

Survey on Organochlorine Pesticide Residues in Raw Materials of Traditional Chinese Medicine (I)

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Abstract

The limitation of organochlorine pesticide in raw materials of traditional Chinese medicine (TCM) is one of important regulation issues for the implementation of GMP in Chinese pharmaceuticals. Mostly purchased from Chinese pharmaceuticals, 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 the residues of 15 organochlorine pesticides including α -BHC, β -BHC, γ -BHC, δ -BHC, o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT, Aldrin, Dieldrin, Endrin, PCNB, Chlordane, Hexachlorobenzene, and Heptachlor in the TCM were determined by GC/ECD and conformed by GC/MS method. The pesticide residues in seventeen selected TCM were not detected. Three kinds of organochlorine pesticides, BHCs, PCNB, and Hexachlorobenzene were found in all Red Ginseng samples, with average amounts of 1.90 ppm, 1.00 ppm, and 0.14 ppm, respectively. Three samples of Loquat Leaf and one sample of Platygala Root were detected to contain an average of 0.06 ppm o,p'-DDT and 0.22 ppm p,p'-DDE, respectively. These results could provide limitation assessment of organochlorine pesticide residues in raw materials of TCM for the regulatory authority.

Key words: GC/ECD, α -BHC, β -BHC, γ -BHC, δ -BHC, o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT, Aldrin, Dieldrin, Endrin, PCNB, Chlordane, Hexachlorobenzene, Heptachlor, traditional Chinese medicine