



真实性检测

欧陆是全球食品与饲料真实性检测的领导者。除了获得专利的点特异天然同位素分馏核磁共振（SNIF-NMR[®]）技术（其为检测天然产品掺假的最强大的技术之一），我们勇于尝新，率先利用DNA分析技术检测食品真伪，以提高客户产品的安全性和真实性。充裕的研发经费使得欧陆能够针对具体案例采用最合适的真实性检测方法。根据潜在的掺假风险，我们可以为每个产品“量身定制”真实性检测（包含基本方法和特定检测）。



欧陆最初擅长使用同位素技术，而核磁共振指纹图谱是我们最新的一项技术突破。这是一种新型的结合靶标分析和非靶标分析的整体方法，可以快速、完整地进行全基质真实性筛选。此外，欧陆还将靶标分析与特定数据库结合，帮助制造商免遭假冒仿制或虚假地理来源声明之害。

专业知识与具体分析

欧陆还可以通过DNA检测食品的真实性，如普通的DNA测序方法和特定的实时聚合酶链反应（real-time PCR）方法。特别是，无需事先知道预计有哪些种类，DNA宏条形码技术能够一次性检测出复杂食品/饲料样品中存在的所有鱼、肉、植物、细菌和真菌种类。DNA宏条形码技术是采用市场领先技术，配合全球领先的、最新的美国国立生物技术信息中心和BOLD参考序列数据库，通过新一代测序（NGS）分析，对传统的DNA条形码区进行测序。



质量保证

- 拥有最先进技术的能力中心实验室
- 独立的商业实验室，获得DIN EN ISO/IEC 17025:2005认证或类似地方标准认可
- 官方授权的监控检测专家，检测准时、结果准确，质量有保证
- 本地与全球实验室网络

检测能力

- 水果及衍生产品：检测是否添加糖、水、色素、芳香剂或其他未声明的添加剂，确定水果成分；地理来源检查
- 葡萄酒、苹果酒：检测是否加糖、加甜味剂、稀释或添加甘油，检查产品起泡工艺，是否符合同位素特点；地理来源检查
- 烈酒、啤酒：根据当前法规和/或产品规格，控制酒精的植物源和成分参数
- 蜂蜜、枫糖浆、龙舌兰糖浆：检测是否添加糖或其他未声明的添加剂，是否错贴标签，地理来源检查
- 调味料：检查香精是否天然源于某物X（香草、八角、苦杏仁、肉桂、薰衣草、水果、薄荷）属于天然的还是人造的
- 咖啡、茶叶、香料和草本提取物：区分阿拉比卡和罗布斯塔，咖啡和菊苣等；检查茶叶、咖啡或瓜拉那饮品中的咖啡因源于天然还是人造；地理来源检查；单味药草和香料的真实性控制
- 肉制品：确定并量化动物种类、地理来源检查、性别检测、清真认证等。
- 鱼类和海鲜：确定种类和饲养法（野生和畜养）；通过DNA测序和/或特定的实时聚合酶链反应，区分所有常见的鱼类、海鲜和外来物种（金枪鱼、鲑鱼、鳕鱼、鲟鱼、扇贝、鱿鱼、龙虾等）。
- 奶制品：确认所使用的主要饲料（草或青贮玉米）、真实性检测、动物种类检查、奶酪（绵羊/山羊奶酪、马苏里拉奶酪）、香精检查（如水果、香草）；地理来源检查
- 油脂、食品中的脂肪部分：确认样品中的脂肪来源
- 谷类：确认种类；地理来源检查；区别软质小麦/斯卑尔脱小麦、以及软质小麦/硬质小麦
- 大米：对印度香米和泰国香米进行真实性检测；确定大米中印度香米的数量；以及区分香米和非香米。
- 其他植物：根据DNA分析区分松子的种类；蔬菜、大蒜等



