Supplementary information

High-sensitivity analysis of mercury in medicinal herbs using nanoparticle-enhanced laser-induced breakdown spectroscopy combined with argon purging

Yuanhang Wang, [a,b] Yang Bu,*[a,b] Yachao Cai [c] and Xiangzhao Wang [a]

I. Optimization of the delay time and gate width.

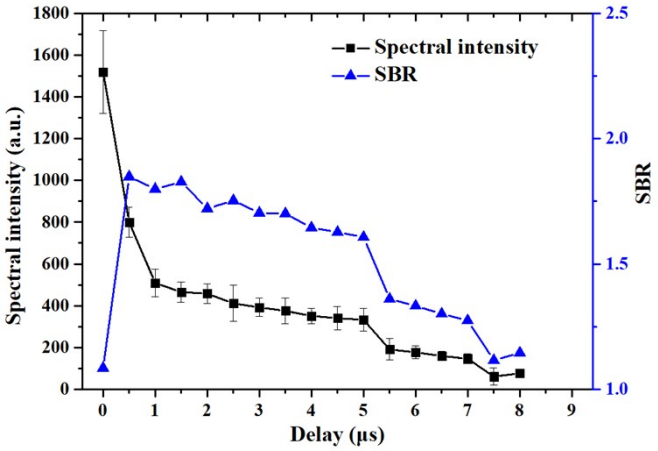

Fig. S1 The evolution trends of intensities and SBRs for Hg(I) 253.65 nm with delay times. The error bars represent the standard deviation.

Fig. S1 shows the evolution trends of Hg(I) 253.65 nm intensities and (signal-to-background ratios) SBRs. The gate width of the ICCD was set to 0.5 μs and the interval of the delay time was set to 0.5 μs in the Fig. S1. As shown in the figure, the SBRs first increased and reached a maximum at 0.5 μs, then slowly decreased from 0.5 to 5μs, and rapidly decreased after 5 μs of the delay time. The SBRs have a relatively high value between 0.5 and 5.0 μs of the delay times. Therefore, 0.5 μs was chosen as the optimum delay time, and 5.0 μs was chosen as the gate width in this work.

II. Measurement of laser energy stability.

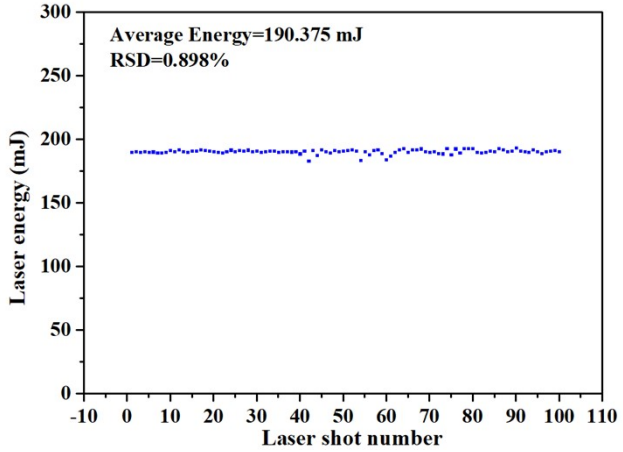

Fig. S2 The laser energy of one hundred laser shots.

The laser energy was measured by a laser energy sensor (J-50MB-YAG, Coherent) coupled with a laser energy meter (FieldMaxII-TOP, Coherent).