

CHAPMAN Agar

(Staphylococcus Selective Agar No. 110 acc. to CHAPMAN)

For the isolation and differentiation of staphylococci in foodstuffs and other materials according to CHAPMAN (1946, 1948, 1952).

Mode of Action

Only those microorganisms which display a high salt tolerance can grow on this culture medium; these include staphylococcal colonies, which can be differentiated on the basis of mannitol degradation, gelatinolysis and pigment production.

SMUCKLER and APPLEMAN (1964) recommend the addition of sodium azide (65 mg/litre) to improve the inhibition of Bacillus species.

Typical Composition (g/litre)

Peptone from casein 10.0; yeast extract 2.5; di-potassium hydrogen phosphate 5.0; gelatin 30.0; lactose 2.0; D(-)mannitol 10.0; sodium chloride 75.0; agar-agar 12.0.

Preparation

Suspend 146.5 g/litre, autoclave (15 min at 121 °C). Pour plates. pH: 7.0 ± 0.2 at 25 °C.

The plates are clear and yellowish-brown.

Experimental Procedure and Evaluation

Inoculate the plates by spreading the sample on the surface of the medium.

Incubation: 48 hours at 35 °C aerobically.

Pigment-forming colonies are golden yellow, non-pigmented colonies are white.

Formation of acid from mannitol is indicated by a colour change to yellow, when drops of a 0.04 % bromothymol-blue solution are applied to colony sites; the individual colonies should first be removed with a platinum loop.

According to STONE (1935), gelatinolysis is an indicator of toxicity and it is shown by the appearance of clear zones around the colonies about 10 minutes after applying drops of a saturated ammonium sulfate solution or a 20 % sulfosalicylic acid solution.

Further tests should be performed to confirm the results.

Literature

CHAPMAN, G.H.: A single culture medium for selective isolation of plasma coagulating staphylococci and for improved testing of chromogenesis, plasma coagulation, mannitol fermentation and the Stone reaction. – *J. Bact.*, **51**; 409-410 (1946).

CHAPMAN, G.H.: An improved Stone medium for the isolation and testing for food-poisoning staphylococci. – *Food Res.*, **13**; 100-105 (1948).

CHAPMAN, G.H.: A simple method for making multiple tests of a microorganism. – *J. Bact.* **63**; 147 (1952).

SMUCKLER, S.A., a. APPLEMAN, M.D.: Improved staphylococcus medium no. 110. – *Appl. Microbiol.* **12**; 355-359 (1964).

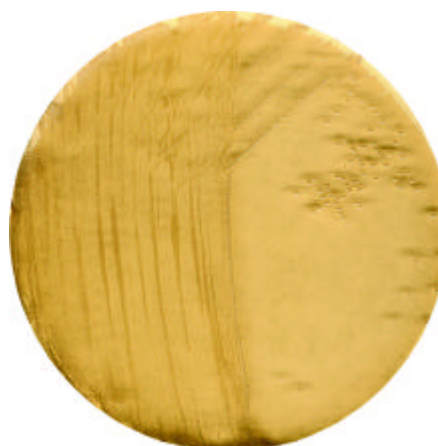
STONE, R.V.: A cultural method for classifying staphylococci as of the "food poisoning" type. – *Proc. Soc. Exptl. Biol. Med.*, **33**; 185-187 (1935).

Ordering Information

Product	Merck Cat. No.	Pack size
CHAPMAN Agar (Staphylococcus Selective Agar No. 110 acc. to CHAPMAN)	1.05469.0500	500 g
5-sulfosalicylic acid dihydrate	1.00691.0100	100 g
Ammonium sulfate	1.01217.0100	100 g
Bromothymol blue indicator	1.03026.0005	5 g
Sodium azide purified	1.06688.0100	100 g



Staphylococcus aureus
ATCC 25923



Staphylococcus epidermidis
ATCC 12228

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Quality control

Test strain	Growth
Staphylococcus aureus ATCC 25923	good/ very good
Staphylococcus aureus ATCC 6538	good / very good
Staphylococcus simulans ATCC 11631	good / very good
Staphylococcus epidermidis ATCC 12228	fair / very good
Escherichia coli ATCC 25922	none
Proteus vulgaris ATCC 13315	none
Pseudomonas aeruginosa ATCC 27853	none
Streptococcus pyogenes ATCC 12344	none