# Technical Information

## Pyrazinamidase Agar

## Product Code: DM 2880

**Application: -** Pyrazinamidase Agar is recommended for identification of *Yersinia* species from food in accordance with FDA BAM, 1998.

## Composition**

| Ingredients | Gms / Litre |
|---|---|
| Tryptone | 11.250 |
| Soya peptone | 3.750 |
| Sodium chloride | 3.750 |
| Yeast extract | 3.000 |
| Pyrazine-carboxamide | 1.000 |
| Agar | 11.250 |

**Formula adjusted, standardized to suit performance parameters

## Principle & Interpretation

Pyrazine Amidase Agar (DM2880) is recommended for the identification of *Yersinia* sp. in accordance with FDA BAM, 1998(3). *Yersinia enterocolitica* is a ubiquitous organism, isolated from soil, water, animals, and a variety of foods (1). They comprise a biochemically heterogeneous group that can grow even at refrigerated temperatures. The association of human illness with consumption of *Y.enterocolitica* -contaminated food, animal wastes, and unchlorinated water is well documented (2).

Pyrazinamidase activity distinguish potential pathogenic from nonpathogenic strains of *Y. enterocolitica* in epidemiological surveillance programs.Fully grown culture, on pyrazinamidase agar slants at RT is flooded with 1 ml of 1% freshly prepared ferrous ammonium sulphate over slant. Development of pink color within 15 min is positive test, indicating presence of pyrazinoic acid formed by pyrazinamidase enzyme.

Tryptone, soya peptone and yeast extract supplies nitrogenous, carbonaceous compounds, long chain amino acids, vitamins and other essential nutrients. Sodium chloride helps to maintain the osmotic balance of the medium. Pyrazine-carboxamide acts as substrate to detect Pyrazinamidase activity.

## Methodology

Suspend 34.00 grams of dehydrated powder media in 1000 ml 0.2 M Tris-maleate, pH 6.0. Mix thoroughly & heat to boiling to dissolve the medium completely. Dispense 5ml amount in 16 x 125 mm tubes. Sterilize by autoclaving at 15 lbs pressure (121$^0$C) for 15 min. After sterilization, cool the tubes in slanted position.

## Quality Control

**Appearance**

Cream to yellow homogeneous free flowing powder.

**Gelling**

Firm, comparable with 1.13% Agar gel.

**Colour and Clarity**

Light yellow coloured clear to slightly opalescent gel forms in tubes as slants.

**Cultural Response**

DM2880: Cultural characteristics observed after an incubation at 25-30°C for 48 hours. *-After incubation flood 1 ml of 1% freshly prepared ammonium sulphate solution over the slant.

| Organism | Growth | Inoculum (CFU) | Recovery |
|---|---|---|---|
| *Yersinia enterocolitica ATCC 27729* | good-luxuriant | 50-100 | Variable Positive(development of pink colour within 15 mins) |

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on label.
**Prepared Media**: 2-8° in sealable plastic bags for 2-5 days.

## Further Reading

1. Sabina, Y., Rahman, A., Ray, R.C. and Montet, D. 2011. Journal of Pathogens, 2011.
2. Aleksic, S., A., Steigerwalt, J., Bockemuhl, G., Huntley-Carter. and Brenner, D.J 1987. Int. J. Syst. Bacteriol, 37: 327-332.
3. FDA, U.S. 1998. Bacteriological Analytical Manual. 8 ed. Gaithersburg, MD: AOAC International.
4. Aulisio, C.C.G., Mehlman, I. J. and Sanders, A.C. 1980. Appl. Environ. Microbiol, 39: 135-140.

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