Forensic Science Quality Assurance Program

Seized Drugs General Method for GC-MS Reporting Limits Study

Program Purpose

The Forensic Science Quality Assurance Program (FSQAP) is focused on exploring laboratory challenges and improving reporting comparability, while providing the forensic community with tools for data interpretation and analysis.

Benefits

Participation in FSQAP provides opportunities for laboratories to evaluate their current in-house method performance and identify areas for possible improvement. NIST utilizes FSQAP to determine community wide analytical challenges and support improvement of measurements through appropriate reference materials, data, and educational resources.

Study Design, Purpose, and Rationale

The goals of the study are 1) to capture the range of methods, instrumentation, and analytical approaches used in the community, 2) investigate mass spectral variability across methods, and 3) investigate how different reporting practices effect the limit of seized drug reporting.

Timeline and Commitment

Registration is currently open and will close on July 5, 2024. To participate in this study, laboratories must be accredited forensic laboratories based in the United States and have a valid Schedule I & II DEA license, a validated seized drug screening method using GC-MS, and a documented reporting practice. To be considered for the study, participants will be required to complete a pre-study questionnaire pertaining to the method that will be used for sample analysis. After acceptance into the study, participants will be provided a kit of 10 solutions containing mixtures of controlled substances and asked to analyze the solutions and report whether the analytes are present above their established reporting thresholds. Participants will also be required to report chromatographic peak height/area and retention time of each peak and provide the raw datafile from each run. Standards used for comparison will also be reported. Participants will be requested to submit results to NIST via Google Forms. Note that due to a limited number of available kits, completion of the pre-study questionnaire does not guarantee acceptance into the study.

Those who complete the pre-study questionnaire will be informed on their acceptance into the study no later than July 10, 2024. Solution kits will be distributed by August 2024. Data entry will close in late September 2024, upon which time laboratories will receive a preliminary report and have an opportunity to review reported results. After data entry closes, participants must be available to answer follow-up questions regarding sample analysis. Preliminary certificates of participation will be issued in fall 2024.

Publication of Results

Upon closure of data entry, laboratories will receive a preliminary report containing a summary of reported data, consensus results, and a summary of analytes present in each mixture. Preliminary performance certificates will be available while NIST prepares a final report, which will be made publicly available by Spring 2025. Published tables, figures, and reports are provided using randomized laboratory codes, with identities known only to NIST and individual laboratories. NIST will not knowingly reveal laboratory identities associated with study results.

NIST MATERIAL MEASUREMENT LABORATORY

For questions, contact andrea.yarberry@nist.gov

To signup, go to: https://forms.gle/gPDU9aENHguPkw1D7