AUTHENTICITY TESTING

Eurofins is the worldwide leader in food and feed authenticity testing. Besides the patented Site Specific Natural Isotope Fractionation Studied by Nuclear Magnetic Resonance (SNIF-NMR®) technology, one of the most powerful techniques for detecting the natural products adulteration, we pioneer DNA-based analytical technologies for food testing using innovative protocols, in order to improve the safety and authenticity of our clients' food products. A considerable investment in research and development enables Eurofins to apply the most suitable methods to every specific authenticity evaluation case. Our authenticity analyses are "tailor-made" for each product, including basic methods and specific tests selected to check for likely adulteration practices.



Eurofins' earliest expertise lies in the use of isotopic techniques, especially the SNIF-NMR® method. A recent breakthrough was introduced through NMR profiling, a new holistic approach combining targeted and non-target analyses for a fast and complete authenticity screening of whole matrices. Additionally, Eurofins offers targeted analytical approaches coupled with specific data banks to help protect producers from fraudulent imitations or false geographic origin declarations.

EXPERTISE & SPECIFIC ANALYSES

Eurofins also carries out DNA-based food test, such as universal DNA sequencing methods as well as specific real-time PCR approaches. In particular, Metabarcoding could detect all fish, meat, plant, bacterial and fungal species present in complex food/ feed samples in one single run without prior knowledge about expected species. For Metabarcoding classical DNA barcoding regions are sequenced by Next Generation Sequencing (NGS) analysis using the market leader's technology, with the world-leading and up-to-date reference sequence databases of NCBI and BOLD.



Quality

- Competence centers with state-of-the-art technologies.
- Private, independent commercial laboratory, accredited acc. to DIN EN ISO/IEC 17025:2005 or analogous local standards.
- Officially authorized experts for control tests, quality assurance with accurate results on time.
- Local contacts with global network.

Portfolio

- **Fruit and derived products:** detection of addition of sugar, water, colorings, aromas or other undeclared additives, determination of fruit content; geographic origin check
- **Wines, ciders:** detection of chaptalization, sweetening, dilution or addition of glycerol, checking the process used in sparkling products, conformity to the isotopic profile; geographic origin check
- **Spirits, beers:** control of the botanical origin of the alcohol, composition parameters according to current regulations and/or product specifications
- **Honey, maple syrup, agave syrup:** detection of addition of • sugar or other undeclared additives, mislabeling, geographic origin check
- **Flavors:** checking whether a flavor is natural from X (vanilla, aniseed, bitter almond, cinnamon, lavender, fruit, mint), natural, or synthetic
- **Coffee, tea, spices and herbal extracts:** differentiation Arabica vs Robusta, coffee vs chicory, etc.; checking for natural or synthetic sources of caffeine in tea, coffee or guarana-containing drinks; geographic origin check; authenticity control of single herbs and spices
- **Meat products:** confirmation and quantification of animal species, geographic origin check, Gender testing, Halal Certification, etc.
- **Fish and Seafood:** confirmation of species and of feeding regime (wild vs. farmed); differentiation all \ common fish, seafood and exotic species via DNA sequencing and/or specific real-time PCR (tuna, salmon, plaice, sturgeon, scallop, squid, lobster, etc.)
- **Dairy products:** confirmation of the main feed used (grass or maize silage), detection of adulteration, animal species check, cheeses (sheep/ goat cheese, Mozzarella), flavorings check (e.g. fruit, vanilla); geographic origin check
- **Oils & fat, fat part of food:** confirmation of the origin of fat present in a sample
Cereals: confirmation of variety; geographic origin check; differentiation of soft wheat/spelt wheat as well as of soft wheat/durum wheat
- **Rice:** authenticity testing of Basmati and Thai Jasmine rice; quantification of the amount of basmati present in rice; as well as differentiation fragrant vs. non-fragrant rice.
- **Other plants:** differentiation pine nut species based on DNA analysis; vegetables, garlic, etc.