Electronic Supplementary Information

Immobilized lipase on porous ceramic monoliths for the production of sugar-derived oil gelling agent

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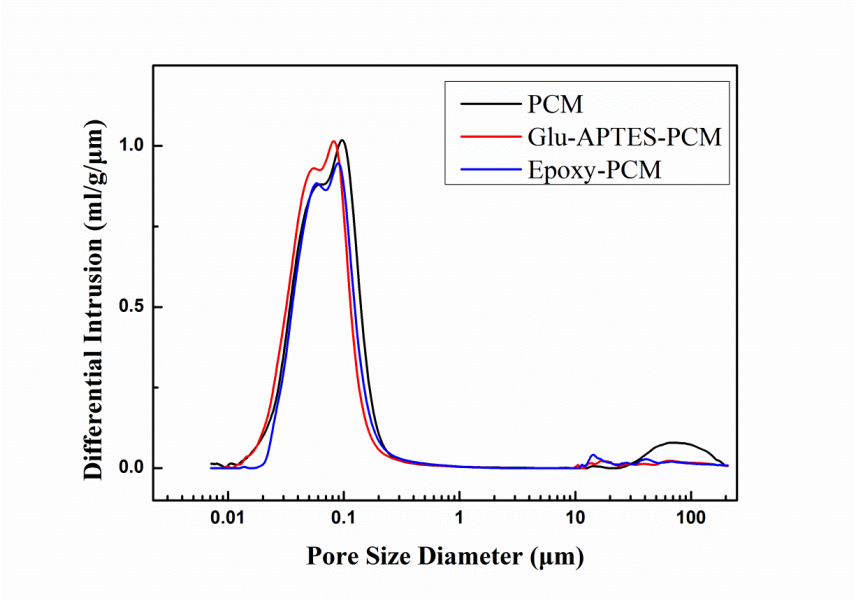

Fig. S1. Size distribution of PCM, Glu-APTES-PCM and Epoxy-PCM

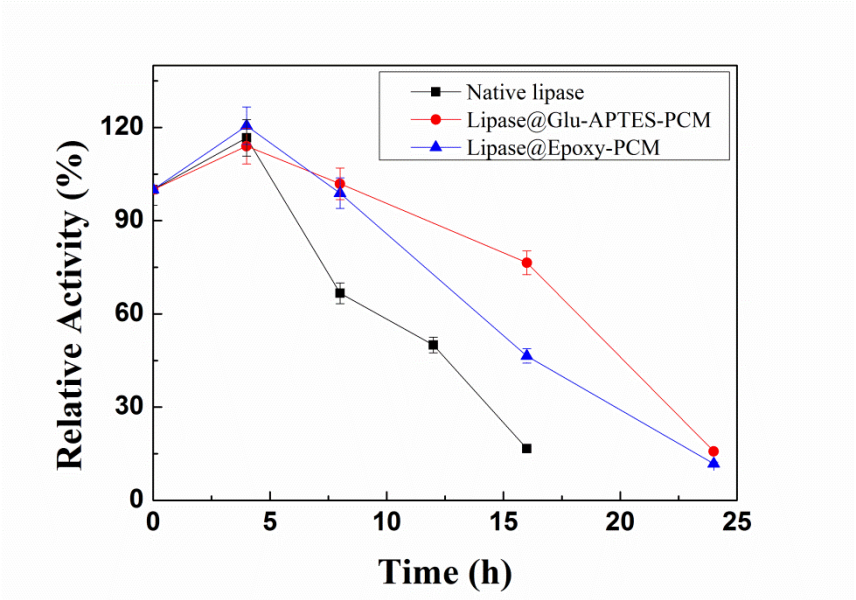

Fig. S2. Thermal stability of native lipase, Lipase@Glu-APTES-PCM and Lipase@Epoxy-PCM in isooctane at 70 ^{o}C

