



Integrated analytical platform

Makes food safety testing simpler

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MICRODAY 29 & 31 May, Italy



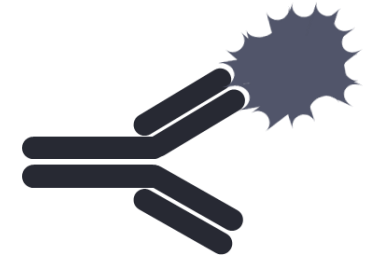
Flexible bioanalytical platform

bact-QFast

gen-QFast

immuno-QFast

Background – Current technologies



Enzymatic assays

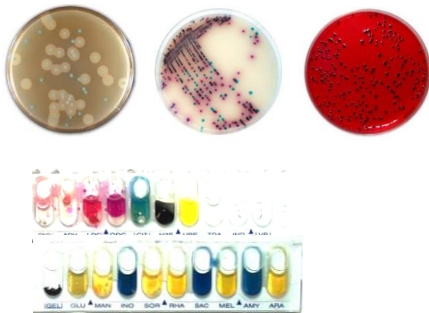
DNA assays

Immunoassays

Chromogenic Plates
Biochemical Galleries

PCR
Genotyping

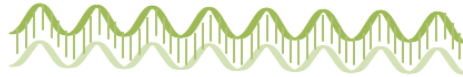
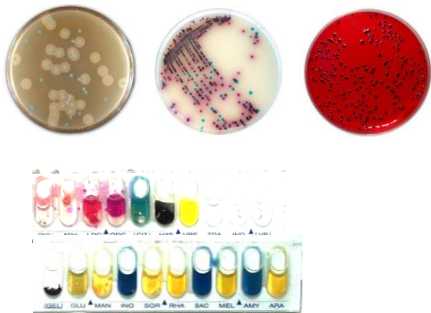
ELISA
Immunostrips (LFD)



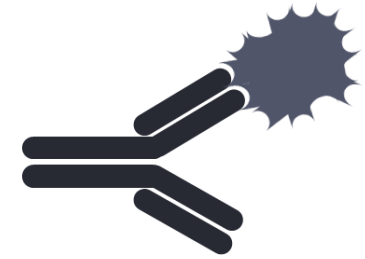
Background



Enzymatic assays
Colorimetry



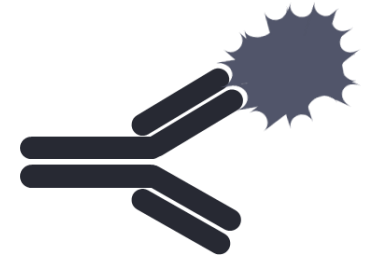
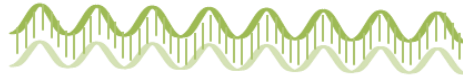
DNA assays
Fluorimetry



