

## K250 GELATIN STRIPS

### DISCUSSION:

The production of enzymes that enable some organisms to hydrolyze certain substrates can be a valuable tool in identification. The enzyme gelatinase, which liquifies gelatin, is one of these. This enzyme is produced by only a few members of Enterobacteriaceae, primarily *Serratia sp.*, *Proteus mirabilis*, *Proteus vulgaris*, and some *Enterobacter species*. *Salmonella* and *Shigella* are negative with the exception of *S. arizona*. The gelatin test may also be used in the I.D. of organisms other than Enterobacteriaceae, specifically in differentiating the *Pseudomonas* species or anaerobes. Key Gelatin Strips indicate production of gelatinase by the visibility of the blue color of the base material when the gelatin has been liquified from a strip incubated in a heavy suspension of the organism being tested.

### MSDS:

KEY Gelatin strips contain an emulsion of gelatin bonded to an acetate base. These strips are chemically inert and contain no hazardous or toxic material. No action or treatment is required on contact or ingestion. The acetate base is combustible and should not be used around an open flame.

### MATERIALS REQUIRED:

Key Gelatin Strips are sold in bottles of 50. Usage requires preliminary growth on media appropriate for the specimen. Consult a reference manual such as the Manual of Clinical Microbiology for appropriate media. The following items are required but not provided: small test tubes (e.g. 10 x 75), loop for harvesting colonies, and distilled water.

### STORAGE

Store tightly covered in a cool, dry place

### INSTRUCTIONS:

- 1) In a small test tube, make a heavy suspension of the organism to be tested in 0.5 to 1 ml. of distilled water.
- 2) Drop 1 gelatin strip in the test tube. Alternately, if you already have a pure culture in broth, you may drop the gelatin strip directly into that tube (e.g. TSB).
- 3) Incubate at 32-37 C for up to 48 hours. Some liquification may be seen as quickly as 30-60 minutes.

### INTERPRETATION:

A positive result is the visibility of the blue base material anytime during the 48 hours. In some strongly positive tests a blue ring may form on the surface of the liquid.

## QUALITY CONTROL

Positive and negative organisms should be tested along with each test group. Key suggests *Serratia marcescens* ATCC 8100 as positive control and *Escherichia coli* ATCC 25922 as negative. Discard used tests in a manner conforming with accepted laboratory procedures for biohazardous materials.

### FREQUENTLY ENCOUNTERED GELATINASE POSITIVE BACILLI

#### Fermenters:

<i>Proteus vulgaris</i>	91%
<i>Proteus mirabilis</i>	90%
<i>Proteus myxofaciens</i>	100%
<i>Serratia marcescens</i>	90%
<i>Serratia liquifaciens</i>	90%
<i>Serratia odorifera</i>	95%

#### Nonfermenters:

<i>Pseudomonas stutzeri</i>	100%
<i>Pseudomonas fluorescens</i>	90%
<i>Pseudomonas cepacia</i>	90%

## REFERENCES

- 1) Bailey and Scott's Diagnostic Microbiology, 7th Edition, 1986, pg. 418
- 2) Manual of Clinical Microbiology, 5th Edition, Chapters 40 & 41.
- 3) Nonfermentative Gram Negative Bacilli, a syllabus for detection and identification, by M.J. Pickett.



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