STARCH HYDROLYSIS MEDIA

PRODUCT:

Plate and Tube Media:

Starch Broth, 0.2%, item no. T7505, T3615

PURPOSE:

Starch hydrolysis media are useful in characterizing organisms possessing the enzyme amylase, which hydrolyzes starch. They are particularly useful in the identification of *Streptococcus bovis* from other group D streptococci and certain aerobic actinomycetes.

PRINCIPLE:

Starch hydrolysis was described by Vedder[5] in 1915 and is used to test the ability of an organism to hydrolyze starch. The organism is grown on a basal medium containing starch. After suitable incubation, an aliquot is removed and iodine is added. If starch is hydrolyzed, no color change occurs. If it has not been hydrolyzed, a blue-black color will appear. The remainder of the tube may be reincubated for further testing.

FORMULAS:

Approximate, per liter deionized filtered water.

Starch Broth, 0.2%:

Pancreatic Digest of Casein	11.0 g
Beef Heart Infusion Solids	2.0
Peptic Digest of Animal Tissue	5.0
Yeast Extract	2.0
Sodium Chloride	5.0
Soluble Starch	2.0

Final pH 7.3 ± 0.2 at 25°C

PRECAUTIONS:*

For in vitro diagnostic use. Observe approved biohazard precautions.

Storage: Upon receipt store at 2-8°C away from direct light. Media should not be used if there are signs of contamination, deterioration (shrinking, cracking, evaporation, or discoloration), or if the expiration date has passed.

Limitations: Swarming bacteria such as *Proteus mirabilis* and *Proteus vulgaris* must not be used on the starch hydrolysis agar.

Results from this biochemical procedure are not 100% accurate for the individual organisms tested. Consult appropriate texts and references for a final definitive identification. [1,2,3,4]

PROCEDURE:*

Specimen Collection: Not applicable since this medium is not used for primary isolation. This medium is used in characterizing pure cultures of isolated organisms, and established isolation techniques and tests for purity are necessary before inoculating this medium. Direct inoculation of specimens will produce erroneous results. Information on specimen collection may be found in standard reference texts.[1,2,3,4]

Method of Use, Tube: Prior to inoculation, the medium should be brought to room temperature. Remove a well-isolated colony from an agar plate using a sterile wire or loop and inoculate into a broth culture, using aseptic technique. Incubate aerobically at 35°C for up to 5 days. Remove an aliquot of the starch solution to another tube and add Gram or Lugols iodine. A blue-black color is indicative of a negative test; an unstained color indicates a positive test.

Interpretation:

Positive: Red or no color change after the addition of Gram or Lugols iodine to the plate or tube.
Negative: Blue-Black color after the addition of Gram or Lugols iodine to the plate or tube.

Materials Required but Not Provided: Standard microbiological supplies and equipment such as loops, needles, incubator, incinerator, pipettes, and iodine reagent are not provided.

QUALITY CONTROL:*

Microorganisms Used (ATCC #):	**Expected Results:**
Streptococcus bovis (9809)	(+)
Enterococcus faecalis (29212)	(-)
Enterococcus avium	(-)

User Quality Control: Check for signs of contamination and deterioration.

BIBLIOGRAPHY:

1. Burrows, W., *Textbook of Microbiology*, W.B. Saunders, Philadelphia, 1968.
2. Davidson, I., et al., *Clinical Diagnosis by Laboratory Methods*, W.B. Saunders, Philadelphia, 1969.
3. Finegold, S. M., and E. J. Baron, *Bailey and Scott's Diagnostic Microbiology*, 7th ed, C. V. Mosby, St. Louis, 1986.
4. Lennette, E. H., et al., *Manual of Clinical Microbiology*, 4th ed., American Society for Microbiology, Washington, D. C., 1985.
5. Vedder, E. B., *J. Inf. Dis*., 16:395, 1915.

*For more detailed information, consult appropriate references and/or details in the preface of the PML Technical Manual.

PML MICROBIOLOGICALS, INC.
Data #710

Revision Date: January 2001