Baird-Parker Agar (ISO)(NCM0200)

Intended Use

Baird Parker Agar (ISO) is used for the cultivation of *Staphylococcus aureus* from foodstuffs according to ISO 6888, and is not intended for use in the diagnosis of disease or other conditions in humans.

Description

Originally introduced in 1962, this medium was developed by Baird-Parker to overcome the problems of recovering damaged *Staphylococcus aureus* from foodstuffs. This version of the medium is formulated according to ISO 6888-1:1999+A1:2003 and is in compliance with ISO 6888-2:2003+A1:2003 and ISO 6888-3:2003.

Baird-Parker medium is highly selective by nature, due to the presence of potassium tellurite and lithium chloride. Tellurite inhibits most coliforms and is also reduced to telluride by *S. aureus*, giving the typical black colonies. Glycine and sodium pyruvate are both used as growth factors by staphylococci while the pyruvate also neutralizes any toxic peroxides that may be formed.

When Baird-Parker medium is used with Egg Yolk Tellurite NCM4010, presumptive *S. aureus* appear as black colonies demonstrating lecithinase activity (an opaque zone around the colony) and lipase activity (a zone of clearing encircling the opaque zone). Suspected *S. aureus* colonies should be confirmed with RPF for coagulase or latex agglutination test.

Rabbit plasma fibrinogen (RPF NCM4052) is a more specific alternative to egg yolk tellurite and allows the direct detection of coagulase-positive *S. aureus*. Typical *S. aureus* appear as black colonies surrounded by a zone of precipitation (demonstrating coagulase activity). This is recognized as the gold standard method for the identification of *S.aureus*. RPF overcomes any issues with atypical colony forms and its use means further confirmatory tests are not necessary.

Typical Formulation

Pancreatic Digest of Casein	10.0 g/L
Yeast Extract	1.0 g/L
Meat Extract	5.0 g/L
Sodium Pyruvate	10.0 g/L
L-Glycine	12.0 g/L
Lithium Chloride	5.0 g/L
Agar	20.5 g/L

Final pH: 7.2 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precaution

Refer to SDS

Preparation

For Baird-Parker Medium with Egg Yolk Tellurite NCM4010

1. Suspend 63.5 grams of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Cool to 45-50°C and add 5% (50mL) NCM4010.
5. Mix well before aseptically pouring into sterile Petri dishes.
6. Dry the agar surface prior to use. Sulphamezathine may be added at 0.05g/L to suppress the swarming of *Proteus* spp.

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For Baird-Parker Medium with Rabbit Plasma Fibrinogen (RPF) Supplement NCM4052

1. Suspend 6.35 grams of the medium in 90 ml of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121ºC for 15 minutes.
4. Cool to 45-50°C and add 1 vial of NCM4052-0.1*, each reconstituted with 10mL sterile deionized water.
5. Mix well before aseptically pouring into sterile Petri dishes.
6. Dry the agar surface prior to use.

*Larger vials may be available. Please see appropriate supplement data sheet for availability and preparation instructions.

Test Procedure

- For the technique using Baird-Parker Agar – Refer to ISO 6888-1:2003.
- For the technique using rabbit plasma fibrinogen agar medium - Refer to ISO 6888-2:2003.
- For the detection and MPN for low numbers – Refer to ISO 6888-3:2003.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared medium is an opaque pale yellow gel (with NCM4010). Clear, straw gel (with NCM4052)

Minimum QC:

Staphylococcus aureus WDCM 00034
Staphylococcus saprophyticus WDCM 00159
Escherichia coli WDCM 00013

Results

NCM0200+NCM4010: Presumptive *S. aureus* colonies appear as black colonies demonstrating lecithinase activity and lipase activity. All black colonies (suspected *S. aureus)* should be confirmed with a coagulase test (RPF) or a latex agglutination kit.

NCM0200+NCM4052: Typical *S. aureus* appear as black colonies surrounded by a zone of coagulase activity.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing or appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedures

Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Storage

Store dehydrated culture media at 2-30°C away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

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References

1. ISO 6888-1:1999+A1:2003 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) - Part 1: Technique using Baird-Parker agar medium (includes amendment A1:2003).
2. ISO 6888-2:1999+A1:2003 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) - Part 1: Technique using rabbit plasma fibrinogen agar medium (includes amendment A1:2003).
3. ISO 6888-3:2003 Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species) - Part 3: Detection & MPN technique for low numbers.
4. Baird-Parker, A.C. (1962). An improved diagnostic and selective medium for isolating coagulase-positive staphylococci. *J. Appl. Bact.* 25(1):12-19.
5. Smith, B.A. and Baird-Parker, A.C. (1964). The use of sulphamezathine for inhibiting *Proteus* spp. on Baird-Parker's isolation medium for *Staphylococcus aureus*. *J. Appl. Bact.* 27(1):78-82