

Confident Listeria detection – new regulations, smart solutions

Real-time PCR strategies for safe food production

Now
AOAC &
MicroVal
certified



Lysis & real-time PCR in ONE kit



Simultaneous detection of
L. monocytogenes & *Listeria* spp.



Open system

More information:



<https://r-bio/listeria>

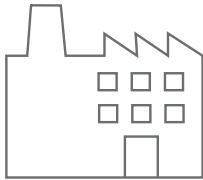
Regulatory testing of *Listeria* in food production

Recent updates in food safety regulations are increasing pressure on food producers and laboratories to improve *Listeria* spp. and *L. monocytogenes* detection.

Regulation EC 2073/2005 (Microbiological criteria of food)

Listeria monocytogenes

Original regulation (2005)



Product specific limits

- ≤ 100 CFU/g if no growth throughout shelf-life
- If growth is possible: not detected in 25 g before leaving producer control

Amended (EU 2024/2895)



New criteria for food that supports growth

Not detected in 25 g throughout shelf-life unless proven < 100 CFU/g

Listeria control now applies across all stages



Production



Packaging



Distribution



Retail



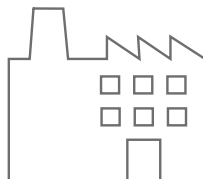
Consumer



USDA & FDA (FSIS Programs)

Listeria monocytogenes

Original regulation



Primarily tested in RTE products, environmental samples, and food contact surfaces.

Now (from January 2025)



Expanded testing to include all **Listeria species** in both ready-to-eat products and environmental samples.

Where real-time PCR makes sense

Practical implementation areas for *Listeria* detection using real-time PCR to support compliance, traceability and release procedures.

Listeria spp. → Environmental early warning
L. monocytogenes → Critical product safety indicator

Preventive controls

-  Environmental monitoring (swab testing)
-  Temperature control (cold chain)
-  Sanitation procedure
-  Employee hygiene
-  Raw material control

Process validation

-  Thermal processing validation
-  Hurdle technology (ph, a_w preservatives)
-  Shelf-life studies
-  Challenge testing

Real-time PCR implementation points



- Raw material screening
- Environmental monitoring
- In-process testing
- Finished product testing
- Shelf-life validation

Application area	Purpose	Benefit
Product release testing	Rapid RTE food clearance	Next day results
Environmental monitoring	Detect <i>Listeria</i> spp.	Early risk indicator
Raw material screening	Trace <i>L. monocytogenes</i> early	Source control
Hygiene validation	Check cleaning effectiveness	Documented assurance
Sanitation zones	Trend analysis	Avoid persistent contamination

SureFast® ONE – simple and straightforward

Streamlined protocol



1 Incubate e.g.
25 g food/feed
in enrichment
medium*



4 Transfer 5 µL DNA
samples (controls)
to 20 µL master
mix



2 Take sample from
the stomacher bag
and add lysis buffer



5 Start the qPCR run



3 Mix briefly
and incubate for 10
minutes at 95 °C



6 Result analysis

* *Salmonella*: BPW for 16 - 24 h; *E. coli*: BPW / mTSB for 18 - 24 h; *Listeria*: Half Fraser broth for 26 - 28 h

ONE system qPCR products

Product	Description	Tests	Art. No.
SureFast® <i>Listeria</i> 3plex ONE AOAC-RI 062501; MicroVal 2023LR114; OMA 2025.04 "First Action"	ROX: <i>Listeria</i> spp. Cy5: <i>Listeria monocytogenes</i> HEX: IAC	100 reactions incl. DNA prep	F5217
SureFast® <i>Salmonella</i> ONE AOAC-RI 81803; MicroVal 2014LR43	FAM: <i>Salmonella</i> spp. HEX: IAC	100 reactions incl. DNA prep	F5211
SureFast® STEC 4plex ONE	FAM: <i>E. coli stx1</i> (subtype a-d) & <i>stx2</i> (subtype a-g) Cy5: <i>eae</i> ROX: <i>E. coli</i> O157 HEX: IAC	100 reactions incl. DNA prep	F5265