

Supplementary material

Construction and Application of A New Cell Electrochemical Detecting System

Based on the Hyposmotic Principle

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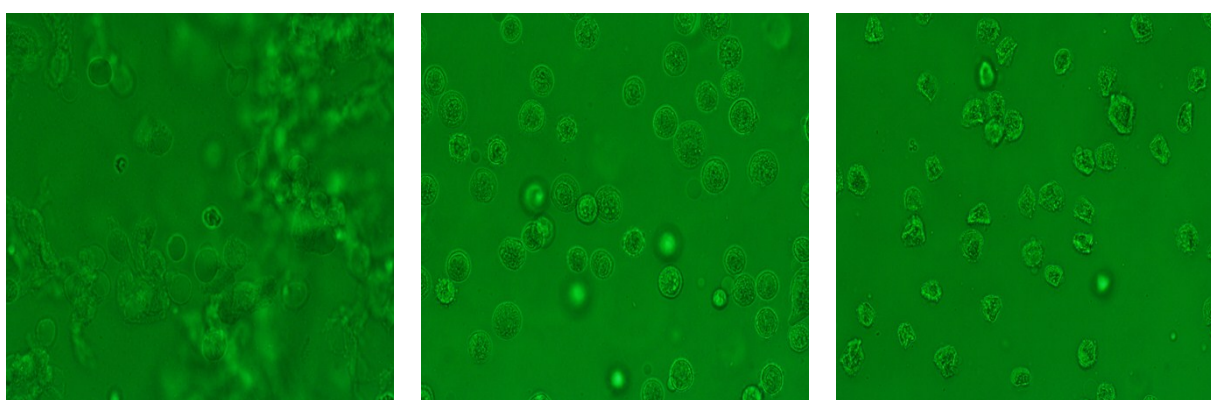


Fig. S1 Micrographs of the fragmented MCF-7 cell suspension in the (a) hypo-CDS, (b) iso-CDS and (c) hyper-CDS. Cell concentration, 5×10^6 cells mL^{-1} .

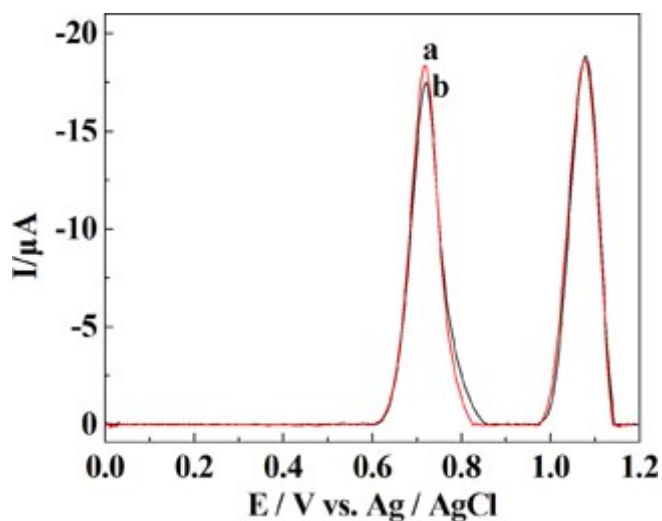


Fig. S2 Baseline-corrected LSV of the fragmented MCF-7 cell suspension (a) with and (b) without ultrasonic treatment. Cell concentration, 5×10^6 cells mL^{-1} .

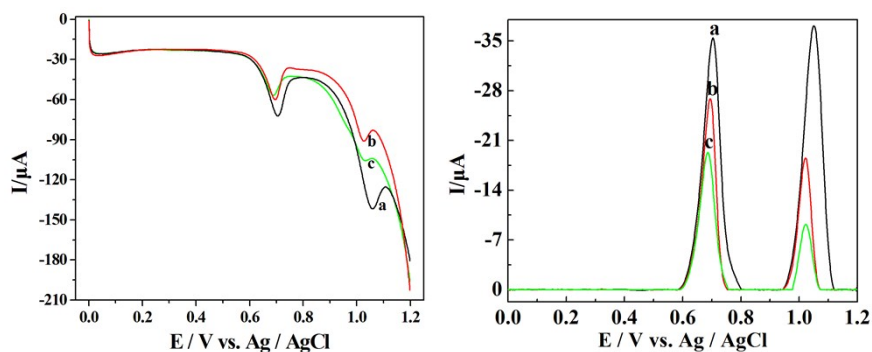


Fig. S3 The original figure and baseline-corrected of LSVs of the fragmented MCF-7 cell suspension in the (a) hypo-CDS, (b) iso-CDS and (c) hyper-CDS. Cell concentration, 5×10^6 cells mL^{-1} .

