

GUARANTEED HALAL PRODUCTS COMPLIANCE

Improving the reliability and throughput
of Halal products testing



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“Halal” is an Arabic word meaning lawful or allowable. Any product deemed Halal is permitted for use and consumption by Muslims. Besides being free from ingredients such as pork and alcohol, products must be healthy, wholesome, nutritious and of good quality. Many consumers are unaware that animal by-products are used by food and cosmetics industries as additives and ingredients, therefore expanding the analytical techniques required to detect them.

As the food industry’s premier measurement company, Agilent is uniquely positioned to help you meet *current* and *future* challenges with chemical *and* biological technologies.

Agilent has earned a worldwide reputation for reliability and uptime under the most demanding operating conditions. With industry-leading Agilent innovative instrumentation, quality certified columns and supplies and easy-to-use software solutions, we can give you greater confidence in your results, increase your productivity and lower your cost per analysis. We can also help you navigate the maze of regulatory issues and approved methods.





GC, Headspace-GC

Detection of alcohol in food, beverages and cosmetics; animal fats analysis.



GC-MS, GC-MSMS

Identification and quantitation of adulterants, steroids and allergens at ultra trace levels in finished products. Fingerprinting ID of fats.



HPLC, UHPLC and MS

Identification and quantitation of contaminants like hormones and antibiotics at ppt level. Analysis of collagen.



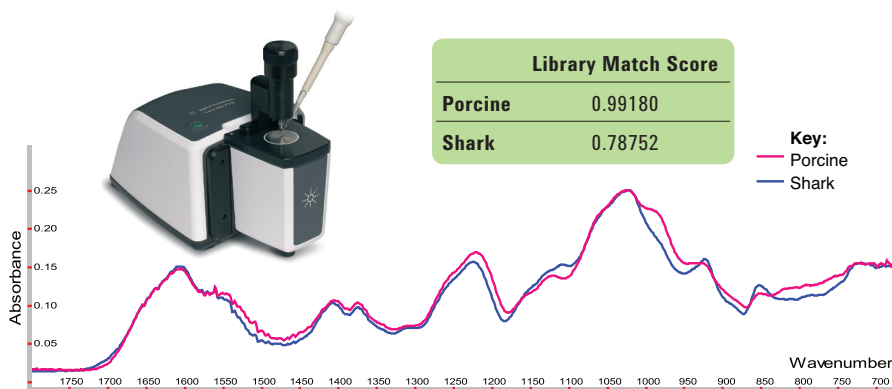
LC-MS and GC-MS Application Kits

Analyzing pesticide and veterinary drug residues in food samples is challenging. Large numbers of compounds, many at low concentrations, must be monitored and quantitated. To complicate matters, method development is labor-intensive and time-consuming, due to compound-dependent parameters that must be optimized.

A faster, easier solution are the Agilent's Application Kits: they provide columns, consumables, comprehensive compound databases and easily customizable methods with optimized settings for hundreds of pesticides and veterinary drugs, making your lab productive in no time.

Molecular Spectroscopy

Encompassing both portable and lab-based FTIR, UV-Vis/NIR and Fluorescence, Agilent offers you a comprehensive range of molecular spectroscopy solutions for the identification and quantitation of ingredients used in foodstuffs, animal feeds, nutritional supplements and cosmetics.



Origin of nutritional supplement identified by FTIR

ICP-OES, ICP-MS

The new standard for high productivity elemental analysis with unmatched matrix tolerance and interference removal.



2100 Bioanalyzer

Accurately and reproducibly measures protein or nucleic acid contents for food speciation, authenticity, GMO testing and allergen testing.



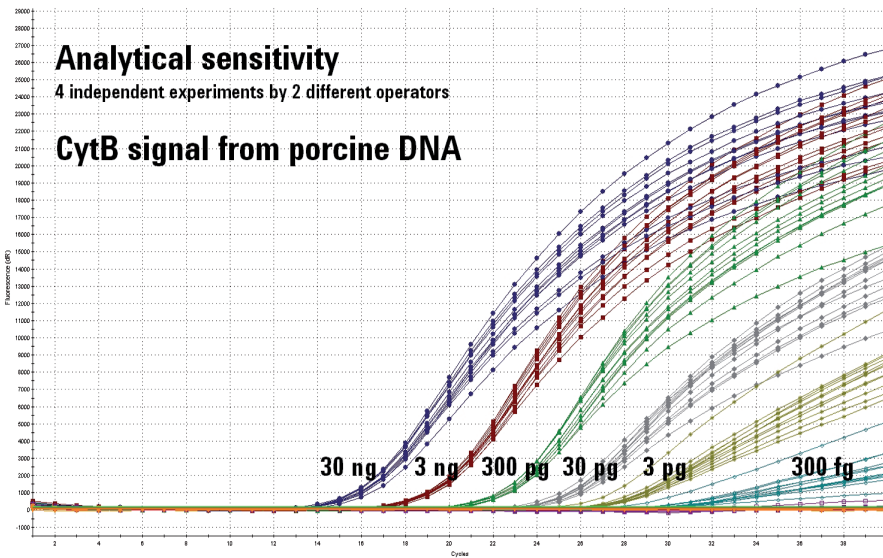
QPCR – Porcine Detection Assay

Detects contamination and cross-contamination from pork and its related products (collagen, lard, etc. etc.) down to 0.0005% w/v.



