Supplementary information

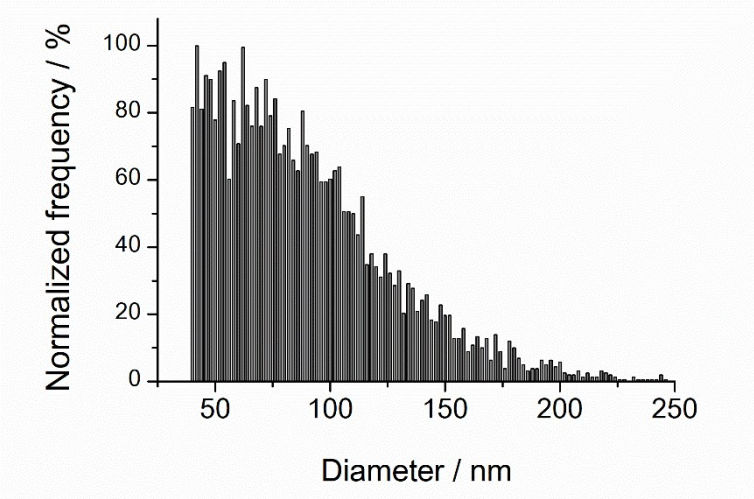

Figure 1 SI. Particle size distribution of palladium nanoparticles applied during the study in hydroponic cultivation of *Sinapis alba*. [14]

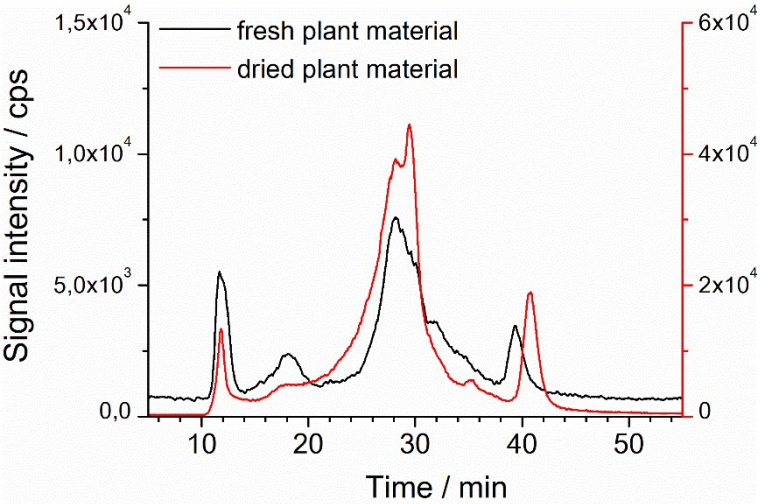

Figure 2 SI. SEC ICP MS chromatograms of lyophilized fresh plant extract (black line) and dried tissue extract (red line, secondary Y-axis). Chromatograms were obtained on SEC Superdex-200 column after injection of 100 µL of the sample and isocratic elution with 100 mmol L^{-1} ammonium acetate (pH 7.5) at a flow rate of 0.7 mL min^{-1}.

