Supplementary Information

Gold nanoparticles (GNP) induced redox modulation in organoselenium compounds: Distinction between cyclic vs. linear structures

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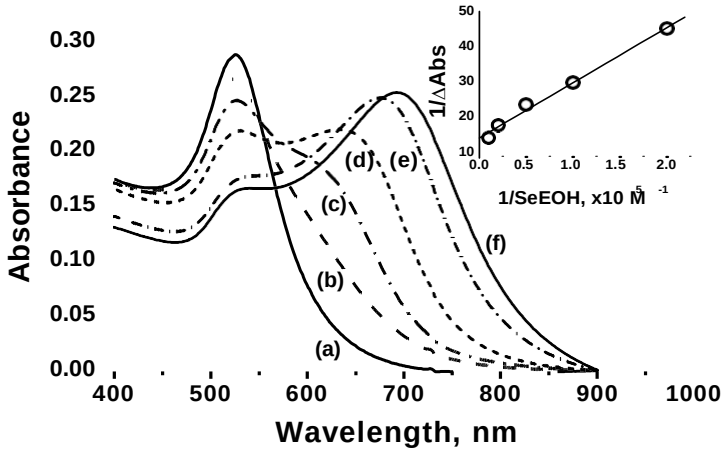

Figure S1: Absorption spectra of 7 nM GNP3 in absence (a) and in presence of (b) 5 µM, (c) 10 µM, (d) 20 µM, (e) 50 µM and (f) 100 µM SeEOH. Inset shows double reciprocal plot for GNP3 absorbance at 526 nm as a function of SeEOH concentration.

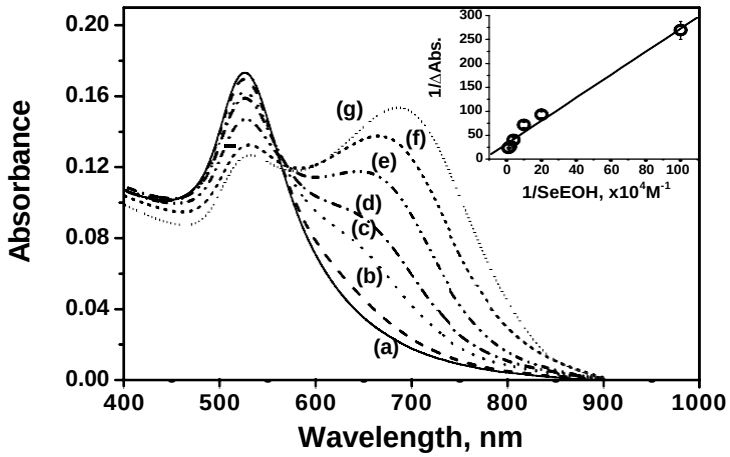

Figure S2: Absorption spectra of 7 nM GNP4 in absence (a) and in presence of (b) 5 µM, (c) 10 µM, (d) 25 µM, (e) 50 µM, (f) 75 µM and (g) 100 µM SeEOH. Inset shows double reciprocal plot for GNP4 absorbance at 527 nm as a function of SeEOH concentration.

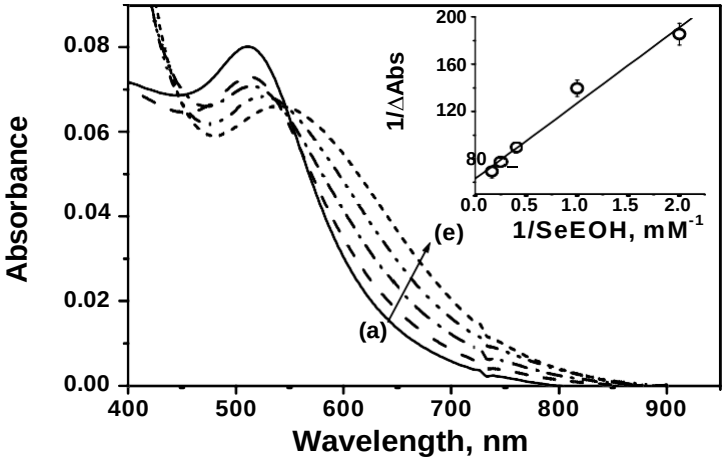

Figure S3: Absorption spectra of 7 nM GNP1 in absence (a) and in presence of (b) 0.5 mM, (c) 1 mM, (d) 2.5 mM and (e) 4 mM SeEOH. Inset shows double reciprocal plot for GNP1 absorbance at 510 nm as a function of SeEOH concentration.