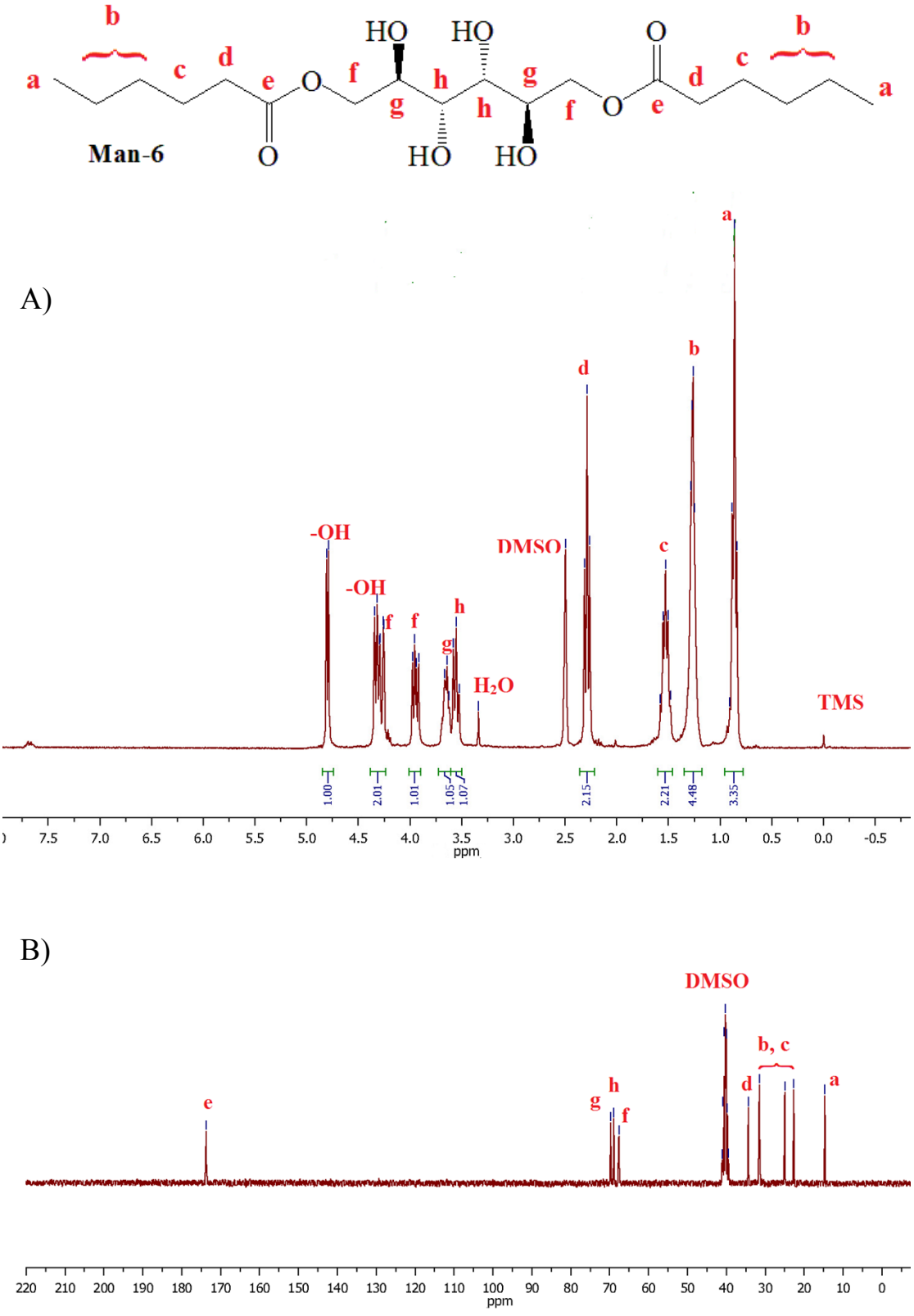

Fig. S3. A. ^{1}H-NMR spectrum and **B.** ^{13}C-NMR spectrum of Man-6

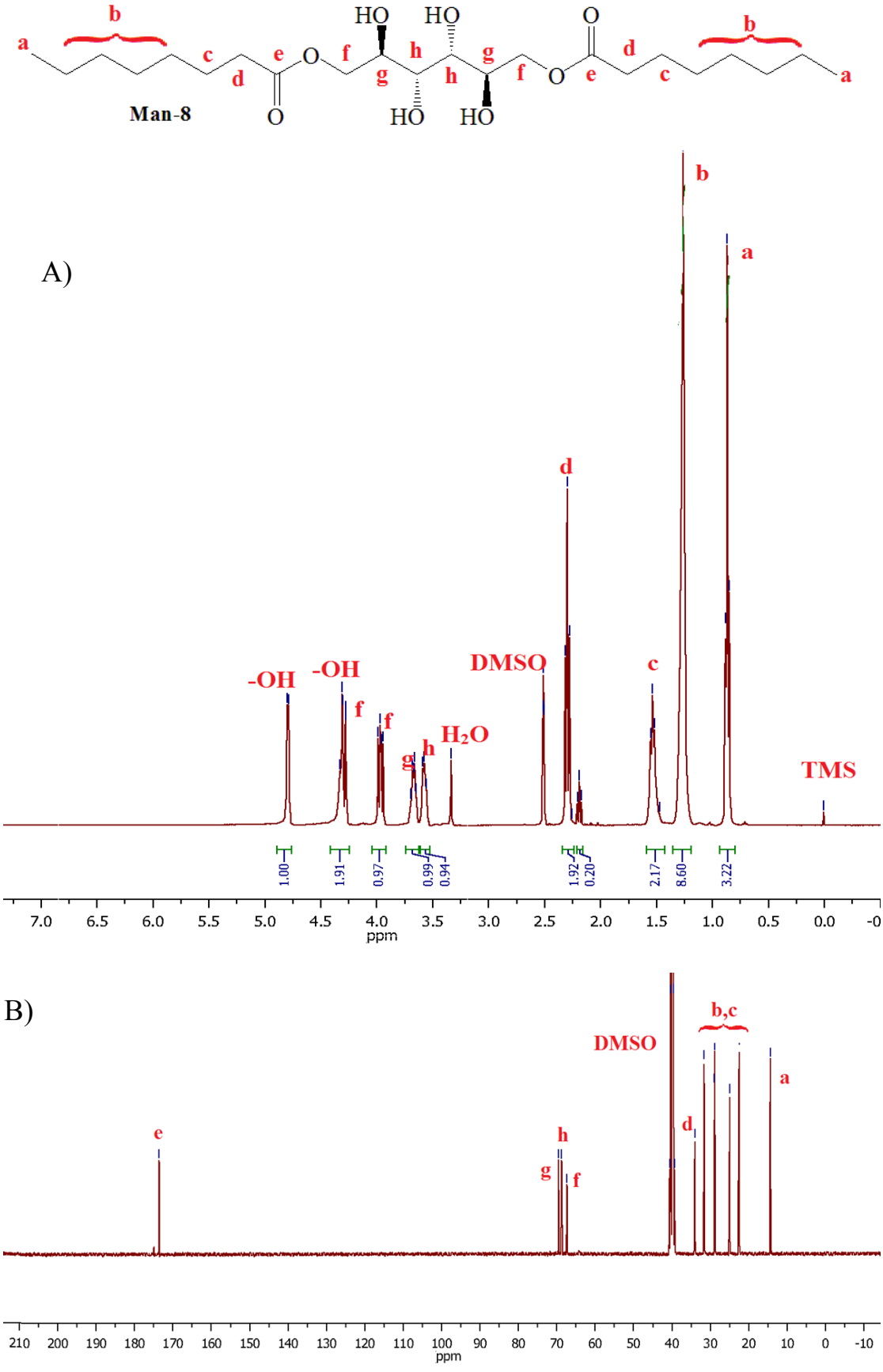

