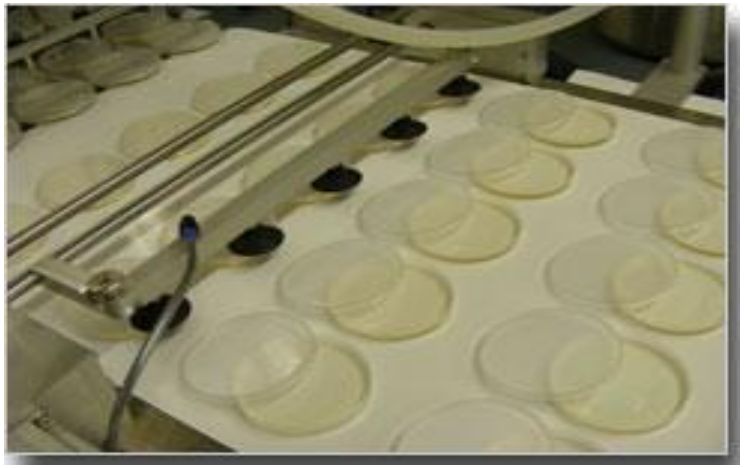
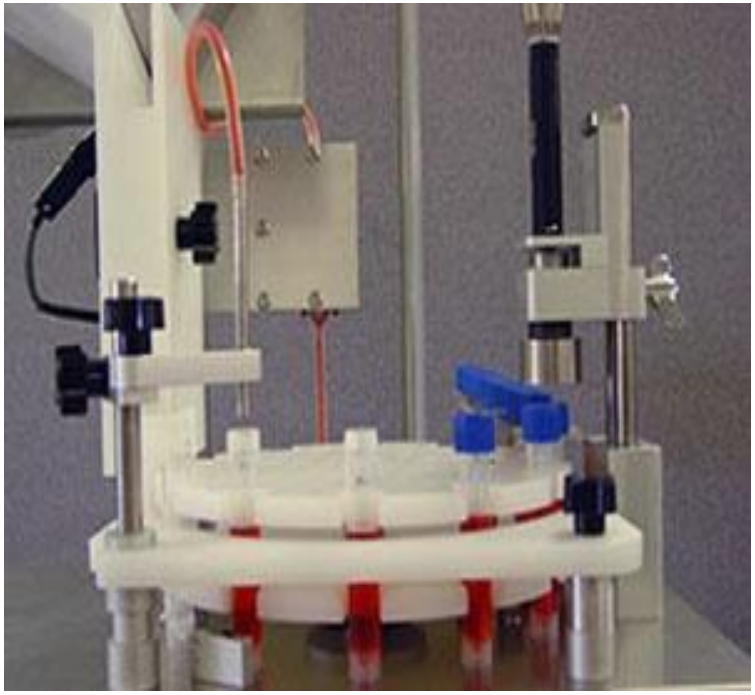
Mini Catalogue





READY
Microbiology System

Raw Materials (Source supplier for each product) Import, logistics, custom clearance DG/ No DG

Dehydrated culture media, antibiotic supplements, Sheep blood, horse blood, horse serum, chemicals, Instruments, glassware)

Production (Plates, tubes, bottles, Blood culture bottles)

Quality control (Color, gel strength, pH, sterility, Growth promotion, growth inhibition according to current CLSI guidelines)

Storage (2- 8 C) Delivery
Shelf life (Plates 2- 3 months, Tubes 3 months - 6 months)

Sheep 5 % Blood Agar

Sheep Blood Agar products are recommended for use as general purpose growth media for the isolation, cultivation, and differentiation of a wide variety of microorganisms. Tryptic Soy Agar is the basal medium for the Blood Agar products. Sheep blood has been added, in various concentrations, to facilitate the growth and for the observation of hemolytic reactions. The absence of reducing sugars and carbohydrates allows the hemolysis to occur without hindrance.

