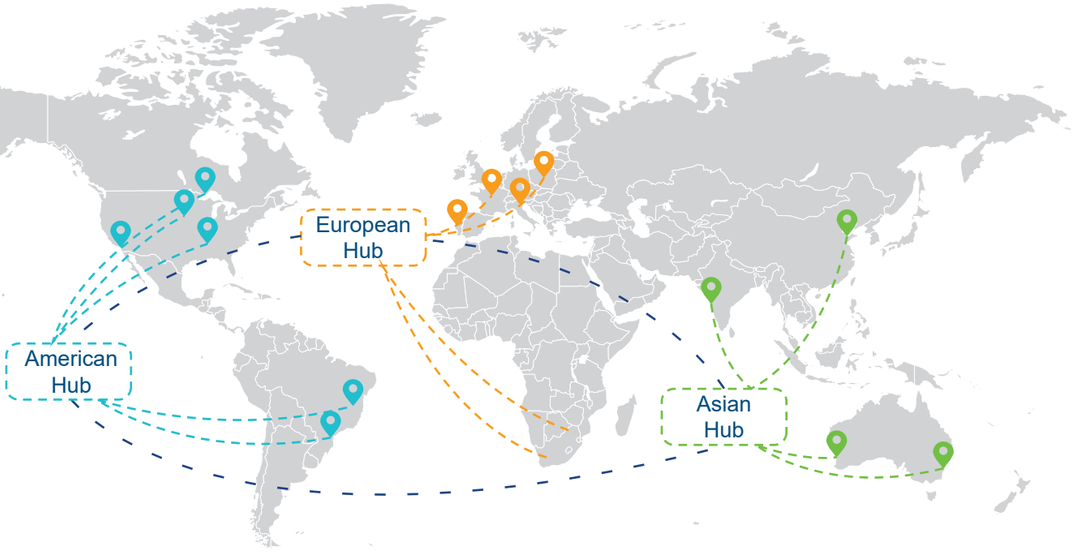

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中国区食品科学中心
FOOD SCIENCE CENTER

Mérieux NutriSciences

INSPIRE. **DISCOVER.** INNOVATE

目录

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At Silliker® Food Science Center, we partner with you to create the food products and processes of tomorrow with the practical application of science today.

About Mérieux NutriSciences 关于梅里埃营养科学

Established in 1967, as a leading worldwide provider of food safety, quality and nutrition service, Mérieux NutriSciences is dedicated to advancing global public health and has over 50 years of experience working with leading food and beverage companies throughout the world. Mérieux NutriSciences has over 100 laboratories in 32 countries, in addition 6 R&D centers in the US, Canada, Italy, France, Brazil and China, more than 10,000 employees.

Mérieux NutriSciences China focuses on food safety, quality and nutrition to provide solutions. It operates multiple laboratories in China, including Shanghai, Beijing, Qingdao, Ningbo, Chengdu, Shaanxi weinan, Guangzhou and other locations close to 1,000 employees, who are distributed in major cities with the business and audit teams, to deliver highly trusted professional services with a strong reputation in testing, auditing, consulting, research, training and one stop solutions for the entire global food chain to serve the Chinese and Asian markets.

梅里埃营养科学成立于1967年，致力于引领全球公众健康事业，是全球领先的食品安全、质量和营养服务提供商。与世界领先的食品及饮料企业拥有50多年的全球合作经验，在32个国家拥有超过100家实验室，并在美国、加拿大、意大利、法国、巴西以及中国开设了6家专业研发中心，员工人数超过10,000人。

梅里埃营养科学（中国），专注于为食品质量安全与营养领域提供解决方案。拥有上海、北京、青岛、宁波、成都、渭南、广州等多家实验室，员工人数近1,000人，并有分布于主要城市的业务和审核团队，为中国乃至亚洲市场提供高质量的检测、审核、咨询、培训和研究等多元化服务，为全球食品药品产业链提供一站式解决方案。

About Food Science Center 关于食品科学中心

China Food Science Center, located in Shanghai, is a vital member of the global Silliker® Food Science Center. Having been rooted and developed in China for nearly 15 years, it collaborates with global resources to assist clients in advancing food safety process control practices, ensuring product stability, quality, and safety from concept development to retail shelf.

Creating the products and processes of tomorrow starts with the practical application of science and innovation today. To protect your considerable investment, solidify consumer and customer loyalty, and comply with regulatory mandates, it is critical for companies to conduct thorough scientific studies to ensure the safety of their products and verify the efficiency of your processes.

