ThermoFisher SCIENTIFIC

Ensuring Food Safety From Farm to Fork

Advances in Food Microbiology Testing

Nicole Bond

Microbiology

Thermo Scientific SureTect Real-Time PCR System

- Designed to quickly and accurately detect microorganisms in a broad range of foods samples

- Assays available now:
  - *Salmonella* species
  - *Listeria* species
  - *Listeria monocytogenes*

It’s Easy to be Sure!

Prepare

- Reduce hands-on time
- Simple lysis in < 20 minutes

Run

- Streamlined protocols
- Flexible throughput

Read

- Intuitive software
- Straightforward interpretation

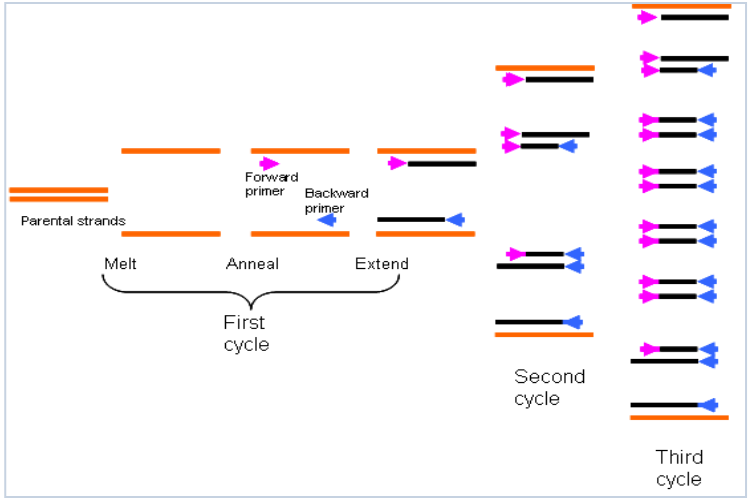
Principles of PCR

- PCR (Polymerase Chain Reaction) enables amplification of short DNA fragments
- PCR comprises 3 steps:

1. Denaturation - at 95°C DNA strands are separated

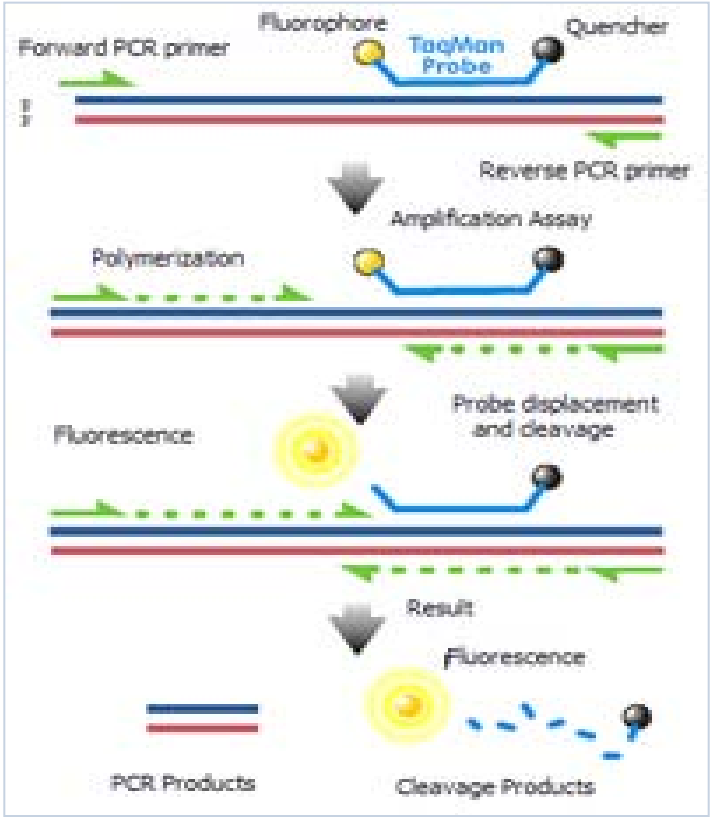
2. Annealing - at 55 - 60°C target specific primer anneals to targets and then DNA polymerase finds 3´end of the annealed primers

3. Extension - at 60-75°C DNA polymerase elongates the primers accroding to template strand



Principles of Real-Time PCR (qPCR)

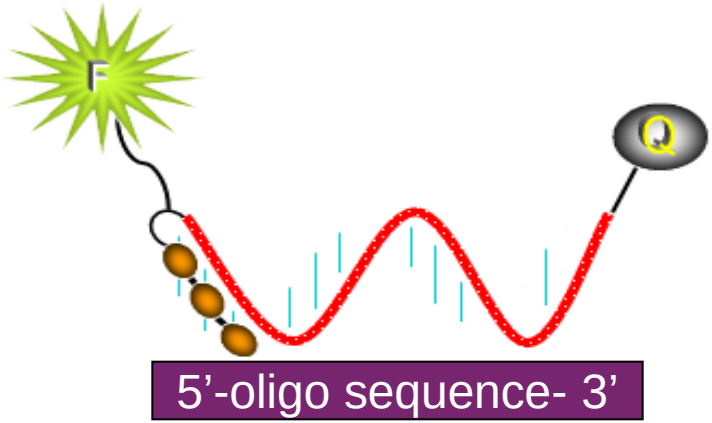
- TaqMan - most widely used qPCR chemistry
- Species-specific probe with reporter molecule at 5´end and quencher molecule at 3´ end of the probe
- DNA polymerase dissociates reporter molecule from the quencher molecule



It’s Better to be Sure!

- Thermo Scientific™ SureTect™ system is based on Thermo Scientific™ Solaris™ qPCR chemistry

- Solaris qPCR chemistry is a new innovative probe chemistry having the functionality and advantages of the most widely used TaqMan qPCR chemistry with additional benefits:
  - Improved sensitivity
    - Minor Groove Binder (MGB) on the 5´end of the probe
  - Improved mismatch discrimination
    - Modified nucleotides (Super bases)



It‘s Time to be Sure!

What are our customers saying?

- ✓ Sample preparation for amplification is fast
- ✓ Nice streamlined lysis protocol
- ✓ Small platform
- ✓ Software is easy to use
- ✓ Very clear result interpretation
- ✓ Convenient pdf reporting function
- ✓ Auto sample numbering feature works well with barcoding and LIMS

For more info, please visit www.thermoscientific.com/SureTect