

OHSU Research Cores and Shared Resources

Elemental Analysis Core

OHSU's cores are your campus technology partners dedicated to the success of your project. For optimal results, take advantage of the state-of-the-art scientific resources within the OHSU community.

www.ohsu.edu/cores



We offer quantitative analysis of biological and non-biological specimen.

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Mission Statement

Elemental analysis using inductively coupled plasma mass spectrometry (ICPMS) is rapidly becoming the method of choice in a diverse array of different research fields such as biology, chemistry, semiconductors, and geology. Unmatched sensitivity (part per trillion – parts per billion), high quantitation accuracy even for complex samples, matrix-independent analysis, small sample size, and a large dynamic range provide reliable and robust quantitative analysis of trace or common elements in a plethora of samples. As a core within the Medical School of OHSU large numbers of samples are biological material. To conserve material we tailor each sample type preparation to minimize sample consumption. Our services are offered to the academic community as well as the general public. We also work with colleges on student laboratory projects.

Services

Most common ICPMS application in our Core:

Biological/Medical Studies

- Concentration measurement of metal containing proteins.
- Biodistribution of metals and other trace elements in tissue and body fluids.
- Cellular uptake studies.
- Na, K, Ca studies in cells and organelles.

Drug Discovery

- Cis-platin
- Gold Nanoparticles
- Magnetic Nanoparticles

Services Continued

Environment

- Water and soil heavy metal analysis.
- Food and nutritional supplements studies.
- Paint and building materials.

Our services include sample preparation, measurements and data workup. We typically determine ~5 elements in a single analysis. In addition we offer two dimensional elemental analysis involving HPLC separation and ICPMS measurement. This type of analysis is especially useful for complex mixtures such as tissue or cellular lysates to identify or enrich protein populations that bind certain elements (in combination with MSMS). Another possible application is the determination of oxidation states of metals.

Instrumentation and Pricing

The Elemental Analysis Core is equipped with an Agilent 7700x. HPLC separation is carried out by a Agilent HPLC cap system. Application specific separation columns for HPLC are available. Prices for OHSU users start at only \$15 for a simple analysis.

Can We Help You?

We accept samples delivered in person or mailed to us. Please visit our web site or contact us for any additional information.