



TRYPTONE

Dehydrated Culture Media

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SOYA BROTH (Casein soya bean digest medium) EP/USP/JP/BP

Code: CM0129

a highly nutritious general purpose medium for the growth of bacteria and fungi

Formula

	gm/litre
Pancreatic digest of casein	17.0
Enzymatic digest of soya bean*	3.0
Sodium chloride	5.0
Dipotassium hydrogen phosphate	2.5
Glucose	2.5
pH 7.3 ± 0.2 @ 25°C	

*Contains papain

Directions

Add 30g to 1 litre of water (purified as required), mix well and distribute into final containers. Sterilise by autoclaving at 121°C for 15 minutes.

Description

A highly nutritious versatile medium which is recommended for general laboratory use. Due to the inclusion of both Tryptone and Soya Peptone, the medium will support a luxuriant growth of many fastidious organisms without the addition of serum, etc.

Tryptone Soya Broth conforms to formulations detailed in various international pharmacopoeias^{1,4,5,6}.

Technique

Aerobic Cultivation

Tryptone Soya Broth may be used for the cultivation of aerobes and facultative anaerobes, including some fungi. Cultures should be examined at frequent intervals, as maximum growth is reached earlier than with less nutritious media and the phase of decline consequently begins sooner.

Anaerobic Cultivation

The addition of a small amount of agar renders the broth suitable for the cultivation of obligatory anaerobes, such as *Clostridium* spp.. For this purpose, the broth (with added agar) should be used soon after sterilisation, or, heated and cooled just before inoculation.

Blood Culture

The superior growth-promoting properties of Tryptone Soya Broth make it especially useful for the isolation of organisms from blood or other body fluids. Anticoagulants such as 'liquid'† (sodium polyanethyl sulphonate) or sodium citrate may be added to the broth prior to sterilisation. Five to 10ml of blood may be added to 50ml of medium.

Tryptone Soya Broth is especially suitable for the tube dilution method of antibiotic susceptibility testing.

Oxoid laboratory tests have shown that Tryptone Soya Broth has a greater ability to resuscitate heated spores of *Geobacillus stearothermophilus* than Dextrose Tryptone Broth. Tryptone Soya Broth is recommended in the USP (Casein soya bean digest broth) for the recovery of organisms after sterilisation processes¹. A positive result is revealed after 24-48 hours incubation at 55°C, by a heavy growth of organisms causing turbidity in the broth.

† Roche Products Ltd. Welwyn Garden City, Herts.

Selective Culture Media

Tryptone Soya Broth is used in food bacteriology as the basal medium to which a variety selective agents are added for selective enrichment of *Staphylococcus aureus*² and *Escherichia coli* O157³.

Storage conditions and Shelf life

Store the dehydrated medium at 10-30°C and use before the expiry date on the label.

Store the prepared medium away from the light at room temperature.

Appearance

Dehydrated medium: Straw coloured, free-flowing powder

Prepared medium: Straw coloured solution

Quality control for non-pharmaceutical products

Positive controls:

Expected results

Streptococcus pneumoniae ATCC® 6305 *

Turbid growth

Staphylococcus aureus ATCC® 25923*

Turbid growth

Negative control:

Uninoculated medium

No change

* This organism is available as a Culti-Loop™

Quality control for sterile pharmaceutical products

Sterility Test

Incubate portions of medium at 20-25°C for 14 days. No growth of micro-organisms occurs.

Growth Promotion Test

Inoculate portions of medium with not more than 100 cfu of the following micro-organisms:

Organism Expected Results

Aspergillus brasiliensis ATCC® 16404* White mycelia, with or without black spores†

Bacillus subtilis ATCC® 6633* Flocculent/surface growth††

Candida albicans ATCC® 10231* Flocculent/surface growth†

* this organism is available in Quanti-Cult™ format

† after incubation at 20-25- C for 3 days

†† after incubation at 20-25- C for 5 days

Quality control for non-sterile pharmaceutical products

Microbial Enumeration Tests (Growth promotion test and Test for suitability of count method in presence of product)

Test strains are available in Quanti-Cult™ format. Alternatively, they should be prepared by incubation in TSB (casein soya bean digest broth) at 30-35°C for 18-24 hours.

Inoculate portions of medium with not more than 100 CFU of the following micro-organisms and incubate at 30-35°C for ≤3 days.

Organism Expected Results

Staphylococcus aureus ATCC® 6538* Clearly visible growth

Pseudomonas aeruginosa ATCC® 9027* Clearly visible growth

Bacillus subtilis ATCC® 6633* Clearly visible growth

* this organism is available in Quanti-Cult™ format

Test for specified micro-organisms

Test strains are available in Quanti-Cult™ format. Alternatively, they should be prepared by incubation in TSB (casein soya bean digest broth) at 30-35°C for 18-24 hours.

Organism Expected Results

Staphylococcus aureus ATCC® 6538* Clearly visible growth

Pseudomonas aeruginosa ATCC® 9027* Clearly visible growth

Escherichia coli ATCC® 8793* Clearly visible growth

Salmonella Typhimurium ATCC® 14028* Clearly visible growth

* this organism is available in Quanti-Cult™ format

References

1. US Pharmacopoeia 30 (2008)
2. Compendium of Methods for the Microbiological Examination of Foods. 4th edition. Vanderzant C. and Splittstoesser D.F. (eds). APHA. Washington DC.
3. Practical Food Microbiology. Roberts D., Hooper W and Greenwood M. (Eds). Public Health Laboratory Service, London (1995).
4. British Pharmacopoeia (2004).
5. European Pharmacopoeia . 6.1 (2008)
6. Japanese Pharmacopoeia. 15 th Edition. (2006)

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