

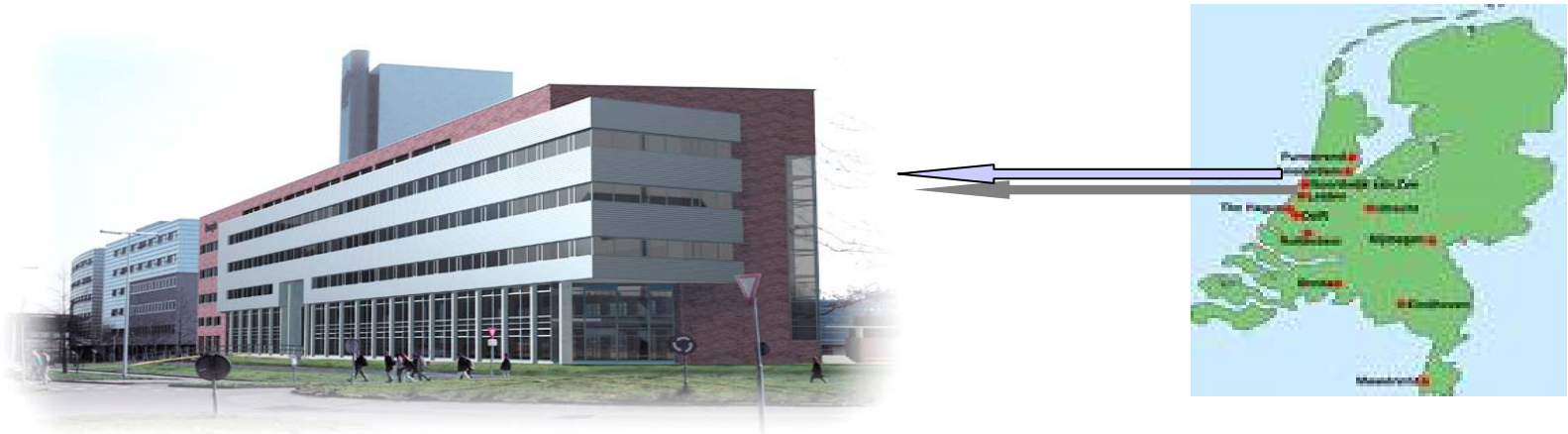


MILLIPORE

# Millipore MicroSafe Services your partner in Bio safety Testing

ADVANCING LIFE SCIENCE TOGETHER™  
Research. Development. Production.

# MicroSafe Services from MILLIPORE



MicroSafe Services offers microbiological, mycoplasma and virus tests.

MicroSafe Services from Millipore is a GMP/GLP contract testing facility that meets the drug manufacturing testing needs of pharmaceutical and biotechnology companies.

## MicroSafe Services from Millipore - Summary of History

- Founded in Leiden 1993
- Founders were Bacteriology, Virology, Mycoplasma and QA specialists
- Became part of the Millipore Bioprocess Division on July 5, 2005
- Transfer to a new lab facility located in the Bioscience Park of Leiden in Q3 2007

# Site Profile

- Capacity: 1500 m<sup>2</sup>
- Improved controls (gowning, storage, alarms)
- Class 10.000 Area with Isolator for sterility testing
- Bio Safety Level 2 (+) facility



# MicroSafe services from Millipore Certificates

- GMP, Certificate of GMP Compliance issued by The Health Care Inspectorate

- According to Art. 111(5) of Directive 2001/83/EC



- Statement of a control laboratory

- License number: 108882 ALAB

- GLP, Endorsement of Compliance with the OECD principles of Good Laboratory Practice

- According to Directive 2004/9/EC



- GMO, The Minister of VROM

- Licence number: GGO 03-160.ab



# MicroSafe Services from MILLIPORE

Key expertise: Mycoplasma testing

- $\pm 40$ /week
  - >30 customers
  - Optimised media (Agar/Broth)
- 
- Certificate of Analysis
  - GMP full report
  - GLP full report
- 
- Routine studies
  - Custom made studies

# MicroSafe Services from Millipore

## **Virology Testing (In vitro)**

- Adventitious Viruses (CPE, HAG)
- Bovine Viruses (CPE, HAG, IFA)
  
- Replication Competent Retroviruses
- Xenotropic/Ecotropic Murine Leukaemia Viruses

# MicroSafe Services from Millipore

## **Bacteriology Testing**

- Antibiotic Assays
- Sterility testing
- Bio burden testing
- Test for specified micro-organisms
- Endotoxin testing