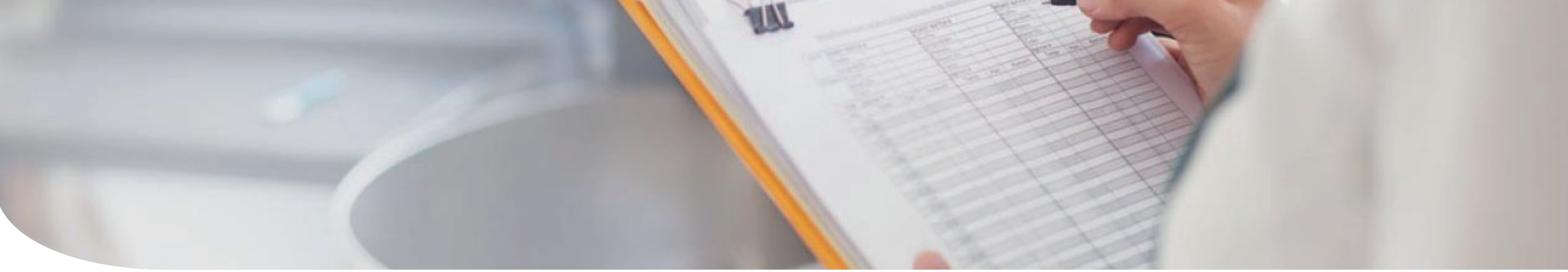
The Food Science Center is equipped with cutting-edge technologies and state-of-the-art testing methods, providing innovative solutions to get your product and process to market faster.

位于上海的中国区食品科学中心是梅里埃营养科学全球实力可食品科学中心的重要成员，在中国扎根发展近15年，帮助我们的客户提升食品安全过程控制理念，确保产品的稳定性，质量和安全性。

未来的产品和工艺，始于现今科学与创新的实践。为了保护您的可观投资，巩固消费者和顾客忠诚度，同时依从法规要求，应用科学研究来确保产品的安全性和工艺的有效性，在食品工业发展中，显得越来越重要。

食品科学中心拥有先进的仪器设备和专业的各种测试方法，确保给您的产品和工艺提供创新的解决方案。

Better Food. Better Health. Better World.



产品杀菌工艺验证研究

所谓产品杀菌工艺验证就是建立高度可信的证据确保食品的工艺过程能够达到预设的食品安全和质量标准。

什么时候需要产品杀菌工艺验证研究?

当您开发新的食品产品配方，工艺调整，或者引入新的技术和生产设备时，您如何确保这些工艺调整能保证产品安全和质量的要求?

常规的时间/温度理论模型可能无法给您提供准确或正确的杀菌预测，或者可能错误估算了新工艺流程或者配方对您产品安全和质量的影响。

我们的产品杀菌工艺验证研究服务!

我们的产品杀菌工艺验证研究给您提供科学可控的实际数据验证您的杀菌设备和终产品食品安全的有效性。

我们的研究人员可以针对您具体的生产工艺流程，杀菌设备和产品配方来量身定制杀菌工艺验证实验，并为您提供科学数据验证您杀菌设备的有效性。杀菌工艺验证研究可提供可靠数据以说明在杀菌过程中腐败菌和致病菌数量降低，保障您的产品安全和质量。我们可根据您的需要在我们的研发实验室内模拟您的工艺流程，或者在您的工厂进行实地考察和验证工作。我们的产品及工艺验证服务严谨且细致，在工业界被普遍认可，给我们珍视的客户对产品享有更高的信心。

我们的专业服务包括但不限于:

- 热处理或非热处理杀菌工艺验证
- 无菌灌装设备验证研究
- 微生物热致死模型研究
- 新的工艺技术评价

工艺验证的精确数据对于您产品安全有重要作用，我们的验证研究都由食品科学中心杰出的科研工作者以及专业的研究实验室来完成。

Process Validation Study

Process Validation Study is establishing documented evidence which provides a high degree of assurance that a specific process meets its predetermined safety and quality characteristics.

When Do You Need Process Validation Study?

When you make changes to your formulation, modify process procedures, employ new equipment and technique, how do you know that you have the safety and quality control of your product? General time/temperature models may not provide accurate or correct predictions on log reduction and could mis-estimate your process.

Our Product and Process Validation Study!

Our validation study provide actionable data to verify the effectiveness of your process and safety of your finished product. Through the application of scientific methods, our researchers can help you meet your food safety objectives.

Mérieux NutriSciences China researchers can conduct validation study and provide scientific date to verify the effectiveness of your process, equipment and formulation. The validation study helps to assure the safety and quality of your food product by providing solid information on the reduction of spoilage organisms and pathogens during process. We can design study to simulate your process at our research facility or conduct study in your plant. Our product and process studies are recognized industry wide for their meticulous attention to detail, providing our valued customers with added confidence.

Our Expert Services Include, But Are Not Limited, To:

- Thermal treatment validation and non-thermal treatment validation
- Aseptic filling machine and aseptic system validation study
- Study on microbial thermal death model
- Novel processing technique evaluations

Dedicated to delivering the precise data you need to make informed food safety decisions, our studies are conducted by a distinguished team of scientists and in an expert lab.

