Electronic Supplementary Information (ESI)

Medicinal plant acid-treatment for a healthier herb tea and recycling of the spent herb residue

Hong-Wen Gao, Dong-Dong Ma and Gang Xu

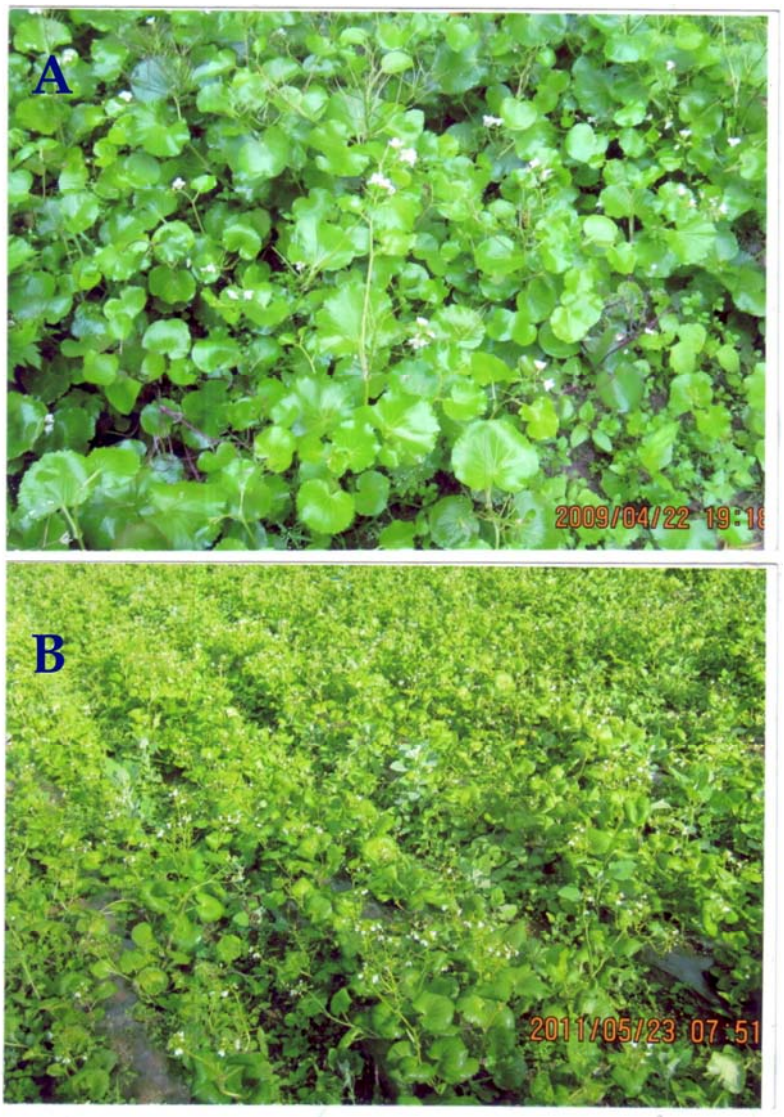

Figure S1 The *T. rotundifolium* herb plantation at Shuanghe Yutangba village of Xintang Town in Enshi Region of China.

