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Wenjie Cao

SABIC Technology Center—Riyadh, Saudi Arabia

Further investigation of the adduct ion complications on MRM at different LC-MS/ MS ionization techniques, ESI, APCI, MMI and APPI

This presentation is going to extend the comparison of electrospray ionization (ESI) and atmospheric pressure chemical ionization (APCI) to multimode ionization (MMI) and atmospheric pressure photo ionization (APPI) per some of the audiences' request during the Q&A section of my presentation during the 2015 International Summit on Current Trend of MS in New Orleans. For the triple quadrupole LC-MS/MS instrument, the primary purpose or the most significant feature is the highest sensitivity among almost all, if not all of the LC-MS/MS instruments by doing the multiple reaction monitoring (MRM) testing. Ionization efficiency, selectivity, adduct ion production are among the top parameters which affect the MRM testing and the sensitivity. From ESI to APCI to MMI and APPI, this presentation will show that the species and amount of adduct ions produced at each mode are quite different. Some type of the adduct ions may complicate the MRM testing by decreasing the sensitivities while some other adduct ions may prevent any reliable MRM tests being performed. Some examples will be presented to show how the typical adduct ions are produced in each mode from ESI to APCI and APPI, and how the typical adduct ions may complicate the MRM testing. The overall pros and cons, and the best ionization mode for some type of the targeted chemicals will be summarized for the different ionization techniques.

Biography

Wenjie Cao received a PhD from Professor John Calvin Giddings' Group at the University of Utah, Salt Lake City, UT. He is a Contributor to the book, "Encyclopedia of Chromatography" and more than 20 publications and presentations in peer-reviewed scientific journals and international conferences. He has worked for Huntsman Polymers Corp, Sealed Air, and DuPont as a Research Investigator for 14 years in USA before joined SABIC in 2012. He is now the Technical Leader of chromatography and wet lab and a Staff Scientist of the Analytical Department of the SABIC Technology Center at Riyadh. He has filed six patents, delivered talks and made seminar presentations in the ISPAC Symposium, 2016 and in King Saud University since he joined SABIC Technology Center.

CaoWF@SABIC.com

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