Instructions for Use

REF - PP0630 **Listeria (Oxford) Agar**

Pre-Poured Media

1. Intended Use

For *in vitro* diagnostic use. PP0630 Listeria (Oxford) Agar is a selective isolation medium for the detection and identification of *Listeria* spp. in food and clinical laboratories.

2. Composition*

Ingredient	g/L
Columbia agar base	41.0
Aesculin	1.0
Ferric ammonium citrate	0.5
Lithium chloride	15.0
Cefoxitin	0.002
Amphotericin B	0.01
Colistin	0.02
Fosfomycin	0.01
Acriflavine	0.005

*Adjusted/supplemented as needed to meet performance requirements

3. Summary and Explanation

Foodborne infection by *Listeria monocytogenes* has prompted increased concern for detecting this organism in foods, in the environment and in pathological specimens from both human and animal subjects. The ability to isolate the organism has been impeded in the past by lack of an effective selective medium, as *Listeria monocytogenes* can be easily and completely overgrown by competing flora.

Successful recovery of *Listeria spp.* from food and environmental sources depends on the ability of the method to promote the growth of potentially injured cells while at the same time inhibiting the growth of non-*Listeria* background organisms. PP0630 Listeria (Oxford) Agar is based on the formulation described by Curtis *et al* [(1)].

PP0630 Listeria (Oxford) Agar is recommended as a primary isolation media for *Listeria* species by the UK Standards for Microbiology Investigations [(2)] and tested in accordance with ISO 11133:2014 [(3)]. PP0630 is also a specified plating medium in the FDA/BAM isolation procedure [(4)] of *L. monocytogenes* from food samples and can also be used as a secondary plating medium according to ISO 11290-1:2017 [(5)].

4. Principle

Columbia agar base supplies the required carbon, nitrogen, and other essential nutrients in the medium. Lithium chloride is included to inhibit enterococci. Aesculin is present as an indicator; *Listeria* species will hydrolyse aesculin and the subsequent reaction of the hydrolysis product, aesculetin, with the ferric ammonium citrate gives rise to a brown/black precipitate around the colonies. Acriflavine, cefoxitin, colistin, fosfomycin and amphotericin B are present to inhibit any yeasts, Gram-negative and other Gram-positive organisms that may be present in specimens.

5. Physical Characteristics

	Medium
Appearance and Colour	Pale yellow firm gel
pH	7.2 ± 0.2

6. Materials Provided

PP0630 Listeria (Oxford) Agar is supplied in packs of 10 x 90mm P090 Petri dishes (18-22ml fill) (product code: PP0630-P090); each plate is ink-jet printed with (abbreviated) product name, product code, lot number and expiry date.

7. Materials Needed but not Provided

Standard microbiological laboratory materials e.g., sterile loops or swabs, collection containers, incubators, and quality control organisms.

8. Specimens

PP0630 Listeria (Oxford) Agar is suitable for the testing of the following samples:

- Food Industry: products for human consumption, animal feed and environmental samples.
- Clinical: can include genital-tract swabs, stool samples, amniotic fluid, urine, blood, and spinal fluid.

Sampling and transport equipment must be used in accordance with the end user's suppliers' recommendations. Refer to appropriate standard method or local guidance on sample collection and subsequent processing.

9. Test Procedures and Interpretation of results

Allow the plates to come to room temperature.

Food/Environmental Specimens [5]

Based on sample type and information provided, check to see if the specimen needs to be pre-enriched prior to inoculation to PP0630 Listeria (Oxford) Agar.

- Process the food/environmental sample as required by local guidelines.
- Inoculate the pre-enriched sample onto the medium and streak across the agar surface using a sterile loop or automated plate streaker.
- Incubate the plates at 37 ± 1°C aerobically for up to 48 hours. It is recommended to check for typical colonies at both 24- and 48-hour marks.

After incubation, examine agar for colonies (typical colony appearance outlined in Quality Control table below). Perform further biochemical, serological, or mass spectroscopy testing to confirm identity of presumptive positive isolates. Refer to relevant local guidelines.

Clinical Specimens [2]

- Process the clinical specimen as required by local guidelines.
- Inoculate specimen directly onto the medium and streak across the agar surface using a sterile loop or automated plate streaker to obtain single colonies.
- Incubate the plates at 36 ± 1°C aerobically for 40-48 hours.

