

Sulfide Indole Motility Medium, SIM (i23170)

Used to differentiate enteric bacilli on the basis of sulfide production, indole formation and motility.

Industry: Water / Food

Principles & Uses

SIM Medium, a semisolid medium, serves as a valuable tool for differentiating enteric bacteria based on sulfide production, indole formation, and motility. The sulfur reduction test aids in distinguishing organisms like *Salmonella* and *Shigella*. Components like Casein and Meat peptones provide essential nutrients, while sodium thiosulfate and Ferric ammonium citrate indicate H₂S production. Bacteriological agar, in a low concentration, facilitates the observation of motility. The medium is instrumental in discerning *Klebsiella* from *Enterobacter* and *Serratia* species.

In the incubation phase, motility is evidenced by diffuse turbidity around the puncture line, and H₂S formation is indicated by blackening. The subsequent indole test, using KOVÁCS Indole Reagent, following Tryptophan degradation, confirms indole production and results in a purple color change if indole is produced.

Peptones provide necessary nutrients, and the semisolid nature of the medium aids in detecting motility.

Composition (gr/L)

Enzymatic Digest of Casein 20 g, Enzymatic Digest of Animal Tissue 6.1 g, Ferric Ammonium Citrate 0.2 g, Sodium Thiosulfate 0.2 g, Agar 3.5 g.

Final pH at 25°C 7.3 ± 0.2

Preparation from dehydrated Powder

Suspend 30 g of the powder in 1 L of purified water. Mix thoroughly. Dispense and autoclave at 121°C for 15 minutes. Test samples of the finished product for performance using stable, typical control cultures.

Quality Control

Dehydrated Appearance: Fine, homogeneous, free of extraneous material.

Prepared Appearance: Light to medium, yellow to tan, clear to slightly hazy.

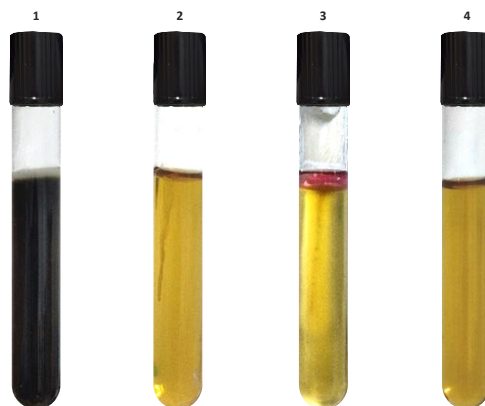
Reaction of 3.0% Solution at 25°C: pH 7.3 ± 0.2

Cultural Response

Stab inoculate using heavy inocula of fresh cultures and incubate at 35 ± 2°C for 18-24 hours.

Organism (ATCC*)	Recovery	Motility	H ₂ S	Indole
<i>Escherichia coli</i> (25922)	Good	+	-	+
<i>Salmonella enterica</i> (13311)	Good	+	+	-
<i>Shigella sonnei</i> (9290)	Good	-	-	-

*ATCC is a registered trade mark of the American Type Culture Collection.



Salmonella enterica (1). *Shigella flexneri* (2). *Escherichia coli* (3). Prepared Culture Medium (4)

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.