

Electronic Supplementary Material

Polysorbate 40-Stabilized Gold Nanoparticles for Colorimetric Assay for Cyanogenic Glycoside in Plant

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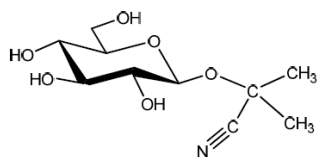
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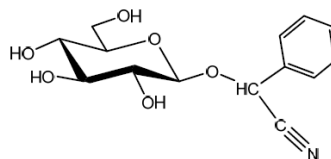
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Linamarin



Prunasin



Amygdalin

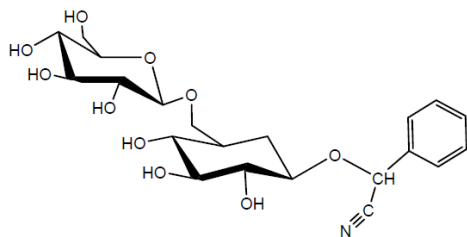


Fig. S1. Chemical structures of linamarin, prunasin, and amygdalin.

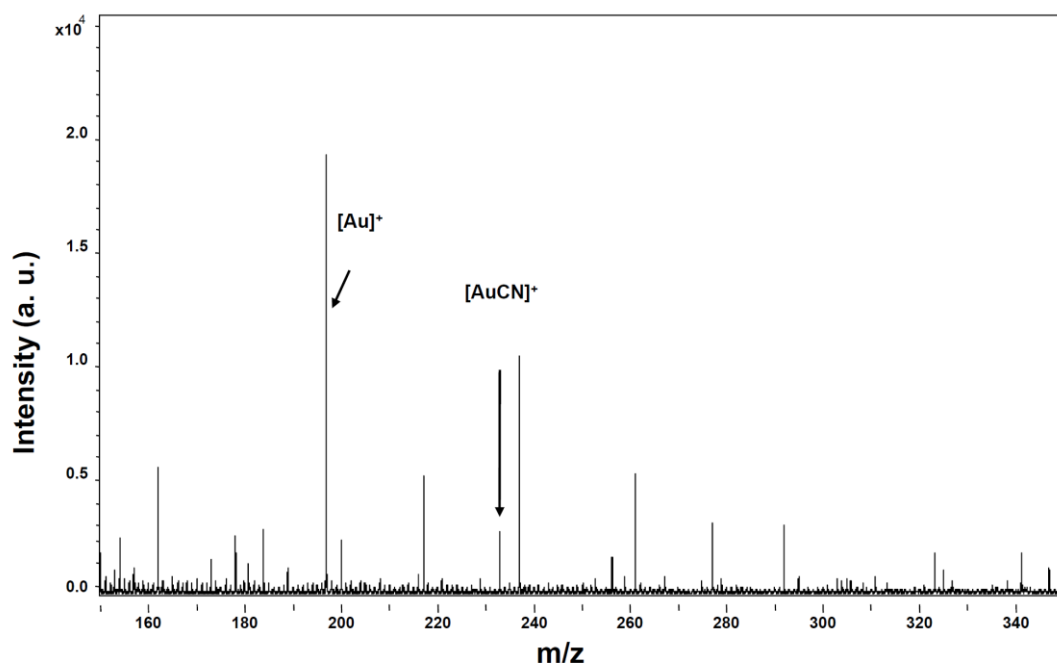


Fig. S2. SALDI spectrum of a solution of 5x PBS, 1 nM PS 40-AuNPs and 5 μ M cyanide.

