

## TARTRATE (JORDAN'S)

K635

### PRINCIPLE/DISCUSSION:

This formulation of Tartrate medium is primarily used to differentiate tartrate fermenting and non-fermenting *Salmonella* strains, and has been adopted from the current WHO method. Tartrate can be used by salmonella strains as a substrate for the synthesis of ATP in the acetate kinase reaction (Schink 1984). *Salmonella paratyphi B* d- (L+) tartrate non-fermenting strains can exhibit an increased human pathogenicity and cause typhoid-like illness. *Salmonella Paratyphi B* d-tartrate fermenting strains cause gastroenteric disease.

### ACTIVE INGREDIENTS:

Each tablet contains 2 mg. of the tartrate and Brom-thymolBlue indicator with inert ingredients and fillers.

### MATERIAL SAFETY DATA:

This product does not contain any materials known at this time to be hazardous.

### STORAGE/ DISPOSAL:

Store tightly covered and with desiccant in a dry place at room temperature. .Dispose of used materials in a manner appropriate for biohazardous materials.

### MATERIALS REQUIRED:

Tartrate requires fresh 18-24 hour growth on media appropriate for the specimen. The following items are required but not provided: Stoppered test tubes, Boiling water bath, Sterile distilled water, pipette or inoculating loop.

### PROCEDURE:

- (1) Place one tablet and 1.5 ml of distilled water in a stoppered or capped tube.
- (2) Boil in a boiling water bath for 10 minutes to kill any vegetative cells which might be present.
- (3) Cool then inoculate with a loopful of growth from a fresh 24 hour culture.
- (4) Incubate at 35-37C for 4-6 days, observing daily for a color change.

### INTERPRETATION:

A color change from dark blue-green to light green is a positive result, indicating that the tartrate has been alkalinized.

### QUALITY CONTROL:

Tablets should be tested with known positive and negative organisms. We use the following:  
Positive: *Salmonella typhimurium*, ATCC® 14028  
Negative: *Enterobacter cloacae* ATCC®13047

### LIMITATIONS:

A positive test, if continued to incubate, may revert back to alkaline pH (blue) after the tartrate in the medium has been exhausted. Reaction should be checked daily for color change.

### REFERENCES:

- 1.Burkhard Malorny, Cornelia Bunge, and Reiner Helmuth; *Journal of Clinical Microbiology*, Sept. 2003, p. 4292-4297.
- 2.Alfredsson, G. A., R. M. Barker, D. C. Old, and J. P. Duguid. 1972. Use of tartaric acid isomers and citric acid in the biotyping of *Salmonella typhimurium*; *J. Hygiene*. **70**:651-666.

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