Supporting Information

Zinc Finger Protein Arrays in an Epoxy-Functionalized, Pump-Free Microfluidic Device for Amplification-Free, Colorimetric Detection of Double-Stranded DNA

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Non-target DNA
Forward oligonucleotide: 5'-GAC **TGC ATC CAG AGC AGT TCT GCG TTT TGT CAC TGT CAC** GGG-3'
Reverse oligonucleotide: 5'-CCC **GTG ACA GTG ACA AAA CGC AGA ACT GCT CTG GAT GCA** GTC-3'

Irrelevant DNA
Forward oligonucleotide 5'-GGC **TTT CCA CAC CGC CCA CGC** GGG-3'
Reverse oligonucleotide: 5'-CCC **GCG TGG GCG GTG TGG AAA** GCC-3'

Fig. S1 Sequences of DNA oligonucleotides for non-target and irrelevant DNA with ZFP binding sites shown in bold.

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   1 atgaagtgta tattatttaa atgggtactg tgcctgttac tgggtttttc ttcggtatcc
  61 tattcccggg aatttacgat agacttttcg actcaacaaa gttatgtctc ttcgttaaat
 121 agtatacgga cagagatatc gacccctctt gaacatatat ctcaggggac cacatcggtg
 181 tctgttatta accacacccc accgggcagt tattttgctg tggatatacg agggcttgat
 241 gtctatcagg cgcgttttga ccatcttcgt ctgattattg agcaaaataa tttatatgtg
 301 gccgggttcg ttaatacggc aacaaatact ttctaccgtt tttcagattt tacacatata
 361 tcagtgcccg atgtgacaac ggtttccatg acaacggaca gcagttatac cactctgcaa
 421 cgtgtcgcag cgctggaacg ttccggaatg caaatcagtc gtcactcact ggtttcatca
 481 tatctggcgt taatggagtt cagtggtaat acaatgacca gagatgcatc cagagcagtt
 541 ctgcgttttg tcactgtcac agcagaagcc ttacgcttca ggcagataca gagagaattt
 601 cgtcaggcac tgtctgaaac tgctcctgtg tatacgatga cgccgggaga tgtggacctc
 661 actctgaact gggggcgaat cagcaatgtg cttccggagt atcggggaga ggatggtgtc
 721 agagtgggga gaatatcctt taataatata tcagcgatac tgagtactgt ggccgttata
 781 ctgaattgcc atcatcaggg ggcgcgttct gttcgcgccg tgaatgaaga gagtcaacca
 841 gaatgtcaga taactggcga caggcccgtt ataaaaataa acaatacatt atgggaaagt
 901 aatacagcag cagcgtttct gaacagaaag tcacagtttt tatatacaac gggtaaataa
 961 aggagttaag tatgaagaag atgtttatgg cggttttatt tgcattagtt tctgttaatg
1021 caatggcggc ggattgcgct aaaggtaaaa ttgagttttc caagtataat gagaatgata
1081 cattcacagt aaaagtggcc gggaaagaat actggaccag tcgctggaat ctgcaaccgt
1141 tactgcaaag tgctcagctg acaggaatga ctgtcacaat caaatccagt acctgtgaat
1201 caggctccgg atttgctgaa gtgcagttta attttgaatg a
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Fig. S2 Location of target regions of ZFP stx2_233 (cyan) and stx2_268 (pink) in the *stx2* gene present in *E. coli* O157; a non-target region (grey) in the *stx2* gene.

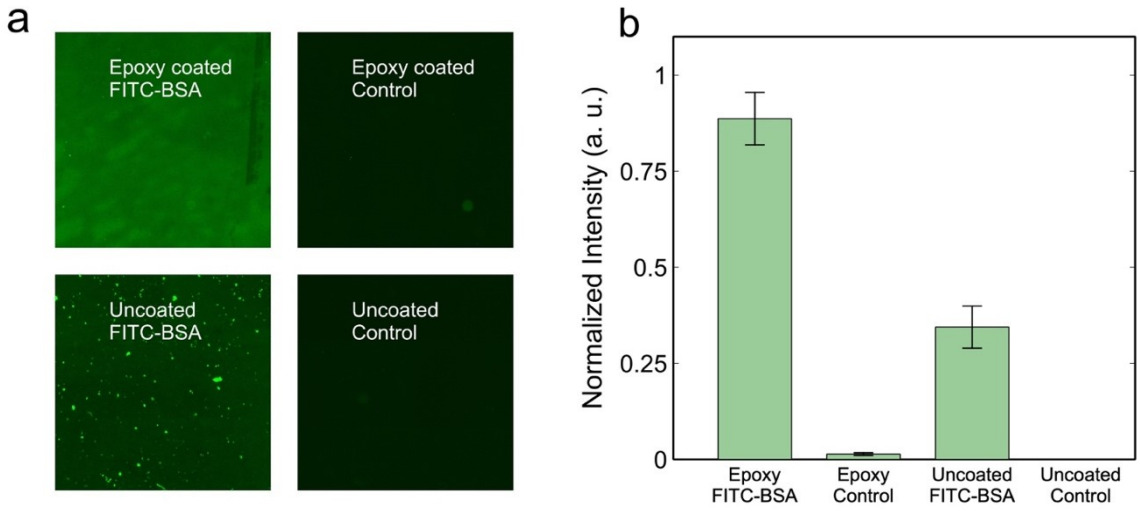

Fig S3. Protein retention on epoxy-functionalized and uncoated glass surfaces. (a) Representative fluorescence images of FITC-BSA adsorbed onto epoxy-functionalized glass and uncoated glass substrates following incubation and washing. (b) Quantification of normalized fluorescence intensity from the images in (a). Epoxy-functionalized surfaces exhibit substantially higher and more uniform retained signal compared to uncoated glass, while control samples show minimal background. Data represent mean ± standard error.