环境监控

环境监控是通过对生产区域及其周边相关环境的监测，以确保生产环境不受致病菌和腐败菌的污染，从而保证产品质量安全的一种预防控制措施。环境监控的结果为工厂环境的安全风险提供重要的信息和数据支持，并且帮助工厂在问题区域对产品构成风险之前采取正确有效的纠正措施。

目前，环境监控作为一种高效的质量监控手段已广泛的被各大食品企业所应用，因为它是辨别问题的有效途径，并可作为鉴别微生物污染高危区域的有利工具，且能确认清洗消毒的有效程度。《美国食品安全现代化法案》要求在食品加工过程中对产品有暴露的环境进行监控，以验证预防性控制措施的有效性。

梅里埃营养科学（中国）食品科学中心数十年来在环境监控方面有着丰富的经验和良好的策划团队，我们根据客户不同的需求或QA对产品风险的评估，有针对性地提供工厂实地考核和EMP选择与采样，为工厂量身定制有效的环境监控计划，并且通过完成环境涂抹以及致病菌实验室检测，真实有效地了解工厂环境风险，合理采取纠正措施，以避免产品召回及食品安全事故对食品工厂的重大损失。

为工厂提供的环境监控服务内容如下：

- **常规采样：**根据客户工厂或梅里埃营养科学制定的采样计划进行的环境采样或产品采样（依据全球梅里埃营养科学采样标准）
- **环境监控计划建立：**依据企业的产品类型和工厂设计差异帮助企业建立全面的EMP计划，包含致病菌及指示菌环境监控计划。
- **环境监控评估：**作为第三方帮助企业评估工厂的微生物风险并提出建议
- **环境监控培训：**提供全面的EMP课程、工厂实际操作培训，以及与微生物交叉污染相关的客户定制化内容的培训
- **线上培训平台订阅：**提供专门针对工厂人员的持续培训方案，包括环境监控项目、GMP及交叉污染风险控制、HACCP、采样技术等多个在线课程
- **微生物问题调查服务：**针对工厂致病菌阳性检出、指示菌超标、消费者投诉等问题提供问题排查和咨询服务
- **EnviroMap：** 基于云端的EMP计划、数据管理全面解决方案
- **环境样品致病菌检测：**可运用快速方法（BAX、VIDAS），GB，ISO，AOAC等权威方法检测李斯特菌属、单增李斯特、沙门氏菌等微生物

Environmental Monitoring Program

Enviromental Monitoring Program(EMP), is through the monitoring of production area and its surrounding environment, to ensure that production environment is not contaminated by pathogens and spoilage organisms, thus as a measure to ensure product quality and safety.

As an effective method of quality assurance, EMP has been widely used in many food companies. EMP can be used as an advantaged tool to identify the high-risk areas of microbial contamination, and to determine the effectiveness of disinfection control. The FDA Food Safety Modernization Act (FSMA) requires monitoring of the food processing environment to verify the effectiveness of pathogen controls in processes where a food is exposed to a potential contaminant in the environment.

With years of rich experience in environmental monitoring service and an excellent teamwork, Mérieux NutriSciences China food science center is able to target to provide factory on-the-spot inspection, EMP selection and sampling services according to customer requirement and QA assessment on product risk, to tailor effective environmental monitoring programs for the factory. Silliker® can help you realistic understanding of the factory environment risk, and taking corrective measures, so as to minimize product contamination issues and prevent recalls.

What Main Environmental Monitoring Service Provided by Mérieux NutriSciences Now?

- **Regular Sampling:** Environmental or product sampling according to customer requirement or Mérieux NutriSciences plan (following Global standard of Mérieux NutriSciences EMP).
- **EMP Establishment:** Help customer established comprehensive EMP according to entrepreneurial types and the factory design differences, including EMP for pathogen and indicator organisms.
- **EMP Assessment:** As a third party to help customer assess the factory's microbial risk, and put forward suggestion.
- **EMP Training:** To provide comprehensive EMP courses and practical training to factory, and custom training courses associated with microbial cross-contamination.
- **E-learning platform subscription:** Programs designed specifically for continuous training of factory personnel, including online courses on EMP, GMP and cross-contamination risk control, HACCP, sampling techniques.
- **Troubleshooting Service:** To provide troubleshooting and consulting services to customers when pathogen testing results are positive, indicators are out-of-specs, or there are consumer complaints.
- **EnviroMap:** Cloud-based comprehensive solution for EMP management and data analysis.
- **Environmental Sample Testing:** To test pathogens with rapid method (BAX, VIDAS), GB, ISO, AOAC and other authority methods.

