## **Supporting Information**

## Development of a Protein Microarray Chip with Enhanced Fluorescence for Identification of Semen and Vaginal Fluid

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**Figure S1.** Comparison of measured fluorescence intensity of streptavidin-Cy5 spots just after spotting process (before washing) on bare glass substrate (reference), and vertical Ag nanorods MEF substrate.



**Figure S2**. Comparison of measured fluorescence intensity of streptavidin-Cy5 spots after the washing process on bare glass substrate (reference), and vertical Ag nanorods MEF substrate.



**Figure S3.** Schematic of the procedure to produce amine bond on the Ag nanorods MEF substrate and the activation of EDC group on the antibody for generating stable amide bond.



**Figure S4**. The representative X-Ray Photoelectron Spectroscopy (XPS) spectra analysis of the surfaces of the Bare Ag MEF substrate and amine functionalized Ag MEF substrate.