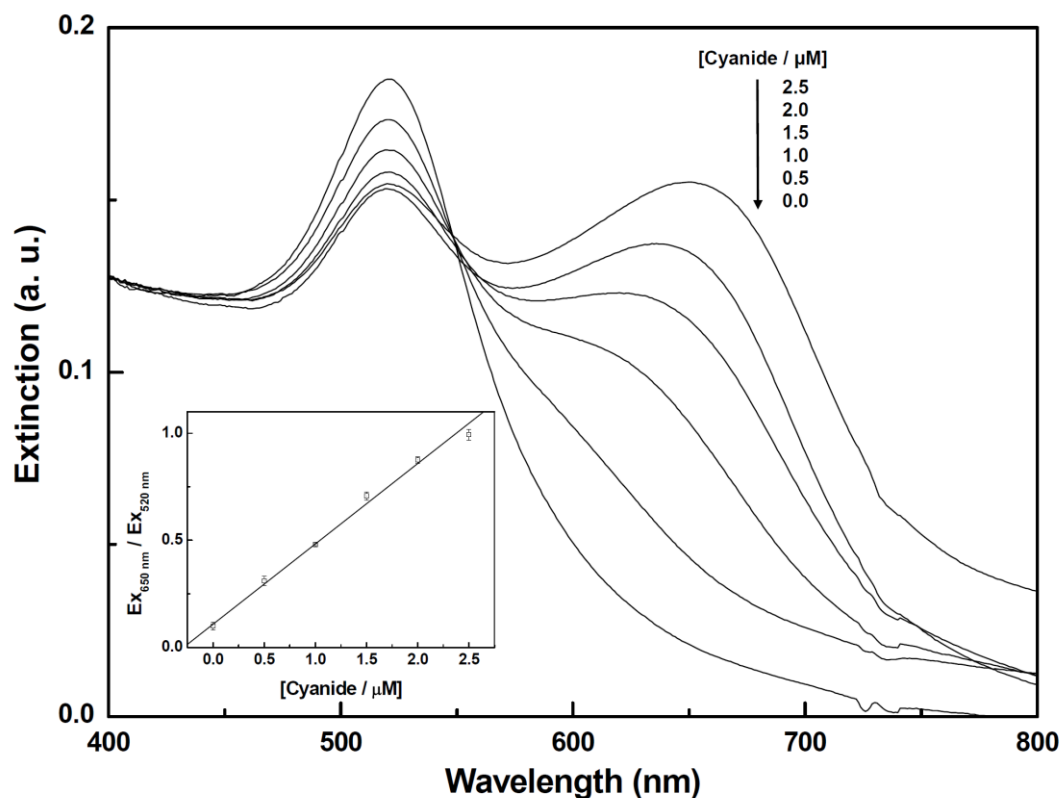


Fig. S3. Determination of cyanide content in loquat kernel (0.2 g) using PS 40-AuNPs. Samples were ground into powders and then incubated with deionized water for 1 h. After centrifugation, the supernatants containing released cyanide were spiked with standard solutions of 0–625 μM cyanide. The resulting solutions were diluted to 250-fold with deionized water. A portion of the solution was incubated with a solution containing 5x PBS and 1 nM PS 40-AuNPs for 30 min. Inset: a plot of $\text{Ex}_{600 \text{ nm}}/\text{Ex}_{520 \text{ nm}}$ versus the concentration of cyanide. The error bars represent standard deviations based on three independent measurements.