Fig. S4. A. ^{1}H-NMR spectrum and **B.** ^{13}C-NMR spectrum of Man-8

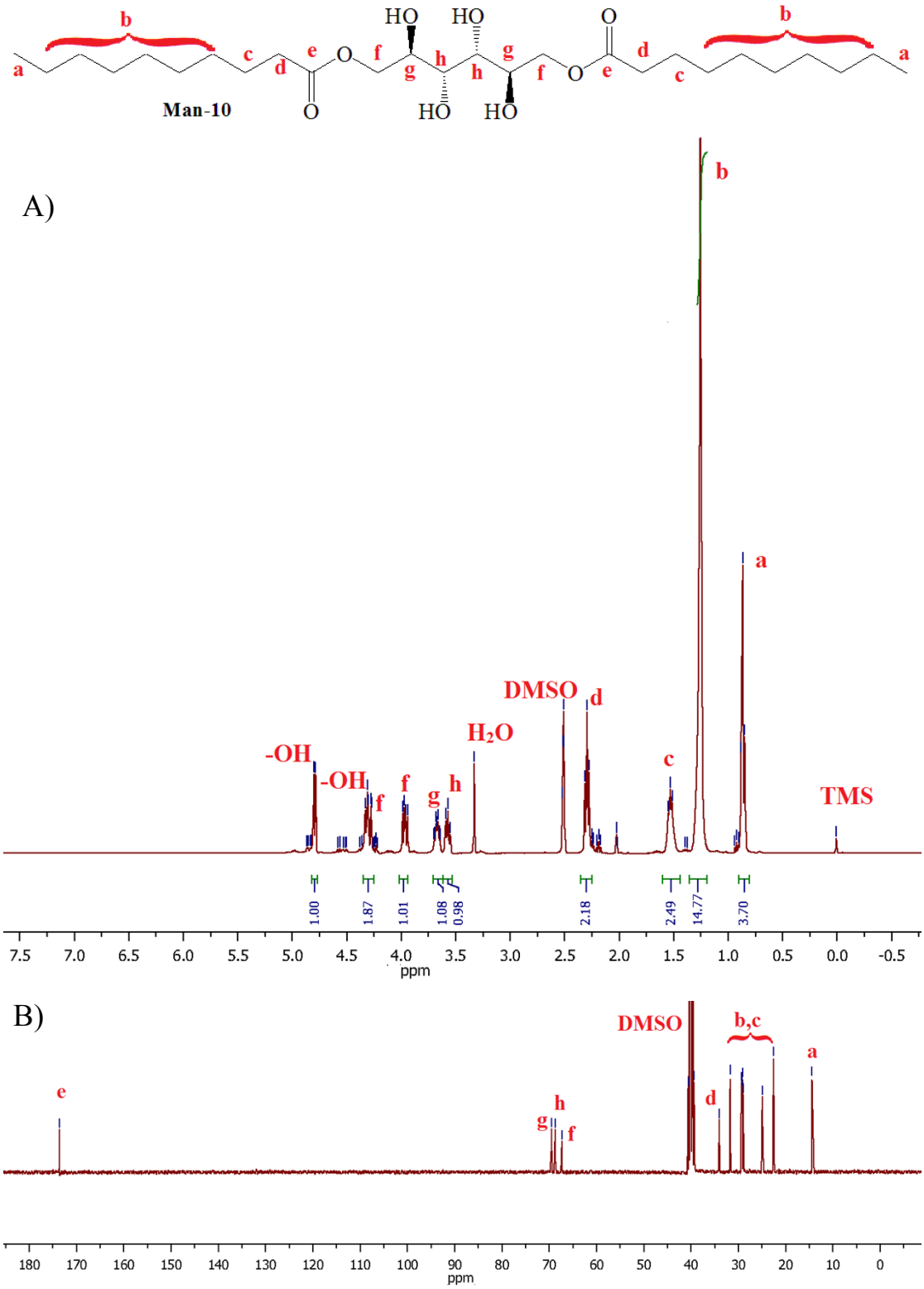

Fig. S5. A. ^{1}H-NMR spectrum and **B.** ^{13}C-NMR spectrum of Man-10

