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SUPPLEMENTARY MATERIAL TO
**Antimicrobial and anticancer activities of copolymers of
tri-*O*-acetyl-D-glucal and itaconic anhydride**

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SPECTRAL DATA

Itaconic anhydride

IR (KBr, cm⁻¹), Fig. S-1: 3599 (alkenyl C-H stretch), 1700 (>C=O of imide), 1621 (>C=C< of double bond of the ring), 731 (oop C-H bending). ¹H NMR (500 MHz, CDCl₃), δ / ppm, Fig. S-2: 6.5 ppm (1H_a, s); 5.9 ppm (1H_b, s); 3.6 ppm (2H_c, s).

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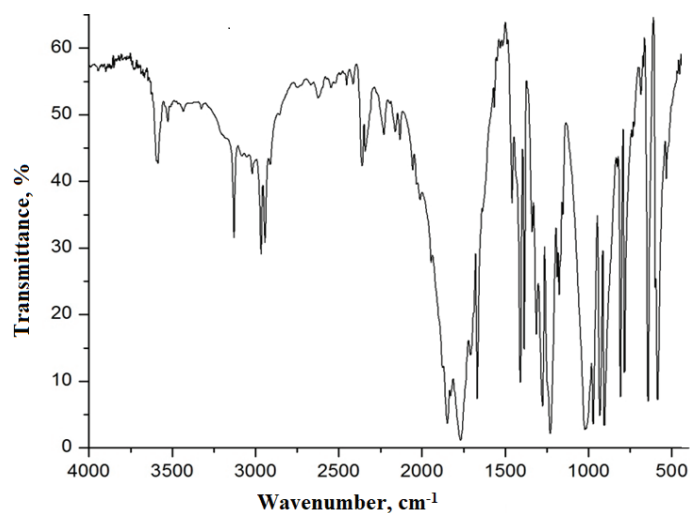
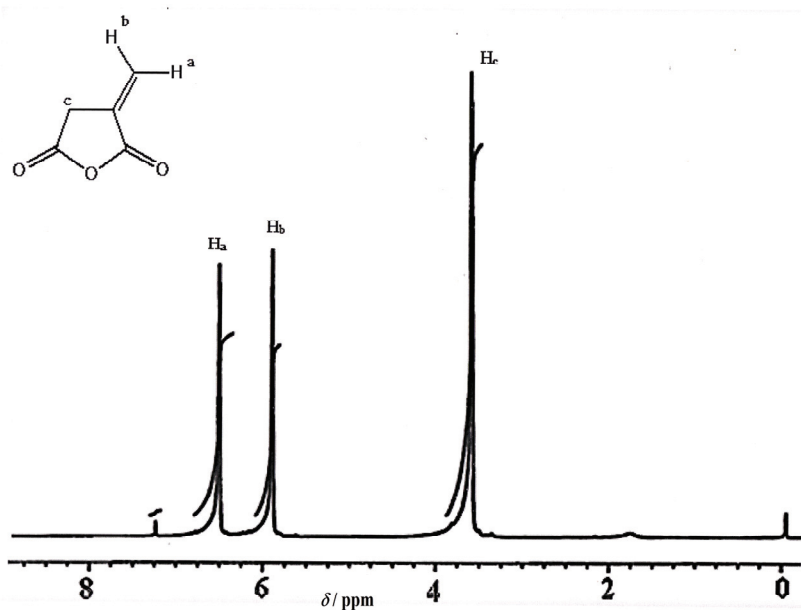
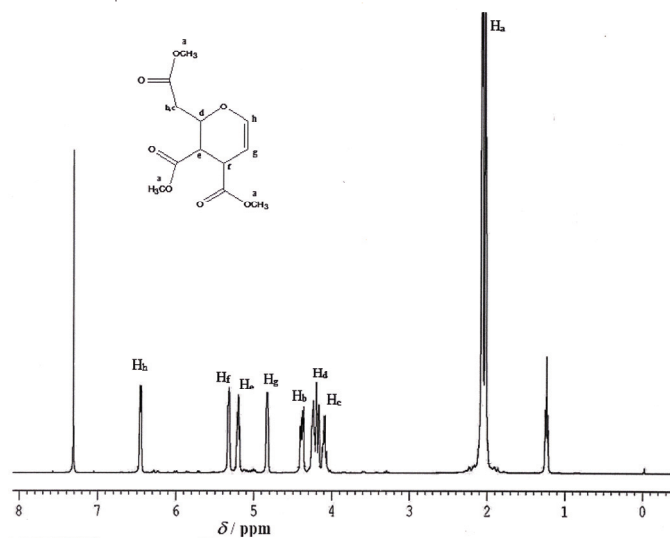


Fig. S-1. FT-IR Spectra of itaconic anhydride (IA).

