Evaluation of Novel FAIMS Technology for Intact Protein Detection and Characterization by Infusion

Susan E. Abbatangelo, Jason Neil, William McGee, Scott Kronewitter, Michael Belford, Jim Stephenson, Mary Blackburn, 1Thermo Fisher Scientific, Cambridge, MA, 2Thermo Fisher Scientific, San Jose, CA

ABSTRACT

Purpose: A novel FAIMS (High Field Asymmetric waveform Ion Mobility Spectrometry) technology was evaluated to determine if it provided benefits for improved intact protein detection by infusion-MS.

METHODS: A novel FAIMS device was combined with a TriVersa NanoMate™ source, with a Tribrid™ mass spectrometer, and protein samples ranging from simple mixtures to complex cell lysates were evaluated by infusion at nanoflow rates.

RESULTS: FAIMS improved intact protein detection by infusion-based MS techniques by separating discrete CV during the 9 minute method. Overall, more proteins were detected with FAIMS than when FAIMS voltages were off, or with FAIMS voltages on and the corresponding CV at which it was operated.

CONCLUSIONS: • FAIMS improves intact protein detection in cell lysates when compared to no FAIMS for infusion-MS. • FAIMS can be used to minimize sample prep steps.

REFERENCES


ACKNOWLEDGEMENTS

The authors would like to thank Dr. Daniel Eikel and Advion for providing setup and assistance on the EASY-Spray ion source.

TRADEMARKS/LICENSING

© 2019 Thermo Fisher Scientific Inc. All rights reserved. Thermo Fisher Scientific Inc. is a trademark of Thermo Fisher Scientific Inc. These trademarks may not be used without the permission of Thermo Fisher Scientific Inc.