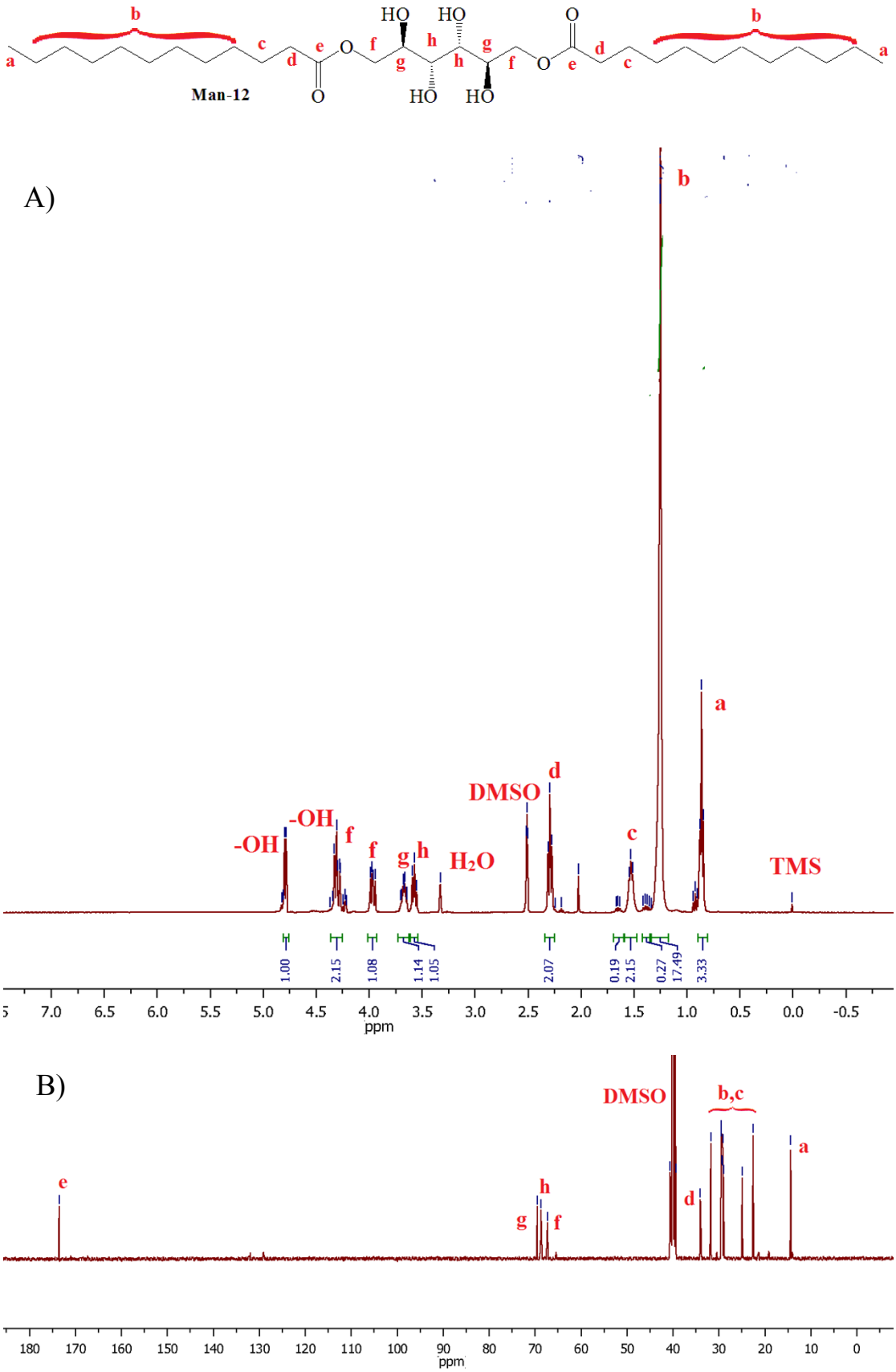

Fig. S6. A. ^{1}H-NMR spectrum and **B.** ^{13}C-NMR spectrum of Man-12

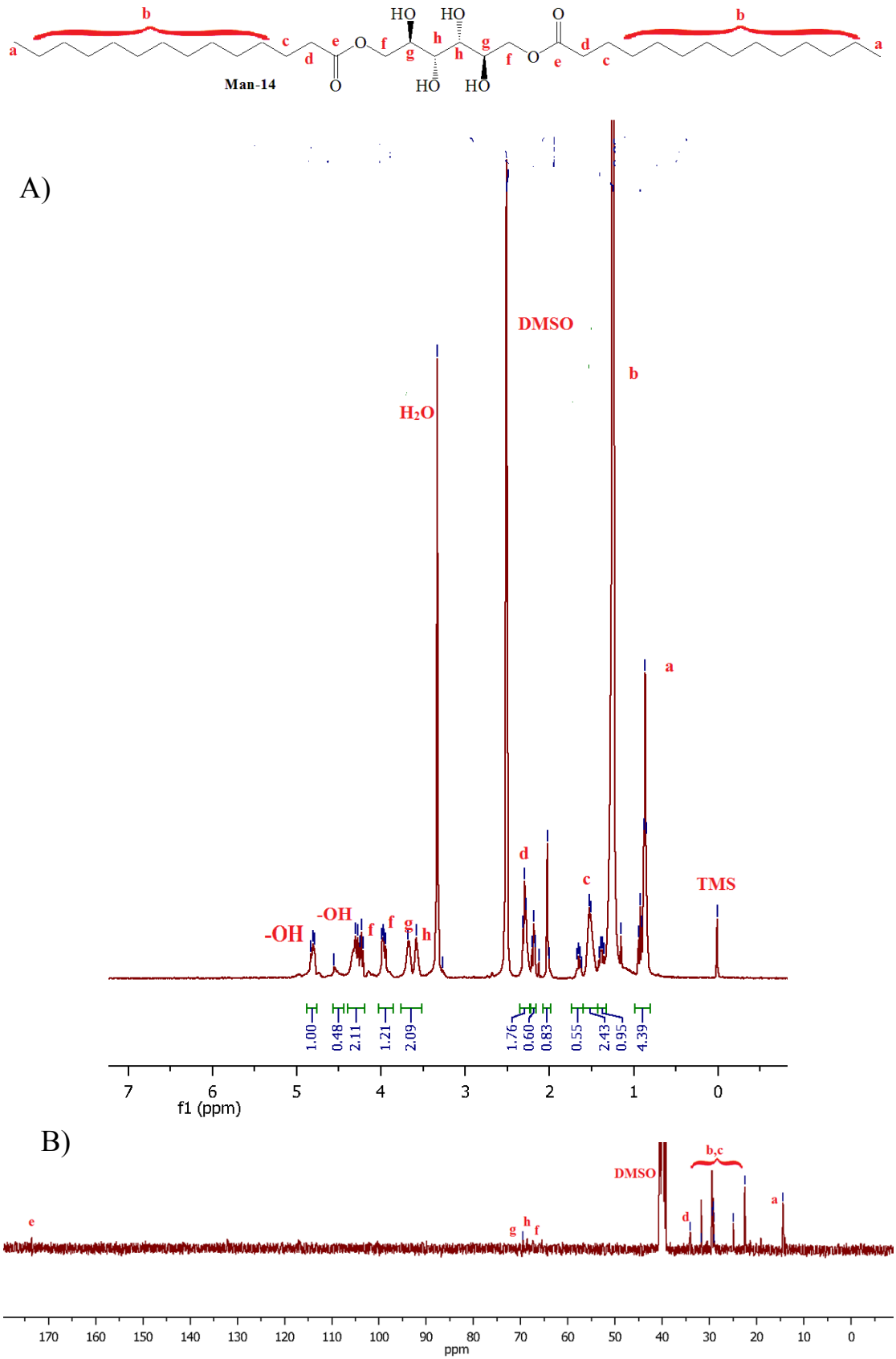

