Supporting Information

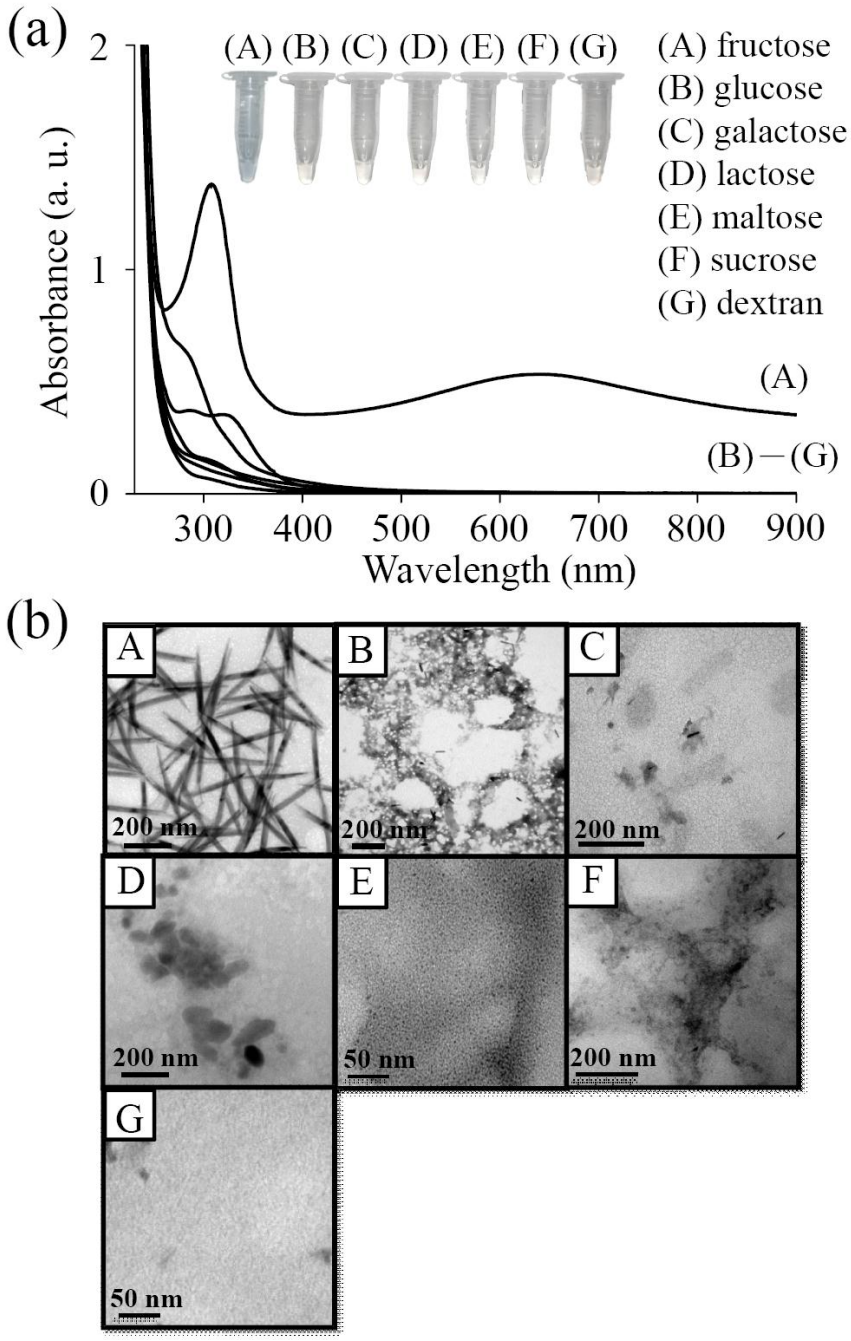

Fig. S1. (a) UV–Vis absorption spectra and (b) TEM images of Te nanomaterials synthesized under the various saccharides-mediated reduction reactions by (A) fructose, (B) glucose, (C) galactose, (D) lactose, (E) maltose, (F) sucrose, and (G) dextran. Te nanomaterials were obtained from the reaction of 3.13 mM TeO_2 and 1.0 M saccharide in 10 mM NaOH at 60 °C for 5 min. Other conditions are the same as those described in Figure 1.

