

Commonly Practiced Quality Control and Quality Assurance Procedures for Gas Chromatography/Mass Spectrometry Analysis in Forensic Urine Drug-Testing Laboratories

REFERENCE: Goldberger BA, Huestis MA, Wilkins DG: Commonly practiced quality control and quality assurance procedures for gas chromatography/mass spectrometry analysis in forensic urine drug-testing laboratories; *Forensic Sci Rev* 9:59–80; 1997.

ABSTRACT: Forensic urine drug-testing laboratories operate in a prescribed scientific and administrative manner to ensure accurate test results. All specimens positive by an initial immunoassay test must be confirmed by gas chromatography/mass spectrometry (GC/MS). To provide adequate control and verification of these analytical processes, laboratories must implement appropriate policies and procedures to be used in routine practice. This review describes the following topics regarding GC/MS analyses: method validation, instrument performance, assay calibration, quality control, criteria for designating a positive test result, sample and batch acceptance criteria, and GC/MS data review.

KEYWORDS: Accuracy, calibration, carryover, gas chromatography/mass spectrometry, GC/MS, internal standard, laboratory certification, limit of determination, limit of quantitation, linearity, precision, quality assurance, quality control, sensitivity.
