

33rd Asia Pacific Metrology Programme General Assembly
24 November – 1 December 2017
New Delhi, India

Laboratory Report
Government Laboratory, Hong Kong, China (GLHK)

Section 1: Laboratory Related Matters

(a) Statutory functions

GLHK is entrusted with a statutory role to provide analytical and advisory services to government departments to support the enforcement of regulations related to public health and safety, environmental protection, protection of government revenue and criminal justice in Hong Kong.

(b) Scope of Services

GLHK is equipped with an array of state-of-the-art equipment and provides comprehensive analytical services pertaining to food, pharmaceutical products, Chinese medicine, dangerous goods, environmental protection and consumer products for the protection of public health and safety and the environment. GLHK also provides technical support for the implementation of government policies and initiatives.

GLHK also provides comprehensive forensic scientific services to the Criminal Justice System in Hong Kong, covering questioned documents, toxicology and controlled drugs examination, as well as chemical, biochemical, and physical examination of evidence.

(c) Metrology

GLHK is a Designated Institute in the field of metrology in chemistry for Hong Kong, China under the Mutual Recognition Arrangement of International Committee for Weights and Measures (CIPM MRA), and has the responsibility for

- (i) promoting the awareness of metrology in chemistry and biology;
- (ii) ensuring that measurement standards maintained are traceable to the International System of Units (SI):
 1. via a primary realization or representation of the unit of measurement concerned;
 2. via another national metrology institute or designated institute having relevant Calibration and Measurement Capabilities (CMCs) with appropriate uncertainty published in the Key Comparison Database or through calibration and measurement services offered by the International Bureau of Weights and Measures (BIPM).
- (iii) dissemination of traceability of measurement to field laboratories.

Section 2: CIPM MRA Related Activities

(a) Participation in international comparisons

To ensure equivalence of measurements with other metrology institutes, GLHK has actively participated in international comparisons and studies especially those related to food, health, environment and product safety. In the past year, GLHK participated in 5 key comparisons organised under the auspices of the Consultative Committee on Amount of Substance: Metrology in Chemistry and Biology (CCQM), namely CCQM-K78.a on amino acids in aqueous solution, CCQM-K86.c on relative quantification of DP-073496-4 and RT73/GT73 in GM rapeseed matrix sample, CCQM-K145 on toxic and essential elements in bovine liver, CCQM-K149 on nitrogen mass fraction measurements in milk powder and CCQM-P164 on mass spectrometry based serum growth hormone measurement.

Besides, GLHK also organised and participated in APMP.QM-S10 on elements in food supplement and APMP.QM-S11 on organochlorine pesticides in ginseng root.

(b) Calibration and Measurement Capabilities (CMCs) claims

In Cycle XVIII, 13 new and 5 revised CMCs claims from GLHK were published in the KCDB and the total number of CMCs was increased to 64 covering 10 various measurement service categories (i.e. high purity chemicals, inorganic solutions, water, pH, polymers & plastics, biological fluids & materials, food, fuels, sediments & soils, and other materials) as of October 2017.

Section 3: International and Regional Cooperation

(a) Proficiency testing (PT) programmes

GLHK organised two proficiency testing programmes related to food safety under the auspices of APMP and Asia Pacific Laboratory Accreditation Cooperation (APLAC), including APLAC T107 on elements in food supplement and APLAC T106 on organochlorine pesticides in ginseng root with reference values for evaluation of PT performance derived from the Supplementary Comparison Reference Values (SCRVs) of APMP.QM-S10 and APMP.QM-S11 respectively.

(b) World Metrology Day Seminar and Metrology Symposium

On 6 June 2017, GLHK joined Hong Kong Accreditation Service, Standards & Calibration Laboratory (SCL) and Product Standards Information Bureau of the Innovation and Technology Commission, and the Hong Kong Council for Testing and Certification (HKCTC) to organise the “Seminar on the World Metrology Day (WMD), World Accreditation Day (WAD), and World Standards Day (WSD) 2017”. This seminar was a key event of the Government of the Hong Kong Special Administrative Region, China for celebrating the WMD, WAD and WSD 2017. The aim was to promote the concept of accreditation, metrology and standards and to raise the public awareness of their importance. We were delighted to have Dr. Toshiyuki Takatsuji, the Chairman of Asia Pacific Metrology Programme (APMP), Ms. CHANG Kwei-fern, the Chairman of the

Pacific Accreditation Cooperation (PAC), and Mr Adrian O'Connell, the Chairman of the Pacific Area Standards Congress (PASC) as the honourable guest speakers.

On 27 October 2017, Metrology Symposium about the redefinition of SI Units was organised jointly by GLHK, HKCTC, SCL and the Open University of Hong Kong. This symposium attempted to unfold the history and the latest development of SI units to the local testing and certification industry.

Section 4: Activities relevant to APMP's "Focus Groups"

GLHK has joined the APMP Food Safety Focus Group as a member since May 2015. As a considerable part of its services is related to food safety monitoring work, GLHK placed significant emphasis on the development work on this specific area over the years. For instance, GLHK organised and participated in a number of CCQM/APMP international comparisons related to food safety testing. Also, GLHK organised a number of international symposiums with theme on food safety to promote the importance of metrology to this area. GLHK expects more technical exchange and experience sharing with other national metrology institutes/designated institutes (NMIs/DIs) through the coming activities of the APMP Food Safety Focus Group especially for topics of interest common to the economies in the region.

Section 5: Future Plans, Priorities and the Role of APMP

GLHK will continuously take part in the international activities on metrology in chemistry and biology. In particular, food analysis, proteomics analysis and forensic analysis are the major new areas that GLHK would focus on in the coming years. This is to underpin the related measurement services and technical support to be provided to the clients. For instance, GLHK is currently coordinating two new supplementary comparisons under the auspices of APMP, namely APMP.QM-S10 on elements in food supplement and APMP.QM-S11 on organochlorine pesticides in ginseng root. GLHK would continue to provide support to the APMP-APLAC Joint Proficiency Testing Working Group on the organisation of new proficiency testing programmes on food analysis, where the reference values for performance evaluation are obtained from associated international comparisons or supported by means of relevant GLHK's CMCs.