

PALCAM Agar Base (i23212)

Used with PALCAM Selective Supplement for the selective cultivation, isolation and differentiation of *Listeria monocytogenes* and other *Listeria* species from food and other samples.

Industry: Food / Clinical

Principles & Uses

PALCAM Agar, a vital tool in *Listeria* detection, offers selectivity and differentiation. It caters to *Listeria monocytogenes*, inhibiting Gram-negative and most Gram-positive bacteria. The medium's exclusivity is attributed to polymyxin, acriflavine, ceftazidime, and lithium chloride. *L. monocytogenes* metabolizes esculin into glucose and esculetin, forming distinctive olive-green to black complexes. Mannitol-positive bacteria, like *staphylococci*, yield yellow colonies. PALCAM Agar, endorsed by ISO 11290, integrates a double indicator system Esculin/Iron and Mannitol/Phenol red ensuring accurate *Listeria* species diagnosis. Esculin hydrolysis leads to blackening, with lithium chloride and supplements inhibiting non-*Listeria* bacteria. Peptones, starch, yeast extract, and glucose provide nutrients. Ferric ammonium citrate enhances *L. monocytogenes* growth. Mannitol/Phenol red discerns *Listeria* spp. from non-fermenters like *enterococci*. The medium, following primary and secondary enrichment stages, is pivotal in ISO 11290-endorsed protocols for *L. monocytogenes* detection. Confirmatory tests involve biochemical and serological assessments. PALCAM Agar's superior selectivity, crucial in *Listeria* cultivation, emphasizes its utility in varied samples, from foods to clinical and environmental matrices.

Composition (gr/L)

Peptone 23 g, Yeast extract 3 g, Starch 1 g, Sodium chloride 5 g, Ferric Ammonium Citrate 0.5 g, Glucose 0.5 g, Mannitol 10 g, Lithium Chloride 15 g, Esculin 0.8 g, Phenol Red 0.08 g, Agar 13 g.

Final pH at 25°C 7.2 ± 0.2

Preparation from dehydrated Powder

Suspend 71.88 g of the powder of the medium in 990 mL of purified water. Mix thoroughly. Autoclave at 121°C for 15 minutes. Cool to 45 - 50°C. Aseptically add 10 mL of sterile PALCAM selective supplement.

Quality Control

Dehydrated Appearance: Pink, free-flowing, homogeneous.

Prepared Appearance: Medium red, very slightly to slightly opalescent with slight precipitate.

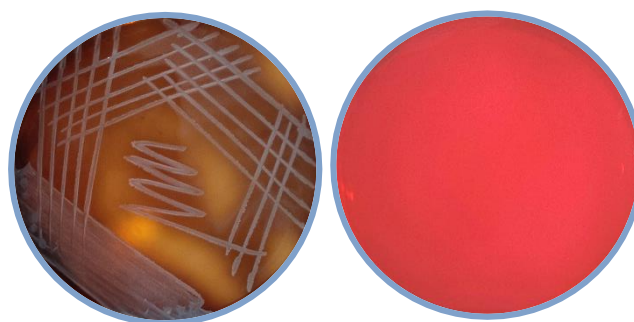
Reaction of 7.18% Solution at 25°C: pH 7.2 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 48 hours in a microaerophilic environment.

Organism (ATCC*)	Recovery	Esculin reaction
<i>E. coli</i> (25922)	Inhibition	-
<i>Enterococcus faecalis</i> (29212)	Inhibition	-
<i>Listeria monocytogenes</i> (19114)	Good	+
<i>Staphylococcus aureus</i> (25923)	Inhibition	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Listeria monocytogenes (left). Prepared Culture Media (right).

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.