SUPPLEMENTARY INFORMATION

Fabrication of Carbohydrate Microarrays on Poly(2-Hydroxy ethyl methacrylate)-Based Photoactive Substrate

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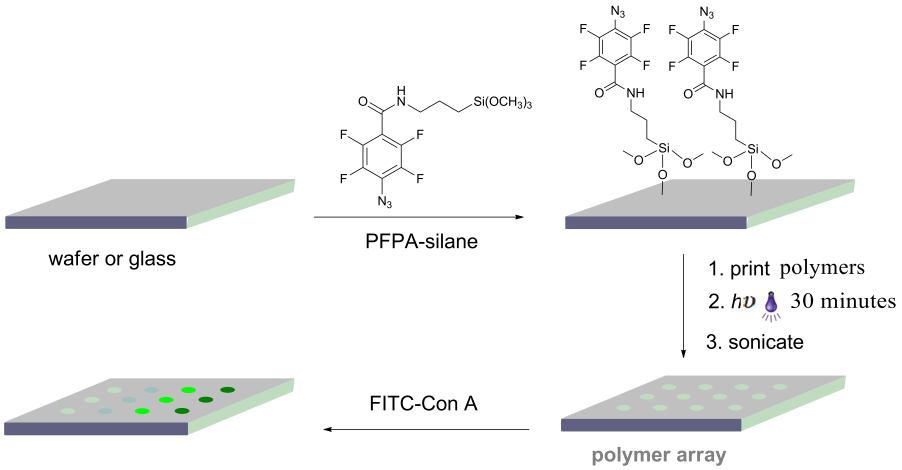
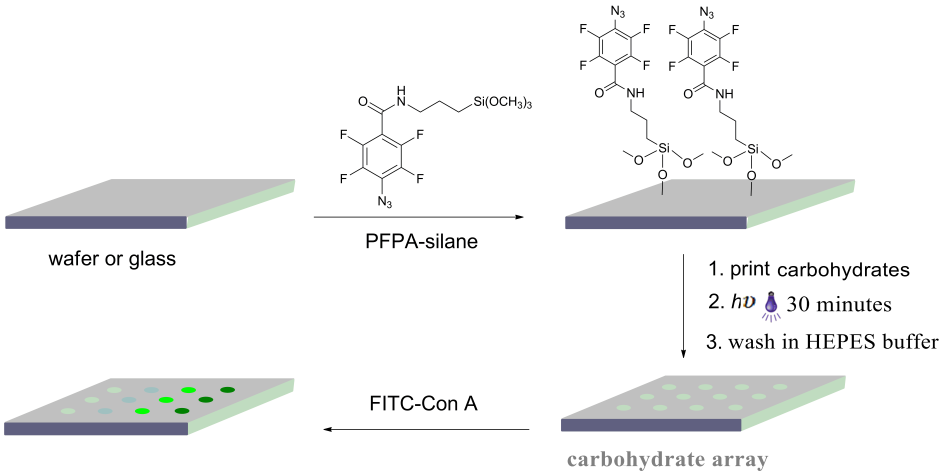


Scheme S-1. Fabrication of polymer array followed by treating with FITC-Con A.



Scheme S-2. Fabrication of 2D carbohydrate array followed by treating with FITC-Con A.

