

## 12282 Hoyle's tellurite agar, base (Hoyle's Medium, Base) NutriSelect® Plus

Hoyle Medium is a highly selective medium used for the isolation and differentiation of *Corynebacterium diphtheriae* types.

### Composition:

Ingredients	Grams/Litre
Peptic digest of animal tissue	10.0
Beef extract	10.0
Sodium chloride	5.0
Agar	15.0

Final pH 7.8 +/- 0.2 at 25°C

Store dehydrated powder between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Protect from moisture and light by keeping container in a low humidity environment.

Appearance(color): Faintly yellow & faint beige & faint brown, free flowing powder  
Gelling: Firm, comparable with 1.5% Agar gel  
Color and Clarity: Amber coloured, clear to slightly opalescent gel. After addition of blood & tellurite: Brownish red coloured opaque gel forms in Petri plates

### Directions:

Suspend 40 grams in 915 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 55°C and aseptically add 50 ml of laked blood and 35 ml of 1.0% Potassium Tellurite Solution. (Cat. No. 17774) Mix well and pour into sterile Petri plates.

### Principle and Interpretation:

*Corynebacterium diphtheriae* is a rod-shaped, Gram positive, non-spore-forming, and nonmotile bacterium that causes diphtheria. It's an acute communicable disease manifested by both local infection of the upper respiratory tract and the systemic effects of the toxin, which are most notable in the heart and peripheral nerves (1). Hoyle medium is the well-known *modification* (2) of Neill's medium for the cultural isolation and differentiation of *Corynebacterium diphtheriae* types. Hoyle medium does not exert the inhibitory effect manifested by Neil's original formulation on some mitis types, but gives very rapid growth with all types of *Corynebacterium diphtheriae*.

Peptone and beef extract supply carbon, nitrogen substances, amino acids, vitamins and other essential growth nutrients. Potassium tellurite is a selective agent, which inhibits most of the normal flora of the upper respiratory tract except *Corynebacterium*. Sodium chloride maintains the osmotic balance.

*C. diphtheriae* are usually present in small numbers permitting the formation of well isolated colonies. Thus, for inoculation swab is directly rubbed over the entire surface of the medium. Incubation should be carried out till 72 hours if the results are negative. Morphology studies are carried out with the help of gentian violet staining. To demonstrate the characteristic morphology and staining reactions of *C. diphtheriae* by Neissers or Alberts method, it is advisable to use colonies from Loeffler Medium. The toxigenicity of *C. diphtheriae* strains can be determined by Eleks (3) method.



Cultural characteristics after 18-24 hours at 35-37°C with added 50 ml of laked blood and tellurite solution

Organisms (ATCC/WDCM)	Inoculum (CFU)	Growth	Recovery	Colony characteristics
<i>Escherichia coli</i> (25922/ 00013)	≥10 <sup>4</sup>	-	0%	-
<i>Bacillus subtilis subsp. spizizenii</i> (6633/00003)	≥10 <sup>4</sup>	-	0%	-
<i>C. diphtheriae type intermedius</i> (14779/-)	50-100	++/+++	≥50%	grey colonies with darker centres
<i>Corynebacterium diphtheriae type mitis</i>	50-100	++/+++	≥50%	grey colonies with shining surface
<i>Enterococcus faecalis</i> (29212/00087)	50-100	++/+++	≥50%	black minute colonies

#### References:

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Tenover F. C., 8th Ed., American Society for Microbiology, Washington, D.C. (Ed.), 2003, Manual of Clinical Microbiology.
2. Hoyle I., 1941, Lancet., 1:175—2
3. Elek S. D., 1948, Brit. Med. A1:493.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