Testing organism	ATCC NO	Growth /colour / reaction
Streptococcus pneumoniae	ATCC 6305	growth alpha hemolysis
Streptococcus pyogenes	ATCC 19615	growth beta hemolysis
Staphylococcus aureus	ATCC 25923	growth beta hemolysis
Escherichia coli	ATCC 25922	growth

5% Sheep Blood agar with Gentamicin

5% Sheep Blood agar with Gentamicin is used for the isolation of *Streptococcus pneumoniae* from clinical specimens. *Streptococcus pneumoniae* is the leading cause of bacterial pneumonia and a cause of meningitis, endocarditis, otitis media and sinusitis. To improve the recovery of *S. pneumoniae* from clinical specimens, gentamicin has been incorporated into a general growth medium enriched with sheep blood. The concentration of gentamicin has been reduced to 2.5 mg/L in this medium because higher concentrations of gentamicin may inhibit the growth of some strains of *S. pneumoniae.*

Testing organism	**ATCC NO**	**Growth /colour / reaction**
Streptococcus pneumoniae	ATCC 6303	Good recovery
Staphylococcus aureus	ATCC 25923	inhibited

Phenylethyl Alcohol Agar with 5% Sheep Blood

is a selective medium for the isolation of gram-positive organisms, particularly gram-positive cocci, from specimens of mixed gram-positive and gram-negative flora. The medium should not be used for determination of hemolytic reactions since atypical reactions may be observed.Phenylethyl alcohol is bacteriostatic for gram-negative bacteria since it selectively and reversibly inhibits DNA synthesis.

Testing organism	ATCC NO	Growth /colour / reaction
Proteus mirabilis	ATCC 12453	inhibited
Streptococcus pyogenes	ATCC 19615	Fair to heavy growth, colonies surrounded by diffuse, beta hemolysis

Chocolate agar

It is a general purpose medium for fastidious microorganisms. Chocolate Agar consists of GC Agar Base with added hemoglobin and KoEnzyme Enrichment. GC Agar Base contains proteose peptone which provides nitrogenous nutrients. Hemoglobin releases hemin (X-factor) components. The phosphate buffer is added to maintain the pH of the medium. Corn starch aids in neutralizing any toxic fatty acids present. KoEnzyme Enrichment is a chemically defined supplement that provides NAD (V-factor), amino acids, vitamins, dextrose, ferric ions, and coenzymes to promote the growth of *Neisseria* species.

Testing organism	**ATCC NO**	**Growth /colour / reaction**
Neisseria gonorrhoeae	ATCC 43069	good growth
Haemophilus influenzae	ATCC 10211	good growth

Columbia PNBA agar

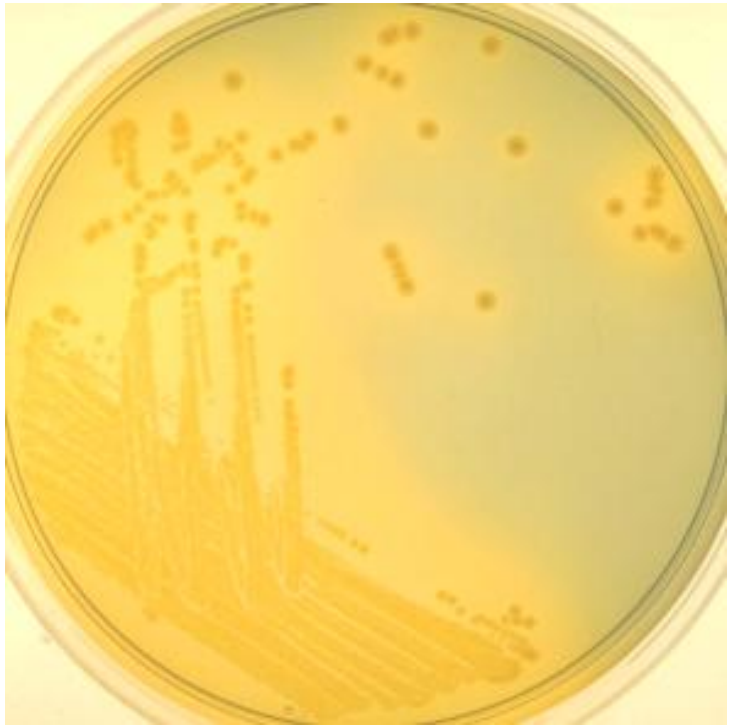
Columbia CNA Agar with 5% Sheep Blood is a selective and differential medium used for the isolation and differentiation of gram-positive microorganisms from clinical and nonclinical materials. Gram negative organisms are inhibited in this medium.

