**A.** **B.** **C.**

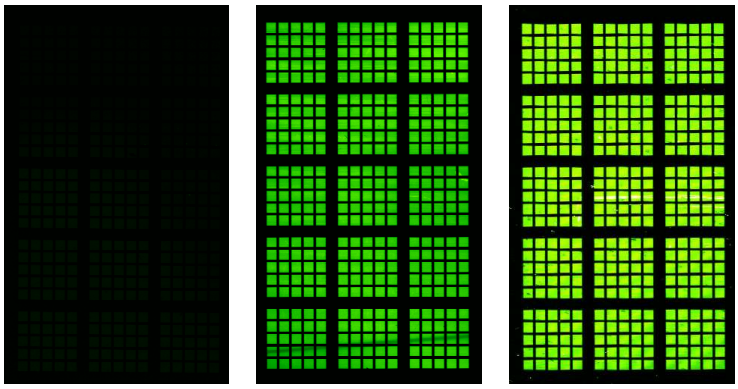
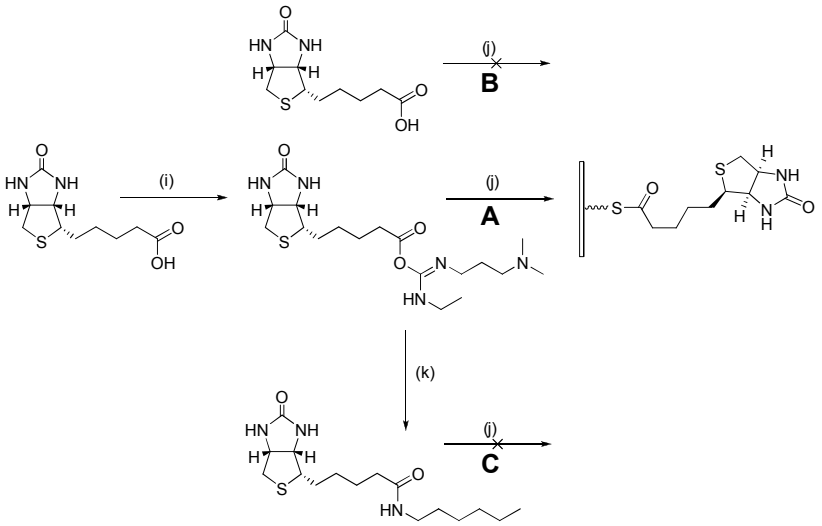


Figure S1. *in situ* DNA synthesis (5'-ACTCTTGCAGGTCATCGGC$(T)_{15}$-3') on amorphous carbon (aC) substrates followed by hybridization of a fluorescently labeled complement (5'-GCCGATGACCTGCAAGAGT-FAM-3') to the DNA array. (A) unmodified aC; (B) 9-decene-1-ol functionalized aC; (C) $(EG)_4$ functionalized aC.




Scheme S1. Schematic illustration showing the derivatization of biotin followed by surface coupling. Reagents and conditions: (i) N-(3-dimethylaminopropyl)-N'-ethylcarbodiimidie hydrochloride, 4, 4-di(methylamino)pyridine, N, N-Dimethylformamide, room temperature, 2 h; (j) biotin or biotin derivatives in DMF as exposure solvent; (k) hexylamine, room temperature, 2 h.

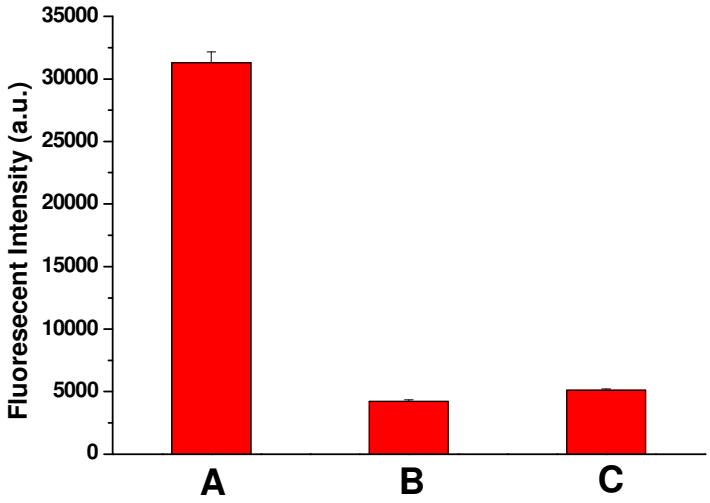



Figure S2. Fluorescence intensities after FITC-avidin staining of biotin functionalized surfaces. Letters on the bottom correspond to routes of biotin derivatization employed in Scheme S1. (A) EDC-activated biotin in DMF as exposure solvent; (B) free biotin in DMF as exposure solvent; (C) EDC-activated biotin followed by quenching by adding hexylamine in DMF as exposure solvent.