Immunoassays
Absorbance



Background



Enzymatic assays

DNA assays

Immunoassays

Electrochemical Read Out platform



bact-QFast



gen-QFast



immuno-QFast



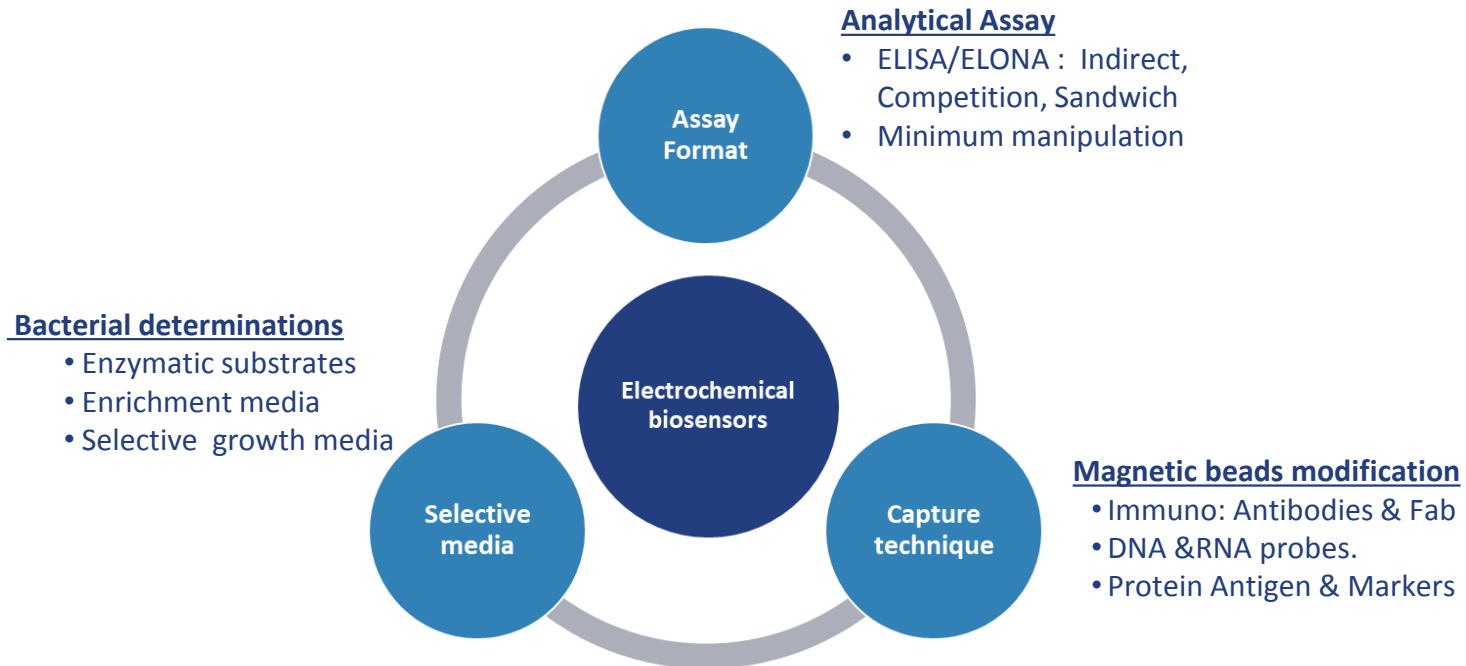
Electrochemical Read Out Platform

bact-QFast

gen-QFast

immuno-QFast

Electrochemical signal transduction as final step of customised design of assay formats, capturing technique and selective reagents”



ODM, OEM services for companies interested in developing their own detection kits



Electrochemical Read Out platform

bact-QFast

Salmonella spp
E. coli
Cronobacter Sakazakii

24h assays < 1 CFU/sample
POSITIVE/NEGATIVE
results
No need for interpretation

immuno-QFast

Salmonella spp
Legionella spp
Gluten, Soya, Milk, Egg proteins
Micotoxins

No washing, colour
revealing or stop
solution

No sample turbidity or
interferences from
complex matrixes

gen-QFast

L. monocytogenes
S. enteritidis
S. typhimurium
Campylobacter
Mycoplasma G.

POSITIVE/NEGATIVE
results
No software associated
No need for
interpretation

Incubators - Mixers



Racks - Magnets



Biosensors



Electrochemical readers



- New **integral** solution to analytical assays.
- Low **cost** equipment. Laboratory use and *in field* applications
- No **maintenance** service or calibration required. Heavy duty design.
- From unitary to **high** sample **throughput**
- **Custom made** solutions to different applications

CONSUMABLE KITS

ADDITIONAL EQUIPMENT

READ-OUT EQUIPMENT

RESULT

Bacterial Screening

Salmonella
Sakazakii
E.Coli
Staphylococcus

Genotyping

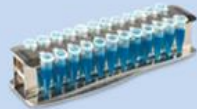
S. Typhimurium
S. Enteritidis
L. Monocytogenes
L. Pneumophila