Agilent Porcine Detection Kit

The Agilent Porcine Detection Kit is an exclusive tool that lets you extract genomic DNA from a food sample or other product and test it for the presence of porcine DNA using QPCR analysis.



The test is quantitative and capable of detecting pork DNA contamination down to 0.0005% w/v. Linearity is very good from 300fg up to 30ng with no matrix effect at all.

The kit is also highly specific to the different species of pig.

Due to the high sensitivity, it's possible to detect contaminations from additives of pork origin (e.g.: collagen, gelatin, lubricants from manufacturing processes) in food, pharmaceuticals and cosmetics.

Example of commodities tested with the Porcine Detection Kit

| | | |
|-------------------------|----------------------------|--------------------------------|
| Primary Meat | Diary | Plant Based Foods |
| Pork loin | Monterey Jack cheese | Garden veggie patties |
| German pork | Mexican cheese blend | Original veggie burgers |
| German boar | Soft cream cheese | Frozen green beans |
| Processed Meat | Onion/olive cream cheese | Tofu |
| Fat free beef franks | Sour cream | Fresh spinach |
| Beef franks | Greek stained yogurt | Frozen spinach |
| Ground pork | Thick/creamy light yogurt | Fresh tomato |
| Ground veal | Heavy wipping cream | Soy yogurt |
| Ground beef | Low fat cottage cheese | Cooked soy beans |
| Primary Poultry | Cheese spread | Soy Mozzarella cheese |
| Chicken meat | Ice Cream | Soups & Ready Meals |
| Turkey meat | | Cream of chicken soup |
| Primary Seafood | Processed Grain | Beef soup |
| Fresh prawns | Cooked soy beans | Beef tips |
| Fresh salmon | Brown rice pilaf | Turkey chili |
| Liquid Beverages | Humus | Chicken noodle |
| Soy milk | Whole wheat bread | |
| Cow's milk | Creme filled choco cupcake | Other |
| Dry Beverages | Choc chip cookies | Marshmallows |
| Cocoa mix | | Extra creamy milk chocolate |



Whatever you're looking for in your food analyses, Agilent can help you find it.

Residues

Pesticides in fruits and vegetables
 Veterinary drugs in meat and fish
 Hormones in plants and meat
 Residues in animal feed

Contaminants

Mycotoxins
 Heavy metals
 Allergens
 Acrylamide
 PAHs
 PFOA and PFOS
 PCB's
 Melamine and related compounds

Additives and Natural Products

Alcohol
 Flavors
 Colorants
 Vitamins and minerals
 Sugars
 Fats and transfats
 Food supplements

Other Testing

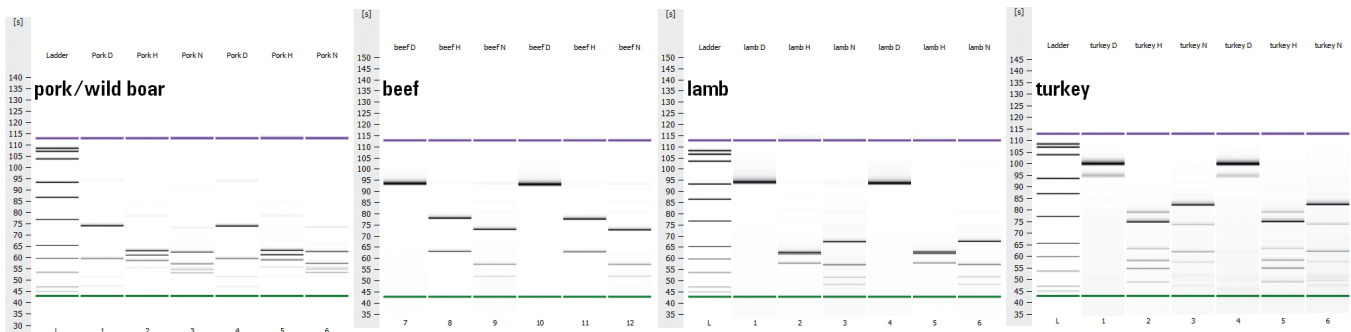
Authenticity, origin and adulteration
 Contaminants from packaging
 Nutritional labeling accuracy
 Bioactivity in functional foods
 Food and feed QA/QC

Biological Food Safety

Analysis of Biological molecules for food safety requires sensitive, specific, streamlined techniques.

Convenient, cost effective Lab-on-a-Chip technology for protein and DNA analysis integrates sample handling, mixing, dilution, electrophoresis, staining and detection on a single miniaturized system. The flexible Agilent 2100 Bioanalyzer platform, PCR reagents and Mx QPCR systems are ideally suited for a wide range of safety, authenticity and traceability applications, including:

- Food allergens
- Meat and fish authenticity
- Multiplex screening of generically modified organisms
- Milk protein quality and content
- Genetic identity of wheat varieties and wheat protein content
- Halal food testing rice authenticity.



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