

Supporting Information

Optimization of silver-nanoprism conjugated with 3,3',5,5'-tetramethylbenzidine towards easy-to-make colorimetric analysis of acetaldehyde: A new platform towards rapid analysis of carcinogenic agents and environmental technology

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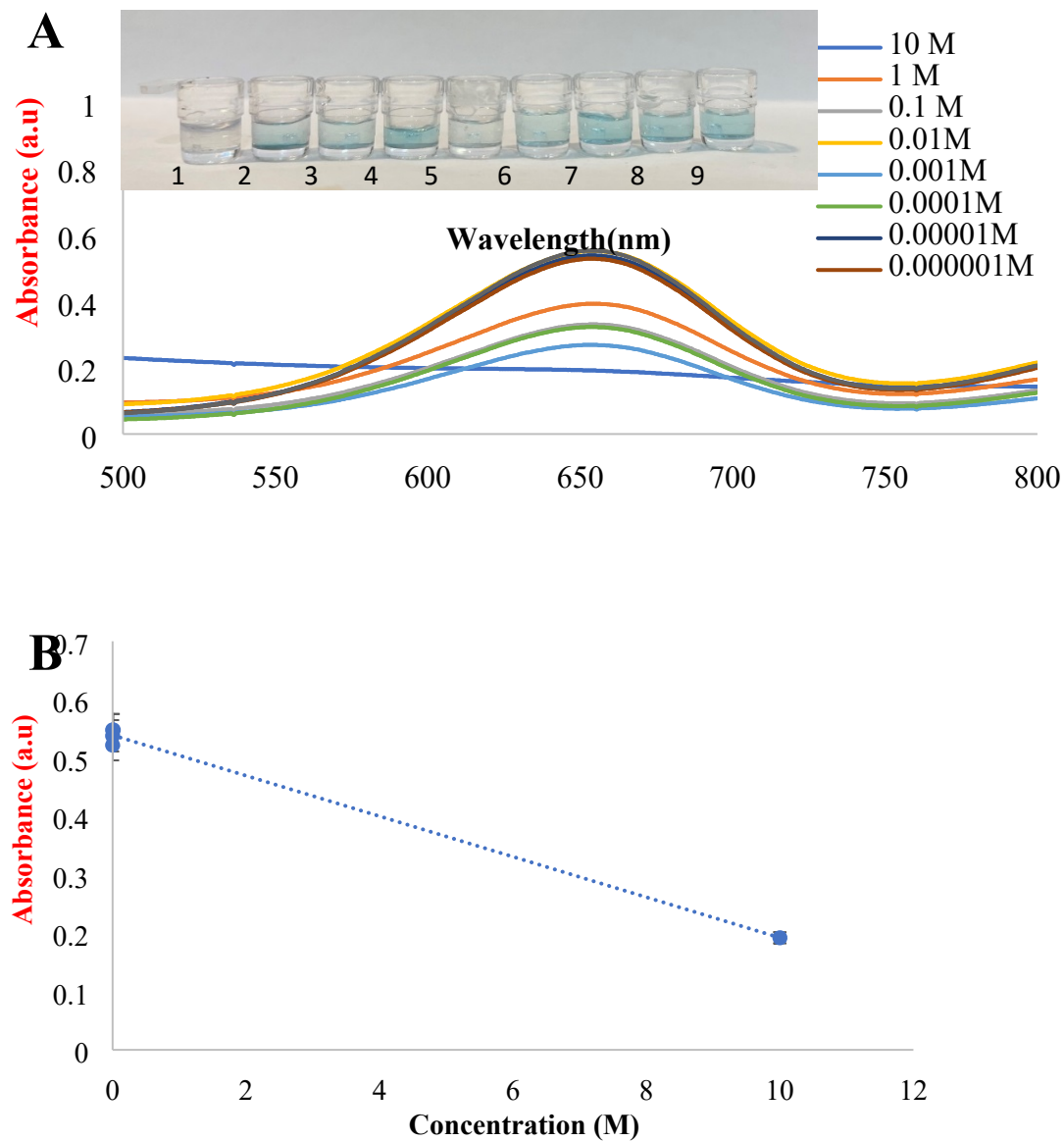


Fig. S1. A) Photographic image and UV-Vis spectra recorded from the reaction systems containing AgNPs, (TMB+H₂O₂) and different concentration of acetaldehyde (0.000001-0.000001-0.00001-0.0001-0.001-0.01-0.1-1 - 10M), **B)** Calibration curve of peak absorbance versus concentration of acetaldehyde. (n=3, SD=1.34).