Immunoassays

Mycotoxins
Allergens
Aflatoxins



Incubator



Magnetic separator



Thermocycler



Thermoblock



Electronic reader

FOOD SAFETY



Absence



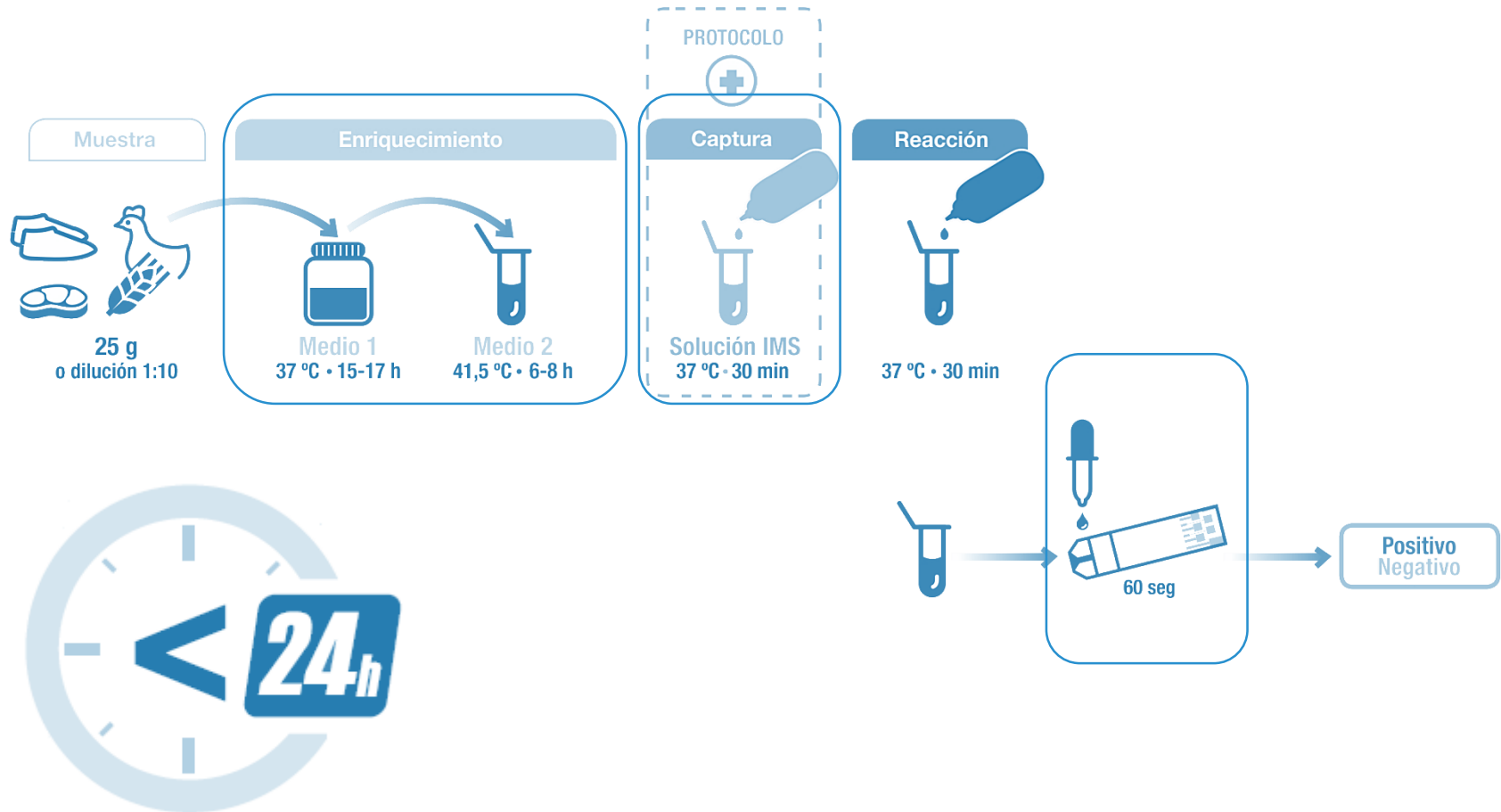
Presence



Quantification



bact-  QFast[®]



3 steps of Selectivity: Enrichment + Capture + Read out

Salmonella in water: Selective and Fast Response



Ease-of-use: 3 droplets

x 8 samples

No agar plates

Culture plate confirmation OK



Customised to sample type:

Water: *Media 1 BPW/SOFT*

Sludge, Soil : *Media 1 HARD*

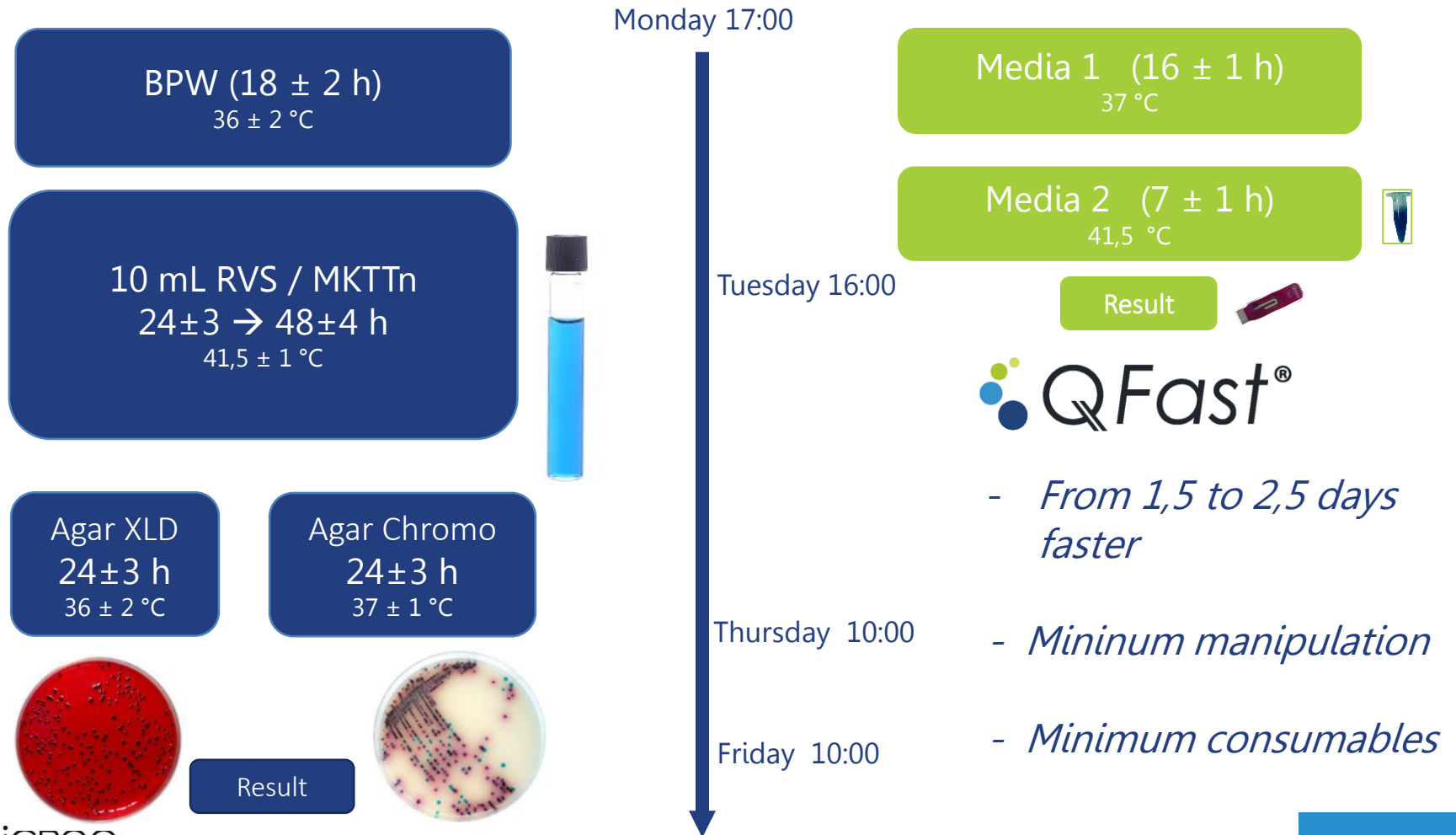
Customised to client:

Media ready-to-use

Media dehydrated

Dry-Bags

Salmonella in water: Advantageous vs. ISO 19250



Salmonella in water: Advantageous vs. Membrane + XLD

Membrane into XLD (24
± 3 h)
36 ± 2 °C



Result

Monday 17:00



Tuesday 17:00

Tuesday 16:00

Membrane into Media 1
(16 ± 1 h)
37 °C

Media 2 (7 ± 1 h)
41,5 °C



Result



QFast[®]

100 % exclusivity



Soil & Sludges included
Nevermind the accompanying flora

Red colonies most with black centers (H₂S)

Salmonella spp

Reported Bacteria XLD false positives:

- ⚠ *Pseudomona spp*
- ⚠ *Shigella*
- ⚠ *Chronobacterium*
- ⚠ *Proteus*

Whole portfolio for pathogen bacteria detection with **ISO 16140 Certification** as an International Quality Standard



Salmonella food & veterinary

Cronobacter sakazakii

Escherichia Coli

QFast® Salmonella

Permite detectar de manera rápida la ausencia/presencia de Salmonella SPP

1 ENRIQUECIMIENTO

Permite detectar de manera rápida la ausencia/presencia de Salmonella SPP

1 ENRIQUECIMIENTO 2 INMUNOCAPTURA (Solo HARD +) 3 LECTURA POSITIVO NEGATIVO

MUESTRAS DE CONSUMO HUMANO
Alimentos procesados, Lácteos derivados, Carnes crudas, Charcutería, Vegetales, Huesos derivados, Pescado

MUESTRAS VETERINARIAS
Piel de pollo, Calzas, Heces

MUESTRAS AMBIENTALES
Polvo, Fondo de caja

TIPO DE MUESTRAS

48 tests	96
SOFT EASY Medio de cultivo RTU para usar	TBR Medio de cultivo deshidratado
HARD EASY	D

48 TESTS	96 TESTS
HARD + Listo para usar	Dry Bag Medio de cultivo deshidratado en bolsa individual
HARD EASY VETERINARY	

QFast®

QFast® Sakazakii

Permite detectar en menos de 24 h la ausencia/presencia de Cronobacter spp.

1 ENRIQUECIMIENTO 2 RESULTADOS POSITIVO NEGATIVO

TIPO DE MUESTRAS

MUESTRAS AMBIENTALES
Muestras ambientales Industrial Alimentaria

MUESTRAS DE CONSUMO HUMANO
Formulaciones Infantiles, leche en polvo, Productos lácteos.

