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The Forensic Toxicology Section at the Wisconsin State Laboratory of Hygiene (WSLH) is committed to providing the highest quality laboratory results. A recent commentary in the *Wisconsin Law Journal* expressed concerns that ethanol results reported by WSLH are unreliable due to the appearance of unidentified peaks in the ethanol chromatograms. We welcome this opportunity to address this claim.

Gas chromatography is a widely accepted and powerful laboratory tool for the separation, detection and quantitation of many chemical analytes. Headspace gas chromatography is an accurate, precise and specific method for determining the ethanol content of biological specimens. In this method, which is used at WSLH, ethanol is separated from other volatile substances. The ethanol peak must be completely separated from all other compounds or peaks, which is the case with the WSLH method and demonstrated in each chromatogram (including those published with the original commentary). The presence of additional peaks in a chromatogram often occurs and does not indicate an instrument malfunction.

The WSLH ethanol results are verified through the use of multiple quality assurance procedures. These include: daily calibration of the laboratory instrumentation; duplicate specimen testing with the results agreeing within a defined analytical tolerance; internal and external quality control materials are analyzed multiple times daily; and peer review of laboratory data prior to result reporting. All state and national proficiency testing challenges are processed in the same manner as submitter specimens.

The ISO 17025 and ABFT standards mentioned in the commentary refer to equipment that is malfunctioning or "repeated failures" of a laboratory's quality control results. None of these conditions apply to unidentified peaks with chromatography. As an accredited laboratory, WSLH rigorously adheres to accreditation standards.

The WSLH complies with record requests. Specimen chromatograms and other laboratory documents are available for inspection as public records. Wisconsin attorneys have requested and received this information frequently. Additionally, the unused portion of the original specimen is maintained for at least six months and may be retested either by WSLH chemists or by an independent laboratory. Wisconsin attorneys have made many such requests without the original WSLH result coming into question.

Again, we emphasize that the unidentified peaks have nothing whatsoever to do with the ethanol determination and are due to other substances sometimes present in biological samples such as blood. These unidentified peaks are NOT included in the ethanol calculation. From its inception the WSLH has demonstrated a commitment to excellence in ethanol testing. The data produced by the WSLH, in conjunction with the quality assurance and rigorous accreditation standards, provides confidence that the ethanol testing results reported are reliable.