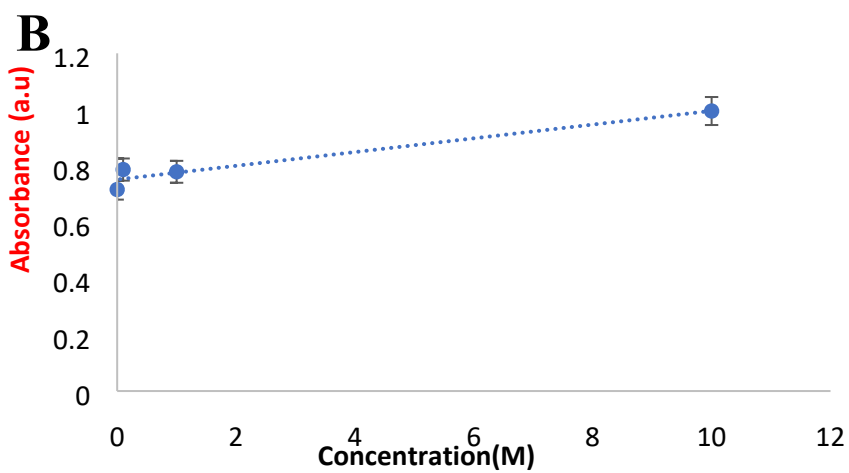
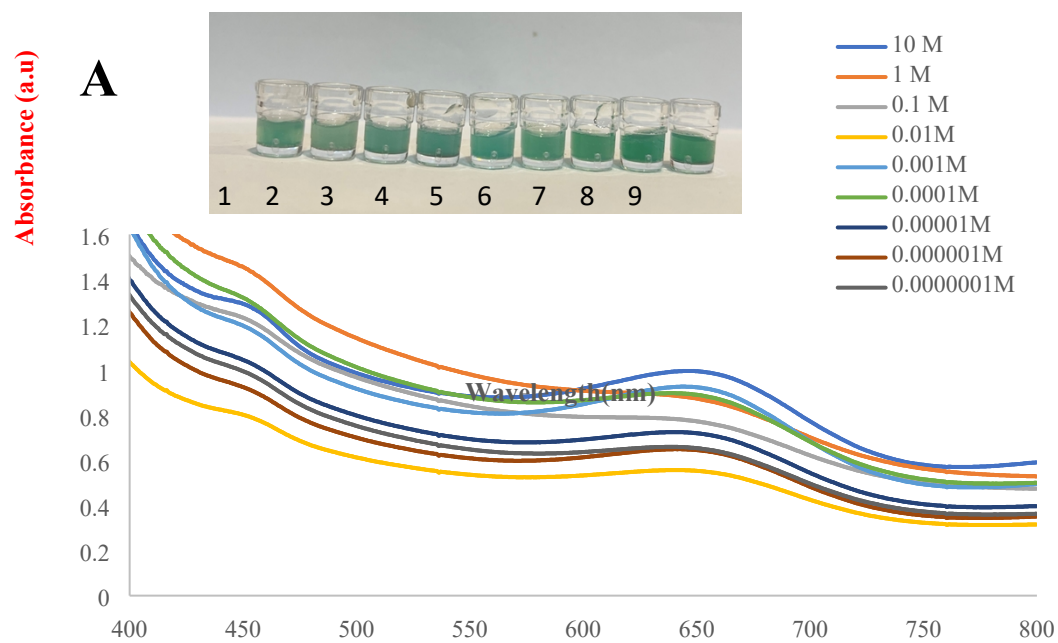


Fig.S2. A) Photographic image and UV-Vis spectra recorded from the reaction systems containing AgNWs, (TMB+H₂O₂) and different concentration of acetaldehyde (0.000001-0.000001-0.00001-0.0001-0.001-0.01-0.1-1 - 10M), **B)** Calibration curve of peak absorption versus concentration of acetaldehyde. (n=3, SD=2.17).

