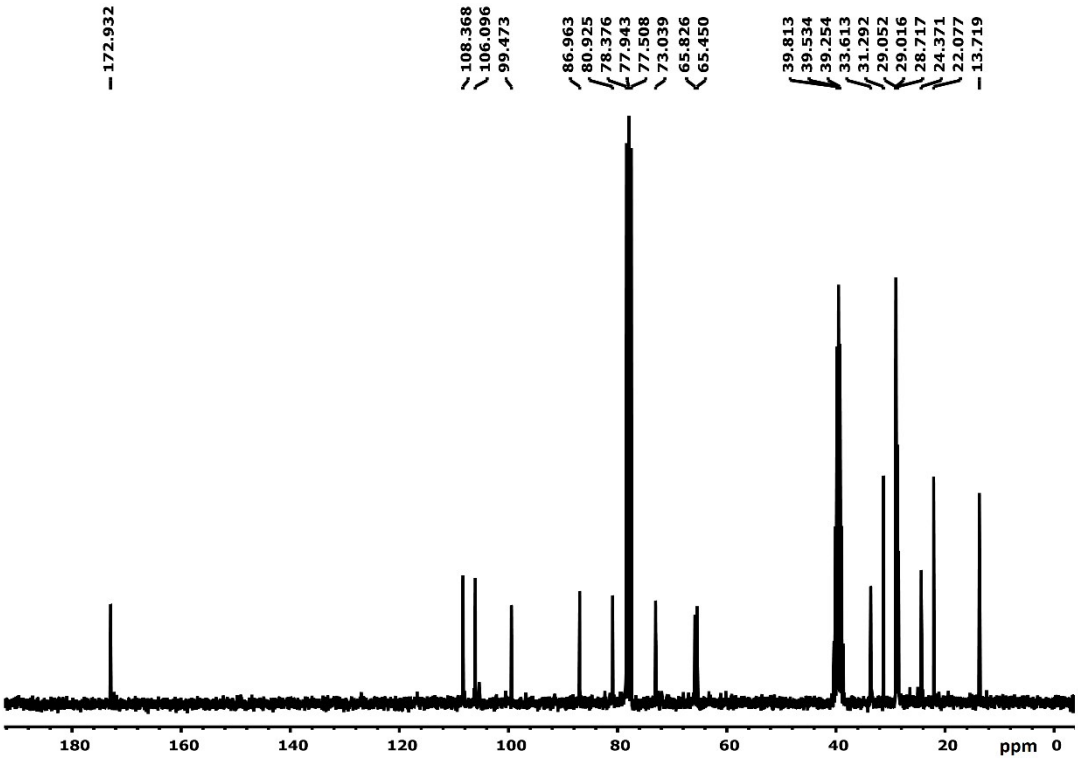


Figure S15. ^{1}H NMR spectrum of glycolipid **3d** in $CDCl_3$

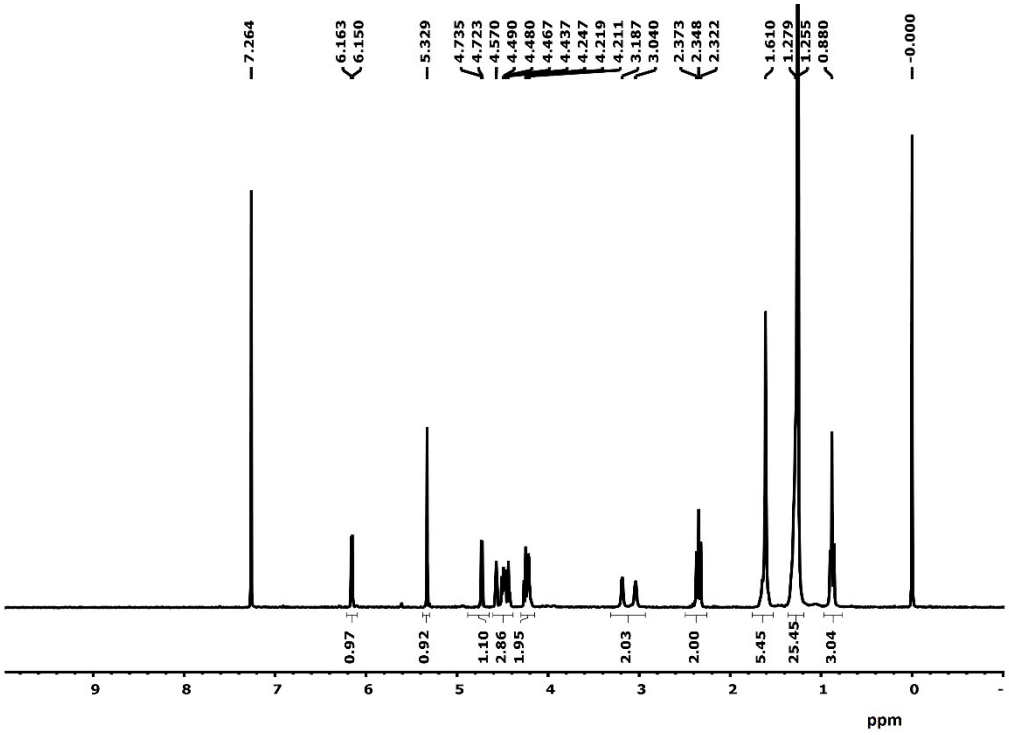


