Supporting Information

Straightforward green synthesis of “naked” aqueous silver nanoparticles

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Figure 1S. Extinction spectra of Ag(acac) and Hacac in water
**H$_2$O$_2$ detection.**

H$_2$O$_2$ was detected by a highly sensitive (detection limit on the order of the nanomoles) spectrophotometric assay\(^1\) based on the reduction of ferricyanide by H$_2$O$_2$ according to the reaction:

\[
2[\text{Fe(CN)}_6]^{3-} + \text{H}_2\text{O}_2 \rightarrow 2[\text{Fe(CN)}_6]^{4-} + 2\text{H}^+ + \text{O}_2
\]

and subsequent reaction of the ferrocyanide with ferric chloride to form the highly absorbing Prussian blue. Briefly, after the formation of the AgNPs was complete, the final solution (3 mL) was added of 100 µL of an aqueous solution containing equal parts of 0.8% K$_3$Fe(CN)$_6$ and 0.4% FeCl$_3$ and, after 2 min, an absorption spectrum was run. Figure 2S shows representative results of the assay performed on a solution of Ag(acac) at the end and, for comparison, at the beginning of its thermal decomposition leading to AgNPs. The observation of the typical, absorption spectrum of the Prussian blue extending in the visible region with maximum at ca. 730 nm only in the former case confirmed the generation of H$_2$O$_2$ during the AgNPs formation.

![Graph](attachment:image.png)

**Figure 2S.** Absorption spectra recorded before (a) after (b) addition of 100 µL of an aqueous solution of 0.8% K$_3$Fe(CN)$_6$ and 0.4% FeCl$_3$ to 3 mL of aqueous AgNPs. The absorption spectra of a solution of unreacted Ag(acac) before (c) and after (d) addition of the same amount of iron salts, is also shown as a control experiment.