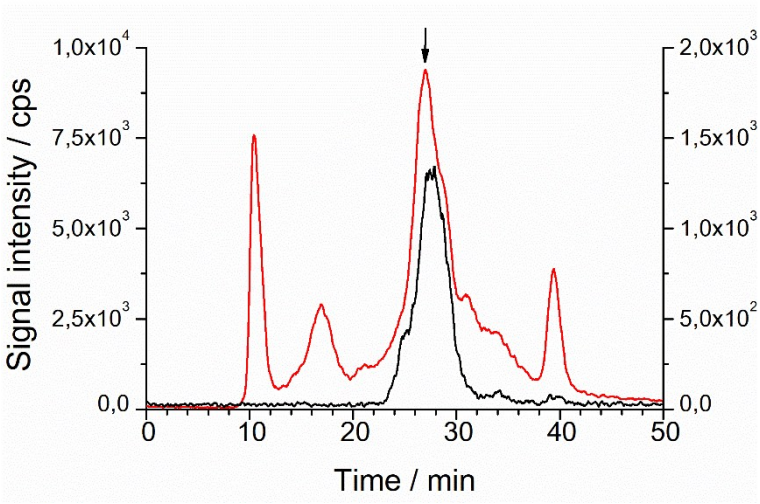

Figure 3 SI. Confirmation of the species stability upon lyophilisation: SEC ICP MS chromatograms of the root extract (red line, left axis) and lyophilized and dissolved fraction of interest (black line, right auxiliary axis). Fraction of interest was marked with an arrow on the chromatogram obtained for extract. Chromatograms were obtained on SEC Superdex-200 column after injection of 100 µL of the sample and isocratic elution with 100 mmol L^{-1} ammonium acetate (pH 7.5) at a flow rate of 0.7 mL min^{-1}.

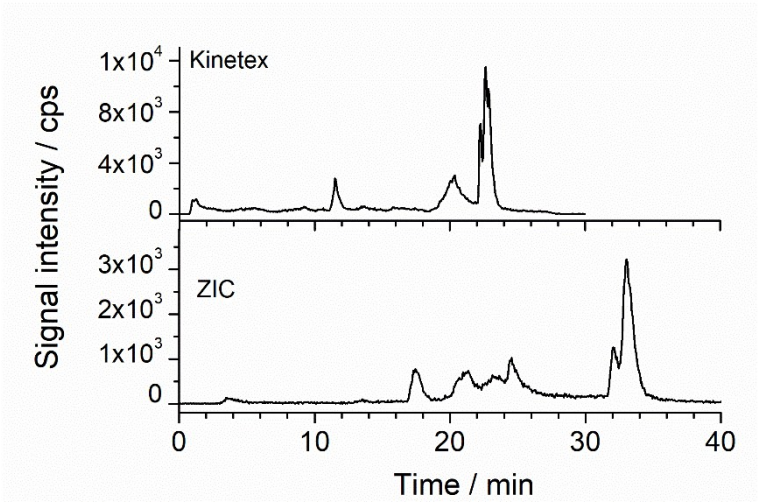

Figure 4 SI. Effect of the choice of the HILIC stationary phase on fractionation efficiency of the plant extract size-exclusion fraction as in Fig. 3d. Chromatograms where obtained on: a) Kinetex HILIC column; b) SeQuant®Zic®-cHILIC column. See procedure for the optimum experimental conditions.

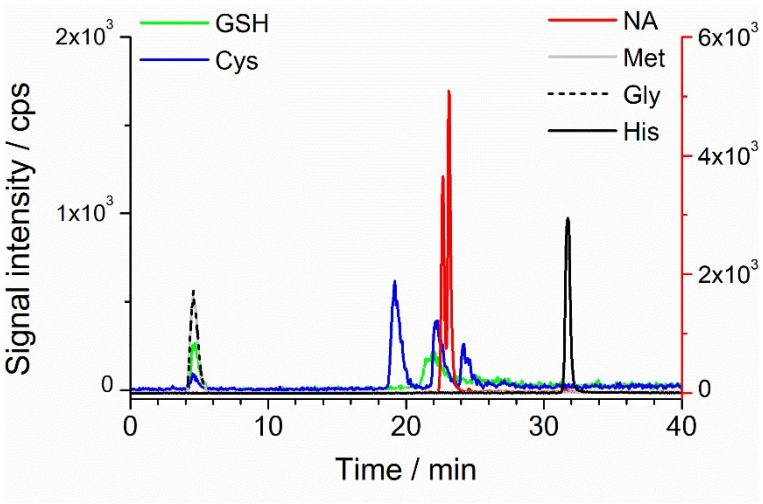

Figure 5 SI. HILIC–ICP MS chromatograms of model palladium complexes with reduced glutathione (GSH), cysteine (Cys) – left Y-axis; nicotianamine (NA), methionine (Met), glycine (Gly) and histidine (His) – right Y-axis. Injection of 4 µL of the sample on SeQuant®Zic®-cHILIC column, gradient elution with a mixture of 5 mmol L^{-1} ammonium acetate (pH 5.5) and acetonitrile at a flow rate of 0.2 mL min^{-1}.