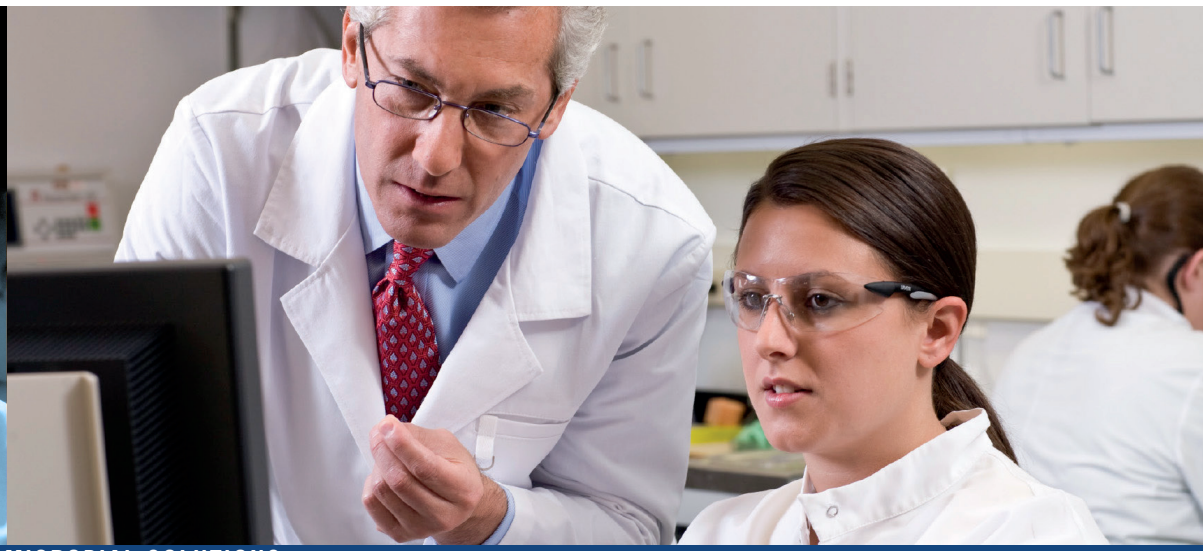
charles river



MICROBIAL SOLUTIONS

Bacterial Endotoxins Testing Contract Staff Lab Services

LAL Techniques and Methods Offered

- Initiation of LAL testing program requires careful consideration of methods, instruments, and technical mastering

Testing Techniques

- Gel-clot: based on gel formation
- Turbidimetric: based on the development of turbidity
- Chromogenic: based on the development of colour after cleavage of a synthetic peptide-chromogen complex

Testing Methods

- Method A: Gel-clot (limit test)
- Method B: Gel-clot (semi-quantitative test)
- Method C: Turbidimetric kinetic
- Method D: Chromogenic kinetic (conventional or rapid micro-method Endosafe®-PTS™/Endosafe®-MCS™)
- Method E: Chromogenic endpoint

LAL Testing Overview

Any product labeled non-pyrogenic must be tested to verify the absence of bacterial components left from pre-sterilization bacterial contamination. Thus, the pharmaceutical industry takes great care to produce drugs, vaccines, and medical devices that are non-toxic and free of microorganisms. For years, pharmaceutical manufacturers have used the Bacterial Endotoxin Test (BET), or LAL (Limulus Amoebocyte Lysate) Test, which uses amoebocyte lysate from the blood of the American horseshoe crab (*Limulus polyphemus*), to detect endotoxins of gram-negative origin.

Regulatory authorities require an LAL test for injectable and intravenous drugs, as well as for screening prosthetic devices such as heart valves or hip replacements. Any medical devices with bloodstream or cerebrospinal fluid contact must also be tested for bacterial endotoxins. Many other products, such as dialysis fluids, must be screened to ensure the safety of patients as well.

Charles River Technical Services – Lyon, France Laboratory

Charles River Technical Services offers testing and support to improve the compliance and efficiency of endotoxin detection programs.

History: Our Charles River European laboratory, conveniently located on the outskirts of Lyon, France, has been dedicated to BET for almost 30 years.

Services: A wide range of samples can be tested, including end product release, raw material, in-process samples, medical devices, dialysis fluids, and much more. In addition to testing, we offer results analysis, SOP writing assistance, and protocol recommendations. We also offer standard or customized LAL training courses.

Accreditation: Our facility is COFRAC accredited (April 2007 [ISO 17025: v2005] for Gel-clot, kinetic chromogenic, and kinetic turbinimetric techniques) and approved to perform the BET in accordance with all methods described in the EP (Chapter 2.6.14) and USP (Chapter <85>). The facility is also ISO 9001:2008 certified and FDA-registered as of December 2009.

EVERY STEP OF THE WAY

Services

- Routine testing, and testing for interfering factors
- Depyrogenation validation
- Outsource testing
- Product specificity testing
- Protocol and method development

Available LAL Testing Services

Routine testing, and test for interfering factors: All testing is performed using customer-requested methods for submitted samples. Our optimized formulations provide increased sensitivity, greater linearity, and superior interference resistance. Formulations are offered with a comprehensive range of buffers and accessories, providing numerous options for resolving interferences with difficult to test products. Specific sensitivity requests can be met with ranges that include 0.015 to 0.25 EU/mL for gel-clot, and as low as 0.001 EU/mL for the kinetic chromogenic method.

Depyrogenation validation: Studies from oven validation, to stopper washing endotoxin reduction, and a wide variety of depyrogenation validation are offered and often performed during production downtime, they use specifically contaminated articles to verify a 3-log reduction in endotoxin content.

Charles River can also contaminate specific devices or articles with an adequate contamination value, or provide ready-to-use endotoxin indicators as preferred. With a capacity of more than 200 devices per day, all returned devices, articles, or indicators can be assayed within 72 hours of receipt, avoiding production delays.

Benefits of LAL Testing with Charles River

Why use Charles River's Technical Laboratory?

Outsource testing	
Manage unexpected increases in testing activity	Quick turnaround on a large number of samples
Save on equipment costs	Streamline facility for fewer samples
Product specificity	
Resolve interferences for difficult products	Check for Glucan false positives
Confirm results with a second method	
Protocol and Method Development	
Perform oven validation studies	Methods transfer and specific studies (e.g., transfer existing method to the Endosafe®-MCS™ instrument)
Stability testing	LER study
Sample preparation	SOP and protocol writing

What value does Charles River offer?

High-quality process	
72 hour sample testing	High capacity: > 200 samples processed per week
Thorough QA/QC review of report and acceptance criteria before release and associated raw data	Supports compliance with data integrity requirements
Results archived for 10 years in secure storage facility	
Dedicated team	
Specialist recommendations before choice of method	Technical expertise and explanation of results
Qualified LAL technicians	
Exceptional features	
The only lab offering the options to transfer from classical methods to next generation rapid BET with PTS® and MCS® technology	Maximum sensitivity: 0.001 EU/mL for kinetic chromogenic method and 0.015 EU/mL for gel-clot
Alternative testing solutions for internal methods	Experience with a diverse range of samples
Variety of certified containers for transportation of samples	

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