KIT 96 TESTS Enriquecimiento en medio de cultivo comercial estándar. Incluye solución de reacción y sensores para la lectura

QFast®

QFast® E.Coli

Permite detectar en menos de 24 h la ausencia/presencia de Escherichia coli

1 ENRIQUECIMIENTO 2 RESULTADOS POSITIVO NEGATIVO

TIPO DE MUESTRAS

MUESTRAS DE LIMPIEZA Y DESINFECCIÓN
Herramientas Útiles Superficies

MUESTRAS DE CONSUMO HUMANO
Pescado, Charcutería, Carnes Crudas, Alimentos Procesados, Lácteos y Derivados, vegetales, Huesos y Derivados.

KIT 48 TESTS Enriquecimiento en medio de cultivo Ec Broth no incluido. Incluye solución de reacción y sensores para la lectura

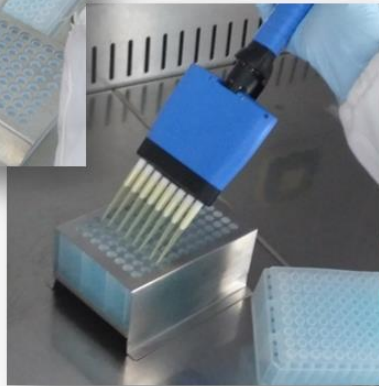
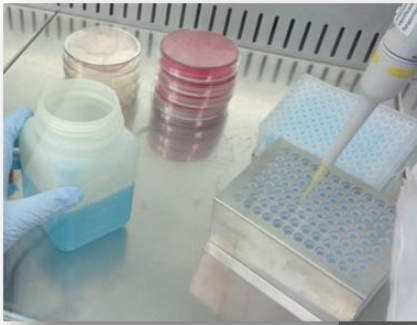
QFast®

Platform that grows

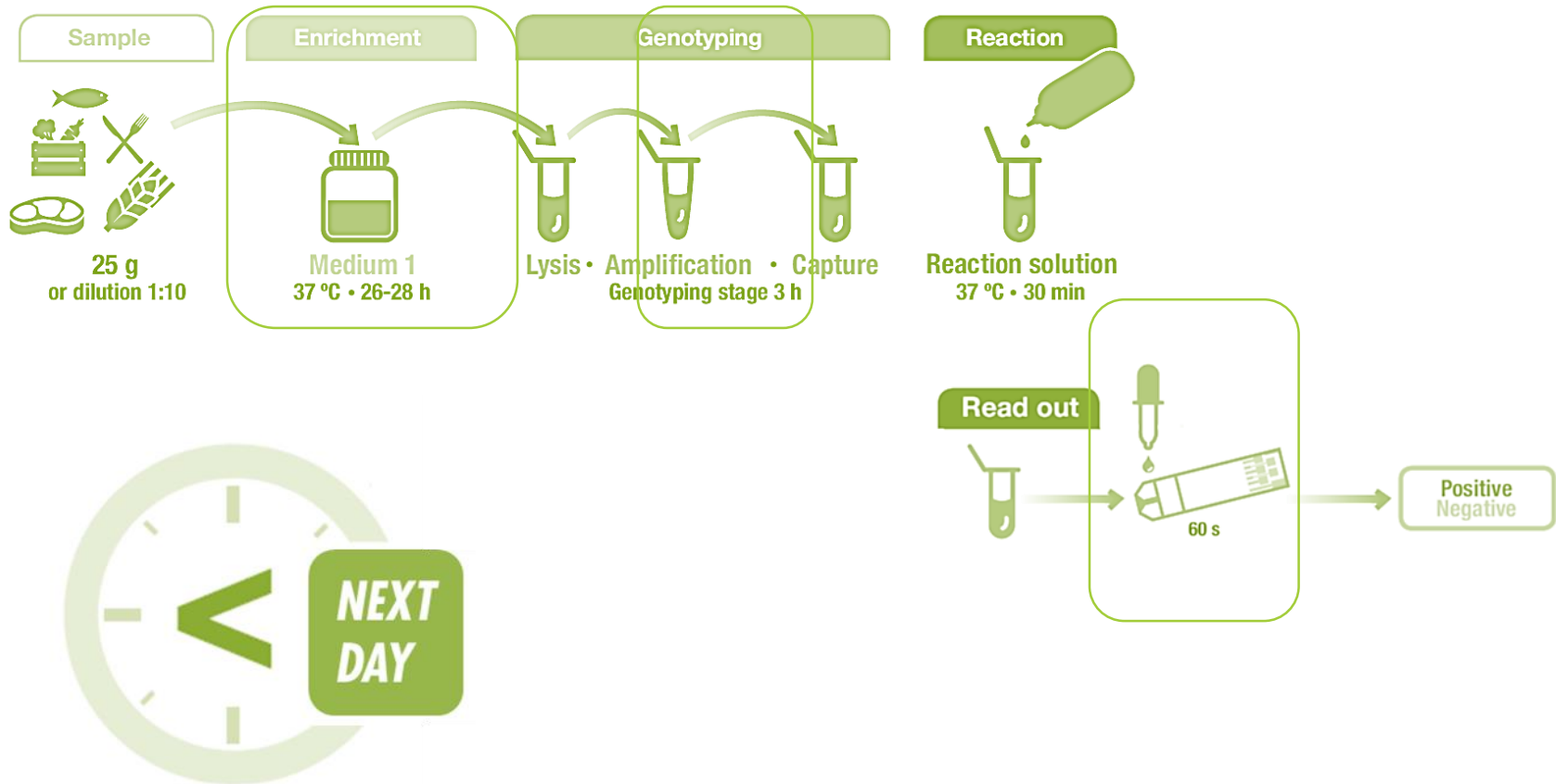
New **QFast**[®]-Easy8 Platform for 96 sample processing/day