Fig. S-2. ¹H-NMR of IA.

TAG

¹H NMR (500 MHz, CDCl₃), δ / ppm, Fig. S-3: 2.0 ppm (9H_a, s); 4.0 ppm (1H_c, m); 4.2 ppm (1H_d, m); 4.3 ppm (1H_b, m); 4.8 ppm (1H_g, s); 5.2 ppm (1H_e, d); 5.3 ppm (1H_f, d); 6.4 ppm (1H_h, s).

Fig. S-3. ¹H-NMR of TAG.*PSG*

¹H-NMR (500 MHz, CDCl₃), δ / ppm, Fig. S-4: 2.0 ppm (6H_a, s); 2.2 ppm (1H_h, hump); 4.1 ppm (1H_c, m); 4.2 ppm (1H_b, m); 5.3 ppm (1H_d, m); 5.4 ppm (1H_g, d); 5.9 ppm (1H_e, 1H_f, d).

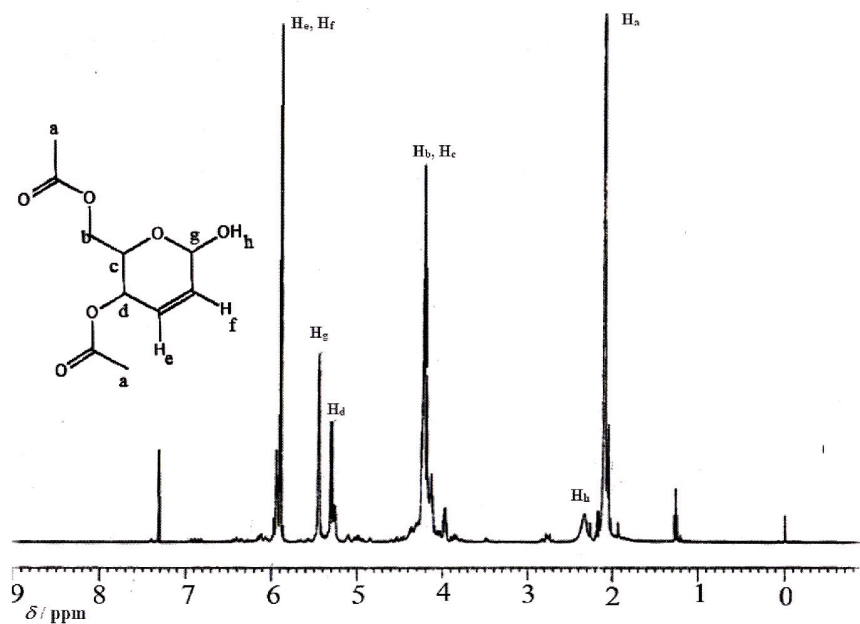


Fig S-4. ¹H-NMR of PSG.

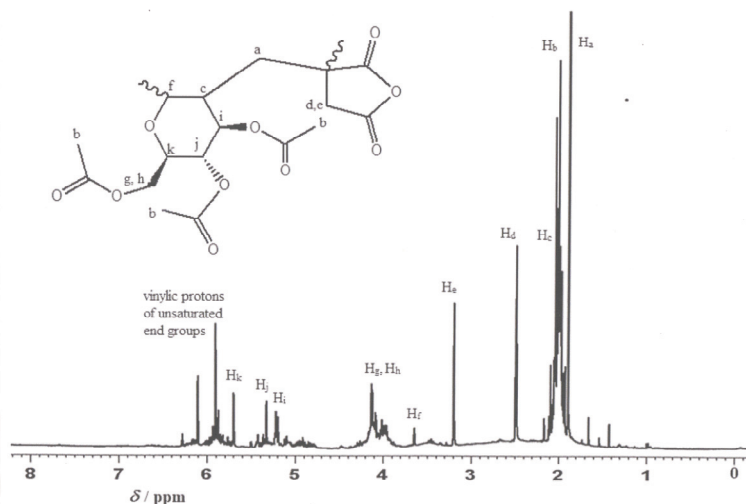


Fig. S-5. ¹H NMR spectrum of IA-TAG5.