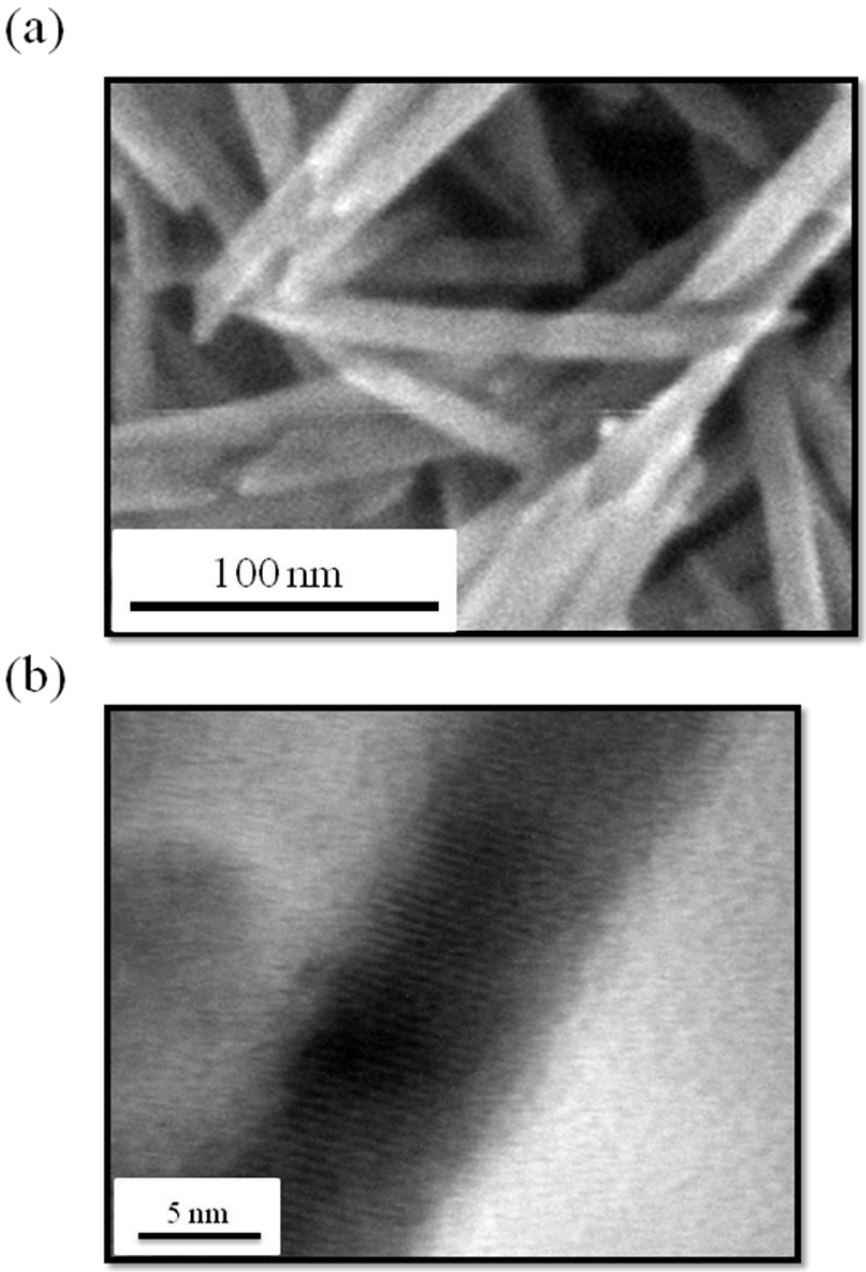

Fig. S2. Representative (a) SEM image and (b) HRTEM of Te NTs obtained from a reaction time of 5 min by 3.13 mM TeO_2 and 1.0 M fructose in 10 mM NaOH at 60 ℃. Other conditions are the same as those described in Figure 1.