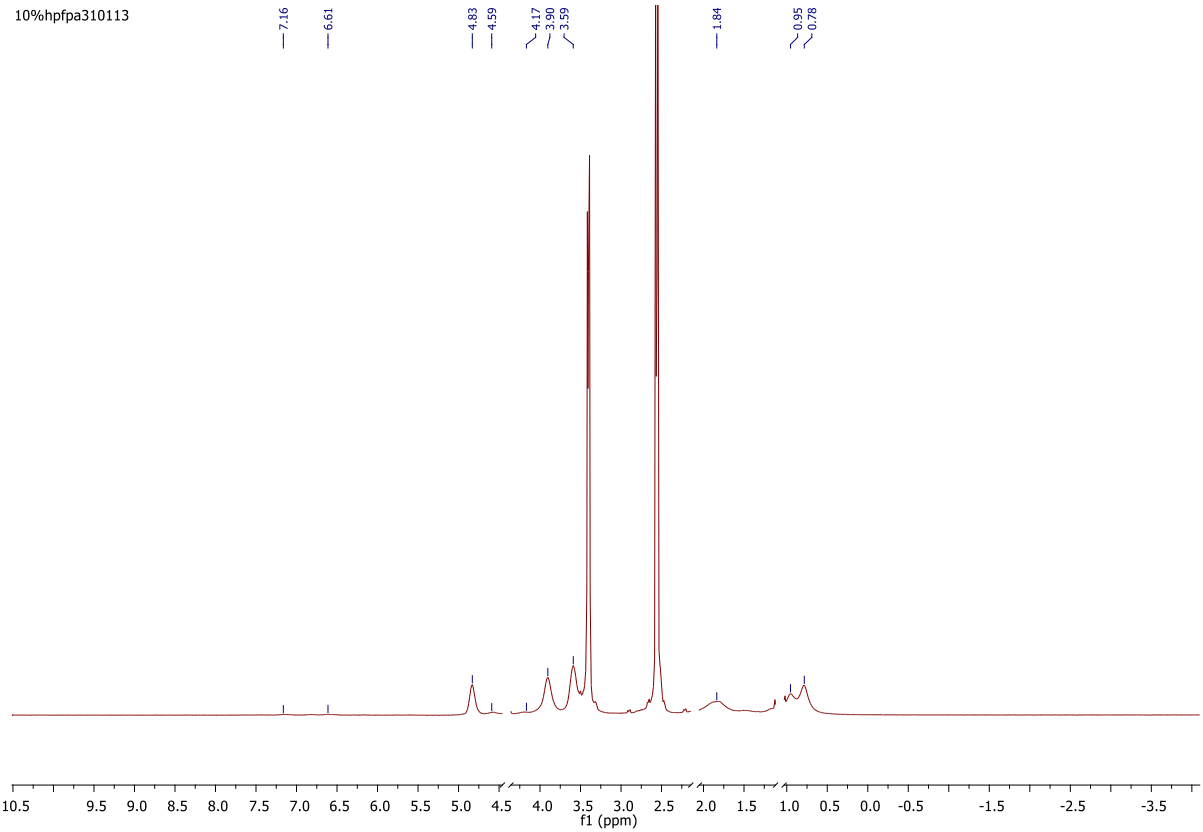


Figure S-1. ^{1}H NMR spectrum of poly(HEMA-*co*-HEMA-PFPA) in d_6-DMSO $\overline{M}_n$ = 9960, calculated as follow:

$\overline{M}_n = 2 \times (I_{4.59} \times 347 + I_{3.90} \times 130) / I_{6.61} + 153$, where $I_{4.56}$, $I_{3.90}$, and $I_{6.60}$ are integrals of peaks at 4.59 (ethylene proton of HEMA-PFPA part), 3.90 (ethylene proton of HEMA part), and 6.61 ppm (proton in RAFT agent), respectively. 153 is the molecular weight of RAFT agent incorporated in the polymer chain.

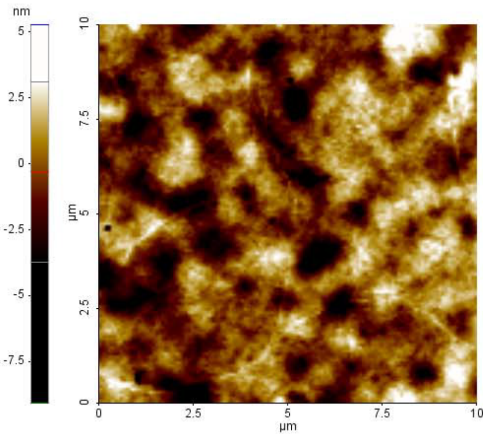


Figure S-2. AFM image of poly(HEMA-*co*-HEMA-PFPA) film, after irradiation with a medium pressure Hg lamp

