

## Technical Information

### MOX Agar

**Product Code: DM 2167**

**Application:** - MOX (Magnesium Oxalate) Agar is used for the cultivation of *Yersinia enterocolitica* from food.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	12.83
Soya peptone	5.000
Sodium chloride	5.000
Magnesium chloride,6 H <sub>2</sub> O	4.067
Sodium oxalate	2.680
Agar	15.000
Final pH ( at 25°C)	7.5±0.1

\*\*Formula adjusted, standardized to suit performance parameters

### Principle & Interpretation

*Yersinia enterocolitica*, a gram-negative coccobacillus shaped bacterium, is often isolated from clinical specimens such as wounds, faeces, sputum and mesenteric lymph nodes. It is a foodborne pathogen responsible for gastroenteritis. However, it is not a part of the normal human flora. Strains of *Y. enterocolitica* can be found in meats (pork, beef, lamb, etc.), oysters, fish, and raw milk. MOX Agar is formulated as per APHA (1) for the cultivation of *Y. enterocolitica*, a causative agent of human illness caused due to consumption of contaminated food (2).

Casein enzymic hydrolysate and soya peptone in the medium supply essential growth nutrients. Magnesium chloride and sodium oxalate prevent the growth of *Y. enterocolitica*.

Aseptically collected food samples are sealed in containers to prevent dehydration, contamination in transit and to protect handlers. In case of delay, refrigeration is preferable to freezing since the latter may result in cell injury. *Yersinia* is sensitive to acid conditions, therefore acid foods and fermented products should be analyzed promptly. *Yersinia* is a psychrotroph hence cold enrichment at 4°C has been commonly used as the incubation temperature (1).

### Methodology

Suspend 44.58 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat to boil with stirring to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Shake well before pour into sterile Petri plates.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity

Yellow coloured opalescent to slightly hazy gel forms in Petri plates

#### Reaction

Reaction of 4.68% w/v aqueous solution at 25°C. pH : 7.5±0.1



Dehydrated Culture Media  
Bases / Media Supplements

**pH Range**

7.40-7.60

**Cultural Response**

DM2167: Cultural characteristics observed after an incubation at 25-30°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
<i>Yersinia enterocolitica</i> ATCC 27729	50-100	good-luxuriant	>=50%

## 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 the label.

**Prepared Media:** 2-8° in sealable plastic bags for 2-5 days.

## Further Reading

1. Vanderzant C., Splittstoesser D. F., 1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C
2. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.

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