PRODUCT SPECIFICATION SHEET

TM004Transport Swabs W/Stuart Medium (TM004)

Intended Use
Stuart Transport Medium (Transport Medium, Stuart) (DM250) is recommended for preservation and transportation of *Neisseria* species and other fastidious organisms from clinic to the laboratory.

Product Summary and Explanation
This medium is a chemically defined, semisolid, non-nutrient medium which prevent microbial proliferation. Transport media are chemically defined, semisolid, non-nutritive, phosphate buffered media that provide a reduced environment. Transport media are formulated to maintain the viability of microorganisms without significant increase in growth. In 1948, Moffett, Young and Stuart described a medium for transporting gonococcal specimens and other fastidious organisms during their transport from clinic to laboratory.[1] Originally formulated for the conservation of *Neisseria gonorrhoeae* and *Trichomonas vaginalis*, it may also be used for the transport of other bacteriological specimens. Stuart, Toshach and Patsula improved this formulation, introducing what is now known as Stuart's Transport Medium.[2] Ringertz included thioglycollate in the Stuart Medium and omitted charcoal.[3] The ability of Stuart's medium to maintain the viability of gonococci during transport led other researchers to explore its use with a variety of specimens. This medium is currently recommended for throat, vaginal and wound samples. Originally formulated for the conservation of *Neisseria gonorrhoeae* and *Trichomonas vaginalis*, it may also be used for the transport of other bacteriological specimens. Stuart et al.[4] noted that the transport medium may also be used for *Haemophilus influenzae, Streptococcus pneumoniae, Streptococcus pyogenes* and *Corynebacterium diphtheriae*. Cooper[5] investigated the extension of Stuart's method to the transport of swabs of clinical material containing upper respiratory tract and enteric pathogens. Stuart[6] published an account of his experiences of the medium in a public health bacteriology, whilst Crookes and Stuart[7] used the transport medium in combination with polymyxin B for the cultivation of *N. gonorrhoeae*. Because of this composition the medium ensures that microorganisms present are able to survive for a sufficiently long period of time.

Principles of the Procedure
Stuart Transport Medium contains calcium chloride along with sodium glycerophosphate acts as good buffering agent and also maintains osmotic equilibrium in the medium, while controlling permeability of bacterial cells. Sodium thioglycollate suppresses oxidative changes and provides a reduced environment. The medium provides an adequate degree of anaerobiosis which can be monitored by means of the redox indicator methylene blue. Methylene blue is a colorimetric pH indicator of the oxidation-reduction state.

Formula / Liter

Ingredients	Gms / Liter
Sodium glycerophosphate	10.00
Sodium thioglycollate	1.00
Calcium chloride	0.10
Methylene blue	0.002
Agar	3.00
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions
For In-Vitro Diagnostic Use Only.

Quality Control Specifications

Prepared Medium	Colourless to whitish coloured slightly opalescent butt with upper 10% or less portion blue on standing
Reaction of 1.41% Solution	pH : 7.4 ± 0.2 at 25°C
Media Per tube	3ml

Sterility test
Passes release criteria

Expected Cultural Response Cultural characteristics observed after an incubation at 35 - 37°C for 72 hours when subcultured from Stuart Transport Medium.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Subculture Medium
1.	*Haemophilus influenza ATCC 49247*	good	Chocolate Agar (incubated in CO_2 atmosphere)
2.	*Neisseria gonorrhoeae ATCC 19424*	good	Chocolate Agar (incubated in CO_2 atmosphere)
3.	*Streptococcus pneumoniae ATCC 6303*	good	Tryptone Soya Agar with 5% sheep blood

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

1. Refer to appropriate references for specific procedures.
2. Obtain specimen with sterile swab sterile cotton-tipped swabs or wooden sticks. Insert specimen swab(s) into the upper third of the medium in the transport container. Cut with sterile scissors or break-off the protruding portion of the swab stick.
3. Tightly screw the lid on the bottle or vial or plug the tube with cotton, due to which the swab is forced to the bottom of the medium.
4. Label the bottle or vial and send to the laboratory with minimum delay. Specimens may be refrigerated until ready for shipment. DO NOT FREEZE.
5. Submit to laboratory within 24 hours for culture and analysis.

Results

1. Refer to appropriate references and standard procedures for interpretation of results.
2. Survival of bacteria in a transport medium depends on many factors including the type and concentration of bacteria in the specimen, the formulation of the transport medium, the temperature and duration of transport and inoculation to appropriate culture media within 24 hours.
3. Optimal growth and typical morphology can only be expected following direct inoculation and appropriate cultivation.

Storage

Store at 2-8°C. The product retains potency until the expiration date shown on the label when stored properly under ideal storage conditions.

Expiration

Refer to the expiration date stamped on the label.

Limitations of the Procedure

1. Specimens taken from transport media will not exhibit the optimal or comparative growth as expected from direct inoculation and cultivation. These media do, however, provide an adequate degree of preservation for those specimens which cannot be forwarded immediately to the laboratory for prompt evaluation.
2. Viability of cells will diminish over time and some degree of multiplication or growth of contaminants can occur during prolonged periods of transit. This is particularly true of fecal specimens that contain substantial numbers of coliform organisms.
3. The condition of the specimen received by the laboratory for culture is a significant variable in recovery and final identification of the suspect pathogen. An unsatisfactory specimen (overgrown by contaminants, containing nonviable organisms, or having the number of pathogens greatly diminished) can lead to erroneous or inconclusive results.

Packaging

Product Name: Transport swab with Stuart Medium

Product Code: TM004
Available Pack sizes: 20 TB

References

1. Moffett, Young and Stuart. 1948. Br. Med. J. 2:421.
2. Stuart, Toshach and Patsula, 1954, Can. J. Public Health, 45:73.
3. Ringertz, 1960, Acta Pathol. Microbiol. Scand., 48:105.
4. Stuart R. D., Toshach S.R. and Patsula T.M. (1954) Canad. J. Publ. Hlth 45. 13-83.
5. Cooper G. N. (1967) J. Clin. Path. 10. 226-230.
6. Stuart R. D. (1959) Pub. Hlth Rep. Wash. 74. 431-438.
7. Crookes E.M.L. and Stuart R. D. (1959) J. Path. Bact. 78. 283-288.

Further Information

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