

## Supporting information for

# Template-Induced Synthesis and Superior Antibacterial Activity of Hierarchical Ag/TiO<sub>2</sub> Composites

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### CAPTIONS:

Fig. S1. SEM image and EDX spectrum of the as- prepared TiO<sub>2</sub>

Fig. S2. EDX spectrum of product obtained without bubbling of CO<sub>2</sub>

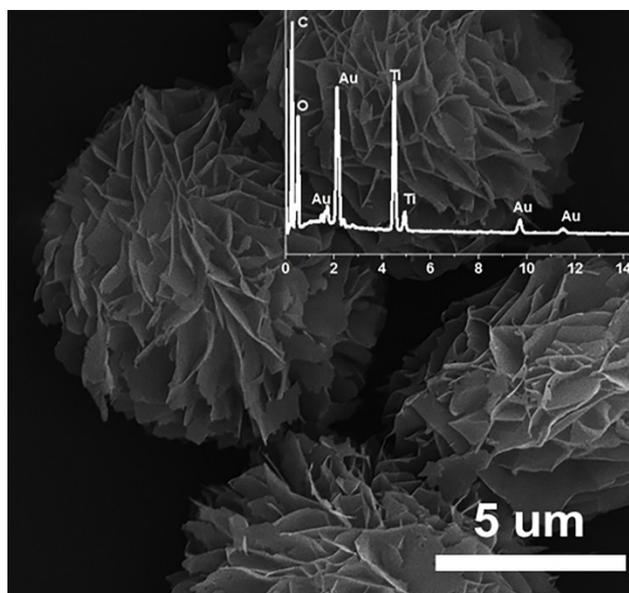
Fig. S3. TG curve of Ag<sub>2</sub>CO<sub>3</sub>/TiO<sub>2</sub>·xH<sub>2</sub>O

Fig. S4. XRD patterns of the 0.01-HAC, 0.1-HAC and 0.5-HAC

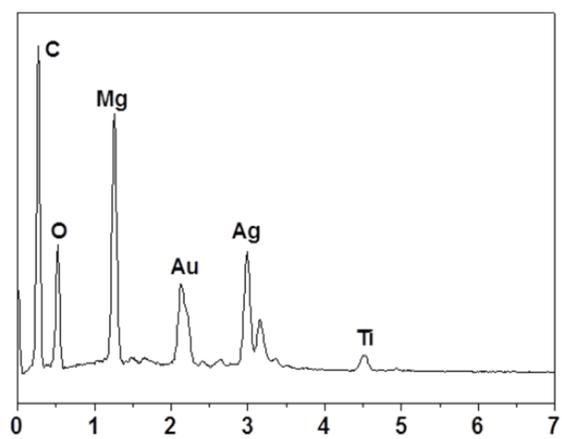
Fig. S5. MICs of Ag@TiO<sub>2</sub> composite against (a) *E.coli* (b) *S.aureus*. (Insets: the optical images of bacteria with different concentration of Ag/TiO<sub>2</sub>)

Fig. S6. Diffuse reflectance spectra of the Ag/TiO<sub>2</sub> and as-prepared TiO<sub>2</sub>.

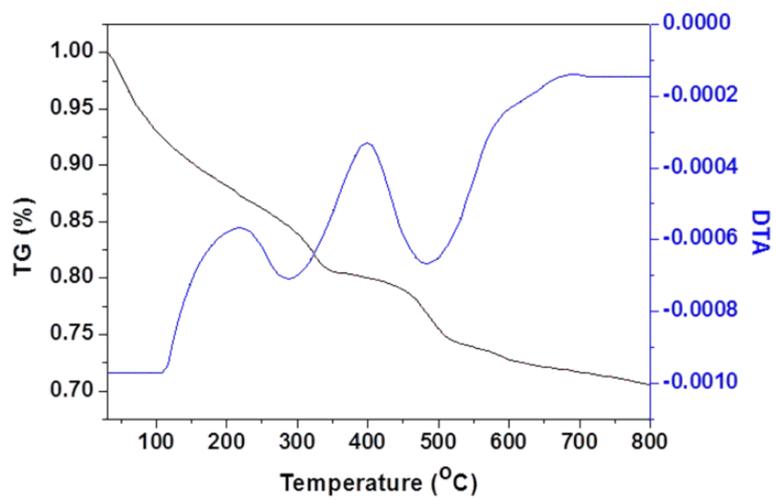
Fig. S7 Fluorescence spectra of TAOH obtained by the reaction of TA with •OH radicals generated by as-prepared TiO<sub>2</sub> and Ag /TiO<sub>2</sub> composite under visible-light irradiation for 20 min



