



Government Laboratory of Hong Kong  
Proficiency Testing Programme (GLHK PT 14-03)  
Assay of Chinese Materia Medica

# **ASSAY OF CHINESE MATERIA MEDICA**

## **PROFICIENCY TESTING PROGRAMME**

### **GLHK PT 14-03**

### **FINAL REPORT**

**30 June 2015**



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### Summary of Results

1. This proficiency testing programme (GLHK PT 14-03) 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 six selected Chinese Materia Medicas (CMMs); and (ii) to identify problems and opportunities for improvement.
2. A total of 14 laboratories in Hong Kong registered for the programme. Participants were requested to report three out of the six CMMs and to determine the mass fractions (%) of chemical markers and the water contents (%). The number of results returned for each CMM is summarized below.

CMM	No. of results received
Radix Scutellariae (黃芩)	14
Radix Codonopsis (黨參)	13
Radix Bupleuri (柴胡)	11
Radix Paeoniae Alba (白芍)	13
Radix Polygoni Multiflori (何首烏)	14
Radix Salviae Miltiorrhizae (丹參)	10

3. The assigned value was derived as the robust average of the participants' results using robust analysis. The standard deviation for proficiency assessment ( $\hat{\sigma}$ ) was calculated as the robust standard deviation of the participants' results.



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4. The z-scores of the participants for water content are summarized as follows:

CMM	Number of participants (Percentage)		
	$ z  \leq 2.0$	$2.0 <  z  < 3.0$	$ z  \geq 3.0$
Radix Scutellariae (黃芩)	13 (93%)	0 (0%)	1 (7%)
Radix Codonopsis (黨參)	10 (77%)	2 (15%)	1 (8%)
Radix Bupleuri (柴胡)	9 (82%)	2 (18%)	0 (0%)
Radix Paeoniae Alba (白芍)	11 (85%)	0 (0%)	2 (15%)
Radix Polygoni Multiflori (何首烏)	10 (71%)	4 (29%)	0 (0%)
Radix Salviae Miltiorrhizae (丹參)	9 (90%)	1 (10%)	0 (0%)

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

CMM	Number of participants (Percentage)		
	$ z  \leq 2.0$	$2.0 <  z  < 3.0$	$ z  \geq 3.0$
Baicalin	12 (86%)	0 (0%)	2 (14%)
Lobetyolin	8 (62%)	0 (0%)	5 (38%)
Saikosaponin A	10 (91%)	1 (9%)	0 (0%)
Paeoniflorin	10 (77%)	1 (8%)	2 (15%)
2,3,5,4'- tetrahydroxystilbene -2-O- $\beta$ -D-glucoside	13 (93%)	0 (0%)	1 (7%)
Tanshinone IIA	8 (80%)	1 (10%)	1 (10%)
Rosmarinic acid	10 (100%)	0 (0%)	0 (0%)
Salvianolic acid B	9 (90%)	0 (0%)	1 (10%)



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

CMM	Number of participants (Percentage)		
	$ z  \leq 2.0$	$2.0 <  z  < 3.0$	$ z  \geq 3.0$
Baicalin	12 (86%)	0 (0%)	2 (14%)
Lobetyolin	8 (62%)	1 (8%)	4 (30%)
Saikosaponin A	9 (82%)	2 (18%)	0 (0%)
Paeoniflorin	11 (84%)	1 (8%)	1 (8%)
2,3,5,4'- tetrahydroxystilbene-2-O- $\beta$ -D-glucoside	13 (93%)	0 (0%)	1 (7%)
Tanshinone IIA	8 (80%)	1 (10%)	1 (10%)
Rosmarinic acid	10 (100%)	0 (0%)	0 (0%)
Salvianolic acid B	9 (90%)	0 (0%)	1 (10%)