保质期和挑战性实验

保质期就是在特定的储存条件下，食品维持其特性的时间。保质期测试即在特定储存条件下，测试产品在储存期内的各项指标，判定是否“变质”，以确定产品的保质期。

微生物挑战性实验是一种特殊的保质期测试，通过在食品中接种特定的致病和腐败微生物，用来评估当一种食品在加工、运输和后续再加工过程中被污染时所发生的情况，产品在保质期内的微生物安全风险或腐败风险。

什么时候需要保质期和挑战性实验？

- 食品企业开发了新产品配方
- 食品企业为了验证新产品或者新的储藏条件
- 食品企业在配送过程中运用了新条件等
- 新的食品加工工艺

保质期测试服务

通过稳定性测试、加速保质期测试等方法确定产品保质期。

通过识别不同产品中的微生物风险，设计挑战实验，验证产品配方、理化特性、储存条件、包装形式等，是否具备抑制微生物生长或使微生物致死的能力，从而确定产品的安全储存期、开封保质期或二次保质期、防腐剂抑菌效果等。

梅里埃营养科学（中国）的实力可食品科学中心针对以上几种情况，为客户定制的保质期或挑战性实验能帮助您确定您产品中潜在的微生物生长风险，帮助您了解随着时间的推移产品质量可能发生变化。我们提供关键数据，帮助确保你的整个产品保质期内的质量。在研究设计阶段，我们的团队将协助评估引起食品变质的最有可能原因。

我们的服务优势

我们的保质期和挑战性实验将根据每个企业产品独有的特征，严谨客观的模拟产品保存条件，为企业提供有针对性的保质期和挑战性实验设计和研究。

根据 NACMCF（美国国家生物限量标准咨询委员会）等权威标准给您的产品设计挑战性实验，人工接种研究，我们的保质期和挑战性实验可以帮助您了解：

- 通过稳定性测试、加速保质期测试等方法确定产品保质期
- 通过识别不同产品中的微生物风险，设计挑战实验验证产品自身或其储存条件对于微生物的抑制或失活效果

Shelf Life and Challenge Study

Shelf-life is the time to maintain the specific properties of the foods under specified storage conditions. Shelf-life tests are comfirmed by the experiments to evaluate the quaility and safety of the products udner specific storage conditions.

A challenge study is a kind of special shelf life tests and is performed by inoculating selected microorganisms into a food to determine if the microorganisms are a potential health risk or spoilage risk within shelf life.

When Do You Need Shelf-life and Challenge Study?

- New product formulations
- To verify a new product or storage condition
- New transportation and distribution condition
- New processing methods of foods

Our Services

Mérieux NutriSciences Silliker® Food Science Center's custom-designed shelf-life or stability study to evaluate the quality and determine the shelf life of the products. We provide critical data to help assure quality throughout the life of your product. During the study design phase, our team will assist in evaluating which component of the food product is most likely to fail during storage. In specific cases, accelerated protocols can be proposed to conduct at one or more abuse conditions for the purpose of predicting best-before date determination.

Mérieux NutriSciences Silliker® Food Science Center's challenge study is to verify whether the food formula, properties, storage conditions, packages coud inhibit or inactivate the pathogen or spoilage microorganisms during storage by inoculating the specific microorganisms into the products. The challenge study could help to determine the shelf life, open shelf life, second shelf life and preservatives efficiency of the foods or formula.

Our Services Present the Following Benefits

Our shelf-life studies provide you with critical data regarding your product's spoilage risk under different storage conditions. We will consider your critical factors and design a shelf-life study uniquely specific to your product.

Conducting the challenge studies under National Advisory Committee on Microbiological Criteria for Foods (NACMCF) guidelines:

- Shelf life tests using stability tests or accelerated shelf life tests
- Evaluation of the inhibition or inactivation efficiency by the product formula or storage conditions by microbiological risk assessment and challenge study designing

实验室提升服务

针对食品、药品、化妆品企业实验室自身管理中会遇到的常见性问题，全面帮助客户提升实验室实际管理水平，梅里埃检测由多名拥有十年以上三方实验室管理经验的资深专家成立实验室提升项目辅导小组，为客户提供以下专业样品和咨询服务：

- 能力验证和实验室间比对
- 实验室审核服务，提供改进建议报告及定制培训服务
- 检验人员检测方法专业培训，考核并颁发证书
- 实验室布局安全性评估和安全管理培训
- 实验室专业设备和耗材的代理和验收技术指导
- 新建 CNAS17025 体系及已运行的实验室体系优化辅导

可帮助工厂实验室解决常见的以下问题：

- 实验室现有检测能力和管理能力综合性评估
- 实验室能力验证失败根本原因调查
- 实验室异常数据偏离调查
- 实验室人手不足，工作效率改进提升
- 检验人员专业知识缺失，检测能力不足以提供准确测试结果
- 实验室布局存在安全隐患和交叉污染的风险
- CNAS17025 体系经验不足及缺失持续提升实验室管理的能力

Laboratory Improvement Service

In response to the common problems that food, pharmaceutical and cosmetic enterprise laboratories encounter in their own management, Merieux Testing has established a laboratory improvement project guidance team composed of several senior experts with over ten years'experience. We provide the following professional proficiency test samples and consulting services to our clients:

- Proficiency testing and inter - laboratory comparisons.
- Laboratory services, including providing improvement suggestion reports and training services.
- Training on testing methods for inspectors, conducting assessments, and issuing certificates.
- Safety assessment of laboratory layout and safety training.
- Acting as an agent for laboratory professional equipment and consumables, and providing acceptance guidance.
- Assisting in the establishment of the CNAS 17025 system for new laboratories and optimizing the existing laboratory systems.