Available for **QFast**[®]- EASY Protocols (Food and Raw Material)

8-samples read out in 60 s



gen-  QFast[®]



3 Steps of Selectivity: Enrichment + PCR + Read out

Whole portfolio for pathogen bacteria detection with ISO 16140 Certification as an International Quality Standard



Listeria monocytogenes

Permite detectar de manera rápida la ausencia/presencia de *Listeria monocytogenes*

1 ENRIQUECIMIENTO

2 GENOTIPADO

3 RESULTADOS

POSITIVO
NEGATIVO

TIPO DE MUESTRAS

MUESTRAS DE LIMPIEZA Y DESINFECCIÓN

Herramientas Útiles Superficies

MUESTRAS DE CONSUMO HUMANO

Pescado, Charcutería, Carnes Crudas, Alimentos Procesados, Lácteos y Derivados, Vegetales, Huevos y Derivados.

KIT 48 TESTS
Enriquecimiento en medio de cultivo HALF FRASER (no incluido). Incluye solución de reacción y sensores para la lectura.

REFERENCIAS COMERCIALES
L. MONO BASIC KIT CGLMO

Salmonella enteritidis, typhimurium, spp

New !!

Permite detectar de manera rápida la ausencia/presencia de *Salmonella* Enteritidis, Typhimurium o spp mediante PCR

1 ENRIQUECIMIENTO

2 GENOTIPADO

3 LECTURA

POSITIVO
NEGATIVO

TIPO DE MUESTRAS

MUESTRAS DE CONSUMO HUMANO

Alimentos procesados, Lácteos y Derivados, Carnes crudas, Charcutería, Vegetales, Huevos y Derivados, Pescado

MUESTRAS DE ALIMENTACIÓN ANIMAL

Plenos y Materia prima.

MUESTRAS VETERINARIAS

Piel de pollo, cabras, heces.

MUESTRAS AMBIENTALES

Pavos, Fondo de caja.

KIT 48 TESTS
Enriquecimiento en medio de cultivo HALF FRASER (no incluido). Incluye reactivos PCR y sensores para la lectura.

PRESENTACIONES COMERCIALES
SALMONELLA SE, ST O SPP BASIC

■ New protocols under development


Listeria monocytogenes

ISO 16149 Certified 2019

- New presentation in **Multiwell** plate under development
- Easy to manage volume transfers with multichannel micropipette (8 by 8)
- Read out by 8 samples in 1min until 32 samples.

Salmonella enteritidis, typhimurium, spp

- **Internal Control** for industry and labs to genotype *Salmonella* strains in less than 3h.
- New presentation in **Multiwell** plate under development
- **Reduced times and steps in protocol !**
- Read out by 8 samples in 1min until 32 samples.