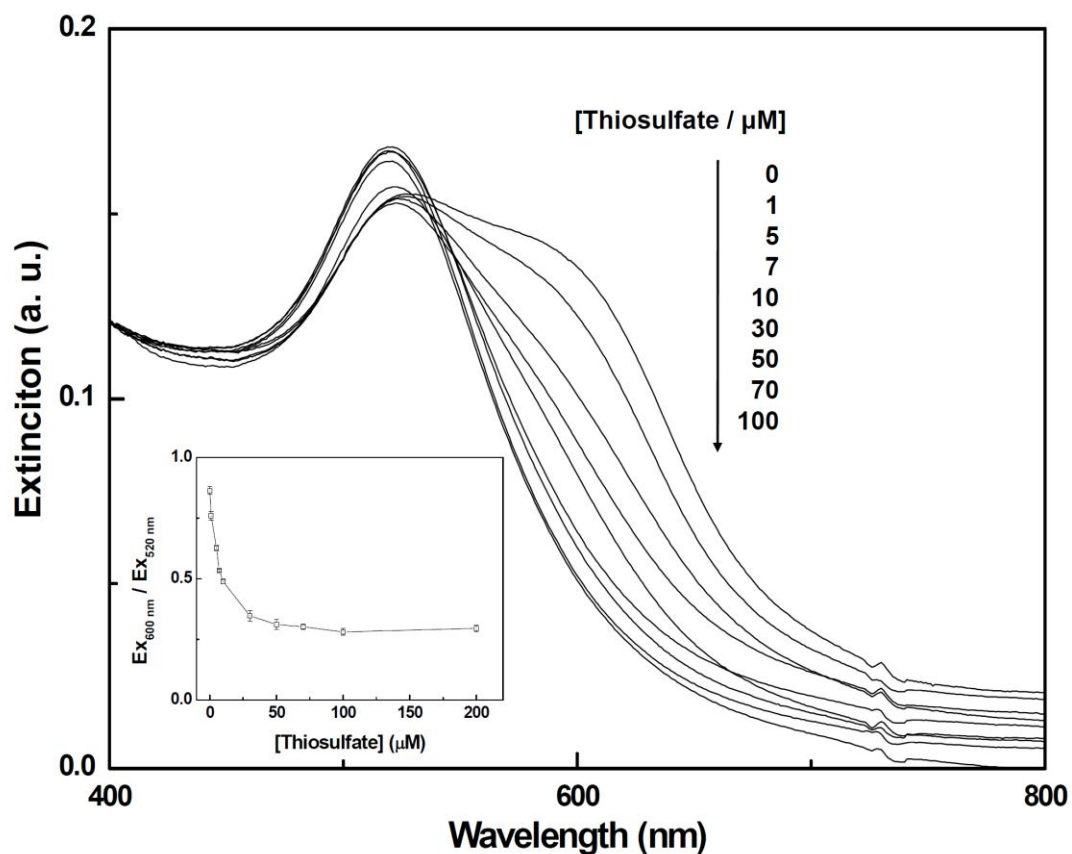


Fig. S4. Effect of the concentration of thiosulfate on the detoxification of the released cyanide from peach kernel (2 g). Samples were ground into powders and then incubated with deionized water for 1 h. After centrifugation, the supernatants were diluted to 10-fold with deionized water. A portion of the solution (180 μL) was reacted with a 20 μL of 0–200 μM thiosulfate for 10 min. The resulting solution incubated with a solution containing 5x PBS and 1 nM PS 40-AuNPs for 30 min.

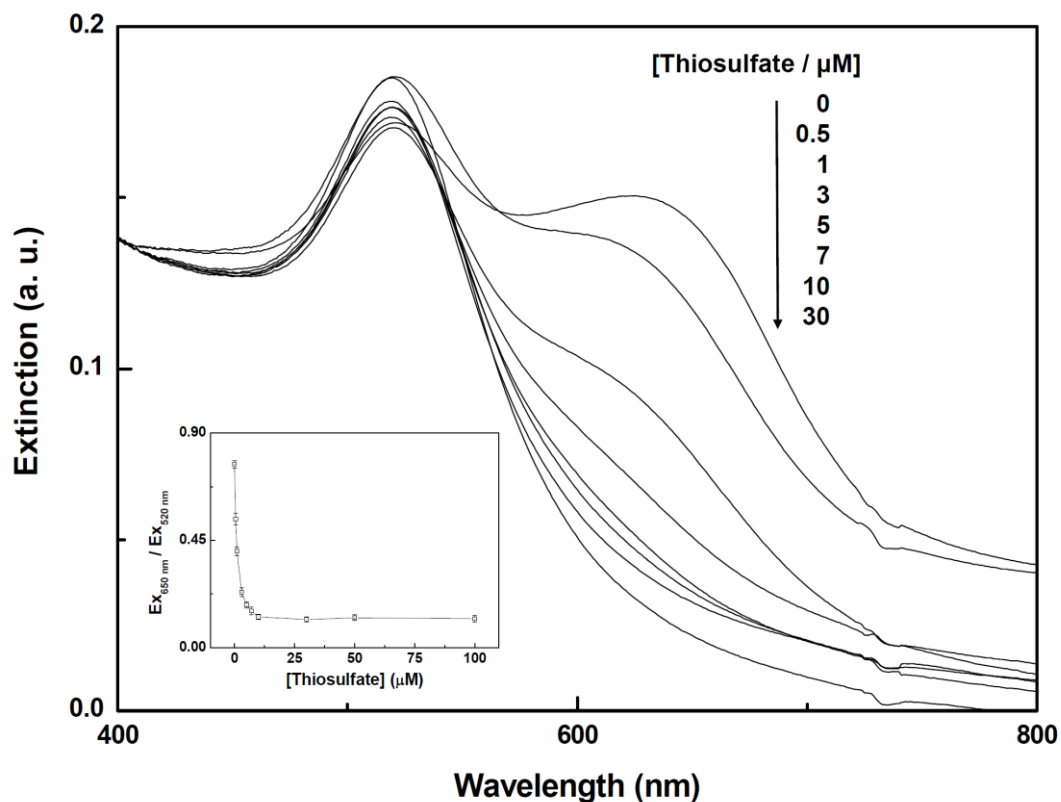


Fig. S5. Effect of the concentration of thiosulfate on the detoxification of the released cyanide from loquat kernel (0.2 g). Samples were ground into powders and then incubated with deionized water for 1 h. After centrifugation, the supernatants were diluted to 100-fold with deionized water. A portion of the solution (180 μL) was reacted with a 20 μL of 0–100 μM thiosulfate for 10 min. The resulting solution incubated with a solution containing 5x PBS and 1 nM PS 40-AuNPs for 30 min.