

Supporting Information

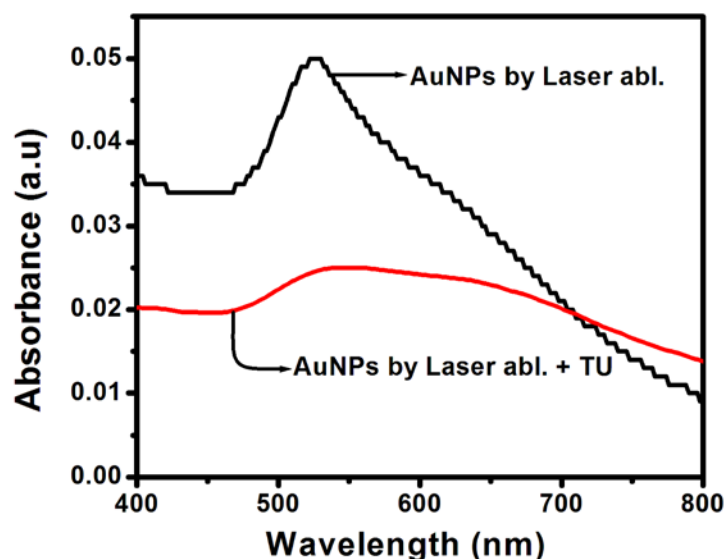


Figure S1. Absorbance spectra of Laser ablation based AuNPs before and after addition of TU (30 ppb). The surface chemistry of laser ablated AuNPs is reported to be dominated by negatively charged functionalities like Au^- , AuO^- , AuOH^- , and $\text{CO}_3^- \text{Au}^-$, thus accounting for electrostatic stabilization.¹ Addition of TU disrupts the homogeneity in surface charge distribution resulting in aggregation of NPs.

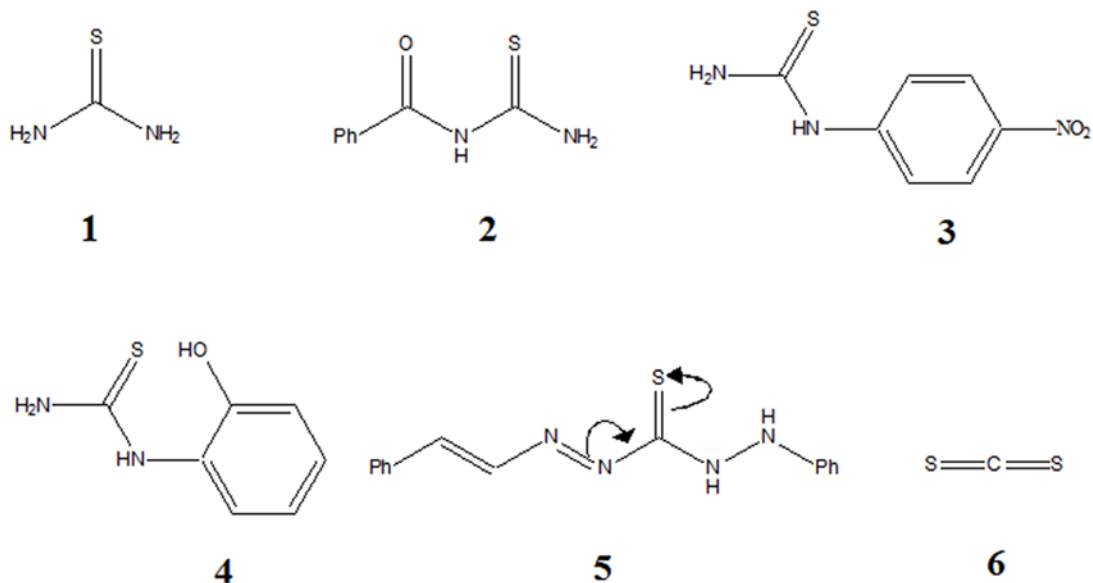


Figure S2. Structures of various thiones studied for their interaction with Cit-AuNPs: **1.** Thiourea (TU), **2.** Benzoylthiourea (BTU), **3.** p-Nitrophenylthiourea (PNPTU), **4.** o-Hydroxyphenylthiourea, **5.** Dithizone (DTZ), **6.** Carbondisulphide (CDS).

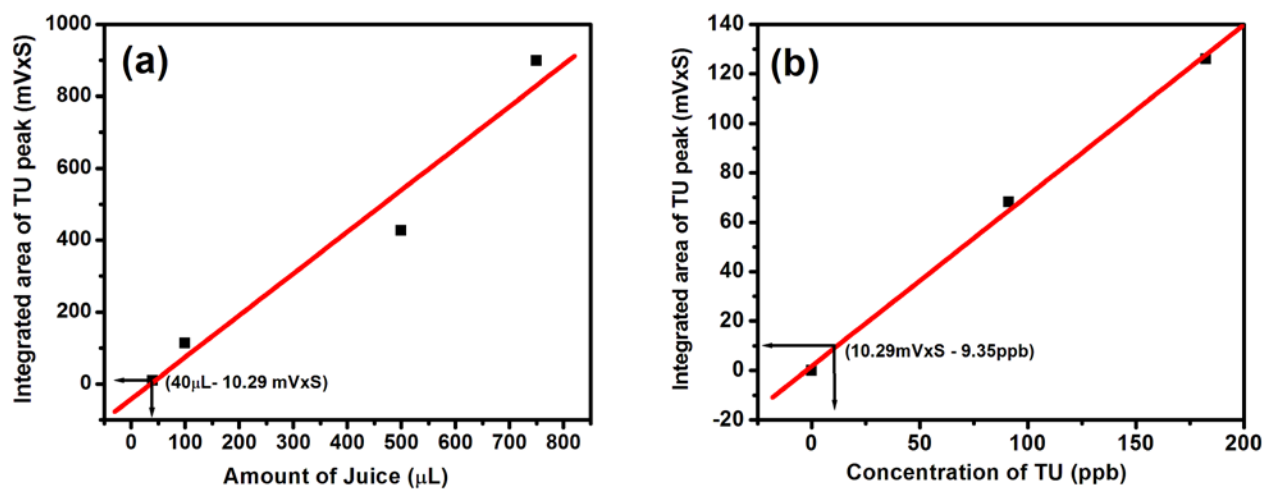


Figure S3. Calibration curve of integrated area of HPLC peaks (Retention time of 1.27-1.42 min) a) for different amounts of sweet lime juice ($R^2 = 98\%$), and b) for different concentrations of TU ($R^2 = 99.8\%$). It should be noted that on consolidating both the plots (a and b), the minimum TU concentration in sweet lime juice that is detected is 9.35 ppb.

References

1. J.-P. Sylvestre, S. Poulin, A. V. Kabashin, E. Sacher, M. Meunier and J. H. T. Luong, *The Journal of Physical Chemistry B*, 2004, **108**, 16864-16869.