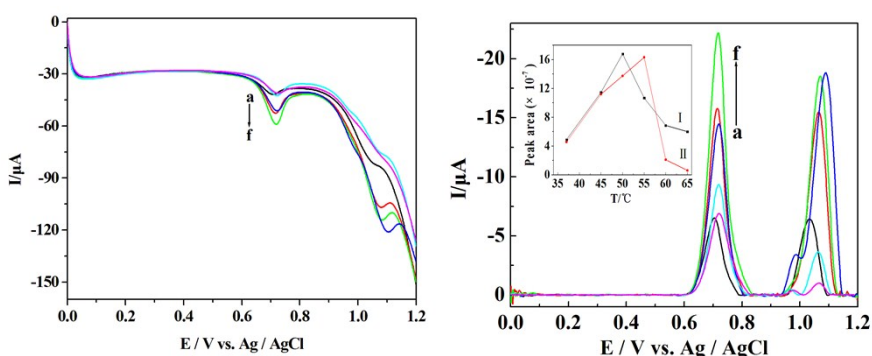


Fig. S4 (A) The original figure and baseline-corrected of LSVs in the hypo-CDS with the different fragmented temperature: a) 37 °C, (b) 65 °C, (c) 60 °C, (d) 45 °C, (e) 55 °C, and (f) 50 °C.

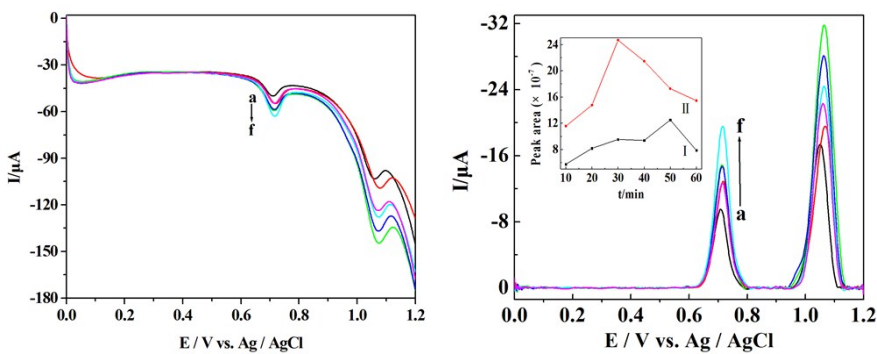


Fig. S4 (B) The original figure and baseline-corrected of LSVs in the hypo-CDS with the different fragmented time: (a) 10 min, (b) 60 min, (c) 20 min, (d) 40 min, (e) 30 min, and (f) 50 min. Cell concentration, 5×10^6 cells mL^{-1} .

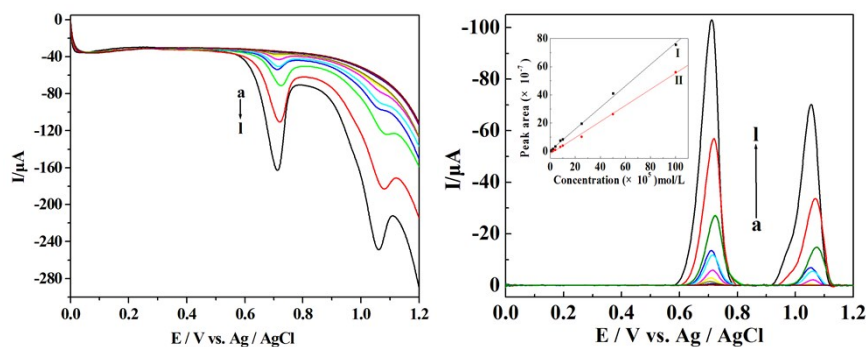


Fig. S5 (A) The original figure and baseline-corrected of LSVs in the hypo-CDS at different concentration, (a) 1.0×10^4 , (b) 2.5×10^4 , (c) 5.0×10^4 , (d) 1.0×10^5 , (e) 2.0×10^5 , (f) 4.0×10^5 , (g) 8.0×10^5 , (h) 1.0×10^6 , (i) 2.5×10^6 , (j) 5.0×10^6 , (k) 8.0×10^6 , and (l) 1.0×10^7 cells mL^{-1} .