# MicroSafe Services from Millipore

## **Bacteriology Testing**

- Biochemical identifications (API)
- Growth promotion testing
- Preservative efficacy testing
- Mycobacterium test
- Environmental monitoring programs

# MicroSafe Services from Millipore

## **NAT**

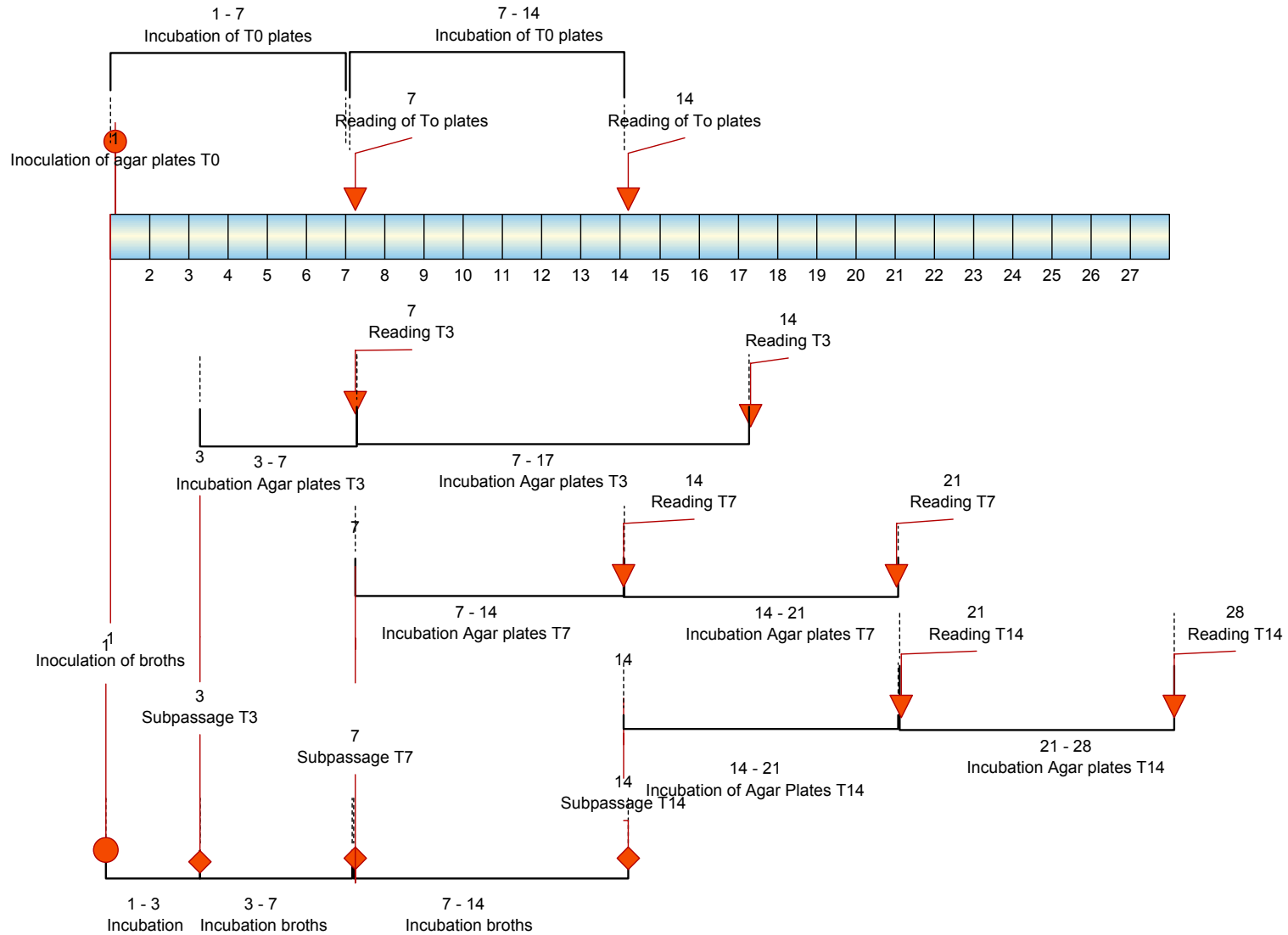
- QPCR Virus & Mycoplasma
- Sequencing
- Bacterial identification

# MicroSafe Services from Millipore

## **Mycoplasma Testing**

- Agar broth test in compliance with EP, CFR, CBER
- Test on indicator cells (Vero, 3T6)

