11705 Baird parker Agar

Baird Parker Agar is used for the isolation and differentiation of coagulase-positive staphylococci in food and pharmaceuticals according to Baird Parker.

Composition:

Ingredients	Grams/Litre
Casein Peptone	10.0
Meat Extract	5.0
Yeast Extract	1.0
Lithium Chloride	5.0
Glycine	12.0
Sodium pyruvate	10.0
Agar	15.0
Final pH (at 25 °C) 6.8 ± 0.2	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Faintly beige coloured, homogeneous, free flowing powder.
Gelling: Firms
Color and Clarity: Light yellow coloured, clear gel form in petri plates.

Directions:
Dissolve 5.8 g in 100 ml distilled water and heat with frequent agitation; boil for one minute. Autoclave at 121°C for 15 minutes. Cool to 45-50°C and add the supplements. Mix thoroughly and dispense into Petri dishes. Inoculate the specimen and streak and incubate at 34-38°C for 24-48 hours.
This medium is only a part of the identification. Other tests may be required.

Formulations:

ISO 6888-1:2020	Base medium	100 ml
	Egg Yolk Emulsion (Cat. No. 75208)	5 ml
	Potassium Tellurite Solution 1% (Cat. No. 17774)	1 ml
	Sulfamezathine solution 0.2% in 10% NaOH (if necessary)	2.5 ml
	or	
	Egg Yolk Tellurite Emulsion (Cat. No. 17148)	5 ml
ISO 6888-2:2020	Base medium	100 ml
	RPF Supplement (Cat. No. 05939)	5 ml

Principle and Interpretation:
Baird Parker Agar is used for the isolation and differentiation of coagulase-positive staphylococci in food and pharmaceuticals according to Baird Parker.
As nitrogen source for the organism casein peptone and meat extract are added to the medium. Yeast extract provides as well nitrogen but also other important nutrients like e.g. vitamin B_{12} complex. The medium contains lithium and tellurite which inhibits most of the contaminating microflora, while glycine and pyruvate enhance Staphylococci growth. Staphylococci can reduce tellurite to telluride which results in grey to black coloration of the colonies. With the addition of egg yolk the medium becomes yellow, slightly opaque. A clear halo develops around colonies from coagulase positive *Staphylococcus*

aureus and upon further incubation may an opaque zone will appear which is due to egg yolk - lecithinase reaction (lypolytic activity). A halo and grey-black colonies on this medium are presumptive coagulase positive staphylococci as there was found a high correlation between coagulase test and lipophylitic activity. *Staphylococcus aureus* and some strains of *Staphylococcus saprophyticus* (Shaw et al.[5]) may show both of these characteristics, but they are easily distinguished from each other by the different times at which the halo develops.

Baird Parker Agar with Rabbit Plasma Fibrinogen can be used for the detection of coagulase activity. Coagulase positive organisms appear as grey to black colonies because of the tellurite reduction and an opaque halo, due to the conversion by coagulase from fibrinogen to fibrin. Only plates with less then 100 characteristic colonies should be counted. Use this media eliminates the need of an additional coagulase test.

Cultural characteristics after 24-48 hours at 34-38°C.

Organisms (ATCC)	Colour of Colony	Growth	Lecithinase	Coagulase
Staphylococcus aureus (25923)	grey-black shiny	+	+	+
Staphylococcus aureus (6538)	grey-black shiny	+	+	+
Stapylococcus epidermidis (12228)	Black	+/-	-	-
Micrococcus luteus (10240)	very small in shades of brown-black	+/-	-	-
Bacillus subtilis (6633)	dark brown matt	+/--	-	-
Escherichia coli (25922)	large brown black	+/--	-	-
Proteus mirabilis (12453)	brown-black	+	-	-

References:

1. A.C. Baird Parker, An improved diagnostic and selective medium for isolating coagulase-positive staphylococci. J. Appl. Bacteriol. 25, 12 (1962)
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3. Jean F. Mac Faddin, Media for Isolation-Cultivation Identification-Maintenance of Medical Bacteria. Vol. I, Baltimore, MD.: Williams & Wilkins (1985)
4. A. Nisakanen, M. Alto, Appl. Envir. Microbiol. 35, 1233 (1978)
5. S. Shaw, M. Scott, T. Cowan, Gen. Microbiol. 5, 1010-1023 (1957)
6. ISO 6888-1:2020; Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium
7. 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
8. ISO 6888-2:2020; Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium
9. 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 and MPN technique for low numbers

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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