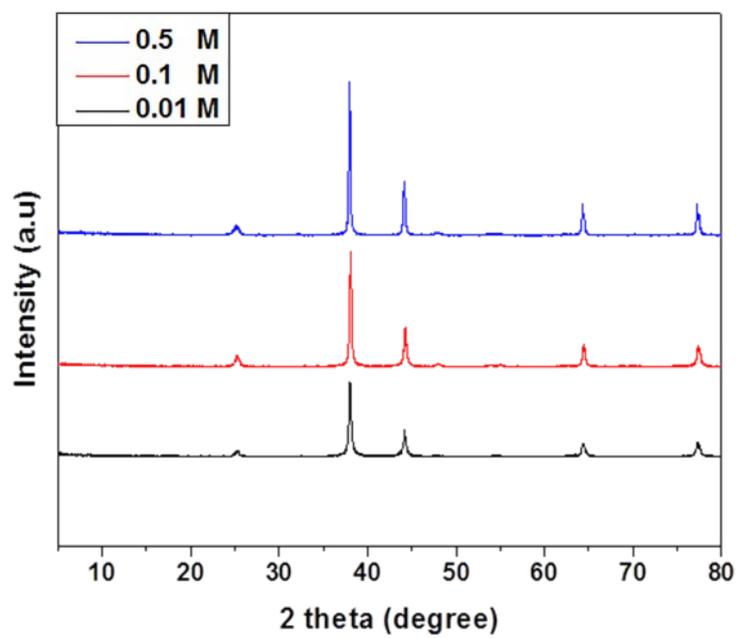
**Fig. S1.** SEM image and EDX spectrum of the as- prepared TiO<sub>2</sub>



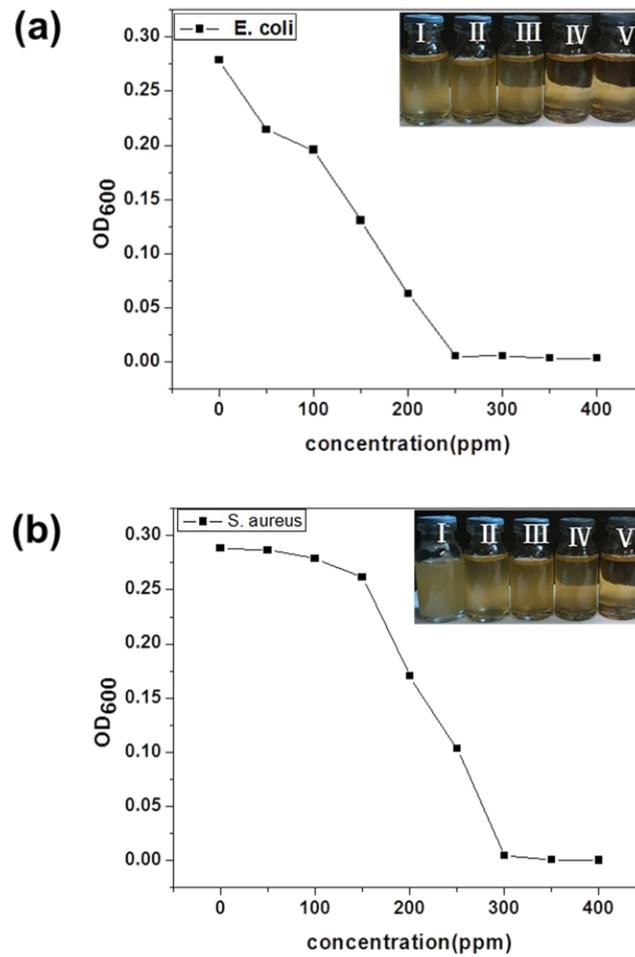
**Fig. S2.** EDX spectrum of product obtained without bubbling of CO<sub>2</sub>



