Background

The analysis of homocysteine in a clinical research environment requires a quick and simple analytical method for rapid sample turnaround. LC/MS can be used to measure the level of homocysteine enabling a fast and high-throughput analysis in a cost effective manner.

The Approach

Agilent’s 1200 Infinity LC and 6460 Triple Quad LC/MS system enabled with Agilent Jet Stream technology delivers excellent sensitivity and speed for homocysteine analysis. This performance enhancement is leveraged by Agilent’s industry proven reliability and robustness for utmost productivity and cost-effectiveness.

The industry leading MassHunter software enables a simple workflow for the routine and precise quantitation of homocysteine. Linearity of calibration curves as well as accuracy of quality control and sample data can be quickly verified using the Batch at a Glance feature. Processed data can be viewed in a variety of user-defined customizable report formats or exported directly to a laboratory informatics management system (LIMS) in .xml or .csv format.
<table>
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<th>Acquisition Time (min)</th>
<th>Counts $\times 10^5$</th>
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Relative Abundance for each acquisition time.

**Figure 2**: Chromatograms of homocysteine respectively demonstrating rapid and sensitive analysis in 2.5 minutes.

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**Key Benefits**

- LC/MS delivers a selective, cost effective and less time-consuming method.
- The Agilent 6460 Triple Quad LC/MS with Jet Stream technology delivers a 2.5 minute high-throughput method.
- The LC/MS method enables two MRM transitions providing confident compound identification and provides sensitive and accurate quantitation.
- MassHunter Quantitative Analysis Software delivers fast results and interpretation through advanced software tools.

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**Figure 3**: Calibration curve for homocysteine in plasma demonstrating excellent sensitivity and linearity.

$R^2 = 0.9984$

![Calibration Curve](image)

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