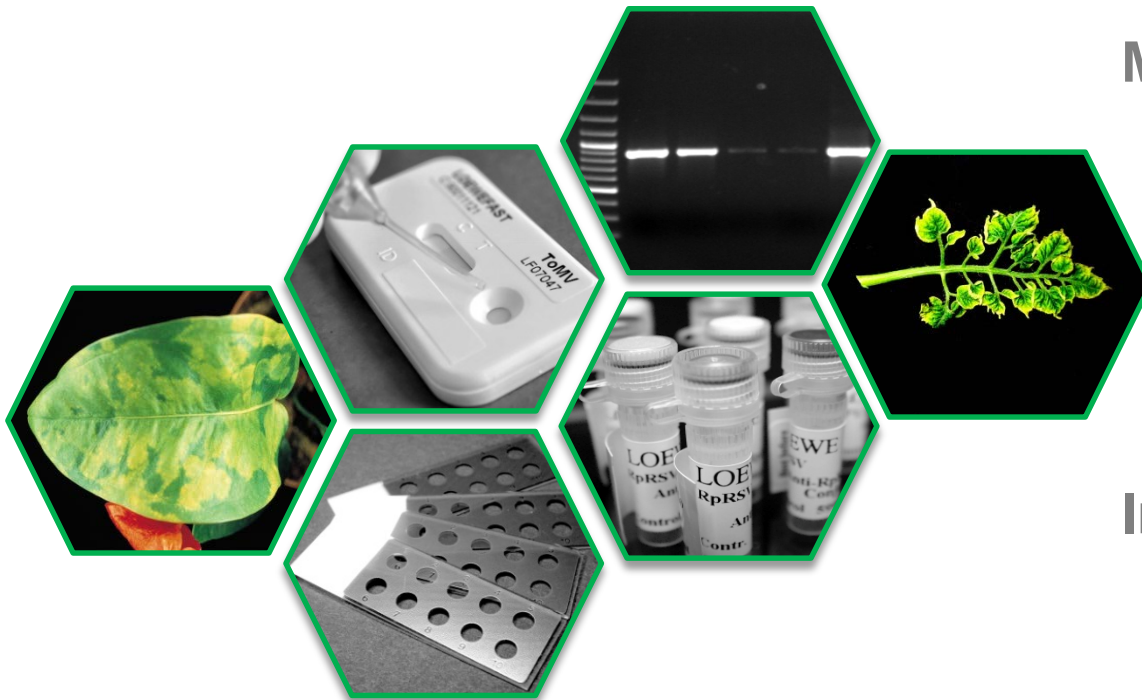


LOEWE®

Solutions for Plant Disease Diagnostics



Molecular Diagnostics

Rapid Tests

ELISA Reagents

Immuno Fluorescence

About us:

... established in 1988 as an independent, privately hold company, we are located in Sauerlach, Southern-Germany. Since almost 30 years we are specialized in the development and production of **premium diagnostic reagents** for the detection of plant pathogens. We are offering more than **130 antisera** to analyse plant pathogens (viruses, bacteria, fungi, nematodes)

Direct and immediate service for our national and international customers is one of our main objectives. Join our satisfied clientele who trust in LOEWE® reagents for plant pathogen testing.



Our Core Competences

ELISA sets for detection of plant pathogens

Antisera for immuno fluorescence techniques

Molecular diagnostics (PCR set and kits)

Lateral flow tests for rapid diagnosis



Serological assay	Advantages	Drawbacks
Immuno Fluorescence Assay IFA	<ul style="list-style-type: none"> - use of crude antiserum - high throughput screening - pathogen morphology - one cell is detectable 	<ul style="list-style-type: none"> - bleaching - low reproducibility - experience needed
Enzyme-Linked Immunosorbent Assay ELISA	<ul style="list-style-type: none"> - semi quantitative evaluation - high specificity, sensitivity - high throughput analyses - high reproducibility - assay can be automated - objective evaluation 	<ul style="list-style-type: none"> - special equipment, experts essential - long time assay (two days)
Lateral Flow Assay	<ul style="list-style-type: none"> - simple, quick procedure - no expert staff, special equipment essential - specific, sensitive similar to ELISA 	<ul style="list-style-type: none"> - semi-quantitative - yes or no answer
Molecular Biology		
Polymerase Chain Reaction - PCR	<ul style="list-style-type: none"> - High-throughput - Automatable - Sensitive, specific 	<ul style="list-style-type: none"> Trained personel Laboratory setting Cross contamination
Real-time PCR	<ul style="list-style-type: none"> - Fast – 30 - 60 min - Quantitative - Highly specific - Very sensitive 	<ul style="list-style-type: none"> - Expensive - Trained personel - Laboratory setting

