# Authentication is the Fundamental Work for Standardization of Herbal Medicine

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Nowadays, exacerbated by the international dimension of the herbal market, the urgent need for authentication standard is growing. To ensure its safety and effective, authentication is the first and very important work; it is also the fundamental work for standardization and international of Chinese herbal medicine.

Most of the Chinese herbal medicine reaching the rest of the world passes through Hong Kong; hence, Hong Kong has a unique opportunity, if not responsibility, to ensure the authenticity of its exports.

Chinese Herbal Medicines are mainly originated from nature; their quality is usually affected by the species, growing area, collecting season and processing method etc. The following steps for authentication of Chinese medicines can be generally proceeded : crude drug identification, original plant investigation, microscopic identification and chemical analysis, and proceed at many levels, including DNA analysis to chemical, chromatographic fingerprinting.

The reasons of confusions arise because of historical, geographical reasons, language ambiguities and similarities in appearance of the growing herbs. With the support from government, and CM industry, we have conducted systematic investigations on the confused CMM in Hong Kong Ten thousands CMM samples were randomly acquired in 100 local herbal retail shops, 86 groups confused CMM have been identified systematically after the process of studying their origins, morphological appearances, microscopic authentication, and chemical components. The entire research work finished at the Jan of 2005. A handbook entitled "Authentication of CMM in Hong Kong" (香港容易混淆中药) was published and 20,000 copies available to public. (http://www.hkcccm.com)

Prior to this investigation, we have already published a bilingual reference "An Illustrated CMM in Hong Kong" (香港中药材图鉴 ISBN: 988-97448-2-1) with details on 500 commonly

used CMM distributed by world scientific (http://www.worldscibooks.com/medsci/5634.html )

In view of the global trend in the use of Chinese medicines, it is important to harmonize with international requirements. A well-established standard with international recognition will serve this purpose and help to facilitate the trade. An International Advisory Board (IAB) was established in 2002 to give advice on the Hong Kong Chinese Materia Medica (香港中药材标准). The IAB consists of renowned experts from Hong Kong local, mainland China, and overseas including Australia, Canada, Germany, Japan, Thailand and the United States. HKCMM standards covering 60 herbals, The first Phase 8 species are complied and will be published in 2005.

In 2003, the Bank of China (Hong Kong) Chinese Medicine Centre (中国银行中药标本中心) was established in our school. The centre collects over thousands of authentic CMM and herbarium specimens which include herbal CM originated in HK, potent/toxic CM used under local regulation, common observed confusable species of CMM, distinct decoction pieces used in HK and herbal markets etc. Our local CMM database has been linked up with those herbarium centres worldwide. The centre is also a bridge whereby CM can reach out to the world. Over 10,000 visitors have been reached here in the past 1.5 years. http://www.bucmm.org/

Microscopic Identification is an effective way with advantages of speedy, accurate, simple and low cost. It is achieved by observing under microscope, comparing the micro-morphological features of powered CMM and Chinese Patent Medicine samples with those of the standard or reference powdered crude drug sample. We have already set up the SOP and the method is also included in Hong Kong Standard of Chinese Materia Medica. "An Illustrated Microscopic Authentication of Chinese Materia Medica" (中药显微鉴别图鉴 ISBN:99937-838-0-3) was published in 2005.

The School of Chinese Medicine, Hong Kong Baptist University, has already laid the platform of pharmacognosy for establishing these criteria. It has built up resources in terms of herbarium specimens, crude drug samples, reference books, and human expertise.