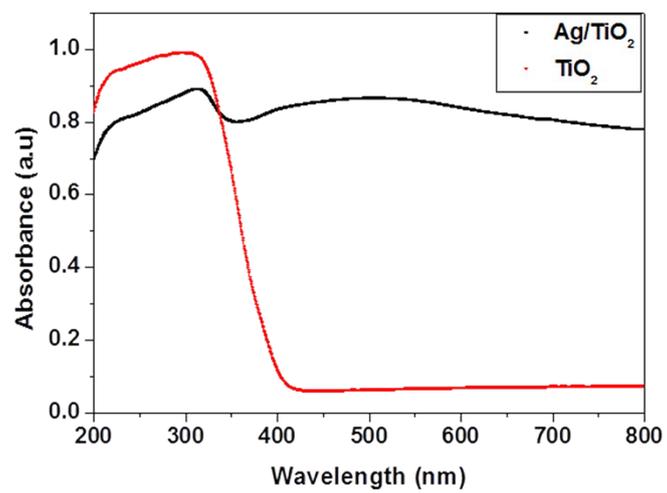
**Fig. S3.** TG curve of  $\text{Ag}_2\text{CO}_3/\text{TiO}_2 \cdot x\text{H}_2\text{O}$



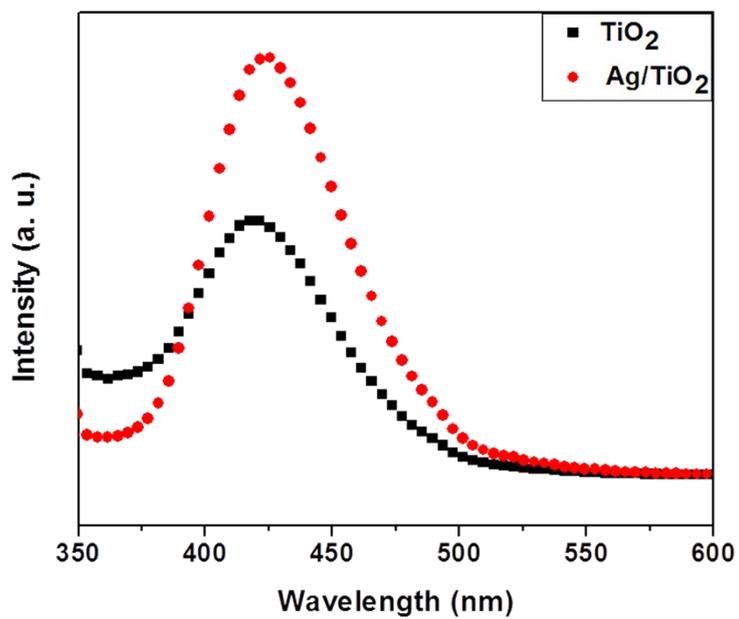
**Fig. S4.** The XRD patterns of the 0.01-HAC, 0.1-HAC and 0.5-HAC



**Fig. S5.** MICs of Ag/TiO<sub>2</sub> composite against (a) *E. coli* (b) *S. aureus*. (Insets: the optical images of bacteria with different concentration of Ag/TiO<sub>2</sub>).



**Fig. S6** Diffuse reflectance spectra of the Ag/TiO<sub>2</sub> and as-prepared TiO<sub>2</sub>.



**Fig. S7.** Fluorescence spectra of TAOH obtained by the reaction of TA with  $\bullet\text{OH}$  radicals generated by as-prepared  $\text{TiO}_2$  and  $\text{Ag}/\text{TiO}_2$  composite under visible-light irradiation for 20 min.