



The NIST Quality Assurance Program for Metabolomics

Summary

Description

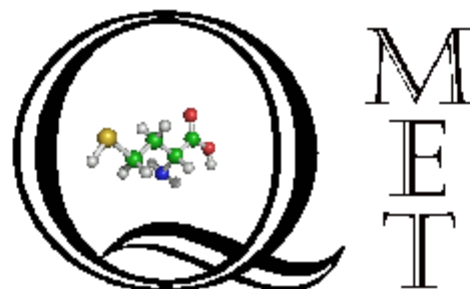
Contact Information

The National Institute of Standards and Technology (NIST) has established qMet: The NIST Quality Assurance Program for Metabolomics to demonstrate and improve the comparability of metabolomics measurements for both clinical research and routine metabolomics testing laboratories through the use of NIST Reference Materials and Data (RMDs) that are assessed by both NIST evaluations and community-based interlaboratory comparisons.

We encourage direct feedback from the metabolomics community regarding the anticipated needs for quality assurance/quality control reference materials and data to improve comparability in routine and research-based metabolomics measurements. Please consider providing your knowledge and insights through our online [QA for Metabolomics questionnaire](#).

The qMet program is presently conducting a pilot urine-based interlaboratory comparison. If you are interested in participation for a future public interlaboratory comparison with human-based urine samples, please complete our online [Expression of Interest in a Urine-based Interlaboratory Comparison](#).

To get in touch with us please send an e-mail to qmet@nist.gov.



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qMet is designed to evaluate an individual laboratory's capability to determine an appropriate metabolomic profile (both targeted and untargeted analysis) in well-defined, homogenous and stable control materials originating from human biofluids and tissues (e.g., plasma/serum, urine, tissue extracts, breast milk). NIST is currently commencing a pilot (limited-scale) interlaboratory comparison in 2016 to evaluate a series of candidate urine materials with platform-specific (NMR, LC-MS, GC-MS) protocols. Consultation and troubleshooting regarding the prescribed protocols will be provided during the exercise; participant feedback on the protocols will also be encouraged. Participants will be provided feedback regarding their results relative to expected measurement performance (repeatability and reproducibility) metrics.

Through this effort, a suite of viable, well-characterized materials and well-defined protocols will be developed that can be employed in routine metabolomics laboratory practice. These materials will then be made available to the community at large as the first in a series of NIST Reference Materials and Data (RMDs) for metabolomics. NIST's goal is to use the results of this pilot study to conduct a large-scale, public exercise, once the pilot has shown that the protocols and samples are suitable.

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Participation in the qMet program will enable laboratories to identify sources of measurement inconsistency that can occur during standard laboratory practice originating after the collection of biological samples, including sample preparation, analytical measurement and data processing and pattern recognition steps. Results from these interlaboratory comparison exercises are intended to help participants maintain and improve their metabolomics-based measurement precision and comparability, which will ultimately facilitate better outcomes from clinical and health-care decisions.

The coordinating laboratory for the qMet program is the Chemical Sciences Division, Gaithersburg, MD USA 20899-8390. Any feedback or general program questions, can be sent to gmet@nist.gov, or directly to Katrice Lippa (301-975-3116). Website related questions should be sent to Niksa Blonder niksa.blonder@nist.gov 301-975-4978.

Platform-specific questions can be directed to the following technical coordinators:

- NMR: Dan Bearden, Hollings Marine Laboratory, Chemical Sciences Division, Charleston SC, dan.bearden@nist.gov, 843-762-8865
- LC-MS: Yamil Simon, Biomolecular Sciences Division, Gaithersburg, MD, yamil.simon@nist.gov, 301-975- 8638
- GC-MS: Bruce Benner, Chemical Sciences Division, Gaithersburg, MD, bruce.benner@nist.gov, 301-975-3113