Our Product Range

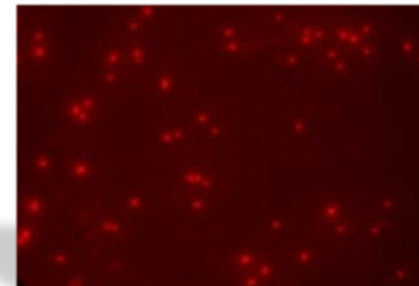
- 🌱 **ELISA** sets for detection of plant pathogens:
 Antisera for the detection of plant viruses, bacteria, fungi, and nematodes in vegetables, field crops, fruits and ornamentals

- 🌱 **Antisera** for immuno fluorescence techniques:
 Bacteria: *Clavibacter m. sepedonicus*, *Ralstonia solanacearum* etc.

- 🌱 **Molecular diagnostics** (PCR set and kits):
 Pretested and evaluated PCR primers for the detection of bacteria and fungi (e.g. *Erwinia amylovora*, *Fusarium* spp. etc.)

- 🌱 **Lateral flow tests** for rapid diagnosis:
 LOEWE® FAST series based on the lateral flow technology

- 🌱 **Testing service** of samples with serological or molecular methods



Especially if testing a large number of samples, **immuno fluorescence (IF)** is still a very popular and easy technique.

We are offering a wide range of polyclonal antisera from goat and rabbit, secondary fluorescence labeled antibodies, as well as multiwell slides and cover slides for immuno fluorescence studies on bacteria and fungi.

What you need to do the assay:

- Multiwell-slides
- Specific **LOEWE®** antiserum
- Fluorescent labeled antibody (Cy3, red; FITC, green)
- Fluorescence microscope

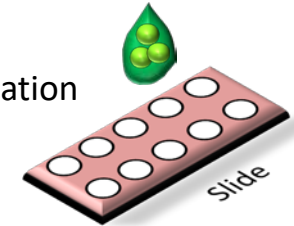


Available for:

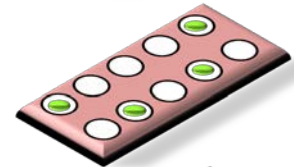
<i>C.m.s.</i>	<i>P.s.pv. tomato</i>
<i>C.m.m.</i>	<i>X.c.vesicatoria</i>
<i>C.m.i.</i>	<i>X.a.phaseoli</i>
<i>Ralstonia sol.</i>	<i>Xylella fastidiosa</i>
	<i>... and more</i>

How it works:

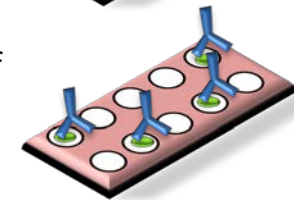
1. Sample application



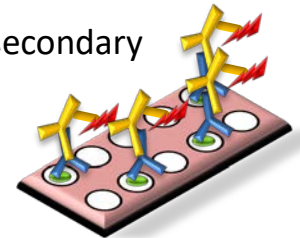
2. Heat fixation



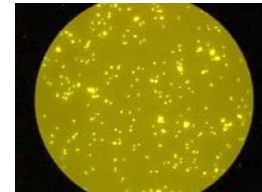
3. Application of specific Antisera



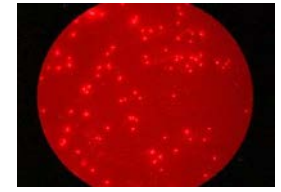
4. Application of secondary labeled Antibody



5. Microscopic Evaluation

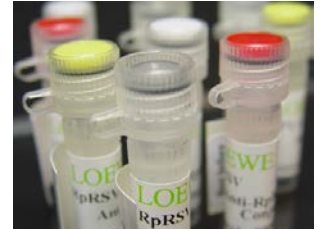


FITC: Excitation 520nm
Emission: 492 nm



Cy3: Excitation 550nm
Emission: 570 nm

LOEWE® ELISA sets contain IgG and AP-conjugate for 100, 500 and for some articles 1000 tests. Our ELISA sets are optimized for a test volume of 200 µl per well; ensuring highest accuracy, repeatability and sensitivity.