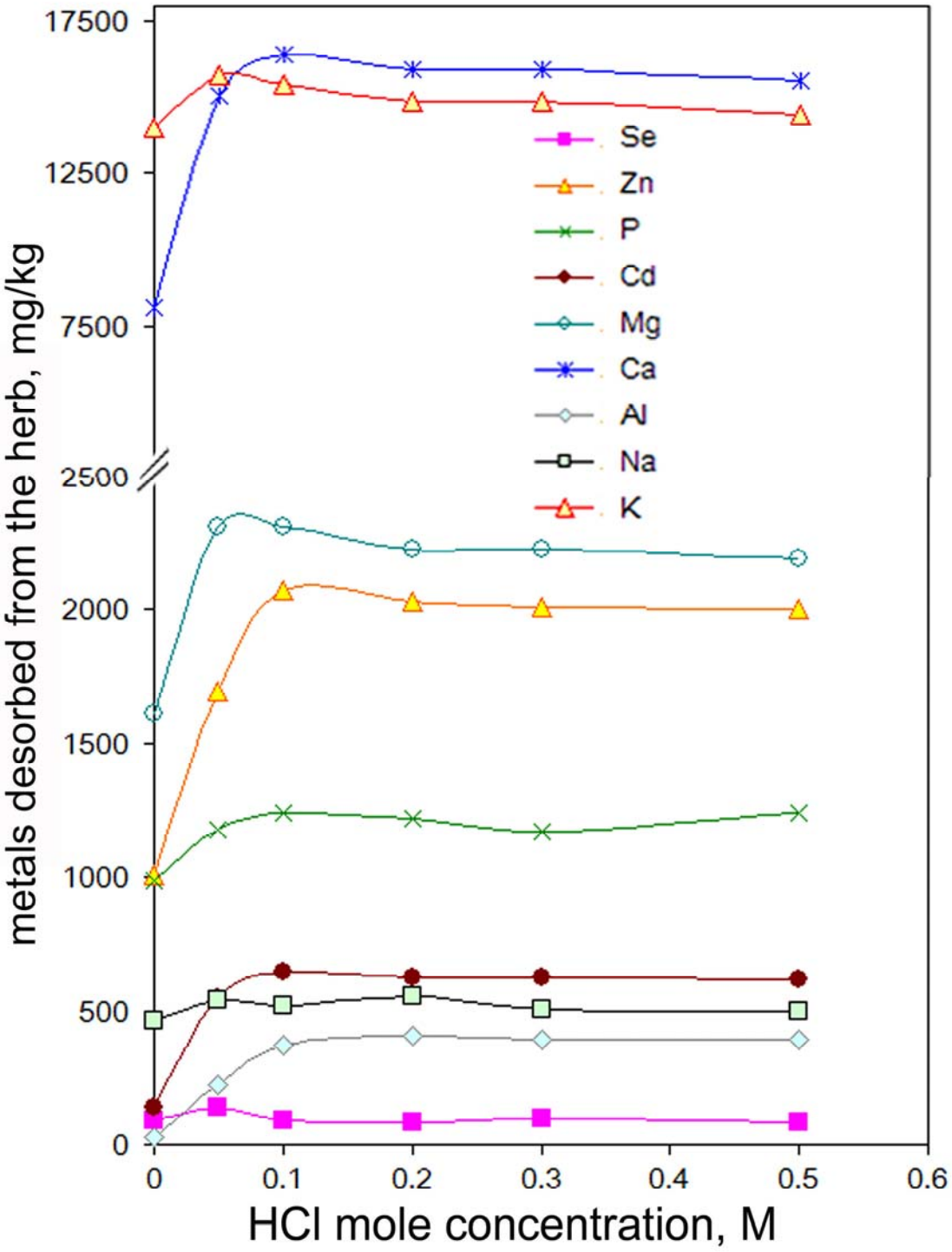

Figure S2 Effect of hydrochloric acid molarity on elimination of metals from the raw *T. rotundifolium* (5%). The desorption of various metals approached equilibrium when hydrochloric acid is more than 0.1 M.

