

TWO MINUTE QUANTITATIVE ANALYSIS OF IMMUNOSUPPRESSANT DRUGS

Rapid determination of cyclosporine A,
everolimus, sirolimus, and tacrolimus
in whole blood

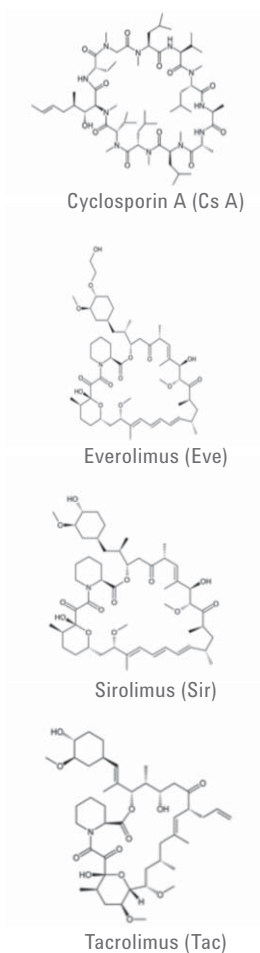


Figure 1. Structures of the target compounds.

Background

The analysis of immunosuppressants in a clinical research environment requires a quick and simple analytical method for rapid sample turnaround. LC/MS is the ideal solution for the routine quantitative analysis of target compounds such as cyclosporine A, everolimus, sirolimus, and tacrolimus because it delivers the necessary sensitivity and accuracy.

The Approach

A two-minute LC/MS/MS method with online sample preparation provides a simple, accurate, and rapid analysis of these target compounds in whole blood. Time consuming and labor intensive sample preparation is reduced when analytes are trapped on a Zorbax Eclipse Plus C18 Guard Column, washed, and eluted onto a Poroshell 120 EC-C18 column for further chromatographic separation. Analysis with an Agilent 6460 Triple Quadrupole Mass Spectrometer coupled to an Agilent 1200 Infinity Series LC delivers the outstanding sensitivity and specificity required to confidently identify and quantify immunosuppressants in difficult biological matrices. This enhanced performance is leveraged by Agilent's industry proven reliability and robustness for utmost productivity and cost-effectiveness.

With easy-to-use MassHunter software, a simple work flow can be established to rapidly quantify immunosuppressants. Linearity of calibration curves, as well as accuracy of quality control and sample data, can be quickly verified. Processed data can be viewed in a variety of customizable report formats or it can be exported to a laboratory informatics system (LIS/LIMS) in .xml or .csv format.



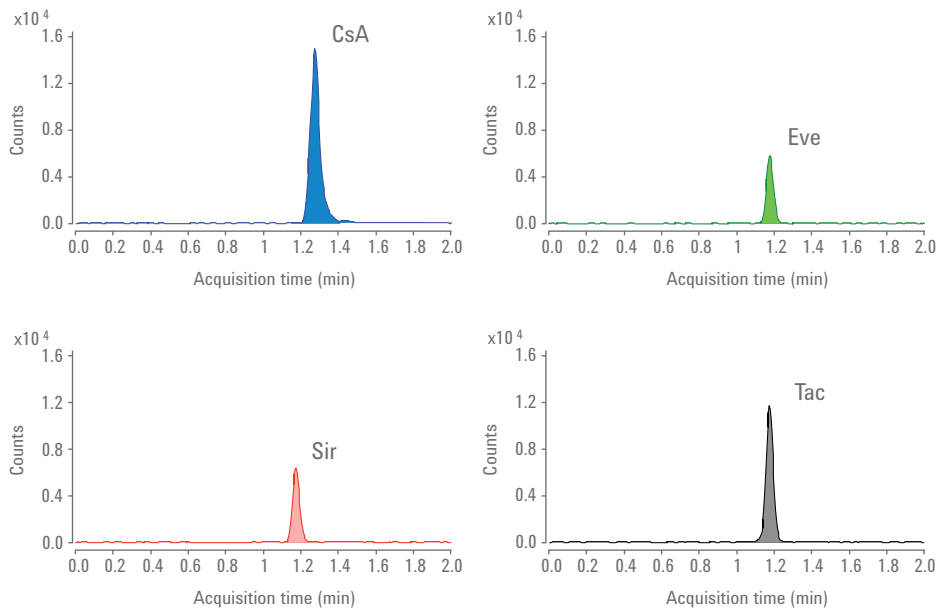


Figure 2. Representative chromatograms demonstrating the rapid and sensitive LC/MS analysis of four immunosuppressants.

Key Benefits

- Rapid, high-throughput analysis of immunosuppressants
- Sensitive and accurate quantitation within two minutes
- Simple, straightforward online sample cleanup
- Quick results interpretation using advanced software tools
- Specific, cost-effective, and time-saving

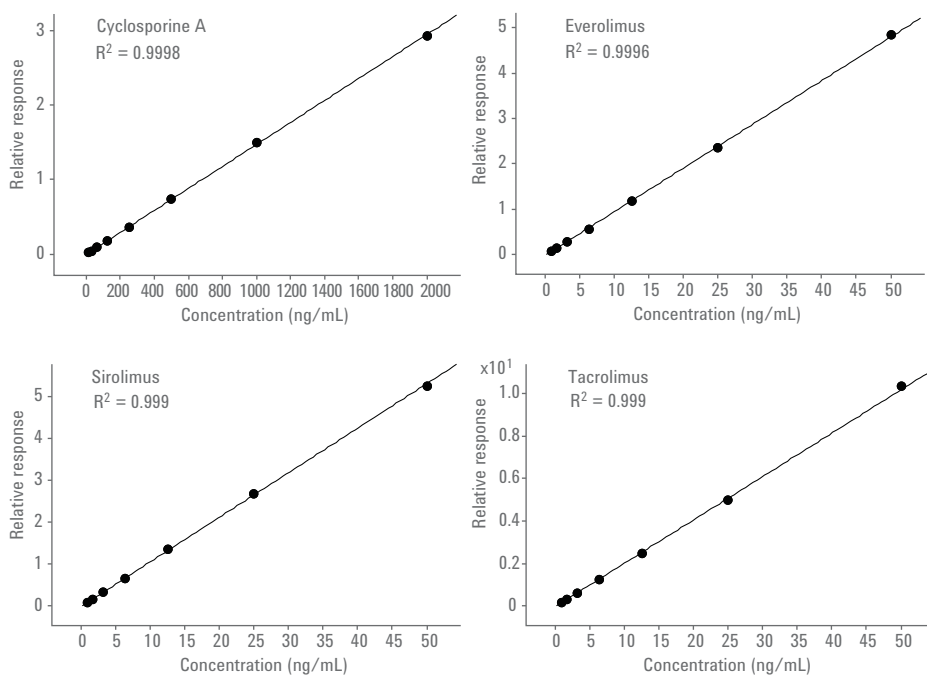


Figure 3. Excellent linearity and sensitivity enables accurate quantitation of immunosuppressants.

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