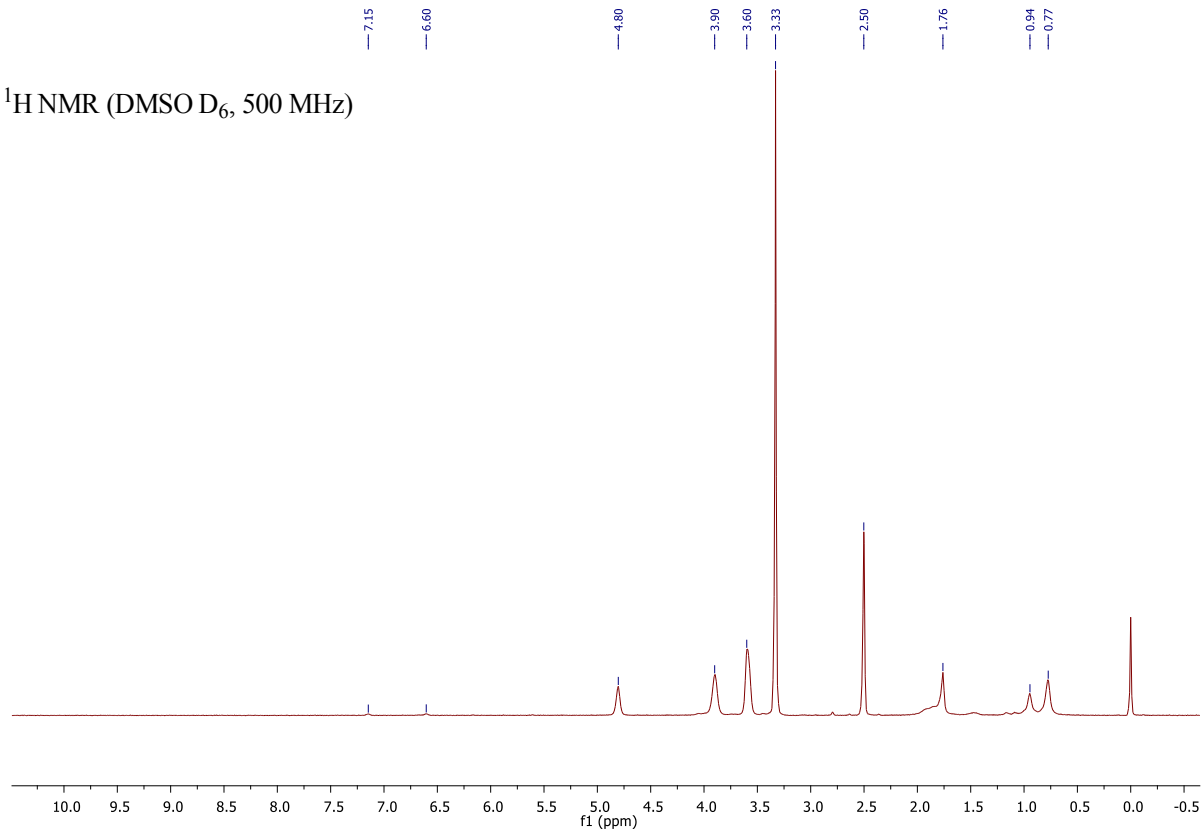


Figure S-3. ^{1}H NMR spectrum of PHEMA in d_6-DMSO. $\overline{M}_n$ = 5360, which was calculated following the same formula in **Figure S-1**.

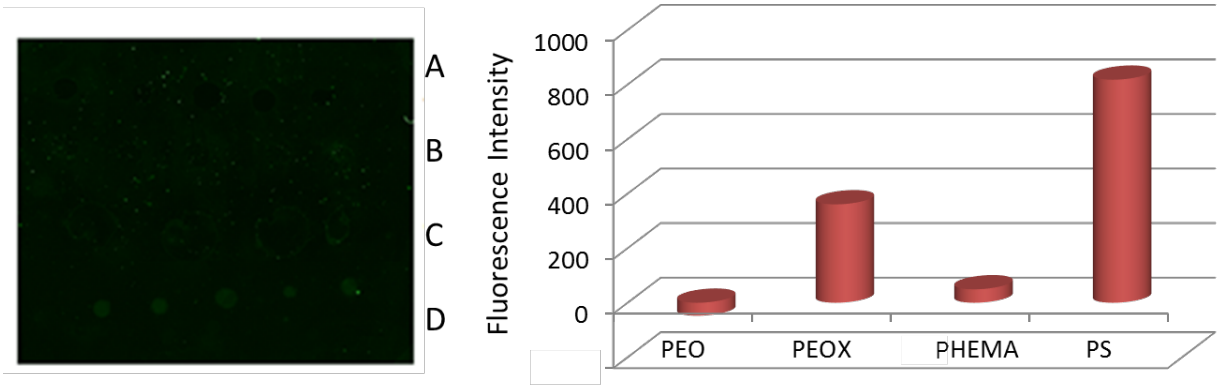


Figure S-4. Fluorescence image (left) and intensities (right) of the polymer array after treating with FITC-Con A. The array contains immobilized PEO 1,000,000 (A), PEOX 200,000 (B), PHEMA (C), and PS 280,000 (D). On the fluorescence intensity plot (right), each data was the average of the 5 spots on the array, and the error bars were omitted for clarity.