Fig. S7. A. ^{1}H-NMR spectrum and **B.** ^{13}C-NMR spectrum of Man-14

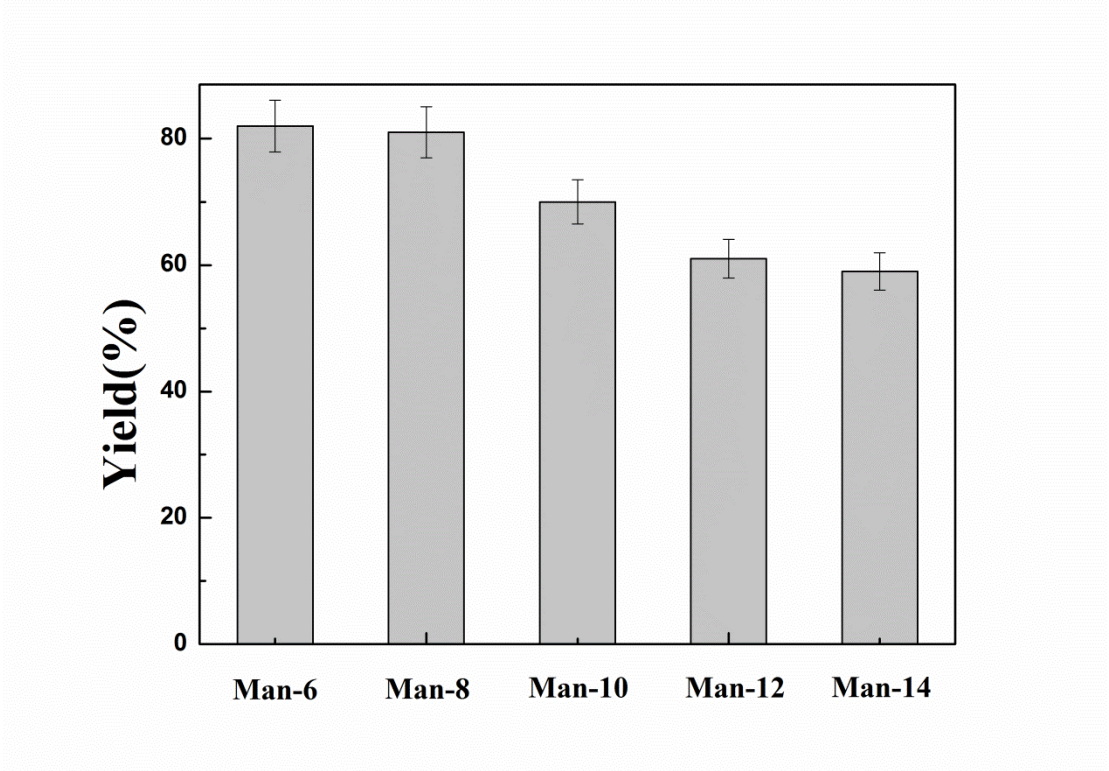

Fig. S8. The yield of Man-6, Man-8, Man-10, Man-12 