

Survey on Heavy Metals in Raw Material of Traditional Chinese Medicine (I)

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Abstract

The limitation of heavy metals in raw materials of traditional Chinese medicine (TCM) is an important regulation issues for the implementation of GMP in Chinese pharmaceutical manufactures. Mostly purchased from Chinese pharmaceutical manufacturers, twenty raw materials of TCM including Cinnamomi Cortex, Cinnamomi Ramulus, Eucommiae Cortex, Eriobotryae Folium, Bletillae Rhizoma, Astragali Radix, Poria, Glycyrrhizae Radix, Paeoniae Alba Radix, Rhei Radix et Rhizoma, Ephedrae Herba, Platycodi Radix, Coptidis Rhizoma, Angelicae Sinensis Radix, Sennae Folium, Zingieris Rhizoma, Dioscoreae Rhizoma, Lilii Bulbus, Ginseng Rubra Radix et Rhizom and Chuanxiong Rhizoma were monitored for the survey. The amounts of lead (Pb), copper (Cu), cadmium (Cd), mercury (Hg) and arsenic (As) in the TCM were determined by ICP/MS method. The detection limit for Pb, Cu, Cd, Hg and As was about 20, 300, 3, 10, and 3 ppb, respectively. The 80th percentile of each heavy metal in TCM lied in range of 0.10 ~ 6.26 ppm for Pb, 1.60 ~ 27.12 ppm for Cu, <0.01 ~ 0.98 ppm for Cd, <0.03 ~ 0.1 ppm for Hg, and 0.01 ~ 0.74 ppm for As, respectively. These results could provide limitation assessment of heavy metals in raw materials of TCM for the regulatory authority.

Key words : ICP/MS, Pb, Cu, Cd, Hg, As, 80th percentile , traditional Chinese medicine