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“Evolution of Intelligent HPLC/MS/MS – Examples of Automated Problem Solving”

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The quadrupole ion trap mass analyzer offers a variety of experimental ion separation capabilities including full scan MS, SIM, SRM, multiple consecutive MS/MS experiments up to 10, and high resolution (Zoom) scanning. These experiments may be combined and changed within the course of an HPLC elution to maximize the analytical data obtained from each injection. Switching among experiments can be pre-programmed at the beginning of a run, or much greater analysis versatility is obtained by permitting the incoming data to dictate the timing of experimental change. This “Data Dependent” feature dramatically increases the productivity of the ion trap and creates unmatched analysis flexibility and problem solving power. Several examples are given demonstrating this feature including: identification of proteins and sequencing of peptides; identification and quantitation of drug metabolites, identification of natural products in crude plant extracts; analysis of environmental pesticides. In each example, efficient sample utilization has been enhanced through “Data Dependent” analysis methods.