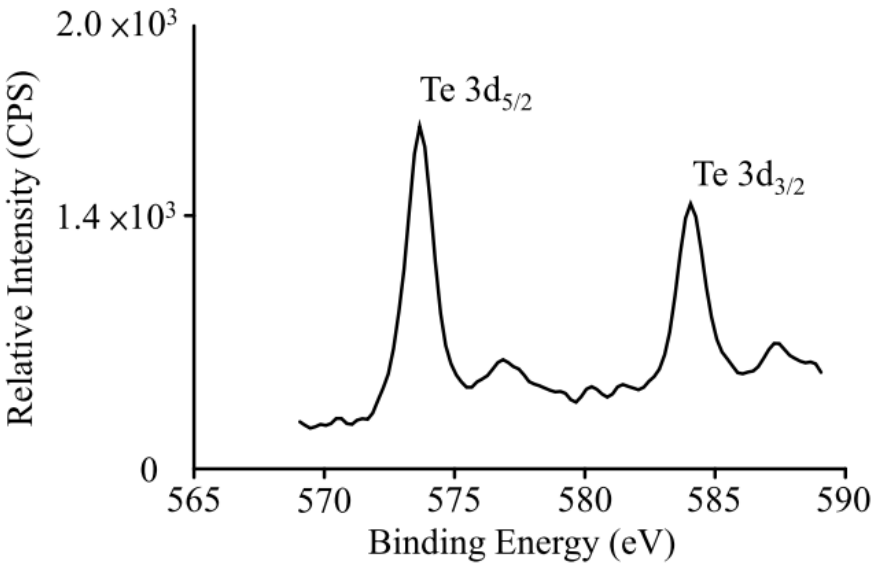

Fig. S3. XPS spectrum of as-prepared Te NTs. The purified Te NTs was dosed onto silicon substrates and the surface properties measured at room temperature. BE (285.3 eV) of the alkyl chain C1s orbital was used as an internal reference. Other conditions are the same as those described in Figure 1.

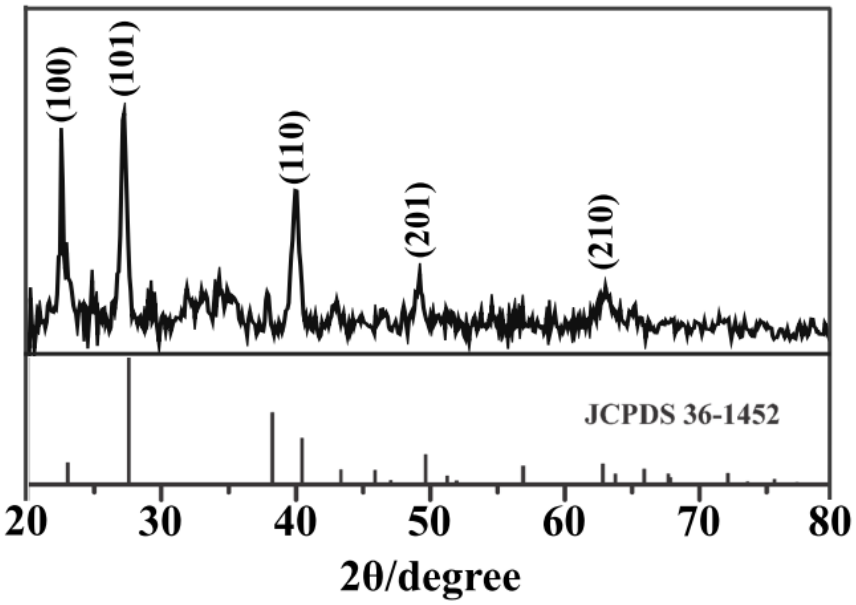

Fig. S4. XRD spectra of as-prepared Te NTs. Other conditions are the same as those described in Figure 1.