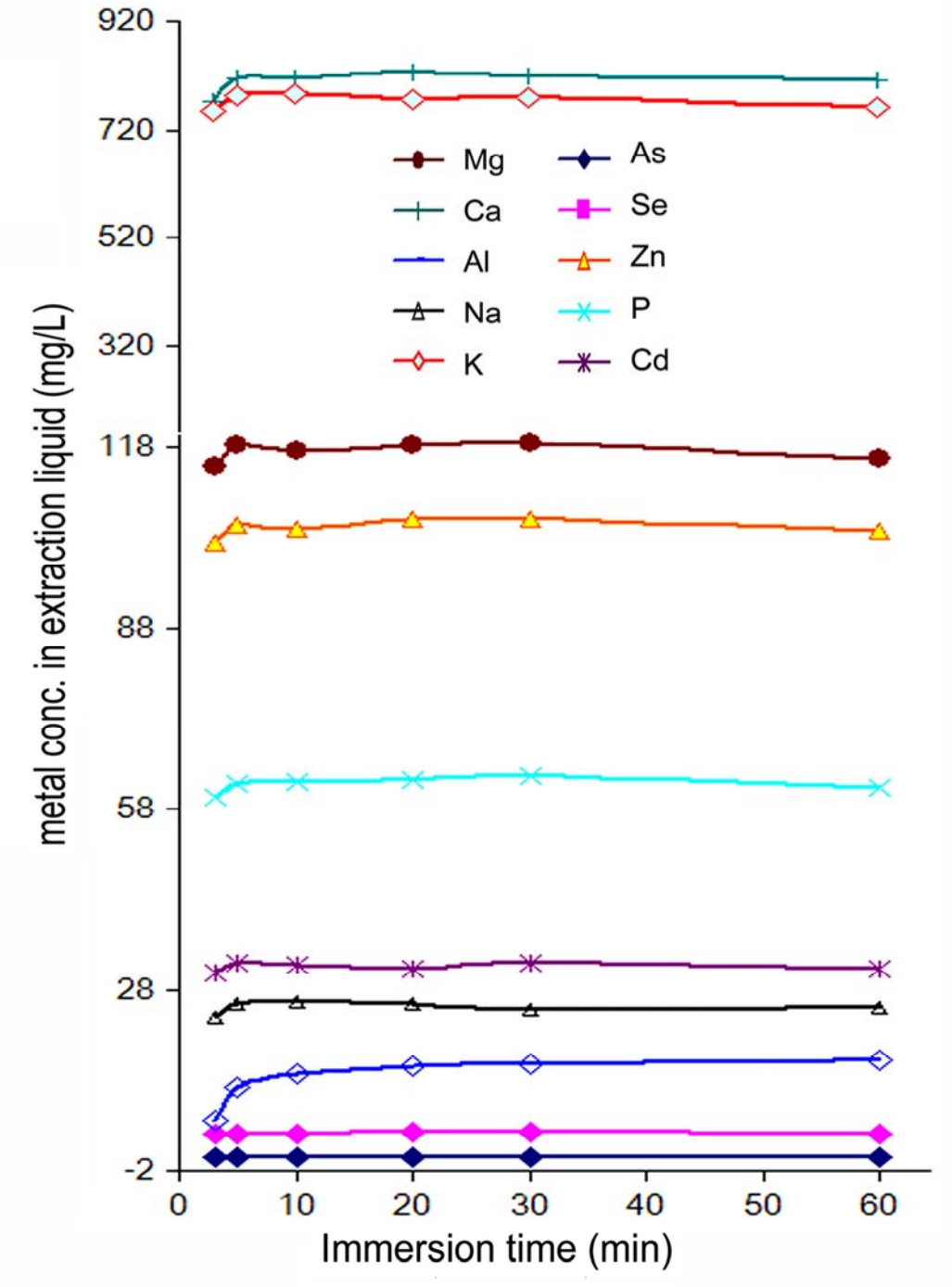

Figure S3 Effect of immersion time on elimination of metals from *T. rotundifolium* treated with 0.1 M hydrochloric acid. The desorption of various metals approached equilibrium when the raw herb (5%) was immersed in 0.1 M hydrochloric acid and mixed for more than 5 min at room temperature.