# Agar broth test



# Rapid Screening of Mollicutes with QPCR

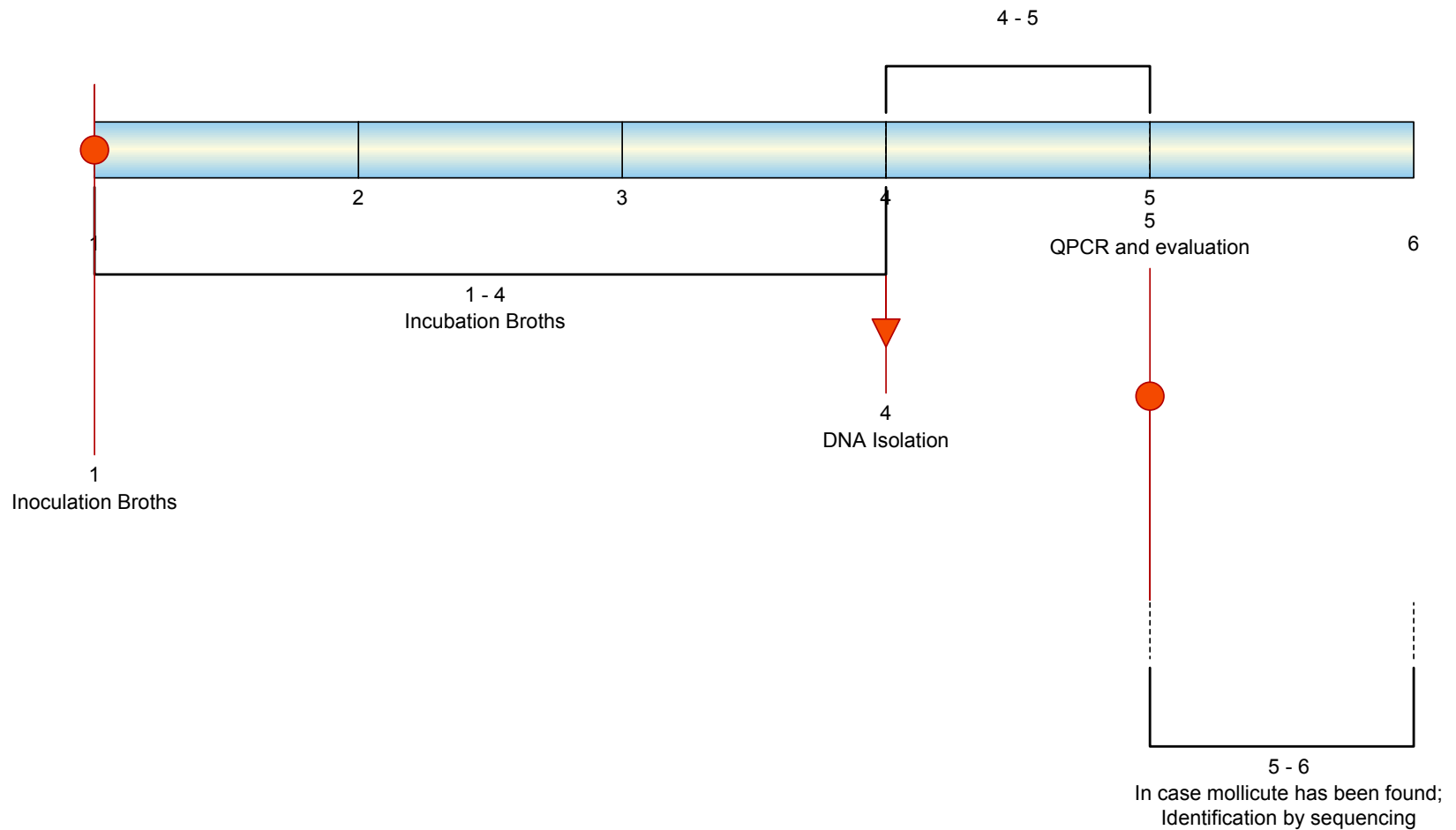
## 4 Stages:

- Culturing
- DNA isolation
- QPCR
- Analysis

Universal primers and SYBR Green I as the fluorescent dye in the QPCR  
LOD of the target sequence is 1-10 CFU/ml for all strains tested

**Complies with validation requirements mentioned in EP 2.6.7**

# Rapid Screening Of Mollicutes with QPCR



# Mollicutes screening using NAT

## Conclusion:

- ✓ Complies to guidelines as outlined in European Pharmacopoeia
- ✓ Assay duration compendial vs NAT: 28 vs 6 days
- ✓ LOD: <1-10 CFU/ml
- ✓ Robust assay
- ✓ Documentation and Trained personnel in place
- ✓ Dedicated protocol for the customer



