

## **Supplemental Information**

*“Critical Concentrations and Role of Ascorbic Acid (Vitamin C) in the Crystallization of Gold Nanorods within CTAB/TOAB*

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**Table 2** showing the yield of nanorods and other shapes produced at various concentrations of (a) H<sub>2</sub>A and (b) HA<sup>-</sup>. Average particle lengths are also given for nanorods.

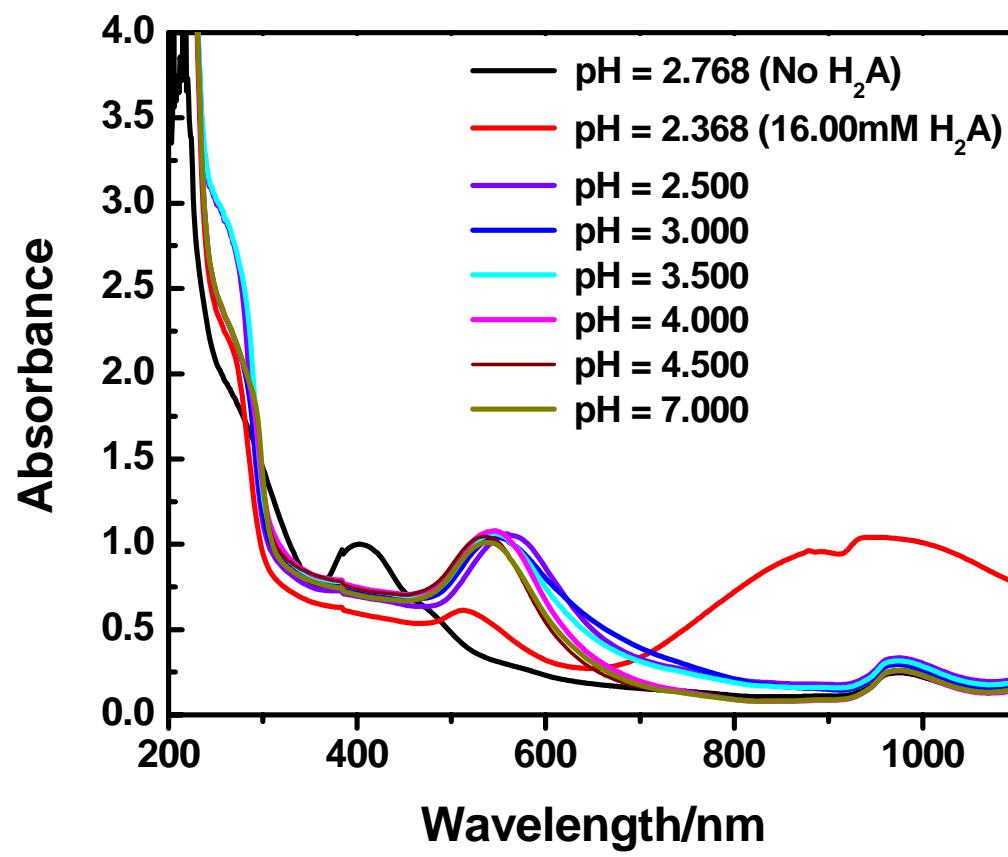
**Figure 8** Effect of initial pH of the reaction on the shape of Au nanoparticles. AuNRs form when H<sub>2</sub>A is but no other acid or base (HCl or NaOH) was added. All other pH values lead to the formation of cubic, hexagonal and millet-like structures.

**Figure 9** Histograms of size distributions of AuNRs for samples B, C, D, E, F, G, H, and I. Mean size and the best fit Gaussian curve are shown.

**Table 2**

a. $[H_2A]/10^{-3}M$	Yield of Nanorod ( $\pm 3\%$ )	Yield of other shapes ( $\pm 3\%$ )	Average Length of Nanorods / nm
2.00	60	40	$27 \pm 4$
4.00	81	19	$30 \pm 5$
8.00	88	12	$37 \pm 6$
12.00	93	7	$54 \pm 6$
16.00	95	5	$73 \pm 9$
20.00	95	5	$58 \pm 7$
30.00	89	11	$51 \pm 6$
40.00	62	38	$20 \pm 4$
b. $[HA^-]/10^{-3}M$	Yield of Nanorod ( $\pm 3\%$ )	Yield of other shapes ( $\pm 3\%$ )	Average Length of Nanorods / nm
2.00	37	63	$37 \pm 10$
4.00	89	11	$55 \pm 7$
8.00	88	12	$41 \pm 6$
12.00	59	41	$44 \pm 12$
16.00	44	56	$56 \pm 15$
20.00	18	72	$61 \pm 13$
30.00	11	79	$52 \pm 15$
40.00	16	84	$56 \pm 15$

Figure 8



**Figure 9**

