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From ESI to APCI, MMI and APPI, complications of adduct ions on MRM at different LC-MS/MS ionization techniques

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This presentation is going to extend the comparison of ESI and APCI to MMI and 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 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 completed his PhD at University of Utah, USA. He has contributed to the book *Encyclopedia of Chromatography* and has more than 20 publications and presentations in peer-reviewed scientific journals and international conferences. He has worked at Huntsman Polymers Corporation, Sealed Air Corporation, and DuPont, as a Research Investigator, for 14 years in USA before joined SABIC in 2012. Now, he is the Technical Leader of the Chromatography and Wet Lab and a Staff Scientist of the Analytical department of the SABIC Technology Center at Riyadh.

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