BAIRD PARKER AGAR (7112)

Intended Use
Baird Parker Agar is used for detection and enumeration of *Staphylococcus aureus* in foods.

Product Summary and Explanation
Baird Parker Agar was first described in 1962.[1] It is a selective medium for the isolation and presumptive identification of coagulase-positive staphylococci. This medium is used extensively for detecting *Staphylococcus aureus* in foods, dairy products, and other materials.[2-6] Coagulase-positive staphylococci can grow and reproduce in cosmetic products. These products are tested for the presence of coagulase-positive staphylococci using standard microbiological methods.[4]

Principles of the Procedure
Enzymatic Digest of Casein and Beef Extract are the carbon and nitrogen sources in Baird Parker Agar. Yeast Extract supplies B-complex vitamins that stimulate bacterial growth. Glycine and Sodium Pyruvate stimulate growth of staphylococci. The selectivity of the medium is due to Lithium Chloride and a 1% Potassium Tellurite Solution, suppressing growth of organisms other than staphylococci. The differentiation of coagulase-positive staphylococci is based on Potassium Tellurite and Egg Yolk Emulsion. Staphylococci that contain lecithinase break down the Egg Yolk and cause clear zones around the colonies. An opaque zone of precipitation may form due to lipase activity. Reduction of Potassium Tellurite is a characteristic of coagulase-positive staphylococci, and causes blackening of colonies. Agar is the solidifying agent.

Formula / Liter

Enzymatic Digest of Casein	10 g
Beef Extract	5 g
Yeast Extract	1 g
Lithium Chloride	5 g
Glycine	12 g
Sodium Pyruvate	10 g
Agar	17 g

Final pH: 7.0 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Enrichment
1% Potassium Tellurite Sol, 10 mL
Sterile Egg Yolk Emulsion, 50 mL

Precautions
1. For Laboratory Use.
2. HARMFUL. Harmful if swallowed, inhaled, or absorbed through skin. Skin irritation may be severe. Irritating to eyes, respiratory system, and skin. May cause central nervous system effects.

Directions
1. Suspend 60 g 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. After cooling to 45 - 50°C, add 10 mL of a sterile 1% Potassium Tellurite Solution and 50 mL of sterile Egg Yolk Emulsion. Mix thoroughly before dispensing.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and beige.

Prepared Appearance: Prepared medium is clear to slightly hazy and light amber. The prepared enriched medium is canary yellow and opaque.

Expected Cultural Response: Cultural response on Baird Parker Agar with sterile 1% Potassium Tellurite Solution and sterile Egg Yolk Emulsion at 35°C after 18 - 24 hours incubation.

Microorganism	Response	Reactions
Enterococcus faecalis ATCC® 29212	growth	gray-black colonies, suppressed, no zone
Escherichia coli ATCC® 25922	inhibited	------
Proteus mirabilis ATCC® 12453	growth	brown colonies
Staphylococcus aureus ATCC® 25923	growth	black colonies with a clear halo
Staphylococcus epidermidis ATCC® 12228	growth	black colonies, suppressed, no zone

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1 Prepare dilutions of test samples, if indicated by references.[2-5]
2. Transfer 1 mL of the sample to each of 3 Baird Parker Agar plates, distribute over the surface using a sterile, bent glass rod.
3. Allow inoculum to be absorbed by the medium before inverting the plates.
4. Incubate at 35 - 37°C for 45 - 48 hours.
5. Examine plates having 20 - 200 colonies, counting colonies typical of *Staphylococcus aureus*.

Results

Coagulase-positive staphylococci produce black, shiny, convex colonies with entire margins and clear zones, with or without an opaque zone. Coagulase-negative staphylococci produce poor or no growth. If growth occurs, colonies are black; clear or opaque zones are rare. The majority of other organisms are inhibited or grow poorly. If growth appears, colonies are light to brown-black, with no clear or opaque zones.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

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

Limitation of the Procedure

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

Packaging

Baird Parker Agar	**Code No.**	**7112A**	**500 g**
		7112B	**2 kg**
		7112C	**10 kg**

References

1. **Baird-Parker, A. C.** 1962. An improved diagnostic and selective medium for isolating coagulase-positive staphylococci. J. Appl. Bacteriol. **25:**12-19.
2. **Vanderzant, C., and D. F. Splittstoesser (eds.).** 1992. Compendium of methods for the microbiological examination of food., 3rd ed. American Public Health Association, Washington, D.C.
3. **Marshall, R. T. (ed.).** 1993. Standard methods for the microbiological examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
4. **U.S. Food and Drug Administration.** 1995. Bacteriological analytical manual, 8th ed., AOAC International, Gaithersburg, MD.
5. **Cunnif, P. (ed.).** 1995. Official Methods of Analysis AOAC International, 16th ed. AOAC International, Gaithersburg, MD.
6. **United States Pharmacopeial Convention.** 1995. The United States Pharmacopeia, 23rd ed. The United States Pharmacopeial Convention, Rockville, MD.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.

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