



Asia Pacific Laboratory Accreditation Cooperation Proficiency Testing Programme (APLAC T082)

Essential and Toxic Elements in Seafood

Final Report Summary

Jointly coordinated by:

Government Laboratory Hong Kong (GLHK)

&

Hong Kong Accreditation Service (HKAS)

26 August 2013



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Summary

1. This proficiency testing programme (APLAC T082) was jointly organized by Government Laboratory, Hong Kong (GLHK) and Hong Kong Accreditation Service (HKAS) under the auspices of the Asia Pacific Laboratory Accreditation Cooperation (APLAC). The purposes of the study were (i) to assist participating laboratories in demonstrating competence on the measurement of the contents of the incurred analytes (iron, zinc, total arsenic and cadmium) at $\mu\text{g/g}$ levels through testing of the proficiency test sample which is a dried shrimp powder by various analytical techniques; and (ii) to identify problems and opportunities for self-improvement. The mass fractions of the incurred analytes on a dry mass basis were used for comparability purposes.
2. A total of 71 laboratories from 23 economies registered for the programme. 66 laboratories returned the results to GLHK within the scheduled timeline.
3. The programme was conducted in parallel with the supplementary comparison “APMP.QM-S5” which was conducted under the auspices of the Asia-Pacific Metrology Programme (APMP) using the same test material of dried shrimp powder. The supplementary comparison reference values (SCRV) obtained from APMP.QM-S5, which had participation from national metrology institutes and designated institutes worldwide, were used as the assigned values for evaluation of the performance of participants of this proficiency testing programme. Standard deviations for performance assessment were calculated using the Horwitz Equation. The z-scores were used to show the performance of participants with respect to the assigned values of the analytes of interest.
4. Participants’ z-scores on the four analytes are summarized as follows:

z-Score	Number of Participants (Percentage)			
	Iron	Zinc	Arsenic (total)	Cadmium
$ z \leq 2.0$	21 (34.4%)	49 (80.3%)	36 (63.2%)	49 (81.7%)
$2.0 < z < 3.0$	16 (26.2%)	9 (14.8%)	12 (21.1%)	3 (5.0%)
$ z \geq 3.0$	24 (39.3%)	3 (4.9%)	9 (15.8%)	8 (13.3%)
Total:	61 (100%)	61 (100%)	57 (100%)	60 (100%)