

SIM Medium

Test culture medium used to detect sulfide formation, indole production and motility for the identification of Enterobacteriaceae.

The medium complies with the recommendations of APHA (1992) for food examination.

Typical Composition (g/litre)

Peptone from casein 20.0; peptone from meat 6.6; ammonium iron(II)citrate 0.2; sodium thiosulfate 0.2; agar-agar 3.0.

Preparation

Suspend 30 g/litre, dispense into tubes to give a depth of about 4 cm, autoclave (15 min at 121 °C), allow to solidify in a vertical position.

pH: 7.3 ± 0.2 at 25 °C.

The prepared medium is clear and yellowish-brown.

Experimental Procedure and Evaluation

Introduce a pure culture of the microorganism to be tested into the butt by puncture.

Incubation: 18-24 hours at 35 °C aerobically.

Motility is indicated by a diffuse turbidity of the culture medium surrounding the puncture line. In case of immotility, growth takes place solely along the puncture line. H₂S formation is shown by a blackening in those areas of the medium in which microbial growth has occurred.

After checking the tubes for motility and H₂S production, the indole test is performed. The medium is covered with a layer of KOVÁCS Indole Reagent. Production of indole causes the reagent layer to become purple in colour.

Microorganisms	H ₂ S	Indole	Motility
Escherichia	-	+	+ / -
Enterobacter	-	-	+
Citrobacter	+	-	+
Klebsiella	-	-	-
Salmonella	+	-	+
Shigella	-	+ / -	-
Prot. vulgaris	+	+	+
Prot. mirabilis	+	-	+
Morganella	-	+	+
Rettgerella	-	+	+
Arizona	+	-	+
Hafnia	-	-	+
Serratia	-	-	+
Providencia	-	+	+
Edwardsiella	+	+	+
Yers. enterocolitica	-	- (+)	-

Literature

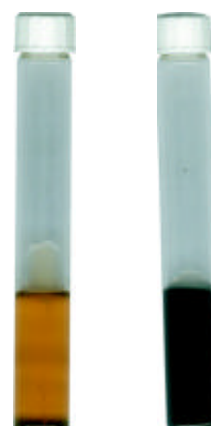
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COSTIN, I.D.: Orientierende Identifizierung obligat- und fakultativ-aerob, anspruchsloser, gramnegativer Stäbchen von medizinischem Interesse. - **Med. Labor.**, **30**; 197-217 (1977).

Ordering Information

Product	Merck Cat. No.	Pack size
SIM Medium	1.05470.0500	500 g
Bactident® Indole (dropper bottle)	1.11350.0001	1 x 30 ml
KOVÁCS Indole Reagent	1.09293.0100	100 ml



Escherichia coli
ATCC 25922

Salmonella
typhimurium
ATCC 14028

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Quality control

Test strains	Growth	H ₂ S-formation	Indole formation	Motility
<i>Escherichia coli</i> ATCC 25922	good / very good	-	+	+
<i>Escherichia coli</i> ATCC 4351	good / very good	-	+	+
<i>Klebsiella pneumoniae</i> ATCC 13883	good / very good	-	-	-
<i>Enterobacter cloacae</i> ATCC 13047	good / very good	-	-	+
<i>Salmonella typhimurium</i> ATCC 14028	good / very good	+	-	+
<i>Proteus vulgaris</i> ATCC 13315	good / very good	+	+	+