Robust bioanalysis over a large 1500 injection sample set

Using the SCIEX Triple Quad™ 7500 LC-MS/MS System — QTRAP® Ready

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Here, the robustness of the SCIEX Triple Quad 7500 LC-MS/MS System — QTRAP Ready was evaluated over 1500 injections of a plasma sample spiked with four relevant bioanalysis compounds (atenolol, metoprolol, nadolol and rosuvastatin). This number of injections relates to more than two days total analysis time and shows that the instrument can perform optimally even after this large number of injections. After this testing, no instrument cleaning was required before the next analysis could begin, showing that the system's performance had not been impacted.

Figure 1, below, plots area values of each of the analytes against injection number, with a successful outcome appearing flat across the injection number. For this analysis, internal standards have not been used, so the data shown represents uncorrected, raw areas for each analyte. This highlights the robustness of the system.

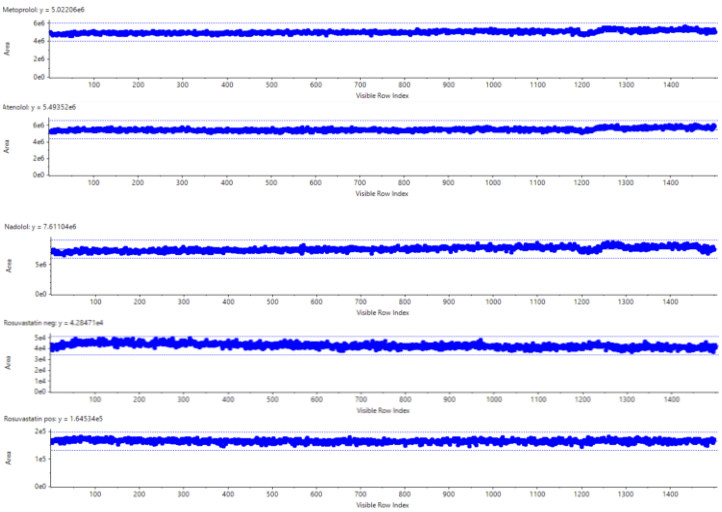

Figure 1. Area vs. injection number for all compounds analyzed. All compounds analyzed provided %RSD values of peak area between 3.12% and 5.02% over 1500 injections. From top to bottom with individual %RSD values provided in brackets: metoprolol (3.39), atenolol (3.12), nadolol (4.78), rosuvastatin in negative mode (5.02), rosuvastatin in positive mode (3.41). All compounds were analyzed at a concentration of ~ 10 ng/mL.

More details on the sample preparation and methods can be found in the Supplementary information.

Conclusions

- The SCIEX 7500 System provides excellent levels of robustness for bioanalysis from plasma matrices and provides consistent area values over more than two days of analytical run time
- Analysis was performed in both positive and negative mode, highlighting that the SCIEX 7500 System is capable of high levels of robustness in both acquisition modes
- No cleaning or maintenance of the instrument was necessary after this analysis was complete.

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