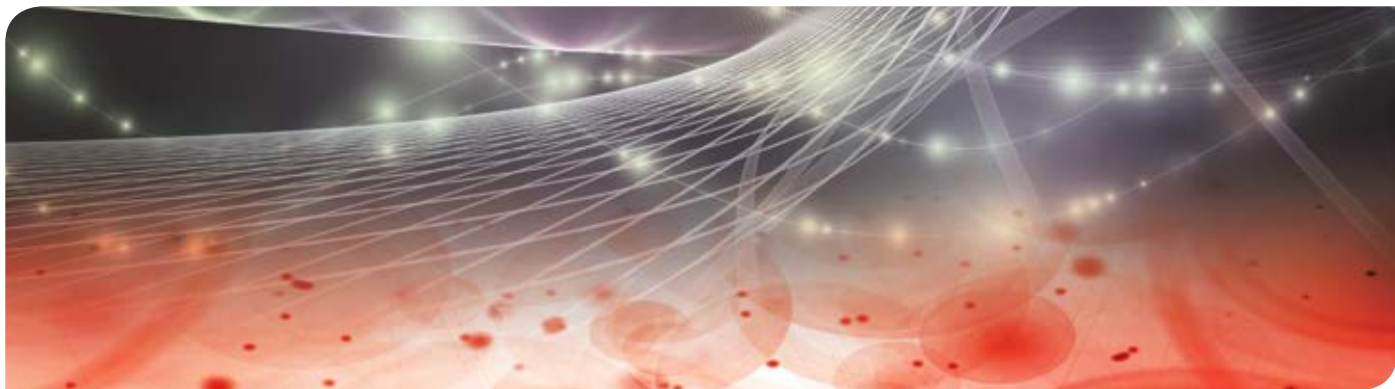


Liquichek Serum Indices

Pre-analytical instrument monitoring to detect HIL specimen interferences





Monitor the Ability of an Instrument to Detect Pre-Analytical Interferences

Hemolysis, Icterus and Lipemia (HIL) are the most commonly tested interferences that affect the integrity of patient samples in the clinical laboratory. Depending on the type and the degree of interferences, it may impact patient results when run with a colorimetric assay. Fortunately, most major chemistry platforms include an automated HIL detection feature that employs spectrophotometric detection to measure the level of common interferences. However, in lieu of automated detection, some laboratorians may visually inspect samples. In both scenarios, the level of interference is translated as indices (Hemolysis, Icterus and Lipemia index) according to Clinical and Laboratory Standards Institute (CLSI) Standard C56-A.

Liquichek Serum Indices is intended for use as part of laboratory interference testing to monitor the ability of the instrument to detect Hemolyzed, Icteric or Lipemic (HIL) samples.

Resemble patient samples with human sourced material

Liquichek Serum Indices is designed to monitor an instrument's ability to detect HIL specimens to help improve detection of pre-analytical errors. Replicating relevant concentrations of HIL interferences using human-sourced material adds confidence to instrument performance.

Reduce human errors by eliminating manual inspections

Manual HIL interference detection involves subjective visual assessment from a trained laboratory technician that may result in longer turnaround times, errors or repeat testing. Automating HIL detection with Liquichek Serum Indices may help eliminate hands-on time and ensure reliable results, enabling laboratory technicians to focus on other important tasks.

Compare instrument responses among peer groups with the Unity Interlaboratory Program

An interlaboratory program can offer early awareness of shifts and trends to help avoid costly test repeats and unnecessary troubleshooting. Liquichek Serum Indices is integrated into the Unity Interlaboratory Program allowing access to instrument performance over time, peer group comparisons and easy-to-read reports.



Regulators are taking note:

ISO 15189:2012 includes expanded pre-examination procedures, and the IFCC is recommending standardized "Quality Indicators" in an effort to reduce the volume of pre-analytical errors.¹*

Liquichek Serum Indices is a product that monitors instrument's response to detect HIL specimen interferences.

¹ Plebani, M., Sciacovelli, L., Aita, A., Chiozza, M.L. "Harmonization of pre-analytical quality indicators." *Biochem Med (Zagreb)*. 2014; 24(1): 105-13. Published 2014 Feb 15. doi:10.11613/BM.2014.012.



Liquichek Serum Indices

Liquichek Serum Indices monitors the ability of an instrument to detect and flag HIL interference in a sample. Liquichek Serum Indices consists of three independent interferents (Hemolysis, Icterus, and Lipemia) and one non-interfered serum sample. The Hemolysis, Icterus, and Lipemia levels provide a response based on increased hemoglobin, bilirubin, and lipoproteins respectively. The Non-interfered level is a human-based serum and is similar to a patient specimen. This product is unassayed, with target values and reference tables provided for convenience.² Values in the reference tables include both quantitative results and qualitative interpretations compatible with major chemistry instrument platforms.

