Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Antibody-Modified Hydroxyapatite Surfaces for the Efficient Capture of Bladder Cancer Cells within Patient's Urine without Recourse to Any Sample Pre-treatment

Wei Zhang,[a,b] Kai Zhao [c] Craig E. Banks [*, d] and Ying Zhang [*, a]

[a.] *College of Science, Huazhong Agricultural University, Wuhan 430072, P.R. China. E-mail: zhangying84@mail.hzau.edu.cn*
[b] *Wuhan Institute of Marine Electric Propulsion, Wuhan 430064, P.R. China.*
[c] *Huazhong University of Science and Technology Tongji Medical College, Wuhan 430030, P.R. China.*
[d] *Faculty of Science and Engineering, Manchester Metropolitan University, Chester Street, Manchester M1 5GD, UK.*

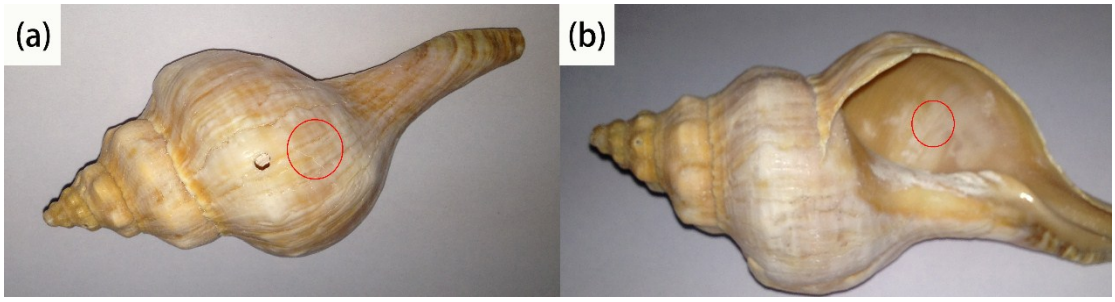

Figure S1. The outer (a) and inner surface (b) of conch shell as defined within this work.