Testing organism	ATCC NO	Growth /colour / reaction
Staphylococcus aureus	ATCC 25923	good recovery with hemolysis
Streptococcus pyogenes	ATCC 19615	beta hemolytic colonies
E.coli	ATCC 25922	inhibited
P. aeruginosa	ATCC 10145	inhibited

MacConkey agar with Crystal violet

A more selective modification of MacConkey medium which is suitable for the detection and enumeration of coliform organisms and also for the detection and isolation of *Salmonella* and *Shigella* species occurring in pathological and food specimens. Due to the inclusion of a specially prepared fraction of bile salts in addition to crystal violet, the medium gives improved differentiation between coliforms and non-lactose fermenting organisms whilst Gram-positive cocci are completely inhibited.

Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	ATCC 25922	red colonies with bile precipitate
Salmonella typhimurium	ATCC 14028	straw color colonies
Shigella flexneri	ATCC 12022	straw color colonies
E.faecalis	ATCC 29212	inhibited
Staphylococcus aureus	ATCC 25923	inhibited



(CLED) medium

Cystine-Lactose-Electrolyte Deficient (CLED) medium is recommended for urinary bacteriology supporting the growth of all urinary pathogens and giving good colonial differentiations and clear diagnostic characteristics. In the laboratory CLED Medium provides a valuable non-inhibitory diagnostic agar for plate culture of urinary organisms. It is electrolyte deficient to prevent the swarming of *Proteus* species.

Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	ATCC 25922	yellow colonies
Proteus mirabilis	ATCC 12453	Light green
E.faecalis	ATCC 29212	Tiny yellow colonies
Staphylococcus aureus	ATCC 25923	Medium sized yellow colonies

Mueller Hinton Agar

Mueller Hinton Agar is used in antimicrobial susceptibility testing by the disk diffusion method. This medium is low in sulfonamide, trimethoprim and tetracycline inhibitors, and provides satisfactory growth of most non-fastidious pathogens along with demonstrating batch-to-batch reproducibility. A variety of supplements can be added to Mueller Hinton Agar, including 5% defibrinated sheep or horse blood, 1% growth supplement and 2% sodium chloride.

Testing organism	ATCC NO	Growth /colour / reaction
Staphylococcus aureus	ATCC 29213	good growth
E.coli	ATCC 25922	good growth
Staphylococcus epidermidis	ATCC 14990	good growth
Pseudomonas aeruginosa	ATCC14207	good growth

Mueller Hinton with Blood

Mueller Hinton with Blood is recommended for use in disk diffusion sensitivity testing of *Streptococcus* spp., including *Streptococcus pneumoniae*. The basal medium for Mueller Hinton with Blood is Mueller Hinton Agar supplemented with 5% defibrinated sheep blood. This medium is now used in standardized antimicrobial disk susceptibility testing as described by Bauer and Kirby et al.

Testing organism	ATCC NO	Growth /colour / reaction
Streptococcus pyogenes	ATCC 19615	good-luxuriant
Streptococcus pneumoniae	ATCC 6305	good-luxuriant

Mueller Hinton Agar, 2% Glucose with Methylene blue

Mueller Hinton Agar, 2% Glucose with Methylene blue is recommended for testing performing Antifungal Disk Diffusion Susceptibility of yeasts. When supplemented with glucose to a final concentration of 2%, it provides for suitable fungal growth. The addition of methylene blue to a final concentration of 5µg/ml enhances zone edge definition.

Testing organism	ATCC NO	Growth /colour / reaction
Candida albicans	ATCC 60193	good growth
Candida glabrata	ATCC 66032	good growth
Candida krusei	ATCC 6258	good growth
Saccharomyces cerevisiae	ATCC9763	good growth

Sabouraud Dextrose Agar with chloramphenicol

Sabouraud Dextrose Agar with chloramphenicol is is used for cultivating pathogenic and commensal fungi and yeasts. The high dextrose concentration and acidic pH of the formula permits selectivity of fungi. This medium is beneficial in sporulation studies and pigment production. Chloramphenicol is added to increase selectivity against commensal bacteria.

Testing organism	ATCC NO	Growth /colour / reaction
C. albicans	ATCC 60193	Good growth
C. tropicalis	ATCC 1369	Good growth
Staphylococcus aureus	ATCC 25923	inhibited
E.coli	ATCC 25922	inhibited

Sabouraud Dextrose Agar with cyclohexamide /chloramphenicol

Sabouraud Dextrose Agar with cyclohexamide chloramphenicol is used for cultivating pathogenic and fungi and yeasts. This medium inhibits fungi like *Cryptococcus neoformans, Aspergillus, Nocardia*, certain *Candida* species but allow the dermatophytes to grow well.

