

PRODUCT CODE: 415576

TSC Agar Base (ISO 14189, 7937) (Dehydrated Culture Media) for microbiology

Preparation

Suspend 42 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121°C for 15 minutes. Cool to 44-47°C and aseptically add 0.4 g Cycloserine reconstituted in sterile distilled water. If desired, 25 ml of Egg Yolk Emulsion can be added (Not indicated in Norma ISO). Homogenize gently and dispense into Petri dishes. The prepared medium should be stored at 8-15°C.

The colour of the prepared medium is amber, slightly opalescent. The dehydrated medium should be homogeneous, free-flowing and beige in colour. If there are any physical changes, discard the medium.

***Clostridium perfringens* supplement**

(1 vial for 100 ml of media)

Clostridium perfringens TSC (Supplement) for microbiology, Code 417206.02132.

Alternatively D-Cycloserine Code A1943 can be used.

Uses

T.S.C. AGAR BASE is a recommended medium in ISO 7937 for presumptive identification and enumeration of *Clostridium perfringens* by count technique and in ISO 14189 for the enumeration of *Clostridium perfringens* by membrane filtration method. Is a nutrient medium for the cultivation and detection of *Clostridium perfringens* based on lecithinase detection if the Egg Yolk Emulsion (414722) is added and hydrogen sulfide gas production. It is also useful for the recovery of stressed cultures.

The superior nutrient base provides optimal conditions for the development of *Clostridia*. Tryptose and Soy peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B-group essential for bacterial growth. Ferric Ammonium Citrate and Disodium disulfite are H₂S indicators. Bacteriological agar is the solidifying agent. Egg yolk Emulsion is added for the lecithin, utilizing the reduction capacity of certain *Clostridium perfringens* strains to produce an opaque area in the colony surroundings. Note that this is not recognized as a universal character for all *C. perfringens*. Cycloserine inhibits the accompanying bacterial flora and causes the colonies, which develop, to remain smaller. It also reduces, thus, disturbs the blackening around the *C. perfringens* colonies. ISO 14189 recommends the incubation of the plates anaerobically with the filters at (44±1) °C during (21±3) hours. Alternatively, a thin layer of melted TSC (5-10 ml of media) as an overlay on the filter can be used. It is not necessary that this layer contain Cycloserine.

Colonies producing hydrogen sulfide are characterized by a blackening due to the reaction with the Ferric salt. The degradation of the egg yolk lecithin produces insoluble products which accumulate around the colonies, forming a white precipitate. After 24 hours incubation, all black colonies, lecithinase positive as well as the lecithinase negative ones, have to be considered as positive presumptive *C. perfringens* and the corresponding confirmation tests have to be made.

Composition

See in Data Sheet (TDS).

Microbiological Test

The following results were obtained in the performance of the medium from type cultures, with the respective supplements added, after incubation at a temperature of 37°C and observed after 20 ± 2 hours under anaerobic conditions.

Microorganism	Growth	Colony Color
<i>Clostridium perfringens</i> ATCC 13124	Good	Black with opaque halo

According to 11133 20 h/37°C (anaerobic atm.) (Productivity and Selectivity) (Food microbiology)

Microorganism	Inoculum (cfu/ml)	Reference media	Productivity Quantitative	Selectivity Qualitative	Specificity Qualitative
<i>Clostridium perfringens</i> ATCC 13124	10 ²	TSA	pr ≥ 0.5	-	Black colonies
<i>Clostridium perfringens</i> ATCC 12916	10 ²	TSA	pr ≥ 0.5	-	Black colonies
<i>Escherichia coli</i> ATCC 25922	10 ⁴ / 10 ⁶	-	-	Inhibited	-

According to 11133 21 ± 3h/44±1°C (anaerobic atm.) (Productivity and Selectivity) (Water microbiology)

Microorganism	Inoculum (cfu/ml)	Reference media	Productivity Quantitative	Selectivity Qualitative	Specificity Qualitative
<i>Clostridium perfringens</i> ATCC 13124	10 ²	TSA	pr ≥ 0.5	-	Black colonies
<i>Clostridium perfringens</i> ATCC 12916	10 ²	TSA	pr ≥ 0.5	-	Black colonies
<i>Clostridium perfringens</i> ATCC 10543	10 ²	TSA	pr ≥ 0.5	-	Black colonies
<i>Bacillus subtilis</i> ATCC 6633	10 ⁴ / 10 ⁶	-	-	Inhibited	-

Microorganism	Inoculum (cfu/ml)	Reference media	Productivity Quantitative	Selectivity Qualitative	Specificity Qualitative
<i>Clostridium perfringens</i> ATCC 13124	10 ²	Media batch TSC already	pr ≥ 0.7	-	Black colonies
<i>Clostridium perfringens</i> ATCC 12916	10 ²		pr ≥ 0.7	-	Black colonies
<i>Clostridium perfringens</i> ATCC 10543	10 ²		pr ≥ 0.7	-	Black colonies
<i>Bacillus subtilis</i> ATCC 6633	10 ⁴ / 10 ⁶	-	-	Inhibited	-

Storage

Once opened keep powdered medium closed to avoid hydration.

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