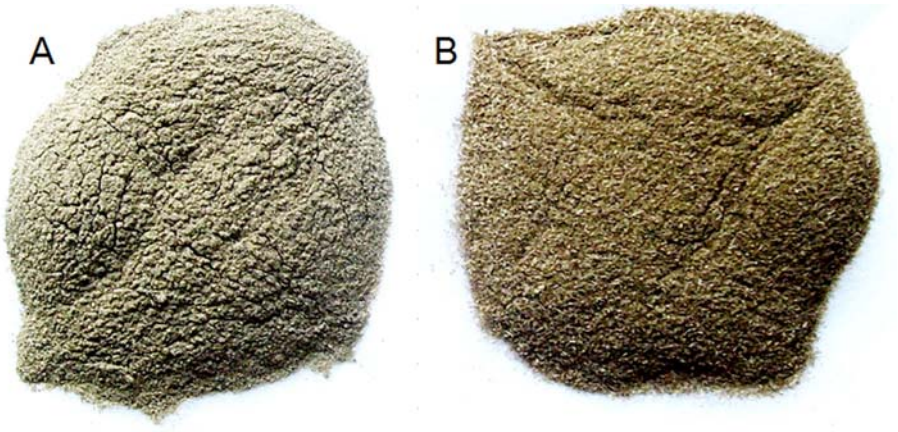

Figure S4 Photographs of raw (A) and acid-treating (B) *T. rotundifolium*. powder

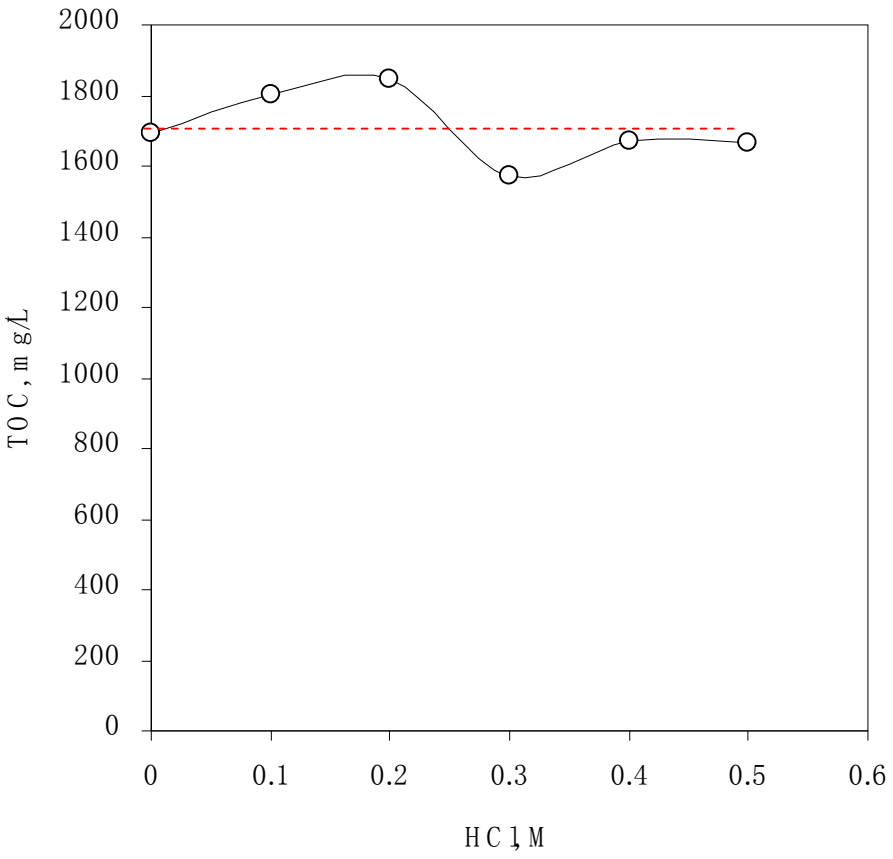

Figure S5 - Release of TOC from the raw *T. rotundifolium* (5%) immersing in deionized water and hydrochloric acid solutions for 10 min at room temperature. It indicated that the release amount of organic substances is almost same wherever in deionized water or diluted acids. Absolutely, the diluted acid as the metals-extracting agent to treat the herb will not bring out an obvious loss of organic components including BACs in the herb.