immuno- *QFast*®



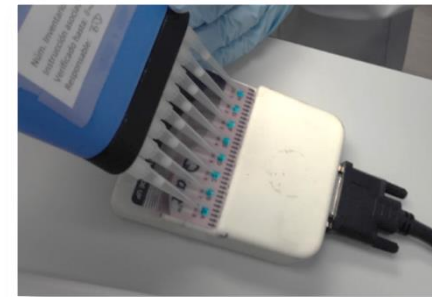
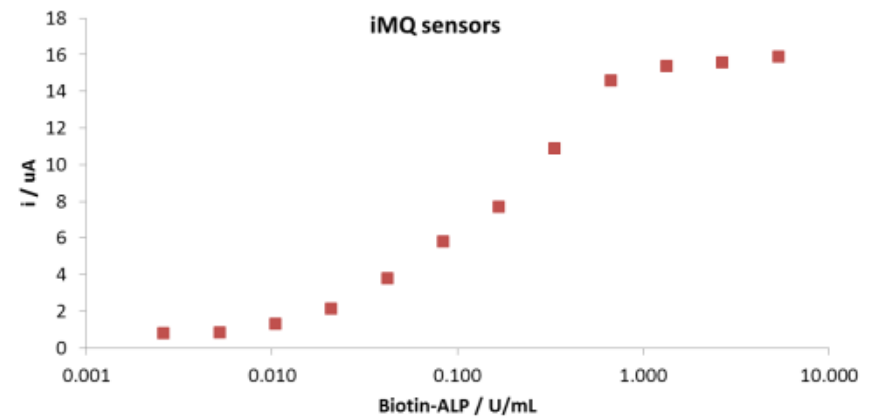
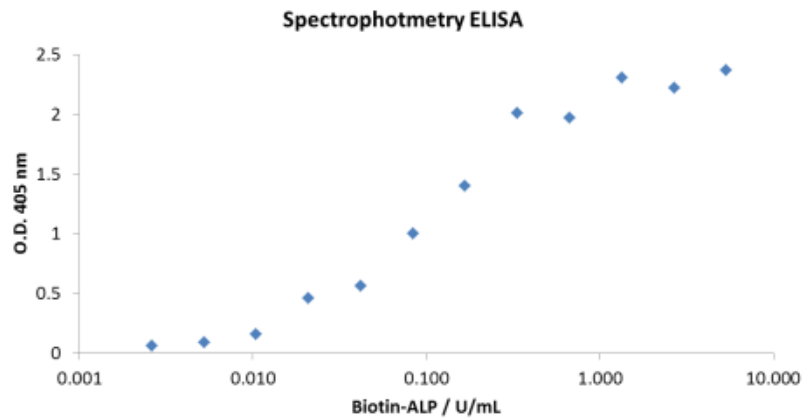
- Plate-adsorption bio-affinity element
- Read out through optical techniques:
- Challenges
 - Maximize selectivity
 - Decrease background signals

“ELIMSA” : Electrochemical immunomagnetic

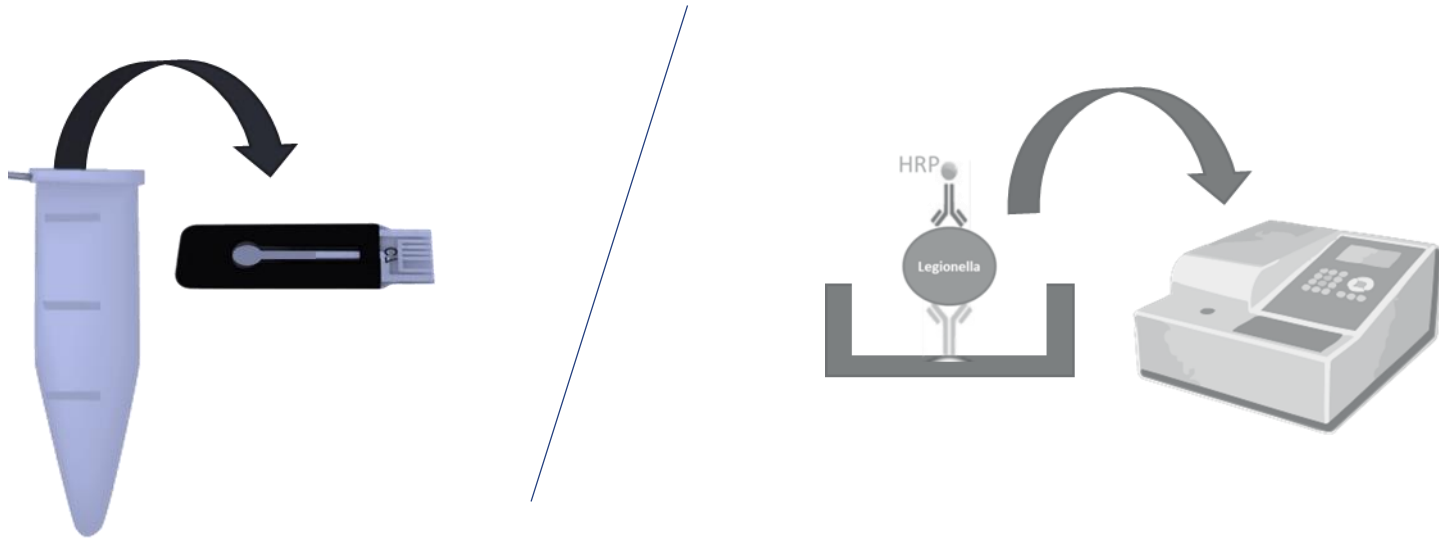
- Magnetic bead as substrates
- Read out through electrochemical techniques
- Advantages
 - Improved selectivity
 - Improved background signals
 - Improved sensitivity



