Overview

This document outlines the 6 easy steps to upgrade a basic Multiple Reaction Monitoring (MRM) acquisition method to automatically include Enhanced Production Ion (EPI) scanning to acquire full scan MS/MS spectra for any MRM that was detected in an unknown sample.

The benefits of this workflow include:

- Improved selectivity – multiple fragment ions are detected (beyond just 2 MRM transitions) meaning additional confidence in identification of positive findings
- Improved sensitivity – EPI scans are called ‘enhanced’ because fragments are accumulated in Q3 of your mass spectrometer, giving you better signal-to-noise for the detected MS/MS spectra
- Improved data acquisition – EPI spectra are acquired fully automatic using the logic provided by Information Dependent Acquisition (IDA), Dynamic Background Subtraction (DBS), and Dynamic Fill Time (DFT)
- Improved data processing – ability to compare results to MS/MS mass spectral libraries for better identification

The QTRAP® Software Workflow in Analyst® Software

Open any MRM method that contains your list of targeted MRM transitions.
Right click on your MRM experiment and select ‘Add IDA Criteria Level’

Set-up the criteria by using these recommended settings:
1. Monitor 1 to 2 peaks
2. Activate DBS
3. Set the automatic exclusion to ‘Never’
4. Set the IDA threshold to 500 cps (or higher depending on MRM background)

Right click on your IDA criteria and ‘Add Experiment’

Set-up your EPI scan by:
1. Change scan type to ‘Enhanced Product Ion’
2. Select a scan rate of 10000 Da/s
3. Specify a mass range to cover all targets of your MRM list, like 50 to 1000
• Set Declustering Potential (DP) to a value near the average DP of all compounds in your MRM list.

• Set Collision Energy (CE) to 35 V and Collision Energy Spread (CES) to 15 V for best library search results.

• Go to the ‘Advanced MS’ tab and be sure to verify that DFT is active.

For additional support on this and other AB SCIEX products, visit our website or email us at support@absciex.com.