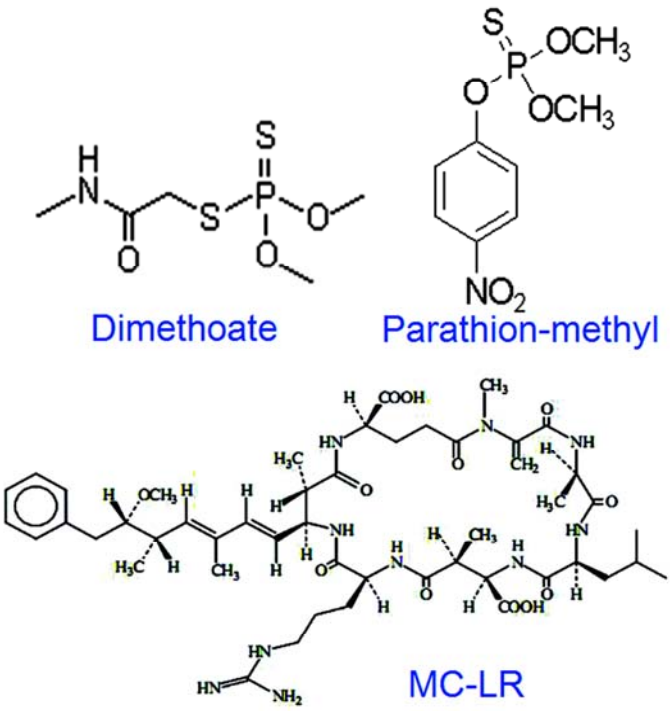

Figure S6 Chemical structure of dimethoate, parathion-methyl and MC-LR.

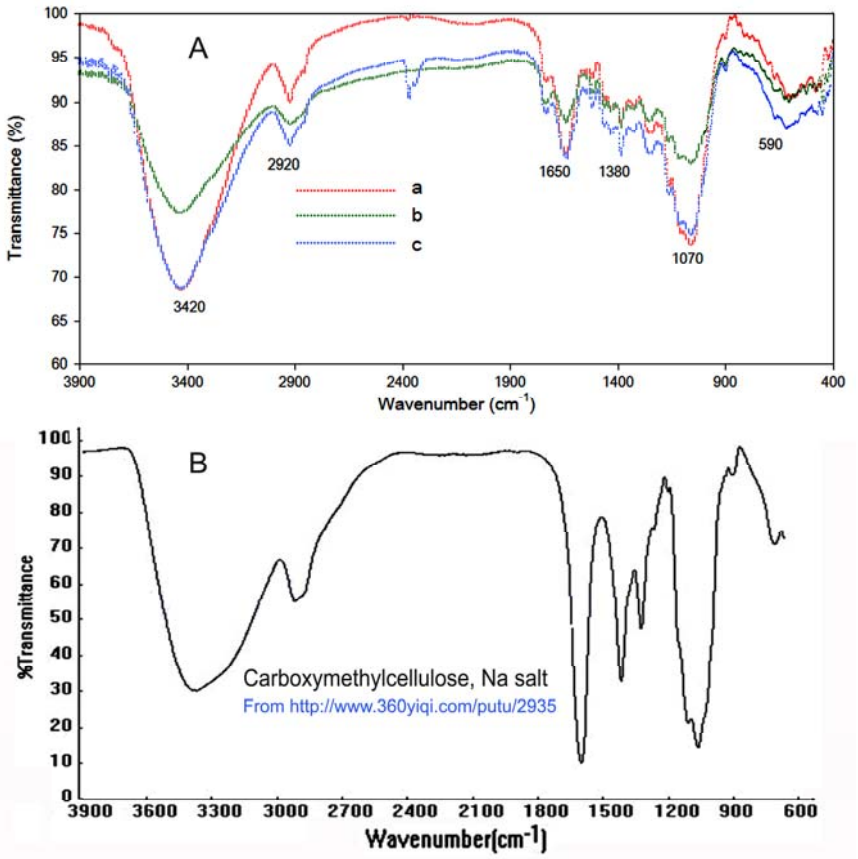

Figure S7 IR spectra of the herbs. **A a:** raw herb, **b**: acid-treated herb and **c**: the same as b but metals adsorbed on. **B**: IR of carboxymethylcelluose from an IR data bank, it was used to compare with **A**.