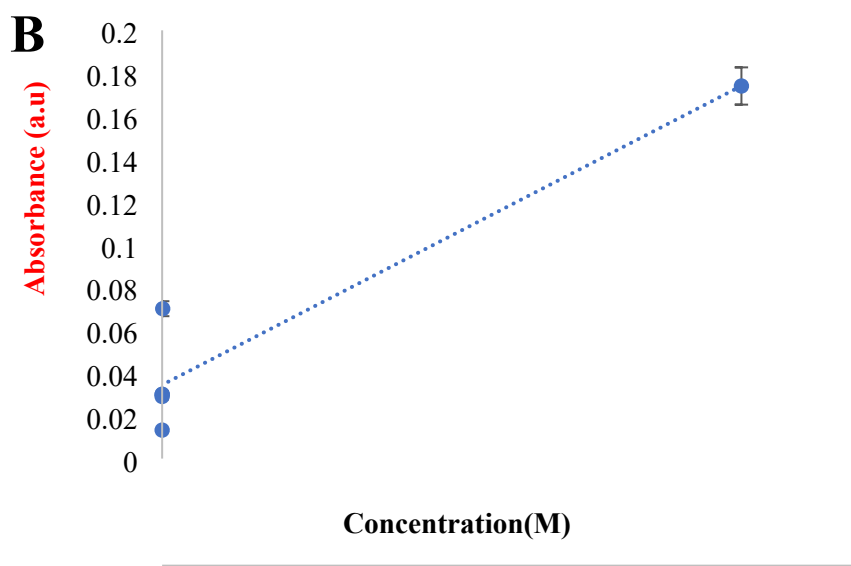
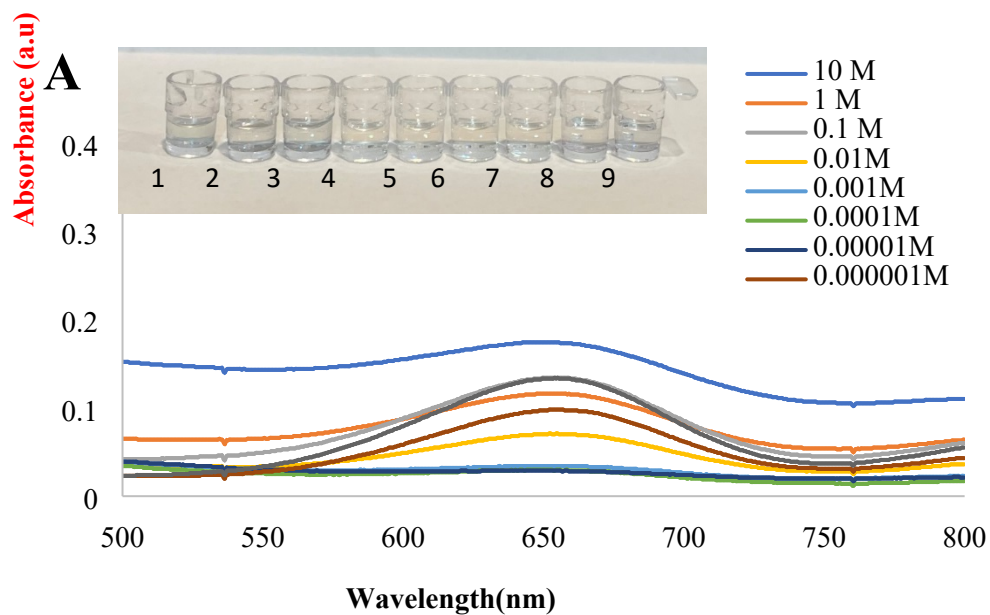


Fig.S3. A) Photographic image and UV-Vis spectra recorded from the reaction systems containing AgNPs-Cit, TMB solution and different concentration of acetaldehyde (0.000001-0.000001-0.00001-0.0001-0.001-0.01-0.1-1 -10M), **B)** Calibration curve of peak absorption versus concentration of acetaldehyde. (n=3, SD=2.00).