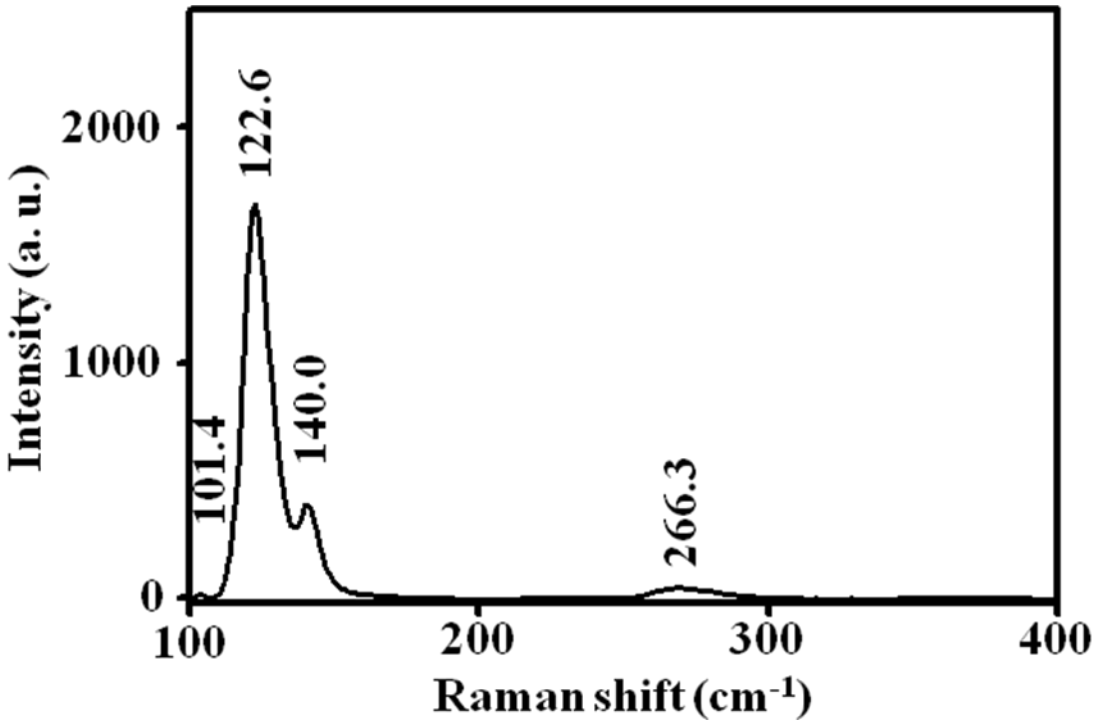

Fig. S5. Raman scattering spectrum of as-prepared Te NTs.

