Formula * in g/L

Enzymatic digest of casein..... 10.000
Yeast extract..... 1.000
Magnesium chloride (anhydrous)..... .28.100(*1)
Sodium chloride 5.000
Malachite green..... 0.010
Potassium Chlorate..... 1.000

Final pH 6.9 ±0,2 at 25 ºC

(*1) Equivalent to 60.0 g of $MgCl_2.6H_20$

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Dissolve 45.11 g of the powder in 1 liter of distilled water and sterilize in the autoclave for 15 minutes at 121 ° C. It is allowed to cool to 50 °C and add 1 ml of a sterile solution of Ticarcillin and Triclosan (Irgasan®) at 0,1%. Homogenize and distribute in suitable containers trying to minimize contact with air (relative anaerobiosis).

Description

This medium was originally formulated by Wauter *et al.*, starting from the enrichment broth for salmonellae from Rappaport et al., to which they modified the proportions of magnesium chloride and malachite green and added potasium chlorate that inhibits the growth of nitratase A-producing enterobacteria. The selectivity for *Yersinia enterocolitica* is achieved with the inclusion of triclosan (Irgasan®) that acts against gram-positive microorganisms and tricarcillin, an antibiotic that interferes with the formation of bacterial cell walls.
This medium works very well to detect the *Y. enterocolitica* pathogens of biotype 4 and serotype O:3, but it is not suitable for detecting other serotypes.

Technique

Proceed according to current national or international standards, established and tested protocols or according to the procedures established and accepted in each laboratory.

Quality control

Incubation temperature: 25±1 ºC **Incubation time:** 44± 4h

Inoculum: Practical range 50 - 100 CFU (Productivity)/ 10^4-10^6 CFU (Selectivity) according to ISO 11133:2014/ Amd 1:2018

Microorganism	Growth	Remarks
Yersinia enterocolitica DSM® 13030 +(1)+(2)	Good	> 10 CFU in CIN Agar
Escherichia coli ATCC® 25922 (1)	Total Inhibited	-
Pseudomonas aeruginosa ATCC® 27853 (2)	Total Inhibited	-
Proteus mirabilis ATCC® 29906	Partial/ total Inhibied	<10 CFU in TSA

References

· ISO Standard 10273 (2017) Microbiology of food and animal feeding stuffs - Horizontal method for the detection of presumptive pathogenic Yersinia enterocolitica.
· ACUFF, G.R. (2001) Media, Reagents and Stains in Compendium of methods of microbiological examination of foods. 3rd E d. Chap. 62. APHA. Washington D.C.
· ATLAS, R.M. & L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London
CORRY, J.E.L., G.D.W. CURTIS & R.M. BAIRD (2012) Handbook of culture media for food and water microbiology. RSC Publishing. Cambridge. UK.
· CURTIS, G.D.W. & R.M. BAIRD (1993) Pharmacopoeia of Culture Media for Food Microbiology: Additional monographs (II). Int. J. Food Microbiol 17:201-266
· de BOER, E. (2012) Culture media for the isolation of *Yersinia enterocolitica* from foods. Chap 15 in Handbook of culture media for food and wáter microbiology. (Corry *et al*., eds) RSC Publishing. Cambridge. UK.
· de ZUTTER, L., L. LeMORT, M. JANSSENS & G. WAUTERS (1994) Short-comings of Irgasan Ticarcillin Chlorate Broth for the enrichment of *Yersinia enterocolitica* biotype 2 serotype 9 from meat. Int. J. Food Microbiol. 23:231-237
· de ZUTTER, L., M. JANSSENS & G. WAUTERS (1995) Detection of *Yersinia enterocolítica* serogroup O:3 using different inoculation methods of the enrichment médium Irgasan Ticarcillin Chlorate. Contrib. Microbiol. Immunol. 13:123-125
· ISO Standard 10273:2017 Microbiology of the food chain. Horizontal method for the detection of pathogenic *Yersinia enterocolitica*.
· DOWNES, F.P. & K. ITO (2006) Compendium of methods for the microbiological examination of foods. 4th Ed. APHA. Washington D.C.
· PRPIC, J.K & D. HUGHES (1989) Yersinia enterocolitica in Foodborne Microorganisms of Public Health Significance 4th Ed. (K.A. Buckle *et al*. Eds) Chap. 6. AIFST. Australia.
· RAPPAPORT, F., N. KONFORTIN & B. NAVON (1956) A new enrichment médium for certain *Salmonellae*. J. Clin. Pathol. 9:261-266
· SCHIEMANN, D.A. & G. WAUTERS (2001) *Yersinia* in Compendium of methods for the microbiological examination of foods. 3rd ed. Chap. 27. APHA. Washington D.C.
· VANDERZANT, C. & D. SPLITTERSTOESSER(Eds) (2001) Compendium of methods for the microbiological examination of foods. 3rd ed. APHA. Washington D.C.
· WAUTERS, G., V. GOOSENS, M. JANSSENS & J. VANDEPITTE (1988) New enrichment method for isolation of pathogenic *Yersinia enterocolitica* serogroup O:3 from pork. Appl. Environ. Microbiol. 54:851-854
· WEAGANT, S.D. & P. FENG (2006) *Yersinia* in Compendium of methods for the microbiological examination of foods. 4th ed. APHA. Washington D.C.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).