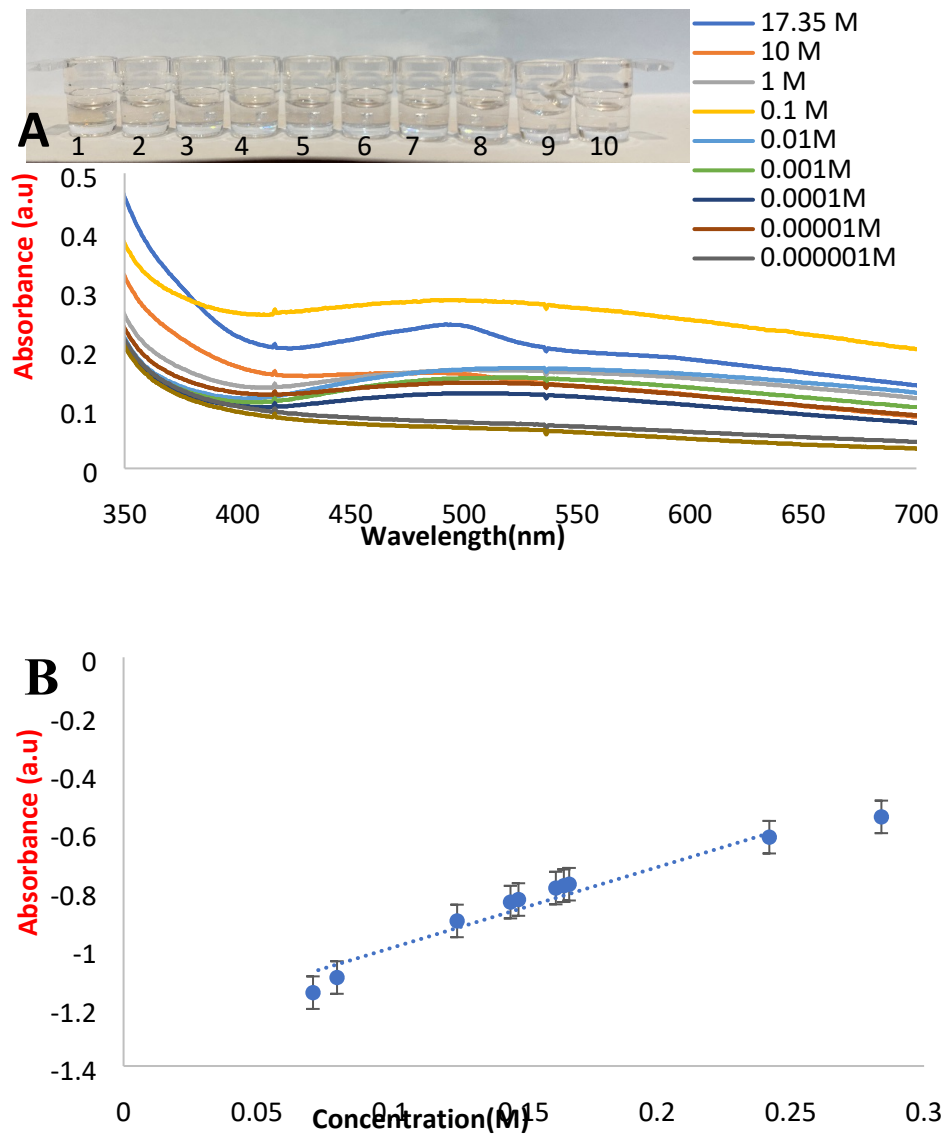


Fig. S4. **A)** Absorption response for acetaldehyde with increasing concentrations (10^{-7} - 17.35M) and AgNPrs in human urine specimens, **B)** Calibration curve. (n=3, SD=1.98).

