**SUPPLEMENTARY INFORMATION**



**FIGURE 1.** Chromatogram of arsenic species in *C. sinensis* by extracted with different ratios of nitric acid using HPLC-ICP-MS*.*



**FIGURE 2.** Chromatogram of arsenic species extracts with different ratios of nitric acid in *C. sinensis* by SEC-HPLC-ICP-MS*.*



**FIGURE 3.** Chromatogram of unknown arsenic in*C. sinensis* and itsconversion behavior in the extracts.



**FIGURE 4.** Chromatograms of simulated gastric juice extracts treated with different proportions of nitric acid in *C. sinensis* by HPLC-ICP-MS.



**FIGURE 5.** Chromatograms of simulated gastric juice extracts treated with different proportions of nitric acid in *C. sinensis* by SEC-HPLC-ICP-MS.



**FIGURE 6.** MMA conversion chromatogram under extracted conditions.

**FIGURE 7.** The results of arsenic transformation .

**TABLE 1.** Sample collection information in present study

|  |  |  |  |
| --- | --- | --- | --- |
| Code | Location | Latitude | Longitude |
| C1 | Qinghai | 32°33′17N | 097°12′17E |
| C2 | Qinghai | 32°56′31N | 095°43′00E |
| C3 | Qinghai | 34°13′22N | 100°14′02E |
| C4 | Qinghai | 34°13′48N | 100°01′50E |
| C5 | Qinghai | 35°26′45N | 100°36′21E |
| C6 | Qinghai | 36°00′40N | 099°44′01E |
| C7 | Qinghai | 34°04′24N | 102°07′08E |
| C8 | Qinghai | 34°04′24N | 102°16′57E |
| C9 | Tibet | 31°21′19N | 097°42′22E |
| C10 | Tibet | 31°04′25N | 096°58′48E |
| C11 | Tibet | 31°48′33N | 093°34′18E |
| C12 | Tibet | 31°44′28N | 092°40′24E |
| C13 | Gansu | 34°04′24N | 102°07′08E |
| C14 | Yunnan | 28°24′22N | 098°59′07E |
| C15 | Sichuan | 31°35′06N | 099°41′47E |
| C16 | Sichuan | 30°00′40N | 100°18′56E |
| C17 | Qinghai | 32°33′17N | 097°12′17E |