Figure S16. ^{13}C NMR spectrum of glycolipid **3d** in $CDCl_3$

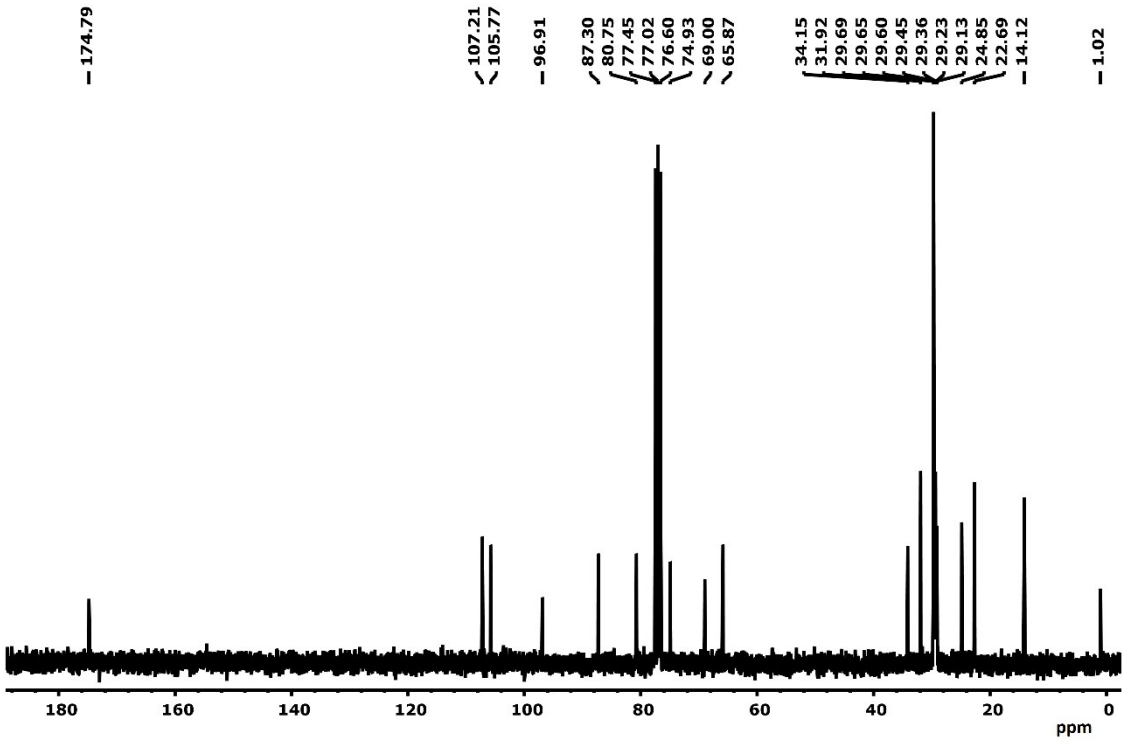