Testing organism	ATCC NO	Growth /colour / reaction
C. albicans	ATCC 60193	fair growth
Staphylococcus aureus	ATCC 25923	inhibited
E.coli	ATCC 25922	inhibited
Aspergillus brasiliensis	ATCC 16404	inhibited
Trichophyton mentagrophytes	ATCC 9533	good growth

Dermatophyte Test Medium

Dermatophyte Test Medium is used for the selective isolation of dermatophytic fungi, the causative agent of ringworm from hair, nails, and skin and is preferred for isolation and early recognition of *Microsporum, Trichophyton, and Epidermophyton* genera because of a distinct color change in the medium. Rapidly growing species may produce a complete color change in the medium in 3 days. The slower-growing species will change the indicator in longer time periods. Other organisms may grow, but can be recognized as nondermatophytes by lack of a color change. A few organisms, including saprophytes, yeasts, and bacteria are capable of changing the medium from red to yellow, but are easily recognized by their distinctive colonial morphology. Cycloheximide inhibits most saprophytic molds.

Testing organism	ATCC NO	Growth /colour / reaction
C. albicans	ATCC 60193	growth
Aspergillus brasiliensis	ATCC 16404	inhibited
Staphylococcus aureus	ATCC 25923	inhibited
E.coli	ATCC 25922	inhibited
Trichophyton mentagrophytes	ATCC 9533	colony exhibits pink to red reverse

MANNITOL SALT AGAR WITH CEFOXITIN FOR MRSA

This medium is recommended for screening *Staphylococcus aureus* MRSA isolates. It can be used to selectively enrich MRSA. Cefoxitin is incorporated in the medium. Cefoxitin is stable than oxacillin.

Testing organism	ATCC NO	Growth /colour / reaction
Staphylococcus aureus (MRSA)	ATCC 43300	Growth yellow colonies
Staphylococcus aureus	ATCC 29213	No growth

Brain Heart Infusion (BHI) Agar w/ Vancomycin

Brain Heart Infusion (BHI) Agar w/ Vancomycin is a solid medium recommended for use in qualitative procedures as an agar screen test for use in the detection of vancomycin resistance in enterococci. An agar screen test with BHI Agar supplemented with 6 µg/ml of vancomycin has been recommended by the Clinical and Laboratory Standards Institute (CLSI) as a reliable method for the detection of all phenotypes of vancomycin-resistant enterococci.

Testing organism	ATCC NO	Growth /colour / reaction
E.faecalis	ATCC 29212	inhibited
E.faecalis	ATCC 51299	growth

Bile esculin azide agar with vancomycin

Sodium azide inhibits gram negative bacilli and vancomycin detects vancomycin resistant enterococci. Organisms positive for esculin hydrolysis hydrolyze the esculin to esculetin and dextrose. The esculetin reacts with the ferric citrate to form a dark brown or black complex. Oxbile is used to inhibit Gram-positive bacteria other than enterococci. Beef Extract and Enzymatic Digest of Gelatin are the carbon and nitrogen sources used for general growth requirements in Bile Esculin Agar. Agar is the solidifying agent.

Testing organism	ATCC NO	Growth /colour / reaction
E.faecalis	ATCC 29212	Inhibited, vancomycin susceptible
E.coli	ATCC 25922	inhibited
E.faecalis	ATCC 51299	growth, black colonies, vancomycin resistant

Deoxycholate Citrate Agar

Deoxycholate Citrate Agar is used for isolation of intestinal pathogens and enumeration of intestinal pathogens.citrates and sodium deoxycholate work as inhibitors. Increasing the concentration of Sodium Citrate and Sodium Deoxycholate for improved recovery of *Salmonella* spp. and *Shigell*a spp. by inhibiting coliforms and many *Proteus* spp. This medium is used to screen *Salmonella* spp. and *Shigella* spp. H2S forming organisms produces dark black colonies

Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	ATCC 25922	growth, no H2S
Salmonella typhimurium	ATCC 14028	color less black colonies
Shigella flexneri	ATCC 12022	color less colonies
Staphylococcus aureus	ATCC 25923	inhibited

XLD AGAR

Xylose-Lysine-Desoxycholate Agar is for the isolation and identification of *Shigellae and Salmonella* from stool specimens. It relies on xylose fermentation, lysine decarboxylation and production of hydrogen sulphide for the primary differentiation of *Shigellae* and *Salmonellae* from non-pathogenic bacteria.