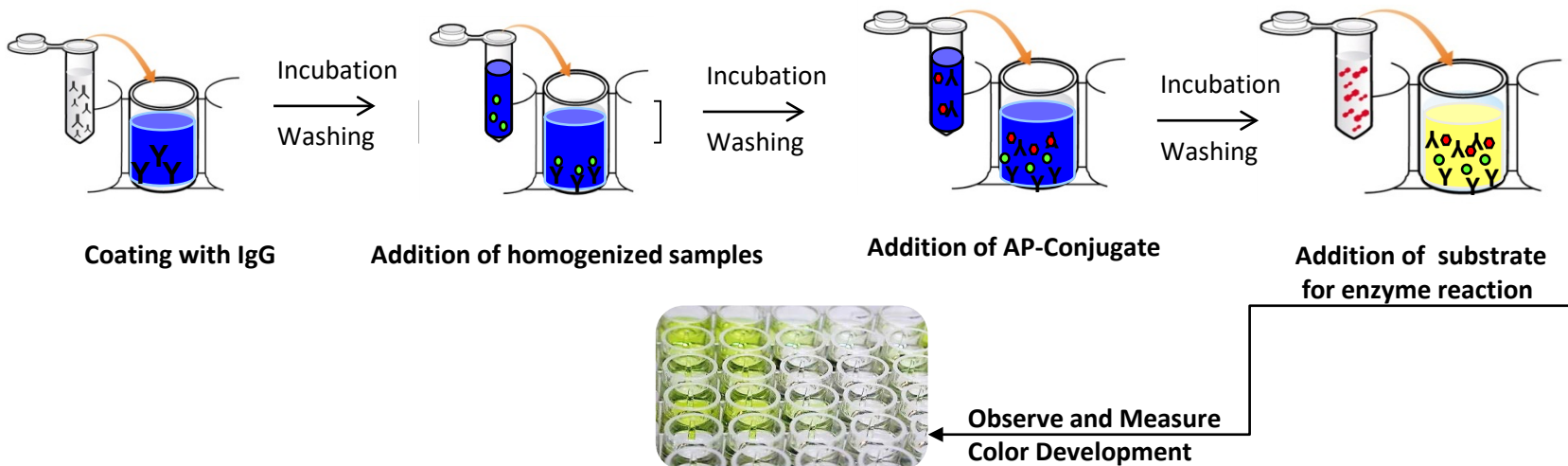


LOEWE® ELISA complete kits contain following all component needed for performing an ELISA

- ELISA set (IgG and AP-Conjugate)
- Positive Control
- Negative Control
- Coating Buffer
- Wash Buffer
- Conjugate/Sample Buffer
- Tween 20
- Substrate (p-Nitrophenylphosphate)
- Substrate Buffer
- High-Binding ELISA plates + sealing tapes



How it works (basic Double Antibody Sandwich (DAS) -ELISA:



The **LOEWE®FAST** rapid test series is designed for reliable and specific detection of plant pathogens within minutes.

You will be able to assess suspicious plant material in the field or greenhouse without the need of an analytical laboratory. Available for a series of viruses and bacteria like the quarantine pests *C.m.s* and *Ralstonia solanacearum*.

One Basic Kit contains:

5 x test cassettes

5 x single use pipettes for sample application

5 x sample tubes prefilled with sample buffer

How it works:



1. Punch out a piece of leaf from a suspected area

2. Homogenize with micro-pestle and mix

3. Apply 3 drops of sample onto the test cassette

4. After 2 -10 minutes interpret the test result

...for the detection of Bacteria, Fungi, and Phytoplasmas

The PCR technique allows specific and sensitive detection of plant pathogens, when other test serological reagents are not available or a second method is needed, as often demanded in diagnostic protocols from Plant Protection Organisations.