Figure S17. ESI-MS spectra of glycolipid **3d** in $CDCl_3$+MeOH

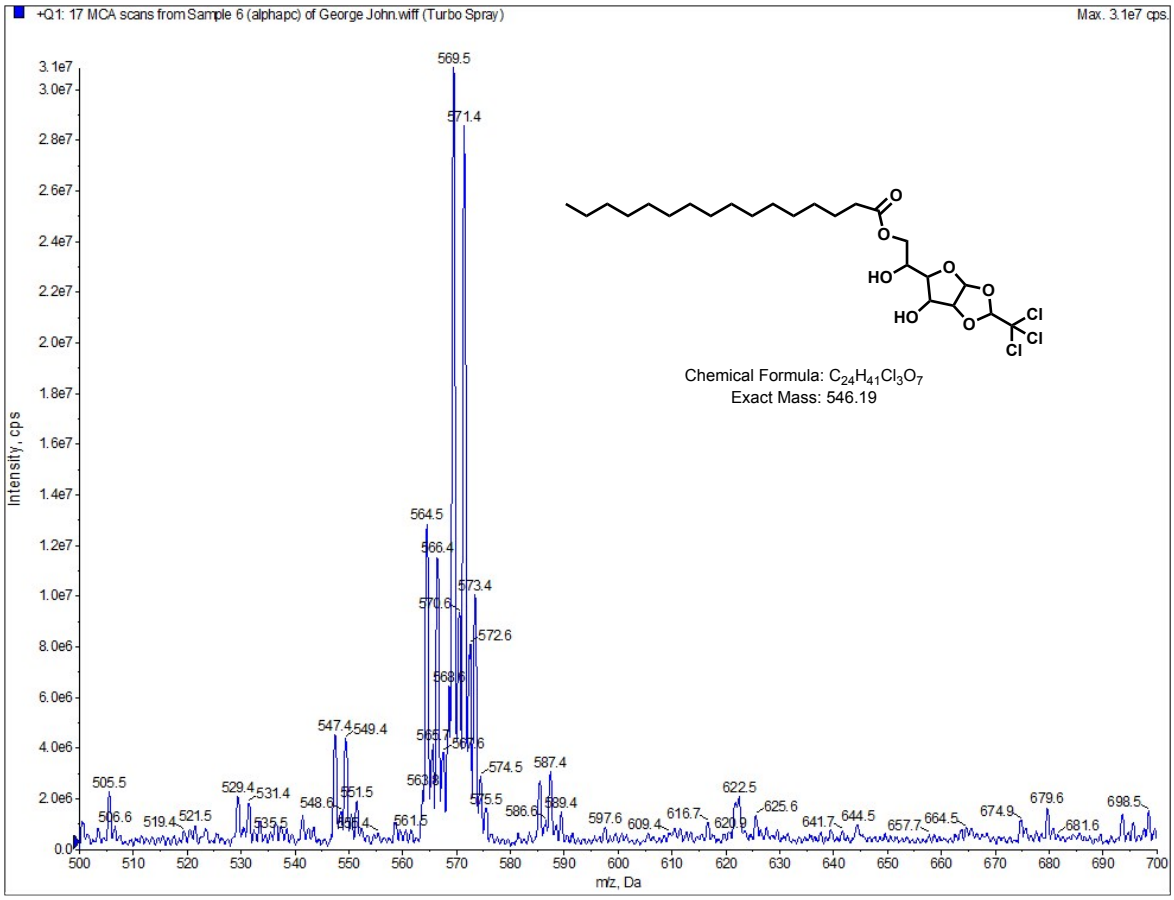


Figure S18. ^{1}H NMR spectrum