and Man-14 (Reaction conditions: 0.3 g native lipase, 3 mmol mannitol, 9 mmol fatty acid vinyl ester, 40 mL acetone, 45°C , 120 h reaction, 120 r/min shaking speed.)

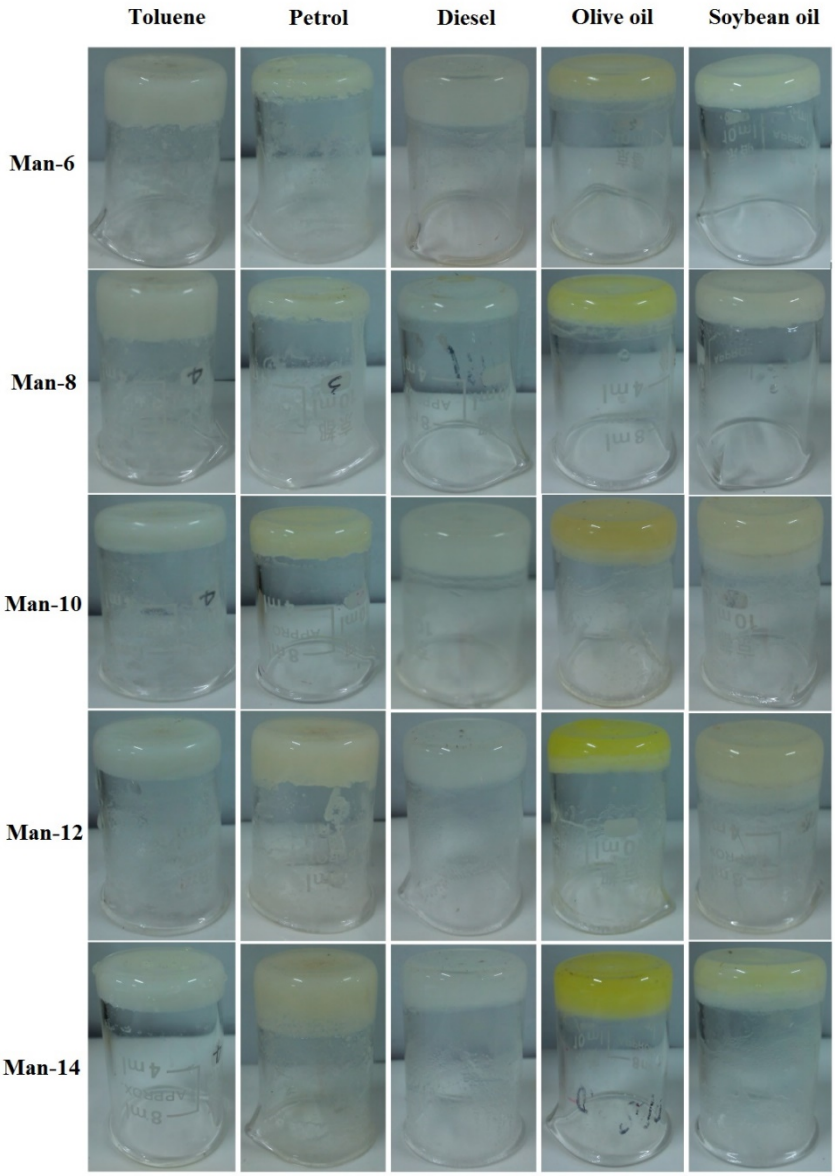

Fig. S9. Gelation of different hydrocarbons and oils by using Man-6, Man-8, Man-10, Man-12 and Man-14

