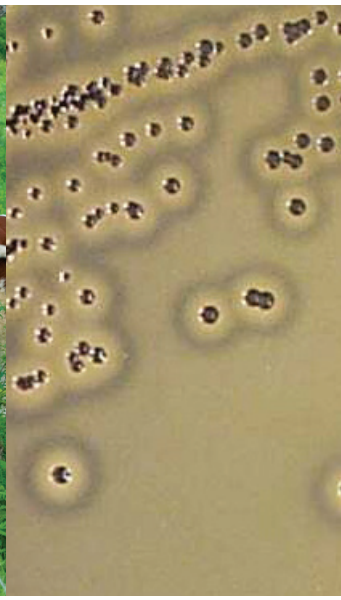
BAIRD-PARKER AGAR (ISO) CM1127



Summary of ISO 6888-1:1999

Homogenise sample 1:10 in suitable diluent

2 x 0.1ml ↓

Plate onto 2 x BPA plates, Incubate at 35-37°C for 24 hours ± 2 hours Record number of colonies

↓

Re-incubate for a further 24 hours ± 2 hours. Record total number of colonies

Typical colonies ↓

Sub into BHI and incubate for 24 hours ± 2 hours

2 x 0.1ml ↓

Incubate with 0.3ml rabbit plasma for 4-6 hours (overnight if necessary)

↓

Confirmed Coagulase-positive staphylococci

A selective and diagnostic medium for the isolation and enumeration of coagulase-positive staphylococci in foods.

EASY TO COUNT

Defined black colonies surrounded by a distinctive halo

SELECTIVE

The inclusion of glycine, tellurite and lithium chloride inhibits the growth of background flora

CONFIDENCE

Conforms to ISO 6888-1:1999[1]

Part of our extensive range of ISO compliant media for food and environmental testing.

SUMMARY

(with Egg Yolk Tellurite Emulsion SR0054)
Baird-Parker[2] developed this medium from the tellurite-glycine formulation of Zebovitz *et al.*[3] and improved its reliability in isolating coagulase-positive staphylococci from foods. Baird-Parker added sodium pyruvate, to protect damaged cells and aid their recovery[4] and egg yolk emulsion as a diagnostic agent. It is now widely recommended by national and international bodies for the isolation of coagulase-positive staphylococci[5] and is included in ISO 6888-1:1999[1].

PRINCIPLES

The selective agents glycine, lithium and tellurite have been carefully balanced to suppress the growth of most bacteria present in foods, without inhibiting coagulase-positive staphylococci. Egg yolk emulsion makes the medium yellow and opaque. Coagulase-positive staphylococci reduce tellurite to form grey-black shiny colonies which, after 48 hours, produce clear zones around the colonies caused by the proteolysis of egg yolk. This clear zone with typical grey-black colony is diagnostic for coagulase-positive staphylococci. On further incubation, most strains of coagulase-positive staphylococci form opaque haloes around the colonies, this is probably the action of a lipase. Not all strains of coagulase-positive staphylococci produce both reactions.

Some strains of *Staphylococcus saprophyticus* produce both clear zones and opaque haloes but experienced workers can distinguish these from other organisms by the longer incubation time required[6]. Certain foods, especially cheese, may produce typical colonies of coagulase-positive staphylococci but without an egg yolk reaction. These can be confirmed by testing for coagulase production[7].

Baird-Parker and Davenport[8] showed that the recovery of damaged staphylococci was greater on Baird-Parker medium than on other recovery media tested. Broeke[9] and de Waart *et al.*[10] found Baird-Parker medium valuable in ecological studies on foods incriminated in staphyloenterotoxicosis. 97.5% of the 522 strains of *Staphylococcus aureus* tested that were isolated from human and food origins, developed characteristically and quantitatively on Baird-Parker medium.

FORMULATION

Baird-Parker agar (ISO) CM1127	Grams per litre
Pancreatic digest of casein	10.0
Meat extract	5.0
Yeast extract	1.0
Sodium pyruvate	10.0
L-Glycine	12.0
Lithium Chloride	5.0
Agar	20.0

pH 7.2 ± 0.2 at 25°C

DIRECTIONS

Suspend 63g in 950ml of distilled water and boil to dissolve the medium and sterilise by autoclaving at 121°C for 15 minutes. Cool to 50°C and aseptically add 50ml of Egg Yolk Tellurite Emulsion (SR0054). Mix well and pour into sterile Petri dishes.

METHOD OF USE

Refer to the relevant standard method for detailed instructions. The following method is a summary of ISO 6888-1:1999[1]

1. Prepare samples in accordance with ISO 6887[11], ISO 8261[12] or the appropriate standard.
2. Spread 0.1ml aliquots of food dilutions made up in a suitable diluent such as Buffered Peptone Water (CM1049) over the plate until absorbed. Up to 0.5ml may be used on larger dishes.
3. Incubate the inverted dishes at 35°C. Examine after 24 hours and look for typical colonies of coagulase positive staphylococci.
4. Re-incubate negative plates for a further 24 hours.
5. For quantitative results, count coagulase positive staphylococci like colonies and confirm by tube coagulase, Staphylase (DR0595A), or Staphytect Plus (DR0850M).
6. Report coagulase positive staphylococci results per gram of food.

Organism	**Culti-loop® order code**	**Typical colony appearance at 48 hours**
Staphylococcus aureus ATCC® 25923™†	C7010L	Good growth; black shiny colonies with white and clear zones
Staphylococcus epidermidis ATCC® 12228™†	C6500L	Variable growth; Not shiny black and seldom produce clearing
Escherichia coli ATCC® 25922™†	C7050L	Variable growth; Large brown/black

REFERENCES 1. ISO 6888-1:1999 Microbiology of food and animal feeding stuffs-Horizontal method for the enumeration of coagulase-positive staphylococci (*Staphylococcus aureus* and other species). 2. Baird-Parker A. C. (1962) *J. Appl. Bact.* **25**:12-19. 3. Zebovitz E., Evans J. B. and Niven C. F. (1955) *J. Bact.* **70**:686-689. 4. Baird-Parker A. C. (1963) *J. Gen. Microbiol.* **30**:409-413. 5. Chopin A., Malcolm S., Jarvis G., Asperger H., Beckers H. J., Bertona A. M., Cominazzini C., Carini S., Lodi R., Hahn G., Heeschen W., Jans J. A., Jervis D., I., Lanier J. M., O'Connor F., Rea M., Rossi J., Seligmann R., Tesone S., Waes G., Mocquot G. and Pivnick H. (1985) *ICMSF Methods studies XV. J. Food Protect.* **48**:21-27. 6.Shaw S., Scott M. and Cowan T. (1957) *J. Gen. Microbiol.* **5**:1010-1023. 7. Devries L. A. and Hajek V. (1960) J. Appl. Bact. 49:1-11. 8.Baird-Parker A. C. and Davenport E. (1965) *J. Appl.Bact.* **28**:390-402. 9.Broeke R. Ten (1967) *Antonie van Leeuwenhoek* **33**:220-236. 10.Waart J., de Mossel D. A. A., Broeke R. Ten and Moosdijk A. van de (1968) *J. Appl. Bact.* **31**:276-285. 11. ISO 6887-1:1999 Microbiology of food and animal feeding stuffs - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination. 12. ISO 8261:2001 Milk and milk products - General guidance for the preparation of test samples, initial suspensions and decimal dilutions for microbiological examination.

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