

# **Electronic Supplementary Information (ESI)**

*for*

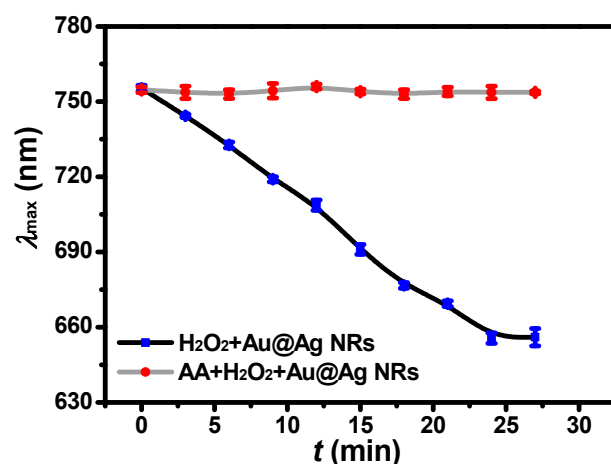
## **Silver coated gold nanorods as optical probe for the sensitive detection of ascorbic acid in tablets**

Shuai Wen <sup>1</sup>, Min Huang <sup>1</sup>, Ru Cheng <sup>1</sup>, Jie Gao <sup>2,\*</sup>, Jian Wang <sup>1,\*</sup>

<sup>1</sup> Key Laboratory of Luminescence Analysis and Molecular Sensing (Southwest University),  
Ministry of Education, College of Pharmaceutical Sciences, Southwest University,  
Chongqing 400715, China

<sup>2</sup> Department of biological and chemical Engineering, Chongqing University of Education,  
Chongqing 400067, China

\* Correspondence: Tel.: +86-23-68254059 (J. W.), Fax: +86-023-68367257 (J. W.), E-mail address:  
gaoj@cque.edu.cn (J. G.); wj123456@swu.edu.cn (J. W.).



**Figure S1.** Time-dependent etching. Conditions: AA, 17.5  $\mu$ M; Au@AgNRs, 50  $\mu$ L; H<sub>2</sub>O<sub>2</sub>, 450  $\mu$ M; Fe<sup>2+</sup>, 0.25 mM; HCl, 0.10 M; T, 45 °C.

**Table S1. 11 sets  $\lambda_{\max}$  of blank samples**

<b>Samples No.</b>	<b><math>\lambda_{\max}</math></b>
1	649
2	649
3	650
4	651
5	650.5
6	648
7	650
8	651
9	649.5
10	650.5
11	648

Conditions: Au@AgNRs, 50  $\mu$ L; H<sub>2</sub>O<sub>2</sub>, 450  $\mu$ M; Fe<sup>2+</sup>; 0.25 mM; HCl, 0.10 M; *t*, 25 min; T, 45 °C.

**Table S2.** Real sample test results detected by iodometry (n=3)

Sample manufacturer	Detected AA in each tablet (g)	Labeled content in each tablet (g)	Percentage of labeled content (%)	RSD (%)
Huazhong Pharmaceutical Co., Ltd	0.09926±0.0002	0.1000	99.26±0.15	0.17
Northeast Pharmaceutical Group Co., Ltd	0.1005±0.0003	0.1000	100.50±0.05	0.08
South China Pharmaceutical Group Co., Ltd	0.09859±0.00032	0.1000	98.59±0.1	0.08

Conditions: acetic acid, 0.1 M; starch indicator solution, 1 mL; iodine, 0.05 M.

**Table S3.** Real sample test results detected by the proposed method (n=3)

Sample manufacturer	Detected AA in each tablet (g)	Labeled content in each tablet (g)	Percentage of labeled content (%)	RSD (%)
Huazhong Pharmaceutical Co., Ltd	0.1014±0.0004	0.1000	101.40±0.4	0.47
Northeast Pharmaceutical Group Co., Ltd	0.1007±0.0011	0.1000	100.70±0.19	0.62
South China Pharmaceutical Group Co., Ltd	0.09825±0.0008	0.1000	98.25±2.38	2.83

Conditions: Au@AgNRs, 50 uL; H<sub>2</sub>O<sub>2</sub>, 450 μM; Fe<sup>2+</sup>; 0.25 mM; HCl, 0.10 M; *t*, 25 min; T, 45 °C.