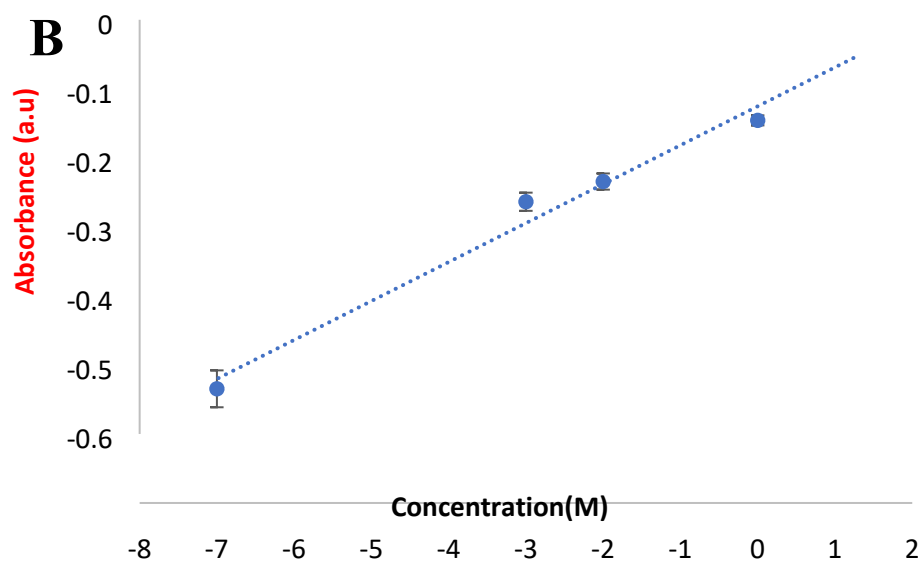
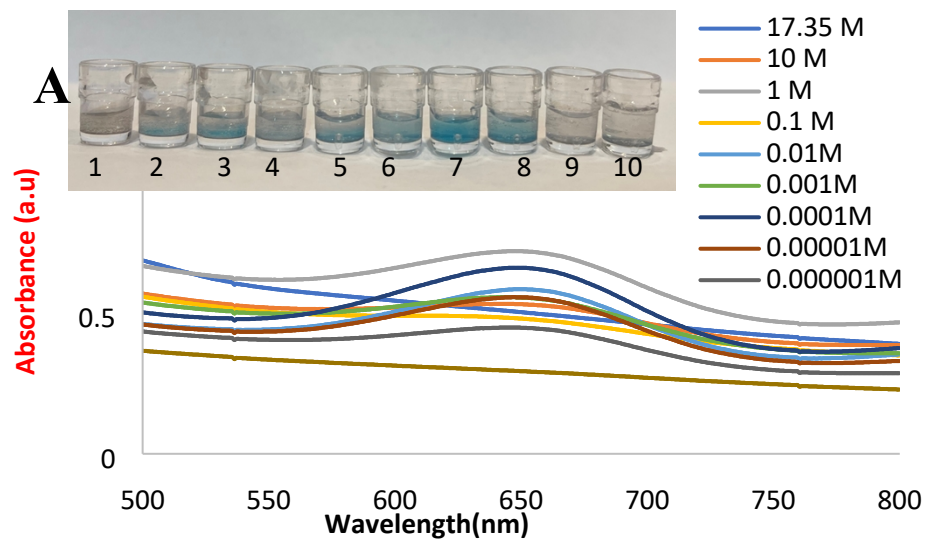


Fig.S5. A) Absorption response for acetaldehyde with increasing concentrations (10^{-7} - 17.35M) and AgNWs in human urine specimens, **B)** Calibration curve. ($n=3$, $SD=1.27$).

