

# Full System of Halal Diagnostics

With iNtRON Biotechnology



# What is Halal?

HALAL means what is **permissible** or **lawful** in Islam. It is frequently applied to permissible food and drinks.

Halalan toyyiban food means any food which is not harmful and safe to be consumed as underlined by the Syariah law. Food safety is one of the key determinants in assuring halalan toyyibban which resembles wholesome (safe, clean, nutritious, quality) aspects of the food.

Besides being free from forbidden ingredients such as pork and alcohol, food must be healthy, nutritious and of good quality for compliance to halalan toyyiban.

Halal lifestyle can include travel, finance, clothing, media, recreation, and cosmetics as well as halal food and diet

In the Quran, the word halal is contrasted with **haram** (forbidden)

# Halal Market

World Muslim population of **1.8 billion** in 2015 out of 7.6 billion World population

With average annual growth rate of about 1.80% per annum. Approximately 117,000,000 per year.

The trade in Halal food is enormous with est. annual halal food value at US **\$347 billion** globally

The HALAL Market is fast becoming recognized as a vitally important emerging market sector.

**Key Halal Market** : Algeria, Bahrain, Egypt, Indonesia, Iran, Iraq, Jordan, Kuwait, Lebanon, Malaysia, Morocco , Oman, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, UAE, Yemen and Pakistan (Combined population of key Halal markets : 652 Million)

# Halal & Haram Foods

Halal Foods (Permitted Foods)	Haram Foods (Not Permitted)
<ul style="list-style-type: none"> <li>- Rice / Pasta</li> <li>- Any grain product, such as bread, breakfast cereal or baked goods prepared without Haram ingredients</li> <li>- All vegetables and fruit: raw, dried, frozen or canned.</li> <li>- All vegetables and fruit cooked or served with water,</li> <li>- Butter, or vegetable oils</li> <li>- All juices / Milk</li> <li>- Meat and poultry slaughtered according to Islamic dietary law (Zabihah)</li> <li>- Seafood / Eggs / Nuts, seeds / Peanut butter / Tofu Halal deli meats / Dried beans, peas and lentils</li> <li>- Beverages: carbonated drinks, fruit juice, punch, cocktails, tea and coffee</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Pork and its by-products</b> e.g. gelatin, lipase, pepsin</li> <li>- Meat from animals not slaughtered according to the Islamic dietary law</li> <li>- Alcohol and foods prepared with alcohol</li> <li>- Foods made with pure or artificial vanilla extract</li> <li>- Foods containing blood and blood by-products</li> <li>- Foods made with any of the following: whey prepared with non-microbial enzyme, rennet, animal shortening, monoglycerides and diglycerides from an animal source, sodium stearoyllactylate, L-cysteine</li> </ul>

※ **Haram** means **Impermissible**, **sinful** or **Unlawful** in Islam. Regarding haram meat, Muslims are prohibited from consuming flowing blood. Meats pork, dog, cat, monkey, or any other haram animal.

# Full Package System

Laboratory of Halal products

## Halal حلال Lab Product line



### Screening line Rapid detection kit

- Halal Food iN RDT kit (Pork detection kit)

### Checking line Extraction system

- DNA / RNA extraction spin column kits : HALAL Food Nucleic Acid Extraction Kit
- Automated Nucleic acid Extraction system

### Confirming line PCR Detection

- HALAL Real-time PCR kit (Pork)



Total Halal Lab Solution  
with iNtRON

# LiliF™ RDT (Rapid test)

## HALAL Rapid Diagnostic Test (Pork)

### Clean & Automatic system

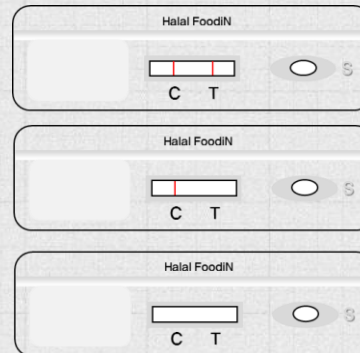
Halal FoodiN (LiliF™) RDT kit introduces a complete range of porcine detection kits designed for fast screening pork in raw meat, processed meat, fat, oil, gelatin, prior sending samples to the laboratory for confirmation tests.

#### Features

- ✓ Easy-to-use
- ✓ Fast : 15 minutes to get a result
- ✓ Cost effectiveness : No additional equipment needed
- ✓ High Specificity & Sensitivity

#### Rapid Kit information

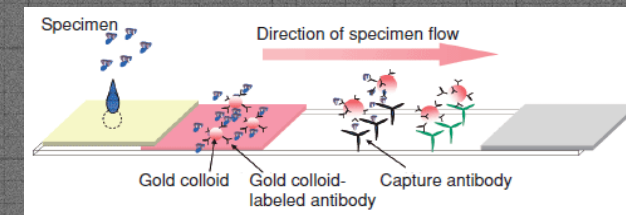
Product Name	Detection Target	Cat No	Package
Halal FoodiN	Antigen	IRR1947	10T / 1kit



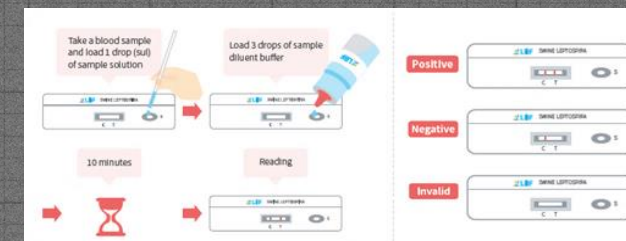
#### Items & Brochure



#### Basic Principle



#### Procedure



# LiliF™ MDx (PCR)

## HALAL Real-time PCR kit (Pork)

### Clean & Automatic system

LiliF™ HALALReal-time PCR Kit(Pork) is designed for use by food and feed producers, dairies, marketers of these products, as well as regulators and auditors of final food and feed quality and safety. It is also intended to be used to verify that ruminant feed and feed supplements are properly labeled and do not contain ruminant materials.

#### Features

- ✓ Premix type ready-to-use for qPCR
- ✓ Pork detection with High Specificity & Sensitivity
- ✓ Application of various raw & processed sample

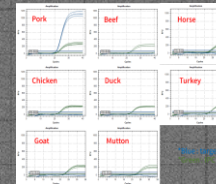
#### Halal Real-time PCR Kit

Product Name	CAT	Size
LiliF™ HALALReal-time PCR Kit(Pork)	IP54246	48T

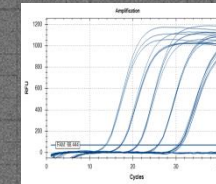
#### Items & Brochure



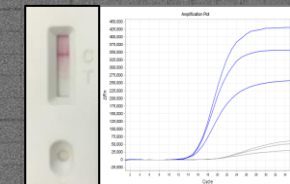
#### Results / Basic Data



Specificity



Sensitivity



Comparative Test

#### Simple Protocol

Step. 1



Put water and sample!

Step. 2



Running the instrument!



# iNtRON's Halal System



## Halal Customized

Less set up time / Less errors / Less contamination

## System I | Screen Line System

HALAL Rapid Diagnostic Test



## System II | Confirming Line System

HALAL Real-time PCR Kit  
HALAL Food Nucleic Acid Extraction Kit



## System III | Full Automation Line System

Total Full Automation  
Halal Detection System

Screening line – Confirming line – Full Automation System