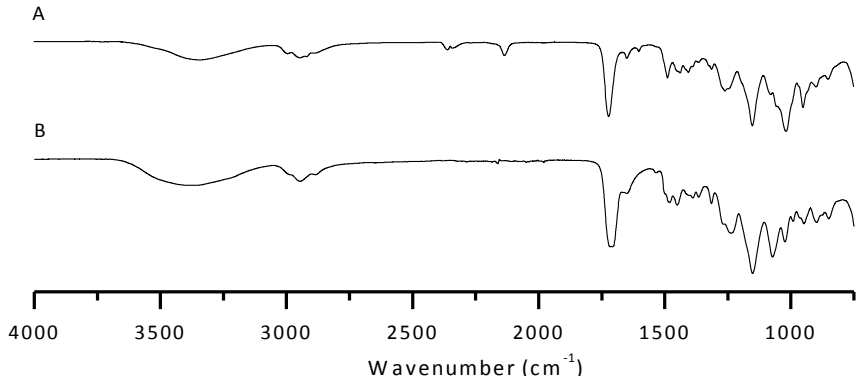


Figure S-5. IR spectra of poly(HEMA-*co*-HEMA-PFPA) (A) before, and (B) after UV treatment.

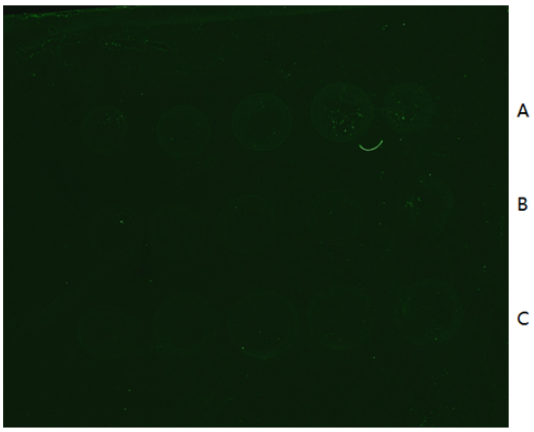


Figure S-6. Fluorescence image of carbohydrate array printed (9 mg/mL) on PHEMA after treating with FITC-Con A. The array contains water (A), D-fructose (Fru) (B), and D-mannose (Man) (C).