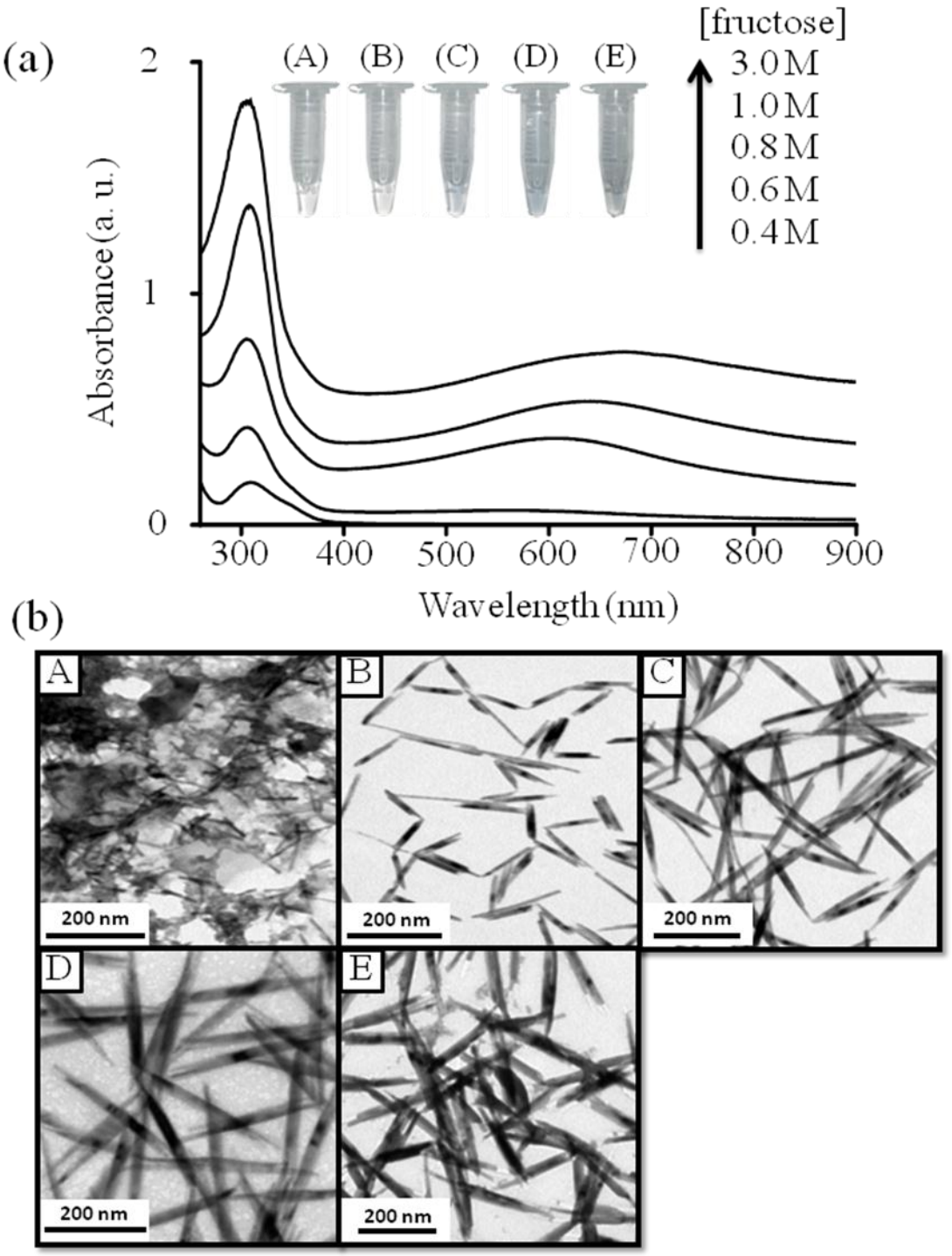

Fig. S6. (a) UV–Vis absorption spectra and (b) TEM images of Te NTs synthesized by (A) 0.4 M, (B) 0.6 M, (C) 0.8 M, (D) 1.0 M, and (E) 3.0 M fructose and 3.13 mM TeO_2 in 10 mM NaOH after reaction at 60 °C for 5 min. Other conditions are the same as those described in Figure 1.

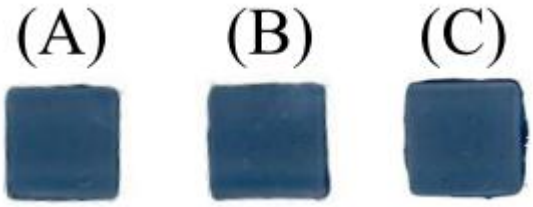

Fig. S7. Photographic images of (A) as-prepared Te NTs–AGM and (B, C) after incubated in (B) 200 mM NaCl solution and (C) 5.0 mM sodium phosphate (pH 7.0) at 80 °C for 2 h.

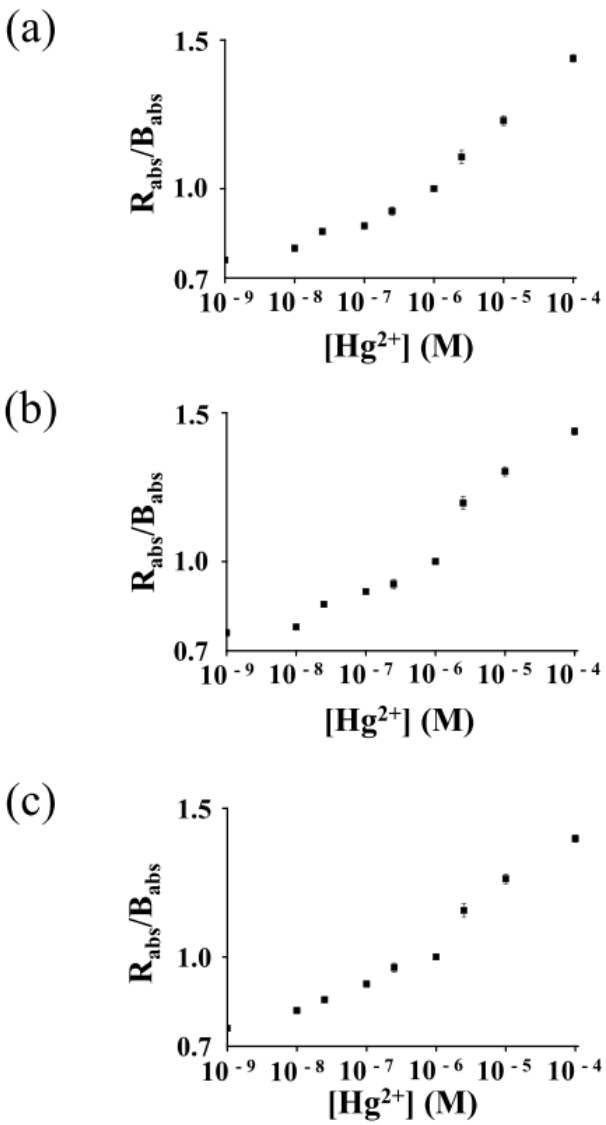

Fig. S8. Analyses of representative samples of (a) tap water, (b) stream water, and (c) sea water samples using Te NTs–AGM probes for Hg^{2+} detection. Diluted (two fold) water samples were spiked with Hg^{2+} (0–100 μM). Other conditions are the same as those described in Figure 4.