

## Electronic Supplementary Information

### Remarkable increase in luminol electrochemiluminescence by sequential electroreduction and electrooxidation

Xiaoyun Liu,<sup>a,b</sup> Wenjing Qi,<sup>a,c</sup> Wenyue Gao,<sup>a,c</sup> Zhongyuan Liu,<sup>a</sup> Wei Zhang,<sup>a</sup> Ying Gao<sup>b</sup> and  
Guobao Xu<sup>\*,a</sup>

<sup>a</sup> State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, Jilin 130022, China. Fax: +86 431 85262747; Tel: +86 431 85262747; E-mail: guobaoxu@ciac.ac.cn

<sup>b</sup> School of Chemistry and Environmental Engineering, Changchun University of Science and Technology, Changchun 130022, PR China.

<sup>c</sup> University of the Chinese Academy of Sciences, Chinese Academy of Sciences, No. 19A Yuquanlu, Beijing 100049, China;

\*Corresponding author: Prof. G. B. Xu

### Experimental Section

**Chemicals and Reagent.** Luminol was obtained from Aldrich and used without any further purification. A  $1.0 \times 10^{-2}$  M stock solution of luminol was prepared by dissolving luminol in 0.2 M NaOH. Luminol working solutions were prepared by diluting the stock solution. Supporting electrolyte was 0.2 M phosphate buffer solution (PBS). Other chemicals were analytical-reagent grade and used as received. Doubly distilled water was used throughout the experiments.

**Apparatus.** Cyclic voltammetric measurements were carried out using a model CHI 660C electrochemical working station (Shanghai CHI Instruments Co., China). ECL was performed using a BPCL ultra-weak luminescence analyzer. All experiments were carried out with a homemade three-electrode electrochemical cell system. The glassy carbon electrode (GCE), platinum wire, and Ag/AgCl (saturated

with KCl) were used as working, counter, and reference electrodes, respectively. All measurements were performed at room temperature.