Supporting Information

Efficient Base-Free Direct Oxidation of Glucose to Gluconic

Acid over TiO₂-Supported Gold Clusters

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Fig. S1. The adsorption-desorption curve (left panel) and Brunauer–Emmett–Teller plot (right panel) of the Au/TH-150 sample.



Fig. S2. TEM images of a) Au/TH-150, b) STEM images of Au/TH-150, c) and d) Au/TH-150 without anthranilic acid.



Fig. S3 TPR profiles for a) H_2 consumption and b) H_2O production of Au/TH-200 and Au/TA-200.



Fig. S4. HPLC analysis of the reaction mixture at different reaction time in the aerobic oxidation of D-glucose into gluconic acid. Test conditions: Shodex SH1011 column, 10 mM acetic acid as the mobile phase of 0.5 mL/min at 303 K, and using the refractive index (RI) as the detector. The retention time for gluconic acid and D-glucose is ca. 12.65 and 13.67 min.



Fig. S5. The retention time curves of gluconic acid, D-glucose, and fructose.



Figure S6. Au4f XPS spectra of the spent Au/TH-200 catalysts.