

Preamble

The goal of obtaining comparability of laboratory diagnostic test results will be reached only when common reference systems can be established for worldwide use. A critical step in reaching this goal is achieving traceability of values obtained using reference measurement procedures and reference materials to a universally recognized and accepted reference point such as the International System of Units (SI). Recently, traceability requirements for medical devices to be imported into the European Community have been codified. The European Community *In Vitro* Diagnostic Directive (EC IVDD) states that **”The traceability of values assigned to calibrators and/or control materials must be assured through available reference measurement procedures and/or available reference materials of a higher order.”** (98/79/EC, Annex I (A) (3) 2nd paragraph).

The Joint Committee for Traceability in Laboratory Medicine (JCTLM) was created to provide a worldwide platform to promote and give guidance on internationally recognized and accepted equivalence of measurements in laboratory medicine and traceability to appropriate measurement standards. These are embodied in ISO 17511, 17025 and 18153. The JCTLM created a Database working group (DBWG) for evaluating nominated reference materials, reference measurement method, and reference measurement services from calibration (reference) laboratories required for industry compliance with the EC IVDD.

The Declaration of Cooperation between the International Bureau of Weights and Measures (BIPM), the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), and the International Laboratory Accreditation Cooperation (ILAC) for the establishment of the JCTLM can be found at <https://www.bipm.org/en/worldwide-metrology/jctlm-cooperation/>.

JCTLM DBWG is charged with establishing a process for identifying, reviewing against criteria described in relevant international documentary standards, and publishing available higher-order Certified Reference Materials, Reference Measurement Methods and Services.

Nominated reference materials and measurement methods/procedures are categorized according to the criteria described in ISO 15194 and ISO 15193. Three lists will be used to classify (certified) reference materials and reference measurement methods/procedures of a higher metrological order published in the JCTLM database:

List I. Certified reference materials and reference measurement methods for well-defined chemical entities or internationally recognized reference method-defined measurands. Reference materials and measurement methods included in this category are those that provide values that are traceable to the SI units; e.g., electrolytes, enzymes, drugs, metabolites and substrates, non-peptide hormones, and some proteins.

List II. Reference materials for which values of the measurands are not SI-traceable but are assigned by or traceable to an internationally agreed upon protocol, e.g., reference materials for blood typing, coagulation factors, microbial serology, nucleic acids, and some proteins and purified substances. List II also contains a group of purified substances which, due to the absence of reference measurement procedures, should not be directly used for calibration of routine methods unless commutability is established and/or matrix effect independent internationally recognized standardized value transfer protocols to commutable samples are applied.

List III. Certified Reference Materials for nominal properties

The procedures by which reference materials, reference measurement methods and reference measurement services provided by calibration (reference) laboratories have been evaluated for listing are provided in the JCTLM DBWG Quality Manual which is available at: <https://www.bipm.org/en/committees/jc/jctlm/jctlm-nominations-and-review.html#procedures>

New reference materials, reference methods/procedures and reference measurement services will be considered for listing annually. Listed materials are expected to be available for at least eighteen months after initial posting in the JCTLM Database. However, because usage rates for listed materials cannot be predicted accurately, producers must be contacted by anyone intending to use the listed material to determine availability of the current materials and projected times for production of new lots. It is the responsibility of the producer to notify the JCTLM Secretariat if a material ceases to be available.