



Government Laboratory of Hong Kong
Proficiency Testing Programme (GLHK PT 15-03)
Assay of Chinese Materia Medica

ASSAY OF CHINESE MATERIA MEDICA

PROFICIENCY TESTING PROGRAMME

GLHK PT 15-03

FINAL REPORT

27 January 2017



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Summary of Results

1. This proficiency testing programme (GLHK PT 15-03) was organised by the Government Laboratory of Hong Kong (GLHK) with the support from the Hong Kong Council for Testing and Certification (HKCTC). The main objectives of the proficiency testing programme are (i) to assist participating laboratories in demonstrating competence on determination of specific chemical markers and water contents in five selected Chinese Materia Medicas (CMMs); and (ii) to identify areas for improvement.
2. A total of 14 laboratories registered for the programme (i.e. 12 laboratories in Hong Kong, 1 laboratory in Macau and 1 laboratory in Shenzhen). Participants were requested to determine the mass fractions (%) of chemical marker(s) and the water content (%) in the five CMMs. Besides, participants were request to determine the volatile oil content (% v/w) in Cinnamomi Cortex (肉桂). The number of results returned for each CMM is summarised below.

CMM	No. of results received
Croci Stigma (西紅花)	9
Cinnamomi Cortex (肉桂)	9
Fritillariae Cirrhosae Bulbus (川貝母)	7
Rhizoma Gastrodiae (天麻)	12
Dendrobii Officinalis Caulis (鐵皮石斛)	8

3. The assigned value for each chemical marker and volatile oil content was derived as the robust average of the participants' results using robust statistics according to ISO 13528:2015. The assigned value for the water content was derived as the average of the participants' results according to ISO 13528:2015. The standard deviation for proficiency assessment (σ_{pt}) for the chemical markers and volatile oil content was calculated as the robust standard deviation of the participants' results according to ISO 13528:2015. The standard deviation for proficiency assessment (σ_{pt}) for the water content was calculated as the standard deviation of the participants' results according to ISO 13528:2015.



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4. The z-scores of the participants for the water contents are summarised as follows:

CMM	Number of participants (Percentage)		
	$ z \leq 2.0$	$2.0 < z < 3.0$	$ z \geq 3.0$
Croci Stigma (西紅花)	8 (89%)	1 (11%)	0 (0%)
Cinnamomi Cortex (肉桂)	8 (89%)	0 (0%)	1 (11%)
Fritillariae Cirrhosae Bulbus (川貝母)	7 (100%)	0 (0%)	0 (0%)
Rhizoma Gastrodiae (天麻)	11 (92%)	0 (0%)	1 (8%)
Dendrobii Officinalis Caulis (鐵皮石斛)	7 (88%)	1 (12%)	0 (0%)

5. The z-scores of the participants for the volatile oil content are summarised as follows:

CMM	Number of participants (Percentage)		
	$ z \leq 2.0$	$2.0 < z < 3.0$	$ z \geq 3.0$
Cinnamomi Cortex (肉桂)	6 (100%)	0 (0%)	0 (0%)

6. The z-scores of the participants for the mass fraction of each chemical marker (as-received basis) are summarised as follows:

CMM	Number of participants (Percentage)		
	$ z \leq 2.0$	$2.0 < z < 3.0$	$ z \geq 3.0$
Crocin I	7 (78%)	1 (11%)	1 (11%)
Crocin II	7 (78%)	0 (0%)	2 (22%)
Cinnamic acid	7 (100%)	0 (0%)	0 (0%)
Cinnamaldehyde	7 (88%)	0 (0%)	1 (12%)
Peimisine	7 (100%)	0 (0%)	0 (0%)
Gastrodin	11 (92%)	1 (8%)	0 (0%)
Anhydrous glucose	7 (88%)	0 (0%)	1 (12%)



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7. The z-scores of the participants for the mass fraction of each chemical marker (dry-mass basis) are summarised as follows:

CMM	Number of participants (Percentage)		
	$ z \leq 2.0$	$2.0 < z < 3.0$	$ z \geq 3.0$
Crocin I	8 (89%)	0 (0%)	1 (11%)
Crocin II	7 (78%)	0 (0%)	2 (22%)
Cinnamic acid	7 (100%)	0 (0%)	0 (0%)
Cinnamaldehyde	7 (88%)	0 (0%)	1 (12%)
Peimisine	7 (100%)	0 (0%)	0 (0%)
Gastrodin	11 (92%)	1 (8%)	0 (0%)
Anhydrous glucose	7 (88%)	0 (0%)	1 (12%)