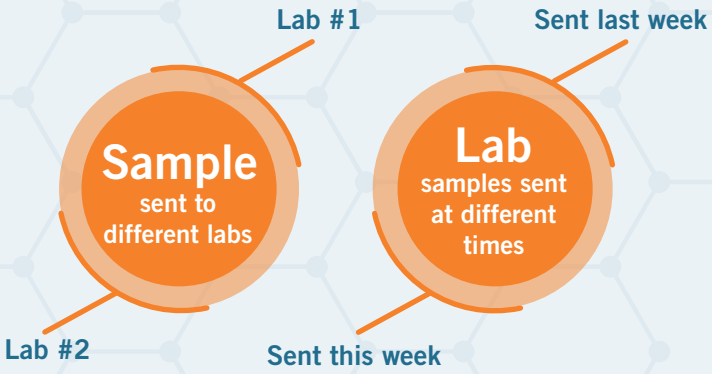
VARIABILITY OF LABORATORY RESULTS

Certificates of analysis from ISO accredited laboratories contain results that are used as basis for making decisions. The laboratory derives such results from testing of a sample submitted by a client.



The exact same sample sent to two different laboratories, or to the same laboratory on two different occasions, can contribute to a small difference in results. **Why is that?**

There are many factors that can influence results.

The list below is not exhaustive and each item may not apply to all cases.

Sampling
Both by the client and sub-sampling at the lab

Environment
Cross contamination risks, environmental impact on instruments, etc

Method
Method selection, validation, etc

Equipment
Calibrations, maintenance, sensitivity, etc

People
Training, technique, performance differences between staff, etc

Handling of Test Items
Maintaining integrity of sample

Measurement Traceability
Quality of reference standards and reference materials

Standard Operating Procedures (SOPs)

Standard operating procedures (SOPs) are a set of standardized processes that help ensure consistency across operations. Laboratories have SOPs in place to minimize the negative impact of the factors above, helping to reduce the variability of results.

Quality Control (QC)

Laboratories have built-in quality control (QC) measures where QC samples are analyzed along with client samples. The results from the QC samples are charted onto control charts and compared to specifications that are obtained using statistical calculations. If the results of the QC samples are inside the acceptance limits the samples results are often deemed OK to release.

Summary

While variability of results obtained by analysis can never be eliminated, an estimate of the extent of the variability can be obtained from data reported in ring trials. In ring trials, the same samples are analyzed by multiple labs or control sample programs. This is where the lab analyzes the same sample multiple times over an extended time period.

For additional information or assistance, please contact us at: info@eurofinsUS.com

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