- ✓ Specific and sensitive, ready-to-use, fast and cost effective
- ✓ Optimized and evaluated conditions for the amplification reaction
- ✓ Shipping at room temperature - no dry ice needed!



Complete PCR Reaction Kits

Premix (Primers, dNTPs)

DNA-Polymerase

10 x Reaction Buffer

PCR-grade Water

Positive Control (DNA based)

Negative Control (DNA based)

Fungi:

- Phytophthora fragariae
- Fusarium culmorum
- Fusarium graminearum

Phytoplasmas:

- Apple Proliferation Group
- Aster Yellows
- Elm Yellows
- Stolbur
- Universal Phytoplasma

Bacteria:

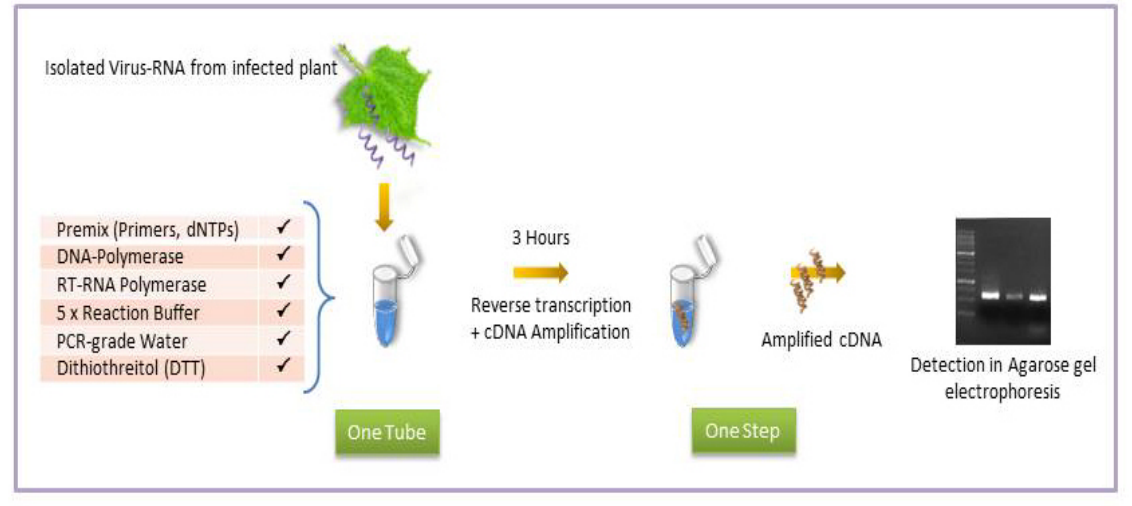
NEW:

Curtobacterium flaccumfaciens pv. flaccumfaciens!

- Clavibacter m. sepedonicus
- Clavibacter m. michiganensis
- Erwinia amylovora
- Ralstonia solanacearum
- Pantoea st. stewartii
- Xylella fastidiosa
- X. arabiscola pv. pruni
- Xylophilus ampelinus
- Xanthomonas oryzae ...

Test principle

The reaction is carried out in one tube starting with the reverse transcription of virus RNA and subsequent cDNA amplification. The amplicon can be visualized on a standard agarose gel. Each kit is provided with detailed instructions and product specifications and quality validation data. Extraction kits for RNA isolation are available separately.



Available for:

Fruit tree viruses:

Apple Chlorotic Leaf Spot Virus
 Apple Mosaic Virus
 Apple Stem Grooving Virus
 Cherry Leafroll Virus
 Plum Pox Virus
 Strawberry Latent Virus

Vegetable and Potato viruses:

Cucurbit Vein Yellowing Virus
 Impatiens Necrotic Stunt Virus
Potyvirus group
 Potato Mop Top Virus
 Potato Virus Y
 Potato Leafroll Virus
Tobamovirus group

And many more!

**Also available for:
 Tomato Brown Rugose Fruit Virus!**