It Can Help Factory Laboratories Solve the Following Common Problems:

- Comprehensive assessment of the current testing capabilities and management capabilities of the laboratory.
- Investigation of the root causes of laboratory proficiency testing failures.
- Investigation of abnormal data deviations in the laboratory.
- Improving work efficiency facing the shortage of personnel in the laboratory.
- Insufficient professional knowledge of testing personnel and inadequate testing capabilities to provide accurate test results.
- The layout of the laboratory poses safety hazards and risks of cross-contamination.
- Lack of experience in establishing ISO/IEC 17025 system and the need for continuous improvement of laboratory management capabilities.

方法确认及验证研究

方法确认与验证是实验室通过实验对标准方法、非标方法、内部方法提供客观证据以确认或验证该实验方法的准确性、精密性与稳定性能达到特定的需求。

包含但不仅限于以下这些情况：

- 分析一种或多种样本基质
- 运用一种或多种仪器或平台
- 多种方法之间的比较
- 不同实验室，不同区域实验室之间的比较
- 通过确认实验可以摸索出实验的特征性和关键步骤，以确保有足够胜任方法的实施经验

为什么要确认/验证你的方法?

- 基于企业过程监控，快速放行的需要，需要使用更加快速的方法
- 新研发产品，无国家国际标准方法，需要制定企业内部方法
- ISO 17025 实验室认证要求使用确认过的实验方法
- 和其他实验室结果有可比性
- 避免假阴性结果

我们的方法验证程序基于:

依据灵敏性、准确性、精密性、重复性、再现性、特异性等参数信息来评价方法的可接受性。

基于以下参考依据：

- AOAC Microbiological Guidelines
- ISO 16140-2:2016
- FDA's Guidelines for Validation of Analytical Methods for the Detection of Microbial Pathogens in Foods
- RB/T 033-2020 微生物检测方法确认与验证指南评价

Method Validation Study

Method validation is a process by which a laboratory confirms by examination, and provides objective evidence, that the particular requirements for specific uses of a method are fulfilled. It serves to demonstrate that the method can detect and identify an analyte or analytes.

- In one or more matrices to be analyzed
- In one or more instruments or platforms
- With a demonstrated sensitivity, specificity, accuracy, trueness, reproducibility, ruggedness and precision to ensure that results are meaningful and appropriate to make a decision.
- Reliably for its intended purpose. Intended purpose categories include, but may not be limited to emergency / contingency operations; rapid screening and high throughput testing; and, confirmatory analyses.
- After the method developer has conducted experiments to determine or verify a number of specific performance characteristics that serve to define and / or quantify method performance.

Why Validate Your Test Methods?

- Benefits public health and world trade
- False negative results are unacceptable
- ISO 17025 lab accreditation demands the use of validated methods

Our Method Validation Study

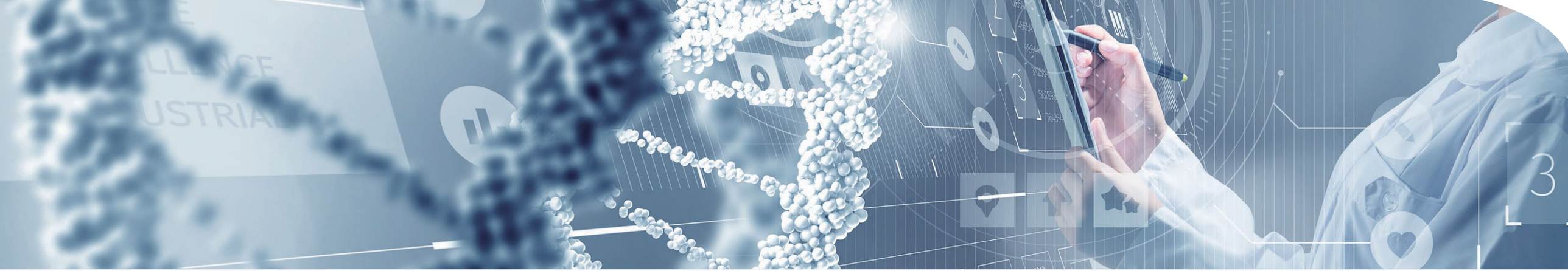
With a long history in method validations, Mérieux NutriSciences confirms your methods are suitable for their intended use. We analyze for accuracy, precision and reproducibility in quantitative methods, and sensitivity and specificity in qualitative methods.

