



Citrate Azide Tween Carbonate Base

M1618

Intended Use:

Enterococci

Composition**

Ingredients	Gms / Litre
Casein	15.000
Yeast extract	5.000
Potassium dihydrogen phosphate	5.000
Sodium citrate	15.000
Triphenyl Tetrazolium Chloride	1.000
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 70°C. Aseptically add the rehydrated contents of 1 vial of CATC Supplement (FD235). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Enterococci may be considered an essential part of the autochthonous microflora of humans and animals. Because of its wide distribution, Enterococci can also occur in different food commodities, especially those of animal origin (1). *Enterococcus faecalis* and *Enterococcus faecium* are relatively heat-resistant and may characteristically survive in traditional milk pasteurization procedures.

E. faecium is markedly heat-tolerant and is a spoilage agent in marginally processed canned hams. Most of the Enterococci are relatively resistant to freezing, and, unlike *Escherichia coli*, they readily survive this treatment (2). A wide variety of selective media for *Enterococcus* has been recommended and used. Indicator substances added to the media are useful for the recognition of Enterococci and for the rapid identification of single species on the basis of colony appearance. Citrate Azide Tween Carbonate Base is a selective media formulated by Burkwall and Hartmann (3). It was later modified by Reuter (4) for the identification of Enterococci in meat, meat products, dairy products and other foodstuffs.

Casein and yeast extract in the medium provide nitrogen, vitamins and amino acids. Tween 80 acts as a neutralizer, which inactivates residual disinfectants if present in the collected sample. The high concentrations of citrate inhibit the growth of the accompanying microbial flora. Triphenyl Tetrazolium Chloride (TTC) is reduced by Enterococci to form a red formazan, which imparts red colour to the colonies. Sodium azide helps in the selective isolation of Enterococci. The test sample can be directly streaked on the surface of the agar.

Type of specimen"

Food and dairy samples

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For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,2,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Enterococci are resistant to many antibiotics. They are also resistant to many disinfectants. They are also resistant to many antiseptics. They are also resistant to many preservatives. They are also resistant to many antibiotics. They are also resistant to many disinfectants. They are also resistant to many antiseptics. They are also resistant to many preservatives.

Performance and Evaluation

CXbe TaVXbygX` XWn` YkXgWj [XhfXWf`cXeg XWgWgba`ba`g X_TUX] `g`a`g Xk`d` cXebW j [X`fgXWgXb` ` XWVgX` cXgheX

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.6% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics observed with added CATC Supplement (FD235),after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Streptococcus pyogenes</i> ATCC 12344	50-100	none -poor	<=10%	
<i>Streptococcus agalactiae</i> ATCC 13813	50-100	none-poor	<=10%	
<i>Enterococcus faecalis</i> ATCC 29212	50-100	good-luxuriant	>=50%	red
<i>Enterococcus faecalis</i> ATCC 33186	50-100	good-luxuriant	>=50%	red
<i>Enterococcus faecium</i> ATCC 6057	50-100	good	40-50%	red colonies may or may not be observed
<i>Streptococcus bovis</i> DSM 20065	50-100	none-poor	<=10%	
<i>Escherichia coli</i> ATCC 25922	>=10'	inhibited	0%	
<i>Staphylococcus aureus</i> ATCC 25923	>=10'	Inhibited	0%	

Key : *Corresponding WDCM numbers.

Uvqtcig"cpf"Ujgnh"Nkhg

FgeXUween`10-30°C`a`T`gZl`gl`VbfXWbag`VaX`TaWg`X`ceX`TeXW`XWn` `Tg2-8°C!`HfXU`X`X`c`d`WgX`ba`g`X_TUX!`Oa`bcXa`aZ`c`b`W`g`f`bh`WUK`c`b`c`X`e`l``f`g`e`X`W`W`l`Z`T`g`e`g`Z`l`gl`Vlcc`a`Z`g`X`U`g`g`X`a`b`e`W`e`g`c`e`X`X`g`h`c`Y`e`T`g`b`a`W`X`g`g`X`l`l`Z`b`f`b`c`V`a`l`g`e`X`b`Y`g`X`c`b`W`V`g`<`c`e`b`c`X`e`f`g`e`l`Z`X`b`Y`g`X`c`b`W`V`g`T`l`X`W`g`p`h`c`Y`e`T`g`b`a`!`F`g`e`X`a`W`i`X`g`T`g`W`e`X`T`c`e`g`X`W`W`b``X`g`e`X`X`b`Y`g`X`c`X`l`g`e`X`T`a`W`f`b`e`X`b`Y`Z`a`g`b`a`F`X`T`g`X`V`b`a`g`T`a`X`e`g`Z`l`gl`T`g`e`h`f`X`H`f`X`U`X`b`e`X`X`c`d`W`g`X`b`a`g`X_TUX!`C`b`W`V`g`c`X`e`T`a`V`X`f`U`X`g`Y`h`X`W`j`g`a`f`g`g`W`k`c`d`c`X`e`b`W

Disposal

I`g`f`a`i`g`h`Y`g`f`Y`g`Z`Y`X`g`c`g`U` `V`m`U`h`c`W`U`j`l`b`l`U`b`X`c`f`l`b`W`b`Y`U`h`c`b`c`Z`i`g`X`c`f`i`b`i`g`U`Y`d`f`Y`U`h`c`b`g`c`Z`h`l`g`d`f`c`X`W`i`":`c` `ck`Y`g`U`V`l`g`X` `U`c`f`U`c`f`m`d`f`c`W`X`f`Y`g`l`b`X`l`g`c`g`b`l`c`Z`l`b`Z`W`l`c`i`g`a`U`h`f`l`U`g`U`b`X`a`U`h`f`l`U` `h`U`h`W`a`Y`g`l`b`c`W`b`h`U`M`i`k`l`h`W`l`b`l`W` `g`h`d`Y`a`i`g`h`W`X`W`b`h`U`l`b`h`X`U`b`X`X`l`g`c`g`X`c`Z`l`b`U`W`f`X`l`b`W`k`h`W`f`f`Y`h` `U`c`f`U`c`f`m`h`W`l`e`Y`g`f`l`"

Reference

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2. Vanderzant C. and Splittstoesser D. F., (Eds.), 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
3. Burkwall M. K., and Hartman P. A., 1964, Appl. Microbiol., 12; 18-23.
4. Reuter G., Arch F., Lebensmittelhyg., 1968, 19; 53-57 and 84-89.

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