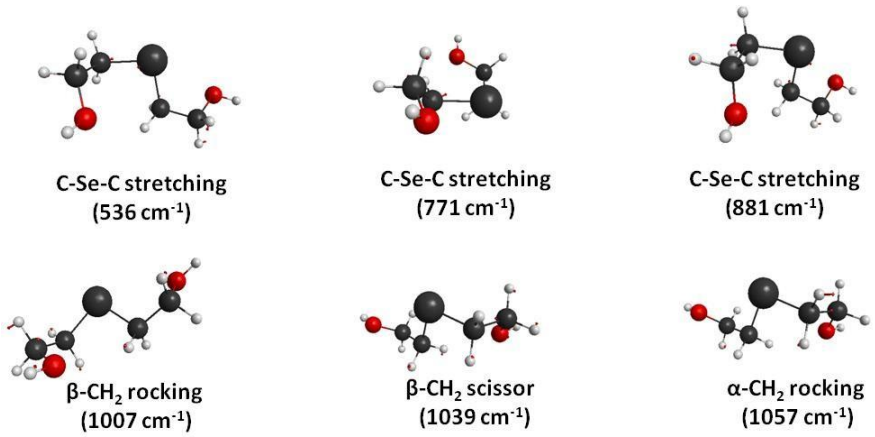

Figure S4: Images of molecular structure of SeEOH showing different vibrational modes in Raman spectra along with corresponding frequencies calculate at B3LYP/6-31+G(d,p) level in water using solvent density model.

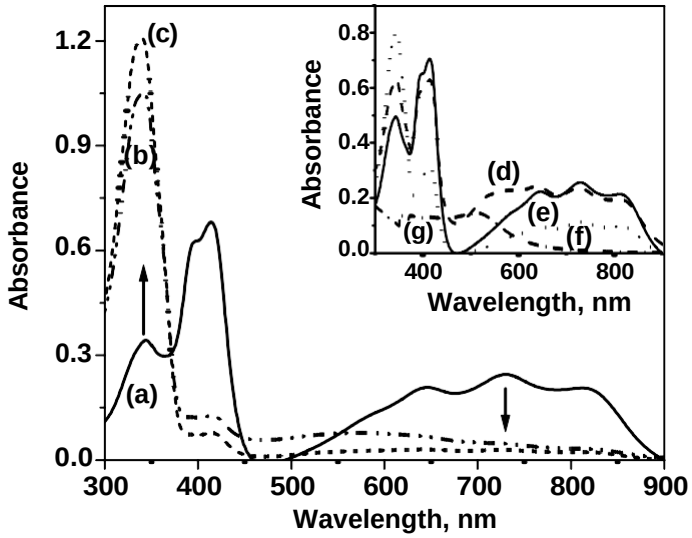

Figure S5: Absorption spectra of 30 µM $ABTS^{\bullet-}$ radical in absence (a) and in presence of (b) 1 mM SeEOH-GNP1 and (c) DHS-GNP1 composites. Inset shows the absorption spectra of 30 µM $ABTS^{\bullet-}$ radical in presence of (d) 7 nM GNP1, (e) 1 mM SeEOH, (f) 1 mM DHS. Spectral trace (g) in inset corresponds to 7 nM GNP1 alone.

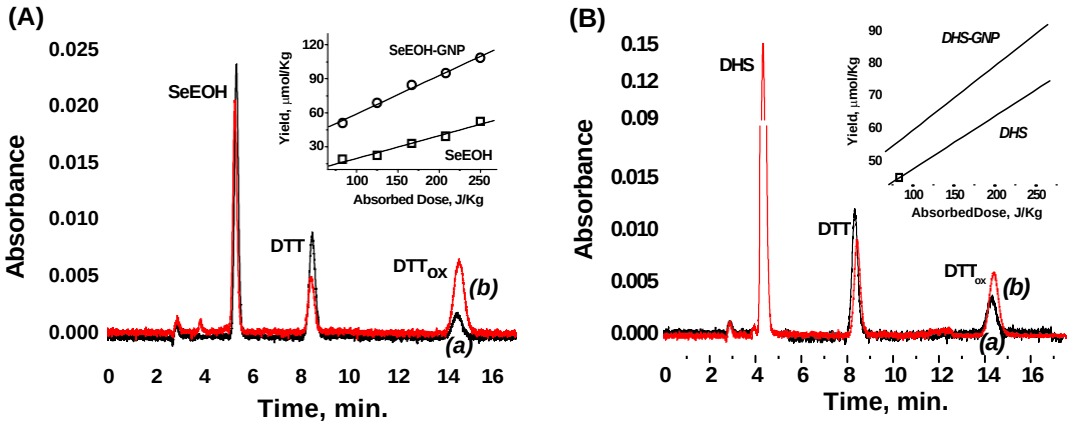

Figure S6: HPLC chromatogram of reaction mixture containing γ-radiolysed N_2O purged aqueous solution of 1 mM SeC (A-SeEOH, B-DHS) (*a*) in absence and (*b*) in presence of 7 nM GNP1. Insets (A) and (B) show the linear variation in the amount of DTT_{ox} formed as a function of absorbed dose.