Adhering to recognize industry protocols, Mérieux NutriSciences researchers bring years of experience to each method validation study. At each stage of our custom-designed projects, our research team will keep you informed and engaged. Our method validation studies can help:

- Assist kit manufacturers with new proprietary testing method developments
- Compare the validation parameters of existing methods

Our Validation Programs Based on:

- AOAC Microbiological Guidelines
- ISO 16140-2:2016
- FDA's Guidelines for Validation of Analytical Methods for the Detection of Microbial Pathogens in Foods
- RB/T 033-2020 Guidance on verification and validation of microbiological testing methods



微生物鉴定与溯源

微生物种属水平鉴定：

微生物鉴定将帮助您挽回高度难以捉摸的微生物污染带来的经济损失，有助于减少昂贵的污染的发生概率。我们采用全自动细菌生化鉴定系统Vitek2C、基质辅助激光解吸电离飞行时间质谱MALDI-TOF MS以及种属保守基因测序的方法（16S/ITS）来识别有害或污染的细菌及真菌。

微生物种属水平鉴定可以帮助您：

根据工厂环境中不同位置进行微生物的种类比较

比较从原料到成品可能污染微生物的差别

识别微生物在工厂环境里存在或定殖位点

建立污染微生物信息库帮助问题调查解决

微生物菌株水平(全基因组测序)鉴定：

全基因组测序（也称为WGS），就是指确定某一个微生物菌株的基因组完整DNA序列的过程

与传统方法相比，WGS是唯一能够在克隆（菌株）水平上鉴定细菌的技术

是目前所有分型方法中最高精度的方法

溯源的金标准特别针对反复污染相同菌株情况

WGS可全面追溯食品或生产环境样品中的不同菌株

微生物菌株水平鉴定可以帮助您：

建立完整高信息量的内部菌株库

克服相同来源反复污染问题

锁定污染源以便采取快速行动（在多组分原料，污染热点，疾病与加工环境之间的关键确凿的联系）

通过排除错误的污染来源来减少经济损失

识别微生物毒力基因和抗性基因，为研究微生物的致病性和耐药性提供重要依据。

满足标准中对于益生菌在菌株水平的鉴定

Microbial Identification and Traceability

Microorganisms Identification

We use Vitek2C, MALDI-TOF MS, 16S / ITS gene sequencing to identify pathogens or spoilage organisms. This will help you offset economic losses by highly elusive food organisms and help decrease costly incidences of contamination.

Your Benefits:

Compare strains from different plant locations

Compare environmental isolates or isolates from ingredients to finished product isolates

Identify microbial niches

Establish Database of contamination microorganisms, which will be benefit for the traceability and trouble-shooting of polluted finished products.

Next Generation Sequencing Whole Genome Sequencing (WGS)

Also known as WGS or full / complete / entire genome sequencing is the process of determining the complete DNA sequence of an organism's genome at a single time.

The only technology able to identify a bacteria at clone level

The gold standard method for source-tracking, applicable in case a recurring contamination

The best-in-class tool for a comprehensive overview of a strain from a food or production environment sample.

WGS Applications & Benefits

BUILD A COMPLETE INTERNAL STRAIN BANK

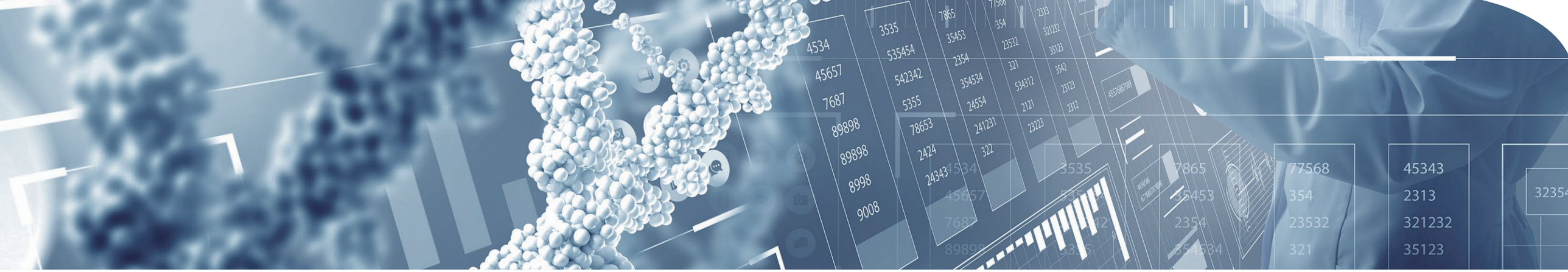
OVERCOME RECURRING CONTAMINATIONS

IDENTIFY THE ORIGIN OF CONTAMINATION TO TAKE RAPID ACTION (ingredient responsible in a multi-ingredient food, contamination hotspot, link between illnesses and processing facilities)

REDUCE ECONOMIC DAMAGE BY EXCLUDING WRONGLY SUSPECTED SOURCES OF INFECTION

Identify microbial virulence and resistance genes and provide important evidence for studying the pathogenicity and drug resistance of microorganisms.

Meet the standard requirements to idenfity probiotics at strain-level.