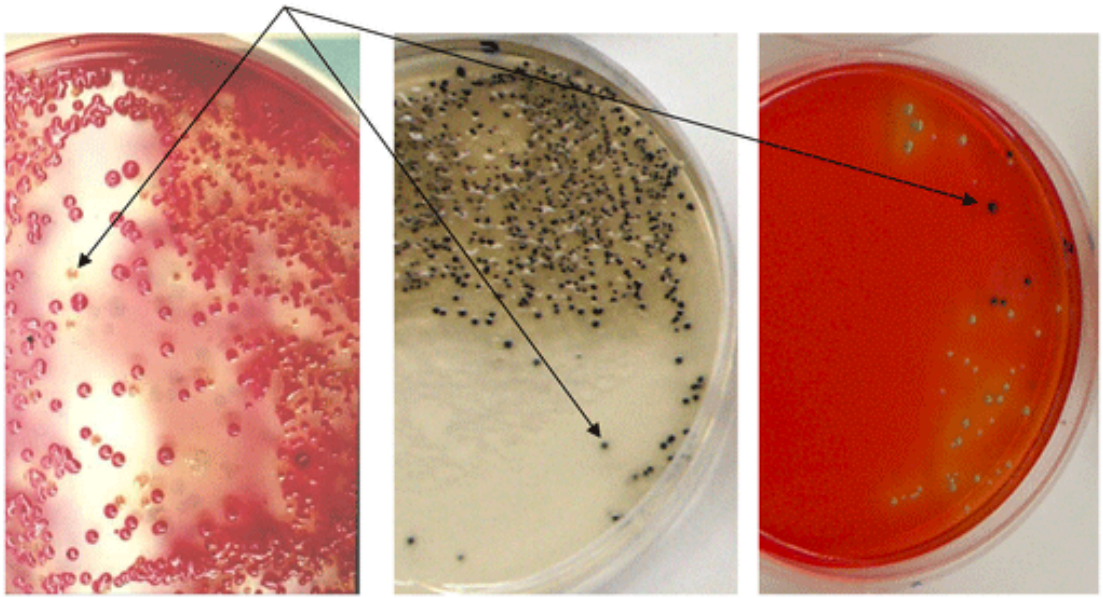
Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	ATCC 25922	Partial to complete inhibition
Salmonella typhimurium	ATCC 14028	Growth; red colonies with black centers
Shigella flexneri	ATCC 12022	Growth; red colonies
E.faecalis	ATCC 29212	Inhibited

Salmonella Shigella Agar

SS Agar is recommended for use as a selective and differential medium for the isolation of*Salmonella* and some *Shigella* species from clinical and non-clinical specimens. The basis for differentiation on SS Agar depends on the fermentation of lactose and the absorption of neutral red as the bile salts precipitate in the acidic condition. Neutral red turns red in the presence of an acidic pH, thus showing fermentation has occurred. The inclusion of bile salts, sodium citrate, and brilliant green serve to inhibit gram-positive and coliform organisms. *Salmonella* , *Shigella* , and other non-lactose-fermenting organisms appear as transparent or translucent colorless colonies on SS Agar. Sodium thiosulfate is added to the medium as a hydrogen sulfide source, and ferric citrate is added as an indicator for hydrogen sulfide production.

Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	ATCC 25922	Partial to complete inhibition; pink to rose red colonies with precipitate
Salmonella typhimurium	ATCC 14028	Growth; colorless colonies with or without black centers
Shigella flexneri	ATCC 12022	Growth; colorless colonies
E.faecalis	ATCC 29212	inhibited

