

# An easy way to find a needle in a haystack by removing the haystack

June 18 2009

---



One drop of blood is sufficient for detailed metabolomic analysis by MAILD mass spectrometry. Credit: MPI for Chemical Ecology, Aleš Svatoš

Researchers at the Max Planck Institute for Chemical Ecology in Jena and their colleagues from the Czech Academy of Sciences in Prague have developed a new method to quickly and reliably detect metabolites, such as sugars, fatty acids, amino acids and other organic substances from plant or animal tissue samples. One drop of blood -- less than one micro liter -- is sufficient to identify certain blood related metabolites.

The new technique, called MAILD, is based on classical mass spectrometry (MALDI-TOF/MS) and enables researchers to measure a large number of metabolites in biological samples, opening doors for targeted and high-throughput metabolomics. Because of its versatile applications, also in medical diagnostics, the invention is protected by

patent.

Mass spectrometry is an analytical technique used to elucidate the molecular composition and structure of chemical compounds. In the last two decades mass spectrometry found vast applications in biology, especially for analyzing of large biomolecules. Matrix-Assisted Laser Desorption/Ionization (MALDI), wherein bio-molecules (e.g. proteins) are co-crystallized with a chemical substance called a matrix subsequently irradiated with a laser leads to the formation of protein [ions](#) which can be analyzed and detected.

However, matrices used in the MALDI technique have a substantial disadvantage: the laser beam not only forms ions from the substances of interest; it also forms low-mass ions (

Citation: An easy way to find a needle in a haystack by removing the haystack (2009, June 18) retrieved 10 April 2024 from <https://phys.org/news/2009-06-easy-needle-haystack.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--