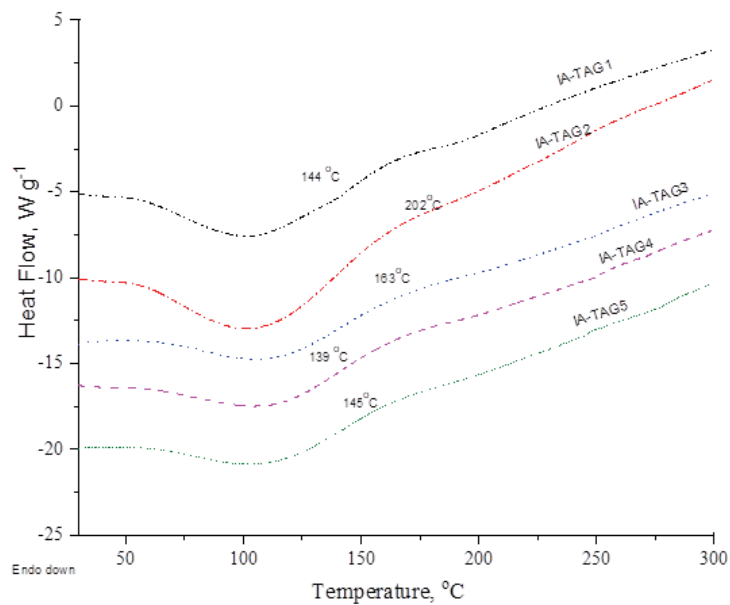


Fig S-6. DSC Scans of IA-TAG Copolymers

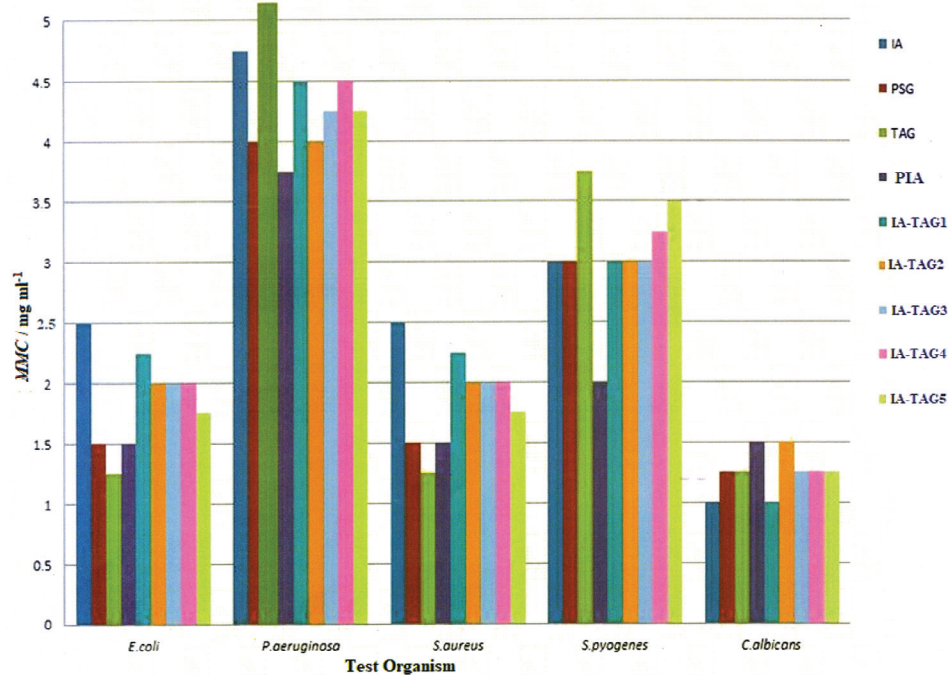


Fig S-7. Anti-microbial activity of Monomers and copolymers of IA and TAG.

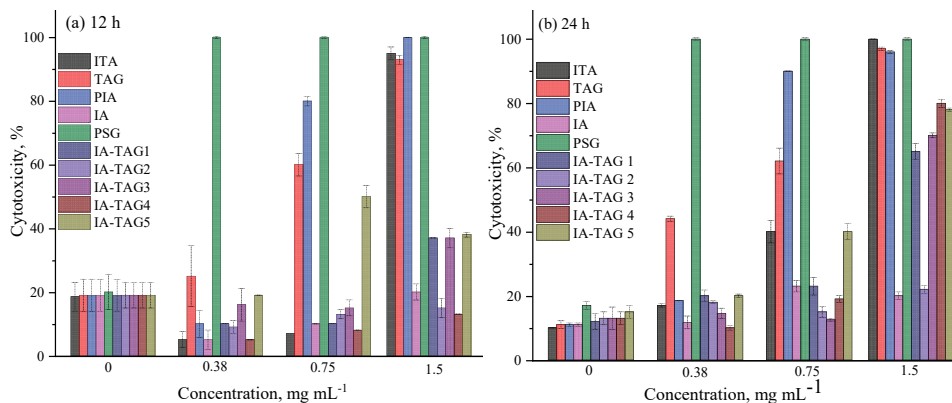


Fig S-8. The cytotoxic effect of the various test compounds after (a) 12h and (b) 24h on A549 human lung adenocarcinoma cells. The cytotoxicity of the test compounds was estimated using the trypan blue viability test. Error bars represent standard deviation.