After incubation, examine agar for colonies (typical colony appearance outlined in Quality Control table below). Perform further biochemical or mass spectroscopy testing to confirm identity of presumptive positive isolates. Refer to relevant local guidelines.

10. Quality Control

Organism	Incubation	Result (Specificity)
L. monocytogenes (NCTC 11994)	37 ± 1°C aerobically for 44 ± 4 hours	Growth: Grey colonies with dark halo
E. coli (NCTC 12241)	37 ± 1°C aerobically for 44 ± 4 hours	Inhibited
E. faecalis (NCTC 12697)	37 ± 1°C aerobically for 44 ± 4 hours	Inhibited
C. albicans (NCPF 3179)	37 ± 1°C aerobically for 44 ± 4 hours	Inhibited

It is the responsibility of the user to perform Quality Control testing taking into consideration the intended use of the medium and in agreement with any local relevant guidelines (e.g., frequency, strains used, atmosphere, incubation temperature).

11. Performance

To fully verify PP0630 Listeria (Oxford) Agar performance, samples were tested to assess colony morphology and recovery level (where an acceptable range is ≥50% and ≤120%) compared to a non-selective reference medium. Samples were inoculated with 30-150cfu for the target organisms and 10^3-10^5 cfu for the non-target organisms then incubated at 37 ± 1°C aerobically for 44 ± 4 hours. All samples showed expected recovery and morphology of the required test organism: *Listeria monocytogenes* (NCTC 11994), and no recovery of the non-target test organisms: *Escherichia coli* (NCTC 12241), *Enterococcus faecalis* (NCTC 12697) and *Candida albicans* (NCPF 3179). Therefore, it can be concluded that PP0630 Listeria (Oxford) Agar, meets performance criteria when used according to the instructions outlined above. Trend analysis data available upon request.

12. Limitations of the Media

- Other *Listeria* spp. cannot be visually differentiated from *L. monocytogenes* on this medium [5].
- Poor growth and a weak esculin reaction maybe seen after 40 hours incubation for some enterococci. Such colonies require differentiation from *Listeria* spp. using additional biochemical testing.
- Due to natural variation, some strains may grow poorly on this medium.

13. Precautions and Warnings

This product is considered non-hazardous under CLP regulations. Wear such PPE as recommended by laboratory COSHH assessment. During and after use, always handle all materials in a manner conforming to Good Laboratory Practices and consider that material under test should be regarded as a potential biohazard if mishandled.

Refer to the E&O Poured Plate Material Safety Data Sheet.

14. Storage conditions and Shelf life

Store PP0630 in the original packaging between 2 and 8°C in the dark. Kept under these conditions it may be used up to date of expiry shown on product label.

Dispose of in accordance with local and national authority requirements. Do not use media if it is contaminated, discoloured, out of date or if cracks in the agar medium are present. Additionally, do not use media if it has been stored inappropriately or the packaging has been damaged.

15. References

1. Curtis G., Mitchell R., King A. and Griffin E. (1989) A selective differential medium for the isolation of Listeria monocytogenes. Letters in Appl. Microbiol. 8(3), pp.95-98.
2. Public Health England (2025) Identification of *Listeria* species, and other non-sporing Gram positive rods (except *Corynebacterium*). UK Standards for Microbiology Investigations. Bacteriology – Identification, ID 3 (4.2). London: Standards Unit, Microbiology Services.
3. International Organization for Standardization (2014) 11133:2014 Microbiology of food, animal feed and water – Preparation, production, storage and performance testing of culture media. Geneva, ISO.
4. United States Food and Drug Administration (1998) BAM Media M118: Oxford Medium. Bacteriological analytical manual. 8th Ed, Rev. A. Gaithersburg, MD: AOAC International.
5. International Organization for Standardization (2017) 11290-1:2017 Microbiology of the food chain - Horizontal method for the detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp. - Part 1: Detection method. Geneva, ISO.

Version History*

001 13/07/2023 - New document created
002 20/05/2026 - Added incubation atmosphere for clarity

*Note: minor typographical, grammatical, and formatting changes are not included in the revision history.

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TABLE OF APPLICABLE SYMBOLS

REF o REF Catalogue number	LOT Batch code	IVD *In vitro* Diagnostic Medical Device	Manufacturer	Use by
Temperature limitation	Contents sufficient for <n> tests	Consult Instructions for Use	Keep away from direct light	Store in a dry place