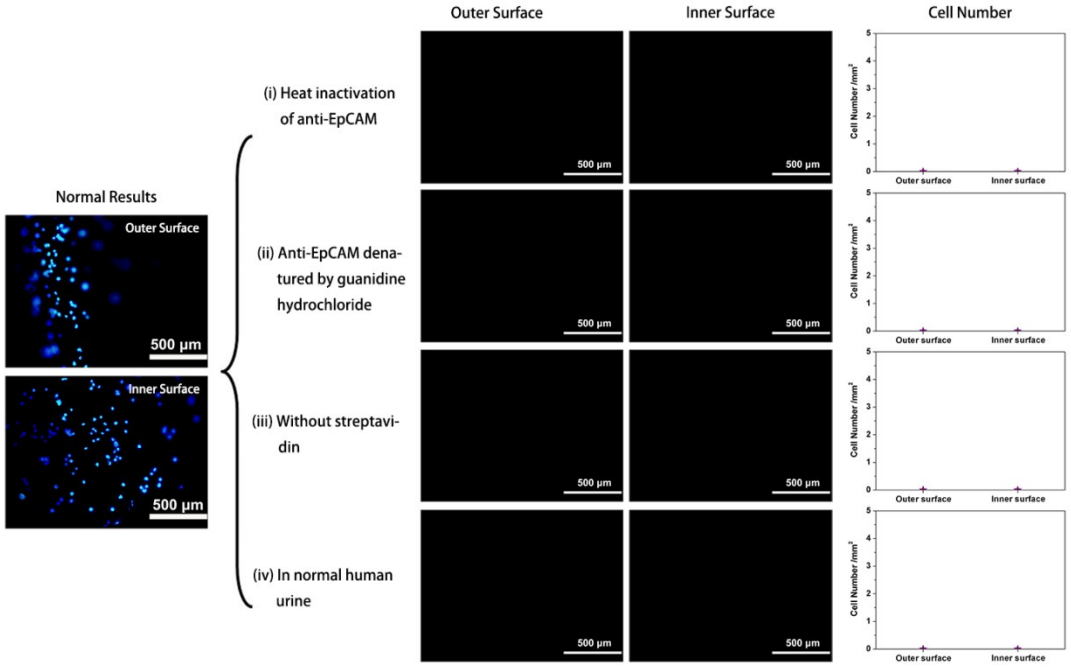

Figure S2. Fluorescence characterization and cell number statistical results of control groups for cell-capture experiments. Herein, the normal human urine samples collected from 25 normal people were utilized for parallel experiment, aimed to find out the interferences in urine environment. The whole process was kept pace with that for the patient urine. (p<0.05)

Table S1. Corresponding disease information to the urine samples used within this work.

Sample No. [a)]	Gender of patient	Age of patient	Region of patient	Urine appearance	Disease	Grade/ stage
BC-1	Male	50	Hubei	Clear	Bladder cancer	G3/ T2
BC-2	Male	87	Hubei	Blood	Bladder cancer	G3/ T3
BC-3	Female	64	Hubei	Clear	Bladder caner	G3/T2
BP-1	Male	72	Hubei	Blood	Bladder polyp	/
BC-4	Female	57	Hubei	Cloudy	Bladder cancer	G1/T1
BC-5	Female	67	Hubei	Clear	Bladder cancer	G3/ T2
BPH-1	Male	77	Hubei	Cloudy	Benign prostatic hyperplasia	/
BC-6	Male	81	Jiangxi	Clear	Bladder cancer	G3/T2
BC-7	Female	72	Jiangxi	Clear	Bladder cancer	G1/T1
BC-8	Male	28	Jiangxi	Blood	Bladder cancer	G1/T1
BC-9	Male	62	Jiangxi	Clear	Bladder cancer	G1/T1
BC-10	Male	63	Jiangxi	Cloudy	Bladder cancer	G3/T1
BC-11	Female	47	Jiangxi	Cloudy	Bladder cancer	G3/T2
BC-12	Male	72	Jiangxi	Cloudy	Bladder cancer	G3/T3
BC-13	Male	63	Jiangxi	Clear	Bladder cancer	G3/T1
BC-14	Female	\	Henan	Blood	Bladder cancer	High-level non invasion
BC-15	Female	43	Henan	Clear	Bladder cancer	G1/T1
BC-16	Male	41	Henan	Clear	Bladder cancer	G1/T1
BC-17	Female	45	Henan	Blood	Bladder cancer	G3/T2
BC-18	Male	66	Henan	Cloudy	Bladder cancer	G1/T1
BC-19	Male	56	Henan	Blood	Bladder cancer	G3/T3
BC-20	Male	66	Henan	Cloudy	Bladder cancer	Low potential

