MOBILion and International Research Team are Awarded Grant from The Michael J. Fox Foundation and the Shake it Up Australia Foundation to Resolve Biomarkers for Parkinson's Disease

MOBILion Systems, Inc., Chadds Fords, PA.- November 10, 2020 -- MOBILion Systems, Inc., a pioneer in fast, efficient, high-resolution instrumentation for biomarker discovery, diagnostics and therapeutic development, is collaborating with an international research team to identify alterations in the metabolism of selective glycosphingolipids in specific brain regions that contribute to the early onset and progression of Parkinson's disease.

The assembled international team brings together the diverse expertise needed to dissect the metabolic glycosphingolipid map in Parkinson's disease (PD). The team includes Dr. Kim Ekroos of Lipidomics Consulting Ltd., a pioneering subject matter expert in the field of lipidomics, the research group of Dr. Shane Ellis at the University of Wollongong in Australia; Dr. Ron Heeren from the Maastricht Multi Modal Molecular Imaging Institute (M4I), a world-leading institute in lipid Mass Spectrometry Imaging; Dr. Nathan Hatcher, a Principal Scientist with the Department of Neuroscience at Merck.

The project is funded by a grant from The Michael J. Fox Foundation and its partner the Shake It Up Australia Foundation and builds on several technical developments made by the group at M4I in the fields of mass spectrometry imaging and lipid analysis. This research will include use of MOBILion's Structures for Lossless Ion Mobility (SLIM)-based High-Resolution Ion Mobility (HRIM) instrument to identify alterations in the metabolism of selective glycosphingolipids (GSLs) in specific brain regions that contribute to early Parkinson's onset and accelerated progression rates.

PD affects more than 6 million people worldwide. Glycosphingolipids are natural cellular fats and part of the PD epidemiology. They are components of cellular membranes that fulfill multiple functional roles, from cell structure and transport to signalling. However, the contribution of glycosphingolipids to PD is not fully understood.

"We are excited to apply MOBILion's high resolution separations technology to advance the characterization of glycosphingolipids," says Dr. Melissa Sherman, MOBILion Systems CEO. "Our HRIM-MS instrument can rapidly reveal previously indistinguishable GSLs that are critical to understanding PD."

"Our approach is a game-changer," states Dr. Kim Ekroos, founder and CEO of Lipidomics Consulting Ltd. "Mutations in the GBA1 gene, the most prevalent genetic risk factor for PD, results in accumulation of glucosylceramide and glucosylsphingosine. However, we do not know the breadth of alterations in glycosphingolipids and how this contributes to PD. We will combine mass spectrometry imaging with isotope labelling methods that allow us to track the synthesis and breakdown rates of glycosphingolipids in different brain regions, in real-time, as well as using MOBILion's High-Resolution Ion Mobility Mass Spectrometry to study how larger, more complex

glycosphingolipids are altered in PD. With this support from The Michael J. Fox Foundation, we can now utilize experiments that have never been done before to identify in what ways the glycosphingolipid metabolism can be restored in PD."

MOBILion has partnered with Agilent Technologies Inc. to integrate their HRIM separations technology with Agilent's Q-TOF mass spectrometry platform as the company's first commercial product offering, to be fully commercialized in 2021. Members of the above research group have pre-commercial use of the MOBILion High-Resolution Ion Mobility instrument.

About MOBILion Systems, Inc.

MOBILion Systems is enabling advancements in disease diagnosis and treatment by commercializing instruments to separate, identify and analyze the most challenging molecules that other instruments fail to detect. MOBILion's separations technology provides higher resolution, faster analysis and simpler workflows to reveal molecules that are most important in characterizing biologic therapeutics, discovering biomarkers, and improving the accuracy of diagnostic tests. Processing population-scale samples in days versus years, and detecting molecules other instruments miss, make treatments safer and more effective, accelerate disease prediction and diagnosis, and enhance the development of new therapies. The company is headquartered in Chadds Ford, Pennsylvania within the Philadelphia biopharmaceutical and medical innovation corridor. Connect with us on LinkedIn or visit www.mobilionsystems.com

About Lipidomics Consulting Ltd.

Lipidomics Consulting is fundamentally advancing disease biology by providing the cutting-edge experience, skills and know-how in lipids and lipidomics. For more information, visit www.lipidomicsconsulting.com and connect with us on Twitter and LinkedIn.

About the University of Wollongong

A research-intensive global university, University of Wollongong (UOW) has become a benchmark for Australia's new generation of universities. It is ranked among the top modern universities in the world and has built a reputation as an enterprising institution, with a multi-disciplinary approach to research and a personalised approach to teaching. More information can be found at uow.edu.au.

About University of Maastricht

Maastricht University (UM) is the most international university in the Netherlands and, with about 20,000 students and 4,500 employees, still growing. The university stands out for its innovative education model, international character and multidisciplinary approach to research and education.

Thanks to its high-quality research and study programmes as well as a strong focus on social engagement, UM has quickly built up a solid reputation. Today it is considered one of the best young universities in the world.

About Merck & Co, Inc.

For more than 125 years, Merck, known as MSD outside of the United States and Canada, has been inventing for life, bringing forward medicines and vaccines for many of the world's most challenging diseases in pursuit of our mission to save and improve lives. We demonstrate our commitment to patients and population health by increasing access to health care through far-reaching policies, programs and partnerships. Today, Merck continues to be at the forefront of research to prevent and treat diseases that threaten people and animals – including cancer, infectious diseases such as HIV and Ebola, and emerging animal diseases – as we aspire to be the premier research-intensive biopharmaceutical company in the world. For more information, visit www.merck.com and connect with us on Twitter, Facebook, Instagram, YouTube and LinkedIn.