Typical *E. coli* O157:H7 colonies on selective agars



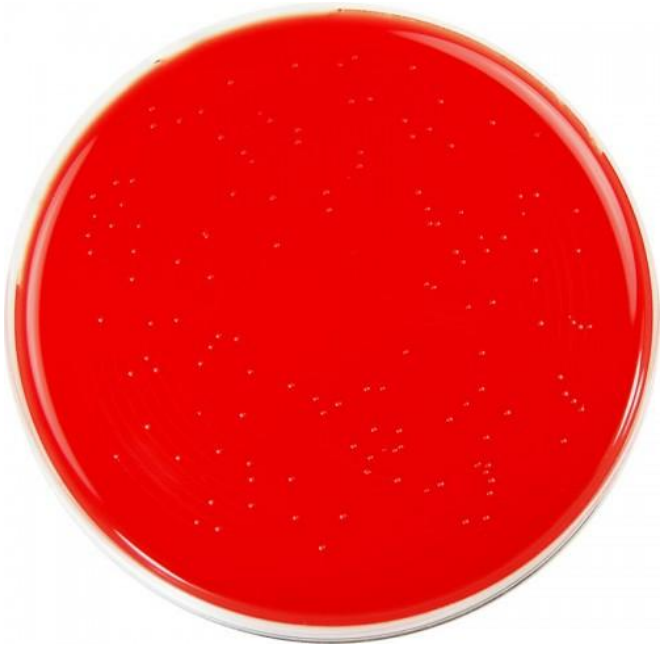
TC-SMAC | Rainbow® Agar O157 | R&F® *E. coli* O157:H7

Sorbitol MacConkey Agar with Cefixime and Tellurite (TC-SMAC)

Sorbitol MacConkey Agar is recommended for the isolation of pathogenic *E.coli* O157.

E.coli O157 does not ferment sorbitol and, therefore, produces colourless colonies. In contrast, most *E. coli* strains ferment sorbitol and form pink colonies. cefixime and potassium tellurite to Sorbitol MacConkey Agar to improve the selectivity of the medium. The level of potassium tellurite selects serogroup O157 from other *E. coli* serogroups and inhibits *Providencia* and *Aeromonas* species. Cefixime is inhibitory to *Proteus* spp.

Testing organism	ATCC NO	Growth /colour / reaction
Escherichia coli	NCTC 12900	Good growth, colour less colonies
Escherichia coli	ATCC 25922	growth



HBT (Blood Tween) Bilayer Medium

HBT (Blood Tween) Bilayer Medium is a selective and differential medium used in the primary isolation and presumptive identification of *Gardnerella vaginalis* from clinical specimens. The top layer is made by adding blood to the basal medium. Colonies of G. vaginalis may be differentiated by a diffuse, beta-hemolytic reaction they produce in the presence of blood. Colistin and nalidixic acid inhibit most gram-negative organisms. Amphotericin B is active against yeasts and filamentous fungi.

Testing organism	ATCC NO	Growth /colour / reaction
Proteus mirabilis	ATCC 12453	inhibited
Candida albicans	ATCC 10231	inhibited
Gardnerella vaginalis	ATCC 27853	Fair to heavy growth, colonies surrounded by diffuse, beta hemolysis

CHROMagar Orientation

Urinanalysis is the most common clinical microbial test. For instance, in France in 2007, out of 10 million bacteriology tests carried out, 6 million (60%) were urine analyses. **Any workload reduction related to this analysis will dramatically improve the efficiency of the laboratory.**

Testing organism	ATCC NO	Growth /colour / reaction
S. epidermidis	ATCC 12228	growth color less
Klebsiella	ATCC 13883	growth metalic blue
E.coli	ATCC 25922	growth, reddish
E.faecalis	ATCC 29212	growth, turquoise blue
Staphylococcus aureus	ATCC 25923	growth, golden yellow
S. saprophyticus	ATCC 15305	growth, pink

CHROMagar MRSA

Leading cause of nosocomial infections, especially in intensive care units, the MRSA sources are either endogenous (the patient) or through cross contamination (environmental or by person to person contact). The major issue with this pathogen is its resistance to a large panel of antibiotics, among them beta-lactam antibiotics, limiting the therapeutic options for clinicians.

Testing organism	ATCC NO	Growth /colour / reaction
S. aureus MRSA	ATCC 33592	growth, mauve
S. aureus MSSA	ATCC 25923	inhibited
E.cloacae	ATCC 35030	inhibited
E.coli	ATCC 25922	inhibited
E.faecalis	ATCC 29212	inhibited
Pseudomonas	ATCC 9027	inhibited
C. albicans	ATCC 10231	inhibited

Enriched Thioglycollate Medium

Enriched Thioglycollate Broth (M738)

1. Control
2. Clostridium perfringens ATCC 12924
3. Clostridium sporogenes ATCC 11437
4. Bacteroides vulgatus ATCC 8482
5. Streptococcus pyogenes ATCC 19615

Thioglycollate Medium without Indicator supplemented with vitamin K1 and hemin. The enriched broth medium is recommended for use in the isolation and cultivation of fastidious or slow growing, obligately anaerobic microorganisms present in clinical materials. It is also recommended for the isolation and cultivation of a wide variety of aerobic and facultatively anaerobic microorganisms. Calcium carbonate enhances the maintenance of stock cultures by neutralizing acids produced during growth.