下一代测序平台服务

宏基因组学：

宏基因组学（Metagenomics）是研究样品微生物群落基因组的科学，具有高通量、高精度和高效率的特点　它通过直接从样本中提取全部DNA，进行高通量测序，从而揭示微生物群落组成的种类和丰度。

宏基因组学可以帮助您：

食品腐败鉴定：

无需培养即可精准锁定食品中的腐败微生物，对于未知菌株不受培养条件和时间的限制，及时发现食品中的腐败菌。

原辅料监控：

监测食品生产过程中的原辅料质量，对比不同批次、不同产地原材料菌群差异，筛选优质供应商，从源头上保障食品质量，提高生产效率。

工厂环境监控：

监测食品生产工厂环境中的微生物菌群，及时发现潜在的污染源，绘制工厂环境微生物地图，为工厂环境的微生物安全提供保障。

延长食品货架期：

观察微生物群落的变化，捕捉关键菌株，从而优化包装和储存条件，延长食品货架期。

食品掺假检测：

宏基因组学通过分析食品中的所有生物的组成基因信息，可以快速、准确地非定向识别食品中的掺假成分，保障食品安全和质量，避免食品欺诈事件的发生。

qPCR技术：

qPCR(Quantitative Polymerase Chain Reaction)，即定量聚合酶链反应，是一种基于PCR（聚合酶链反应）技术的实时定量方法。它通过在PCR扩增过程中实时监测荧光信号的变化，来定量分析目标核酸（DNA或RNA）的初始浓度。qPCR技术结合了PCR的高特异性和荧光检测的高灵敏度，能够精确地测量核酸的量，得到了广泛地应用。

qPCR技术用途：

益生菌检测：

qPCR技术能够快速、准确地检测食品中益生菌的数量和种类。通过特异性引物和探针，qPCR可以对目标益生菌进行定量分析。

食品真实性鉴定：

可以用于定向检测食品中的物种成分，防止食品掺假和欺诈行为。通过对特定DNA序列的扩增和检测，qPCR能够准确判断食品中是否含有某种成分，确保食品标签的真实性和准确性。

NGS Platform Service

Metagenomics:

Metagenomics is the science of studying the genome of sample microbial communities, which is characterized by high throughput, high precision and high efficiency. It directly extracts all DNA from samples and performs high-throughput sequencing to reveal the types and abundance of microbial community composition.

Metagenomics Can Help You:

Food spoilage identification:

It can accurately lock the spoilage microorganisms in food without cultivation. For unknown strains, it is not limited by culture conditions and time, and spoilage bacteria in food can be found in time.

Raw material monitoring:

Monitor the quality of raw materials in the food production process, compare the differences in the flora of raw materials from different batches and different origins to screen high-quality suppliers, ensure food quality from the source, and improve production efficiency.

Factory environment monitoring:

Monitor the microbial species in the food production factory environment, discover potential sources of pollution, draw a microbial map of the factory environment, and provide protection for the microbial safety of the factory environment.

Extend the shelf life of food:

Observe the changes in the microbial community and capture key strains, so as to optimize the packaging and storage conditions and extend the shelf life of food.

Food adulteration detection:

Metagenomics can quickly and accurately identify adulterated ingredients in food by analyzing the composition gene information of all organisms in food, ensuring food safety and quality and avoiding food fraud.

qPCR Technology:

qPCR (Quantitative Polymerase Chain Reaction) is a real-time quantitative method based on PCR (polymerase chain reaction) technology. It quantitatively analyzes the initial concentration of the target nucleic acid (DNA or RNA) by real-time monitoring of the changes in the fluorescence signal during PCR amplification. qPCR technology combines the high specificity of PCR with the high sensitivity of fluorescence detection, can accurately measure the amount of nucleic acid, and has been widely used.

Uses of qPCR Technology:

Probiotic detection:

qPCR technology can quickly and accurately detect the number and type of probiotics in food. Through specific primers and probes, qPCR can quantitatively analyze the target probiotics.

Food authenticity identification:

It can be used to detect target species components in food to prevent food adulteration and fraud. By amplifying and detecting specific DNA sequences, qPCR can accurately determine whether food contains a certain ingredient, ensuring the authenticity and accuracy of food labels.

感官和消费者研究

感官分析是以实验设计和统计分析为基础，并应用人类的基本感官（视觉、嗅觉、味觉、触觉和听觉）来确定产品的感官特性和并结合对消费者主观认识的分析来洞察消费者的感受及期望值。

梅里埃营养科学（中国）拥有一支多年实践经验的感官研究及专业感官品评小组，来帮助您评估产品的质量、探究消费者兴趣、分析竞争对手产品，并与我们的感官服务团队一起规划您对新产品研发的意见与建议。