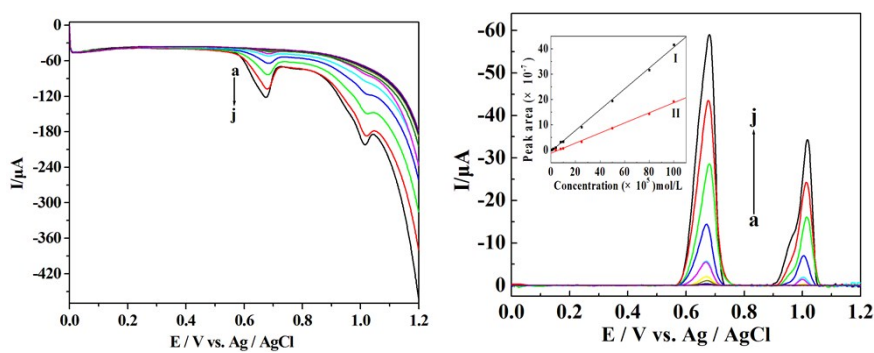


Fig. S5 (B) The original figure and baseline-corrected of LSVs in the hyper-CDS at different concentration, (a) 5×10^4 , (b) 1.0×10^5 , (c) 2.0×10^5 , (d) 4.0×10^5 , (e) 8.0×10^5 , (f) 1.0×10^6 , (g) 2.5×10^6 , (h) 5.0×10^6 , (i) 8.0×10^6 , and (j) 1.0×10^7 cells mL^{-1} .

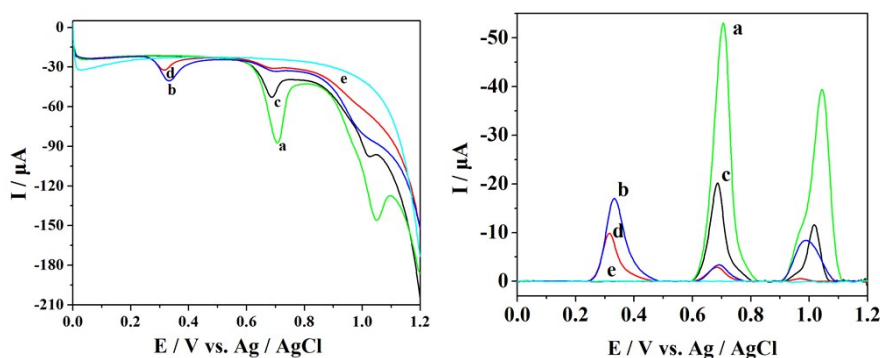


Fig. S6 The original figure and baseline-corrected of LSVs in the hypo-CDS (a) without and (b) with XO; LSVs in the hyper-CDS (c) without and (d) with XO; (e) XO.

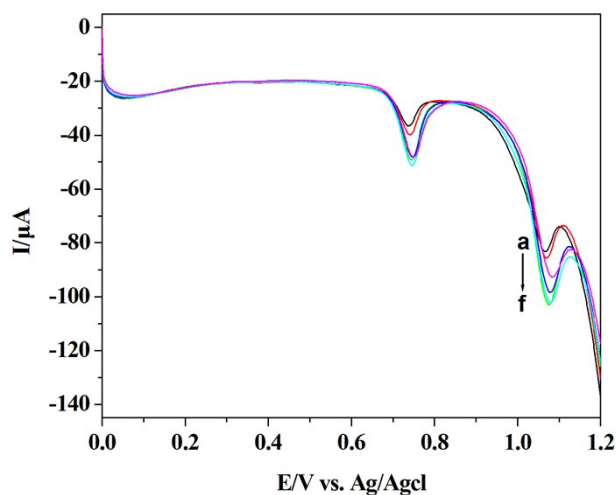


Fig. S7 LSVs in the iso-CDS with the different fragmented time: (a) 10 min, (b)20 min, (c)60 min, (d) 50 min, (e) 40 min, and (f) 30 min.

Table S1 The peak area and concentration of purine in the fragmented MCF-7 cell suspension.

| | G/X | A/H | G | X | A | H |
|---|----------------------|----------------------|----------------------|-----------------------------------|---------------------|-----------------------------------|
| S ^a ($\times 10^{-7}$) | 13.59(± 0.384) | 6.46(± 0.283) | 2.13(± 0.041) | 11.46(± 0.384) ^e | 0.28(± 0.000) | 6.46(± 0.312) ^e |
| S ^b ($\times 10^{-7}$) | 38.06(± 0.384) | 31.92(± 0.283) | 2.60 (± 0.041) | 35.46(± 0.384) ^e | 8.30(± 0.000) | 23.62(± 0.312) ^e |
| C ^c ($\mu\text{mol L}^{-1}$) | | | 3.785 | 10.174 | 2.468 | 10.787 |
| C ^d ($\mu\text{mol L}^{-1}$) | | | 4.175 | 31.973 | 11.469 | 33.883 |

^a Peak area for heated fragmented, ^b Peak area for composite fragmented, ^c Calculated concentration for heated fragmented, ^d Calculated concentration for composite fragmented, ^e $S_X = S_{G/X} - S_G$, $S_H = S_{A/H} - S_A$.