

Thermo Fisher offers enhanced GC-MS systems

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The enhancements include the addition of Variable electron Voltage (VeV) technology, the Orbitrap GC-MS HRAM Metabolomics Library and the TraceFinder Automated Compound Identification.



Updated with new capabilities in high resolution accurate mass (HRAM) GC-MS, the Thermo Scientific Orbitrap GC-MS systems now give users across metabolomics, food safety, environmental, pharma and toxicology applications high levels of accuracy in their data.

Building on the existing reputation and success of the Thermo Scientific Q Exactive GC Orbitrap and the Exactive GC Orbitrap, enhancements include the addition of Variable electron Voltage (VeV) technology, the Orbitrap GC-MS HRAM Metabolomics Library and the TraceFinder Automated Compound Identification. These new capabilities are designed to provide highly sensitive, selective and accurate compound identification of complex samples for both research and routine laboratories performing gas chromatography mass spectrometry (GC-MS).

“The power of the multi-award winning Orbitrap GC-MS technology has facilitated numerous scientific advances and enabled our customers to break new ground and gain a deeper understanding of samples through the use of HRAM technology,” said Fausto Pigozzo, director of marketing, GC GC-MS, Thermo Fisher. “Our R&D teams are dedicated to advancing this technology and with these newest capabilities offer systems that continue to provide customers with information rich analysis.”

“Orbitrap GC-MS technology provides a remarkable opportunity to explore the metabolome, and alongside other technology is helping us build up an understanding of disease phenotypes in more detail,” said Jean-François Focant, professor and director of the organic and biological analytical chemistry laboratory (OBiAChem), University of Liege, Belgium. “One of the primary challenges in metabolomics is to identify significant metabolites during non-targeted studies. The addition of the new Orbitrap GC-MS HRAM Metabolomics Library is helping us move in the right direction with respect to obtaining putative metabolite identifications quickly, and as such, allowing a fast route to begin the work of understanding the biological meaning of our observations.”

The new capabilities included on the Q Exactive GC Orbitrap and the Exactive GC Orbitrap, include:

- VeV technology that enables low electron voltage settings to be used during electron ionization (EI) protocols, promoting high mass signals and providing high sensitivity for compounds prone to extensive fragmentation.
- The Orbitrap HRAM Metabolomics Library for electron ionization (EI), metabolite identification is efficiently streamlined. The library includes more than 800 metabolites and the spectra is refined and curated with the elemental composition of each EI fragment verified.
- New TraceFinder software features a specialized spectral deconvolution library and automated compound identification to enable identification of challenging compounds. With the addition of Kovats retention index to the scoring index of unknowns, user confidence in compound identification is improved, especially in relation to isomeric compounds.

The Q Exactive GC Orbitrap is a relatively easy-to-use GC-MS system that provides high quality data for compound discovery, identification and quantitation for comprehensive analyses. The Exactive GC Orbitrap GC delivers sensitive, routine grade performance in both targeted and non-targeted screening protocols. Both systems provide excellent resolving power, mass accuracy, linear dynamic range and sensitivity of leading Orbitrap technology.