of glycolipid **3e** in $CDCl_3$

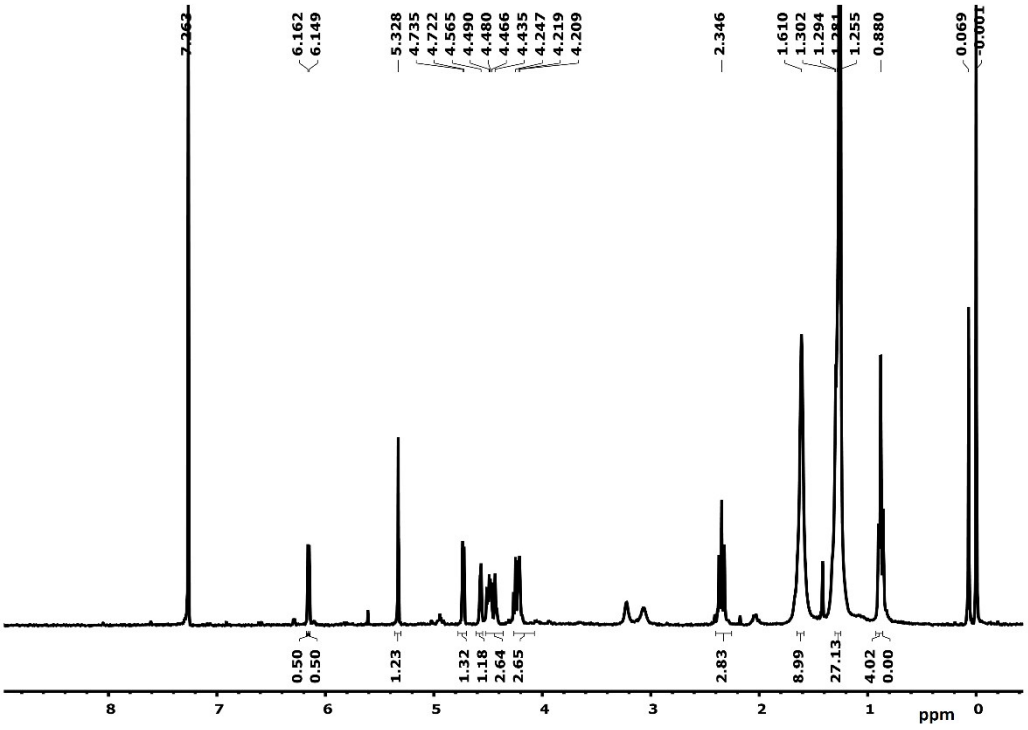


Figure S19. ^{13}C NMR spectrum of glycolipid **3e** in $CDCl_3$