服务范围

食品饮料、化妆品、日用品、个人护理、高档香水、包装等，以及任何需要感官洞察的情况。

研究内容

感官研究服务

- 描述性分析：定量描述分析(QDA)，风味轮廓图，时间强度描述分析(TI)等；
- 差异测试（部分检测方法已获资质认证）：三角测试，A非A测试等。

消费者研究服务

定性服务：定性研究的目的是通过观察、深度访谈、问卷调查、焦点小组以及对情感、行为和产品或品牌关系的分析来建立对消费者的理解。

定量研究：定量研究专注于量化收集的数据和统计分析技术。能使企业根据确切的消费者态度、意图、行为以及市场分类评估市场并决定为市场提供怎样的产品。

培训服务

我们可为企业提供定制的培训方案，包括感官方法概述及感官品评小组的建立。

我们的优势

拥有超过**35**年的感官研究经验，并能帮助企业的研发团队、营销人员、销售团队和制造商优化其产品特征。

拥有**250**位感官专家，在全世界**4**大洲**15**个实验室里为企业提供全方位的感官服务。

我们的感官专家及感官测试方法以国际化的经验和视野帮助您的产品引领市场

- 在竞争激烈的环境中建立企业产品的感官定位。
- 解释消费者偏好（偏好定位），确定优化线路或寻找新的感官方向。
- 了解一个品牌的感官特征。
- 验证新配方或生产过程。
- 通过时间评估企业产品的感官稳定性（保质期测定、质量跟踪等）。
- 创建针对产品的感官指标。
- 针对产品验收及放行的感官质量进行监控。

Sensory and Consumer Research

Sensory analysis is a scientific discipline that applies principles of experimental design and statistical analysis to the use of human senses (vision, smell, hearing, taste and tactile sensation) for the purpose of evaluating sensory characteristics of products and insight into the consumer's feeling and expectation.

With an over years of practical experience in sensory research and sensory judge team, Sino Silliker could help you to evaluate the quality of your products, discover consumer attitudes, compare products against competitors and generate new product ideas with our sensory services.

Service Scope

food, beverages, cosmetics, home care, personal care, fine fragrances, packaging..., whenever there is a need for sensory insights.

Our Sensory and Consumer research

Sensory research services

- Descriptive analysis: Quantitative descriptive analysis (QDA), flavor profile , time intensity (TI) etc;
- Discrimination tests (several testing methods have been certified by CMA/CNAS): ie. Triangle test, A non A test etc.

Consumer research services

Qualitative studies: Designed to create consumer understanding through first-hand observation, in-depth interviews, questionnaires, focus groups, and analysis of emotions, behaviors and relationship with the product or brand.

Quantitative studies: focuses on quantifying the collection of data, and performing statistical techniques. Allows you to evaluate your market and define your offer based upon a solid understanding of consumer attitudes, intentions and behaviors and segmentation.

Training services

We offer customized solutions to meet your needs, such as basic sensory knowledge sharing, internal/external panel training.

Our Strength

Bring over **35** years' experience in sensory research to help R&D groups, marketers, sales teams and manufacturers to optimize their product characteristics.

With **250** sensory experts in **15** dedicated labs on four continents, we offer a full spectrum of sensory services.

Our sensory studies enable you to:

- Establish the sensory positioning of your products in their competitive environment
- Explain consumer preferences (Preference Mapping) and define optimization routes or identify new sensory niches
- Understand the sensory signature of a brand
- Validate new formulations or manufacturing processes
- Evaluate sensory constancy of your products through time (shelf-life determination, quality follow-up, etc.)
- Create a sensory vocabulary specific to your product's category
- Sensory quality control on product releasing and recieving

临床研究

临床试验对于确保安全、验证健康声称、满足法规标准、建立消费者信任以及推动食品和营养行业创新至关重要。梅里埃营养科学的临床团队致力于通过为食品、膳食补充剂和营养品行业提供广泛的合同研究服务来保护全世界消费者的健康。

梅里埃营养科学的临床团队由来自中国、法国和美国的经验丰富的专业人员组成，其职能涵盖了临床试验流程的各个领域。通过跨国合作，我们的临床研究服务结合了符合GCP要求的内部专业人员、科学家，以及微生物组、消化、心血管、代谢、医学营养、运动生理学、认知功能、饱腹感和体重管理等多个领域的顶尖医学专家。凭借超过二十年的运营经验和800多项已完成的研究，我们在营养临床试验的设计与实施方面拥有深厚的专业知识，能够满足多样化的业务和监管需求。

Clinical Research

Clinical trials are essential for ensuring safety, validating health claims, meeting regulatory standards, building consumer trust, and driving innovation in the food and nutrition industries. The clinical team of Mérieux NutriSciences is dedicated to protecting consumers' health throughout the world, by delivering a wide range of contracted research services to the food, supplement and nutrition industries.

The clinical team is made up of experienced professionals in all areas of the clinical trial process across 3 continents. Through collaboration among China, France and USA, our clinical services combine internal GCP-compliant staffs and experienced scientists with a strong network of health care professionals in various fields such as microbiome, gastrointestinal, cardiovascular, metabolic, medical nutrition, exercise physiology, cognitive function, satiety and weight management. With over two decades of operation and more than 800 completed studies, we have extensive experience in the design and implementation of nutritional clinical trials to meet a range of business and regulatory needs.