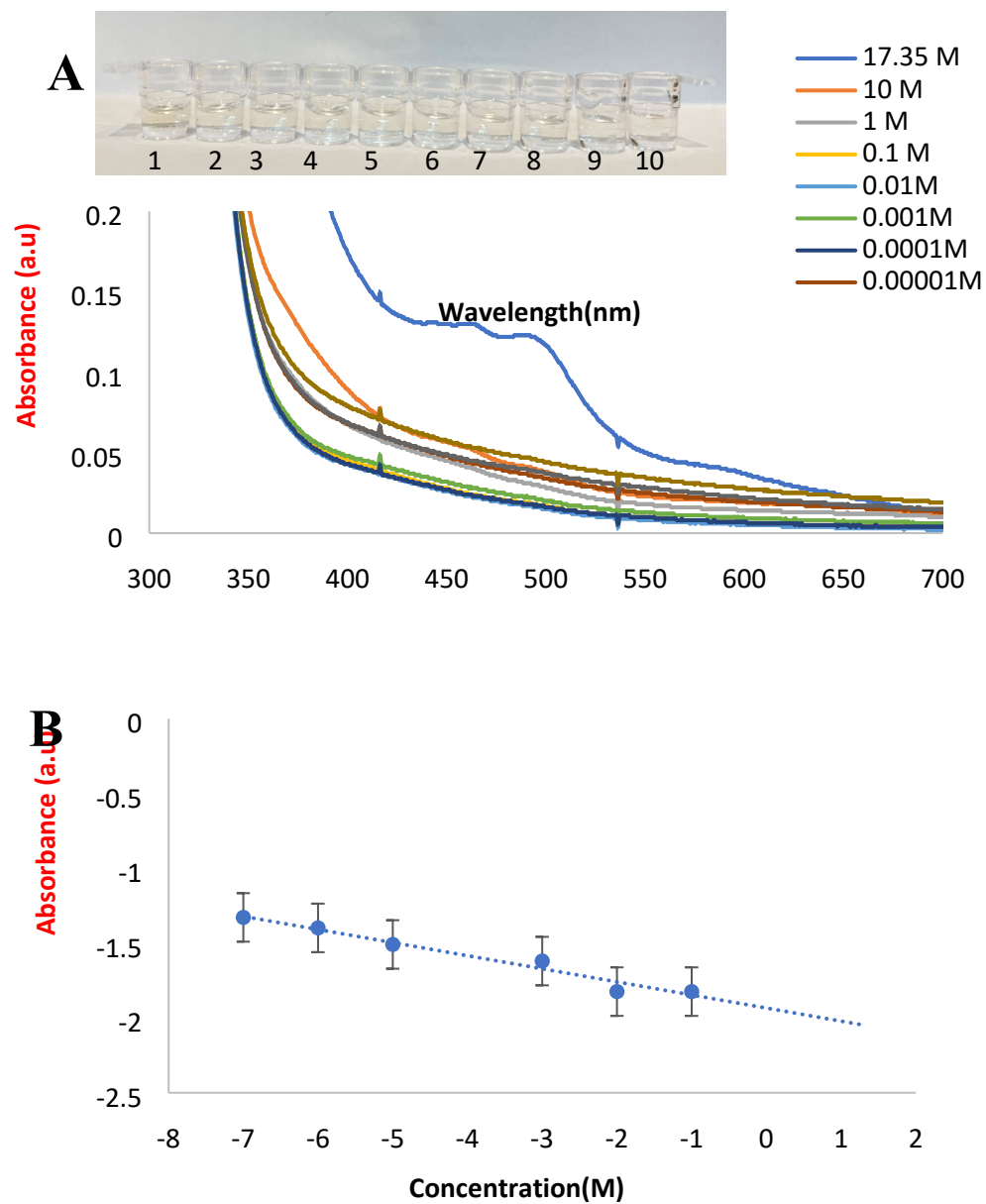


Fig.S6. A) Absorption response for acetaldehyde with increasing concentrations (10^{-7} - 17.35M) and AgNPs-Cit in human urine specimens, **B)** Calibration Curve. (n=3, SD=2.05).