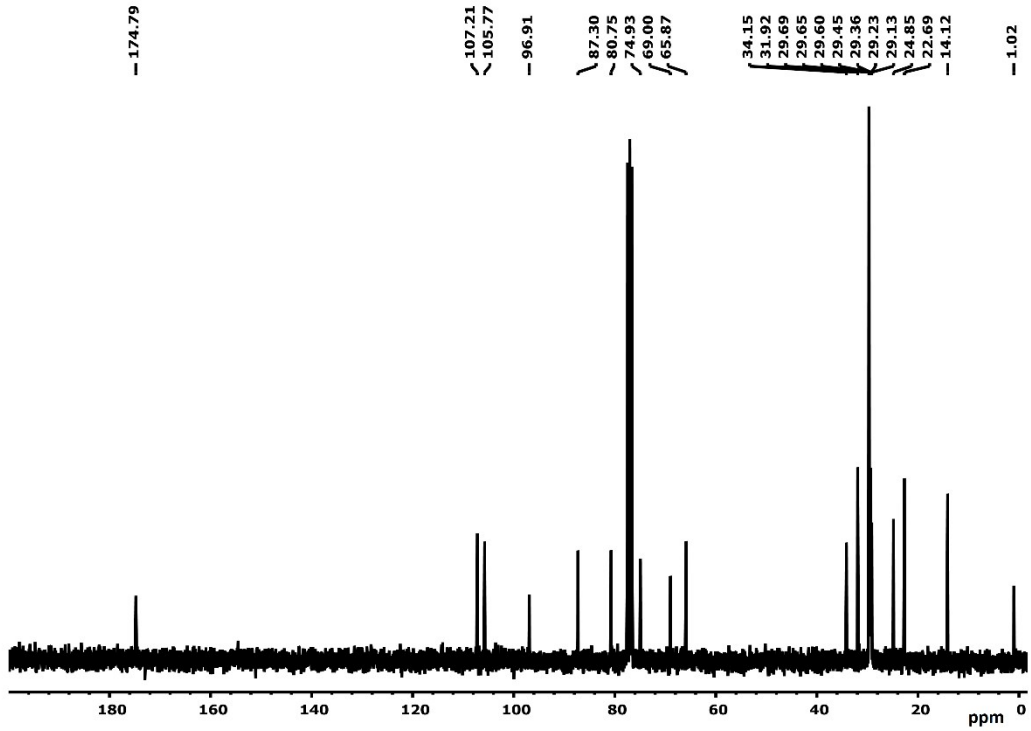
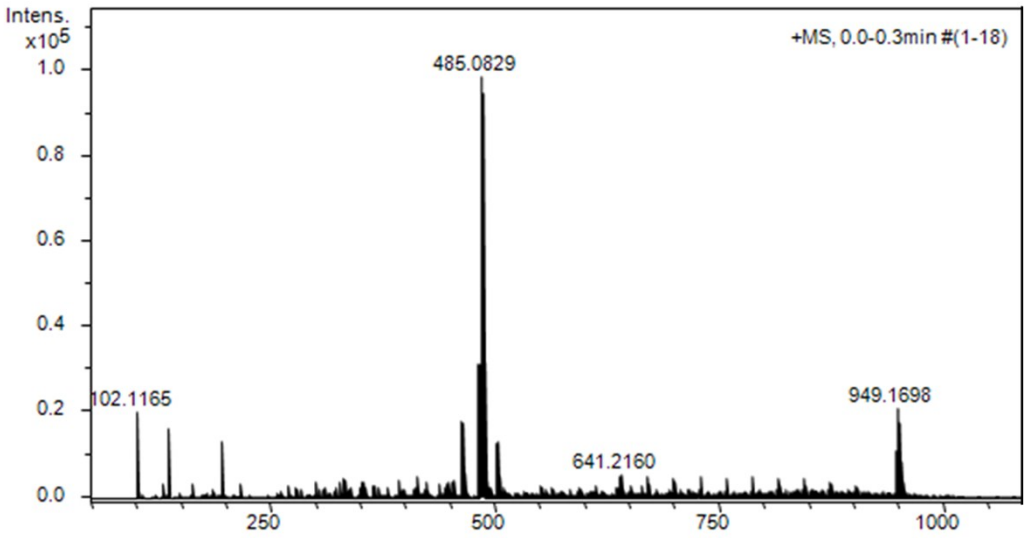
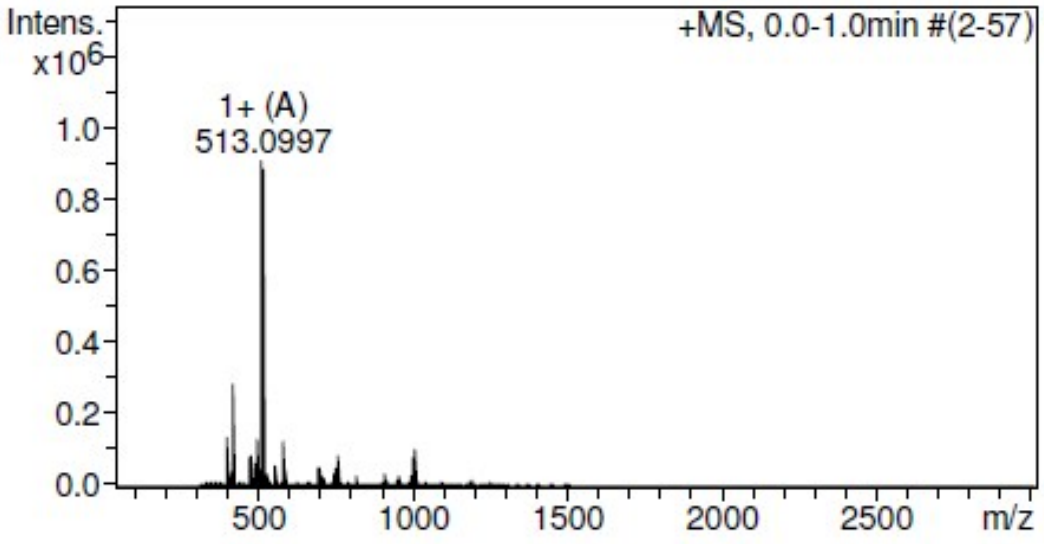