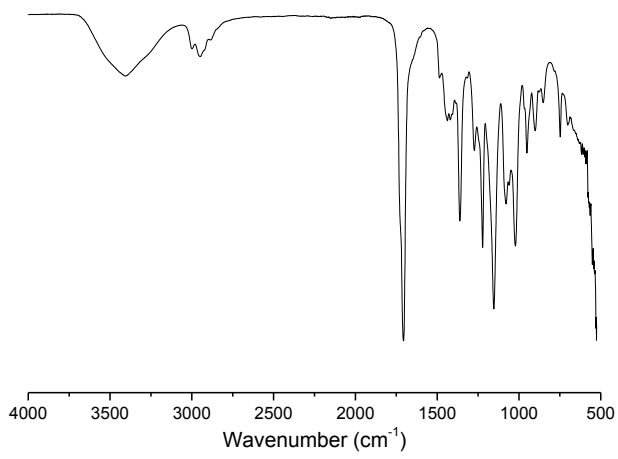


Figure S-7. IR spectrum of PHEMA

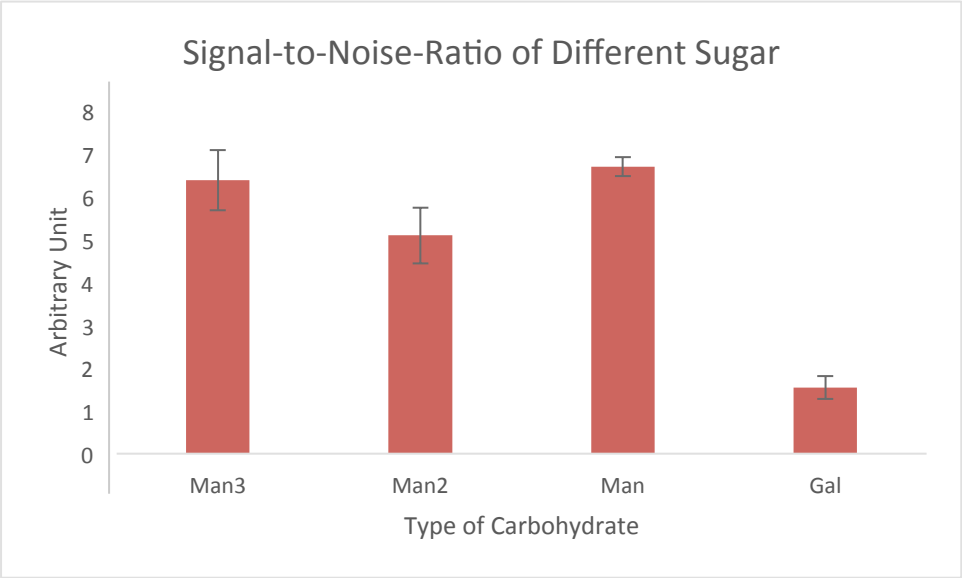


Figure S-8. Signal-to-noise ratios of the microarray shown in Figure 2.

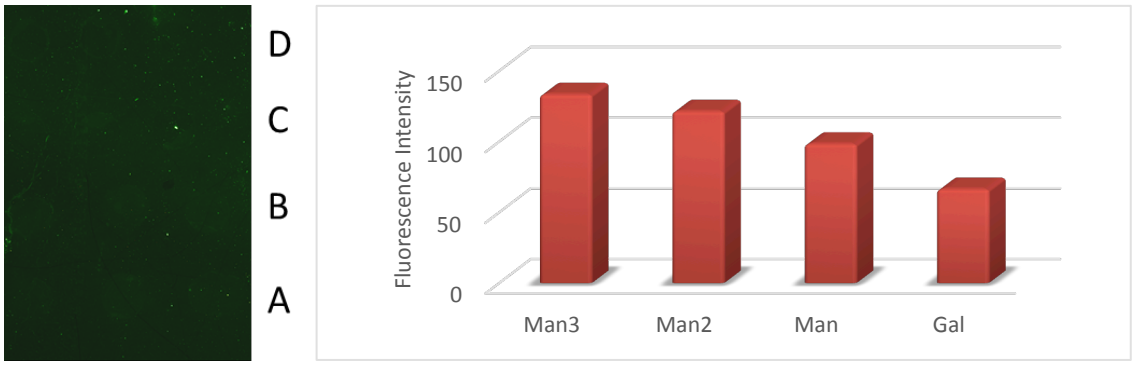


Figure S-9. Fluorescence images of 2D carbohydrate array printed on silicon wafer after treating with FITC-Con A. The array contains Man3 (A), Man2 (B), Man (C) and Gal (D).

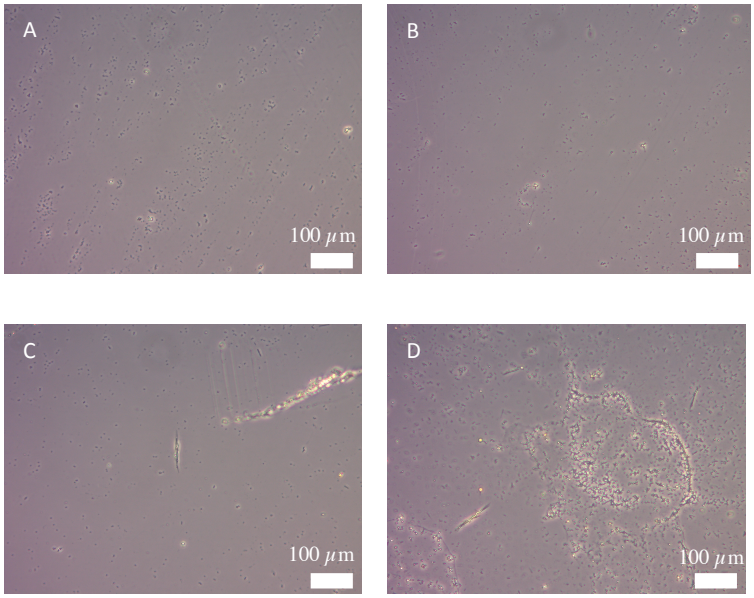


Figure S-10. Optical images of *E. coli* ORN 208 after treating with: (A) PEO, (B) PEOX, (C) PHEMA, (D) PS.