



APMP-APLAC Joint Proficiency Testing Programme  
(APLAC T107)  
Elements in Food Supplement



**FINAL REPORT SUMMARY**

**APMP-APLAC Joint Proficiency Testing Programme**

**(APLAC T107)**

**Elements in Food Supplement**

Organized by

Government Laboratory of Hong Kong (GLHK)

September 2018



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**Summary**

1. This APMP-APLAC joint proficiency testing programme (APLAC T107) was organized by the Government Laboratory of Hong Kong (GLHK) under the auspices of the Asia-Pacific Metrology Programme (APMP) - Asia Pacific Laboratory Accreditation Cooperation (APLAC) Joint Proficiency Testing Working Group (PTWG). The purposes of the study are (i) to assist participating laboratories to demonstrate their capabilities in determining the mass fractions of four analytes (zinc, manganese, calcium and magnesium) at mg/kg levels in a test sample of food supplement by various analytical techniques; and (ii) to identify areas for improvement.
2. A total of 53 laboratories from 18 economies enrolled in the PT programme and 52 of them returned the Result Proforma to GLHK within the scheduled timeline.
3. The programme was concurrently conducted in parallel with the APMP Supplementary Comparison “Elements in Food Supplement” APMP.QM-S10 using the same test material. It was stipulated in the proposal for the PT programme that the supplementary comparison reference values (SCRVs) obtained from APMP.QM-S10, which had participation from national metrology institutes (NMIs) and designated institutes (DIs) worldwide, were to be used as the assigned values for evaluating the performance of participants in the APLAC T107. The standard deviation for proficiency assessment was derived from the Horwitz Equation [9.1]. The z-scores were used to show the performance of participants with respect to the assigned values of the analytes of interest.
4. Assigned values, standard deviation for proficiency assessment, robust average of the participants’ results and robust standard deviation of the participants’ results are summarized as follows:

	<b>Zinc mg/kg</b>	<b>Manganese mg/kg</b>	<b>Calcium mg/kg</b>	<b>Magnesium mg/kg</b>
Assigned value based on SCRv of APMP.QM-S10	11 140	3 716	119 500	65 670
Standard deviation for proficiency assessment estimated from the Horwitz equation	438	173	3 290	1 979



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Robust average of participants' results	10 610	3 571	114 700	64 160
Robust standard deviation of participants' results	996	335	16 760	6 426
Standard uncertainty of robust average	178	61	3 055	1 184

5. Participants' z-scores on the four analytes are summarized as follows:

z-Score	Number of Participants (Percentage)			
	Zinc	Manganese	Calcium	Magnesium
$ z  \leq 2.0$	30 (61%)	31 (66%)	20 (43%)	27 (59%)
$2.0 <  z  < 3.0$	7 (14%)	7 (15%)	10 (21%)	5 (11%)
$ z  \geq 3.0$	12 (24%)	9 (19%)	17 (36%)	14 (30%)
<b>Total:</b>	49 (100%)	47 (100%)	47 (100%)	46 (100%)

\*\*\*\*\*End of Report\*\*\*\*\*