Figure S20. ESI-MS spectra of glycolipid **3a-e** in $CDCl_3$+MeOH

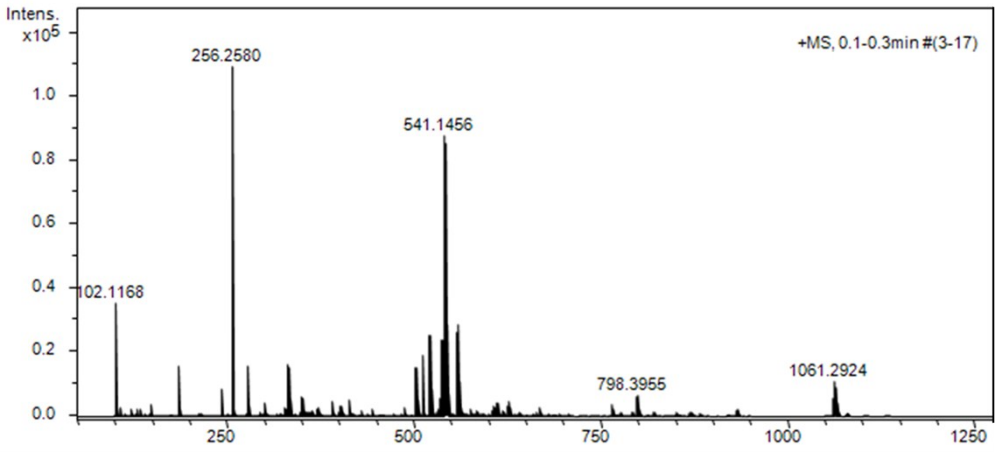
Glycolipid 3a



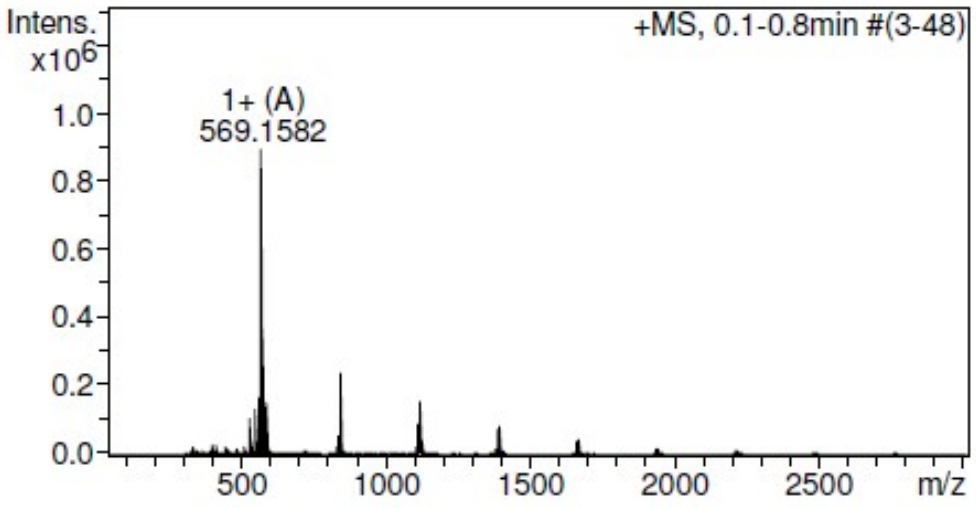
Glycolipid 3b



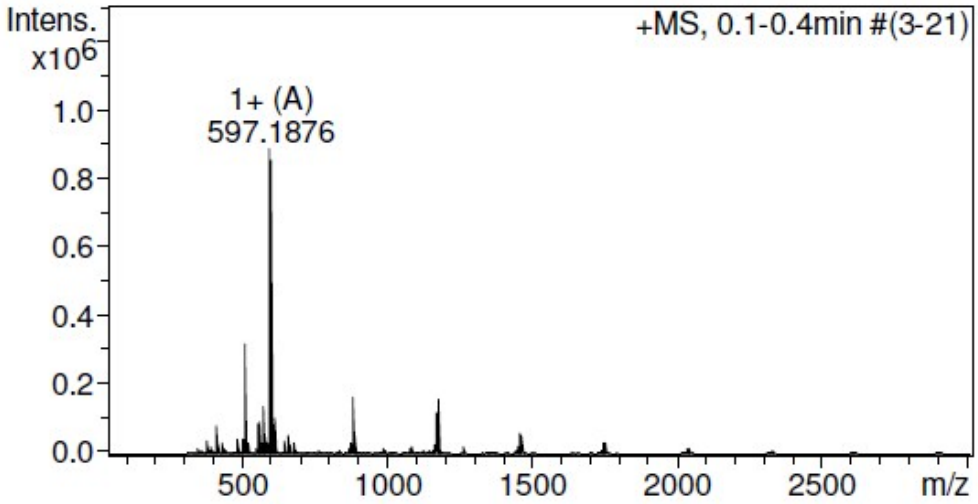
Glycolipid 3c



Glycolipid 3d



Sample 3e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