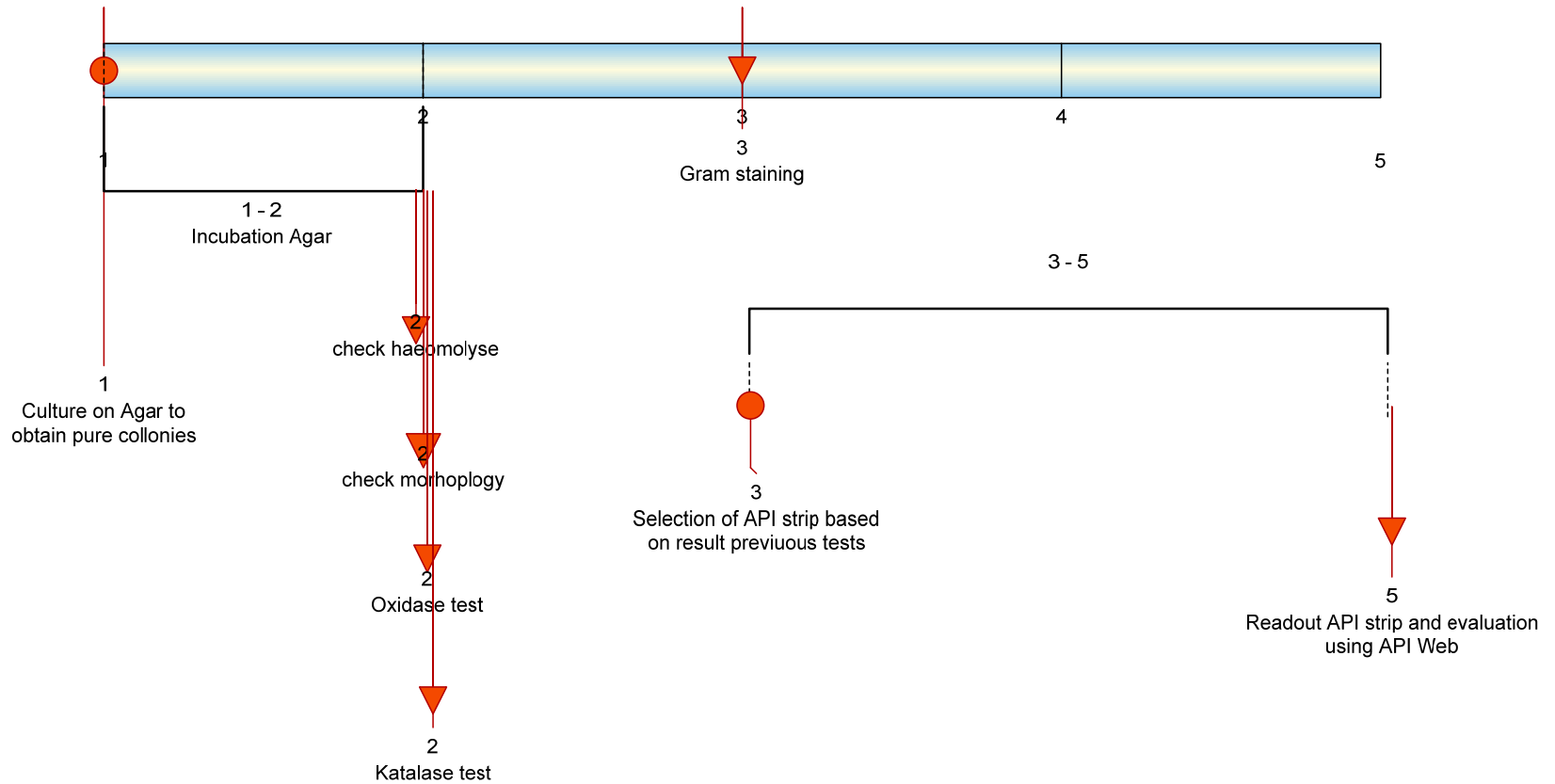
Routine Test Method

# QPCR for detection viruses

MicroSafe services from Millipore is now in process for validation of QPCR for the detection of different virus strains

- BVDV (validated)
- BAV-3 (validated)
- BPV
- BRSV
- PI-3
- IBR
- BVDV non cpe
- Ad-5

# Identification using API system



# Identification by sequencing

:

- DNA isolation
- PCR
- Purification of PCR products
- Sequencing reaction
- Purification of sequencing reaction products
- Sequence run
- Analysis of the sequences
  
- Total days needed <3.

## Bacterial identification API vs sequencing

Less labour intensive  
No operator interpretation  
Quick, <3 days.

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