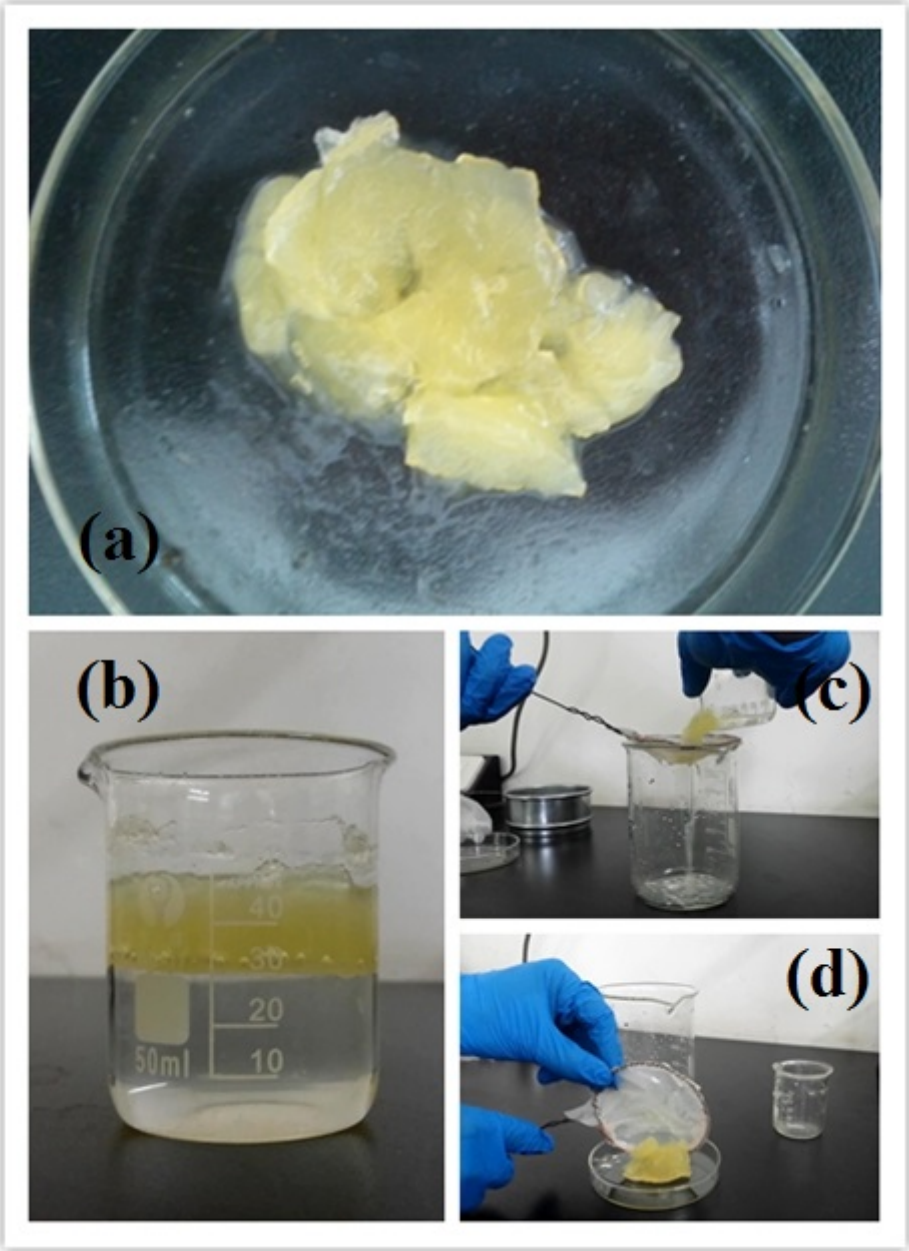

Fig. S10. Recovery of diesel gel from diesel-water mixture (a) the obtained diesel gel; (b) the diesel gel and water; (c-d) separation diesel gel from water

Table S1 The minimum gelation concentration of oil gelling agents with different alkyl chain length

	Man-6	Man-8	Man-10	Man-12	Man-14
toluene	1.5±0.075	1.0±0.050	0.95±0.048	0.87±0.044	0.96±0.048
petrol	5.0±0.25	2.6±0.13	2.4±0.12	2.2±0.11	2.5±0.13
diesel	4.5±0.23	2.0±0.10	1.9±0.095	1.8±0.090	2.1±0.11
olive oil	3.8±0.19	1.2±0.060	1.2±0.060	1.0±0.050	1.1±0.055
soybean	5.5±0.28	3.9±0.19	3.7±0.19	3.4±0.17	3.8±0.19