

High sensitivity and dynamic range for veterinary drugs analysis with the SCIEX Triple Quad™ 5500+ System – QTRAP® Ready

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Veterinary drugs are commonly used in livestock breeding to prevent or treat infections of the animals and to ensure their optimal growth. A highly selective and sensitive LC-MS/MS method for the analysis of veterinary drugs is presented, using SCIEX Triple Quad 5500+ System together with the SCIEX OS Software for a targeted quantitation/screening workflow. A mixture of 218 veterinary drugs, with different compound classes, like Corticoids, Quinolones, Sulfamides, Macrolides, Tetracyclines and many others, are included in this study. An optimal LC-MS/MS quantitative analysis would not only be able to incorporate a large, chemically diverse panel of these compounds, but also be able to produce quantitative results across a large range of potential occurrence concentrations. The SCIEX Triple Quad 5500+ System incorporates detector technology allowing for expanded linear dynamic range (LDR) for this and other demanding applications.

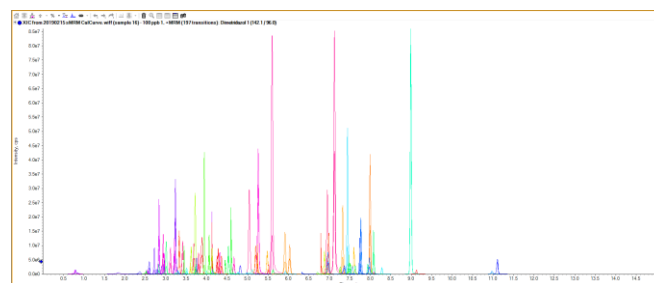


Figure 2. XICs of veterinary drug mixture in positive Mode.

The MS method was set up with a targeted list of 218 veterinary drugs (Pos/Neg). An acquisition method of time scheduled MRM transitions was created to ensure high data quality. Sensitivity is assessed down to the sub- ppb level and linear dynamic range is exceeding 4 orders of magnitude without internal standard correction.

Figure 3 is an example from another study using two pharmaceutical compounds, which illustrated with the linear dynamic range (LDR) exceeding 5 orders of magnitude, with internal standard correction.

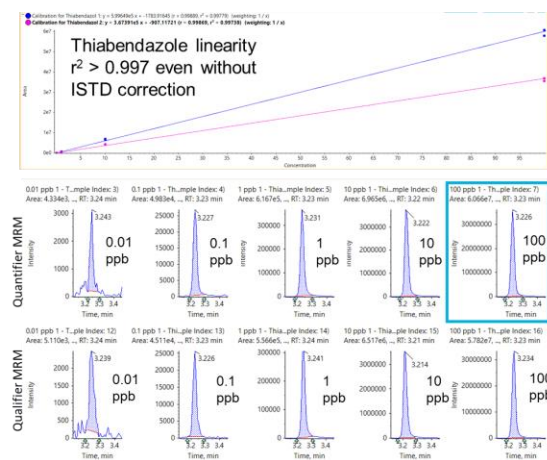


Figure 1. Sensitivity and linearity for thiabendazole. This example compound demonstrated with excellent sensitivity. Linear response is exceptional even in the absence of internal standard correction.

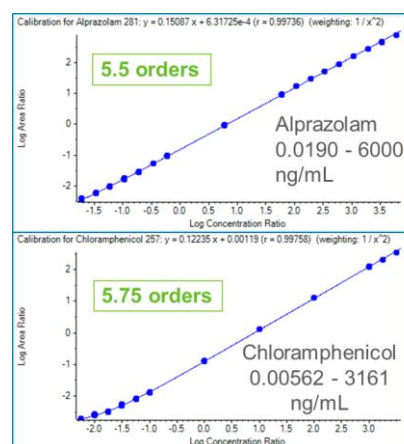


Figure 3. High linear dynamic range in positive and negative modes.

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