

## Triple Sugar Iron Agar(TSI)

**Product No.** CM205

### Intended Use

Used for the differentiation of *Enterobacteriaceae* based on carbohydrate fermentation and the production of hydrogen sulfide. (ISO、FDA BAM、GB、SN)

**Specification** 250 g

<b>Ingredients</b>	<b>(g/L)</b>
Peptone	20.0
Sucrose	10.0
Lactose	10.0
Dextrose	1.0
Beef Extract	5.0
Phenol Red	0.025
Ammonium Ferrous Sulfate(6H <sub>2</sub> O)	0.2
Sodium Chloride	5.0
Sodium Thiosulfate	0.2
Agar	12.0
(pH 7.4 ± 0.2)	

### Additional Reagents

No

### Principle and Interpretation

TSI Agar contains three sugars (dextrose, lactose and sucrose), phenol red for detecting carbohydrate fermentation and ferrous ammonium sulfate for detection of hydrogen sulfide production (indicated by blackening in the butt of the tube). Carbohydrate fermentation is indicated by the production of gas and a change in the color of the pH indicator from red to yellow. To facilitate the detection of organisms that only ferment dextrose, the dextrose concentration is one-tenth the concentration of lactose or sucrose. The small amount of acid produced in the slant of the tube during dextrose fermentation oxidizes rapidly, causing the medium to remain red or revert to an alkaline pH. In contrast, the acid reaction (yellow) is maintained in the butt of the tube because it is under lower oxygen tension. After depletion of the limited dextrose, organisms able to do so will begin to utilize the lactose or sucrose.

To enhance the alkaline condition of the slant, free exchange of air must be permitted by closing the tube cap loosely. If the tube is tightly closed, an acid reaction (caused solely by dextrose fermentation) will also involve the slant.

### Directions

Suspend 63.4 g of the powder in 1 L of distilled water. Heat with frequent agitation and boil to dissolve completely. Dispense into tubes and autoclave at 115°C for 15 minutes. Cool in a slanted position so that deep butts are formed.

### Precautions

No

### Quality Control

Microorganisms	Method	Incubation	Growth	Characteristic reactions
<i>Escherichia coli</i> ATCC 25922	quantitative	36°C±1°C 48h±2h	Grows well	A/A; Produces gas but not hydrogen sulfide
<i>Escherichia coli</i> CICC 25012 [CMCC(B) 43201]				
<i>Salmonella enterica</i> subsp. <i>enterica</i> CMCC(B) 50335				K/A; Produces gas and hydrogen sulfide
<i>Shigella Castellani</i> CMCC(B) 51572				K/A; No gas; No hydrogen sulfide
<i>Pseudomonas aeruginosa</i> ATCC 27853				K/A; No gas; No hydrogen sulfide
<i>Pseudomonas aeruginosa</i> CICC 25016 [CMCC(B) 10901]				K/A; No gas; No hydrogen sulfide

### Storage Conditions

Keep container tightly closed and store in a cool dry place.

### Shelf Life

3 years.

### Related Products

Product No.	Product Name	Specification
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CM205-05

Triple Sugar Iron Agar(TSI)

20tubes

*For laboratory use in industry or R&D purpose. Not for drug, household or other uses.*