

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

**Laboratory Report**

***Public Health Laboratory, Macao Special Administrative Region, China***

**Section 1: Laboratory Related Matters**

The Public Health Laboratory (PHL) was established in 1985 under the General Health Care Division of the Health Bureau of the Macao Special Administrative Region Government, China. The PHL has now over 70 staff with one-third being professionals in chemistry and biology disciplines, and occupies a work space of about 2300 m<sup>2</sup> on the Macao Peninsula. The PHL, headed by a director, is tasked with the responsibility of providing analytical and advisory services to the Health Bureau and other government agents in support of their law enforcement over the public health and environment protection.

**Section 2: CIPM MRA Related Activities**

As a newcomer of APMP (being admitted as a full member this June) the PHL has yet fully engaged in the CIPM MRA related activities. The Laboratory, as the government laboratory in Macao, is fully committed to providing quality analytical services to safeguard the public health and the environment within its scope of expertise. Since March 2006, the Laboratory has been accredited under the ISO 17025: 2005 standard by the China National Accreditation Service of Conformity Assessment (CNAS) for some 120 tests in chemistry and bacteriology for foods, cosmetics, pharmaceuticals and environmental samples. The Laboratory has also been ready for accreditation of its microbiological tests by CNAS under the ISO 15189:2012 standard early next year. In addition to active participation in the regional and international comparison exercises, the Laboratory has been strengthening its staff training on metrology in chemistry and biology by conducting a series of seminars given by experienced analysts from Hong Kong.

**Section 3: International and Regional Cooperation**

***International/Regional Comparisons***

In chemistry discipline, the PHL has actively participated in the following inter-laboratory studies :

- a) 2016 Asia Collaborative Study on Cigarette Test under the leadership of Tobacco Institute of Japan (nicotine, tar in smoking cigarettes)
- b) CTI-AF16065127 by the Centre Testing International Group Co., Ltd. , China (lead in cosmetics)

- c) Water Supply for Drinking Water by ERA (metals, total hardness, total chlorine, nitrite and bromate)
- d) FAPAS PT 20129 by FAPAS (permitted colours in sugar confectionary)
- e) FAPAS PT 1885 by FAPAS (nutritional elements in breakfast cereal)
- f) FAPAS PT 03131 by FAPAS (sorbic acid and benzoic acid in soft drink)
- g) FAPAS PT 15115 by FAPAS (nitrate and nitrite in meat)
- h) FAPAS PT 25147 by FAPAS (nutritional components in milk powder)
- i) FAPAS PT 1887 by FAPAS (nutritional elements in infant formula)
- j) FAPAS PT 07273 by FAPAS (metallic contaminants in powdered rice)

### ***Training/Workshop***

The PHL's senior staff had regularly attended metrology related seminars and workshops organized by CTC, HKAS and HKGL in Hong Kong during the report period.

To promote the chemical metrology concepts and applications in Macau, the PHL had organized workshops on metrology in chemistry and biology by experienced chemists from Hong Kong on various occasions for its analysts and those in private sectors:

- "An overview of metrological traceability – its basic principles, development and applications" delivered by Dr TT Kam in the 2013 Annual Scientific Meeting of the Macau Laboratory Technologist Association, Oct. 2013
- "The international metrology framework", delivered by Dr CS Mok for in-house training programme of the Public Health Laboratory in June 2016
- "Traceability in Chemical Measurement", delivered by Dr TT Kam for in-house training programme of the Public Health Laboratory, June 2016
- "Metrology in chemistry – essential concepts" delivered by CS Mok in the 2017 Annual Scientific Meeting of the Macau Laboratory Technologist Association, Oct. 2017.

(Note: Drs TT Kam and CS Mok are retired Senior Chemists of HKGL and currently appointed Adjunct Professors for the MSc programme of the Chinese University of Hong Kong, Hong Kong on accreditation chemistry)

A public half-day workshop on metrology in chemistry and biology has been scheduled for 15 December, 2017 for all lab workers from both public and private sectors in Macau.

<b>Section 4: Activities relevant to APMP's "Focus Groups"</b>
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As a new member of APMP, not yet joined any Focus Group.

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

The PHL will be committed to the promotion of metrology in chemistry and biology through the following functions and activities:

1. To participate inter-laboratory comparisons organized by APMP and other relevant organizations;
2. To organize inter-laboratory comparison study for local testing laboratories and institutions on the determination of some heavy metals (such as lead, cadmium, total chromium and nickel) in drinking water in Macau, as those are some of harmful substances according to “Macau Regulations of Water Supply”
3. To enhance the Laboratory’s measurement capabilities including the accreditation of the bacteriological tests and other biological tests under ISO 15189:2012 ; and
4. To organize workshops and training to promote the awareness of metrology in chemistry and biology for the testing industry.