Testing organism	ATCC NO	Growth /colour / reaction
Bacteroides fragilis	ATCC 25285	Good recovery
Clostridium perfringens	ATCC 13124	Good recovery

Todd Hewitt Broth with Gentamicin and Nalidixic Acid (0R) Colistin & Nalidixic acid

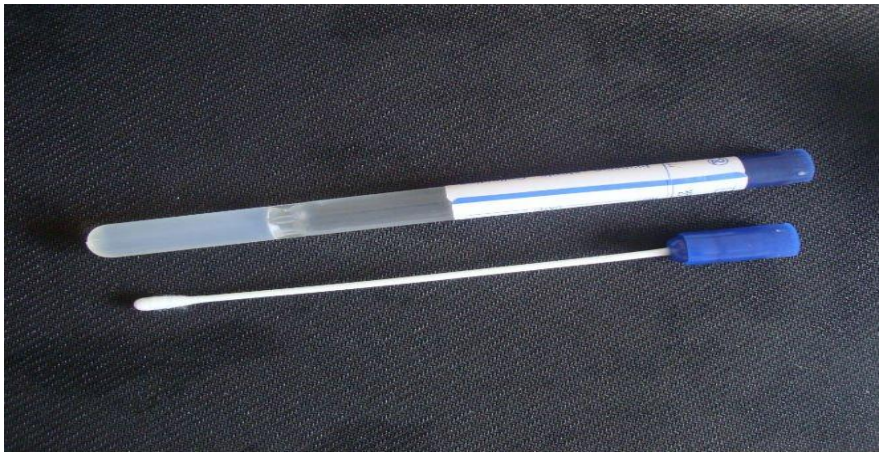
Todd Hewitt Broth is a general-purpose medium primarily used for the cultivation of β-hemolytic streptococci, especially for serologic studies. The medium is highly nutritious due to its content of peptones, dextrose and salts. Dextrose stimulates hemolysin production. Sodium phosphate and sodium carbonate provide buffering action to counteract the acidity produced during fermentation of dextrose, thereby protecting the hemolysin from inactivation by the acid. Selectivity for group B streptococci is obtained by the inclusion of gentamicin and nalidixic acid in the medium.

Testing organism	ATCC NO	Growth /colour / reaction
Streptococcus agalactiae	ATCC 12386	growth
Escherichia coli	ATCC 25922	inhibited

AMIES TRANSPORT MEDIUM WITHOUT CHARCOAL

AMIES TRANSPORT MEDIUM WITHOUT CHARCOAL is used for collecting, transporting and preserving microbiological specimens. It is formulated to maintain the viability of microorganisms without significant increase in growth, being nonnutritive, phosphate buffered and semi-solid. Amies Transport Medium is recommended for throat, vaginal, and wound samples. The Chloride salts supply essential electrolytes for transport and osmotic balance.

Testing organism	**ATCC NO**	**TEMP C**	**Growth /colour / reaction**
Streptococcus pneumoniae	ATCC 6303	4 C and 37 C	Good recovery



AMIES TRANSPORT MEDIUM WITH CHARCOAL

The pre requisite of a transport medium is that it should be non-nutritive, semi-solid, and reductive and should be able to hamper self-destructive enzymatic reactions within the cells and in addition, must inhibit toxic oxidation reactions. AmiesTransport Medium by replacing glycerophosphate with an inorganic phosphate buffer and adding charcoal to the medium. This modified medium gave a higher percentage of positive results than the transport medium of Stuart. Amies Transport Medium provides a reduced environment due to the presence of sodium thioglycollate and small amount of agar. Charcoal helps to neutralize materials that are toxic to sensitive pathogens *like Neisseria gonorrhoeae* . Calcium magnesium, potassium and sodium salts help the survival of gonococcal cells and also control permeability of bacterial cells. Phosphates buffer the medium

Testing organism	ATCC NO	TEMP C	Growth /colour / reaction
Streptococcus pneumoniae	ATCC 6303	4 C and 37 C	Good recovery