- Liquid, human source material based matrix
- 2 year shelf life at -20°C to -70°C
- 30 day unopened stability at 2-8°C
- 14 day open-vial stability at 2-8°C
- 28 day frozen aliquot at -20°C to -70°C



Indices

Hemolysis
Icterus
Lipemia
Non-interfered

Assay Sensitivity to HIL Interferences

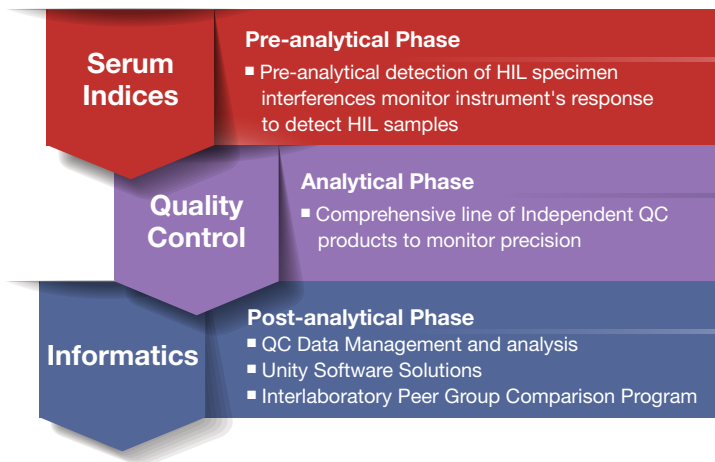
Interfering substances that remain undetected during pre-analytic inspection may impact the quality of results in the analytic testing cycle. The potentially negative consequences of inaccurate results must be prevented wherever possible. Some common assays with known sensitivity to HIL interferences are listed in the table below.

Assay Sensitivity to HIL Interferences

Hemolysis	Icterus	Lipemia
Amylase (AMY)	Amylase (AMY)	Aspartate Aminotransferase (AST)
Aspartate Aminotransferase (AST)	Creatinine (SC)	Direct Bilirubin (DBI)
Magnesium (MG)	Digoxin	Magnesium (MG)
Iron (FE)	Iron (FE)	Iron (FE)
Lactate Dehydrogenase (LDH)	γ-Glutamyl Transferase (GGT)	Lactate Dehydrogenase (LDH)
Direct Bilirubin (DBI)	Triglycerides (TG)	Potassium (K)
Potassium (K)	Potassium/Sodium (K/Na)	Sodium (Na)

²Reference tables based on values in CLSI 56-A. Clinical and Laboratory Standards Institute (CLSI), Approved Guideline—First Edition, CLSI document C56-A (ISBN 1-56238-799-5), Clinical and Laboratory Standards Institute, *Hemolysis, Icterus, and Lipemia/Turbidity Indices as Indicators of Interference in Clinical Laboratory Analysis*, 2012.

Bio-Rad offers a comprehensive portfolio of products to cover all phases of clinical chemistry testing and data management



- Liquichek Serum Indices**
 Pre-analytical detection of HIL specimen interferences to monitor instrument's response to detect HIL samples
- Quality Controls**
 A wide range of QC products to help your lab run smoothly and maintain your quality system
- Unity Interlaboratory Program**
 QC Data management solutions to help manage QC data and powerful peer group comparisons for greater confidence in patient test results

You can count on our consistent product quality to help assure reliability of patient results, along with expert technical support and customer educational programs.

Product Accessories

Add dispenser tips to vials for easy handling of Liquichek Serum Indices material, and conveniently store vials in our QC Tray.



Ordering Information

Cat #	Description
Liquichek Serum Indices	
12009621	Hemolysis 6 x 4 mL
12009620	Icterus 6 x 4 mL
12009619	Lipemia 6 x 4 mL
12009618	Non-interfered 6 x 4 mL
12009617	MiniPak (1 of each indice) 4 x 4 mL

Product Accessories

987000	Dispenser Tips for Screw Caps 100/Package
12000846	Quality Control Tray 1 Unit



EQAS

An independent, external assessment of performance in comparison to your peers.



Independent QC

Ongoing, proactive, unbiased daily QC that helps identify errors as they occur or begin to trend.



Unity

QC Data Management tools that help you create a strategy to reduce risk and streamline QC workflow.



Bio-Rad Laboratories, Inc.

For further information, please contact the Bio-Rad office nearest you or visit our website at www.bio-rad.com/serum-indices

Clinical Diagnostics Group

Web site www.bio-rad.com/qualitycontrol **USA** 1 800 224 6723 **Australia** 61 2 9914 2800 **Austria** 43 1 877 8901 **Belgium** 32 03 710 53 00 **Brazil** 55 31 3689 6600 **Canada** 1 514 334 4372 **China** 86 21 61698500 **Czech Republic** 420 241 430 532 **Denmark** 45 4452 1000 **Finland** 358 9 804 22 00 **France** 33 1 47 95 60 00 **Germany** 49 0 89 318 840 **Greece** 30 210 7774396 **Hong Kong** 852 2789 3300 **Hungary** 36 1 459 6100 **India** 1800 180 1224 **Israel** 972 3 9636050 **Italy** 39 02 216091 **Japan** 81 3 6361 7070 **Korea** 82 2 3473 4460 **Mexico** 52 55 5488 7670 **The Netherlands** 31 318 540666 **New Zealand** 64 9 415 2280 **Norway** 47 23 38 41 30 **Poland** 48 22 3319999 **Portugal** 351 21 472-7700 **Russia** 7 495 721 1404 **Singapore** 65 6415 3170 **South Africa** 27 11 442 85 08 **Spain** 34 91 590 5200 **Sweden** 46 8 555 127 00 **Switzerland** 41 0 26 674 55 05 06 **Taiwan** 886 2 2578 7189 **Thailand** 662 651 8311 **United Kingdom** 44 0 20 8328 2000