a) Fresh morning urine

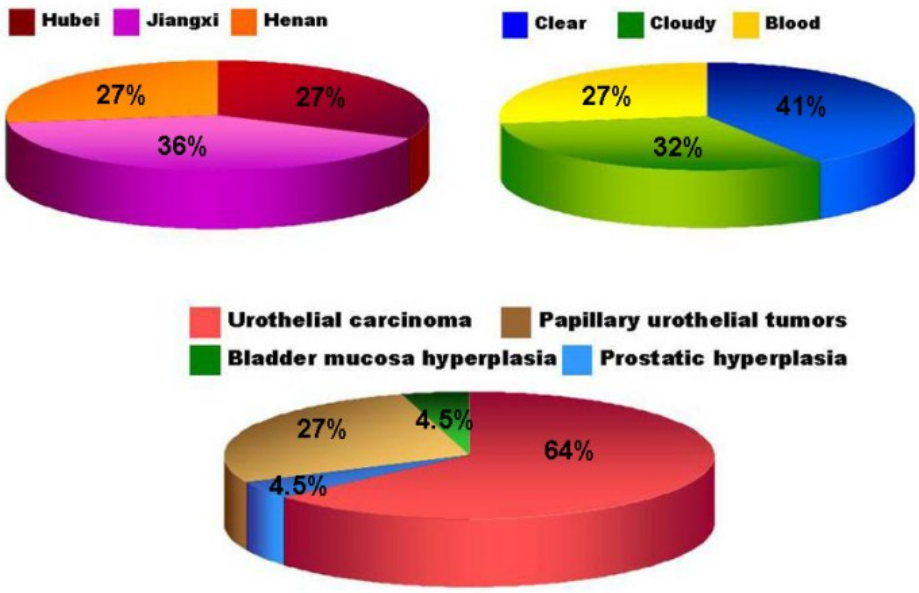

Figure S3. Classification of patients' urine samples

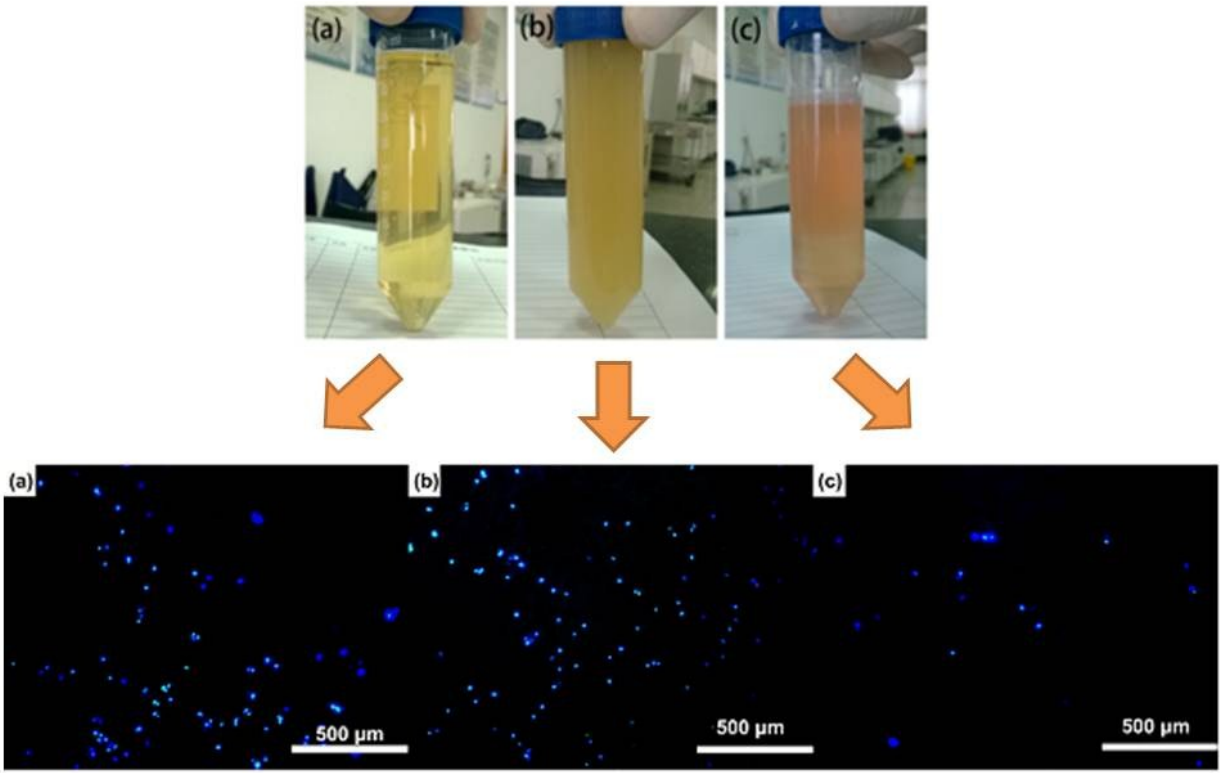

Figure S4. Three typical appearances of urine samples used in this research and corresponding typical fluorescence micrographs: (a) clear (normal), (b) cloudy and (c) blood (*gross hematuria*).