

Trace Metals Analysis in Support of the Health Sciences



RTI International performs trace metals analyses and methods development research in support of many types of health research. We work for federal, state, and local agencies, as well as universities and commercial companies. Our clients rely on RTI's national reputation for excellence to meet their need for timely and accurate results.

Chemical analysis is a vital part of many types of health research, from developing treatments for disease to monitoring the health of the food chain by determining exposure of wildlife to potential contaminants.

For decades, RTI has been performing trace metals analyses of animal and plant tissues in support of such research by the U.S. Fish and Wildlife Service, the pharmaceutical and microelectronics industries, the National Institutes of Health, state and local governments, and universities.

Why Clients Choose RTI

RTI is nationally renowned for excellence in performing trace element measurements of biological media. We are home to one of the few labs with experience performing trace elemental measurements that conform to the U.S. Food and Drug Administration's Good Practice Standards (GxPs), including Good Laboratory Practices (GLPs) and current Good Manufacturing Practices (cGMPs).

Our laboratory has acquired an international reputation for specialized measurements, such as hexavalent chromium, elemental mercury, ionic and organic mercury compounds, and compounds of arsenic.

Meeting Scientific Challenges in Methods Development

RTI has a strong tradition of scientific creativity and flexibility, developing analytical methods to accommodate the specific needs of each client and project. Several such methods developed by RTI chemists have been adopted as standards by the U.S. Environmental Protection Agency and other agencies and are widely used today.

Meeting Scientific Challenges

RTI takes pride in being responsive to clients' unique needs. For example, at the request of a pharmaceutical client, we performed ultra-trace, parts-per-trillion measurement of a rare earth element in blood plasma, a challenge that required sophisticated equipment and experienced analytical chemists. Previous attempts by other facilities over a nine-month period had failed to yield a viable analytical method. RTI staff developed and validated a rapid, extremely sensitive, and highly accurate method in only one month.



Laboratories and Instrumentation

RTI laboratories are equipped with state-of-the-art instrumentation. We conduct many measurement programs in Class 100 and 1000 atmospheres, and we use all-plastic hoods to provide Class 10 atmospheres for ultra-low-level sample preparation.

Trace Inorganics Instruments

- Inductively coupled plasma high-resolution mass spectrometry (Thermo Finnigan ELEMENT2 SF-ICP-MS)
- Inductively coupled plasma quadrupole mass spectrometry (ICP-MS)
- Thermo NORAN X-ray fluorescence (XRF) for analysis of environmental filters
- Liquid chromatography/inductively coupled plasma mass spectrometry (UPLC/HPLC-ICP-MS) for speciation of organometallic compounds
- Inductively coupled plasma atomic emission spectrometry (ICP-AES)
- Cold vapor (gold trap) atomic fluorescence spectroscopy (CVAFS) for ultra-trace mercury.

More Information

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