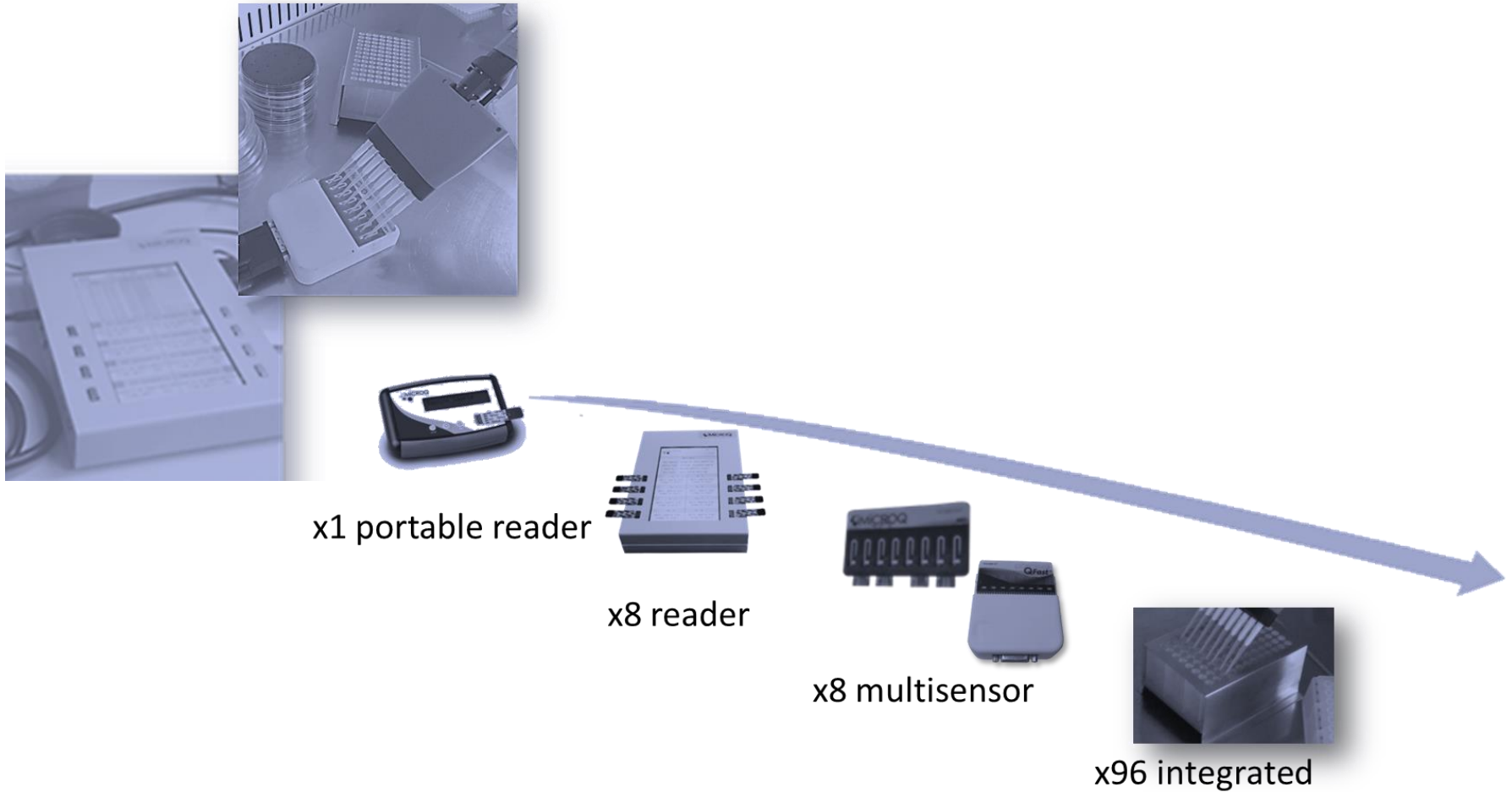
Electrochemical Assay : Easily matching ELISA performance



Electrochemical Assay vs. ELISA: Legionella detection commercial kit



ELIMSA (LOD)	ELISA (LOD)	Assay Protocol
	1000 CFU/mL	ELISA std
100 CFU/mL		ELIMSA no washing step
10 CFU/mL		ELIMSA 1 washing step



QFast®



- ✓ Expanding platform
- ✓ New areas to be covered
- ✓ Reliable
- ✓ Certified

bact-QFast

gen-QFast

immuno-QFast





Thank you very much for your attention

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